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Canadian Pacific Acquisition of Kansas City Southern

FINAL ENVIRONMENTAL IMPACT STATEMENT

Docket No. FD 36500
Volume II: Appendices A - R





LEAD AGENCY
Surface Transportation Board
Office of Environmental Analysis

APPLICANTS
Canadian Pacific Railway
Kansas City Southern Railway

Decision ID No. 51566

Appendix A

Public Involvement

Under the National Environmental Policy Act (NEPA) regulations, agencies shall make diligent efforts to involve the public in the environmental review process. Agencies shall also "Provide public notice of NEPA-related hearings, public meetings, and other opportunities for public involvement, and the availability of environmental documents so as to inform those persons and agencies who may be interested or affected by their proposed actions." (40 Code of Federal Regulations [C.F.R.] Section (§) 1506.6). For the Draft Environmental Impact Statement (Draft EIS) for the Proposed Acquisition of Kansas City Southern Railway (KCS) by Canadian Pacific Railway (CP), the Surface Transportation Board's (Board) Office of Environmental Analysis (OEA) conducted public involvement activities to inform the public, including elected officials, of the scoping period, ~~and~~ the availability of the~~is~~ Draft EIS and the associated comment period, and the availability of this Final EIS. The Draft EIS analyzed~~s~~ the potential environmental impacts of the Proposed Acquisition and presents OEA's preliminary environmental mitigation recommendations. OEA developed its public involvement approach to provide the public with opportunities to comment on the scope of the Draft EIS and on its content so that OEA could~~an~~ assess issues raised by the public and consider those concerns in developing this~~e~~ Final EIS. OEA considered all comments received, and responses to substantive comments are provided in **Appendix S.**

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires enhanced outreach efforts to Environmental Justice (EJ) populations for public involvement opportunities. OEA conducted additional notification efforts to engage EJ communities, including the use of online banner advertisements and letters and postcards to community leaders, such as school principals, police and fire chiefs, library leadership, and religious leaders. Over 500 local leaders were notified about this environmental review process and the opportunities for engagement, identified in **Table A.2-1** at the end of this appendix.

This appendix contains examples of public involvement materials that OEA developed to inform the public of the scoping and Draft EIS comment periods, as well as the information shared at public meetings and other sources, such as the Board-sponsored project website.

A.1 Public Notification Materials

Attachment A, *Public Notification Materials*, includes the following materials used to notify the public of the scoping period, extension of the scoping period, issuance of the Draft EIS, extension of the Draft EIS review period, issuance of this Final EIS, and information about the project.

A.1.1 Public Notification Materials

- Federal Register Notices
  - Notice of Intent to Prepare an EIS: November 12, 2021
  - Notice of Public Scoping Comment Period Extension: December 17, 2021
  - Notice of Availability of the Final Scope of Study for the Environmental Impact Statement: February 18, 2022
- Board Press Releases
  - Notice of Intent: November 12, 2021
  - Scoping Period Extension: December 17, 2021
  - Notice of Availability of the Final Scope of Study for the Environmental Impact Statement: February 18, 2022

A.1.2 Scoping Period Materials

- Letters to Elected Officials
  - Federal: Emailed to U.S. Senators and Representatives representing states or districts, respectively, where the Proposed Acquisition could result in adverse environmental impacts, including states or districts where increased rail traffic resulting from the Proposed Acquisition would exceed thresholds for environmental review, states or districts where increased activity at rail yards or intermodal facilities would exceed thresholds for environmental review, and states or districts where CP and KCS intend to make capital improvements if the Board authorizes the Proposed Acquisition.
  - State: Emailed to governors and state legislators representing districts where the Proposed Acquisition could result in adverse environmental impacts.
  - Local: Emailed to the executive or highest ranking local elected official (e.g., mayor, county board chairperson)—identified through internet research— representing any county or locality where the Proposed Acquisition could result in adverse environmental impacts.
- Outreach to EJ Populations
  - Community Leaders: Letter emailed to community leaders in EJ population areas with a flier (also included) to post in their communities. Postcards were mailed to the community leaders when an email address was not available.
  - Banner Advertisement: Paid digital advertisement deployed in EJ population areas, linking to Board-sponsored project website.

A.1.3 Informational Materials

- Project Website (www.CP-KCSMergerEIS.com/)
- Information Toll-free Number
- Public Meeting Materials
  - Pre-recorded Presentation
  - Virtual Meeting Room (https://vmr.vhb.com/v/ydjWGe0Jj32)

- Merger Process Overview Slides
- Environmental Review Process Overview Slides
- Review Schedule Slides
- Purpose and Need, Proposed Action, and Alternatives Slides
- Impact Topic Slides
- Meeting Booklet (PDF)
- Project Update Flyer

A.2 Draft EIS Materials

A.2.1 Public Notification Materials

- Federal Register Notices
  - EPA Notice of Availability (~~TBD~~August 12, 2022)
  - EPA Amended Notice of Draft EIS Comment Period Extension: September 16, 2022
- Board Press Release
  - Notice of Availability of the Draft EIS: August 5, 2022
  - Notice of Draft EIS Review Period Extension: September 6, 2022
  - Emailed press release to media outlets
- Email Notification to Elected Officials
  - Federal: Emailed to U.S. Senators and Representatives representing states or districts, respectively, where the Proposed Acquisition could result in adverse environmental impacts.
  - State: Emailed to governors and state legislators representing districts where the Proposed Acquisition could result in adverse environmental impacts.
  - Local: Emailed to the executive or highest ranking local elected official (e.g., mayor, county board chairperson), representing any county or locality where the Proposed Acquisition could result in adverse environmental impacts.
- Environmental Justice Outreach
  - Community Leaders: Letter emailed to community leaders in EJ population areas with a flier (also included) to post in their communities. Postcards were mailed to the community leaders when an email address was not available.
  - Banner Advertisement: Paid digital advertisement deployed in EJ population areas, linking to Board-sponsored project website.

Table A.2-1. Community Leaders Notified

Organization/Agency	City	State
Ashdown Public Library	Ashdown	Arkansas
Community Christian Fellowship	Siloam SPGS	Arkansas
De Queen Police Dept	De Queen	Arkansas
DeQueen/Mena Area Voc Center	Gillham	Arkansas
Gentry Public Library	Gentry	Arkansas
Grannis Police Dept	Grannis	Arkansas
New Life Church	Siloam SPGS	Arkansas
Penuel Assembly of God	Hatfield	Arkansas
Wickes Elementary School	Wickes	Arkansas
Acorn High School	Mena	Arkansas
Board Camp Baptist Church Food Distribution Center	Mena	Arkansas
Cossatot River High School	Cove	Arkansas
Cossatot River School District	Wickes	Arkansas
De Queen Library	De Queen	Arkansas
Decatur Fire Station	Decatur	Arkansas
Gentry Middle School	Gentry	Arkansas
Gillham Branch Library	Gillham	Arkansas
God's Feeding Hand Ministry	Mena	Arkansas
Iva Jane Peek Library HQ	Decatur	Arkansas
Lillies Pad Food Distribution	De Queen	Arkansas
Mena First Assembly of God Food Distribution Center	Mena	Arkansas
Mena High School	Mena	Arkansas
Mena Public Schools	Mena	Arkansas
Mena Regional Health System	Mena	Arkansas
Ninth Street Ministries	Mena	Arkansas
Ouachita River School District	Mena	Arkansas
Polk Co. Housing Authority	Mena	Arkansas
Quality Of Life Coalition	Mena	Arkansas
Sevier County Sheriff's Dept	De Queen	Arkansas
South Central Arkansas Drug Task Force	De Queen	Arkansas
Tri-county Regional Library System	De Queen	Arkansas
Ashdown City Police Dept	Ashdown	Arkansas
Ashdown Fire Department Station 1	Ashdown	Arkansas
Assembly of God	Decatur	Arkansas
Calvary	Gentry	Arkansas
Christian Motorcyclists Association Inc	Hatfield	Arkansas
Church on the Rock - Polk County	Hatfield	Arkansas
Cove Volunteer Fire Station 3	Cove	Arkansas
De Queen Fire Station	De Queen	Arkansas

Table A.2-1. Community Leaders Notified

Organization/Agency	City	State
Decatur Police Dept	Decatur	Arkansas
Decatur United Methodist Church	Decatur	Arkansas
Domtar Industries Fire Department Ashdown Mill	Ashdown	Arkansas
Faith Christian Church	Mena	Arkansas
Gentry Police Dept	Gentry	Arkansas
Grannis Fire Station 1	Grannis	Arkansas
Hatfield Library	Hatfield	Arkansas
Hatfield Station Fire District 4	Hatfield	Arkansas
Mena Fire Department Station 1	Mena	Arkansas
Mountain Springs Youth Camp Inc	Grannis	Arkansas
Pleasant Grove Church of the Nazarene	Cove	Arkansas
Solid Rock Full Gospel Church	Horatio	Arkansas
Wickes Church of the Nazarene	Wickes	Arkansas
Wickes Fire Department	Wickes	Arkansas
Bettendorf City Police Dept	Bettendorf	Iowa
Bettendorf Fire Station 3	Bettendorf	Iowa
Blakesburg Elementary	Blakesburg	Iowa
Blakesburg Public Library	Blakesburg	Iowa
Catholic Daughters of the Americas	Washington	Iowa
Clinton County Sheriff's Dept/Clinton County Jail	Clinton	Iowa
Clinton Police Dept	Clinton	Iowa
Clinton Public Library	Clinton	Iowa
Columbus Junction Public Library	Columbus Jct	Iowa
Faith Baptist Church	Washington	Iowa
First Presbyterian Church of Muscatine	Muscatine	Iowa
Lamrim Kadampa Buddhist Center	Davenport	Iowa
Lyons Branch	Clinton	Iowa
Mystic Community Church	Mystic	Iowa
National Spiritualist Association of Churches	Davenport	Iowa
River Church Assembly of God	Clinton	Iowa
Saint Paul Lutheran Church	Clinton	Iowa
Temple of the Flowing Waters	Muscatine	Iowa
Victory Chapel Inc	Columbus Jct	Iowa
Victory Christian Center Inc	Columbus Jct	Iowa
Washington County Sheriff's Office	Washington	Iowa
Young Men’s Christian Association of Washington, Iowa	Washington	Iowa
Al-Hira Community Center	Bensenville	Illinois
Bensenville Community Library	Bensenville	Illinois
Bensenville Police Dept	Bensenville	Illinois

Table A.2-1. Community Leaders Notified

Organization/Agency	City	State
Community of Hope Church of God	Hanover Park	Illinois
Discovery Church Inc	Elgin	Illinois
Fenton High School	Bensenville	Illinois
Hanover Park Police Dept	Hanover Park	Illinois
Living Water Ministries	Elgin	Illinois
North Elementary School	Franklin Park	Illinois
Ontarioville Elementary School	Hanover Park	Illinois
Philadelphia Holiness Full Gospel Baptist Church	Elgin	Illinois
River Grove Public Library District	Grove City	Illinois
Savanna Police Dept	Savanna	Illinois
Transition Learning Center	Bensenville	Illinois
Willard E. Schoppe Fire Station No.1	Bensenville	Illinois
Wood Dale Community United Methodist Church	Wood Dale	Illinois
Wood Dale Police Dept	Wood Dale	Illinois
Zion Evangelical Lutheran Church	Elgin	Illinois
Abundant Life Christian Fellowship Inc	Elgin	Illinois
Faith Forward Inc	Elgin	Illinois
Franklin Park Fire Department Station 3	Franklin Park	Illinois
Franklin Park Police Dept	Franklin Park	Illinois
Gail Borden Public Library District	Elgin	Illinois
Manav Seva Mandir	Bensenville	Illinois
Mashetimoses Ministries	Elgin	Illinois
Mount Calvary Lutheran Church	Franklin Park	Illinois
New Creation International Church	Bensenville	Illinois
Next City Church	River Grove	Illinois
Nichiren Shoshu Academy Chicago West Chapter	Franklin Park	Illinois
SELC District of LCMS	Franklin Park	Illinois
St. Gertrude Church	Franklin Park	Illinois
St. Paul’s Evangelical Covenant Church Franklin Park	Franklin Park	Illinois
St. Edward Central Catholic High School	Elgin	Illinois
St. John's Latvian Evangelical Lutheran Church of Chicago	Wood Dale	Illinois
Third Day Christian Ministries	Elgin	Illinois
Village-Franklin Park-Police	Franklin Park	Illinois
Word of Truth Deliverance Ministry	Wood Dale	Illinois
Calvary Bible Church of the Quad Cities	Davenport	Iowa
Calvary Chapel of Davenport Iowa	Davenport	Iowa
Calvary Full Gospel Ministries	Seymour	Iowa
Camanche Chief of Police	Camanche	Iowa
Columbus Junction Fire and Rescue Department	Columbus Junction	Iowa

Table A.2-1. Community Leaders Notified

Organization/Agency	City	State
Columbus Junction Police Dept	Columbus Jct	Iowa
Davenport Public Library	Davenport	Iowa
First Baptist Church	Washington	Iowa
Greater True Love Missionary Baptist Church	Clinton	Iowa
Hillcrest Baptist Church	Davenport	Iowa
Hope Bible Church	Columbus JCT	Iowa
Jerusalem Temple Apostolic Church	Davenport	Iowa
Muscatine Foursquare Church	Bettendorf	Iowa
Muscatine Mission Church	Muscatine	Iowa
Muscatine South Foursquare Church	Bettendorf	Iowa
Musser Public Library	Muscatine	Iowa
Reformed Baptist Fellowship	Bettendorf	Iowa
Restoration Outreach Ministries	Davenport	Iowa
Seymour Police Dept	Seymour	Iowa
Seymour Public Library	Seymour	Iowa
Seymour Volunteer Fire Department	Seymour	Iowa
Trinity Baptist Church of Clinton Iowa	Clinton	Iowa
Church of God of Prophecy	Pittsburg	Kansas
Antioch Baptist Church	Shreveport	Louisiana
Beauregard Parish Library	Deridder	Louisiana
Bobby Leger Ministries, Inc.	Deridder	Louisiana
Caddo Fire District 2	Shreveport	Louisiana
Caddo Parish Fire District 8	Vivian	Louisiana
Calcasieu Parish Ward 6 Fire Protection District	Dequincy	Louisiana
Christian Living Fellowship	Leesville	Louisiana
De Soto Parish Fire District 8	Mansfield	Louisiana
DeQuincy Volunteer Fire Department	DeQuincy	Louisiana
Deridder Area Ministerial Alliance, Inc.	Deridder	Louisiana
Deridder Police Department	Deridder	Louisiana
Desoto Parish Library	Mansfield	Louisiana
Exousia Miracle Temple International Inc	Shreveport	Louisiana
First Assembly of God	Leesville	Louisiana
Johnson Temple Church of God in Christ	Leesville	Louisiana
Louisiana State University - Shreveport Health Sciences Center Police Department	Shreveport	Louisiana
Martin Luther King Center	Leesville	Louisiana
Mary Evergreen Baptist Church CORE	Shreveport	Louisiana
Mount Sinai Missionary Baptist Church	Shreveport	Louisiana
New Willow Baptist Church	Leesville	Louisiana

Table A.2-1. Community Leaders Notified

Organization/Agency	City	State
North Sabine Volunteer Fire Protection District	Zwolle	Louisiana
Parish-Vernon-Police Jury Main	Leesville	Louisiana
Pleasant Hill Baptist Church	Leesville	Louisiana
Police Department	Shreveport	Louisiana
Rivers of Living Water School of the Spirit	Leesville	Louisiana
Sabine Parish Police Jury	Many	Louisiana
Shreve Memorial Library	Vivian	Louisiana
Shreveport Police Dept	Shreveport	Louisiana
Shreveport Police Dept District 7 Satellite Station	Shreveport	Louisiana
St. Mary Baptist Church Inc	Shreveport	Louisiana
Trinity Lutheran Church	Leesville	Louisiana
True Deliverance Worship Center	Mansfield	Louisiana
Vernon Parish Police Jury	Leesville	Louisiana
Vivian Police Department	Vivian	Louisiana
Zwolle Elementary School	Zwolle	Louisiana
Beauregard Parish Police Jury	Deridder	Louisiana
Bethlehem Missionary Baptist Church Inc	Mansfield	Louisiana
Calcasieu Baptist Church	Leesville	Louisiana
Chief of Police Leesville	Leesville	Louisiana
De Quincy Police Dept	Dequincy	Louisiana
De Soto Parish Police Jury	Mansfield	Louisiana
Eightieth St Church of God in Christ	Shreveport	Louisiana
Eighty-First Street ECE Center	Shreveport	Louisiana
Faith Tabernacle Assembly of God	Mansfield	Louisiana
Faith Works in Caddo Bossier	Shreveport	Louisiana
First Bible Missionary Church of Shreveport Inc	Shreveport	Louisiana
First Christian Church	Leesville	Louisiana
Full Gospel Church of Leesville Louisiana Inc	Leesville	Louisiana
Lakeside Baptist Church of Shreveport	Shreveport	Louisiana
Leesville Fire Department	Leesville	Louisiana
Leesville Police Dept	Leesville	Louisiana
Living Word Church of Mansfield Inc	Mansfield	Louisiana
Many Church of God of Prophecy	Many	Louisiana
Memorial Seventh Day Adventist Church	Mansfield	Louisiana
Mt. Olive Baptist Church	Leesville	Louisiana
New Llano Police Dept	New Llano	Louisiana
New Oak Grove Baptist Church of Mansfield	Mansfield	Louisiana
Park Avenue Church of Christ of De Soto	Mansfield	Louisiana
Paul Laurence Dunbar Branch	Leesville	Louisiana

Table A.2-1. Community Leaders Notified

Organization/Agency	City	State
Renewal Ministries Inc	Leesville	Louisiana
Resurrection Life Worship Center Inc	Leesville	Louisiana
Sabine Parish Library Zwolle Branch	Zwolle	Louisiana
Sabine Parish Sheriff's Dept	Many	Louisiana
Senseless Favor Ministries Inc	Mansfield	Louisiana
Shreveport Fire Department Station 9	Shreveport	Louisiana
Spoken Word Prayer Center Ministries Inc	Shreveport	Louisiana
St. Augustine Missionary Baptist Church	Shreveport	Louisiana
St. John Baptist Church of Mansfield Louisiana Inc	Mansfield	Louisiana
Vernon Parish Sheriff's Office	Leesville	Louisiana
Vivian Church of God of Prophecy	Vivian	Louisiana
Zwolle City Police Dept	Zwolle	Louisiana
Zwolle High School	Zwolle	Louisiana
Abounding Grace Worship Center	Anderson	Missouri
American Rehabilitation Ministry Inc	Joplin	Missouri
Amsterdam Volunteer Fire Department	Amsterdam	Missouri
Anderson Police Dept	Anderson	Missouri
Blessed Hope Church	Goodman	Missouri
Centro Cristiano Emanuel Asamblea de Dios	Noel	Missouri
Christ's Cornerstone Church	Lawson	Missouri
Church of Hope of Newtown County	Neosho	Missouri
Crossroads Church of Joplin Inc	Joplin	Missouri
Donna Ross Ministries	Anderson	Missouri
Faith Ministries World Outreach Center	Grandview	Missouri
Gateway Moscow Inc	Joplin	Missouri
God's Church of Love and Grace LLC	Lawson	Missouri
Goodman Area Fire Protection District	Goodman	Missouri
Goodman Police Dept	Goodman	Missouri
Gospelaires Inc	Lawson	Missouri
Grace Apostolic Church of Joplin Inc	Joplin	Missouri
Grace-life Church	Anderson	Missouri
Hickman Mills Freshman Center	Kansas City	Missouri
Hilltop Missions Inc	Anderson	Missouri
Immanuel Assembly of God	Noel	Missouri
Impact Family Worship Center Church of God in Christ Inc	Kansas City	Missouri
Independent Assemblies of God	Goodman	Missouri
Joplin Apostolic Church Inc	Joplin	Missouri
Joplin Church Alive	Joplin	Missouri
La Gracia De Dios/The Grace of God Inc	Noel	Missouri

Table A.2-1. Community Leaders Notified

Organization/Agency	City	State
Lawson Fire and Rescue Protection District	Lawson	Missouri
Marshal's Office	Noel	Missouri
Master's Touch PCG	Joplin	Missouri
McDonald County Community Outreach	Anderson	Missouri
Millennium Baptist Church	Kansas City	Missouri
Neosho Fire Department Station 2	Neosho	Missouri
Noel Community Library	Noel	Missouri
Noel Islamic Center	Noel	Missouri
Open Door Ministries	Chillicothe	Missouri
Passion and Compassion Ministries International	Joplin	Missouri
Proclamation Ministries Inc	Noel	Missouri
Schrage Christian Mission	Joplin	Missouri
Seth Wilson Library	Joplin	Missouri
St. Nicholas Episcopal Church Noel	Noel	Missouri
Stark City Police Dept	Neosho	Missouri
Stella City Police Dept	Neosho	Missouri
Templo Emanuel	Noel	Missouri
The Canopy	Neosho	Missouri
The Way Church Inc	Springfield	Missouri
Trinity Worship Center	Goodman	Missouri
True Light of Jesus Christ	Grandview	Missouri
United Family Fellowship	Joplin	Missouri
Anderson Volunteer Fire Department	Anderson	Missouri
Assembly of God	Lawson	Missouri
Bethel Family Worship Center	Kansas City	Missouri
Board of Police KCMO	Kansas City	Missouri
Central Christian Center	Joplin	Missouri
City of Neosho Police Dept	Neosho	Missouri
Community Chapel Church	Joplin	Missouri
Compass Elementary	Kansas City	Missouri
Field Early Childhood/Kindergarten Center	Neosho	Missouri
Field Elementary	Chillicothe	Missouri
First Baptist Church	Liberty	Missouri
Goodman Banner Church of the Nazarene	Anderson	Missouri
Goodman Elementary	Neosho	Missouri
Grace Communion International Joplin	Joplin	Missouri
Grace Life Church	Anderson	Missouri
Grand River Area Family YMCA	Chillicothe	Missouri
Harvesters	Kansas City	Missouri

Table A.2-1. Community Leaders Notified

Organization/Agency	City	State
Heartland Baptist Association Inc	Lawson	Missouri
Iron Works Church of the Nazarene	Anderson	Missouri
Joplin Area Ministerial Alliance Inc	Joplin	Missouri
Joplin Police Dept	Joplin	Missouri
Kansas City Parks & Recreation	Kansas City	Missouri
Lawson High	Lawson	Missouri
Lawson Middle	Lawson	Missouri
Lawson Police Dept	Lawson	Missouri
Life Center Food Pantry Food Distribution Center	Chillicothe	Missouri
Life Change Outreach	Joplin	Missouri
Literature and Teaching Ministries Inc	Joplin	Missouri
Nation to Nation International	Carl Junction	Missouri
Neosho Police Dept	Neosho	Missouri
New Vision Christian Center Assembly of God	Grandview	Missouri
Noel Elementary	Noel	Missouri
Noel Primary School	Noel	Missouri
North Joplin Christian Church	Joplin	Missouri
Ruskin High School	Kansas City	Missouri
Southwest Elementary	Lawson	Missouri
Spring River Baptist Association	Joplin	Missouri
United Christian and Presbyterian Church	Lawson	Missouri
Faith Community	Poteau	Oklahoma
Heavener Public Library	Heavener	Oklahoma
New Beginning Family Ministry	Poteau	Oklahoma
Panama High School	Panama	Oklahoma
Panama Middle School	Panama	Oklahoma
Peavine Public School	Stilwell	Oklahoma
Spiro Public Library	Spiro	Oklahoma
Watts Fire Department	Watts	Oklahoma
Watts High School	Watts	Oklahoma
Westville Elementary School	Westville	Oklahoma
Westville High School	Westville	Oklahoma
Westville PH Church	Westville	Oklahoma
Westville Police Dept	Westville	Oklahoma
Adair County Sheriff's Office/Adair County Jail	Stilwell	Oklahoma
Calvary Temple Full Gospel Church	Sallisaw	Oklahoma
Cave Springs Elementary School	Bunch	Oklahoma
Cave Springs High School	Bunch	Oklahoma
Cave Springs Middle School	Bunch	Oklahoma

Table A.2-1. Community Leaders Notified

Organization/Agency	City	State
Church of Christ Westville Oklahoma Inc	Westville	Oklahoma
Covenant Life Fellowship	Sallisaw	Oklahoma
General Council of the Assemblies of God	Heavener	Oklahoma
Heavener Fire Department Eastside Station	Heavener	Oklahoma
Heavener Fire Department West Side Station	Heavener	Oklahoma
Heavener Police Dept	Heavener	Oklahoma
Hodgen Public School	Hodgen	Oklahoma
Hodgen Volunteer Fire Department	Hodgen	Oklahoma
Jaybird Independent Assemblies Church	Westville	Oklahoma
Marble City Fire Association Station 1	Marble City	Oklahoma
Marble City Fire Association Station 2	Marble City	Oklahoma
Marble City Police Dept	Marble City	Oklahoma
Maryetta School	Stilwell	Oklahoma
Oakridge Assembly of God Church	Sallisaw	Oklahoma
Panama Fire Department	Panama	Oklahoma
Pansy Kidd Middle School	Poteau	Oklahoma
Sallisaw Church of Christ	Sallisaw	Oklahoma
Stilwell Fire Department	Stilwell	Oklahoma
Stilwell Fire Department Station 2	Stilwell	Oklahoma
Stilwell Police Dept	Stilwell	Oklahoma
Town of Watts Police Dept	Watts	Oklahoma
Watts Elementary School	Watts	Oklahoma
Westville Assembly of God	Westville	Oklahoma
Westville Fire Department Station 2	Westville	Oklahoma
Abundant Life Christian Fellowship Inc	Beaumont	Texas
Agape House Fellowship	Alice	Texas
Alice Episcopal Church Of The Advent	Alice	Texas
All Nations Church of the Lord Jesus Christ	Houston	Texas
Ambassadors for Christian Nondenominational Church	Houston	Texas
Banquete Fire Station	Banquete	Texas
Beaumont Fire and Rescue Station 1	Beaumont	Texas
Beaumont Fire and Rescue Station 11	Beaumont	Texas
Benavides Fire Department	Benavides	Texas
Bloomington Volunteer Fire Department Edward E. Kocian Station	Bloomington	Texas
Chin Baptist Church	Plano	Texas
Christian Life Center of El Campo	El Campo	Texas
Community Radio Inc	Houston	Texas
Edna Police Dept	Edna	Texas
Emmanuel Pentecostal Church of Houston	Stafford	Texas

Table A.2-1. Community Leaders Notified

Organization/Agency	City	State
Eucharistic Society Inc	Laredo	Texas
Expansion Ministries	Plano	Texas
Expo Word Christian Ministries	Beaumont	Texas
Filadelfia Cristo Es El Camino	Rosenberg	Texas
First Pentecostal Church of Edna	Edna	Texas
Freedom Bible Research Institute	Banquete	Texas
Full Gospel Churches International	Denton	Texas
Garifuna Mercy of God Church	Houston	Texas
Glory House International Church Inc	Richmond	Texas
Golden Chain Ministry	Robstown	Texas
Grace Church Assembly of God	Sinton	Texas
Great Liberation City	Plano	Texas
Harvest for Lost Souls Outreach Ministry	Beaumont	Texas
House of Refuge Nondenominated	Houston	Texas
House of the Lord of Tyler Texas	Beaumont	Texas
Houston Fire Department Emergency Medical Services Station 19	Houston	Texas
Iconium Missionary Baptist Church	Beaumont	Texas
Iglesia Betania	Banquete	Texas
Iglesia Leon De Juda Internacional Inc.	Rosenberg	Texas
Imani School	Houston	Texas
Independent Assemblies of God	Beaumont	Texas
Jackson County Sheriff's Dept/Jackson County Jail	Edna	Texas
Jim Hogg County Fire Department Station 2	Hebbronville	Texas
Jim Hogg County Public Library	Hebbronville	Texas
Kendleton Church of God	Kendleton	Texas
Kendleton Volunteer Fire Department	Kendleton	Texas
Kingdom Connection Outreach Church	Beaumont	Texas
Lakeway Fellowship	Edna	Texas
Laredo Police Dept - Precinct 3	Laredo	Texas
Liberty Full Gospel Church	Denton	Texas
Liberty Municipal Library	Liberty	Texas
Love Ministry	Richmond	Texas
Macedonia Missionary Baptist Church of Wharton Texas	Wharton	Texas
Martin Elementary School	Laredo	Texas
Mixta Help of Charity and Mercy	Robstown	Texas
Nations for Christ Ministries	Stafford	Texas
New Day Ministries International Life	Rosenberg	Texas
New Deliverance Community Development Center Inc	Houston	Texas
New Friendship Missionary Baptist Church	Beaumont	Texas

Table A.2-1. Community Leaders Notified

Organization/Agency	City	State
New Life Community Church	San Diego	Texas
New Life Ministries of Houston Inc	Rosenberg	Texas
North Ridge Baptist Church of Plano Texas	Plano	Texas
Northside Antioch Baptist Church of Houston	Houston	Texas
Oak Hill Missionary Baptist Church	Kendleton	Texas
Ocean of Love Church of God in Christ	Sinton	Texas
Olivet Missionary Baptist Church	Houston	Texas
Pentecostal Maranatha Temple Inc	Robstown	Texas
Polly Chapel Baptist Church	Texarkana	Texas
Power of the Gospel Inc	Robstown	Texas
Premier High School of Laredo	Laredo	Texas
Quad City Volunteer Fire Department and Emergency Medical Services	Bruni	Texas
Remnant Church Inc	Victoria	Texas
Richmond Fire Department Station 1	Richmond	Texas
Robstown City Police Dept	Robstown	Texas
Robstown Fire Department	Robstown	Texas
Simon Peter Ministries International Inc	Denton	Texas
Sinton Police Dept	Sinton	Texas
Stafford Police Dept	Stafford	Texas
Sunlight Baptist Church	Beaumont	Texas
Temple I Am	Robstown	Texas
Templo Jerusalem Asambleas De Dios	Robstown	Texas
Templo Sion	Robstown	Texas
Templo Vida Nueva Asambleas De Dios Inc	Laredo	Texas
The Iglesia Nuevo Pacto de Cristo Evangelio Completo	Sinton	Texas
The Southeast Texas Buddhist Community Inc	Beaumont	Texas
Trinity Full Gospel Church of Edna	Edna	Texas
Universal Church of the Living God	Beaumont	Texas
Verdin Ministries International Inc	Robstown	Texas
Wesley Chapel AME Church	Houston	Texas
Wharton Police Dept	Wharton	Texas
Word of Truth Church of Beaumont	Beaumont	Texas
Accelerated Int Charter School	Houston	Texas
Alice High School	Alice	Texas
Alice Police Dept	Alice	Texas
Amelia Elementary	Beaumont	Texas
Banquete Elementary School	Banquete	Texas
Banquete Junior High	Banquete	Texas

Table A.2-1. Community Leaders Notified

Organization/Agency	City	State
Beaumont Police Dept	Beaumont	Texas
Beaumont Public Library System	Beaumont	Texas
Benavides Secondary School	Benavides	Texas
Bernarda Jaimie Junior High	San Diego	Texas
Borden Street Church of Christ	Sinton	Texas
Bruni High School	Bruni	Texas
Catholic Daughters of the Americas	Benavides	Texas
Catholic Daughters of the Americas	Alice	Texas
Central Senior High School	Beaumont	Texas
Charlton-Pollard Elementary	Beaumont	Texas
Child Outreach International	Robstown	Texas
Christian Bible Fellowship Church of Rosenberg	Richmond	Texas
Christian Witness for Nepal	Denton	Texas
City of Texarkana	Texarkana	Texas
Collins-Parr Elementary	San Diego	Texas
Demetrio D. Hachar Elementary	Laredo	Texas
Dogan Elementary	Houston	Texas
Duval County Sheriff's Office/Duval County Jail	San Diego	Texas
E. Merle Smith Middle	Sinton	Texas
East Plano Islamic Center	Plano	Texas
Ebenezer Baptist Church Fifth Ward	Houston	Texas
Edna Fire Department	Edna	Texas
Edna Presbyterian Church	Edna	Texas
El Campo Emergency Medical Services	El Campo	Texas
Family Worship Center of Beaumont	Beaumont	Texas
First Assembly of God	Edna	Texas
First Macedonia Missionary Baptist Church	Houston	Texas
Fort Bend County Alternative School	Rosenberg	Texas
Grace River Chapel	Beaumont	Texas
Heights Elementary School	Laredo	Texas
High Point East	Houston	Texas
Holy Bible Faith Center	Beaumont	Texas
Jefferson County J J A E P	Beaumont	Texas
Jefferson County Sheriff's Office	Beaumont	Texas
Jesus is Alpha and Omega Ministries Inc	Houston	Texas
Jim Hogg County Sheriff's Dept/Jim Hogg County Jail	Hebbronville	Texas
Laredo Fire Department	Laredo	Texas
Liberty Academy	Victoria	Texas
Little Zion Missionary Baptist Church Kendleton	Kendleton	Texas

Table A.2-1. Community Leaders Notified

Organization/Agency	City	State
Lords Kitchen, Inc.	Rosenberg	Texas
Lyons Unity Missionary Baptist Church Inc	Houston	Texas
M L King Middle School	Beaumont	Texas
Mamie George Branch Library	Stafford	Texas
Maurine Gray Literacy Center	Beaumont	Texas
Meyerpark Elementary	Houston	Texas
Missouri City Fire and Rescue Services Station 2	Houston	Texas
Mountain Top Ministries - MTM	Rosenberg	Texas
New Beginnings Fellowship Sinton	Sinton	Texas
No Greater Love Outreach Ministries Church	Houston	Texas
Nueces County Keach Family Library	Robstown	Texas
Nueva Jerusalem Church	Houston	Texas
Odem Public Library	Odem	Texas
Odem Volunteer Fire Department	Odem	Texas
Pathways Learning Center	Beaumont	Texas
Patti Welder Middle School	Victoria	Texas
Pleasant Grove Missionary Baptist Church	Houston	Texas
Port of Beaumont Port Authority Police Dept	Beaumont	Texas
Richmond Police Dept	Richmond	Texas
Rosenberg Police Admin	Rosenberg	Texas
San Diego High School	San Diego	Texas
Second Mt. Olive Missionary Baptist Church	Houston	Texas
Sehion Mar Thoma Church Dallas	Plano	Texas
Sheldon Elementary	Houston	Texas
Sheldon Intermediate School	Houston	Texas
Sinton Volunteer Fire Department	Sinton	Texas
St Anthony's School	Robstown	Texas
St. John Baptist Church	Beaumont	Texas
St. John Lutheran Church	Robstown	Texas
Stafford Fire Department Station Number 1	Stafford	Texas
Texarkana Public Library	Texarkana	Texas
Texas Dept of Public Safety - Highway Patrol Region 3 District A Seargent 0 Area 4	Edna	Texas
Texas Dept of Public Safety - Highway Patrol Region 3 District A Seargent 0 Area 6	Alice	Texas
The Good Shepherd	Laredo	Texas
Tyrrell Historical Library	Beaumont	Texas
Victoria Fire Department Station 1	Victoria	Texas
Vision of Deliverance Outreach Ministries, Inc.	Houston	Texas
Clay County African American Society	Liberty	Missouri

Table A.2-1. Community Leaders Notified

Organization/Agency	City	State
Garrison School	Liberty	Missouri
Kansas City Public Schools (Superintendent)	Kansas City	Missouri

A.3 Final EIS Materials

A.3.1 Public Notification Materials

- Federal Register Notices
  - EPA Notice of Availability (Issued after Distribution of Final EIS)
- Board Press Release
  - Notice of Availability of the Final EIS (Issued after Distribution of Final EIS)
  - Emailed press release to media outlets
- Email Notification to Elected Officials
  - Federal: Emailed to U.S. Senators and Representatives representing states or districts, respectively, where the Proposed Acquisition could result in adverse environmental impacts.
  - State: Emailed to governors and state legislators representing districts where the Proposed Acquisition could result in adverse environmental impacts.
  - Local: Emailed to the executive or highest ranking local elected official (e.g., mayor, county board chairperson), representing any county or locality where the Proposed Acquisition could result in adverse environmental impacts.
- Environmental Justice Outreach
  - Community Leaders: emailed to community leaders in EJ population areas. Postcards were mailed to the community leaders when an email address was not available.

Appendix A – Attachment 1: Public Notification Materials

50990 SERVICE DATE – NOVEMBER 12, 2021
OEA

SURFACE TRANSPORTATION BOARD

DECISION

Docket No. FD 36500

CANADIAN PACIFIC RAILWAY LIMITED; CANADIAN PACIFIC RAILWAY COMPANY; SOO LINE RAILROAD COMPANY; CENTRAL MAINE & QUEBEC RAILWAY US INC.; DAKOTA, MINNESOTA & EASTERN RAILROAD CORPORATION; AND DELAWARE & HUDSON RAILWAY COMPANY, INC.
—CONTROL—
KANSAS CITY SOUTHERN; THE KANSAS CITY SOUTHERN RAILWAY COMPANY; GATEWAY EASTERN RAILWAY COMPANY; AND THE TEXAS MEXICAN RAILWAY COMPANY

AGENCY: Surface Transportation Board

ACTION: Notice of Intent to Prepare an Environmental Impact Statement (EIS); Notice of Initiation of the Scoping Process; Request for Comments on Scope of the EIS; and Notice of Public Scoping Meetings.

SUMMARY: On October 29, 2021, Canadian Pacific Railway Limited, Canadian Pacific Railway Company, and their U.S. rail carrier subsidiaries Soo Line Railroad Company; Central Maine & Quebec Railway U.S. Inc.; Dakota, Minnesota & Eastern Railroad Corporation; and Delaware & Hudson Railway Company, Inc. (collectively, CP) and Kansas City Southern, The Kansas City Southern Railway Company, Gateway Eastern Railway Company, and The Texas Mexican Railway Company (collectively, KCS) filed an application with the Surface Transportation Board (Board) seeking the Board's approval of the acquisition of control by CP of KCS. The proposed acquisition has the potential to result in significant environmental impacts; therefore, the Board's Office of Environmental Analysis (OEA) has determined that the preparation of an Environmental Impact Statement (EIS) is appropriate pursuant to the National Environmental Policy Act (NEPA). The purpose of this Notice is to inform stakeholders—including members of the public; tribes; federal, state, and local agencies; and environmental groups—interested in or potentially affected by potential environmental impacts related to the proposed acquisition. OEA will hold online public scoping meetings as part of the NEPA process. Oral and written comments submitted during scoping will assist OEA in defining the range of alternatives and potential impacts to be considered in the EIS. Public scoping meeting dates are provided below.

DATES: Comments on the scope of the EIS are due by December 17, 2021. OEA will hold six online public scoping meetings on the following dates (times in Central Standard Time).

- Tuesday, November 30, 2021, 6-8 p.m.
- Wednesday, December 1, 2021, 2-4 p.m.
- Thursday, December 2, 2021, 6-8 p.m.
- Tuesday, December 7, 6-8 p.m.
- Wednesday, December 8, 2021, 2-4 p.m.
- Thursday, December 9, 2021, 6-8 p.m.

Information on how to attend and participate in an online public scoping meeting, including how to register in advance, is available on the Board-sponsored project website at www.CP-KCSMergerEIS.com.

ADDRESSES: Interested parties are encouraged to file their scoping comments electronically through the Board-sponsored project website at www.CP-KCSMergerEIS.com or through the Board's website at www.stb.gov by clicking on the "File an Environmental Comment" link. Please refer to Docket No. FD 36500 in all correspondence, including E-filings, addressed to the Board. Scoping comments submitted by mail should be addressed to: Joshua Wayland, Surface Transportation Board, c/o VHB, Attention: Environmental Filing, Docket No. FD 36500, 940 Main Campus Dr., Suite 500, Raleigh, NC 27606.

FOR FURTHER INFORMATION CONTACT: Joshua Wayland, Office of Environmental Analysis, Surface Transportation Board, c/o VHB, 940 Main Campus Dr., Suite 500, Raleigh, NC 27606, or call OEA's toll-free number for the project at 1-888-319-2337. Assistance for the hearing impaired is available through the Federal Information Relay Service at 1-800-877-8339. The website for the Board is https://www.stb.gov. For further information about the Board's environmental review process and the EIS, you may also visit the Board-sponsored project website at www.CP-KCSMergerEIS.com.

SUPPLEMENTARY INFORMATION:

Background

On October 29, 2021, CP and KCS (collectively, the Applicants) filed an application with the Board under 49 U.S.C. §§ 11323-25 seeking its approval of the acquisition of control of KCS by CP. CP and KCS are two of the seven Class I railroads in the United States, which are the largest railroads defined as having annual revenue greater than $250 million. CP is one of Canada's two major railroads, extending across the country and connecting east and west coast ports. In the U.S., CP connects to Buffalo and Albany, New York and Searsport, Maine. CP also runs south into the U.S. Midwest and connects with KCS in Kansas City, Missouri. KCS is a Class I railroad that extends from Kansas City, Missouri to the Gulf Coast and into Mexico, operating across 10 states in the Midwest and Southeast. CP and KCS provide rail service for a variety of industries, including agriculture, minerals, military, automotive, chemical and petroleum, energy, industrial, and consumer products. CP and KCS are the two smallest Class I railroads, and the combined railroad would be the smallest Class I railroad by revenue. At the request of OEA, the Applicants have submitted information needed by OEA to initiate an environmental review of the proposed acquisition. Based on the information provided by the

Applicants, OEA has determined that the proposed acquisition has the potential to result in significant environmental impacts and that the preparation of an EIS is appropriate.

Summary of the Board's Review Processes for this Proceeding

The Board will review the proposed transaction through two parallel but distinct processes: (1) the transportation-related process that examines the competitive, transportation, and economic implications of the proposed acquisition on the national rail system, and (2) the environmental process conducted by OEA that assesses the potential environmental effects of the proposed acquisition on the human and natural environment through preparation of an EIS. Interested persons and entities may participate in either process or both. If interested persons or entities are primarily interested in potential environmental impacts on communities, such as noise, vibration, air emissions, grade crossing safety and delay, emergency vehicle access, and other similar environmental issues, the appropriate forum is OEA's environmental review process. The statute setting forth the procedures for Board review of acquisitions at 49 U.S.C. § 11325 and the Board's implementing regulations at 49 CFR § 1180.4 (2000) require that the Board complete its review within approximately 15 months after the application is accepted for a "major" transaction such as this, and OEA must complete the environmental process before the Board issues a final decision.

Environmental Review Process

The NEPA process is intended to assist the Board and the public in identifying and assessing the potential environmental consequences of a proposed action before a decision on that proposal is made. OEA is responsible for ensuring that the Board complies with NEPA (42 U.S.C. §§ 4321-4370m-12) and related environmental statutes, including Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108) and Section 7 of the Endangered Species Act (16 U.S.C. § 1536).

Purpose and Need

The proposed transaction involves an application for Board authority under 49 U.S.C. §§ 11323-25 for CP to acquire KCS. The proposed transaction is not a federal government-proposed or sponsored project. Thus, the project's purpose and need should be informed by both the private applicant's goals and the Board's enabling statute—the Interstate Commerce Act as amended by the ICC Termination Act, Pub. L. No. 104-188, 109 Stat. 803 (1996). See Alaska Survival v. STB, 705 F.3d 1073, 1084-85 (9th Cir. 2013).

According to the Applicants, the purpose of the proposed acquisition is to combine America's two smallest but fastest-growing Class I railroads to build a more efficient and more competitive rail network. The Applicants state that the proposed acquisition would further the need for expanded and more capable and efficient transportation infrastructure while simultaneously advancing the interests of current and future customers in more reliable and economical rail transportation options serving important North-South trade flows. The Applicants also state that the proposed acquisition would generate environmental benefits by reducing truck transportation on highways in North America by more than 60,000 trucks

annually, resulting in less congestion, less maintenance, and improved safety on those roads, as well as less noise pollution in the places where those trucks would have driven, and lowered air emissions, including greenhouse gas emissions. Under the Interstate Commerce Act, as amended, the Board "shall approve and authorize a transaction" such as this when, after considering several factors, "it finds the transaction is consistent with the public interest." 49 U.S.C. § 11324 (b) & (c).

Proposed Action and Alternatives

The Proposed Action in this proceeding is the Applicants' proposed acquisition of KCS by CP. The combination of these two railroads would be an 'end-to-end' merger because the CP and KCS railroad networks do not overlap. The proposed acquisition would result in changes in rail traffic on portions of the combined rail network. Rail traffic would increase on certain rail line segments and would decrease on others. The largest change would occur on the CP mainline between Sabula, Iowa and Kansas City, Missouri, which would experience an increase in rail traffic of approximately 14.4 additional trains per day, on average. Increases in activities at rail yards and intermodal facilities would also occur. In addition, the Applicants propose to make certain capital improvements within the existing rail right-of-way, including adding approximately four miles of double track on the KCS Pittsburg Subdivision, adding approximately five miles of facility working track adjacent to the International Freight Gateway intermodal terminal near Kansas City, and adding or extending 24 passing sidings along the combined network. The Applicants do not propose to construct any new rail lines subject to Board licensing or to abandon any rail lines as part of the proposed acquisition.

The alternative to the Proposed Action is the No-Action Alternative, which would occur if the Board were to deny the proposed acquisition. Under the No-Action Alternative, CP would not acquire KCS.

Scoping

The first stage of the environmental review process is scoping. Scoping is an open process for determining the range of issues that should be examined and assessed in the EIS. In addition to announcing that the Board will prepare an EIS for this proceeding, this Notice also requests comments on the scope of the EIS and presents the schedule of public scoping meetings. With this notice, OEA is soliciting written comments on the scope, alternatives, and issues to be analyzed in the EIS. After the close of the comment period on the scope of the EIS on December 17, 2021, OEA will review all comments received and issue a final scope of study for the EIS. OEA anticipates issuing the final scope of study in early 2022.

Draft EIS

Following the issuance of the final scope, OEA will prepare a Draft EIS for the proposed acquisition. The Draft EIS will identify and analyze alternatives, including the Proposed Action and the No-Action Alternative, and will address potential impacts on the environment as well as issues and concerns identified during the scoping process. The Draft EIS will focus on (1) potential impacts from changes in rail operations along rail line segments and at rail yards that

would experience increases in rail traffic as a result of the proposed acquisition that would exceed OEA's thresholds for environmental review at 49 C.F.R. § 1105.7(e), (2) potential impacts related to changes in vehicular traffic on roadways and at facilities as a result of the proposed acquisition that would exceed OEA's thresholds for analysis, and (3) potential impacts that could result from making capital improvements within the rail right-of-way as part of the proposed acquisition.

The scope of the issues that will be analyzed in the Draft EIS may include potential impacts related to:

- Freight rail capacity and safety;
- Passenger rail capacity and safety;
- Grade crossing safety and delay;
- Motor vehicle traffic and roadway systems;
- Land use;
- Air quality;
- Noise;
- Biological resources;
- Water resources;
- Hazardous waste sites;
- Cultural resources;
- Environmental justice; and
- Cumulative impacts.

The thresholds for assessing environmental impacts from increased rail traffic on rail lines in railroad acquisition proceedings are an increase in rail traffic of at least 100 percent (measured in gross ton miles annually) or an increase of at least eight trains per day. For air quality impacts, rail lines located in areas classified as being in nonattainment under the Clean Air Act (42 U.S.C. §§ 7401-7671q) are also assessed if they would experience an increase in rail traffic of at least 50 percent (measured in gross ton miles annually) or an increase of at least three trains per day. Based on the information provided by the Applicants to date, OEA has identified rail lines in Illinois, Iowa, Missouri, Kansas, Oklahoma, Arkansas, Louisiana, and Texas that would experience increases in rail traffic that would exceed the analysis thresholds as a result of the proposed acquisition.

In addition to assessing the environmental impacts of the proposed acquisition, the Draft EIS will also set forth OEA's preliminary recommendations for environmental mitigation measures. OEA anticipates issuing the Draft EIS in the spring of 2022.

Final EIS

Upon its completion, the Draft EIS will be made available for public and agency review and comment for 45 days. OEA will then prepare and issue a Final EIS that will address the comments on the Draft EIS from the public; and federal, state and local agencies; and other interested parties and will set forth OEA's final recommended environmental mitigation. Then,

in reaching its decision in this case, the Board will consider the Draft EIS, the Final EIS, public comments, and any final environmental mitigation proposed by OEA. OEA anticipates issuing the Final EIS in the fall of 2022.

Public Scoping Meetings

As noted above, scoping is the first stage of the environmental review process. OEA will hold online public scoping meetings at the dates and times listed below. All times are listed in Central Standard Time. There is no need to attend more than one online meeting, but all are welcome to attend as many meetings as desired.

- Tuesday, November 30, 2021, 6-8 p.m.
- Wednesday, December 1, 2021, 2-4 p.m.
- Thursday, December 2, 2021, 6-8 p.m.
- Tuesday, December 7, 6-8 p.m.
- Wednesday, December 8, 2021, 2-4 p.m.
- Thursday, December 9, 2021, 6-8 p.m.

The online public scoping meetings will include a brief presentation by OEA, followed by an opportunity for interested individuals to make oral comments. Participants who have registered in advance will be called upon first to deliver their oral comments and will be given three minutes in which to do so. If time permits, participants who did not register in advance will be given the opportunity to make oral comments. A court reporter will record the oral comments, and OEA staff will be available to listen and make notes of comments.

For information on how to attend an online public scoping meeting, including how to register in advance, please visit the Public Involvement page on the Board-sponsored project website (www.CP-KCSMergerEIS.com). Although individuals who would like to make oral comments are encouraged to register in advance, registration is not required to attend the public scoping meetings. OEA will consider all comments equally no matter how comments are received, and it is not necessary to attend an online public scoping meeting to provide scoping comments, as OEA will also be accepting written comments during the comment period, which ends on December 17, 2021.

Submitting Written Comments on the Scope of the EIS

Interested parties are encouraged to file their scoping comments electronically through the Board-sponsored project website at www.CP-KCSMergerEIS.com. Written comments can also be submitted electronically on the Board's website, www.stb.gov, by clicking on the "E-FILING" link. Please refer to Docket No. FD 36500 in all correspondence, including E-filings, addressed to the Board. Scoping comments submitted by mail should be addressed to Joshua Wayland, Surface Transportation Board, c/o VHB, 940 Main Campus Dr. Suite 500, Raleigh, NC 27606, Attention: Environmental Filing, Docket No. FD 36500. Following these directions will help ensure that your comments are considered in the environmental review process for this proposed acquisition.

All comments submitted during scoping will be made available to the public on the Board-sponsored project website and the Board's website. OEA will add commenters' names to its email distribution list to announce the availability of the final scope of the EIS, the Draft EIS, and the Final EIS, which will be posted on the Board's website and the Board-sponsored project website. Commenters without email addresses will receive notifications by U.S. mail if accurate mailing addresses are provided, as needed.

All Board decisions, orders, and notices in this proceeding will also be available on the Board's website at www.stb.gov under "E-Library," and "Decisions & Notices" or "Filings." For further information about the Board's environmental review process and the EIS, you may also visit the Board-sponsored project website at www.CP-KCSMergerEIS.com.

By the Board, Danielle Gosselin, Acting Director, Office of Environmental Analysis.

51072 SERVICE DATE – DECEMBER 17, 2021
OEA

SURFACE TRANSPORTATION BOARD

NOTICE

Docket No. FD 36500

CANADIAN PACIFIC RAILWAY LIMITED; CANADIAN PACIFIC RAILWAY COMPANY; SOO LINE RAILROAD COMPANY; CENTRAL MAINE & QUEBEC RAILWAY US INC.; DAKOTA, MINNESOTA & EASTERN RAILROAD CORPORATION; AND DELAWARE & HUDSON RAILWAY COMPANY, INC.
—CONTROL—
KANSAS CITY SOUTHERN; THE KANSAS CITY SOUTHERN RAILWAY COMPANY; GATEWAY EASTERN RAILWAY COMPANY; AND THE TEXAS MEXICAN RAILWAY COMPANY

Decided: December 17, 2021

Notice of Extension of Scoping Comment Period

The Surface Transportation Board's (Board) Office of Environmental Analysis (OEA) issued a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) in the above-captioned proceeding on November 12, 2021 and published it in the Federal Register on the same day. In the NOI, OEA invited public comments on the scope of the EIS by December 17, 2021. OEA has received requests for an extension of the scoping comment period and is issuing this Notice to advise the public and all interested parties that the comment period will be extended until January 3, 2022. **No further extensions of time will be granted**.

OEA will issue a Final Scope of Study for the EIS after the close of the scoping comment period. Scoping comments may be submitted electronically on the Board-sponsored project website at www.CP-KCSMergerEIS.com or the Board's website at www.stb.gov by clicking on the "E-FILING" link. Please refer to **Docket No. FD 36500** in all correspondence, including e-filings, addressed to the Board. Any comments previously submitted need not be resubmitted. Scoping comments are now due by **January 3, 2022**.

For additional information about the Board's environmental review process for this proposed acquisition please visit the Board-sponsored project website at www.CP-KCSMergerEIS.com.

By the Board, Danielle Gosselin, Acting Director, Office of Environmental Analysis.

51129 SERVICE DATE – FEBRUARY 18, 2022
OEA

SURFACE TRANSPORTATION BOARD

DECISION

Docket No. FD 36500

CANADIAN PACIFIC RAILWAY LIMITED; CANADIAN PACIFIC RAILWAY COMPANY; SOO LINE RAILROAD COMPANY; CENTRAL MAINE & QUEBEC RAILWAY US INC.; DAKOTA, MINNESOTA & EASTERN RAILROAD CORPORATION; AND DELAWARE & HUDSON RAILWAY COMPANY, INC.
—CONTROL—
KANSAS CITY SOUTHERN; THE KANSAS CITY SOUTHERN RAILWAY COMPANY; GATEWAY EASTERN RAILWAY COMPANY; AND THE TEXAS MEXICAN RAILWAY COMPANY

Decided: February 15, 2022

AGENCY: Surface Transportation Board.

ACTION: Notice of Availability of the Final Scope of Study for the Environmental Impact Statement.

SUMMARY: On October 29, 2021, Canadian Pacific Railway Limited, Canadian Pacific Railway Company, and their U.S. rail carrier subsidiaries Soo Line Railroad Company; Central Maine & Quebec Railway U.S. Inc.; Dakota, Minnesota & Eastern Railroad Corporation; and Delaware & Hudson Railway Company, Inc. (collectively, CP) and Kansas City Southern, The Kansas City Southern Railway Company, Gateway Eastern Railway Company, and The Texas Mexican Railway Company (collectively, KCS) filed an application with the Surface Transportation Board (Board) seeking the Board's approval of the acquisition of control by CP of KCS (Proposed Acquisition). The Proposed Acquisition has the potential to result in significant environmental impacts; therefore, the Board's Office of Environmental Analysis (OEA) has determined that the preparation of an Environmental Impact Statement (EIS) is appropriate to meet the Board's obligations under the National Environmental Policy Act (NEPA) and related laws, including Section 106 of the National Historic Preservation Act (NHPA). The purpose of this Notice is to inform stakeholders—including members of the public; elected officials; tribes; federal, state, and local agencies; and organizations—interested

in or potentially affected by potential environmental and cultural impacts related to the Proposed Acquisition that the Final Scope of Study for the EIS is available.

FOR FURTHER INFORMATION CONTACT: Joshua Wayland, Office of Environmental Analysis, Surface Transportation Board, c/o VHB, 940 Main Campus Dr., Suite 500, Raleigh, NC 27606, or call OEA's toll-free number for the project at 1-888-319-2337. Assistance for the hearing impaired is available through the Federal Information Relay Service at 1-800-877-8339. The website for the Board is https://www.stb.gov. For further information about the Board's environmental review process and the EIS, you may also visit the Board-sponsored project website at www.CP-KCSMergerEIS.com.

SUPPLEMENTARY INFORMATION:

Background

On October 29, 2021, CP and KCS (collectively, the Applicants) filed an application with the Board under 49 U.S. Code (U.S.C.) §§ 11323-25 seeking the Board's approval of the Proposed Acquisition. CP and KCS are two of the seven Class I railroads in the United States, which are the largest railroads, defined as having annual revenue greater than $250 million. CP is one of Canada's two major railroads, extending across the country and connecting east and west coast ports. In the U.S., CP connects to Buffalo and Albany, New York and Searsport, Maine. CP also runs south into the U.S. Midwest and connects with KCS in Kansas City, Missouri. The KCS network extends from Kansas City, Missouri to the Gulf Coast and into Mexico, operating across 10 states in the Midwest and Southeast. CP and KCS provide rail service for a variety of industries, including agriculture, minerals, military, automotive, chemical and petroleum, energy, industrial, and consumer products. CP and KCS are the two smallest Class I railroads, and the combined railroad would be the smallest Class I railroad by revenue.

Summary of the Board's Review Processes for this Proceeding

The Board will review the Proposed Acquisition through two parallel but distinct processes: (1) the transportation-related process that examines the competitive, transportation, and economic implications of the Proposed Acquisition on the national rail system, and (2) the environmental process conducted by OEA that assesses the potential environmental effects of the Proposed Acquisition on the human and natural environment through the preparation of an EIS. Interested persons and entities may participate in either, or both, processes but if interested persons or entities are focused on potential environmental and historical impacts on communities, such as noise, vibration, air emissions, grade crossing safety and delay, emergency vehicle access, and other similar environmental issues, the appropriate forum is OEA's environmental review process. The statute setting forth the procedures for Board review of

acquisitions at 49 U.S.C. § 11325 and the Board's implementing regulations at 49 C.F.R. § 1180.4 (2000) require that the Board complete the process within approximately 15 months after the primary application is accepted for a "major" transaction such as this, and OEA must complete the environmental process before the Board decides whether to authorize the merger.

Environmental Review Process

On November 12, 2021, OEA issued a Notice of Intent (NOI) to inform interested agencies, tribes, and the public of its decision to prepare an EIS and to initiate the formal scoping process under NEPA (42 U.S.C. §§ 4321-4370m-12) and the Section 106 consultation process under the NHPA (54 U.S.C. § 306108). The NEPA process is intended to assist the Board and the public in identifying and assessing the potential environmental consequences of a proposed action before a decision on that proposal is made. OEA is responsible for ensuring that the Board complies with NEPA and related statutes, including Section 106 of the NHPA and Section 7 of the Endangered Species Act (16 U.S.C. § 1536).

Purpose and Need

The Proposed Acquisition involves an application for Board authority under 49 U.S.C. §§ 11323-25 for CP to acquire KCS. The Proposed Acquisition is not a federal government-proposed or sponsored project. Thus, the project's purpose and need is informed by both the Applicants' goals and the Board's enabling statute—the Interstate Commerce Act as amended by the ICC Termination Act, Pub. L. No. 104-188, 109 Stat. 803 (1996). See Alaska Survival v. STB, 705 F.3d 1073, 1084-85 (9th Cir. 2013).

According to the Applicants, the purpose of the Proposed Acquisition is to combine America's two smallest but fastest-growing Class I railroads to build a more efficient and competitive rail network. The Applicants state that the Proposed Acquisition would further the need for expanded and more capable and efficient transportation infrastructure while simultaneously advancing the interests of current and future customers in more reliable and economical rail transportation options serving important North-South trade flows. The Applicants also state that the Proposed Acquisition would generate environmental benefits by reducing truck transportation on highways in North America by more than 60,000 trucks annually, resulting in less congestion, less maintenance, and improved safety on those roads; as well as less noise pollution in the places where those trucks would have driven; and lowered air emissions, including greenhouse gas emissions. Under the Interstate Commerce Act, as amended, the Board "shall approve and authorize a transaction" such as this when, after considering several factors, "it finds the transaction is consistent with the public interest." 49 U.S.C. §§ 11324 (b) & (c).

Proposed Action and Alternatives

The proposed federal action in this proceeding is the Applicants' Proposed Acquisition of KCS by CP. If the Board authorizes the Proposed Acquisition, CP and KCS would combine to form an integrated system to be known as Canadian Pacific Kansas City (CPKC). The combination of these two railroads would be an end-to-end merger because the CP and KCS railroad networks do not overlap. The Proposed Acquisition would result in changes in rail traffic on portions of the combined rail network. Rail traffic would increase on certain rail line segments and would decrease on others. The largest change would occur on the CP mainline between Sabula, Iowa, and Kansas City, Missouri, which would experience an increase in rail traffic of approximately 14.4 additional trains per day, on average. Increases in activities at rail yards and intermodal facilities would also occur.

If the Board authorizes the Proposed Acquisition, the Applicants plan to make capital improvements within the existing rail right-of-way to support the projected increases in rail traffic. The capital improvements would include extending 13 existing passing sidings, adding 10 new passing sidings, adding approximately four miles of double track in Blue Valley near Kansas City, Missouri, and approximately five miles of facility working track adjacent to the International Freight Gateway intermodal terminal near Kansas City. The Applicants have stated that they would add the capital improvements only as needed based on increasing traffic and that design-level engineering for each capital improvement would only occur if and when the capital improvement is needed. The Applicants do not propose to construct any new rail lines subject to Board licensing or to abandon any rail lines as part of the Proposed Acquisition.

As discussed in the NOI, the Applicants initially informed OEA that they intended to add 11 new passing sidings as part of the Proposed Acquisition. Following the issuance of the NOI, however, the Applicants submitted information clarifying that one of the sidings, located near Brownsville, Minnesota, had been previously designed to accommodate projected increases in rail traffic unrelated to the Proposed Acquisition. The Applicants previously obtained a permit for the siding from the U.S. Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act (33 U.S.C. §§ 1251–1387) (CWA), and the Corps conducted an environmental and historic review of the siding as part of the permitting process. Because the Brownsville siding is a preexisting proposed project, OEA has concluded that this capital improvement would not occur as a result of the Proposed Acquisition and, therefore, it would not be appropriate to assess the potential environmental impacts of the planned siding as part of the EIS for the Proposed Acquisition. Accordingly, the EIS will evaluate a total of 25 capital improvements. An interactive map showing the locations of those capital improvements is available on the Board-sponsored project website at www.CP-KCSMergerEIS.com.

Railroads have the right to increase efficiency by improving their rail lines and rerouting their traffic without seeking authority from the Board. Therefore, railroad capital improvements that are designed to improve operational efficiency (such as sidings, double tracking, and industry track) typically do not require Board authorization or environmental review by OEA. Where capital improvements are related to a proposed merger or acquisition requiring Board approval, OEA considers, as appropriate, the potential environmental impacts from such capital improvements on a case-by-case basis. In this case, the Applicants have stated that certain capital improvements would be necessary to accommodate the increase in rail traffic that the Applicants expect would occur as a result of the Proposed Acquisition. Further, the Applicants have identified the location and general layout of these 25 planned capital improvements in sufficient detail to support an environmental review. Therefore, OEA will assess the potential impacts of the planned capital improvement projects, as appropriate, as part of the EIS.

The alternative to the Proposed Acquisition is the No-Action Alternative. The No-Action Alternative would occur if the Board were to deny authority for the Proposed Acquisition. Under the No-Action Alternative, CP would not acquire KCS and the projected changes in rail operations, rail yard activity, and intermodal facility activity would not occur. Rail traffic on rail lines and activities at rail yards and intermodal facilities could change to support regular railroad operations or as a result of changing market conditions, such as general economic growth, but would not change as a result of the Proposed Acquisition. Similarly, the Applicants would not construct the 25 planned capital improvement projects under the No-Action Alternative. However, CP and KCS could construct sidings, extend existing sidings, or add additional track within the rail right-of-way in the future without seeking Board authority if needed to support rail operations on their respective rail networks. Under the No-Action Alternative, none of the anticipated adverse or beneficial environmental impacts of the Proposed Acquisition would occur.

During the public comment period for the scoping process, the U.S. Environmental Protection Agency (EPA) recommended that the EIS assess alternatives for sidings, double tracking, and other new infrastructure components. OEA notes that potential locations for siding extensions, new sidings, and other capital improvements along the combined CPKC system are limited. The locations of the 13 planned siding extensions are determined by the locations of the existing sidings that would be extended, so no alternative locations can be considered. The locations of the 10 planned new sidings are based on system-wide requirements, including the need for sidings to be placed at regular intervals along the mainline. The start and end points of new sidings are also constrained by site-specific conditions, such as the curvature of the existing mainline. For example, the start and end points for passing sidings are generally placed on straight sections of track for operational reasons. OEA understands that the planned double tracking and the planned facility working track are intended to serve site-specific operational needs and could not be constructed in other locations to serve those needs. Further, because the

capital improvements would be constructed only as needed if traffic were to increase, the final engineering and design of these improvements has not been completed to allow for comparison of alternatives that would differ in terms of final engineering and design (such as the final placement of switches or the locations of construction laydown areas).

Responsive Applications

Certain railroads have notified the Board that they may submit Responsive Applications for consideration by the Board. Responsive Applications are proposals that parties other than the Applicants file with the Board to request modifications or conditions to the primary application. After the Board receives any Responsive Applications, OEA will determine what, if any, environmental review would be required. If any environmental review would be required, that review would be conducted separately from the EIS for the Proposed Acquisition.

Summary of Scoping Process

The scoping process began on November 12, 2021, when OEA issued the NOI and published the NOI in the *Federal Register*. OEA also distributed the NOI to agencies, organizations, and tribes with jurisdiction or interest in areas where the Proposed Acquisition could result in environmental and cultural impacts, including along the CP and KCS mainlines from Chicago, Illinois to Sabula, Iowa and from Sabula, Iowa, to Laredo, Texas, where projected increased rail traffic resulting from the Proposed Acquisition would exceed the Board's thresholds for environmental review. OEA distributed the NOI via:

- Letters to local, state, and federal elected officials;
- Letters to community leaders, such as school principals, police and fire chiefs, library leadership, and religious leaders;
- Geotargeted online banner advertisements for minority and low-income populations;
- Letters to tribal governments and Tribal Historic Preservation Officers (THPOs);
- Letters to federal, state, and local agencies; and
- A press release to television stations, radio stations, and newspapers.

OEA held six online public scoping meetings during the scoping period. To promote participation in the meetings, OEA published meeting information in the NOI and circulated information to elected officials (federal, state, and local) and local community leaders through direct mail and email. OEA also used Google banner advertisements to advertise the public scoping meetings in minority and low-income communities.

Project information was and continues to be available for public review on the Board-sponsored project website and the online meeting room. OEA considered all comments equally

no matter how comments were received, and it was not necessary to attend an online public meeting to provide scoping comments. Public scoping meeting participants had the option to deliver their oral comments during the meeting. Interested parties were encouraged to file their written scoping comments electronically on the Board's website, https://www.stb.gov, or through the Board-sponsored project website at www.CP-KCSMergerEIS.com. Scoping comments could also be submitted by mail. All comments submitted during scoping are available to the public on the Board's website and OEA has added commenters' email addresses to its email distribution list.

The deadline for submitting comments regarding the scope of the EIS was originally set for December 17, 2021. However, based on requests from the public, OEA extended the comment period to January 3, 2022. In total, OEA received 492 comments, 49 of which were oral comments at the public scoping meetings and 443 of which were written comments, between November 12, 2021 and the end of the scoping comment period on January 3, 2022.

OEA has and will continue to update and monitor the Board-sponsored project website, project email inbox, and toll-free information phone line throughout the environmental review process to provide current project information.

Summary of Scoping Comments

- **Environmental Review Process:** Commenters requested an extension of the scoping comment period, an extended comment period on the Draft EIS, an extension of the Board's oversight period of the Proposed Acquisition, and that OEA publish a draft Scope of Study for the EIS. As discussed above, OEA extended the scoping comment period in response to requests from commenters. Requests for other extensions will be considered if filed at the appropriate time. Regarding the issuance of a draft Scope of Study, the Board's regulations at 49 C.F.R. § 1105.10(a)(2) only require the issuance of an NOI with a description of the proposed action and a request for written comments on the scope of the EIS. The NOI and public involvement and agency consultation materials that OEA issued in this case provided the list of topics that the EIS might address and, therefore, the public and agencies had information necessary to provide comments regarding the scope of the EIS.

  Commenters requested that the EIS consider projected changes in rail operations extending at least 10 years after authorization of the Proposed Acquisition. Consistent with past practice, OEA will assess impacts related to changes in rail operations projected over five years from the authorization of the Proposed Acquisition because five years is not too long to produce reasonable and reliable freight rail forecasts. The 10-year

projections recommended by commenters, however, would be too long to produce reasonable estimates.

- **Proposed Action and Alternatives:** Commenters requested that OEA consider reasonable alternatives to the Proposed Acquisition. As discussed above, the EIS will evaluate the Proposed Acquisition and the No-Action Alternative.

- **Freight Rail Capacity and Safety:** Commenters requested that the EIS evaluate potential public health and safety impacts that could be associated with the accidental release of oil and other hazardous substances that could be transported on the combined network. Commenters expressed concerns about safety, citing their understanding of CP's safety record, specific incidents, and the potential for derailments. Commenters requested that the Board impose mitigation measures to address rail safety, including measures requiring reduced train speeds and preventative measures for reducing the risk of derailments. Commenters requested additional information regarding the potential changes in operations that could occur as a result of the Proposed Acquisition, including changes to lengths of trains, and questioned some data provided by the Applicants regarding operations changes, including the projected number of trains per day and the projected volumes of oil and other hazardous materials that trains operating on the combined network could transport. The EIS will provide additional available information regarding potential changes in operations, will disclose the potential impacts of those changes on freight rail capacity and safety, and will consider potential appropriate mitigation measures to address impacts related to freight rail capacity and safety.

- **Passenger Rail Capacity and Safety:** Commenters expressed concern regarding increased delays and service impacts to passenger rail service, such as the Metra commuter rail service. As described below in the Final Scope, the EIS will address passenger rail capacity and safety, including impacts to commuter rail, and will consider potential appropriate mitigation measures to address impacts related to passenger rail capacity and safety.

- **Roadway/Rail At-Grade Crossing Safety and Delay:** Commenters expressed concern regarding the increased number and length of trains causing traffic delays and delays to emergency services. Commenters recommended that the EIS estimate the impact of the Proposed Acquisition on extended blockages at each crossing, develop mitigation to address those impacts, and then measure the actual changes using gate monitoring during the Board's oversight period if the Board authorizes the Proposed Acquisition. Commenters expressed concern about trains using the new sidings and blocking access to roads, public land access, and private driveways (including delays for emergency response services). Commenters expressed concern regarding decreased safety for drivers, pedestrians, and bicyclists as a result of projected increased train traffic at grade

crossings. Commenters also expressed concern regarding increased delays at grade crossings blocking access to important economic activities, recreational facilities, and schools. Commenters requested that OEA consider mitigation measures, such as grade separations, to address impacts associated with increased rail traffic at grade crossings. As described below in the Final Scope, the EIS will address grade crossing safety and delay impacts and will consider potential appropriate mitigation measures to address impacts related to grade crossing safety and delay.

- **Traffic and Roadway Systems:** Commenters requested additional information regarding truck traffic increases at intermodal facilities and requested that the analysis of traffic operations include a morning, afternoon/evening, and off-peak period analysis. As described below in the Final Scope, the EIS will address traffic and roadway system impacts and will consider potential appropriate mitigation measures to address impacts related to traffic and roadway systems.

- **Noise:** Commenters recommended that the impact of noise and vibration on people and animals living in proximity to the rail lines be considered. Commenters expressed concern about their communities experiencing negative impacts from increased train noise. Commenters also expressed concern regarding vibrations damaging utilities, roadways, and buildings in their communities. Commenters recommended mitigation measures for noise impacts on their communities, including quiet zone restrictions, idling policies, gate crossing policies, and horn policies. As described below in the Final Scope, the EIS will address noise and vibration impacts and will consider potential appropriate mitigation measures to address impacts related to noise and vibration.

- **Air Quality and Climate Change:** Commenters expressed concern regarding potential air quality impacts on human health, communities, and wildlife due to emissions from locomotives, vehicles delayed at at-grade crossings, and from activities at rail yards and intermodal facilities. Commenters recommended that the EIS evaluate the short- and long-term emissions and associated potential health impacts using best available methods, particularly in areas with special air quality protections and areas where vulnerable community are located. Commenters also recommended a "hotspot" analysis be conducted at rail yards, intermodal terminals, grade crossings, junctions, and other places of concentrated rail activity. Commenters further requested that the EIS consider measures to reduce air emissions, such as vegetative barriers, staging zones, and using electric switching locomotives. Commenters requested that the EIS evaluate the potential air quality benefits of the Proposed Acquisition. Commenters requested that OEA evaluate the impact of the Proposed Acquisition on climate change in terms of greenhouse gas emissions and consider climate change resiliency and adaptation measures or plans to ensure that infrastructure would maintain structural integrity under

changing climate conditions. The Final Scope reflects that the EIS will consider beneficial and adverse impacts related to air quality and climate change, as well as potential appropriate mitigation measures to address air quality and climate change impacts.

- **Energy:** Commenters expressed concern that the Proposed Acquisition could increase rail transportation of crude oil. As described below in the Final Scope, the EIS will analyze the effect of the Proposed Acquisition on the transportation of energy resources and will consider potential appropriate mitigation measures to address impacts related to energy.

- **Cultural Resources:** Commenters expressed concern that the 25 planned capital improvements could affect cultural resources. Commenters recommended consultation with tribal governments and THPOs regarding the Proposed Acquisition. Commenters expressed concerns regarding vibration impacts to historic districts, sites, and landmarks. The Final Scope reflects that the EIS will consider impacts on cultural resources, as well as potential appropriate mitigation measures to address impacts on cultural resources.

- **Natural Resources (Water Resources and Biological Resources):** Commenters expressed concerns regarding impacts from increased train traffic, including noise and vibration impacts, and impacts from the use of chemical and herbicides along the rail right-of-way on wildlife and vegetation, including migratory birds, forest preserve assets, and threatened and endangered species. Commenters recommended that OEA consult with the U.S. Fish and Wildlife Service, state natural resources departments, and regional and local wildlife experts regarding impacts on wildlife and vegetation and appropriate mitigation measures, potentially including wildlife crossings, methods to prevent the spread of invasive species, and alternative management practices to limit herbicide use. The Final Scope reflects that the EIS will consider impacts on wildlife and vegetation, as appropriate.

  Commenters recommended that the EIS identify impacts on water resources, including wetlands, and discuss compliance with Sections 404, 402, and 303(d) of the CWA. Commenters expressed concern that increased rail traffic could worsen existing impacts related to rail operation, such as by increasing structural fatigue and maintenance costs for water crossings, increasing the potential for harmful runoff from the rail right-of-way, and increasing the risk of derailments or spills that could affect water quality. The Final Scope reflects that the EIS will consider potential impacts on water resources, as well as potential appropriate mitigation measures to address impacts on water resources.

- **Environmental Justice:** Commenters expressed concerns regarding potentially disproportionate impacts on minority and low-income populations, including impacts from increased rail traffic and increased activity at rail yards and intermodal facilities on economic advancement, business development, healthcare and pharmacy access, commute times, education access, and food access in minority and low-income communities. Commenters recommended expanded outreach to minority and low-income populations, including multilingual outreach to impacted communities.

  Commenters suggested mitigation measures for environmental justice communities living adjacent to the tracks and near rail yards to protect their health, including air quality monitoring and air filters in schools. As described below in the Final Scope, the EIS will address environmental justice impacts and will recommend potential appropriate mitigation measures to address disproportionately high and adverse impacts on environment justice communities.

- **Cumulative Impacts:** Commenters expressed concern that cumulative impacts from the Proposed Acquisition and other projects and activities could result in impacts on people, communities, and the environment, including impacts related to increased noise, increased air pollution, decreased economic activity, and decreased safety. As described below in the Final Scope, the EIS will address cumulative impacts, as appropriate.

Based on the comments received and OEA's own analysis, OEA has prepared the Final Scope of Study for the EIS, which is detailed below.

FINAL SCOPE

Environmental Impact Analysis

The EIS will address proposed activities and their potential environmental impacts, as appropriate. OEA will evaluate only the potential environmental impacts of operational and physical changes that are related to the Proposed Acquisition.

The scope of the analysis will include the following types of activities:

1. Anticipated changes in level of operations on rail lines (for instance, an increase in average number of trains per day) for those rail line segments that meet or exceed the Board's thresholds for environmental review in 49 C.F.R. § 1105.7(e).
2. Expected changes in activity at rail yards and intermodal facilities to the extent such changes may exceed the Board's thresholds for environmental analysis in 49 C.F.R. § 1105.7(e).

3. Planned capital improvements, including new sidings, siding extensions, and installation of double track and industry track.

Based on OEA's initial screening of topics pertinent to the Proposed Acquisition and on the fact that no comments were received on the topics of land use, recreation, geology, soils, and aesthetics, the Draft EIS will not analyze these topics.

Environmental Impact Categories

The EIS will analyze potential impacts of the Proposed Acquisition on the environment, including the areas of: freight and passenger rail capacity and safety, including hazardous materials transport safety; roadway/rail at-grade crossings, including safety, delay, and emergency response delay; transportation systems; noise; air quality and climate change; energy; cultural resources; hazardous waste sites; natural resources, water resources, and navigation; environmental justice; and cumulative impacts as described below.

1. **Freight and Passenger Rail Capacity and Safety**
   The EIS will:
   A. For rail line segments on which rail traffic is projected to meet or exceed the Board's thresholds for environmental review as a result of the Proposed Acquisition, describe projected freight rail operations and analyze the potential for increased probability of train accidents including derailments, as appropriate.
   B. For rail line segments with existing passenger rail traffic and a projected average increase of one or more freight trains per day, describe projected passenger rail operations and analyze the potential for increased probability of train accidents including derailments, as appropriate.
   C. Determine adequacy of freight rail capacity.
   D. For rail line segments with existing passenger rail traffic and a projected increase of one or more freight trains per day, determine adequacy of existing and proposed passenger rail capacity and any impacts to passenger rail service.
   E. Identify hazardous materials that would be transported on the combined network, the materials and quantity; the projected frequency of service; whether chemicals are being transported that, if mixed, could react to form more hazardous compounds; safety practices (including any speed restrictions); the Applicants' safety record on derailments, accidents, and hazardous spills; the contingency plans to deal with accidental spills; and the likelihood of an accidental release of hazardous materials.
   F. Describe the Applicants' emergency management or emergency response plans.

2. **Roadway/Rail At-Grade Crossing Safety and Delay**
   The EIS will:

A. For all roadway/rail at-grade crossings on rail line segments where increased traffic would exceed applicable thresholds for environmental review, describe the existing crossing delay and analyze the potential for an increase in delay related to the proposed rail operations, as appropriate.
B. For all roadway/rail at-grade crossings on rail line segments where projected increases in rail traffic would exceed applicable thresholds for environmental review, describe the probability of vehicle accidents, as appropriate.
C. For the 25 planned capital improvements, evaluate the potential for trains stopped on sidings to block roadway/rail at-grade crossings.
D. Evaluate the potential for disruption and delays to the movement of emergency vehicles.

3. Traffic and Roadway Systems

The EIS will:

A. Describe the effects of the Proposed Acquisition on regional or local transportation systems and patterns. Estimate the amount of traffic (passenger or freight) that would be diverted to other transportation systems or modes because of the Proposed Acquisition.
B. Describe potential diversions of freight traffic from trucks to rail and from rail to trucks that would occur as a result of the Proposed Acquisition, as appropriate.
C. Analyze increased truck traffic to and from intermodal facilities where the Proposed Acquisition would result in an increase of 50 or more trucks per day or a 10 percent increase in ADT on affected roadways.

4. Noise

The EIS will:

A. For rail line segments, analyze noise impacts where an increase in rail traffic of at least 100 percent (measured in gross ton miles annually) or an increase of at least eight trains per day is projected to occur as a result of the Proposed Acquisition.
B. For rail yards, analyze noise impacts where an increase in rail yard activity of at least 100 percent (measured by carload activity) is projected to occur.
C. For intermodal facilities, analyze noise impacts where an average increase in truck traffic of more than 10 percent of the ADT or 50 vehicles per day on any affected road segment is projected to occur.
D. Analyze noise and vibration impacts resulting from the 25 planned capital improvements, as appropriate.
E. If any of the thresholds above would be exceeded, determine whether the Proposed Acquisition would cause:
    i. An incremental increase in noise levels of three decibels (dB) day-night average sound level (Ldn) or more; and

ii. An increase to a noise level of 65 dB Ldn or greater. If so, identify sensitive receptors (e.g., schools, libraries, hospitals, residences, retirement communities, and nursing homes) in the project area, and quantify the noise increase for these receptors if the thresholds are surpassed.

5. Air Quality and Climate Change

The EIS will:

A. Quantify air emissions in areas where the Proposed Acquisition would result in:
   i. An increase in rail traffic of at least 100 percent (measured in gross ton miles annually) or an increase of at least eight trains per day on any segment of rail line affected by the proposal, or
   ii. An increase in rail yard activity of at least 100 percent (measured by carload activity), or
   iii. An average increase in truck traffic of more than 10 percent of the average daily traffic or 50 vehicles per day on any affected road segment.

B. If the Proposed Acquisition would affect Class I or nonattainment areas under the Clean Air Act, quantify air emissions where the Proposed Acquisition would result in:
   i. An increase in rail traffic of at least 50 percent (measured in gross ton miles annually) or an increase of at least three trains per day on any segment of rail line,
   ii. An increase in rail yard activity of at least 20 percent (measured by carload activity), or
   iii. An average increase in truck traffic of more than 10 percent of the average daily traffic or 50 vehicles per day on a given road segment.

C. State whether any expected increased emissions are within the parameters established by the applicable State Implementation Plan.

D. Discuss potential air emissions increases from vehicle delays at roadway/rail at-grade crossings where the crossing is projected to experience a change in rail traffic arising from the Proposed Acquisition that would exceed the threshold described above.

E. Evaluate the air emissions and air quality impacts from potential changes in operation of trains and changes in truck traffic that would result from the Proposed Acquisition, including potential greenhouse gas emissions, as appropriate.

F. Analyze the potential impacts of climate change on the 25 planned capital improvements.

6. Energy

The EIS will:

A. Describe the effect of the Proposed Acquisition on transportation of energy resources.

B. Describe the effect of the Proposed Acquisition on recyclable commodities.

C. State whether the Proposed Acquisition would result in an increase or decrease in overall energy efficiency and explain why.

7. Cultural Resources

For the 25 planned capital improvements, the EIS will:

A. Identify historic buildings, structures, sites, objects, or districts eligible for listing on or listed on the National Register of Historic Places (National Register) within the Area of Potential Effect (APE).

B. In consultation with federally recognized tribes participating in the Section 106 process, identify properties of traditional religious and cultural importance to tribes and prehistoric or historic archaeological sites evaluated as potentially eligible, eligible, or listed on the National Register (archaeological historic properties) within the APE and analyze potential project-related impacts to them, including indirect visual effects.

8. Hazardous Waste Sites

For the 25 planned capital improvements, the EIS will:

A. Identify known hazardous waste sites or sites where there have been known hazardous materials spills within 500 feet of the capital improvement locations, identify the location of those sites and the types of hazardous waste involved.

9. Natural Resources

For the 25 planned capital improvements, the EIS will:

A. Based on consultation with the U.S. Fish and Wildlife Service, state whether the Proposed Acquisition would be likely to adversely affect endangered or threatened species or areas designated as a critical habitat, and if so, describe the effects.

B. State whether the Proposed Acquisition would affect wildlife sanctuaries, refuges, or rearing facilities; national or state parks, forests, or grasslands; critical, unique, or high-value habitats that support threatened or endangered species; and riparian habitats and describe any effects.

C. Evaluate the existing biological resources within the project area, including vegetative communities, wildlife, fisheries, wetlands, and federally and state-listed threatened and endangered species (including candidate species).

10. Water Resources

A. For the existing mainline, the EIS will, identify any movable-span bridges that an increase in trains per day might affect.

B. For the 25 planned capital improvements, the EIS will:

i. State whether the Proposed Acquisition would be consistent with applicable federal, state, or local water quality standards and describe any inconsistencies.
ii. State whether the capital improvements would require permits under Section 404 of the CWA and whether any designated wetlands or 100-year floodplains would be affected.
iii. State whether the capital improvements would require permits under Section 402 of the CWA.
iv. Describe the existing surface water and groundwater resources within the project area, including lakes, rivers, streams, stock ponds, wetlands, and floodplains.
v. Evaluate potential impacts from the Proposed Acquisition on the aquatic habitat environment and fish, including the potential effects of stream-crossing structures (i.e., culverts and bridges) on fish passage.
vi. Consider the potential impacts on groundwater and surface water quality, including 303(d) listed impaired surface waters, from the capital improvements.
vii. Evaluate potential alterations of stream morphology and surface water and groundwater movement and flow from the presence of culverts, bridges, and rail embankments for each capital improvement.
viii. Identify existing navigable waterways within the project area.

11. Environmental Justice

The EIS will:

A. Evaluate whether the Proposed Acquisition would adversely or beneficially affect low-income or minority populations.
B. Conduct enhanced outreach efforts to environmental justice populations.
C. Identify potentially high and adverse impacts to minority and low-income populations.
D. Determine whether those impacts are disproportionately borne by minority and low-income populations.

12. Cumulative Impacts

The EIS will:

A. Evaluate the cumulative and incremental impacts of the Proposed Acquisition when added to other past, present, and reasonably foreseeable future actions in the project area, as appropriate.

13. Mitigation Measures

The EIS will:

A. Describe any actions that are proposed to mitigate adverse environmental impacts, indicating why the proposed mitigation is appropriate.

By the Board, Danielle Gosselin, Acting Director, Office of Environmental Analysis.

SURFACE TRANSPORTATION BOARD

FOR RELEASE

02/18/2022 (Friday)
No. 22-08
www.stb.gov

Contact:
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FedRelay 1-800-877-8339

STB ISSUES FINAL SCOPE OF STUDY FOR CP/KCS MERGER ENVIRONMENTAL IMPACT STATEMENT

The Surface Transportation Board's Office of Environmental Analysis (OEA) today issued the Final Scope of Study (Final Scope) for the Environmental Impact Statement (EIS) that OEA is preparing in connection with the proposed acquisition of Kansas City Southern (KCS) by Canadian Pacific (CP) in Docket No. FD 36500.

OEA will now prepare and issue a Draft EIS, which will discuss the potential environmental impacts of the proposed acquisition of KCS by CP and set forth OEA's preliminary recommendations for appropriate mitigation measures. OEA will request public comments on the Draft EIS and will hold public meetings after the Draft EIS is issued. More information regarding the environmental review process for the proposed acquisition is available on the Board-sponsored project website at www.CP-KCSMergerEIS.com.

The Final Scope, in Canadian Pacific Railway Limited; Canadian Pacific Railway Company; Soo Line Railroad Company; Central Maine & Quebec Railway US Inc.; Dakota, Minnesota & Eastern Railroad Corporation; and Delaware & Hudson Railway Company, Inc.—Control—Kansas City Southern; The Kansas City Southern Railway Company; Gateway Eastern Railway Company; and The Texas Mexican Railway Company, Docket No. FD 36500, may be viewed and downloaded here.

POSTED: 02/18/2022 10:52 AM

SURFACE TRANSPORTATION BOARD

FOR RELEASE

11/12/2021 (Friday)
No. 21-45
www.stb.gov

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Michael Booth
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FedRelay 1-800-877-8339

STB ISSUES NOTICE OF INTENT TO PREPARE EIS FOR CP/KCS MERGER APPLICATION

The Surface Transportation Board's Office of Environmental Analysis (OEA) today issued a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) in connection with the proposed acquisition of control of Kansas City Southern and its U.S. rail carrier subsidiaries (collectively, KCS) by Canadian Pacific Railway Limited, Canadian Pacific Railway, and their U.S. rail carrier subsidiaries (collectively, CP) in Docket No. FD 36500.

Because the proposed acquisition has the potential to result in significant environmental impacts, the Board's Office of Environmental Analysis (OEA) has determined that the preparation of an EIS is appropriate pursuant to the National Environmental Policy Act. The issuance of the NOI begins the scoping period, the first step of the environmental review process.

OEA will be accepting comments on the scope of the EIS, including alternatives and issues to be analyzed in the EIS, until the close of the scoping comment period on December 17, 2021. OEA will hold six online public scoping meetings during the scoping comment period, as set forth in the NOI.

To view the NOI, click here.

For more information on the environmental review process for the proposed acquisition or to submit a written comment, visit the Board-sponsored project website at www.CP-KCSMergerEIS.com.

SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

Letter for Elected Officials

November 12, 2021

Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern, et al.; **Notice of Intent to Prepare an Environmental Impact Statement**

On October 29, 2021, Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern et al. (KCS) (collectively, Applicants) filed an application with the Surface Transportation Board (Board) seeking authorization for CP to acquire KCS.

Because the proposed acquisition has the potential to result in significant environmental impacts, the Board's Office of Environmental Analysis (OEA) has determined that the preparation of an Environmental Impact Statement (EIS) is appropriate. This letter is to formally announce that the Board has issued a Notice of Intent (NOI) to prepare an EIS for this proceeding (https://cp-kcsmergereis.com/docs/cp-kcs-noi.pdf). In addition to announcing that the Board will prepare an EIS for this proceeding, the NOI also requests comments on the scope of the EIS and presents a schedule for public scoping meetings; interested parties are encouraged to participate.

Scoping is the first step of the EIS process. Scoping is an open process to determine the range of issues that should be examined and assessed in an EIS. Comments submitted during scoping will assist OEA in defining the range of alternatives and potential impacts to be considered in the EIS.

OEA will hold six online public scoping meetings at the dates and times listed below (all times are listed in Central Standard Time). There is no need to attend more than one meeting,

but all are welcome to attend as many meetings as desired. Interested parties can access the online meetings in one of two ways:

- Join online: https://bit.ly/cp-kcs .
    - Project information will be available for review at this link prior to the public meeting dates.
- Join by phone by calling (888) 788-0099 and using the call-in information below:

Public Scoping Meeting Dates and Times

Date	Time	Meeting ID	Passcode
Tuesday, November 30, 2021	6-8 PM	899 9411 9431	336859
Wednesday, December 1, 2021	2-4 PM	834 1445 3134	140066
Thursday, December 2, 2021	6-8 PM	860 6003 9544	510488
Tuesday, December 7, 2021	6-8 PM	891 6903 1796	598592
Wednesday, December 8, 2021	2-4 PM	884 5338 0280	470936
Thursday, December 9, 2021	6-8 PM	899 8627 2409	227867

These meetings will comply with the Americans with Disabilities Act. Persons who need additional special accommodations should call the project information line: 1-888-319-2337. Assistance for the hearing impaired is available through the Federal Information Relay Service at 1-800-877-8339. For further information about the Board's EIS process, visit the Board-sponsored project website at www.CP-KCSMergerEIS.com.

Interested parties are encouraged to file their comments on the scope of the EIS electronically through the Board-sponsored project website. Comments can also be submitted electronically on the Board's website, www.stb.gov, by clicking on the "E_FILING" link and then on "Environmental Comments." Alternatively, written comments may be sent by mail to:

Joshua Wayland, Surface Transportation Board, c/o VHB
Attention: Environmental Filing, Docket No. FD 36500
940 Main Campus Dr., Suite 500
Raleigh, NC 27606

Please refer to Docket No. FD 36500 in all correspondence, including E-filings, addressed to the Board. **All scoping comments are due no later than December 17, 2021.**

For further information or questions pertaining to the scoping process, please contact Joshua Wayland at the address provided above, or call the project line at 1-888-319-2337. For further information about the Board's environmental review process and the EIS, you may also visit the Board-sponsored project website at www.CP-KCSMergerEIS.com. We look forward to receiving your comments.

Sincerely,



Danielle Gosselin
Acting Director
Office of Environmental Analysis

SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

Letter for Local Community Leaders

November 12, 2021

Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern, et al.; **Notice of Intent to Prepare an Environmental Impact Statement**

Hello,

On October 29, 2021, Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern, et al. (KCS) (collectively, Applicants) filed an application with the Surface Transportation Board (Board) seeking authorization from the Board for CP to acquire KCS. The proposed acquisition has the potential to result in significant environmental impacts; therefore, the Board's Office of Environmental Analysis (OEA) has determined that the preparation of an Environmental Impact Statement (EIS) is appropriate. This letter is to formally announce that the Board has issued a Notice of Intent (NOI) to prepare an EIS for this proceeding (https://cp-kcsmergereis.com/documents.htm). In addition to announcing that the Board will prepare an EIS for this proceeding, the NOI also requests comments on the scope of the EIS and presents a schedule for public scoping meetings; interested parties are encouraged to participate.

Scoping is the first step of the EIS process. Scoping is an open process to determine the range of issues that should be examined and assessed in an EIS. Comments submitted during scoping will assist OEA in defining the range of alternatives and potential impacts to be considered in the EIS. OEA will hold six online public scoping meetings at the dates and times listed below (all times are listed in Central Standard Time). There is no need to attend more than one meeting, but all are welcome to attend as many meetings as desired. Interested parties can access the online meetings in one of two ways:

- Join online at: https://bit.ly/cp-kcs .
    - Project information will be available for review at this link prior to the public meeting dates.
- Join by phone by calling (888) 788-0099 (Toll Free) and using the call-in information below:

Public Scoping Meeting Dates and Times

Date	Time	Meeting ID	Passcode
Tuesday, November 30, 2021	6-8 PM	899 9411 9431	336859
Wednesday, December 1, 2021	2-4 PM	834 1445 3134	140066
Thursday, December 2, 2021	6-8 PM	860 6003 9544	510488
Tuesday, December 7, 2021	6-8 PM	891 6903 1796	598592
Wednesday, December 8, 2021	2-4 PM	884 5338 0280	470936
Thursday, December 9, 2021	6-8 PM	899 8627 2409	227867

These meetings will comply with the Americans with Disabilities Act. Persons who need additional special accommodations should call the project information line: 1-888-319-2337. Assistance for the hearing impaired is available through the Federal Information Relay Service at 1-800-877-8339. For further information about the Board's EIS process, please visit the Board-sponsored project website at www.CP-KCSMergerEIS.com .

Interested parties are encouraged to file their comments on the scope of the EIS electronically through the Board-sponsored project website. Comments can also be submitted electronically on the Board's website, www.stb.gov, by clicking on the "E_FILING" link and then on "Environmental Comments." Alternatively, written comments may be sent by mail to:

Joshua Wayland, Surface Transportation Board, c/o VHB
Attention: Environmental Filing, Docket No. FD 36500
940 Main Campus Dr., Suite 500
Raleigh, NC 27606

Please refer to Docket No. FD 36500 in all correspondence, including E-filings, addressed to the Board. **All scoping comments are due no later than December 17, 2021.** Links to the NOI, an interactive map of the project area, and a printable flyer that you can share with your community are below:

- NOI: https://cp-kcsmergereis.com/docs/cp-kcs-noi.pdf
- Interactive Map: https://cp-kcsmergereis.com/maps.htm
- Printable Flyer: https://cp-kcsmergereis.com/docs/cp-kcs-flyer.pdf

For further information or questions pertaining to the scoping process, please contact Joshua Wayland at the address provided above, or call the project line at 1-888-319-2337. For further information about the Board's environmental review process and the EIS, you may also visit the Board-sponsored project website at www.CP-KCSMergerEIS.com. We look forward to receiving your comments.

Sincerely,



Danielle Gosselin
Acting Director
Office of Environmental Analysis

SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis November 12, 2021

By email, if available, at

Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern, et al.; **Notice of Intent to Prepare an Environmental Impact Statement**

Dear :

On October 29, 2021, Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern et al. (KCS) (collectively, Applicants) filed an application with the Surface Transportation Board (Board) seeking authorization for CP to acquire KCS.

Because the proposed acquisition has the potential to result in significant environmental impacts, the Board's Office of Environmental Analysis (OEA) has determined that the preparation of an Environmental Impact Statement (EIS) is appropriate. This letter is to formally announce that the Board has issued a Notice of Intent (NOI) to prepare an EIS for this proceeding (https://cp-kcsmergereis.com/docs/cp-kcs-noi.pdf). In addition to announcing that the Board will prepare an EIS for this proceeding, the NOI also requests comments on the scope of the EIS and presents a schedule for public scoping meetings; interested parties are encouraged to participate.

Scoping is the first step of the EIS process. Scoping is an open process to determine the range of issues that should be examined and assessed in an EIS. Comments submitted during scoping will assist OEA in defining the range of alternatives and potential impacts to be considered in the EIS.

OEA will hold six online public scoping meetings at the dates and times listed below (all times are listed in Central Standard Time). There is no need to attend more than one meeting,

but all are welcome to attend as many meetings as desired. Interested parties can access the online meetings in one of two ways:

- Join online: https://bit.ly/cp-kcs .
    - Project information will be available for review at this link prior to the public meeting dates.
- Join by phone by calling (888) 788-0099 and using the call-in information below:

Public Scoping Meeting Dates and Times

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Tuesday, November 30, 2021	6-8 PM	899 9411 9431	336859
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These meetings will comply with the Americans with Disabilities Act. Persons who need additional special accommodations should call the project information line: 1-888-319-2337. Assistance for the hearing impaired is available through the Federal Information Relay Service at 1-800-877-8339. For further information about the Board's EIS process, visit the Board-sponsored project website at www.CP-KCSMergerEIS.com.

Interested parties are encouraged to file their comments on the scope of the EIS electronically through the Board-sponsored project website. Comments can also be submitted electronically on the Board's website, www.stb.gov, by clicking on the "E_FILING" link and then on "Environmental Comments." Alternatively, written comments may be sent by mail to:

Joshua Wayland, Surface Transportation Board, c/o VHB
Attention: Environmental Filing, Docket No. FD 36500
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Raleigh, NC 27606

Please refer to Docket No. FD 36500 in all correspondence, including E-filings, addressed to the Board. **All scoping comments are due no later than December 17, 2021.**

For further information or questions pertaining to the scoping process, please contact Joshua Wayland at the address provided above, or call the project line at 1-888-319-2337. For further information about the Board's environmental review process and the EIS, you may also visit the Board-sponsored project website at www.CP-KCSMergerEIS.com. We look forward to receiving your comments.

Sincerely,



Danielle Gosselin
Acting Director
Office of Environmental Analysis

CP-KCS RAILROAD MERGER

Project Update: Public Scoping Period

ENVIRONMENTAL IMPACT STATEMENT



The Canadian Pacific Railway (CP) and Kansas City Southern Railway (KCS) filed an application with the Surface Transportation Board (Board) seeking the Board's approval for CP to acquire control of KCS. This acquisition would create the first railroad that connects Canada, the United States, and Mexico.

As part of the approval review process, the Board will evaluate potential impacts of the project on the environment. The Board will hold online meetings to present the project and take comments. The public scoping meeting schedule and other information is available below and on the project website at **www.CP-KCSMergerEIS.com**.

Contact the Surface Transportation Board as soon as possible if you require any accommodations under the Americans with Disabilities Act (ADA) to participate in the scoping process.

1-800-877-8339 for hearing impaired assistance

1-888-319-2337 for ADA Assistance

Contact@CP-KCSMergerEIS.com

You may ask us questions about the project at any time by:

1-888-319-2337

Contact@CP-KCSMergerEIS.com

Public Scoping Meetings

**Central Standard Time*

Tuesday, November 30, 2021, 6-8 p.m.

Wednesday, December 1, 2021, 2-4 p.m.

Thursday, December 2, 2021, 6-8 p.m.

Tuesday, December 7, 6-8 p.m.

Wednesday, December 8, 2021, 2-4 p.m.

Thursday, December 9, 2021, 6-8 p.m.

For public scoping meetings, visit:
www.CP-KCSMergerEIS.com

There, you'll find materials such as:
maps • documents • fact sheets

Need Your Input

Comment deadline: December 17, 2021

To comment, please visit the website listed above.

FUSIÓN DE CP-KCS

Actualización del Proyecto: El Periodo Público de Evaluación

DECLARACIÓN DEL IMPACTO AMBIENTAL

Canadian Pacific Railway (CP) y Kansas City Southern Railway (KCS), por sus siglas en inglés, presentaron una solicitud ante la agencia Surface Transportation Board solicitando la aprobación para que CP adquiera el control de KCS. Esta adquisición crearía el primer ferrocarril que conecta Canadá, Estados Unidos y México.

Parte del proceso de aprobación, la agencia Surface Transportation Board evaluará los impactos potenciales del proyecto en el medio ambiente. La agencia tendrá reuniones virtuales para presentar el proyecto y recibir comentarios. El cronograma de la reunión de alcance público y otra información está disponible a continuación y en la página web del proyecto: **www.CP-KCSMergerEIS.com**.

Comuníquese con la agencia Surface Transportation Board lo mas antes posible si necesita adaptaciones según la Ley de Estadounidenses con Discapacidades (ADA, por sus siglas en inglés) para participar en el proceso de determinación del alcance.

1-800-877-8339 para asistencia para personas con problemas de audición

1-888-319-2337 para asistencia ADA

Contact@CP-KCSMergerEIS.com

Para poder hacer preguntas sobre el proyecto en cualquier momento:

1-888-319-2337

Contact@CP-KCSMergerEIS.com

Reuniones del Alcance Público

**Hora Estándar Central*

Martes 30 de noviembre de 2021, 6-8 p.m.

Miércoles 1 de diciembre de 2021, 2-4 p.m.

Jueves 2 de diciembre de 2021, 6-8 p.m.

Martes 7 de diciembre de 2021, 6-8 p.m.

Miércoles 8 de diciembre de 2021, 2-4 p.m.

Jueves 9 de diciembre de 2021, 6-8 p.m.

Para reuniones públicas de determinación del alcance, visite:

www.CP-KCSMergerEIS.com

Allí, encontrarás materiales como:
mapas • documentos • hojas de datos

Necesitamos Su Opinión

Vencimiento del Plazo para Presentar Comentarios: 17 de diciembre de 2021

Para comentar, por favor visite la pagina web mencionado anteriormente.

AVAILABILITY OF FINAL SCOPE OF STUDY

Update on Proposed CP-KCS Merger

ENVIRONMENTAL IMPACT STATEMENT

Scan the QR Code above to go to the Final Scope of Study.

On October 29, 2021, Canadian Pacific Railway (CP) and Kansas City Southern Railway (KCS) filed an application with the Surface Transportation Board (Board) seeking the Board's approval of the acquisition of control by CP of KCS. The proposed acquisition has the potential to result in significant environmental impacts and the preparation of an Environmental Impact Statement (EIS) is appropriate. This notice is to inform stakeholders that the Final Scope of Study for the EIS is available.

The Notice of Intent to prepare an EIS was distributed November 12, 2021. Interested parties were encouraged to file their scoping comments electronically, by mail, or at the online public scoping meetings through January 3, 2022. All comments submitted during the scoping process are available to the public on the Board's website (www.stb.gov). The Final Scope of Study is available on the Board-sponsored project website (www.CP-KCSMergerEIS.com) or at the QR code to the left.

Contact the Surface Transportation Board as soon as possible if you require any accommodations under the Americans with Disabilities Act.

Josh Wayland
888.319.2337
Contact@CP-KCSMergerEIS.com

For project details including the Final Scope of Study, visit:
www.CP-KCSMergerEIS.com

There, you'll find materials such as:
maps • documents • project updates • fact sheets • contact information • how to stay engaged

Surface Transportation Board
Office of Environmental Analysis, c/o VHB
940 Main Campus Drive
Suite 500
Raleigh, NC 27606

Aquellas personas no hablan inglés, o tienen limitaciones para leer, hablar o entender inglés, podrían recibir servicios de interpretación si los solicitan antes de la reunión llamando al **1-888-319-2337**.

CANADIAN PACIFIC ACQUISITION OF
KANSAS CITY SOUTHERN

Potential Increase in Freight Trains in Your Area



ENVIRONMENTAL IMPACT STATEMENT



For More Information, Click Here

www.CP-KCSMergerEIS.com

CANADIAN PACIFIC ACQUISITION OF
KANSAS CITY SOUTHERN

Potential Increase in Freight Trains in Your Area



ENVIRONMENTAL IMPACT STATEMENT – FINAL SCOPE OF STUDY AVAILABLE

For More Information, Click Here

www.CP-KCSMergerEIS.com

Dear Interested Party:

The Surface Transportation Board's (Board) Office of Environmental Analysis is pleased to announce that the Draft Environmental Impact Statement (Draft EIS) for the proposed acquisition of Kansas City Southern Railway (KCS) by Canadian Pacific Railway (CP) is available for review and comment. The Draft EIS analyzes the potential environmental impacts of the proposed acquisition, including impacts related to expected increases in rail traffic ranging from 8 to approximately 14.4 additional trains per day, on average, on CP and KCS rail lines between Chicago, Illinois and Laredo, Texas. Please click this link https://cp-kcsmergereis.com/draft-eis.htm for the Board-sponsored project website, which provides a copy of the Draft EIS, information about ways to comment, and upcoming in-person and online public meetings. You can access a flyer at this link https://cp-kcsmergereis.com/docs/DEIS-availability-flyer.pdf that you can use to let your community know about the Draft EIS and ways to comment.



Danielle Gosselin
Director
Office of Environmental Analysis
Surface Transportation Board

CP/KCS Merger EIS
Email: Contact@CP-KCSMergerEIS.com
Information Line: 1-888-319-2337 (Toll free)
Website: https://www.cp-kcsmergereis.com

Dear Interested Party:

The Surface Transportation Board's (Board) Office of Environmental Analysis is pleased to announce that the Draft Environmental Impact Statement (Draft EIS) for the proposed acquisition of Kansas City Southern Railway (KCS) by Canadian Pacific Railway (CP) is available for review and comment. The Draft EIS analyzes the potential environmental impacts of the proposed acquisition, including impacts related to expected increases in rail traffic ranging from 8 to approximately 14.4 additional trains per day, on average, on CP and KCS rail lines between Chicago, Illinois and Laredo, Texas. Please click this link https://cp-kcsmergereis.com/draft-eis.htm for the Board-sponsored project website, which provides a copy of the Draft EIS, information about ways to comment, and upcoming in-person and online public meetings.



Danielle Gosselin
Director
Office of Environmental Analysis
Surface Transportation Board

CP/KCS Merger EIS
Email: Contact@CP-KCSMergerEIS.com
Information Line: 1-888-319-2337 (Toll free)
Website: https://www.cp-kcsmergereis.com

Dear Interested Party:

The Surface Transportation Board's Office of Environmental Analysis is pleased to announce that the Draft Environmental Impact Statement (Draft EIS) for the proposed acquisition of Kansas City Southern Railway (KCS) by Canadian Pacific Railway (CP) is available for review and comment. The Draft EIS analyzes the potential environmental impacts of the proposed acquisition, including impacts related to expected increases in rail traffic ranging from 8 to approximately 14.4 additional trains per day, on average, on CP and KCS lines between Chicago, Illinois and Laredo, Texas. Please click this link https://www.stb.gov/news-communications/latest-news/pr-22-40/ for the official press release, which provides information about the Draft EIS, ways to comment, and upcoming in-person and online public meetings.



Danielle Gosselin
Director
Office of Environmental Analysis
Surface Transportation Board

CP/KCS Merger EIS
Email: Contact@CP-KCSMergerEIS.com
Information Line: 1-888-319-2337 (Toll free)
Website: https://www.cp-kcsmergereis.com

SURFACE TRANSPORTATION BOARD

Office of Environmental Analysis

Canadian Pacific Railway Limited, et al.—Control—Kansas City Southern et al.,
Docket No. FD 36500
Script for Toll-Free Information Line
August 2022 – Availability of Draft Environmental Impact Statement

Hello, you have reached the toll-free information line for the Surface Transportation Board's Office of Environmental Analysis for the proposed acquisition of Kansas City Southern Railway by Canadian Pacific Railway.

Hola, ha llamado a la línea de información gratuita de la Junta de Transporte de Superficie de la Oficina de Análisis Ambiental para la propuesta de adquisición del Ferrocarril del Sur de la ciudad de Kansas por el Ferrocarril Pacifico canadiense.

Press 1 to hear this recording in Spanish.

Presione 1 para escuchar este mensaje en español.

[*Begin Script*]

The Office of Environmental Analysis has prepared a Draft Environmental Impact Statement or EIS, which includes an evaluation of the potential impacts of the project on the environment.

La oficina de análisis ambiental ha preparado un borrador de la declaración de impacto ambiental, conocido como EIS por sus siglas en inglés, la cual incluye una evaluación de los impactos potenciales del proyecto en el medio ambiente.

The Office of Environmental Analysis distributed the Draft Environmental Impact Statement on August 5, 2022. The Draft Environmental Impact Statement and other project information and updates are available on the Board-sponsored project website at www.CP-KCSMergerEIS.com. The Office of Environmental Analysis will host in-person and online public meetings on the Draft EIS September 7, 2022 through September 19, 2022, and is accepting comments through September 26, 2022. Meeting times and locations can be found on the project website. Comments can be submitted through the in-person and online public meetings as well as the Board-sponsored project website. Comments may also be submitted electronically through the environmental comment form on the Board-sponsored project website.

El 5 de agosto del 2022, la oficina de análisis ambiental distribuyó un borrador del EIS. Este borrador y - y otra información del proyecto están disponibles en la pagina web de la junta: www.cp-kcsmergerEIS.com.

La oficina de análisis ambiental organizara reuniones en persona y virtuales acerca del borrador del EIS durante las siguientes fechas: 7 de septiembre del 2022 hasta el 19 de septiembre del 2022, y esta aceptando comentarios hasta el 26 de septiembre del 2022.

Los horarios de estas reuniones estarán disponibles en la pagina web del proyecto. Pueden entregar comentarios durante las reuniones en persona y virtuales, como también a través de la página web del proyecto. También podrán entregar sus comentarios electrónicamente usando el formulario electrónico ambiental en la pagina web del proyecto.

If you would like information on the upcoming public meetings or have questions about the EIS process, please clearly state your request or question. Depending on the nature of your request, please leave your appropriate contact information after the beep.

Si quiere información sobre las próximas reuniones o tiene cualquier pregunta sobre el proceso del EIS, por favor diga claramente su petición o pregunta. Dependiendo de la naturaleza de su petición, por favor deje su información de contacto después del tono.

Press the star key to hear this recording again.

Por favor presione el botón de la estrella para escuchar esta grabación otra vez.

Thank you.

Gracias,

[*End Script*]

CP-KCS RAILROAD MERGER

Project Update: Availability of Draft Environmental Impact Statement



ENVIRONMENTAL IMPACT STATEMENT

The Surface Transportation Board's Office of Environmental Analysis (OEA) is pleased to announce that the Draft Environmental Impact Statement (Draft EIS) for the proposed acquisition of Kansas City Southern Railway (KCS) by Canadian Pacific Railway (CP) is available for review. The The Draft EIS analyzes the potential environmental impacts of the proposed acquisition, including impacts related to expected increases in rail traffic ranging from 8 to approximately 14.4 additional trains per day, on average, on CP and KCS rail lines between Chicago, Illinois and Laredo, Texas.

OEA will hold public meetings and receive comments from the public. The meeting schedule, instructions for submitting comments, and other project information are available below and on the Board-sponsored project website at **www.CP-KCSMergerEIS.com**.

Contact the Surface Transportation Board as soon as possible if you require any accommodations under the Americans with Disabilities Act (ADA) to participate in the environmental review process.

1-800-877-8339 for hearing impaired assistance

1-888-319-2337 for ADA Assistance

Contact@CP-KCSMergerEIS.com

You may ask us questions about the review process at any time by:

1-888-319-2337

Contact@CP-KCSMergerEIS.com

Public Meetings **Central Daylight Time (CDT)*

In-Person Public Meetings:

September 12, 2022, 6 to 8p.m. (CDT) in Itasca, Illinois
The Westin Chicago Northwest, 400 Park Boulevard, Itasca, Illinois, 60143

September 13, 2022, 6 to 8p.m. (CDT) in Davenport, Iowa
The River Center, 136 E. 3rdStreet, Davenport, Iowa, 52801

September 14, 2022, 6 to 8p.m. (CDT) in Excelsior Springs, Missouri
The Montgomery Event Venue, 425 S. Thompson Avenue, Excelsior Springs, Missouri, 64024

September 15, 2022, 6 to 8p.m. (CDT) in Vidor, Texas
The Oaks Event Center, 2110 South Main Street, Vidor Texas, 77662

Online Public Meetings:

September 7, 2022, 6-8 p.m.
September 8, 2022, 12-2 p.m.
September 19, 2022, 6-8 p.m.

Scan this QR Code to view the Draft EIS and Public Meeting information.

*To comment, please visit the Board-sponsored project website listed above or the Board's website at **www.stb.gov**. Please refer to Docket No. FD 36500 in all correspondence.*

For public meetings, visit:
www.CP-KCSMergerEIS.com

There, you'll find materials such as:
maps • documents • draft EIS

Comment Deadline
September 26, 2022

CANADIAN PACIFIC ACQUISITION OF
KANSAS CITY SOUTHERN

Potential Increase in Freight Trains in Your Area

DRAFT ENVIRONMENTAL IMPACT STATEMENT AVAILABLE

For More Information, Click Here

www.CP-KCSMergerEIS.com

Appendix B

Agency and Tribal Consultation

Appendix B discusses agency and tribal consultation for the development of the~~is~~ Draft EIS and this Final EIS for the Proposed Acquisition. Consultation correspondence is provided in the following three attachments.

- Attachment 1, Agency Consultation
- Attachment 2, Tribal Consultation
- Attachment 3, National Historic Preservation Act [NHPA], Section 106 Consultation

Attachment 1, Agency Consultation, contains a selection of OEA's written correspondence with federal, state, and local agencies. The first three letters, sent to the U.S. Environmental Protection Agency (EPA), U.S. Army Corps of Engineers (Corps), and U.S. Fish and Wildlife Service (USFWS), invited these federal agencies to participate in agency consultation, particularly in relation to their respective jurisdictions, such as, air and water quality; threatened, and endangered species; and wetlands, as detailed in ~~Draft~~ Final EIS *Section 1.4.2, Other Agencies*. The fourth letter type was sent to local and state agencies, such as departments of transportation, environment, and conservation, to solicit their input regarding the scope of this Draft EIS. *Attachment 1, Agency Consultation* also includes responses from agencies. Letters were also provided to tribal governments to inform them of the Proposed Acquisition and solicit interest in formal government-to-government consultation (see *Attachment 2, Tribal Consultation*). No tribal governments expressed interest in government-to-government consultation; therefore, no responses are included in *Attachment 2, Tribal Consultation*. Additional letters were prepared to initiate consultation between OEA and State Historic Preservation Officers (SHPOs), Tribal Historic Preservation Officers (THPOs), which are included in *Attachment 3, National Historic Preservation Act, Section 106 Consultation*. Responses from SHPOs and THPOs are also included in *Attachment 3, National Historic Preservation Act, Section 106 Consultation*.

B.1 Agency Consultation

Following issuance of the Notice of Intent, OEA engaged with federal and state agencies through tailored meetings based on geography or resource topics. OEA sent letters to federal, state, and local agencies providing background information on the Proposed Acquisition and how to participate in the process. The state agency letters extended invitations to relevant state agency staff for state-specific officials' briefings. Separately, OEA sent letters for individual agency meetings to the local regional offices, as applicable, of federal agencies with jurisdiction or interest in potentially affected resources. OEA held eight agency consultation meetings during the scoping period:

- Tuesday, November 30, 2021, Army Corps Agency Meeting
- Wednesday, December 1, 2021, Minnesota and Michigan Agency Meeting
- Wednesday, December 1, 2021, USFWS Agency Meeting
- Thursday, December 2, 2021, Illinois and Iowa Agency Meeting
- Monday, December 6, 2021, EPA Agency Meeting
- Tuesday, December 7, 2021, Kansas and Missouri Agency Meeting
- Wednesday, December 8, 2021, Louisiana and Arkansas Agency Meeting
- Thursday, December 9, 2021, Texas and Oklahoma Agency Meeting
- *Attachment 1, Agency Consultation*, contains a selection of OEA's written correspondence with federal, state, and local agencies and responses from these agencies; these different types of agencies are detailed below. Note that Section 7 correspondence with USFWS are available in **Appendix O, Biological Resources**.
- Letters to Federal Agencies with Jurisdiction
    - Emailed (or mailed if emails were not available) letters to staff of federal agencies (regional offices where applicable) that have permitting or approval roles, including EPA, Corps, and USFWS.
- Letters to Other Agencies
    - **Federal:** Emailed (or mailed if emails were not available) letters to staff of federal agencies (regional offices where applicable) that may have an interest in the Proposed Acquisition and related impacts but without official permitting or approval roles, including the National Park Service (NPS), Federal Emergency Management Agency (FEMA), Natural Resources Conservation Service (NRCS), and the U.S. Department of Commerce.
    - **State:** Emailed (or mailed if emails were not available) letters to staff of state agencies that have interests in topics related to the Proposed Acquisition, such as transportation, natural resources, and conservation, in states where the Proposed Acquisition could result in adverse environmental impacts, including states where increased rail traffic resulting from the Proposed Acquisition would exceed thresholds for environmental review, states where increased activity at rail yards or

intermodal facilities would exceed thresholds for environmental review, and states where CP and KCS plan to make capital improvements if the Board authorizes the Proposed Acquisition.

- **Local:** Emailed (or mailed if emails were not available) letters to staff of local agencies (for example, city, town, village, parish, county) that have interests in topics related to the Proposed Acquisition, such as transportation, natural resources, and conservation, in localities where the Proposed Acquisition could result in adverse environmental impacts.

During the scoping comment period, OEA received comments from federal, state, and local agencies identifying topics of interest and community concerns to consider for inclusion in the Final Scope of Study for the EIS. After the close of the comment period on the scope of the EIS, OEA reviewed all comments received and issued a Final Scope of Study for the EIS on February 18, 2022, which responded to comments received during the scoping period and set forth the final issues to be examined in the EIS. Following the issuance of the Final Scope of Study, OEA continued to consult and correspond with agencies under the Section 7 and Section 106 consultation processes. Aside from the other agencies that participated in consultation during scoping, there were no further expressions of interest. No other agencies beyond USFWS, SHPOs, and THPOs provided any additional studies, data, or other input to consider in OEA's analysis before OEA issued the Draft EIS.

Several Federal, state, and local agencies commented on the Draft EIS. Those comments and responses to them are found in **Appendix S, Responses to Comments on the Draft EIS**.

Table B.1-1 lists all the federal and state~~, and local~~ agencies to whom OEA sent correspondence.

Table B.1-1. List of Federal and State Agencies to Whom OEA Sent Correspondence

Federal Agencies
EPA
EPA Region 5
EPA Region 6
EPA Region 7
Corps
Little Rock District
Chicago District
Rock Island District
Kansas City District
Kansas City District
Omaha District
Tulsa District
Fort Worth District
Galveston District
Vicksburg District

Table B.1-1. List of Federal and State Agencies to Whom OEA Sent Correspondence

New Orleans District
St. Paul District
Omaha District
USFWS
Arkansas Ecological Services Field Office
Arlington Ecological Services Field Office
Chicago Ecological Services Field Office
Illinois-Iowa Ecological Services Office
Kansas Ecological Services Field Office
Minnesota Wisconsin Ecological Services Field Office
Mountain Prairie Region
Oklahoma Ecological Services Field Office
Pond Creek National Wildlife Refuge
Region 2
Region 2 Ecological Services Field Office
Region 6
Southeast Region
Texas Coastal Ecological Services Field Office
Upper Mississippi River National Wildlife and Fish Refuge
USFWS Midwest Region
Other Federal Agencies
Amtrak, Government Affairs, Midwest Division
Amtrak, Government Affairs, South District
Federal Railroad Administration, Environmental Division
FRA, Region 5
FRA, Region 6
FEMA Region 5, Congressional/Intergovernmental
FEMA Region 7, FEMA Regional Tribal Liaison
FEMA Region 7
FEMA, Region 6, Enforcement and Compliance Assurance Division
NPS Intermountain Region, Interior Regions 6, 7, and 8
NPS Intermountain Region, Region 6
NPS Midwest Region, Regions 3, 4, 5, and 6
NRCS, Texas Office
NRCS, Arkansas Office
NRCS, Illinois Office
NRCS, Indiana Office
NRCS, Kansas Office

Table B.1-1. List of Federal and State Agencies to Whom OEA Sent Correspondence

NRCS, Louisiana Office
NRCS, Missouri Office
NRCS, State Office
NRCS, State Tribal Liaison
Ouachita National Forest
U.S. Department of Commerce, Office of Legislative and Intergovernmental Affairs
State Agencies
Arkansas Department of Agriculture
Arkansas Department of Commerce
Arkansas Department of Energy and Environment
Arkansas Department of Public Safety
Arkansas Department of Transportation
Department of Arkansas Heritage/SHPO
Illinois Department of Agriculture
Illinois Department of Commerce and Economic Opportunity
Illinois Department of Natural Resources
Illinois Department of Transportation
Iowa Department of Agriculture and Land Stewardship
Iowa Department of Commerce
Iowa Department of Cultural Affairs
Iowa Department of Natural Resources
Iowa Department of Public Safety
Iowa Department of Transportation
Iowa Economic Development Authority
Kansas Department of Agriculture
Kansas Department of Commerce
Kansas Department of Health and Environment
Kansas Department of Transportation
Kansas Historical Society
Louisiana Board of Commerce and Industry
Louisiana Department of Agriculture and Forestry
Louisiana Department of Health
Louisiana Department of Natural Resources
Louisiana Department of Transportation and Development
Louisiana Department of Wildlife and Fisheries
Louisiana Department of Environmental Quality
Louisiana Governor's Office of Homeland Security and Emergency Preparedness

Table B.1-1. List of Federal and State Agencies to Whom OEA Sent Correspondence

Louisiana Office of Cultural Development
Michigan Department of Natural Resources
Michigan Department of Transportation
Minnesota Department of Agriculture
Minnesota Department of Commerce
Minnesota Department of Natural Resources
Minnesota Department of Public Safety
Minnesota Department of Transportation
Minnesota Environmental Review
Missouri Department of Agriculture
Missouri Department of Commerce and Insurance
Missouri Department of Conservation
Missouri Department of Economic Development
Missouri Department of Natural Resources
Missouri Department of Public Safety
Missouri Department of Transportation
Missouri Environmental Improvement and Energy Resource Authority
Missouri State Historic Preservation Office
Oklahoma Capital Investment Board
Oklahoma Capitol Improvement Authority
Oklahoma Commerce Department
Oklahoma Conservation Commission
Oklahoma Corporation Commission
Oklahoma Department of Agriculture, Food, and Forestry
Oklahoma Department of Environmental Quality
Oklahoma Department of Public Safety
Oklahoma Department of Transportation
Oklahoma Historical Society
Oklahoma Land Commissioners
Oklahoma NRCS
Oklahoma Secretary of Energy and Environment
Texas Commission on Environmental Quality
Texas Department of Agriculture
Texas Department of Economic Development
Texas Department of Public Safety
Texas Department of Transportation
Texas General Land Office Natural Resource Trustee Program
Texas Historical Commission

B.2 Tribal Consultation

OEA consulted with tribes pursuant to the NHPA, NEPA, and Executive Order (EO) 13175. Consultation under Section 106 of the NHPA is discussed in *Section B.3*. EO 13175 requires that federal agencies conduct government-to-government consultations with federally recognized Indian tribes in the development of federal policies (including regulations, legislative comments or proposed legislation, and other policy statements or actions) that have tribal implications. OEA's outreach extended beyond the required federally recognized tribes to engage tribes that have expressed cultural interest in the counties/parishes where the Applicants expect adverse environmental impacts. Tribes may have concerns about natural resources and other potential impacts that would not be brought up during the Section 106 process and these concerns can be voiced during government-to-government consultation.

This section contains a record of written consultation from OEA to federally recognized tribes. On November 12, 2021, OEA sent letters to the tribes listed below to determine their interest in participating in government-to-government consultation. The letters also provided information on the broader public involvement process described in *Appendix A, Public Involvement*. The letter from OEA to tribes contained information about the Proposed Acquisition as well as a response questionnaire to determine their interest in consultation. Follow-up phone calls were placed to tribes between November 30, 2021, and December 10, 2021, to provide tribes with additional opportunity to respond to the request for their interest in consultation.

- Alabama-Coushatta Tribe of Texas
- Alabama-Quassarte Tribal Town
- Apache Tribe of Oklahoma
- Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin
- Bois Forte Band (Nett Lake) of the Minnesota Chippewa Tribe
- Caddo Nation of Oklahoma
- Cherokee Nation
- Cheyenne and Arapaho Tribes, Oklahoma
- Chitimacha Tribe of Louisiana
- Choctaw Nation of Oklahoma
- Citizen Potawatomi Nation, Oklahoma
- Comanche Nation, Oklahoma
- Coushatta Tribe of Louisiana
- Delaware Nation, Oklahoma

- Flandreau Santee Sioux Tribe of South Dakota
- Fond du Lac Band of the Minnesota Chippewa Tribe
- Forest County Potawatomi Community of Wisconsin
- Fort Belknap Indian Community of the Fort Belknap Reservation of Montana
- Grand Portage Band of the Minnesota Chippewa Tribe
- Hannahville Indian Community, Michigan
- Ho-Chunk Nation of Wisconsin
- Iowa Tribe of Kansas and Nebraska
- Iowa Tribe of Oklahoma
- Jena Band of Choctaw Indians
- Kaw Nation, Oklahoma
- Keweenaw Bay Indian Community, Michigan
- Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas
- Kickapoo Tribe of Oklahoma
- Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin
- Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan
- Leech Lake Band of the Minnesota Chippewa Tribe
- Little Traverse Bay Bands of Odawa Indians, Michigan
- Lower Sioux Indian Community in the State of Minnesota
- Menominee Indian Tribe of Wisconsin
- Mescalero Apache Tribe of the Mescalero Reservation, New Mexico
- Miami Tribe of Oklahoma
- Mille Lacs Band of Ojibwe (The Mille Lacs Band of the Minnesota Chippewa Tribe Mille Lacs Band of Ojibwe)
- Minnesota Chippewa Tribe
- Mississippi Band of Choctaw Indians
- Muscogee (Creek) Nation
- Omaha Tribe of Nebraska
- Osage Nation
- Otoe-Missouria Tribe of Indians, Oklahoma

- Peoria Tribe of Indians of Oklahoma
- Pokagon Band of Potawatomi Indians, Michigan and Indiana
- Prairie Band Potawatomi Nation
- Prairie Island Indian Community in the State of Minnesota
- Quapaw Tribe of Indians
- Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin
- Red Lake Band of Chippewa Indians, Minnesota
- Sac & Fox Nation of Missouri in Kansas and Nebraska
- Sac & Fox Nation, Oklahoma
- Sac & Fox Tribe of the Mississippi in Iowa
- Santee Sioux Nation, Nebraska
- Seminole Tribe of Florida
- Seneca-Cayuga Nation
- Shakopee Mdewakanton Sioux Community of Minnesota
- Sisseton-Wahpeton Oyate of the Lake Traverse Reservation, South Dakota
- Sokaogon Chippewa Community, Wisconsin
- Spirit Lake Tribe, North Dakota
- Tonkawa Tribe of Indians of Oklahoma
- Tunica-Biloxi Indian Tribe
- Turtle Mountain Band of Chippewa Indians of North Dakota
- United Keetoowah Band of Cherokee Indians in Oklahoma
- Upper Sioux Community, Minnesota
- White Earth Band of the Minnesota Chippewa Tribe
- Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie), Oklahoma
- Winnebago Tribe of Nebraska

Of the tribes that responded to OEA, only one tribe, the Santee Sioux Nation, requested government-to-government consultation during a phone call. The Tribe subsequently indicated that it did not wish to participate in consultation. All other tribes will continue to be invited to participate in public involvement activities throughout the course of the environmental review process. Several tribes directed OEA to coordinate with their THPO and/or elected to participate in the Section 106 consultation described in *Section B.3, Section 106 Consultation under the National Historic Preservation Act*.

Following the issuance of the Draft EIS, the Bureau of Indian Affairs provided a list of additional tribes to consult, including:

- Delaware Tribe of Indians
- Absentee Shawnee Tribe of Indians of Oklahoma
- Eastern Shawnee Tribe of Oklahoma
- Seminole Nation of Oklahoma
- Thlopthlocco Tribal Town
- Kialegee Tribal Town

OEA emailed Government-to-Government and Section 106 consultation request letters to each tribe on October 18, 2022, and followed up with another email to unresponsive tribes on November 4, 2022. OEA also left voicemails with several tribes on October 17, 2022, where active phone numbers were available. If an email address was undeliverable, OEA mailed the consultation letters and called the tribes.

During the Draft EIS review and comment period, the White Earth Band of Ojibwe contacted OEA to request government-to-government consultation. OEA responded to the Tribe to initiate consultation, and the Tribe did not respond. Details of this correspondence are also included in **Appendix J**.

OEA is notifying the previously contacted Tribes of the availability of this Final EIS via the same methods used for scoping and Draft EIS issuance.

B.3 Section 106 Consultation under the National Historic Preservation Act

The Section 106 regulations at 36 C.F.R. Part 800 require federal agencies to consider the impact of their "undertakings" on "historic properties" listed or eligible for listing in the National Register of Historic Places prior to licensing or providing funds for a project. In considering project impacts, federal agencies are required to consult with their applicants (CP and KCS, in this case), the SHPO and THPO, tribes, and other consulting parties. Agencies must also make their findings available to the public and provide the Advisory Council on Historic Preservation an opportunity to comment on the undertaking.

Attachment 3, National Historic Preservation Act, Section 106 Consultation, contains formal written correspondence between OEA, the SHPOs, and federally recognized tribes.

OEA sent letters to initiate Section 106 consultation to SHPOs and to tribes in or having a cultural interest in the project area. The letters in *Attachment 3, National Historic Preservation Act, Section 106 Consultation*, were sent to initiate consultation with SHPOs and tribes. Responses from SHPOs and tribes are also included in *Attachment 3, National Historic Preservation Act, Section 106 Consultation*.

OEA hosted meetings with each SHPO from states where the Proposed Acquisition could result in effects on historic properties during the scoping period to initiate Section 106 consultation. These state SHPOs and meeting dates are summarized below in **Table B.3-1**.

Table B.3-1. SHPO Meetings

SHPO	Date
Texas	December 1, 2021
Illinois	December 3, 2021
Minnesota	December 3, 2021
Iowa	December 6, 2021
Oklahoma	December 7, 2021
Missouri	December 7, 2021
Louisiana	December 9, 2021
Arkansas	December 13, 2021
Kansas	December 16, 2021

In addition to the letters sent November 12, 2021, phone calls were placed to tribes between November 30, 2021, and December 10, 2021, to provide tribes with additional opportunity to respond to the request for their interest in consultation. **Table B.3-2** below lists tribes with an expressed interest in Section 106 consultation.

Table B.3-2. Tribes with Interest in Section 106 Consultation

Tribe	Response Type
Iowa Tribe of Kansas and Nebraska	Letter
Choctaw Nation	Email
Osage Nation	Letter
Alabama-Coushatta Tribe of Texas	Verbal
Bois Forte Band (Nett Lake) of the Minnesota Chippewa Tribe	Verbal
Ho-Chunk Nation of Wisconsin	Verbal
Santee Sioux Nation of Nebraska	Verbal
Sisseton-Wahpeton Oyate of the Lake Traverse Reservation of South Dakota	Verbal
Upper Sioux Community of Minnesota	Verbal

Additional consultation occurred as the environmental analysis developed, including requests for information and project updates. OEA provided Section 106 consultation materials to all SHPOs prior to the Final EIS, and OEA has reached concurrence with the SHPOs of the six states with Areas of Potential Effects (APEs). A more detailed discussion of Section 106 consultation activities is included in **Appendix J**.

Appendix B – Attachment 1: Agency Consultation

Appendix B – Attachment 1a: Example Agency Letters

SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

EPA Letter November 12, 2021

Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern, et al.; **Notice of Intent to Prepare an Environmental Impact Statement**

On October 29, 2021, Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern, et al. (KCS) (collectively, Applicants) filed an application with the Surface Transportation Board (Board) seeking authorization for CP to acquire KCS. This acquisition would create the first railroad to connect Canada, the United States, and Mexico. CP's system currently runs east to west across Canada, connecting east and west coast ports. CP's rail lines also run south into the U.S. Midwest and connects with the KCS system in Kansas City. The KCS rail lines run from Kansas City to the Gulf Coast and into Mexico. The combination of these two railroads would be an 'end-to-end' merger because the CP and KCS railroad networks do not overlap (see the interactive map on the Board-sponsored project website here: https://cp-kcsmergereis.com/maps.htm).

As part of the approval process, the Board must evaluate the potential impacts of the proposed acquisition on the environment, in accordance with the National Environmental Policy Act of 1969 (NEPA) and the Board's environmental regulations (49 C.F.R. Part 1105). To comply with NEPA, the Board's Office of Environmental Analysis (OEA) initiated preparation of an Environmental Impact Statement (EIS) by issuing a Notice of Intent to Prepare an EIS (NOI) in the *Federal Register* on November 12, 2021. The issuance of the NOI began the scoping period, the first step in the environmental review process. A copy of the NOI can be found here https://cp-kcsmergereis.com/docs/cp-kcs-noi.pdf .

The EIS will describe the potential environmental impacts of the proposed acquisition and assist the Board with making its decision about whether to approve, approve with conditions,

or deny the application. The statute setting forth the procedures for Board review of acquisitions at 49 U.S.C. § 11325 and the Board's implementing regulations at 49 C.F.R. § 1180.4 (2000) require that the Board complete its review within approximately 15 months after the application is accepted for a "major" transaction such as this, and OEA must complete the environmental process before the Board issues a final decision.

Description of the Proposed Action

According to the Applicants, the purpose of the proposed acquisition is to combine America's two smallest but fastest-growing Class I railroads to build a more efficient and more competitive rail network. The Applicants state that the proposed acquisition would further the need for expanded and more capable and efficient transportation infrastructure while simultaneously advancing the interests of current and future customers in more reliable and economical rail transportation options serving important North-South trade flows. The Applicants also state that the proposed acquisition would generate environmental benefits by reducing truck transportation on highways in North America by more than 60,000 trucks annually, resulting in less congestion, less maintenance, and improved safety on those roads, as well as less noise pollution in the places where those trucks would have driven, and lowered air emissions, including greenhouse gas emissions.

The proposed acquisition would involve (1) changes in level of operations (e.g., an increase in average trains per day) on certain segments of the combined rail network that would exceed the Board's thresholds for environmental review at 49 C.F.R. § 1105.7(e); (2) changes in activity at some rail yards and intermodal facilities that would exceed the Board's thresholds for environmental analysis; and (3) capital improvements within the existing rail right-of-way. The thresholds for assessing environmental impacts from increased rail traffic on rail lines in railroad acquisition proceedings are an increase in rail traffic of at least 100 percent (measured in gross ton miles annually) or an increase in rail traffic of at least eight trains per day. For air quality impacts, rail lines located in areas classified as being in nonattainment under the Clean Air Act are also assessed if they would experience an increase in rail traffic of at least 50 percent (measured in gross ton miles annually) or an increase of at least three trains per day. Based on our preliminary review, we have identified rail lines in Illinois, Iowa, Missouri, Kansas, Oklahoma, Arkansas, Louisiana, and Texas that could experience increases in rail traffic that would exceed our analysis thresholds as a result of the proposed acquisition. The EIS will analyze the potential environmental impacts of increased rail traffic along those rail lines, as appropriate.

To support increased rail traffic on the combined network, the Applicants propose to add new passing sidings or extend existing passing sidings at 24 locations within the rail right-of-way as part of the proposed acquisition. Sidings would be added or extended at locations in Louisiana, Oklahoma, Arkansas, Kansas, Minnesota, Illinois, Iowa, and Missouri. The Applicants also propose to add approximately four miles of double track within the right-of-way along the KCS Pittsburg Subdivision in Missouri and to add approximately five miles of facility working track within the right-of-way adjacent to the International Freight Gateway intermodal terminal in Missouri. The EIS will analyze potential environmental impacts, as appropriate, from these capital improvement projects.

The interactive map on the Board-sponsored project website here: https://cp-kcsmergereis.com/maps.htm shows the locations of the rail lines, rail yards, and intermodal facilities that would experience operational changes that would exceed the Board's environmental analysis threshold, as well as the locations of proposed capital improvements within the rail right-of-way.

Request for Comments and Consultation

OEA requests your comments on the potential impacts of the proposed acquisition. We propose a conference call with the EPA on **Monday, December 6h at 10:00 a.m. CST** to discuss this with all potentially impacted EPA Regions (letters have been sent to EPA Regions 5, 6, and 7).

How to Comment

We encourage you to file your written comments electronically through the Board-sponsored project website at www.CP-KCSMergerEIS.com. Written comments can also be submitted electronically on the Board's website, www.stb.gov, by clicking on the "E_FILING" link, then clicking on "Environmental Comments." Alternatively, your written comments may be sent by mail to:

Joshua Wayland, Surface Transportation Board, c/o VHB
Attention: Environmental Filing, Docket No. FD 36500
940 Main Campus Dr., Suite 500
Raleigh, NC 27606

Please make sure to refer to Docket No. FD 36500 in all correspondence, including e-filings, addressed to the Board. **All scoping comments must be sent no later than December 17, 2021.**

Public Scoping Meetings

Additionally, to provide an opportunity for the public to provide oral comments, OEA will hold six online public scoping meetings. We invite you to attend those meetings if you are interested. You can attend the online public scoping meetings in one of two ways:

- Join online at: https://bit.ly/cp-kcs .
    - Project information will be available for review at this link prior to the public meeting dates.
- Join by phone by calling (888) 788-0099 (Toll Free) and using the call-in information below:

Date	Time	Meeting ID	Passcode
Tuesday, November 30, 2021	6-8 PM	899 9411 9431	336859
Wednesday, December 1, 2021	2-4 PM	834 1445 3134	140066
Thursday, December 2, 2021	6-8 PM	860 6003 9544	510488
Tuesday, December 7, 2021	6-8 PM	891 6903 1796	598592
Wednesday, December 8, 2021	2-4 PM	884 5338 0280	470936
Thursday, December 9, 2021	6-8 PM	899 8627 2409	227867

Next Steps

Following the end of the scoping period on December 17, 2021, OEA will review the comments and issue a Final Scope of Study for the EIS. OEA will then proceed with the preparation of the Draft EIS. You will be notified of the publication of the Draft EIS and will have the opportunity to review and comment on it. At this time, OEA anticipates issuing the Draft EIS in the spring of 2022. In the meantime, OEA may contact you with questions pertaining to the resources under your jurisdiction or purview.

Additional information on this project and the Board's environmental review process is available on the Board-sponsored project website at www. CP-KCSMergerEIS.com. If you have any questions or would like to discuss the proposal in more detail, please contact Joshua Wayland at 202-245-0330 (e-mail address: Joshua.Wayland@stb.gov). We look forward to your participation in the Board's environmental review process.

Sincerely,



Danielle Gosselin
Acting Director
Office of Environmental Analysis

SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

Army Corps Letters November 12, 2021

Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern, et al.; **Notice of Intent to Prepare an Environmental Impact Statement**

Dear

On October 29, 2021, Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern, et al. (KCS) (collectively, Applicants) filed an application with the Surface Transportation Board (Board) seeking authorization for CP to acquire KCS. This acquisition would create the first railroad to connect Canada, the United States, and Mexico. CP's system currently runs east to west across Canada, connecting east and west coast ports. CP's rail lines also run south into the U.S. Midwest and connect with the KCS system in Kansas City. The KCS rail lines run from Kansas City to the Gulf Coast and into Mexico. The combination of these two railroads would be an 'end-to-end' merger because the CP and KCS railroad networks do not overlap (see the interactive map on the Board-sponsored project website here: https://cp-kcsmergereis.com/maps.htm).

As part of the approval process, the Board must evaluate the potential impacts of the proposed acquisition on the environment, in accordance with the National Environmental Policy Act (NEPA) and the Board's environmental regulations (49 C.F.R Part 1105). To comply with NEPA, the Board's Office of Environmental Analysis (OEA) initiated preparation of an Environmental Impact Statement (EIS) by issuing a Notice of Intent to Prepare an EIS (NOI) in the *Federal Register* on November 12, 2021. A copy of the NOI is available here: https://cp-kcsmergereis.com/docs/cp-kcs-noi.pdf .

The EIS will describe the potential environmental impacts of the proposed acquisition and assist the Board with making its decision about whether to approve, approve with conditions,

or deny the application. The statute setting forth the procedures for Board review of acquisitions at 49 U.S.C. § 11325 and the Board's implementing regulations at 49 C.F.R. § 1180.4 (2000) require that the Board complete its review within approximately 15 months after the application is accepted for a "major" transaction such as this, and OEA must complete the environmental process before the Board issues a final decision.

Description of the Proposed Action

According to the Applicants, the purpose of the proposed acquisition is to combine America's two smallest but fastest-growing Class I railroads to build a more efficient and more competitive rail network. The Applicants state that the proposed acquisition would further the need for expanded and more capable and efficient transportation infrastructure while simultaneously advancing the interests of current and future customers in more reliable and economical rail transportation options serving important North-South trade flows. The Applicants also state that the proposed acquisition would generate environmental benefits by reducing truck transportation on highways in North America by more than 60,000 trucks annually, resulting in less congestion, less maintenance, and improved safety on those roads, as well as less noise pollution in the places where those trucks would have driven, and lowered air emissions, including greenhouse gas emissions.

The proposed acquisition would involve (1) changes in level of operations (e.g., an increase in average trains per day) on certain segments of the combined rail network that would exceed the Board's thresholds for environmental review at 49 C.F.R. § 1105.7(e); (2) changes in activity at some rail yards and intermodal facilities that would exceed the Board's thresholds for environmental analysis; and (3) capital improvements within the existing rail right-of-way. The thresholds for assessing environmental impacts from increased rail traffic on rail lines in railroad acquisition proceedings are an increase in rail traffic of at least 100 percent (measured in gross ton miles annually) or an increase in rail traffic of at least eight trains per day. For air quality impacts, rail lines located in areas classified as being in nonattainment under the Clean Air Act are also assessed if they would experience an increase in rail traffic of at least 50 percent (measured in gross ton miles annually) or an increase of at least three trains per day. Based on the information provided by the Applicants to date, OEA has identified rail lines in Illinois, Iowa, Missouri, Kansas, Oklahoma, Arkansas, Louisiana, and Texas that could experience increases in rail traffic that would exceed the analysis thresholds as a result of the proposed acquisition. The EIS will analyze the potential environmental impacts of increased rail traffic along those rail lines, as appropriate.

To support increased rail traffic on the combined network, the Applicants propose to add new passing sidings or extend existing passing sidings at 24 locations within the rail right-of-way as part of the proposed acquisition. Sidings would be added or extended at locations in Louisiana, Oklahoma, Arkansas, Kansas, Minnesota, Illinois, Iowa, and Missouri. The Applicants also propose to add approximately four miles of double track within the right-of-way along the KCS Pittsburg Subdivision in Missouri and to add approximately five miles of facility working track within the right-of-way adjacent to the International Freight Gateway intermodal terminal in Missouri. The EIS will analyze potential environmental impacts, as appropriate, from these capital improvement projects. If capital improvement projects would affect waters of

the United States, then the Applicants would need to apply for appropriate permits under Section 404 of the Clean Water Act.

The interactive map on the Board-sponsored project website here: https://cp-kcsmergereis.com/maps.htm shows the locations of the rail lines, rail yards, and intermodal facilities that would experience operational changes that would exceed the Board's environmental analysis threshold, as well as the locations of proposed capital improvements within the rail right-of-way.

Request for Comments and Consultation

OEA requests your comments on the potential environmental impacts from the proposed new sidings and siding extensions. We propose a conference call on **Tuesday, November 30th at 9:00 a.m. CST** to discuss this with your District and the other Districts where capital improvements might affect waters of the United States, including wetlands (OEA has sent letters to the Little Rock, Chicago, Rock Island, St. Louis, Louisville, Detroit, Fort Worth, Galveston, New Orleans, Vicksburg, Tulsa, and Kansas City Districts).

How to Comment

We encourage you to file your written comments electronically through the Board-sponsored project website at www.CP-KCSMergerEIS.com. Written comments can also be submitted electronically on the Board's website, www.stb.gov, by clicking on the "E_FILING" link, then clicking on "Environmental Comments." Alternatively, your written comments may be sent by mail to:

Joshua Wayland, Surface Transportation Board, c/o VHB
Attention: Environmental Filing, Docket No. FD 36500
940 Main Campus Dr., Suite 500
Raleigh, NC 27606

Please make sure to refer to Docket No. FD 36500 in all correspondence, including e-filings, addressed to the Board. **All scoping comments must be sent no later than December 17, 2021**.

Public Scoping Meetings

Additionally, to provide an opportunity for the public to provide oral comments, OEA will hold six online public scoping meetings. We invite you to attend those meetings if you are interested. You can attend the online public scoping meetings in one of two ways:

- Join online at: https://bit.ly/cp-kcs .
    - Project information will be available for review at this link prior to the public meeting dates.
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Additional information on this project and the Board's environmental review process is available on the Board-sponsored project website at www. CP-KCSMergerEIS.com. If you have any questions or would like to discuss the proposal in more detail, please contact Joshua Wayland at 202-245-0330 (e-mail address: Joshua.Wayland@stb.gov). We look forward to your participation in the Board's environmental review process.

Sincerely,



Danielle Gosselin
Acting Director
Office of Environmental Analysis

SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

All USFWS Regions - Letter to Regional offices November 12, 2021

Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern, et al.; **Notice of Intent to Prepare an Environmental Impact Statement**

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As part of the approval process, the Board must evaluate the potential impacts of the proposed acquisition on the environment, in accordance with the National Environmental Policy Act (NEPA) and the Board's environmental regulations (49 C.F.R. Part 1105). To comply with NEPA, the Board's Office of Environmental Analysis (OEA) has initiated preparation of an Environmental Impact Statement (EIS) by issuing a Notice of Intent to Prepare an EIS (NOI) in the *Federal Register* on November 12, 2021. A copy of the NOI can be found here https://cp-kcsmergereis.com/docs/cp-kcs-noi.pdf .

The EIS will describe the potential environmental impacts of the proposed acquisition and assist the Board with making its decision about whether to approve, approve with conditions, or deny the application. The statute setting forth the procedures for Board review of acquisitions at 49 U.S.C. § 11325 and the Board's implementing regulations at 49 C.F.R. § 1180.4 (2000)

require that the Board complete its review within approximately 15 months after the application is accepted for a "major" transaction such as this, and OEA must complete the environmental process before the Board issues a final decision.

Description of the Proposed Action

According to the Applicants, the purpose of the proposed acquisition is to combine America's two smallest but fastest-growing Class I railroads to build a more efficient and more competitive rail network. The Applicants state that the proposed acquisition would further the need for expanded and more capable and efficient transportation infrastructure while simultaneously advancing the interests of current and future customers in more reliable and economical rail transportation options serving important North-South trade flows. The Applicants also state that the proposed acquisition would generate environmental benefits by reducing truck transportation on highways in North America by more than 60,000 trucks annually, resulting in less congestion, less maintenance, and improved safety on those roads, as well as less noise pollution in the places where those trucks would have driven, and lowered air emissions, including greenhouse gas emissions.

The proposed acquisition would involve (1) changes in level of operations (e.g., an increase in average trains per day) on certain segments of the combined rail network that would exceed the Board's thresholds for environmental review at 49 C.F.R. § 1105.7(e); (2) changes in activity at some rail yards and intermodal facilities that would exceed the Board's thresholds for environmental analysis; and (3) capital improvements within the existing rail right-of-way. The thresholds for assessing environmental impacts from increased rail traffic on rail lines in railroad acquisition proceedings are an increase in rail traffic of at least 100 percent (measured in gross ton miles annually) or an increase in rail traffic of at least eight trains per day. For air quality impacts, rail lines located in areas classified as being in nonattainment under the Clean Air Act are also assessed if they would experience an increase in rail traffic of at least 50 percent (measured in gross ton miles annually) or an increase of at least three trains per day. OEA has preliminarily identified rail lines in Illinois, Iowa, Missouri, Kansas, Oklahoma, Arkansas, Louisiana, and Texas that would experience increases in rail traffic that would exceed the analysis thresholds as a result of the proposed acquisition. The EIS will analyze the potential environmental impacts of increased rail traffic along those rail lines, as appropriate.

To support increased rail traffic on the combined network, the Applicants propose to add new passing sidings or extend existing passing sidings at 24 locations within the rail right-of-way as part of the proposed acquisition. Sidings would be added or extended at locations in Louisiana, Oklahoma, Arkansas, Kansas, Minnesota, Illinois, Iowa, and Missouri. The Applicants also propose to add approximately four miles of double track within the right-of-way along the KCS Pittsburg Subdivision in Missouri and to add approximately five miles of facility working track within the right-of-way adjacent to the International Freight Gateway intermodal terminal in Missouri. The EIS will analyze potential environmental impacts, as appropriate, from these capital improvement projects, including impacts on threatened and endangered species.

The interactive map on the Board-sponsored project website here: https://cp-kcsmergereis.com/maps.htm shows the locations of the rail lines, rail yards, and intermodal facilities that would experience operational changes that would exceed the Board's environmental analysis threshold, as well as the locations of proposed capital improvements within the rail right-of-way.

Request for Comments and Consultation

OEA requests your comments on the potential impacts of the proposed acquisition. We propose a conference call for all U.S. Fish and Wildlife Service (USFWS) officials on **Wednesday, December 1 at 10:30 AM CST**. OEA has sent letters to the Midwest, Southeast, Southwest, and Mountain Prairie regional offices, in addition to all relevant field offices. Initial USFWS Information for Planning and Consultation (IPaC) database search results are included in the letters to the field offices.

How to Comment

We encourage you to file your written comments electronically through the Board-sponsored project website at www.CP-KCSMergerEIS.com. Written comments can also be submitted electronically on the Board's website, https://www.stb.gov, by clicking on the "E-FILING" link, then clicking on "Environmental Comments." Alternatively, your written comments may be sent by mail to:

Joshua Wayland, Surface Transportation Board, c/o VHB
Attention: Environmental Filing, Docket No. FD 36500
940 Main Campus Dr., Suite 500
Raleigh, NC 27606

Please make sure to refer to Docket No. FD 36500 in all correspondence, including E-filings, addressed to the Board. **All scoping comments must be sent no later than December 17, 2021**.

Public Scoping Meetings

Additionally, to provide an opportunity for the public to provide oral comments, OEA will hold six online public scoping meetings. We invite you to attend those meetings if you are interested. You can attend the online public scoping meetings in one of two ways:

- Join online at: https://bit.ly/cp-kcs .
    - Project information will be available for review at this link prior to the public meeting dates.
- Join by phone by calling (888) 788-0099 (Toll Free) and using the call-in information below:

Public Meeting Dates and Times

Date	Time	Meeting ID	Passcode
Tuesday, November 30, 2021	6-8 PM	899 9411 9431	336859
Wednesday, December 1, 2021	2-4 PM	834 1445 3134	140066
Thursday, December 2, 2021	6-8 PM	860 6003 9544	510488
Tuesday, December 7, 2021	6-8 PM	891 6903 1796	598592
Wednesday, December 8, 2021	2-4 PM	884 5338 0280	470936
Thursday, December 9, 2021	6-8 PM	899 8627 2409	227867

Next Steps

Following the end of the scoping period on December 17, 2021, OEA will review the comments and then issue a Final Scope of Study for the EIS. OEA will then proceed with the preparation of the Draft EIS. You will be notified of the publication of the Draft EIS and will have the opportunity to review and comment on the document. At this time, OEA anticipates issuing the Draft EIS in the spring of 2022. In the meantime, OEA may contact you with questions or queries pertaining to the resources under your jurisdiction or purview.

For further information or questions pertaining to the scoping process, please contact Joshua Wayland at the address provided above, or call the project line at 1-888-319-2337. For further information about the Board's environmental review process and the EIS, you may also visit the Board-sponsored project website at www.CP-KCSMergerEIS.com. We look forward to receiving your comments.

Sincerely,

Danielle Gosselin
Acting Director
Office of Environmental Analysis

SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

June 6, 2022

Melvin Tobin
Field Supervisor
USFWS Arkansas Ecological Field Office
110 South Amity Road
Suite 300
Conway, AR 72032
Melvin_Tobin@fws.gov

Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern Railway, et al.; **USFWS Informal Section 7 Consultation**

Dear Mr. Tobin:

As you may recall from my letter dated November 12, 2021, Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern Railway et al. (KCS) have filed an application with the Surface Transportation Board (Board) under 49 U.S.C. §§ 11323-25 seeking the Board's approval of the acquisition of control of KCS by CP (Proposed Acquisition). If the Board authorizes the Proposed Acquisition, CP and KCS (collectively, the Applicants) would combine to form an integrated system to be known as Canadian Pacific Kansas City (CPKC). The Board's Office of Environmental Analysis (OEA) is currently preparing a Draft Environmental Impact Statement (EIS) that assesses the potential environmental impacts of the Proposed Acquisition, pursuant to the National Environmental Policy Act (NEPA) and related environmental laws. The purpose of this letter is to request your written concurrence of OEA's determination of effects for the Proposed Acquisition on federally listed species, in accordance with Section 7(a)(2) of the Endangered Species Act (ESA) of 1973.

The Applicants expect that the Proposed Acquisition would cause average rail traffic to increase on certain rail lines within the combined CPKC network because freight would be diverted from rail lines owned by other railroad companies and from truck transportation to rail transportation. To accommodate the projected increase in rail traffic, the Applicants plan to make certain capital improvements within the existing rail right-of-way (ROW) if the Board authorizes the Proposed Acquisition. In Arkansas, those planned capital improvements would include adding one new passing siding and extending one existing siding. Construction activities associated with those capital improvements have the potential to affect federally listed threatened or endangered species if any are present within the existing rail ROW at the planned capital improvement locations. Maps of the planned capital improvement locations in Arkansas are appended to this letter.

Although OEA is evaluating the potential environmental impacts of the planned capital improvements as effects of the Proposed Acquisition, the Applicants would only add the capital improvements as needed to support increased rail traffic. Therefore, the Applicants have not completed detailed design and engineering and would not do so until after the Board has issued its final decision on the Proposed Acquisition. Accordingly, OEA's analysis of the potential impacts from constructing the planned capital improvements is based on largely conceptual design information, as well as conservative assumptions about how construction would proceed. OEA expects that all construction activity associated with the planned capital improvements would take place within the existing rail ROW.

In Arkansas, the planned capital improvements would include extending one existing siding and adding one new siding adjacent to the existing rail line, which would involve tree clearing, grading, and filling within the existing rail ROW. To be conservative, OEA assumed that each planned capital improvement could affect the entire area extending from the existing tracks to the edge of the rail ROW (study area), but the actual affected area would likely be smaller. The planned capital improvements could also involve replacing or extending existing railroad bridges and culverts to accommodate the new or extended siding.

OEA conducted field work in January 2022 to characterize the existing habitat at each planned capital improvement location. Prior to conducting field work, OEA used the USFWS Information for Planning and Consultation tool and correspondence from the Arkansas Natural Heritage Commission to determine the species of concern for each planned capital improvement location. Based on habitat-level field work, OEA identified suitable roosting and foraging habitat within the existing ROW for the northern long-eared bat (*Myotis septentrionalis*) and Indiana bat (*Myotis sodalis*) at both planned capital improvements in Arkansas. The Applicants have proposed multiple measures to protect the northern long-eared and Indiana bat during the construction of the planned capital improvements, as detailed in Attachment A to this letter. These measures include commitments to conduct tree clearing and work on structures that provide suitable roosting habitat outside of the active season (April 1 to October 31), as well as measures related to installing lighting. Based on the Applicants' voluntary commitments, OEA has determined that the Proposed Acquisition **may affect, but is not likely to adversely affect** the northern long-eared bat and Indiana bat.

The following species do not have suitable habitat within the rail ROW at any of the planned capital improvement locations: Arkansas fatmucket (*Lampsilis powelli*), Eastern black rail (*Laterallus jamaicensis*), gray bat (*Myotis grisescens*), Missouri bladderpod (*Physaria filiformis*), monarch butterfly (*Danaus plexippus*), Ozark big-eared bat (*Corynorhinus townsendii ingens*), Ozark cavefish (*Amblyopsis rosae*), piping plover (*Charadrius melodus*), rabbitsfoot (*Quadrula cylindrica cylindrica*), red knot (*Calidris canutus*), and red-cockaded woodpecker (*Leuconotopicus borealis*). Therefore, OEA has determined that the Proposed Acquisition would have **no effect** on these species**.** There is no critical habitat within any of the planned capital improvement locations in Arkansas. If you agree with these recommended determinations, please send your written concurrence.

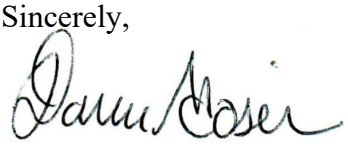
Please see **Table 1** below for a summary of ESA-listed species with suitable habitat and the attached maps showing suitable forested bat habitat and suitable bat roosting structures within the ROW of the planned capital improvement locations.

Table 1. ESA-listed species with suitable habitat at the planned capital improvement locations in Arkansas

Common and Scientific Name	Capital Improvement Location	Federal Status	Suitable Habitat	Recommended Effects Determination
Northern long-eared bat (*Myotis septentrionalis*)	Gentry (Benton County) MP 377 (Polk County)	Threatened (Proposed Endangered)	Suitable roosting and foraging habitat for the northern long-eared bat was present throughout the study area. Roosting habitat was identified in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. Foraging habitat was present in the canopy-enclosed flyways of forested edges of railroad ROW, adjacent roads, and throughout riparian corridors.	May affect, not likely to adversely affect
Indiana bat (*Myotis sodalis*)	Gentry (Benton County)	Endangered	Suitable summer roosting and foraging habitat for the Indiana bat was present throughout the study area. Summer roosting habitat was identified in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. Foraging habitat was present in the canopy-enclosed flyways of forested edges of railroad ROW, adjacent roads, and throughout riparian corridors.	May affect, not likely to adversely affect

We appreciate your review and assistance in the consultation process and look forward to hearing from you. For further information or questions, please contact Joshua Wayland at Joshua.Wayland@stb.gov or 202-245-0330. For further information about the Proposed Acquisition, you may also visit the Board-sponsored project website at www.CP-KCSMergerEIS.com.

Sincerely,



Danielle Gosselin
Director
Office of Environmental Analysis

ATTACHMENT A: NORTHERN LONG-EARED BAT AND INDIANA BAT VOLUNTARY MITIGATION MEASURES

Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern Railway et al. (KCS) (collectively, the Applicants) have voluntarily proposed the following measures to avoid impacts on northern long-eared bat and Indiana bat. If the Surface Transportation Board (Board) authorizes the Proposed Acquisition of KCS by CP, the Applicants, their employees, and their contractors would be required to strictly adhere to these measures during construction of planned capital improvements related to the Proposed Acquisition, as well as any additional mitigation measures recommended by the Board's Office of Environmental Analysis (OEA) and imposed by the Board in its final decision.

- The Applicants will not conduct construction-related tree removal for the planned capital improvements during the active season for the Indiana bat and the northern long-eared bat (April 1 to October 31).

- During the construction of the planned capital improvements, the Applicants will take steps to reduce the unnecessary removal of bat habitat outside of active bat season by limiting tree removal to only the areas necessary to safely construct and operate the new siding or second track, marking the limits of tree clearing through the use of flagging or fencing, and ensuring that construction contractors understand clearing limits and how they are marked in the field.

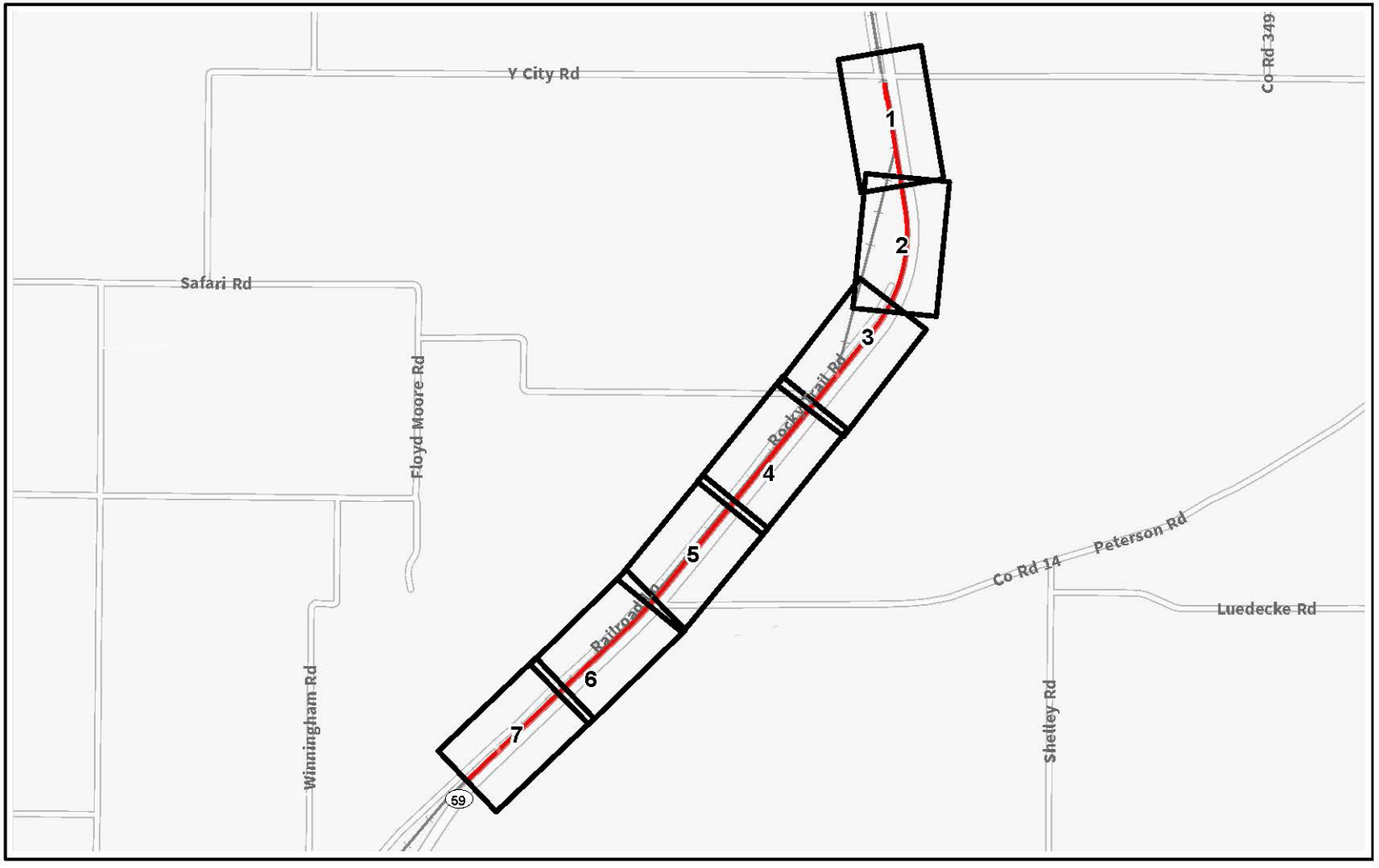
- Where practicable, the Applicants will conduct any culvert or bridge removal as part of the planned capital improvements outside of the roosting period of bat species, specific to each planned capital improvement location. Where practicable, if bridge or culvert removal is required during the bat roosting period where the individual planned capital improvement is located, the Applicants will consult with OEA and the local office of the U.S. Fish and Wildlife Service (USFWS) on appropriate methods to determine if bats are using the bridge or culvert as a roost.

- If construction of the planned capital improvements would require removal or alteration of bridges, culverts, or other structures that provide suitable habitat for the northern long-eared bat or the Indiana bat during the active season for those species (April 1 to October 31), the Applicants will first conduct an inspection for the presence of or evidence of use by bats. The inspection will be completed by a qualified biologist. If the inspection finds bats or evidence of bats, then the Applicants will not commence work on the structure until coordinating with OEA and USFWS to determine appropriate follow-up or mitigative actions. The inspection must be completed during the same year that the work takes place.

- During construction of the planned capital improvements, the Applicants will direct any temporary lighting away from suitable habitat for the northern long-eared bat or the

Indiana bat during the active season for those species (April 1 to October 31). The Applicants will use downward-facing, full cut-off lens lights for any temporary lighting used during the construction of the planned capital improvements.

- If the planned capital improvements would involve installing any new, or replacing any existing, permanent lights, the Applicants will use downward-facing, full cut-off lens lights (with the same intensity or less for replacement lighting).



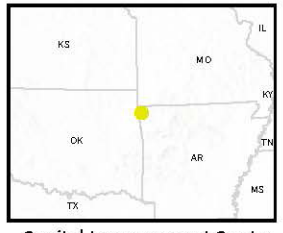
Capital Improvement Location

Page Index

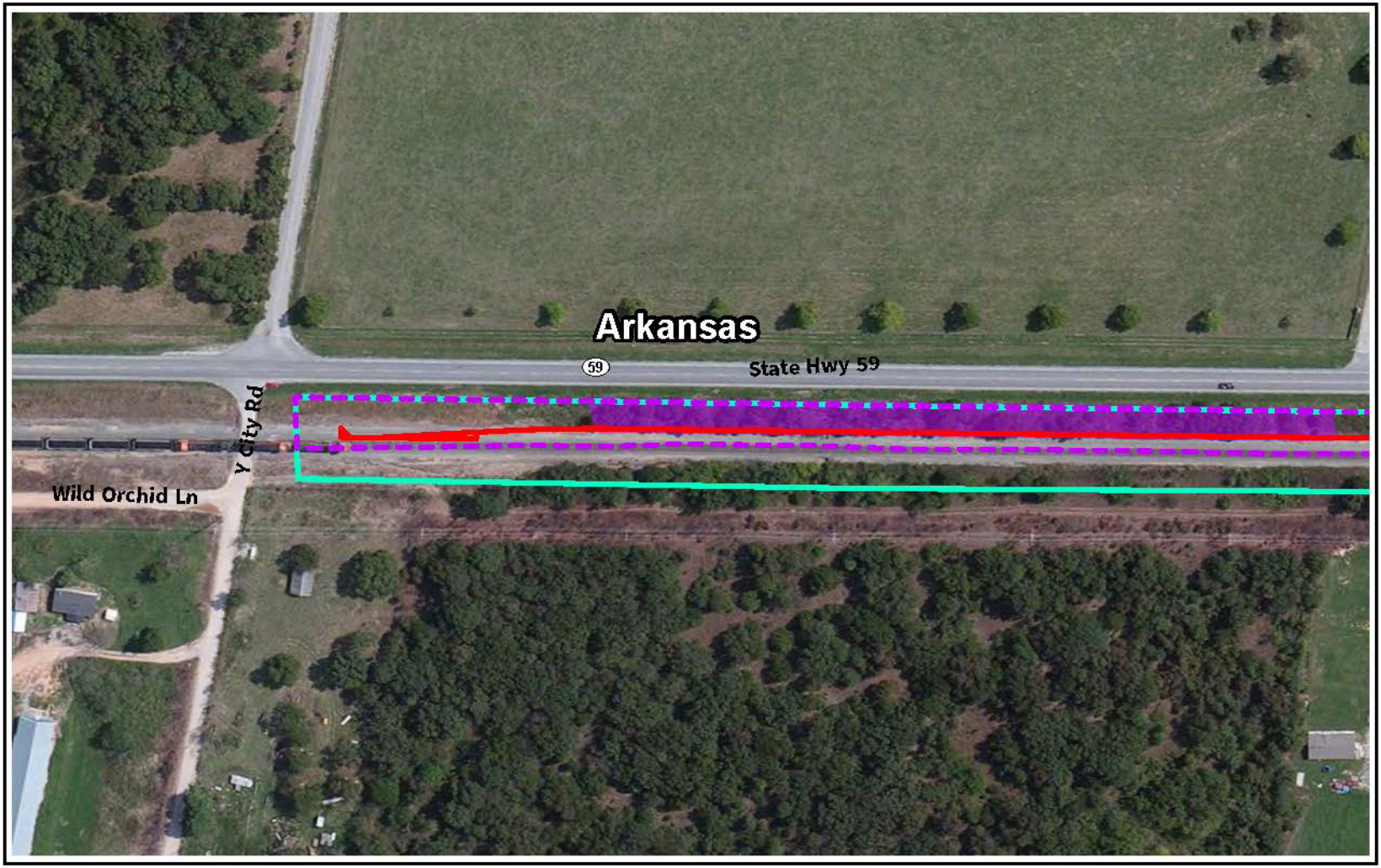
N

0 2000 4000 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Gentry
Benton, Arkansas | Page Index



Study Area

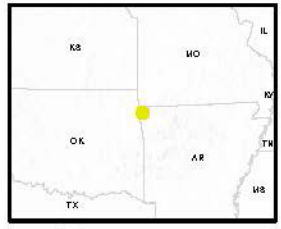
Capital Improvement Location

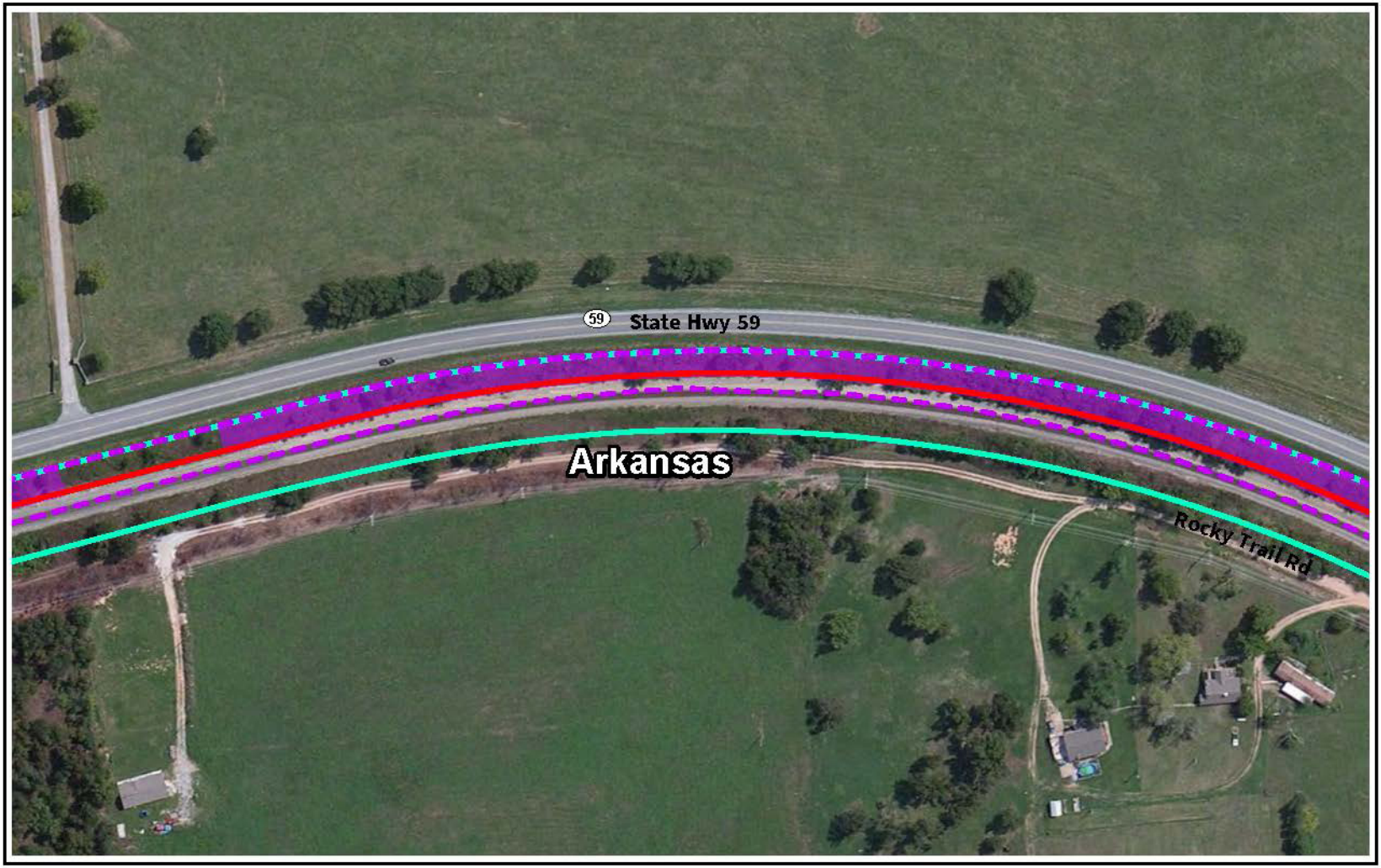
Existing Right-of-Way

Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

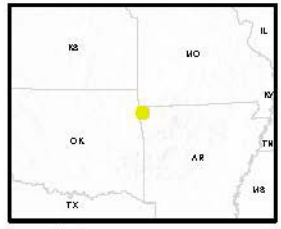
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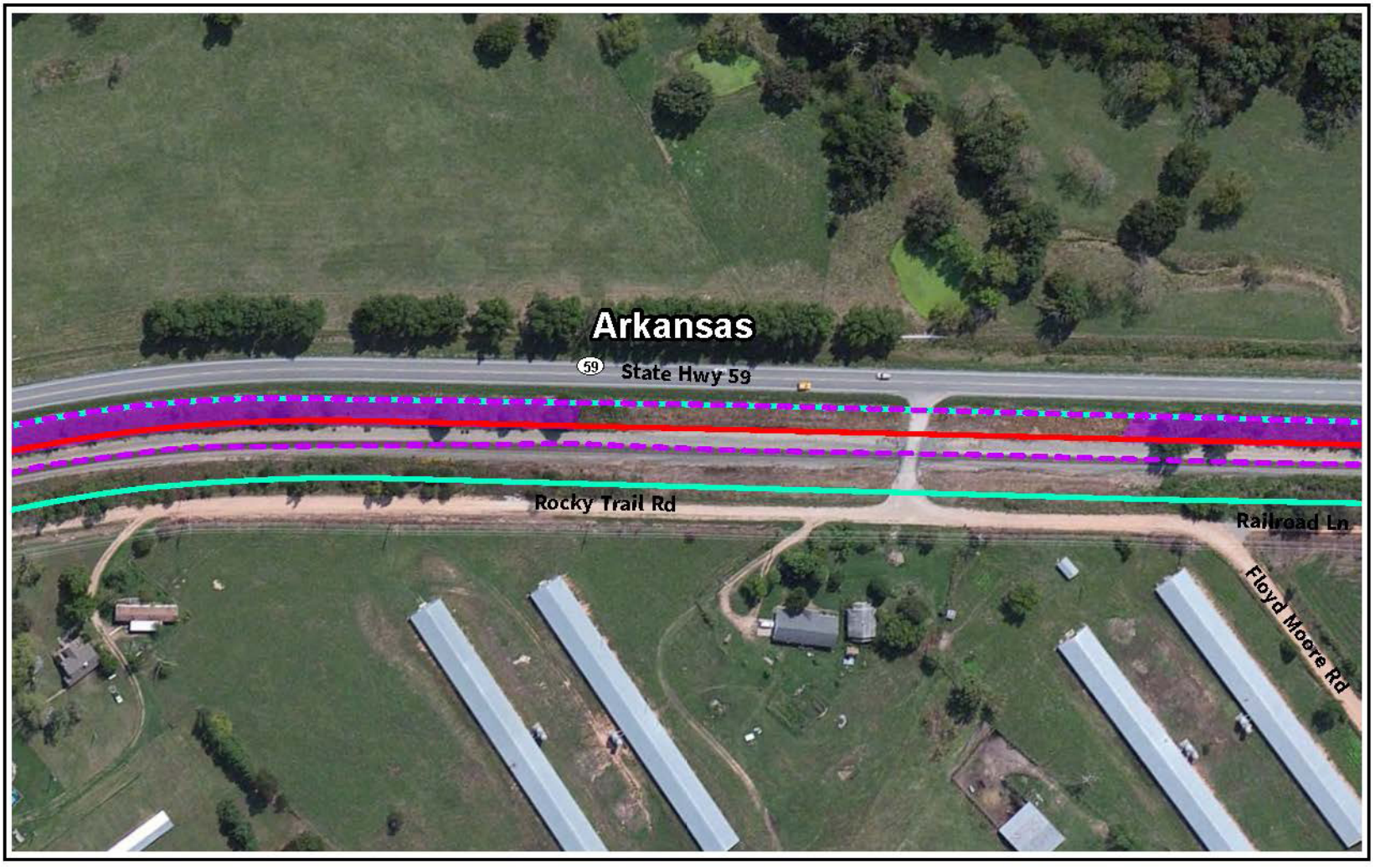
Existing Right-of-Way

Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

Suitable Forested Bat Habitat

Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

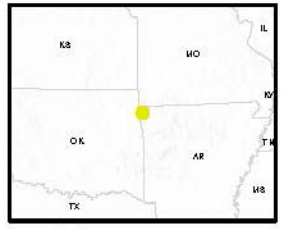
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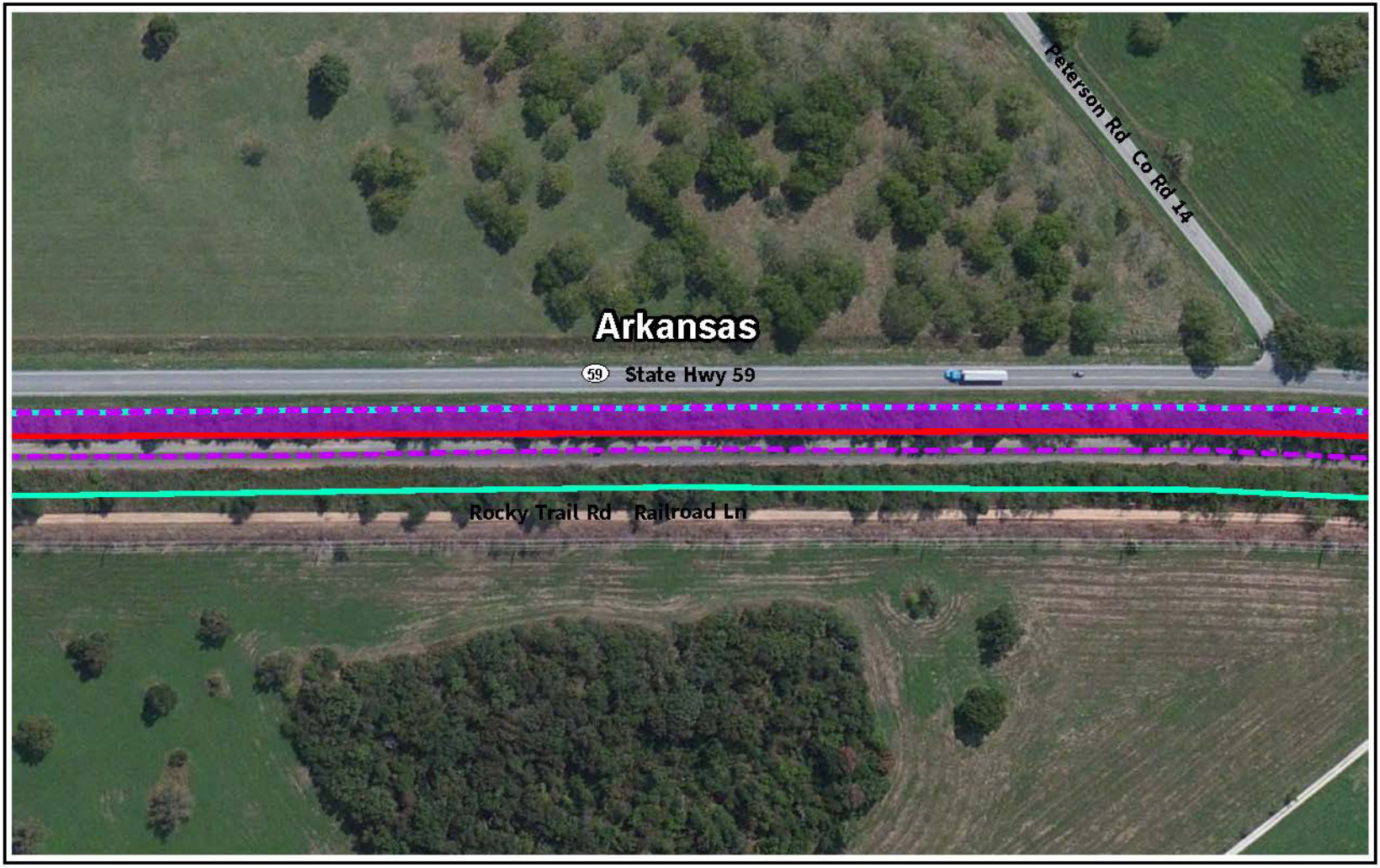
Existing Right-of-Way

Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

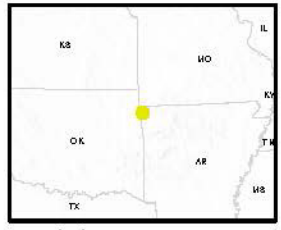
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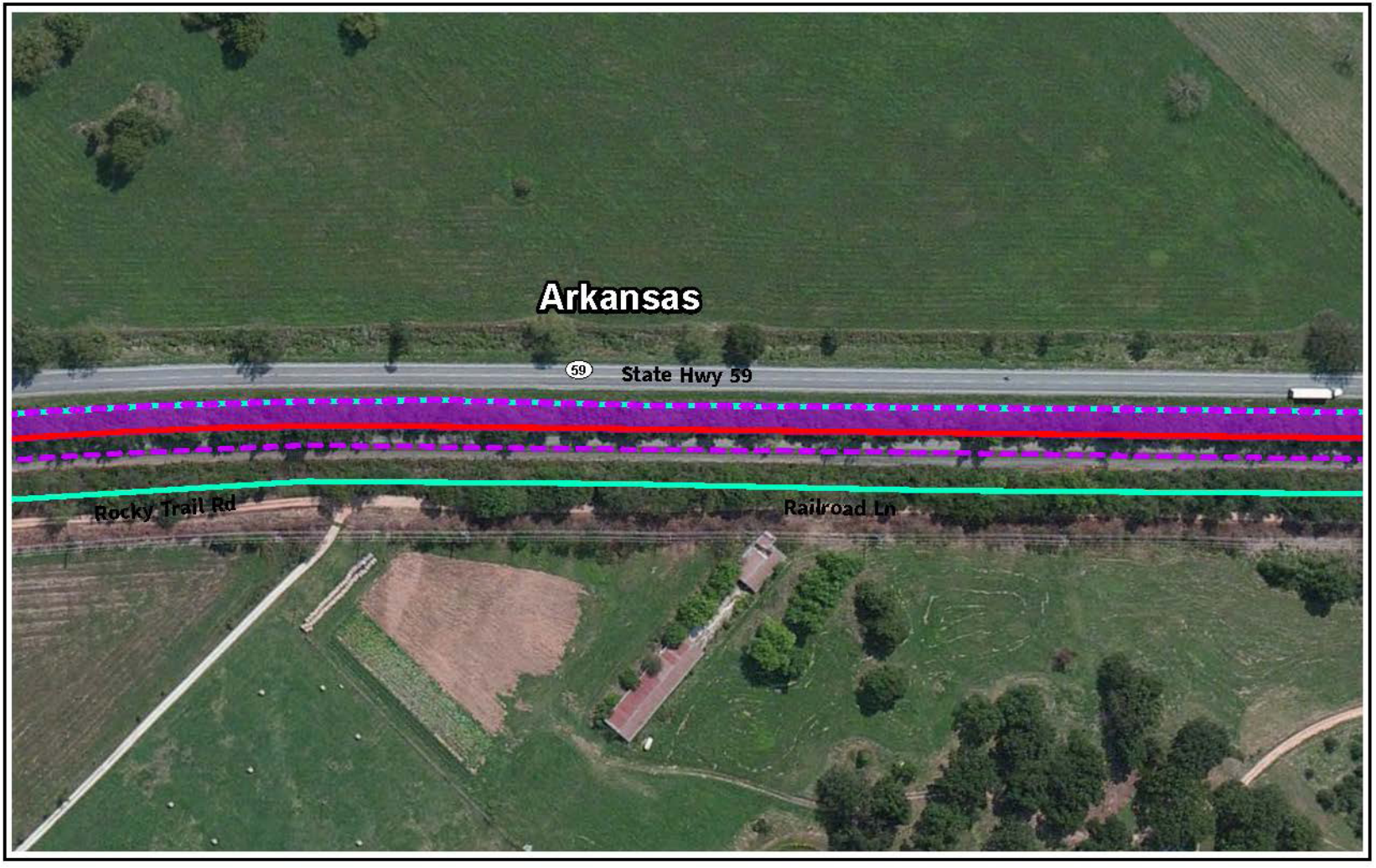
Existing Right-of-Way

Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

Capital Improvement Location

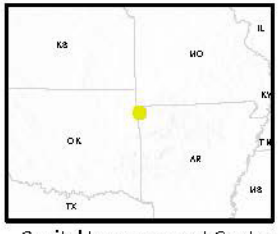
Existing Right-of-Way

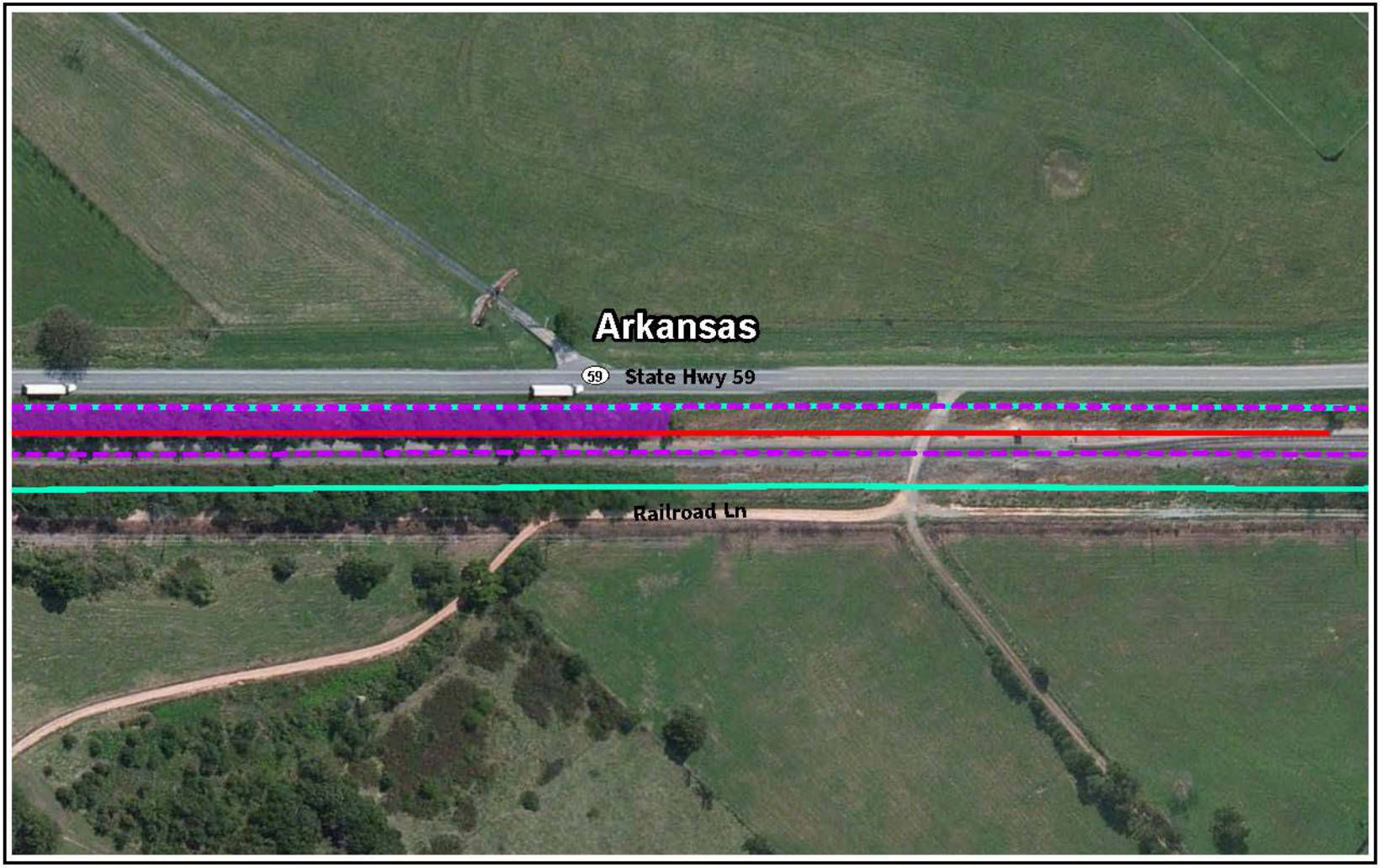
Suitable Forested Bat Habitat

0 200 400

Feet

Source: FRA, CP, ArcGIS Online





Study Area

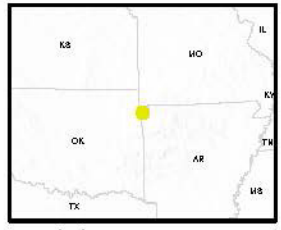
Suitable Forested Bat Habitat

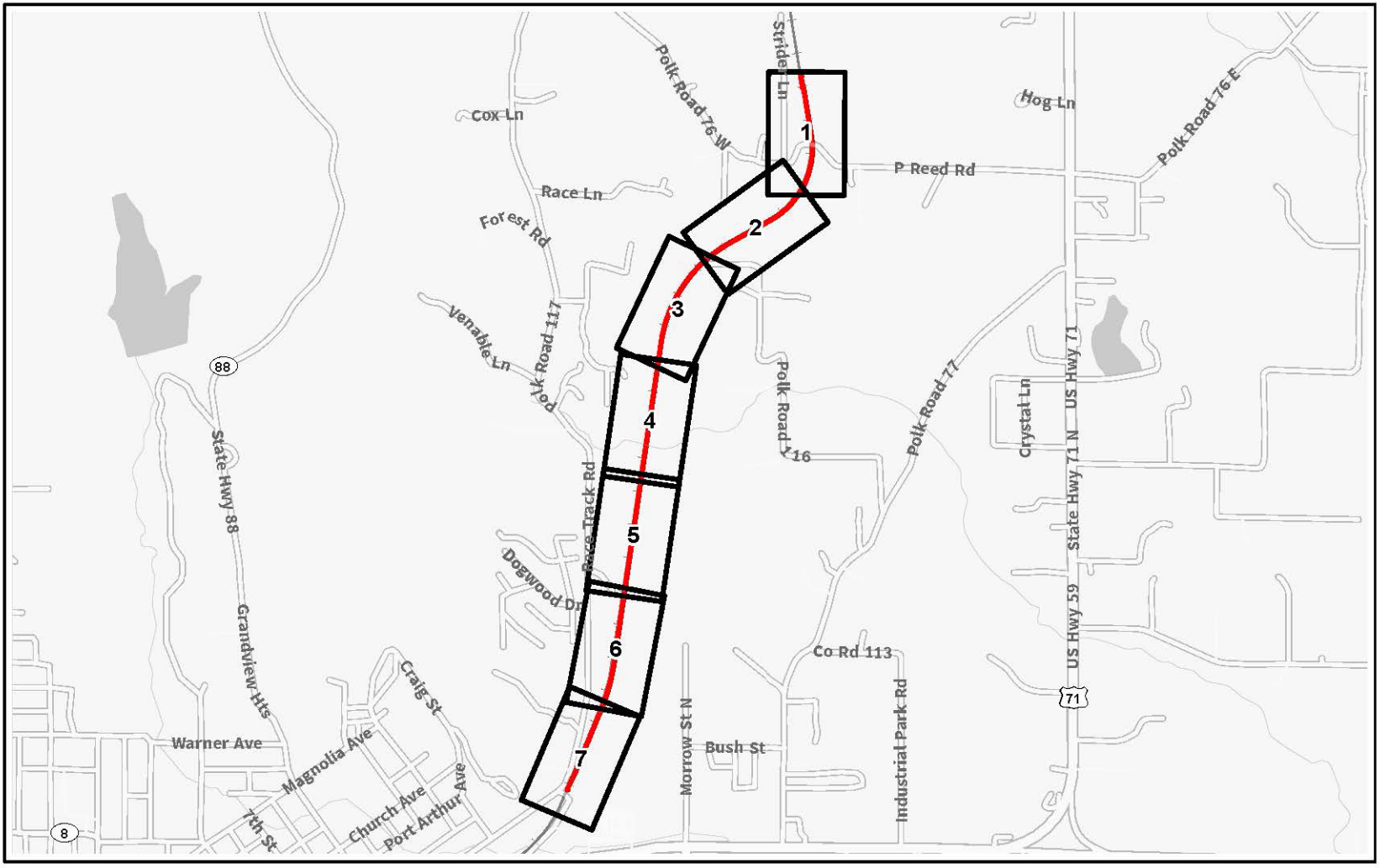
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





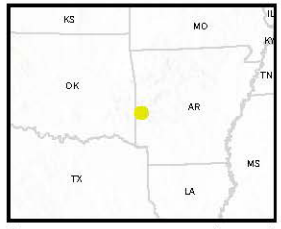
Capital Improvement Location

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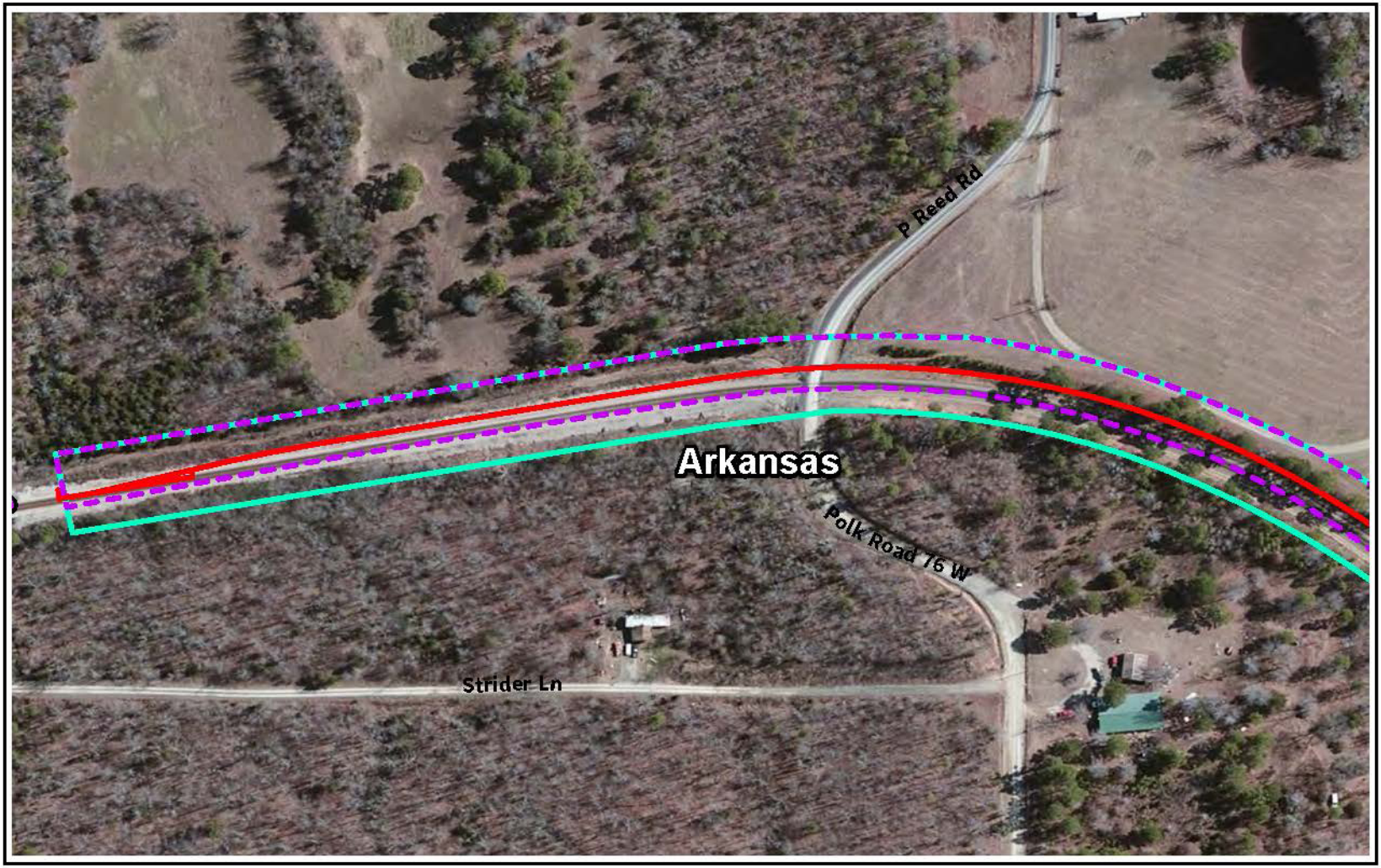
N

0 2200 4400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 377 (Mena)
Polk, Arkansas | Page Index



Study Area

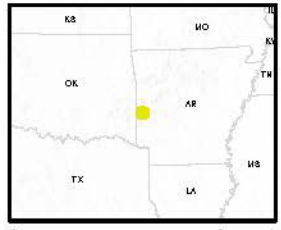
Capital Improvement Location

Existing Right-of-Way

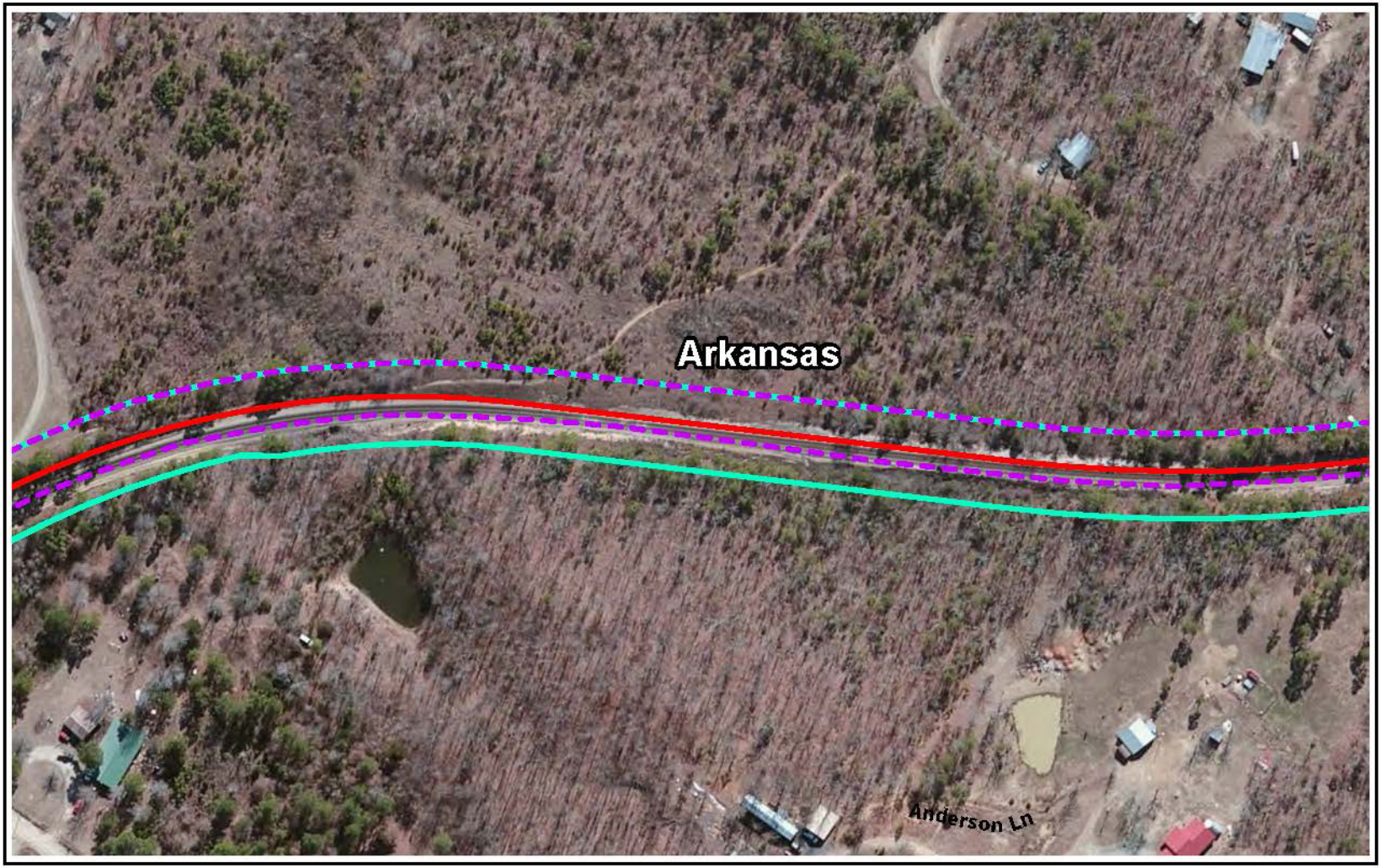
Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 377 (Mena)
Polk, Arkansas | Page 1 of 7



Study Area

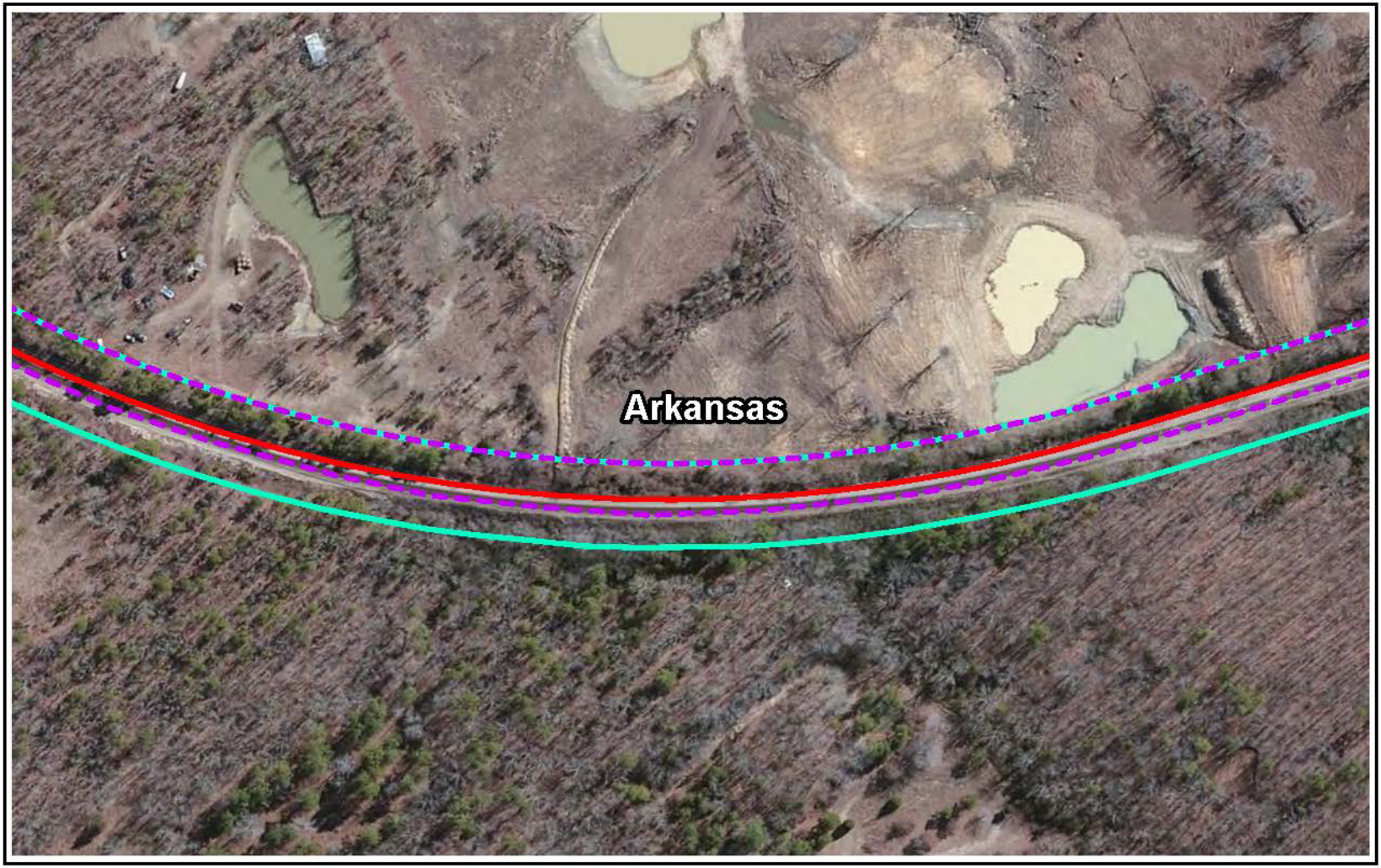
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

Capital Improvement Location

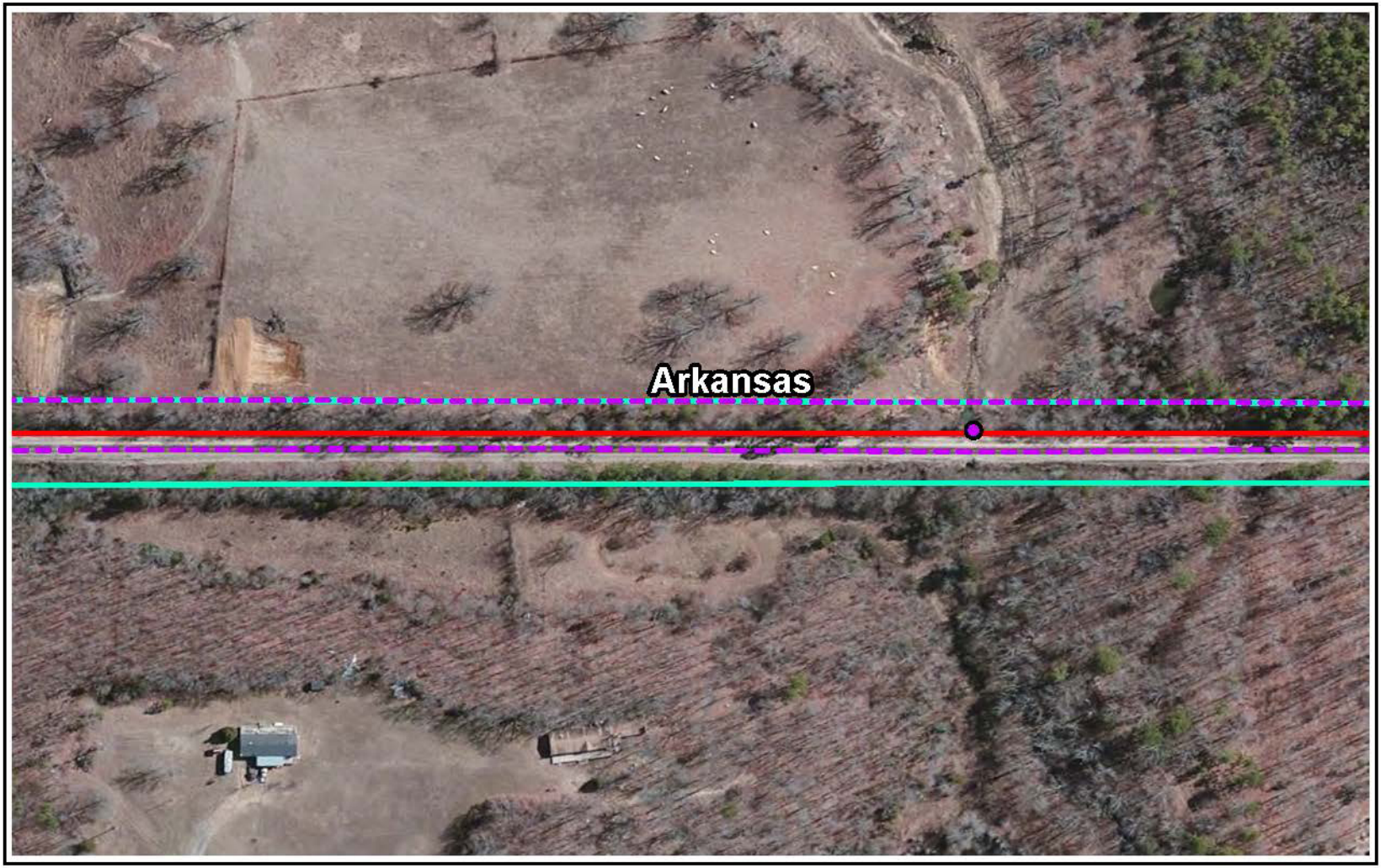
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 377 (Mena)
Polk, Arkansas | Page 3 of 7



Study Area

Capital Improvement Location

Existing Right-of-Way

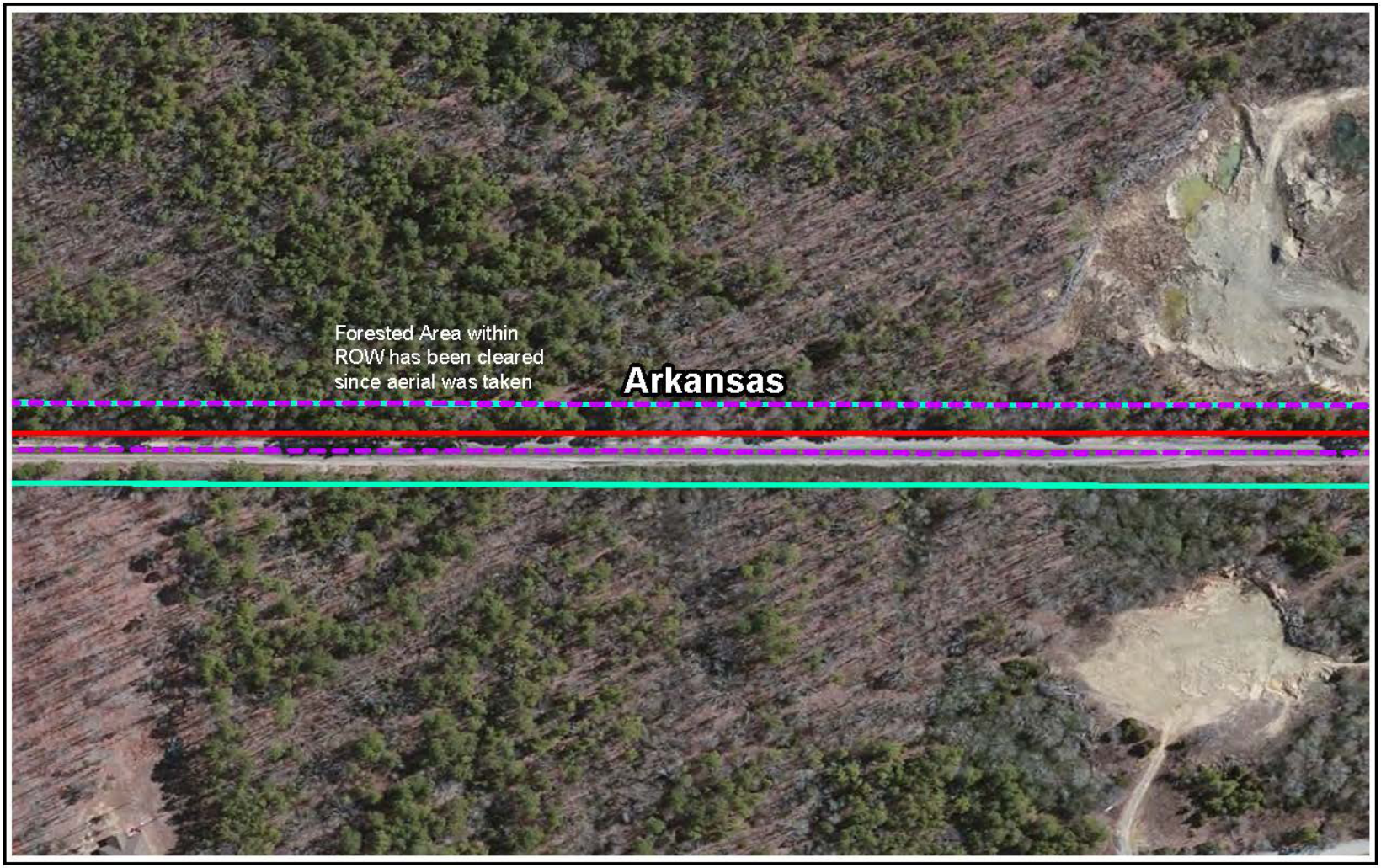
Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 377 (Mena)
Polk, Arkansas | Page 4 of 7



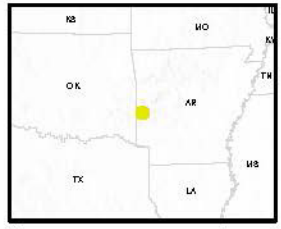
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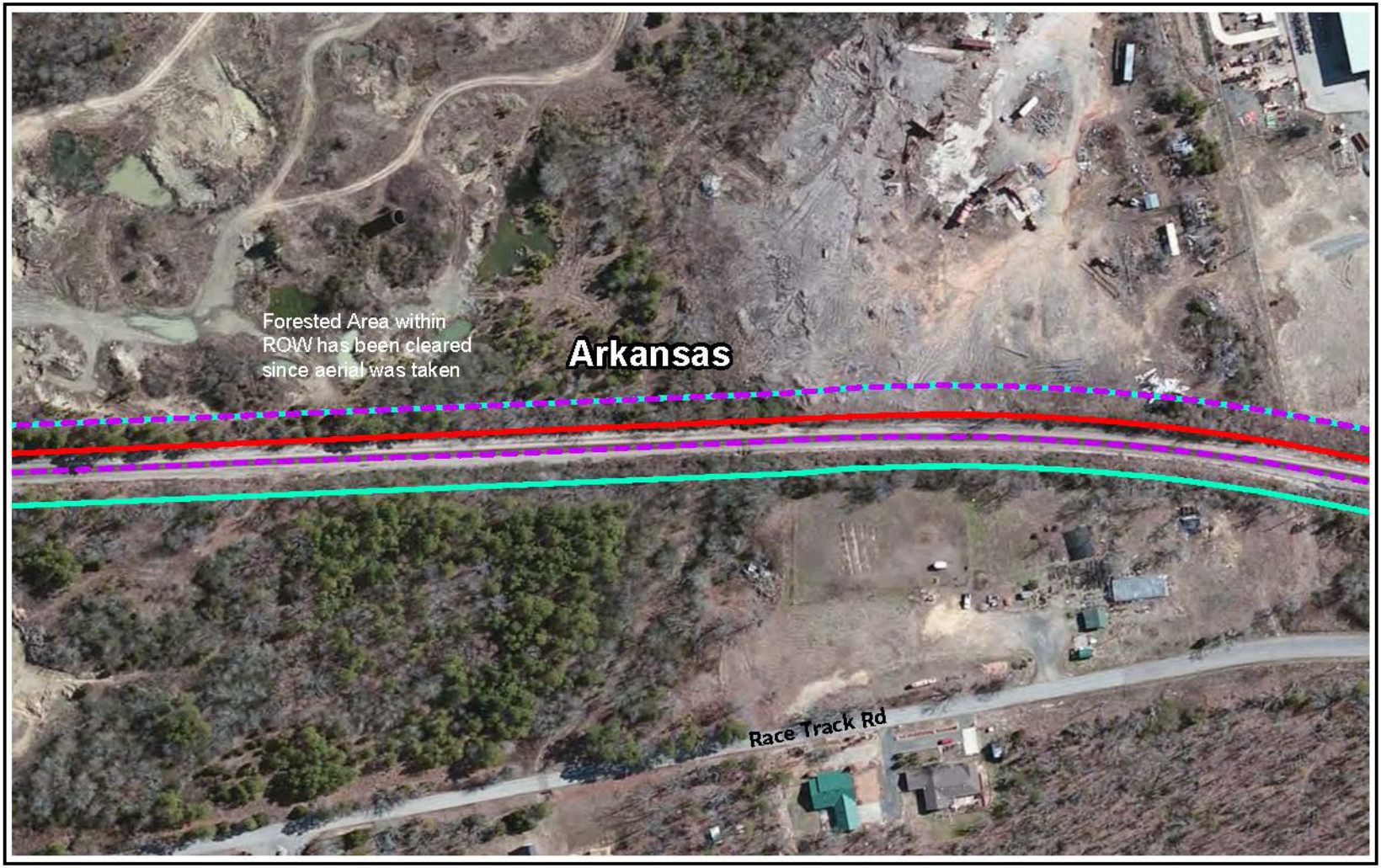
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





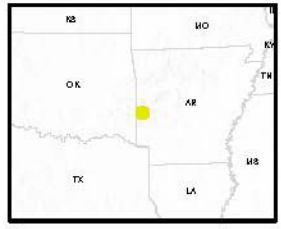
Study Area

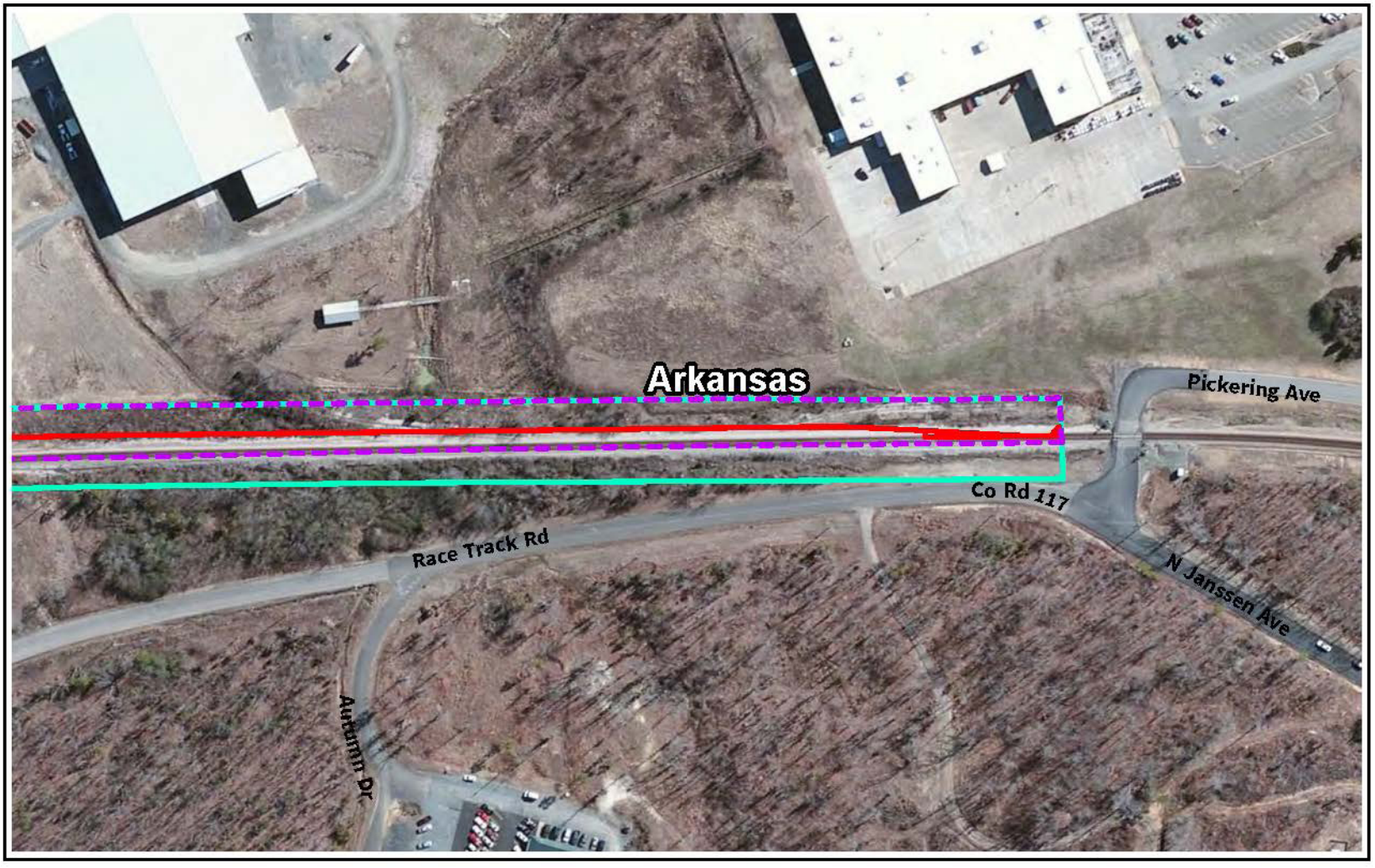
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

June 6, 2022

Aleshia Kenney
Fish and Wildlife Biologist
USFWS Illinois-Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265
Aleshia_Kenney@fws.gov

Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern Railway, et al.; **USFWS Informal Section 7 Consultation**

Dear Ms. Kenney:

As you may recall from my letter dated November 12, 2021, Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern Railway et al. (KCS) have filed an application with the Surface Transportation Board (Board) under 49 U.S.C. §§ 11323-25 seeking the Board's approval of the acquisition of control of KCS by CP (Proposed Acquisition). If the Board authorizes the Proposed Acquisition, CP and KCS (collectively, the Applicants) would combine to form an integrated system to be known as Canadian Pacific Kansas City (CPKC). The Board's Office of Environmental Analysis (OEA) is currently preparing a Draft Environmental Impact Statement (EIS) that assesses the potential environmental impacts of the Proposed Acquisition, pursuant to the National Environmental Policy Act (NEPA) and related environmental laws. The purpose of this letter is to request your written concurrence of OEA's determination of effects for the Proposed Acquisition on federally listed species, in accordance with Section 7(a)(2) of the Endangered Species Act (ESA) of 1973.

The Applicants expect that the Proposed Acquisition would cause average rail traffic to increase on certain rail lines within the combined CPKC network because freight would be diverted from rail lines owned by other railroad companies and from truck transportation to rail transportation. To accommodate the projected increase in rail traffic, the Applicants plan to make certain capital improvements within the existing rail right-of-way (ROW) if the Board authorizes the Proposed Acquisition. In Iowa and Illinois, those planned capital improvements would include adding five new passing sidings and extending four existing sidings. Construction activities associated with those capital improvements have the potential to affect federally listed threatened or endangered species, if any are present within the existing rail ROW at the planned capital improvement locations. Maps of the planned capital improvement locations in Illinois and Iowa are appended to this letter.

Although OEA is evaluating the potential environmental impacts of the planned capital improvements as effects of the Proposed Acquisition, the Applicants would only add the capital improvements as needed to support increased rail traffic. Therefore, the Applicants have not completed detailed design and engineering and would not do so until after the Board has issued its final decision on the Proposed Acquisition. Accordingly, OEA's analysis of the potential impacts from constructing the planned capital improvements is based on largely conceptual design information, as well as conservative assumptions about how construction would proceed. OEA expects that all construction activity associated with the planned capital improvements would take place within the existing rail ROW.

In Iowa, the planned capital improvements would include extending four existing sidings and adding four new sidings adjacent to the existing rail line, which would involve tree clearing, grading, and filling within the existing rail ROW. To be conservative, OEA assumed that each planned capital improvement could affect the entire area extending from the existing tracks to the edge of the rail ROW (study area), but the actual affected area would likely be smaller. The planned capital improvements could also involve replacing or extending existing railroad bridges and culverts to accommodate the new or extended siding.

In Illinois, the single planned new siding would be located within the footprint of a second railroad track that used to extend adjacent to the mainline but has since been removed. Therefore, the planned new siding in Illinois would be located within a previously disturbed area and would not result in any new impacts on habitats, plants, or wildlife.

OEA conducted field work in January 2022 to characterize the existing habitat at each planned capital improvement location. Prior to conducting field work, OEA used the USFWS Information for Planning and Consultation tool and correspondence from the Iowa Department of Natural Resources and Illinois Department of Natural Resources to determine the species of concern for each planned capital improvement location. Based on habitat-level field work, OEA identified suitable roosting and foraging habitat within the existing ROW for the northern long-eared bat (*Myotis septentrionalis*) and Indiana bat (*Myotis sodalis*) at each of the eight planned capital improvements in Iowa. The Applicants have proposed multiple measures to protect the northern long-eared and Indiana bat during the construction of the planned capital improvements, as detailed in Attachment A to this letter. These measures include commitments to conduct tree clearing and work on structures that provide suitable roosting habitat outside of the active season (April 1 to October 31), as well as measures related to installing lighting. Based on the Applicants' voluntary commitments, OEA has determined that the Proposed Acquisition **may affect, but is not likely to adversely affect** the northern long-eared bat and Indiana bat.

The following species do not have suitable habitat within the rail ROW at any of the planned capital improvement locations: Eastern massasauga (*Sistrurus catenatus*), eastern prairie fringed orchid (*Platanthera leucophaea*), Higgins eye pearlymussel (*Lampsilis higginsii*), Iowa pleistocene snail (*Discus macclintocki*), monarch butterfly (*Danaus plexippus*), northern wild monkshood (*Aconitum noveboracense*), prairie bush-clover (*Lespedeza leptostachya*), sheepnose mussel (*Plethobasus cyphyus*), spectaclecase (*Cumberlandia monodonta*), and western prairie fringed orchid (*Platanthera praeclara*). Therefore, OEA has determined that the Proposed Acquisition would have **no effect** on these species**.** There is no critical habitat within any of the

planned capital improvement locations in Iowa and Illinois. If you agree with these recommended determinations, please send your written concurrence.

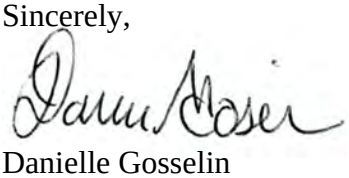
Please see **Table 1** below for a summary of ESA-listed species with suitable habitat and the attached maps showing suitable forested bat habitat and suitable bat roosting structures within the ROW of the planned capital improvement locations.

Table 1. ESA-listed species with suitable habitat at the planned capital improvement locations in Iowa

Common and Scientific Name	**Capital Improvement Location**	**Federal Status**	**Suitable Habitat**	**Recommended Effects Determination**
Northern long-eared bat (*Myotis septentrionalis*)	MP 71 (Clayton County) MP 24 (Jackson County) Deer Creek (Clinton County) Camanche (Clinton County) Letts (Louisa County) MP 255 (Washington County) Ottumwa (Wapello County) Moravia (Monroe County)	Threatened (Proposed Endangered)	Suitable roosting and foraging habitat for the northern long-eared bat was present throughout the study area. Roosting habitat was identified in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. Foraging habitat was present in the canopy-enclosed flyways of forested edges of railroad ROW, adjacent roads, and throughout riparian corridors.	May affect, not likely to adversely affect
Indiana bat (*Myotis sodalis*)	Letts (Louisa County) MP 255 (Washington County) Ottumwa (Wapello County) Moravia (Monroe County)	Endangered	Suitable summer roosting and foraging habitat for the Indiana bat was present throughout the study area. Summer roosting habitat was identified in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. Foraging habitat was present in the canopy-enclosed flyways of forested edges of railroad ROW, adjacent roads, and throughout riparian corridors.	May affect, not likely to adversely affect

We appreciate your review and assistance in the consultation process and look forward to hearing from you. For further information or questions, please contact Joshua Wayland at Joshua.Wayland@stb.gov or 202-245-0330. For further information about the Proposed Acquisition, you may also visit the Board-sponsored project website at www.CP-KCSMergerEIS.com.

Sincerely,



Danielle Gosselin
Director
Office of Environmental Analysis

ATTACHMENT A: NORTHERN LONG-EARED BAT AND INDIANA BAT VOLUNTARY MITIGATION MEASURES

Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern Railway et al. (KCS) (collectively, the Applicants) have voluntarily proposed the following measures to avoid impacts on northern long-eared bat and Indiana bat. If the Surface Transportation Board (Board) authorizes the Proposed Acquisition of KCS by CP, the Applicants, their employees, and their contractors would be required to strictly adhere to these measures during construction of planned capital improvements related to the Proposed Acquisition, as well as any additional mitigation measures recommended by the Board's Office of Environmental Analysis (OEA) and imposed by the Board in its final decision.

- The Applicants will not conduct construction-related tree removal for the planned capital improvements during the active season for the Indiana bat and the northern long-eared bat (April 1 to October 31).

- During the construction of the planned capital improvements, the Applicants will take steps to reduce the unnecessary removal of bat habitat outside of active bat season by limiting tree removal to only the areas necessary to safely construct and operate the new siding or second track, marking the limits of tree clearing through the use of flagging or fencing, and ensuring that construction contractors understand clearing limits and how they are marked in the field.

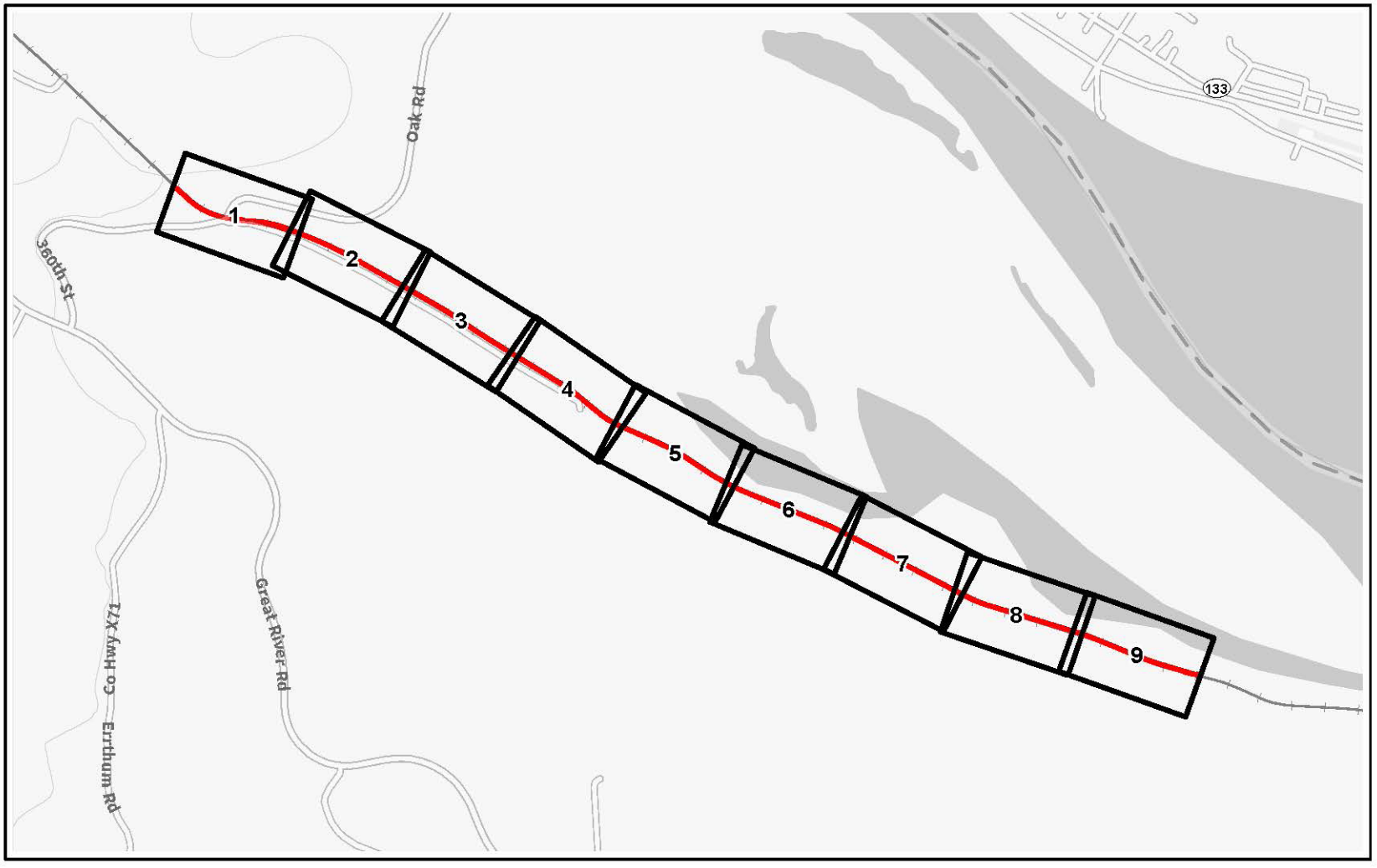
- Where practicable, the Applicants will conduct any culvert or bridge removal as part of the planned capital improvements outside of the roosting period of bat species, specific to each planned capital improvement location. Where practicable, if bridge or culvert removal is required during the bat roosting period where the individual planned capital improvement is located, the Applicants will consult with OEA and the local office of the U.S. Fish and Wildlife Service (USFWS) on appropriate methods to determine whether bats are using the bridge or culvert as a roost.

- If construction of the planned capital improvements would require removal or alteration of bridges, culverts, or other structures that provide suitable habitat for the northern long-eared bat or the Indiana bat during the active season for those species (April 1 to October 31), the Applicants will first conduct an inspection for the presence of or evidence of use by bats. The inspection will be completed by a qualified biologist. If the inspection finds bats or evidence of bats, then the Applicants will not commence work on the structure until coordinating with OEA and USFWS to determine appropriate follow-up or mitigative actions. The inspection must be completed during the same year that the work takes place.

- During construction of the planned capital improvements, the Applicants will direct any temporary lighting away from suitable habitat for the northern long-eared bat or the Indiana bat during the active season for those species (April 1 to October 31). The

Applicants will use downward-facing, full cut-off lens lights for any temporary lighting used during the construction of the planned capital improvements.

- If the planned capital improvements would involve installing any new, or replacing any existing, permanent lights, the Applicants will use downward-facing, full cut-off lens lights (with the same intensity or less for replacement lighting).



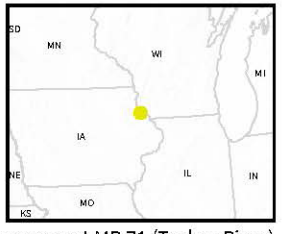
Capital Improvement Location

Page Index

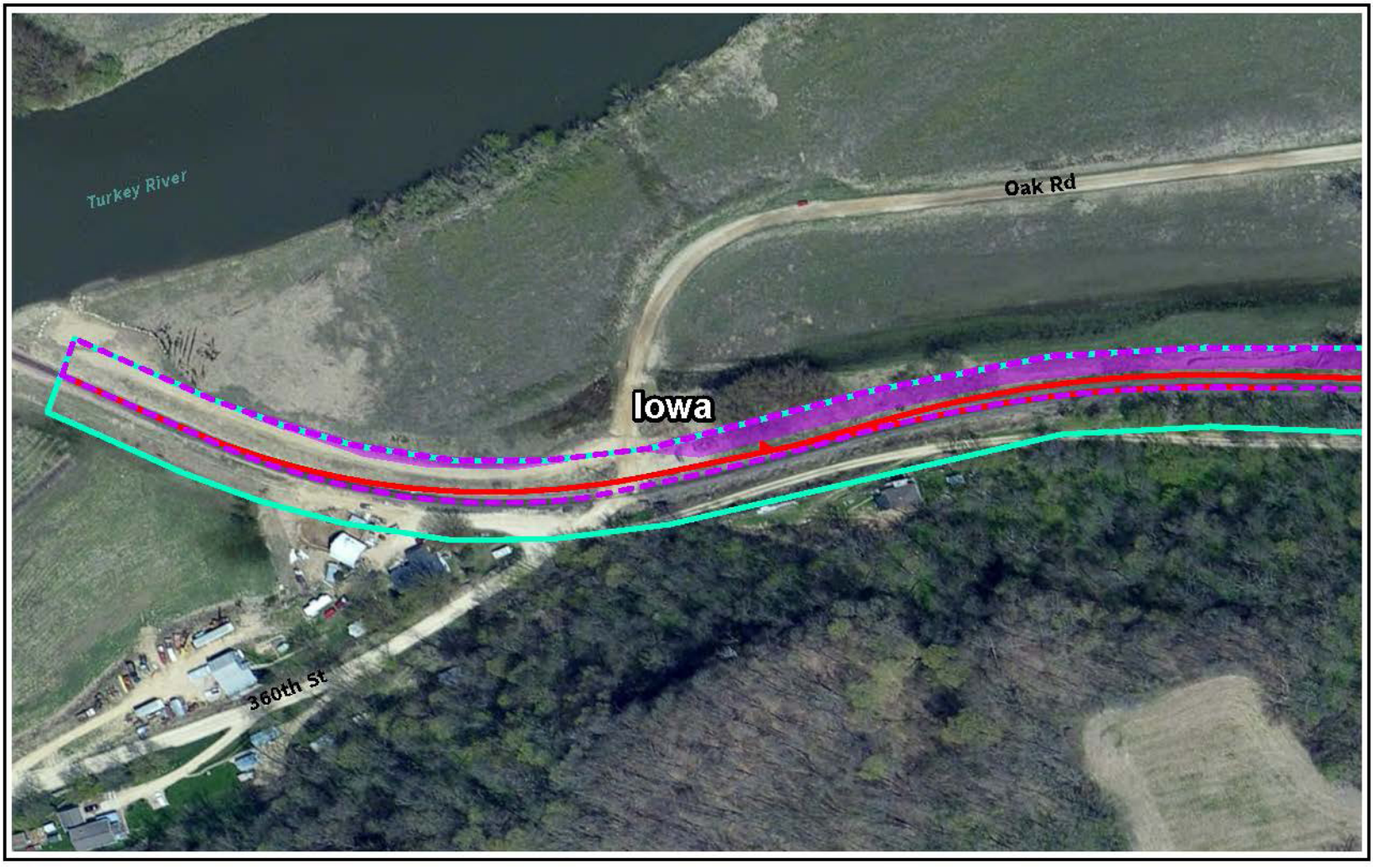
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0 2000 4000 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Page Index



Study Area

Capital Improvement Location

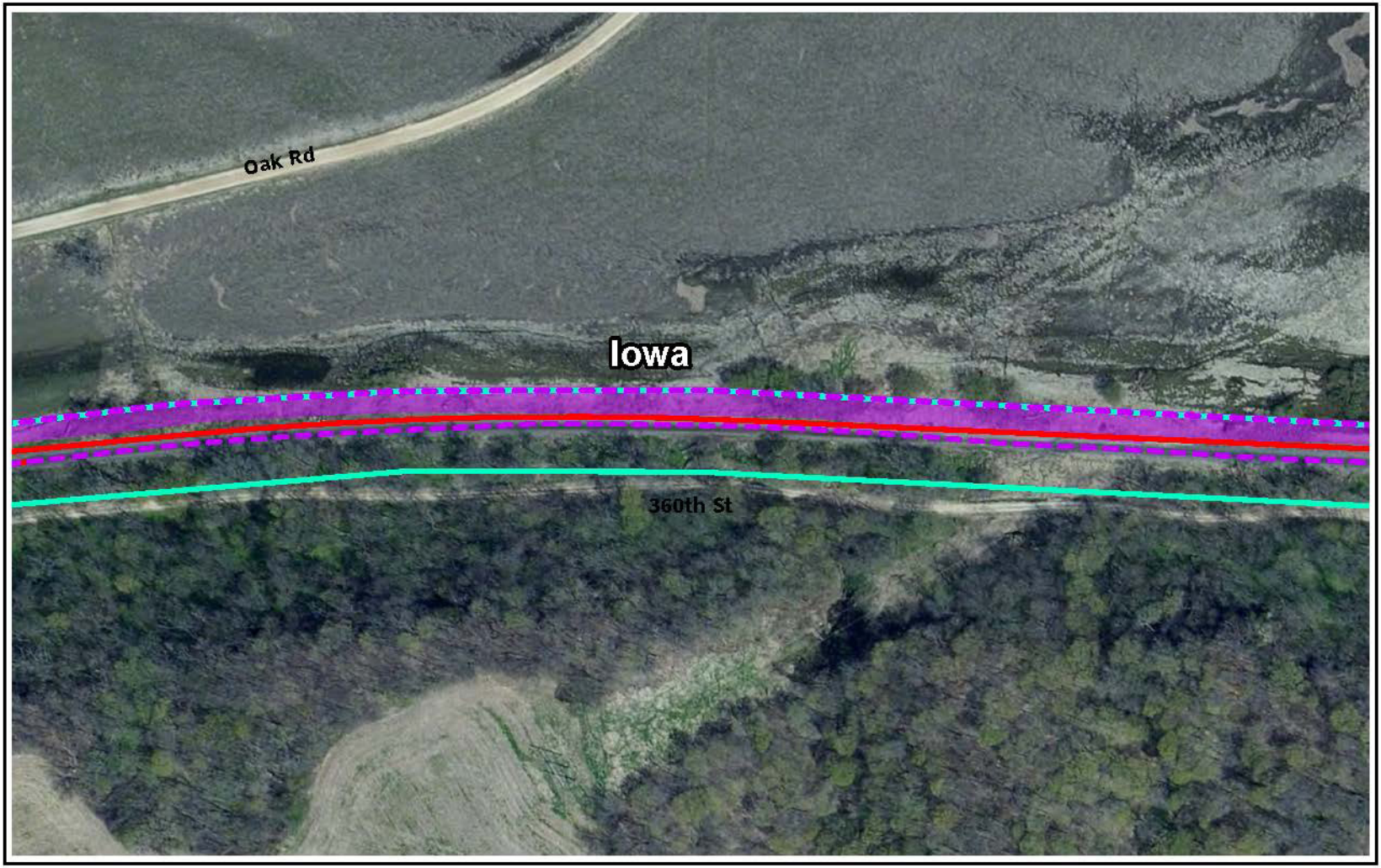
Existing Right-of-Way

Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Page 1 of 9



Study Area

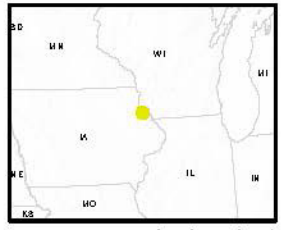
Capital Improvement Location

Existing Right-of-Way

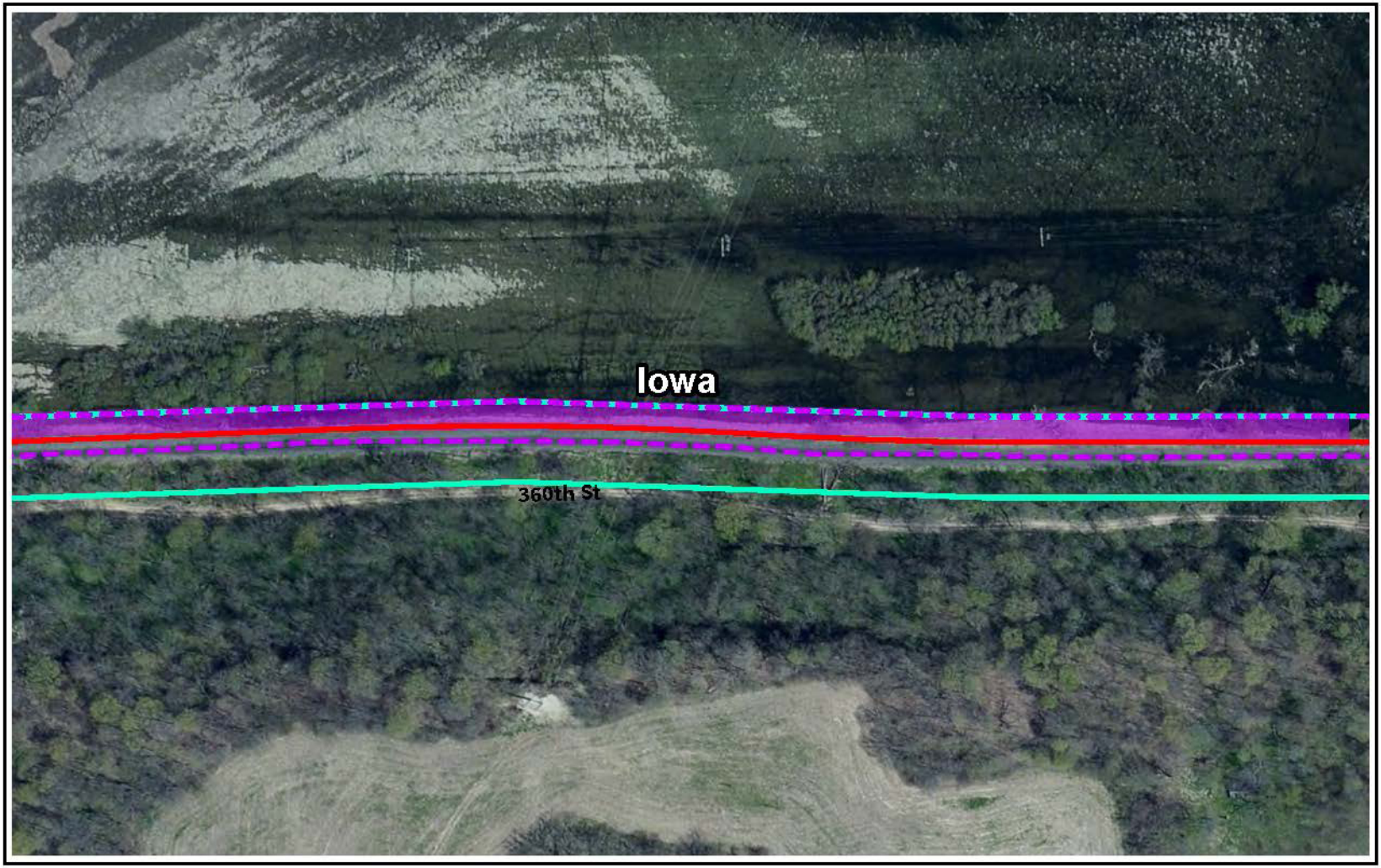
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Page 2 of 9



Study Area

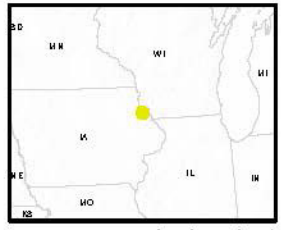
Capital Improvement Location

Existing Right-of-Way

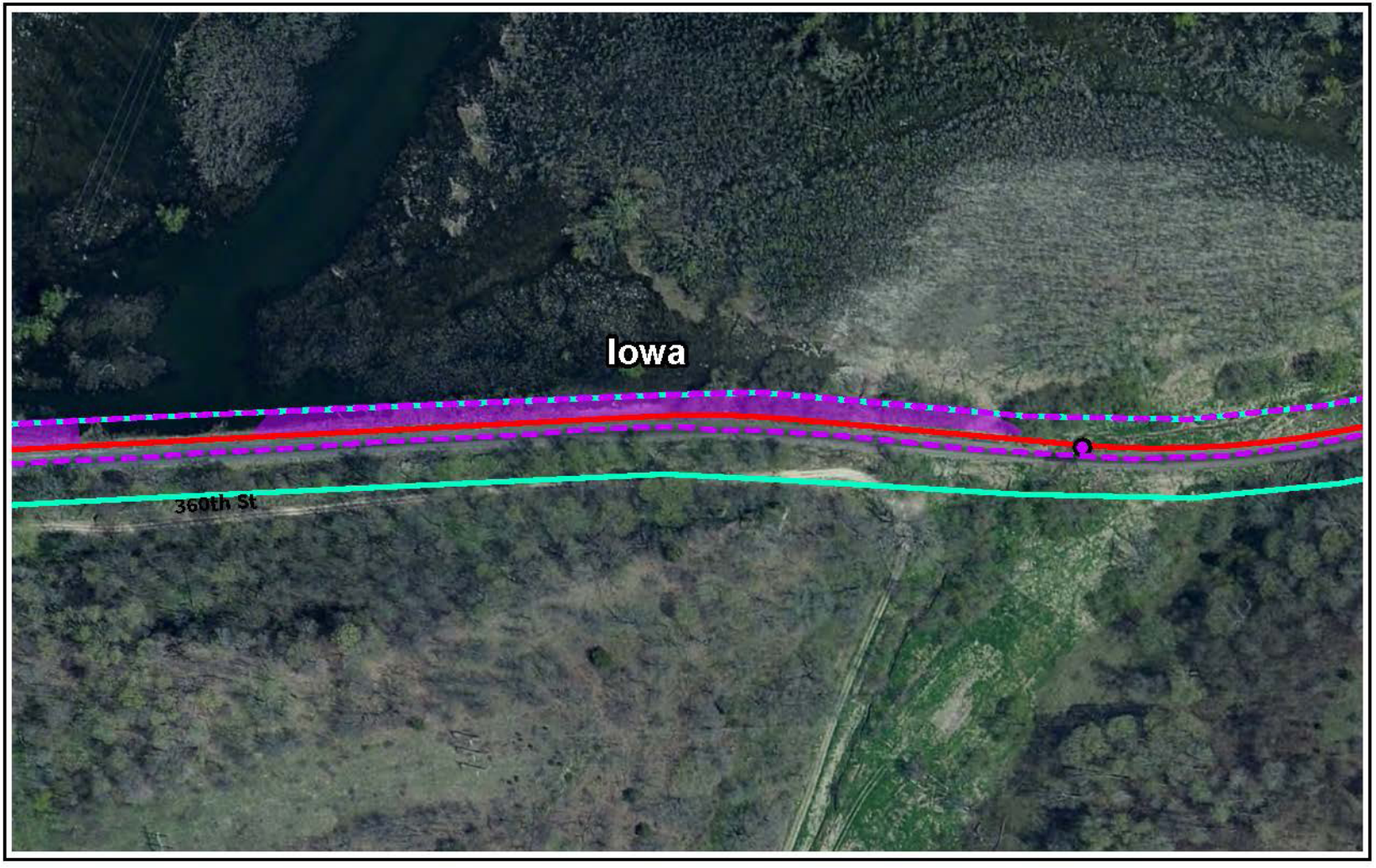
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



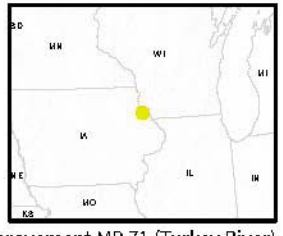
Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Page 3 of 9



Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



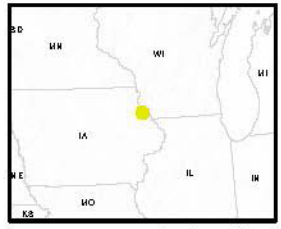
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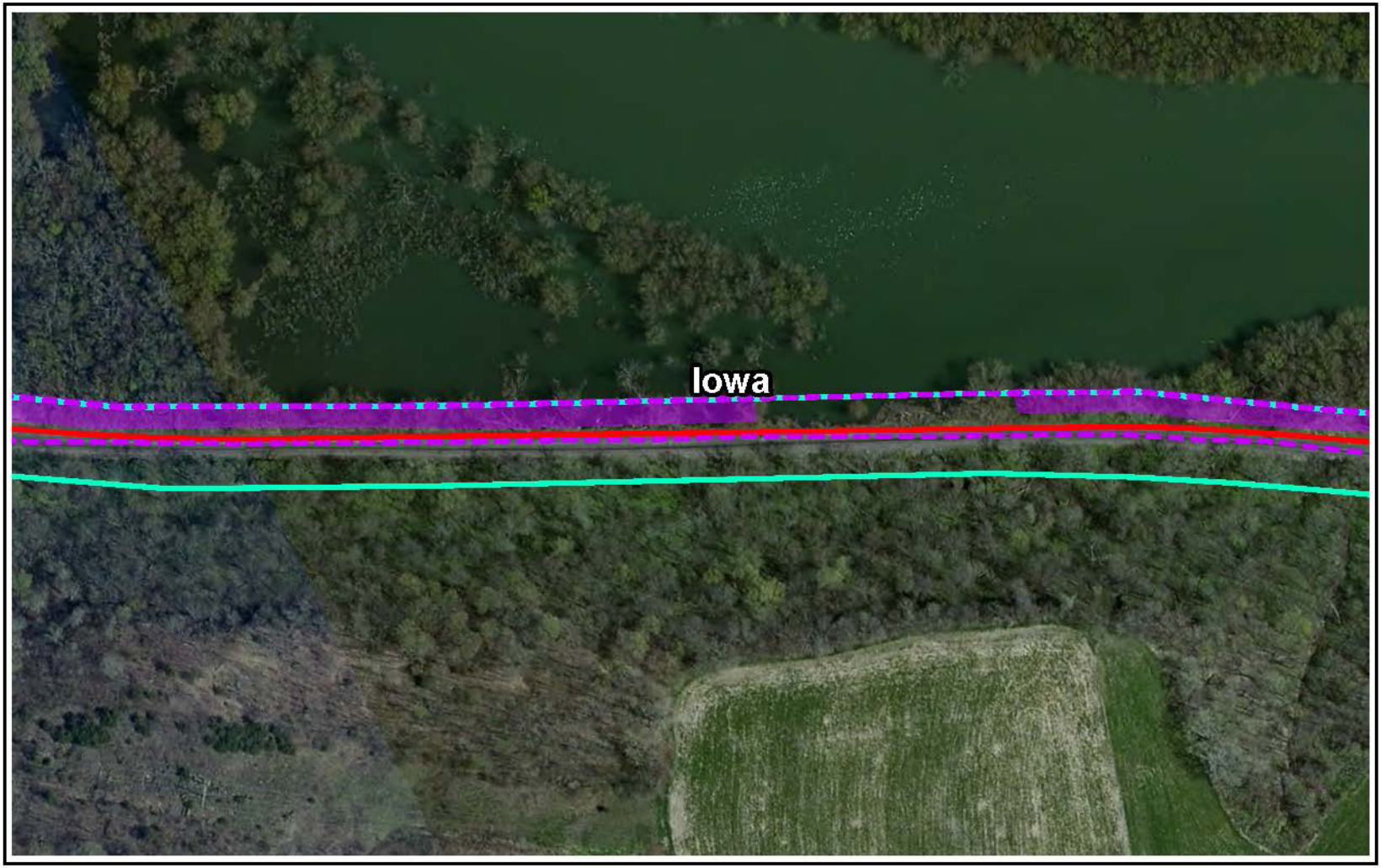
Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 71 (Turkey River)
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Study Area

Suitable Forested Bat Habitat

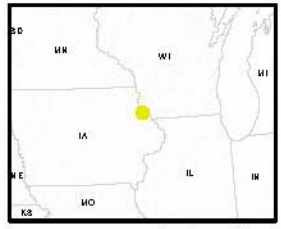
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Existing Right-of-Way

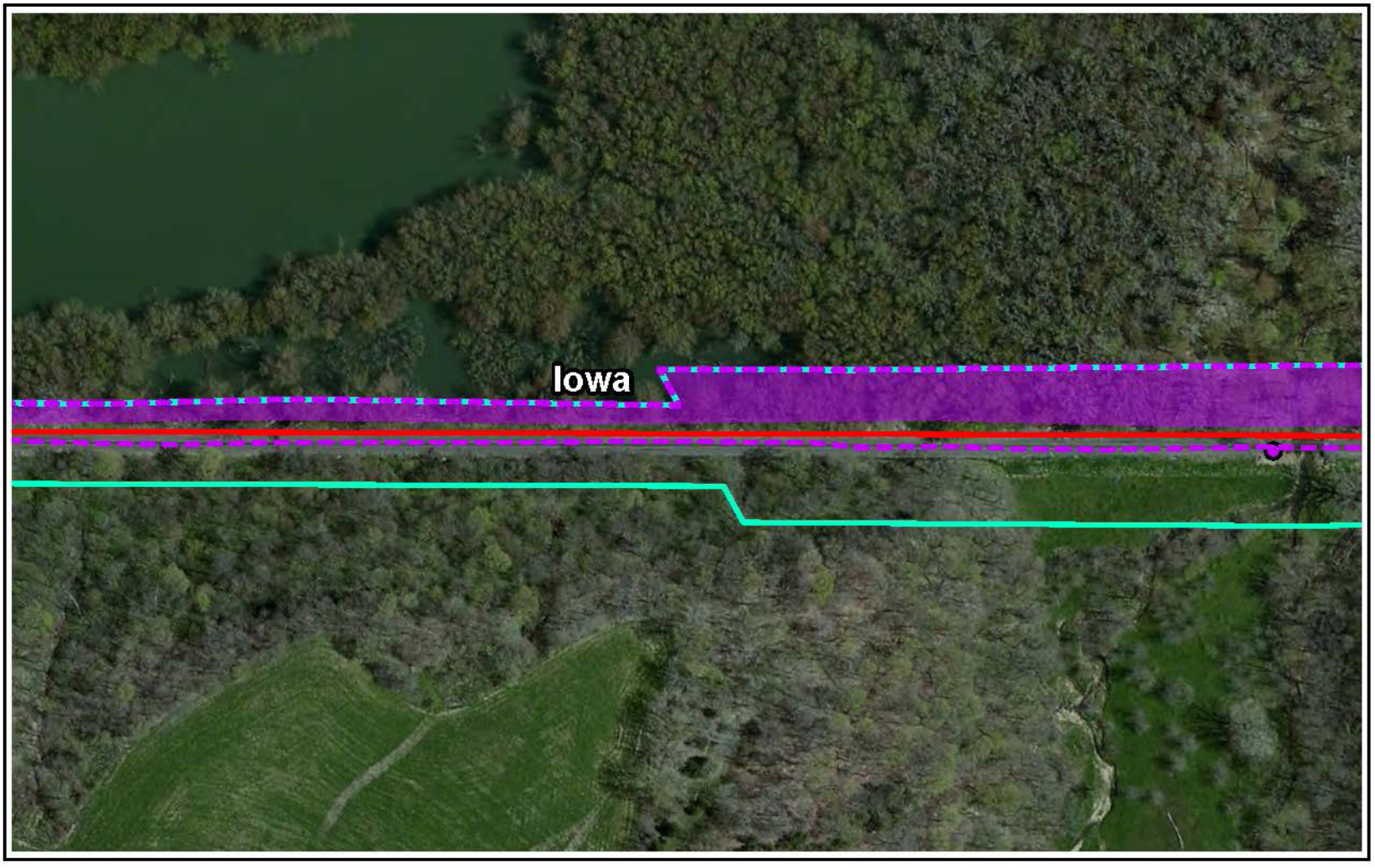
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Feet

Source: FRA, CP, ArcGIS Online



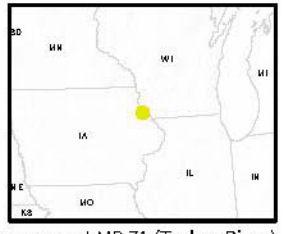
Capital Improvement MP 71 (Turkey River)



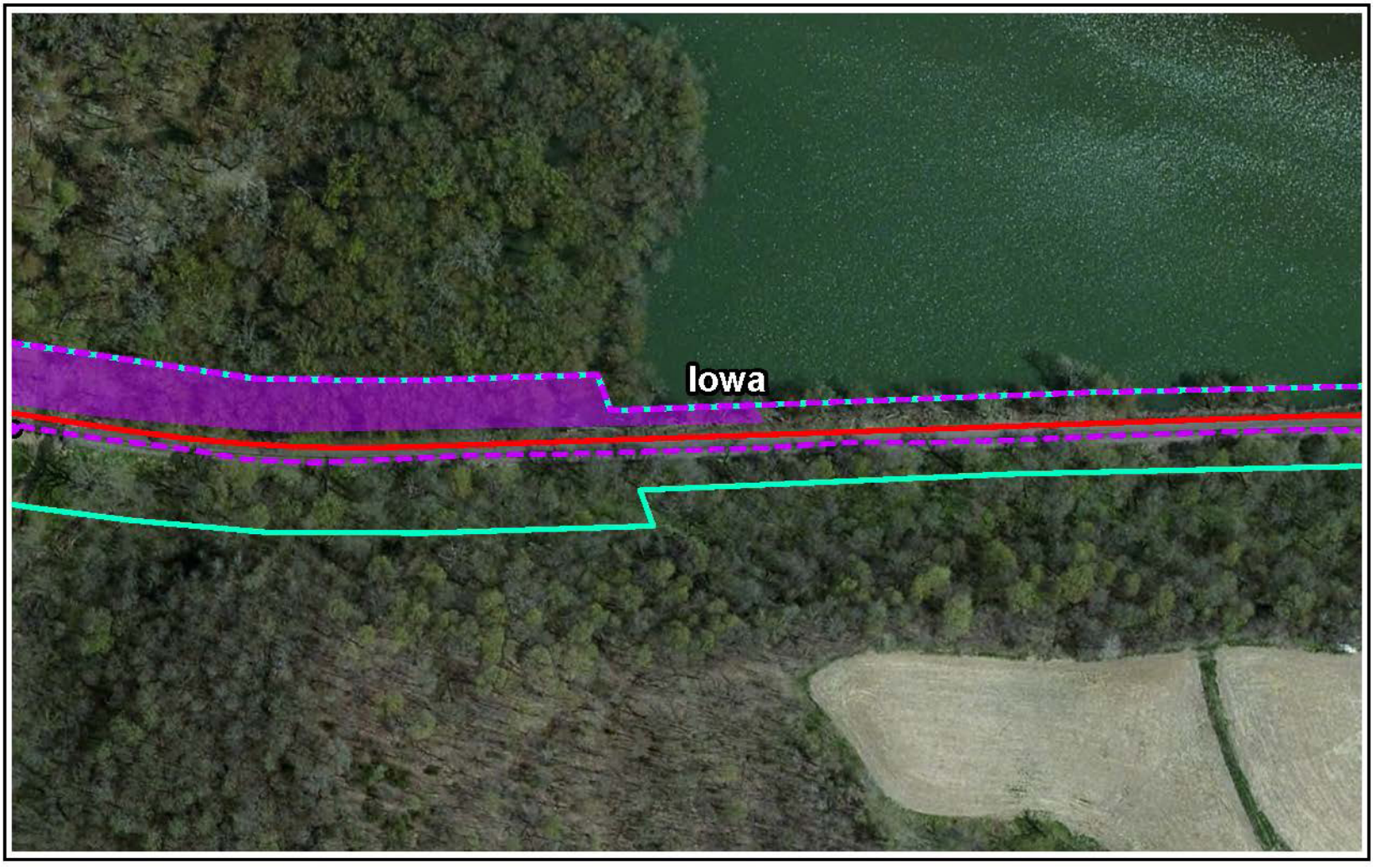
Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



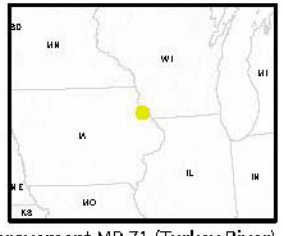
Capital Improvement MP 71 (Turkey River)
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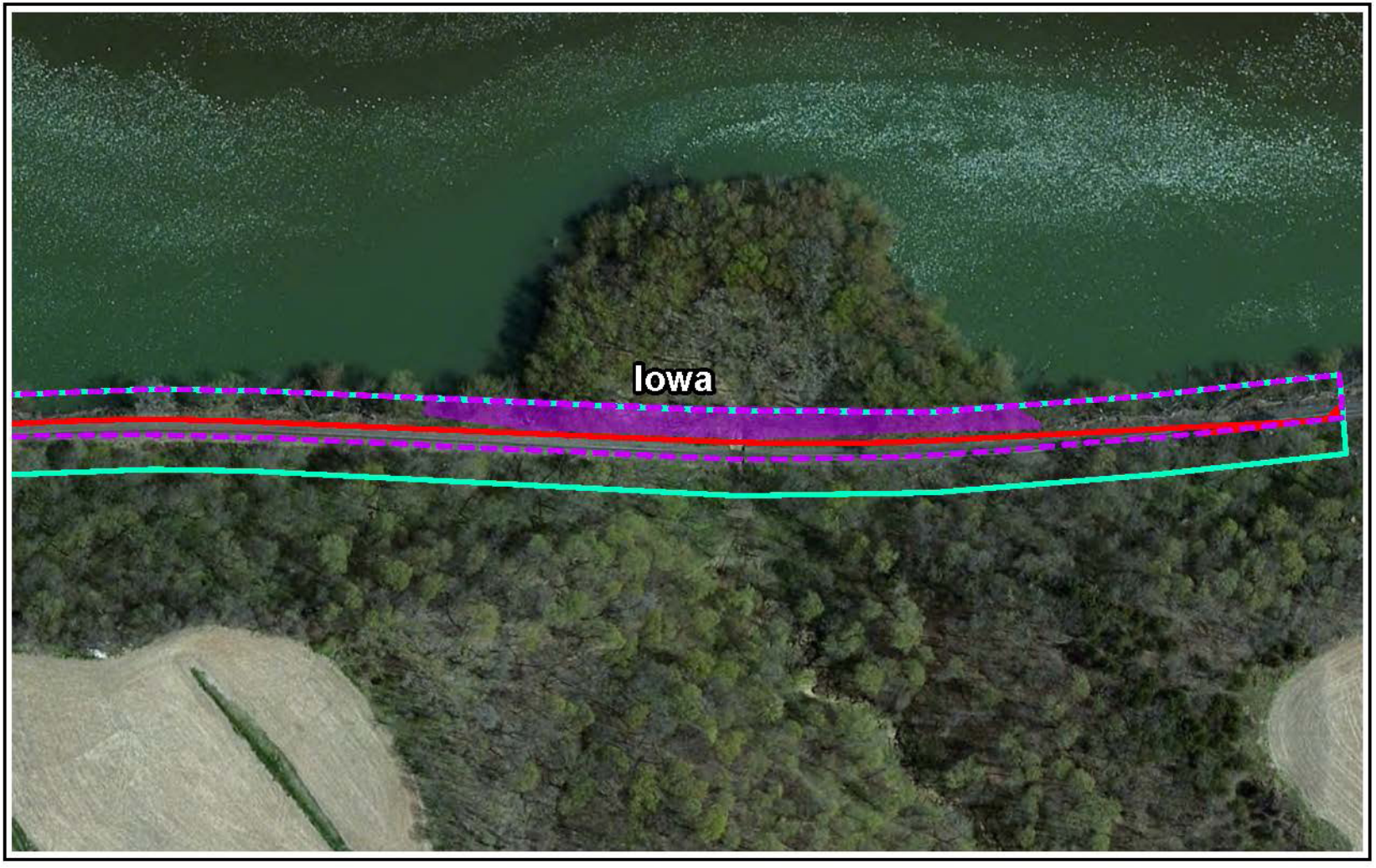
Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



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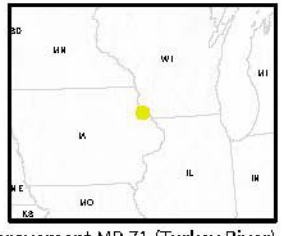


Study Area

Capital Improvement Location

Existing Right-of-Way

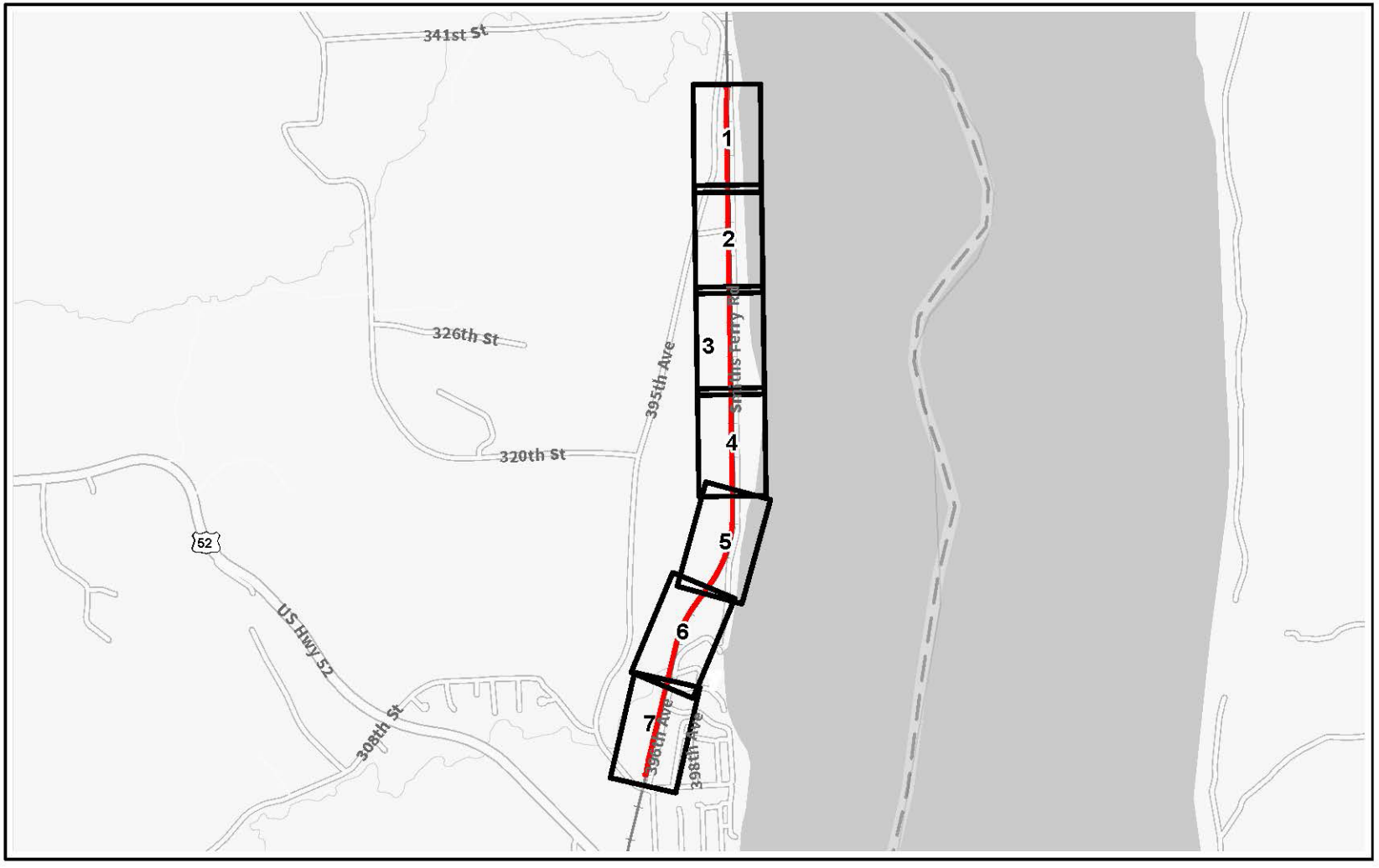
Suitable Forested Bat Habitat



0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Location

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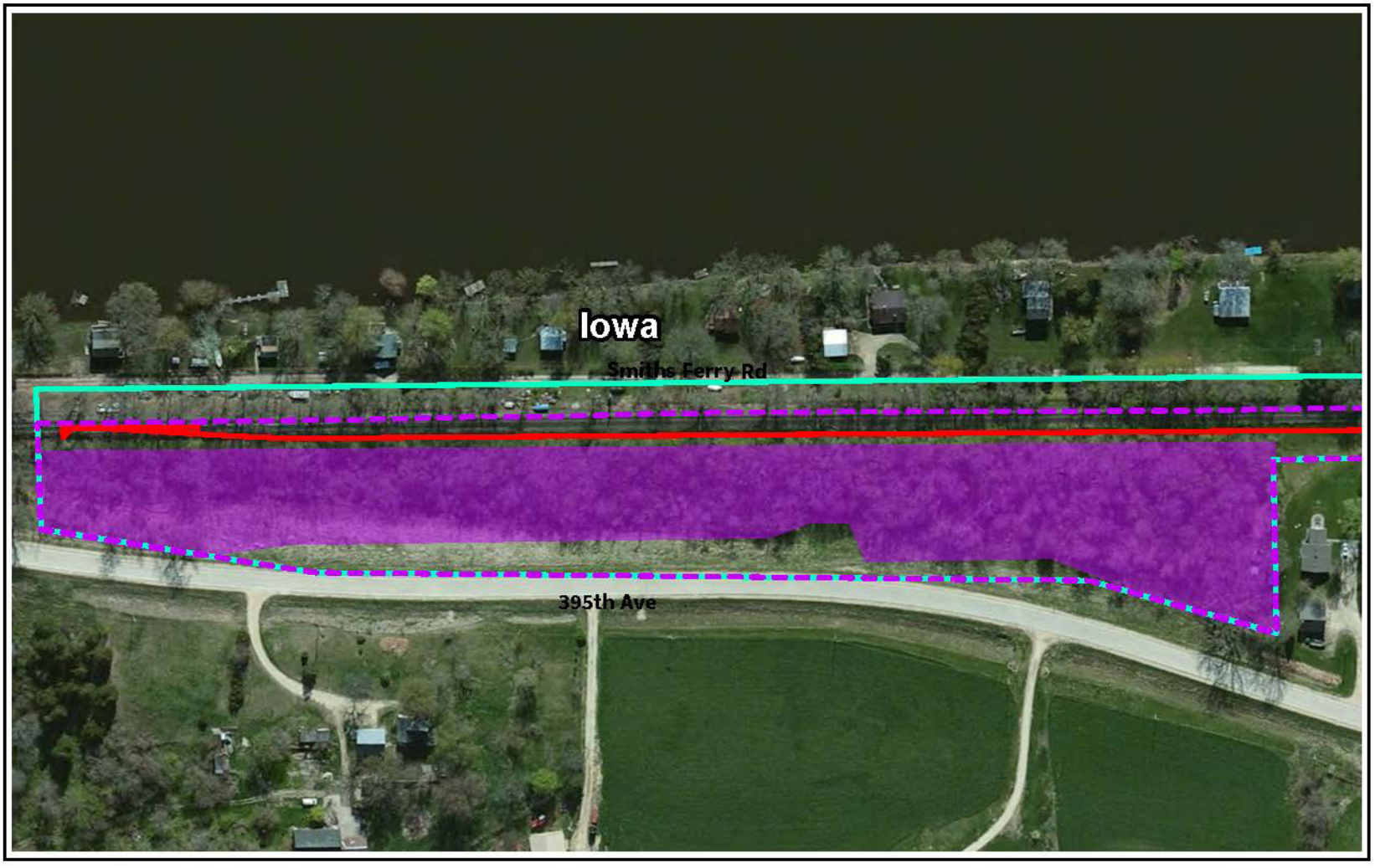


N

0 2500 5000 Feet

Source: FRA, CP, ArcGIS Online

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Jackson, Iowa | Page Index



Study Area

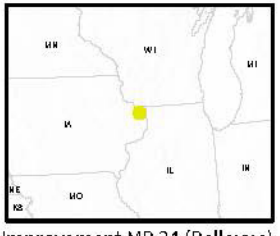
Capital Improvement Location

Existing Right-of-Way

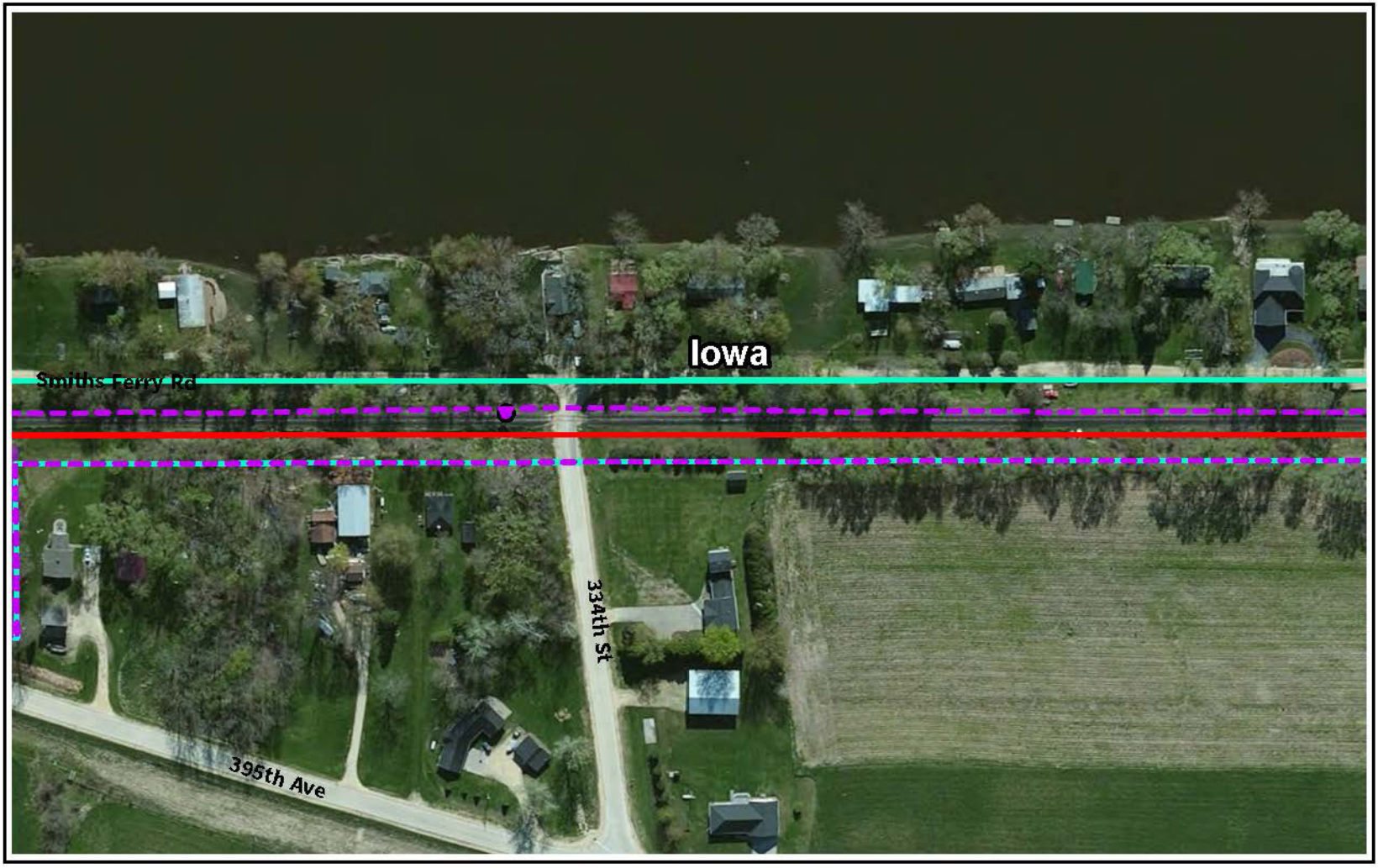
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



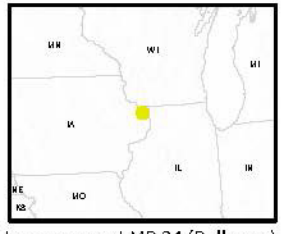
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Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



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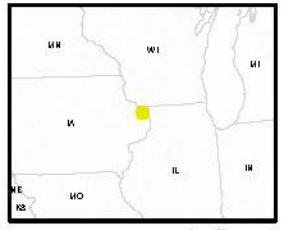
Study Area

Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 24 (Bellevue)



Study Area

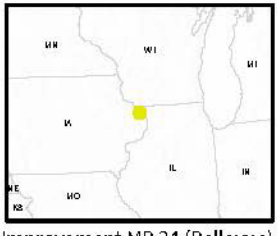
Capital Improvement Location

Existing Right-of-Way

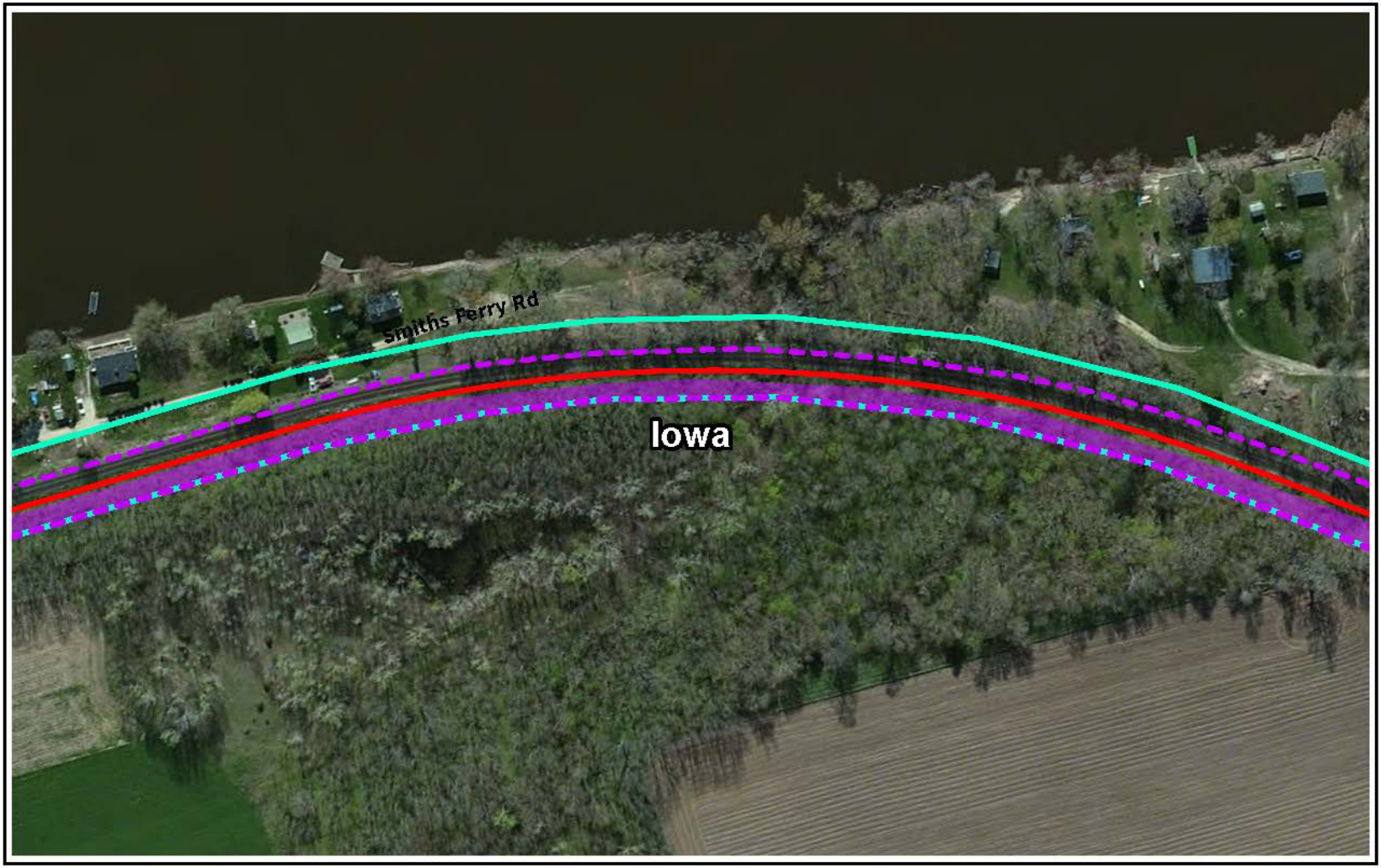
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 24 (Bellevue)



Study Area

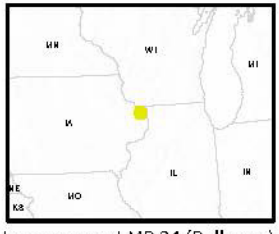
Capital Improvement Location

Existing Right-of-Way

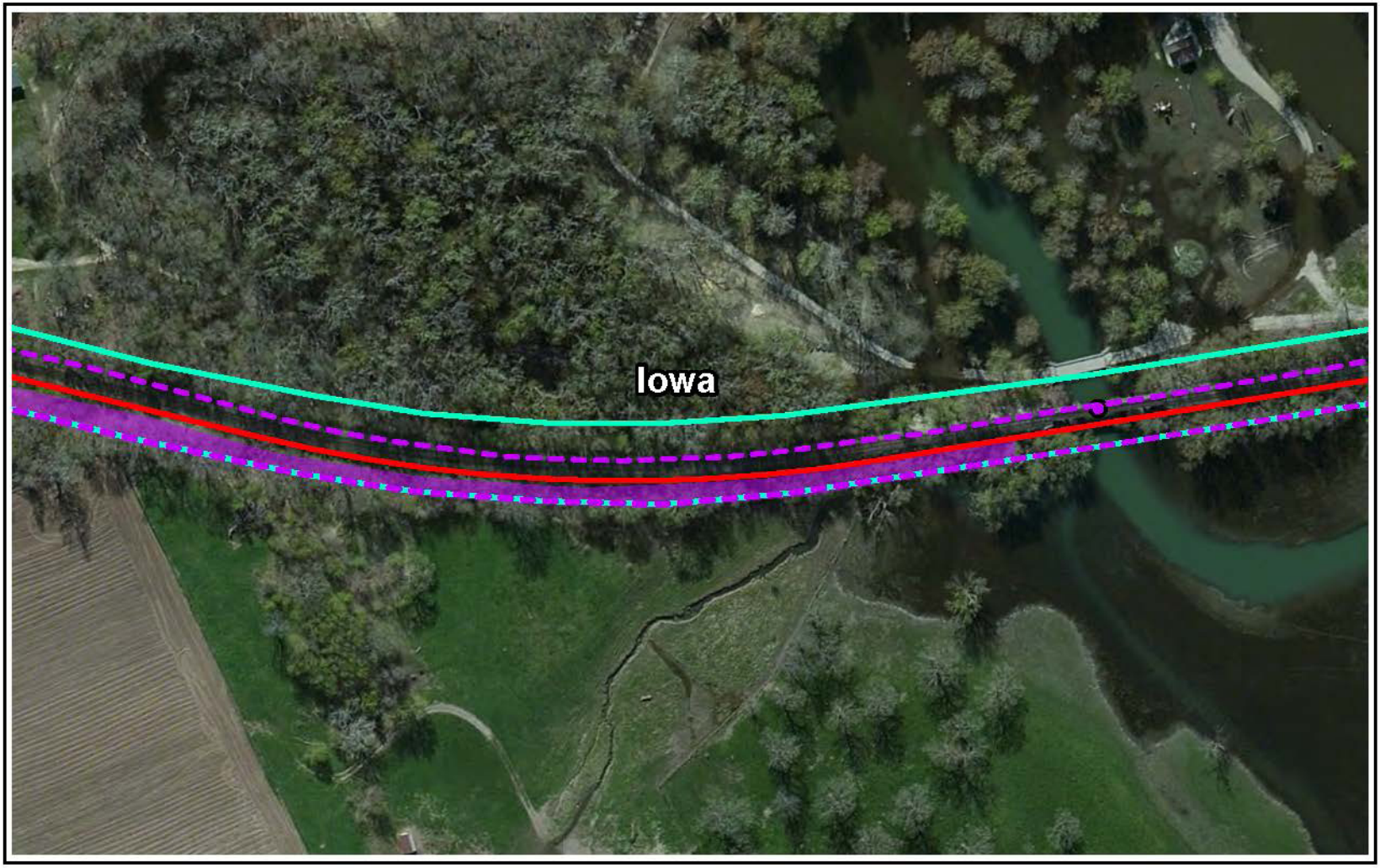
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



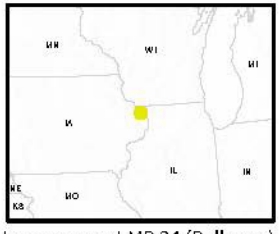
Capital Improvement MP 24 (Bellevue)

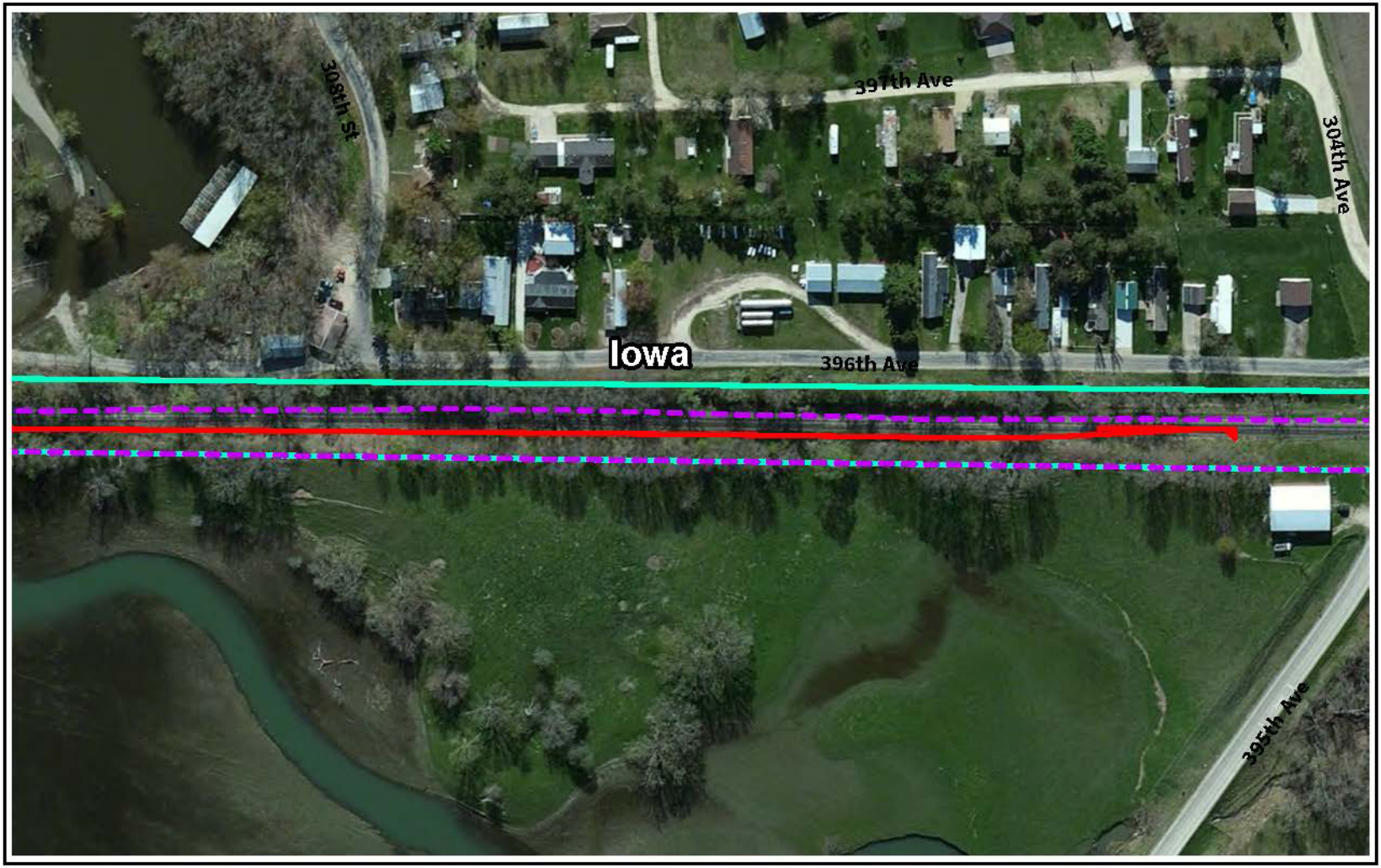


Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





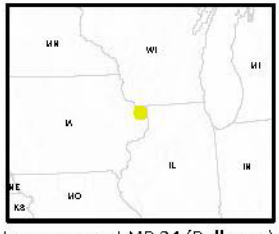
Study Area

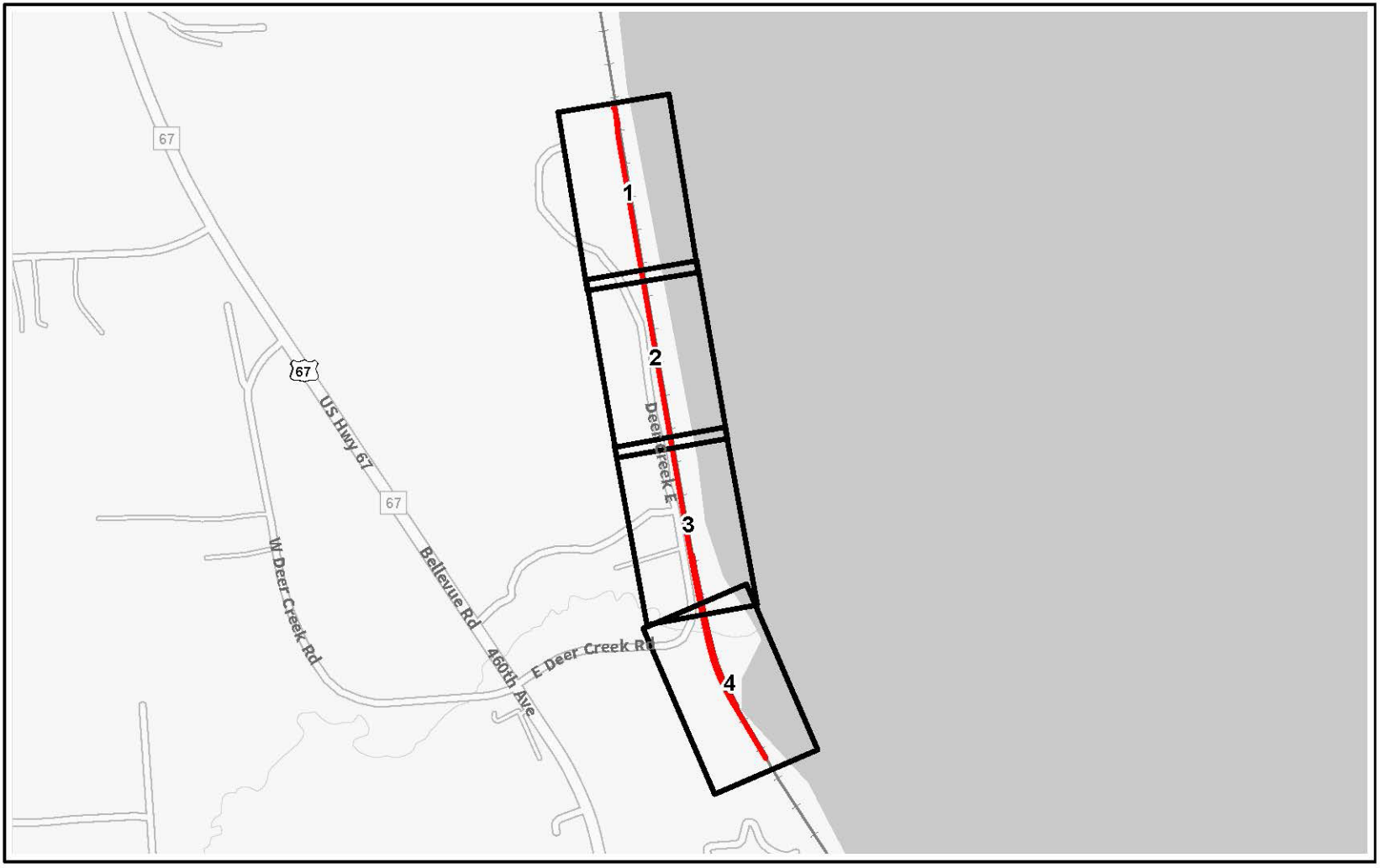
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





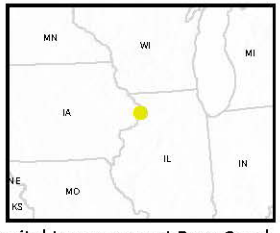
Capital Improvement Location

Page Index

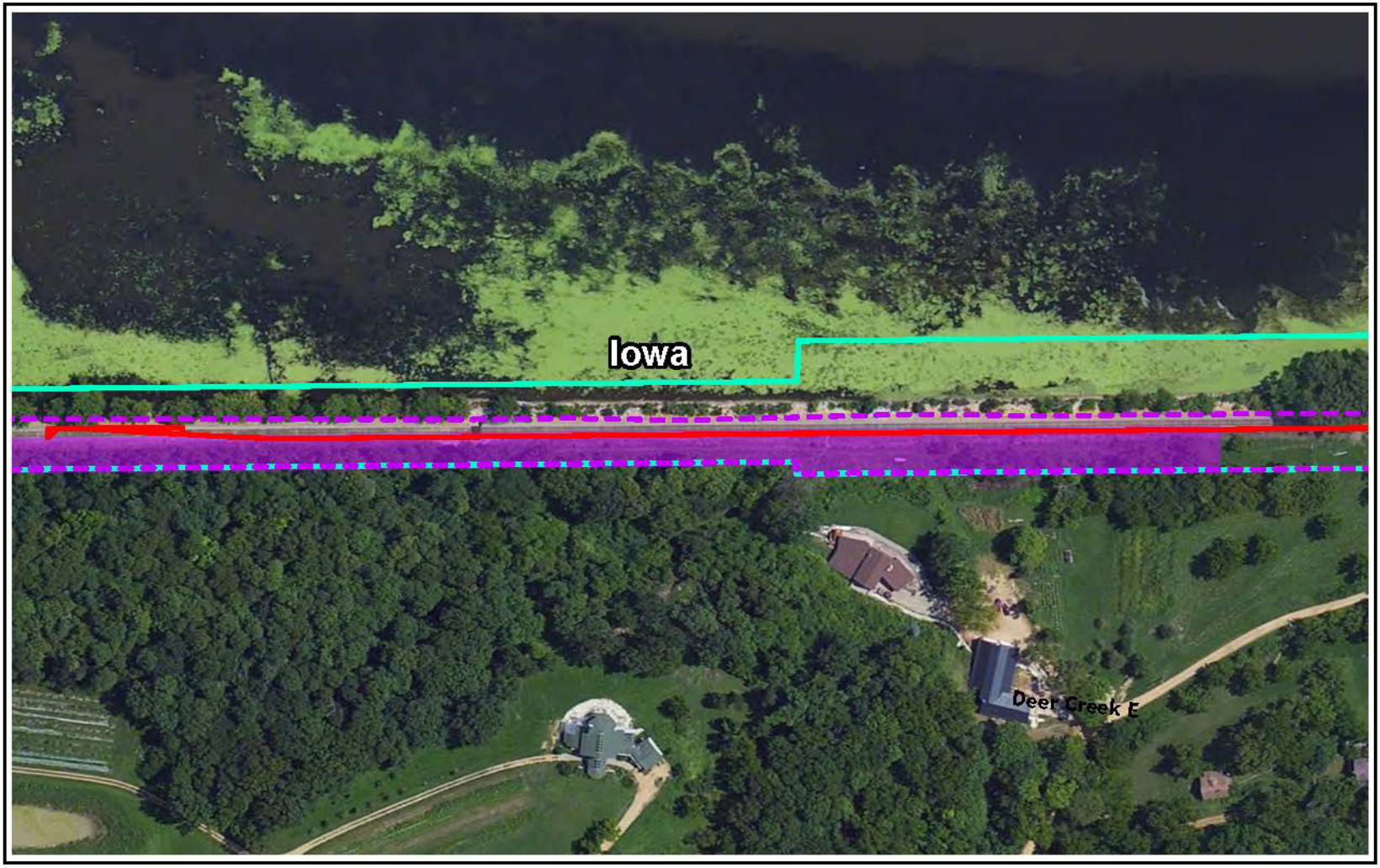
N

0 1500 3000 Feet

Source: FRA, CP, ArcGIS Online



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Clinton, Iowa | Page Index



Study Area

Capital Improvement Location

Existing Right-of-Way

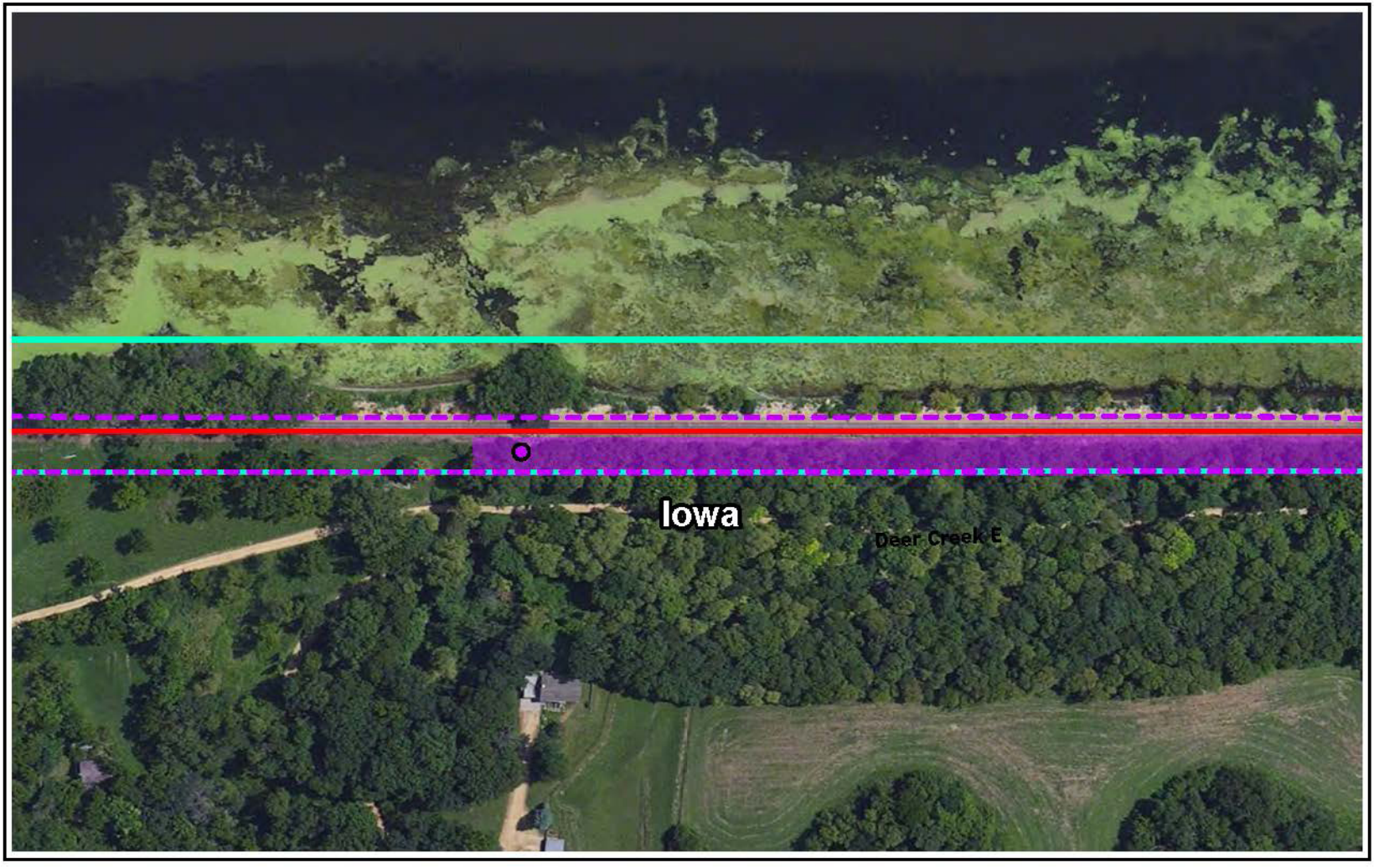
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Deer Creek
Clinton, Iowa | Page 1 of 4



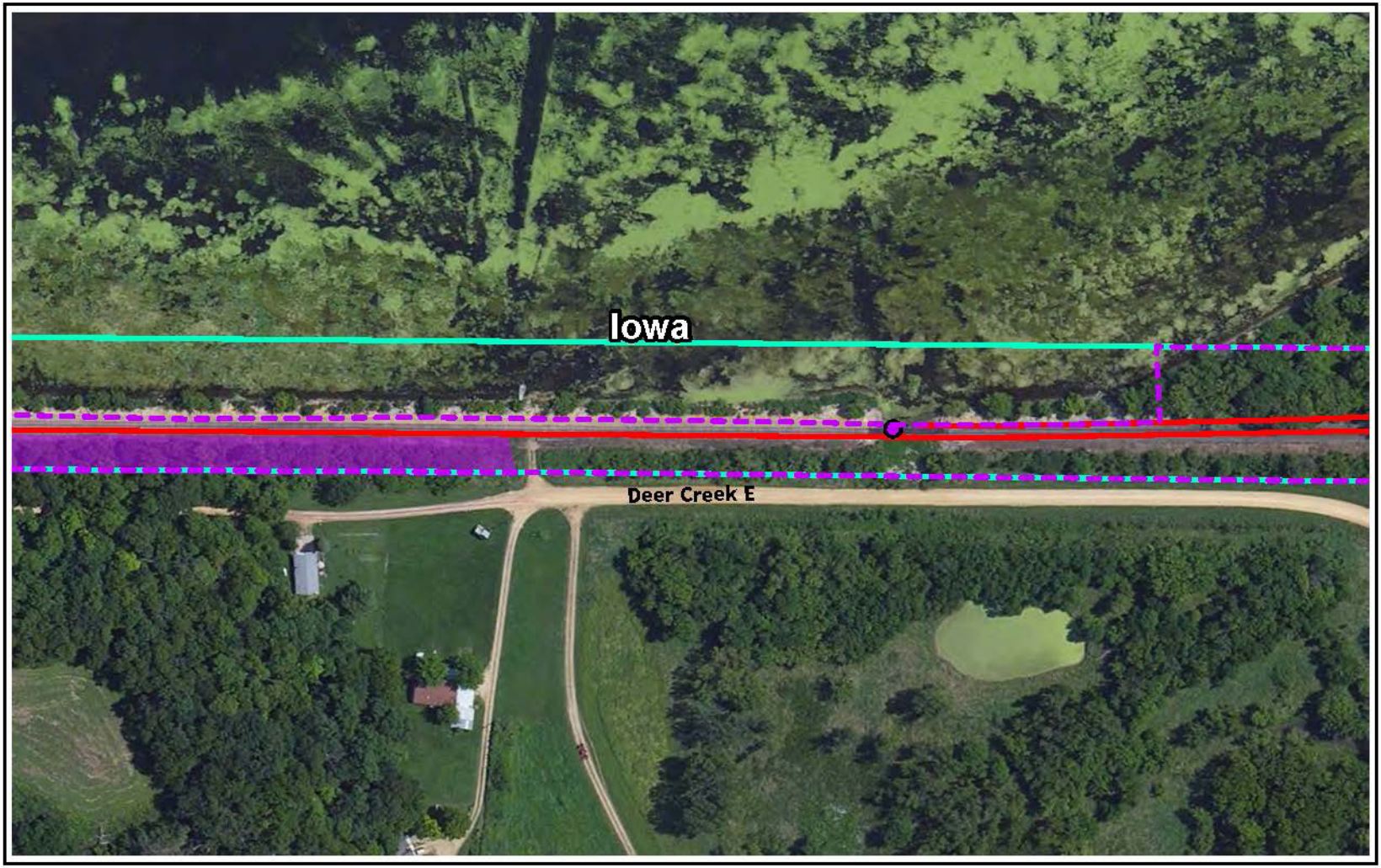
Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Deer Creek
Clinton, Iowa | Page 2 of 4



Study Area

Capital Improvement Location

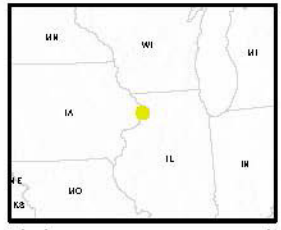
Existing Right-of-Way

Suitable Bat Roosting Structure

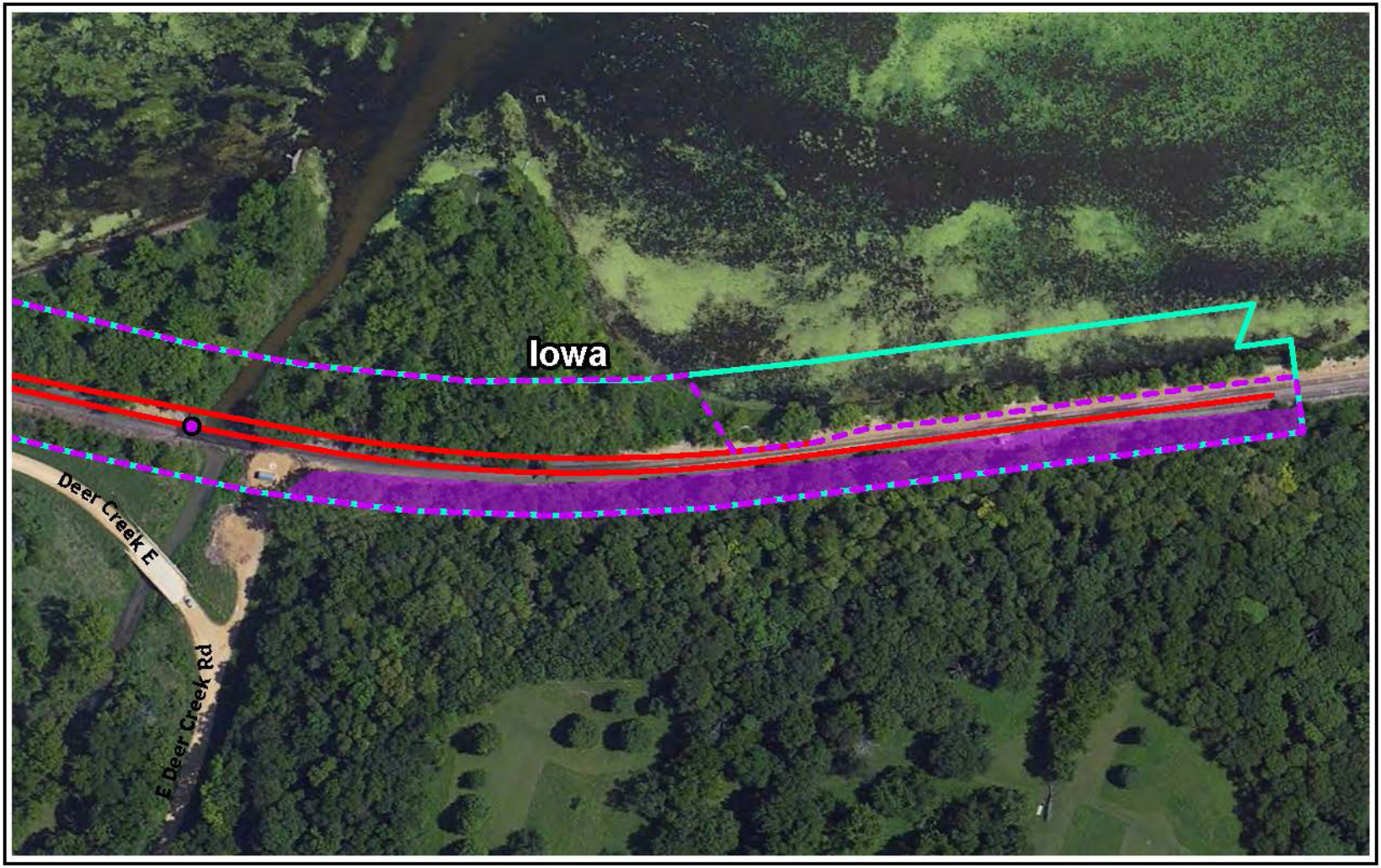
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



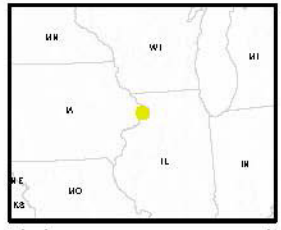
Capital Improvement Deer Creek
Clinton, Iowa | Page 3 of 4



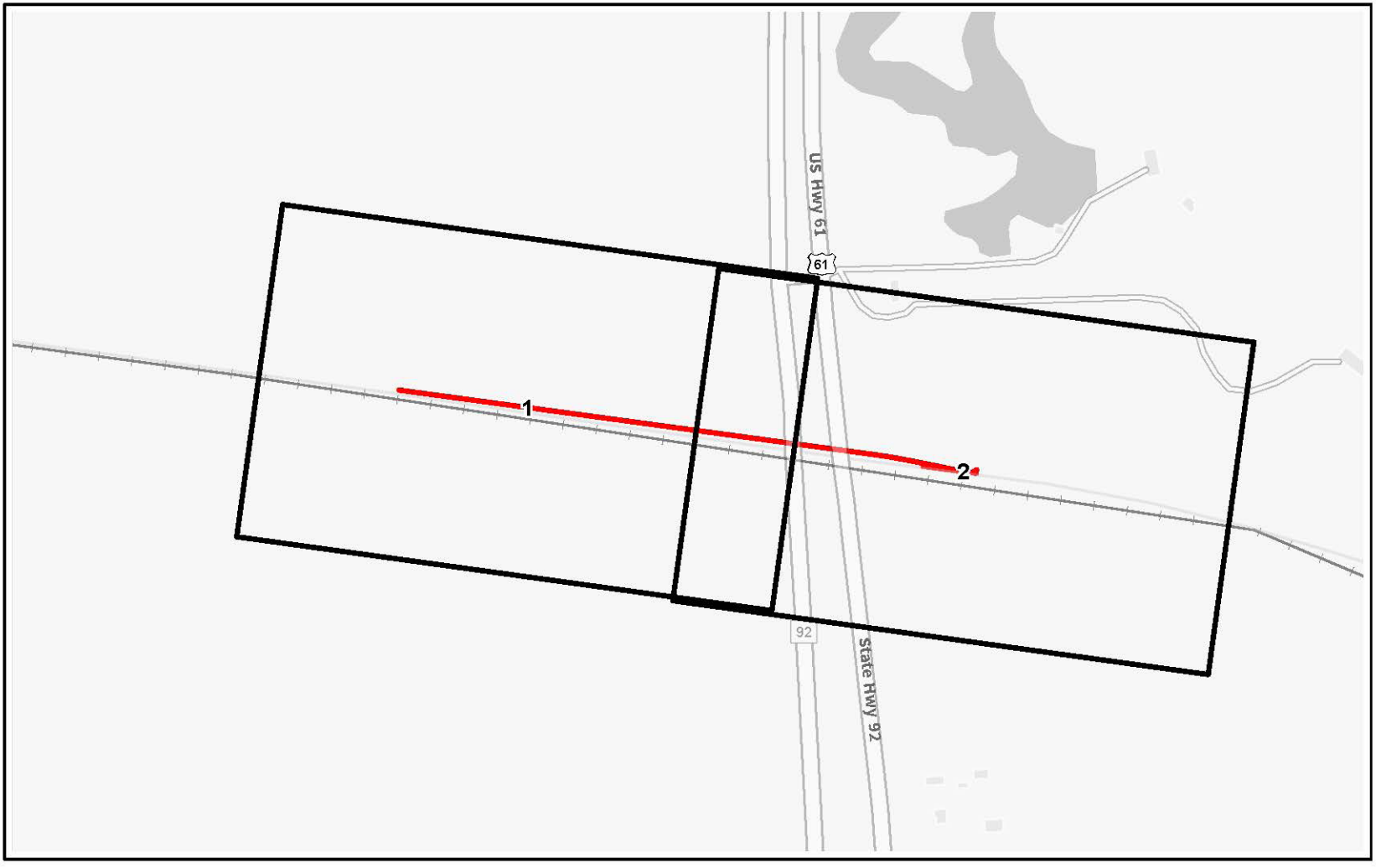
Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Deer Creek
Clinton, Iowa | Page 4 of 4



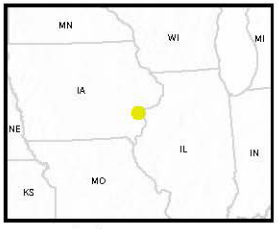
Capital Improvement Location

Page Index

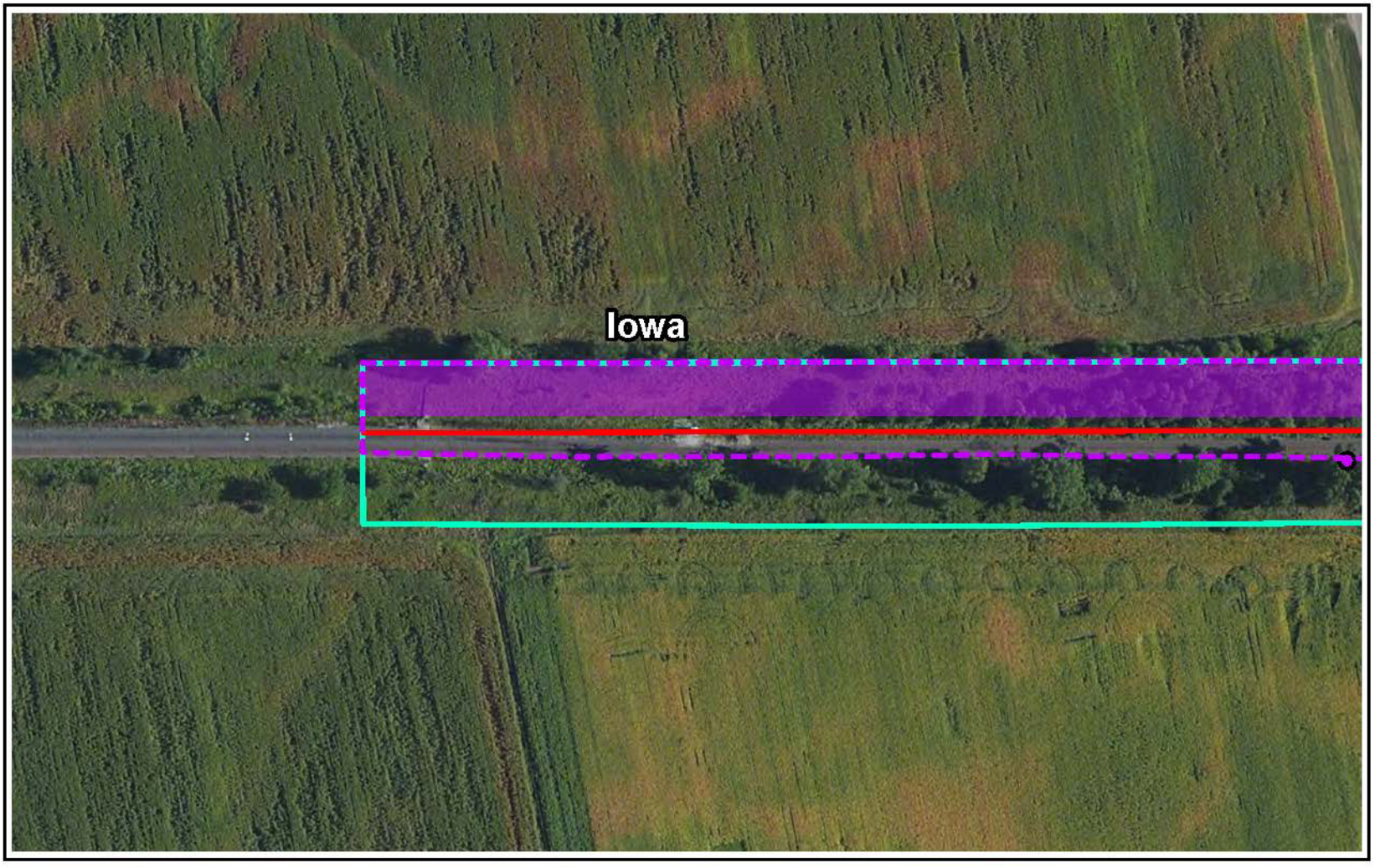
N

0 500 1000 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Letts
Louisa, Iowa | Page Index

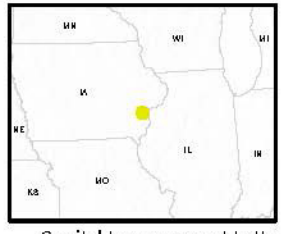


Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

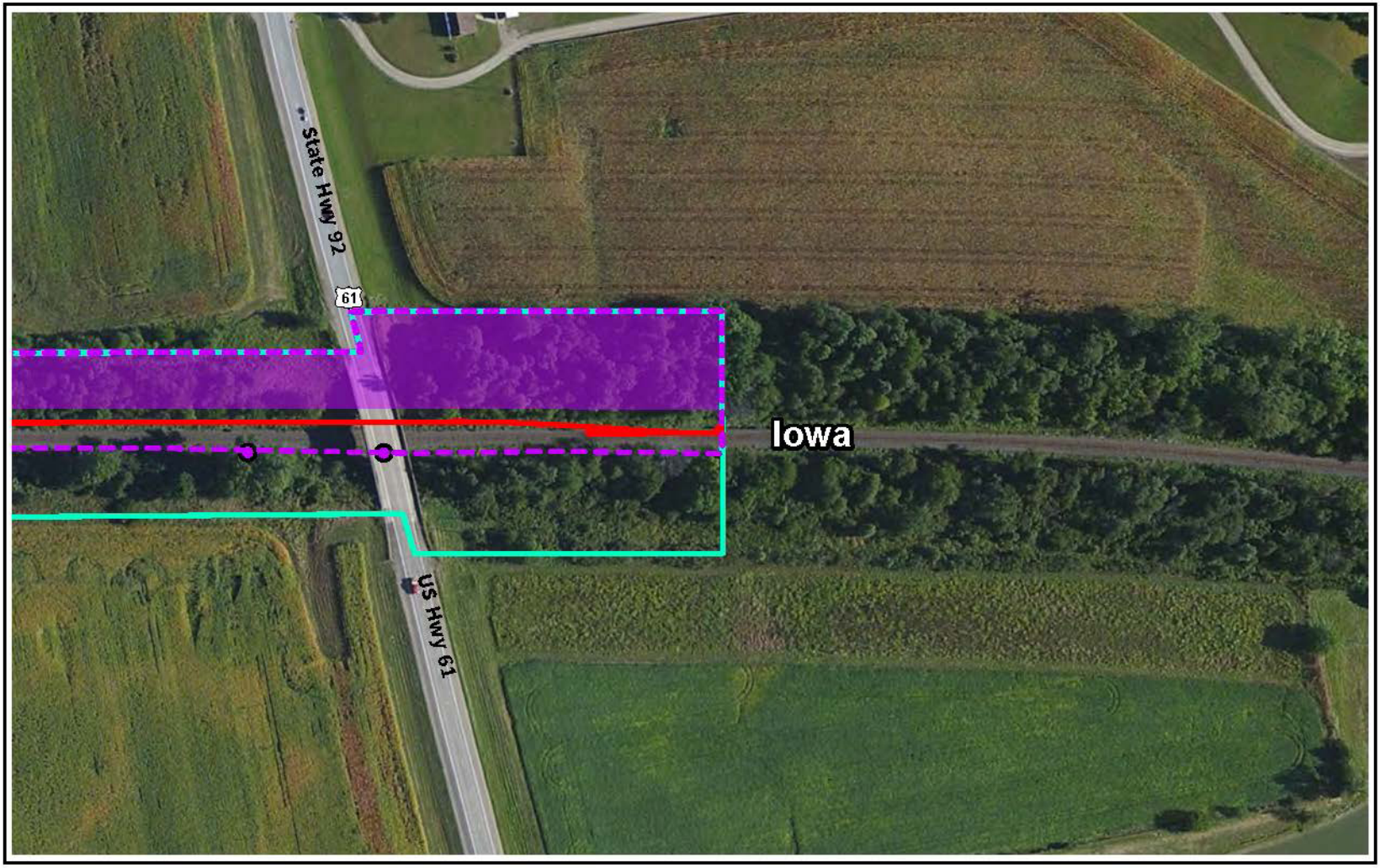
N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Letts
Louisa, Iowa | Page 1 of 2

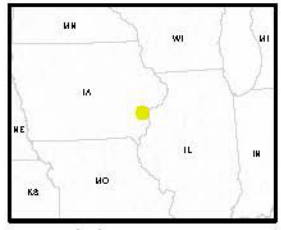


Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

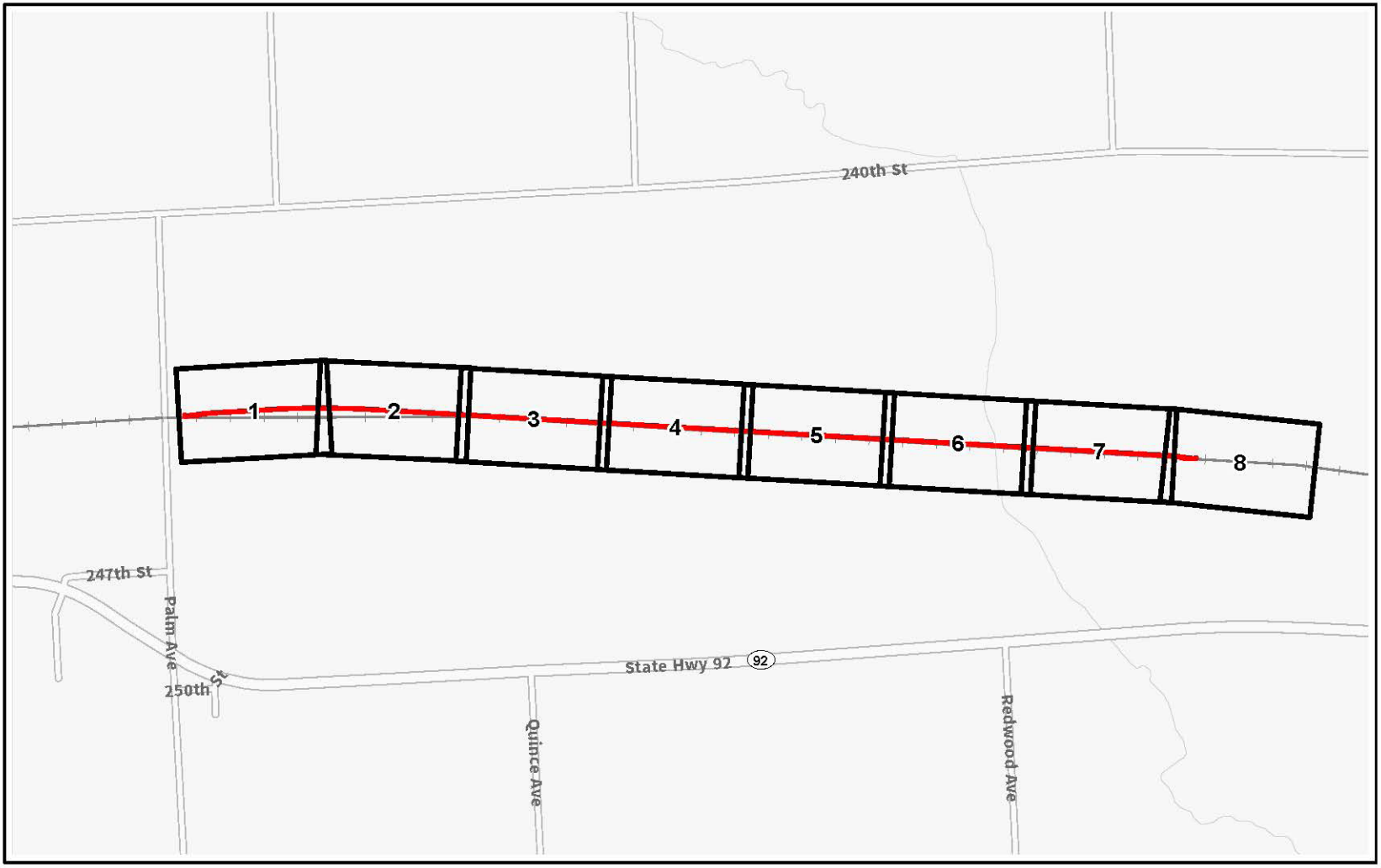
N

0 200 400
Feet

Source: FRA, CP, ArcGIS Online

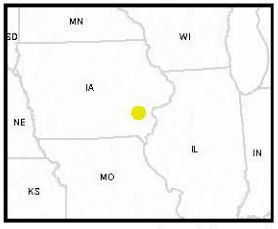


Capital Improvement Letts
Louisa, Iowa | Page 2 of 2



Capital Improvement Location

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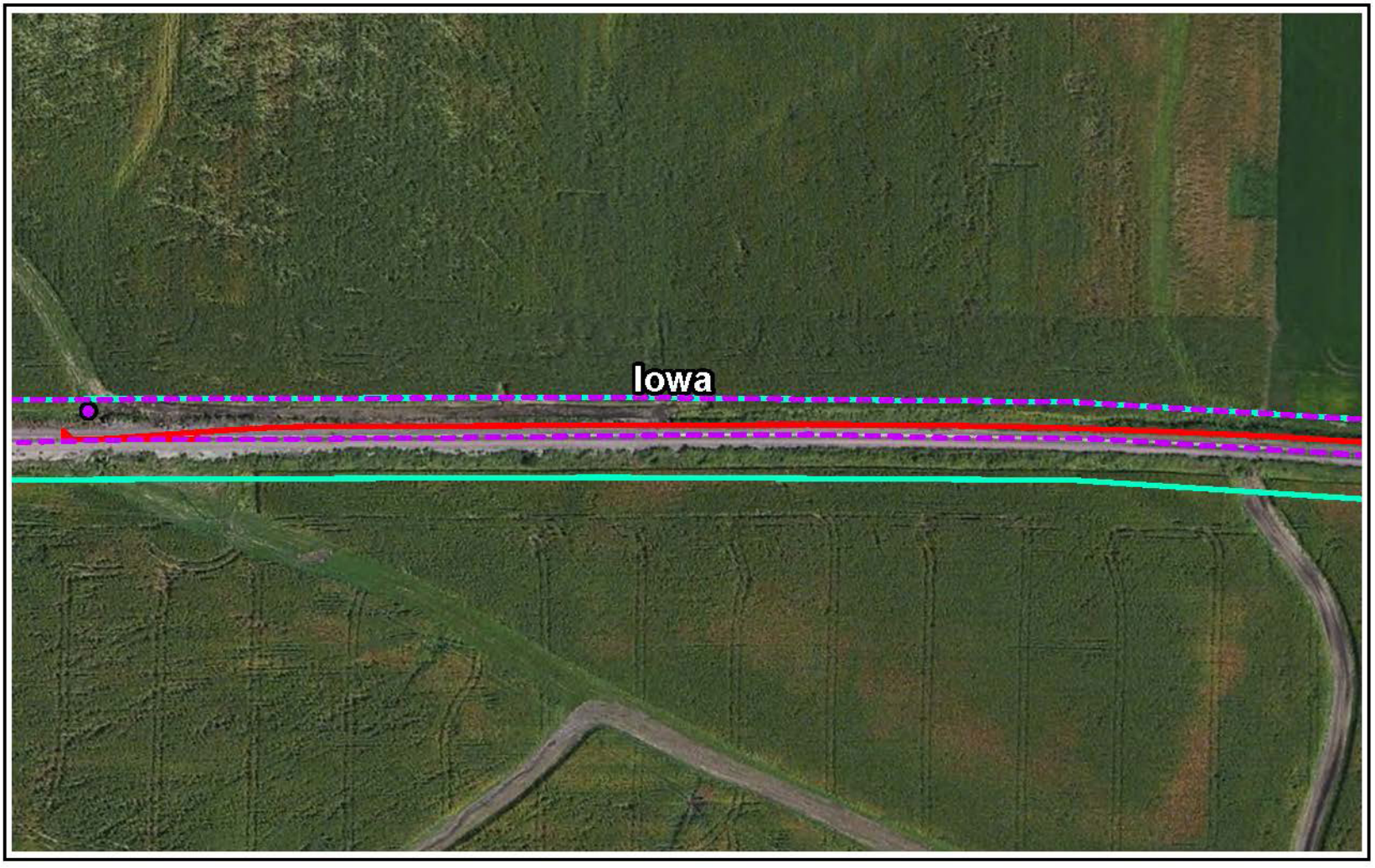


N

0 1800 3600 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

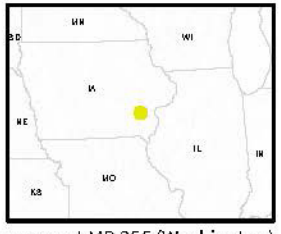
Existing Right-of-Way

Suitable Bat Roosting Structure

N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 255 (Washington)
Washington, Iowa | Page 1 of 8



Study Area

Capital Improvement Location

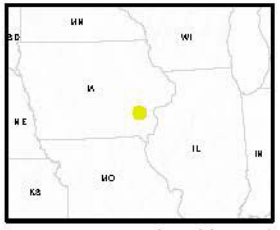
Existing Right-of-Way

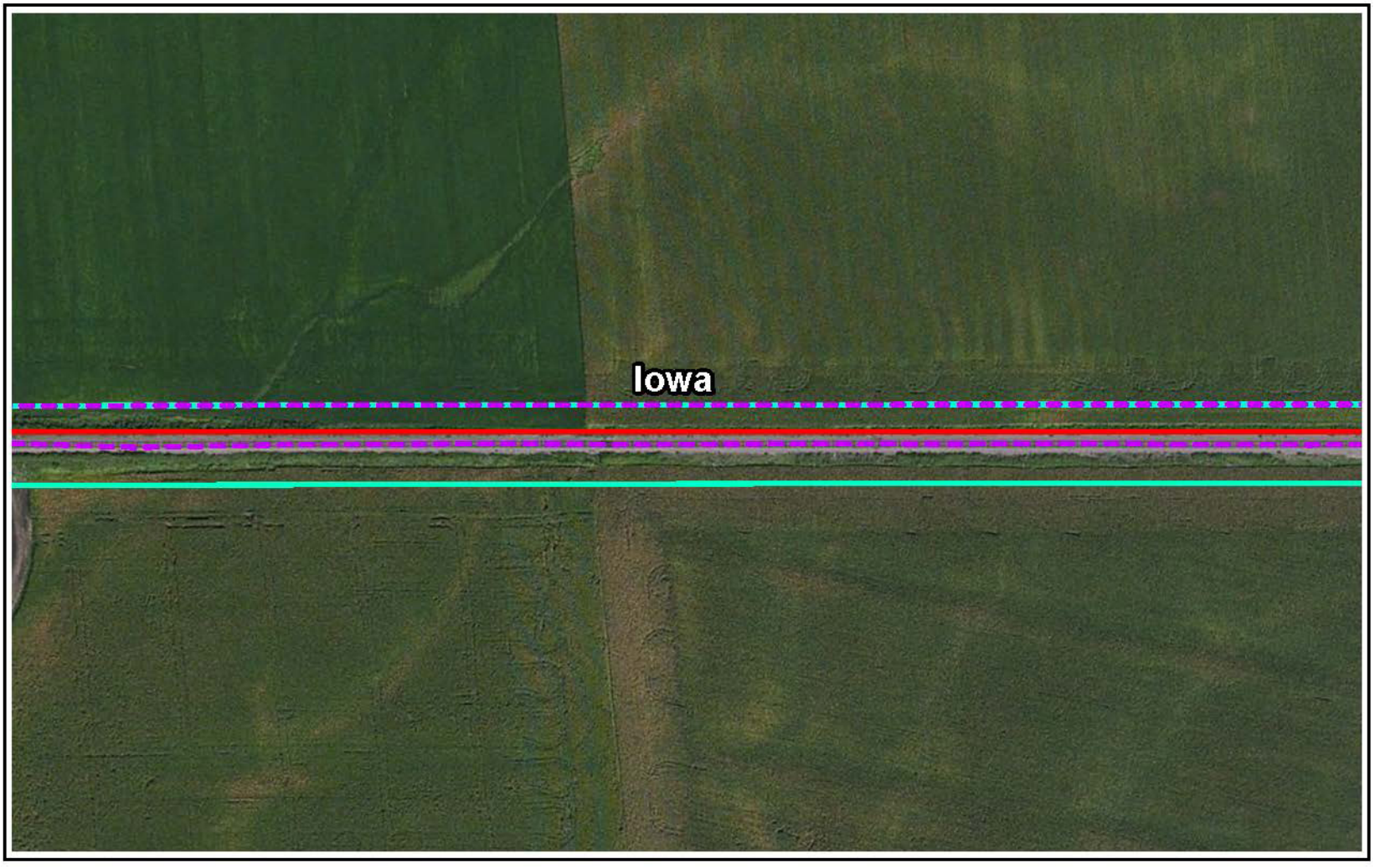
N

0 200 400

Feet

Source: FRA, CP, ArcGIS Online





Study Area

Capital Improvement Location

Existing Right-of-Way



N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement MP 255 (Washington)



Study Area

Capital Improvement Location

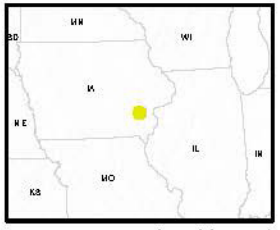
Existing Right-of-Way

N

0 200 400

Feet

Source: FRA, CP, ArcGIS Online





Study Area

Capital Improvement Location

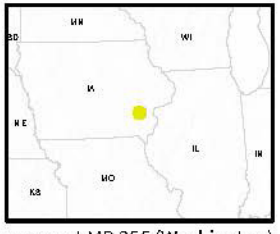
Existing Right-of-Way

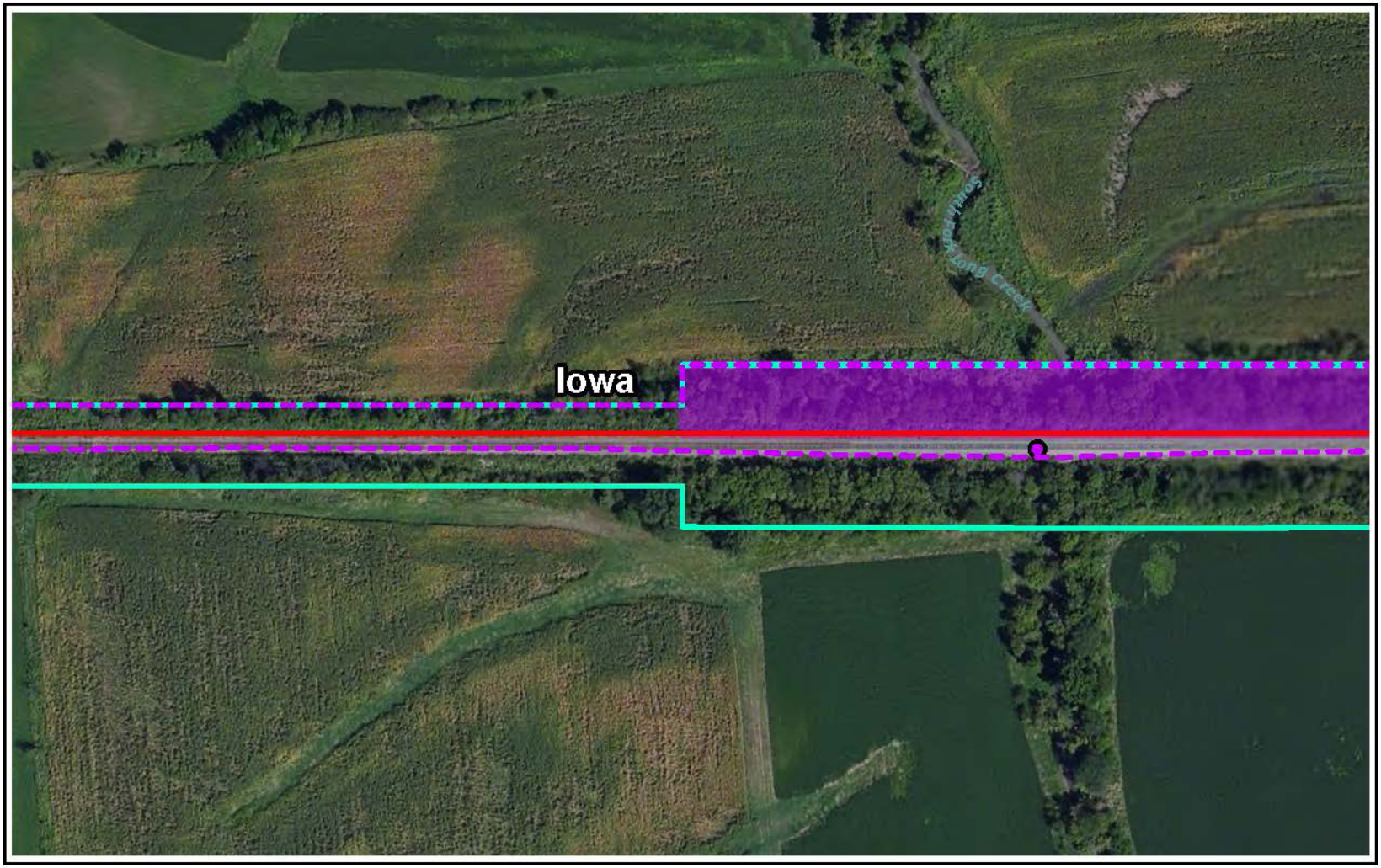
N

0 200 400

Feet

Source: FRA, CP, ArcGIS Online





Study Area

Capital Improvement Location

Existing Right-of-Way

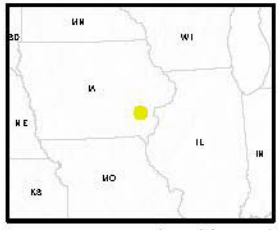
Suitable Bat Roosting Structure

Suitable Forested Bat Habitat

N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 255 (Washington)



Study Area

Capital Improvement Location

Existing Right-of-Way

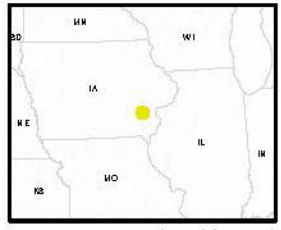
Suitable Forested Bat Habitat

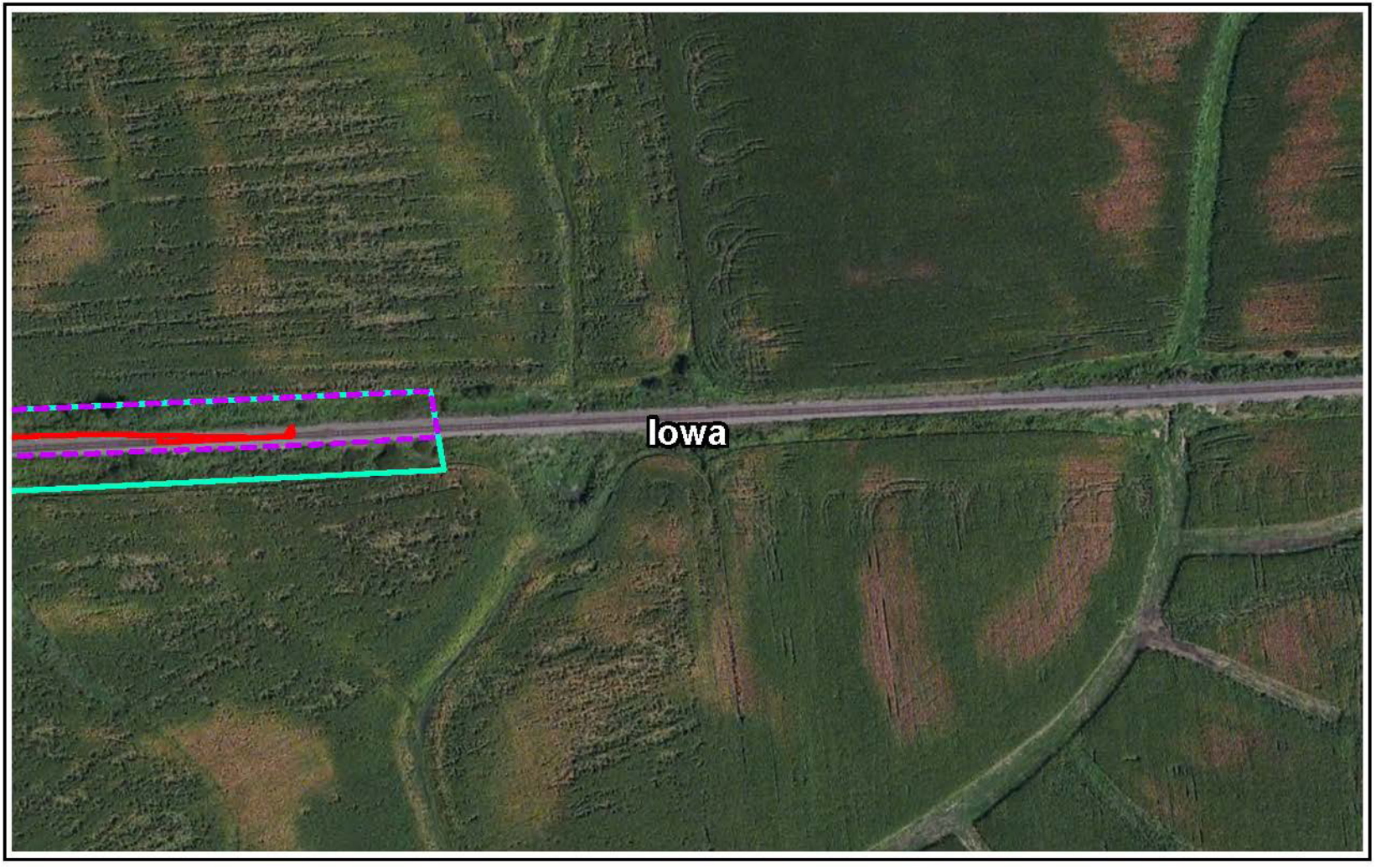
N

0 200 400

Feet

Source: FRA, CP, ArcGIS Online





Study Area

Capital Improvement Location

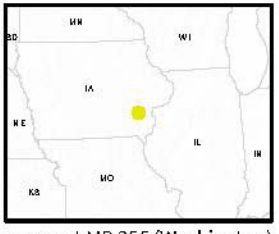
Existing Right-of-Way

N

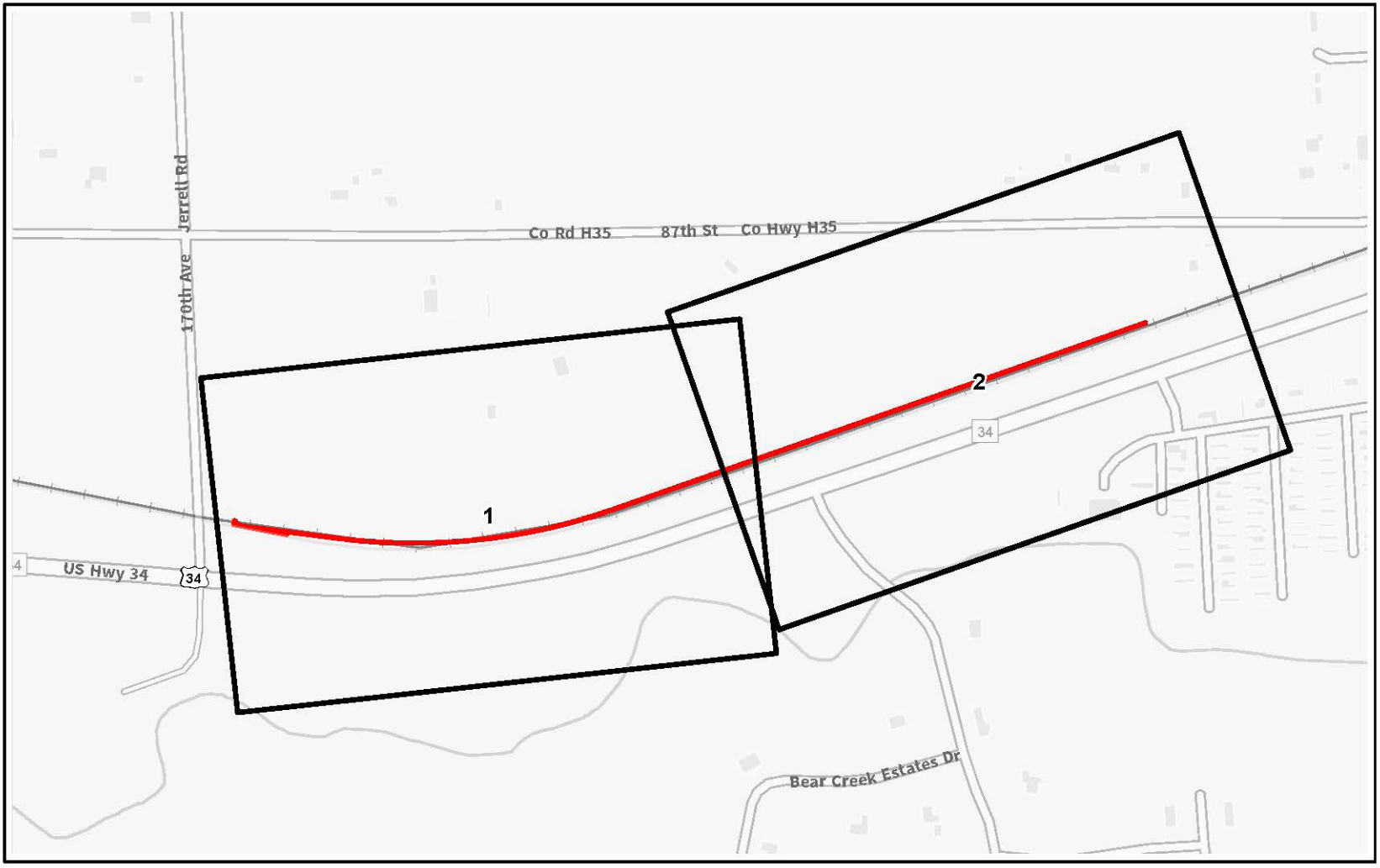
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Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 255 (Washington)



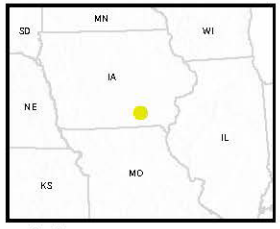
Capital Improvement Location

Page Index

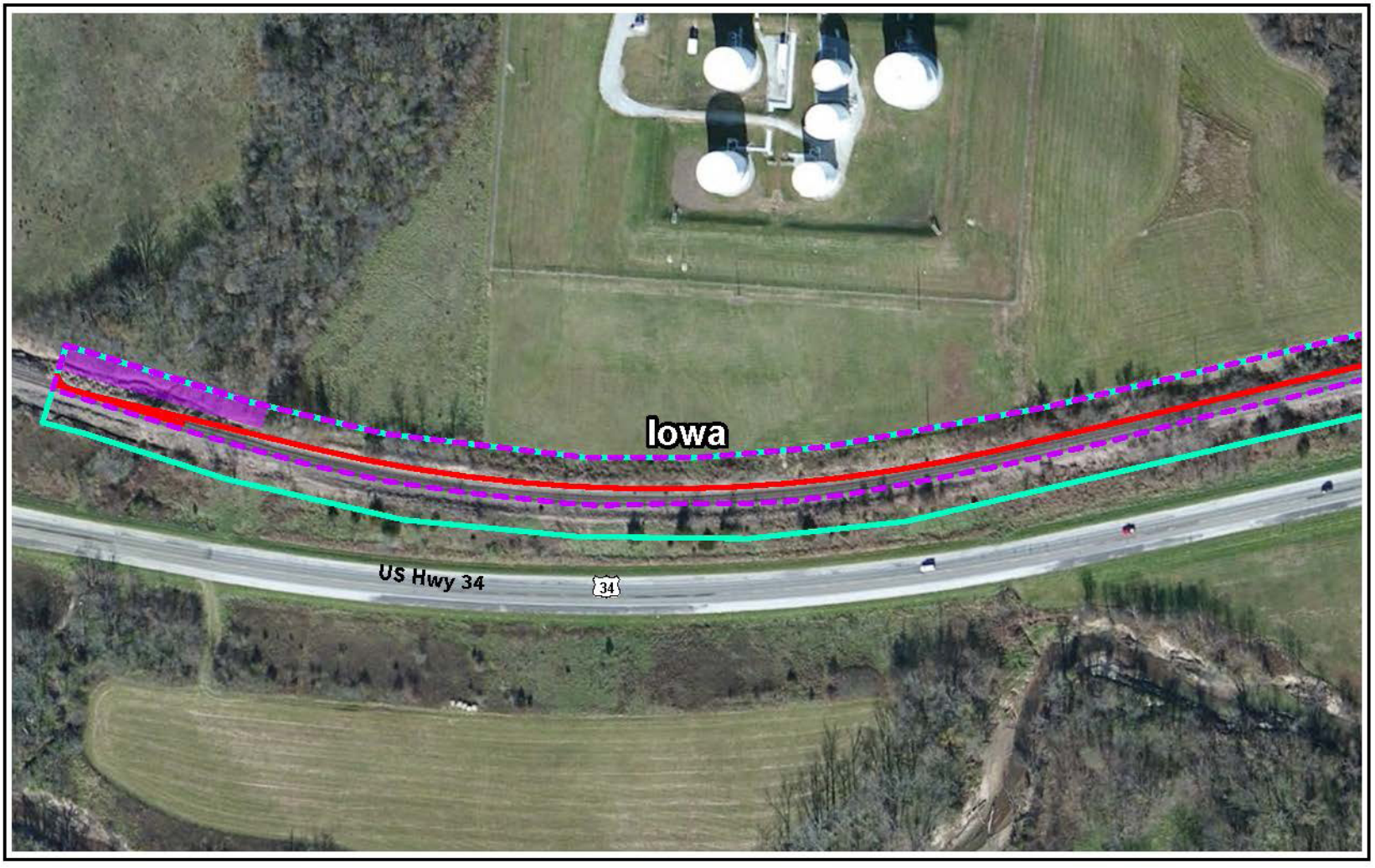
N

0 500 1000 Feet

Source: FRA, CP, ArcGIS Online



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Wapello, Iowa | Page Index



Study Area

Capital Improvement Location

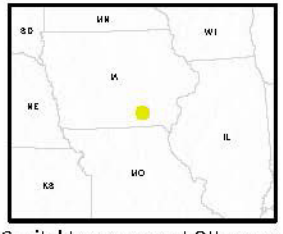
Existing Right-of-Way

Suitable Forested Bat Habitat

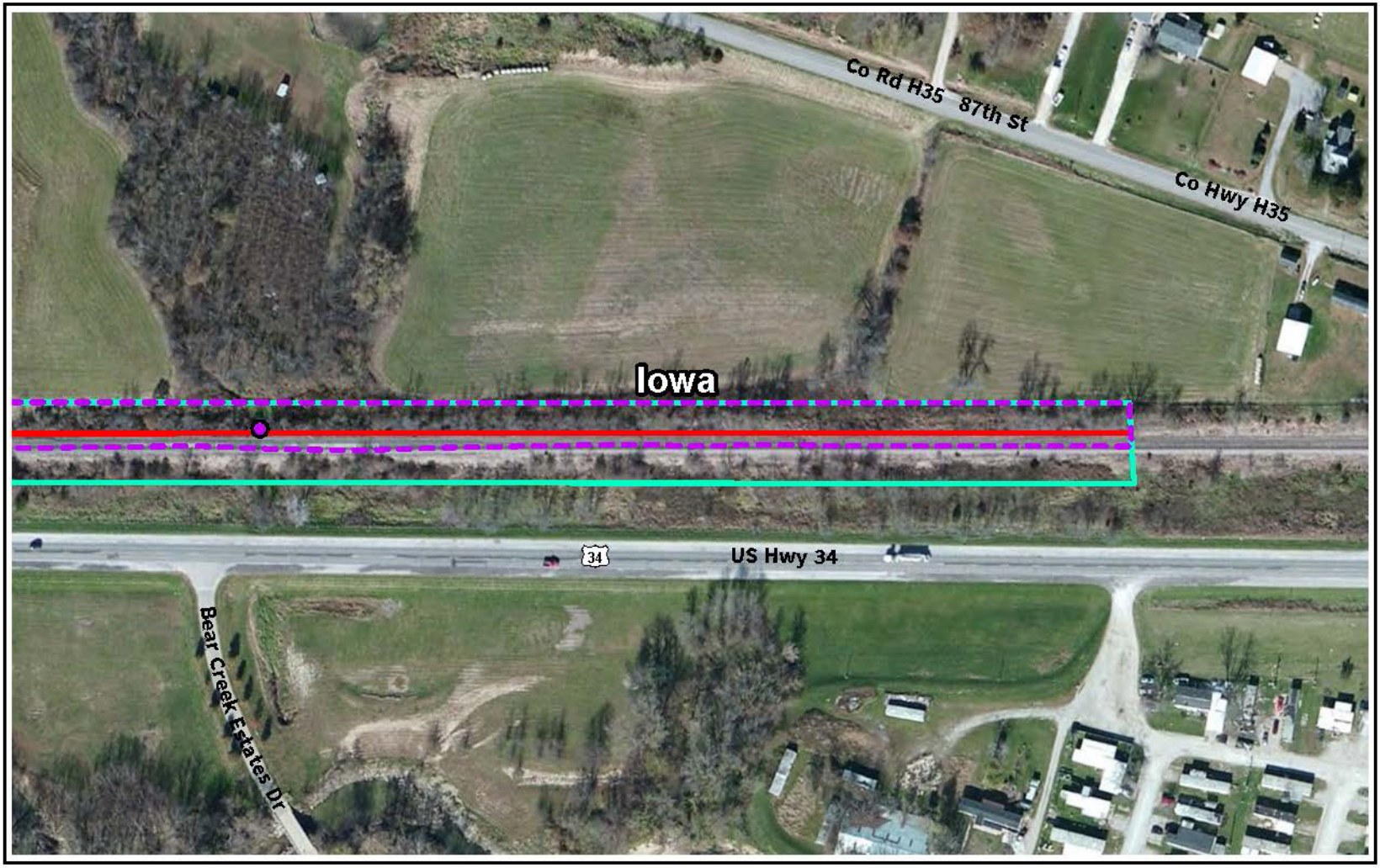
N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Ottumwa
Wapello, Iowa | Page 1 of 2



Study Area

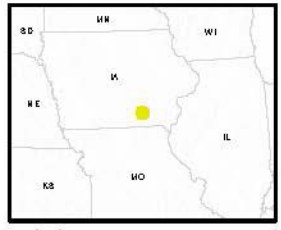
Capital Improvement Location

Existing Right-of-Way

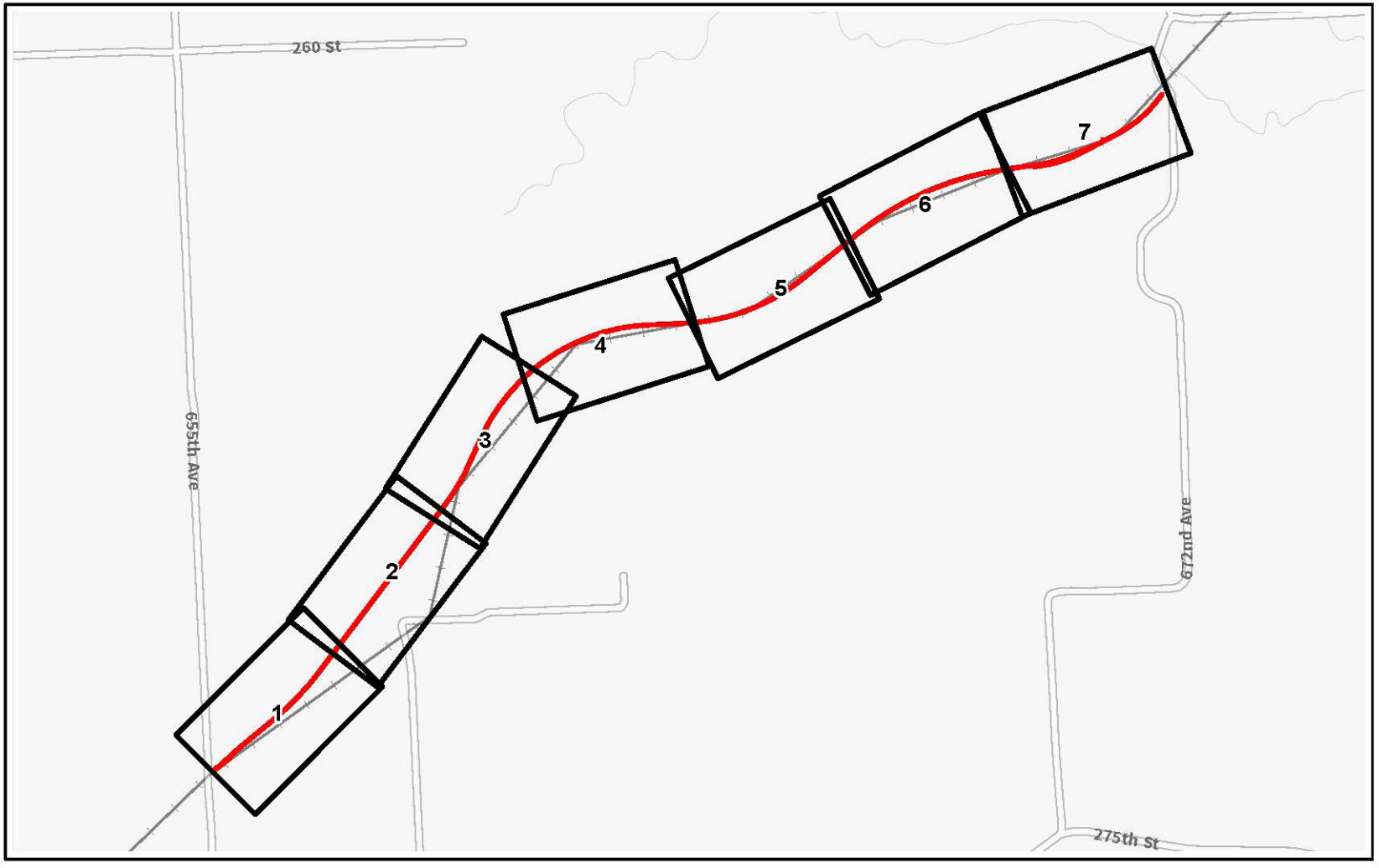
Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Ottumwa
Wapello, Iowa | Page 2 of 2



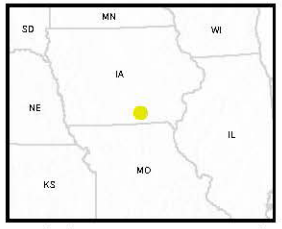
Capital Improvement Location

Page Index

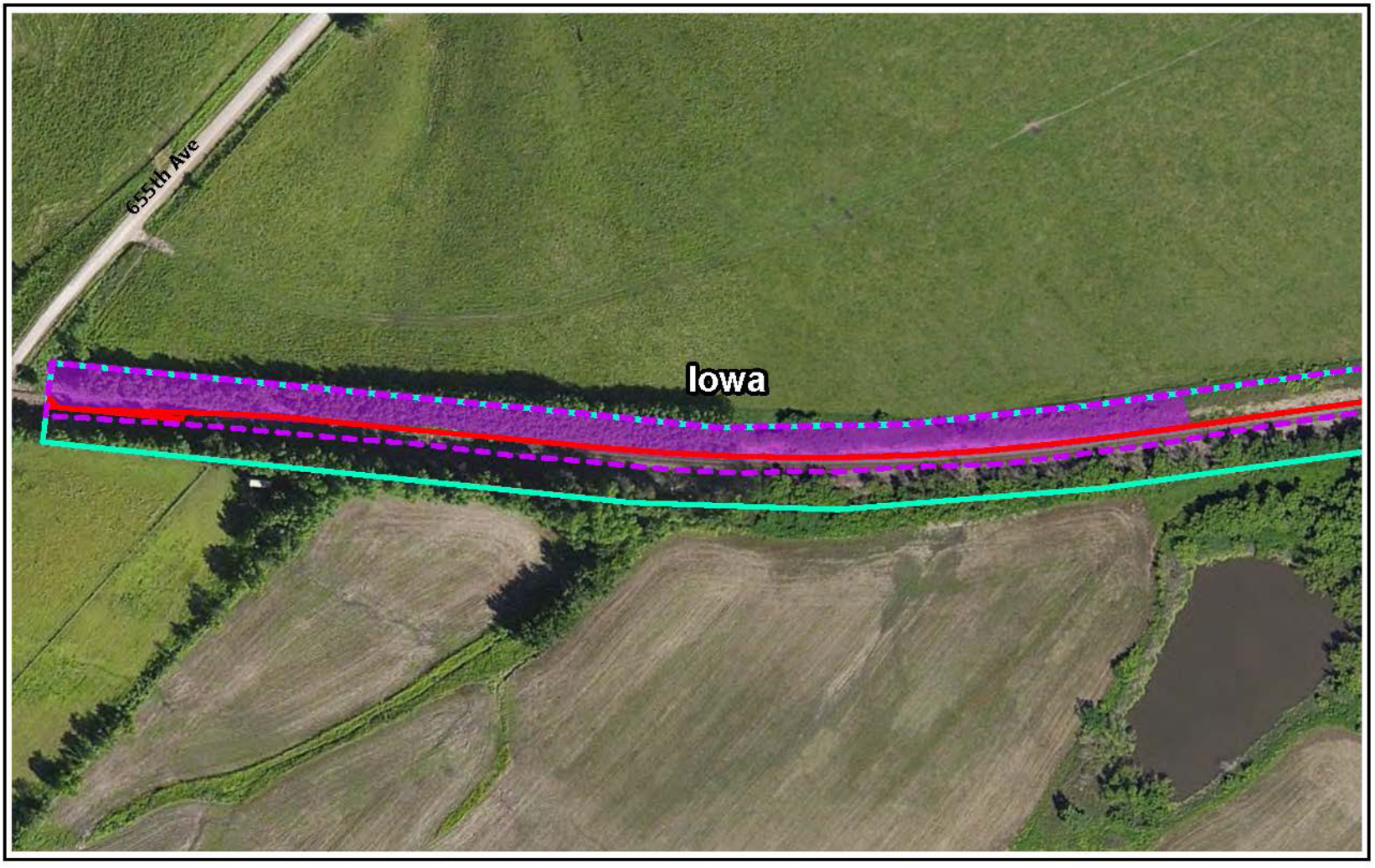
N

0 1500 3000 Feet

Source: FRA, CP, ArcGIS Online



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Study Area

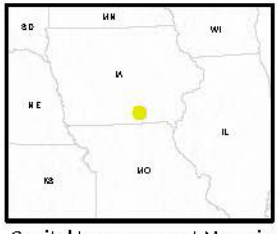
Capital Improvement Location

Existing Right-of-Way

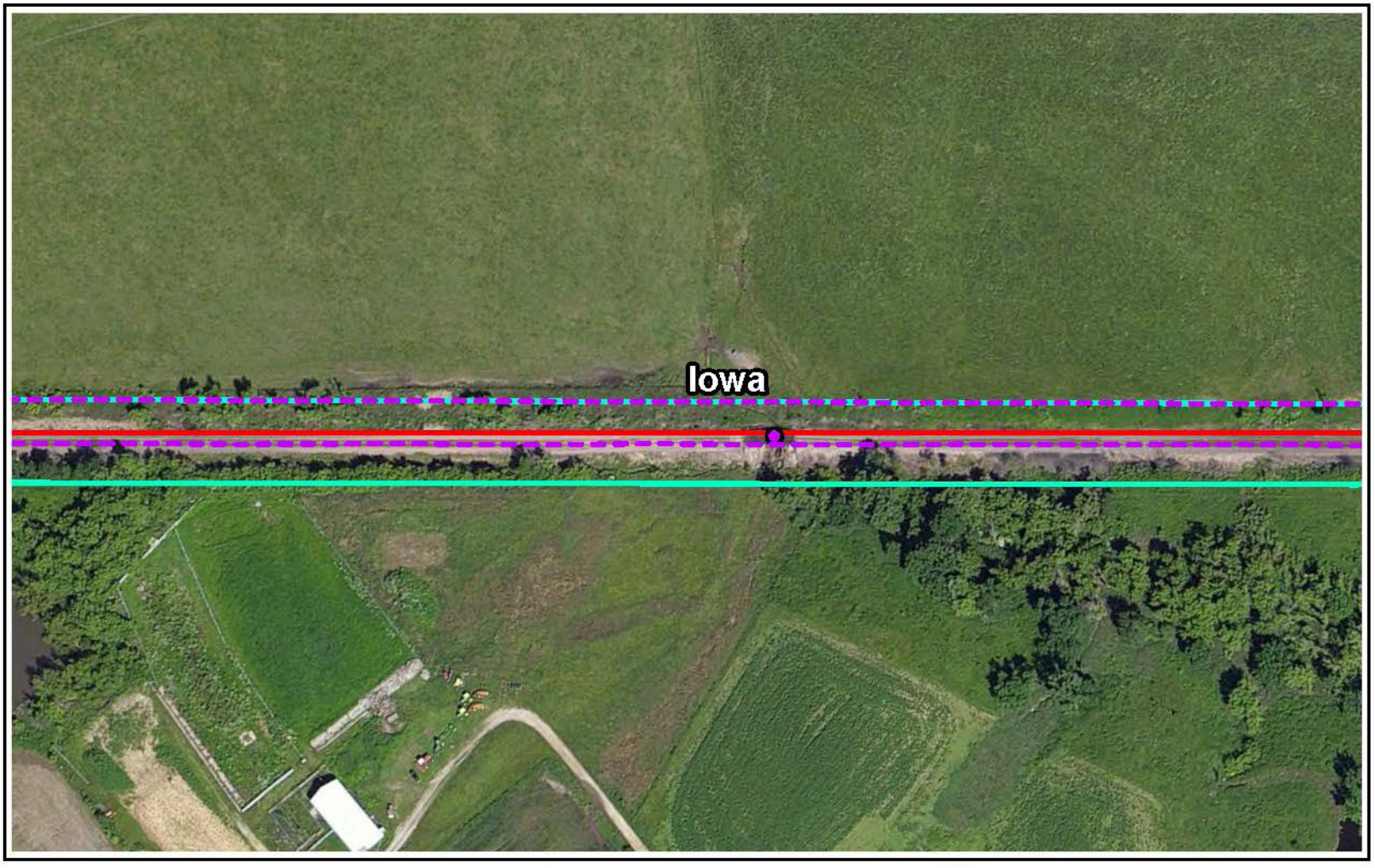
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



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Monroe, Iowa | Page 1 of 7



Study Area

Capital Improvement Location

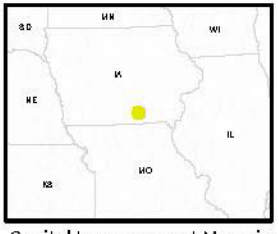
Existing Right-of-Way

Suitable Bat Roosting Structure

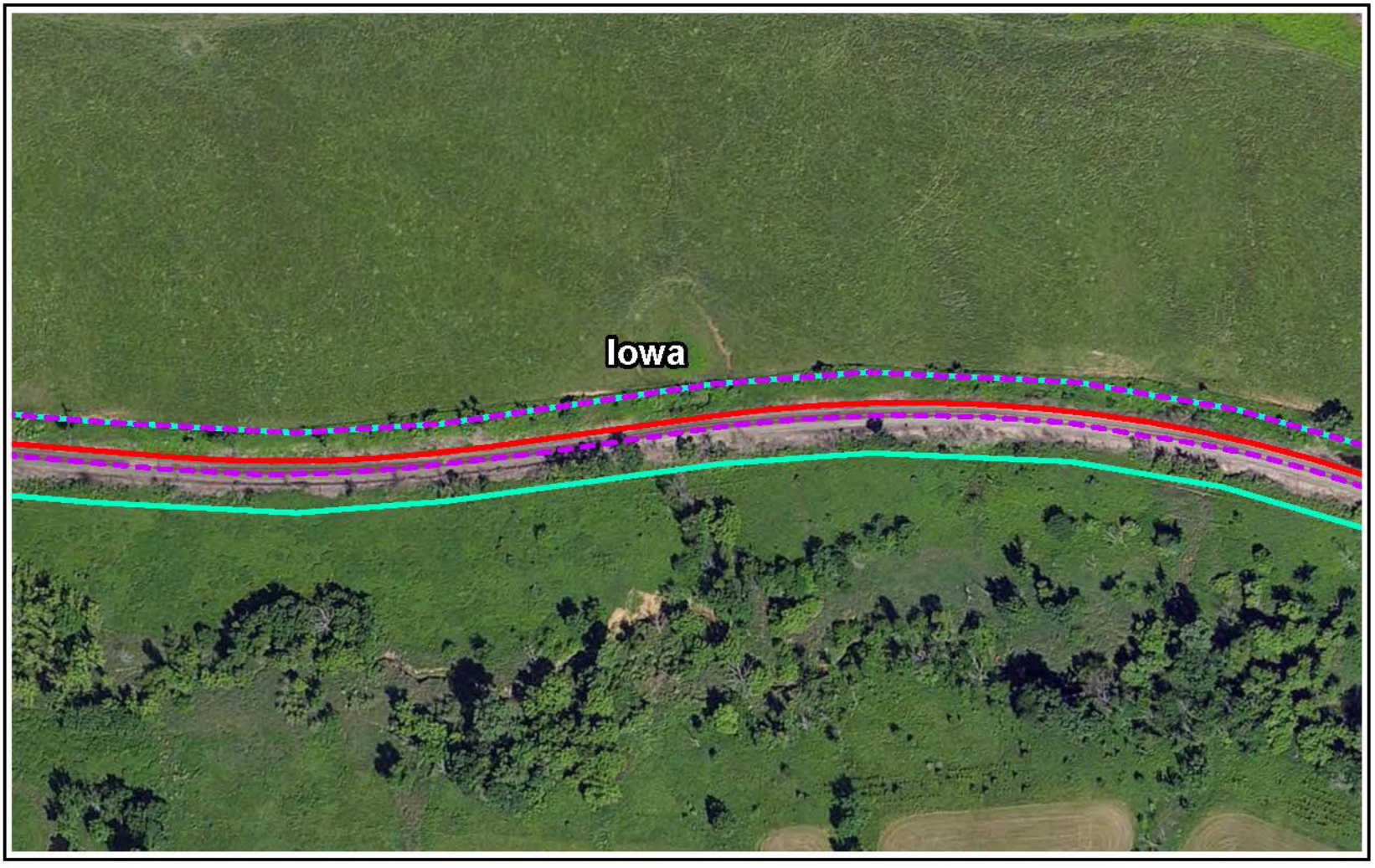
0 200 400

Feet

Source: FRA, CP, ArcGIS Online



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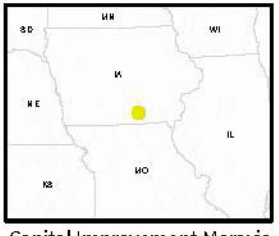
Study Area

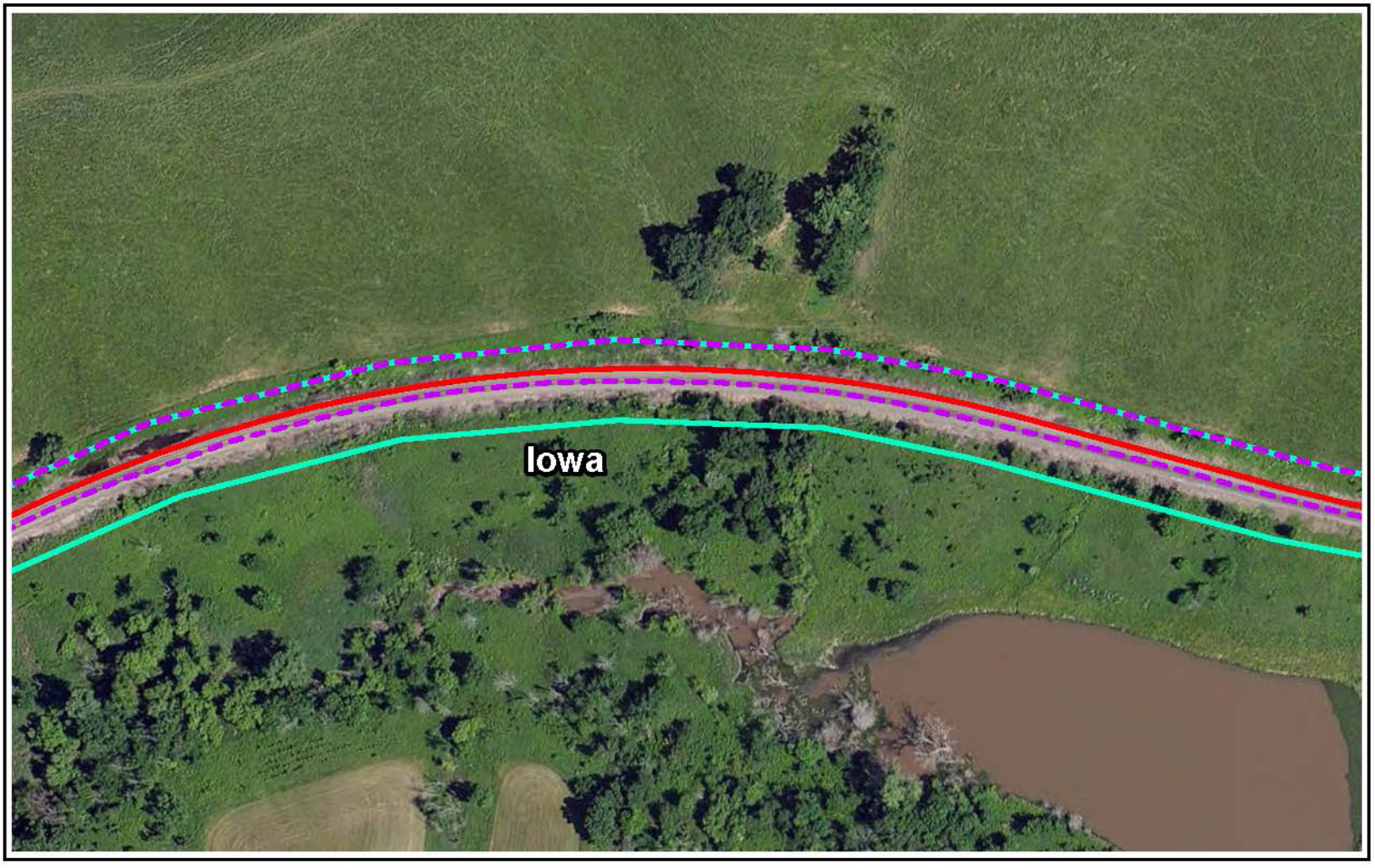
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

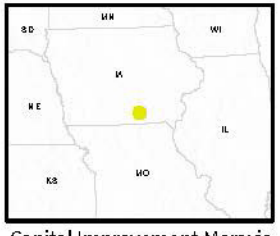




Study Area

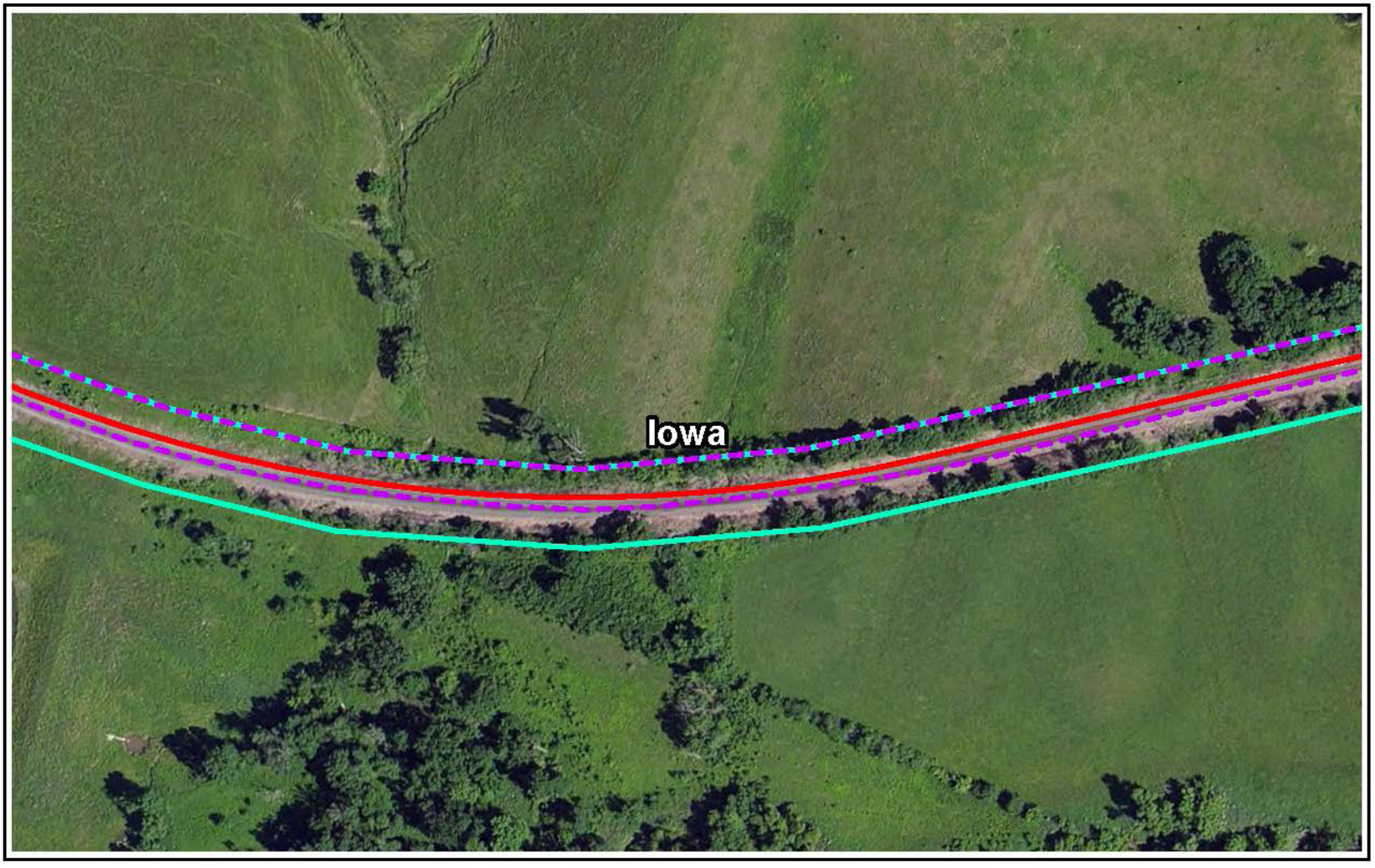
Capital Improvement Location

Existing Right-of-Way



0 200 400 Feet

Source: FRA, CP, ArcGIS Online



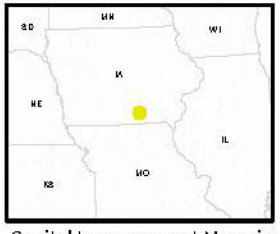
Study Area

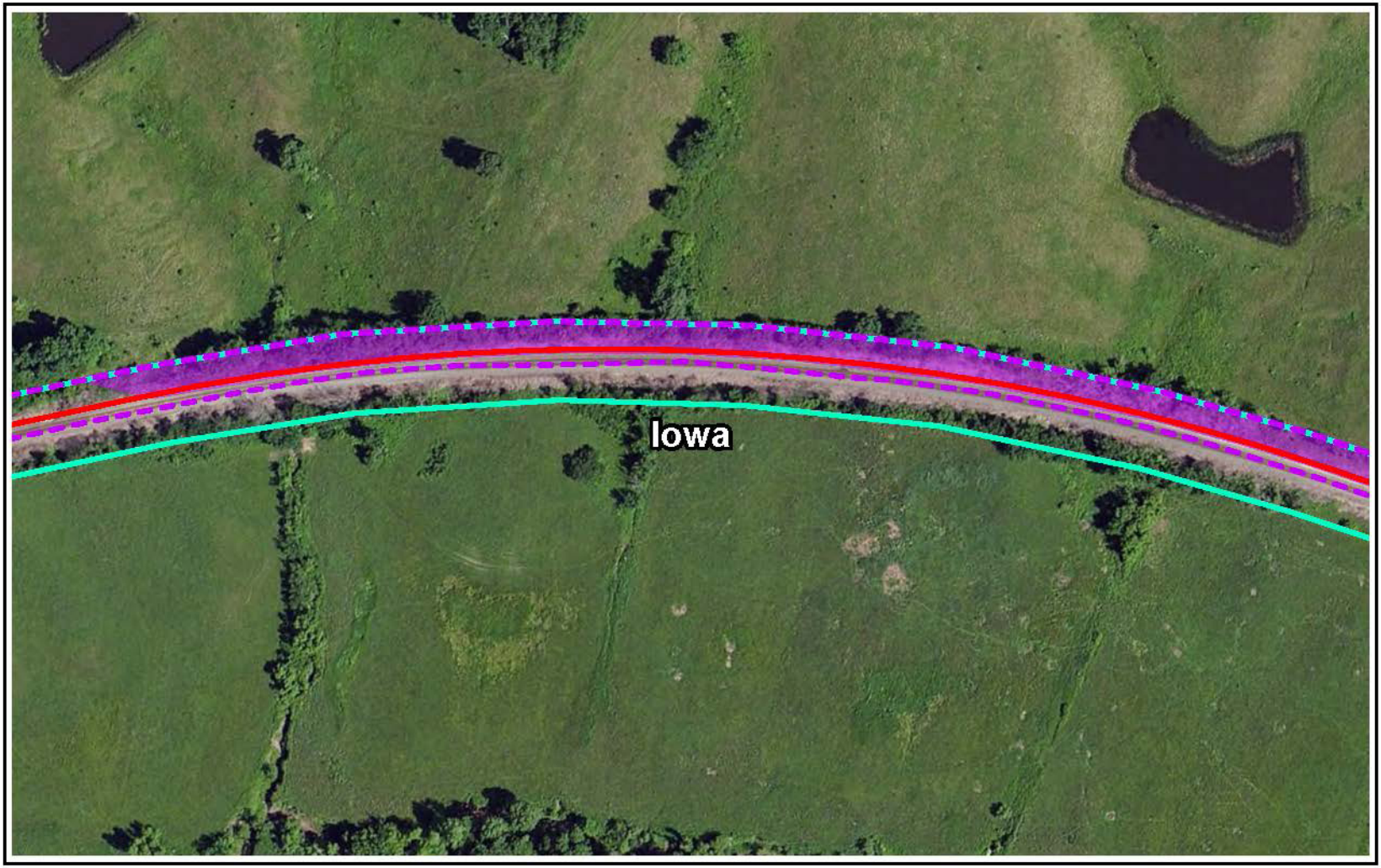
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

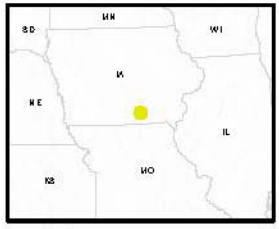
Capital Improvement Location

Existing Right-of-Way

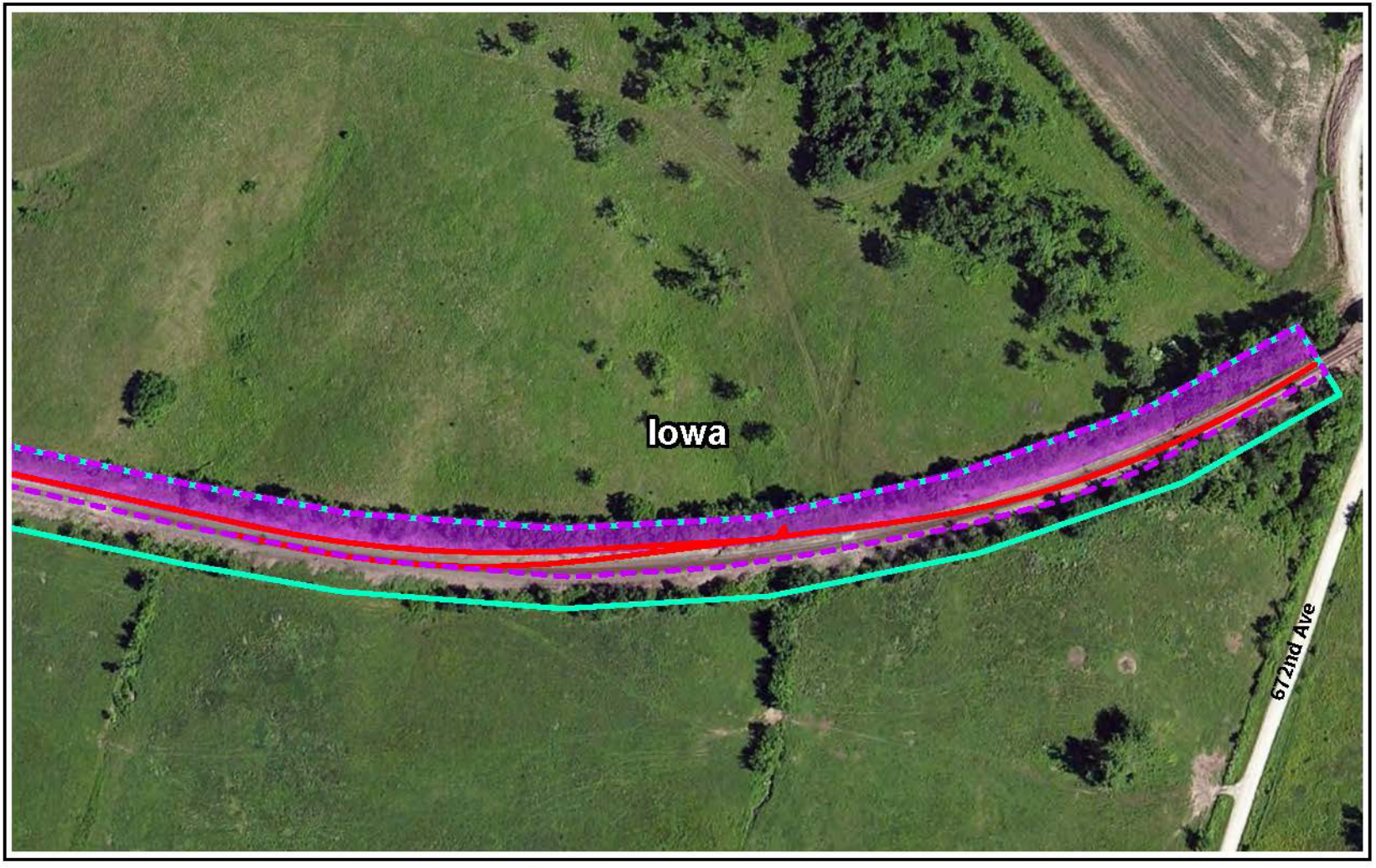
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Moravia
Monroe, Iowa | Page 6 of 7



Study Area

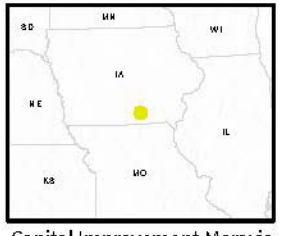
Capital Improvement Location

Existing Right-of-Way

Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

June 6, 2022

Karen Herrington
Field Supervisor
USFWS Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203
Karen_Herrington@fws.gov

Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern Railway, et al.; **USFWS Informal Section 7 Consultation**

Dear Ms. Herrington:

As you may recall from my letter dated November 12, 2021, Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern Railway et al. (KCS) have filed an application with the Surface Transportation Board (Board) under 49 U.S.C. §§ 11323-25 seeking the Board's approval of the acquisition of control of KCS by CP (Proposed Acquisition). If the Board authorizes the Proposed Acquisition, CP and KCS (collectively, the Applicants) would combine to form an integrated system to be known as Canadian Pacific Kansas City (CPKC). The Board's Office of Environmental Analysis (OEA) is currently preparing a Draft Environmental Impact Statement (EIS) that assesses the potential environmental impacts of the Proposed Acquisition, pursuant to the National Environmental Policy Act (NEPA) and related environmental laws. The purpose of this letter is to request your written concurrence of OEA's determination of effects for the Proposed Acquisition on federally listed species, in accordance with Section 7(a)(2) of the Endangered Species Act (ESA) of 1973.

The Applicants expect that the Proposed Acquisition would cause average rail traffic to increase on certain rail lines within the combined CPKC network because freight would be diverted from rail lines owned by other railroad companies and from truck transportation to rail transportation. To accommodate the projected increase in rail traffic, the Applicants plan to make certain capital improvements within the existing rail right-of-way (ROW) if the Board authorizes the Proposed Acquisition. In Missouri, those planned capital improvements would include adding two new passing sidings, extending three existing sidings, adding a double track, and adding a facility working track. Construction activities associated with those capital improvements have the potential to affect federally listed threatened or endangered species, if any are present within the existing rail ROW at the planned capital improvement locations. Maps of the planned capital improvement locations in Missouri are appended to this letter.

Although OEA is evaluating the potential environmental impacts of the planned capital improvements as effects of the Proposed Acquisition, the Applicants would only add the capital improvements as needed to support increased rail traffic. Therefore, the Applicants have not completed detailed design and engineering and would not do so until after the Board has issued its final decision on the Proposed Acquisition. Accordingly, OEA's analysis of the potential impacts from constructing the planned capital improvements is based on largely conceptual design information, as well as conservative assumptions about how construction would proceed. OEA expects that all construction activity associated with the planned capital improvements would take place within the existing rail ROW.

In Missouri, the planned capital improvements would include adding two new passing sidings, extending three existing sidings, adding a double track, and adding a facility working track, which would involve tree clearing, grading, and filling within the existing rail ROW. To be conservative, OEA assumed that each planned capital improvement could affect the entire area extending from the existing tracks to the edge of the rail ROW (study area), but the actual affected area would likely be smaller. The planned capital improvements could also involve replacing or extending existing railroad bridges and culverts to accommodate the new or extended siding.

OEA conducted field work in January 2022 to characterize the existing habitat at each planned capital improvement location. Prior to conducting field work, OEA used the USFWS Information for Planning and Consultation tool and correspondence from the Missouri Department of Conservation to determine the species of concern for each planned capital improvement location. Based on habitat-level field work, OEA identified suitable roosting and foraging habitat within the existing ROW for the northern long-eared bat (*Myotis septentrionalis*) and Indiana bat (*Myotis sodalis*) at six of the seven planned capital improvements in Missouri. The Applicants have proposed multiple measures to protect the northern long-eared and Indiana bat during the construction of the planned capital improvements, as detailed in Attachment A to this letter. These measures include commitments to conduct tree clearing and work on structures that provide suitable roosting habitat outside of the active season (April 1 to October 31), as well as measures related to installing lighting. Based on the Applicants' voluntary commitments, OEA has determined that the Proposed Acquisition **may affect, but is not likely to adversely affect** the northern long-eared bat and Indiana bat.

OEA identified a bald eagle nest within the existing ROW of the MP 431 (Dawn) capital improvement site in Livingston County. If activities for the planned capital improvement requires the removal of the nest tree, the Applicant would obtain an Eagle Nest Take Permit (50 C.F.R. 22.27) prior to removing the nest tree. The following species do not have suitable habitat within the rail ROW at any of the planned capital improvement locations: Eastern prairie fringed orchid (*Platanthera leucophaea*), gray bat (*Myotis grisescens*), Mead's milkweed (*Asclepias meadii*), monarch butterfly (*Danaus plexippus*), Neosho madtom (*Noturus placidus*), Neosho mucket (*Lampsilis rafinesqueana*), Ozark cavefish (*Amblyopsis rosae*), and rabbitsfoot (*Quadrula cylindrica cylindrica*). Therefore, OEA has determined that the Proposed Acquisition would have **no effect** on these species**.** There is no critical habitat within any of the planned

capital improvement locations in Missouri. If you agree with these recommended determinations, please send your written concurrence.

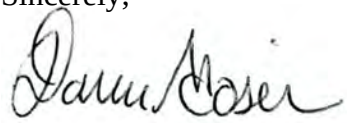
Please see **Table 1** below for a summary of ESA-listed species with suitable habitat and the attached maps showing suitable forested bat habitat and suitable bat roosting structures within the ROW of the planned capital improvement locations.

Table 1. ESA-listed species with suitable habitat at the planned capital improvement locations in Missouri

Common and Scientific Name	Capital Improvement Location	Federal Status	Suitable Habitat	Recommended Effects Determination
Northern long-eared bat (*Myotis septentrionalis*)	Newtown (Sullivan County) Laredo (Grundy County) MP 431 (Livingston County) Blue Valley (Jackson County) Grandview/IFG (Jackson and Cass Counties) MP 186 (McDonald County)	Threatened (Proposed Endangered)	Suitable roosting and foraging habitat for the northern long-eared bat was present throughout the study area. Roosting habitat was identified in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. Foraging habitat was present in the canopy-enclosed flyways of forested edges of railroad ROW, adjacent roads, and throughout riparian corridors.	May affect, not likely to adversely affect
Indiana bat (*Myotis sodalis*)	Newtown (Sullivan County) Laredo (Grundy County) MP 431 (Livingston County) Blue Valley (Jackson County) Grandview/IFG (Jackson and Cass Counties) MP 186 (McDonald County)	Endangered	Suitable summer roosting and foraging habitat for the Indiana bat was present throughout the study area. Summer roosting habitat was identified in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. Foraging habitat was present in the canopy-enclosed flyways of forested edges of railroad ROW, adjacent roads, and throughout riparian corridors.	May affect, not likely to adversely affect

We appreciate your review and assistance in the consultation process and look forward to hearing from you. For further information or questions, please contact Joshua Wayland at Joshua.Wayland@stb.gov or 202-245-0330. For further information about the Proposed Acquisition, you may also visit the Board-sponsored project website at www.CP-KCSMergerEIS.com.

Sincerely,



Danielle Gosselin
Director
Office of Environmental Analysis

ATTACHMENT A: NORTHERN LONG-EARED BAT AND INDIANA BAT VOLUNTARY MITIGATION MEASURES

Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern Railway et al. (KCS) (collectively, the Applicants) have voluntarily proposed the following measures to avoid impacts on northern long-eared bat and Indiana bat. If the Surface Transportation Board (Board) authorizes the Proposed Acquisition of KCS by CP, the Applicants, their employees, and their contractors would be required to strictly adhere to these measures during construction of planned capital improvements related to the Proposed Acquisition, as well as any additional mitigation measures recommended by the Board's Office of Environmental Analysis (OEA) and imposed by the Board in its final decision.

- The Applicants will not conduct construction-related tree removal for the planned capital improvements during the active season for the Indiana bat and the northern long-eared bat (April 1 to October 31).

- During the construction of the planned capital improvements, the Applicants will take steps to reduce the unnecessary removal of bat habitat outside of active bat season by limiting tree removal to only the areas necessary to safely construct and operate the new siding or second track, marking the limits of tree clearing through the use of flagging or fencing, and ensuring that construction contractors understand clearing limits and how they are marked in the field.

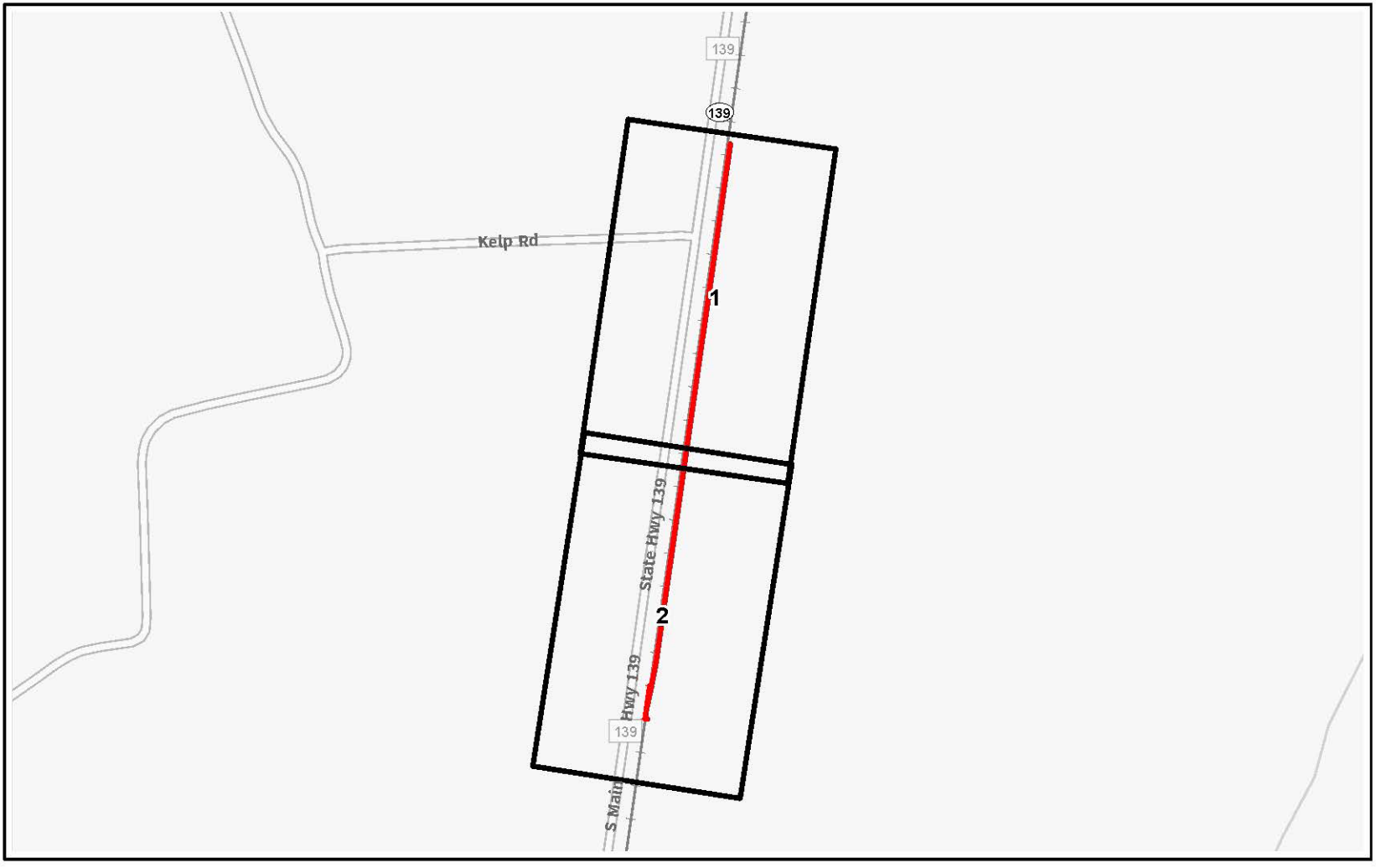
- Where practicable, the Applicants will conduct any culvert or bridge removal as part of the planned capital improvements outside of the roosting period of bat species, specific to each planned capital improvement location. Where practicable, if bridge or culvert removal is required during the bat roosting period where the individual planned capital improvement is located, the Applicants will consult with OEA and the local office of the U.S. Fish and Wildlife Service (USFWS) on appropriate methods to determine if bats are using the bridge or culvert as a roost.

- If construction of the planned capital improvements would require removal or alteration of bridges, culverts, or other structures that provide suitable habitat for the northern long-eared bat or the Indiana bat during the active season for those species (April 1 to October 31), the Applicants will first conduct an inspection for the presence of or evidence of use by bats. The inspection will be completed by a qualified biologist. If the inspection finds bats or evidence of bats, then the Applicants will not commence work on the structure until coordinating with OEA and USFWS to determine appropriate follow-up or mitigative actions. The inspection must be completed during the same year that the work takes place.

- During construction of the planned capital improvements, the Applicants will direct any temporary lighting away from suitable habitat for the northern long-eared bat or the Indiana bat during the active season for those species (April 1 to October 31). The

Applicants will use downward-facing, full cut-off lens lights for any temporary lighting used during the construction of the planned capital improvements.

- If the planned capital improvements would involve installing any new, or replacing any existing, permanent lights, the Applicants will use downward-facing, full cut-off lens lights (with the same intensity or less for replacement lighting).



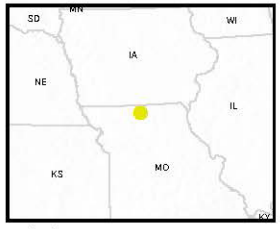
Capital Improvement Location

Page Index

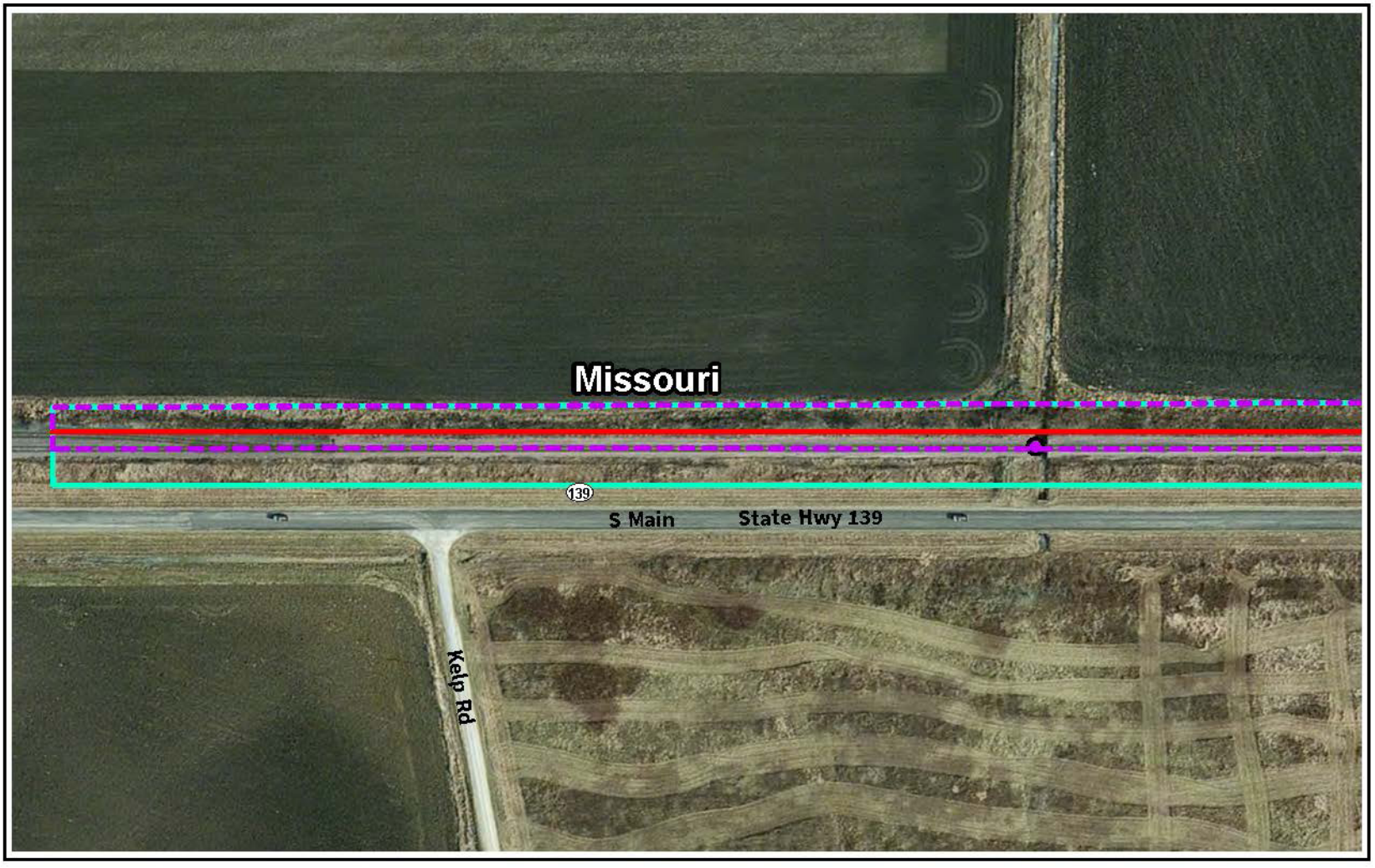
N

0 800 1600 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Newtown
Sullivan, Missouri | Page Index



Study Area

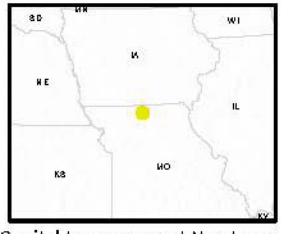
Capital Improvement Location

Existing Right-of-Way

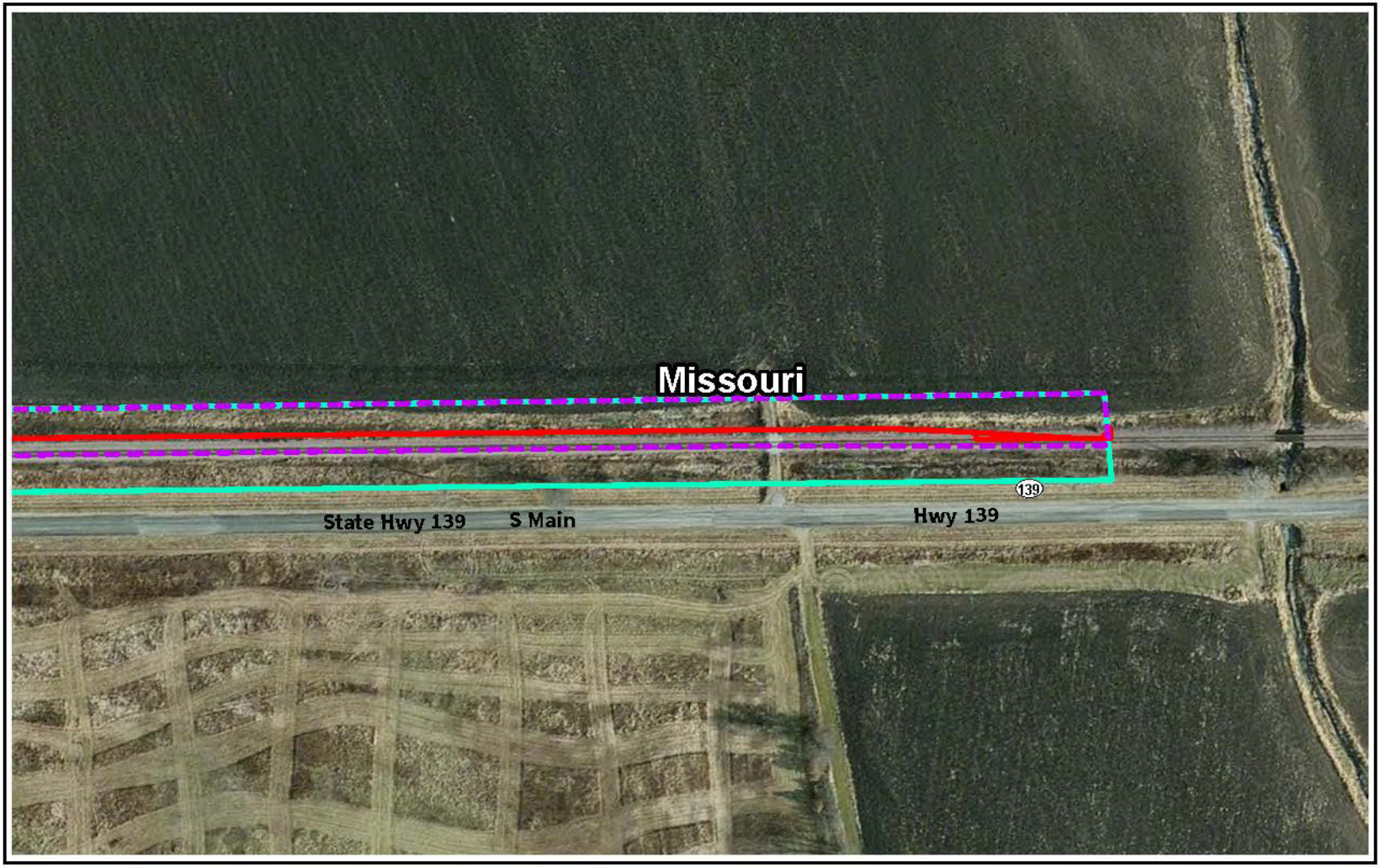
Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Newtown
Sullivan, Missouri | Page 1 of 2



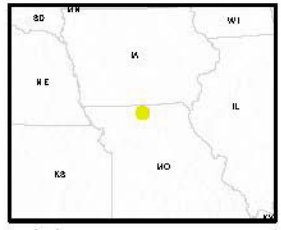
Study Area

Capital Improvement Location

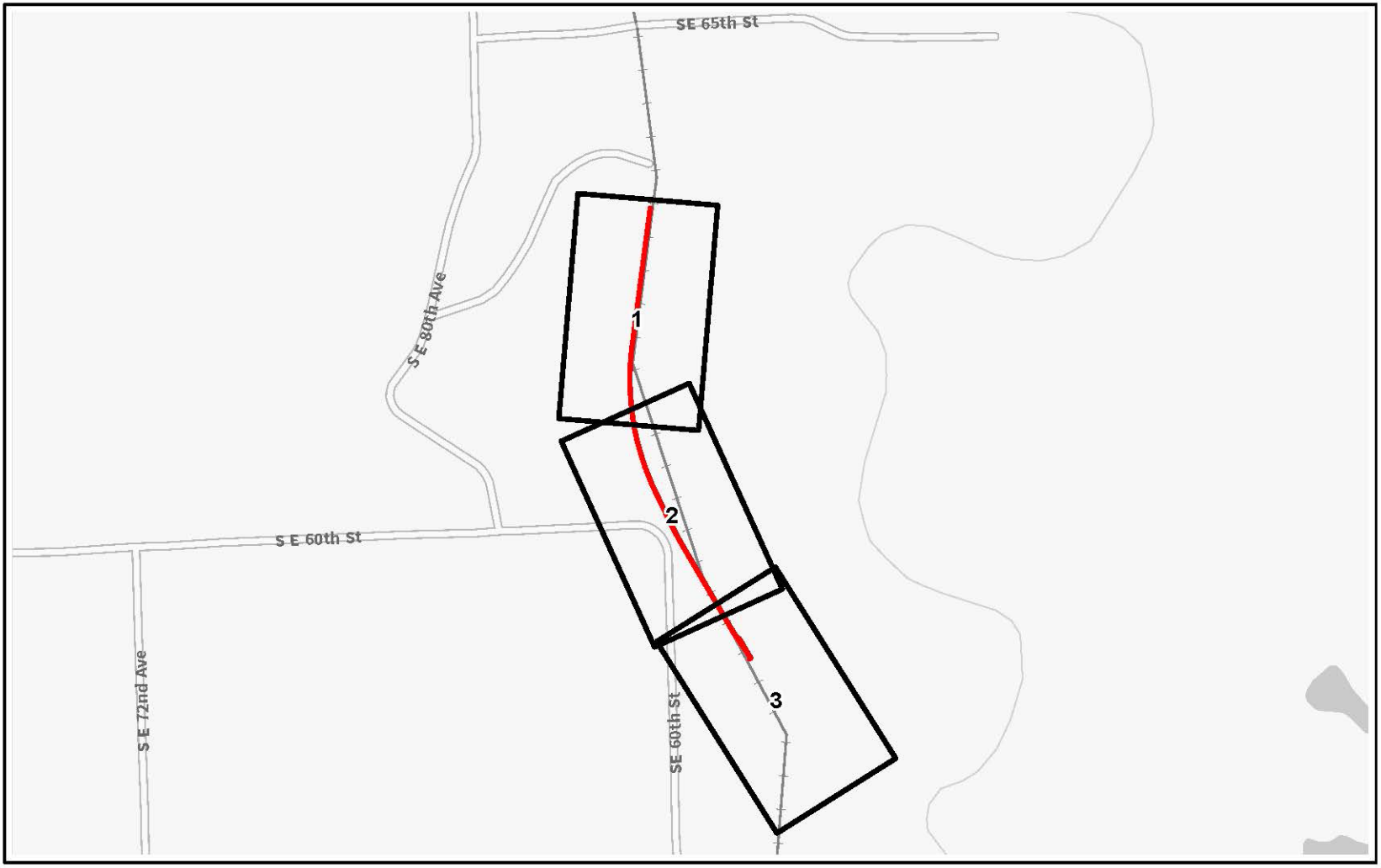
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Newtown
Sullivan, Missouri | Page 2 of 2



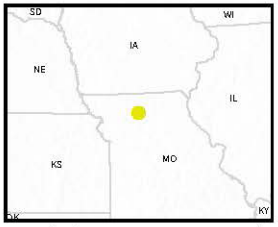
Capital Improvement Location

Page Index

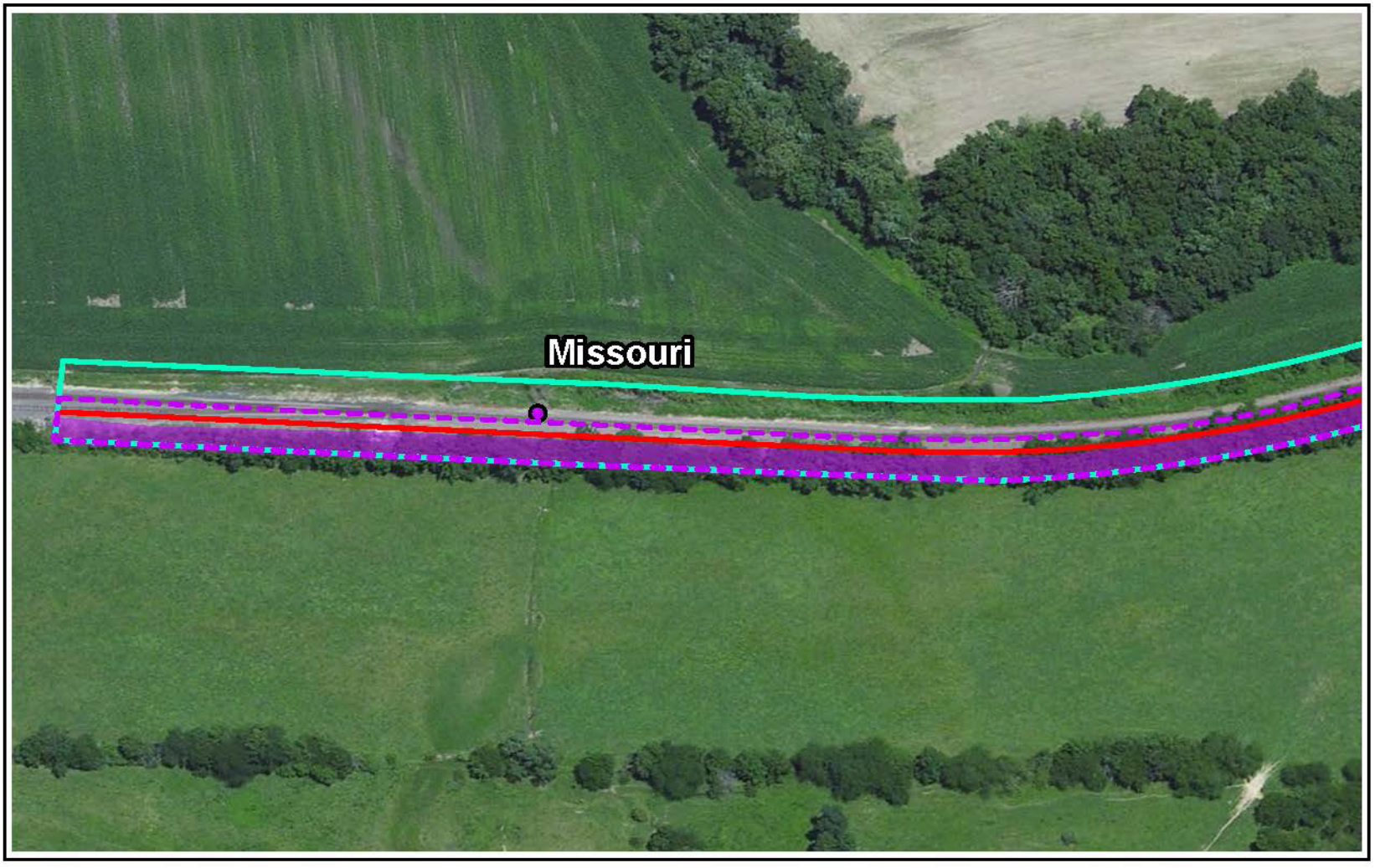
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0 1200 2400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Laredo
Grundy, Missouri | Page Index



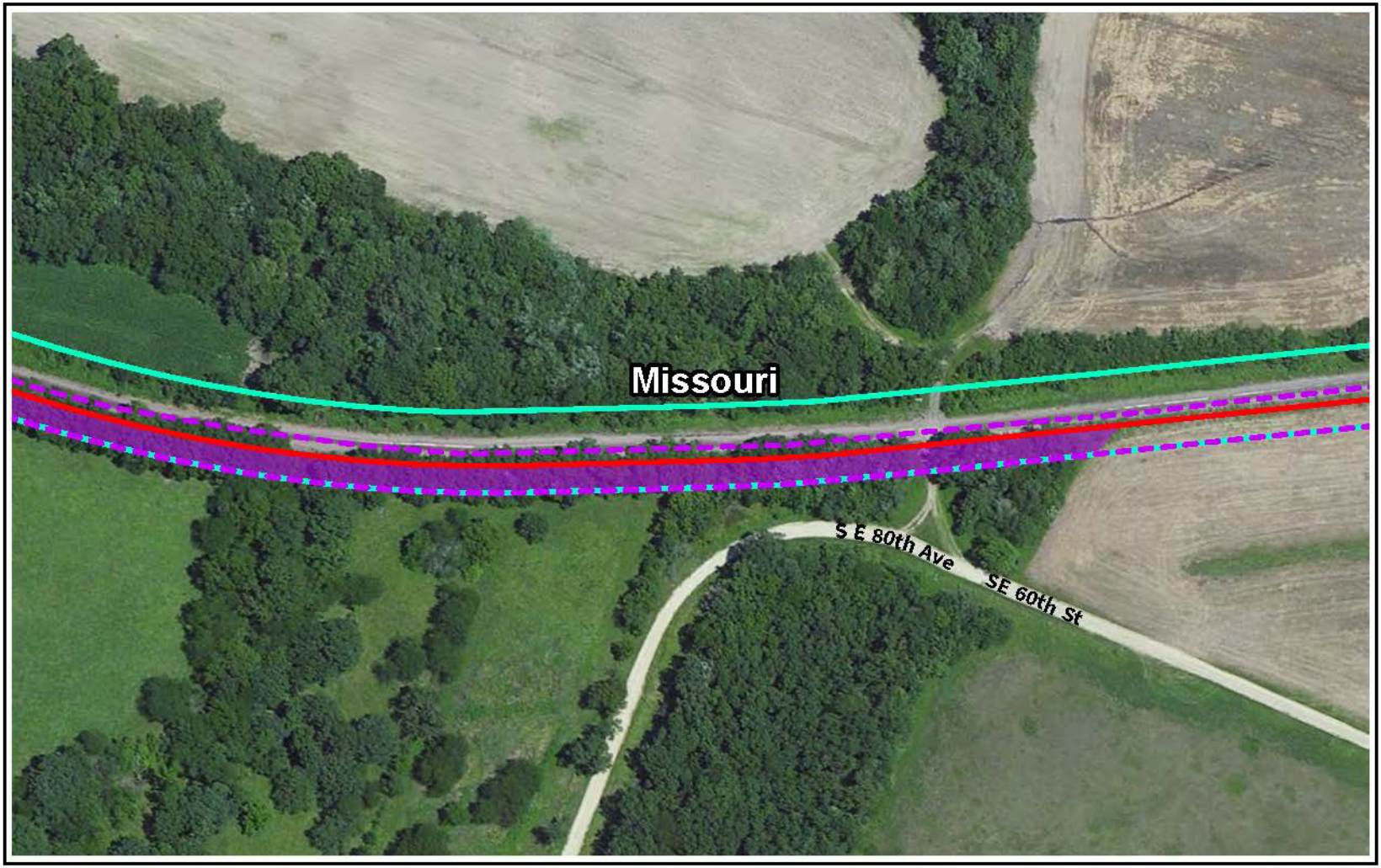
Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Laredo
Grundy, Missouri | Page 1 of 3



Study Area

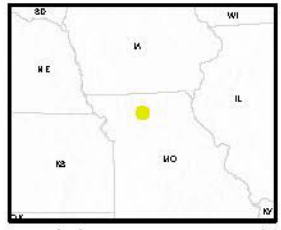
Capital Improvement Location

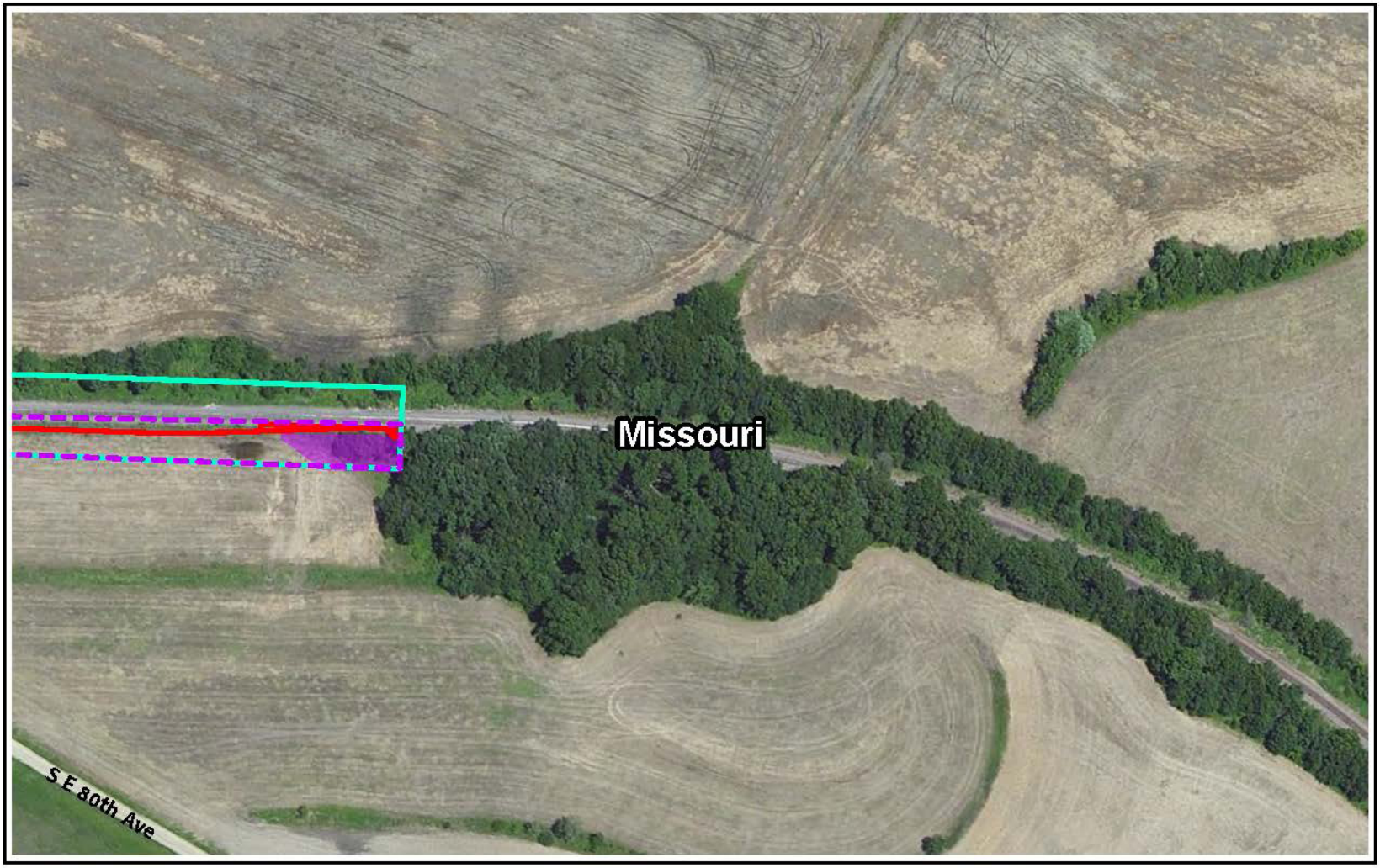
Existing Right-of-Way

Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

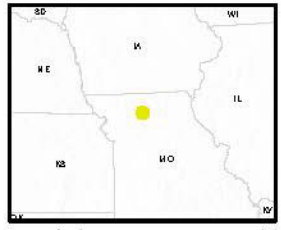
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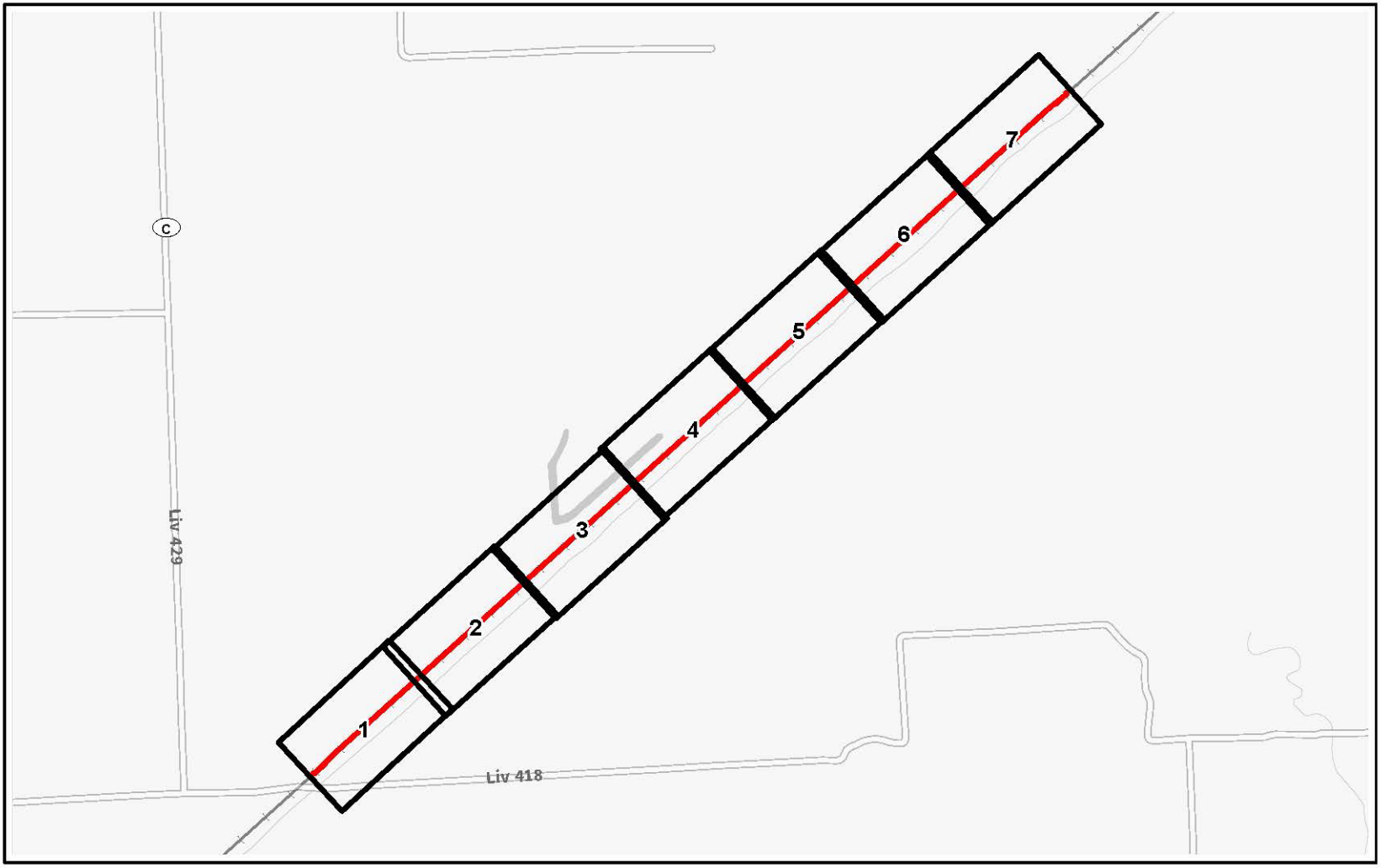
Existing Right-of-Way

Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Capital Improvement Location

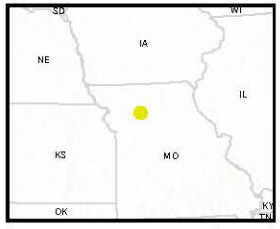
Page Index

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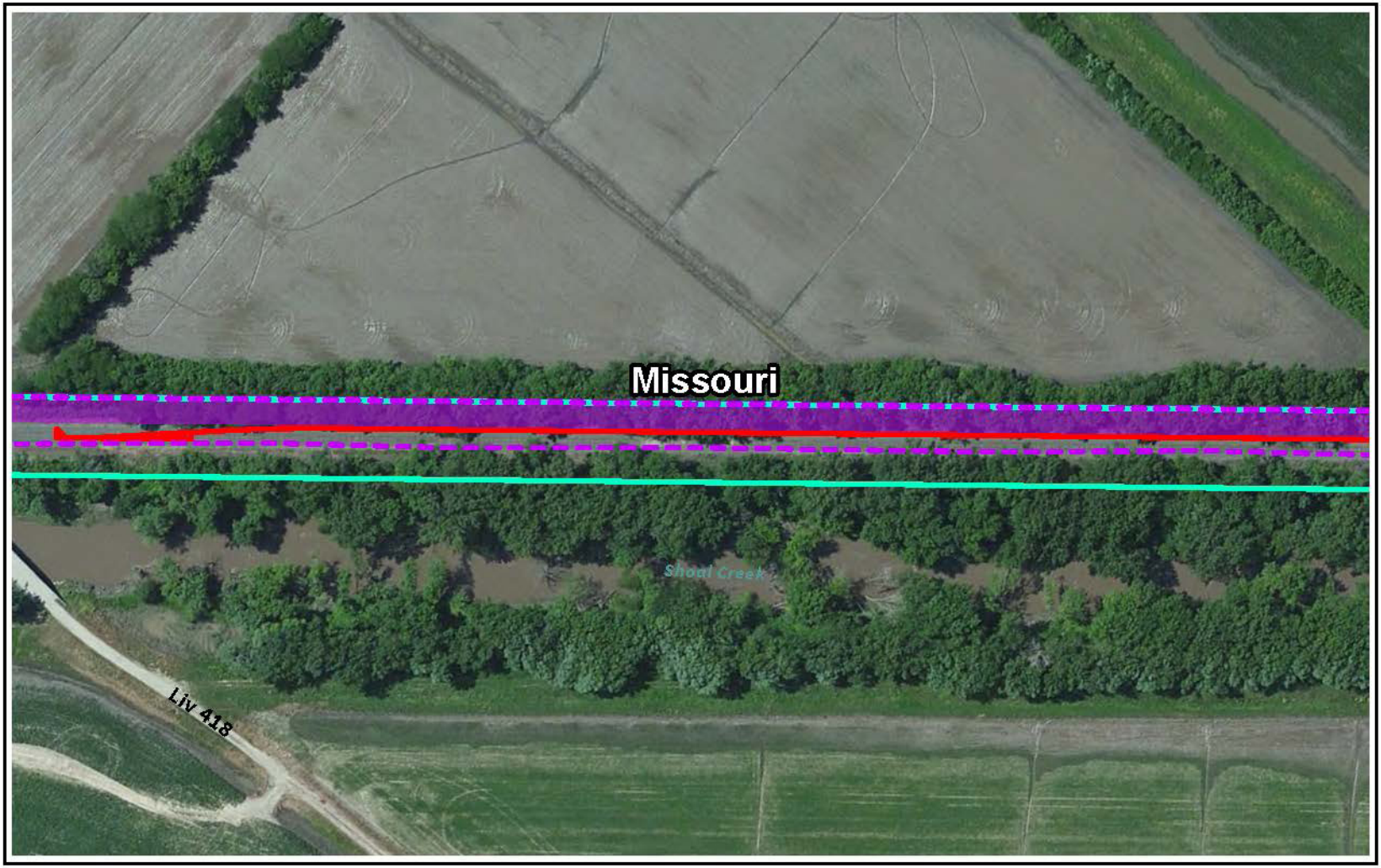
0 1800 3600

Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 431 (Dawn)
Livingston, Missouri | Page Index



Study Area

Capital Improvement Location

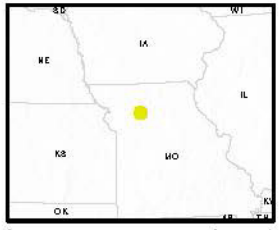
Existing Right-of-Way

Suitable Forested Bat Habitat

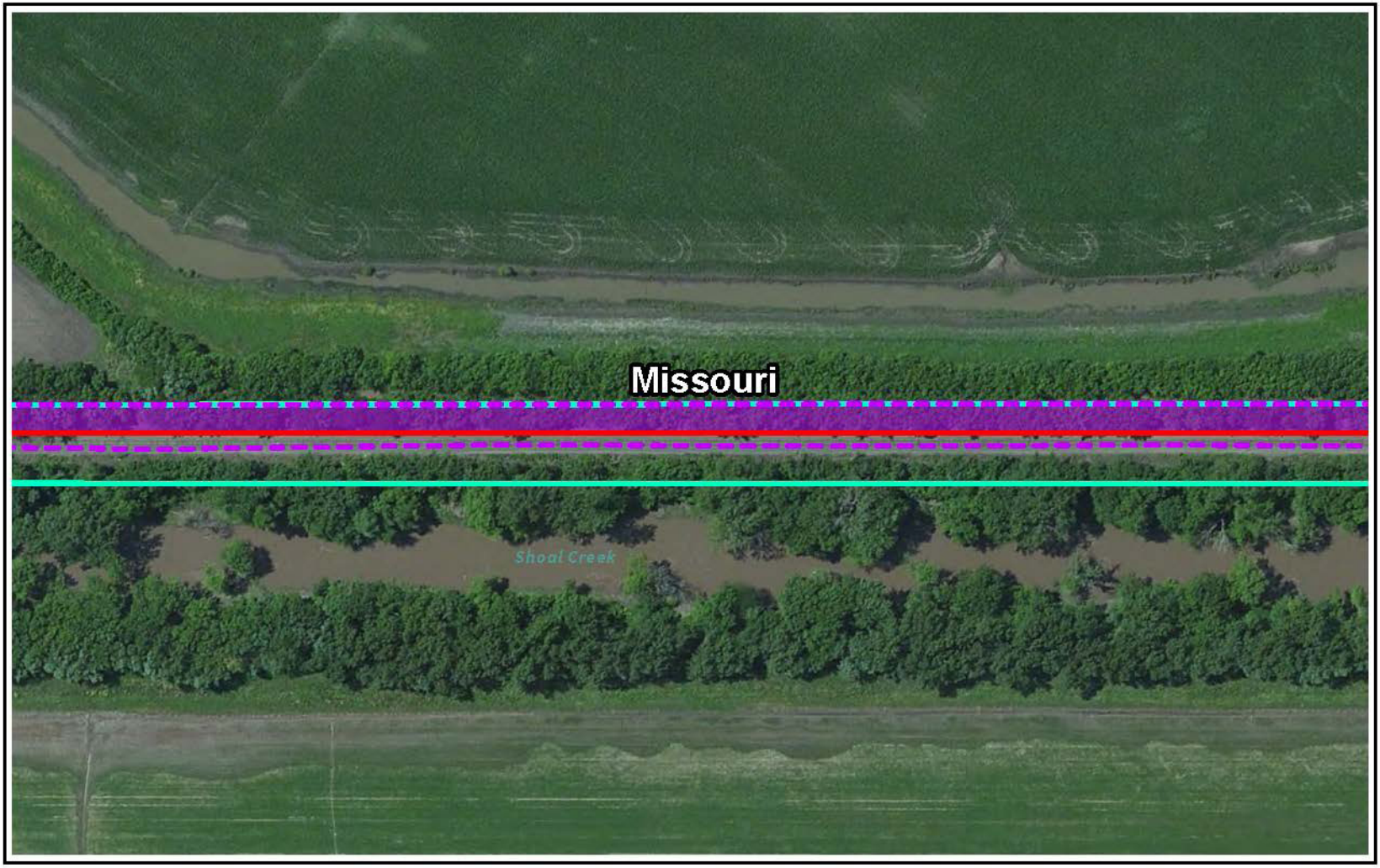


0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 431 (Dawn)
Livingston, Missouri | Page 1 of 7



Study Area

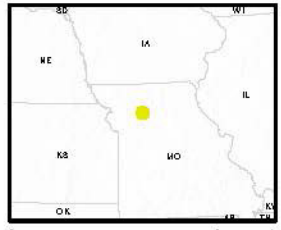
Capital Improvement Location

Existing Right-of-Way

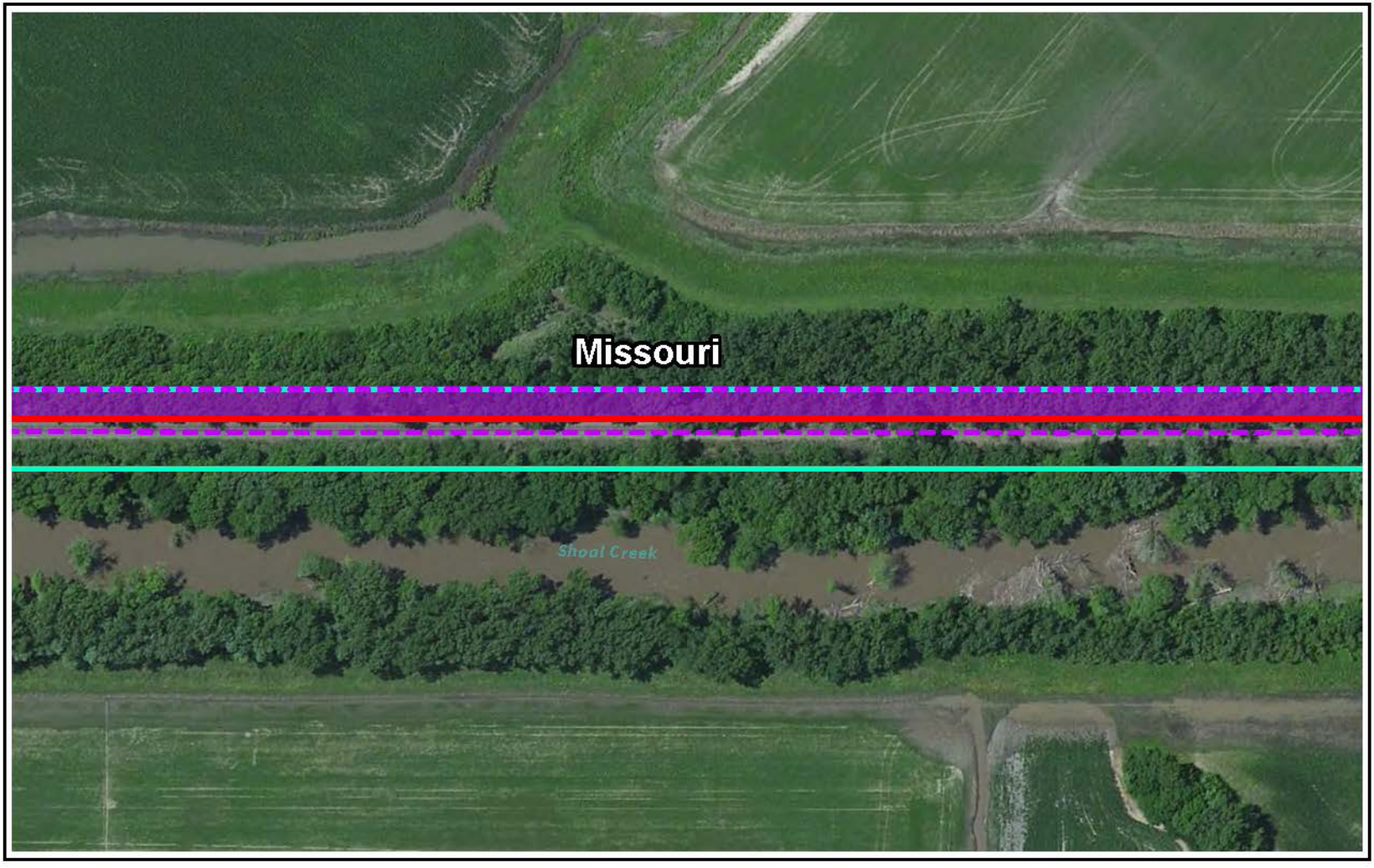
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 431 (Dawn)
Livingston, Missouri | Page 2 of 7



Study Area

Capital Improvement Location

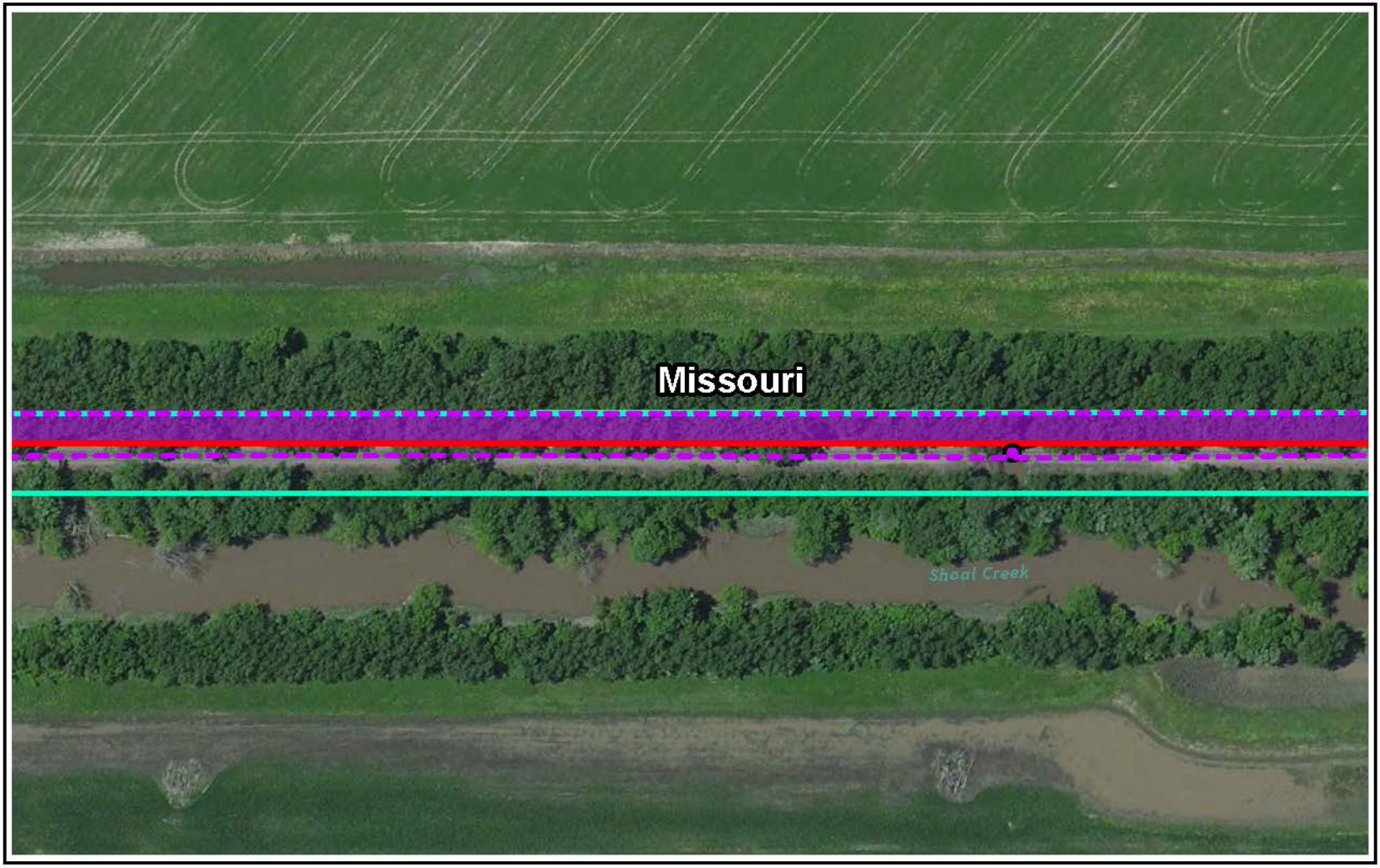
Existing Right-of-Way

Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

Capital Improvement Location

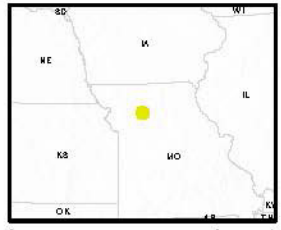
Existing Right-of-Way

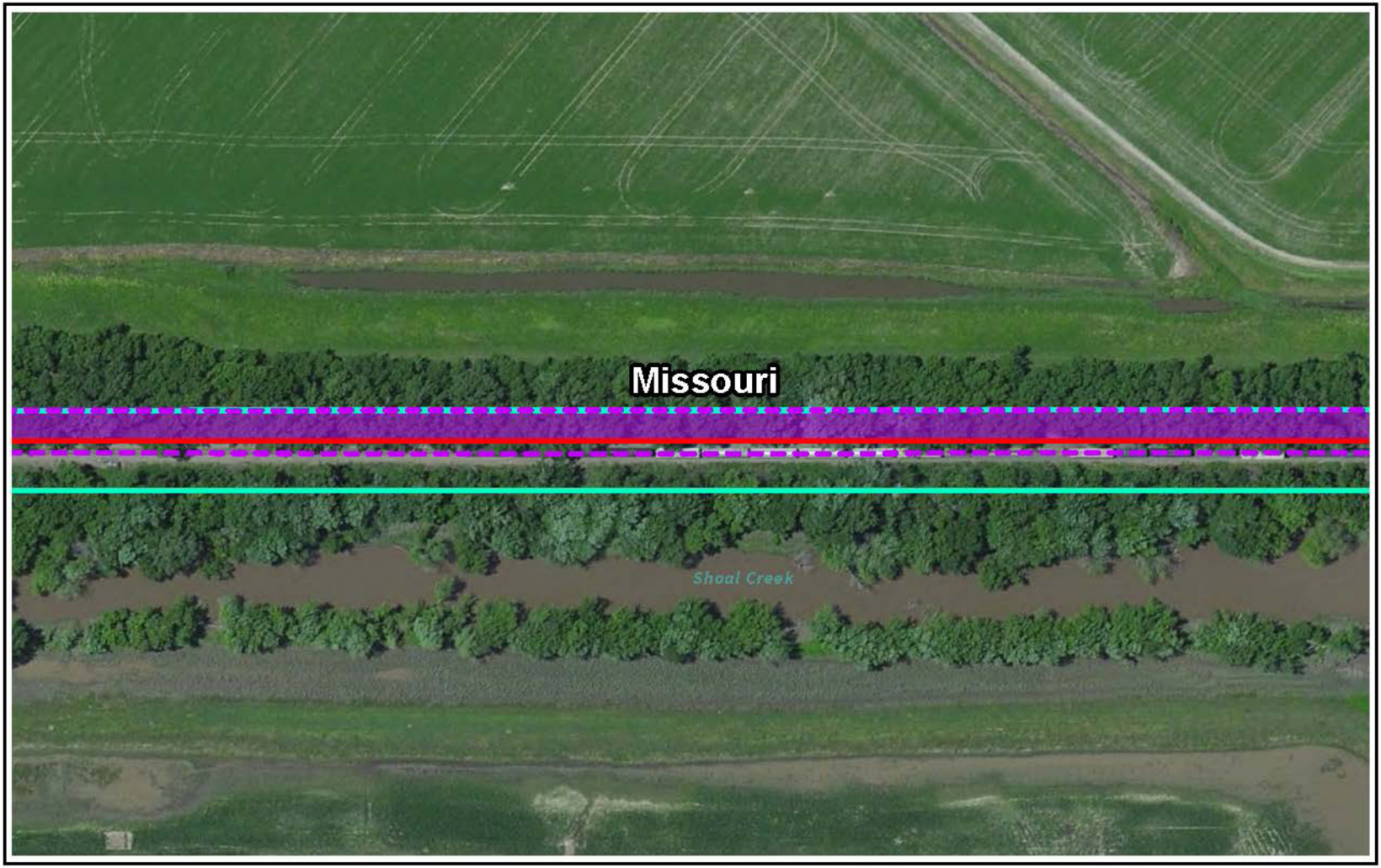
Suitable Bat Roosting Structure

Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

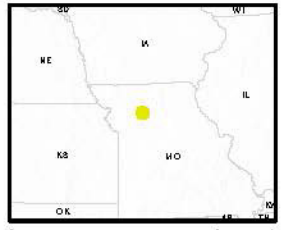
Capital Improvement Location

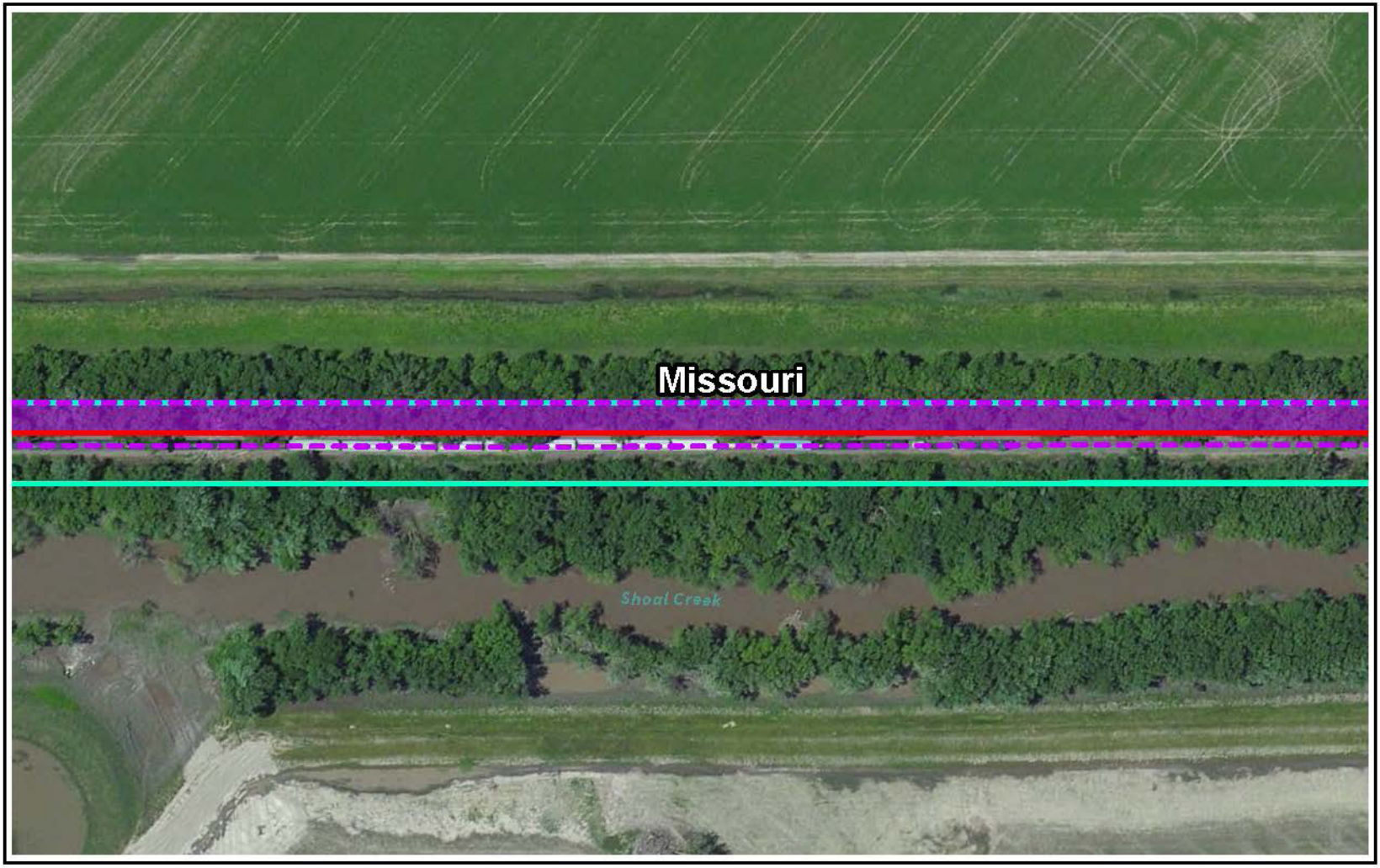
Existing Right-of-Way

Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

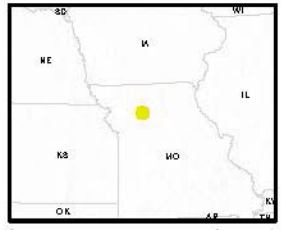
Capital Improvement Location

Existing Right-of-Way

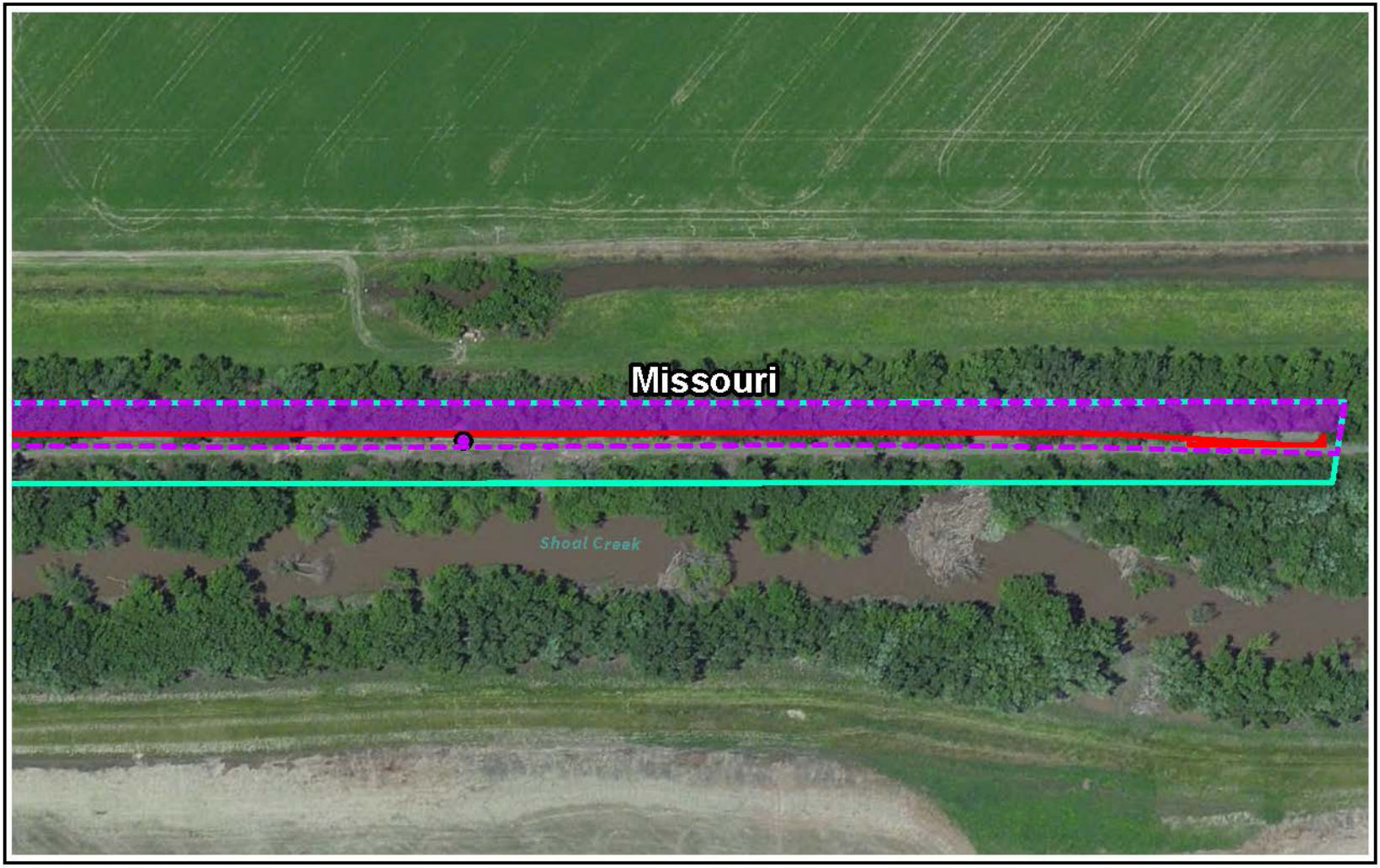
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 431 (Dawn)
Livingston, Missouri | Page 6 of 7



Study Area

Capital Improvement Location

Existing Right-of-Way

Suitable Bat Roosting Structure

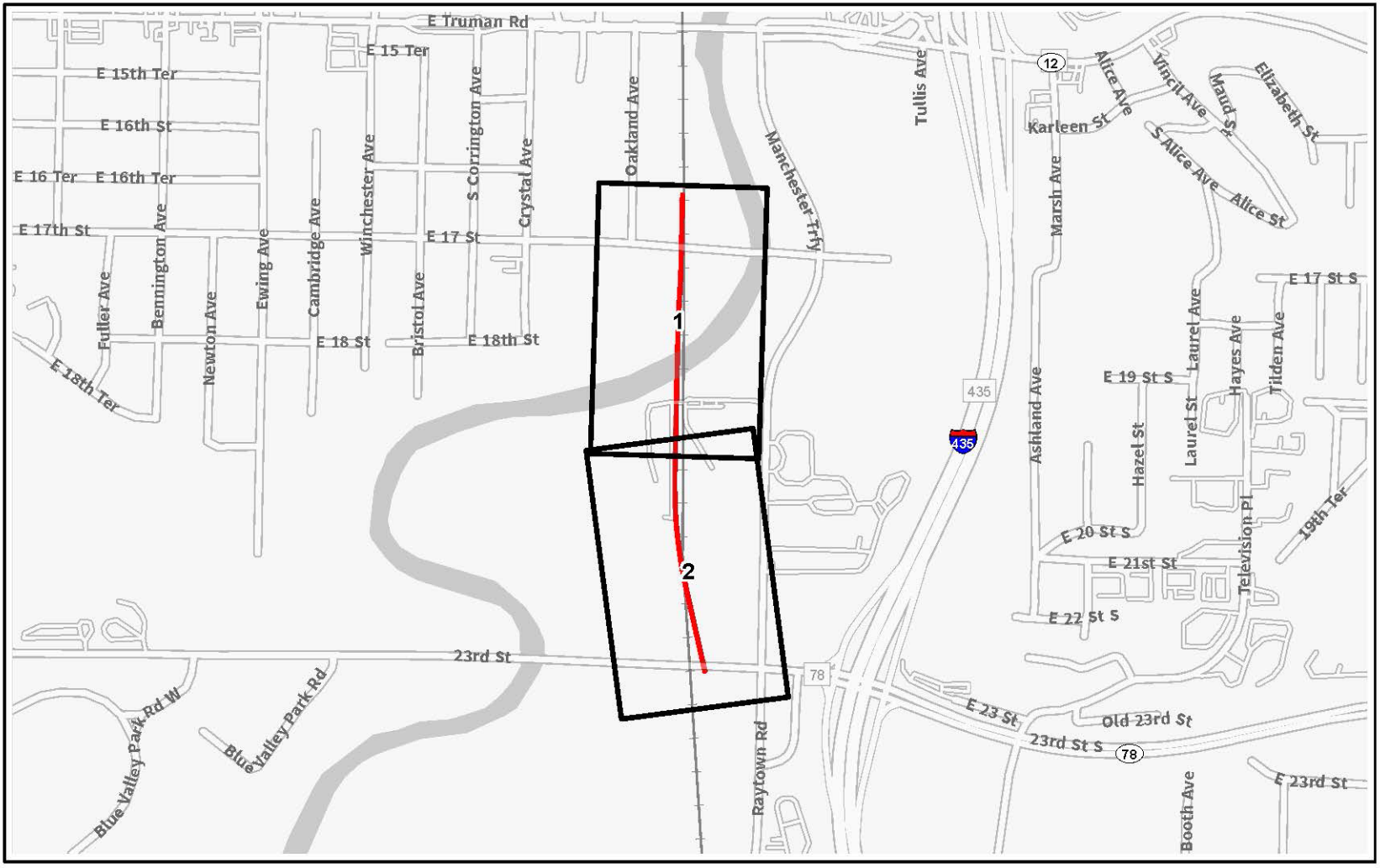
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 431 (Dawn)
Livingston, Missouri | Page 7 of 7



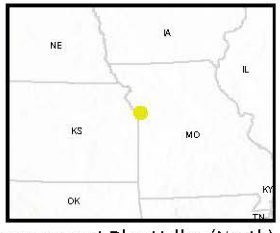
Capital Improvement Location

Page Index

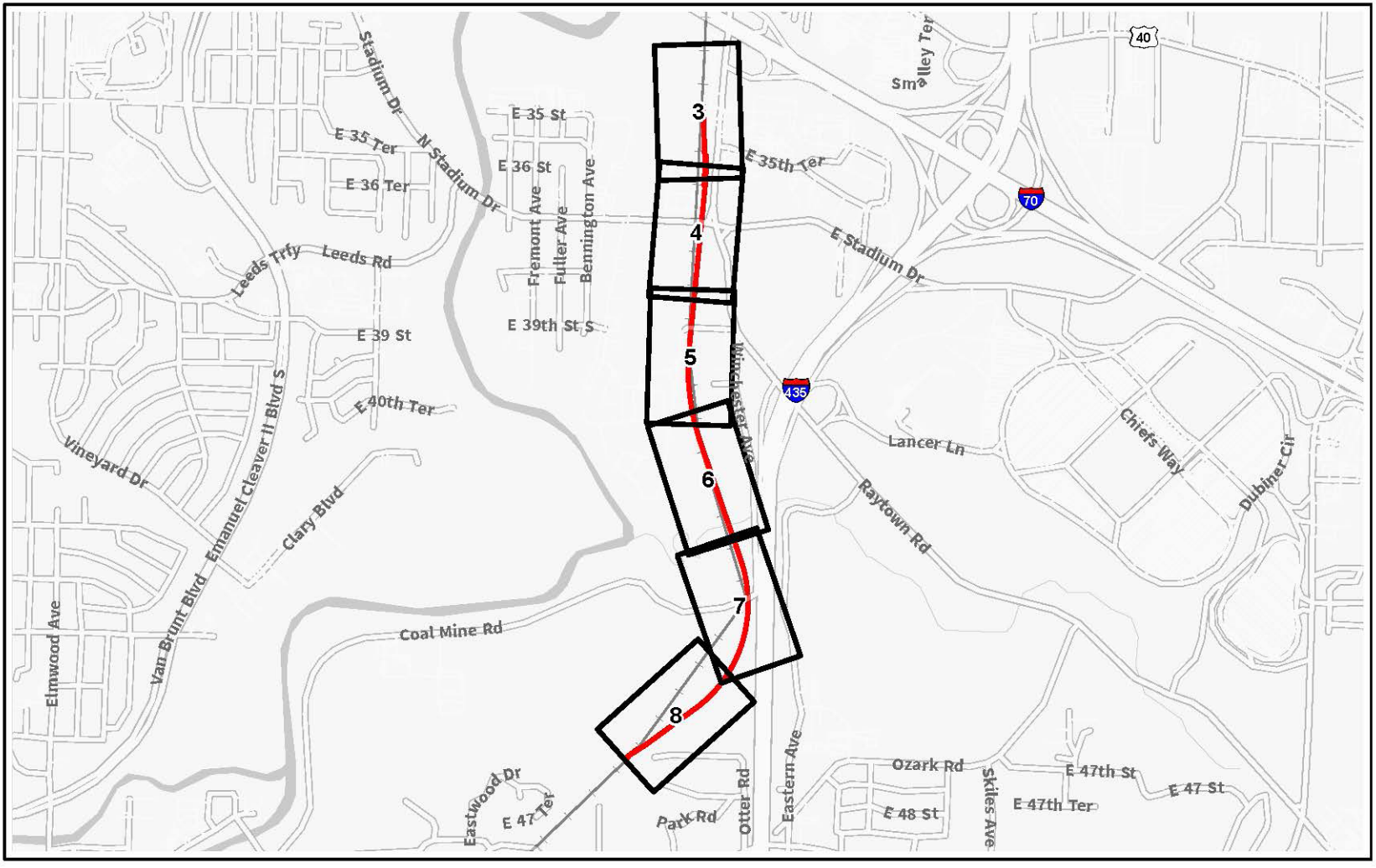
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0 1000 2000 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Blue Valley (North)
Jackson, Missouri | Page Index

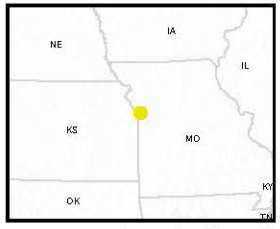


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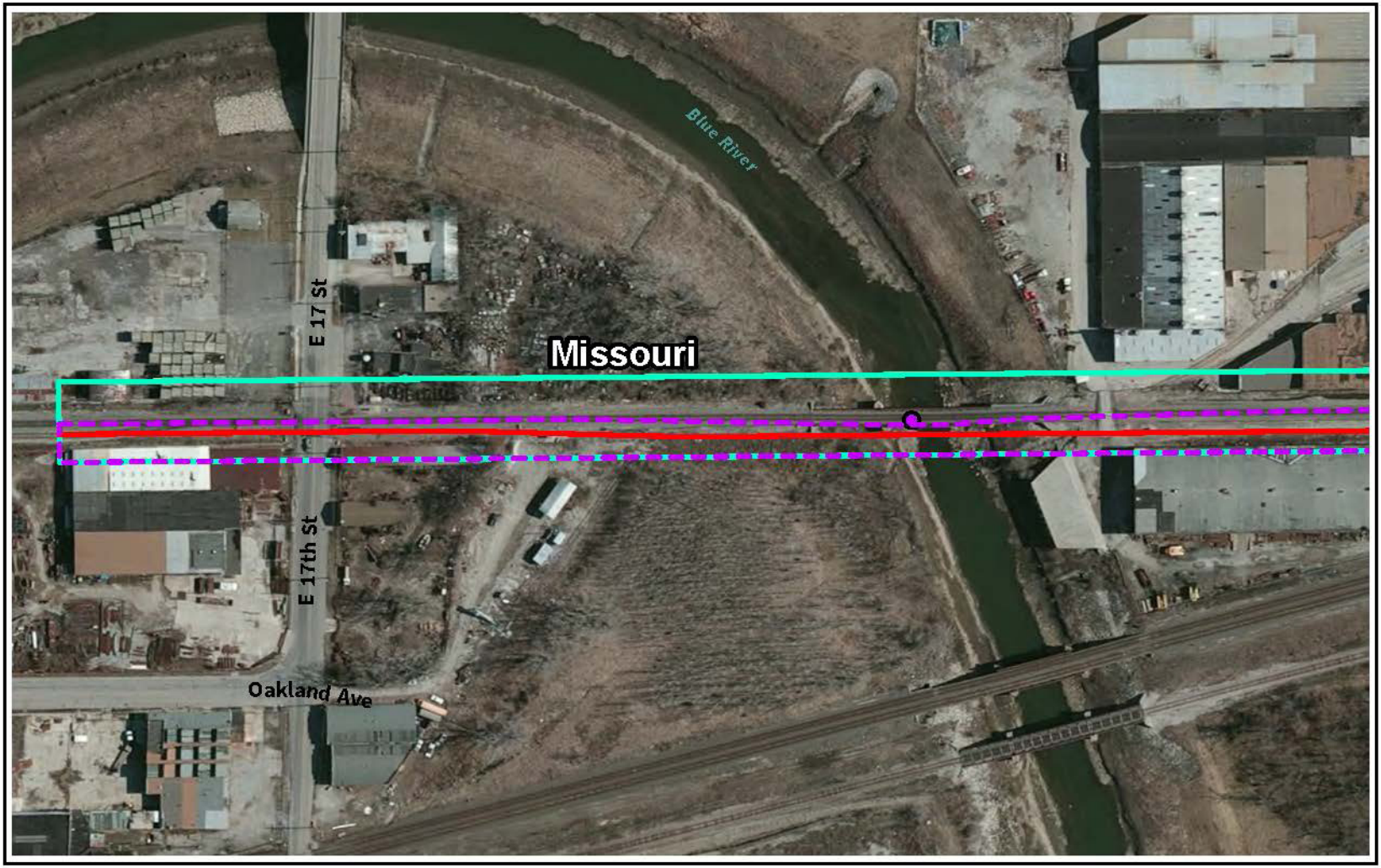
Page Index

0 2000 4000 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Blue Valley (South)
Jackson, Missouri | Page Index



Study Area

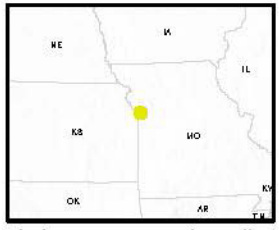
Capital Improvement Location

Existing Right-of-Way

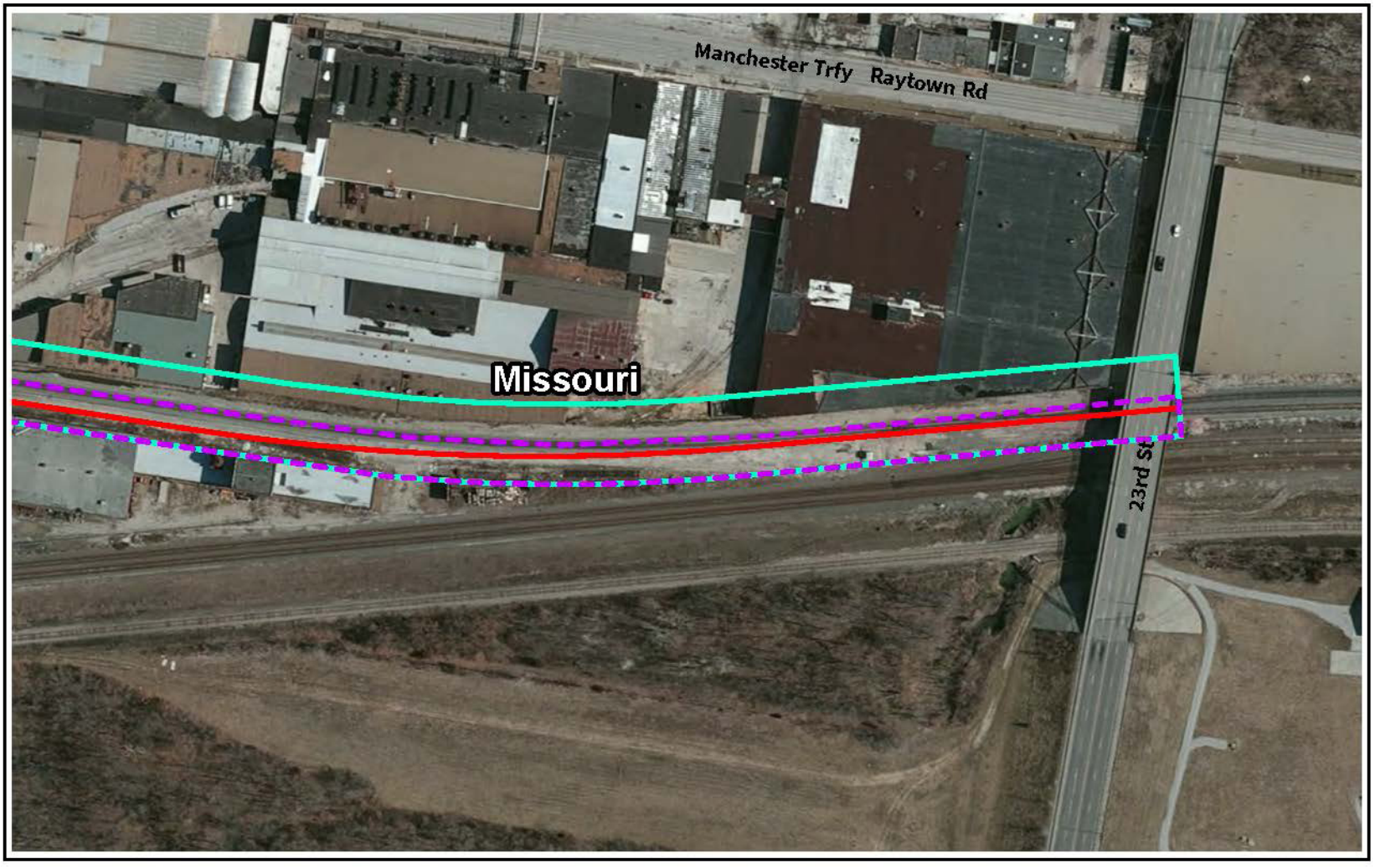
Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Blue Valley
Jackson, Missouri | Page 1 of 8



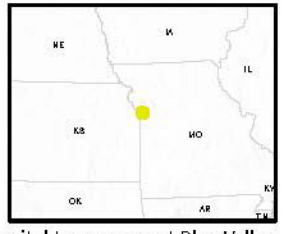
Study Area

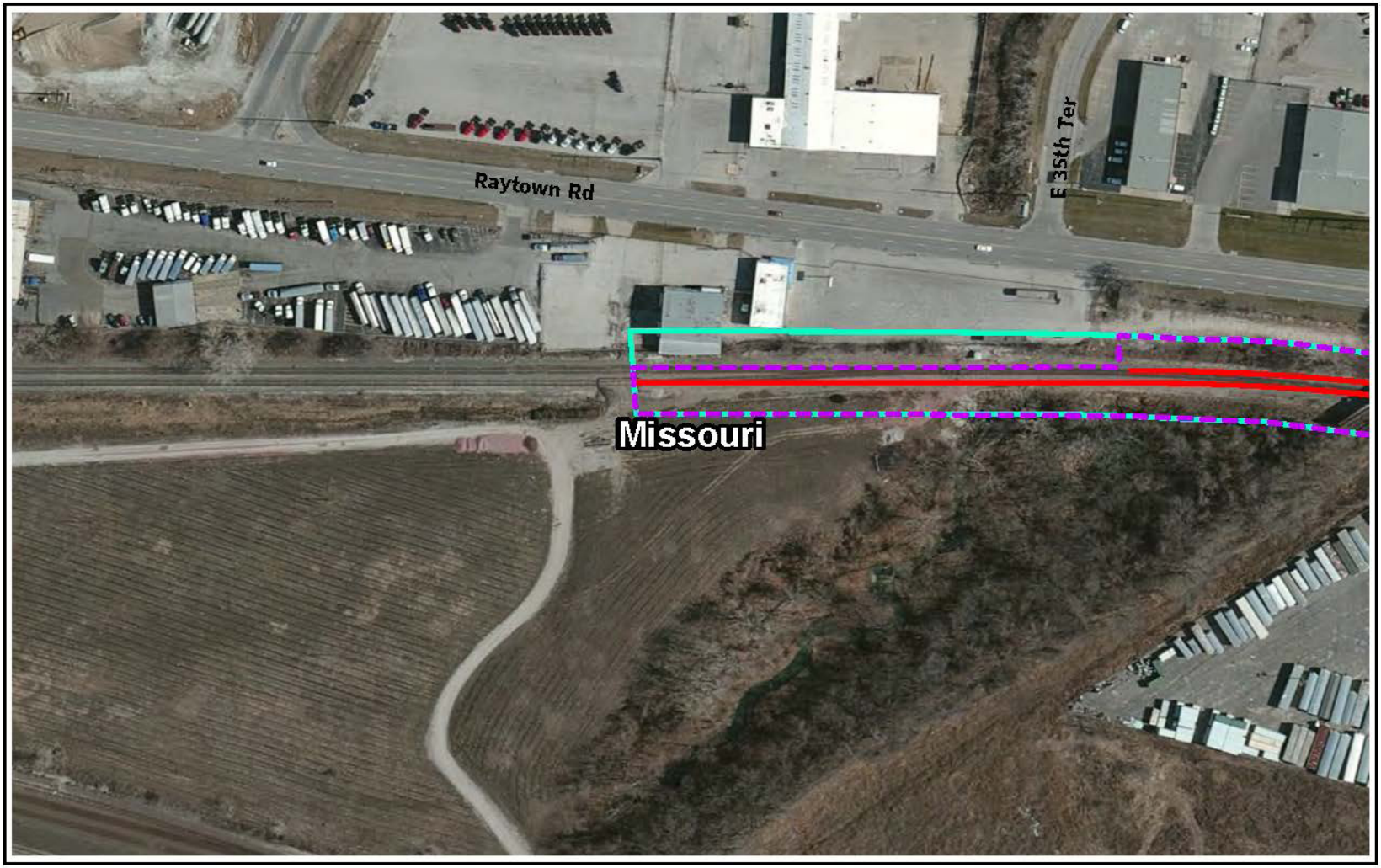
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

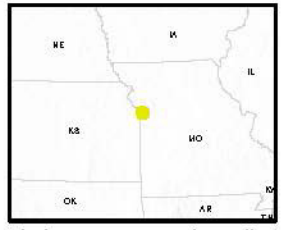
Capital Improvement Location

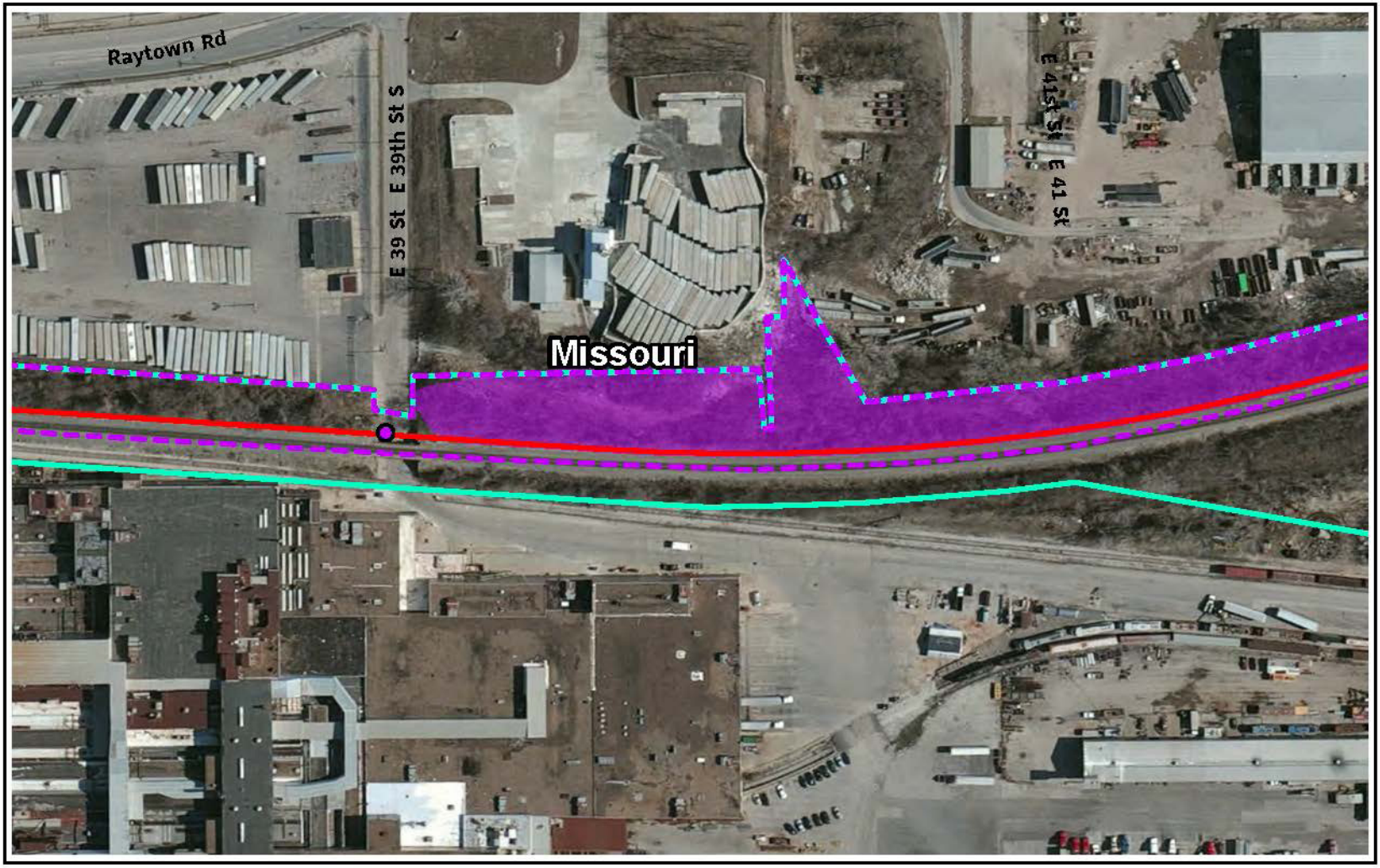
Existing Right-of-Way

Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



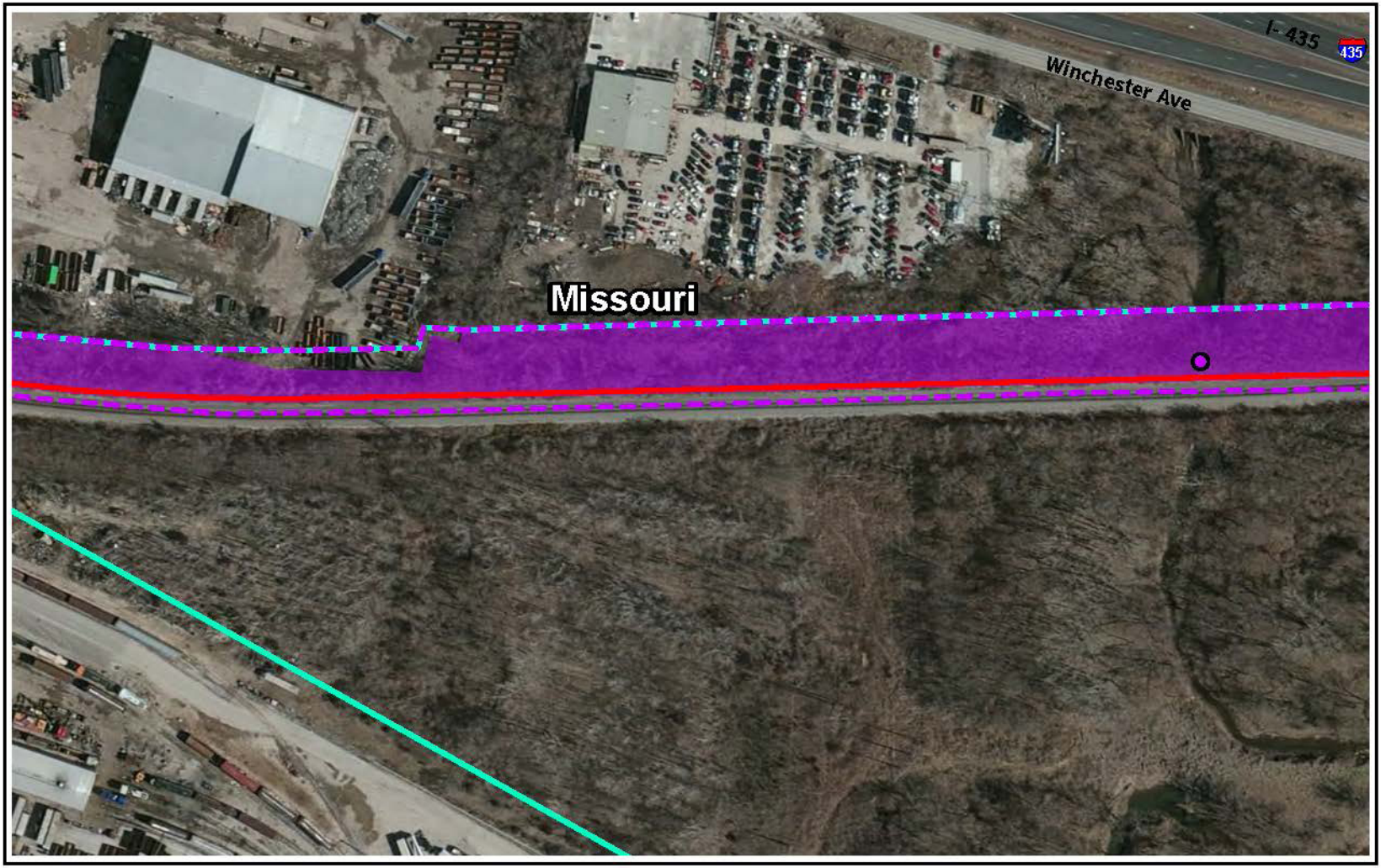


Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

Capital Improvement Location

Existing Right-of-Way

Suitable Bat Roosting Structure

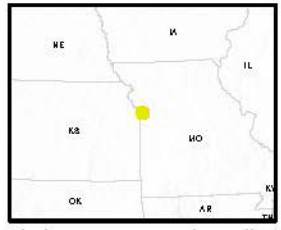
Suitable Forested Bat Habitat

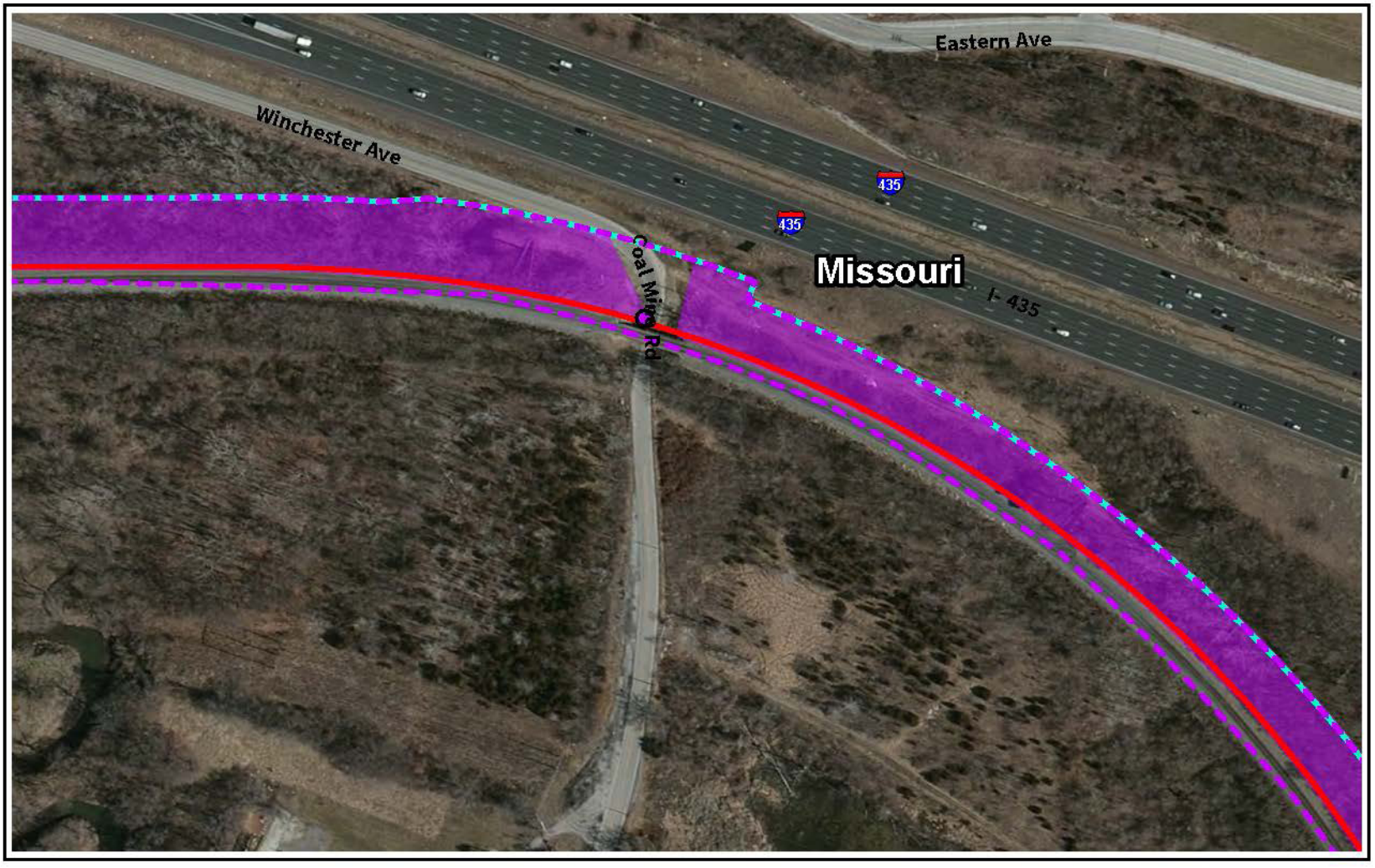
N

0 200 400

Feet

Source: FRA, CP, ArcGIS Online



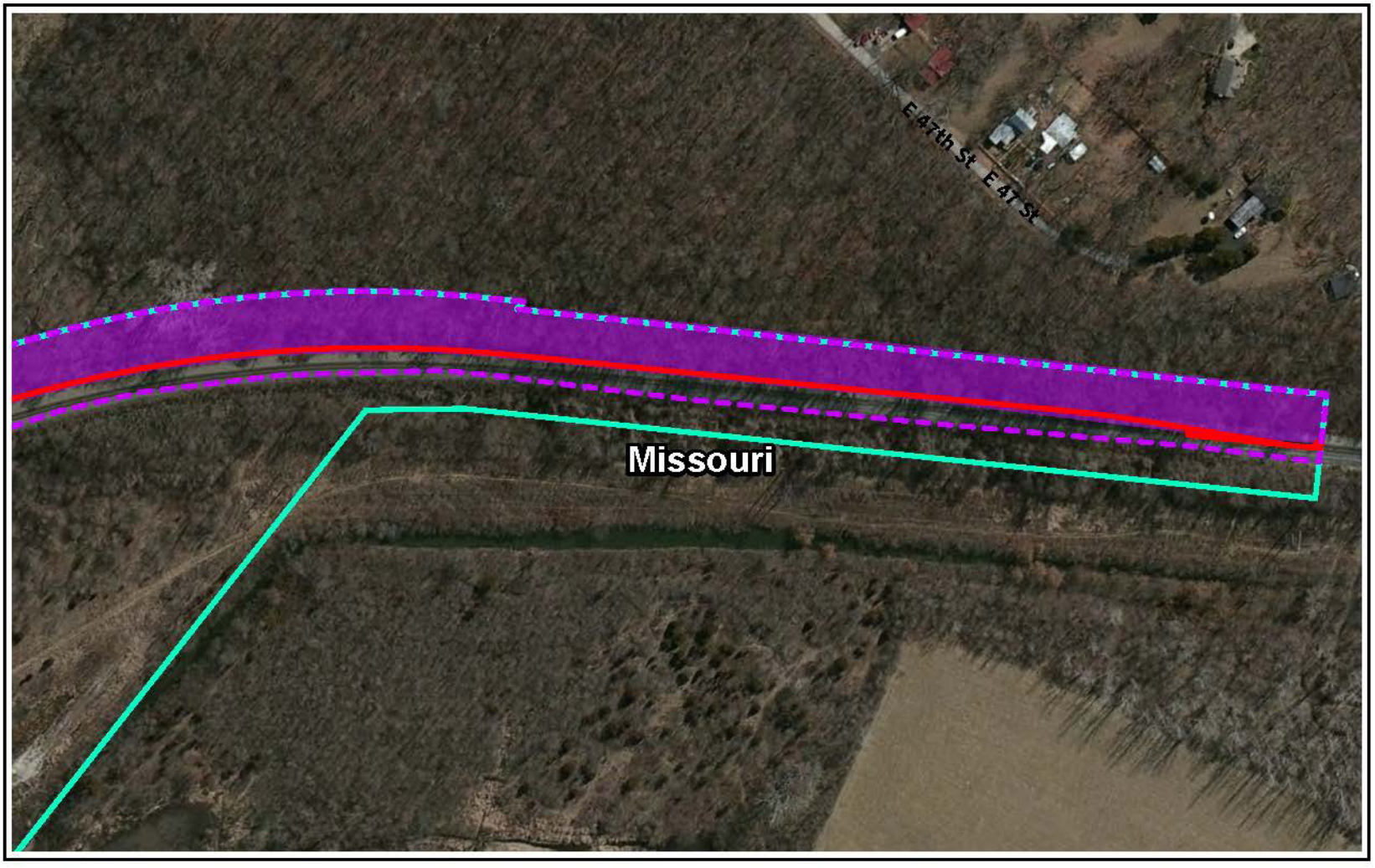


Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

Capital Improvement Location

Existing Right-of-Way

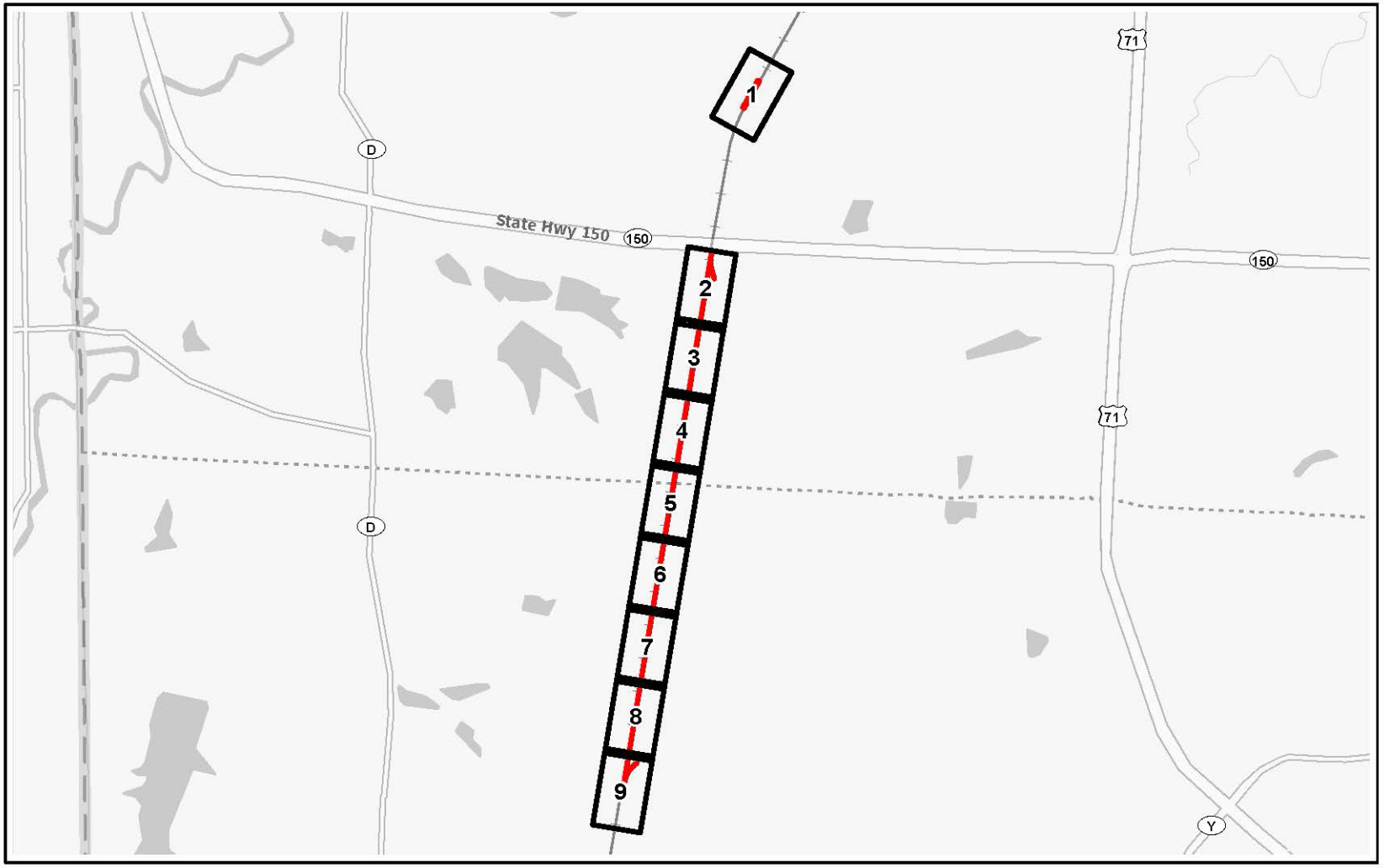
Suitable Forested Bat Habitat

0 200 400

Feet

Source: FRA, CP, ArcGIS Online





Capital Improvement Location

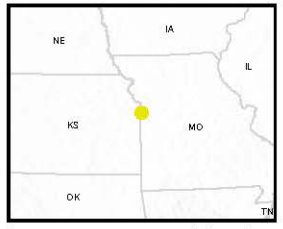
Page Index

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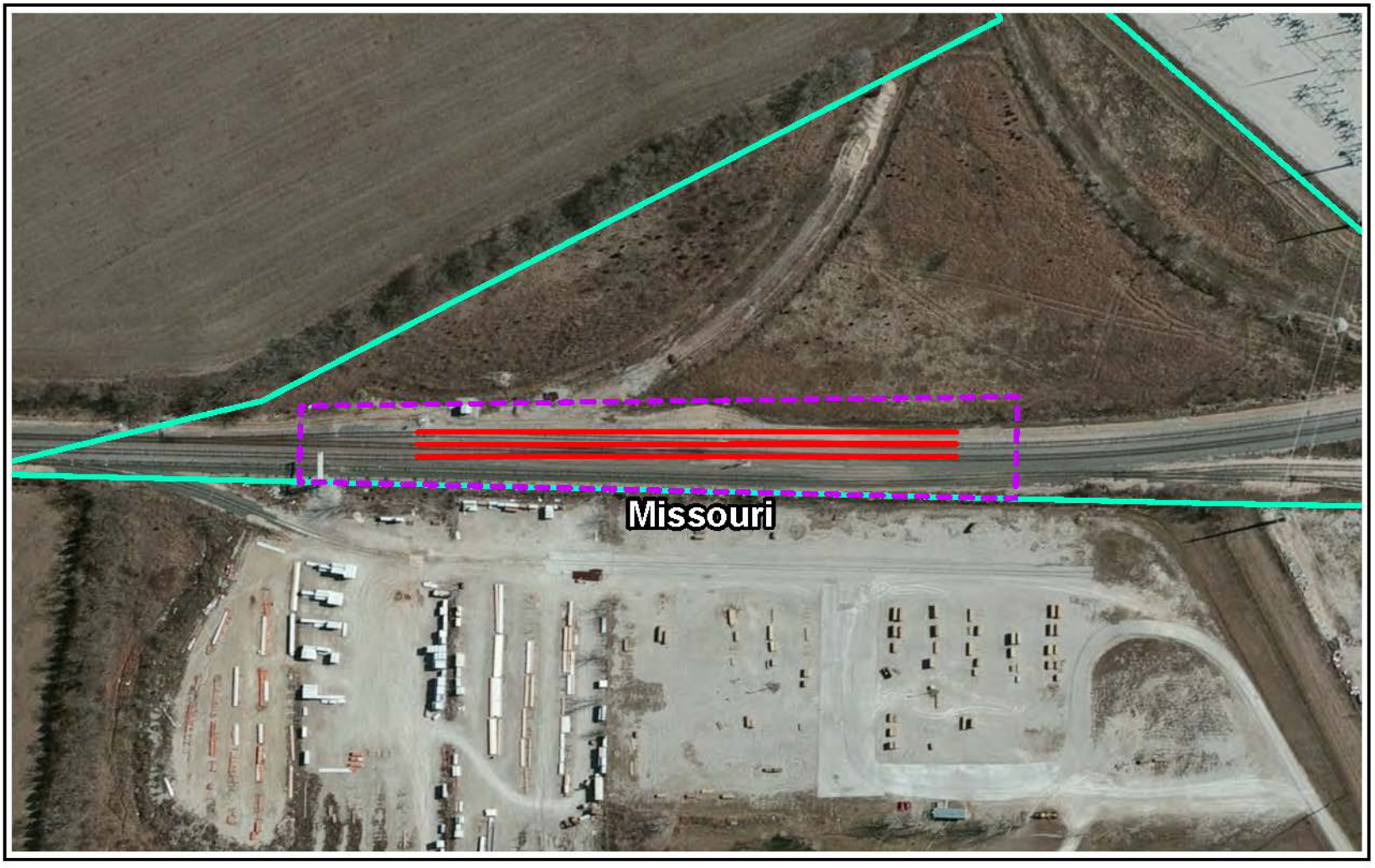
0 3500 7000

Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Grandview/IFG
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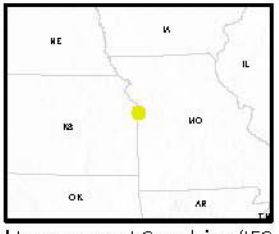
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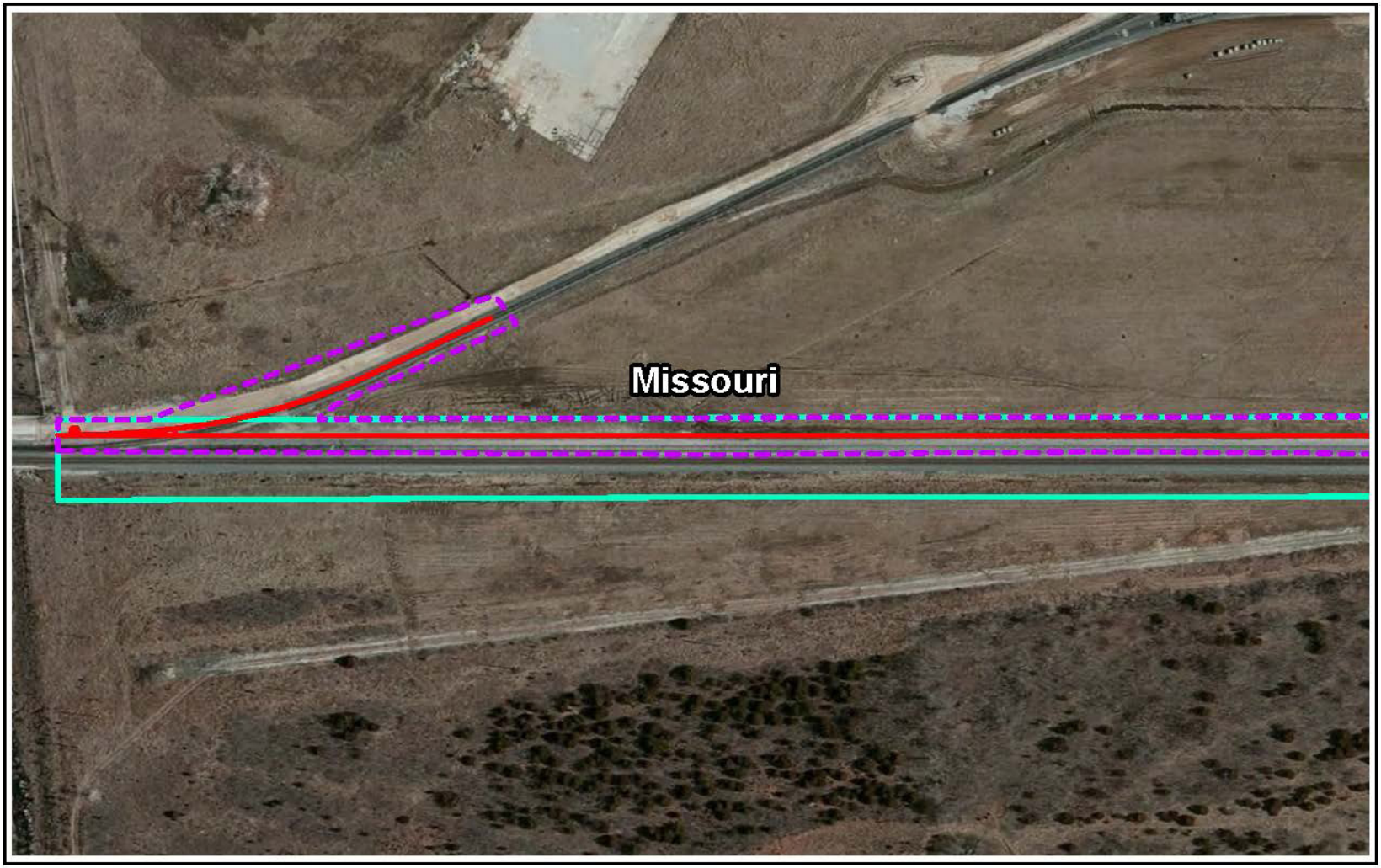
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





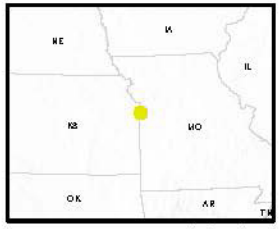
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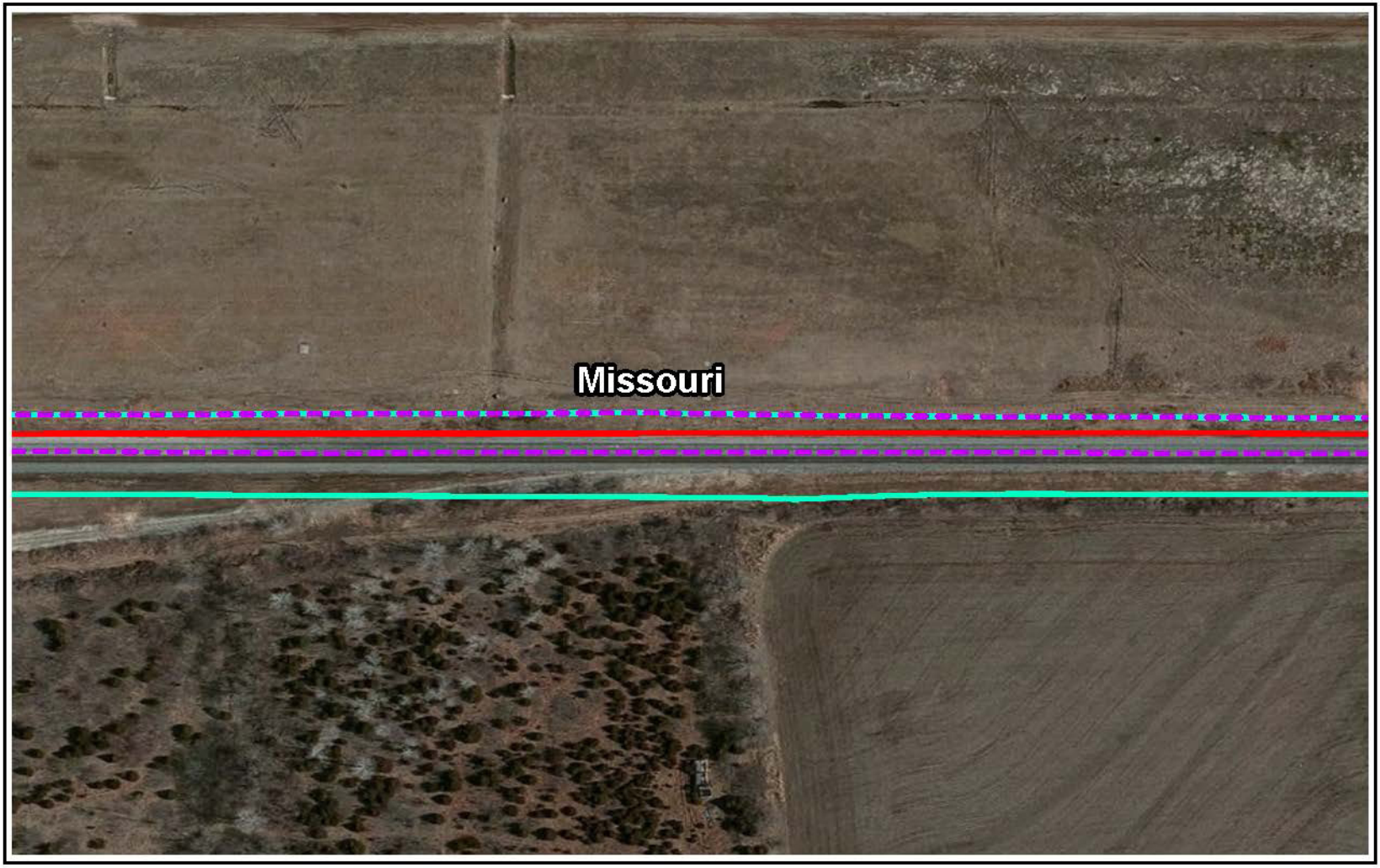
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





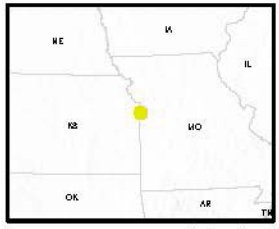
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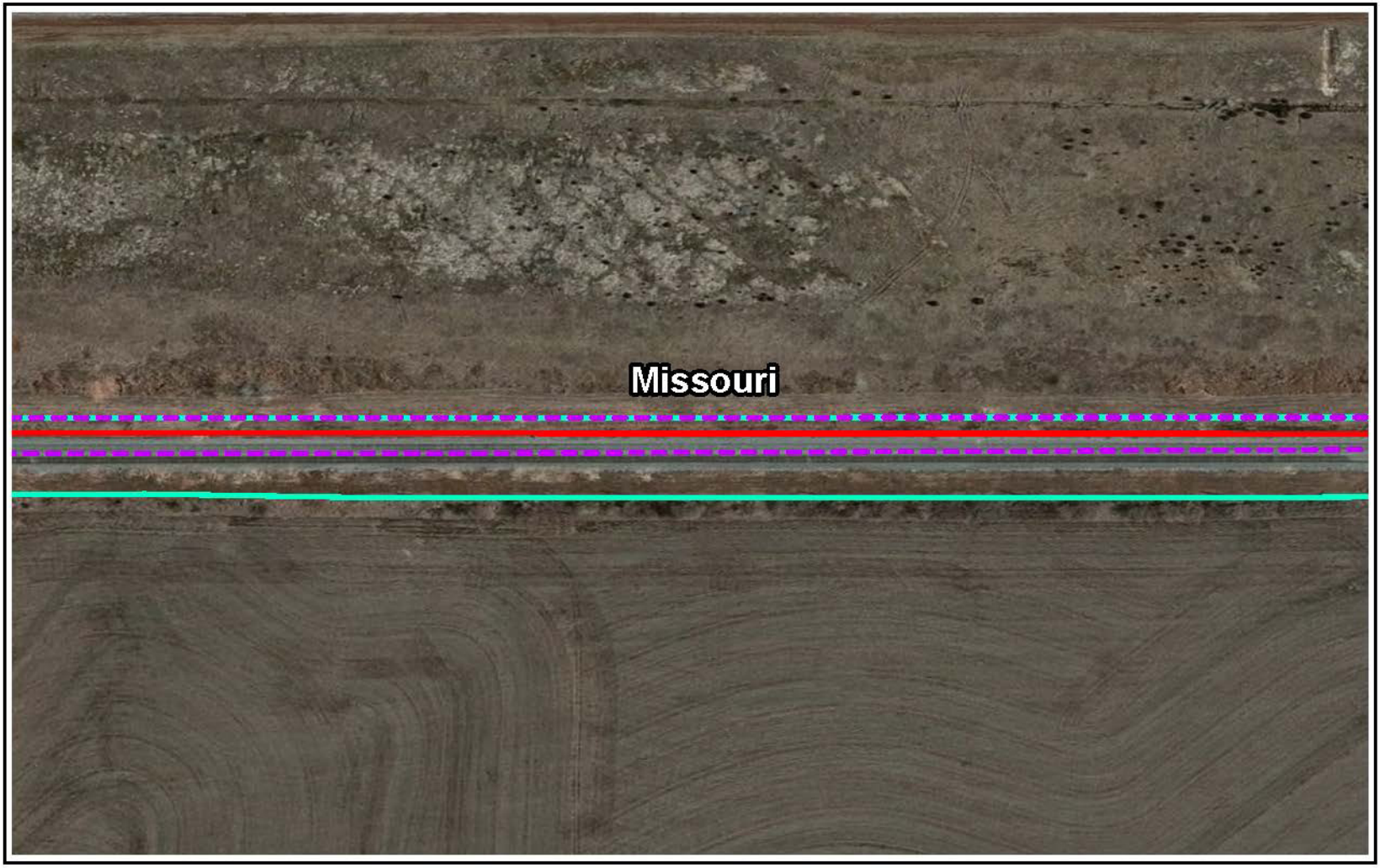
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





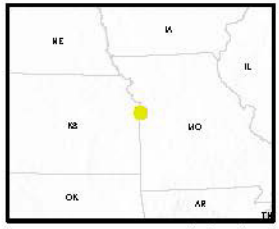
Study Area

Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





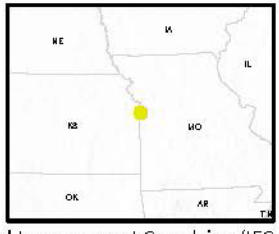
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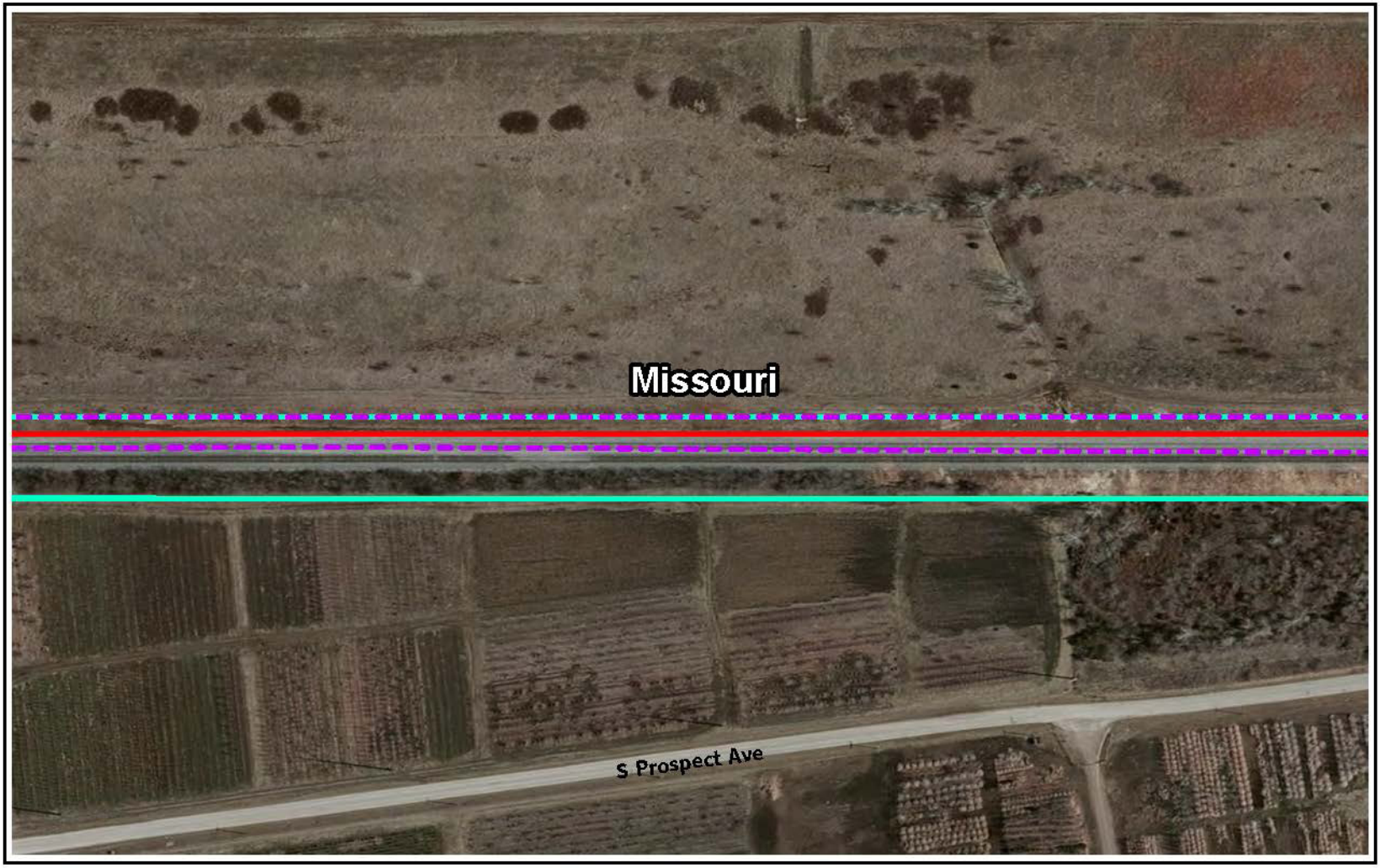
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





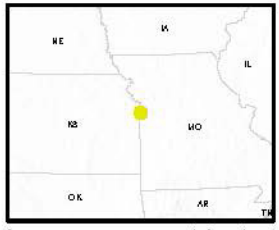
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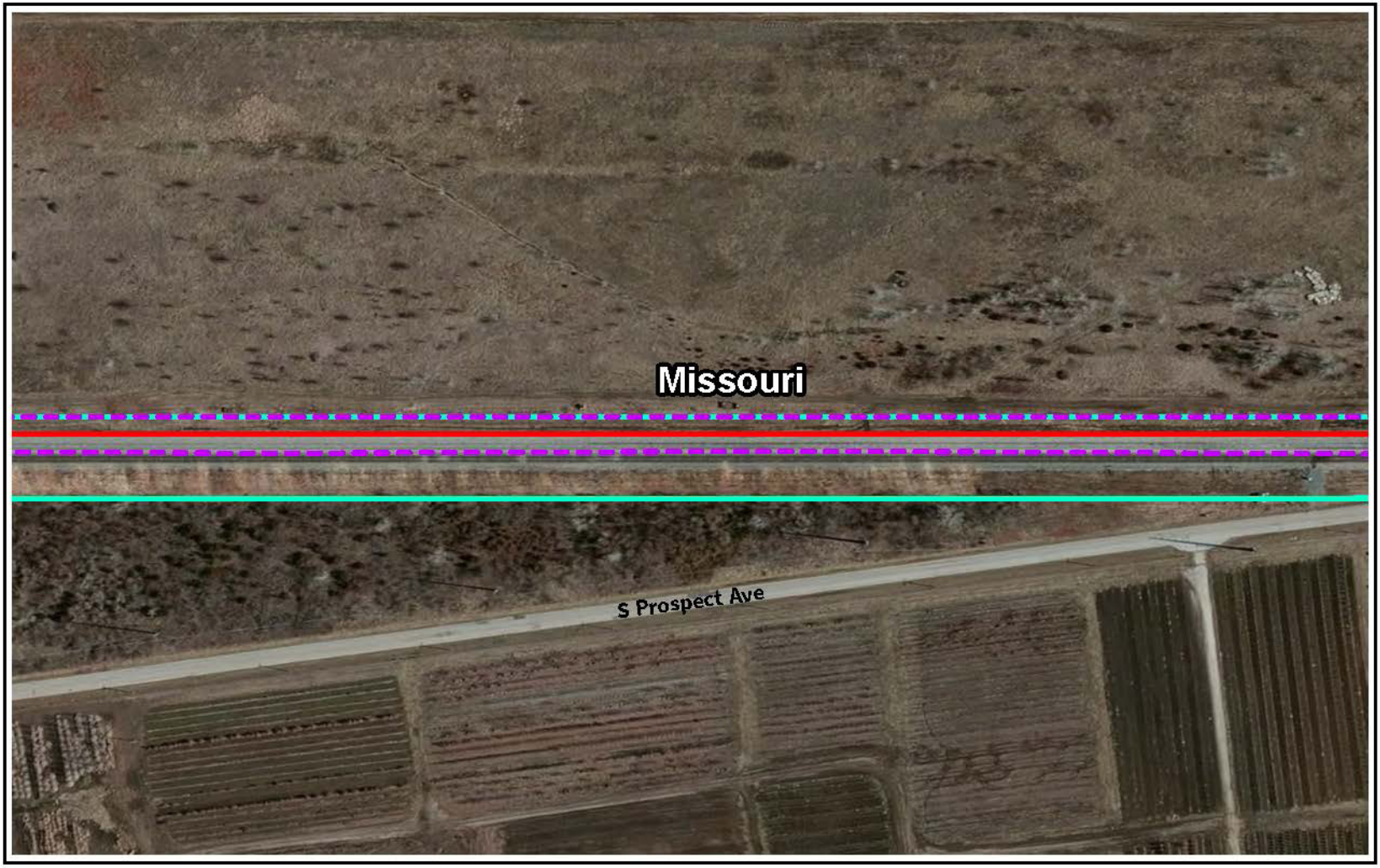
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





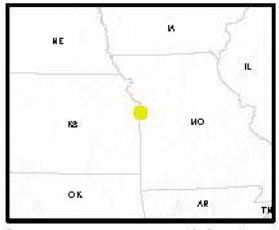
Study Area

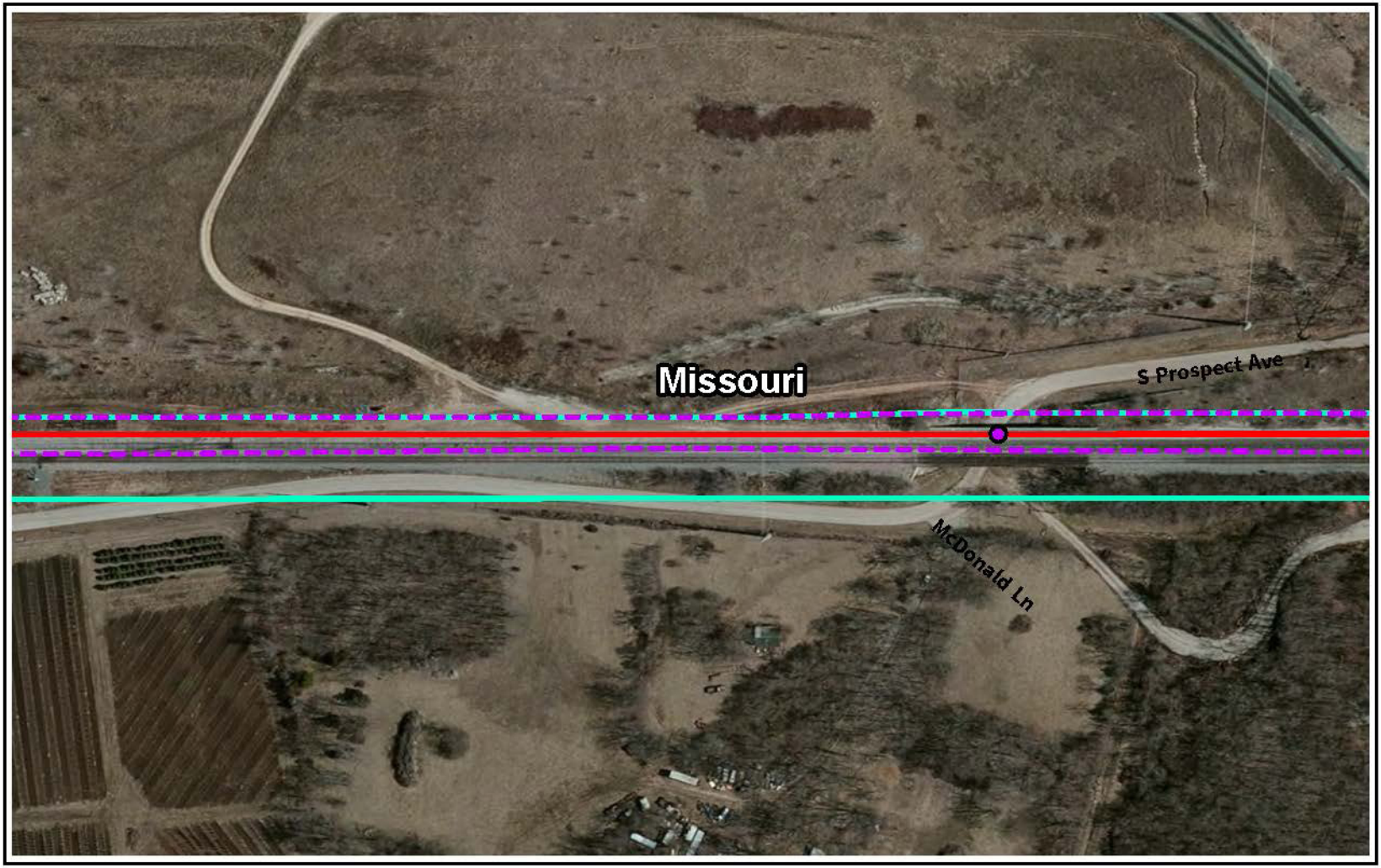
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

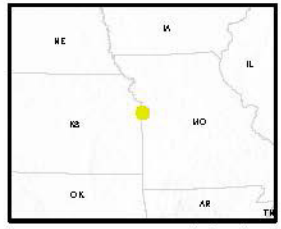
Capital Improvement Location

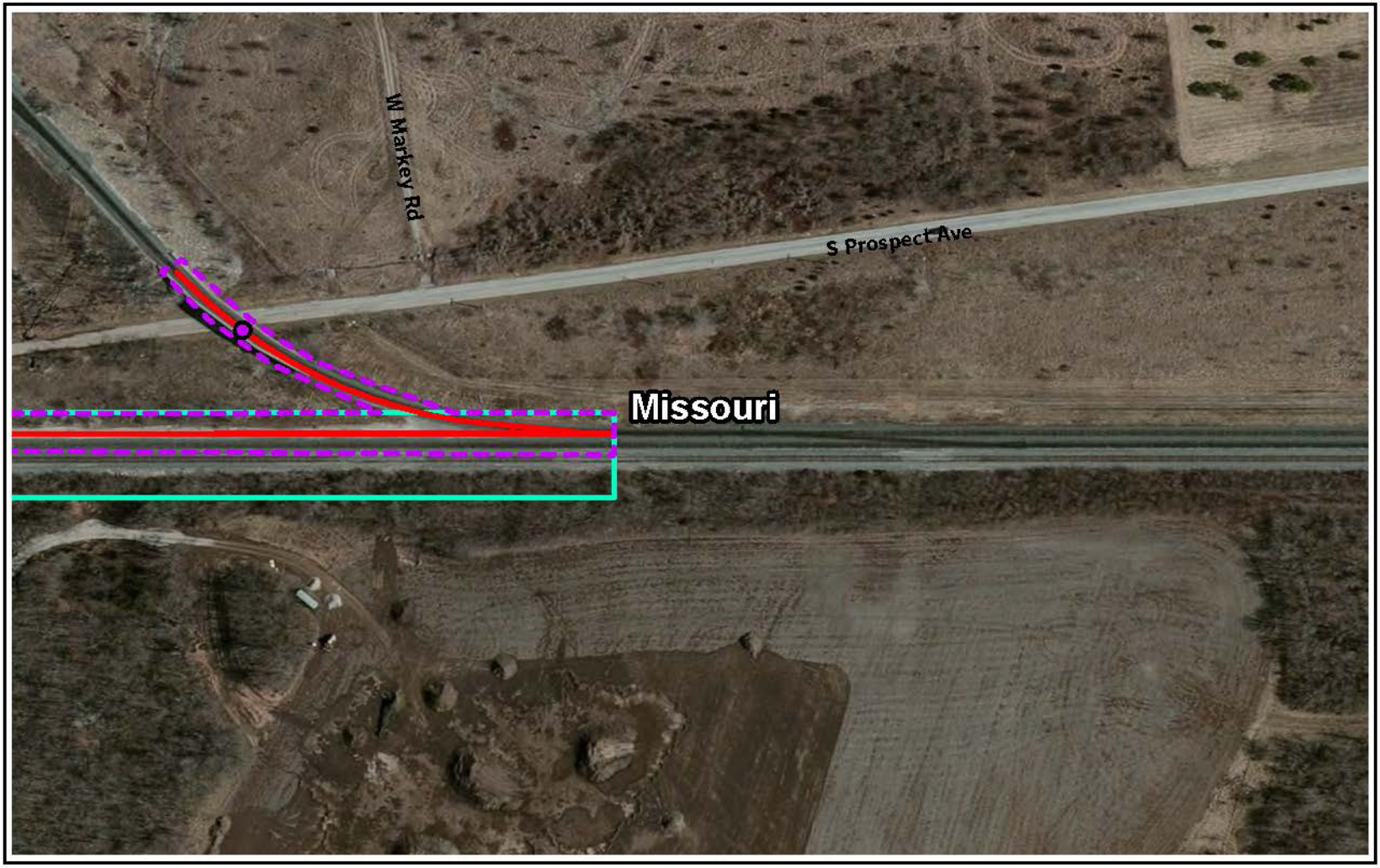
Existing Right-of-Way

Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

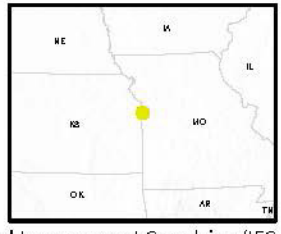
Capital Improvement Location

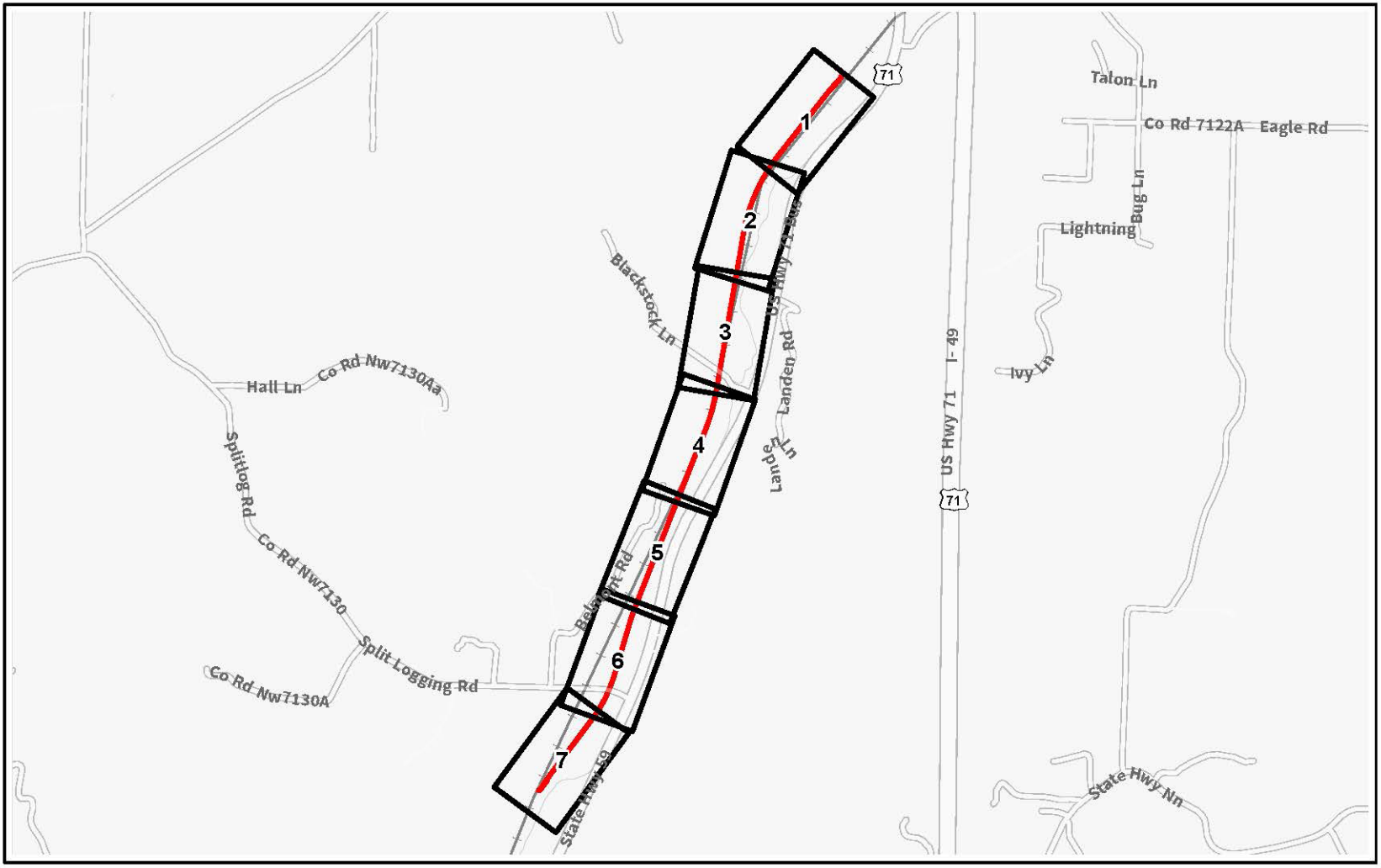
Existing Right-of-Way

Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





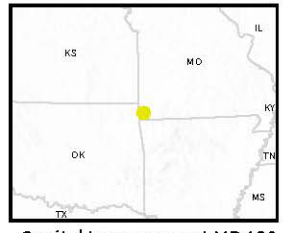
Capital Improvement Location

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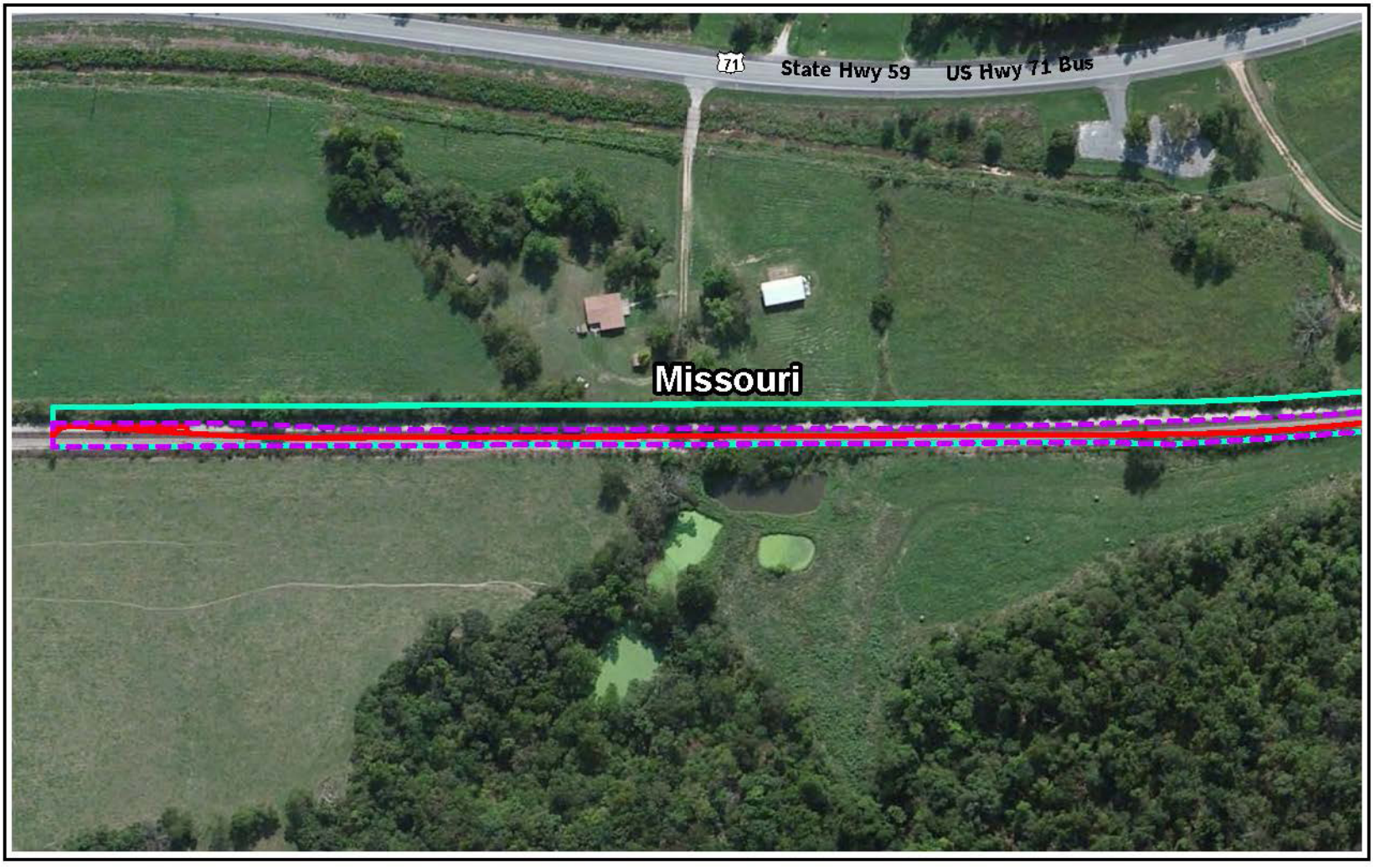
N

0 2200 4400 Feet

Source: FRA, CP, ArcGIS Online



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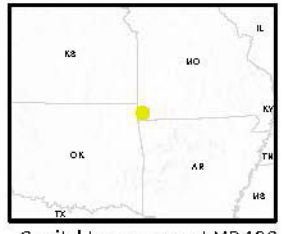
Study Area

Capital Improvement Location

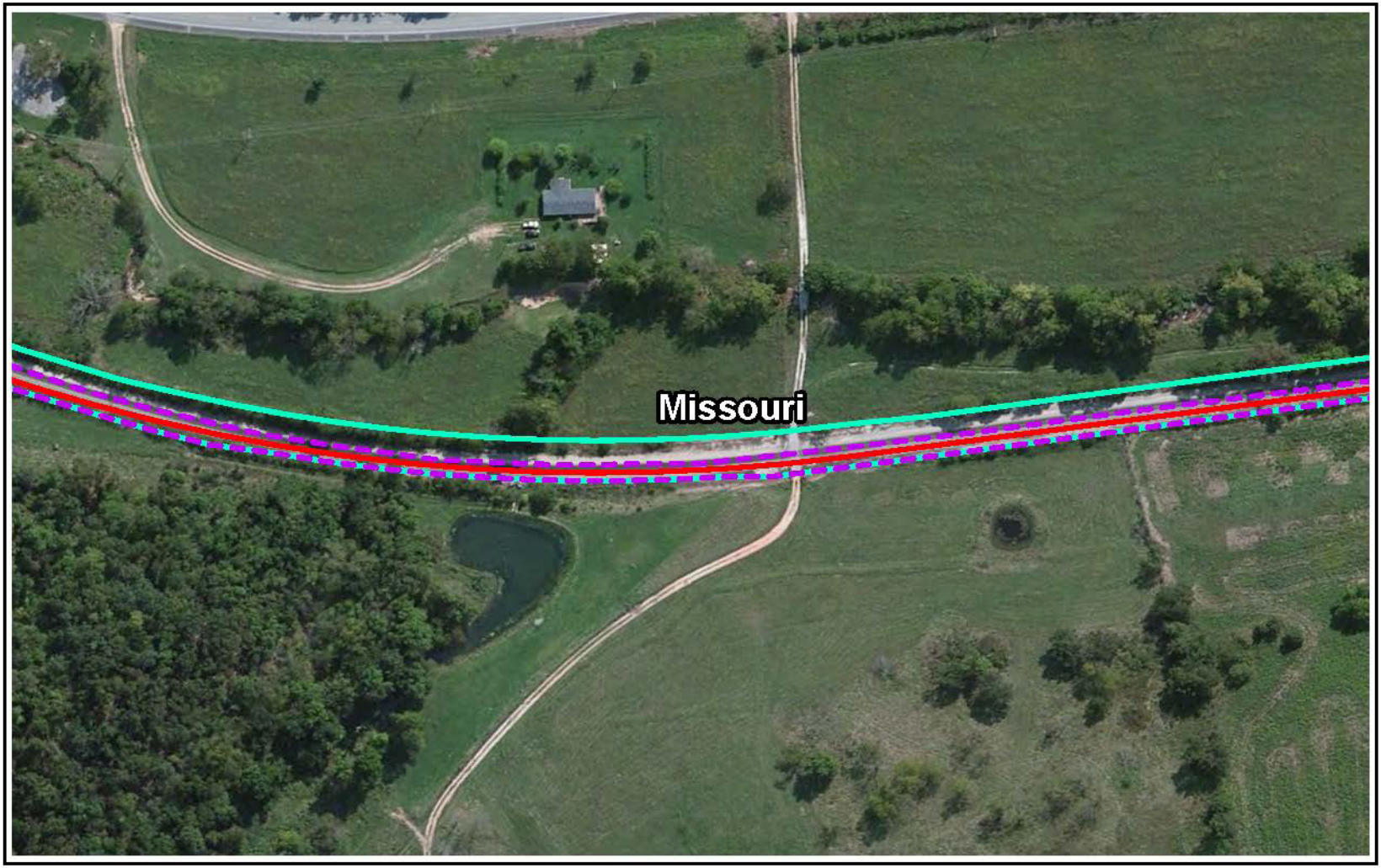
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



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McDonald, Missouri | Page 1 of 7



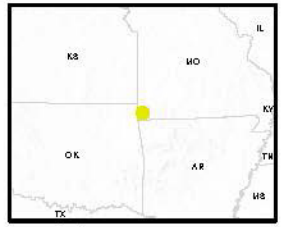
Study Area

Capital Improvement Location

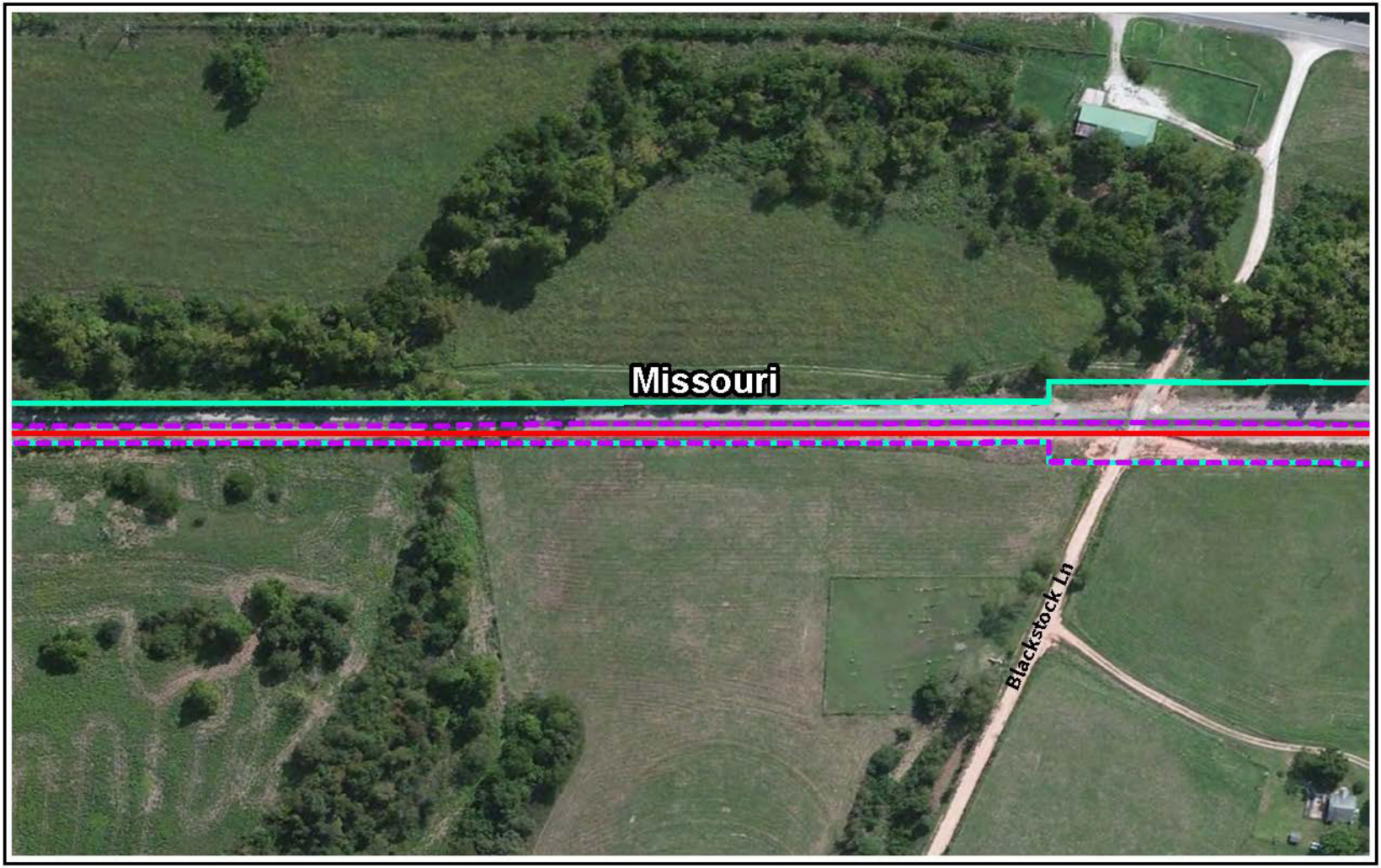
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



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McDonald, Missouri | Page 2 of 7



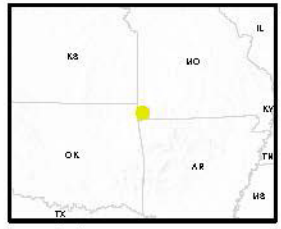
Study Area

Capital Improvement Location

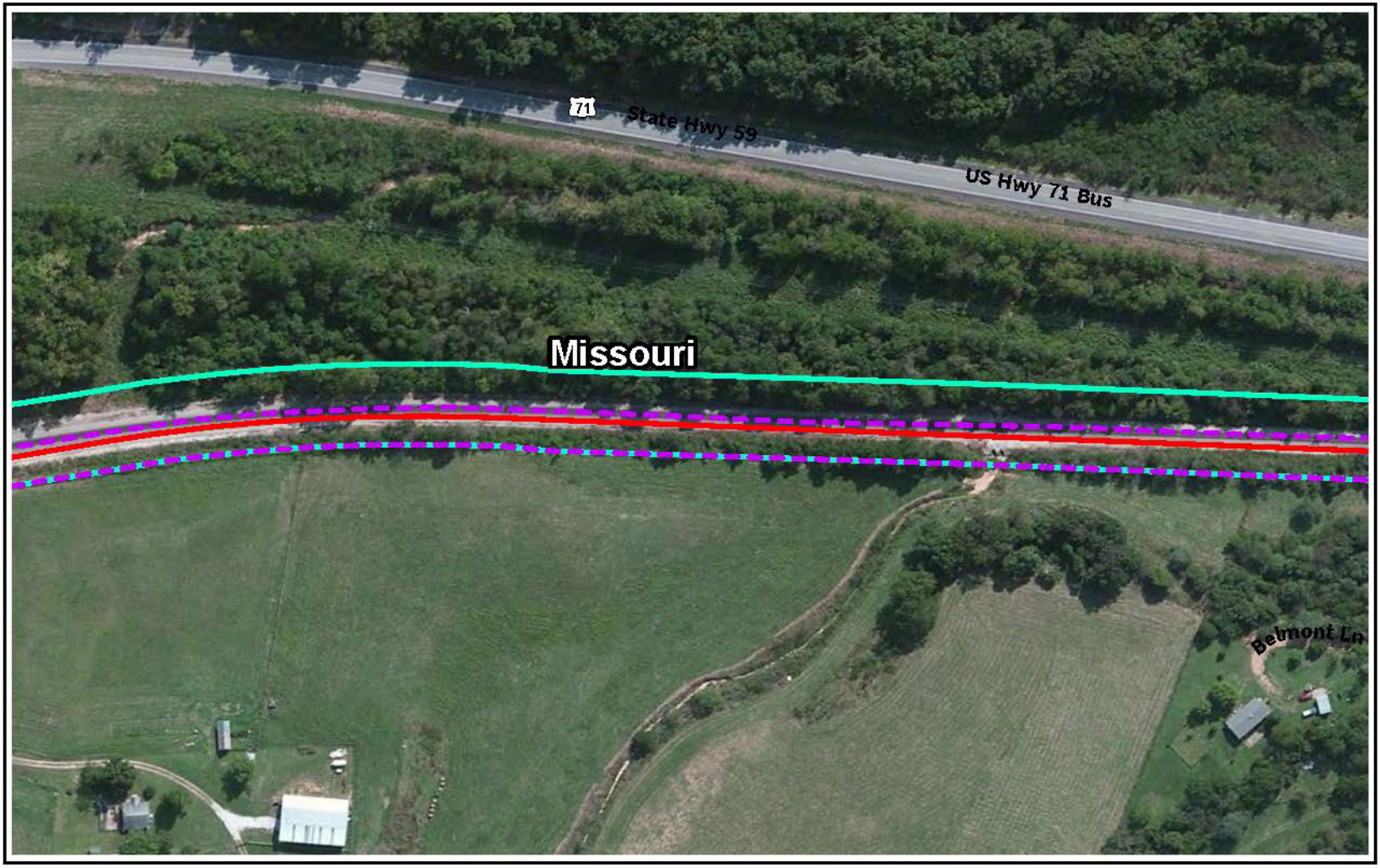
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



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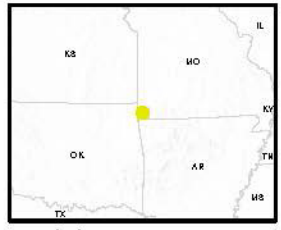
Study Area

Capital Improvement Location

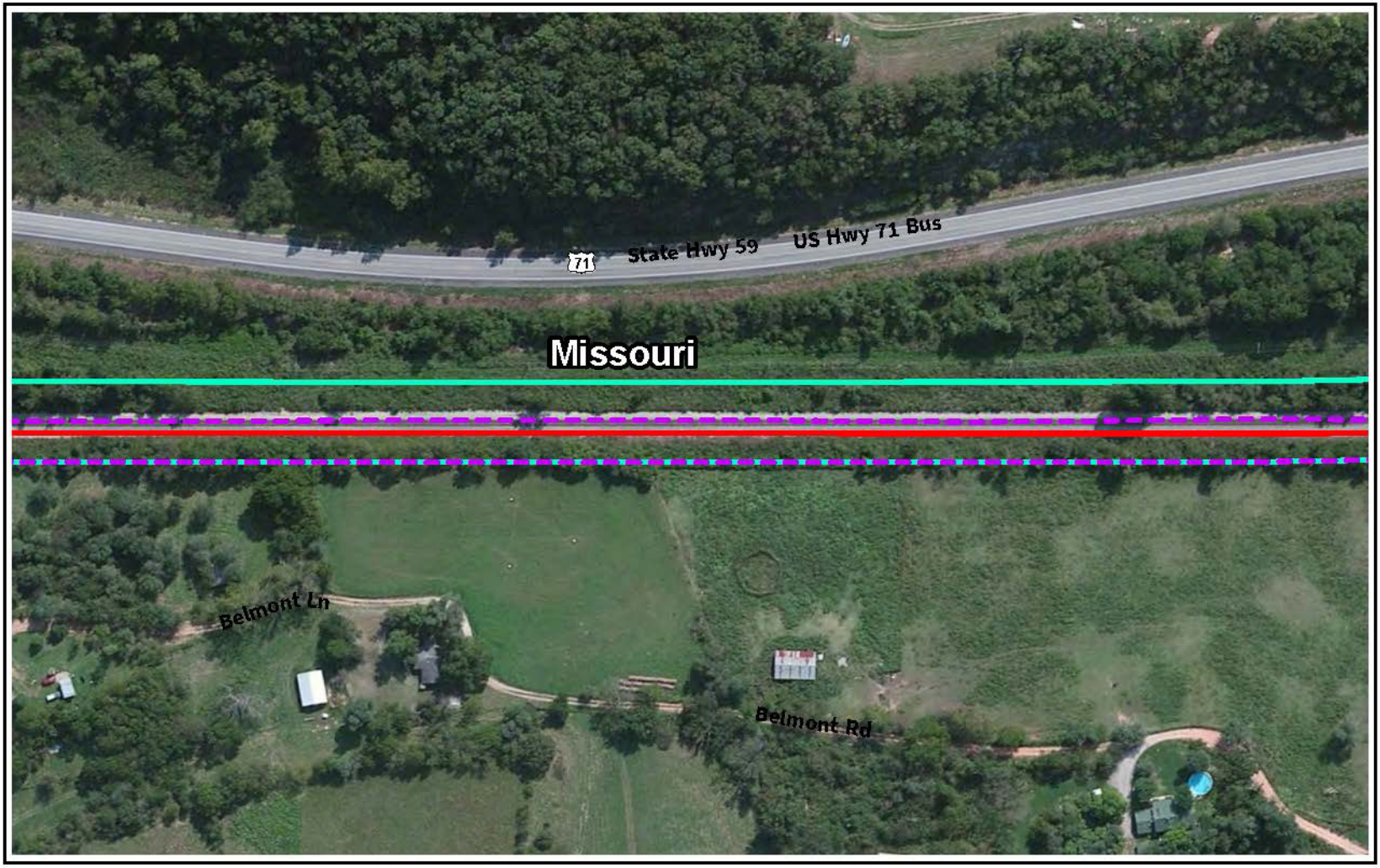
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



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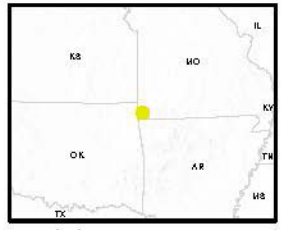
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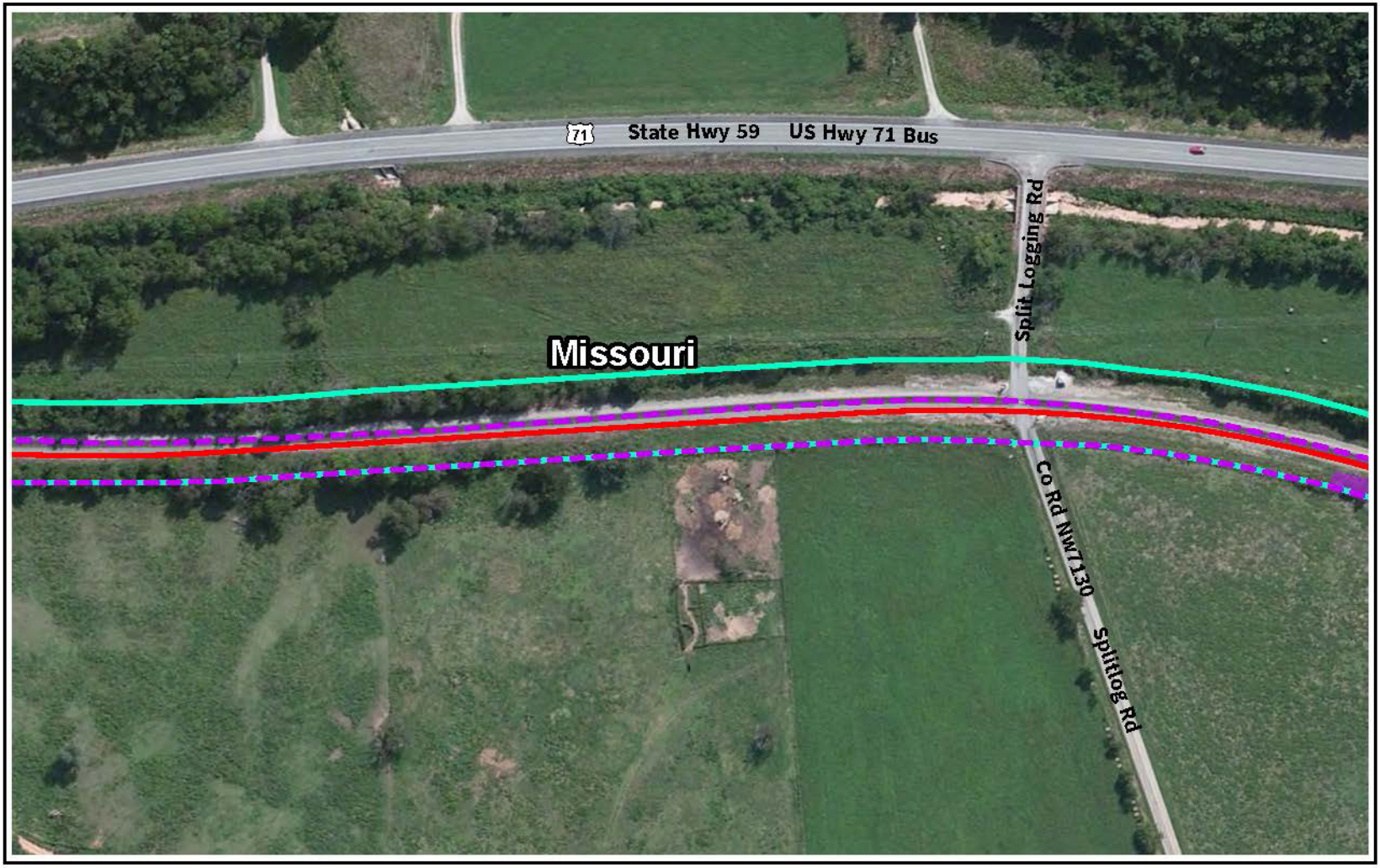
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

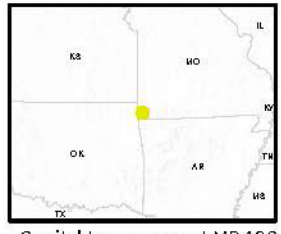
Capital Improvement Location

Existing Right-of-Way

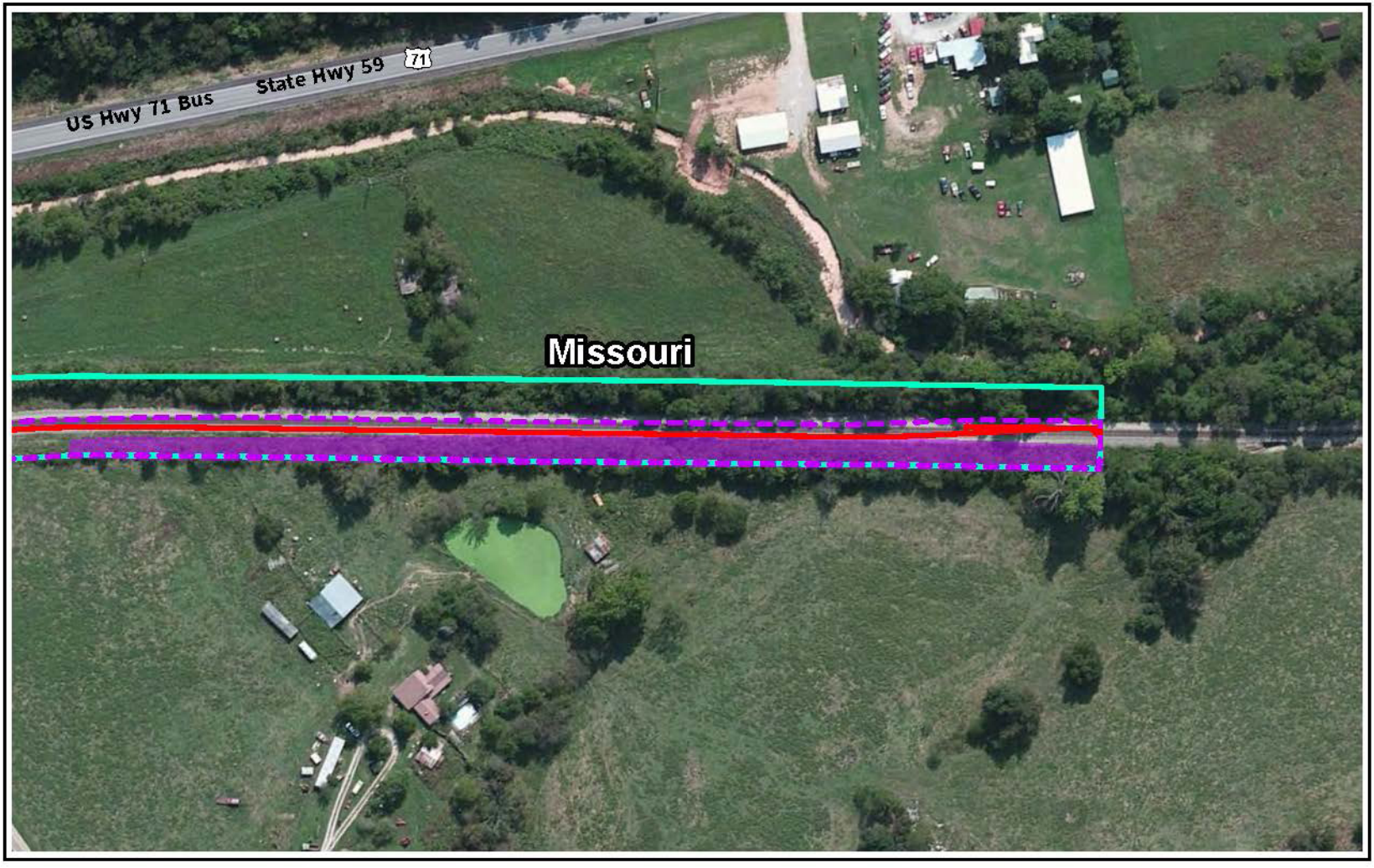
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



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McDonald, Missouri | Page 6 of 7



Study Area

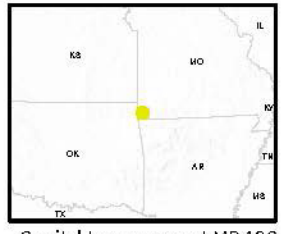
Suitable Forested Bat Habitat

Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 186
McDonald, Missouri | Page 7 of 7



Study Area

Capital Improvement Location

Existing Right-of-Way

Wetlands

Maintained Roadway ROW

*No suitable bat habitat identified at this planned capital improvement location



0 200 400 Feet

Source: FRA, CP, ArcGIS Online

90



Study Area

Capital Improvement Location

Existing Right-of-Way

Wetlands

Maintained Roadway ROW

*No suitable bat habitat identified at this planned capital improvement location

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





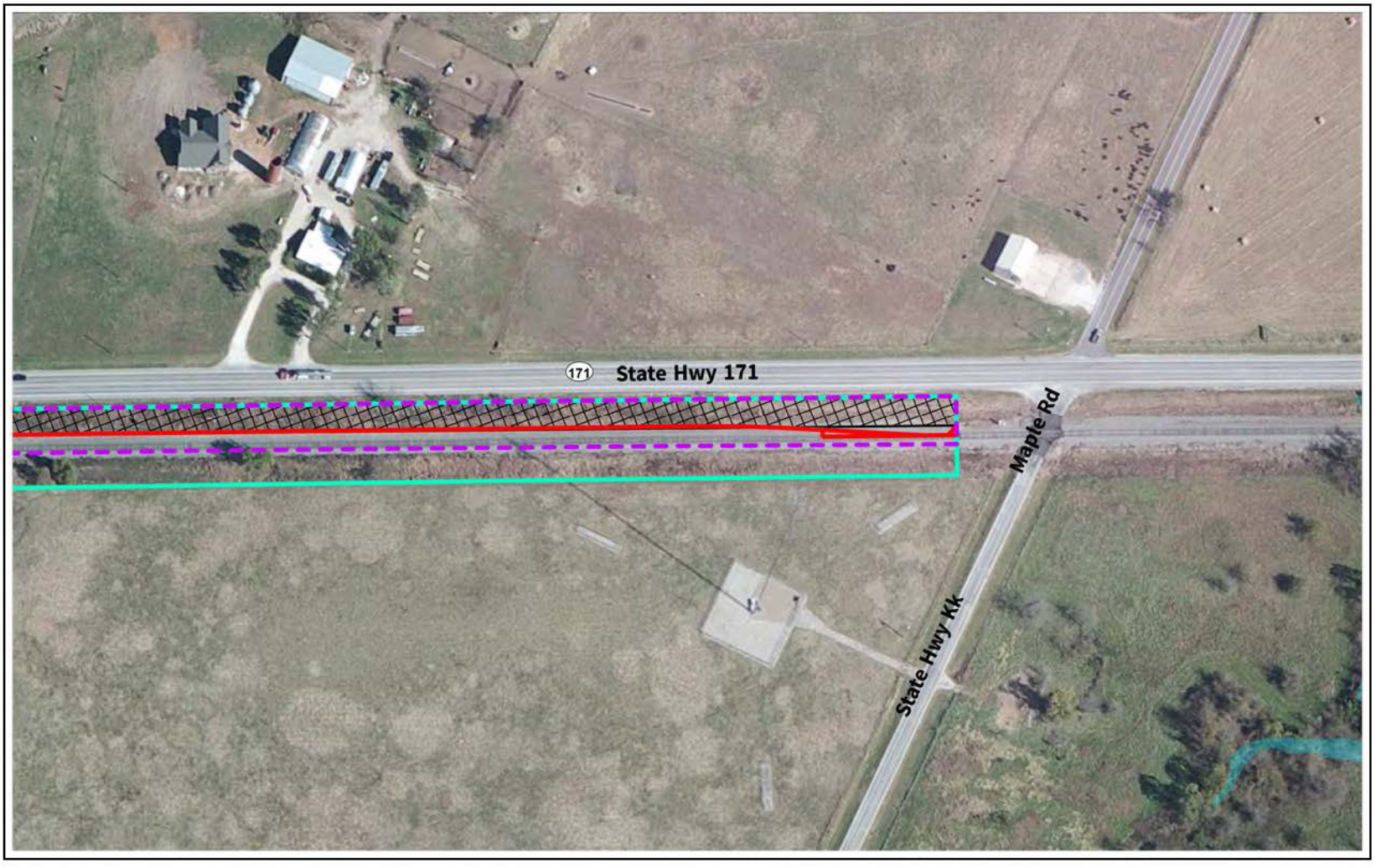
Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Maintained Roadway ROW

*No suitable bat habitat identified at this planned capital improvement location

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

Capital Improvement Location

Existing Right-of-Way

Maintained Roadway ROW

FEMA 100-year floodplain

*No suitable bat habitat identified at this planned capital improvement location



0 200 400 Feet

Source: FRA, CP, ArcGIS Online

SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

Letter for all Other Agencies November 12, 2021

Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern, et al.; **Notice of Intent to Prepare an Environmental Impact Statement**

On October 29, 2021, Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern et al. (KCS) (collectively, Applicants) filed an application with the Surface Transportation Board (Board) seeking authorization for CP to acquire KCS. This acquisition would create the first railroad to connect Canada, the United States, and Mexico. CP's system runs east to west across Canada, connecting the east and west coast ports. It runs south into the U.S. Midwest and connects with KCS in Kansas City. KCS runs from Kansas City to the Gulf Coast and into Mexico. The combination of these two railroads would be an 'end-to-end' merger because the CP and KCS railroad networks do not overlap (see the interactive map on the Board-sponsored project website here: https://cp-kcsmergereis.com/maps.htm).

As part of the approval process, the Board must evaluate the potential impacts of the proposed acquisition on the environment, in accordance with the National Environmental Policy Act (NEPA) and the Board's environmental regulations (49 C.F.R Part 1105). To comply with NEPA, the Board's Office of Environmental Analysis (OEA) has initiated preparation of an Environmental Impact Statement (EIS) by issuing a Notice of Intent to Prepare an EIS (NOI) in the *Federal Register* November 12, 2021. A copy of the NOI is available here: https://cp-kcsmergereis.com/docs/cp-kcs-noi.pdf .

The EIS will describe the potential environmental impacts of the proposed acquisition and assist the Board with making its decision about whether to approve, approve with conditions, or deny the acquisition. The statute setting forth the procedures for Board review of acquisitions at 49 U.S.C. § 11325 and the Board's implementing regulations at 49 C.F.R. § 1180.4 (2000)

require that the Board complete its review within approximately 15 months after the application is accepted for a "major" transaction such as this, and OEA must complete the environmental process before the Board issues a final decision.

Scoping

Scoping is the first step in the preparation of an EIS. Scoping is an open process that helps define the range of issues that should be considered in the EIS. This letter describes OEA's proposed approach to the EIS and asks you to review and comment on the proposed approach as well as provide any information you believe may be relevant when considering impacts, either negative or beneficial, to environmental resources under your jurisdiction or purview.

Description of the Proposed Action

According to the Applicants, the purpose of the proposed acquisition is to combine America's two smallest but fastest-growing Class I railroads to build a more efficient and more competitive rail network. The Applicants state that the proposed acquisition would further the need for expanded and more capable and efficient transportation infrastructure while simultaneously advancing the interests of current and future customers in more reliable and economical rail transportation options serving important North-South trade flows. The Applicants also state that the proposed acquisition would generate environmental benefits by reducing truck transportation on highways in North America by more than 60,000 trucks annually, resulting in less congestion, less maintenance, and improved safety on those roads, as well as less noise pollution in the places where those trucks would have driven, and lowered air emissions, including greenhouse gas emissions.

The proposed acquisition would involve (1) changes in level of operations (e.g., an increase in average trains per day) on certain segments of the combined rail network that would exceed the Board's thresholds for environmental review at 49 C.F.R. § 1105.7(e); (2) changes in activity at some rail yards and intermodal facilities that would exceed the Board's thresholds for environmental analysis; and (3) capital improvements within the existing rail right-of-way. The thresholds for assessing environmental impacts from increased rail traffic on rail lines in railroad acquisition proceedings are an increase in rail traffic of at least 100 percent (measured in gross ton miles annually) or an increase in rail traffic of at least eight trains per day. For air quality impacts, rail lines located in areas classified as being in nonattainment under the Clean Air Act are also assessed if they would experience an increase in rail traffic of at least 50 percent (measured in gross ton miles annually) or an increase of at least three trains per day. Based on our preliminary review, we have identified rail lines in Illinois, Iowa, Missouri, Kansas, Oklahoma, Arkansas, Louisiana, and Texas that could experience increases in rail traffic exceeding our analysis thresholds as a result of the proposed acquisition. The EIS will analyze the potential environmental impacts of increased rail traffic along those rail lines, as appropriate.

To support increased rail traffic on the combined network, the Applicants propose to add new passing sidings or extend existing passing sidings at 24 locations within the rail right-of-way as part of the proposed acquisition. Sidings would be added or extended at locations in

Louisiana, Oklahoma, Arkansas, Kansas, Minnesota, Illinois, Iowa, and Missouri. The Applicants also propose to add approximately four miles of double track within the right-of-way along the KCS Pittsburg Subdivision in Missouri and to add approximately five miles of facility working track within the right-of-way adjacent to the International Freight Gateway intermodal terminal in Missouri. The EIS will analyze potential environmental impacts, as appropriate, from these capital improvement projects.

The interactive map on the Board-sponsored project website here: https://cp-kcsmergereis.com/maps.htm shows the locations of the rail lines, rail yards, and intermodal facilities that would experience operational changes that would exceed the Board's environmental analysis threshold, as well as the locations of proposed capital improvements within the rail right-of-way.

How to Comment

We encourage you to file your written comments electronically through the Board-sponsored project website at www.CP-KCSMergerEIS.com. Written comments can also be submitted electronically on the Board's website, https://www.stb.gov, by clicking on the "E_FILING" link, then clicking on "Environmental Comments." Alternatively, your written comments may be sent by mail to:

Joshua Wayland, Surface Transportation Board, c/o VHB
Attention: Environmental Filing, Docket No. FD 36500
940 Main Campus Dr., Suite 500
Raleigh, NC 27606

Please make sure to refer to Docket No. FD 36500 in all correspondence, including E-filings, addressed to the Board. **All scoping comments must be sent no later than December 17, 2021**.

Public Scoping Meetings

Additionally, to provide an opportunity for the public to provide oral comments, OEA will hold six online public scoping meetings. We invite you to attend those meetings if you are interested. You can attend the online public scoping meetings in one of two ways:

- Join online at: https://bit.ly/cp-kcs .
    - Project information will be available for review at this link prior to the public meeting dates.
- Join by phone by calling (888) 788-0099 (Toll Free) and using the call-in information below:

Public Scoping Meetings Dates and Times

Date	Time	Meeting ID	Passcode
Tuesday, November 30, 2021	6-8 PM	899 9411 9431	336859
Wednesday, December 1, 2021	2-4 PM	834 1445 3134	140066
Thursday, December 2, 2021	6-8 PM	860 6003 9544	510488
Tuesday, December 7, 2021	6-8 PM	891 6903 1796	598592
Wednesday, December 8, 2021	2-4 PM	884 5338 0280	470936
Thursday, December 9, 2021	6-8 PM	899 8627 2409	227867

Next Steps

Following the end of the scoping period on December 17, 2021, OEA will review the comments and then issue a Final Scope of Study for the EIS. OEA will then proceed with the preparation of the Draft EIS. You will be notified of the publication of the Draft EIS and will have the opportunity to review and comment on the document. At this time, OEA anticipates issuing the Draft EIS in the spring of 2022. In the meantime, OEA may contact you with questions or queries pertaining to the resources under your jurisdiction or purview.

For further information or questions pertaining to the scoping process, please contact Joshua Wayland at the address provided above or call the toll-free project line at 1-888-319-2337. For further information about the Board's environmental review process and the EIS, you may also visit the Board-sponsored project website at www.CP-KCSMergerEIS.com. We look forward to your comments.

Sincerely,



Danielle Gosselin
Acting Director
Office of Environmental Analysis

Appendix B – Attachment 1b: Responses from Federal Agencies

EI-31439

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1201 ELM STREET, SUITE 500
DALLAS, TEXAS 75270-2102

December 14, 2021

Mr. Joshua Wayland
Surface Transportation Board
c/o VHB
940 Main Campus Dr.
Suite 500
Raleigh, North Carolina 27606

Attention: Environmental Filing, Docket No. FD 36500

Dear Mr. Wayland:

Regions 5, 6, and 7 of the U.S. Environmental Protection Agency (EPA) have reviewed the November 12, 2021, U.S. Department of Transportation (DOT), Surface Transportation Board (STB), Notice of Intent (NOI) to prepare a Draft Environmental Impact Statement (EIS) for the Canadian Pacific Railway Limited, Canadian Pacific Railway Company, and their U.S. rail carrier subsidiaries Soo Line Railroad Company; Central Maine & Quebec Railway U.S. Inc.; Dakota, Minnesota & Eastern Railroad Corporation; and Delaware & Hudson Railway Company, Inc. (collectively, CP) proposed acquisition of control and merger with the Kansas City Southern, The Kansas City Southern Railway Company, Gateway Eastern Railway Company, and The Texas Mexican Railway Company (collectively, KCS). The STB is the lead agency under NEPA, and CP and KCS are the project applicants.

The proposed acquisition has the potential to result in significant environmental impacts; therefore, STB's Office of Environmental Analysis (OEA) has determined that the preparation of an Environmental Impact Statement (EIS) is appropriate pursuant to the National Environmental Policy Act (NEPA). STB is now requesting comments on the scope of the Draft EIS. STB will use this Draft EIS in its decision-making process to assess the associated impacts on natural resources and the human environment and to determine whether this project is in the public's best interest.

To assist in the scoping process, we enclosed detailed scoping comments for STB's consideration. Our scoping comments are provided pursuant to NEPA, Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500 -1508) and Section 309 of the Clean Air Act. EPA is most interested in the following issues: environmental justice (EJ), climate change, alternative development, impacts to water and biological resources, wetlands, endangered species, invasive species management, habitat protection, air quality, cumulative impacts, and cultural/historic resource impacts.

EPA looks forward to continued involvement and cooperation in the EIS development for this project. Please send one hard copy of the Draft EIS and a web link to this office when completed and submitted for public comment. You may now electronically file your EIS using our *e-NEPA Electronic Filing* by linking to EPA's web site at http://www.epa.gov/compliance/nepa/submiteis/index.html.

If you have any questions, please contact Michael Jansky of my staff at (214) 665-7451 or by e-mail at jansky.michael@epa.gov.

Sincerely,

ROBERT HOUSTON

Digitally signed by ROBERT HOUSTON
DN: c=US, o=U.S. Government, ou=Environmental Protection Agency, cn=ROBERT HOUSTON, 0.9.2342.19200300.100.1.1=68001003655693
Date: 2021.12.14 18:36:08 -06'00'

Robert Houston
Staff Director
Office of Communities, Tribes and Environmental Assessment

Enclosures:

Detailed Scoping Comments
Construction Emission Control Checklist

DETAILED SCOPING COMMENTS
FOR THE
U.S. DEPARTMENT OF TRANSPORTATION (DOT)
SURFACE TRANSPORTATION BOARD (STB)
NOTICE OF INTENT (NOI)
TO PREPARE AN
ENVIRONMENTAL IMPACT STATEMENT (EIS)
FOR THE PROPOSED
CANADIAN PACIFIC RAILWAY
AND
KANSAS CITY SOUTHERN RAILWAY
MERGER

BACKGROUND

The STB plans to assess the environmental impacts of the proposed Canadian Pacific (CP)-Kansas City Southern (KCS) merger. The STB's OEA on November 12, 2021, issued a NOI to prepare an EIS. STB determined the statement is necessary because the CP-KCS merger has the potential to result in "significant environmental impacts." The EIS will focus on how changes in rail operations and vehicular traffic on roadways and in intermodal facilities, as well as capital improvements, could impact the environment if CP and KCS were to combine. EPA offers the following detailed comments for consideration in the development of the Draft EIS.

DETAILED COMMENTS

Statement of Purpose and Need

The Draft EIS should clearly identify the underlying purpose and need to which the STB is responding in proposing the alternatives (40 CFR 1502.13). The purpose of the proposed action is typically the specific objectives of the activity, while the need for the proposed action may be to eliminate a broader underlying problem or take advantage of an opportunity. The purpose and need should be a clear, objective statement of the rationale for the proposed project.

Project Description

The NOI explains that the proposed project would make capital improvements within the existing right-of-way, including adding or extending 24 sidings, adding four miles of double track, and adding five miles of facility working track. In addition, operational changes would alter rail traffic on portions of the combined rail network. Rail yards and intermodal facilities would experience an increase in activity.

Recommendations for the Draft EIS:

- Clarify whether any activity, including staging, would take place outside of the existing right-of-way.

- Provide descriptions and maps for all project features, including any permanent or temporary access roads, staging areas, and changes to infrastructure.

- For all changes to sidings and new double track areas, disclose: (a) the mileage of new track and (b) the proximity of tracks to residences, schools, parks, and other populated places.

- Evaluate locations where train traffic is expected to increase significantly as a result of the railroad merger. Describe impacts associated with increased rail traffic in those locations, such as increased congestion at highway/rail and rail/rail grade crossings, emergency vehicle access at those locations, noise/vibration, air quality, and spill risks. Consider mitigation measures, such as installing grade separations, to address these issues.

- Describe the extent to which activity would increase at maintenance and multimodal facilities and measures to minimize associated environmental impacts.

- Discuss potential indirect impacts that would result from this project. Consider environmental impacts associated with any induced changes to vehicle traffic patterns, increased jobs at maintenance and multimodal facilities, and development patterns.

Alternatives Analysis

NEPA requires evaluation of reasonable alternatives, including those that may not be within the jurisdiction of the lead agency (40 CFR Section 1502.14(c)). A robust range of alternatives will include options for avoiding significant environmental impacts. The Draft EIS should provide a clear discussion of the reasons for the elimination of alternatives which are not evaluated in detail.

The environmental impacts of the proposal and alternatives should be presented in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public (40 CFR 1502.14). The potential environmental impacts of each alternative should be quantified to the greatest extent possible (e.g., acres of wetlands impacted, tons per year of emissions produced).

Recommendations for the Draft EIS:

- Briefly describe any alternatives that were considered but dismissed prior to the Draft EIS, and explain why they were not carried forward.

- Describe and fully analyze a reasonable range of alternatives in the Draft EIS. Develop reasonable alternatives that consider different placements of track sidings, double tracked portions, and other new infrastructure components. Locate infrastructure components with the goal of avoiding or minimizing impacts to natural and community resources.

- For each alternative, describe and assess all components, including, but not limited to, staging areas, access roads, sidings, double tracks, rail spurs, power stations, and storage/maintenance yards.

Stormwater Considerations

The Draft EIS should describe the original (natural) drainage patterns in the project locale, as well as the drainage patterns of the area during project operations. Also, the Draft EIS should identify whether any components of the proposed project are within a 50 or 100-year floodplain. The Draft EIS should note that, under the Federal Clean Water Act (CWA), any construction project disturbing a land area of one or more acres requires a construction stormwater discharge permit.

Surface Water and Groundwater Quality

The Draft EIS should fully discuss potential direct, indirect, and cumulative impacts from the proposed project to surface and groundwater quality.

Recommendations for the Draft EIS:

- Identify all water bodies that are listed as impaired under CWA Section 303(d) and could be directly or indirectly impacted by this project. Describe each water body's specific impairments, the causes of the impairments, and whether a Total Daily Maximum Load (TMDL) plan is in place.

- Analyze project impacts on impaired waters and TMDLs and commit to any necessary mitigation measures to avoid further impairment or delay of timely remediation.

- Evaluate potential direct or indirect impacts to public and private drinking water supply intakes and wells from project construction and operation and identify any wellhead protection areas and protective measures as needed.

- Discuss plans for managing stormwater and complying with the National Pollution Discharge Elimination System under CWA Section 402.

Waters of the United States and Compliance with Section 404 CWA

The impacts from the construction, operation and maintenance of the proposed merger may result in impacts to aquatic resources that require permit authorization under Section 404 of the CWA for the placement of dredged or fill material. As such, the Draft EIS should include a thorough evaluation that demonstrates planning efforts to avoid, minimize, and compensate for stream and wetland losses associated with the construction, operation, and maintenance of the proposed project. This evaluation is necessary to demonstrate the project's compliance with the Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the CWA. Impacts to aquatic resources and wetlands should include direct, indirect (i.e., secondary) and cumulative effects reasonably associated with the proposed project. Along with the CWA 404 (b)(1)

analysis, all unavoidable direct and indirect impacts would need to be compensated. We recommend that an aquatic resource and wetland mitigation plan, consistent with the 2008 Final Rule for Compensatory Mitigation for Losses of Aquatic Resources, be included within Draft EIS.

Specific to the existing documentation, please ensure stream and wetland impacts are consistently identified and quantified throughout the project documentation. If portions of the current evaluation of stream and wetland impacts is based upon a desktop analysis, the EPA recommends a field-based assessment of the project impacts to be included as soon as possible and be available with the Draft EIS. For the evaluation of alternatives, providing a clear comparative analysis of project alternatives with all associated wetland impacts (preferably in a tabular form with supporting map of alternatives) would be beneficial. The alternatives evaluation should include a thorough discussion of avoidance and minimization measures.

The mitigation plan should include all components as required by the 2008 Mitigation Rule and compensate for unavoidable impacts to aquatic resources, including the conversion of wetland resources along with any temporal losses that may result from project construction. The mitigation plan should incorporate an analysis of lost stream and wetland functions along with the stream and wetland functions to be enhanced, restored, or created. The proposed mitigation should be in the same watershed as the proposed impacts and should be of the same type to ensure adequate compensation is provided for the types and quantities of aquatic resources impacted by the project. Please provide the draft mitigation plan in the Draft EIS. Providing this material for public review allows for the optimum analysis of the entire range of significant potential environmental impacts by the U.S. Army Corps on Engineers (USACE) , the EPA, and other interested stakeholders.

Recommendations for the Draft EIS:

- As discussed above, align NEPA and CWA section 404 processes to ensure that this Draft EIS will fulfill future NEPA requirements for permitting actions.

- Quantify waters within the project area and adjacent areas using USACE preliminary or approved jurisdictional determinations. Include clear maps and describe water quality, functions, and values.

- Identify all waters with special designations, such as Outstanding State and National Resource Waters, and those waters located within state and federally-owned lands. Take additional steps to avoid and minimize impacts to these waters.

<u>Biological Resources, Habitat and Wildlife</u>

Section 7 of the Endangered Species Act (ESA) directs all Federal agencies to ensure that any action they authorize, fund, or carry-out does not jeopardize the continued existence of a threatened or endangered species or proposed or designated critical habitat. Implementing regulations found at 50 CFR Part 402 specify how Federal agencies are to fulfill their ESA Section 7 consultation requirements. The Draft EIS should identify all petitioned and listed threatened and endangered species and critical habitat that might occur within the project area, including any areas. The Draft EIS should identify which species or critical habitat might be directly, indirectly, or cumulatively affected by each

alternative and describe possible mitigation for each of the species. EPA recommends that the STB consult with the U.S. Fish and Wildlife Service (FWS) under Section 7 of the ESA. We also recommend that the STB coordinate across field offices and with USFWS and the appropriate State Wildlife and Fisheries Department (SWD) to ensure that current and consistent surveying, monitoring, and reporting protocols are applied in protection and mitigation efforts.

Recommendations for the Draft EIS:

- Use the FWS "Information for Planning and Conservation" tool to obtain a list of trust resources in the project area, which would include species that are listed as threatened or endangered under ESA, candidate species for listing, critical habitat, and migratory birds protected under the Migratory Bird Treaty Act.[1]
- Once the list is obtained, determine whether the proposed action may affect trust resources. If trust resources may be affected, engage in consultation with FWS. Document all coordination and formal consultation in the Draft EIS with the goal of aligning NEPA and ESA Section 7 consultation processes.
- Describe the presence of ESA-listed threatened and endangered species, candidate species, migratory birds, and critical habits in the project area. Describe the extent and nature of potential direct, indirect, and cumulative project impacts.
- Consult with the FWS and regional and local wildlife experts to explore specific locations and design features for any necessary wildlife crossings. Include findings in the Draft EIS.
- Coordinate with state Departments of Natural Resources (DNRs) to determine if any state-listed species could be impacted by the proposed project, and document coordination in the Draft EIS.
- Consult with FWS and state wildlife agencies under the Fish and Wildlife Coordination Act (FWCA),[2] which requires consultation when federal actions would result in the control or modification of a natural stream or body of water. This includes discharges of fill material. Discuss requirements of FWCA, interagency coordination, and measures to protect wildlife.

Invasive Species

Human actions are the primary means of invasive species introductions. Railway construction causes disturbance of right-of-way (ROW) soils and vegetation through the movement of people and vehicles along the ROW, access roads, and lay down areas. These activities can contribute to the spread of invasive species.

Executive Order 13112, *Invasive Species* (February 3, 1999), mandates that federal agencies take actions to prevent the introduction of invasive species, provide for their control, and minimize the economic,

[1] FWS Information for Planning and Conservation (IPaC) tool is available at: https://ecos.fws.gov/ipac/
[2] The Fish and Wildlife Coordination Act is available at 16 U.S.C. 661-666c; Public Law 85-624

ecological, and human health impacts that invasive species cause. Executive Order 13112 also calls for the restoration of native plants and tree species. If the proposed project will entail new landscaping, the Draft EIS should describe how the project will meet the requirements of Executive Order 13112.

In addition, we encourage alternative management practices that limit herbicide use (as a last resort), focusing instead on other methods to limit invasive species vegetation and decrease fire risk. Possible alternatives include mowing and weed control fabric, which may need a layer of soil to prevent degradation due to ultraviolet light.

Air Quality

The Draft EIS should discuss the existing, or baseline, ambient air conditions in the vicinity of the project. This includes identification of applicable National Ambient Air Quality Standards (NAAQS), non-NAAQS pollutants, and criteria pollutant nonattainment areas. The project must be evaluated for cumulative and indirect air quality impacts, with potential impacts from temporary, long-term, or cumulative degradation of air quality also addressed. This evaluation should estimate and quantify project-related criteria and hazardous air pollutant (air toxics) emissions, identify specific emissions sources, and consider any expected air quality/visibility impacts to any Class I Federal Areas identified in 40 CFR Part 81, Subpart D. Such discussions should describe and estimate air emissions from potential construction and maintenance activities and proposed mitigation measures as part of a construction emissions mitigation plan..

The proposed project would result in temporary fugitive dust and diesel exhaust emissions from construction activities, such as material hauling and use of heavy machinery. Long-term direct emissions sources include operating additional trains and increased activity at maintenance and intermodal facilities. Long-term indirect operational emissions sources include, but are not limited to, any induced growth in nearby supporting facilities. In 2002, EPA classified diesel emissions as a likely human carcinogen, and in 2012 the International Agency for Research on Cancer concluded that diesel exhaust is carcinogenic to humans. Diesel exhaust can also lead to other serious health conditions and can worsen heart and lung disease, especially in vulnerable populations, such as children and the elderly. Temporary and long-term emissions and potential health impacts should be fully evaluated and considered in developing alignment locations and protective measures for this project.

EPA's General Conformity Regulations ensure that federal actions comply with the NAAQS. To meet this Clean Air Act requirement, a federal agency must demonstrate that every action that it undertakes, approves, permits, or supports in areas that do not meet or previously have not met air quality standards will conform to the appropriate state implementation plan. Further, projects funded or approved by the STB in areas that do not meet or previously have not met the NAAQS are subject to Transportation Conformity Regulations.[3] Potential elements of this project that could require funding or approval include, but are not limited to, the modification of existing grade crossings, road networks, or transit infrastructure. To comply with EPA's Transportation Conformity Regulations, such elements would need to be included in a conforming transportation plan and a transportation improvement program.

[3] Information on Transportation Conformity is available at: https://www3.epa.gov/otaq/stateresources/transconf/

Recommendations for the Draft EIS:

- Discuss the air quality benefits described in the NOI, which stated that Applicants found that the proposed project would result in 60,000 fewer truck trips on highways annually. Provide context for how the calculation was developed and the associated miles traveled.

- Provide a detailed discussion of existing air quality conditions and criteria pollutant maintenance and nonattainment areas in the project study areas.

- Include an analysis of direct, indirect, and cumulative air quality impacts (positive and negative) from each alternative. Include estimates of all criteria pollutant emissions and any anticipated exceedances of NAAQS.

- Identify potential hotspot impacts, especially where idling locomotives, maintenance yards, storage yards, or new multi-modal centers are proposed, if applicable.

- Analyze health risks associated with construction and operational air emissions from the proposed project to nearby sensitive receptors. Discuss siting decisions and protective measures to avoid, minimize, or mitigate human exposure to harmful emissions.

- Use the most current EPA-approved model to estimate emissions and present all methods and assumptions for analyses.

- Discuss general and transportation conformity requirements and their applicability to the proposed project. If applicable, include a draft General Conformity Determination with related mitigation commitments.

- Commit to require construction contractors to use measures from the enclosed Construction Emission Control Checklist when applicable.

- Specify how impacts to sensitive receptors, such as children, elderly, and the infirm will be minimized. For example, commit to locate construction equipment and staging zones away from sensitive receptors and fresh air intakes to buildings and air conditioners.

- Recommend that the project proponent and other companies that would operate trains on the proposed railroad system use electric switching locomotives, or other low emission locomotive technologies, whenever possible to reduce air emissions during operations. If that is deemed infeasible at this time, discuss a strategy to move toward cleaner technologies.

- When schools, medical facilities, and other places where people gather are within 500 feet from the project, especially where idling is expected, consider whether vegetative barriers may reduce exposure to air pollution. If this option is pursued, we recommend working with

EPA as careful design of the barrier is key to reducing exposure.[4] Elevation changes, gaps between trees, and length of the barrier all must be considered.

Climate Change, Resilience and Adaptation

Many of the proposed action areas may be vulnerable to the impacts of climate change, including but not limited to, sea level rise, changes in local hydrologic conditions, increased precipitation, more severe drought, etc. EPA recommends that the description of the affected environment include an analysis of projected future changes, including future climate scenarios, that may affect the proposed action. The U.S. Global Change Research Program's Fourth National Climate Assessment (NCA) provides a starting place for analyzing changing climate conditions in the project area.[5] The NCA provides an in-depth look at climate change impacts on the U.S. now and in the future. Considering findings for each geographic region of the proposed project can help STB and the Applicants to incorporate resiliency measured into the proposed project.

As stated in Executive Order 14008: *Tackling the Climate Crisis at Home and Abroad*, "The United States and the world face a profound climate crisis. We have a narrow moment to pursue action…to avoid the most catastrophic impacts of that crisis and to seize the opportunity that tackling climate change presents." The proposed project would release greenhouse gas (GHG) emissions from both construction and operations. As described below, opportunities are available to reduce GHG emissions. EPA also recognizes that a well-planned rail system using best practices to minimize air pollution has the potential the benefit air quality by reducing emissions from trucks.

In addition, EPA recommends using the 2016 Council on Environmental Quality Final guidance on consideration of GHG emissions and the effects of climate change (issued Aug. 1, 2016; withdrawn Apr. 5, 2017; under review Feb. 19, 2021, for revision and update) as a resource for addressing, as appropriate, greenhouse gas emissions, disclosing climate change impacts associated with any of the reasonable alternatives considered, including the "no action" alternative, and considering practicable mitigation to reduce potential greenhouse gas emissions.

Recommendations for the Draft EIS:

- Use the 2016 CEQ Final guidance on consideration of GHG emissions and the effects of climate change (issued Aug. 1, 2016; withdrawn Apr. 5, 2017; under review Feb. 19, 2021, for revision and update) as a resource for addressing GHGs and disclosing climate change impacts associated with each alternative.

- Quantify the GHG emissions from project alternatives to inform decision-making. Consider modifications to alternatives to reduce GHG emissions.

[4] See EPA's Recommendations for Constructing Roadside Vegetation Barriers to Improve Near-Road Air Quality https://www.epa.gov/air-research/recommendations-constructing-roadside-vegetation-barriers-improve-near-road-air-quality

[5] USGCRP, 2018: *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018. https://nca2018.globalchange.gov/

- Discuss reasonably foreseeable effects that changes in the climate may have on the study area and the proposed project. While this will vary by geographic region, the Midwest, for example, is expected to see increasing frequency and severity of storm events and flooding. Such considerations could inform the development of resiliency and adaption measures.

- Consider resiliency and adaptation measures or plans to ensure that the proposed infrastructure would maintain structural integrity and safe operating conditions under changing climate conditions. For example, consider anticipated frequencies of severe precipitation events when sizing stormwater control features, bridges, and culverts. See EPA's Adaptation Resource Center[6] for assistance.

- Discuss opportunities and commit to measures to reduce short and long-term releases of GHG emissions from implementation of the proposed project, such as appliable measures from the enclosed Construction Emission Control Checklist.

Hazardous Materials/Hazardous Waste/Solid Waste

The Draft EIS should address potential direct, indirect, and cumulative impacts of hazardous waste from construction and operation of the proposed transmission line and other facilities. The document should identify projected hazardous waste types and volumes and expected storage, disposal, and management plans. It should address the applicability of state and federal hazardous waste requirements. Appropriate mitigation should be evaluated, including measures to minimize the generation of hazardous waste (i.e., hazardous waste minimization). Alternate industrial processes using less toxic materials should be evaluated as mitigation since such processes could reduce the volume or toxicity of hazardous materials requiring management and disposal as hazardous waste.

Hazardous Substances and Emergency Response

The proposed project could result in releases of hazardous substances through accidental spills during construction and, if rail cars carry hazardous substances, through accidents during operation of the railroad. Comprehensive, upfront planning and preparedness are needed to avoid such incidents and establish response contingencies. EPA has engaged in response planning and training with Class I railroads for the purposes of: (1) better understanding the nature of commodity flows, (2) providing joint training to state and local response agencies, and (3) ensuring that railroad spill response plans, as required by the U.S. Department of Transportation (USDOT), are consistent with both the Oil and Hazardous Substances National Contingency Plan and the applicable EPA Regional Contingency Plans for spills of oil and hazardous substances.

Recommendations for the Draft EIS:

- Disclose hazardous substances that would be used during project construction.

- Discuss plans to avoid accidental releases during construction and respond to any accidental releases.

[6] EPA's Climate Adaptation Resource Center, available at: https://www.epa.gov/arc-x

- Disclose hazardous substances that freight trains could carry along the proposed merged rail network. To the extent that information is available, describe all elements of commodity flow, such as material description, volume, frequency, types of containers, shippers, and carriers.

- Discuss plans and controls designed to avoid accidents during operations and to respond to any accidental releases.

- Evaluate potential public health and safety impacts associated with an accidental release of oil and other hazardous substances during project construction and operations.

- Discuss how STB and/or the railroads would coordinate with communities, states, EPA, Federal Railroad Administration, and USDOT to develop integrated spill response plans, including Geographic Response Plans. Such plans are needed to prepare to respond to incidents involving the transport of oil and hazardous substances on the merged rail network. Include a discussion of training and exercises involving all the above parties.

- Consult with the appropriate EPA Region for assistance with emergency preparedness and contingency planning.

Indirect Impacts

Per CEQ regulations at CFR 1508.8(b), the indirect effects analysis "may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems." We recommend the Draft EIS consider available information about the extent to which construction activity might be stimulated by the construction of additional track sidings and parallel track construction and expanded train traffic utilization and the potential environmental effects associated with that activity as result of the merger.

Cumulative Impacts

The cumulative impacts analysis should identify how resources, ecosystems, and communities in the vicinity of the project have already been, or will be, affected by past, present, or future activities in the project area. These resources should be characterized in terms of their response to change and capacity to withstand stresses. Trends data should be used to establish a baseline for the affected resources, to evaluate the significance of historical degradation, and to predict the environmental effects of the project components.

For the cumulative impacts assessment, we recommend the Draft EIS focus on resources of concern or resources that are “at risk” and/or are significantly impacted by the proposed project before mitigation. For this project, the STB should conduct a thorough assessment of the cumulative impacts, especially in the context of the other developments occurring and proposed in the area, including pending and proposed projects.

A cumulative impacts assessment is also required under Section 404. Cumulative impacts are defined in 40 CFR 230.11(g)(1) as "the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Although the impact of a discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems."

Coordination with Tribal Governments

Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments* (November 6, 2000), was issued in order to establish regular and meaningful consultation and collaboration with tribal officials in the development of federal policies that have tribal implications, and to strengthen the United States government-to-government relationships with Indian tribes. If applicable, the Draft EIS should describe the process and outcome of government-to-government consultation between the STB and with each of the tribal governments with current or historical ties to the project area, issues that were raised (if any), and how those issues were addressed in the selection of the proposed alternative.

National Historic Preservation Act and Executive Order 13007

Consultation for tribal cultural resources is required under Section 106 of the National Historic Preservation Act (NHPA). Historic properties under the NHPA are properties that are included in the National Register of Historic Places or that meet the criteria for the National Register. Section 106 of the NHPA requires a federal agency, upon determining that activities under its control could affect historic properties, consult with the appropriate State Historic Preservation Officer (SHPO)/Tribal Historic Preservation Officer (THPO), Indian tribes, or any other interested party. Under NEPA, any impacts to tribal, cultural, or other treaty resources must be discussed and mitigated. Section 106 of the NHPA requires that Federal agencies consider the effects of their actions on cultural resources, following regulation in 36 CFR 800. The Draft EIS should address the existence of cultural and historic resources, including Indian sacred sites, in the project areas, and address compliance with Section 106 of the NHPA. The Draft EIS should provide a summary of all coordination with Tribes, the SHPO/THPO, or any other party; and identify all NHPA listed or eligible sites, and the development of a Cultural Resource Management Plan.

Environmental Justice and Impacted Communities

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994) and the Interagency Memorandum of Understanding on EJ (August 4, 2011) direct federal agencies to identify and address disproportionately high and adverse human health or environmental effects on minority and low-income populations, allowing those populations a meaningful opportunity to participate in the decision-making process. Guidance[7] by CEQ clarifies the terms low-income and minority population (which includes Native Americans) and describes the factors to consider when evaluating disproportionately high and adverse human health effects.

[7] Environmental Justice Guidance under the National Environmental Policy Act, Appendix A (Guidance for Federal Agencies on Key Terms in Executive Order 12898), CEQ, December 10, 1997.

The STB should evaluate EJ populations within at least one-mile radius of the proposed project boundaries. The NOI explained that certain parts of the rail corridor would experience increases in train traffic, which would result noise and air pollution. In addition, new sidings and double track may require property acquisition and displacement of goods and services, altering local character, among other impacts. Strong upfront planning, in close collaboration with affected communities, is key to identifying siting locations and project designs that minimize impacts and protect residents' quality of life and protect vulnerable communities.

Recommendations for the Draft EIS:

- Include a detailed community outreach strategy aimed at gaining local input from impacted communities along the corridor, and specify targeted activities to reach low income and minority communities. Describe actions to date and future plans, including the use of public input to inform project development.

- Describe baseline conditions and potential impacts to communities along the rail corridor, including unincorporated communities.

- Identify low income and minority populations that may be impacted by the proposed project. Compare percentages of low income and minority residents in the project area to an appropriate reference community to determine whether the project could have disproportionately high and adverse effects. Include maps and summary tables.

- For communities with EJ concerns, consider the impacts of the proposed project along with other environmental burdens faced by the community (i.e., nearby sources of pollution, known contaminated sites, etc.). Use the cumulative environmental burdens to inform decision-making about project actions (e.g., siding and double track siting, traffic volumes, idling policies, etc.) in these areas.

- Consider increases in use of existing intermodal yards and associated impacts (noise, air quality, traffic, etc.) on communities, especially communities with EJ concerns. For example, from a high-level assessment, it appears that the three CP intermodal yards in EPA's Region 5 (Detroit, Schiller Park, and Bensenville) are adjacent to minority communities.

- Consider the "Promising Practices for EJ Methodologies in NEPA Reviews" report. Discuss its applicability to this project and any best practices utilized from the report.

- Use EPA's "EJSCREEN" tool[8] to screen for potential impacts to communities living with or vulnerable to EJ concern.

[8] EPA's EJSCREEN Environmental Justice and Mapping Tool is available at: https://www.epa.gov/ejscreen

- Provide specific measures to avoid, minimize, and mitigate any anticipated adverse impacts to communities (e.g., siding and double track siting, traffic volumes, idling policies, adoption of EPA's air quality recommendations, etc.).

Children's Health and Safety:

Executive Order 13045 on children's health and safety directs each Federal agency to make it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children, and to ensure that its policies, programs, activities, and standards address these risks. Children can be particularly vulnerable to the toxic effects of contaminants because their bodies and systems are not fully developed and they generally eat more food, drink more water, and have higher inhalation rates relative to their size. There may be opportunities to develop the proposed project in a way that increases protections for children's health.

Recommendations for the Draft EIS:

- Evaluate potential direct, indirect, and cumulative impacts from the proposed project on children's health.

- Commit to specific measures to protect children's health from project impacts. Site staging areas, material hauling truck routes, and other sources of air emissions away from places where children congregate to the extent possible. Require strict implementation of applicable measures from the enclosed Construction Emissions Control Checklist in these areas.

- Require construction contractors to establish material hauling routes away from places where children live, learn, and play, to the extent feasible. Consider homes, schools, daycare centers, and playgrounds. In additional to local air quality benefits, careful routing may protect children from vehicle-pedestrian accidents.

Noise and Vibration Impacts:

Potential noise and vibration impacts to human health and welfare and wildlife activity are particularly important for this project because of the increases in the number of trains that may use the tracks each day and increases in activity and maintenance and intermodal facilities. Under NEPA, noise and vibration impacts should be fully disclosed in the Draft EIS and used to inform siting decisions and protective measures. EPA's website explains that there are direct links between noise and health.[9] Upfront assessment of noise impacts could inform alternative selection and mitigation measures, if needed.

Recommendations for the Draft EIS:

- Identify residential, commercial, community, and wildlife receptors that could be impacted by noise and vibration from the proposed project and fully analyze potential impacts.

[9] https://www.epa.gov/clean-air-act-overview/clean-air-act-title-iv-noise-pollution

- Commit to specific measures to avoid or minimize impacts. For noise impacts, consider siting of sidings, idling policies, gate crossings and horn policies, among other opportunities to protect communities from noise and vibration.

- Address nocturnal and diurnal impacts to wildlife activities, such as foraging, predator avoidance, and nesting that may be affected by new noise and vibration introduced to natural habitats.

U.S. Environmental Protection Agency
Construction Emission Control Checklist

Diesel emissions and fugitive dust from project construction may pose environmental and human health risks and should be minimized. In 2002, EPA classified diesel emissions as a likely human carcinogen, and in 2012 the International Agency for Research on Cancer concluded that diesel exhaust is carcinogenic to humans. Acute exposures can lead to other health problems, such as eye and nose irritation, headaches, nausea, asthma, and other respiratory system issues. Longer term exposure may worsen heart and lung disease.[10] We recommend STB and the project proponent consider the following protective measures and commit to applicable measures in the subsequent NEPA document.

Mobile and Stationary Source Diesel Controls

Purchase or solicit bids that require the use of vehicles that are equipped with zero-emission technologies or the most advanced emission control systems available. Commit to the best available emissions control technologies for project equipment in order to meet the following standards.

- On-Highway Vehicles: On-highway vehicles should meet, or exceed, the EPA exhaust emissions standards for model year 2010 and newer heavy-duty, on-highway compression-ignition engines (e.g., long-haul trucks, refuse haulers, shuttle buses, etc.).[11]

- Non-road Vehicles and Equipment: Non-road vehicles and equipment should meet, or exceed, the EPA Tier 4 exhaust emissions standards for heavy-duty, non-road compression-ignition engines (e.g., construction equipment, non-road trucks, etc.).[12]

- Locomotives: Locomotives servicing infrastructure sites should meet, or exceed, the EPA Tier 4 exhaust emissions standards for line-haul and switch locomotive engines where possible.

- Marine Vessels: Marine vessels hauling materials for infrastructure project should meet, or exceed, the latest EPA exhaust emissions standards for marine compression-ignition engines (e.g., Tier 4 for Category 1 & 2 vessels, and Tier 3 for Category 3 vessels).[13]

- Low Emission Equipment Exemptions: The equipment specifications outlined above should be met unless: 1) a piece of specialized equipment is not available for purchase or lease within the United States; or 2) the relevant project contractor has been awarded funds to retrofit existing equipment, or purchase/lease new equipment, but the funds are not yet available.

[10] Carcinogenicity of diesel-engine and gasoline-engine exhausts and some nitroarenes. *The Lancet.* June 15, 2012
[11] http://www.epa.gov/otaq/standards/heavy-duty/hdci-exhaust.htm
12 https://www.epa.gov/emission-standards-reference-guide/epa-emission-standards-nonroad-engines-and-vehicles
[13] https://www.epa.gov/emission-standards-reference-guide/all-epa-emission-standards

Consider requiring the following best practices through the construction contracting or oversight process:

- Establish and enforce a clear anti-idling policy for the construction site.

- Use onsite renewable electricity generation and/or grid-based electricity rather than diesel-powered generators or other equipment.

- Use electric starting aids such as block heaters with older vehicles to warm the engine. Regularly maintain diesel engines to keep exhaust emissions low. Follow the manufacturer's recommended maintenance schedule and procedures. Smoke color can signal the need for maintenance (e.g., blue/black smoke indicates that an engine requires servicing or tuning).

- Where possible, retrofit older-tier or Tier 0 nonroad engines with an exhaust filtration device before it enters the construction site to capture diesel particulate matter.

- Replace the engines of older vehicles and/or equipment with diesel or alternatively fueled engines certified to meet newer, more stringent emissions standards (e.g., plug-in hybrid-electric vehicles, battery-electric vehicles, fuel cell electric vehicles, advanced technology locomotives, etc.), or with zero emissions electric systems. Retire older vehicles, given the significant contribution of vehicle emissions to the poor air quality conditions. Implement programs to encourage the voluntary removal from use and the marketplace of pre-2010 model year on-highway vehicles (e.g., scrappage rebates) and replace them with newer vehicles that meet or exceed the latest EPA exhaust emissions standards, or with zero emissions electric vehicles and/or equipment.

Fugitive Dust Source Controls

- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative, where appropriate. This applies to both inactive and active sites, during workdays, weekends, holidays, and windy conditions.

- Install wind fencing and phase grading operations where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.

- When hauling material and operating non-earthmoving equipment, prevent spillage and limit speeds to 15 miles per hour (mph). Limit speed of earth-moving equipment to 10 mph.

Occupational Health

- Reduce exposure through work practices and training, such as maintaining filtration devices and training diesel-equipment operators to perform routine inspections.

- Position the exhaust pipe so that diesel fumes are directed away from the operator and nearby workers, reducing the fume concentration to which personnel are exposed.

- Use enclosed, climate-controlled cabs pressurized and equipped with high-efficiency particulate air (HEPA) filters to reduce the operators' exposure to diesel fumes. Pressurization ensures that air moves from inside to outside. HEPA filters ensure that any incoming air is filtered first.

- Use respirators, which are only an interim measure to control exposure to diesel emissions. In most cases, an N95 respirator is adequate. Workers must be trained and fit-tested before they wear respirators. Depending on the type of work being conducted, and if oil is present, concentrations of particulates present will determine the efficiency and type of mask and respirator. Personnel familiar with the selection, care, and use of respirators must perform the fit testing. Respirators must bear a National Institute for Occupational Safety and Health (NIOSH) approval number.

Chicago Metropolitan Agency for Planning

433 West Van Buren Street
Suite 450
Chicago, IL 60607

312-454-0400
cmap.illinois.gov

December 28, 2021

Ms. Danielle Gosselin
Acting Director, Office of Environmental Analysis
Surface Transportation Board
395 E Street, S.W.
Washington, DC 20423

RE: FD 36500, Environmental Filing, Canadian Pacific Railway – Control of – Kansas City Southern.

Dear Ms. Gosselin:

Thank you for the opportunity to comment on the scope of the Environmental Impact Statement (EIS) for the proposed acquisition of the Kansas City Southern (KCS) by the Canadian Pacific Railway (CP). The Chicago Metropolitan Agency for Planning (CMAP) believes both the positive and negative impacts of any merger on the freight network should be studied. Anticipated transportation benefits should be balanced along with impacts at the local, regional and national levels.

As the federally designated metropolitan planning organization for northeastern Illinois, CMAP is charged with safeguarding and enhancing the region's transportation system. CMAP is focused on strengthening the viability of the region's freight and passenger networks as a key part of the economy and overall transportation system. CMAP intends to play an active role during the EIS process by analyzing the impacts and benefits from a regional perspective and supporting our local partners' analysis and review of the impacts of this transaction on their communities.

As the Surface Transportation Board (STB) finalizes the scope of the EIS process for this potential merger, CMAP submits the following comments for consideration:

Transit services. CP and KCS trains will be running on Metra commuter-rail lines. The Milwaukee District West Line will be most affected by the CP-KCS merger. Prior to the COVID-19 pandemic, the Milwaukee District West Line served more than 20,800 weekday boardings with 58 trains per weekday. Metra operations, including scheduled trains, deadheads, terminals, and station operations, must be fully addressed, and any potential conflict fully mitigated to ensure a full transit system recovery in the coming years. Planning must fully account for a staged recovery in the number of commuter trains per day as ridership rebounds from pandemic lows.

Board Members
Gerald Bennett, Chair
Frank Beal
Matthew Brolley
Karen Darch
Paul Goodrich
James Healy
Nina Idemudia
John Noak
Rick Reinbold
Nancy Rotering
Stefan Schaffer
Carolyn Schofield
Anne Sheahan
Matthew Walsh
Diane Williams

Non-voting Members
Leanne Redden
Abolfazl Mohammadian

Executive Director
Erin Aleman

Extended blockages of highway-rail grade crossings. Extended delays at grade crossings (gate-down intervals of 10 minutes or more) have a detrimental impact on quality of life and are a threat to public safety when emergency vehicles are affected. Data collected during the STB's monitoring period for the CN acquisition of the Elgin Joliet & Eastern Railway (EJE) showed the potential extent of such blockages after an acquisition. Blockages greater than 10 minutes in length totaled 74,754 over a 53-month period, with 1,756 of those blockages lasting more than an hour in duration. Twenty-four crossings had more than 1,000 blockages longer than 10 minutes. Any merger that increases long-duration blockages is unacceptable. The EIS should estimate the impact of the CP-KCS transaction on extended blockages at each crossing, develop mitigations to those impacts, and then measure the actual changes using gate monitoring during STB's oversight period so that grade crossing blockages are not made worse.

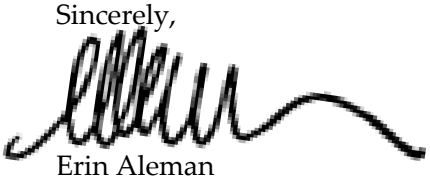
Air quality considerations. "Hotspot" analysis should be undertaken at rail yards, intermodal terminals, rail-rail grade crossings ("diamonds"), junctions, and other places of concentrated rail activity, considering the cumulative and marginal burdens of pollutants from not only the direct operations of CP-KCS operations, but the additional truck trips that are forecast to take place in the vicinity of the intermodal terminals as a result of this transaction. The impacts of the transaction on low-income and minority communities must be fully understood and mitigated, consistent with environmental justice requirements. Air-quality mitigation strategies for locomotives, yard equipment, and drayage trucks entering and leaving the terminal must be considered.

Noise and vibration. We have concerns about expected increases in noise and vibration along CP-KCS facilities. We would like to be assured that the CP-KCS will be required to take a central role in the planning and development of quiet zones as mitigations, including the construction of improvements to establish quiet zones.

STB oversight period. Longer STB oversight will be necessary than the typical three to five years to consider the impacts of network changes, increased market access, and mitigations. To assure performance, it is necessary to monitor the effectiveness of mitigations, not simply to ascertain whether the mitigations were completed. We suggest a minimum oversight period of an additional three years following the completion of all mitigations and network changes. Further, a longer oversight period will be necessary to assure that CP-KCS trains do not interfere with Metra operations as Metra returns to pre-pandemic operating levels, a process that will take several years.

Once again, thank you for the opportunity to comment on the proposed scope of the EIS process. We look forward to working with your office and the applicants as this merger and its potential impacts are being reviewed.

Sincerely,



Erin Aleman
Executive Director

EI-31392

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, KANSAS CITY DISTRICT
601 E. 12TH STREET, 635 FEDERAL BUILDING
KANSAS CITY, MO 64106-2824

December 9, 2021

Regulatory Branch
(NWK-2021-859)

Mr. Joshua Wayland
Surface Transportation Board, c/o VHB
Attention: Environmental Filing, Docket No. FD 36500
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

Dear Mr. Wayland:

This is in response to your letter, dated November 12, 2021, requesting comments regarding the Notice of Intent to prepare an environmental impact statement for the merger of the Canadian Pacific Railway and Kansas City Southern railroad companies. The proposed combined rail lines of these two companies span multiple U.S. Army, Corps of Engineers Districts, including the Kansas City District.

The Corps of Engineers has jurisdiction over all waters of the United States. Discharges of dredged or fill material in waters of the United States, including wetlands, require prior authorization from the Corps under Section 404 of the Clean Water Act (33 USC 1344) and /or Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403).

We have reviewed the locations of the existing rail lines and associated facilities that may experience operational changes resulting from the proposed merger. We will further evaluate any necessary permit considerations for the work when an application and more detailed descriptions for the impacts of that work to waters of the United States has been submitted for review. These locations may include the Leeds or Kansas City Intermodal facilities, the addition of new or improved track and/or rail sidings, or other work and locations within our District.

Thank you for providing us the opportunity to review the Notice of Intent for the project. If you have any questions concerning this matter, please feel free to write or contact Mr. Brian Donahue at 816-389-3703 or by email at brian.t.donahue@usace.army.mil. Please reference Permit file number NWK-2021-0859 in all comments and/or inquiries relating to this project. This letter is only being provided to electronically through the project website at www.stb.gov.

Sincerely,

Mark D. Frazier
Chief, Regulatory Branch
Operations Division

Division of Environment
Curtis State Office Building
1000 SW Jackson St., Suite 400
Topeka, KS 66612-1367

Kansas
Department of Health
and Environment

Phone: 785-296-1535
Fax: 785-296-4264
www.kdheks.gov

Ashley D. Goss, Acting Secretary

Laura Kelly, Governor

Comments by: KDHE

Transmittal Date: December , 2021

This form provides notification and the opportunity for your agency to review and comments on this proposed project as required by Executive Order 12372. Review Agency, please complete Parts II and III as appropriate and return to the contact person listed below. Your prompt response will be appreciated.

Return To: Joshua Wayland, Surface Transportation Board, c/o VHB
Attention: Environmental Filing, Docket No. FD 36500
940 Main Campus Dr., Suite 500
Raleigh, NC 27606

PART I **REVIEW AGENCIES/COMMISSION**

___Aging	___Education	___State Forester
___Agriculture	___Geological Survey, KS	___Transportation
___Biological Survey	_X_Health & Environment	___Water Office, KS
___Conservation Commission	___Historical Society	___Wildlife & Parks
___Corporation Commission	___Social & Rehabilitation	___Commerce

PART II **AGENCY REVIEW COMMENTS**

COMMENTS: (Attach additional sheet if necessary) Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al. – Control of Kansas City Southern, et al.; Notice of Intent to Prepare an Environmental Impact Statement
Kevin Heit, Bureau of Waste Management comments are enclosed for this project.
Please see the enclosed comments submitted from Christopher Wierman, Delbert Smith, Seth Mettling, Wyatt Harness and Brett Tavener, Bureau of Environmental Remediation.
Connie Ellis, Bureau of Air: BOA has no comments.
Tom Stiles, Bureau of Water: Does not appear to have any issues for BOW to consider.

PART III
RECOMMENDED ACTION COMMENTS:

___Clearance of the project should be granted.

___Clearance of the project should not be granted.

___Clearance of the project should be delayed until the issues or questions above have been clarified.

___Request a State Process Recommendation in concurrence with the above comments

_X_ Clearance of the project should not be delayed but the Applicant should (in the final application) address and clarify the question or concerns indicated above.

___Request the opportunity to review final application prior to submission to the federal funding agency.

DIVISIONS/ AGENCY/ COMMISSION:

Donna Fisher, Director's Office
Phone: 785.291.3092
Email: donna.fisher@ks.gov

Office of the Secretary
Curtis State Office Building
1000 SW Jackson St., Suite 540
Topeka, KS 66612-1368

Kansas
Department of Health
and Environment

Phone: 785-296-0461
www.kdheks.gov

Ashley D. Goss, Acting Secretary

Laura Kelly, Governor

MEMORANDUM

TO: Donna Fisher

CC: Ken Powell, Julie Coleman

FROM: Kevin Heit – Bureau of Waste Management

DATE: November 22nd, 2021

RE: Intergovernmental Agency Review requested by US Surface Transportation Board on behalf of the Canadian Pacific Acquisition of Kansas City Southern for proposed merger of the afore mentioned railway corporations. Proposed areas of impact in Kansas are in Linn, Crawford, and Cherokee Counties.

The Canadian Pacific Railway Limited (CP) & Kansas City Southern (KCS), and any respective contractor(s) should review the attached Technical Guidance Document and ensure all waste is properly disposed. Waste that does not meet the definition of clean rubble or construction/demolition waste should be disposed at a permitted municipal solid waste landfill. If further information is required, I may be reached via email at kevin.heit@ks.gov or by phone at (785) 296-1757.

Kansas Department of Health and Environment
Bureau of Waste Management
1000 SW Jackson, Suite 320, Topeka, Kansas 66612-1366

Construction and Demolition Wastes and Clean Rubble

Technical Guidance Document SW-1994-G2

Construction and Demolition (C&D) waste is solid waste generated during construction or demolition activities. Clean rubble is also generated during construction or demolition activities, but it differs in composition from C&D waste. This document explains the definitions of C&D waste and clean rubble and acceptable methods for disposal of both.

Construction and Demolition Waste

Definition of C&D waste

C&D waste is defined in KSA 65-3402 (u) as:

- solid waste resulting from the construction, remodeling, repair and demolition of structures, roads, sidewalks and utilities;
- untreated wood and untreated sawdust from any source;
- treated wood from construction or demolition projects;
- small amounts of municipal solid waste generated by the consumption of food and drinks at construction or demolition sites, including, but not limited to, cups, bags and bottles;
- furniture and appliances from which ozone depleting chlorofluorocarbons have been removed in accordance with the provisions of the federal clean air act;
- solid waste consisting of motor vehicle window glass; and
- solid waste consisting of vegetation from land clearing and grubbing, utility maintenance, and seasonal or storm related cleanup.

Such wastes include, but are not limited to, bricks, concrete, and other masonry materials, roofing materials, soil, rock, wood, wood products, wall or floor coverings, plaster, drywall, plumbing fixtures, electrical wiring, electrical components containing no hazardous materials, non-asbestos insulation and construction related packaging.

Other statutes and regulations further refine the definition:

Construction related packaging means small quantities of packaging wastes that are generated in the construction, remodeling or repair of structures and related appurtenances. "Construction related packaging" does not include packaging wastes that are generated at retail establishments selling construction materials, chemical containers generated from any source or packaging generated during maintenance of existing structures. *KSA 65-3402(dd)*

Furniture and appliances do not include computer monitors and other computer components, televisions, videocassette recorders, stereos, and similar waste electronics.
KAR 28-29-300(a)(4)(A)

Treated wood includes wood treated with any of the following:
(i) Creosote;
(ii) oil-borne preservatives, including pentachlorophenol and copper naphthenate;

Disposal options for C&D wastes
Acceptable C&D wastes may be disposed of in either a municipal solid waste landfill (MSWLF) or in a C&D landfill. Both MSWLFs and C&D landfills must be approved by KDHE through a permit process. But because of the relatively inert nature of the wastes disposed in C&D landfills, these landfills do not have to meet design standards as strict as those for MSWLFs.

Most C&D landfills will, on occasion, receive waste that is not appropriate for disposal. Therefore, all C&D landfills should conduct waste screening (i.e., inspect incoming waste and remove unacceptable materials) and maintain a dumpster or roll-off container onsite for unacceptable wastes which are received at the landfill. Waste screening is covered in Technical Guidance Document SW 02-01, and storage of unapproved wastes screened from construction and demolition landfills is addressed in Bureau of Waste Management Policy 02-01.

Clean Rubble

Definition of clean rubble
According to KSA 65-3402 (w), "Clean rubble means the following types of construction and demolition waste: concrete and concrete products including reinforcing steel, asphalt pavement, brick, rock and uncontaminated soil as defined in rules and regulations adopted by the secretary."

KSA 65-3415b lists "clean rubble" as a waste which is exempt from the state solid waste tonnage fee. The definition of "construction and demolition waste" in KSA 65-3402(u) states: "Clean rubble that is mixed with other construction and demolition waste during demolition or transportation shall be considered to be construction and demolition waste. "

Clean rubble that is brought separately to a construction and demolition landfill or a municipal solid waste landfill is not subject to the tonnage fee, even if the clean rubble is mixed with construction and demolition waste or municipal solid waste upon disposal.

Disposal of clean rubble
The stable nature of the materials in clean rubble means it may be disposed of with C&D waste, or it may be disposed of separately at a clean rubble site. However, clean rubble that is mixed with other C&D waste during demolition or transportation is considered to be C&D waste and must be disposed of at either a MSWLF or at a C&D landfill.
Unlike a C&D landfill, state statutes do not require a solid waste permit for operation of a site that accepts only clean rubble. However, a clean rubble site may be subject to local city or county requirements such as local approval (zoning or land use) and local ordinances.

Approval from the Division of Water Resources (DWR) may be required if the site is located in the 100-year flood plain. The operation and appearance of the site must not create a public nuisance or adversely affect the public health or the environment.

For additional information regarding the proper management of solid or hazardous waste in Kansas, you may visit the Bureau of Waste Management website at http://www.kdheks.gov/waste/ or contact the Bureau at: (785) 296-1600, bwm_web@kdheks.gov, or the address at the top of this document.

Division of Environment
Curtis State Office Building
1000 SW Jackson St., Suite 410
Topeka, KS 66612-1367

Kansas
Department of Health
and Environment

Phone: 785-296-1660
Fax: 785-559-4262
www.kdheks.gov

Ashley D. Goss, Acting Secretary

Laura Kelly, Governor

MEMORANDUM

TO: Donna Fisher

FROM: Christopher Wierman

DATE: November 23, 2021

RE: Intergovernmental Agency Review requested by Surface Transportation Board for Railroad Merger and Improvements in Cherokee County

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The Kansas Department of Health and Environment Bureau of Environmental Remediation (KDHE/BER), Assessment and Restoration Section, Dry Cleaner / Superfund Unit, has not identified contaminated Drycleaner sites within the vicinity of the proposed project.

The following identified Superfund site may impact the proposed work:
Cherokee County Superfund within Cherokee County (KDHE ISL: C3-011-00012)
(also see Cherokee Co Operable Unit 8 Railroad; KDHE ISL: C3-011-73152)

During the lead and zinc ore mining period within the Cherokee County Superfund Site (Site) railroad construction used ballast material from surrounding mine process waste piles to join conventional large-scale railroads to individual mining operations. Residual heavy metals including lead and zinc may be present in the railroad ballast if the ballast material came from mine process waste, colloquially known as chat. Potential contamination transport mechanisms include leaching into native soil underlying the rail bed chat, airborne dust, and surface water runoff. Site workers and adjacent residents may, therefore, be exposed to contaminated materials from historic lead-zinc mining within Cherokee County (via ingestion, inhalation, and/or dermal contact exposure pathways) due to the railroad improvement activities. The primary ecological receptor exposure routes to the chemicals of concern are heavy metals-contaminated mine waste and soil ingestion.

Staff members or representatives for the Surface Transportation Board, Canadian Pacific Railway Limited, et al., Kansas City Southern, et al. or Cherokee County are welcome to come and view the KDHE/BER files in accordance with the Kansas Open Records Act. Please contact me at (785) 296-5548 or by email at christopher.wierman@ks.gov if you have any questions.

Division of Environment
Curtis State Office Building
1000 SW Jackson St., Suite 410
Topeka, KS 66612-1367

Kansas
Department of Health
and Environment

Phone: 785-296-1660
Fax: 785-559-4261
www.kdheks.gov

Lee A. Norman, M.D., Secretary

Laura Kelly, Governor

MEMORANDUM

TO: Donna Fisher

FROM: Delbert Smith

DATE: November 15, 2021

RE: Intergovernmental Agency Review requested by Surface Transportation Board (Canadian Pacific Railroad / Kansas City Southern Railroad Merger).

The Kansas Department of Health and Environment Bureau of Environmental Remediation (KDHE/BER), Assessment and Restoration Section, Spills Unit, has no identified contaminated spill sites within the vicinity of the proposed project.

Staff members or representatives for Surface Transportation Board, Canadian Pacific Railroad, or the Kansas City Southern Railroad are welcome to come and view the KDHE/BER files in accordance with the Kansas Open Records Act. Please contact me at (785) 368-7301 or by email at delbert.smith@ks.gov if you have any questions.

Division of Environment
Curtis State Office Building
1000 SW Jackson St., Suite 410
Topeka, KS 66612-1367

Kansas
Department of Health and Environment

Phone: 785-296-1660
Fax: 785-559-4261
www.kdheks.gov

Ashley D. Goss, Acting Secretary

Laura Kelly, Governor

TO: Donna Fisher
FROM: Seth Mettling
DATE: December 2, 2021
RE: Intergovernmental Agency Review, requested by requested by the Surface Transportation Board

Redevelopment Section – Brownfield Program notes no known sites within the project area. Clearance for the project should be granted.

Staff members or representatives for the Surface Transportation Board are welcome to come and view the KDHE/BER files in accordance with the Kansas Open Records Act. Please contact me at 785.296.5519 or by email at seth.mettling@ks.gov if you have any questions or concerns.

Division of Environment
Curtis State Office Building
1000 SW Jackson St., Suite 410
Topeka, KS 66612-1367

Kansas
Department of Health
and Environment

Phone: 785-296-1660
Fax: 785-559-4261
www.kdheks.gov

Lee A. Norman, M.D., Secretary

Laura Kelly, Governor

MEMORANDUM

TO: Donna Fisher

FROM: Wyatt Harness

DATE: November 18, 2021

RE: Intergovernmental Agency Review requested by Surface Transportation Board regarding the CP/KCS Railway Merge Project

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The Kansas Department of Health and Environment Bureau of Environmental Remediation (KDHE/BER), Assessment and Restoration Section, Orphan Sites Unit, has not identified any sites within the vicinity of the project which would be impacted by or would impact the proposed project.

Staff members or representatives for the Surface Transportation Board are welcome to come and view the KDHE/BER files in accordance with the Kansas Open Records Act. Please contact me at (785) 296-1681 or by email at Wyatt.Harness@ks.gov if you have any questions.

Division of Environment
Curtis State Office Building
1000 SW Jackson St., Suite 410
Topeka, KS 66612-1367

Kansas
Department of Health
and Environment

Phone: 785-296-1660
Fax: 785-559-4261
www.kdheks.gov

Lee A. Norman, M.D., Secretary

Laura Kelly, Governor

MEMORANDUM

TO: Donna Fisher

FROM: Brett Tavener

DATE: November 16, 2021

RE: Intergovernmental Agency Review for Canadian Pacific Acquisition of Kansas City Southern

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The Kansas Department of Health and Environment Bureau of Environmental Remediation (KDHE/BER), Storage Tank Section, was not able to identify any specific storage tank facilities based on the information provided (the information provided did not designate a specific location in Kansas for an environmental review). Clearance for the project should be granted.

Staff members or representatives for Surface Transportation Board or their consultant are welcome to come and view the KDHE/BER files in accordance with the Kansas Open Records Act. Please contact me at 785-291-3105 or brett.tavener@ks.gov if you have any questions or concerns.

LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Office of Engineering
PO Box 94245 | Baton Rouge, LA 70804-9245
ph: 225-379-1234 | fx: 225-379-1851

John Bel Edwards, Governor
Shawn D. Wilson, Ph.D., Secretary
Christopher P. Knotts, Chief Engineer

December 14, 2021

Joshua Wayland, Surface Transportation Board, c/o VHB
Attention: Environmental Filing, Docket No. FD 36500
940 Main Campus Dr., Suite 500
Raleigh, NC 27606

Dear Mr. Wayland,

The Louisiana Department of Transportation and Development (DOTO) is in receipt of your letter providing notice of the Surface Transportation Board's intent to prepare an Environmental Impact Statement for the proposed acquisition of Kansas City Southern (KCS) by Canadian Pacific. While the Highway/Rail Safety Unit at DOTO looks forward to working with Canadian Pacific and welcoming them into Louisiana, we do have some concerns.

Louisiana is one of the few states that hosts six Class 1 railroads and KCS is one of the more proactive and enthusiastic railroad safety partners. Their upper management appear to provide support and empowerment to Chris Ashley (Signal Project Engineer) and Danny Lites (Public Safety Director). This is evident by their participation in Operation Lifesaver, AREMA, and NCUTCD. This is also shown by how they partnered with DOTO to apply for and win two competitive FRA Grants, voluntarily providing financial commitments (even up to 50%). Other railroads have shown interest in pursuing a grant, but few had flexibility and support at the front line level to be successful.

When it comes to project timelines and managing the Section 130 program for the state, there is some uncertainty because DOTD relies on the railroads to develop the plans and estimates. KCS is one of our more responsive railroads and has been flexible enough to prioritize some projects allowing us to initiate projects sooner than planned if needed to use all of our funding for the year. They were especially helpful when FHWA unexpectedly changed their policy to require matching funds for railroad safety project several years ago. Louisiana laws generally do not allow DOTD to spend state transportation funds on non-state routes and our parishes (counties) and local towns do not have exh·a funding to provide the match. Therefore, we relied on railroads to provide the matching funds.

As mentioned above, Chris and Danny provide excellent customer service, not just to the State, but also the local entities and general public. There is an additional level of effectiveness by having them in Louisiana. Meetings with local entities can be scheduled around a car trip rather than an airline flight. They are able to patticipate in person with Operation Lifesaver events.

One of the tools we use in improving railroad safety is crossing consolidation. When there are several crossings very close to each other with good connectivity between them, we look to close one of the crossings and make sure the remaining ones have adequate warning for the additional

traffic. As you can imagine, this is not always popular and can require negotiation with the local entity (city, town, or parish/county). Sometimes this can require connector roads, sidewalks, or other infrastructure to mitigate the closed crossing and it may not be practical for DOTO or the local entity to design and construct them. On many more than just a few occasions, KCS has stepped up and helped by providing these services. While this was not uncommon with other Class 1 railroads even 10 years ago, many railroads have shied away from this practice.

While Louisiana is a relatively small state, DOTO tries to be proactive in Highway/Rail Safety. We look forward to working with Canadian Pacific if the merger is successful and, while we realize it may not be possible, we hope CP is able to maintain some of the flexibility and proactive nature KCS currently exercises in Highway/Rail Safety.

In the interest of aiding future coordination associated with the acquisition, DOTO is offering the contact information for our rail staff below:

Office of Engineering:

Jared Ray
Railroad Construction Program Manager
Jared.Ray@la.gov
(225) 379-1038 office

Bill Shrewsberry
Highway/Rail Safety Engineer
William.Shrewsberry@la.gov
(225) 379-1543

Shawn Luke
Assistant Highway/Rail Safety Engineer
Shawn.Luke@la.gov
(225) 379-1385

Office of Multimodal Commerce:

J. Dean Goodell
Freight & Passenger Rail Program Director
Dean.Goodell@la.gov
(225) 379-3031

The above staff may be reached by phone, email, or mail. The postal address for all is as follows:

Louisiana DOTO, P.O. Box 94245, Baton Rouge, LA 70804.

If sending information by courier, please use the street address:

1201 Capitol Access Road, Baton Rouge, LA 70802.

The Department looks forward to working with the Board and the railroads on this and future endeavors.

Sincerely,

Bill Shrewsberry
Highway/Rail Safety Engineer
Louisiana DOTD

pc: Noel Ardoin (via email)
Robe11 Isemann (via email)
Dean Goodell (via email)
Jared Ray (via email)
Shawn Luke (via email)

Appendix B – Attachment 2: Tribal Consultation

SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

November 12, 2021

Tribal Government to Government Letter

Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern, et al.; **Notice of Intent to Prepare an Environmental Impact Statement**

The purpose of this letter is to determine your interest in initiating formal government-to-government consultation regarding the above-referenced project. On October 29, 2021, Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern, et al. (KCS) (collectively, Applicants) filed an application with the Surface Transportation Board (Board) seeking authorization for CP to acquire KCS. This acquisition would create the first railroad to connect Canada, the United States, and Mexico. CP's system runs east to west across Canada, connecting the east and west coast ports. It runs south into the U.S. Midwest and connects with KCS in Kansas City. KCS runs from Kansas City to the Gulf Coast and into Mexico. The combination of these two railroads would be an 'end-to-end' merger because the CP and KCS railroad networks do not overlap (see the interactive map on the Board-sponsored project website here: https://cp-kcsmergereis.com/maps.htm).

As part of the approval process, the Board must evaluate the potential impacts of the proposed acquisition on the environment, in accordance with the National Environmental Policy Act (NEPA) and the Board's environmental regulations (49 C.F.R. Part 1105). To comply with NEPA, the Board's Office of Environmental Analysis (OEA) has initiated preparation of an Environmental Impact Statement (EIS) by issuing a Notice of Intent to Prepare an EIS (NOI) in the *Federal Register* on November 12, 2021. A copy of the NOI is available here: https://cp-kcsmergereis.com/docs/cp-kcs-noi.pdf . The EIS will describe the potential environmental impacts of the proposed acquisition and assist the Board with making its decision about whether to approve, approve with conditions, or deny the application.

Scoping

Appendix B – Attachment 3: National Historic Preservation Act, Section 106 Consultation

SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

SHPO Letter

November 17, 2021

Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern, et al.; **Notice of Intent to Prepare an Environmental Impact Statement**

On October 29, 2021, Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern, et al. (KCS) (collectively, Applicants) filed an application with the Surface Transportation Board (Board) seeking authorization for CP to acquire KCS. This acquisition would create the first railroad to connect Canada, the United States, and Mexico. CP's system runs east to west across Canada, connecting the east and west coast ports. It runs south into the U.S. Midwest and connects with KCS in Kansas City. KCS runs from Kansas City to the Gulf Coast and into Mexico. The combination of these two railroads would be an 'end-to-end' merger because the CP and KCS railroad networks do not overlap (see the interactive map on the Board-sponsored project-website here: https://cp-kcsmergereis.com/maps.htm).

As part of the approval process, the Board must evaluate the potential impacts of the proposed acquisition on historic properties, in accordance with Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108), the Section 106 implementing regulations (36 C.F.R. Part 800), and the Board's environmental regulations (49 C.F.R. Part 1105). As a concurrent process, the Board's Office of Environmental Analysis (OEA) has initiated preparation of an Environmental Impact Statement (EIS) under the National Environmental Policy Act by issuing a Notice of Intent to Prepare an EIS (NOI) in the *Federal Register* on November 12, 2021. The issuance of the NOI began the scoping period, the first step in the environmental and historic review process. A copy of the NOI is available here: https://cp-kcsmergereis.com/documents.htm .

The EIS will analyze the potential environmental and historic impacts related to the proposed acquisition and assist the Board with making its decision about whether to approve, approve with conditions, or deny the application. The statute setting forth the procedures for Board review of acquisitions at 49 U.S.C. § 11325 and the Board's implementing regulations at 49 C.F.R. § 1180.4 (2000) require that the Board complete its review within approximately 15

months after the application is accepted for a "major" transaction such as this, and OEA must complete the environmental and historic review process before the Board issues a final decision.

Description of the Proposed Undertaking

The Proposed Undertaking in this case is the proposed acquisition of KCS by CP. According to the Applicants, the purpose of the proposed acquisition is to combine America's two smallest but fastest-growing Class I railroads to build a more efficient and more competitive rail network. The Applicants state that the proposed acquisition would further the need for expanded and more capable and efficient transportation infrastructure while simultaneously advancing the interests of current and future customers in more reliable and economical rail transportation options serving important North-South trade flows. The Applicants also state that the proposed acquisition would generate environmental benefits by reducing truck transportation on highways in North America by more than 60,000 trucks annually, resulting in less congestion, less maintenance, and improved safety on those roads, as well as less noise pollution in the places where those trucks would have driven, and lowered air emissions, including greenhouse gas emissions.

The proposed acquisition would involve: (1) changes in level of operations (e.g., an increase in average trains per day) on certain segments of the combined rail network that would exceed the Board's thresholds for environmental review at 49 C.F.R. § 1105.7(e); (2) changes in activity at some rail yards and intermodal facilities (e.g., an increase in the average number of train cars loaded and unloaded per day) that would exceed the Board's thresholds for environmental analysis; and (3) capital improvements within the existing rail right-of-way. No construction of new rail lines that would require a license from the Board or abandonments of existing rail lines are planned. Consistent with past practice in merger cases, OEA will focus the Section 106 review on the capital improvement projects that the Applicants would undertake as part of the proposed acquisition because those projects are the only components of the proposed acquisition that could have the potential to affect cultural resources.

The capital improvement projects that the Applicants have proposed include adding new passing sidings or extending existing passing sidings at 24 locations within the rail right-of-way in Louisiana, Oklahoma, Arkansas, Kansas, Minnesota, Illinois, Iowa, and Missouri. The Applicants also propose to add approximately four miles of double track within the right-of-way along the KCS Pittsburg Subdivision in Missouri and to add approximately five miles of facility working track within the right-of-way adjacent to the International Freight Gateway intermodal terminal in Missouri. The interactive map on the Board-sponsored project website shows the locations of the proposed capital improvements within the rail right-of-way. The table below shows the planned capital improvements in the state of [State Name]:

Site Name	Nearest Town	Type of Construction	Latitude (midpoint)	Longitude (midpoint)	Length (ft)

Area of Potential Effects

The area of potential effects (APE) for historic properties will be defined in accordance with 36 C.F.R. Part 800, 49 C.F.R. § 1105.8, and precedent set by previous mergers. OEA expects that the APE for the proposed acquisition will comprise 26 discontiguous linear areas corresponding to the 26 locations set forth above where capital improvements are planned. Each component area of the APE will extend the length of the proposed capital improvement project and will extend the width of the rail right-of-way to encompass the entire area within which ground disturbing activities could potentially occur. In addition, OEA proposes to add a 500-foot buffer to each component area of the APE (250 feet on either side of the right-of-way and 250 feet at each end) to account for potential setting, visual, noise, or other impacts from construction activities. Based on the information available to date, OEA anticipates that all of the construction activity would take place within the existing right-of-way and may be in previously disturbed areas. The APE will be further refined as additional information about the proposed acquisition and its potential to affect cultural resources becomes available.

Request for Comments and Consultation

OEA requests that you provide information regarding your interest in participating as a Consulting Party under Section 106 for this project by filling out the attached questionnaire. Please return to Alan Tabachnick at alan.tabachnick@stb.gov . OEA also requests your comments on the proposed APE and the potential effects of the proposed acquisition. We will be following up with you soon to discuss the Section 106 process and to answer any questions you may have.

How to Comment

We also encourage you to file your written comments electronically through the Board-sponsored website, www.CP-KCSMergerEIS.com . Written comments can also be submitted electronically on the Board's website www.stb.gov by clicking on the "E-FILING" link, then clicking on "Environmental Comments." Alternatively, your written comments may be sent by mail to:

Alan Tabachnick, Surface Transportation Board, c/o VHB
Attention: Environmental Filing, Docket No. FD 36500
940 Main Campus Dr., Suite 500
Raleigh, NC 27606

Please make sure to refer to Docket No. FD 36500 in all correspondence, including E-filings, addressed to the Board. **All scoping comments must be sent no later than December 17, 2021**.

Public Scoping Meetings

Additionally, to provide an opportunity for the public to provide oral comments, OEA will hold six online public scoping meetings for the EIS and the Section 106 process on the dates

listed below. We invite you to attend those meetings if you are interested. You can attend the online public scoping meetings in one of two ways:

- Join online at: https://bit.ly/cp-kcs .
    - Project information will be available for review at this link prior to the public meeting dates.

- Join by phone by calling toll free at (888) 788-0099 and using the call-in information below:

Date	Time (CST)	Meeting ID	Passcode
Tuesday, November 30, 2021	6-8 PM	899 9411 9431	336859
Wednesday, December 1, 2021	2-4 PM	834 1445 3134	140066
Thursday, December 2, 2021	6-8 PM	860 6003 9544	510488
Tuesday, December 7, 2021	6-8 PM	891 6903 1796	598592
Wednesday, December 8, 2021	2-4 PM	884 5338 0280	470936
Thursday, December 9, 2021	6-8 PM	899 8627 2409	227867

Next Steps

Following the end of the scoping period on December 17, 2021, OEA will review the comments and then issue a Final Scope of Study for the EIS, which will also include the scope of the concurrent Section 106 process. OEA will then issue a Draft EIS for public review and comment, followed by a Final EIS addressing the comments and completing the environmental and historic review process. At this time, OEA anticipates issuing the Draft EIS in the spring of 2022. In the meantime, OEA may contact you with questions or queries pertaining to the resources under your jurisdiction or purview.

Please complete the attached Consultation Questionnaire to provide feedback on your interest in participating in the Section 106 process. Additional information on this project and the Board's environmental and historic review process is available on the Board-sponsored project website at www. CP-KCSMergerEIS.com . If you have any questions or would like to discuss the proposal in more detail, please contact Alan Tabachnick at 202-245-0367 (e-mail address: Alan.Tabachnick@stb.gov). We look forward to your participation in the Board's environmental and historic review process.

Sincerely,



Danielle Gosselin
Acting Director
Office of Environmental Analysis

Consultation Questionnaire

Docket No. FD 36500, Canadian Pacific Railway Limited, et al. – Control of – Kansas City Southern et al.; Notice of Intent to Prepare an Environmental Statement

Project Name: Canadian Pacific Railway Acquisition of Kansas City Southern Railway

Please check all the appropriate response(s) that apply from the list below and use the back of this form or additional sheets if you wish to make further comments:

_____ We have no interest in the proposed acquisition of Kansas City Southern Railway by Canadian Pacific Railway and further consultation is not required.

_____ We want to continue to receive project information by mail and participate in the public involvement process.

_____ We have interest in the proposed acquisition of Kansas City Southern Railway by Canadian Pacific Railway and want to participate as a Consulting Party in the Section 106 process.

Name of Kansas Historical Society designated contact for the proposed acquisition of Kansas City Southern Railway by Canadian Pacific Railway:

Name: _____ Email: _____
Phone: _____

Signed:_____ Date: _____

Please email to:

Alan Tabachnick
Alan.Tabachnick@stb.gov

Or mail to:

Alan Tabachnick, Surface Transportation Board, c/o VHB
Attention: Environmental Filing, Docket No. FD 36500
940 Main Campus Dr., Suite 500
Raleigh, NC 27606

SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

THPO Letter

January 12, 2021

Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern, et al.; Notice of Intent to Prepare an Environmental Impact Statement

Dear Alina Shively:

The purpose of this letter is to initiate Section 106 consultation with the aforementioned tribe regarding the above referenced project.

On October 29, 2021, Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern, et al. (KCS) (collectively, Applicants) filed an application with the Surface Transportation Board (Board) seeking authorization for CP to acquire KCS. This acquisition would create the first railroad to connect Canada, the United States, and Mexico. CP's system runs east to west across Canada, connecting the east and west coast ports. It runs south into the U.S. Midwest and connects with KCS in Kansas City. KCS runs from Kansas City to the Gulf Coast and into Mexico. The combination of these two railroads would be an 'end-to-end' merger because the CP and KCS railroad networks do not overlap (see the interactive map on the Board-sponsored project-website here: https://cp-kcsmergereis.com/maps.htm).

As part of the approval process, the Board must evaluate the potential impacts of the proposed acquisition on historic properties, in accordance with Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108), the Section 106 implementing regulations (36 C.F.R. Part 800), and the Board's environmental regulations (49 C.F.R. Part 1105). As a concurrent process, the Board's Office of Environmental Analysis (OEA) has initiated preparation of an Environmental Impact Statement (EIS) under the National Environmental Policy Act by issuing a Notice of Intent to Prepare an EIS (NOI) in the *Federal Register* on November 12, 2021. The issuance of the NOI began the scoping period, the first step in the environmental and historic review process. A copy of the NOI is available here: https://cp-kcsmergereis.com/documents.htm.

The EIS will analyze the potential environmental and historic impacts of the proposed acquisition and assist the Board with making its decision about whether to approve, approve with conditions, or deny the application. The statute setting forth the procedures for Board review of acquisitions at 49 U.S.C. § 11325 and the Board's implementing regulations at 49 C.F.R. § 1180.4 (2000) require that the Board complete its review within approximately 15 months after the application is accepted for a "major" transaction such as this, and OEA must complete the environmental and historic review process before the Board issues a final decision.

Description of the Proposed Undertaking

The Proposed Undertaking in this case is the proposed acquisition of KCS by CP. According to the Applicants, the purpose of the proposed acquisition is to combine America's two smallest but fastest-growing Class I railroads to build a more efficient and more competitive rail network. The Applicants state that the proposed acquisition would further the need for expanded and more capable and efficient transportation infrastructure while simultaneously advancing the interests of current and future customers in more reliable and economical rail transportation options serving important North-South trade flows. The Applicants also state that the proposed acquisition would generate environmental benefits by reducing truck transportation on highways in North America by more than 60,000 trucks annually, resulting in less congestion, less maintenance, and improved safety on those roads, as well as less noise pollution in the places where those trucks would have driven, and lowered air emissions, including greenhouse gas emissions.

The proposed acquisition would involve: (1) changes in level of operations (e.g., an increase in average trains per day) on certain segments of the combined rail network that would exceed the Board's thresholds for environmental review at 49 C.F.R. § 1105.7(e); (2) changes in activity at some rail yards and intermodal facilities (e.g., an increase in the average number of train cars loaded and unloaded per day) that would exceed the Board's thresholds for environmental analysis; and (3) capital improvements within the existing rail right-of-way. No construction of new rail lines that would require a license from the Board or abandonments of existing rail lines are planned. Consistent with past practice in merger cases, OEA will focus the Section 106 review on the capital improvement projects that the Applicants would undertake as part of the proposed acquisition because those projects are the only components of the proposed acquisition that could have the potential to affect cultural resources.

The capital improvement projects that the Applicants have proposed include adding new passing sidings or extending existing passing sidings at 24 locations within the rail right-of-way in Louisiana, Oklahoma, Arkansas, Kansas, Minnesota, Illinois, Iowa, and Missouri. The Applicants also propose to add approximately four miles of double track within the right-of-way along the KCS Pittsburg Subdivision in Missouri and to add approximately five miles of facility working track within the right-of-way adjacent to the International Freight Gateway intermodal terminal in Missouri. The interactive map on the Board-sponsored project website (https://cp-kcsmergereis.com/maps.htm) shows the locations of the proposed capital improvements within the rail right-of-way.

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Request for Consultation

OEA requests that you provide information regarding your tribe's interest in participating as a Consulting Party under Section 106 for this project by filling out the attached questionnaire. Please return to Alan Tabachnick at Alan.Tabachnick@stb.gov . OEA also requests your comments on the proposed APE and the potential impacts of the proposed acquisition.

How to Comment

We also encourage you to file your written comments electronically through the Board-sponsored website, www.CP-KCSMergerEIS.com. Written can also be submitted electronically on the Board's website www.stb.gov by clicking on the "E-FILING" link, then clicking on "Environmental Comments." Alternatively, your written comments may be sent by mail to:

Alan Tabachnick, Surface Transportation Board, c/o VHB
Attention: Environmental Filing, Docket No. FD 36500
940 Main Campus Dr., Suite 500
Raleigh, NC 27606

Please make sure to refer to Docket No. FD 36500 in all correspondence, including E-filings, addressed to the Board. **All scoping comments must be sent no later than December 17, 2021**.

Public Scoping Meetings

Additionally, to provide an opportunity for the public to provide oral comments, OEA will hold six online public scoping meetings. We invite you to attend those meetings if you are interested. You can attend the online public scoping meetings in one of two ways:

- Join online at: https://bit.ly/cp-kcs .
    - Project information will be available for review at this link prior to the public meeting dates.

- Join by phone by calling toll free at (888) 788-0099 and using the call-in information below:

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Wednesday, December 8, 2021	2-4 PM	884 5338 0280	470936
Thursday, December 9, 2021	6-8 PM	899 8627 2409	227867

Next Steps

Following the end of the scoping period on December 17, 2021, OEA will review the comments and then issue a Final Scope of Study for the EIS, which will also include the scope of the concurrent Section 106 process. OEA will then issue a Draft EIS for public review and comment, followed by a Final EIS that will address the comments and complete the environmental and historic review process. At this time, OEA anticipates issuing the Draft EIS in the spring of 2022. In the meantime, OEA may contact you with questions or queries pertaining to the resources under your jurisdiction or purview.

Please complete the attached Consultation Questionnaire to provide feedback on your interest in participating in the Section 106 process. Additional information on this project and the Board's environmental and historic review process is available on the Board-sponsored project website at www. CP-KCSMergerEIS.com. If you have any questions or would like to discuss the proposal in more detail, please contact Alan Tabachnick at 202-245-0367 (e-mail address: Alan.Tabachnick@stb.gov). We look forward to your participation in the Board's environmental and historic review process.

Sincerely,



Danielle Gosselin
Acting Director
Office of Environmental Analysis

Consultation Questionnaire

Docket No. FD 36500, Canadian Pacific Railway Limited, et al. – Control of – Kansas City Southern, et al.; Notice of Intent to Prepare an Environmental Statement

Project Name: Canadian Pacific Acquisition of Kansas City Southern Railway

Please check all the appropriate response(s) that apply from the list below and use the back of this form or additional sheets if you wish to make further comments:

_____ We have no interests in the proposed acquisition of Kansas City Southern Railway by Canadian Pacific Railway and further consultation with our Tribe is not necessary.

_____ We want to continue to receive project information by mail and participate in the public involvement process.

_____ We have interest in the proposed acquisition of Kansas City Southern Railway by Canadian Pacific Railway and want to participate as a Consulting Party in the Section 106 process.

[Jena Band of Choctaw Indians]-
designated contact for the Canadian Pacific and Kansas City Southern Railway merger:

Name: _____ Email: _____

Phone: _____

Signed:_____ Date: _____

Please email to:

Alan Tabachnick
Alan.Tabachnick@stb.gov

Or mail to:

Alan Tabachnick, Surface Transportation Board, c/o VHB
Attention: Environmental Filing, Docket No. FD 36500
940 Main Campus Dr., Suite 500
Raleigh, NC 27606

EI - 31383

Asa Hutchinson
Governor
Stacy Hurst
Secretary

December 14, 2021

Mr. Alan Tabachnick
Surface Transportation Board, c/o VHB
Attention: Environmental Filing, Docket No. FD 36500
940 Main Campus Dr., Suite 500
Raleigh, NC 27606

RE: Benton and Polk Counties: Gentry and Mena
Section 106 Review: FRA
Proposed Undertaking: Docket No. 36500, Canadian Pacific Railway Limited, et al. – Control of – Kansas City Southern, et al.; Notice of Intent to Prepare an Environmental Impact Statement
AHPP Tracking Number: 109127

Dear Mr. Tabachnick:

The staff of the Arkansas Historic Preservation Program (AHPP) reviewed the submission for the above-referenced project and notice of intent to prepare and environmental impact statement. The proposed undertaking entails the merger of Canadian Pacific Railroad with Kansas City Southern, which would create the first railroad to connect Canada, the United States and Mexico. In reference to Arkansas, two locations have been proposed for capital improvements in Benton and Polk Counties. The first location is located north of Gentry in Sections 24 and 25, Township 19 North, Range 33 West. There are no previously recorded archeological sites in the railroad right of way and the likelihood of finding intact historic properties is small as the area of potential effect (APE) is highly disturbed from previous railroad construction. The second location is located northeast of Mena in Section 5, Township 2 South, Range 30 West. There are no previously recorded archeological sites in the railroad right of way and as the APE is already highly disturbed from previous construction, the likelihood of finding intact historic properties is minimal.

Based on the provided information, the AHPP believes **no historic properties will be affected pursuant to 36 CFR § 800.4(d)(1)** for the proposed undertaking and that the capital improvement work should be able to proceed.

Tribes that have expressed an interest in these areas include the Caddo Nation, the Cherokee Nation, the Choctaw Nation of Oklahoma, the Osage Nation, the Quapaw Nation, the Shawnee Tribe, and the United Keetoowah Band of Cherokee Indians. We recommend consultation in accordance with 36 CFR § 800.2(c)(2).

Thank you for the opportunity to review this notice of intent. Please refer to the AHPP Tracking Number listed above in all correspondence. If you have any questions, call Jessica Cogburn at 501-324-9357 or email jessica.cogburn@arkansas.gov.

Sincerely,
Jessica H. Cogburn
for
Scott Kaufman
Director, AHPP

Digitally signed by Jessica H. Cogburn
Date: 2021.12.14 09:37:07 -06'00'

cc: Dr. Melissa Zabecki, Arkansas Archeological Survey

Cultural Resources Division
State Historic Preservation Office
6425 SW 6th Avenue
Topeka KS 66615-1099

Kansas Historical Society

785-272-8681, ext. 240
kshs.shpo@ks.gov
kshs.org

Jennie Chinn, Executive Director

Laura Kelly, Governor

KSR&C # 21-11-106
December 16, 2021

Danielle Gosselin
Acting Director
Office of Environmental Analysis
Surface Transportation Board
Via Email

Attn: Alan Tabachnick

Re: Canadian Pacific Railway Limited, et al. – Control of Kansas City Southern, et al.
Docket No. FD 36500
Crawford and Cherokee Counties

Staff of the State Historic Preservation Office (SHPO) has reviewed the information received November 19, 2021, regarding the above-referenced project in accordance with 36 CFR Part 800. In reviews of this nature, the SHPO determines whether a federally funded, licensed, or permitted project will adversely affect properties that are listed or determined eligible for listing in the National Register of Historic Places. As confirmed in our meeting today, the proposed project will not involve any facility expansions or new ground disturbance in Kansas. The SHPO therefore concurs that the proposed rail merger will not adversely any property listed or determined eligible for listing in the National Register. As far as this office is concerned, the project may proceed.

Please refer to the Kansas State Review & Compliance number (KSR&C#) listed above on any future correspondence. Please submit any comments or questions regarding this review to Tim Weston at 785-272-8681 ext. 214 (tim.weston@ks.gov) or Lauren Jones at 785-272-8681 ext. 225 (lauren.jones@ks.gov).

Sincerely yours,
Jennie Chinn
State Historic Preservation Officer

Patrick Zollner
Deputy State Historic Preservation Officer

Oklahoma Historical Society *Founded May 27, 1893*
State Historic Preservation Office
Oklahoma History Center• 800 Nazih Zuhdi Drive • Oklahoma City, OK 73105-7917
(405) 521-6249 • Fax (405) 522-0816 • www.okhtstory.org/shpo/shpom.htm

December 9, 2021

Mr. Alan Tabachnick
Surface Transportation Board c/o VHB
Attn: Environmental Filing (Docket #FD-36500)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

RE: File #0349-22; Canadian Pacific Railway Limited (CP) & Kansas City Southern (KCS) Application for CP to Acquire KCS, Docket #FD-36500

Dear Mr. Tabachnick:

Thank you for notifying our office of this project. We look forward to reviewing the results of your background investigations into the archaeological and built environment resources which may be affected by this project. In addition to known archaeological resources previously identified within the project area of potential effect and vicinity, we anticipate receiving your contextual documentation for the rail line and associated documentation for individual resources 45 years of age or older. Buildings and structures should be documented on Historic Preservation Resource Identification (HPRI) forms. Bridges should be documented on Oklahoma Historic Bridge Inventory (OHBI) forms.

For guidance in completing and submitting the above-referenced documentation to our office, please see the following resources available on our website:

Review and Compliance Manual: https://www.okhistory.org/shop/programs/106/rcmanual2015.pdf

OK/SHPO Fact Sheet #2, Review and Compliance: https://www.okhistory.org/shop/docs/fs2rc.pdf

OK/SHPO Fact Sheet #4, Historic Preservation Resource Identification:
https://www.okhistory.org/shop/docs/fs4hpri.pdf

OK/SHPO Fact Sheet #16, Guidelines for Developing Archaeological Survey Reports in Oklahoma and Report Components: https://www.okhistory.org/shop/docs/fs16archreports.pdf

We would like to offer the following references to help support a contextual discussion of the railroad:

- The Encyclopedia of Oklahoma History and Culture includes several entries related to railroads in Oklahoma, including an entry on the Kansas City Southern:
https://www.okhistory.org/publications/encyclopediaonline

- Donovan Hofsommer, ed., Railroads in Oklahoma (Oklahoma Historical Society, 1977), available on the Gateway to Oklahoma History:
https://gateway.okhistory.org/ark:/67531/metadc862892/m1/1/

- W. David Baird and Danney Goble, Oklahoma: A History (University of Oklahoma Press, 2007).

RE: File #0349-22; Canadian Pacific Railway Limited (CP) & Kansas City Southern (KCS) Application for CP to Acquire KCS, Docket #FD-36500

In addition to our review, you must contact the Oklahoma Archeological Survey (OAS), 111 E. Chesapeake, #102, Norman OK 73019-511 I (#405/325-7211, https://www.ou.edu/archsurvey) to obtain a determination about the presence of prehistoric resources that may be eligible for the National Register of Historic Places.

Please note the proximity of this project to the Trail of Tears National Historic Landmark and to associated disbandment sites. Tribes have knowledge regarding cultural associations that the OK/SHPO would not have in our files. Considering this project crosses Cherokee Nation and Choctaw Nation reservation lands, and due to its proximity to the Trail of Tears National Historic Landmark and associated disbandment sites, we strongly encourage you to engage in consultation with tribal governments and Tribal Historic Preservation Offices (THPOs) with reservation lands and/or current or historic cultural associations with these lands.

Thank you for the opportunity to review this project. Please reference the above underlined file number when responding.

Sincerely,



Lynda Ozan
Deputy State Historic
Preservation Officer

LO:pm

cc: Elizabeth Toombs, Cherokee Nation THPO
Ian Thompson, Choctaw Nation THPO
Erin Murphy, VHB (via email)

TEXAS HISTORICAL COMMISSION
REAL PLACES TELLING REAL STORIES

P.O. Box 12276
Austin, Texas 78711-2276
512-463-6100
thc.texas.gov

December 9, 2021

Alan Tabachnick
Surface Transportation Board, c/o VHB
940 Main Campus Dr., Suite 500
Raleigh, NC 27606

Re: Project Review Under Section 106 of the National Historic Preservation Act, Proposed Canadian Pacific Railway Acquisition of Kansas City Southern Railway, Notice of Intent to Prepare an Environmental Impact Statement, Docket No. FD 36500 (106/STB, THC #202203791)

Mr. Tabachnick:

Thank you for the recent correspondence from the Surface Transportation Board (STB) regarding the above-referenced project. This letter serves as comment on the proposed undertaking from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission (THC).

The THC staff, led by Justin Kockritz, Bill Martin, and Lydia Woods-Boone, has completed their review of the submission, which notifies THC of the STB's intent to prepare an Environmental Impact Statement for the proposed acquisition of the Kansas City Southern Railway (KCS) by the Canadian Pacific Railway (CP). Based on your letter and our subsequent meeting on December 1, 2021, THC understands that the proposed acquisition requires approval by the STB, which constitutes a federal undertaking, but there are no capital improvements, construction activity, or ground disturbance proposed within Texas as part of the undertaking. Accordingly, THC concurs that there is no area of potential effects in Texas and thus no historic properties that will be affected in the state.

Should the undertaking be revised to ultimately include capital improvements, construction activity, or ground disturbance in Texas, further consultation will be required. As proposed, no further consultation with our office is necessary, though we would appreciate notification when the Draft and Final Environmental Impact Statements are available.

Thank you for your cooperation in this federal review process. If you have any questions concerning our review or if we can be of further assistance, please contact Justin Kockritz at justin.kockritz@thc.texas.gov or 512-936-7403.

Sincerely,

Justin Kockritz, Lead Project Reviewer, Federal Programs
For: Mark Wolfe, State Historic Preservation Officer

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CHEROKEE NATION®
P.O. Box 948 • Tahlequah, OK 74465-0948
918-453-5000 • www.cherokee.org

Chuck Hoskin Jr.
Principal Chief
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Bryan Warner
Deputy Principal Chief
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March 4, 2022

Alan Tabachnick
Surface Transportation Board
395 East Street SW
Washington, D.C. 20423

Re: Canadian Pacific Railway Acquisition of Kansas City Southern, FC 36500

Mr. Alan Tabachnick:

The Cherokee Nation (Nation) is in receipt of your correspondence about the proposed **Canadian Pacific Railway Acquisition of Kansas City Southern, FC 36500**, and appreciates the opportunity to provide comment upon this project. Please allow this letter to serve as the Nation's interest in acting as a consulting party to this proposed project.

The Nation maintains databases and records of cultural, historic, and pre-historic resources in this area. Our Historic Preservation Office reviewed this project, cross referenced the project's legal description against our information, and found no instances where this project intersects or adjoins such resources for the following defined locations: MP 247 in Adair County; Spiro; Heavener; and Gentry, Arkansas. Thus, the Nation does not foresee this project imparting impacts to Cherokee cultural resources at this time for these aforementioned locations. However, the Nation requests that the Surface Transportation Board (STB) halt all project activities immediately and re-contact our Offices for further consultation if items of cultural significance are discovered during the course of this project.

However, this Office reviewed this project for Cave Springs and found instances where this project is within close proximity to land held by the Nation and culturally sensitive resources. Thus, the Nation recommends that a cultural resources survey is conducted for the Cave Springs location, and requests a copy of the related report. The Nation requires that cultural resources survey personnel and reports meet the Secretary of Interior's standards and guidelines. The Nation respectfully requests that STB halt all survey activities immediately and re-contact our Offices for further consultation if items of cultural significance are discovered during the course of this survey.

Additionally, the Nation requests that the STB conduct appropriate inquiries with other pertinent Historic Preservation Offices regarding historic and prehistoric resources not included in the Nation's databases or records.

If you require additional information or have any questions, please contact me at your convenience. Thank you for your time and attention to this matter.

Wado,



Elizabeth Toombs, Tribal Historic Preservation Officer
Cherokee Nation Tribal Historic Preservation Office
elizabeth-toombs@cherokee.org
918.453.5389

Consultation Questionnaire

Chitimacha Tribe of Louisiana

Docket No. FD 36500, Canadian Pacific Railway Limited, et al. – Control of – Kansas City Southern, et al.; Notice of Intent to Prepare an Environmental Statement

Project Name: Canadian Pacific Acquisition of Kansas City Southern Railway

Please check all the appropriate response(s) that apply from the list below and use the back of this form or additional sheets if you wish to make further comments:

X
_____ We have no interests in the proposed acquisition of Kansas City Southern Railway by Canadian Pacific Railway and further consultation with our Tribe is not necessary.

_____ We want to continue to receive project information by mail and participate in the public involvement process.

_____ We have interest in the proposed acquisition of Kansas City Southern Railway by Canadian Pacific Railway and want to participate as a Consulting Party in the Section 106 process.

[Chitimacha Tribe of Louisiana]-
designated contact for the Canadian Pacific and Kansas City Southern Railway merger:

Name: Kimberly S. Walden Email: kswalden@chitimacha.gov
Phone: 337-578-4323

Signed: Kimberly S. Walden Date: 12/2/21

Please email to:

Alan Tabachnick
Alan.Tabachnick@stb.gov

Or mail to:

Alan Tabachnick, Surface Transportation Board, c/o VHB
Attention: Environmental Filing, Docket No. FD 36500
940 Main Campus Dr., Suite 500
Raleigh, NC 27606

COMANCHE NATION

Surface Transportation Board
Attn: Mr. Alan Tabachnick
940 Main Campus Dr., Suite 500
North Carolina 27606

January 12, 2022

Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al. –Control of-
Kansas City Southern, et al.; Notice of Intent to Prepare an
Environmental Impact Statement

Dear Mr. Tabachnick:

In response to your request, the above reference project has been reviewed by staff of this office to identify areas that may potentially contain prehistoric or historic archeological materials. The location of your project has been cross referenced with the Comanche Nation site files, where an indication of ***"No Properties"*** have been identified. (IAW 36 CFR 800.4(d)(1)).

Please contact this office at (580) 595-9960/9618) if you require additional information on this project.

This review is performed in order to identify and preserve the Comanche Nation and State cultural heritage, in conjunction with the State Historic Preservation Office.

Regards

Comanche Nation Historic Preservation Office
Theodore E. Villicana , Technician
#6 SW "D" Avenue, Suite C
Lawton, OK. 73502

Consult Response delayed due to Covid-19 work conditions.

Consultation Questionnaire

Iowa Tribe of Kansas and Nebraska

Docket No. FD 36500, Canadian Pacific Railway Limited, et al. – Control of – Kansas City Southern, et al.; Notice of Intent to Prepare an Environmental Statement

Project Name: Canadian Pacific Acquisition of Kansas City Southern Railway

Please check all the appropriate response(s) that apply from the list below and use the back of this form or additional sheets if you wish to make further comments:

_____ We have no interests in the proposed acquisition of Kansas City Southern Railway by Canadian Pacific Railway and further consultation with our Tribe is not necessary.

_____ We want to continue to receive project information by mail and participate in the public involvement process.

____X_ We have interest in the proposed acquisition of Kansas City Southern Railway by Canadian Pacific Railway and want to participate as a Consulting Party in the Section 106 process.

[Iowa Tribe of Kansas and Nebraska]- designated contact for the Canadian Pacific and Kansas City Southern Railway merger:

Name: ALAN KELLEY Email: AKELLEY@IOWAS.ORG

Phone: 785.351.0080

Signed: alan Kelley Date: 12.03.2021

Please email to:

Alan Tabachnick
Alan.Tabachnick@stb.gov

Or mail to:

Alan Tabachnick, Surface Transportation Board, c/o VHB
Attention: Environmental Filing, Docket No. FD 36500
940 Main Campus Dr., Suite 500
Raleigh, NC 27606

From: Alina Shively <alina.shively@LVD-NSN.GOV>
Sent: Tuesday, February 8, 2022 10:40 AM
To: Shelby Reed
Subject: [External] RE: EXTERNAL:Canadian Pacific Railway Acquisition of Kansas City Southern Notification Letter

Dear Ms. Reed,

Thank you for reaching out to our office. At this time, the Lac Vieux Desert Band of Lake Superior Chippewa Indians' THPO will defer consultation to the other federally recognized Tribes with interest in the project area. Thank you.

Sincerely,

Alina J. Shively
Tribal Historic Preservation Officer (THPO)/THPO Director
Lac Vieux Desert Band of Lake Superior Chippewa Indians
P.O. Box 249
E23857 Poplar Circle
Watersmeet, MI 49969
(906) 358-0137 Office
(906) 287-0448 Work Cell
(906) 358-4850 Fax
alina.shively@lvd-nsn.gov

From: Shelby Reed
Sent: Wednesday, January 12, 2022 4:33 PM
To: Alina Shively <alina.shively@LVD-NSN.GOV>
Subject: EXTERNAL:Canadian Pacific Railway Acquisition of Kansas City Southern Notification Letter

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon,

My name is Shelby Reed and I am emailing you from VHB on behalf of the Surface Transportation Board about the Canadian Pacific Railway Acquisition of Kansas City Southern. Please find the notification letter for the project attached to this email. A response form is included with the letter to indicate whether or not your tribe is interested in participating as a consulting party in the Section 106 process. If you have any further questions, please reach out to Alan Tabachnick at alan.tabachnick@stb.gov.

Thank you,
Shelby Reed

Shelby Reed
Historian

Miami Tribe of Oklahoma

3410 P St. NW, Miami, OK 74354 ● P.O. Box 1326, Miami, OK 74355
Ph: (918) 541-1300 ● Fax: (918) 542-7260
www.miamination.com

Via email: Joshua.Wayland@stb.gov

January 20, 2022

Joshua Wayland, Surface Transportation Board, c/o VHB
Attention: Environmental Filing, Docket No. FD 36500
940 Main Campus Dr Suite 500
Raleigh, NC 27606

Re: Docket No. FD 36500 Canadian Pacific Railway Ltd. Control of Kansas City Southern – Comments of the Miami Tribe of Oklahoma

Dear Mr. Wayland:

Aya, kikwehsitoole – I show you respect. The Miami Tribe of Oklahoma, a federally recognized Indian tribe with a Constitution ratified in 1939 under the Oklahoma Indian Welfare Act of 1936, respectfully submits the following comments regarding Docket No. FD 36500.

The Miami Tribe has interest in the following areas affected by this project. Exceeded Threshold Segments: C-Chic-01, C-Chic-02, C-Chic-03, C-DAVE-01, C-DAVE-02, C-DAVE-03, C-LARE-01, C-OTTU-01, C-OTTU-02. Capital Improvement Areas: Camanche, Iowa; Chicago, Illinois; Grandview, Missouri; Letts, Iowa; MP 24 (Iowa); MP 255 (Iowa); MP 71 (Iowa); Ottumwa, Iowa.

The Tribe offers no objection to the project at this time, as we are not currently aware of existing documentation directly linking a specific Miami cultural or historic site to any of the project sites. However, given the Miami Tribe's deep and enduring relationship to its historic lands and cultural property within areas of this project, if any human remains or Native American cultural items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) or archaeological evidence is discovered during any phase of this project, the Miami Tribe requests immediate consultation with the entity of jurisdiction for the location of discovery. In such a case, please contact me at 918-541-8966 or by email at dhunter@miamination.com to initiate consultation.

The Miami Tribe requests to serve as a consulting party to the proposed project. In my capacity as Tribal Historic Preservation Officer, I am the point of contact for consultation. I can be reached at 918-541-8966 or by email at dhunter@miamination.com.

Respectfully,
Diane Hunter
Diane Hunter
Tribal Historic Preservation Officer

Osage Nation Historic Preservation Office

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Date: December 28, 2021 **File: 2122-4543MS-11**

RE: STB, Docket No. FD 36500, Canadian Pacific Railway Limited, et al. - Control of - Kansas City Southern, et al., Multiple Counties, Multiple States

Surface Transportation Board, c/o VHB
Alan Tabachnick
940 Main Campus Dr., Suite 500
Raleigh, NC 27606

Dear Mr. Tabachnick,

The Osage Nation has received notification and accompanying information for the proposed project listed as STB, Docket No. FD 36500, Canadian Pacific Railway Limited, et al. - Control of - Kansas City Southern, et al., Multiple Counties, Multiple States. The Osage Nation has a vested interest in the proposed acquisition of Kansas City Southern Railway by Canadian Pacific Railway and requests Consulting Party status in the Section 106 process.

In accordance with the National Historic Preservation Act, (NHPA) [54 U.S.C. § 300101 et seq.] 1966, undertakings subject to the review process are referred to in 54 U.S.C. § 302706 (a), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 432 I and 4331-35 and 40 CFR 1501.7(a) of 1969).

The Osage Nation has a vital interest in protecting its historic and ancestral cultural resources. **The Osage Nation looks forward to participating in future consultation in regards to the proposed STB, Docket No. FD 36500, Canadian Pacific Railway Limited, et al. - Control of - Kansas City Southern, et al., Multiple Counties, Multiple States.**

Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation on this matter.

FOR:
Andrea A. Hunter, Ph.D.
Director, Tribal Historic Preservation Officer

Deseray Helton
Deseray Helton
Archaeologist

627 Grandview Ave.* Pawhuska, OK 74056 Telephone 918-287-5328 * Fax 918-287-5376
HistoricPreservation@osagenation-nsn.gov

From:	Leonard Wabasha (TO)
To:	Tabachnick, Alan
Cc:	Erin Murphy; "Gosselin, Danielle"; "Navecky, David"; Wayland, Joshua; Rutson, Vicki
Subject:	[External] RE: Canadian Pacific Railway Control of Kansas City Southern - Section 106 Initiation (FD 36500)
Date:	Thursday, January 20, 2022 3:42:37 PM
Attachments:	image001.png

Dear Alan Tabachnick

Thank you for the opportunity to consult regarding the Canadian Pacific acquisition of the Kansas City Southern.

Please keep us informed of the progress of this merger and share the EIS information when it becomes available. Thank you again and Have a Great Day!

Respectfully,

LEONARD WABASHA
Director of Cultural Resources • Cultural Resources
Shakopee Mdewakanton Sioux Community
d: 952.496.6120
shakopeedakota.org
Leonard.Wabasha@shakopeedakota.org

The Shakopee Mdewakanton Sioux Community is a federally recognized, sovereign Indian tribe located southwest of Minneapolis/St. Paul. With a focus on being a good neighbor, good steward of the earth, and good employer, the SMSC is committed to charitable donations, community partnerships, a healthy environment, and a strong economy.

Appendix C

Rail Line Segments, Intermodal Facilities, and Rail Yards

Appendix C provides maps and tables for the rail line segments, yards, and intermodal facilities where the Proposed Acquisition would cause rail traffic or operational activities to exceed the environmental thresholds established by the Board's regulations at 49 C.F.R. § 1105.7(e). **Figure C.1-1** through **Figure C.1-16** identify the rail line segments within the proposed combined system, which are detailed in **Table C.1-1**, which contains data from the CPKC Master Rail Line Segment Table. **Table C.1-1** contains pre- and post-Acquisition traffic densities and indicates the rail line segments on which increased rail traffic resulting from the Proposed Acquisition would exceed environmental analysis thresholds. **Table C.1-2**, CPKC Intermodal Facilities Master Table, and **Table C.1-3**, CPKC Rail Yards Master Table, show the projected changes in activity at intermodal facilities and rail yards, respectively.

Figure C.1-1. North Dakota Rail Line Segments

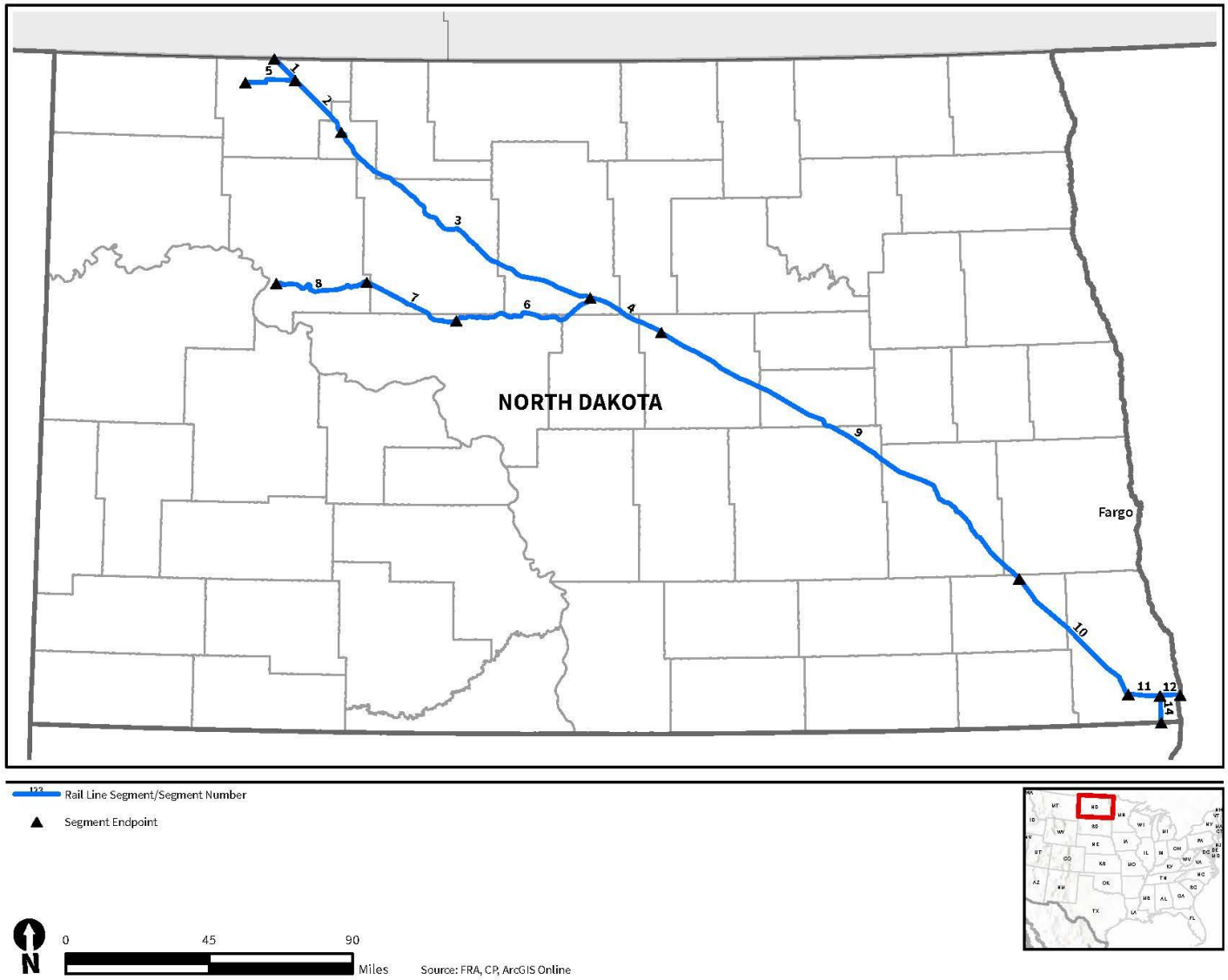


Figure C.1-2. Minnesota Rail Line Segments

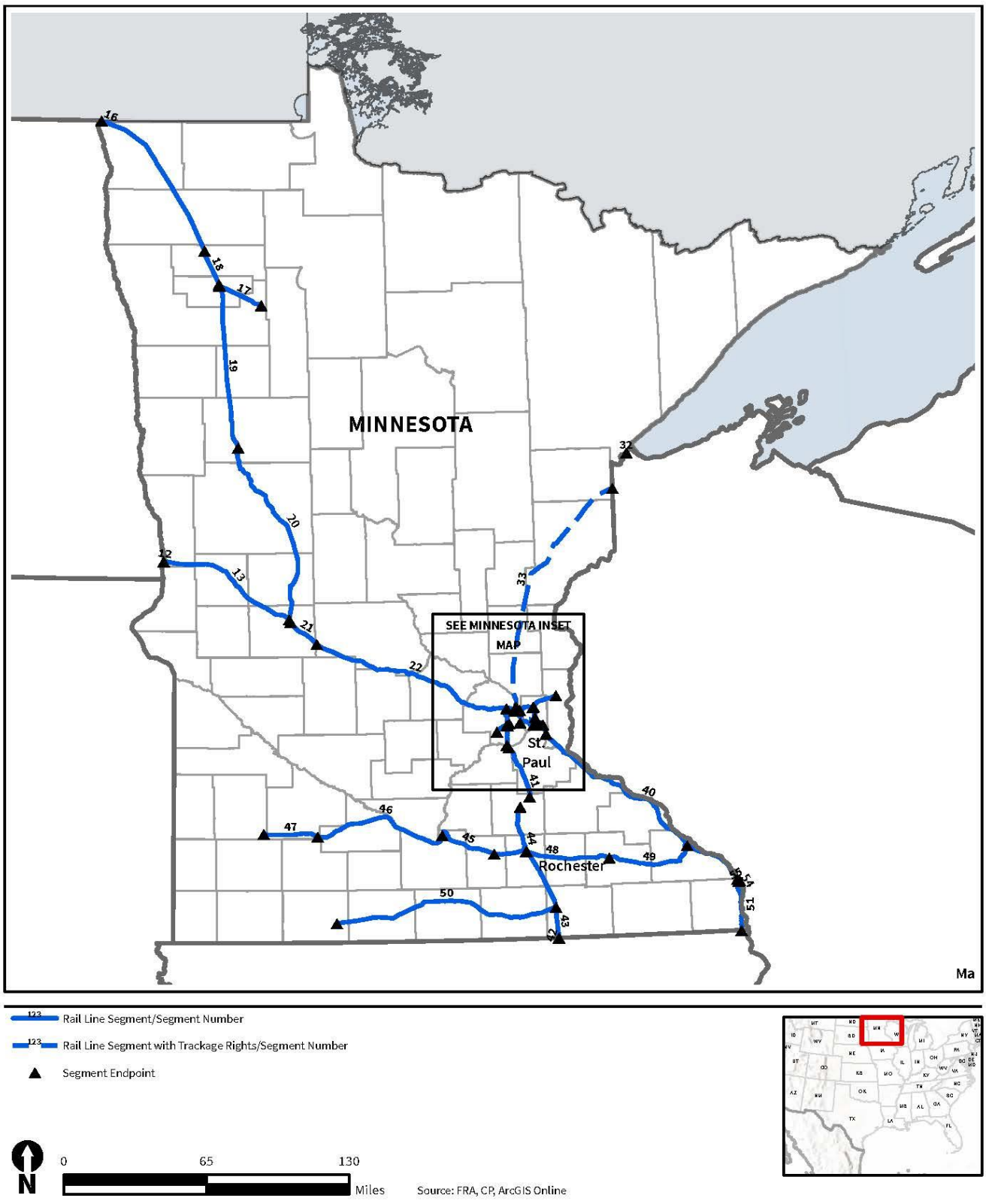


Figure C.1-3. Minnesota Rail Line Segments: Twin Cities Inset

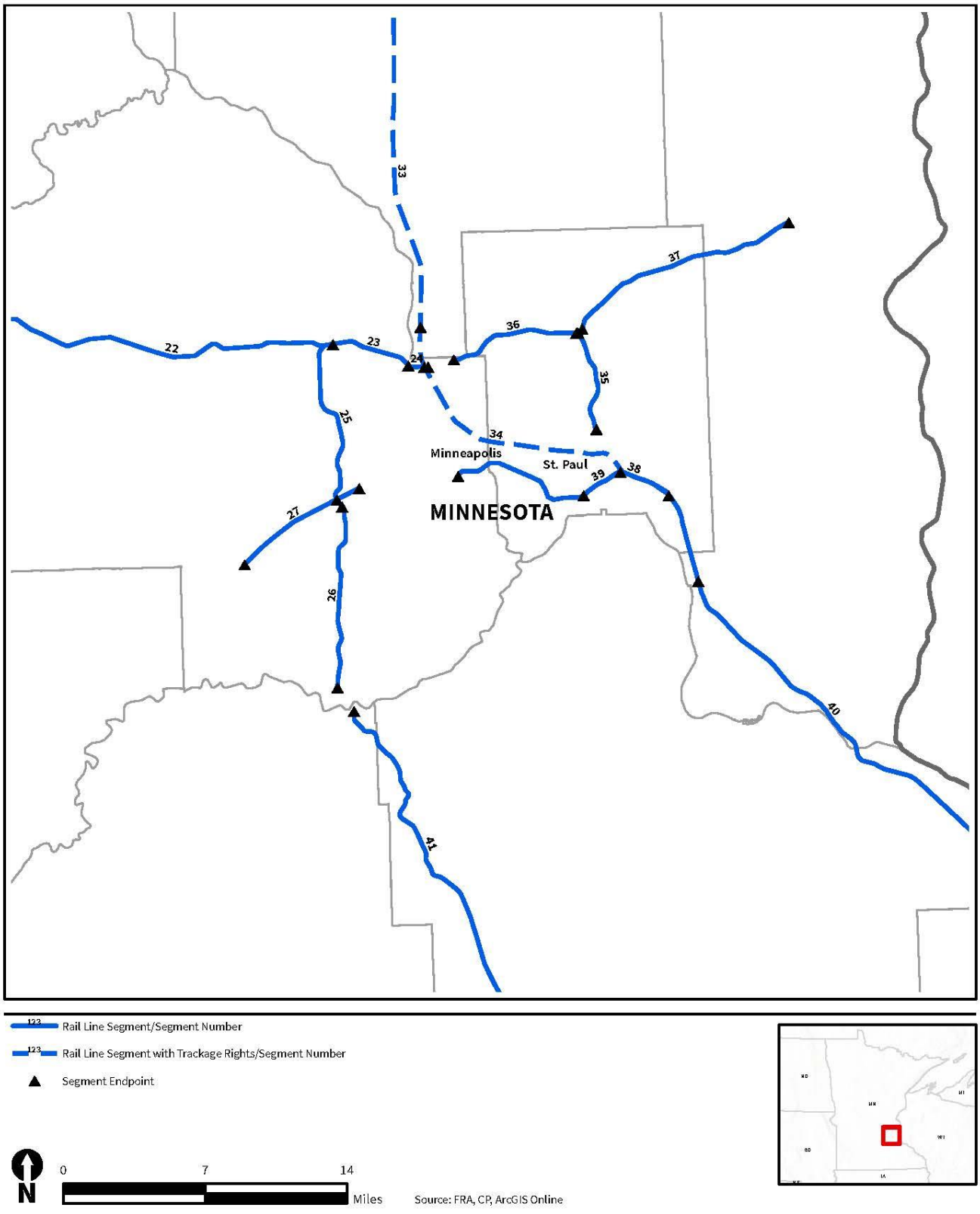


Figure C.1-4. Illinois Rail Line Segments



Figure C.1-5. Illinois Rail Line Segments: Chicago Area Inset



Figure C.1-6. Wisconsin Rail Line Segments



j

Figure C.1-7. Indiana, Ohio, Michigan Rail Line Segments

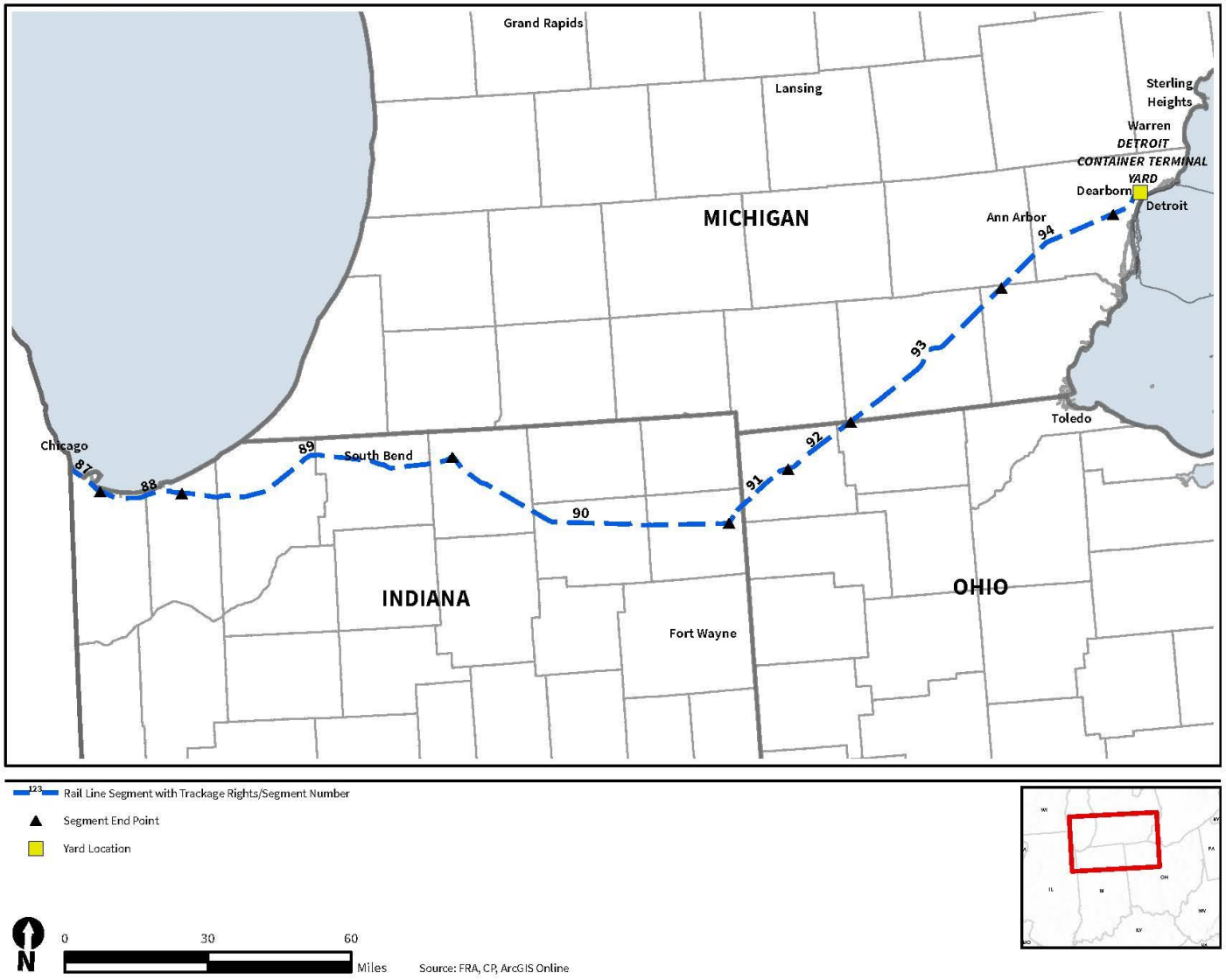


Figure C.1-8. Iowa Rail Line Segments

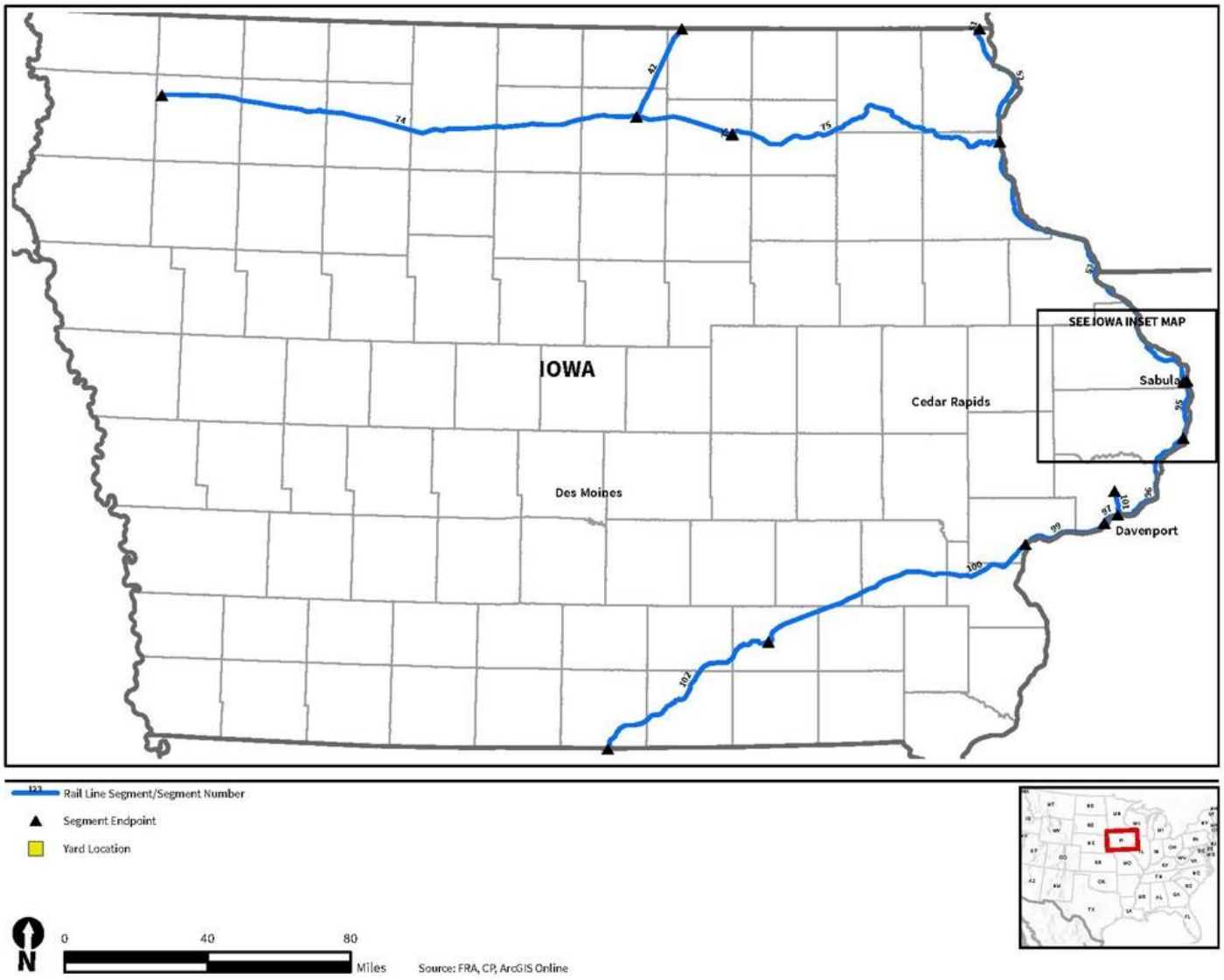


Figure C.1-9. Iowa Rail Line Segments: Sabula Inset

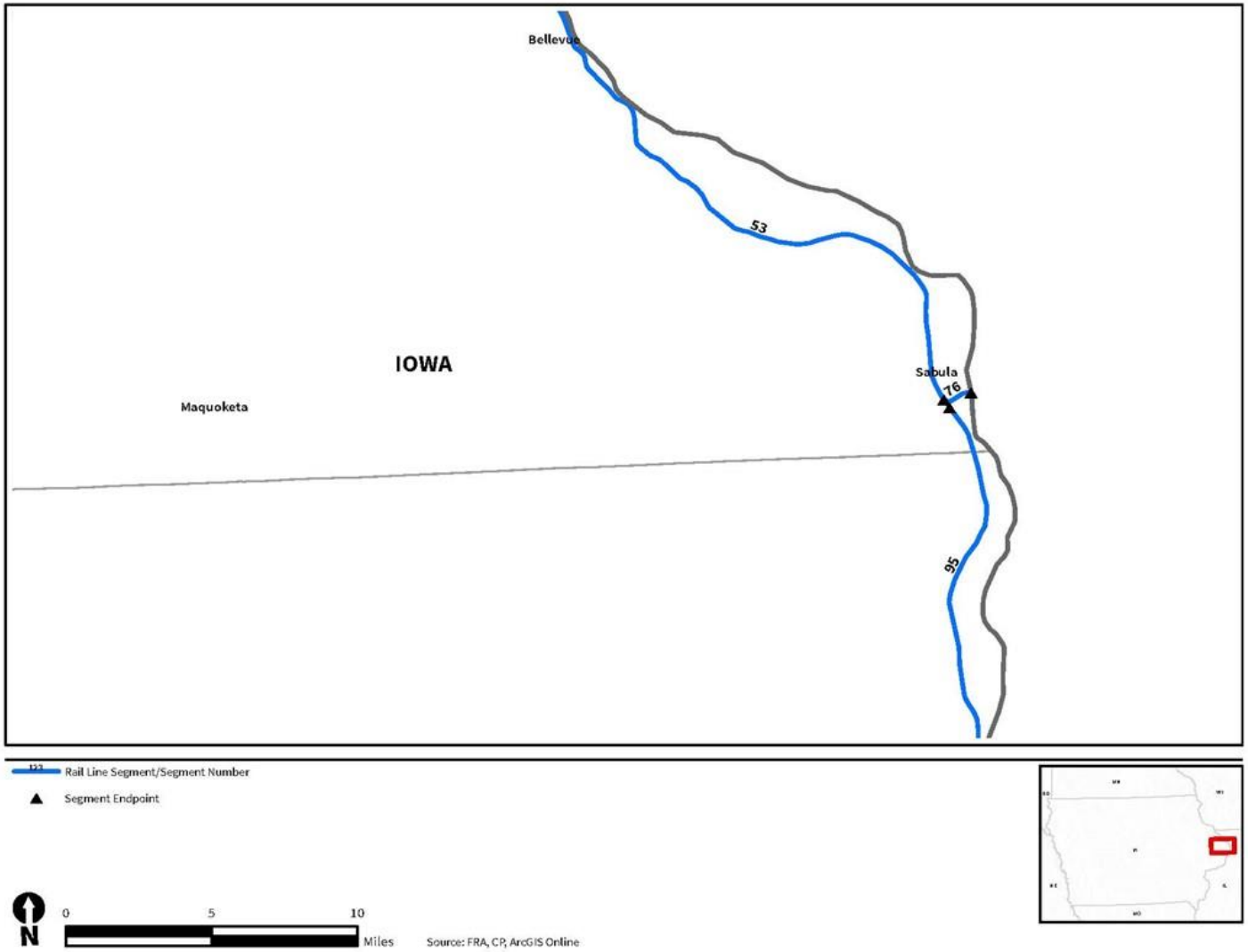


Figure C.1-10. Missouri Rail Line Segments

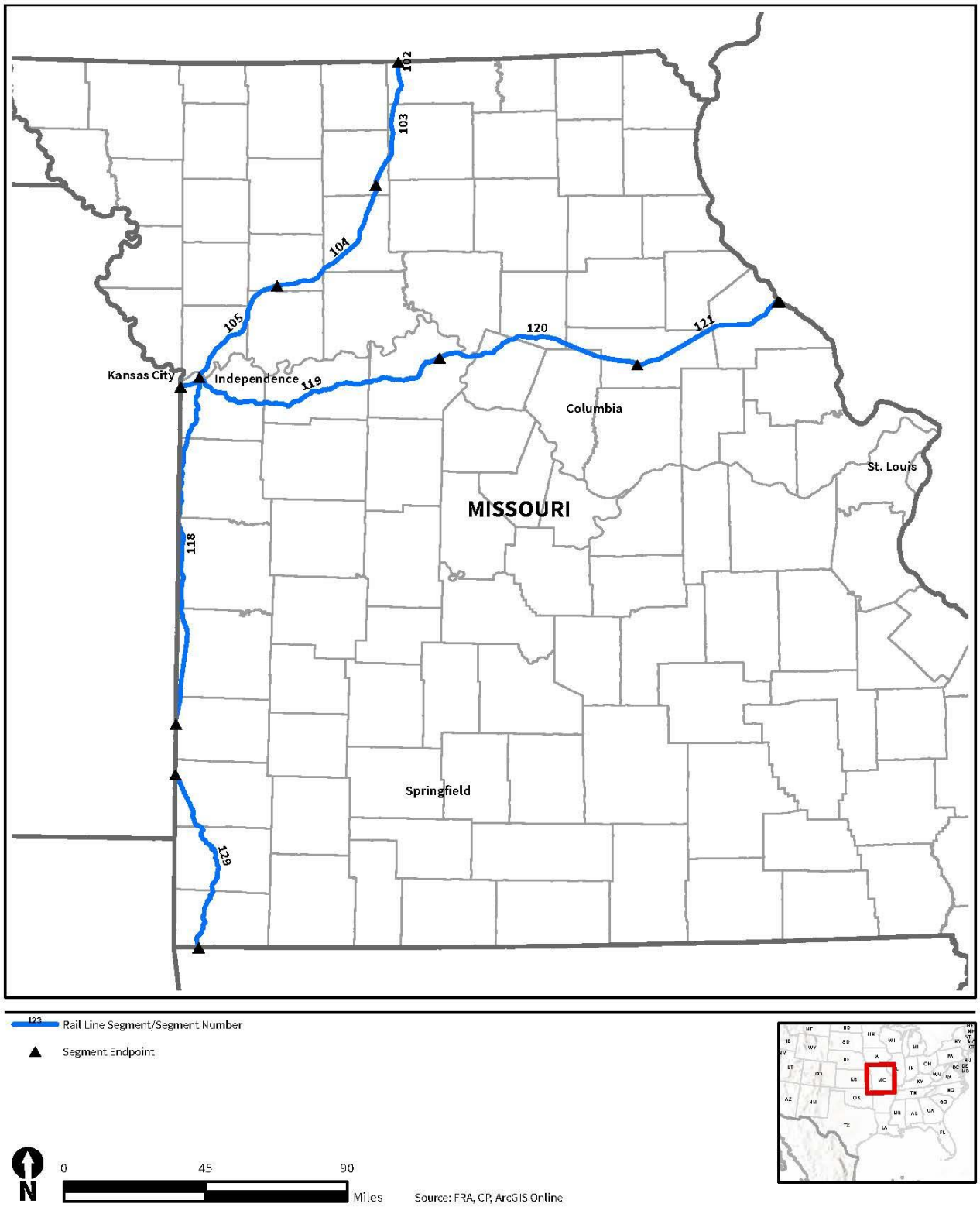


Figure C.1-11. Oklahoma, Arkansas Rail Line Segments

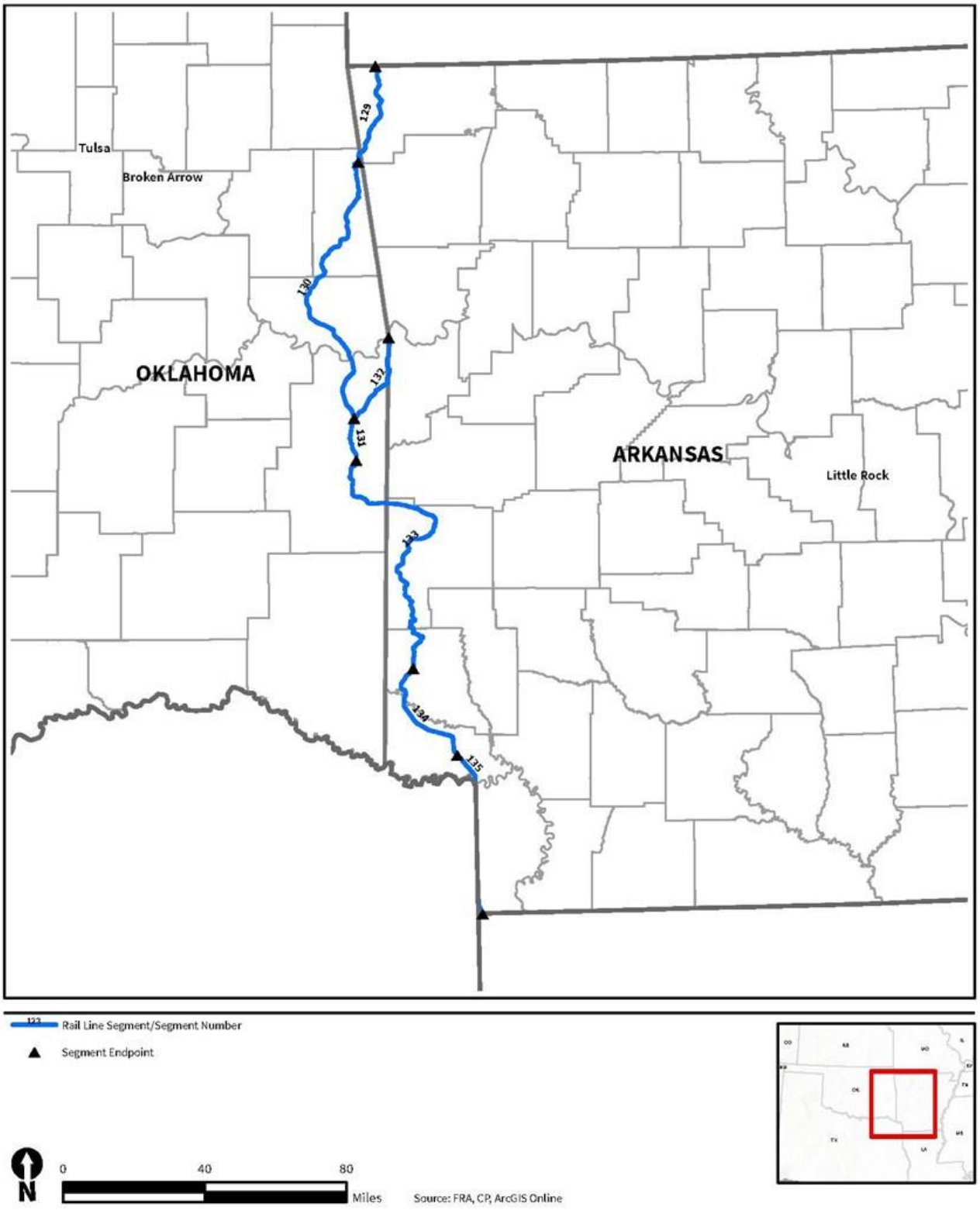


Figure C.1-12. Louisiana Rail Line Segments



Figure C.1-13. Texas Rail Line Segments: Wylie

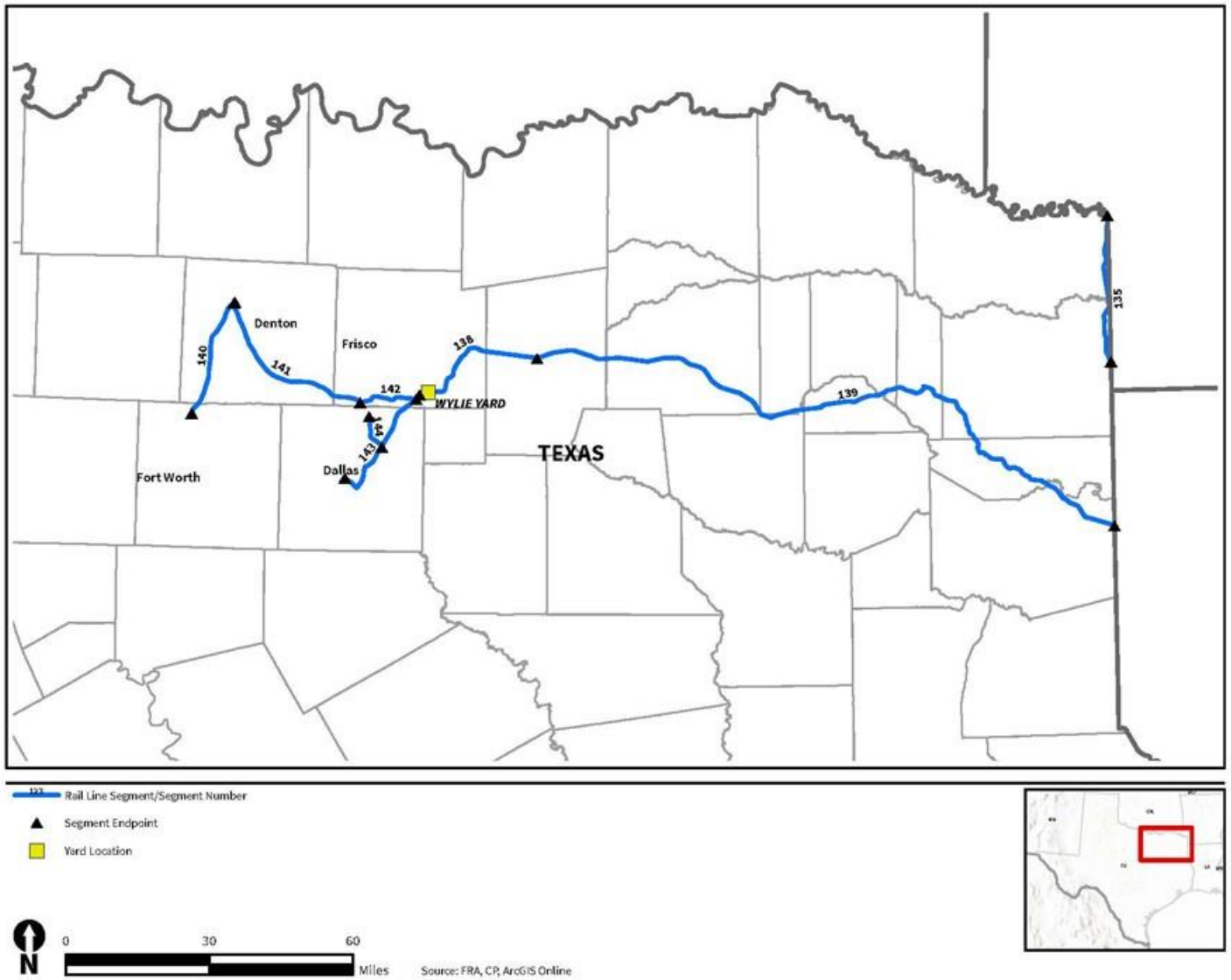


Figure C.1-14. Texas Rail Line Segments: Southeast Texas

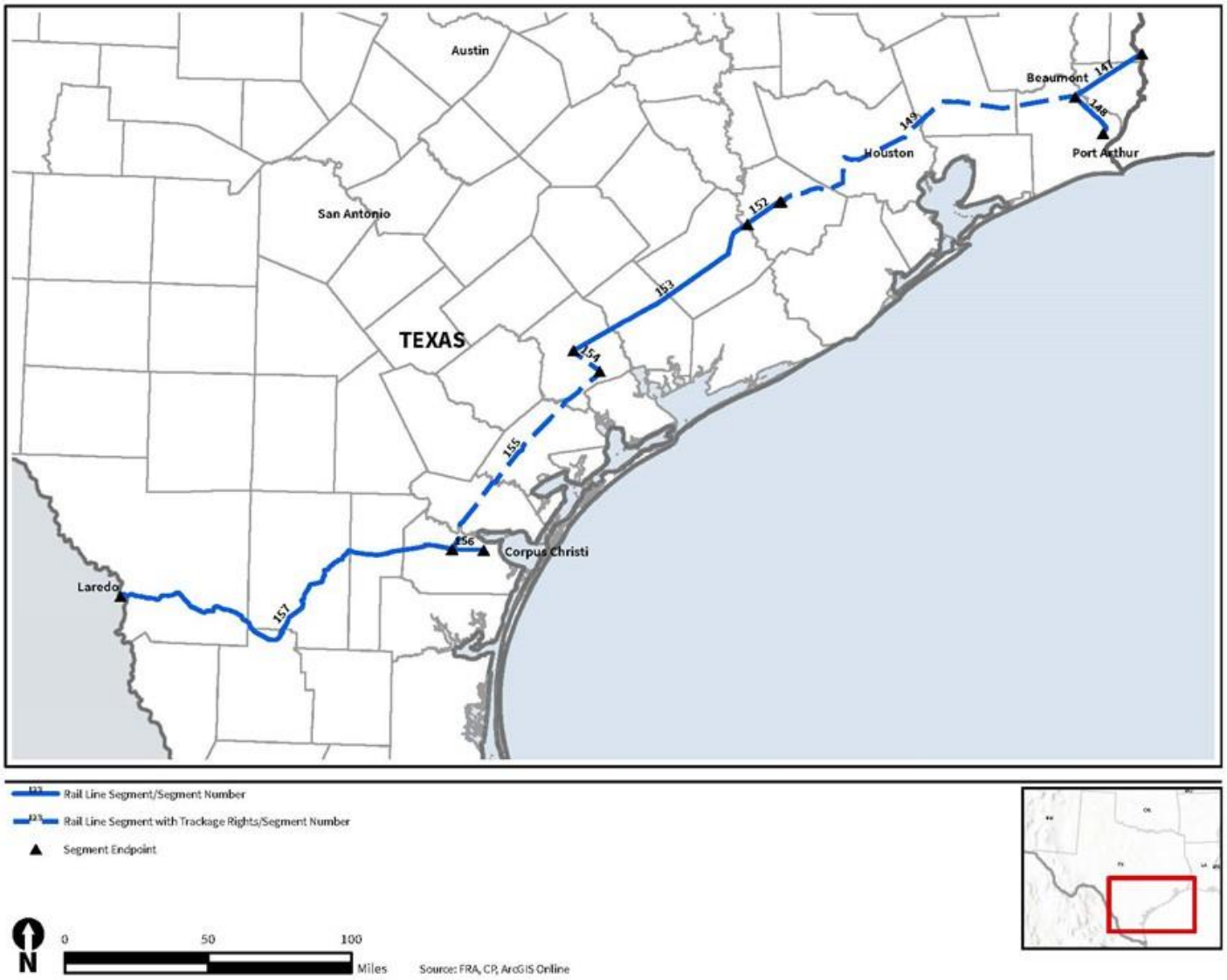


Figure C.1-15. Maine Rail Line Segments

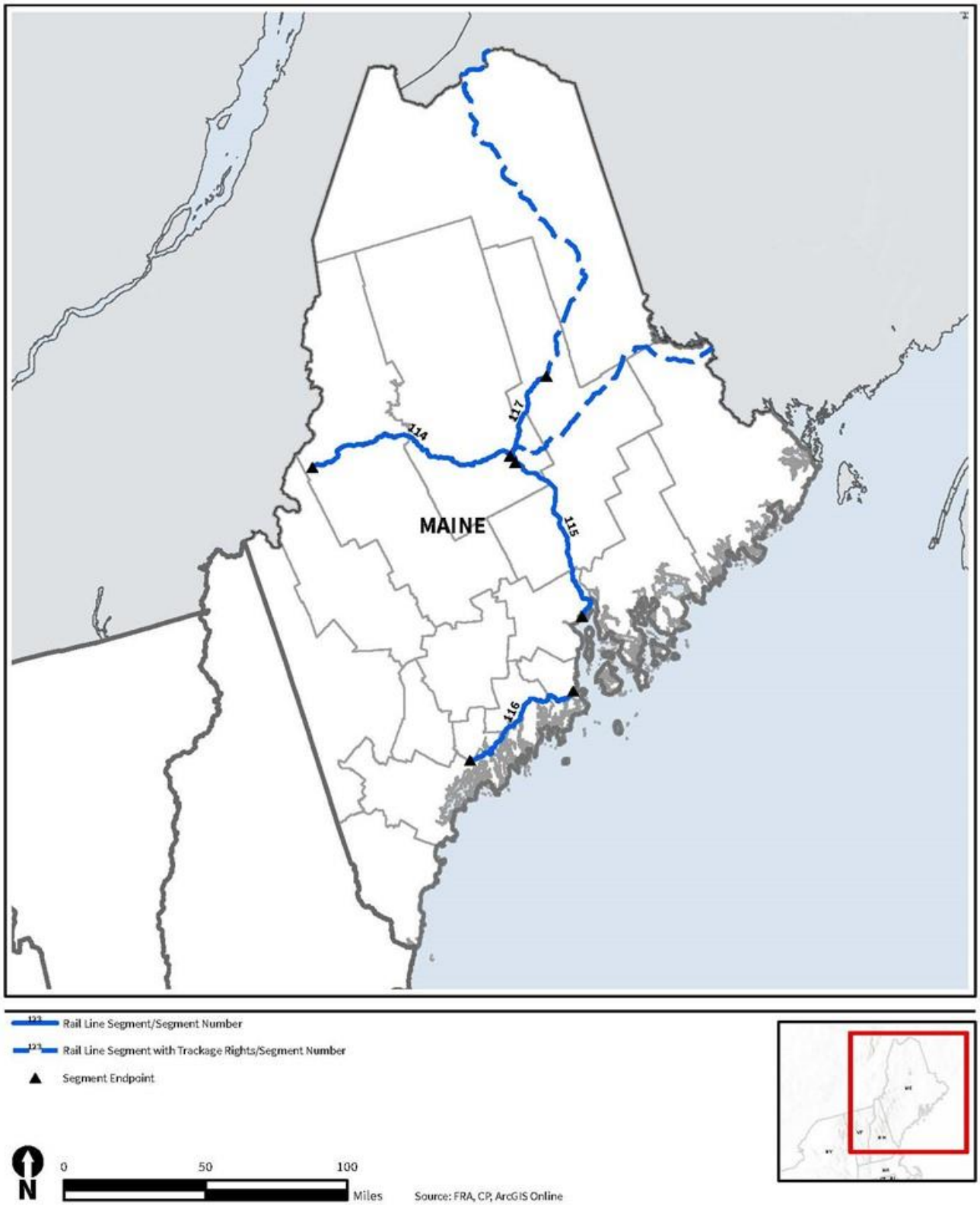


Figure C.1-16. New York, Vermont Rail Line Segments

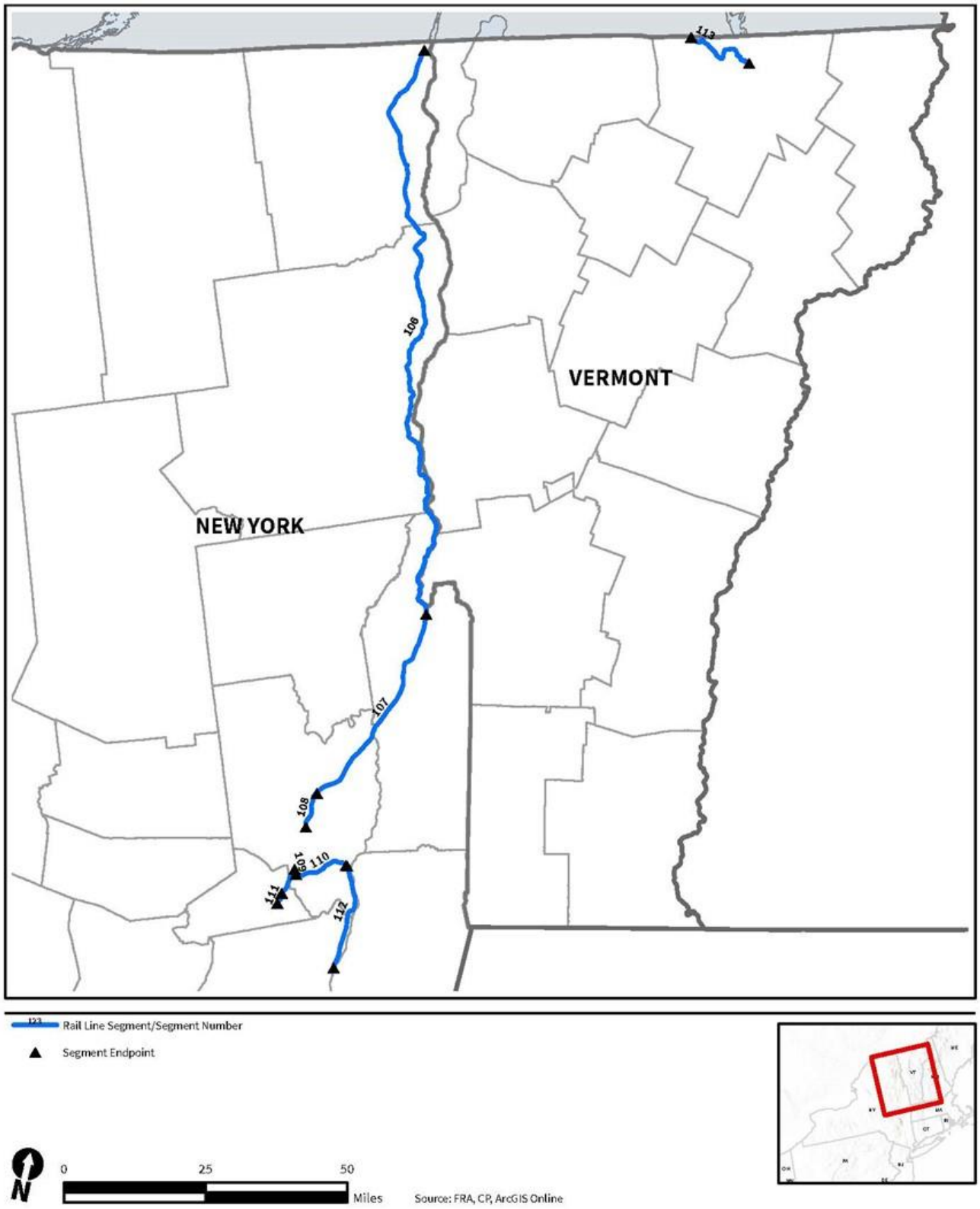


Table C.1-1. Excerpt of CPKC Master Rail Line Segment Table

	Segment Description						Trains/Day					Tonnage –Million Gross Tons per Mile per Year (mGTs)						Hazmat Carloads/Year					Thresholds Met			
Segment Number	Codes	Segment Begin Station	Segment End Station	State	RR	Length (Miles)	Base	Organic Growth	2027 No Acquisition	2027 With Acquisition	Acquisition-Related Change	Base	Organic Growth	2027 No Acquisition	2027 With Acquisition	Acquisition -Related Change	Acquisition-Related Change Percentage	Base Hazmat Carloads	Organic Growth Hazmat Carloads	2027 No Acquisition	2027 With Acquisition	Acquisition-Related Growth Hazmat Carloads	Air Quality	Noise	Pass. Trains	Hazardous Materials
1	C-PORT-01	FLAXTON	PORTAL	ND	CP	10.6	9.92	0.41	10.33	11.11	0.78	33.42	10.11	43.53	47.98	4.44	10.2	126,707	33,451	160,157	199,188	39,030				X
2	C-PORT-02	KENMARE	FLAXTON	ND	CP	20.8	9.92	0.41	10.33	11.11	0.78	32.60	9.86	42.45	46.79	4.33	10.2	126,707	33,451	160,157	199,188	39,030				X
3	C-PORT-03	DRAKE	KENMARE	ND	CP	99.2	9.92	0.41	10.33	11.11	0.78	29.95	9.00	38.96	42.29	3.33	8.6	138,322	36,517	174,838	214,048	39,210				X
4	C-PORT-04	HARVEY	DRAKE	ND	CP	23.8	10.64	0.41	11.05	11.83	0.78	30.92	9.29	40.20	43.43	3.23	8.0	148,881	39,304	188,185	227,566	39,381				X
5	C-LIGN-01	FLAXTON	STAMPEDE	ND	CP	17.3	2.29	0.00	2.29	2.29	0.00	6.38	1.84	8.22	8.22	0.00	0.0	0	0	0	0	0				
6	C-NEWT-01	DRAKE	MAX	ND	CP	48.2	2.13	0.10	2.23	2.23	0.00	4.05	1.18	5.23	5.23	0.00	0.0	29,730	7,849	37,579	37,579	0				
7	C-NEWT-02	MAX	PRAIRIE JCT	ND	CP	31.6	1.13	0.10	1.23	1.23	0.00	2.15	0.65	2.79	2.79	0.00	0.0	17,620	4,652	22,271	22,271	0				
8	C-NEWT-03	PRAIRIE JCT	NEW TOWN	ND	CP	31.2	1.13	0.10	1.23	1.23	0.00	3.17	0.93	4.10	4.10	0.00	0.0	17,620	4,652	22,271	22,271	0				
9	C-CARR-01	ENDERLIN	HARVEY	ND	CP	139.6	10.09	0.59	10.68	11.46	0.78	33.92	10.25	44.17	48.10	3.93	8.9	151,476	39,990	191,465	230,811	39,346				X
10	C-ELLA-01	HANKINSON	ENDERLIN	ND	CP	48.0	9.40	0.49	9.89	10.78	0.89	31.87	9.63	41.50	45.68	4.18	10.1	102,278	27,001	129,280	168,517	39,237				X
11	C-ELLA-02	VEBLEN JCT	HANKINSON	ND	CP	10.0	9.69	0.49	10.18	11.08	0.89	31.38	9.49	40.87	44.72	3.85	9.4	98,654	26,045	124,699	163,990	39,291				X
12	C-ELLA-03	ND/MN ELBOW LAKE	VEBLEN JCT	ND	CP	6.4	9.41	0.49	9.90	10.80	0.89	32.14	9.71	41.85	45.82	3.97	9.5	96,660	25,518	122,178	161,469	39,291				X
13	C-ELLA-04	GLENWOOD	ND/MN ELBOW LAKE	ND	CP	69.6	9.40	0.49	9.89	10.78	0.89	33.00	9.98	42.99	47.03	4.04	9.4	96,477	25,470	121,948	161,239	39,291				X
14	C-VEBL-01	VEBLEN JCT	SD/ND VEBLEN	ND	CP	8.6	0.29	0.00	0.29	0.29	0.00	0.21	0.06	0.27	0.27	0.00	0.0	2,034	537	2,570	2,570	0				
15	C-VEBL-02	SD/ND VEBLEN	ROSHOLT	ND/ SD	CP	5.7	0.29	0.00	0.29	0.29	0.00	0.22	0.07	0.28	0.28	0.00	0.0	2,034	537	2,570	2,570	0				
16	C-NOYE-01	THIEF RIVER FALLS	EMERSON	MN	CP	76.6	3.21	0.28	3.49	5.96	2.47	13.27	4.37	17.64	24.68	7.03	39.9	46,089	12,168	58,257	58,977	720				X
17	C-BEMI-02	GULLY	PLUMMER	MN	CP	22.3	0.29	0.00	0.29	0.29	0.00	0.29	0.14	0.43	0.43	0.00	0.0	248	65	313	313	0				
18	C-DELA-01	PLUMMER	THIEF RIVER IMS	MN	CP	19.1	4.26	0.26	4.52	7.11	2.58	15.10	4.92	20.02	27.70	7.69	38.4	30,882	8,153	39,034	39,754	720				X
19	C-DELA-02	DETROIT LAKES	PLUMMER	MN	CP	77.0	4.26	0.26	4.52	7.11	2.58	14.46	4.72	19.18	26.30	7.12	37.1	30,882	8,153	39,034	39,754	720				X
20	C-DELA-03	GLENWOOD	DETROIT LAKES	MN	CP	92.3	4.26	0.26	4.52	7.11	2.58	14.72	4.81	19.52	26.77	7.25	37.1	30,882	8,153	39,034	39,754	720				X
21	C-PAYN-01	BROOTEN	GLENWOOD	MN	CP	15.4	13.37	0.92	14.29	17.88	3.59	48.33	15.03	63.36	75.19	11.83	18.7	182,305	48,128	230,433	270,497	40,064				X
22	C-PAYN-02	MPLS MN&S JCT	BROOTEN	MN	CP	97.1	13.36	0.92	14.28	17.87	3.59	49.15	15.31	64.46	76.58	12.12	18.8	180,538	47,662	228,200	268,316	40,115				X
23	C-PAYN-03	CAMDEN PLACE	MPLS MN&S JCT	MN	CP	4.1	19.02	0.94	19.96	23.55	3.59	60.94	18.92	79.86	94.32	14.46	18.1	186,165	49,147	235,312	275,663	40,351				X
24	C-PAYN-04	UNIVERSITY AVE	CAMDEN PLACE	MN	CP	1.1	17.55	0.93	18.48	22.07	3.59	49.72	15.42	65.14	76.94	11.80	18.1	183,453	48,431	231,884	272,133	40,249				X
25	C-MNS-01	MPLS MN&S JCT	ST LOUIS PARK	MN	CP	9.1	0.86	0.00	0.86	0.86	0.00	0.88	0.25	1.13	1.20	0.07	6.1	26	7	33	135	102				X
26	C-MNS-02	ST LOUIS PARK	AUTO CLUB YARD	MN	CP	9.4	0.43	0.00	0.43	0.43	0.00	0.49	0.14	0.63	0.63	0.00	0.0	0	0	0	0	0				
27	C-BASS-01	BASS LAKE	TOWER E 14	MN	CP	6.7	0.43	0.00	0.43	0.43	0.00	1.37	0.81	2.19	2.19	0.00	0.0	0	0	0	0	0				
28	C-DULU-01	POKEGAMA	CENTRAL AVE	MN	CP	0.3	0.37	0.02	0.39	0.39	0.00	0.83	0.24	1.07	1.07	0.00	0.0	313	83	395	422	26				X
29	C-DULU-02	CENTRAL AVE	SUPERIOR 12 STREET JCT	MN	CP	4.3	0.65	0.02	0.67	0.67	0.00	1.46	0.42	1.89	1.89	0.00	0.0	886	234	1,120	1,200	79				X
30	C-DULU-03	SUPERIOR 12TH STREET JCT	SUPERIOR	MN	CP	0.3	1.57	0.00	1.57	1.57	0.00	3.54	1.04	4.57	4.57	0.00	0.0	1,564	413	1,977	2,058	81				X
31	C-DULU-04	SUPERIOR	WI/MN DULUTH/SUPERIOR	MN	CP	1.9	1.00	0.00	1.00	1.00	0.00	2.25	0.66	2.91	2.91	0.00	0.0	678	179	857	858	1				X
32	C-DULU-05	WI/MN DULUTH/SUPERIOR	DULUTH	MN	CP	5.9	1.00	0.00	1.00	1.00	0.00	0.85	0.25	1.10	1.10	0.00	0.0	678	179	857	858	1				X
33	B-DULU-01	NORTHTOWN	BOYLSTON	MN	CP	132.2	0.65	0.02	0.67	0.67	0.00	2.08	0.60	2.68	2.68	0.00	0.0	2,594	685	3,279	3,358	79				X
34	B-TWIN-01	ST PAUL YARD	NORTHTOWN	MN	CP	17.5	16.66	0.85	17.51	23.10	5.59	51.60	16.13	67.73	82.37	14.64	21.6	107,480	28,375	135,854	179,425	43,571			X	X
35	C-STPA-01	CARDIGAN JCT	STP SOO JCT	MN	CP	5.3	1.00	0.00	1.00	1.00	0.00	0.35	0.02	0.37	0.37	0.00	0.0	443	117	560	575	15				X
36	C-WITH-01	MPLS SHOREHAM	CARDIGAN JCT	MN	CP	6.9	3.00	0.00	3.00	3.00	0.00	2.35	0.71	3.06	3.24	0.19	6.1	469	124	593	608	15				X
37	C-WITH-02	CARDIGAN JCT	WITHROW	MN	CP	12.3	1.00	0.00	1.00	1.00	0.00	0.16	0.04	0.21	0.21	0.00	0.0	443	117	560	575	15				X
38	C-MEPA-01	HOFFMAN ST PAUL	FORDSON JCT	MN	CP	3.0	1.00	0.00	1.00	4.59	3.59	3.08	0.87	3.94	3.94	0.00	0.0	0	0	0	32,682	32,682			X	X
39	C-RIVE-01	NEWPORT	MINNEAPOLIS	MN	CP	4.9	13.66	0.85	14.51	19.10	4.59	40.26	12.50	52.76	62.57	9.81	18.6	190,295	50,238	240,533	271,989	31,456			X	X
40	C-RIVE-02	RIVER JCT	NEWPORT	MN	CP	114.5	16.16	0.90	17.06	23.06	6.00	52.34	16.27	68.62	81.87	13.25	19.3	200,798	53,011	253,809	294,823	41,014			X	X
41	C-SAVA-01	PORT CARGILL	NORTHFIELD	MN	CP	26.4	1.00	0.00	1.00	1.00	0.00	3.20	0.68	3.88	3.88	0.00	0.0	0	0	0	0	0				
42	C-OWAT-01	MASON CITY	IA/MN OWATONNA	MN/ IA	CP	28.4	1.00	0.00	1.00	1.00	0.00	1.50	0.44	1.95	2.02	0.07	3.6	300	79	379	388	9				X
43	C-OWAT-02	IA/MN OWATONNA	RAMSEY	MN/ IA	CP	44.1	1.71	0.00	1.71	1.71	0.00	2.35	0.67	3.01	3.01	0.00	0.0	378	100	478	497	19				X
44	C-OWAT-03	RAMSEY	COMUS	MN	CP	51.3	1.29	0.00	1.29	1.29	0.00	1.29	0.33	1.62	1.62	0.00	0.0	209	55	264	273	9				X
45	C-TRAC-01	WASECA	WEST MANKATO	MN	CP	27.1	3.09	0.02	3.11	3.52	0.41	7.24	2.20	9.43	10.98	1.54	16.3	6,708	1,771	8,479	8,589	111				X
46	C-TRAC-02	WEST MANKATO	SANBORN	MN	CP	72.1	3.09	0.02	3.11	3.52	0.41	6.76	2.11	8.86	10.76	1.90	21.4	5,306	1,401	6,707	6,832	125				X
47	C-TRAC-03	SANBORN	TRACY	MN	CP	24.9	2.95	0.02	2.97	3.38	0.41	7.57	2.35	9.91	12.41	2.50	25.2	3,247	857	4,104	4,172	68				X
49	C-WASE-02	MINNESOTA CITY	ROCHESTER	MN	CP	42.9	2.39	0.12	2.51	2.92	0.41	7.59	2.35	9.94	11.40	1.46	14.7	5,488	1,449	6,937	7,034	97				X
50	C-JACK-01	RAMSEY	JACKSON	MN	CP	105.1	0.71	0.00	0.71	0.71	0.00	0.97	0.24	1.20	1.20	0.00	0.0	0	0	0	0	0				
48	C-WASE-01	ROCHESTER	WASECA	MN	CP	53.2	2.96	0.12	3.08	3.49	0.41	7.39	2.26	9.65	10.88	1.23	12.7	6,570	1,734	8,304	8,401	97				X
51	C-MARQ-01	MN/IA MARQUETTE	RIVER JCT	MN/ IA	CP	22.5	4.66	0.62	5.28	11.28	6.00	13.05	4.65	17.69	29.34	11.65	65.8	71,079	18,765	89,844	130,654	40,810			X	X

Table C.1-1. Excerpt of CPKC Master Rail Line Segment Table

	Segment Description						Trains/Day					Tonnage –Million Gross Tons per Mile per Year (mGTs)						Hazmat Carloads/Year					Thresholds Met			
Segment Number	Codes	Segment Begin Station	Segment End Station	State	RR	Length (Miles)	Base	Organic Growth	2027 No Acquisition	2027 With Acquisition	Acquisition-Related Change	Base	Organic Growth	2027 No Acquisition	2027 With Acquisition	Acquisition -Related Change	Acquisition-Related Change Percentage	Base Hazmat Carloads	Organic Growth Hazmat Carloads	2027 No Acquisition	2027 With Acquisition	Acquisition-Related Growth Hazmat Carloads	Air Quality	Noise	Pass. Trains	Hazardous Materials
52	C-MARQ-02	MARQUETTE	MN/IA MARQUETTE	IA	CP	38.5	4.66	0.62	5.28	11.28	6.00	16.37	5.83	22.21	36.82	14.62	65.8	71,079	18,765	89,844	130,654	40,810				X
53	C-MARQ-03	SABULA JCT	MARQUETTE	IA	CP	98.0	10.70	0.86	11.56	17.97	6.40	29.17	9.72	38.89	54.97	16.08	41.3	129,465	34,179	163,644	205,312	41,668				X
54	C-TOMA-01	BRIDGE SWITCH	RIVER JCT WEST	MN/ WI	CP	4.3	8.86	0.83	9.69	9.69	0.00	28.20	8.45	36.65	36.86	0.21	0.6	131,449	34,703	166,152	166,264	112				X
55	C-TOMA-02	LA CROSSE	BRIDGE SWITCH	WI	CP	2.6	17.09	1.42	18.51	18.51	0.00	51.74	15.45	67.19	67.70	0.51	0.8	229,176	60,502	289,679	289,921	242				X
56	C-TOMA-03	NEW LISBON	LA CROSSE	WI	CP	60.0	13.90	1.28	15.18	15.18	0.00	44.45	13.29	57.74	58.24	0.51	0.9	74,708	19,723	94,431	94,516	85				X
57	C-TOMA-04	PORTAGE	NEW LISBON	WI	CP	40.8	13.76	1.28	15.04	15.04	0.00	48.07	14.37	62.45	63.12	0.68	1.1	75,255	19,867	95,123	95,176	53				X
58	C-MP-01	PORTAGE JUNCTION	MADISON	WI	CP	30.2	2.72	0.33	3.05	3.05	0.00	2.14	0.65	2.78	2.78	0.00	0.0	35,958	9,493	45,451	45,479	28				X
59	C-MP-02	MADISON	NORTH MADISON	WI	CP	1.4	0.43	0.00	0.43	0.43	0.00	0.20	0.05	0.25	0.26	0.01	4.8	2,920	771	3,691	3,700	9				X
60	C-WATE-01	PORTAGE JUNCTION	PORTAGE	WI	CP	3.5	7.78	0.88	8.66	8.66	0.00	21.53	6.46	28.00	28.25	0.25	0.9	41,493	10,954	52,447	52,493	46				X
61	C-WATE-02	WATERTOWN	PORTAGE JUNCTION	WI	CP	43.2	11.49	0.88	12.37	12.37	0.00	36.01	10.73	46.74	47.26	0.52	1.1	73,495	19,403	92,898	92,961	63				X
62	C-WATE-03	DUPLAINVILLE	WATERTOWN	WI	CP	31.6	11.49	0.88	12.37	12.37	0.00	36.01	10.73	46.74	47.40	0.66	1.4	73,756	19,472	93,228	93,357	129				X
63	C-WATE-04	BROOKFIELD	DUPLAINVILLE	WI	CP	2.7	11.49	0.88	12.37	12.37	0.00	36.01	10.73	46.74	47.40	0.66	1.4	73,743	19,468	93,211	93,331	119				X
64	C-WATE-05	GRAND AVE	BROOKFIELD	WI	CP	11.2	12.64	0.88	13.52	13.52	0.00	39.61	11.80	51.42	52.14	0.72	1.4	74,369	19,633	94,002	94,122	119				X
65	C-WATE-06	CUTOFF	GRAND AVE	WI	CP	1.1	8.91	0.88	9.79	9.79	0.00	27.92	8.41	36.34	36.81	0.47	1.3	34,114	9,006	43,121	43,138	17				X
66	C-CM-01	STURTEVANT	CUTOFF	WI	CP	25.1	12.96	0.86	13.82	13.82	0.00	38.88	11.57	50.44	51.25	0.81	1.6	163,672	43,209	206,881	207,204	323				X
67	C-CM-02	WI/IL C&M	STURTEVANT	WI	CP	14.6	11.81	0.86	12.67	12.67	0.00	36.11	10.78	46.89	47.66	0.77	1.6	159,891	42,211	202,102	202,424	321				X
68	C-CM-03	RONDOUT	WI/IL C&M	WI/ IL	CP	15.1	11.81	0.86	12.67	12.67	0.00	36.11	10.76	46.87	47.65	0.78	1.7	159,409	42,084	201,493	201,795	302				X
69	C-CM-04	NORTHBROOK	RONDOUT	IL	CP	11.2	11.11	0.86	11.97	11.97	0.00	36.91	11.00	47.91	48.70	0.79	1.7	71,879	18,976	90,855	91,157	302				X
70	C-CM-05	TOWER A20	NORTHBROOK	IL	CP	0.6	11.10	0.86	11.96	11.96	0.00	38.00	11.33	49.33	50.14	0.82	1.7	71,879	18,976	90,855	91,157	302				X
71	C-CM-06	CHGO UNION STATION	TOWER A20	IL	CP	20.5	1.73	0.00	1.73	1.73	0.00	5.75	1.68	7.43	7.53	0.10	1.4	69,011	18,219	87,230	87,430	199				X
72	C-CM-07	WAXDALE	STURTEVANT	WI	CP	1.3	0.57	0.00	0.57	0.57	0.00	0.23	0.07	0.30	0.30	0.00	0.0	952	251	1,203	1,222	20				X
73	C-FOLA-01	RONDOUT	FOX LAKE	IL	CP	17.2	0.57	0.00	0.57	0.57	0.00	1.82	0.11	1.93	1.93	0.00	0.0	0	0	0	0	0				
74	C-SHEL-01	MASON CITY	SHELDON	IA	CP	135.7	1.71	0.00	1.71	1.71	0.00	3.06	0.88	3.94	3.94	0.00	0.0	13,492	3,562	17,054	17,055	1				X
75	C-MACI-01	MARQUETTE	MASON CITY	IA	CP	116.7	2.38	0.09	2.47	2.88	0.41	5.32	1.61	6.93	7.89	0.96	13.9	26,507	6,998	33,505	33,518	13				X
76	C-CHIC-01	SABULA DRAWBRIDGE	LAKE		CP	0.7	5.91	0.21	6.12	14.12	8.00	16.57	5.78	22.35	36.53	14.18	63.4	49,432	13,050	62,482	65,345	2,864	X	X		X
77	C-CHIC-02	DAVIS JCT	SABULA DRAWBRIDGE	IL/ IA	CP	61.5	6.35	0.21	6.56	14.56	8.00	15.56	4.30	19.86	36.96	17.10	86.1	56,623	14,949	71,572	82,796	11,225	X	X		X
78	C-CHIC-03	RANDALL ROAD	DAVIS JCT	IL	CP	38.7	2.93	0.22	3.15	11.15	8.00	8.96	3.63	12.60	28.19	15.59	123.8	36,244	9,568	45,813	56,987	11,175	X	X		X
79	C-ROCK-01	DAVIS JCT	STATE LINE	IL	CP	30.9	0.71	0.00	0.71	0.71	0.00	0.13	0.04	0.17	0.18	0.01	8.4	0	0	0	419	419				X
80	C-ROCK-02	STATE LINE	JANESVILLE	WI	CP	14.9	0.29	0.00	0.29	0.29	0.00	0.21	0.09	0.30	0.30	0.00	0.0	0	0	0	34	34				X
81	C-ELGI-01	BENSENVILLE METRA	RANDALL ROAD	IL	CP	23.0	3.20	0.21	3.41	11.41	8.00	9.69	3.93	13.62	31.06	17.44	128.0	47,888	12,642	60,530	71,507	10,977	X	X	X	X
82	C-ELGI-02	TOWER B12	BENSENVILLE METRA	IL	CP	4.6	29.42	1.10	30.52	36.95	6.43	93.91	28.92	122.83	142.94	20.11	16.4	290,956	76,812	367,768	371,565	3,797			X	X
83	C-ELGI-03	CRAGIN JCT	TOWER B12	IL	CP	6.3	12.31	0.31	12.62	12.62	0.00	37.29	11.13	48.42	52.04	3.62	7.5	158,098	41,738	199,836	200,677	841				X
84	C-ELGI-04	NORTH AVE	CRAGIN JUNCTION	IL	CP	1.0	1.74	0.01	1.75	1.75	0.00	5.27	1.54	6.81	6.89	0.09	1.3	39,082	10,318	49,400	49,583	184				X
85	M-CHIC-01	TOWER B17	TOWER A20	IL	CP	3.5	9.37	0.85	10.22	10.22	0.00	29.94	9.00	38.94	39.69	0.75	1.9	33,528	8,851	42,379	42,497	118				X
86	M-CHIC-02	IL/IN BURNHAM/GIB	CRAGIN JUNCTION	IL	CP	25.5	6.80	0.32	7.12	7.12	0.00	23.08	6.84	29.92	30.90	0.98	3.3	144,864	38,244	183,107	183,762	655				X
87	S-CHIC-01	CP 502	ROCK ISLAND JCT	IL	CP	6.9	4.40	0.13	4.53	4.53	0.00	10.19	3.08	13.26	14.64	1.38	10.4	40,742	10,756	51,498	52,296	798				X
88	S-CHIC-02	PORTER	CP 502	IN	CP	20.8	3.40	0.13	3.53	3.53	0.00	8.76	2.63	11.38	12.33	0.94	8.3	40,742	10,756	51,498	52,296	798				X
89	S-CHIC-03	ELKHART	PORTER	IN	CP	60.4	3.40	0.13	3.53	3.53	0.00	8.76	2.63	11.38	12.33	0.94	8.3	40,742	10,756	51,498	52,296	798				X
90	S-CHIC-04	BUTLER	ELKHART	IN	CP	63.1	3.40	0.13	3.53	3.53	0.00	8.82	2.64	11.46	12.41	0.95	8.3	40,742	10,756	51,498	52,296	798				X
91	S-HUNT-01	MONTPELIER	OH/IN NSHUNTINGTON	OH/ IN	CP	11.9	3.40	0.13	3.53	3.53	0.00	8.82	2.64	11.46	12.41	0.95	8.3	16,177	4,271	20,448	21,246	798				X
92	S-DETR-01	MI/OH NSDETRIOT	MONTPELIER	OH	CP	17.0	3.40	0.06	3.46	3.46	0.00	8.85	2.79	11.64	12.59	0.95	8.2	40,742	10,756	51,498	52,296	798				X
93	S-DETR-02	MILAN	MI/OH NSDETRIOT	MI	CP	43.0	3.40	0.13	3.53	3.53	0.00	8.85	2.66	11.51	12.46	0.95	8.3	40,742	10,756	51,498	52,296	798				X
94	S-DETR-03	OAKWOOD	MILAN	MI	CP	31.0	3.40	0.13	3.53	3.53	0.00	8.60	2.58	11.18	12.10	0.92	8.3	40,742	10,756	51,498	52,296	798				X
95	C-DAVE-01	SABULA DRAWBRIDGE	CLINTON	IA	CP	17.5	10.00	0.73	10.73	25.14	14.40	22.08	8.02	30.10	53.23	23.13	76.9	26,829	7,083	33,912	77,771	43,859	X	X		X
96	C-DAVE-02	CLINTON	WATER WORKS	IA	CP	33.2	7.97	0.29	8.26	22.67	14.40	15.36	5.66	21.01	39.49	18.47	87.9	23,379	6,172	29,550	74,016	44,466	X	X		X
97	C-DAVE-03	WATER WORKS	NAHANT	IA	CP	4.5	7.97	0.29	8.26	22.67	14.40	15.36	5.66	21.01	39.49	18.47	87.9	23,379	6,172	29,550	74,016	44,466	X	X		X
98	C-NITR-01	ROCK ISLAND	CEFFCO	IL	CP	19.8	0.71	0.00	0.71	0.71	0.00	0.21	0.06	0.27	0.34	0.08	29.6	2,099	554	2,653	2,968	315				X
99	C-OTTU-01	NAHANT	MUSCATINE	IA	CP	24.6	6.09	0.29	6.38	20.78	14.40	13.31	5.07	18.38	36.92	18.54	100.9	19,884	5,249	25,133	69,117	43,984	X	X		X

Table C.1-1. Excerpt of CPKC Master Rail Line Segment Table

	Segment Description						Trains/Day					Tonnage –Million Gross Tons per Mile per Year (mGTs)						Hazmat Carloads/Year					Thresholds Met			
Segment Number	Codes	Segment Begin Station	Segment End Station	State	RR	Length (Miles)	Base	Organic Growth	2027 No Acquisition	2027 With Acquisition	Acquisition-Related Change	Base	Organic Growth	2027 No Acquisition	2027 With Acquisition	Acquisition -Related Change	Acquisition-Related Change Percentage	Base Hazmat Carloads	Organic Growth Hazmat Carloads	2027 No Acquisition	2027 With Acquisition	Acquisition-Related Growth Hazmat Carloads	Air Quality	Noise	Pass. Trains	Hazardous Materials
100	C-OTTU-02	MUSCATINE	OTTUMWA	IA	CP	82.5	4.30	0.50	4.80	19.21	14.40	14.77	5.73	20.50	42.18	21.68	105.7	21,384	5,645	27,029	70,886	43,857	X	X		X
101	C-ELDR-01	WATER WORKS	ELDRIDGE	IA	CP	9.7	1.00	0.00	1.00	1.00	0.00	0.75	0.05	0.79	0.79	0.00	0.0	0	0	0	0	0				
102	C-LARE-01	OTTUMWA	MO/IA LAREDO	IA/ MO	CP	61.2	3.17	0.24	3.41	17.81	14.40	10.37	4.63	14.99	40.41	25.42	169.5	32,208	8,503	40,711	84,425	43,714	X	X		X
103	C-LARE-02	MO/IA LAREDO	LAREDO	MO	CP	41.1	3.17	0.24	3.41	17.81	14.40	10.37	5.01	15.38	47.04	31.66	205.9	31,230	8,245	39,475	83,091	43,616	X	X		X
104	C-KACI-01	LAREDO	POLO	MO	CP	51.6	3.74	0.24	3.98	18.38	14.40	12.36	5.58	17.94	49.36	31.42	175.1	11,954	3,156	15,110	59,631	44,522	X	X		X
105	C-KACI-02	POLO	AIRLINE JCT	MO	CP	42.1	3.62	0.21	3.83	18.24	14.40	10.49	5.19	15.68	49.51	33.83	215.8	16,473	4,349	20,822	70,216	49,394	X	X		X
106	C-CANA-01	WHITEHALL	ROUSES POINT	NY	CP	112.7	5.51	0.12	5.63	5.63	0.00	10.88	3.24	14.11	14.27	0.15	1.1	48,189	12,722	60,911	60,911	0				
107	C-CANA-02	CPC 38	WHITEHALL	NY	CP	39.7	6.22	0.12	6.34	6.34	0.00	10.58	3.10	13.69	13.69	0.00	0.0	57,653	15,220	72,874	72,874	0				
108	C-CANA-03	MOHAWK YARD	CPC 38	NY	CP	16.5	6.22	0.12	6.34	6.34	0.00	10.58	3.10	13.69	13.69	0.00	0.0	34,453	9,096	43,549	43,549	0				
109	C-CACO-01	CPF 478	CPC 24	NY	CP	1.0	1.86	0.00	1.86	1.86	0.00	5.94	1.70	7.65	7.65	0.00	0.0	18,498	4,883	23,381	23,381	0				
110	C-FRNO-01	MECHANICVILLE	MOHAWK YD	NY	CP	14.5	5.22	0.12	5.34	5.34	0.00	8.81	2.63	11.44	11.57	0.13	1.1	21,066	5,561	26,627	26,627	0				
111	C-FRNO-02	MOHAWK TD	SCHENECTADY	NY	CP	2.3	8.57	0.00	8.57	8.57	0.00	6.08	1.77	7.84	7.84	0.00	0.0	795	210	1,005	1,005	0				
112	C-COLO-01	ALBANY TFR	MOHAWK YD	NY	CP	19.1	5.22	0.12	5.34	5.34	0.00	8.81	2.64	11.44	11.59	0.14	1.3	45,256	11,948	57,204	57,191	-13				
113	C-NEWP-01	BORDER	NEWPORT	VT	CP	32.1	1.14	0.00	1.14	1.14	0.00	0.22	0.05	0.27	0.27	0.00	0.0	209	55	264	264	0				
114	C-MOOS-01	BROWNVILLE JCT	HOLEB	ME	CP	101.8	2.00	0.00	2.00	2.00	0.00	3.23	0.99	4.22	4.45	0.23	5.6	9,125	2,409	11,534	11,521	-13				
115	C-BANG-01	SEARSPORT	BROWNVILLE JCT	ME	CP	74.4	1.43	0.00	1.43	1.43	0.00	1.64	0.48	2.13	2.13	0.00	0.0	6,205	1,638	7,843	7,830	-13				
116	C-ROCL-01	BRUNSWICK	ROCKLAND	ME	CP	56.4	0.14	0.00	0.14	0.14	0.00	0.02	0.00	0.02	0.02	0.00	0.0	0	0	0	0	0				
117	C-MILL-01	BROWNVILLE	MAIN NORTHERN JCT	ME	CP	36.9	2.00	0.00	2.00	2.00	0.00	0.96	0.32	1.28	1.28	0.00	0.0	391	103	494	494	0				
118	K-PITT-01	KANSAS CITY	PITTSBURG	MO/ KS	KCS	124.5	15.14	2.43	17.57	30.41	12.83	36.81	6.67	43.48	72.61	29.14	67.0	17,716	4,677	22,392	70,705	48,313	X	X		X
119	K-MEXI-01	KANSAS CITY	KANSAS CITY	MO	KCS	97.2	2.74	0.27	3.02	3.02	0.00	6.17	1.26	7.42	8.22	0.80	10.7	4,862	1,284	6,146	6,288	142				X
120	K-MEXI-02	MEXICO	SLATER	MO	KCS	67.9	1.85	0.10	1.95	1.95	0.00	4.28	0.85	5.13	5.69	0.56	11.0	4,862	1,284	6,146	6,288	142				X
121	K-ROOD-01	ROODHOUSE	MEXICO	MO/ IL	KCS	88.4	2.12	0.10	2.21	2.21	0.00	4.02	0.79	4.81	5.33	0.52	10.8	7,170	1,893	9,062	9,204	142				X
122	K-SPRI-01	MURRAYVILLE	ROODHOUSE	IL	KCS	15.6	0.78	0.08	0.87	0.87	0.00	1.00	0.20	1.20	1.20	0.00	0.0	0	0	0	0	0				
123	K-SPRI-02	SPRINGFIELD	MURRAYVILLE	IL	KCS	18.0	0.56	0.03	0.59	0.59	0.00	0.17	0.04	0.21	0.21	0.00	0.0	0	0	0	0	0				
124	K-SPRI-03	COCKRELL	SPRINGFIELD	IL	KCS	10.3	0.14	0.00	0.14	0.14	0.00	0.01	0.00	0.01	0.01	0.00	0.0	0	0	0	0	0				
125	K-JACK-01	JACKSONVILLE	MURRAYVILLE	IL	KCS	10.4	0.73	0.10	0.83	0.83	0.00	1.33	0.25	1.58	1.58	0.00	0.0	0	0	0	0	0				
126	K-GODF-01	GODFREY	ROODHOUSE	IL	KCS	40.1	1.57	0.03	1.60	1.60	0.00	1.05	0.21	1.26	1.44	0.18	14.0	4,758	1,256	6,014	6,156	142				X
127	K-ESLT-01	GODFREY	EAST ST LOUIS	IL	KCS	32.9	3.71	0.03	3.74	3.74	0.00	6.84	1.37	8.21	9.39	1.18	14.4	3,715	981	4,696	4,732	36				X
128	K-ESLT-02	EAST ST LOUIS	ST LOUIS	IL	KCS	3.4	1.00	0.00	1.00	1.00	0.00	1.84	-0.06	1.79	1.79	0.00	0.0	834	220	1,055	911	-143				
129	K-HEAV-01	PITTSBURG	WATTS	KS/ MO/ AR/OK	KCS	107.8	14.14	2.03	16.17	28.57	12.40	41.89	7.25	49.15	79.42	30.27	61.6	15,643	4,130	19,773	63,623	43,850	X	X		X
130	K-HEAV-02	WATTS	POTEAU	OK	KCS	90.4	12.29	1.86	14.15	26.56	12.40	36.06	6.15	42.21	70.40	28.19	66.8	17,337	4,577	21,915	63,014	41,100	X	X		X
131	K-HEAV-03	POTEAU	HEAVENER	OK	KCS	11.6	12.77	1.81	14.59	26.99	12.40	37.44	6.36	43.79	73.72	29.93	68.3	17,337	4,577	21,915	65,230	43,316	X	X		X
132	K-FSB-01	FORT SMITH	POTEAU	OK/AR	KCS	27.7	0.71	0.00	0.71	0.71	0.00	1.41	0.24	1.65	1.65	0.00	0.0	1,825	482	2,307	2,294	-13				
133	K-SHRE-01	HEAVENER	DE QUEEN	OK/AR	KCS	94.6	11.96	1.82	13.78	26.18	12.40	34.20	6.12	40.32	68.60	28.28	70.1	17,403	4,594	21,997	64,478	42,481	X	X		X
134	K-SHRE-02	DE QUEEN	ASHDOWN	AR	KCS	37.1	14.48	1.78	16.26	28.67	12.40	41.28	7.41	48.68	73.59	24.91	51.2	41,310	10,906	52,216	98,615	46,399	X	X		X
135	K-SHRE-03	ASHDOWN	SHREVEPORT	AR/ TX/LA	KCS	83.2	11.99	1.50	13.49	25.89	12.40	34.32	5.92	40.24	76.24	36.00	89.5	21,326	5,630	26,957	73,583	46,627	X	X		X
136	K-SHRE-04	SHREVEPORT	FRIERSON	LA	KCS	21.8	23.74	1.31	25.05	36.02	10.97	71.40	12.92	84.32	121.84	37.52	44.5	132,977	35,106	168,083	215,522	47,439	X	X		X
137	K-SHRE-05	ADVANCE	PRINCETON	LA	KCS	15.5	18.03	0.14	18.17	16.74	-1.43	52.34	10.43	62.77	71.11	8.34	13.3	71,032	18,752	89,784	93,791	4,007				X
138	K-GREE-01	GREENVILLE	LAVON JCT	TX	KCS	30.3	6.79	0.02	6.80	8.09	1.29	13.88	2.52	16.40	24.58	8.19	49.9	14,782	3,903	18,685	20,115	1,430				X
139	K-GREE-02	TEXAS JCT	GREENVILLE	TX/LA	KCS	171.5	6.34	0.21	6.56	7.84	1.28	12.94	2.48	15.42	21.39	5.97	38.7	17,572	4,639	22,211	23,080	869				X
140	K-ALLI-01	METRO	ALLIANCE	TX	KCS	22.0	0.83	0.06	0.89	0.89	0.00	1.35	0.41	1.77	3.80	2.03	115.0	156	41	198	615	417	X	X		X
141	K-ALLI-02	PLANO	METRO	TX	KCS	45.0	1.13	0.06	1.19	1.19	0.00	1.86	0.53	2.39	4.64	2.25	94.4	156	41	198	615	417	X	X		X
142	K-ALLI-03	LAVON JCT	PLANO	TX	KCS	9.1	1.27	0.06	1.33	1.33	0.00	2.06	0.57	2.63	4.77	2.14	81.2	235	62	297	714	417	X			X
143	K-DALL-01	LAVON JCT	DALLAS	TX	KCS	18.1	1.57	0.00	1.57	1.57	0.00	2.44	0.46	2.90	3.46	0.56	19.4	5,579	1,473	7,052	7,350	298				X
144	K-WRB-01	ZACHA JCT	RICHARDSON	TX	KCS	8.1	0.71	0.00	0.71	0.71	0.00	1.10	0.32	1.43	1.43	0.00	0.0	274	72	346	346	0				
145	K-BEAU-01	FRIERSON	LEESVILLE	LA	KCS	91.4	10.01	0.70	10.71	21.55	10.83	24.69	4.05	28.74	55.05	26.31	91.5	62,609	16,529	79,138	128,135	48,997	X	X		X
146	K-BEAU-02	LEESVILLE	DE QUINCY	LA	KCS	50.6	10.31	0.67	10.98	21.82	10.83	25.51	4.11	29.62	60.23	30.61	103.3	59,424	15,688	75,112	124,102	48,991	X	X		X
147	K-BEAU-03	DE QUINCY	BEAUMONT	LA/TX	KCS	47.0	8.67	0.65	9.32	20.29	10.97	21.58	3.45	25.03	50.36	25.33	101.2	62,355	16,462	78,817	129,181	50,364	X	X	X	X
148	K-BEAU-04	BEAUMONT	PORT ARTHUR	TX	KCS	20.1	5.19	0.01	5.21	8.86	3.66	12.49	1.33	13.83	50.18	36.35	262.9	23,832	6,292	30,124	64,491	34,367	X	X		X
149	U-BEAU-01	BEAUMONT	ROSENBERG	TX	UP	120.0	8.47	0.78	9.25	16.82	7.57	2.59	0.53	3.12	7.85	4.73	151.3	8,082	2,134	10,216	15,590	5,374	X		X	X
150	K-LACH-01	DE QUINCY	MOSSVILLE	LA	KCS	16.4	6.14	0.00	6.14	6.00	-0.14	6.78	1.38	8.16	9.16	1.00	12.3	25,446	6,718	32,164	32,769	606				X
151	K-LACH-02	MOSSVILLE	WEST LAKE	LA	KCS	17.7	4.29	0.00	4.29	4.29	0.00	4.74	0.88	5.61	5.61	0.00	0.0	12,801	3,379	16,181	16,325	145				X
152	K-ROSE-01	ROSENBERG	KENDLETON	TX	KCS	12.2	8.39	0.76	9.14	17.46	8.32	26.32	3.92	30.24	42.18	11.94	39.5	101,187	26,713	127,901	141,487	13,586	X	X		X
153	K-ROSE-02	KENDLETON	VICTORIA	TX	KCS	74.8	8.70	1.00	9.69	18.01	8.32	27.28	4.17	31.45	43.09	11.63	37.0	99,915	26,377	126,292	138,144	11,852	X	X		X

Table C.1-1. Excerpt of CPKC Master Rail Line Segment Table

Segment Description							Trains/Day					Tonnage –Million Gross Tons per Mile per Year (mGTs)						Hazmat Carloads/Year					Thresholds Met			
Segment Number	Codes	Segment Begin Station	Segment End Station	State	RR	Length (Miles)	Base	Organic Growth	2027 No Acquisition	2027 With Acquisition	Acquisition-Related Change	Base	Organic Growth	2027 No Acquisition	2027 With Acquisition	Acquisition -Related Change	Acquisition-Related Change Percentage	Base Hazmat Carloads	Organic Growth Hazmat Carloads	2027 No Acquisition	2027 With Acquisition	Acquisition-Related Growth Hazmat Carloads	Air Quality	Noise	Pass. Trains	Hazardous Materials
154	U-VICT-01	VICTORIA	PLACEDO	TX	UP	12.8	7.94	0.82	8.75	17.07	8.32	16.45	2.91	19.36	31.42	12.07	62.3	31,964	8,438	40,402	52,019	11,617	X	X		X
155	U-VICT-02	PLACEDO	ROBSTOWN	TX	UP	82.8	7.94	0.82	8.75	17.07	8.32	16.45	2.91	19.36	31.42	12.07	62.3	31,964	8,438	40,402	52,019	11,617	X	X		X
156	K-LARE-01	ROBSTOWN	CORPUS CHRISTI	TX	KCS	10.1	8.64	0.88	9.52	8.23	-1.29	24.11	5.22	29.33	30.01	0.68	2.3	98,506	26,005	124,511	125,727	1,216				X
157	K-LARE-02	LAREDO	ROBSTOWN	TX	KCS	144.0	13.55	1.23	14.77	22.80	8.03	37.27	7.20	44.47	56.13	11.66	26.2	190,626	50,325	240,951	266,589	25,637	X	X		X
158	K-ALEX-01	BOSSIER CITY	PINEVILLE	LA	KCS	120.0	3.39	0.22	3.61	3.61	0.00	10.31	2.01	12.31	13.62	1.31	10.6	24,325	6,422	30,746	33,077	2,330				X
159	K-ALEX-02	PINEVILLE	LATANIER	LA	KCS	10.9	3.21	0.18	3.40	3.40	0.00	9.96	1.96	11.92	13.28	1.36	11.4	24,651	6,508	31,158	33,489	2,330				X
160	K-NEWO-01	LATANIER	BATON ROUGE	LA	KCS	96.5	2.86	0.20	3.06	3.06	0.00	7.48	1.50	8.98	10.12	1.14	12.7	41,793	11,033	52,826	55,330	2,504				X
161	K-NEWO-02	BATON ROUGE	NEW ORLEANS	LA	KCS	76.6	5.84	0.03	5.87	5.87	0.00	13.48	2.68	16.16	18.33	2.17	13.4	41,793	11,033	52,826	55,330	2,504				X
162	K-VICK-01	SIBLEY	ADVANCE	LA	KCS	23.6	15.68	0.09	15.77	14.34	-1.43	35.90	7.10	43.00	49.17	6.17	14.4	44,882	11,849	56,731	60,307	3,576				X
163	K-VICK-02	GIBSLAND	SIBLEY	LA	KCS	14.2	14.99	0.10	15.09	13.66	-1.43	34.41	6.81	41.22	47.13	5.91	14.3	44,621	11,780	56,401	59,978	3,576				X
164	K-VICK-03	MONROE	GIBSLAND	LA	KCS	55.7	15.91	0.08	15.99	14.56	-1.43	36.51	7.25	43.76	49.88	6.11	14.0	43,592	11,508	55,100	58,074	2,975				X
165	K-VICK-04	VICKSBURG	MONROE	LA	KCS	71.5	13.03	0.08	13.11	11.69	-1.42	29.88	5.96	35.84	40.29	4.45	12.4	41,962	11,078	53,040	54,087	1,047				X
166	K-MERD-01	JACKSON	VICKSBERG	MS	KCS	44.7	13.71	0.07	13.77	12.34	-1.43	29.64	5.97	35.61	39.08	3.48	9.8	44,543	11,759	56,303	56,523	220				X
167	K-MERD-02	NEWTON	JACKSON	MS	KCS	65.0	13.71	0.27	13.98	12.55	-1.43	30.18	6.08	36.26	39.00	2.74	7.5	62,467	16,491	78,959	76,474	-2,485				
168	K-MERD-03	MERIDIAN	NEWTON	MS	KCS	30.9	12.05	0.21	12.27	10.84	-1.43	26.59	5.27	31.86	36.90	5.05	15.8	30,777	8,125	38,903	43,973	5,070				X
169	K-ARTE-01	MERIDIAN	ARTESIA	MS	KCS	84.0	3.62	0.21	3.84	3.84	0.00	8.43	1.64	10.08	10.79	0.71	7.1	29,356	7,750	37,107	37,122	16				X
170	K-ARTE-02	ARTESIA	WEST POINT JUNCTION	MS	KCS	13.3	2.43	0.00	2.43	2.43	0.00	4.63	0.81	5.44	5.44	0.00	0.0	10,376	2,739	13,116	13,130	14				X
171	K-ARTE-03	WEST POINT JUNCTION	TUPELO	MS	KCS	46.5	2.14	0.00	2.14	2.14	0.00	4.08	0.75	4.83	4.83	0.00	0.0	3,246	857	4,103	4,106	3				X
172	K-ARTE-04	TUPELO	CORINTH	MS	KCS	49.8	1.71	0.00	1.71	1.71	0.00	3.26	0.55	3.81	3.81	0.00	0.0	2,138	564	2,702	2,704	1				X
173	K-TUSC-01	ARBELA	BROOKWOOD	MS/AL	KCS	90.1	2.14	0.00	2.14	2.14	0.00	1.14	0.23	1.37	1.52	0.15	11.2	12,684	3,349	16,032	16,045	13				X
174	K-ABER-01	WEST POINT JUNCTION	ABERDEEN	MS	KCS	16.4	1.00	0.00	1.00	1.00	0.00	1.99	0.32	2.31	2.31	0.00	0.0	7,587	2,003	9,590	9,603	13				X
175	K-COUN-01	CORINTH	SHARPS	MS	KCS	9.8	4.29	0.00	4.29	4.29	0.00	1.71	0.31	2.01	2.01	0.00	0.0	6,075	1,604	7,678	7,678	0				
176	K-COUN-02	SHARPS	COUNCE	MS/TN	KCS	6.3	3.43	0.00	3.43	3.43	0.00	1.37	0.24	1.61	1.61	0.00	0.0	3,037	802	3,839	3,839	0				
177	K-GULF-01	DELISLE	HATTIESBURG	MS	KCS	63.6	0.73	0.01	0.74	0.74	0.00	0.65	0.19	0.85	0.85	0.00	0.0	1,147	303	1,450	1,450	0				
178	K-GULF-02	GULFPORT	DELISLE	MS	KCS	3.4	3.16	0.01	3.17	3.17	0.00	2.81	0.46	3.26	3.26	0.00	0.0	2,659	702	3,361	3,361	0				

Table C.1-2. CP-KCS Intermodal Facilities Master Table

Intermodal Facility Information			*Container Handling and Truck Traffic/Day*											
			2027 Without Acquisition				*2027 With Acquisition*				*Difference*			
Terminal	**State**	**RR**	**Origin / Destination Lifts Per Day**	**Switch Lifts Per Day**	**Hazmat Container Lifts Per Day**	**OTR Trucks Per Day**	**Origin / Destination Lifts Per Day**	**Switch Lifts Per Day**	**Hazmat Container Lifts Per Day**	**OTR Trucks Per Day**	**Origin / Destination Lifts Per Day**	**Switch Lifts Per Day**	**Hazmat Container Lifts Per Day**	**OTR Trucks Per Day**
BENSENVILLE IMS	IL	CPRS	534	0	10	383	955	0	23	698	421	0	12	315
DET CON TERM	MI	CPRS	156	0	10	141	248	0	16	228	92	0	6	87
MINNEAPOLIS IMS	MN	CPRS	457	0	8	279	543	0	9	332	86	0	1	53
SCHILLER EAST IMS	IL	CPRS	190	0	14	190	356	0	27	324	165	0	12	134
INTL FREIGHT GATEWY	MO	KCS	103	0	4	51	204	0	9	104	101	0	5	53
WYLIE	TX	KCS	702	29	34	326	994	0	48	474	292	-29	14	148

Table C.1-3. CPKC Rail Yards Master Table

Yard Information			*Cars Processed Per Day*					
Yard Name	**RR**	**State**	**Base**	**Organic Growth**	**2027 Without Acquisition**	**Acquisition -Related Growth**	**2027 With Acquisition**	**Acquisition -Related Growth Percentage**
EASTPORT	CP	ID	920.0	242.9	1162.9	-2.5	1160.4	-0.2
PORTAL	CP	ND	3.1	0.8	4.0	0.0	4.0	0.1
MINOT	CP	ND	282.6	74.6	357.2	0.6	357.8	0.2
SARDIS	CP	ND	0.0	0.0	0.0	0.0	0.0	0.0
HARVEY	CP	ND	280.8	74.1	354.9	0.9	355.8	0.2
KULM	CP	ND	0.0	0.0	0.0	0.0	0.0	0.0
HANKINSON	CP	ND	111.7	29.5	141.1	0.0	141.1	0.0
RADIUM	CP	MN	50.9	13.4	64.3	0.1	64.4	0.2
THIEF RIVER FALLS	CP	MN	97.0	25.6	122.6	6.1	128.8	5.0
DULUTH	CP	MN	156.3	41.3	197.6	0.0	197.6	0.0
BARRETT	CP	MN	0.3	0.1	0.4	0.0	0.4	0.8
GLENWOOD	CP	MN	259.8	68.6	328.4	6.3	334.8	1.9
BROOTEN	CP	MN	18.8	5.0	23.8	0.3	24.0	1.2
CARDIGAN JCT	CP	MN	6.6	1.7	8.3	0.1	8.4	1.5
MINNEAPOLIS HUMBO	CP	MN	53.6	14.2	67.8	1.0	68.8	1.5
SHOREHAM YARD	CP	MN	70.6	18.6	89.2	28.7	117.8	32.1
ST PAUL	CP	MN	1805.1	476.6	2281.7	69.7	2351.3	3.1
STP MARYLAND	CP	MN	1.5	0.4	1.9	0.1	2.0	4.3
GOLDEN VALLEY	CP	MN	0.3	0.1	0.4	0.3	0.7	68.7
ST PAUL PARK	CP	MN	35.6	9.4	45.0	0.1	45.0	0.1
ROSEPORT	CP	MN	21.3	5.6	26.9	0.8	27.6	2.8

Table C.1-3. CPKC Rail Yards Master Table

Yard Information			*Cars Processed Per Day*					
Yard Name	**RR**	**State**	**Base**	**Organic Growth**	**2027 Without Acquisition**	**Acquisition -Related Growth**	**2027 With Acquisition**	**Acquisition -Related Growth Percentage**
COTTAGE GROVE	CP	MN	103.3	27.3	130.6	8.6	139.2	6.6
HASTINGS	CP	MN	62.4	16.5	78.8	0.1	78.9	0.1
ROSEMOUNT	CP	MN	14.3	3.8	18.1	0.0	18.1	0.2
NEW ULM	CP	MN	10.7	2.8	13.5	0.2	13.7	1.4
WEST MANKATO	CP	MN	4.4	1.2	5.6	0.2	5.7	2.8
TRACY	CP	MN	176.1	46.5	222.6	21.7	244.3	9.7
WASECA	CP	MN	128.0	33.8	161.8	0.1	161.9	0.1
WINONA	CP	MN	94.0	24.8	118.8	0.1	118.8	0.1
BLOOMING PRAIRIE	CP	MN	1.0	0.3	1.3	0.1	1.3	4.1
AUSTIN	CP	MN	18.6	4.9	23.5	0.1	23.6	0.2
SUPERIOR	CP	WI	104.8	27.7	132.5	0.3	132.8	0.2
LA CROSSE	CP	WI	164.7	43.5	208.2	-4.1	204.1	-2.0
PORTAGE	CP	WI	83.8	22.1	106.0	0.5	106.4	0.5
DE FOREST	CP	WI	3.3	0.9	4.1	0.1	4.2	2.6
WATERTOWN	CP	WI	7.5	2.0	9.5	0.0	9.6	0.3
WINDSOR	CP	WI	8.0	2.1	10.1	0.0	10.1	0.4
MADISON	CP	WI	10.3	2.7	13.0	0.3	13.3	2.4
MILWAUKEE	CP	WI	141.2	37.3	178.5	10.5	189.0	5.9
LAKE	CP	WI	22.6	6.0	28.6	0.0	28.6	0.0
JANESVILLE	CP	WI	13.6	3.6	17.1	0.2	17.4	1.4
PLEASANT PRAIRIE	CP	WI	1.6	0.4	2.1	0.1	2.2	4.3
ROCKTON	CP	IL	1.5	0.4	1.9	0.6	2.5	28.4

Table C.1-3. CPKC Rail Yards Master Table

Yard Information			*Cars Processed Per Day*					
Yard Name	**RR**	**State**	**Base**	**Organic Growth**	**2027 Without Acquisition**	**Acquisition -Related Growth**	**2027 With Acquisition**	**Acquisition -Related Growth Percentage**
ROCKFORD	CP	IL	3.8	1.0	4.8	0.4	5.2	8.6
DAVIS JUNCTION	CP	IL	15.4	4.1	19.5	1.2	20.7	6.2
GENOA	CP	IL	0.0	0.0	0.0	0.0	0.0	0.0
SAVANNA	CP	IL	31.7	8.4	40.0	0.7	40.7	1.7
HANOVER PARK	CP	IL	0.8	0.2	1.0	0.1	1.1	7.6
SCHILLER PARK YARD	CP	IL	58.6	15.5	74.0	76.5	150.6	103.4
WOODDALE	CP	IL	0.0	0.0	0.0	0.0	0.0	0.0
BENSENVILLE YARD	CP	IL	1139.2	300.7	1439.9	367.7	1807.6	25.5
CHICAGO	CP	IL	408.2	107.8	516.0	3.8	519.7	0.7
FRANKLIN PARK	CP	IL	0.8	0.2	1.0	0.0	1.1	1.7
CHICAGO CLEARING	CP	IL	705.6	186.3	891.9	2.0	893.9	0.2
CALUMET	CP	IL	180.9	47.8	228.7	2.0	230.7	0.9
CORDOVA	CP	IL	6.9	1.8	8.7	3.4	12.1	39.5
BLUE ISLAND	CP	IL	9.4	2.5	11.9	1.4	13.2	11.7
ROODHOUSE	KCS	IL	13.4	3.5	16.9	0.9	17.8	5.2
CARROLLTON	KCS	IL	0.0	0.0	0.0	0.9	0.9	0.0
WOOD RIVER	KCS	IL	0.6	0.2	0.8	0.2	1.0	28.7
MADISON	KCS	IL	0.8	0.2	1.0	0.0	1.0	2.6
EAST ST LOUIS	KCS	IL	124.4	32.8	157.2	0.4	157.6	0.3
GIBSON	CP	IN	176.1	46.5	222.6	-0.7	221.9	-0.3
DET CON TERM	CP	MI	26.3	6.9	33.2	23.2	56.5	70.0
DETROIT	CP	MI	215.4	56.9	272.3	0.1	272.4	0.0

Table C.1-3. CPKC Rail Yards Master Table

Yard Information			*Cars Processed Per Day*					
Yard Name	**RR**	**State**	**Base**	**Organic Growth**	**2027 Without Acquisition**	**Acquisition -Related Growth**	**2027 With Acquisition**	**Acquisition -Related Growth Percentage**
SARATOGA SPRINGS	CP	NY	255.6	67.5	323.0	0.7	323.7	0.2
BUFFALO	CP	NY	130.9	34.6	165.5	0.2	165.7	0.1
SCHENECTADY	CP	NY	51.9	13.7	65.6	0.0	65.6	0.0
ALBANY	CP	NY	169.0	44.6	213.6	0.7	214.3	0.3
BROWNVILLE JCT	CP	ME	95.2	25.1	120.3	0.2	120.5	0.1
SPENCER	CP	IA	8.7	2.3	11.0	0.0	11.0	0.0
MASON CITY	CP	IA	124.4	32.8	157.3	21.4	178.7	13.6
CYLINDER	CP	IA	0.0	0.0	0.0	0.0	0.0	0.0
ALGONA	CP	IA	2.8	0.7	3.6	0.0	3.6	0.2
MARQUETTE	CP	IA	166.1	43.8	209.9	0.0	209.9	0.0
CAMANCHE	CP	IA	1.4	0.4	1.8	0.2	2.0	10.2
PRINCETON	CP	IA	7.7	2.0	9.7	1.5	11.2	15.0
BETTENDORF	CP	IA	4.9	1.3	6.2	0.0	6.3	0.4
DAVENPORT	CP	IA	96.6	25.5	122.1	0.4	122.5	0.3
NAHANT	CP	IA	363.7	96.0	459.8	8.4	468.1	1.8
MONTPELIER	CP	IA	120.7	31.9	152.6	-1.1	151.4	-0.8
MUSCATINE	CP	IA	226.7	59.9	286.6	5.4	291.9	1.9
OTTUMWA	CP	IA	217.8	57.5	275.3	1.0	276.3	0.4
MORAVIA	CP	IA	4.2	1.1	5.4	0.1	5.4	1.1
LAREDO	CP	MO	43.5	11.5	54.9	1.0	55.9	1.8
CHILLICOTHE	CP	MO	2.3	0.6	2.8	0.0	2.9	0.2
LIBERTY	CP	MO	15.8	4.2	20.0	0.0	20.0	0.0

Table C.1-3. CPKC Rail Yards Master Table

Yard Information			*Cars Processed Per Day*					
Yard Name	**RR**	**State**	**Base**	**Organic Growth**	**2027 Without Acquisition**	**Acquisition -Related Growth**	**2027 With Acquisition**	**Acquisition -Related Growth Percentage**
SLATER	KCS	MO	53.5	14.1	67.6	0.0	67.6	0.0
KANSAS CITY	CP	MO	2029.3	535.7	2565.0	-67.1	2497.9	-2.6
ODESSA	KCS	MO	0.0	0.0	0.0	0.0	0.0	0.0
GRANDVIEW	KCS	MO	1.7	0.4	2.1	0.1	2.2	4.8
INTL FREIGHT GATE	KCS	MO	98.0	25.9	123.8	19.3	143.1	15.6
JOPLIN	KCS	MO	9.6	2.5	12.1	0.1	12.3	1.2
PITTSBURG	KCS	KS	28.1	7.4	35.5	0.1	35.7	0.4
HEAVENER	KCS	OK	150.0	39.6	189.6	0.2	189.8	0.1
FT SMITH	KCS	AR	37.0	9.8	46.8	0.2	47.0	0.5
DE QUEEN	KCS	AR	81.7	21.6	103.2	0.0	103.3	0.0
ASHDOWN	KCS	AR	46.2	12.2	58.4	7.9	66.2	13.5
WHITE ROCK	KCS	TX	5.5	1.5	7.0	0.1	7.0	1.2
SOUTH TEXARKANA	KCS	TX	15.0	3.9	18.9	0.0	18.9	0.0
DENTON	KCS	TX	3.1	0.8	3.9	0.2	4.1	4.9
SULPHUR SPRINGS	KCS	TX	8.7	2.3	10.9	0.0	11.0	0.0
WYLIE	KCS	TX	260.7	68.8	329.6	137.0	466.5	41.6
VEALS	KCS	TX	19.9	5.3	25.1	0.2	25.3	0.7
HUGHES SPRINGS	KCS	TX	29.3	7.7	37.0	3.3	40.3	8.9
PITTSBURG	KCS	TX	14.7	3.9	18.6	2.7	21.3	14.6
PLANO	KCS	TX	1.4	0.4	1.7	0.1	1.8	5.2
LONE STAR	KCS	TX	7.7	2.0	9.7	0.2	9.9	1.9
JEFFERSON	KCS	TX	7.9	2.1	10.0	0.2	10.3	2.4

Table C.1-3. CPKC Rail Yards Master Table

Yard Information			*Cars Processed Per Day*					
Yard Name	**RR**	**State**	**Base**	**Organic Growth**	**2027 Without Acquisition**	**Acquisition -Related Growth**	**2027 With Acquisition**	**Acquisition -Related Growth Percentage**
DALLAS	KCS	TX	78.7	20.8	99.5	8.4	107.9	8.4
BEAUMONT	KCS	TX	228.3	60.3	288.6	-25.5	263.1	-8.8
PORT NECHES	KCS	TX	245.7	64.9	310.6	2.1	312.7	0.7
PORT ARTHUR	KCS	TX	245.4	64.8	310.2	209.4	519.6	67.5
HOUSTON	KCS	TX	70.1	18.5	88.7	0.6	89.3	0.7
KENDLETON	KCS	TX	90.1	23.8	113.9	2.2	116.1	2.0
THRASHER	KCS	TX	0.4	0.1	0.5	0.1	0.6	20.0
ROBSTOWN	KCS	TX	254.6	67.2	321.8	-17.6	304.2	-5.5
CORPUS CHRISTI	KCS	TX	277.3	73.2	350.5	-4.8	345.7	-1.4
LAREDO YARD	KCS	TX	157.5	41.6	199.1	-7.2	191.9	-3.6
LAREDO	KCS	TX	1105.6	291.9	1397.4	-18.5	1379.0	-1.3
PORT OF BROWNSVIL	KCSM	TX	54.0	14.3	68.3	0.0	68.3	0.0
BROWNSVILLE	KCSM	TX	350.6	92.6	443.2	0.9	444.0	0.2
EAST MOLINE	CPRS	LA	0.0	0.0	0.0	0.0	0.0	6.3
COTTON VALLEY	KCS	LA	12.7	3.3	16.0	1.4	17.4	8.7
ARCADIA	KCS	LA	19.0	5.0	24.1	0.0	24.1	0.2
GIBSLAND	KCS	LA	45.4	12.0	57.3	1.3	58.6	2.2
SIBLEY	KCS	LA	19.9	5.3	25.2	1.4	26.6	5.7
SIMSBORO	KCS	LA	4.5	1.2	5.6	0.2	5.8	3.2
DOYLINE	KCS	LA	11.8	3.1	14.9	0.0	14.9	0.0
SHREVEPORT	KCS	LA	1245.4	328.8	1574.2	80.7	1654.9	5.1

Table C.1-3. CPKC Rail Yards Master Table

Yard Information			*Cars Processed Per Day*					
Yard Name	**RR**	**State**	**Base**	**Organic Growth**	**2027 Without Acquisition**	**Acquisition -Related Growth**	**2027 With Acquisition**	**Acquisition -Related Growth Percentage**
BOSSIER CITY	KCS	LA	63.1	16.6	79.7	1.5	81.2	1.9
MONROE	KCS	LA	95.3	25.2	120.5	0.3	120.8	0.2
TALLULAH	KCS	LA	3.2	0.8	4.1	0.1	4.2	2.4
ADVANCE	KCS	LA	38.0	10.0	48.0	1.1	49.1	2.3
BAYOU PIERRE	KCS	LA	53.3	14.1	67.4	0.2	67.5	0.2
PRT OF NATCHITOCH	KCS	LA	1.4	0.4	1.8	0.0	1.8	1.6
ZWOLLE	KCS	LA	11.8	3.1	14.9	0.6	15.4	3.9
ALEXANDRIA	KCS	LA	19.2	5.1	24.3	0.1	24.4	0.4
LATANIER	KCS	LA	54.7	14.4	69.1	0.1	69.2	0.2
LEESVILLE	KCS	LA	59.2	15.6	74.8	0.6	75.5	0.8
DE RIDDER	KCS	LA	16.8	4.4	21.2	0.0	21.3	0.2
BROOKLAWN	KCS	LA	43.5	11.5	54.9	0.8	55.8	1.5
LOBDELL	KCS	LA	0.0	0.0	0.0	0.9	0.9	0.0
BATON ROUGE	KCS	LA	413.4	109.1	522.5	5.2	527.7	1.0
DE QUINCY	KCS	LA	0.1	0.0	0.1	0.0	0.2	21.1
MOSSVILLE	KCS	LA	66.4	17.5	83.9	1.0	84.9	1.2
WEST LAKE	KCS	LA	15.5	4.1	19.6	0.3	19.9	1.5
LAKE CHARLES	KCS	LA	36.8	9.7	46.5	0.2	46.7	0.5
GEISMAR	KCS	LA	33.8	8.9	42.7	1.3	44.0	3.1
WEST LAKE CHARLES	KCS	LA	3.3	0.9	4.2	0.1	4.3	2.9
RESERVE	KCS	LA	86.3	22.8	109.1	0.6	109.6	0.5
GARYVILLE	KCS	LA	39.7	10.5	50.2	0.3	50.5	0.6

Table C.1-3. CPKC Rail Yards Master Table

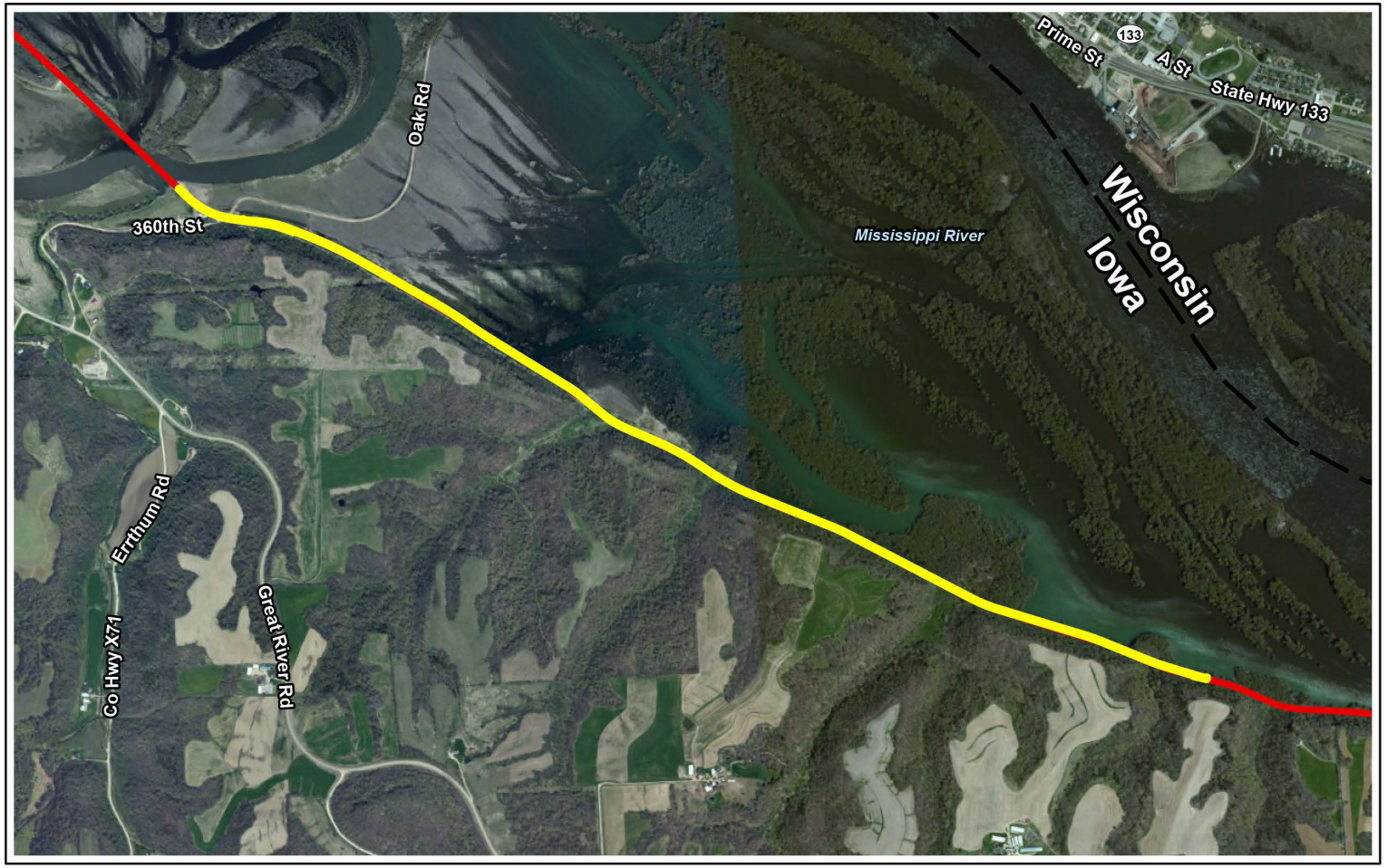
Yard Information			*Cars Processed Per Day*					
Yard Name	**RR**	**State**	**Base**	**Organic Growth**	**2027 Without Acquisition**	**Acquisition -Related Growth**	**2027 With Acquisition**	**Acquisition -Related Growth Percentage**
GRAMERCY	KCS	LA	30.5	8.1	38.6	0.0	38.6	0.0
NEW ORLEANS	KCS	LA	364.1	96.1	460.2	6.3	466.5	1.4
SALTILLO	KCS	MS	5.4	1.4	6.8	0.0	6.8	0.1
TUPELO	KCS	MS	25.9	6.8	32.8	0.0	32.8	0.0
WEST POINT	KCS	MS	1.4	0.4	1.8	0.0	1.8	0.7
ARTESIA	KCS	MS	370.2	97.7	468.0	2.2	470.1	0.5
ARBELA	KCS	MS	147.7	39.0	186.7	2.1	188.8	1.1
CLINTON	KCS	MS	308.2	81.4	389.6	0.1	389.7	0.0
VICKSBURG	KCS	MS	61.8	16.3	78.1	0.2	78.3	0.3
JACKSON	KCS	MS	522.3	137.9	660.2	-51.8	608.4	-7.8
MERIDIAN	KCS	MS	395.3	104.4	499.6	0.7	500.3	0.1
MONUMENT	KCS	MS	0.0	0.0	0.0	0.2	0.2	0.0
BROOKWOOD	KCS	AL	96.7	25.5	122.2	0.1	122.3	0.1

Appendix D

Capital Improvements

Appendix D includes two sections. *Section D-1* contains maps depicting the locations of capital improvements that CP and KCS plan to make within the rail right-of-way if the Board authorizes the Proposed Acquisition of KCS by CP. *Section D-2* contains sample cross-sections of the planned capital improvements, including new and extended sidings.

D.1 Capital Improvement Maps



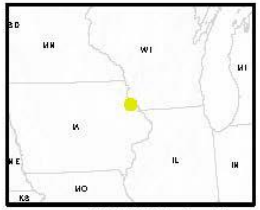
Capital Improvement Project MP 71 (Turkey River)
Clayton, Iowa



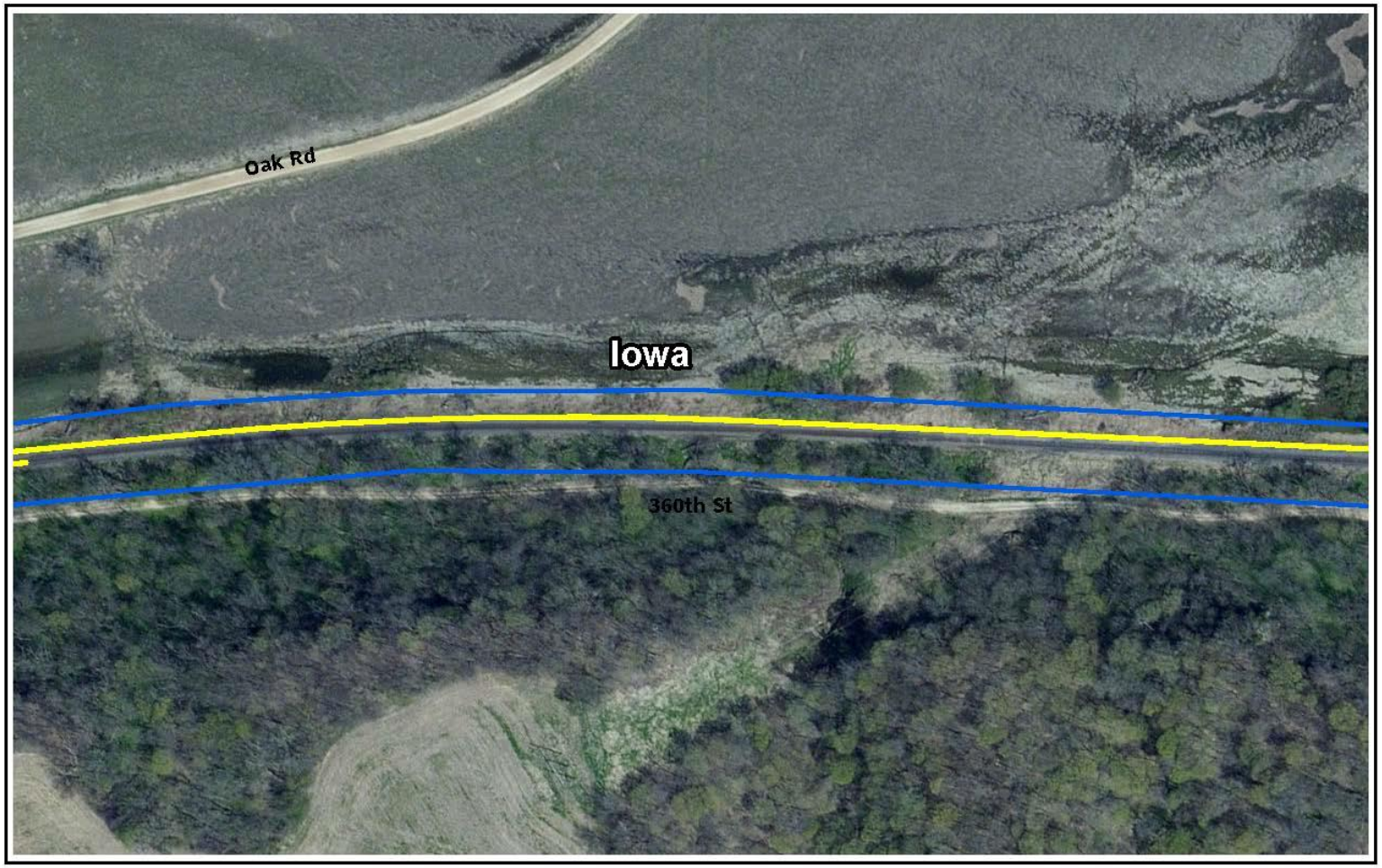
Capital Improvement Location
Existing Right-of-Way



Source: FRA, CP, ArcGIS Online



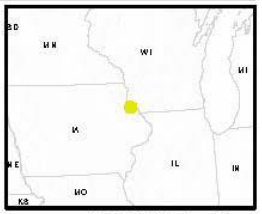
Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Map 1 of 10



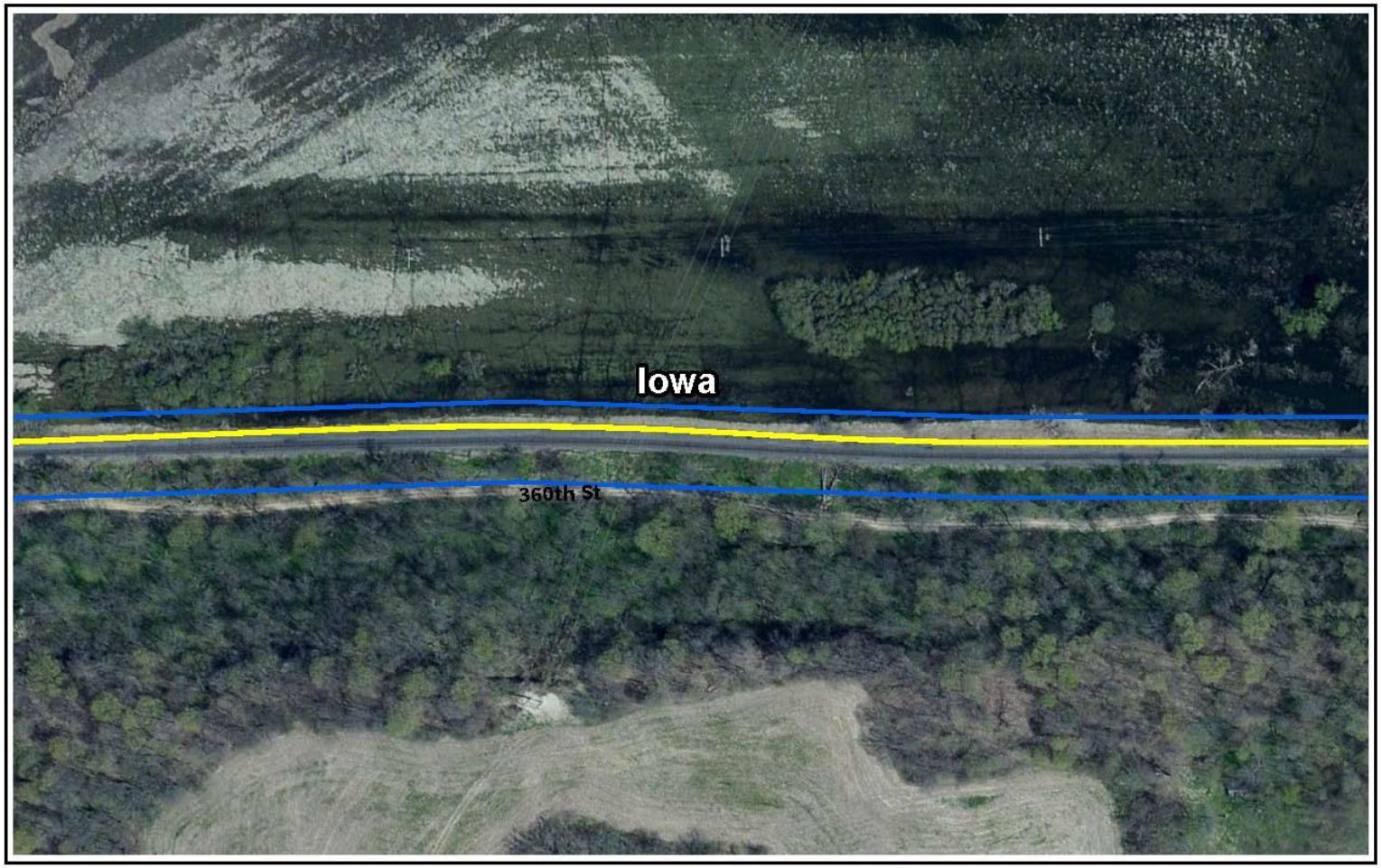
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



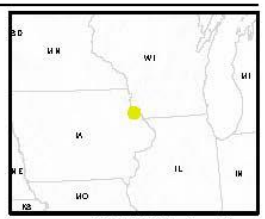
Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Map 2 of 10



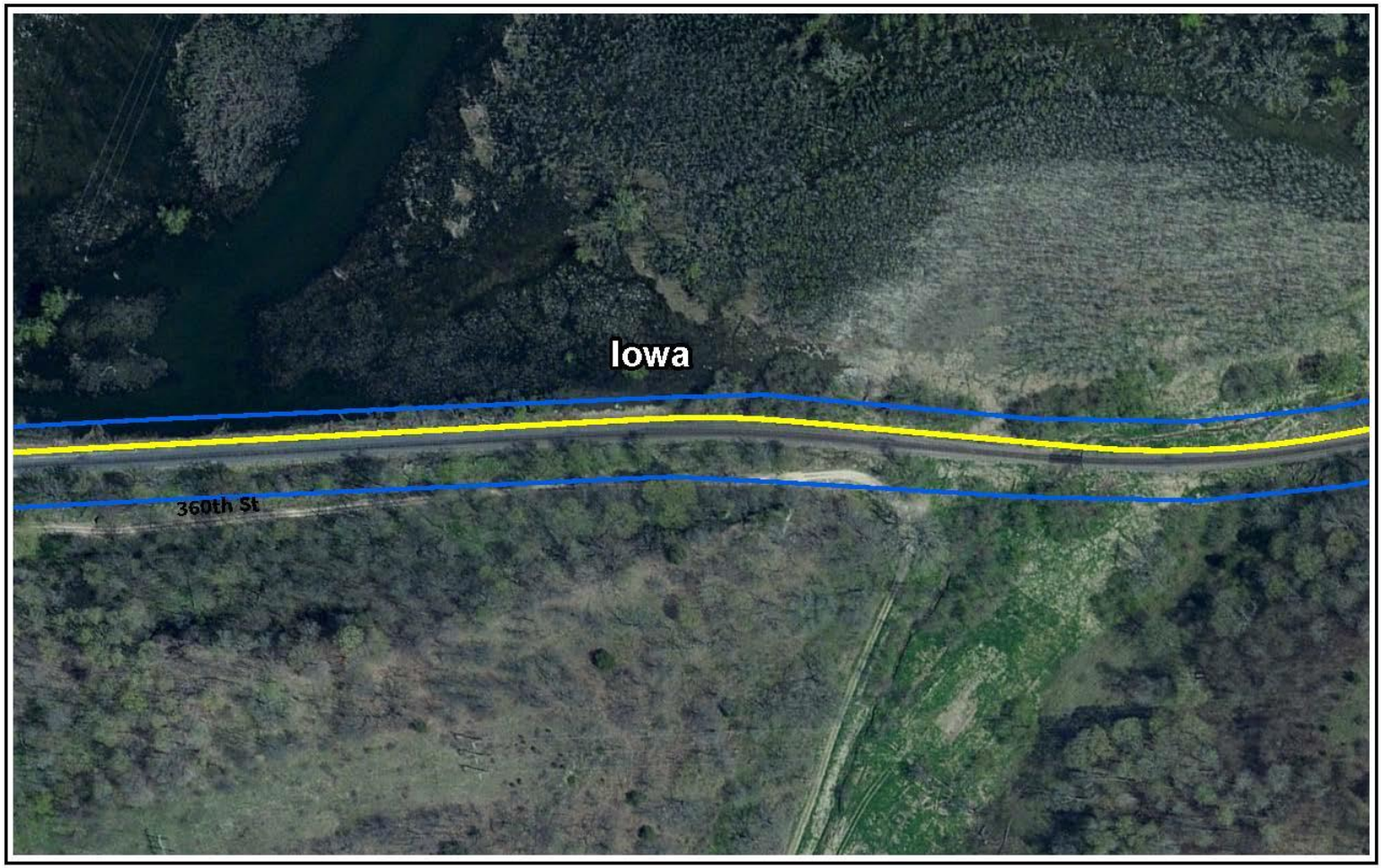
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



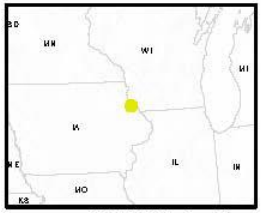
Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Map 3 of 10



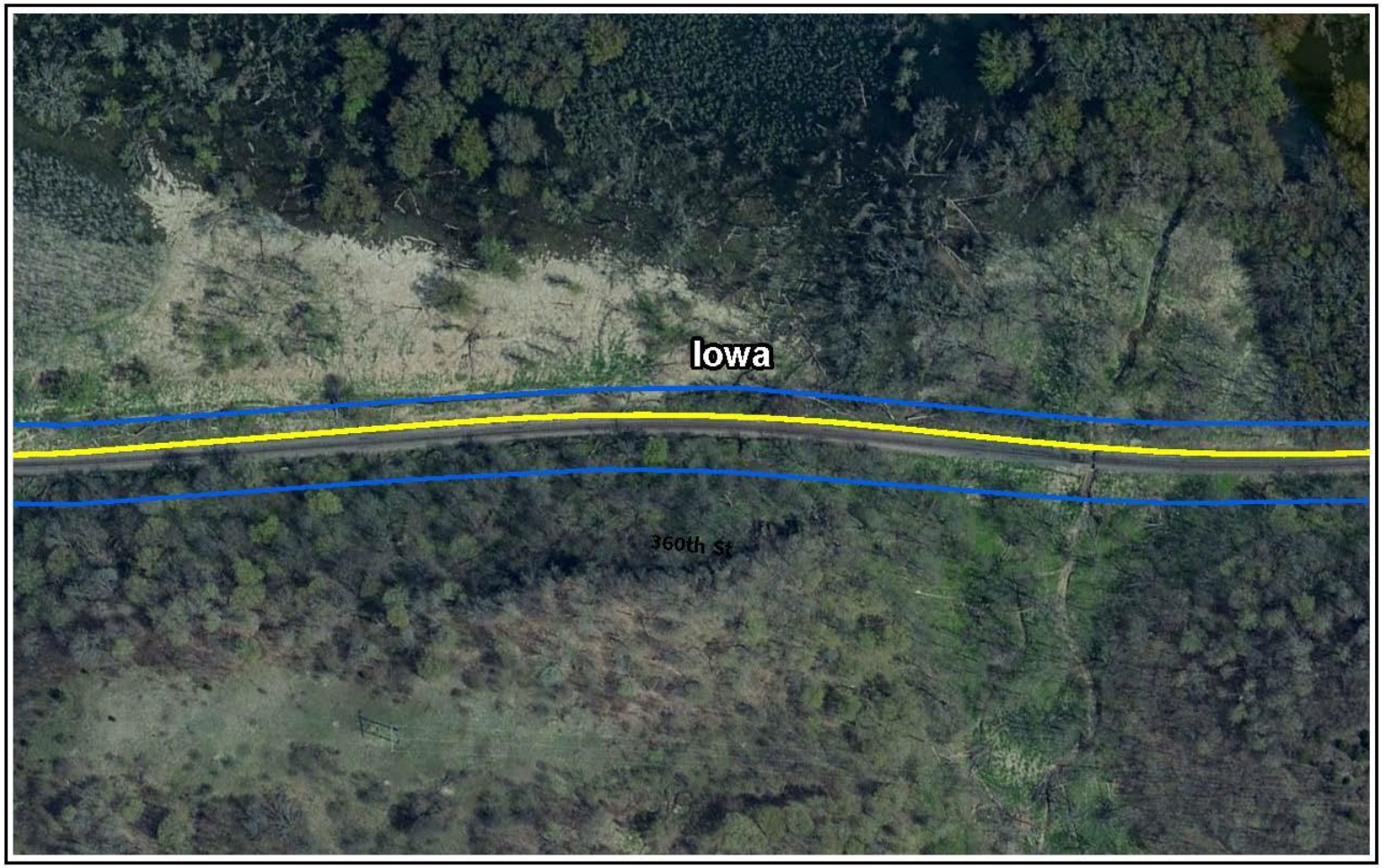
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



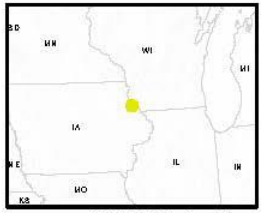
Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Map 4 of 10



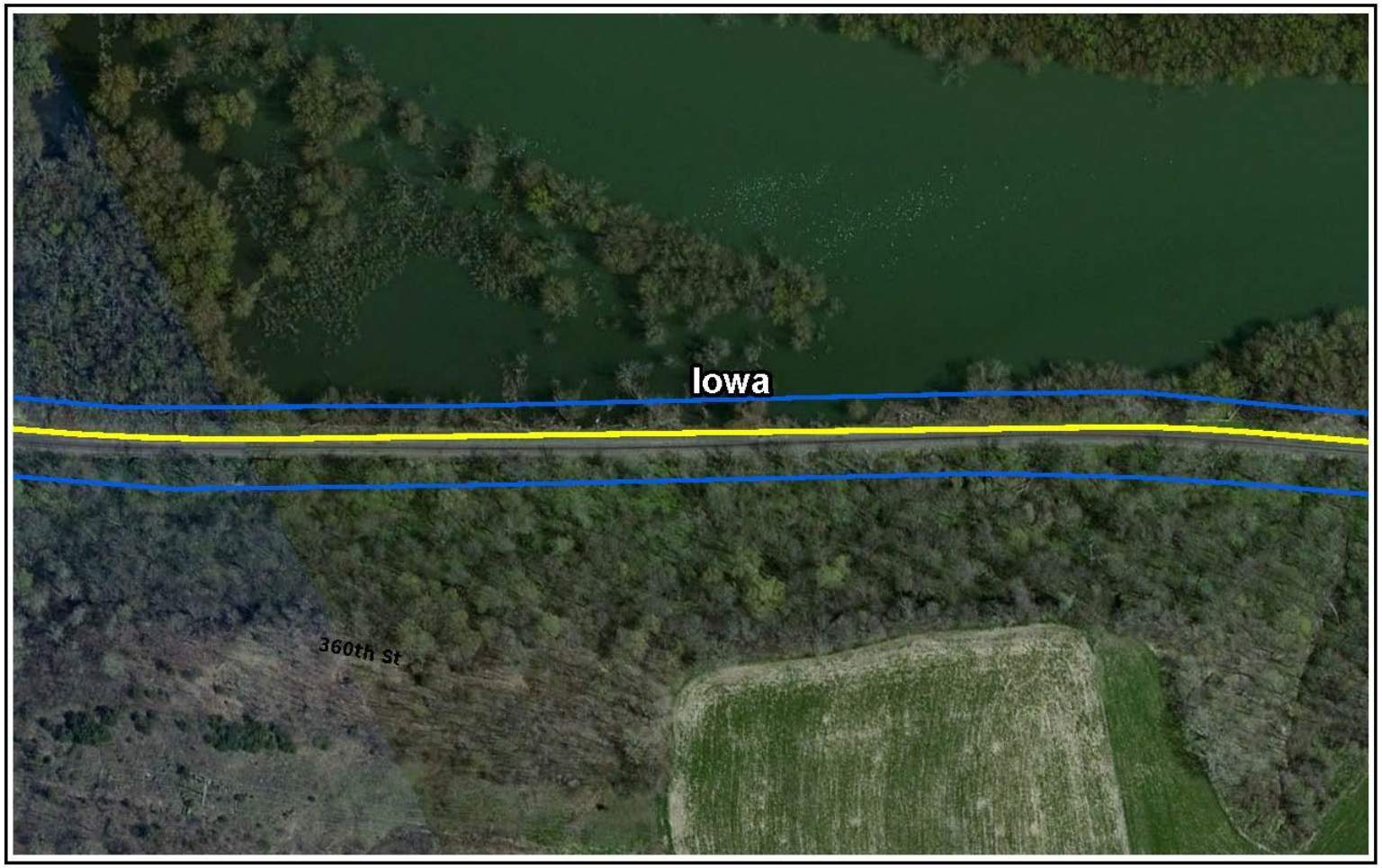
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



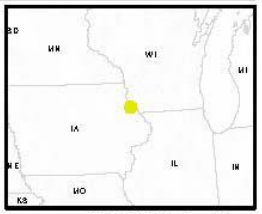
Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Map 5 of 10



Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



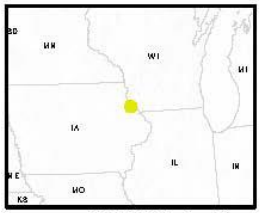
Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Map 6 of 10



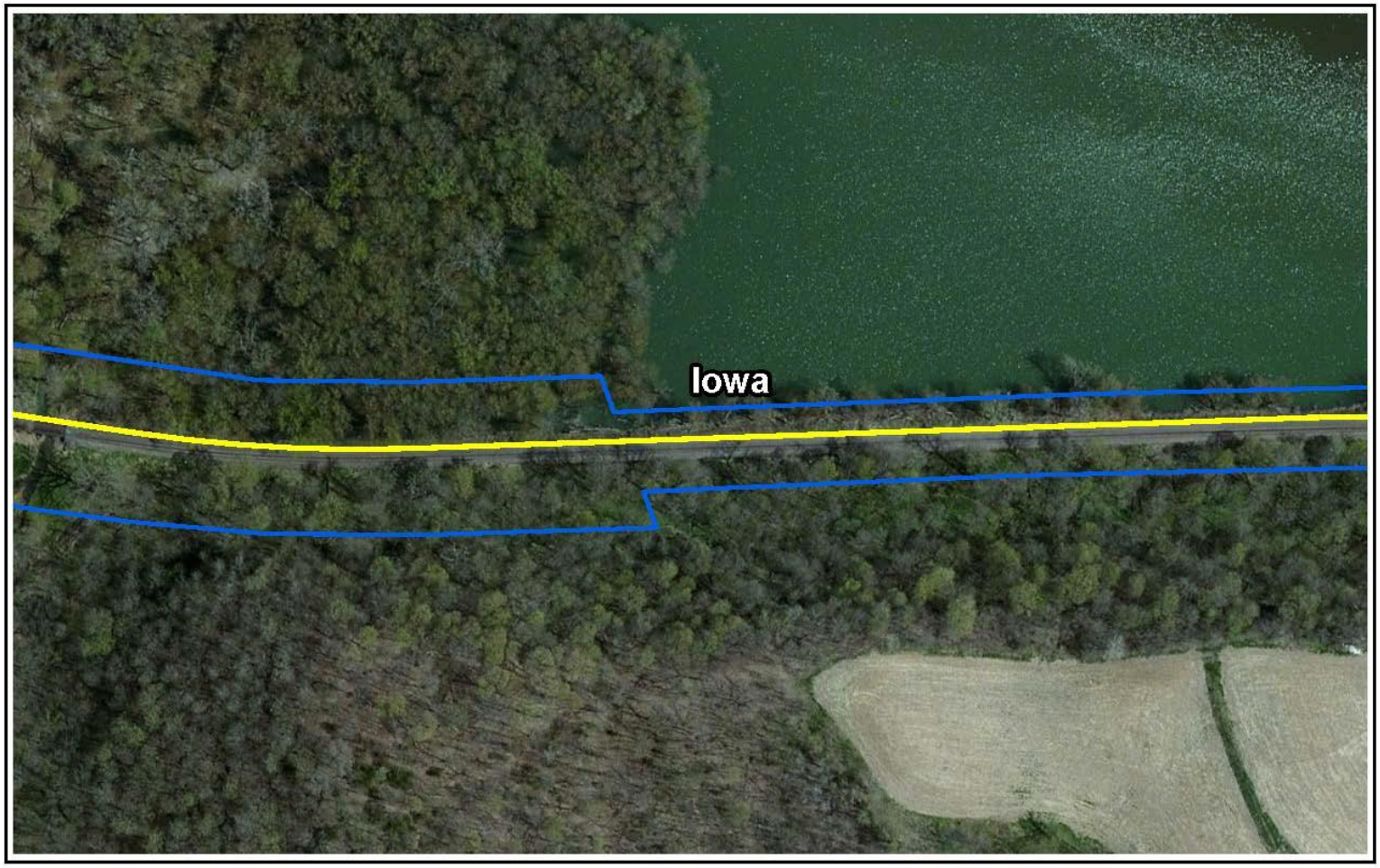
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



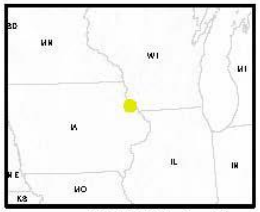
Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Map 7 of 10



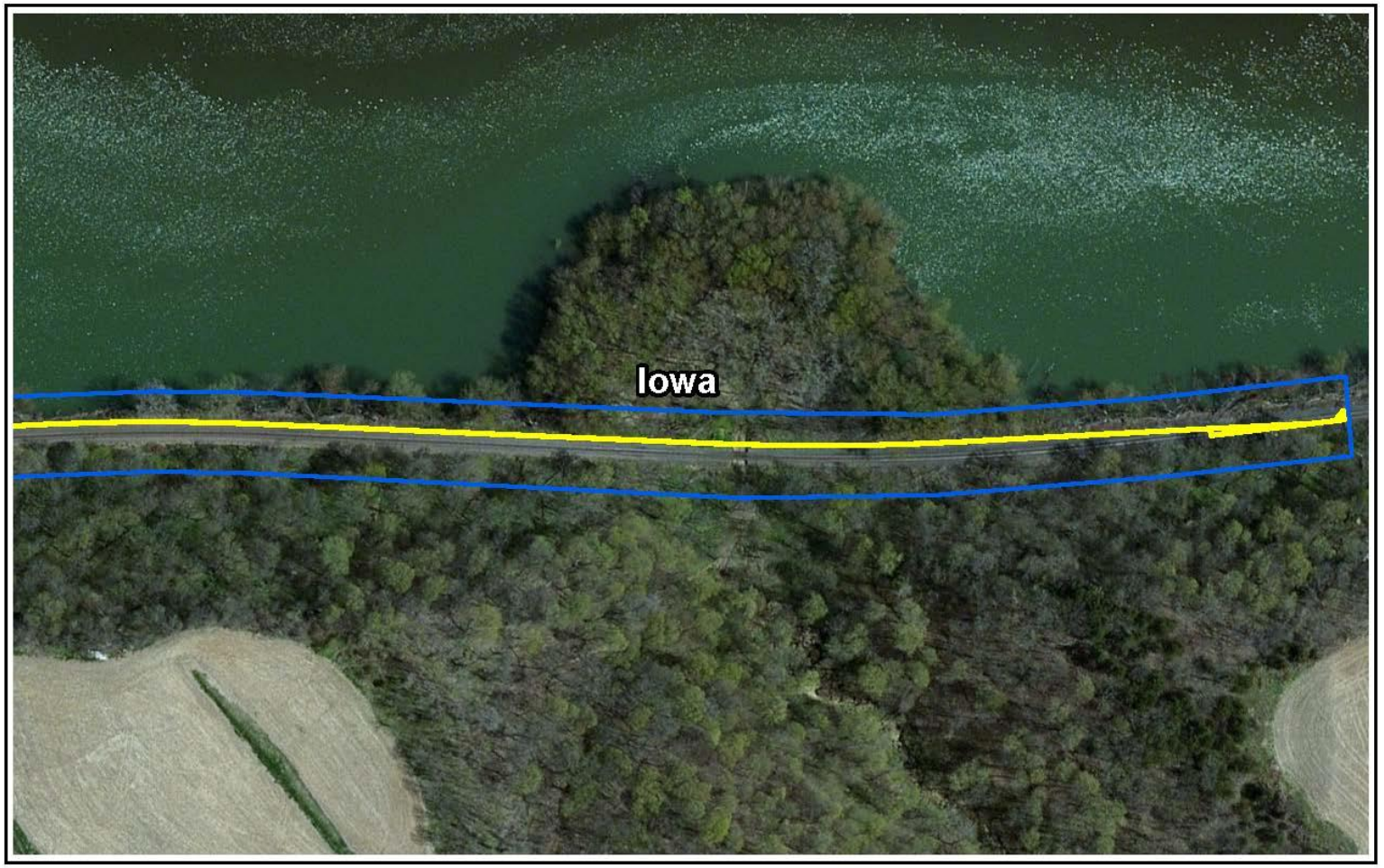
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



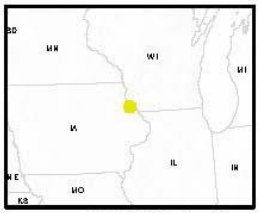
Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Map 8 of 10



Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



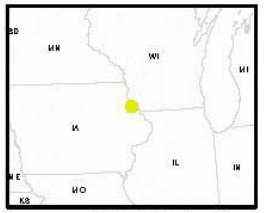
Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Map 9 of 10



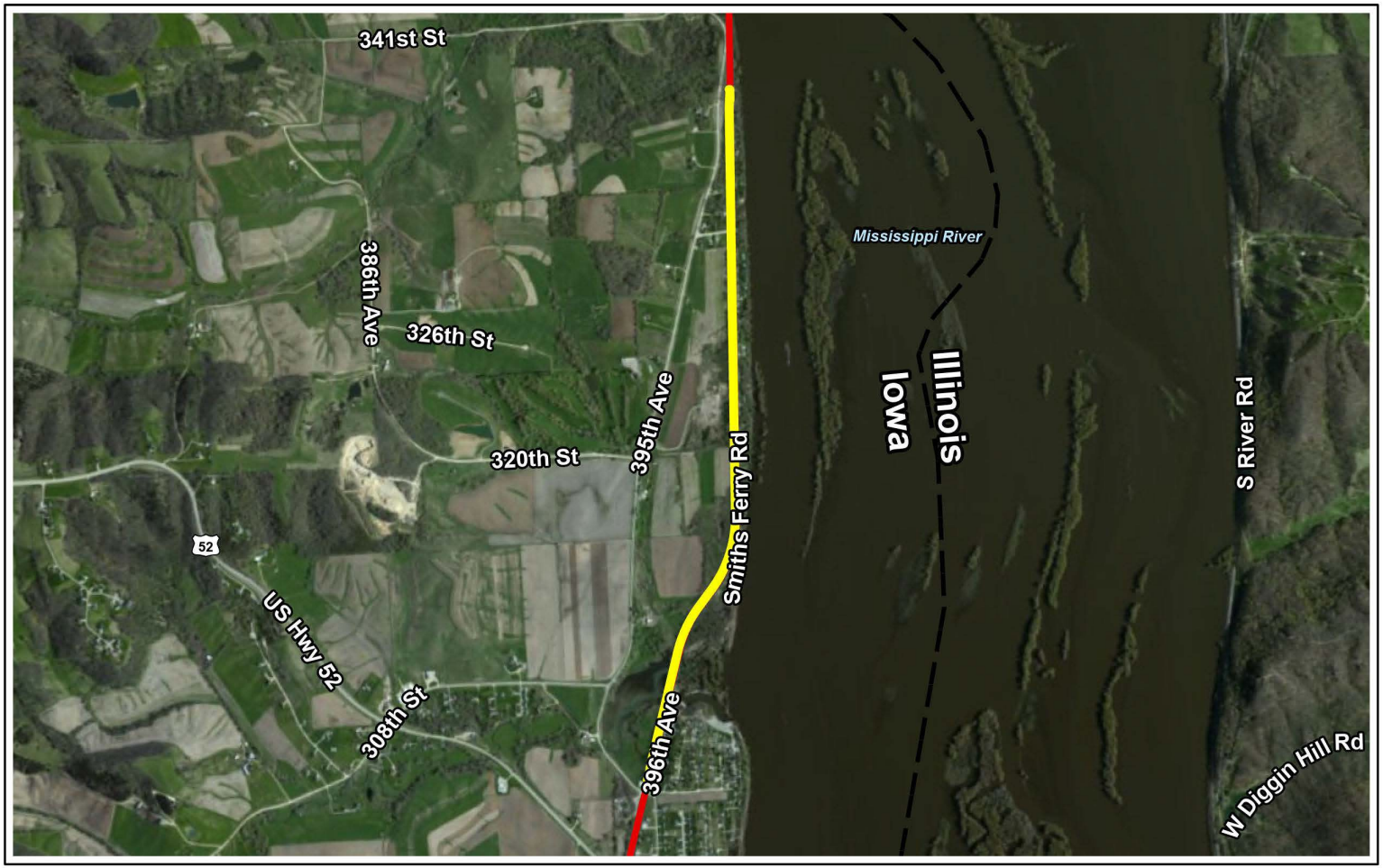
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Map 10 of 10

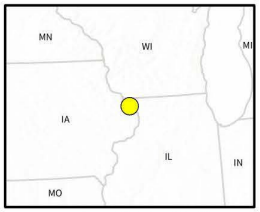


Capital Improvement Location
Canadian Pacific Rail Lines
Kansas City Southern Rail Lines
Canadian Pacific Trackage Rights
Kansas City Southern Trackage Rights

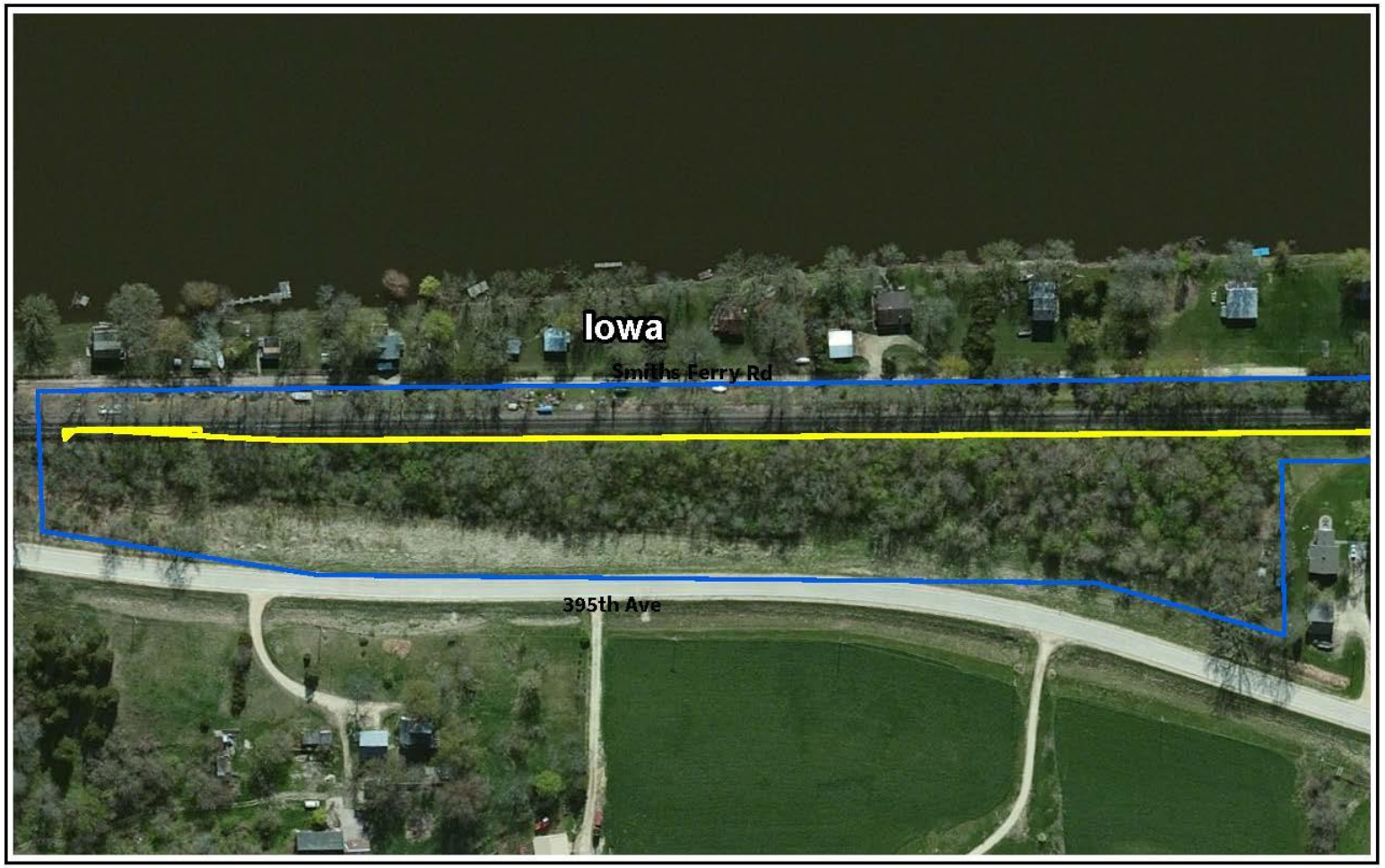
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US Feet

Source: FRA, CP, ArcGIS Online



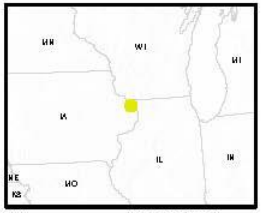
Capital Improvement Project MP 24 (Bellevue)
Jackson, Iowa



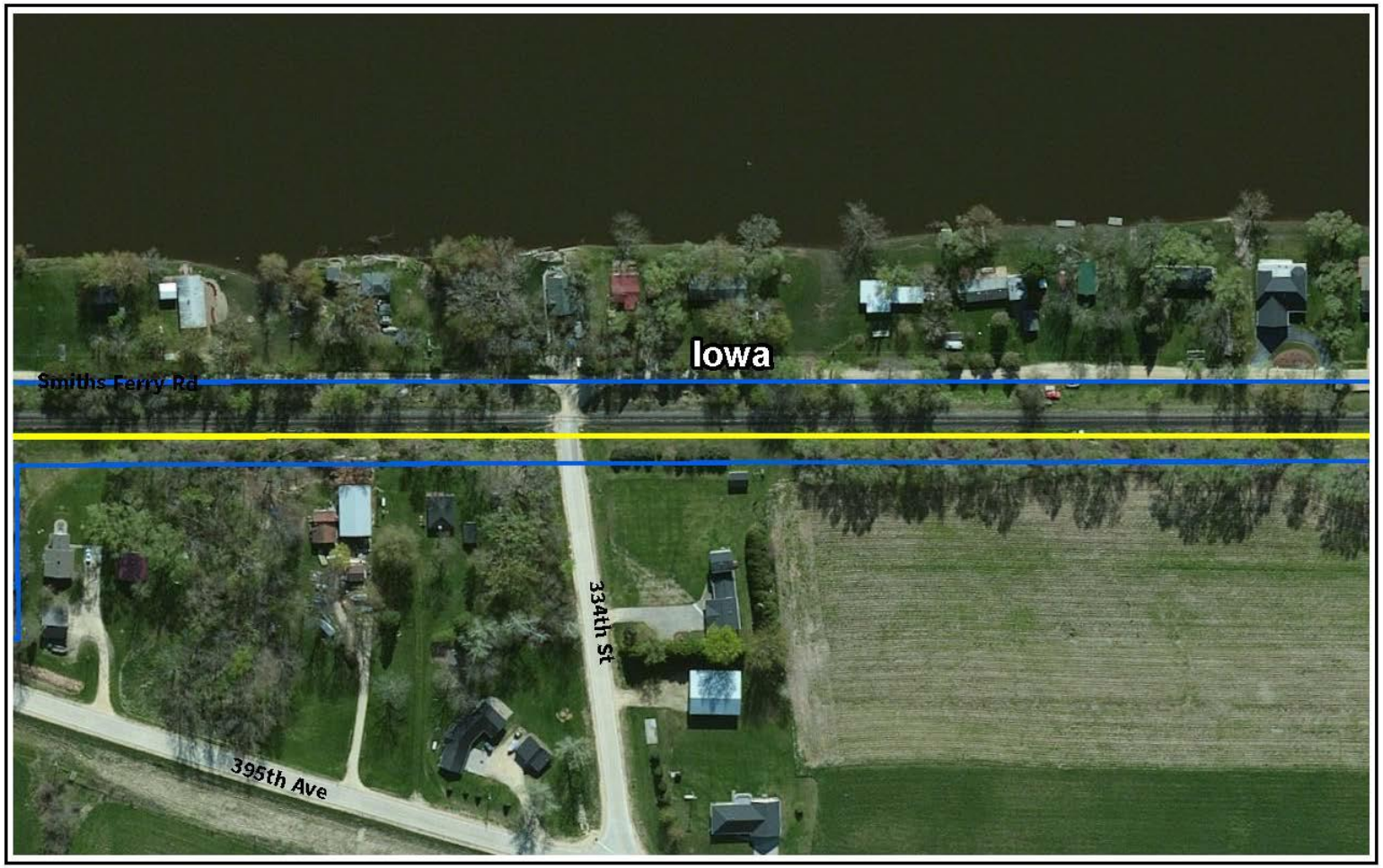
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



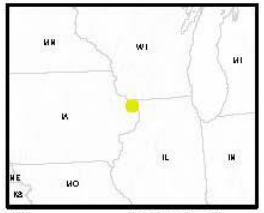
Capital Improvement MP 24 (Bellevue)
Jackson, Iowa | Map 1 of 7



Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 24 (Bellevue)
Jackson, Iowa | Map 2 of 7

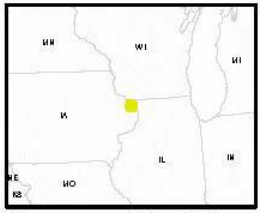


Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



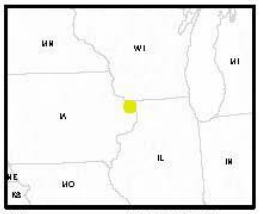
Capital Improvement MP 24 (Bellevue)
Jackson, Iowa | Map 3 of 7



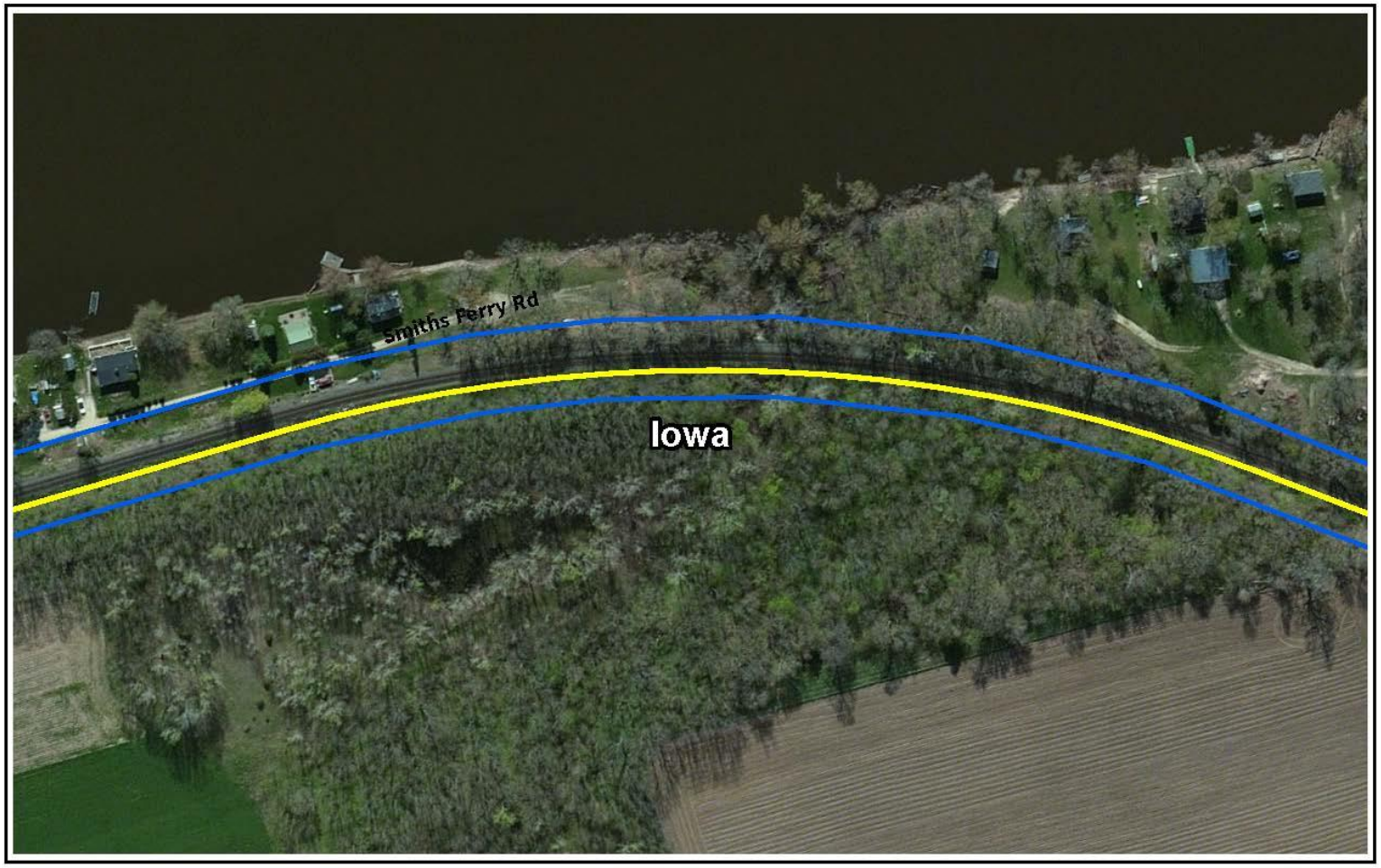
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



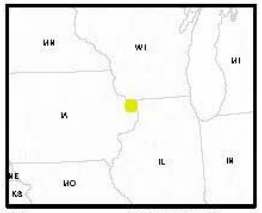
Capital Improvement MP 24 (Bellevue)
Jackson, Iowa | Map 4 of 7



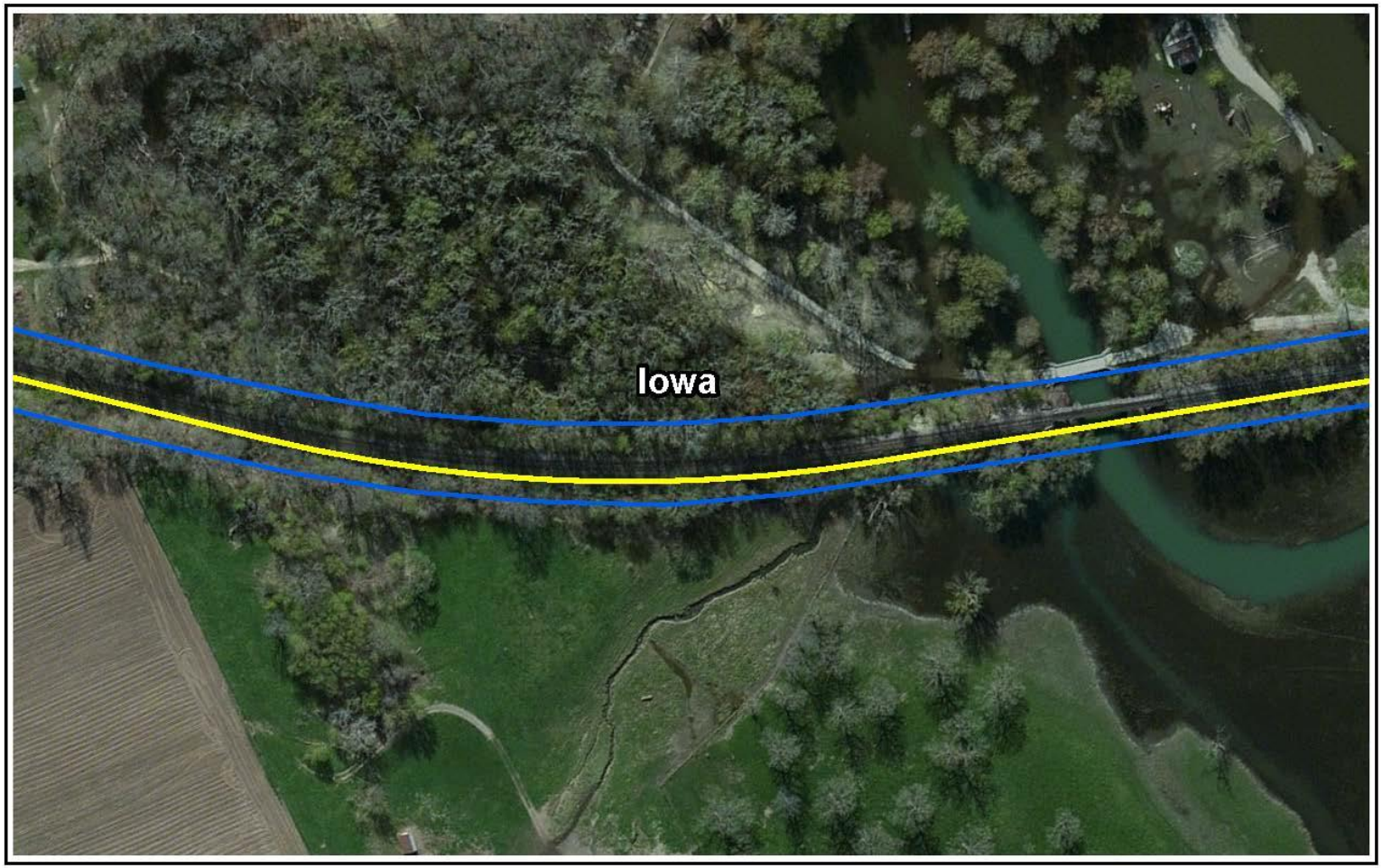
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



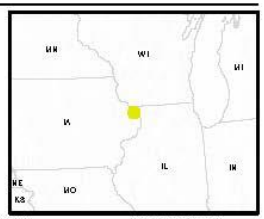
Capital Improvement MP 24 (Bellevue)
Jackson, Iowa | Map 5 of 7



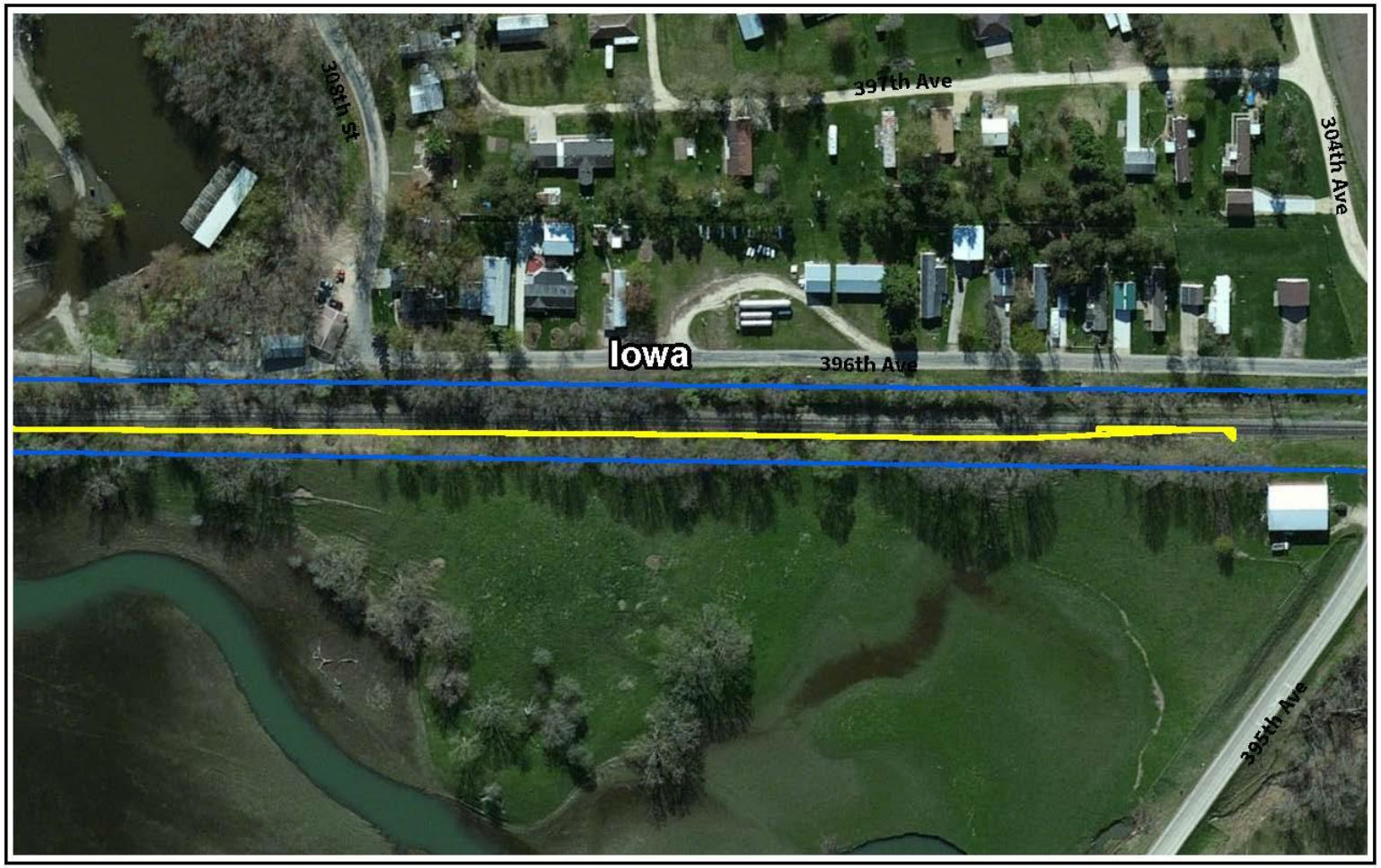
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



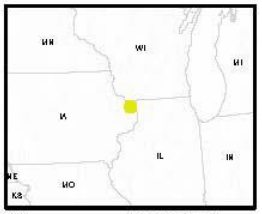
Capital Improvement MP 24 (Bellevue)
Jackson, Iowa | Map 6 of 7



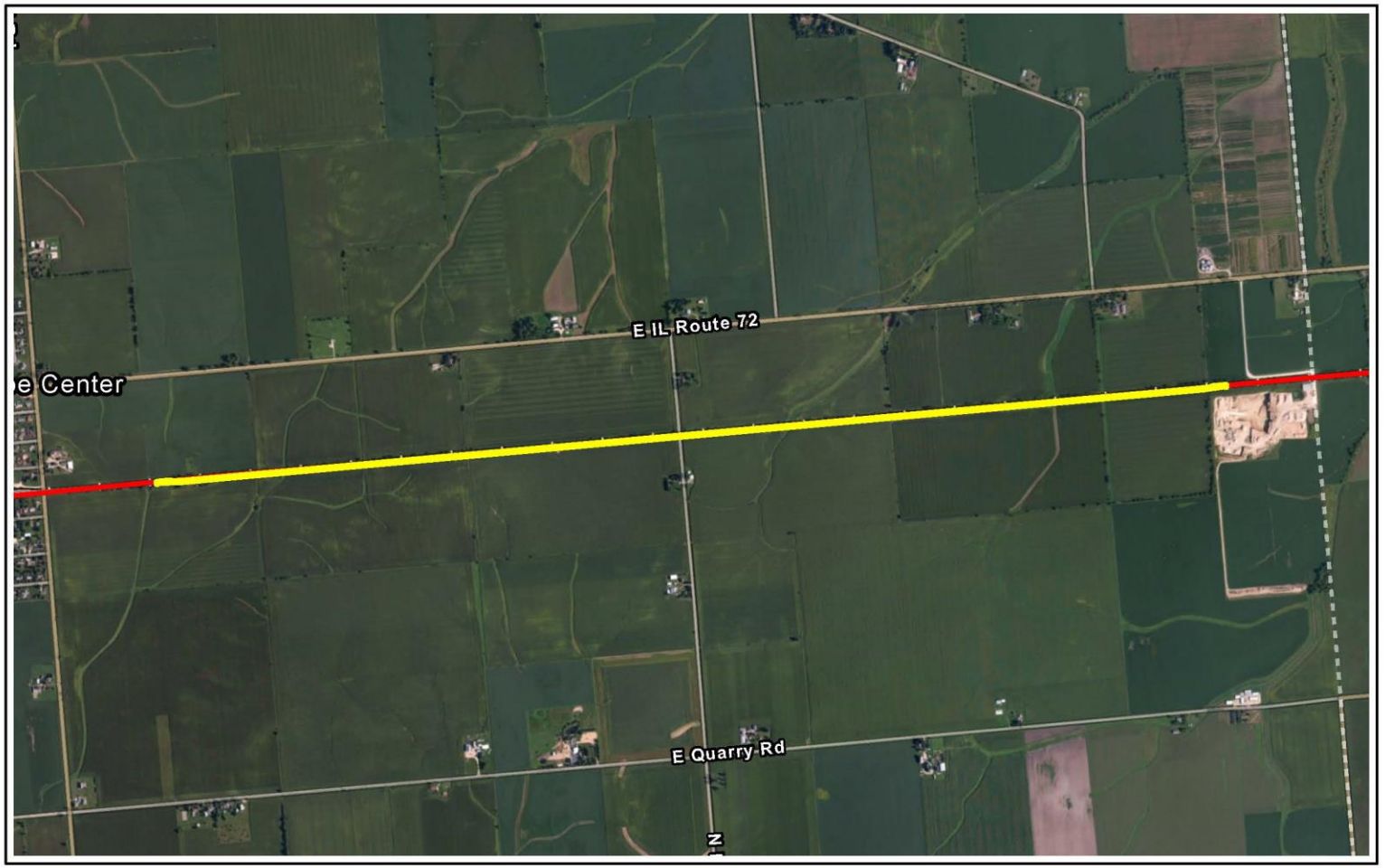
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 24 (Bellevue)
Jackson, Iowa | Map 7 of 7





Capital Improvement Project MP 75 (Monroe)
Ogle, Illinois

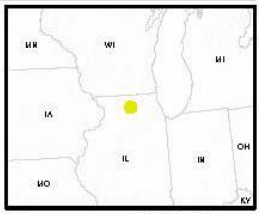


Capital Improvement Location
Existing Right-of-Way

N

0 200 400
Feet

Source: FRA, CP, ArcGIS Online

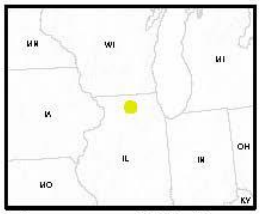


Capital Improvement MP 75 (Monroe)
Ogle, Illinois | Map 1 of 9

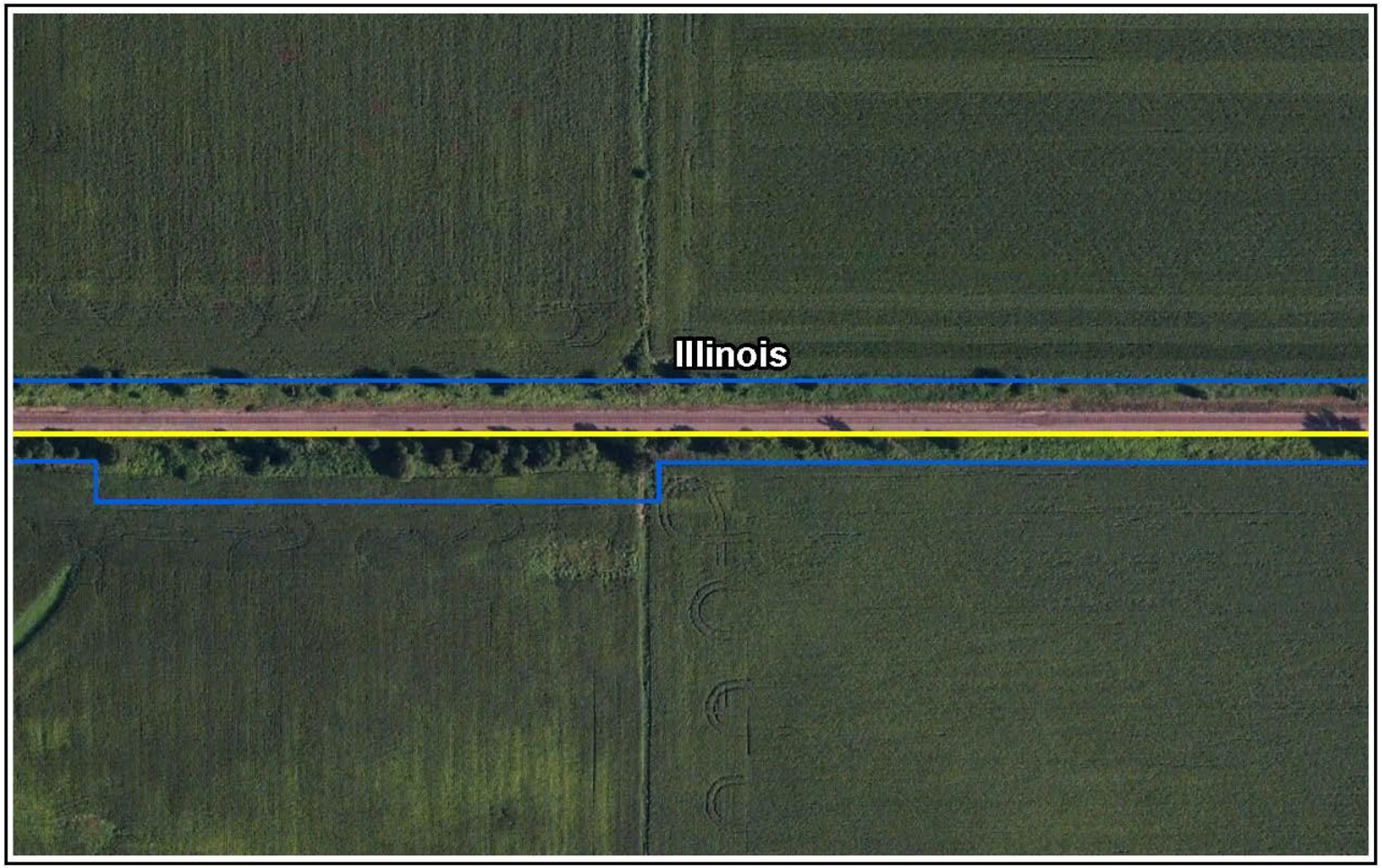


Capital Improvement Location
Existing Right-of-Way

N
0 200 400
Feet
Source: FRA, CP, ArcGIS Online



Capital Improvement MP 75 (Monroe)
Ogle, Illinois | Map 2 of 9

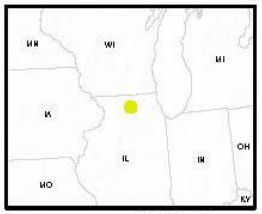


Capital Improvement Location
Existing Right-of-Way

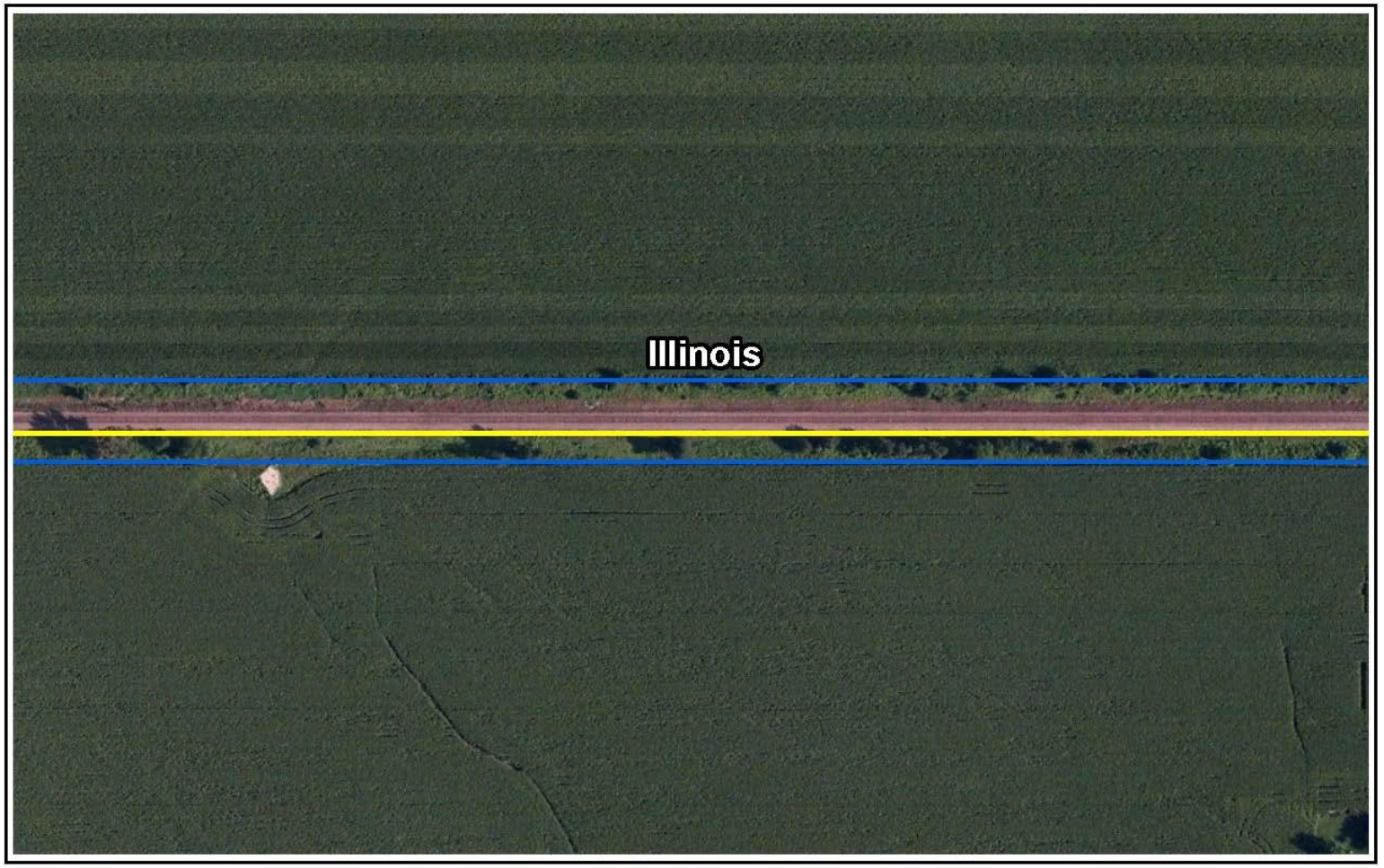
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0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 75 (Monroe)
Ogle, Illinois | Map 3 of 9



Capital Improvement Location

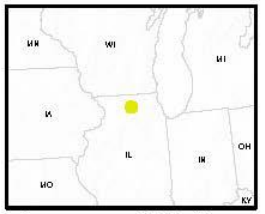
Existing Right-of-Way



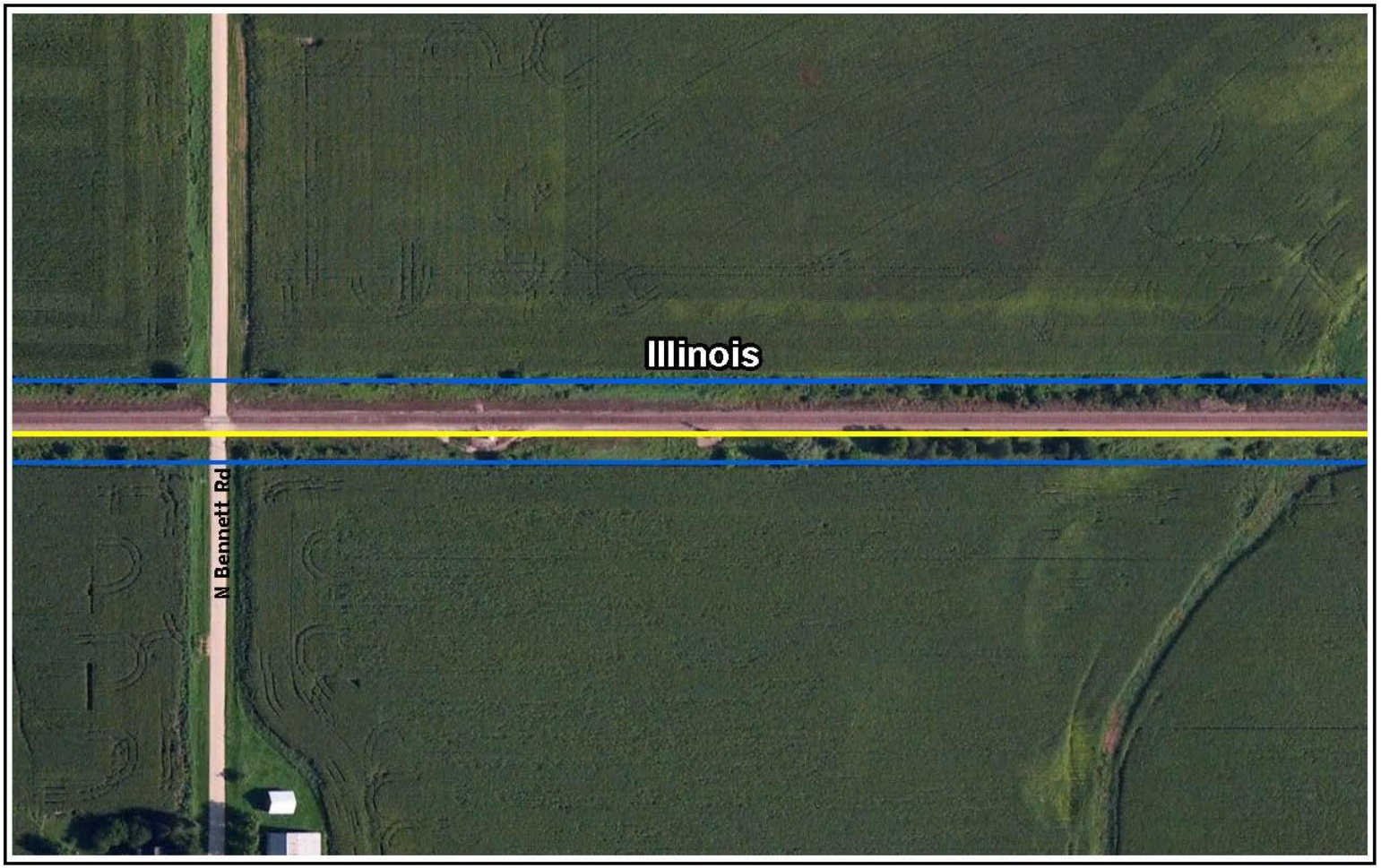
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Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 75 (Monroe)
Ogle, Illinois | Map 4 of 9



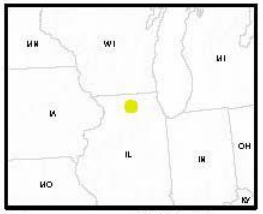
Capital Improvement Location

Existing Right-of-Way

N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 75 (Monroe)
Ogle, Illinois | Map 5 of 9



Capital Improvement Location

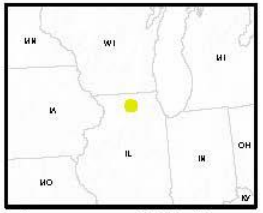
Existing Right-of-Way

N

0 200 400

Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 75 (Monroe)
Ogle, Illinois | Map 6 of 9

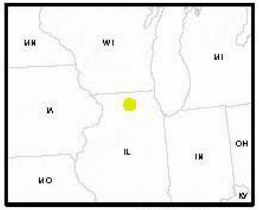


Capital Improvement Location
Existing Right-of-Way

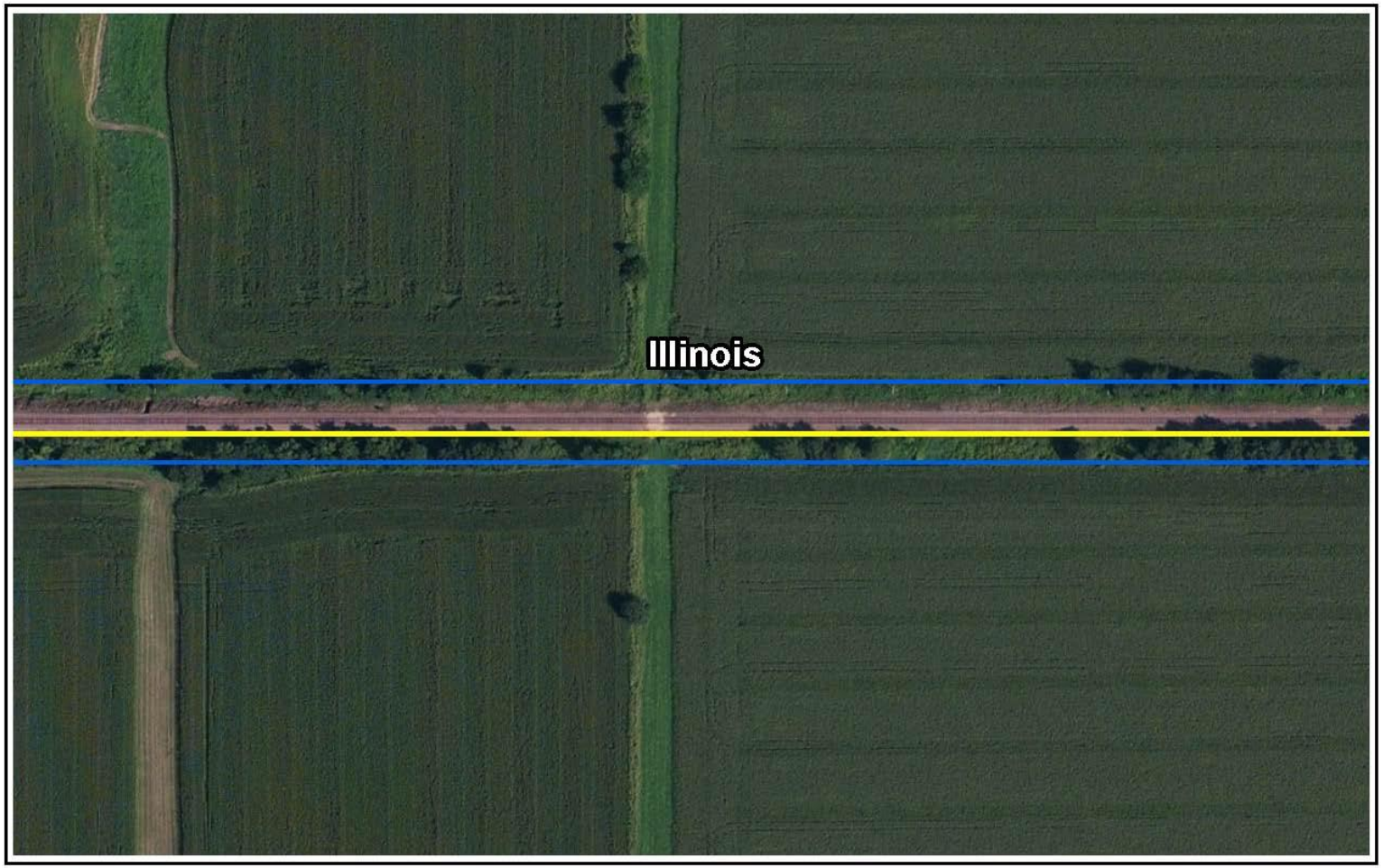
N

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 75 (Monroe)
Ogle, Illinois | Map 7 of 9



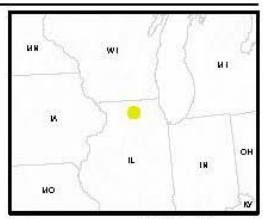
Capital Improvement Location

Existing Right-of-Way

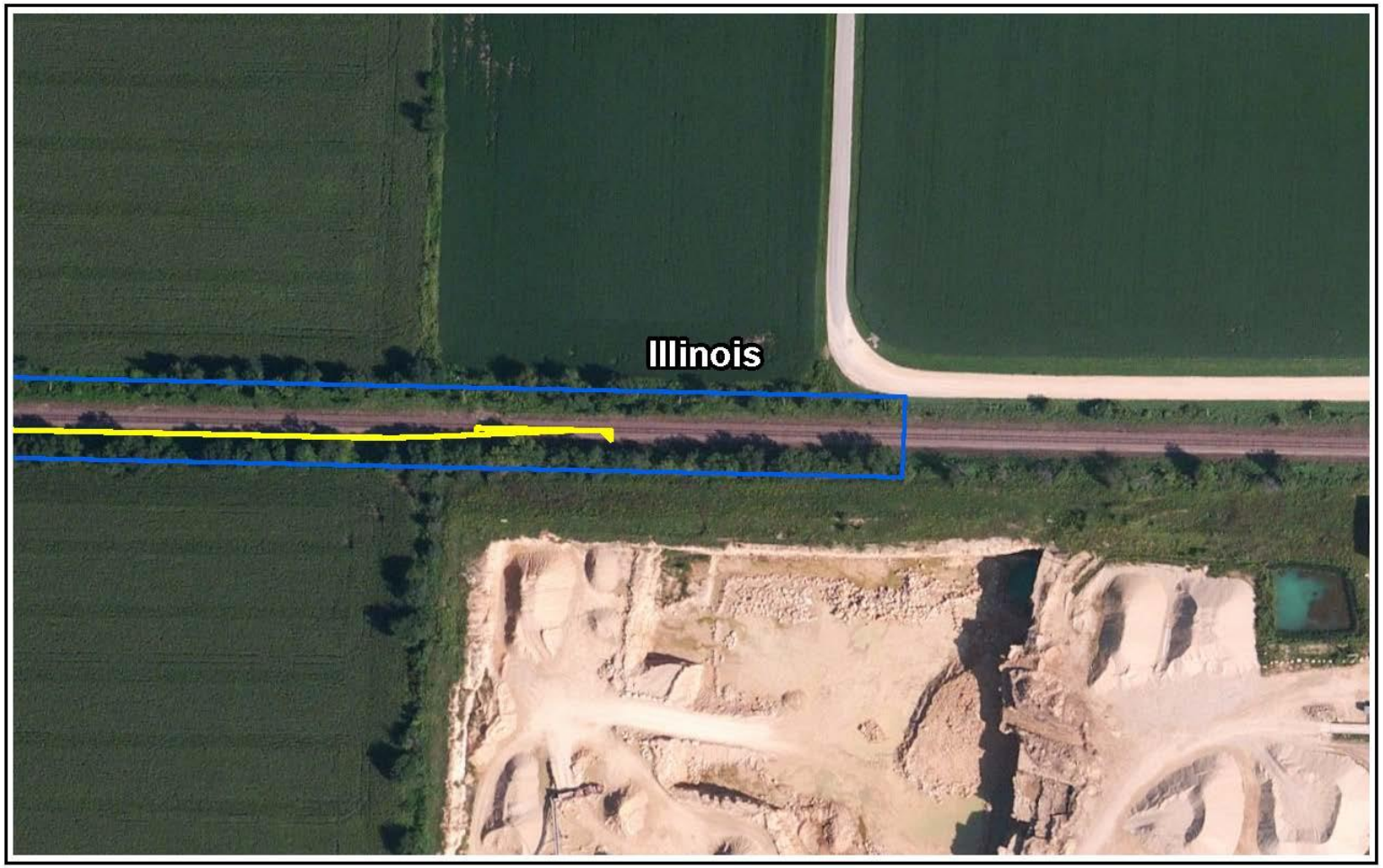
N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 75 (Monroe)
Ogle, Illinois | Map 8 of 9

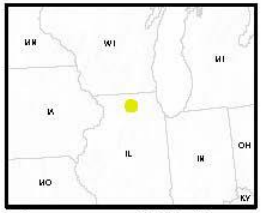


Capital Improvement Location
Existing Right-of-Way



0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 75 (Monroe)
Ogle, Illinois | Map 9 of 9



Capital Improvement Project Location
Canadian Pacific Rail Lines
Kansas City Southern Rail Lines
Canadian Pacific Trackage Rights
Kansas City Southern Trackage Rights

N

0 1,000 2,000 3,000
Feet

Source: FRA, CP, ArcGIS Online



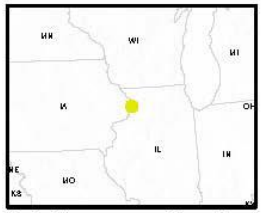
Capital Improvement Project Deer Creek
Clinton, Iowa



Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



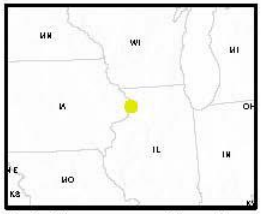
Capital Improvement Deer Creek
Clinton, Iowa | Map 1 of 4



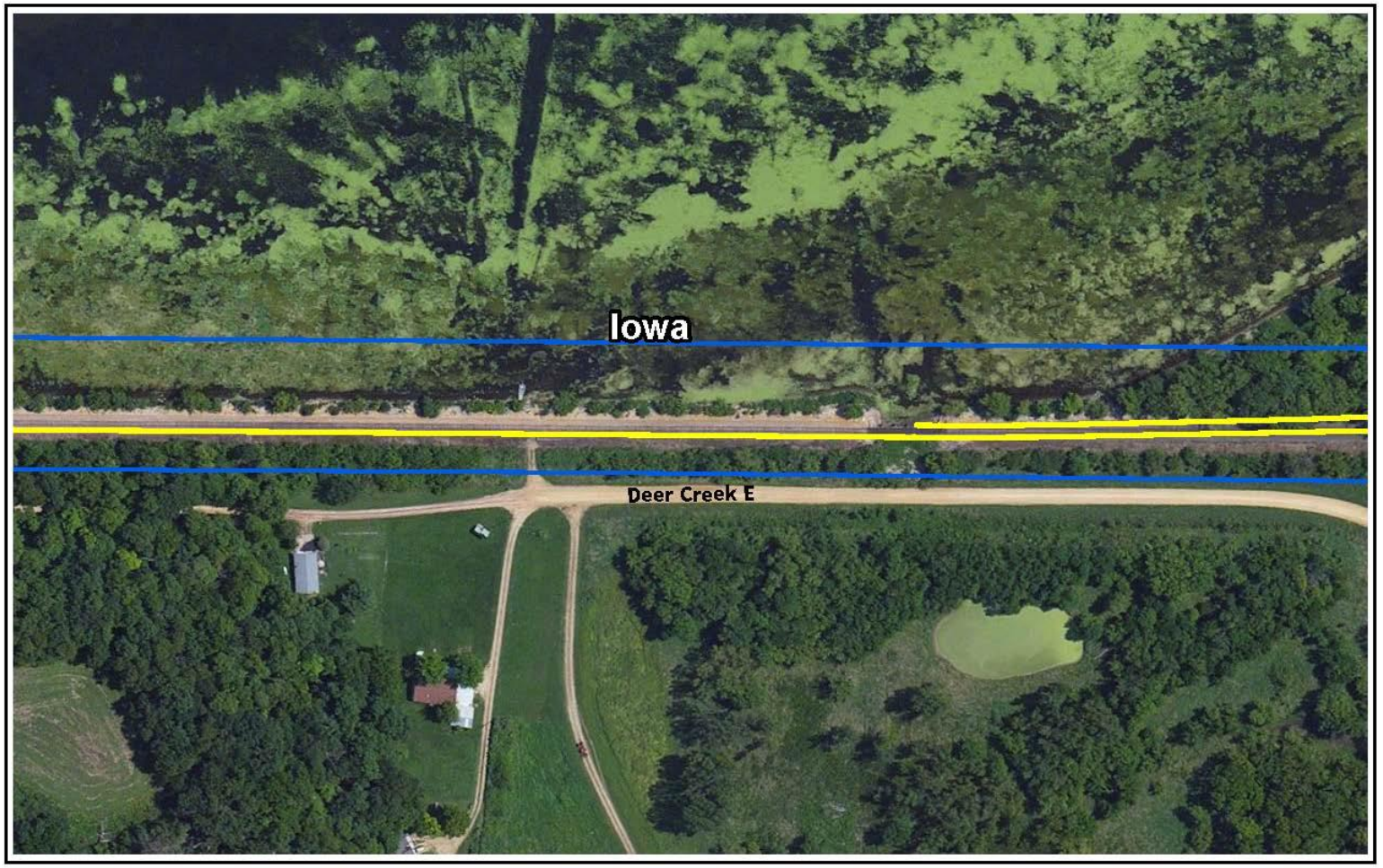
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



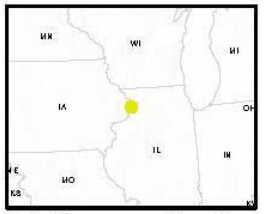
Capital Improvement Deer Creek
Clinton, Iowa | Map 2 of 4



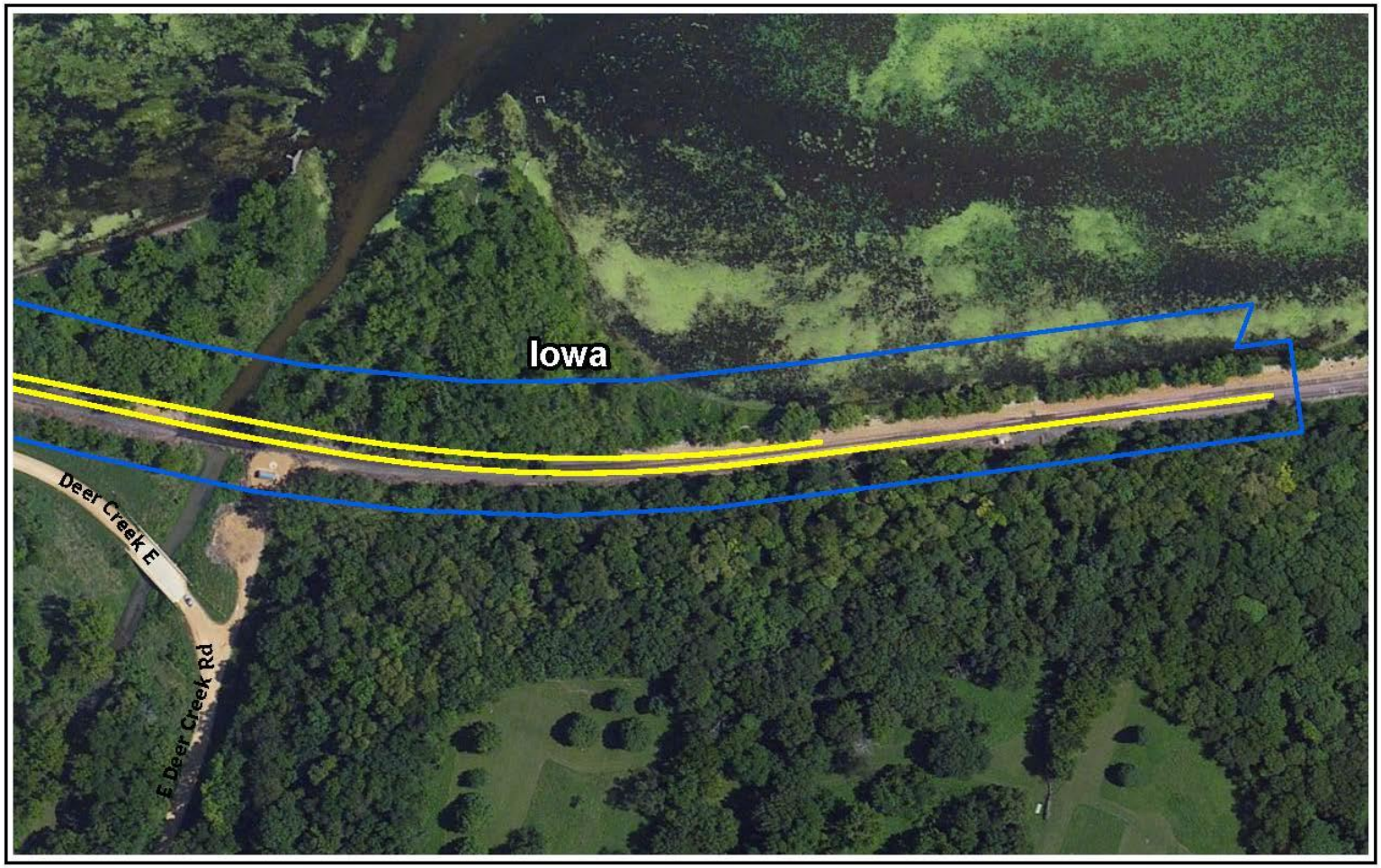
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Deer Creek
Clinton, Iowa | Map 3 of 4



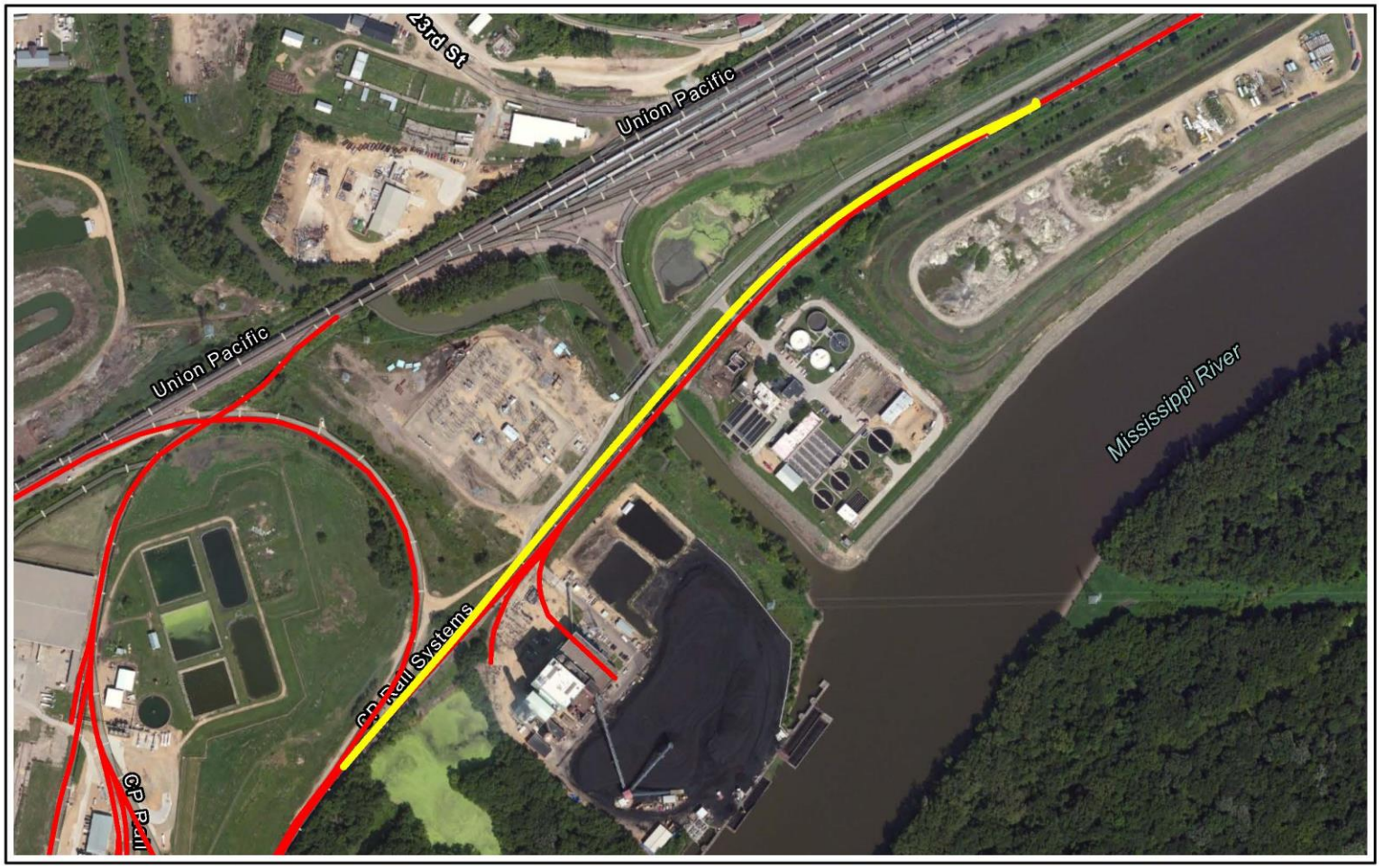
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Deer Creek
Clinton, Iowa | Map 4 of 4

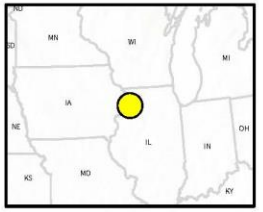


Capital Improvement Project Location
Canadian Pacific Rail Lines
Kansas City Southern Rail Lines
Canadian Pacific Trackage Rights
Kansas City Southern Trackage Rights

N

0 1,000 Feet

Source: FRA, CP, ArcGIS Online



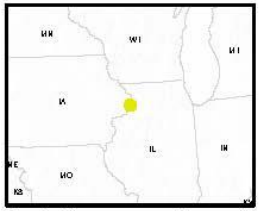
Capital Improvement Project Camanche
Clinton, Iowa



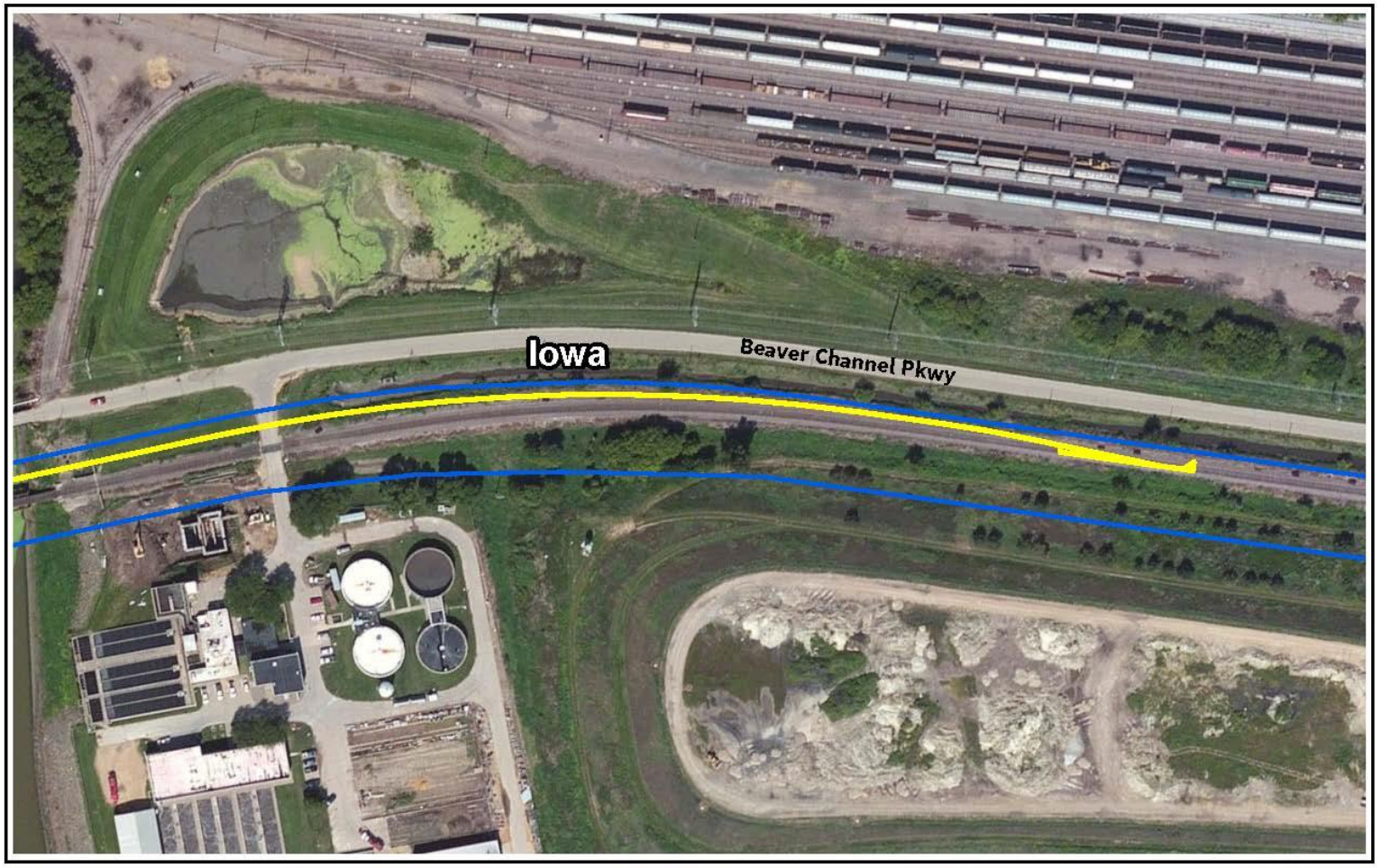
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Camanche
Clinton, Iowa | Map 1 of 2

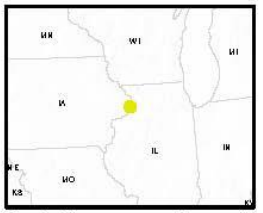


Capital Improvement Location

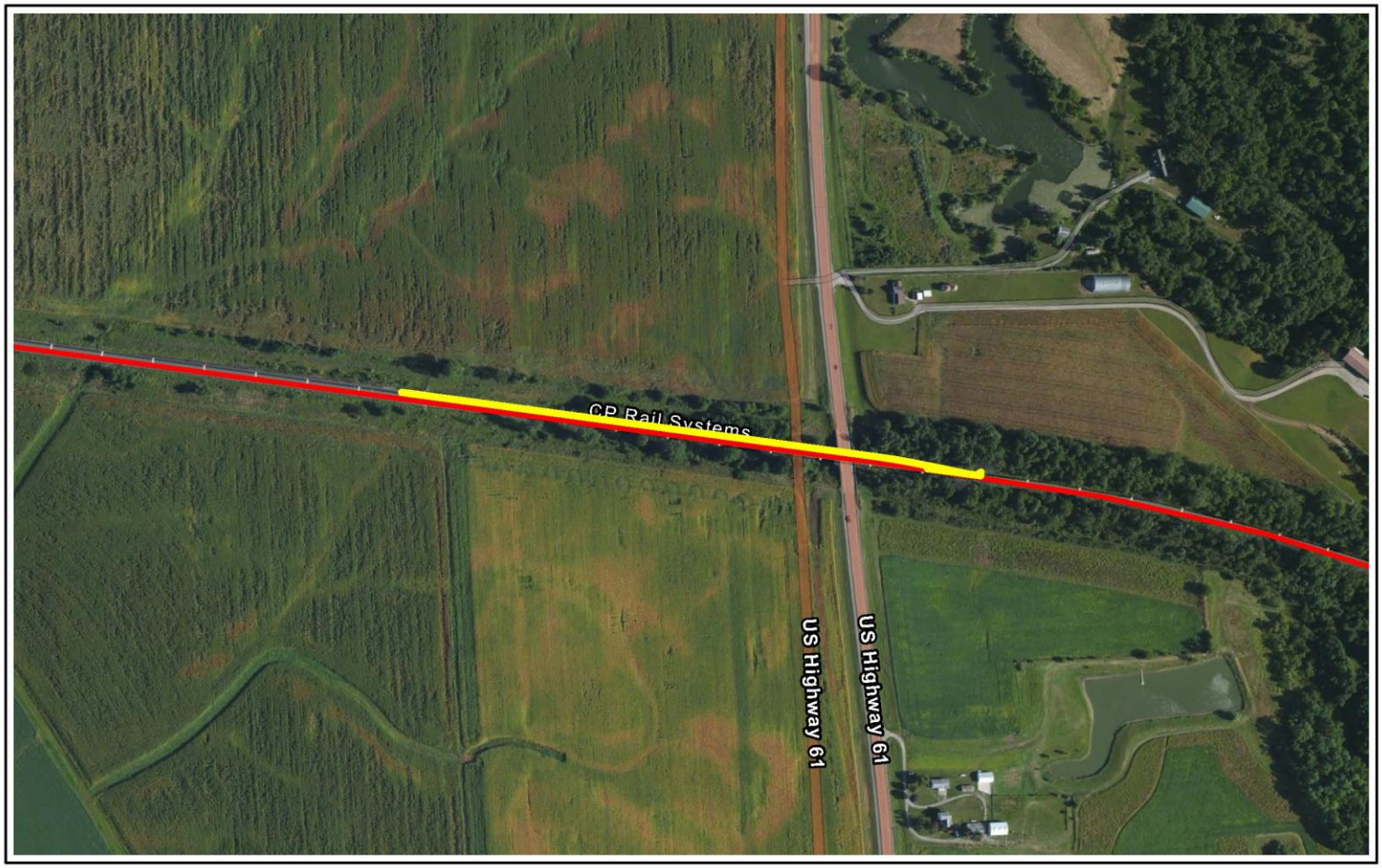
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Camanche
Clinton, Iowa | Map 2 of 2



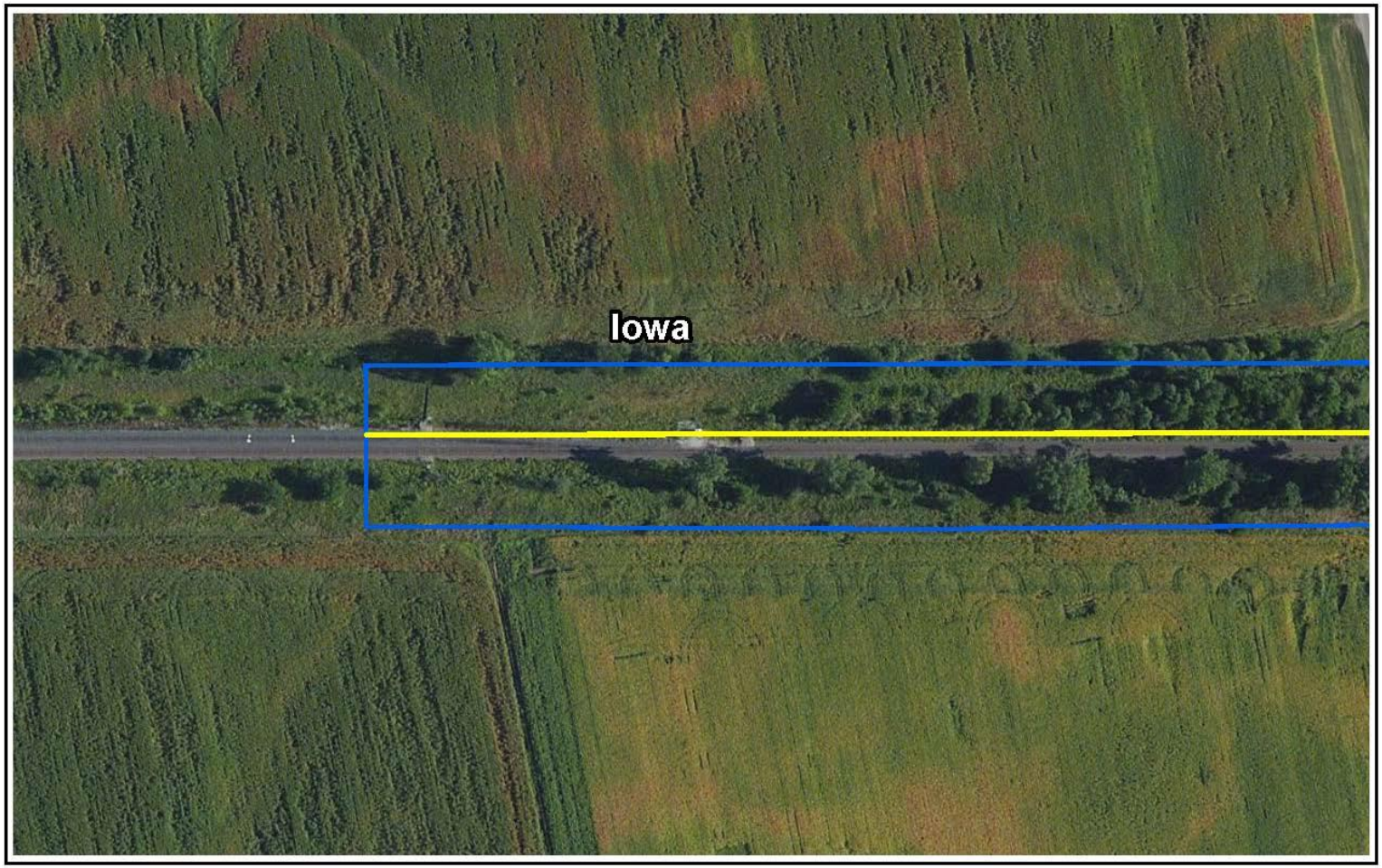
Capital Improvement Project Location
Canadian Pacific Rail Lines
Kansas City Southern Rail Lines
Canadian Pacific Trackage Rights
Kansas City Southern Trackage Rights

N
0
1,000
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Project Letts
Louisa, Iowa

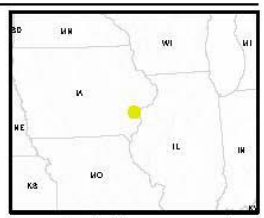


Capital Improvement Location
Existing Right-of-Way

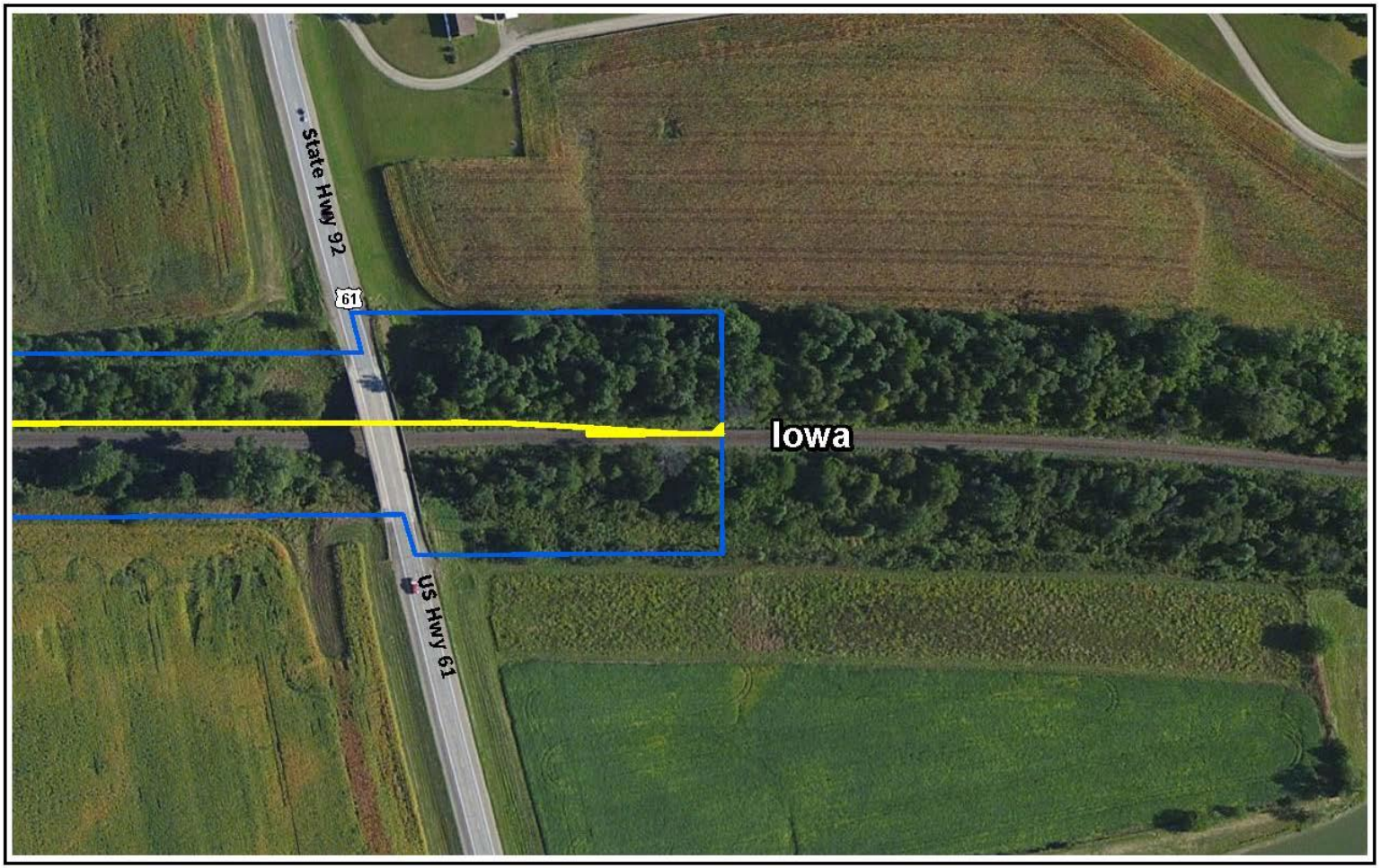
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0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Letts
Louisa, Iowa | Map 1 of 2

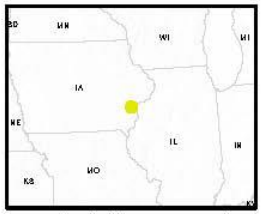


Capital Improvement Location
Existing Right-of-Way

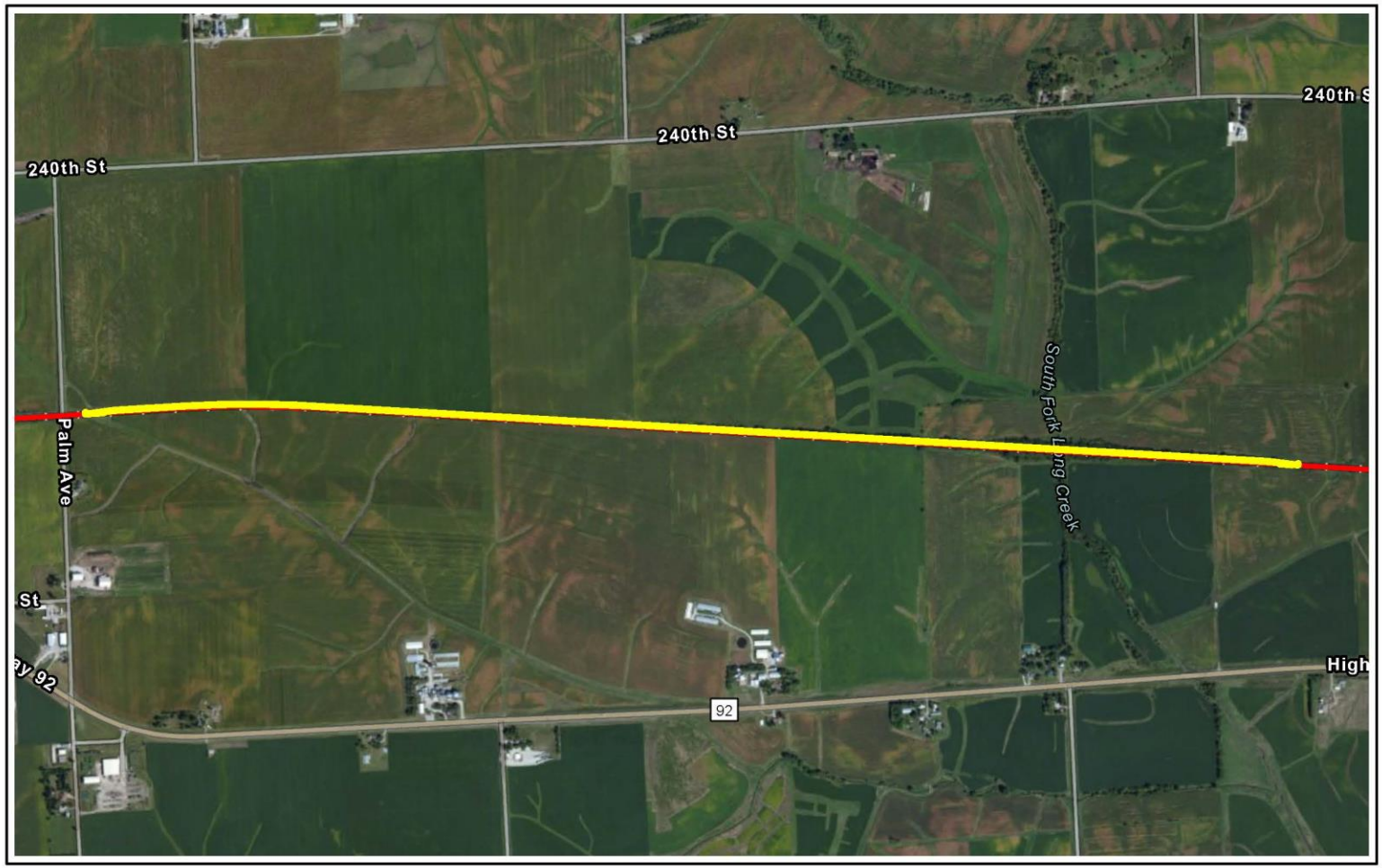


0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Letts
Louisa, Iowa | Map 2 of 2

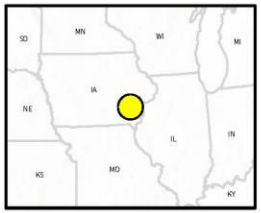


Capital Improvement Project Location
Canadian Pacific Rail Lines
Kansas City Southern Rail Lines
Canadian Pacific Trackage Rights
Kansas City Southern Trackage Rights

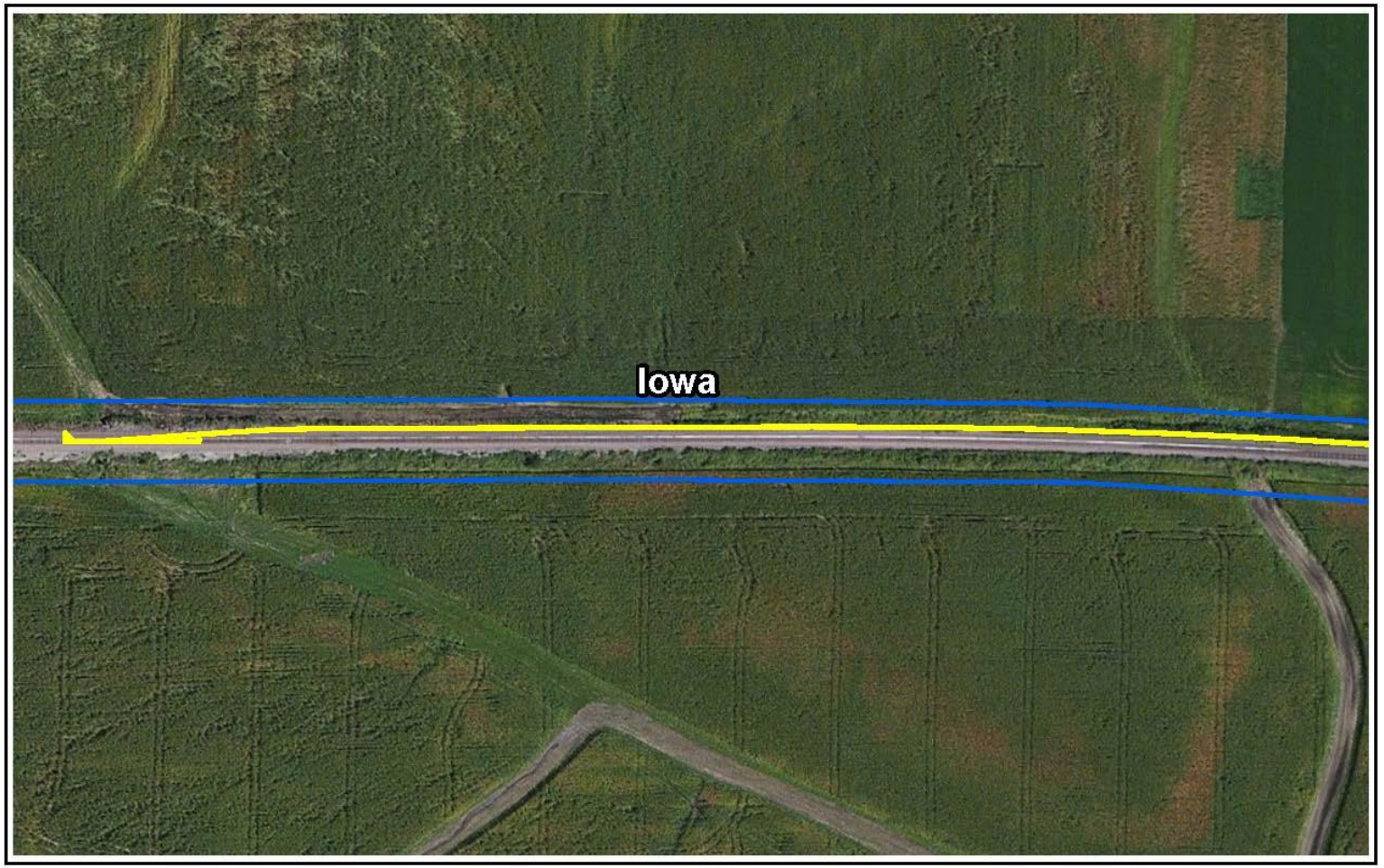
N

0 1,000 2,000 3,000 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Project MP 255 (Washington)
Washington, Iowa

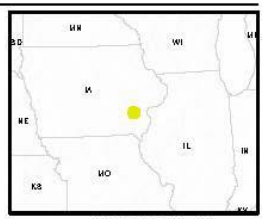


Capital Improvement Location
Existing Right-of-Way

N

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 255 (Washington)
Washington, Iowa | Map 1 of 8

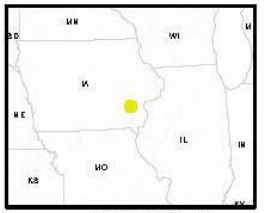


Capital Improvement Location

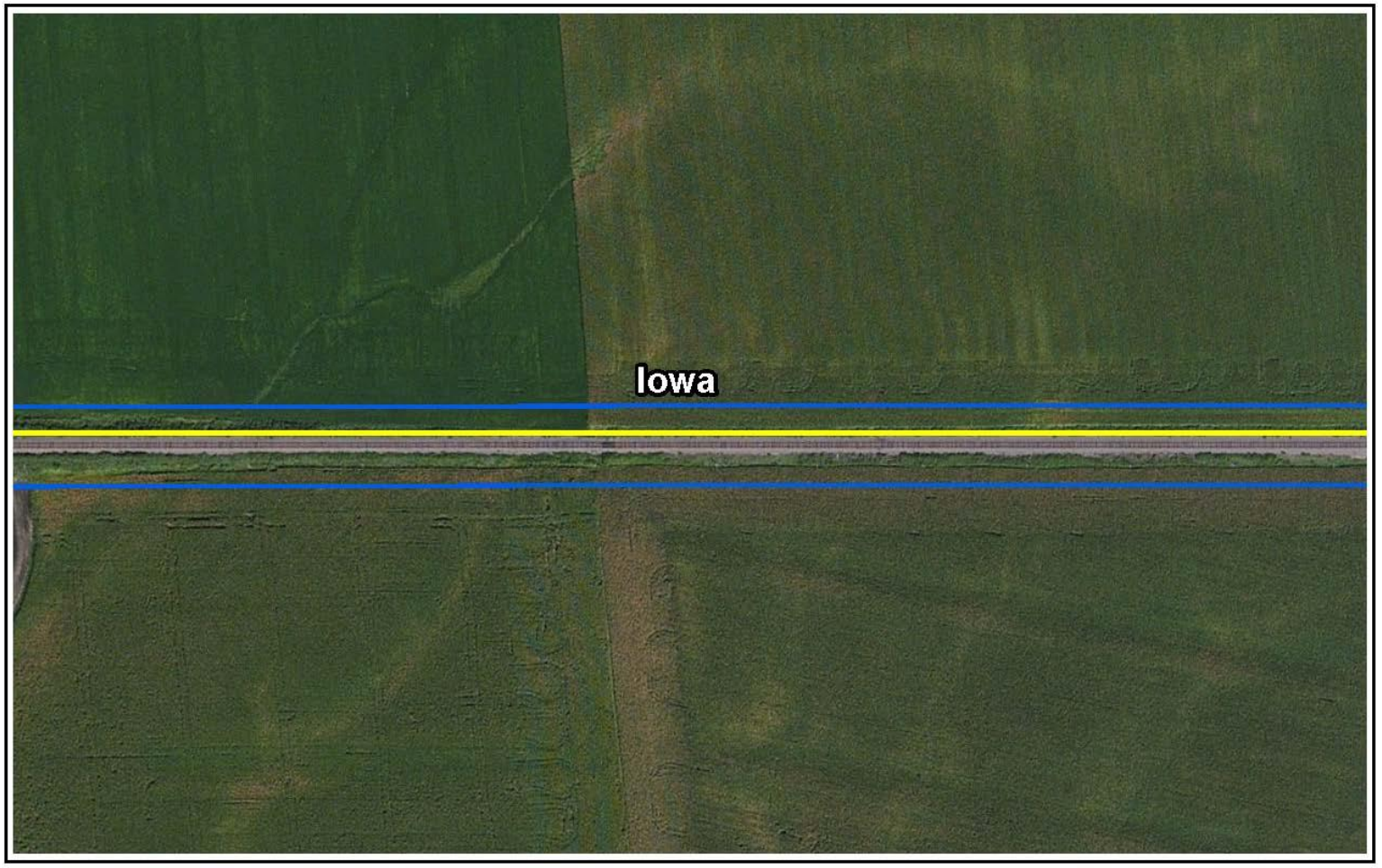
Existing Right-of-Way



Source: FRA, CP, ArcGIS Online



Capital Improvement MP 255 (Washington)
Washington, Iowa | Map 2 of 8

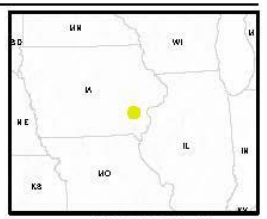


Capital Improvement Location
Existing Right-of-Way

N

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 255 (Washington)
Washington, Iowa | Map 3 of 8

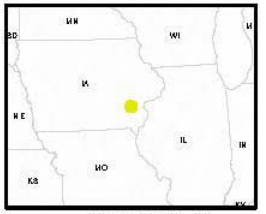


Capital Improvement Location
Existing Right-of-Way

N

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 255 (Washington)
Washington, Iowa | Map 4 of 8

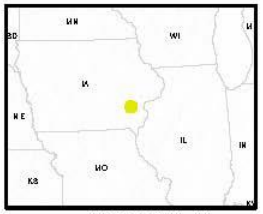


Capital Improvement Location
Existing Right-of-Way

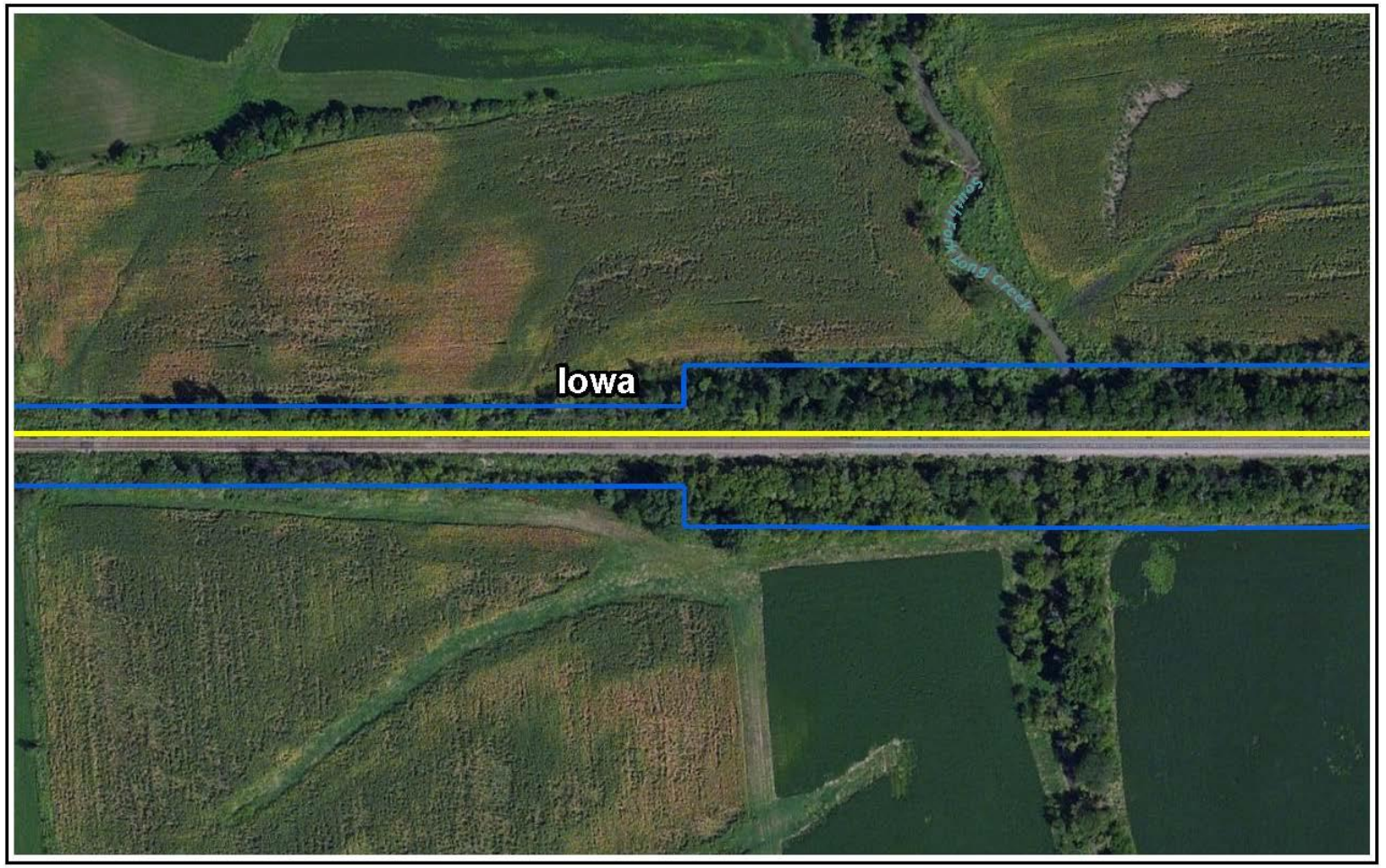
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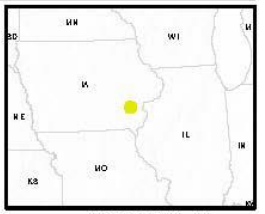
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Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 255 (Washington)
Washington, Iowa | Map 5 of 8





Capital Improvement MP 255 (Washington)
Washington, Iowa | Map 6 of 8

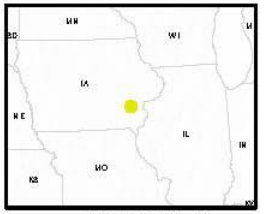


Capital Improvement Location
Existing Right-of-Way

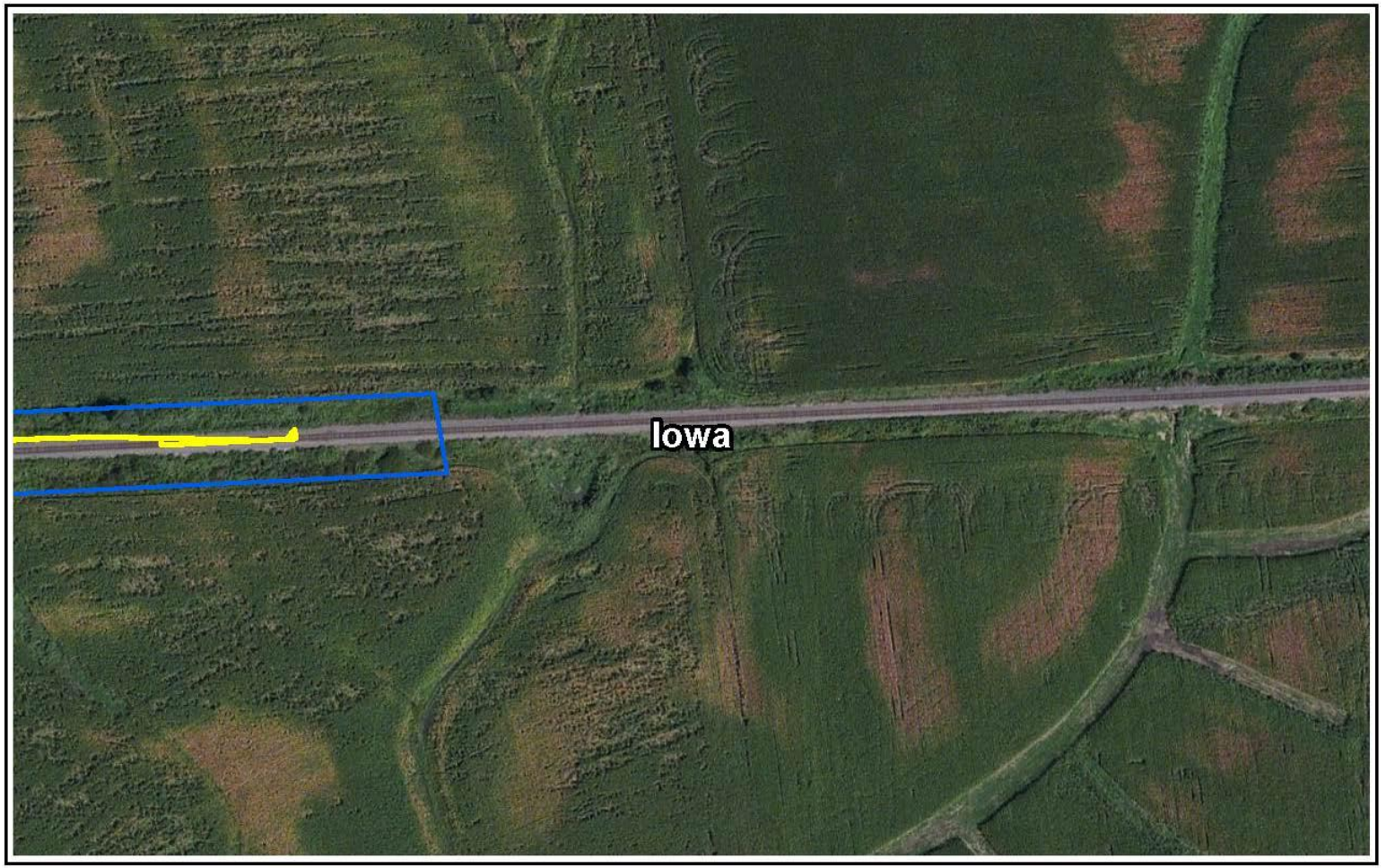
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0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 255 (Washington)
Washington, Iowa | Map 7 of 8

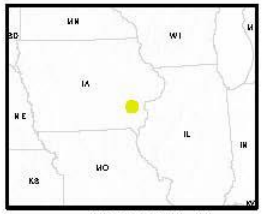


Capital Improvement Location
Existing Right-of-Way

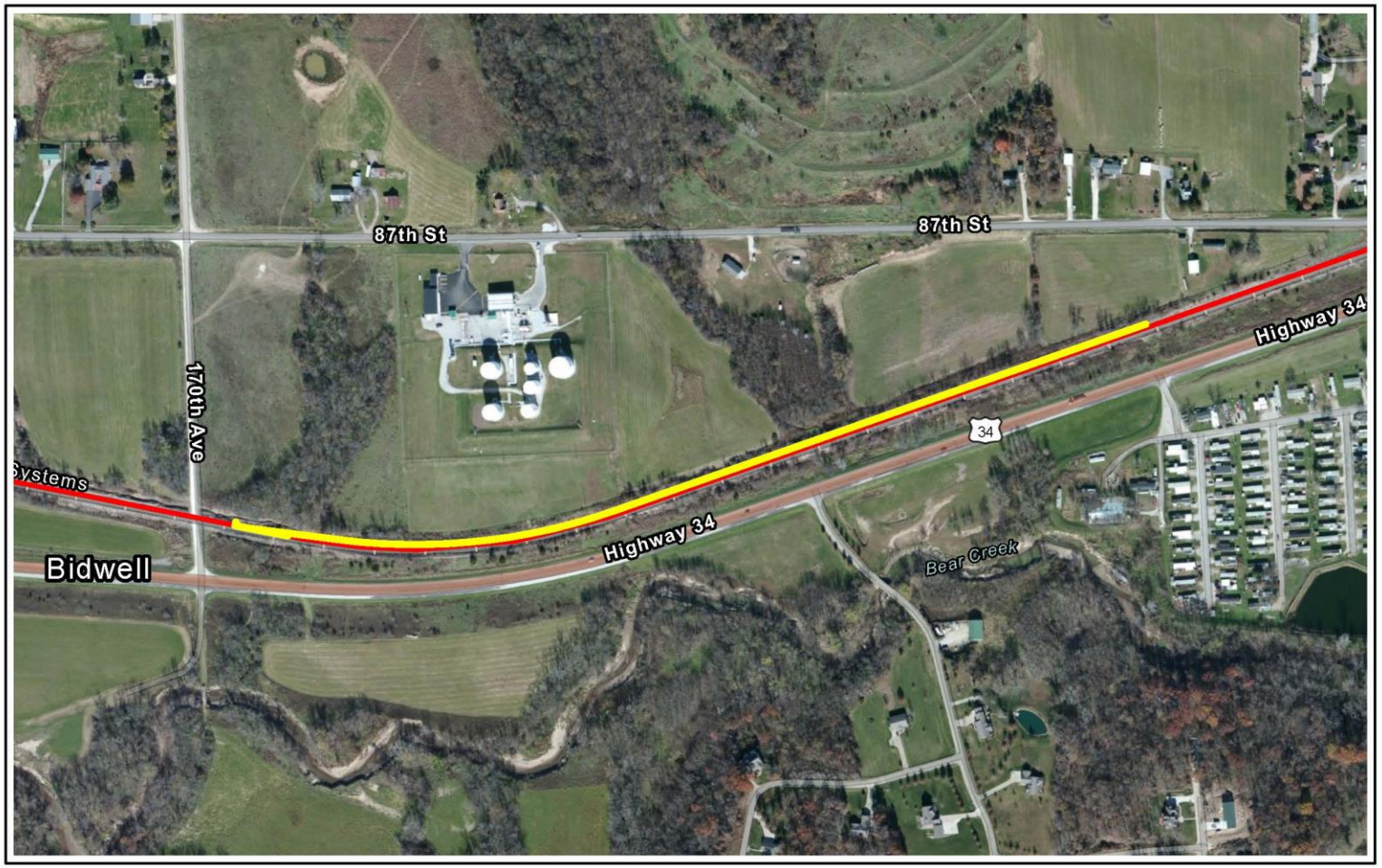
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0 200 400
Feet

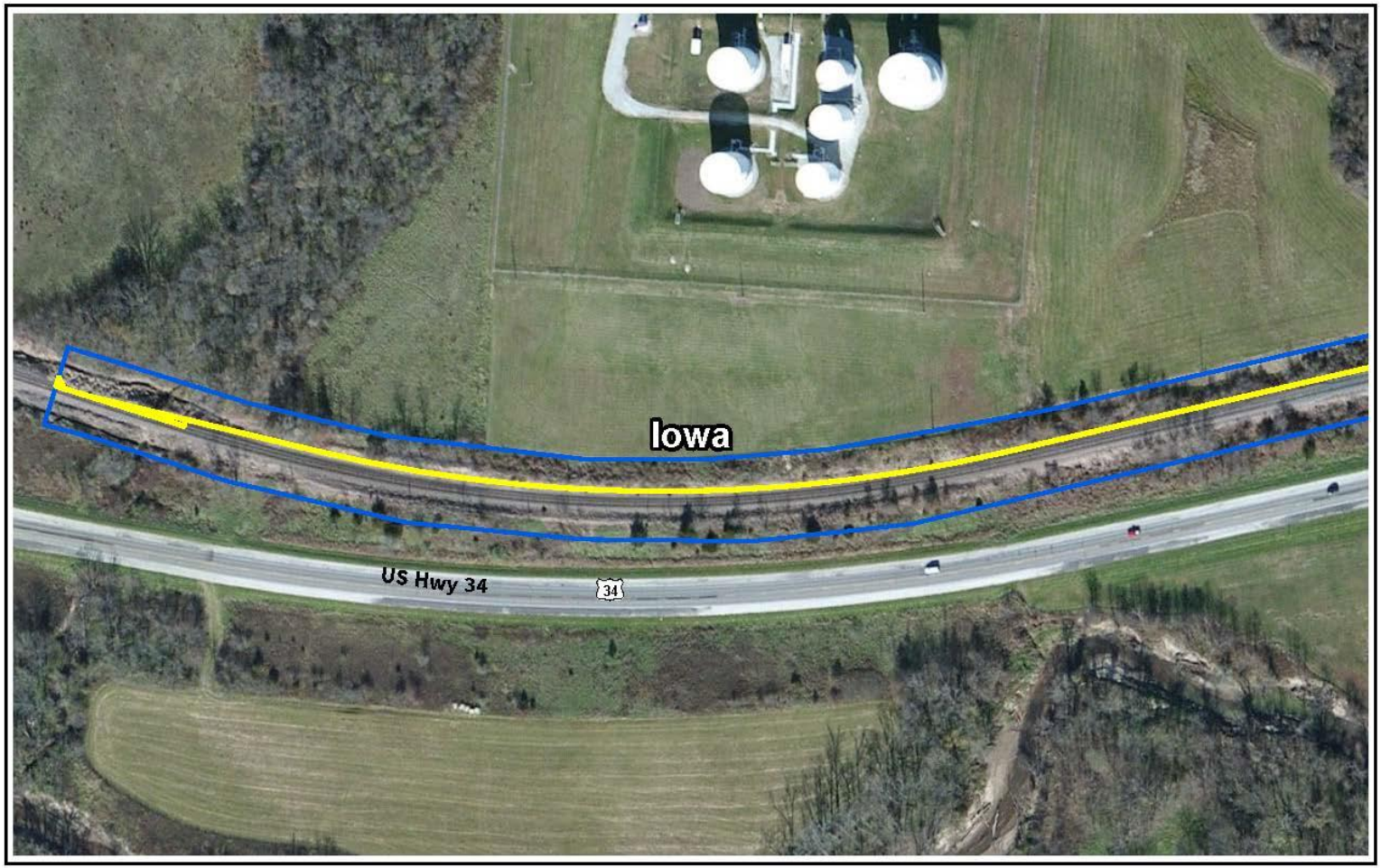
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Capital Improvement MP 255 (Washington)
Washington, Iowa | Map 8 of 8



Capital Improvement Project Ottumwa
Wapello, Iowa

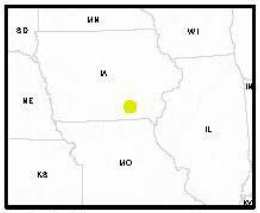


Capital Improvement Location
Existing Right-of-Way



0 200 400
Feet

Source: FRA, CP, ArcGIS Online

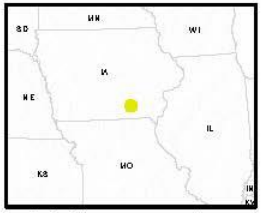


Capital Improvement Ottumwa
Wapello, Iowa | Map 1 of 2



Capital Improvement Location

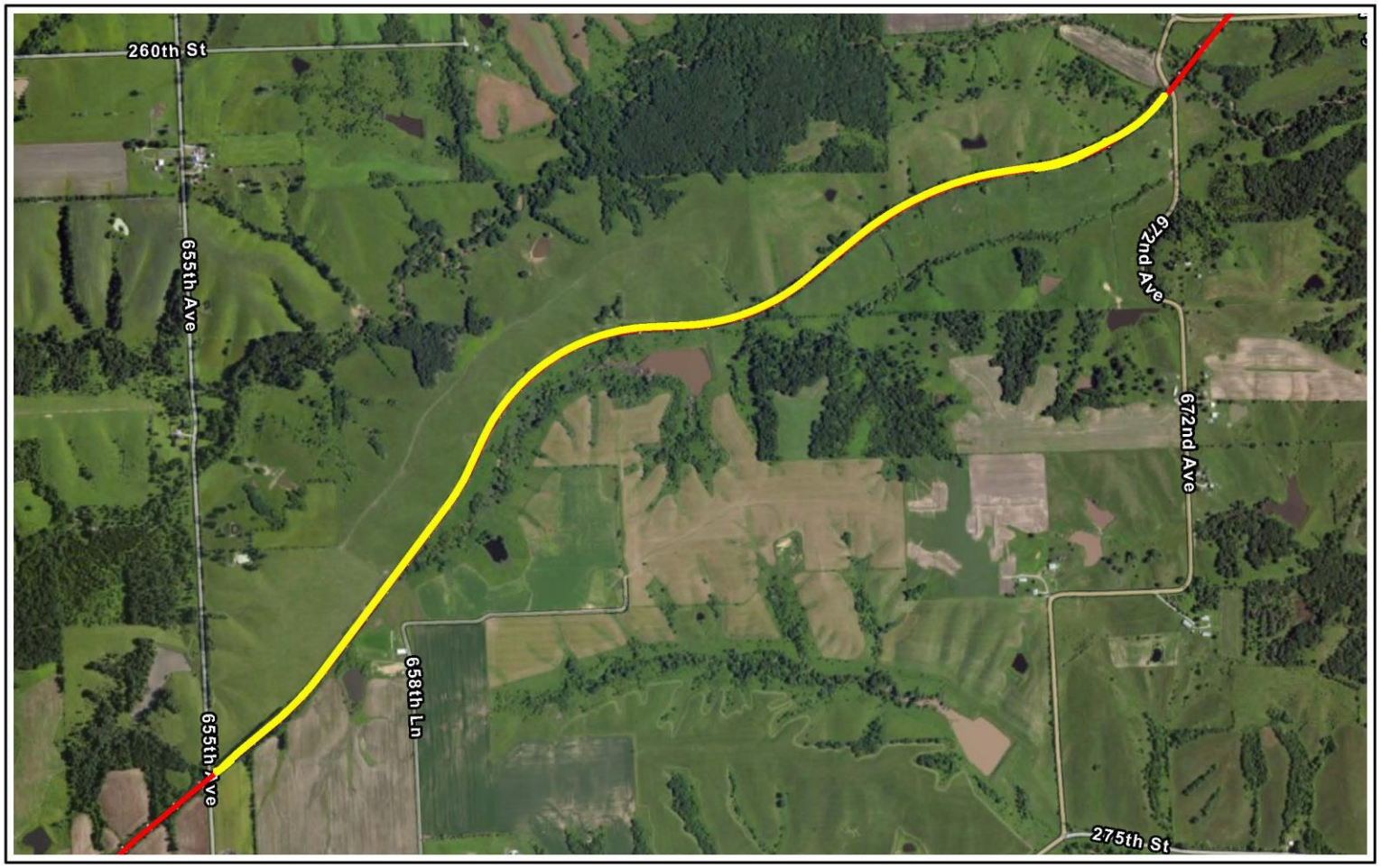
Existing Right-of-Way



0 200 400 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Ottumwa
Wapello, Iowa | Map 2 of 2



Capital Improvement Project Location
Canadian Pacific Rail Lines
Kansas City Southern Rail Lines
Canadian Pacific Trackage Rights
Kansas City Southern Trackage Rights

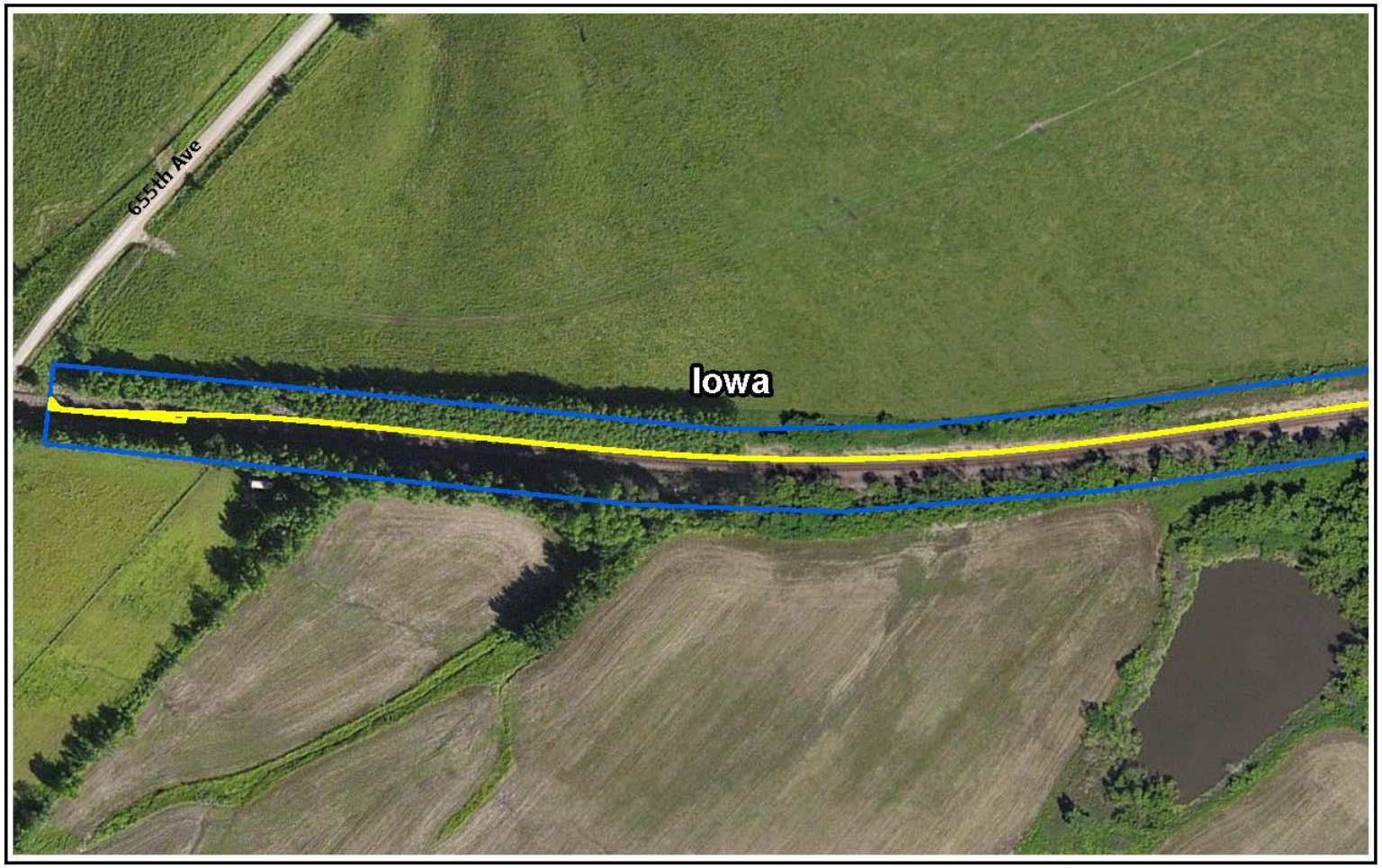
N

0 1,000 2,000 3,000 Feet

Source: FRA, CP, ArcGIS Online



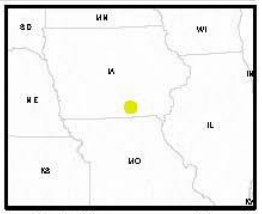
Capital Improvement Project Moravia
Monroe, Iowa



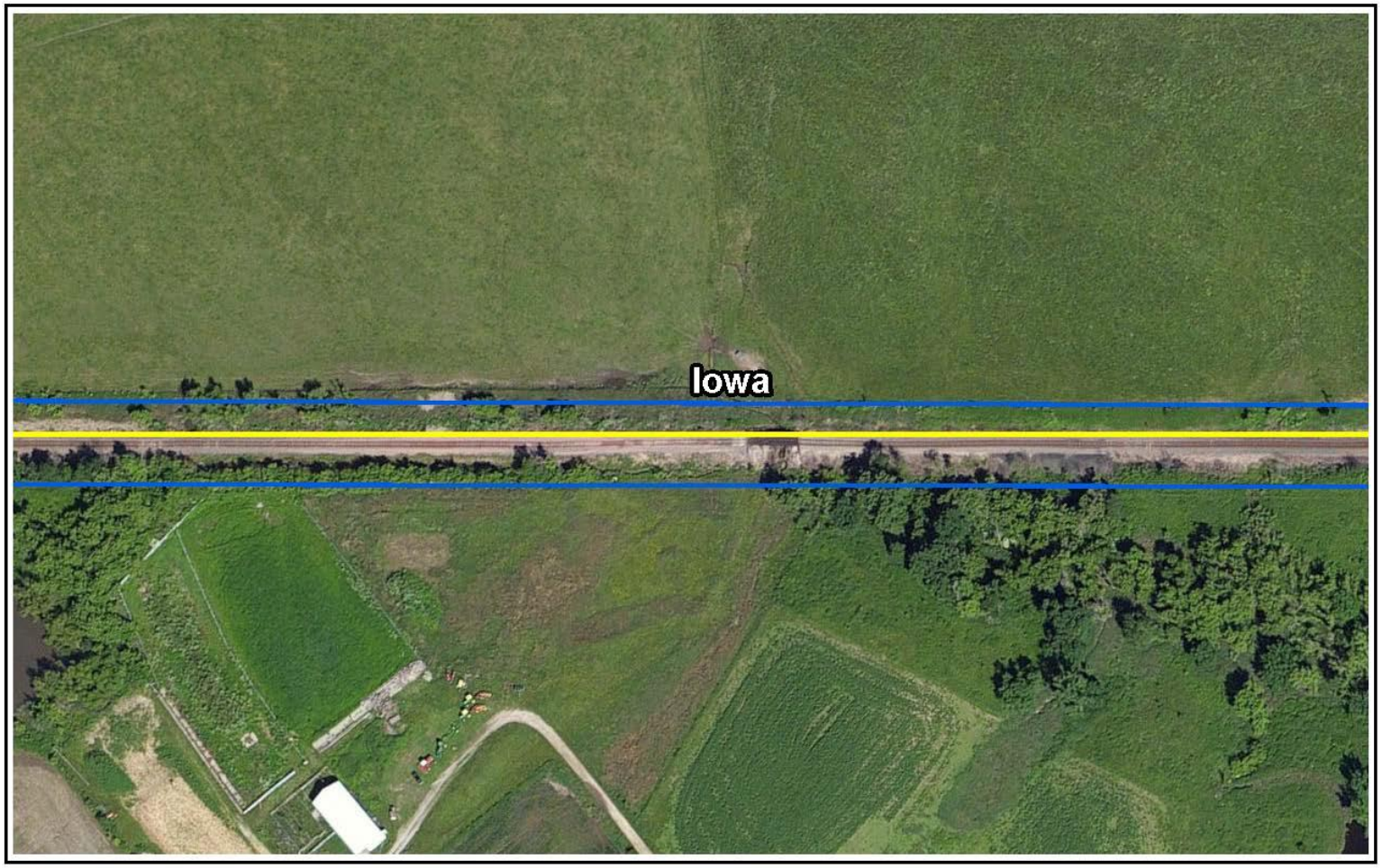
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



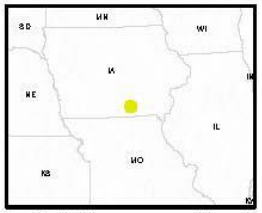
Capital Improvement Moravia
Monroe, Iowa | Map 1 of 7



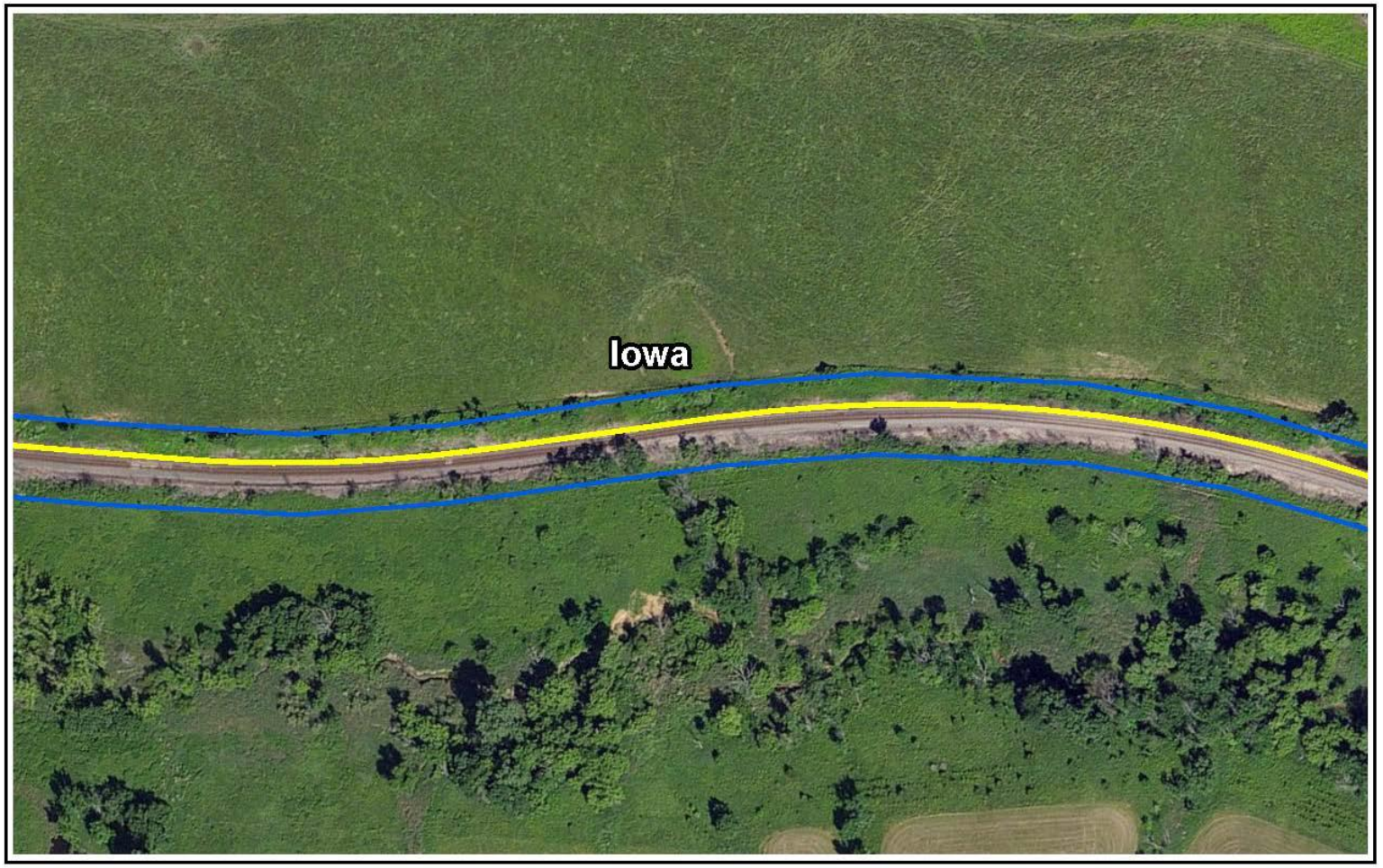
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



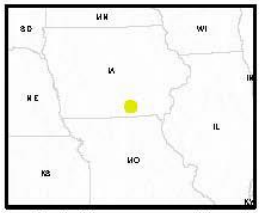
Capital Improvement Moravia
Monroe, Iowa | Map 2 of 7



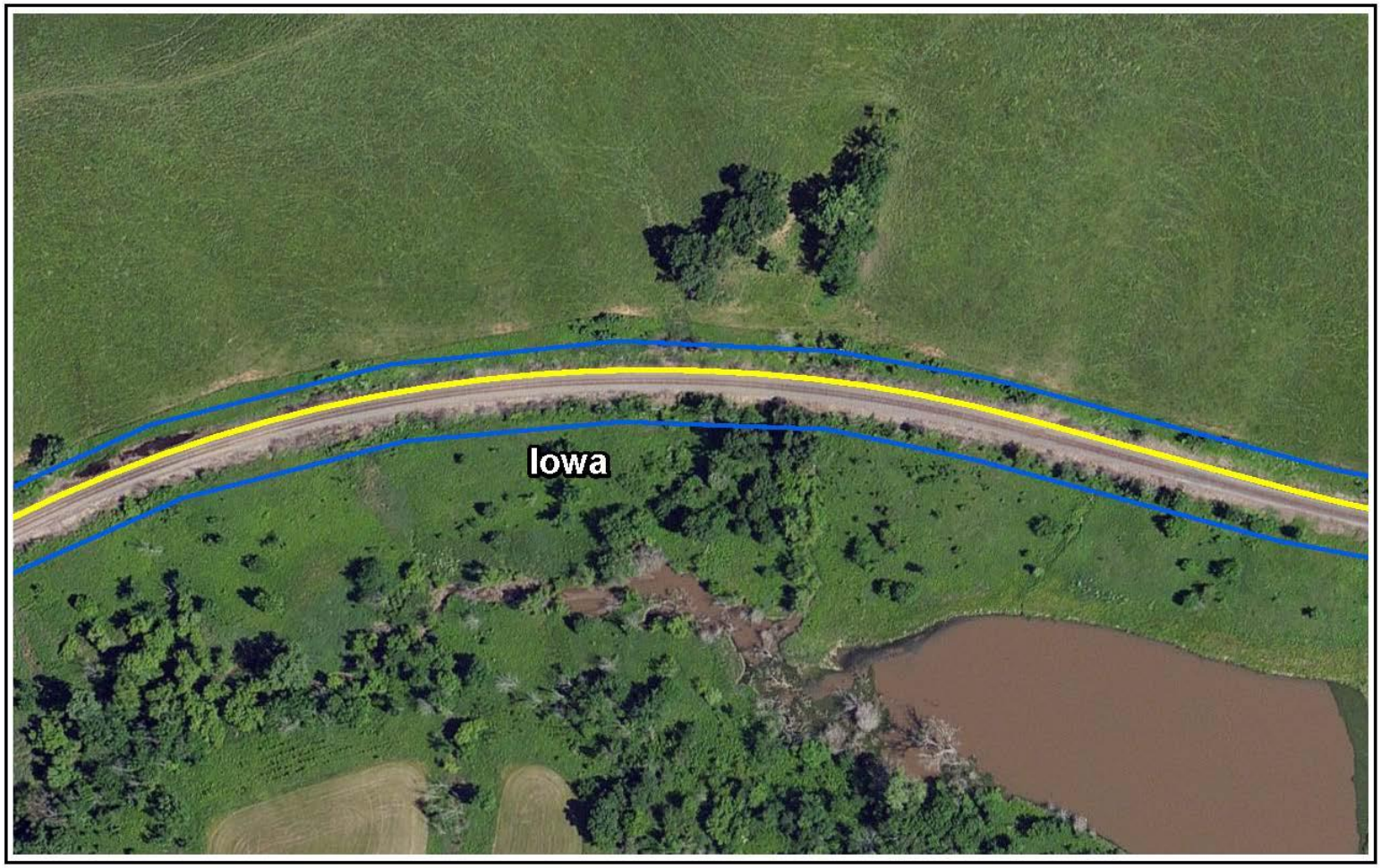
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



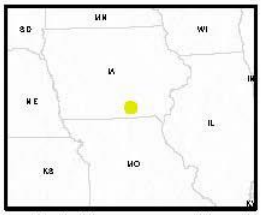
Capital Improvement Moravia
Monroe, Iowa | Map 3 of 7



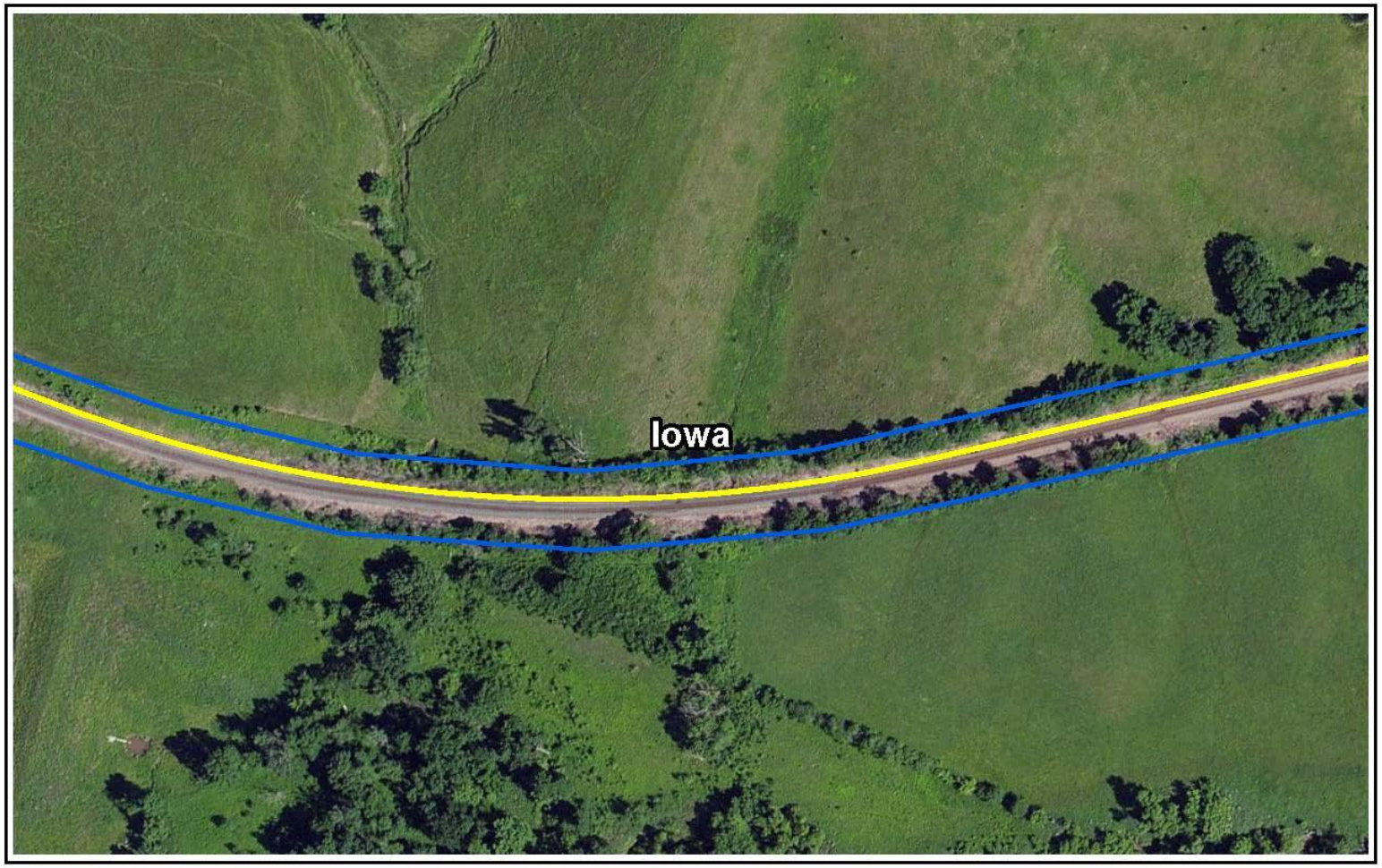
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



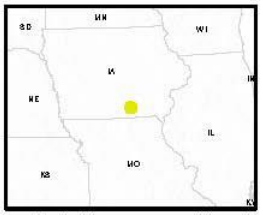
Capital Improvement Moravia
Monroe, Iowa | Map 4 of 7



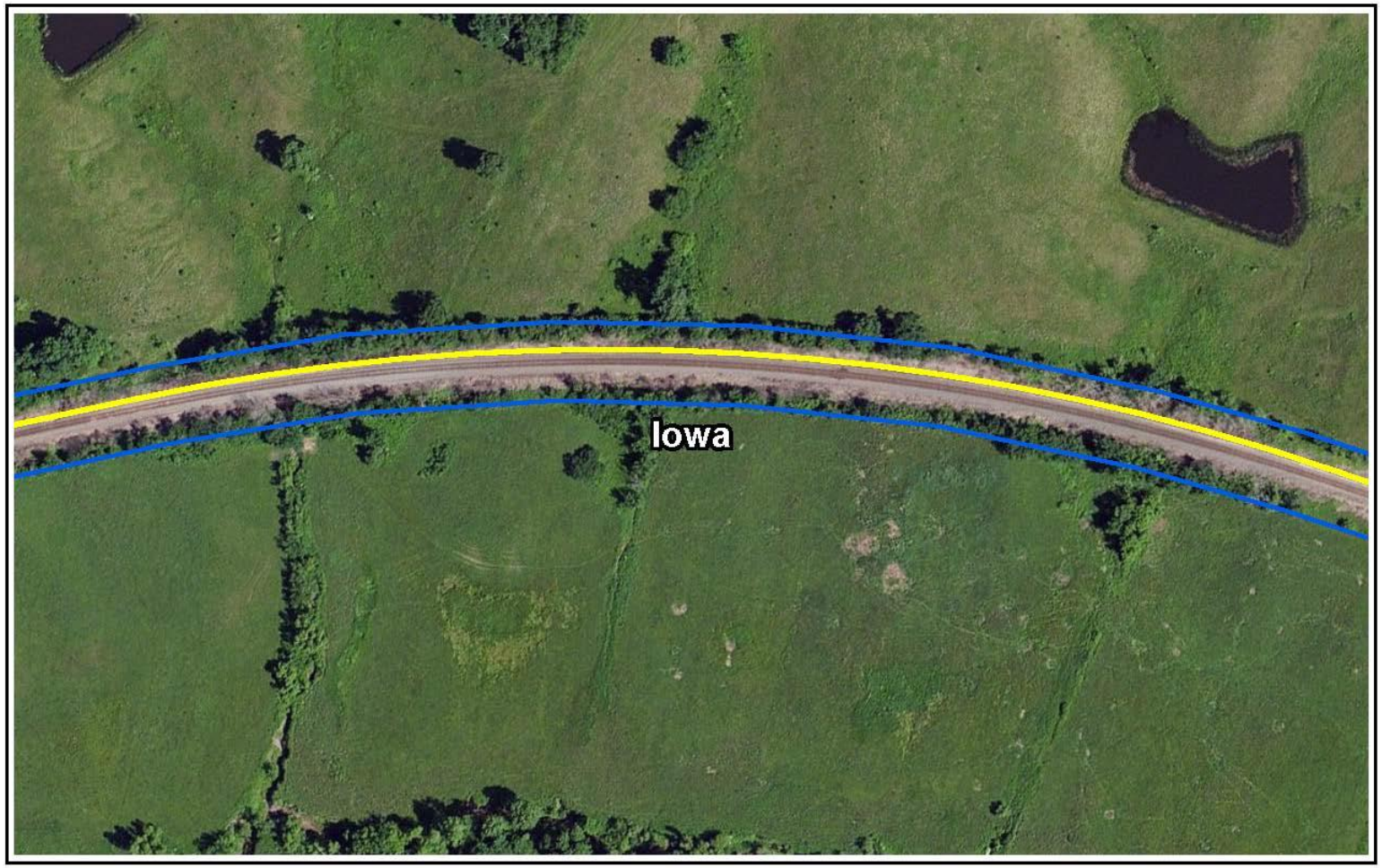
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



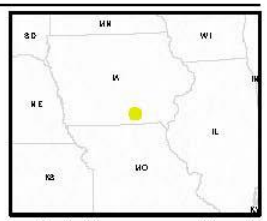
Capital Improvement Moravia
Monroe, Iowa | Map 5 of 7



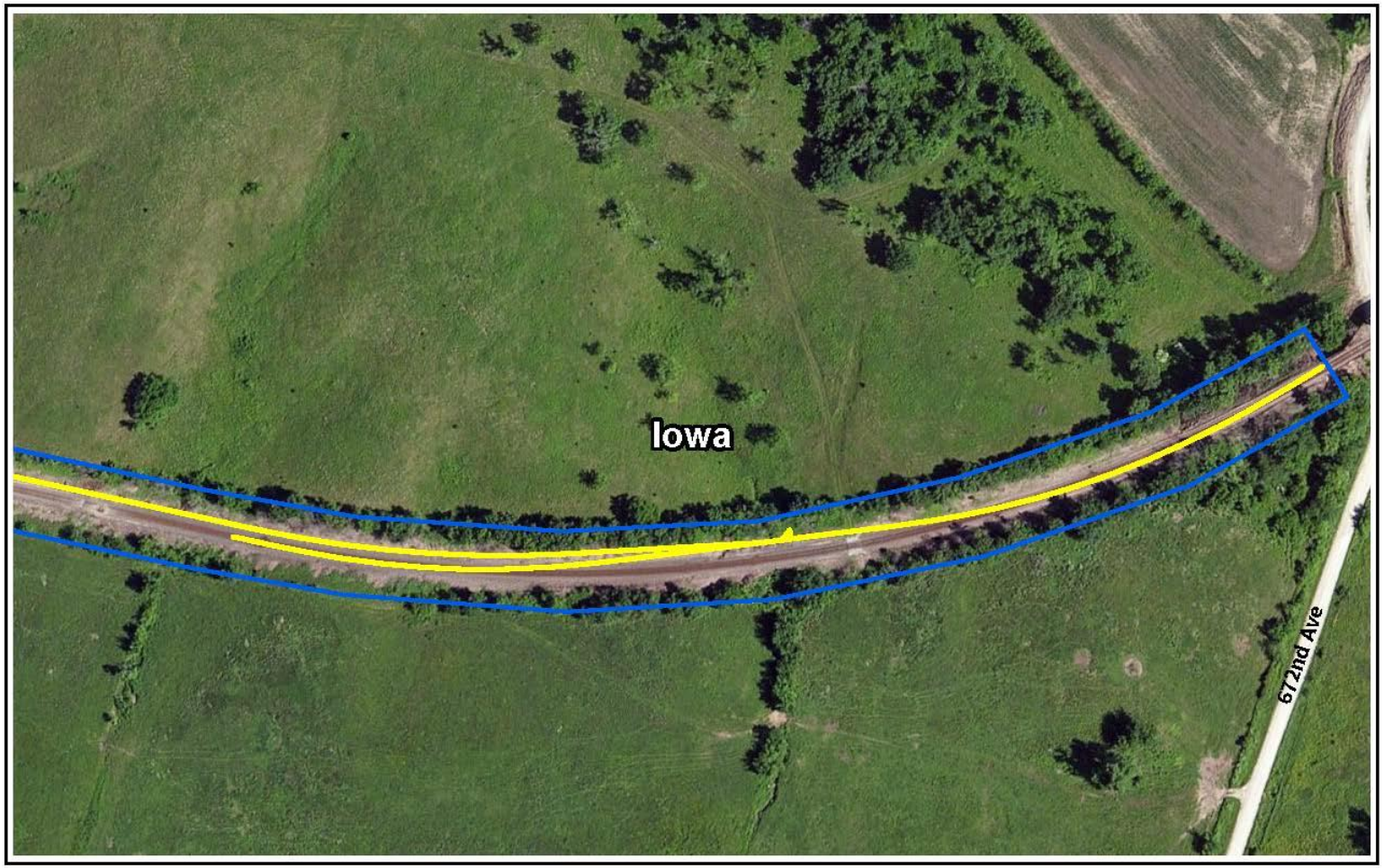
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

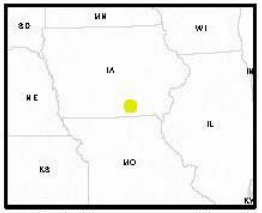
Source: FRA, CP, ArcGIS Online



Capital Improvement Moravia
Monroe, Iowa | Map 6 of 7



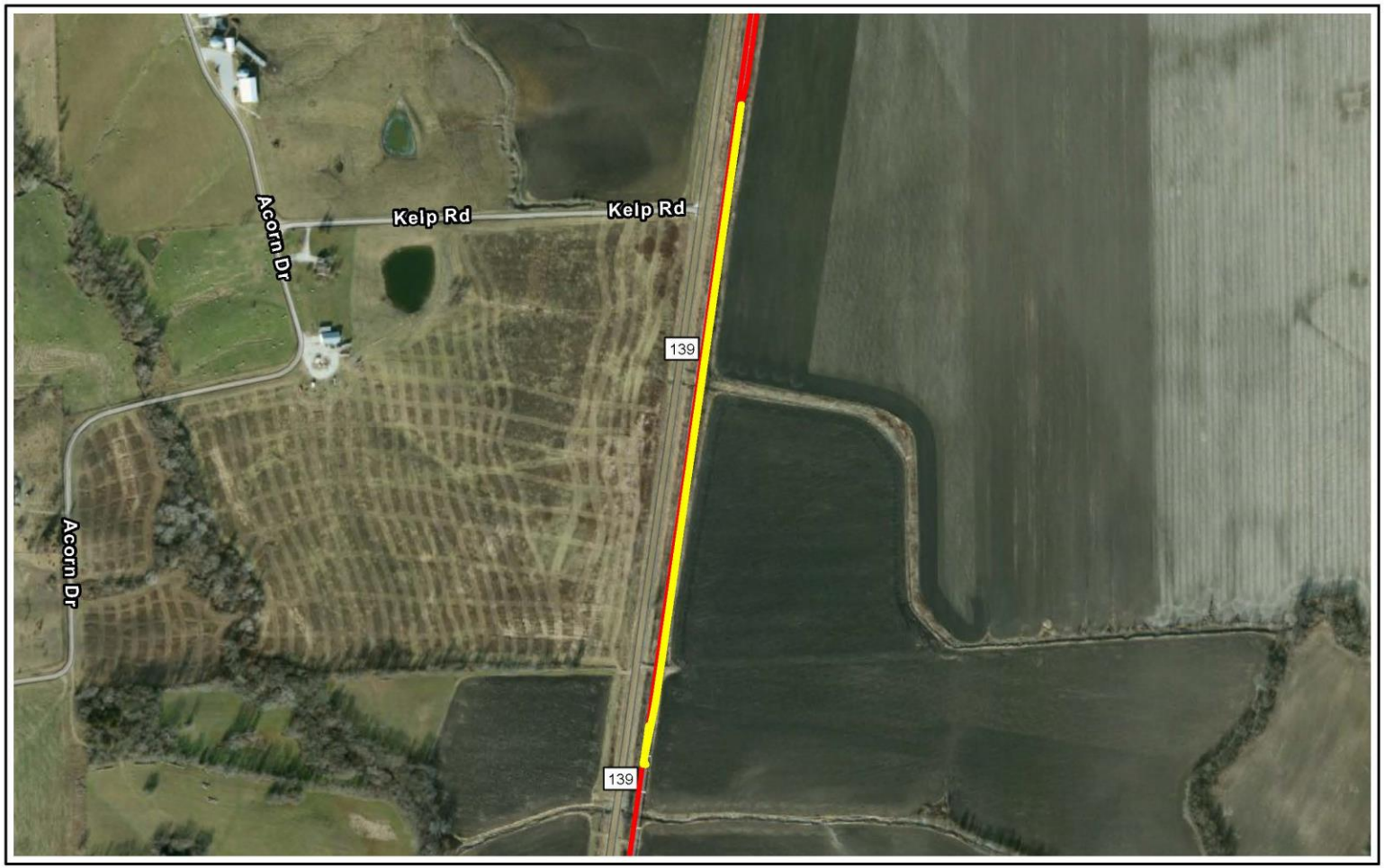
Capital Improvement Location
Existing Right-of-Way



0 200 400 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Moravia
Monroe, Iowa | Map 7 of 7



Capital Improvement Project Location
Canadian Pacific Rail Lines
Kansas City Southern Rail Lines
Canadian Pacific Trackage Rights
Kansas City Southern Trackage Rights

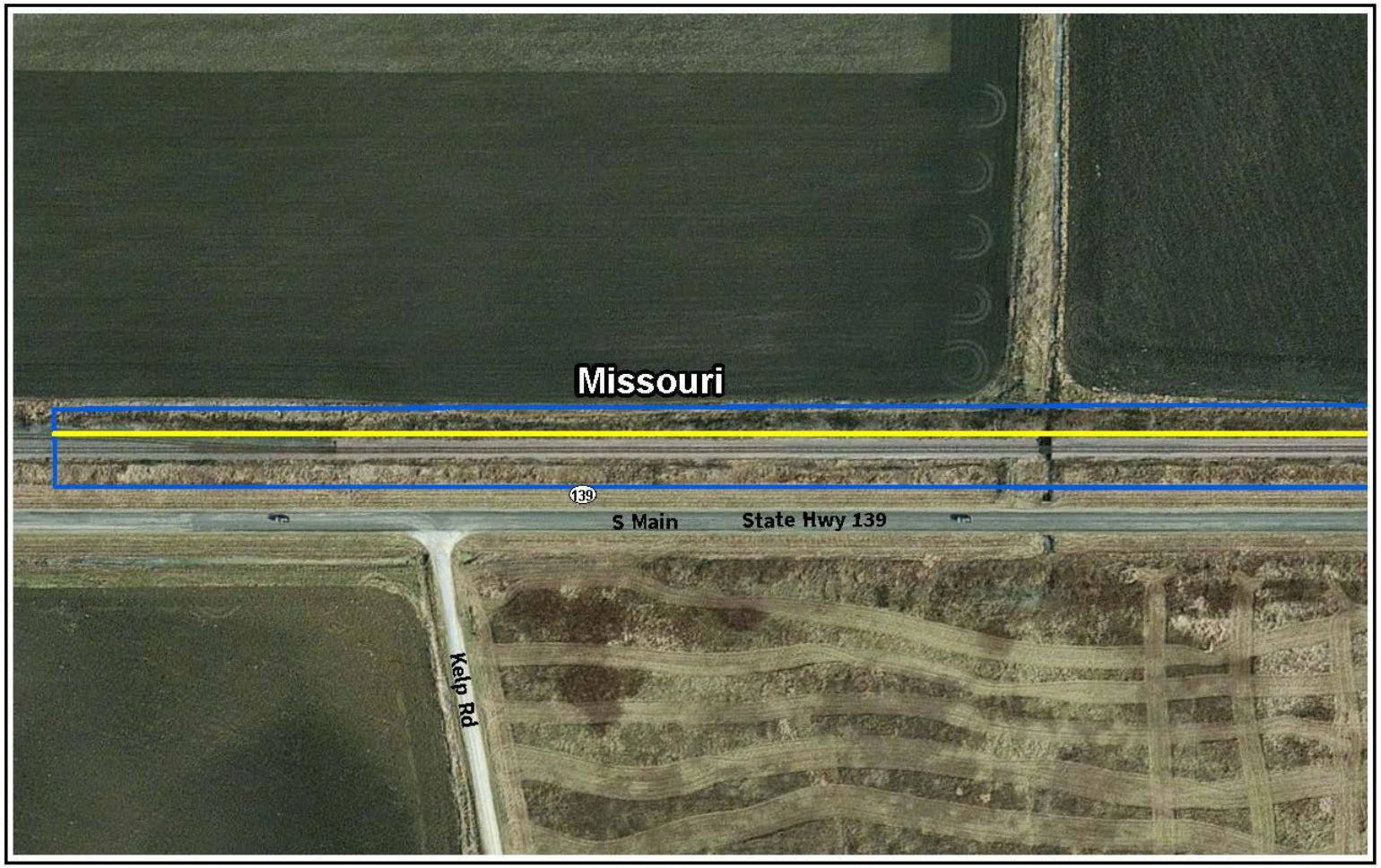
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0 1,000 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Project Newtown
Sullivan, Missouri

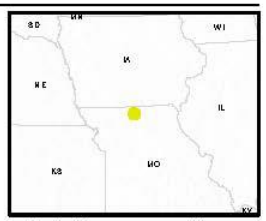


Capital Improvement Location

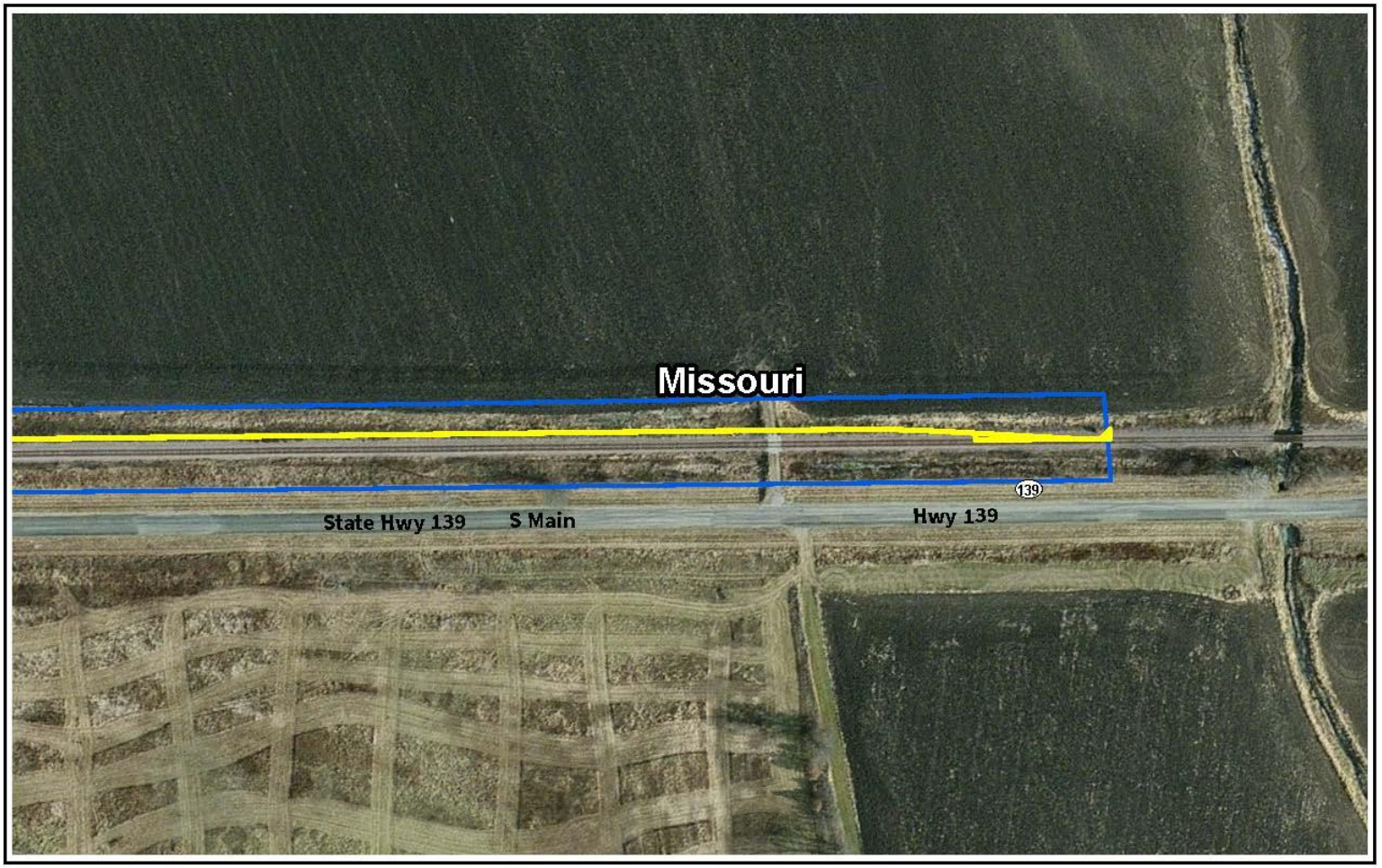
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Newtown
Sullivan, Missouri | Map 1 of 2

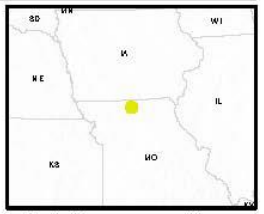


Capital Improvement Location

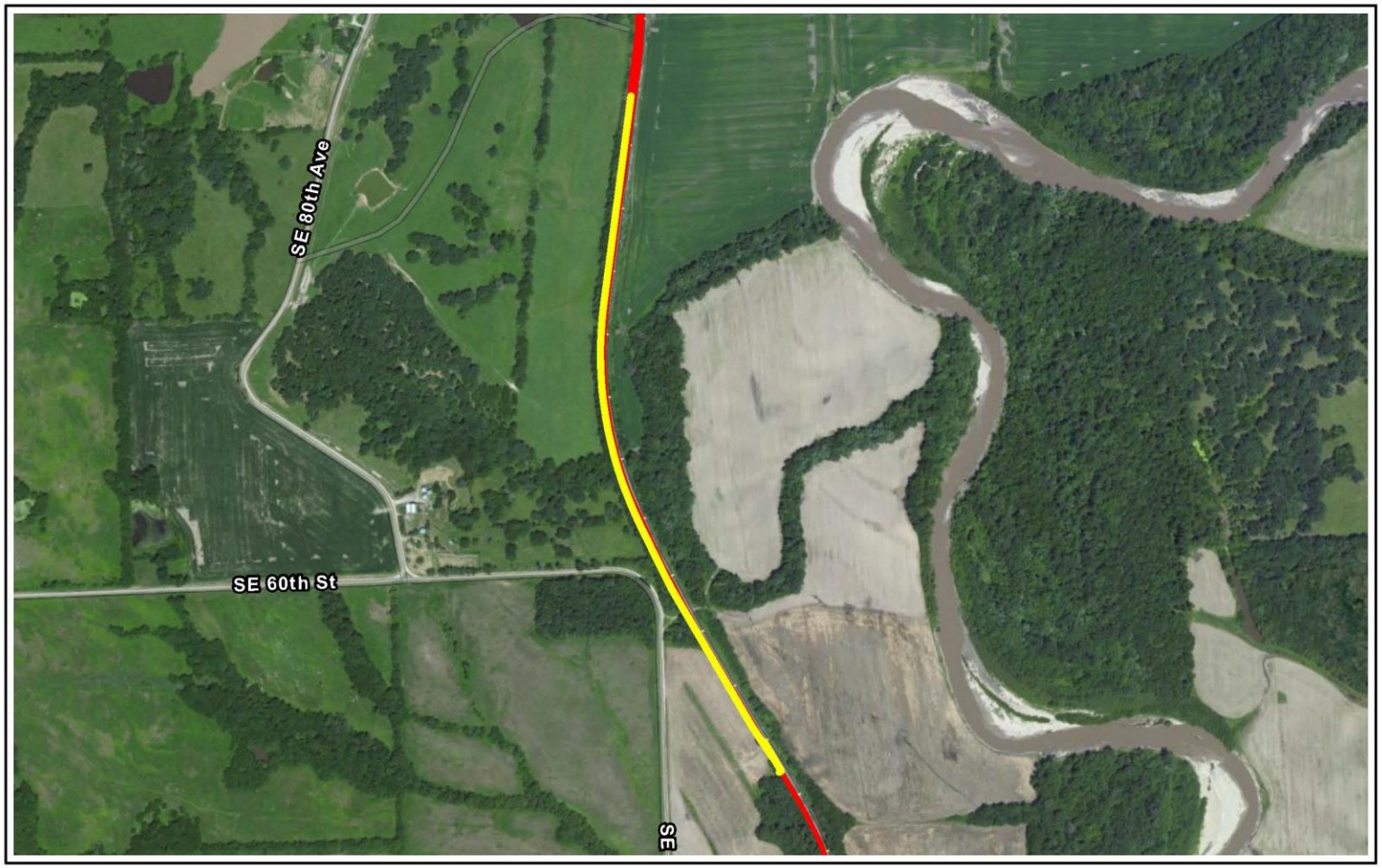
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Newtown
Sullivan, Missouri | Map 2 of 2



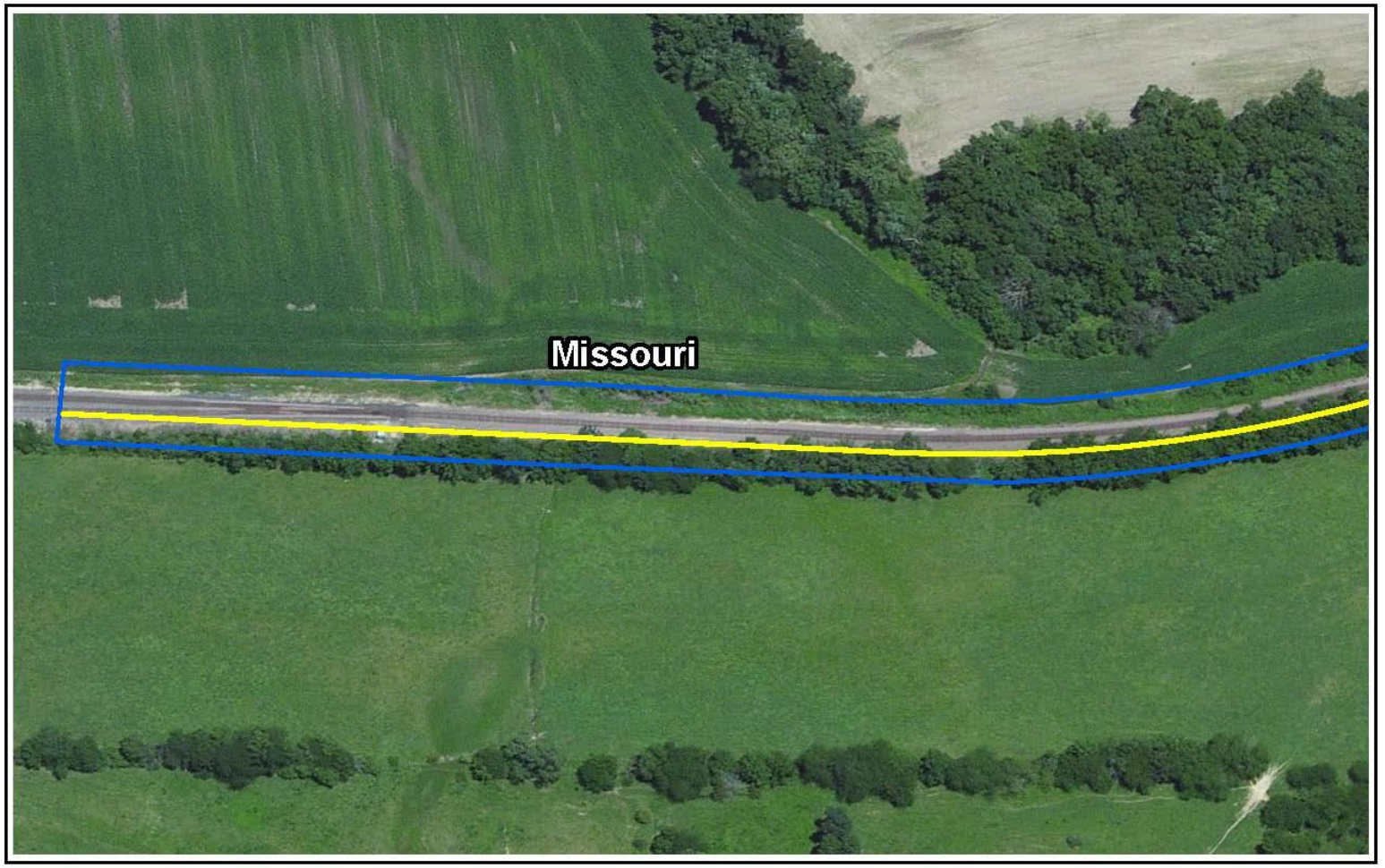
Capital Improvement Project Location
Canadian Pacific Rail Lines
Kansas City Southern Rail Lines
Canadian Pacific Trackage Rights
Kansas City Southern Trackage Rights

N
0
1,000
Feet

Source: FRA, CP, ArcGIS Online



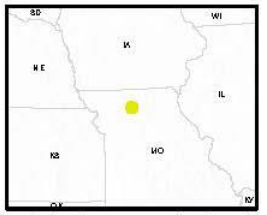
Capital Improvement Project Laredo
Grundy, Missouri



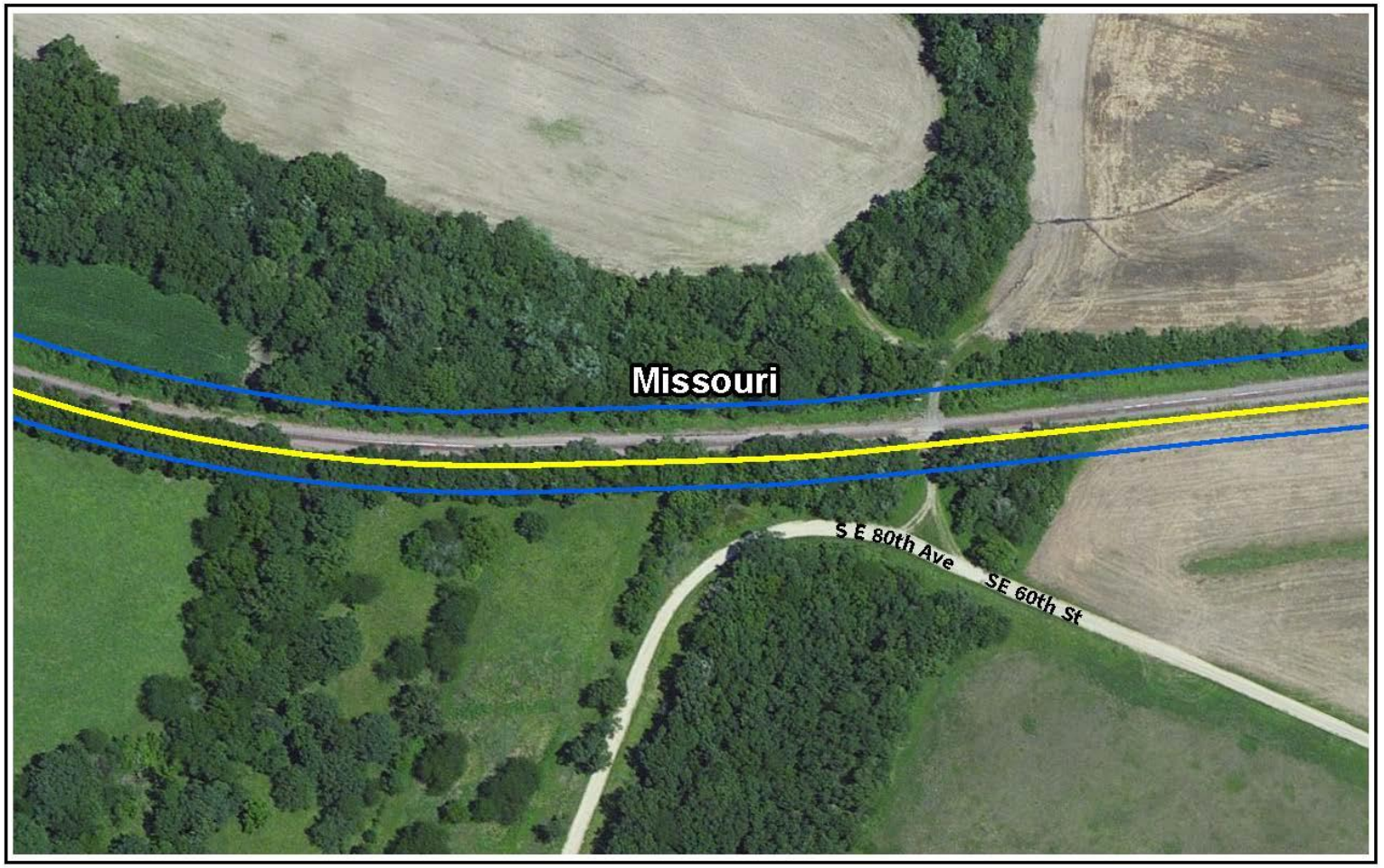
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



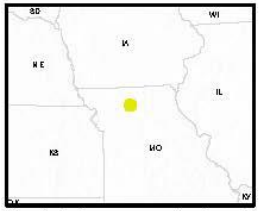
Capital Improvement Laredo
Grundy, Missouri | Map 1 of 3



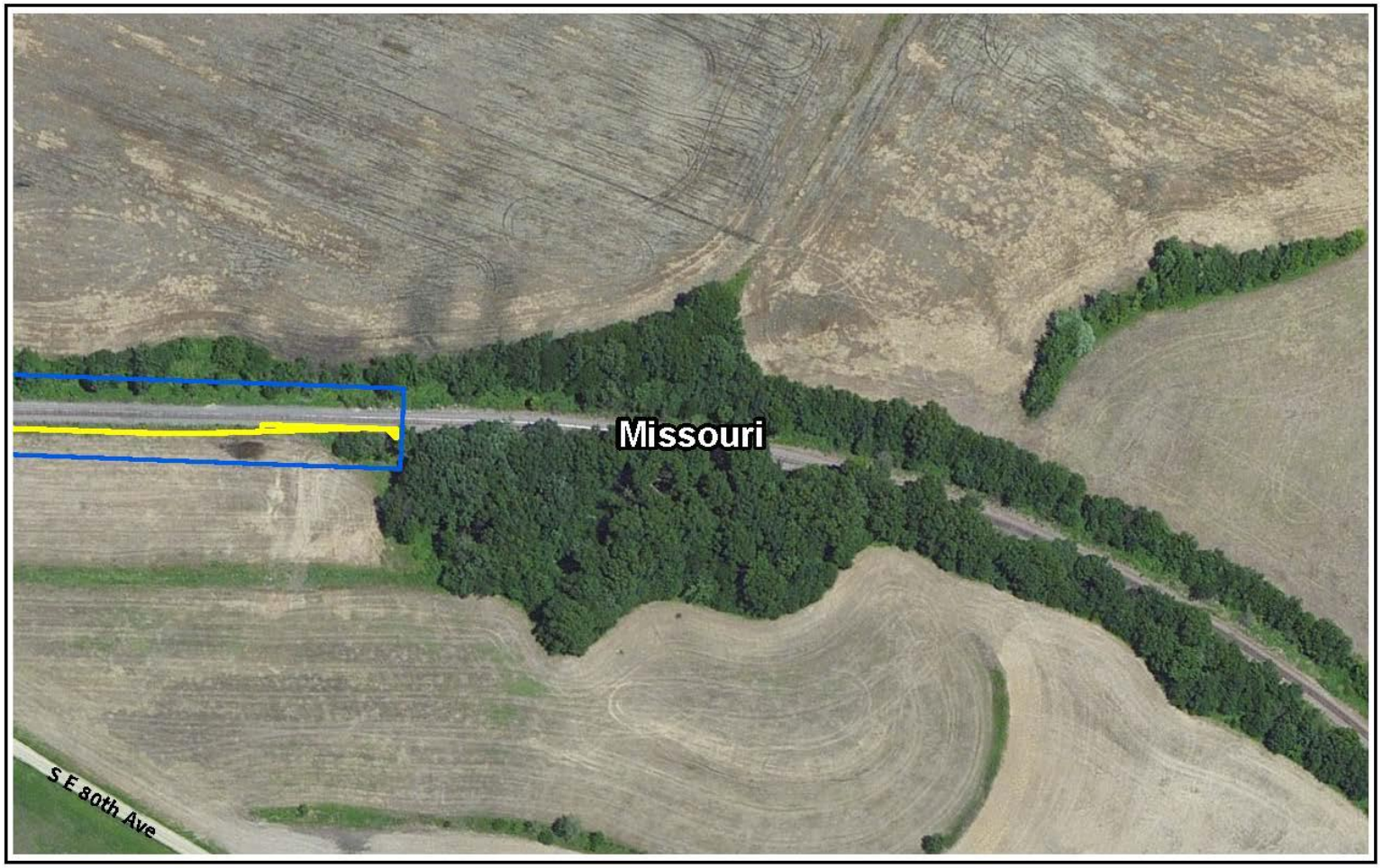
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



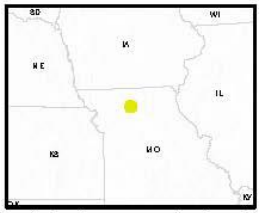
Capital Improvement Laredo
Grundy, Missouri | Map 2 of 3



Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Laredo
Grundy, Missouri | Map 3 of 3



Capital Improvement Project Location
Canadian Pacific Rail Lines
Kansas City Southern Rail Lines
Canadian Pacific Trackage Rights
Kansas City Southern Trackage Rights

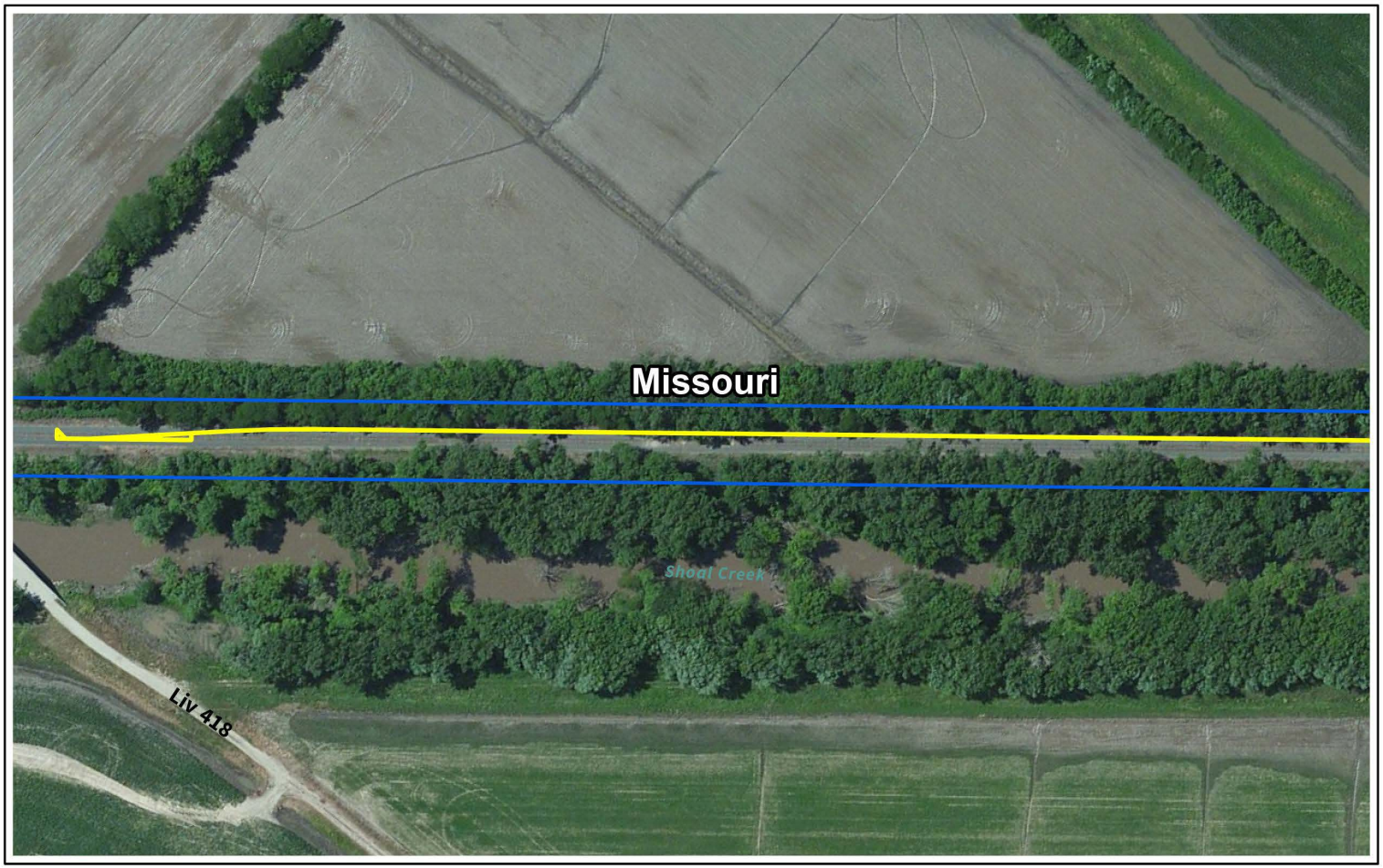
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0 1,000 2,000 3,000 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Project MP 431 (Dawn)
Livingston, Missouri

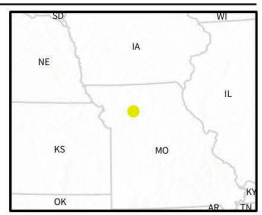


Capital Improvement Location

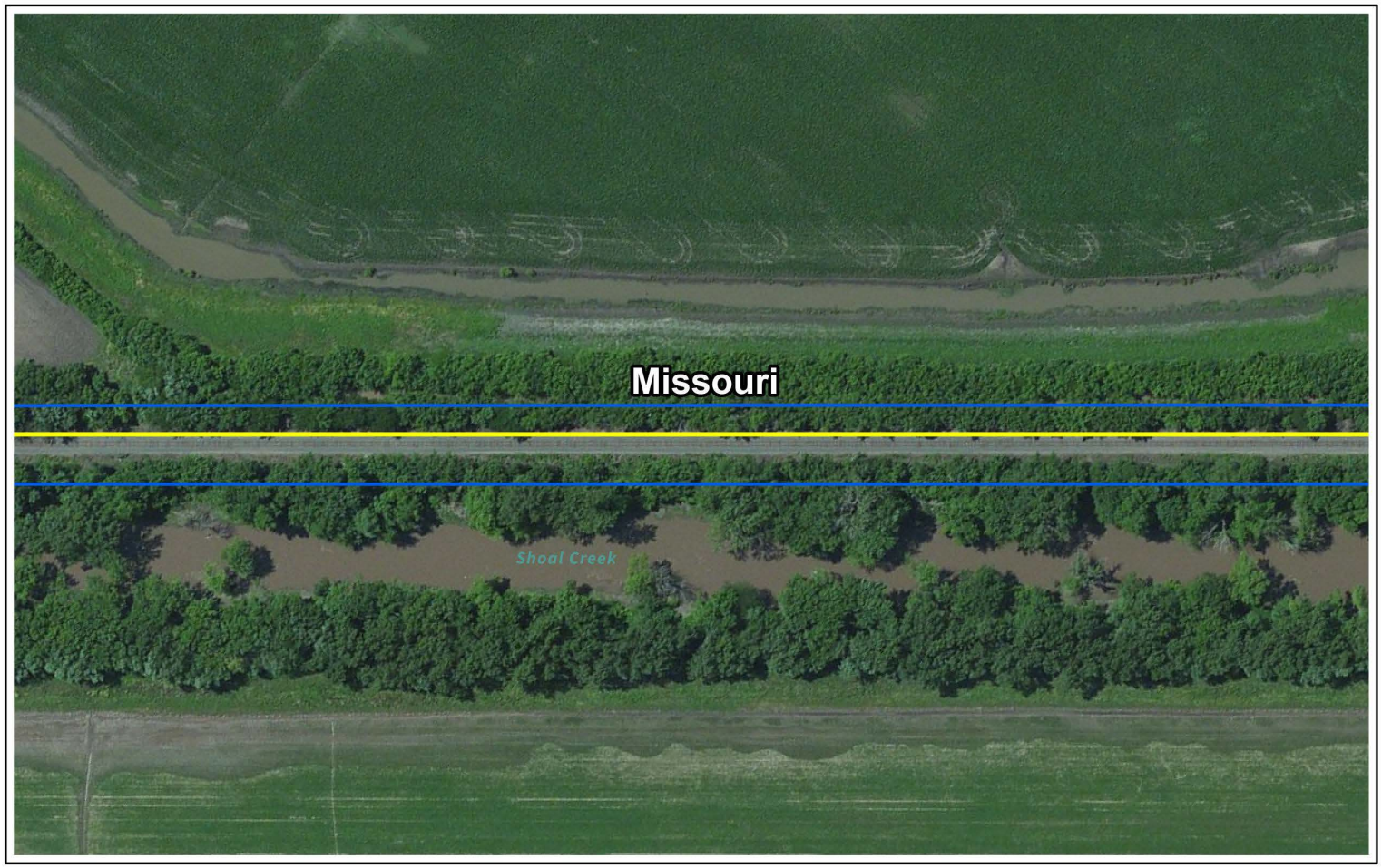
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 431 (Dawn)
Livingston, Missouri | Page 1 of 7



Capital Improvement Location
Existing Right-of-Way

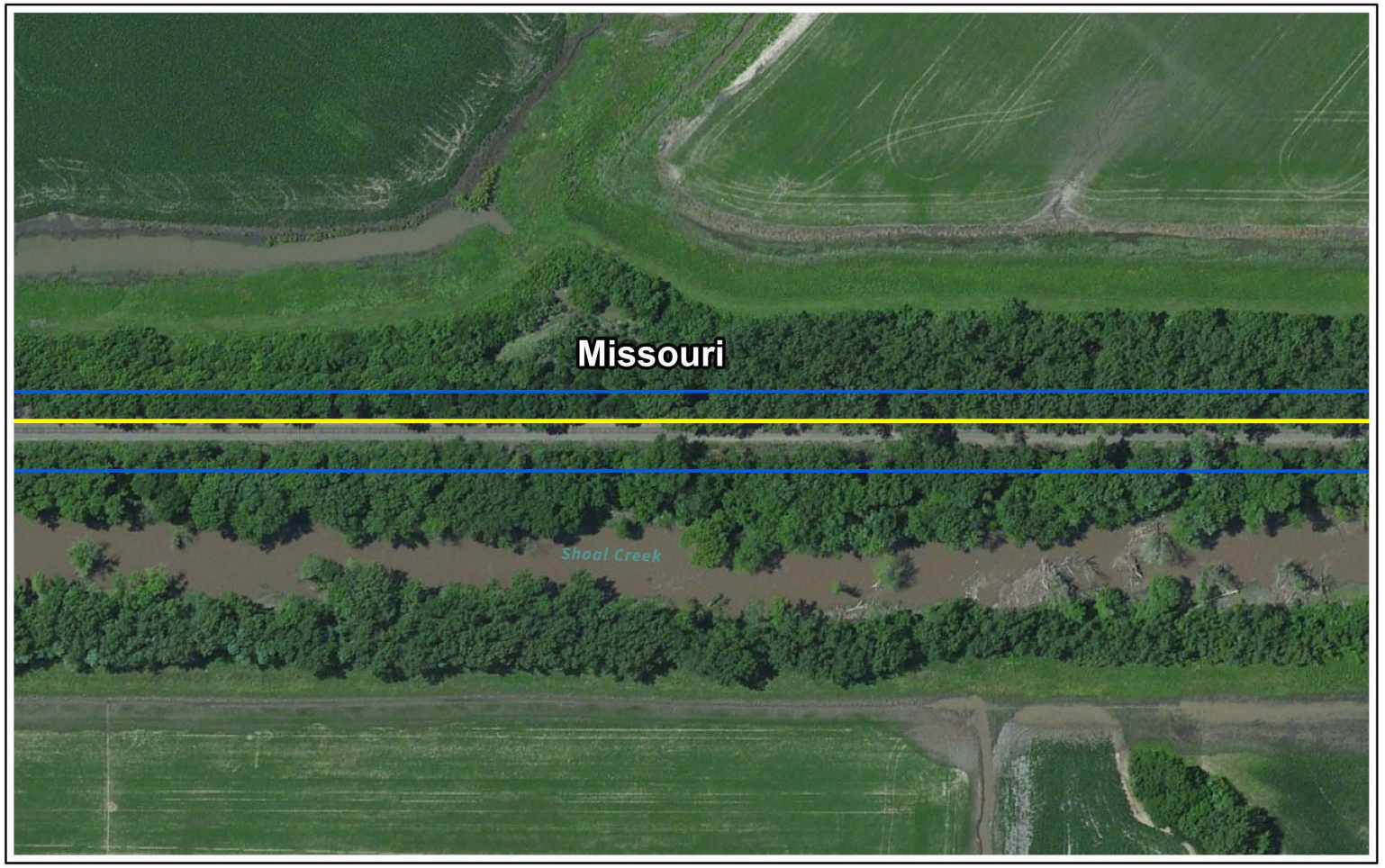


0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 431 (Dawn)
Livingston, Missouri | Page 2 of 7



Capital Improvement Location

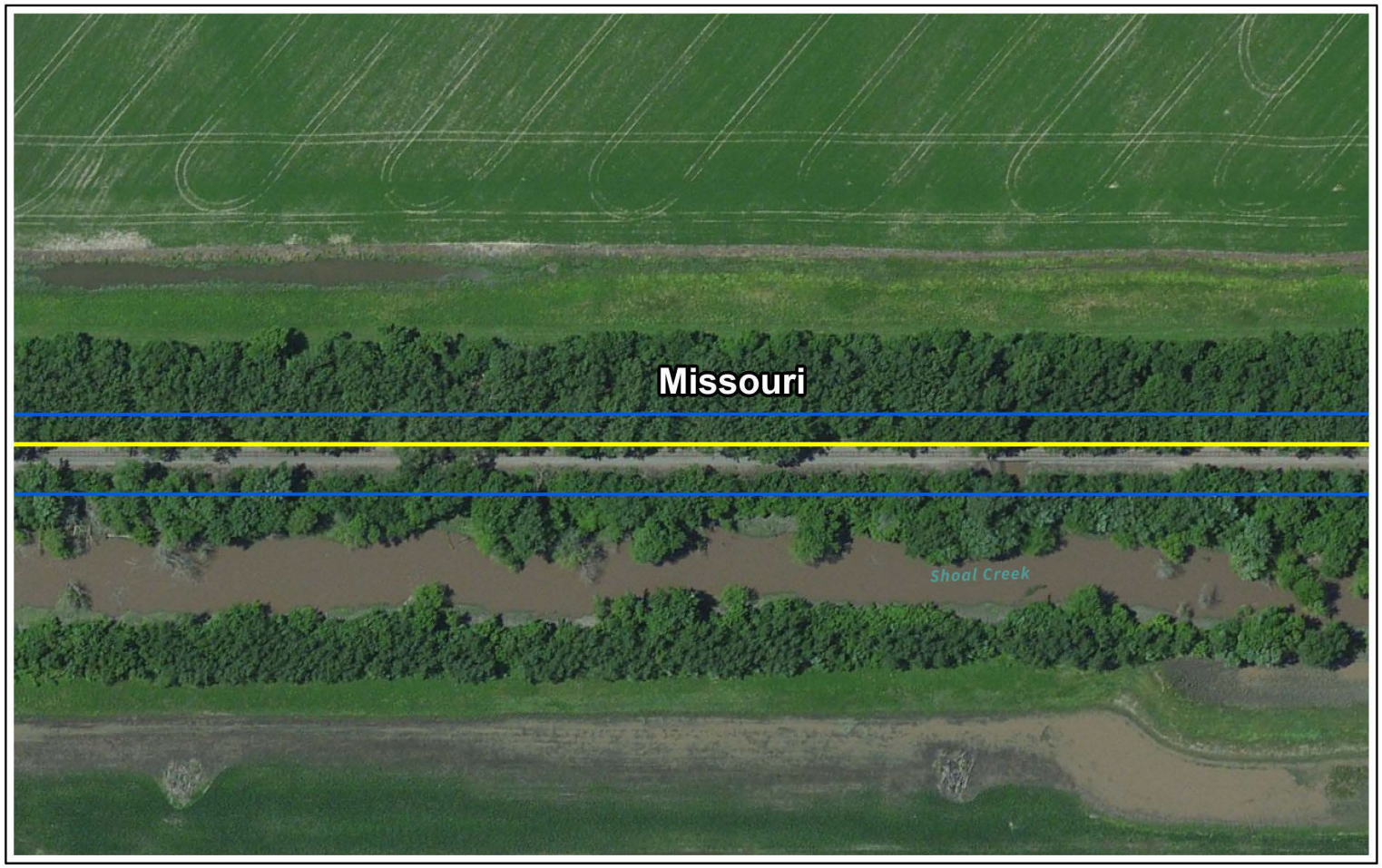
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 431 (Dawn)
Livingston, Missouri | Page 3 of 7



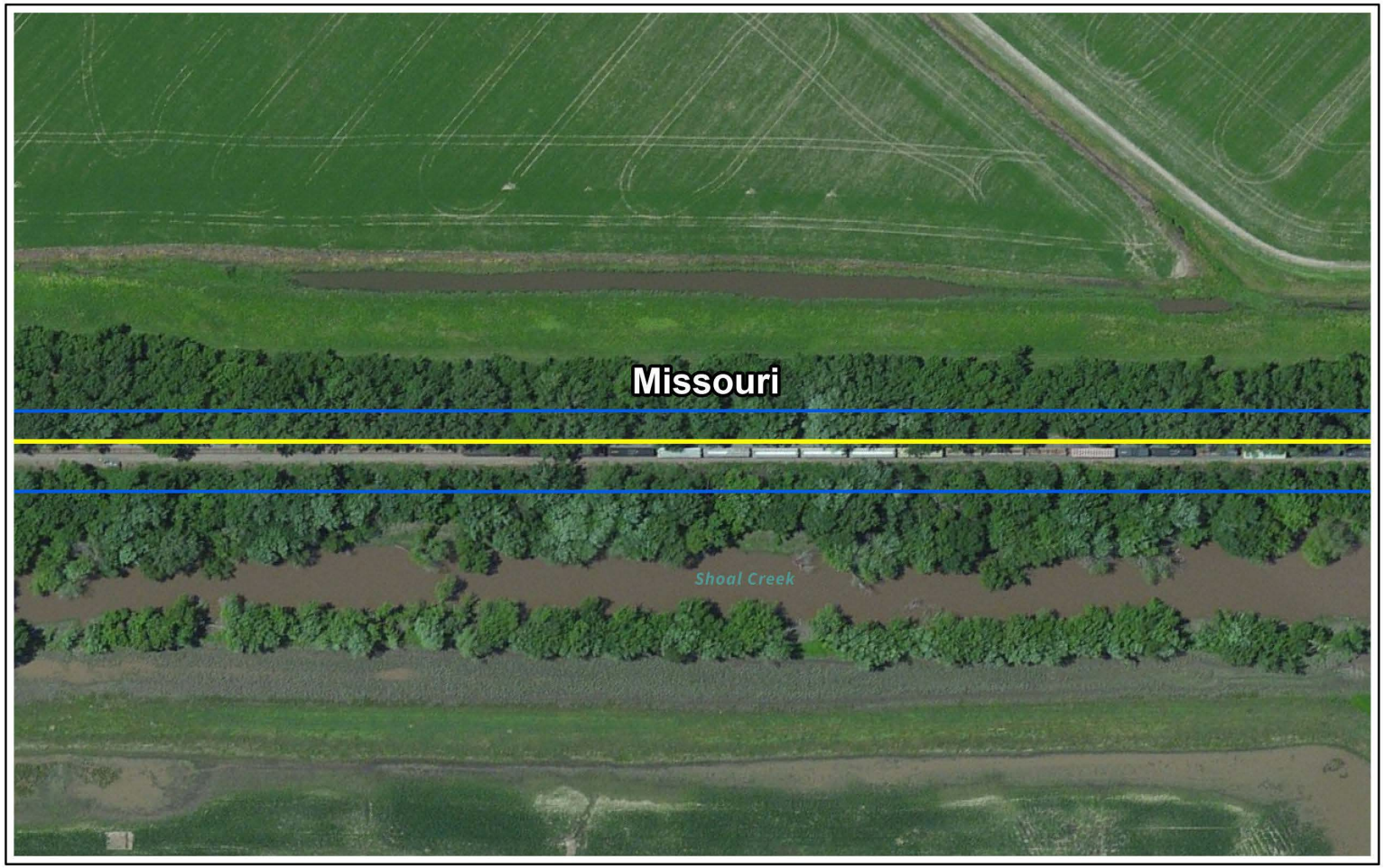
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 431 (Dawn)
Livingston, Missouri | Page 4 of 7



Capital Improvement Location

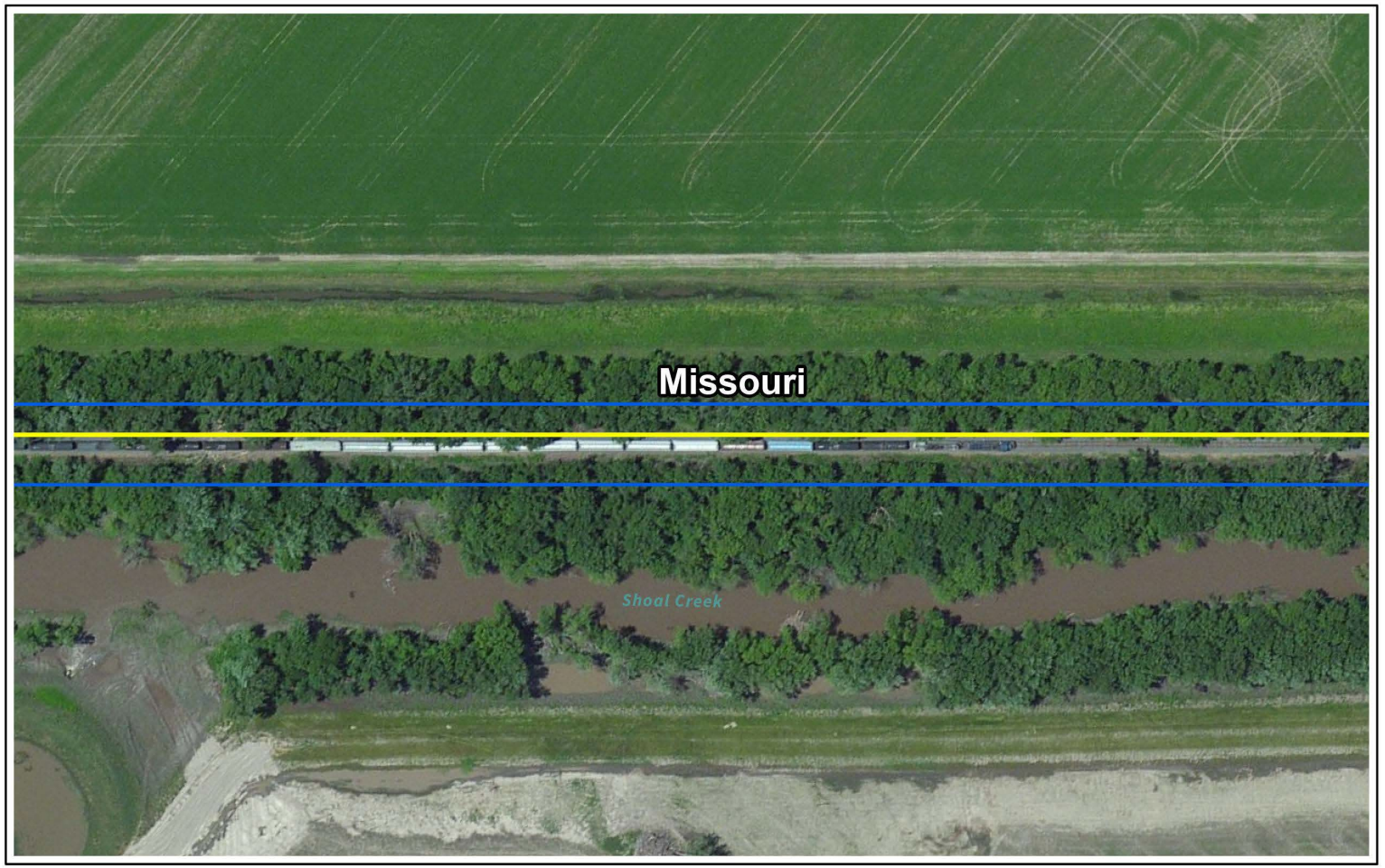
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 431 (Dawn)
Livingston, Missouri | Page 5 of 7



Capital Improvement Location

Existing Right-of-Way

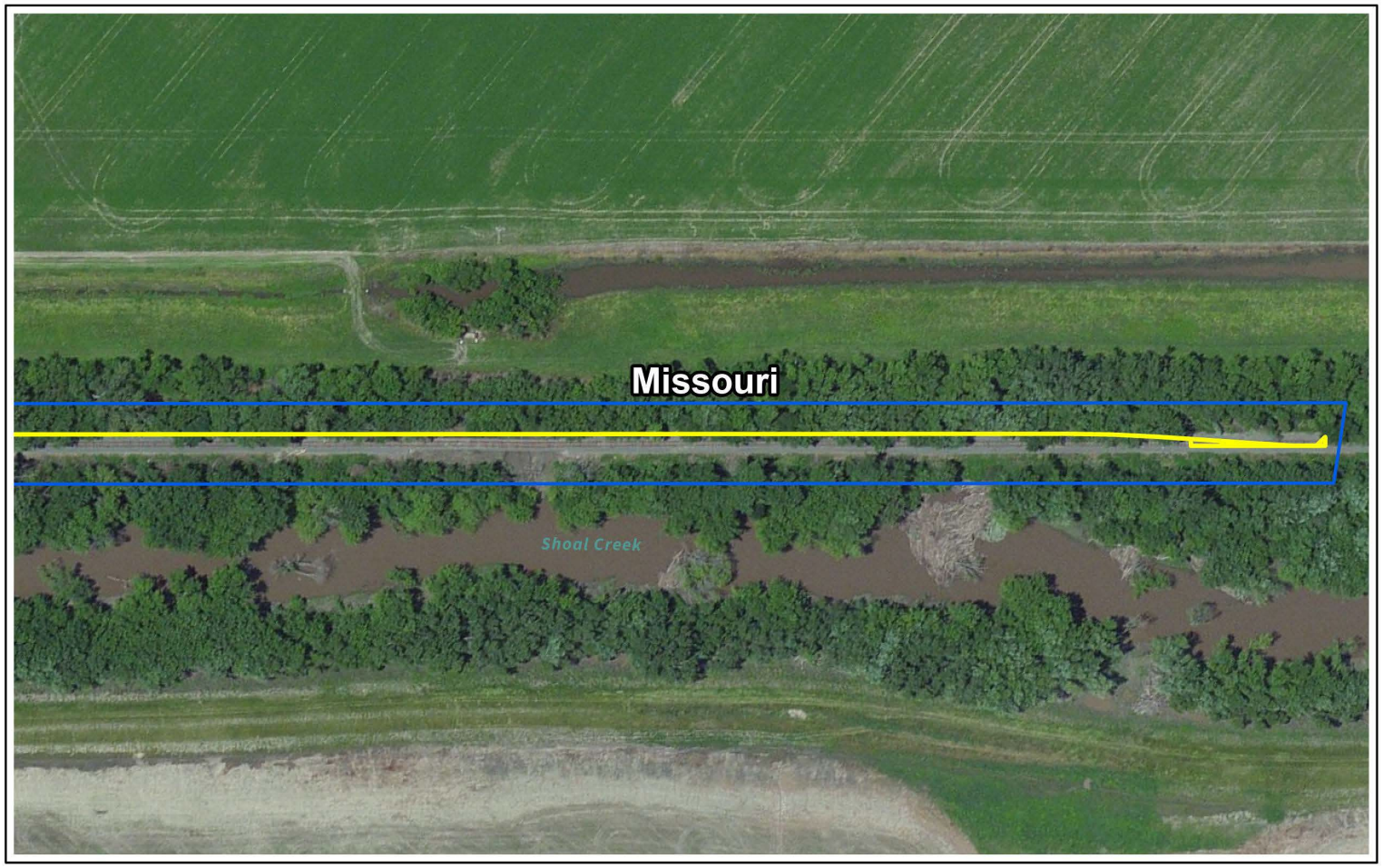


0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 431 (Dawn)
Livingston, Missouri | Page 6 of 7



Capital Improvement Location

Existing Right-of-Way

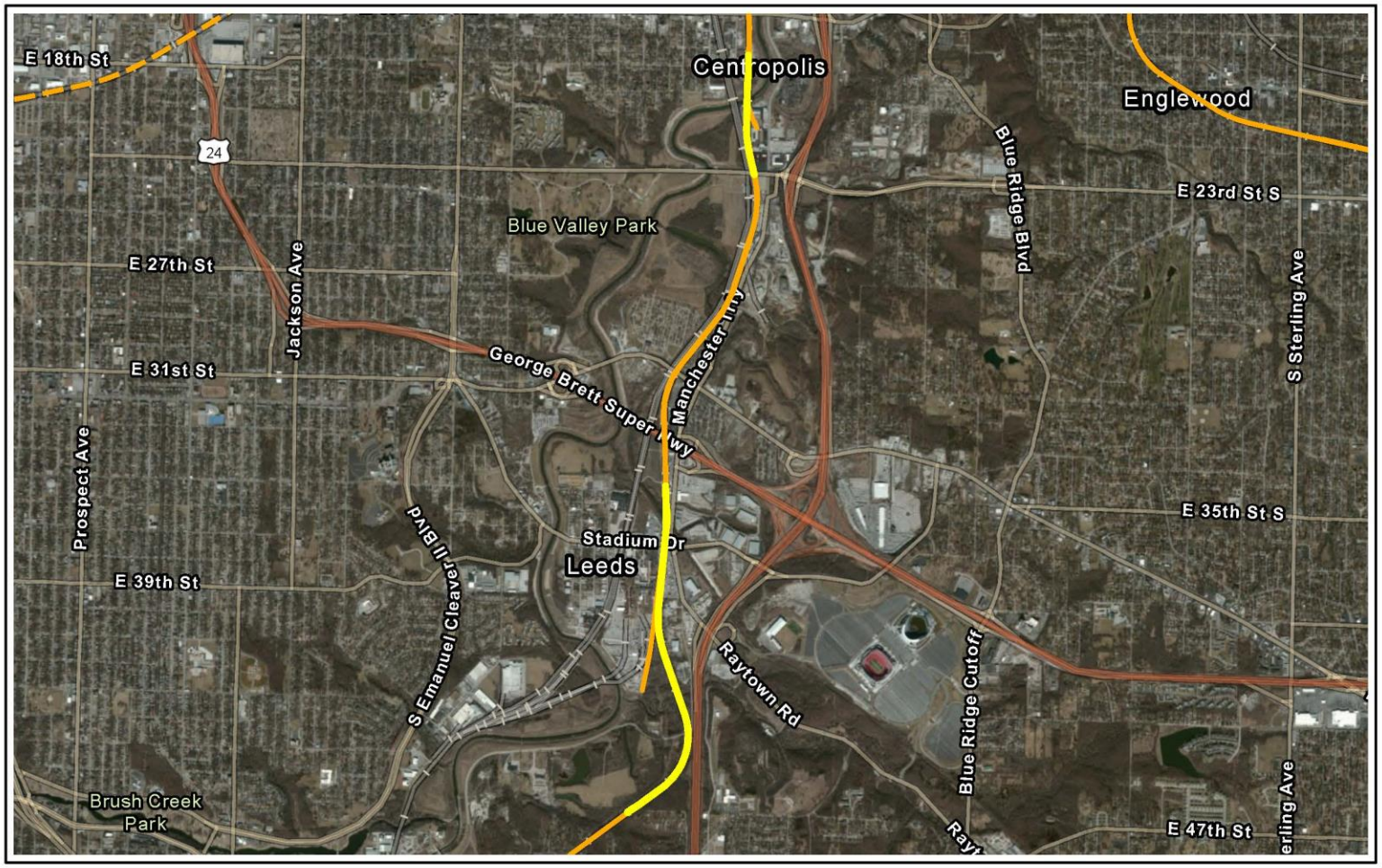


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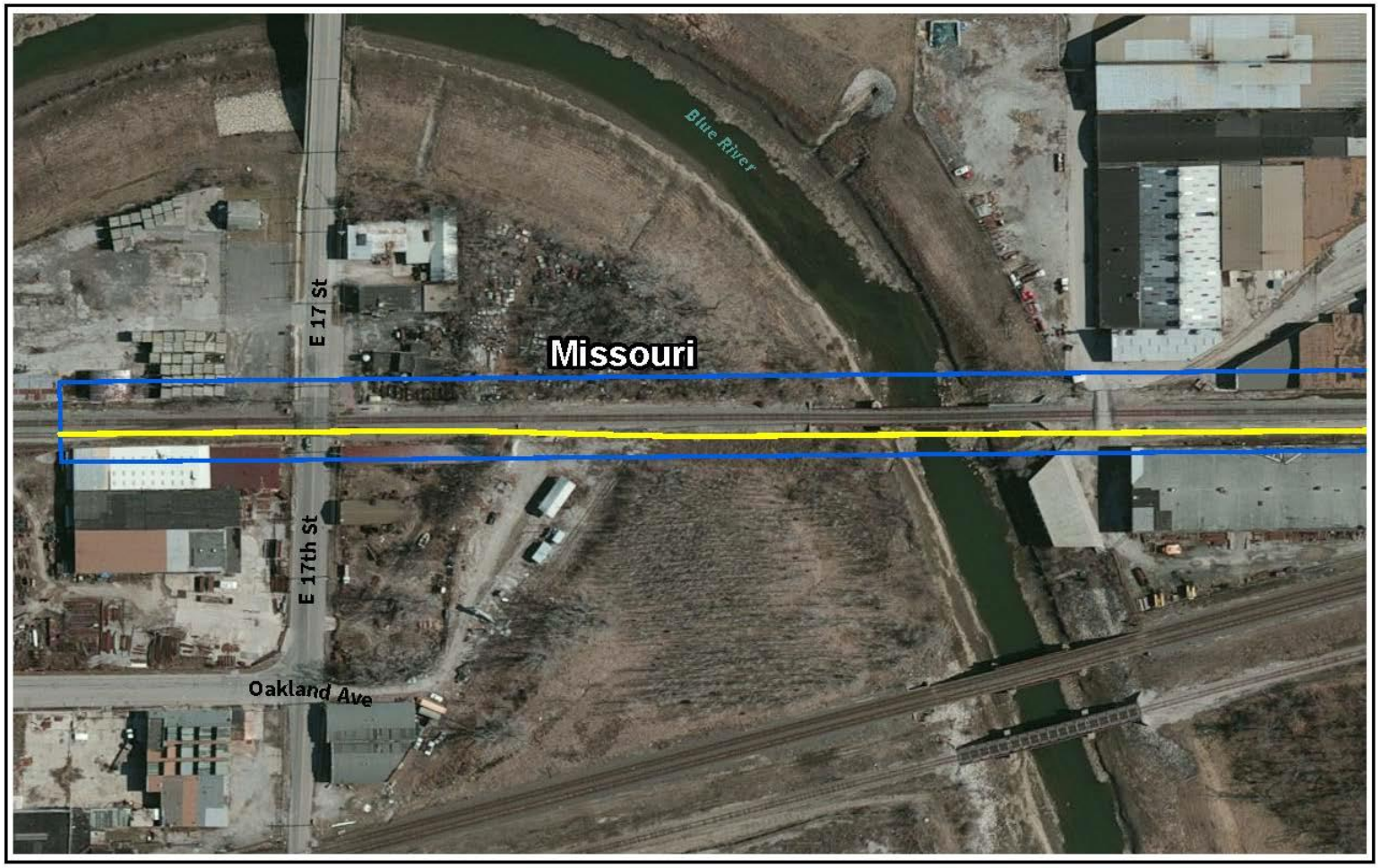
Source: FRA, CP, ArcGIS Online



Capital Improvement MP 431 (Dawn)
Livingston, Missouri | Page 7 of 7



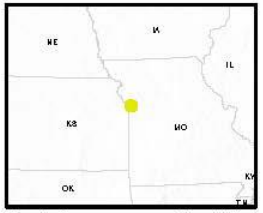
Capital Improvement Project Blue Valley
Jackson, Missouri



Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Blue Valley
Jackson, Missouri | Map 1 of 8



Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Blue Valley
Jackson, Missouri | Map 2 of 8



Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



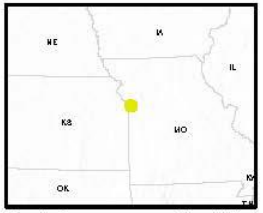
Capital Improvement Blue Valley
Jackson, Missouri | Map 3 of 8



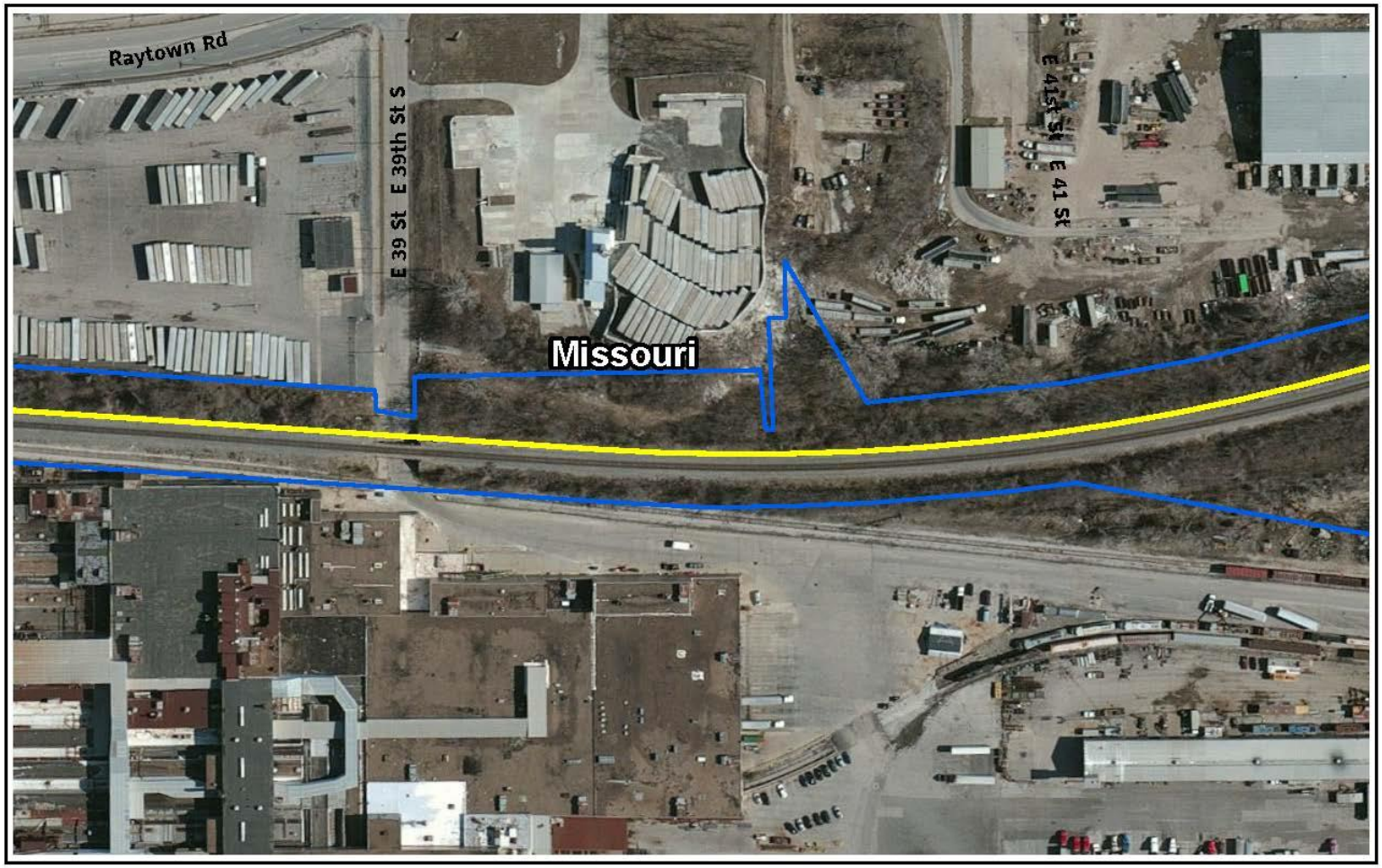
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



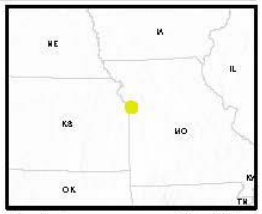
Capital Improvement Blue Valley
Jackson, Missouri | Map 4 of 8



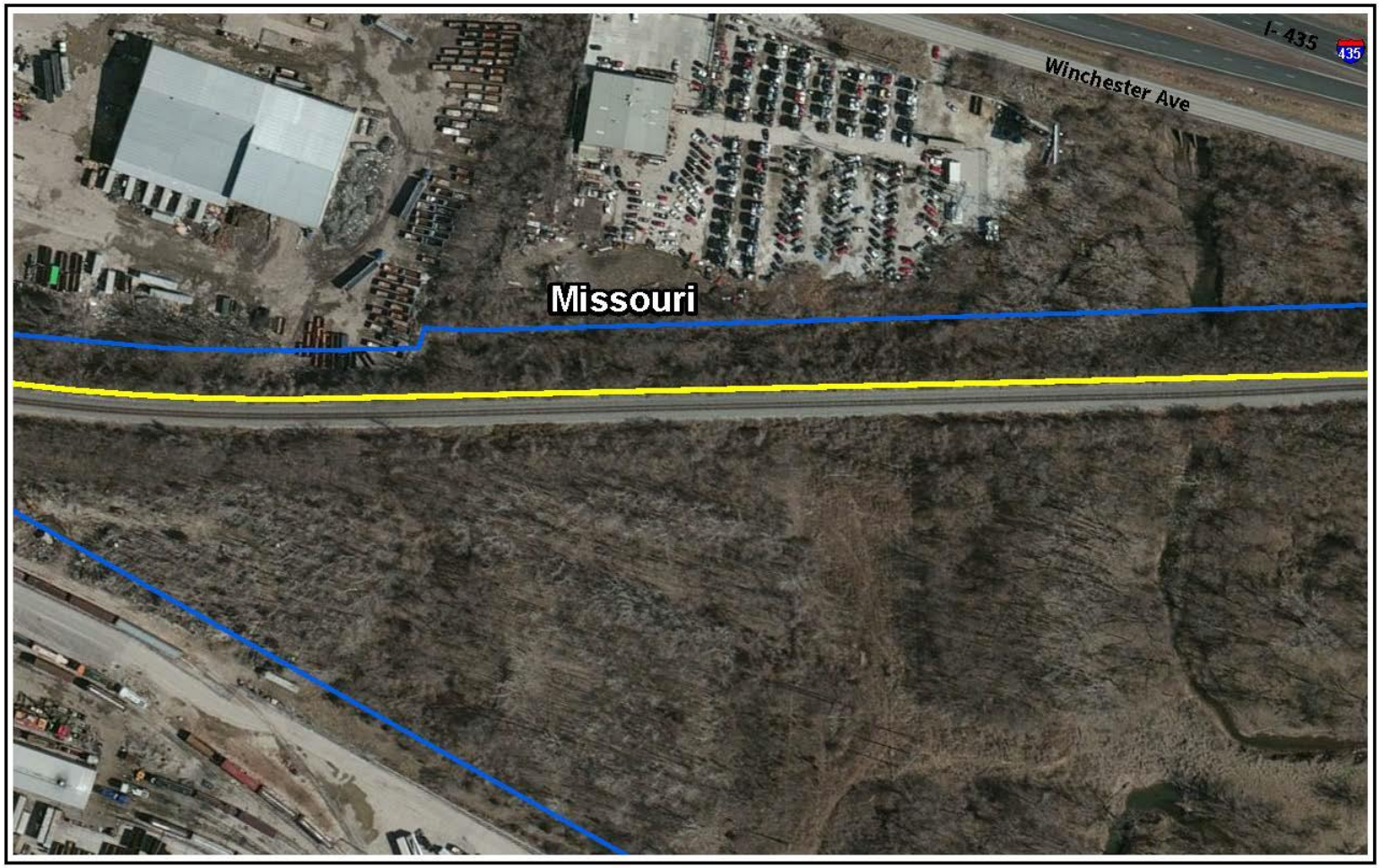
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Blue Valley
Jackson, Missouri | Map 5 of 8

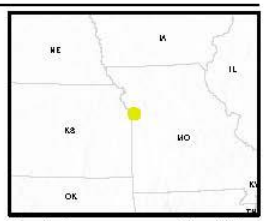


Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



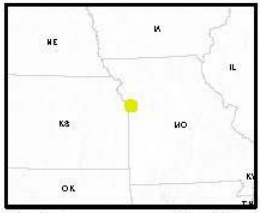
Capital Improvement Blue Valley
Jackson, Missouri | Map 6 of 8



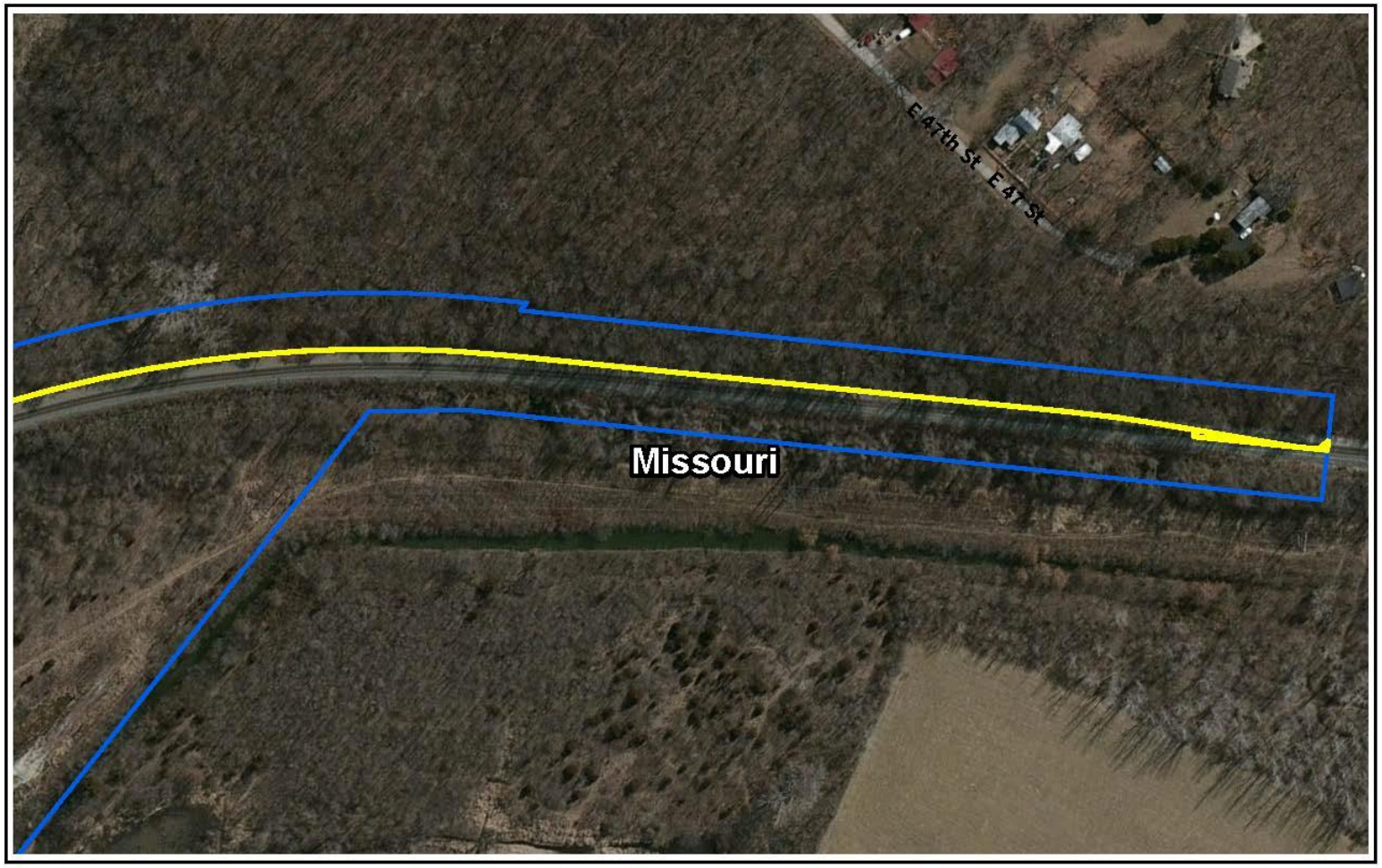
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



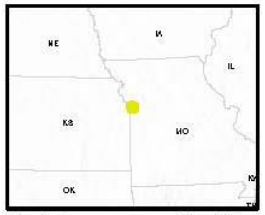
Capital Improvement Blue Valley
Jackson, Missouri | Map 7 of 8



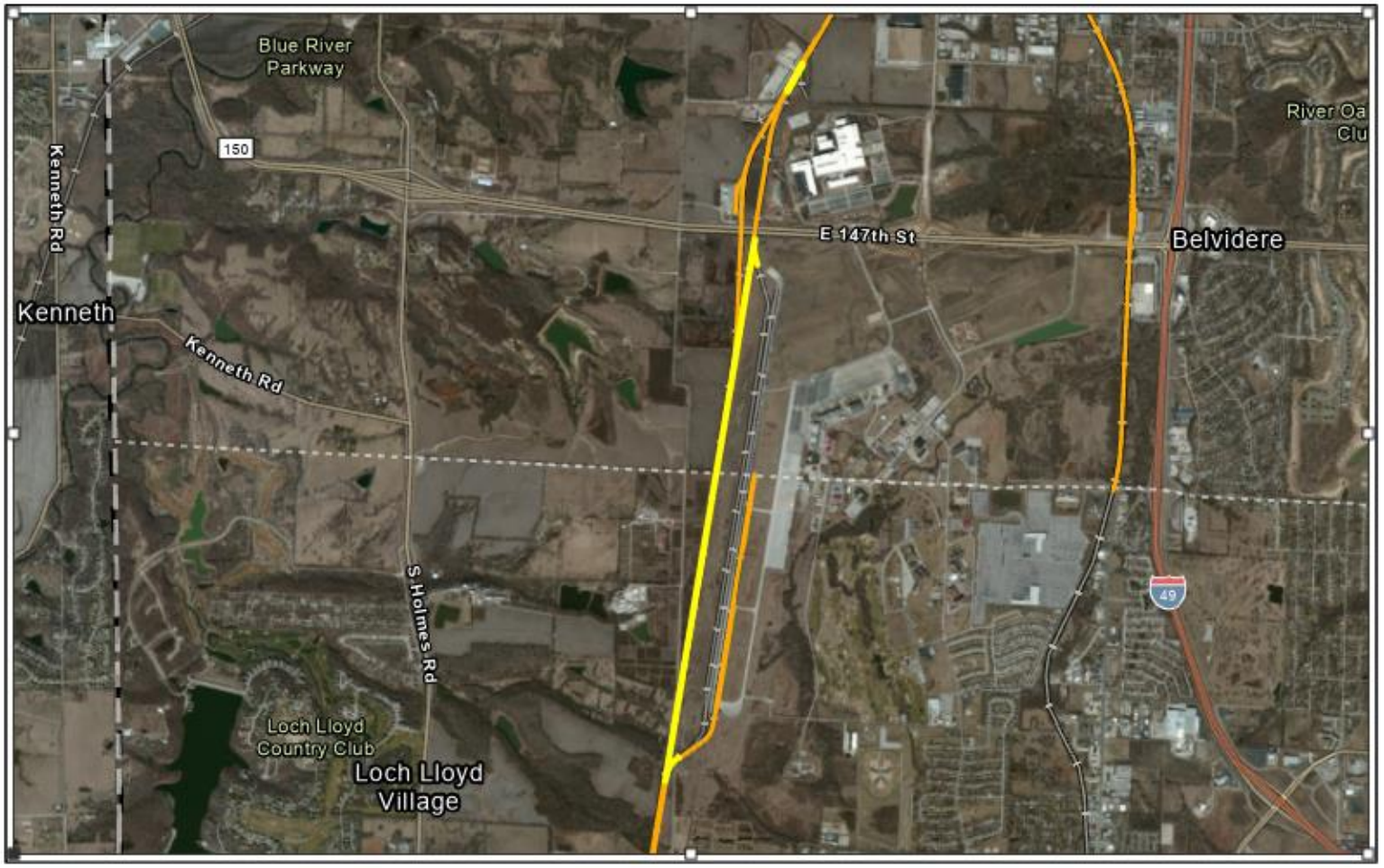
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

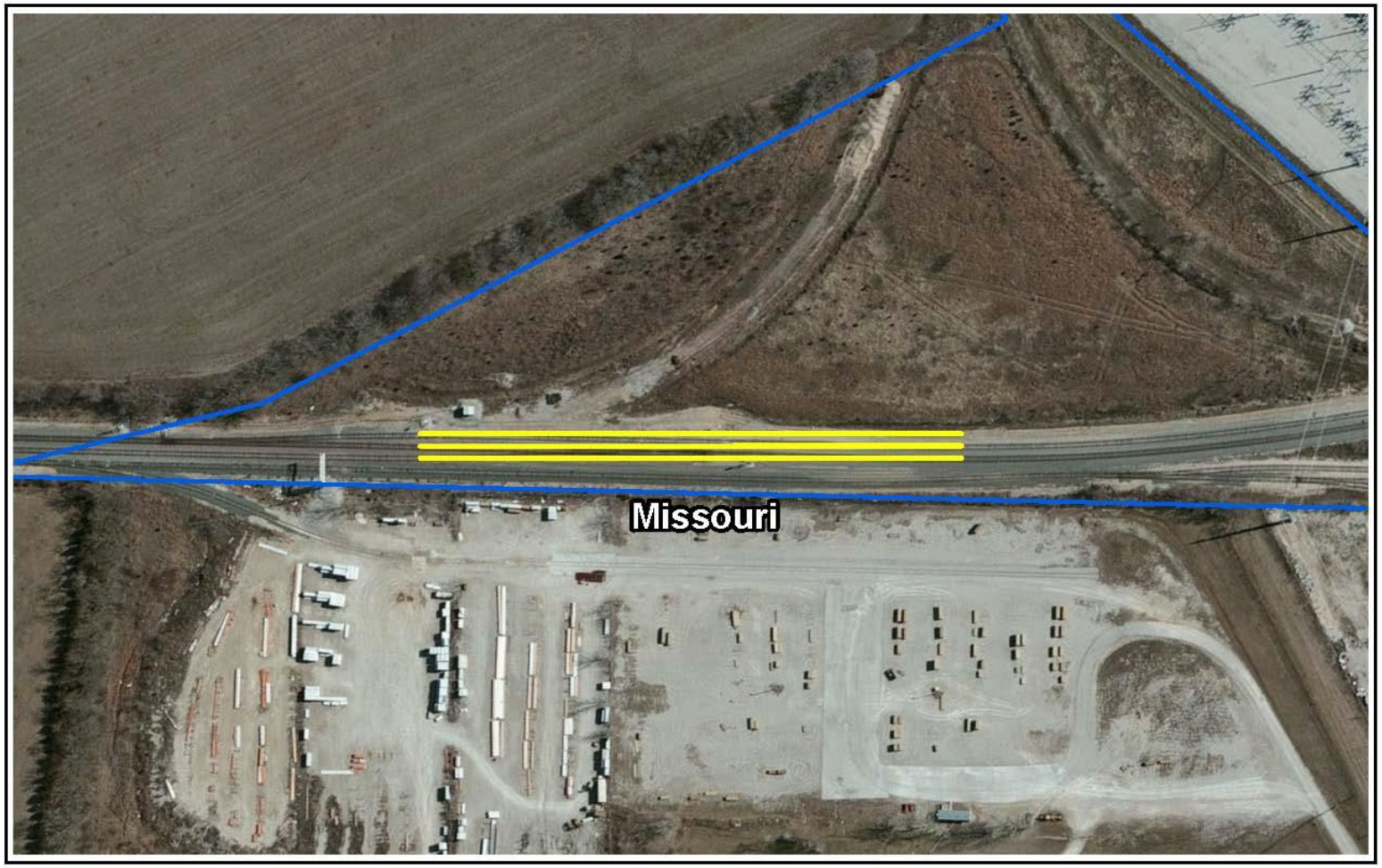
Source: FRA, CP, ArcGIS Online



Capital Improvement Blue Valley
Jackson, Missouri | Map 8 of 8



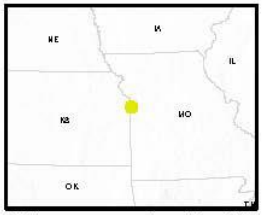
Capital Improvement Project Grandview/IFG
Jackson/Cass, Missouri



Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



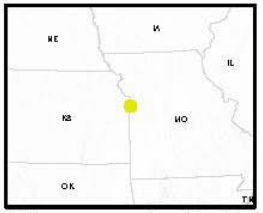
Capital Improvement Grandview/IFG
Jackson/Cass, Missouri | Map 1 of 9



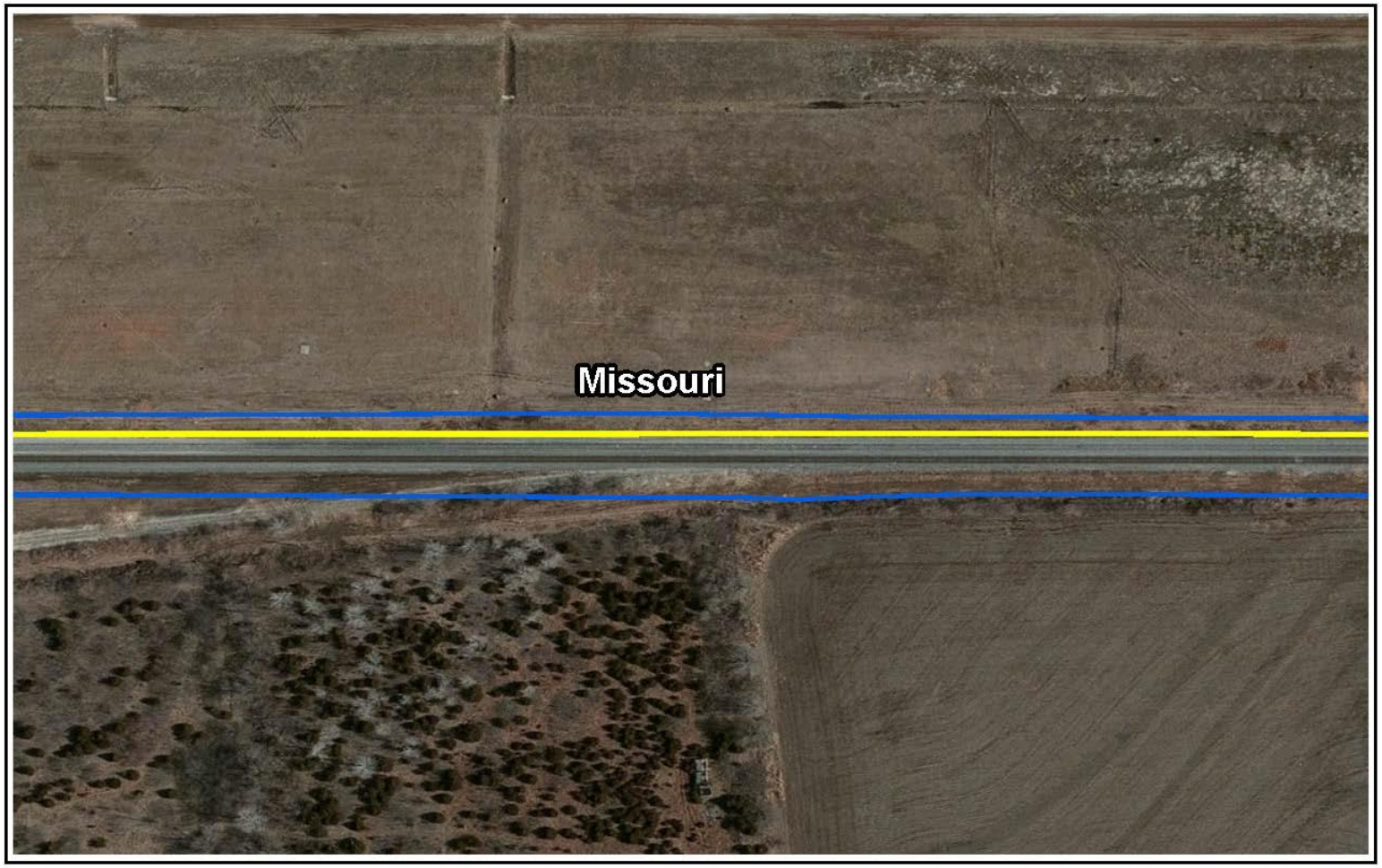
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



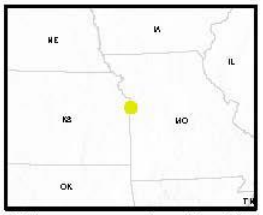
Capital Improvement Grandview/IFG
Jackson/Cass, Missouri | Map 2 of 9



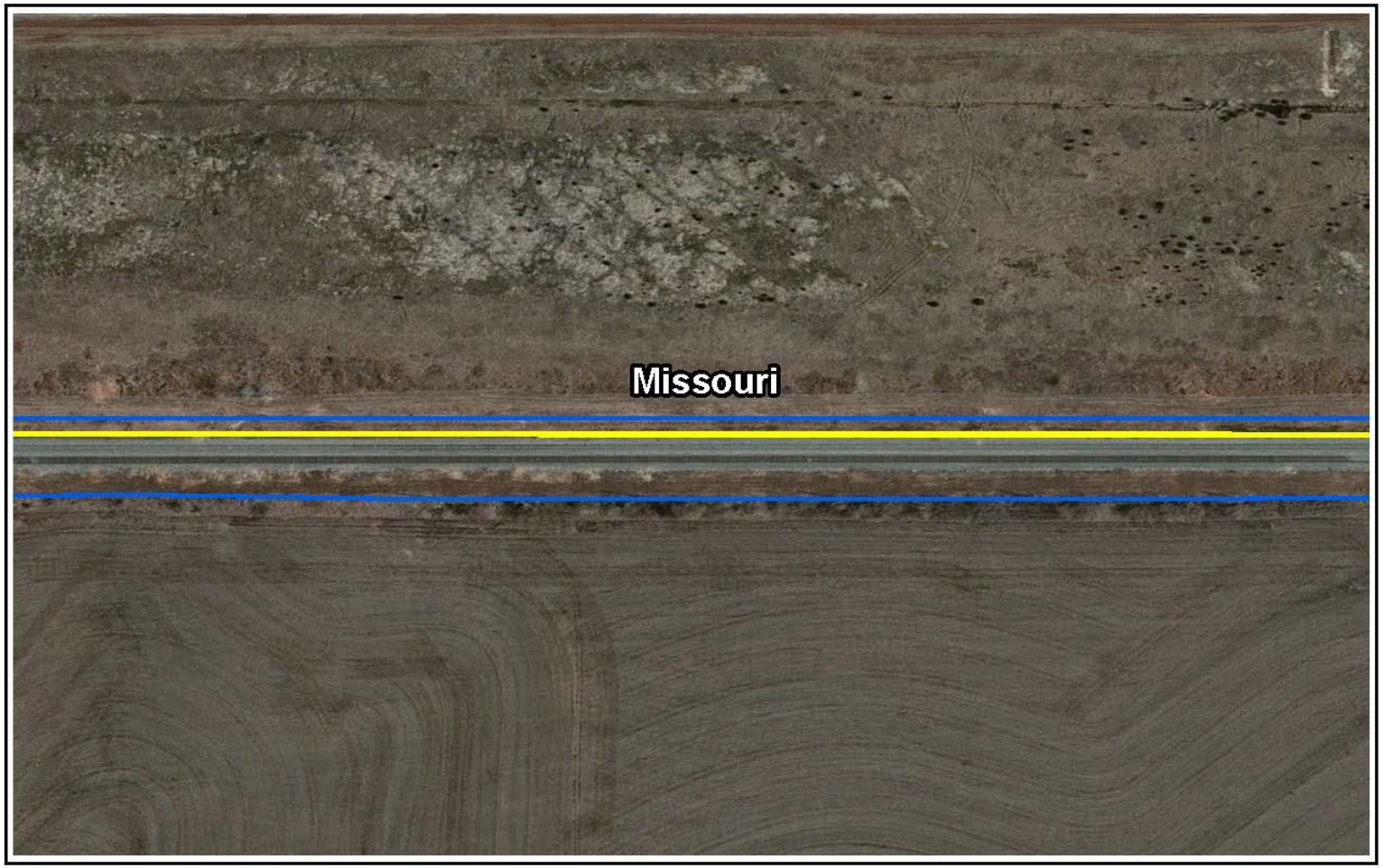
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



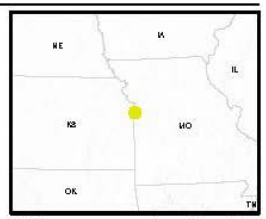
Capital Improvement Grandview/IFG
Jackson/Cass, Missouri | Map 3 of 9



Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



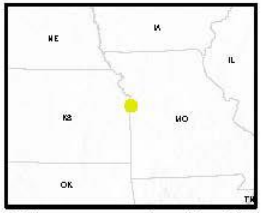
Capital Improvement Grandview/IFG
Jackson/Cass, Missouri | Map 4 of 9



Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Grandview/IFG
Jackson/Cass, Missouri | Map 5 of 9

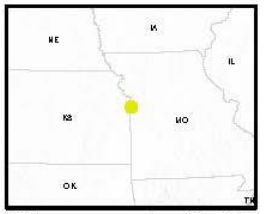


Capital Improvement Location

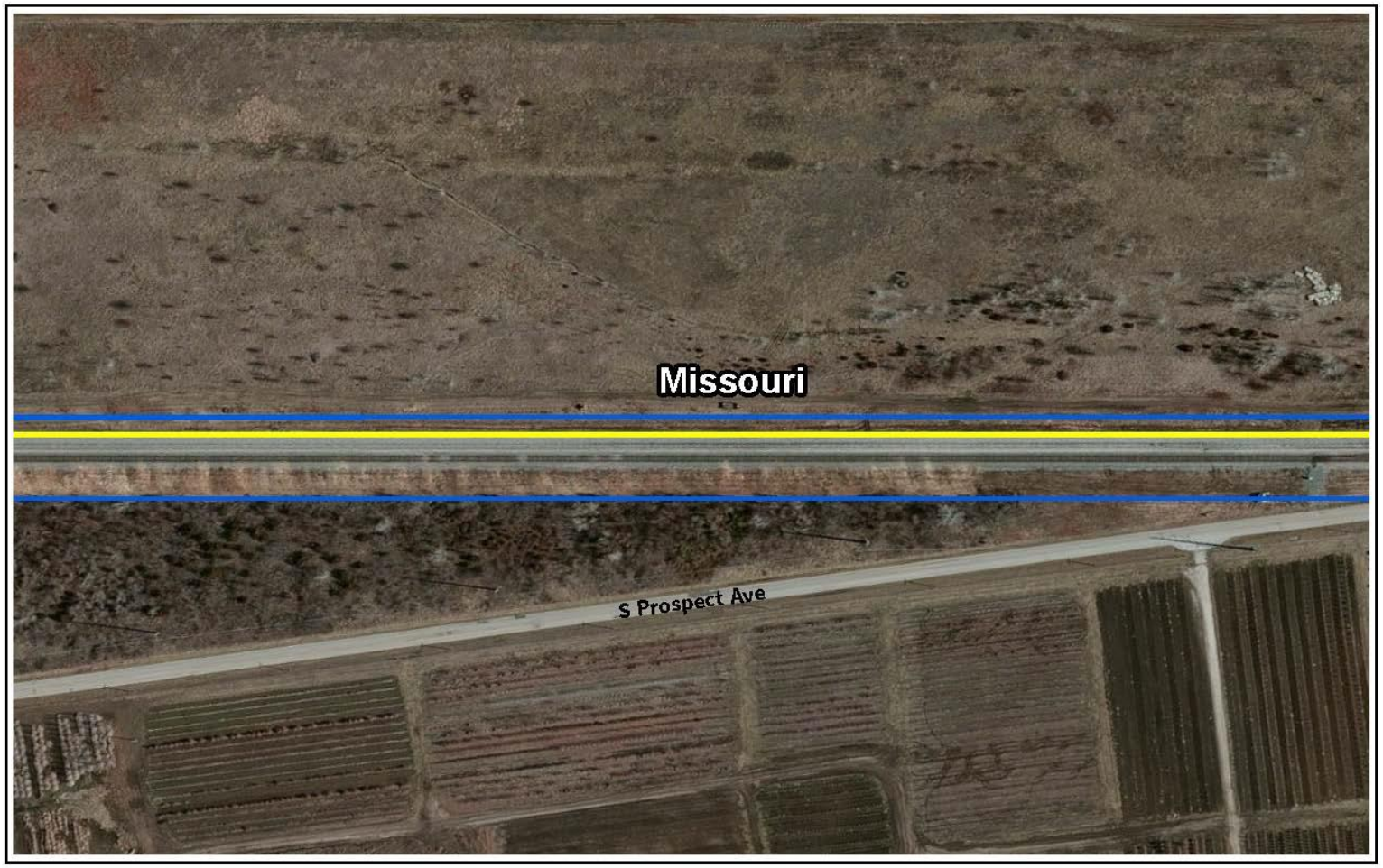
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Grandview/IFG
Jackson/Cass, Missouri | Map 8 of 9

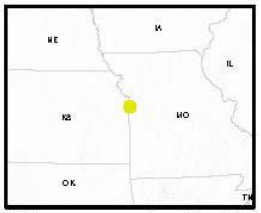


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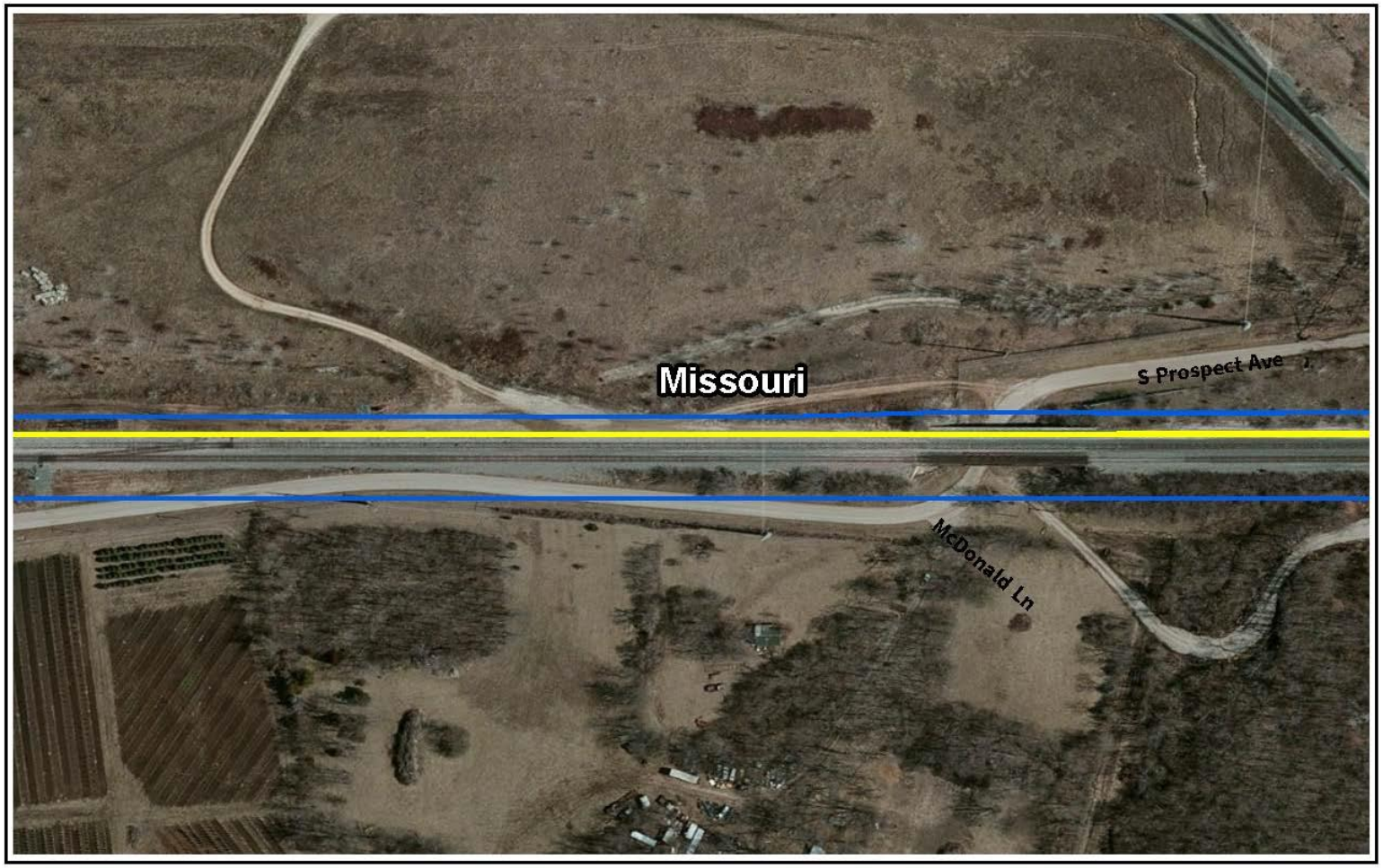
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



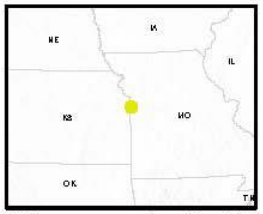
Capital Improvement Grandview/IFG
Jackson/Cass, Missouri | Map 7 of 9



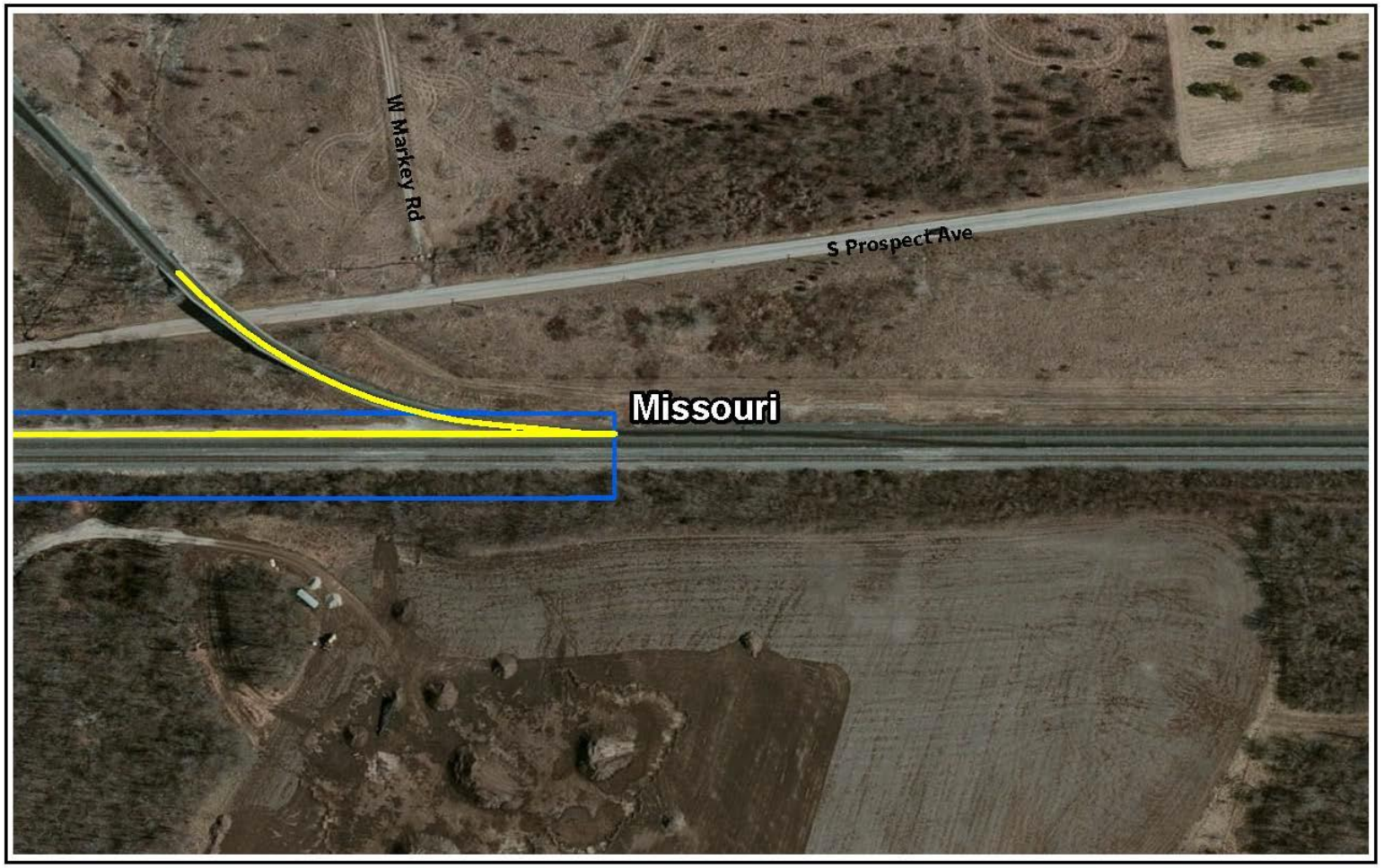
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



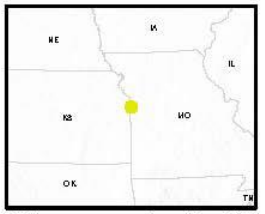
Capital Improvement Grandview/IFG
Jackson/Cass, Missouri | Map 8 of 9



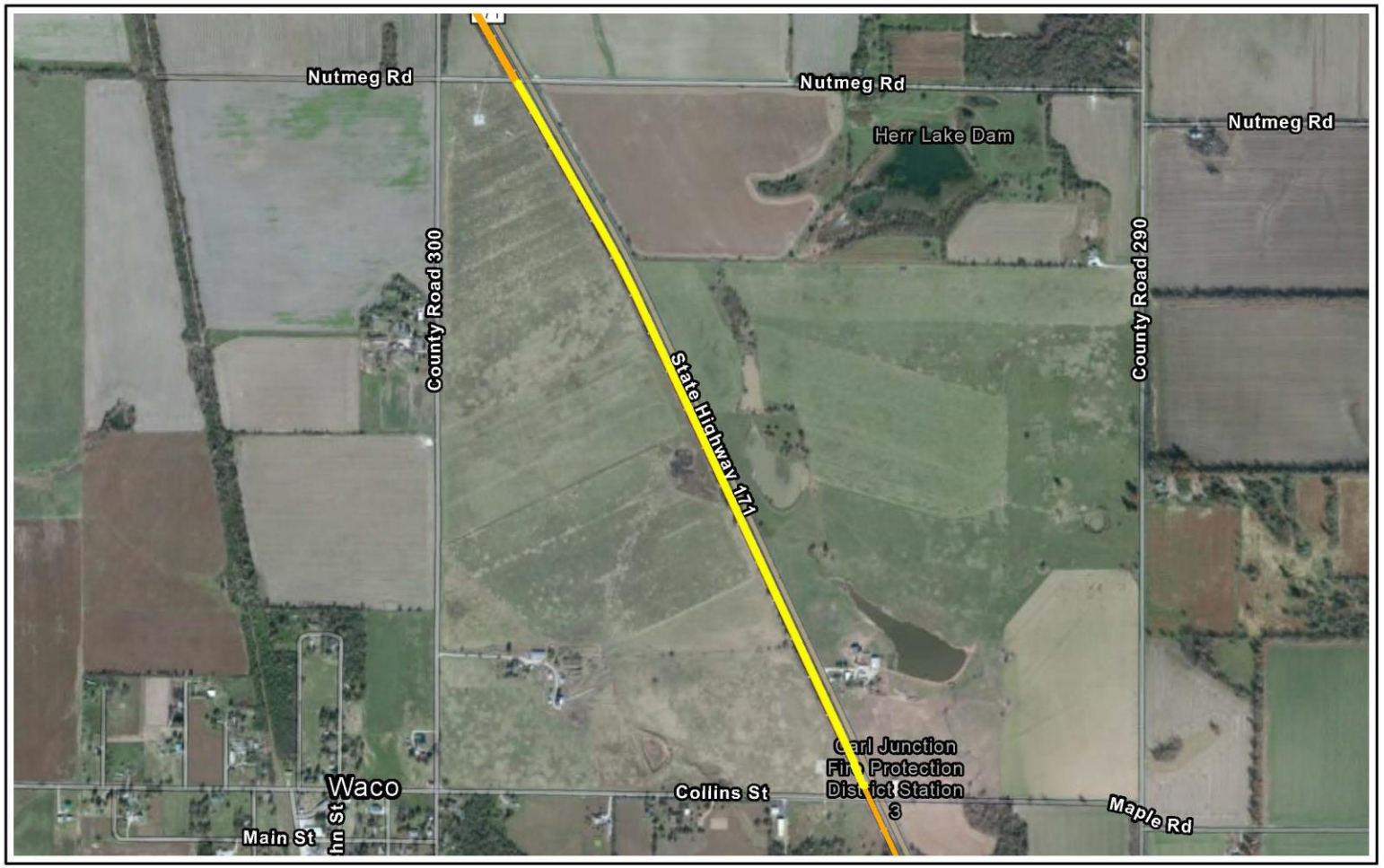
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Grandview/IFG
Jackson/Cass, Missouri | Map 9 of 9



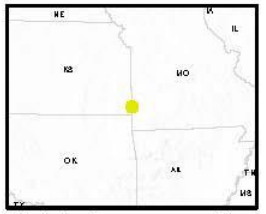
Capital Improvement Project Asbury
Jasper, Missouri



Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



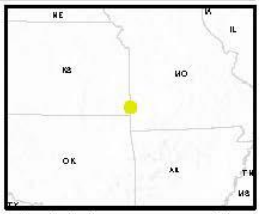
Capital Improvement Asbury
Jasper, Missouri | Map 1 of 4



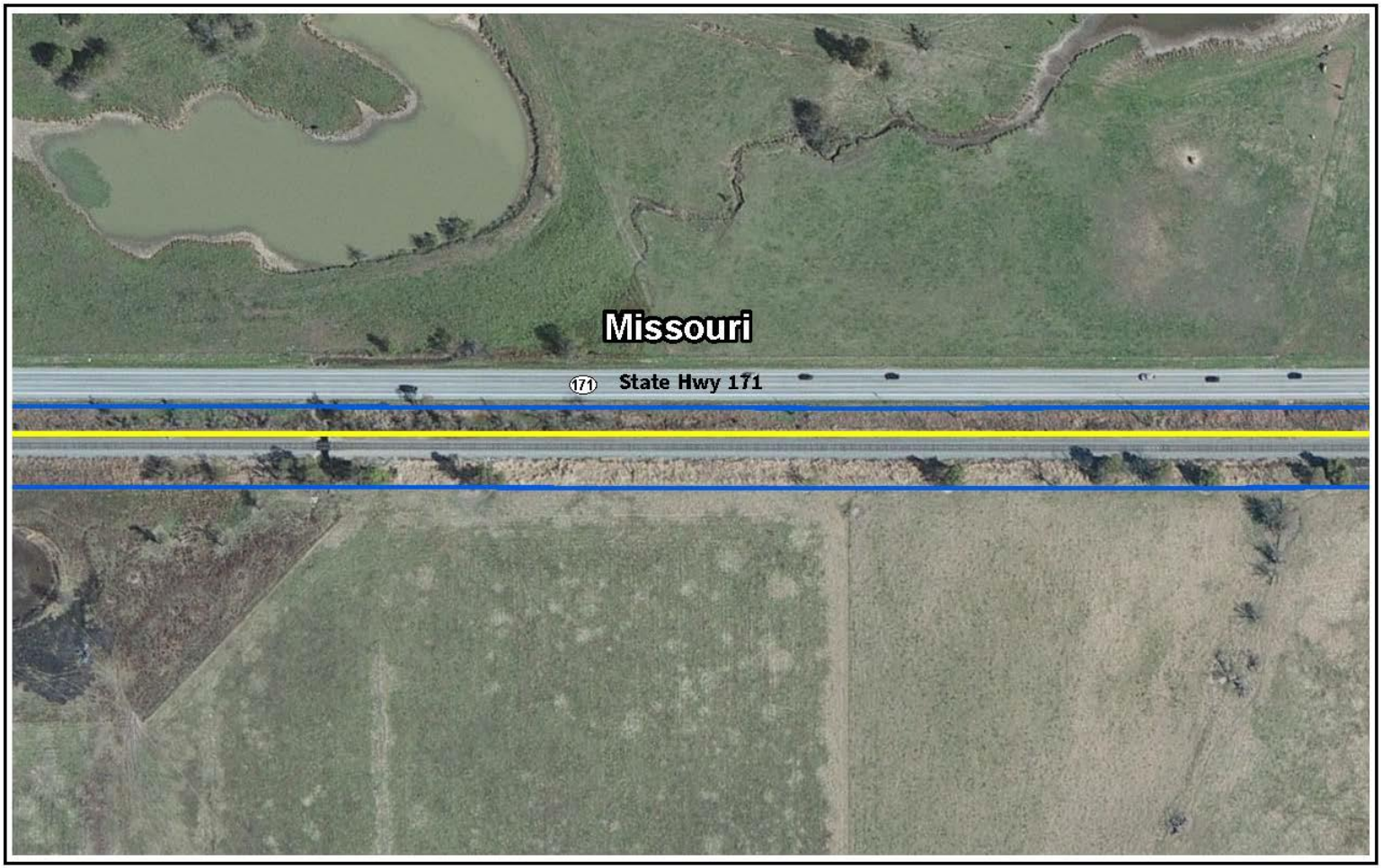
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



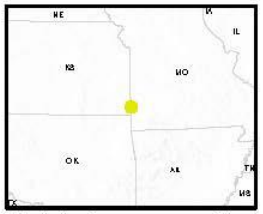
Capital Improvement Asbury
Jasper, Missouri | Map 2 of 4



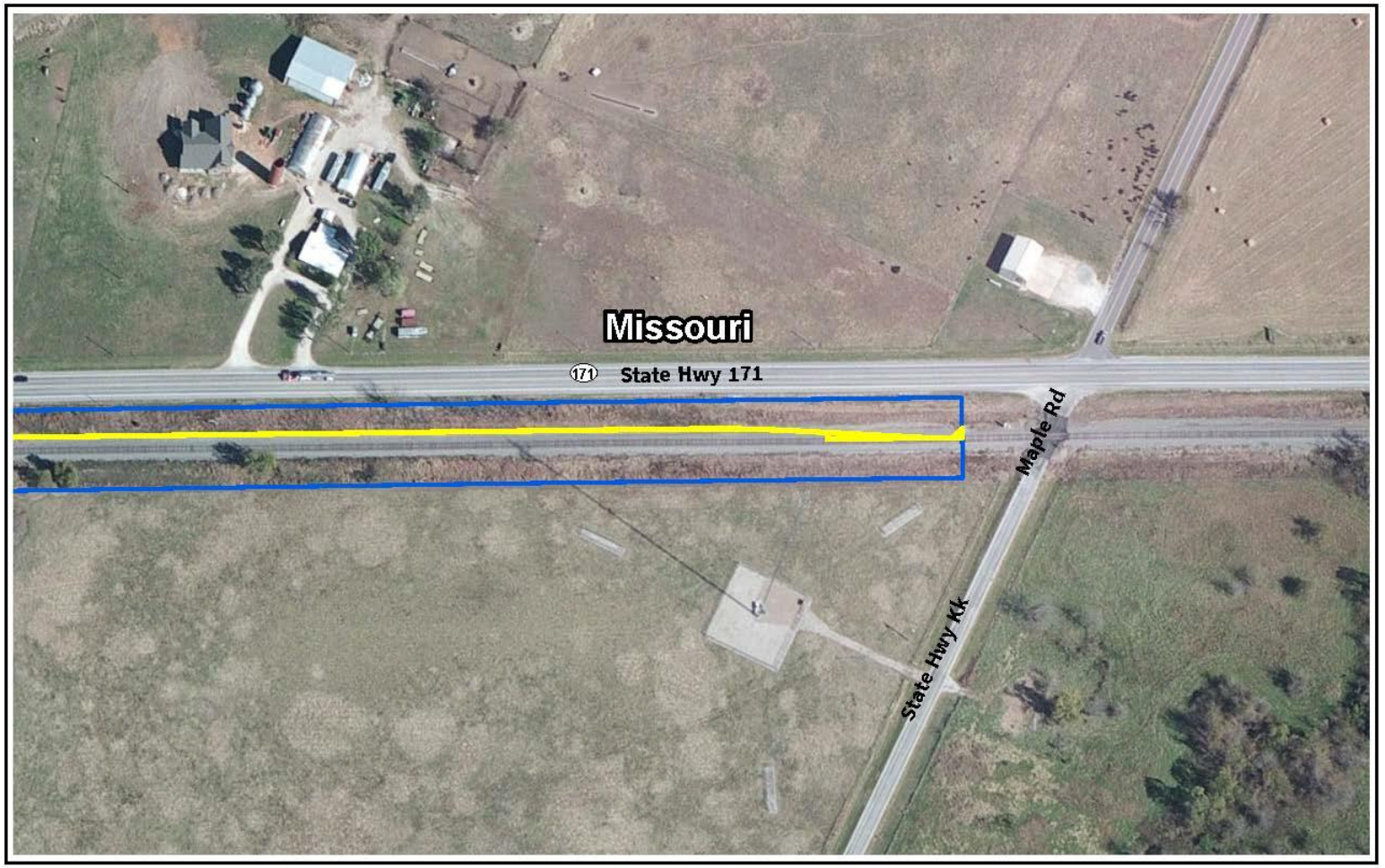
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



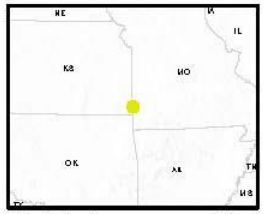
Capital Improvement Asbury
Jasper, Missouri | Map 3 of 4



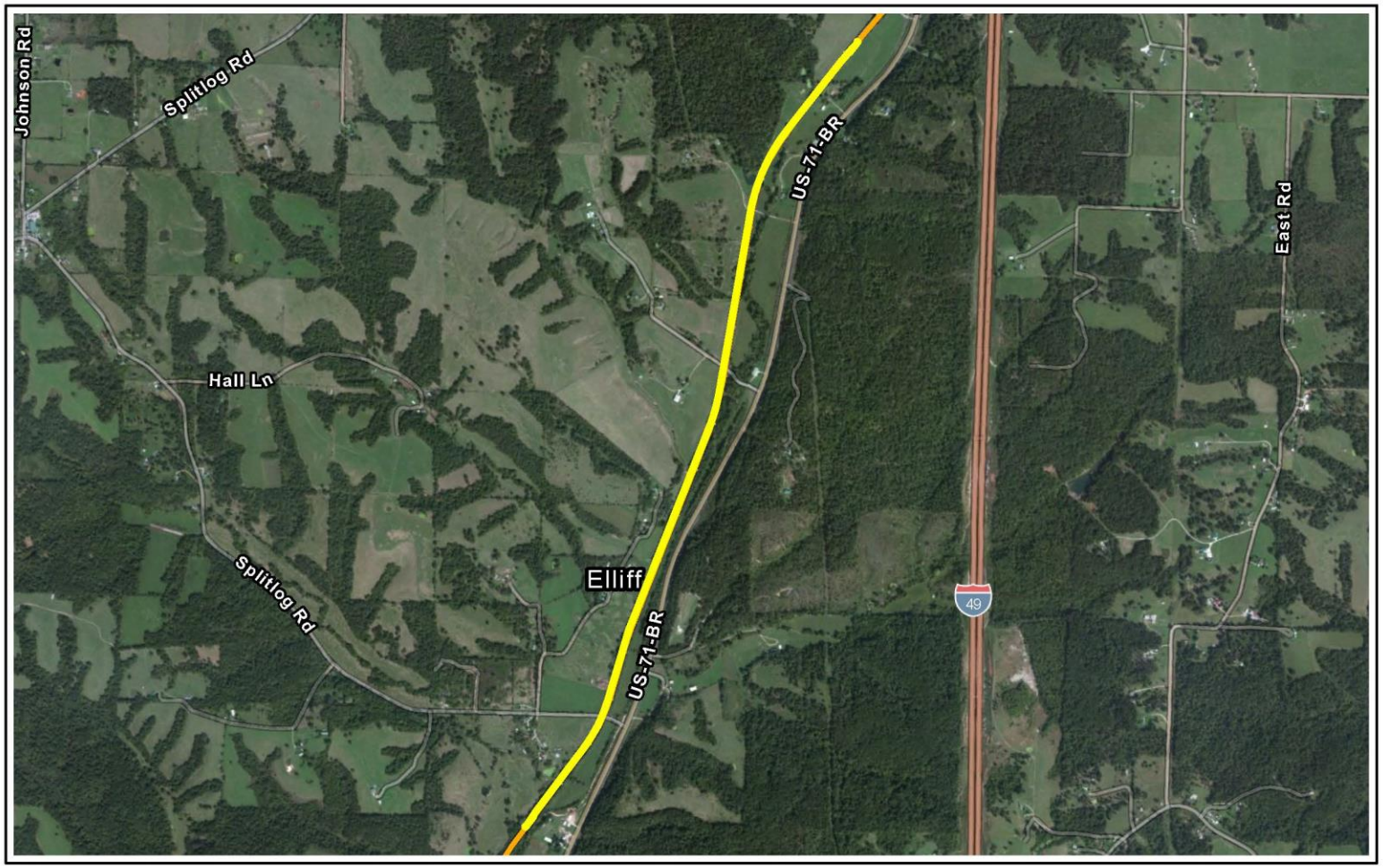
Capital Improvement Location
Existing Right-of-Way

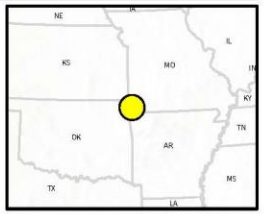
0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Asbury
Jasper, Missouri | Map 4 of 4





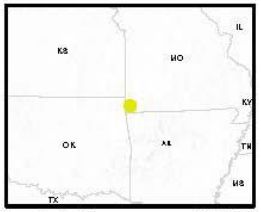
Capital Improvement Project MP 186
McDonald, Missouri



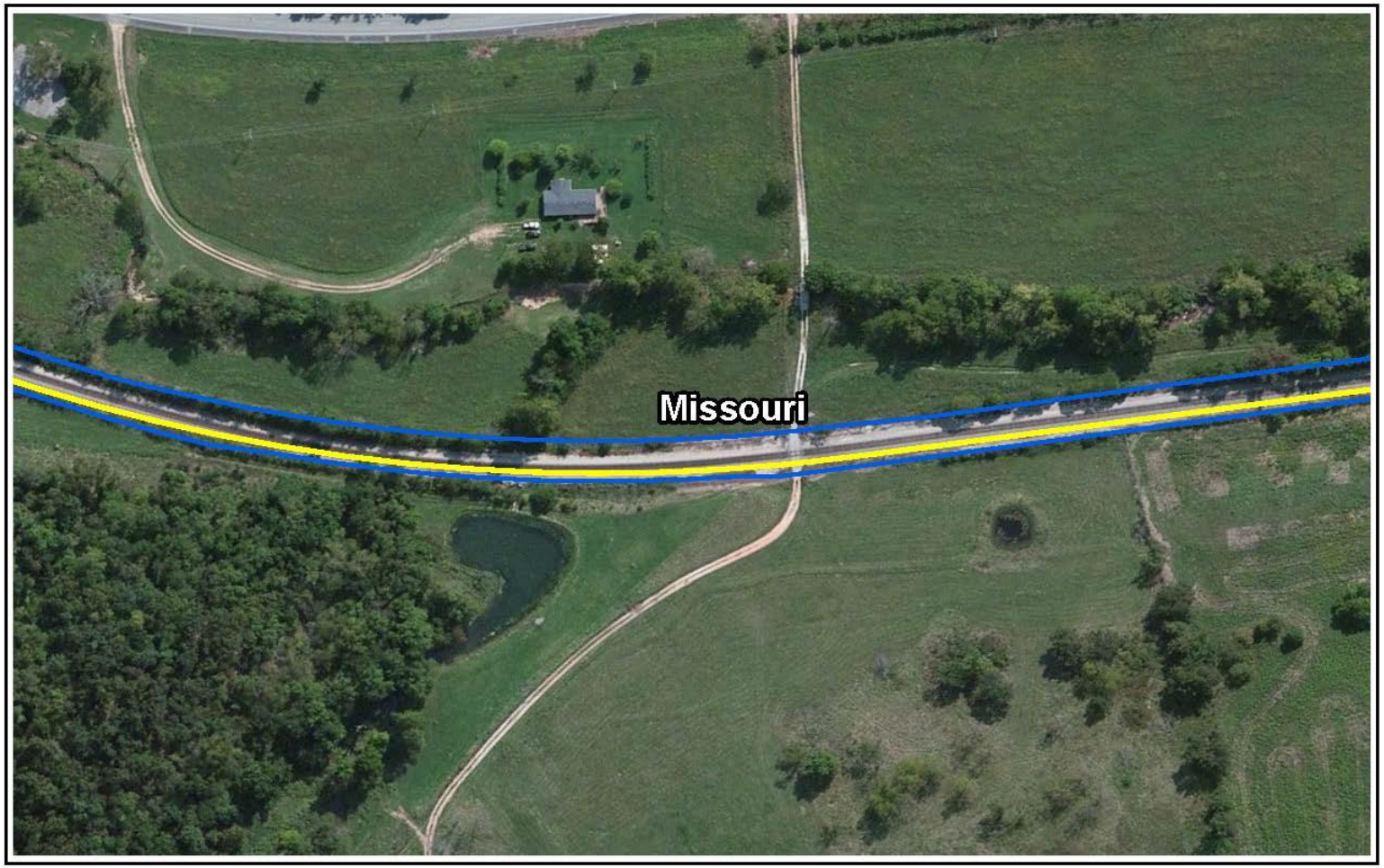
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



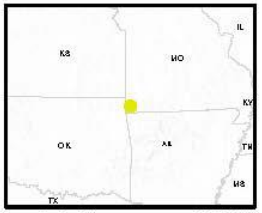
Capital Improvement MP 186
McDonald, Missouri | Map 1 of 7



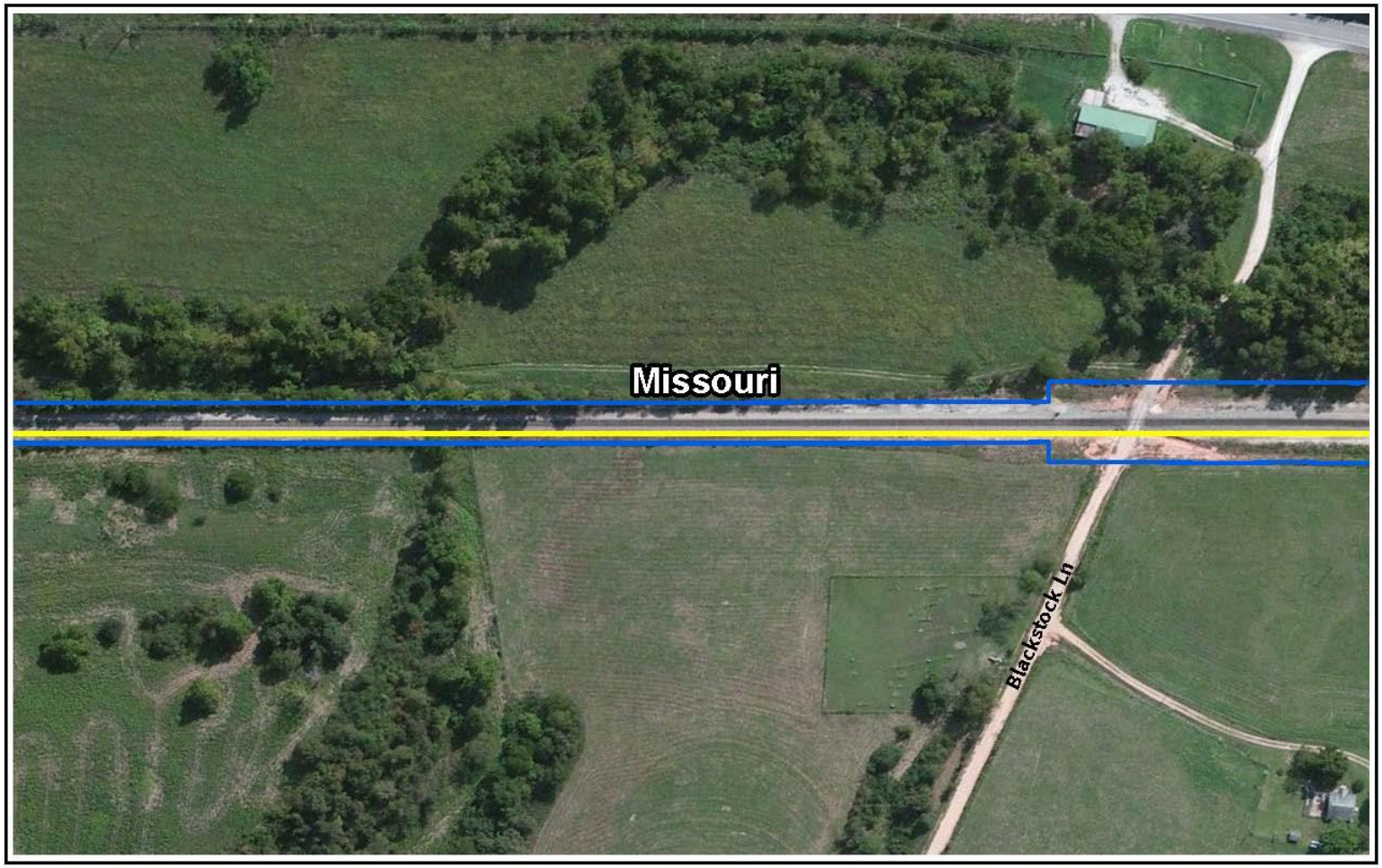
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



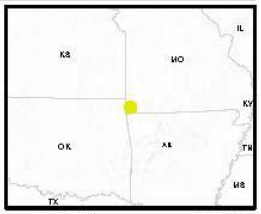
Capital Improvement MP 186
McDonald, Missouri | Map 2 of 7



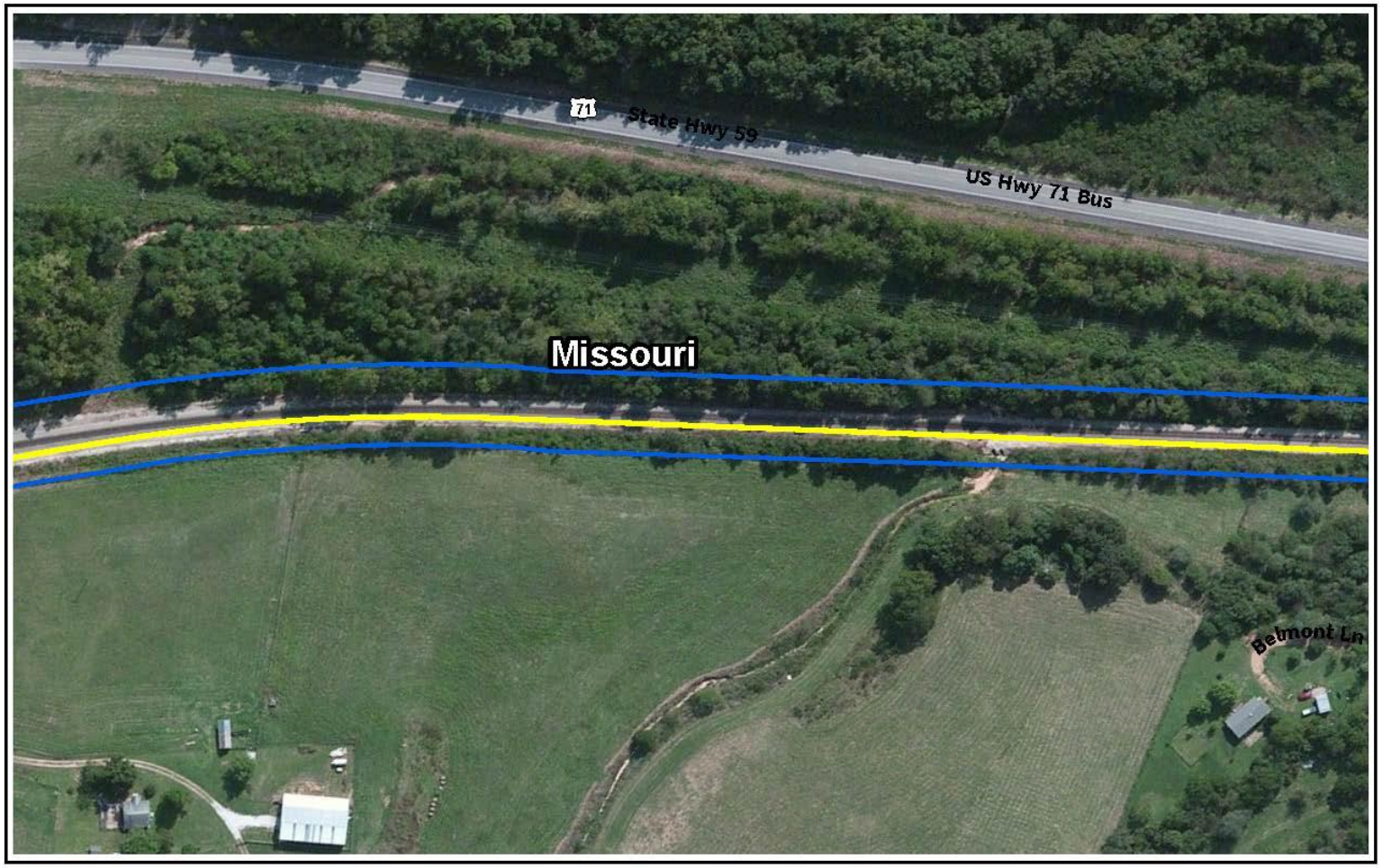
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 186
McDonald, Missouri | Map 3 of 7

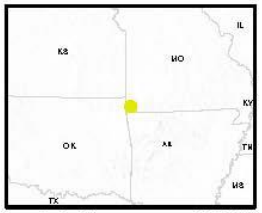


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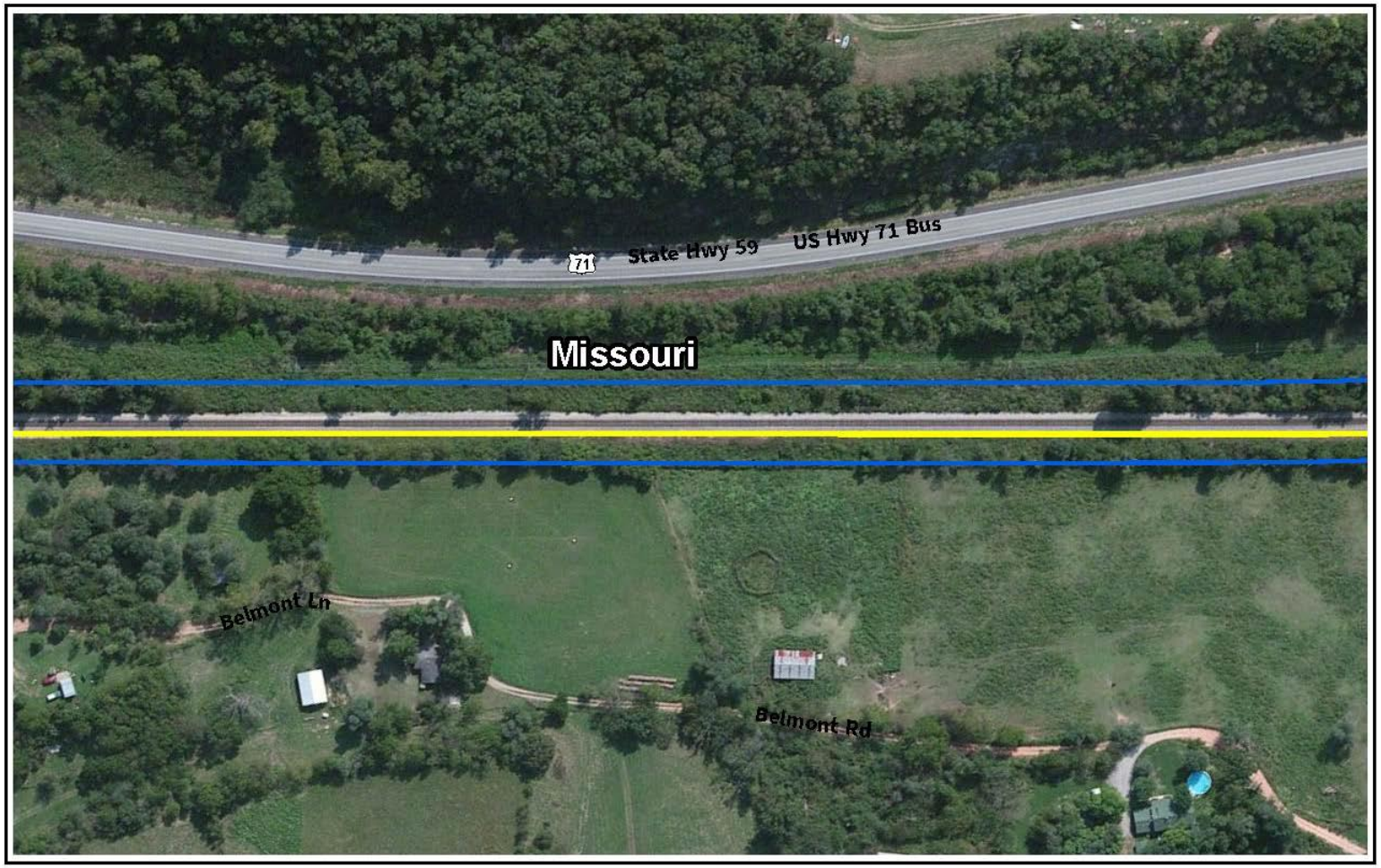
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 186
McDonald, Missouri | Map 4 of 7

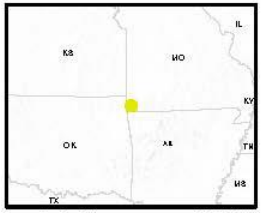


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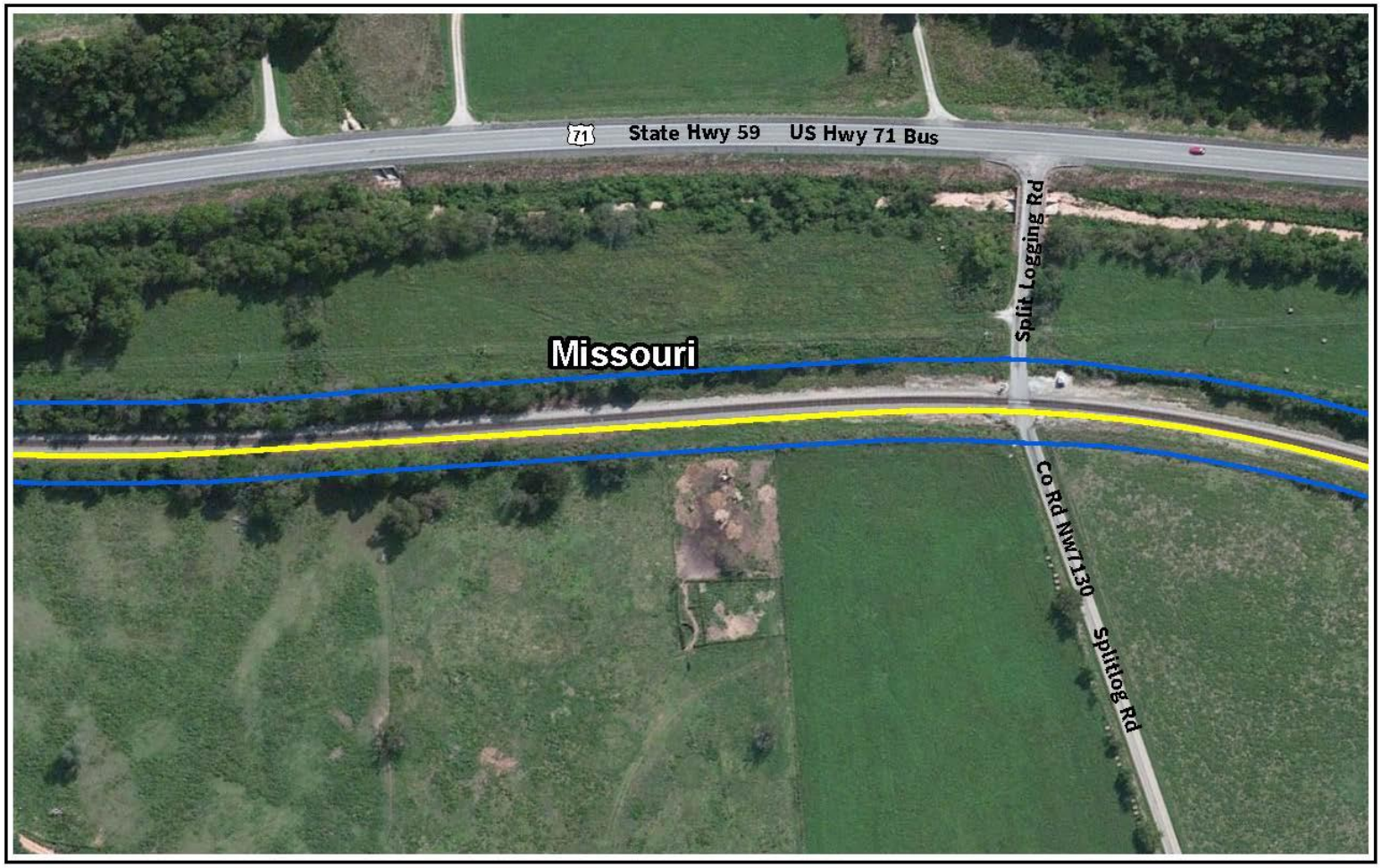
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 186
McDonald, Missouri | Map 5 of 7

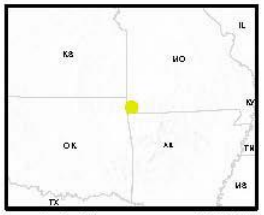


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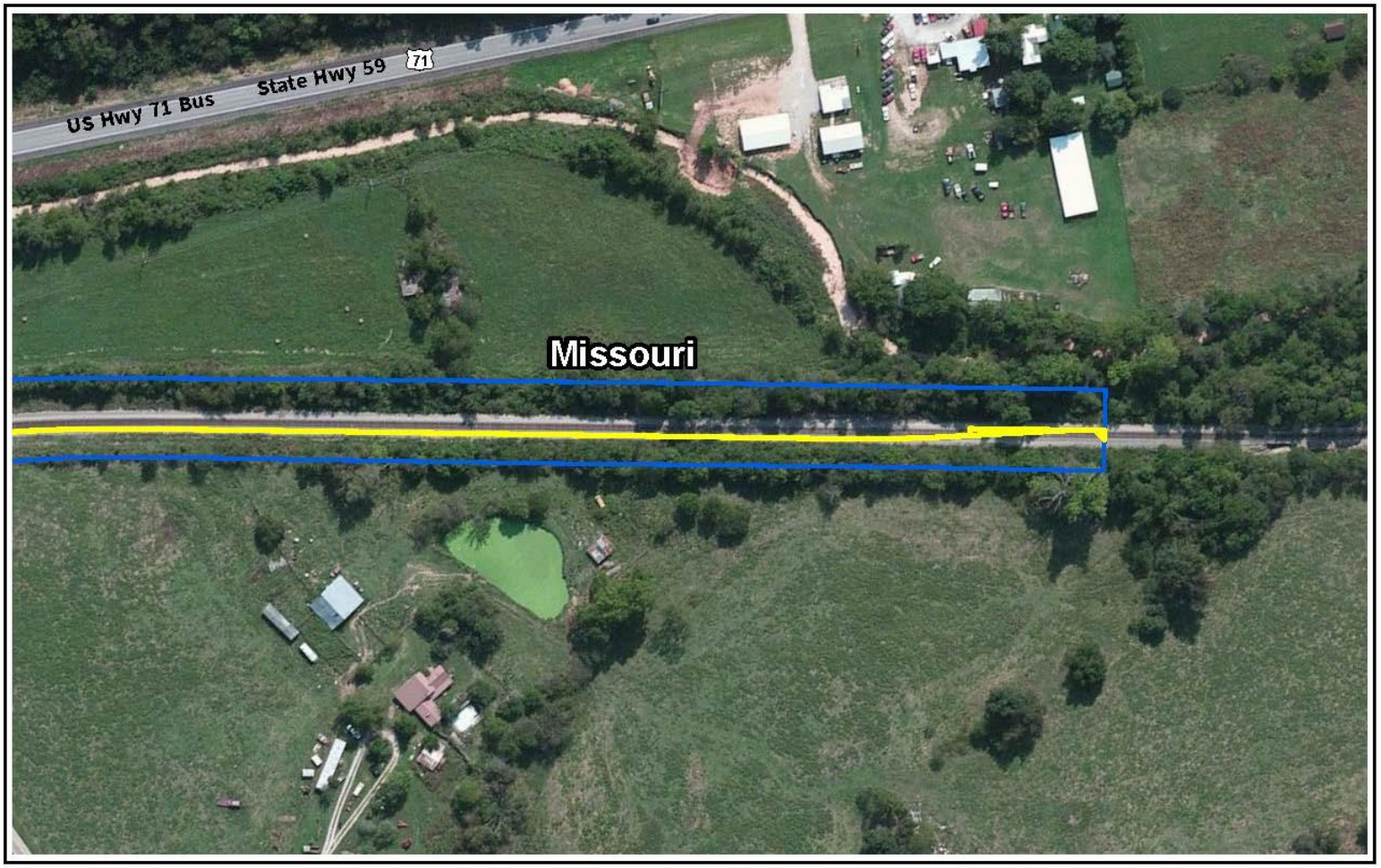
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 186
McDonald, Missouri | Map 6 of 7

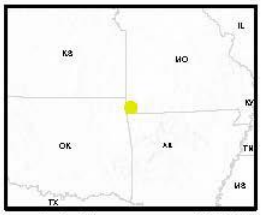


Capital Improvement Location

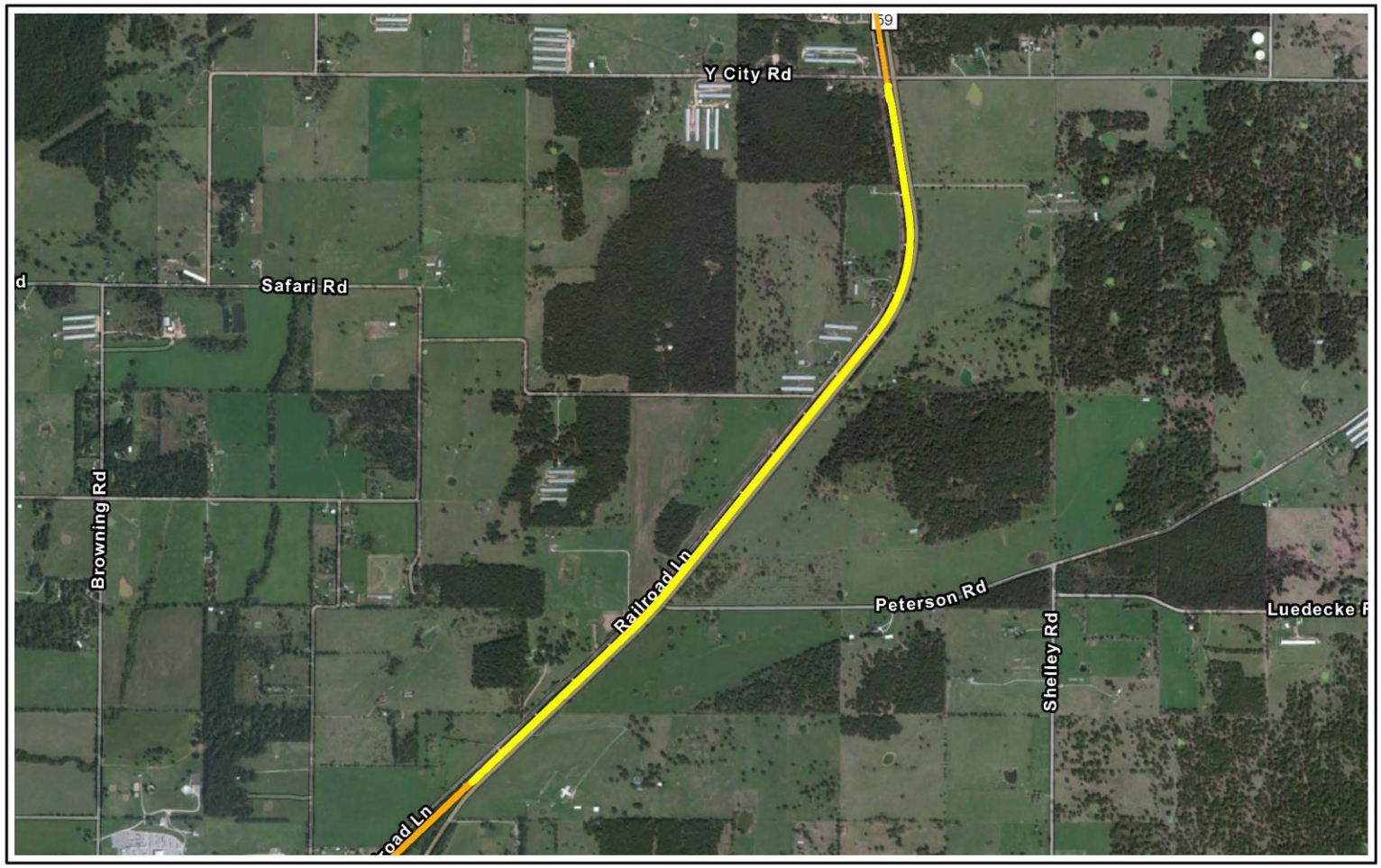
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 186
McDonald, Missouri | Map 7 of 7

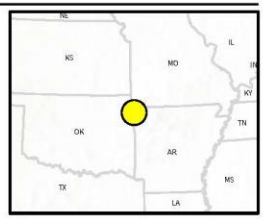


Capital Improvement Project Location
Canadian Pacific Rail Lines
Kansas City Southern Rail Lines
Canadian Pacific Trackage Rights
Kansas City Southern Trackage Rights

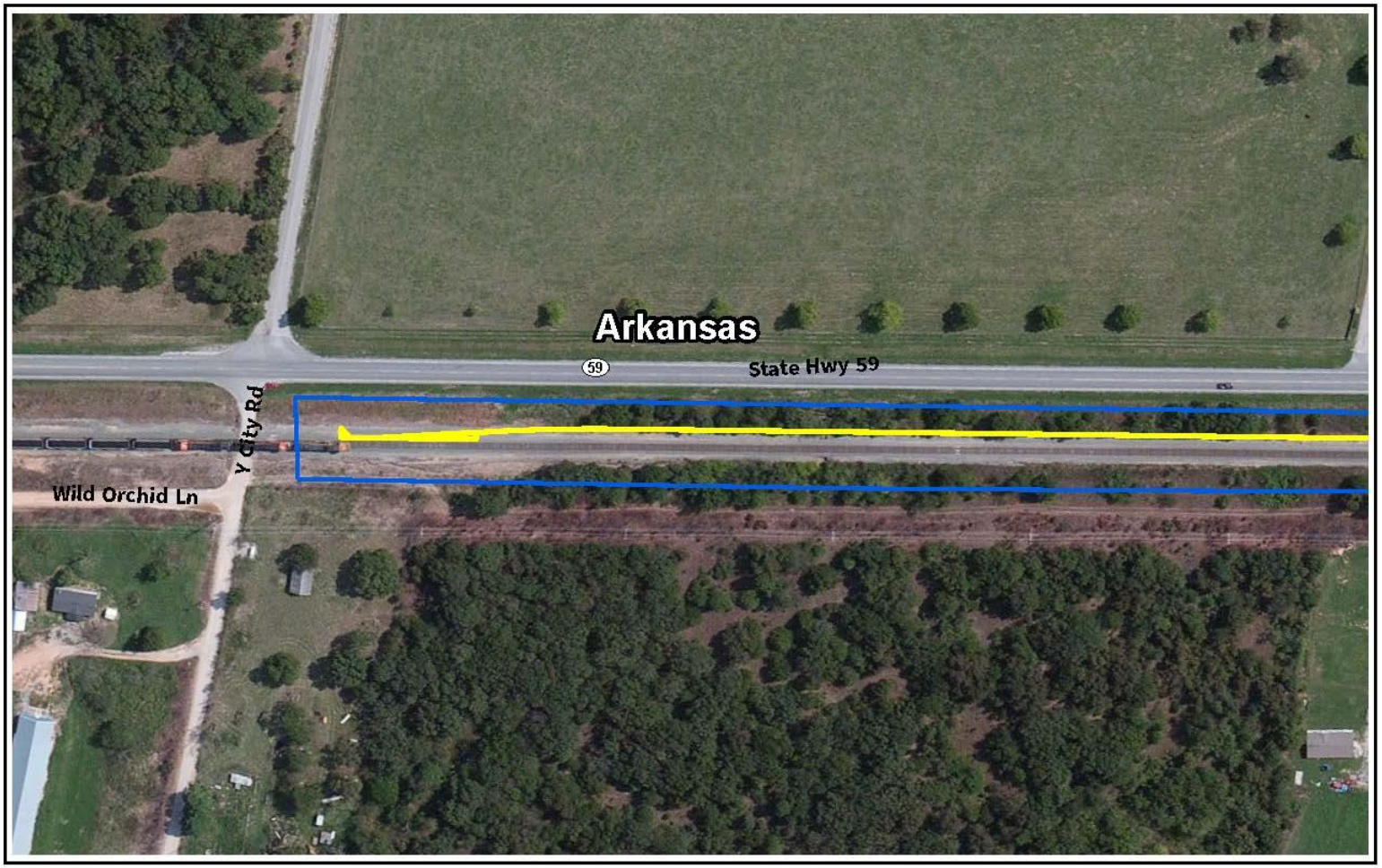
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0 1,000 2,000 3,000 4,000 Feet

Source: FRA, CP, ArcGIS Online



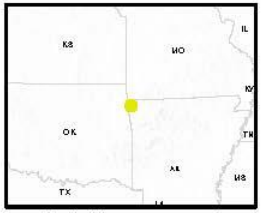
Capital Improvement Project Gentry
Benton, Arkansas



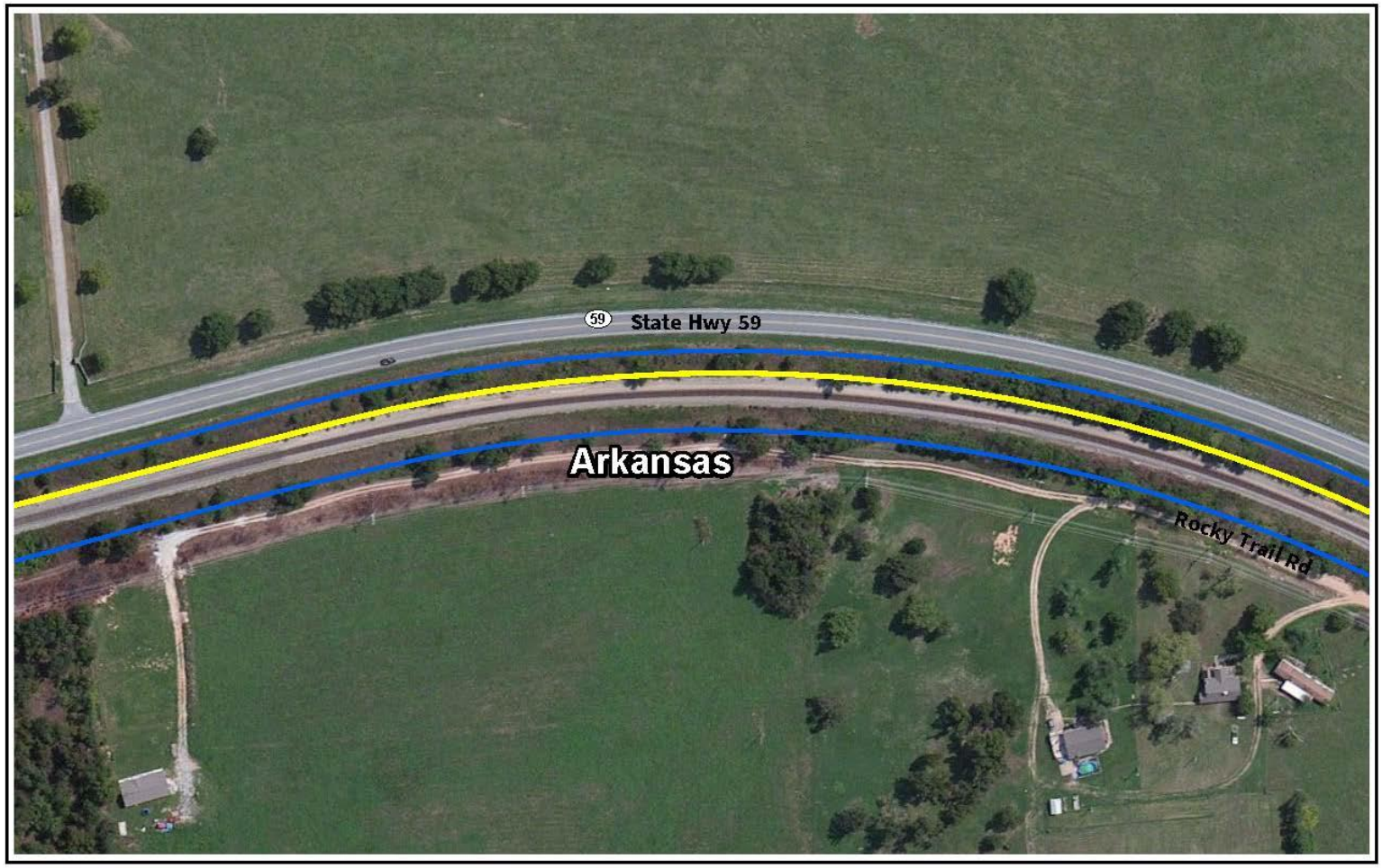
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



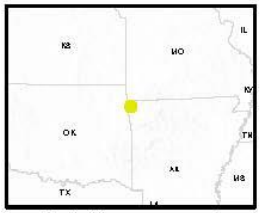
Capital Improvement Gentry
Benton, Arkansas | Map 1 of 7



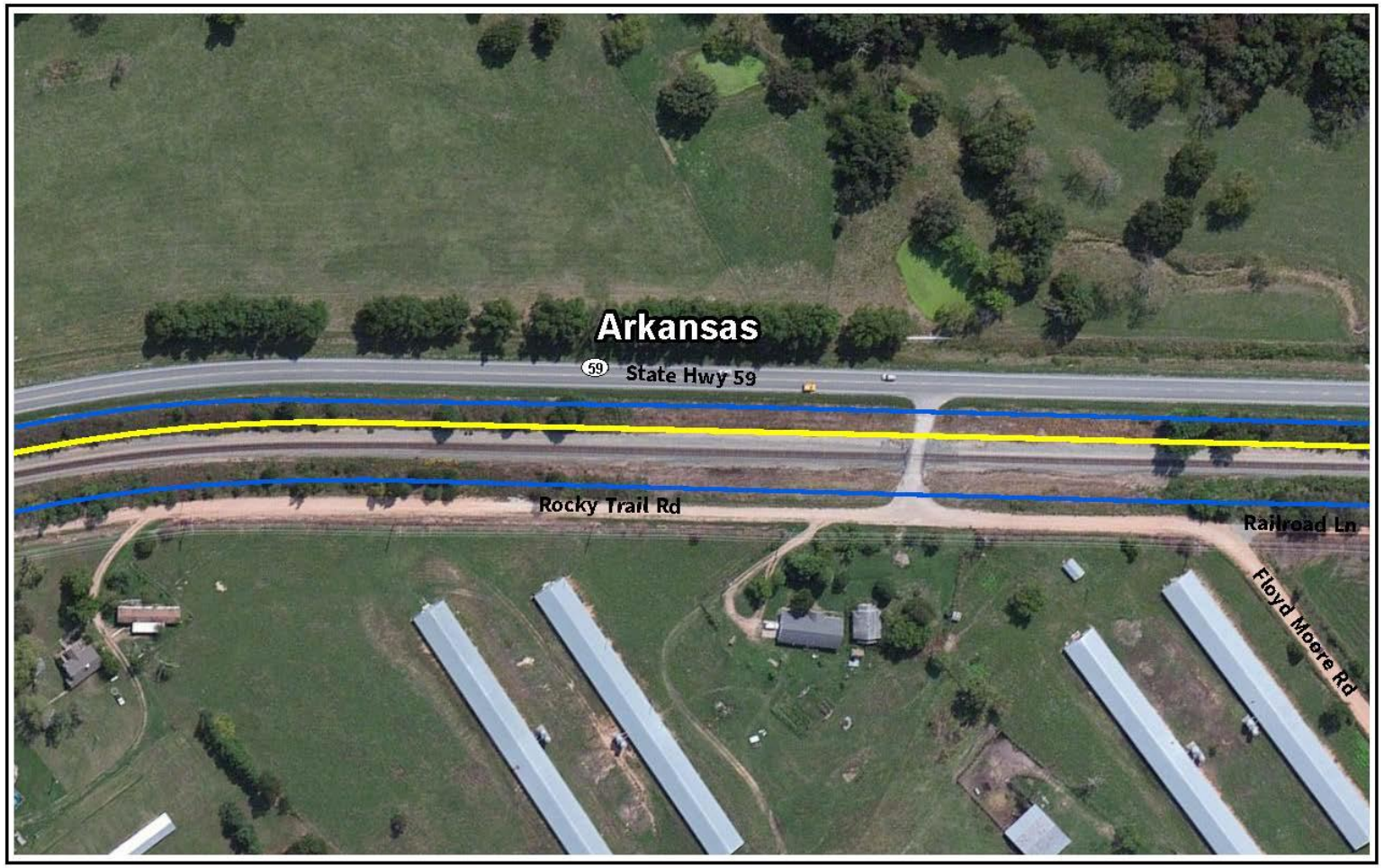
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Gentry
Benton, Arkansas | Map 2 of 7

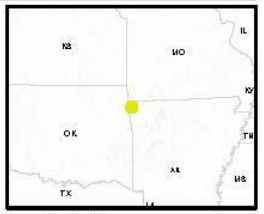


Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Gentry
Benton, Arkansas | Map 3 of 7

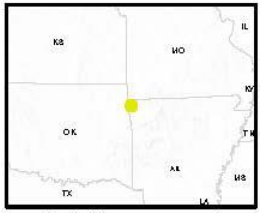


Capital Improvement Location

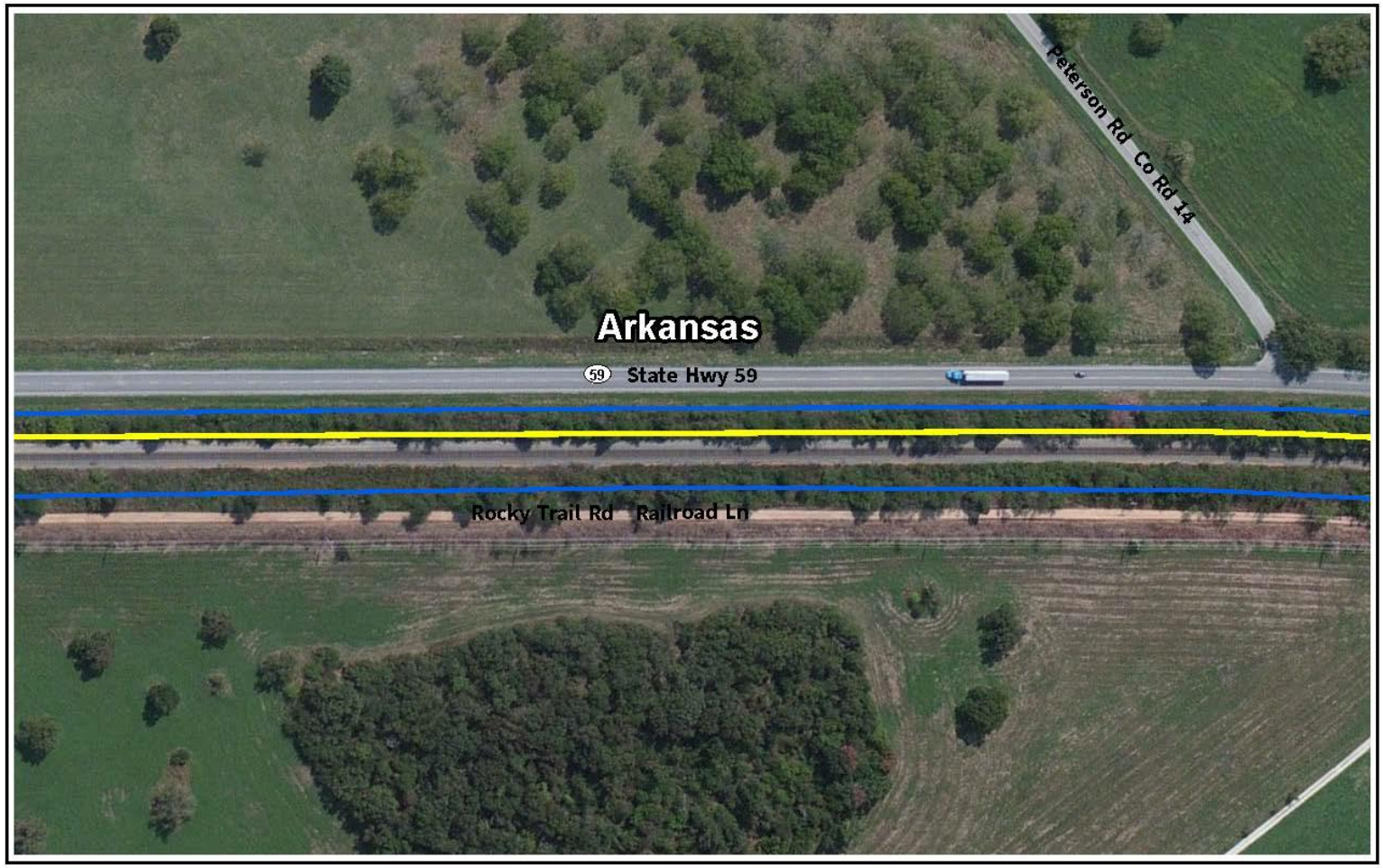
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Gentry
Benton, Arkansas | Map 4 of 7

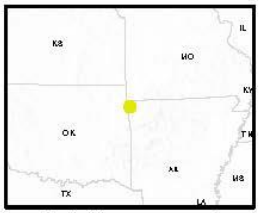


Capital Improvement Location

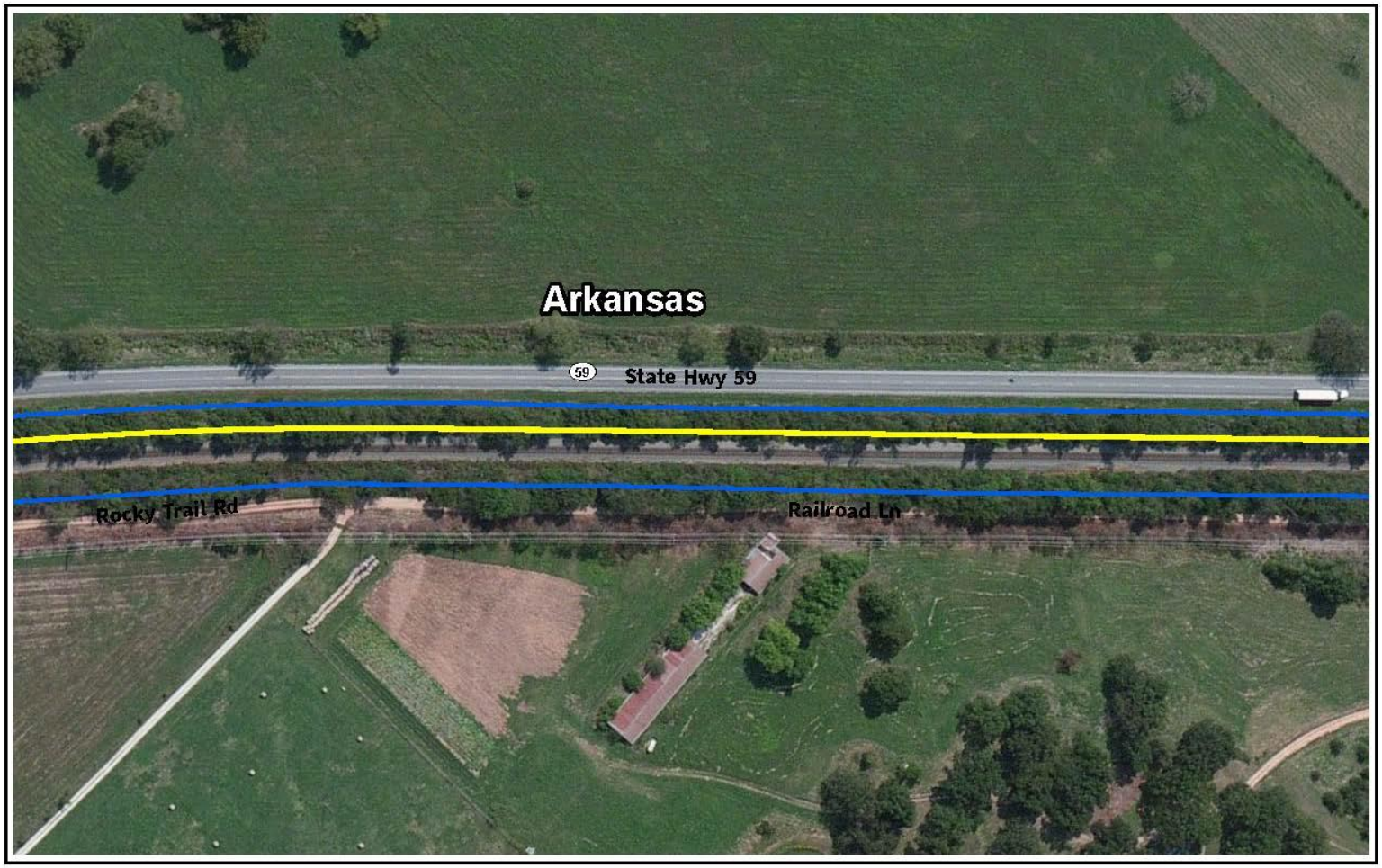
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Gentry
Benton, Arkansas | Map 5 of 7



Capital Improvement Location

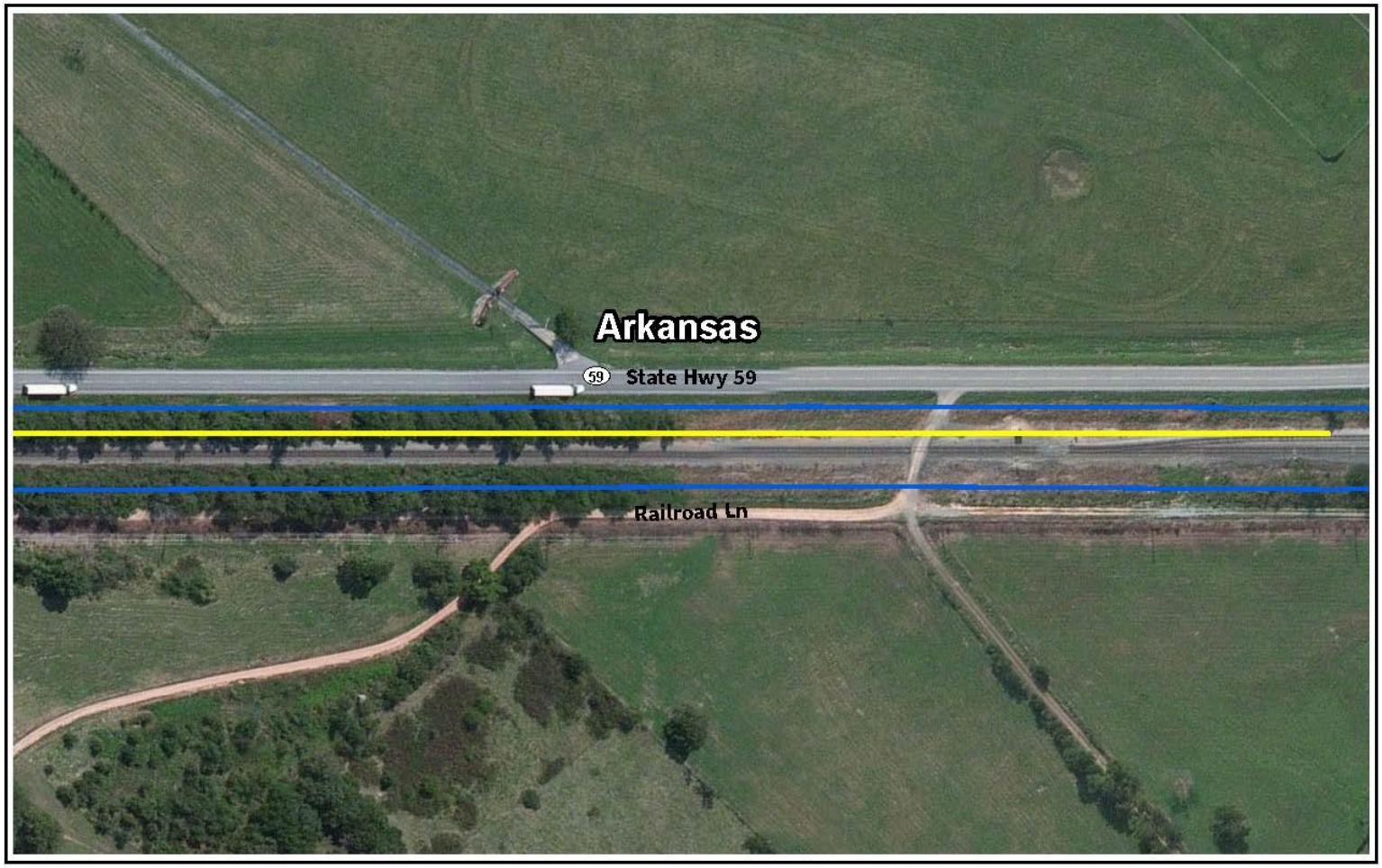
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Gentry
Benton, Arkansas | Map 6 of 7

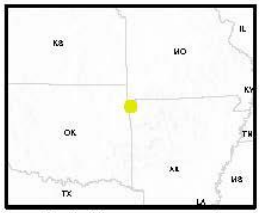


Capital Improvement Location

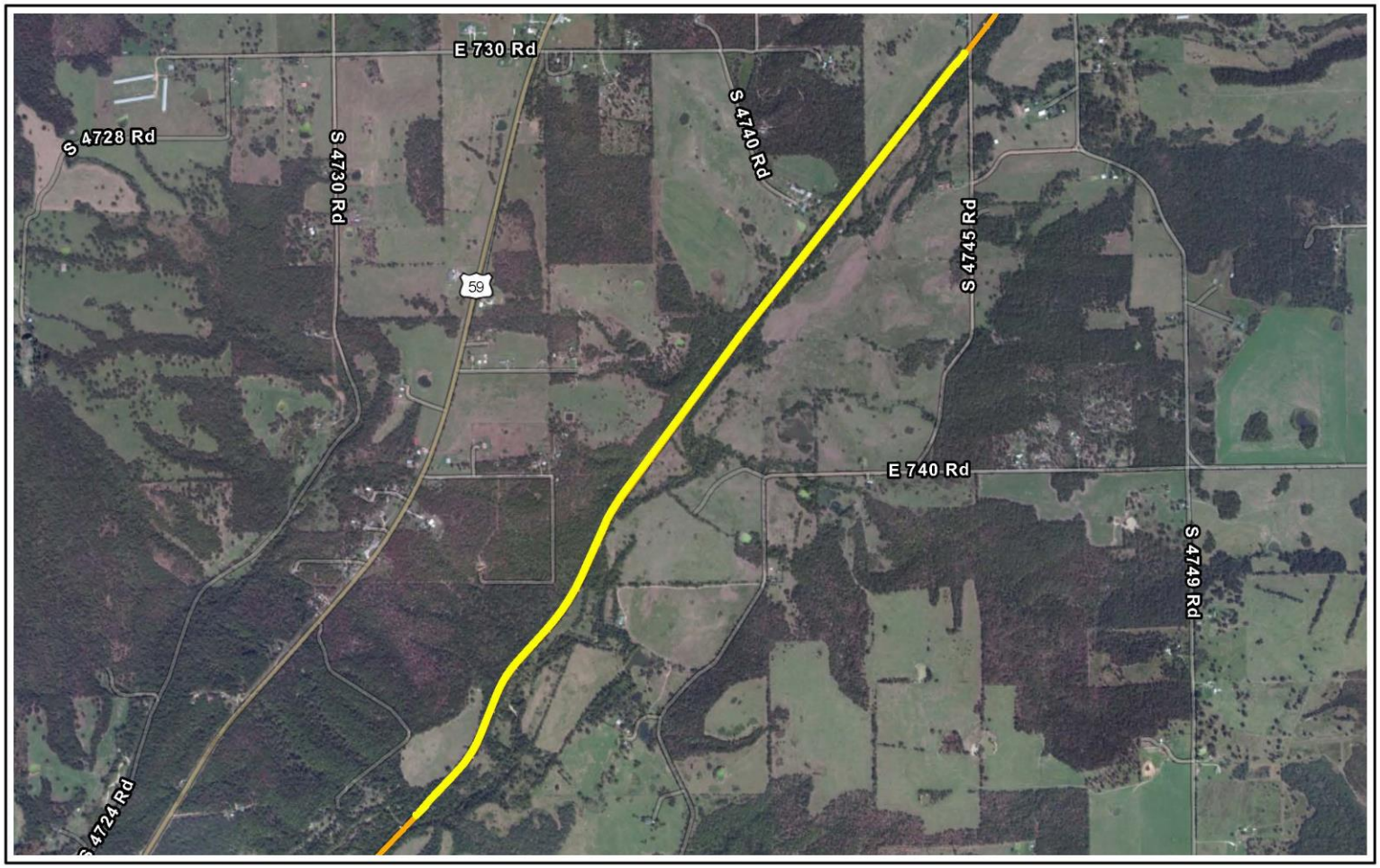
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Gentry
Benton, Arkansas | Map 7 of 7

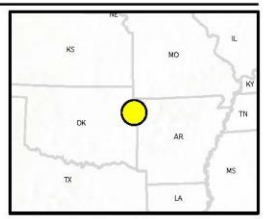


Capital Improvement Project Location
Canadian Pacific Rail Lines
Kansas City Southern Rail Lines
Canadian Pacific Trackage Rights
Kansas City Southern Trackage Rights

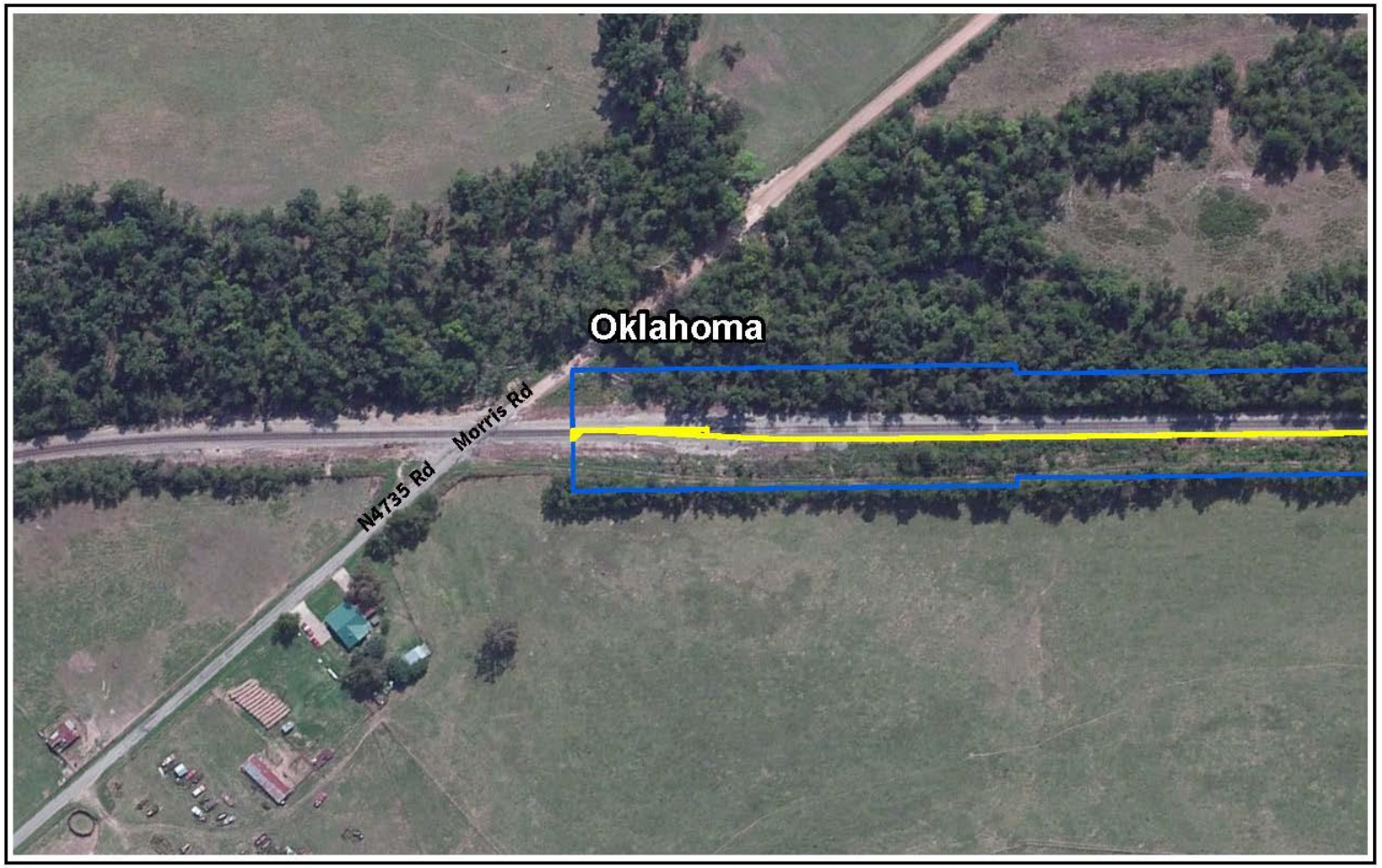
N

0 1,000 2,000 3,000 4,000 Feet

Source: FRA, CP, ArcGIS Online



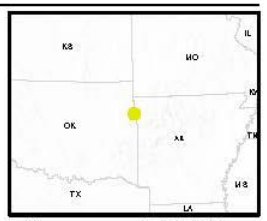
Capital Improvement Project MP 247 (Baron)
Adair, Oklahoma



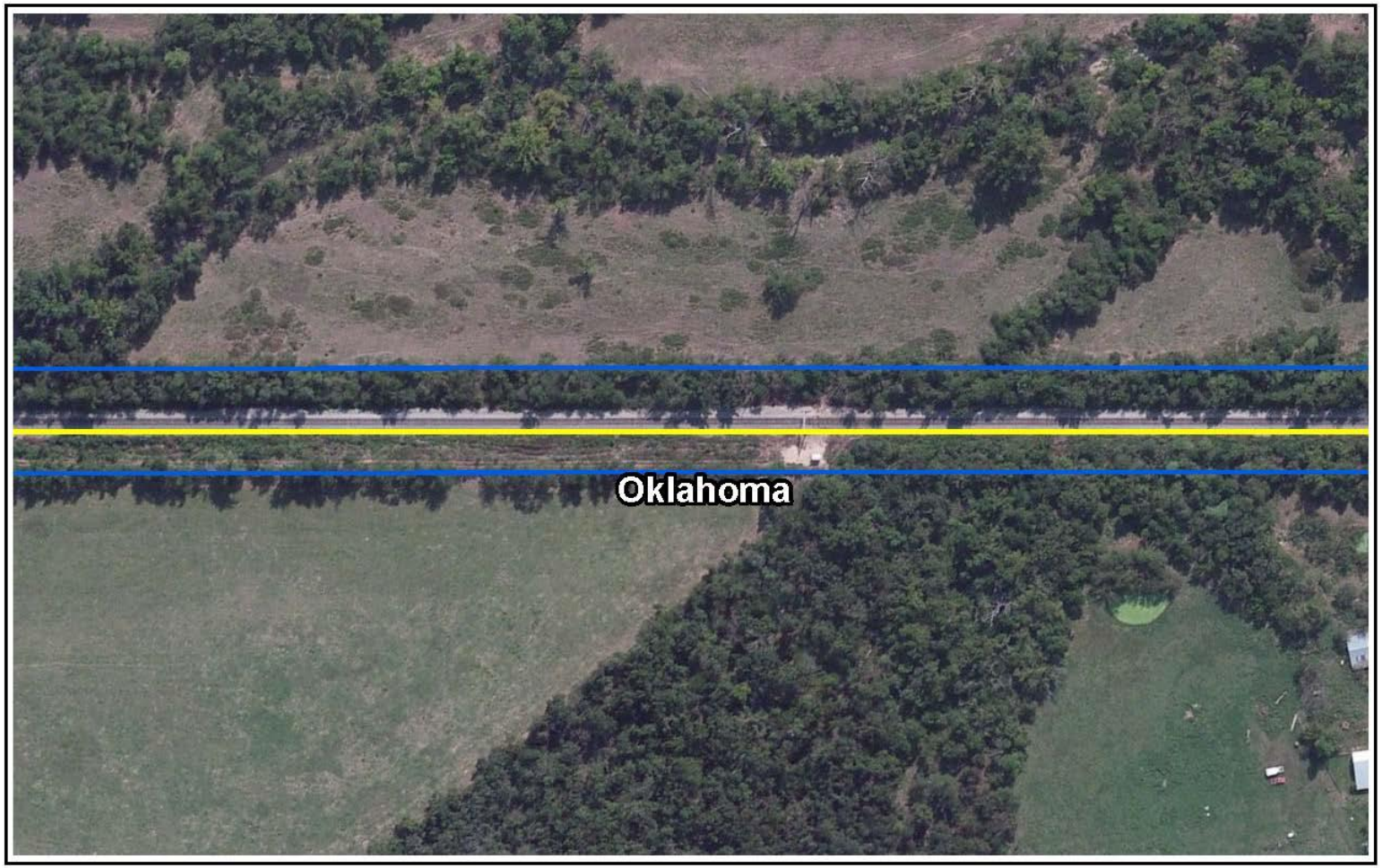
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



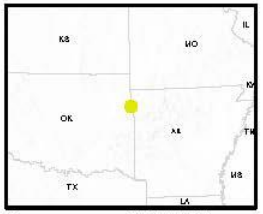
Capital Improvement MP 247 (Baron)
Adair, Oklahoma | Map 1 of 8



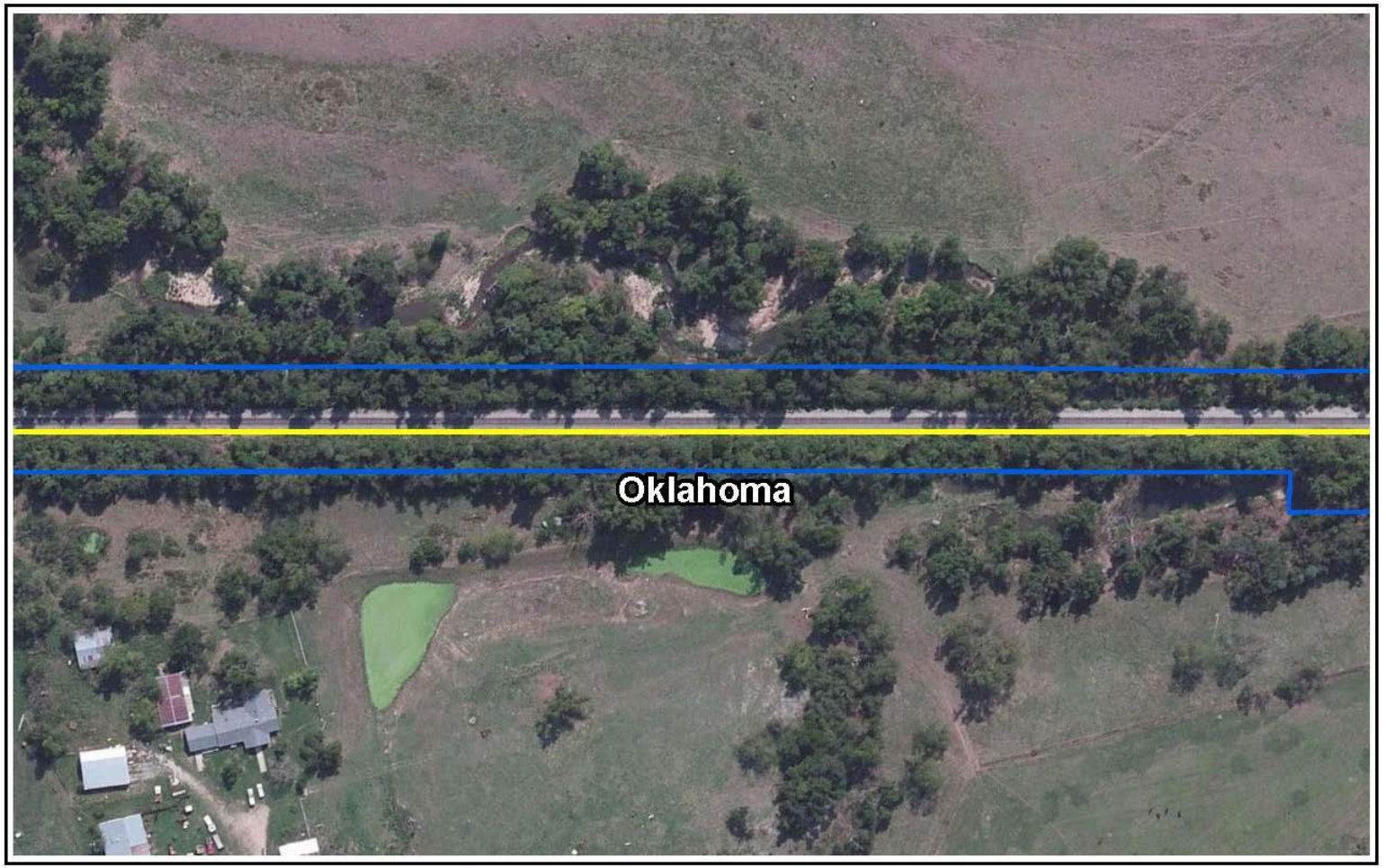
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 247 (Baron)
Adair, Oklahoma | Map 2 of 8



Capital Improvement Location

Existing Right-of-Way

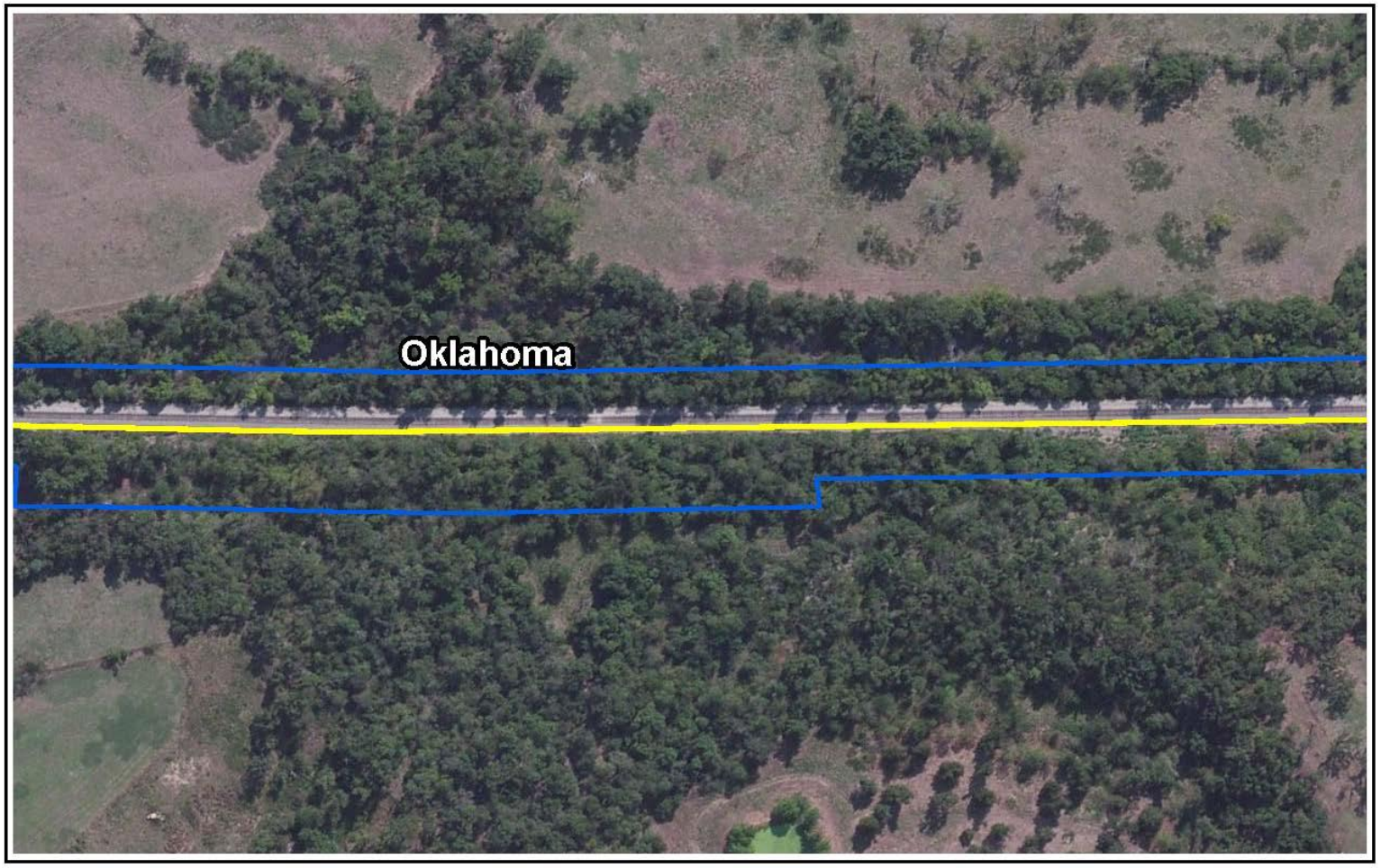
0 200 400

Feet

Source: FRA, CP, ArcGIS Online



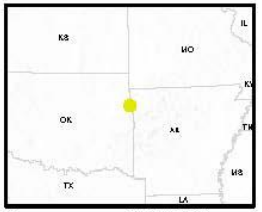
Capital Improvement MP 247 (Baron)
Adair, Oklahoma | Map 3 of 8



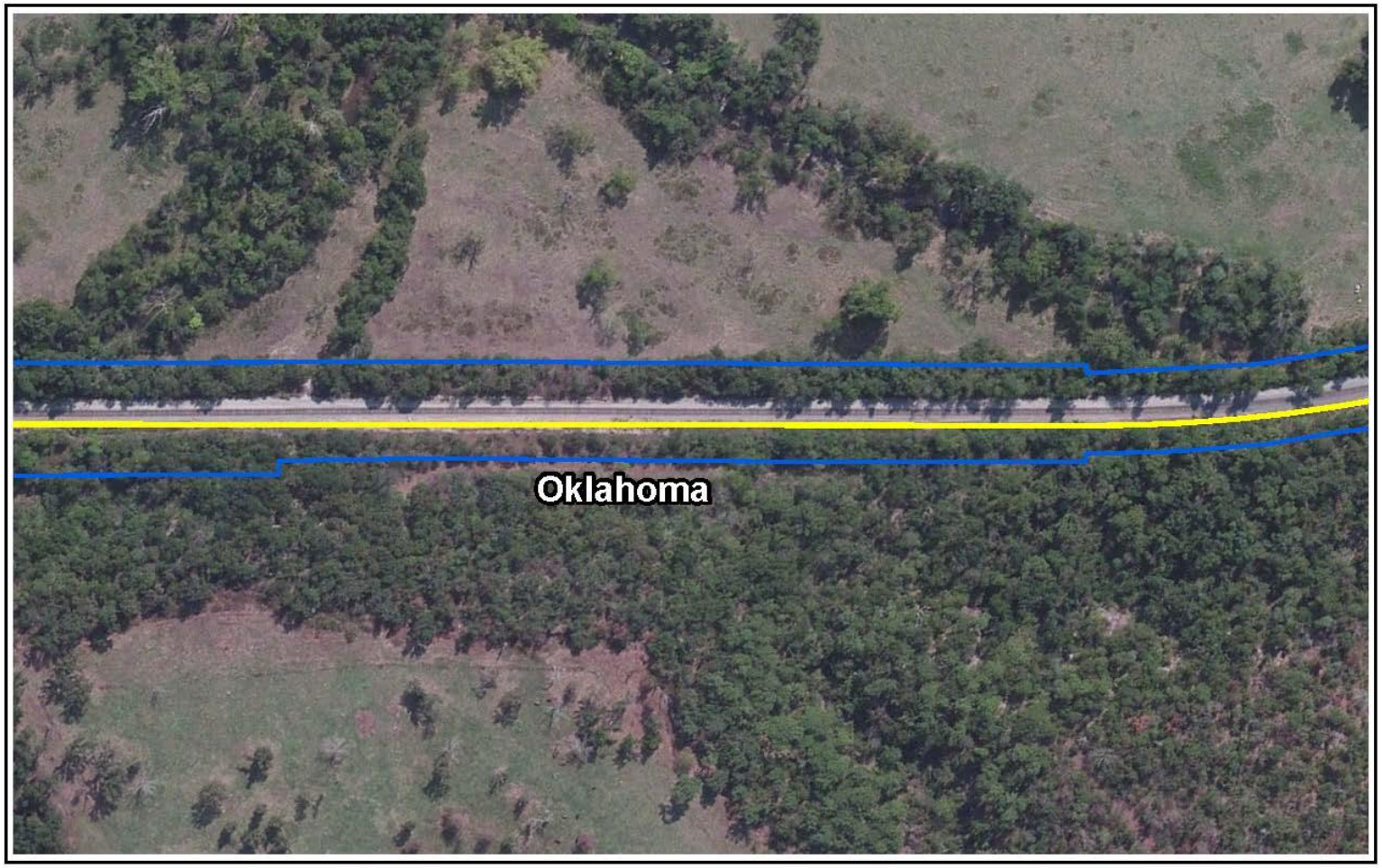
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 247 (Baron)
Adair, Oklahoma | Map 4 of 8



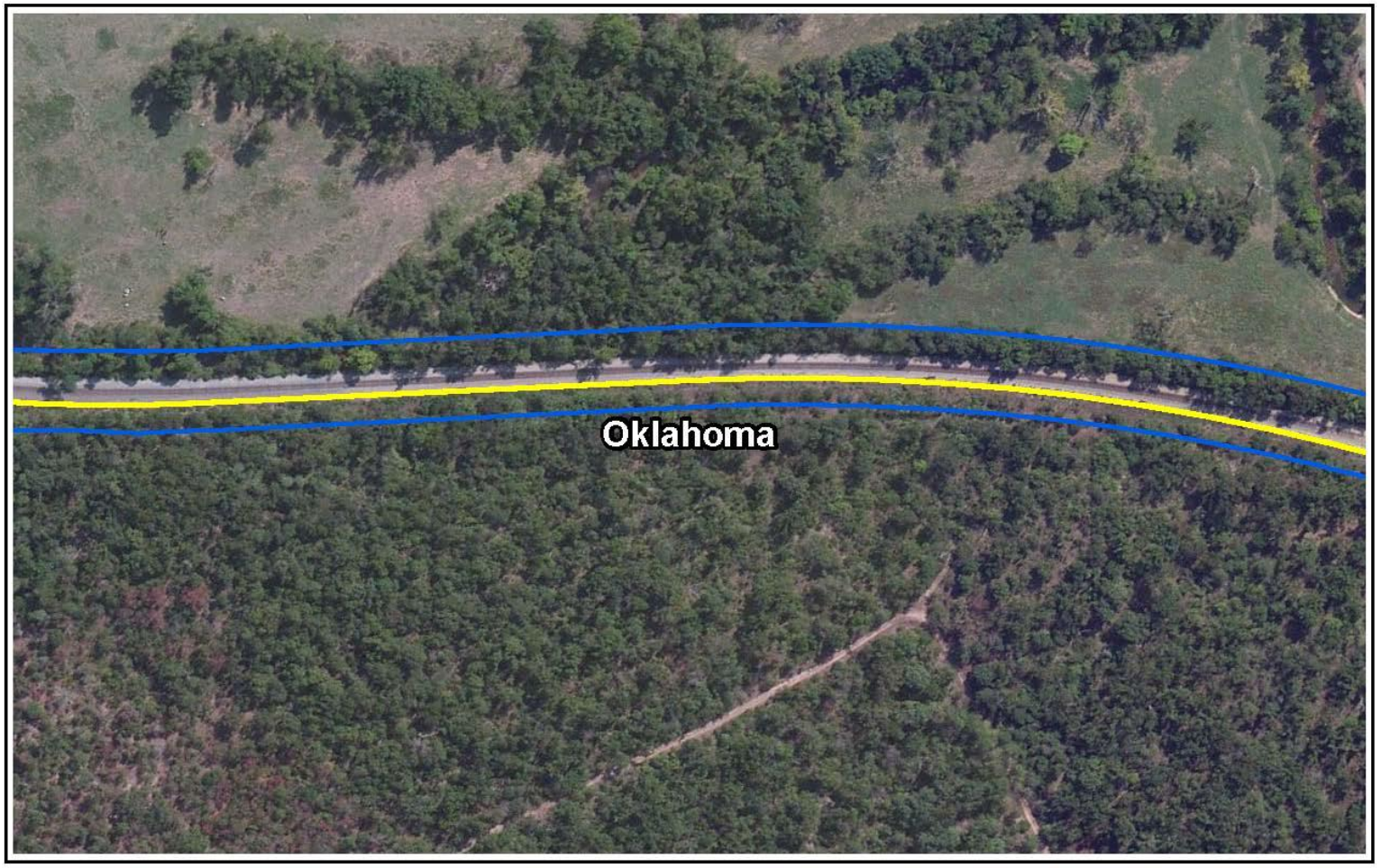
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 247 (Baron)
Adair, Oklahoma | Map 5 of 8



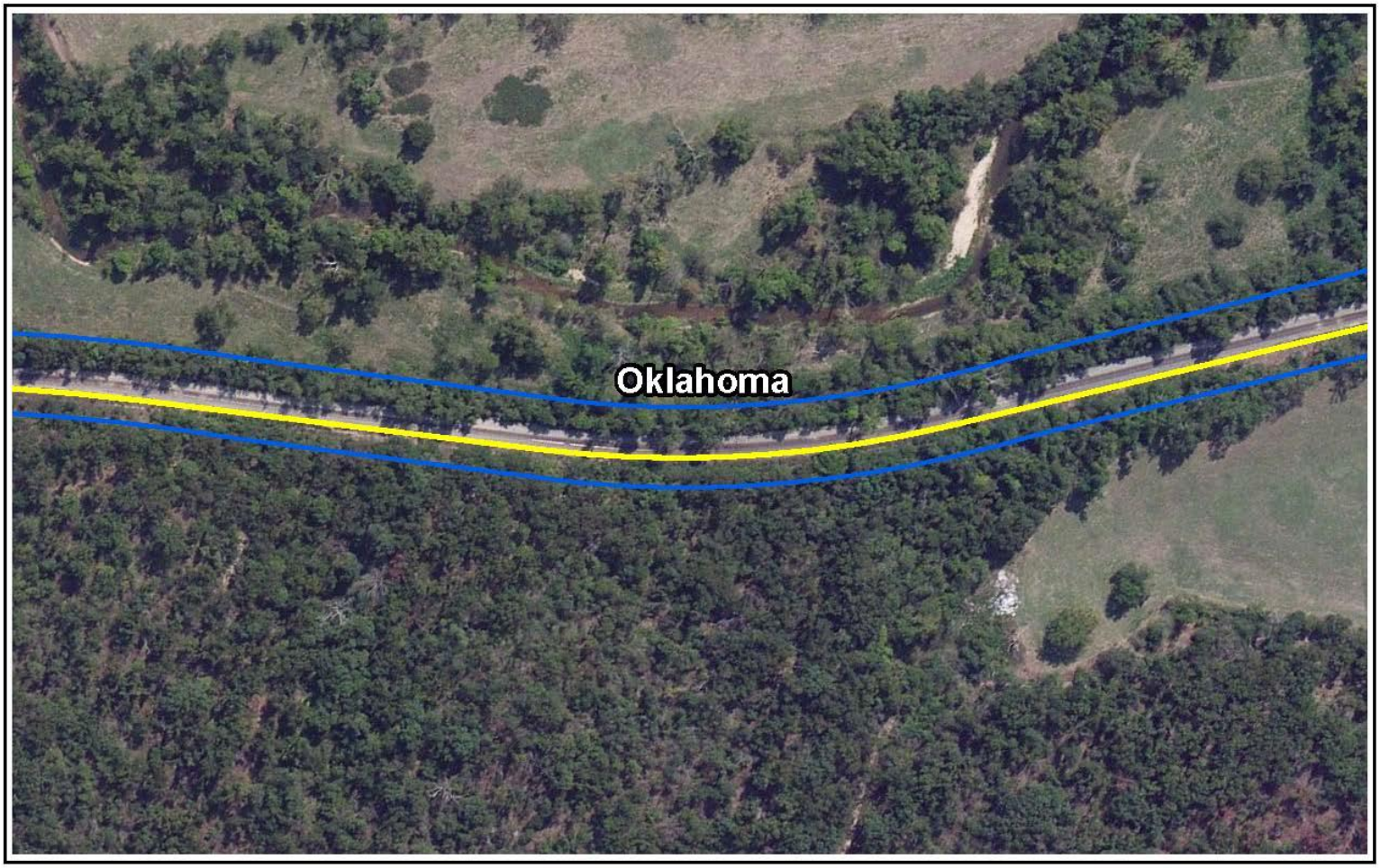
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



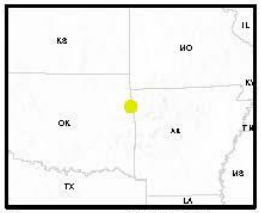
Capital Improvement MP 247 (Baron)
Adair, Oklahoma | Map 6 of 8



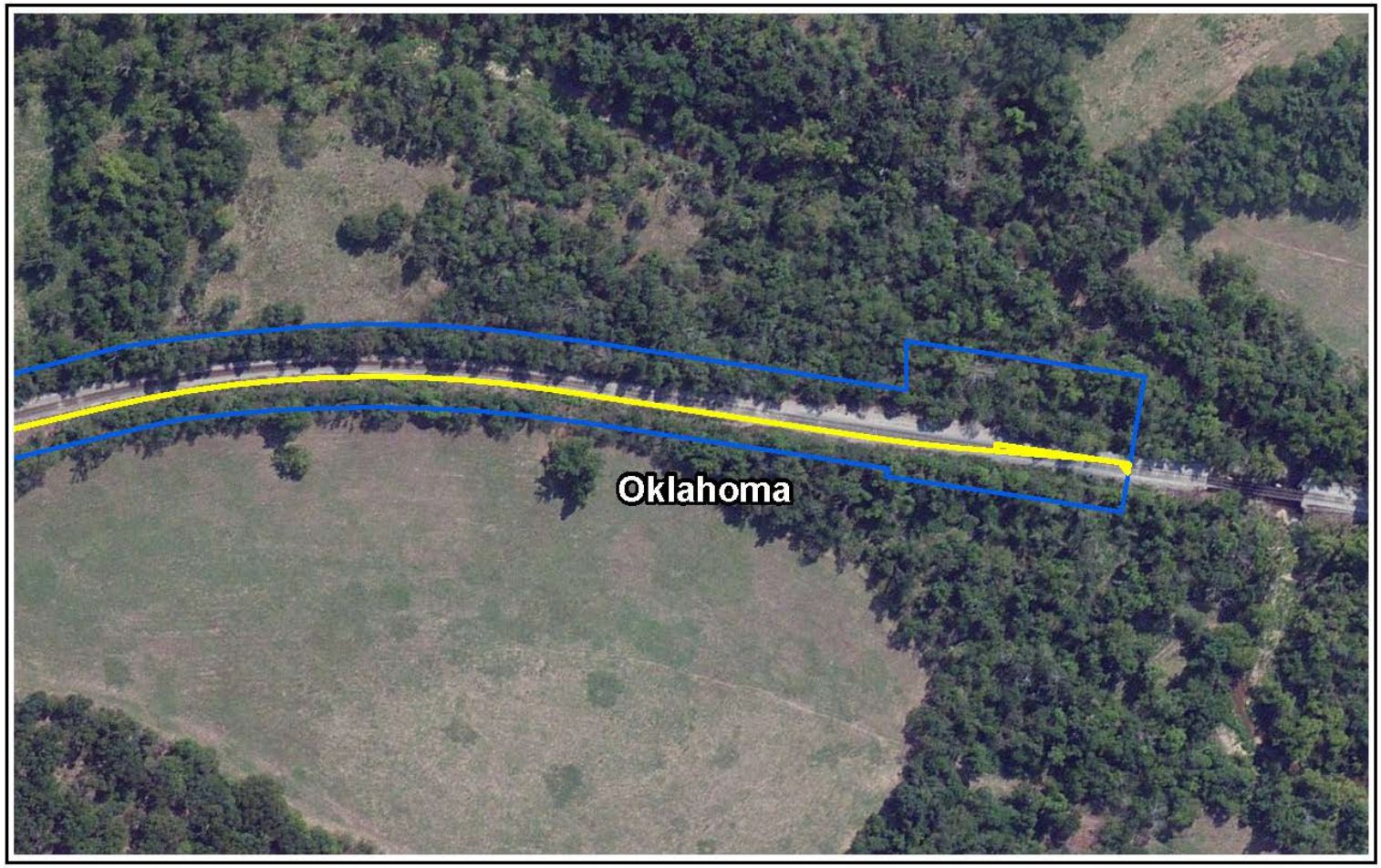
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 247 (Baron)
Adair, Oklahoma | Map 7 of 8



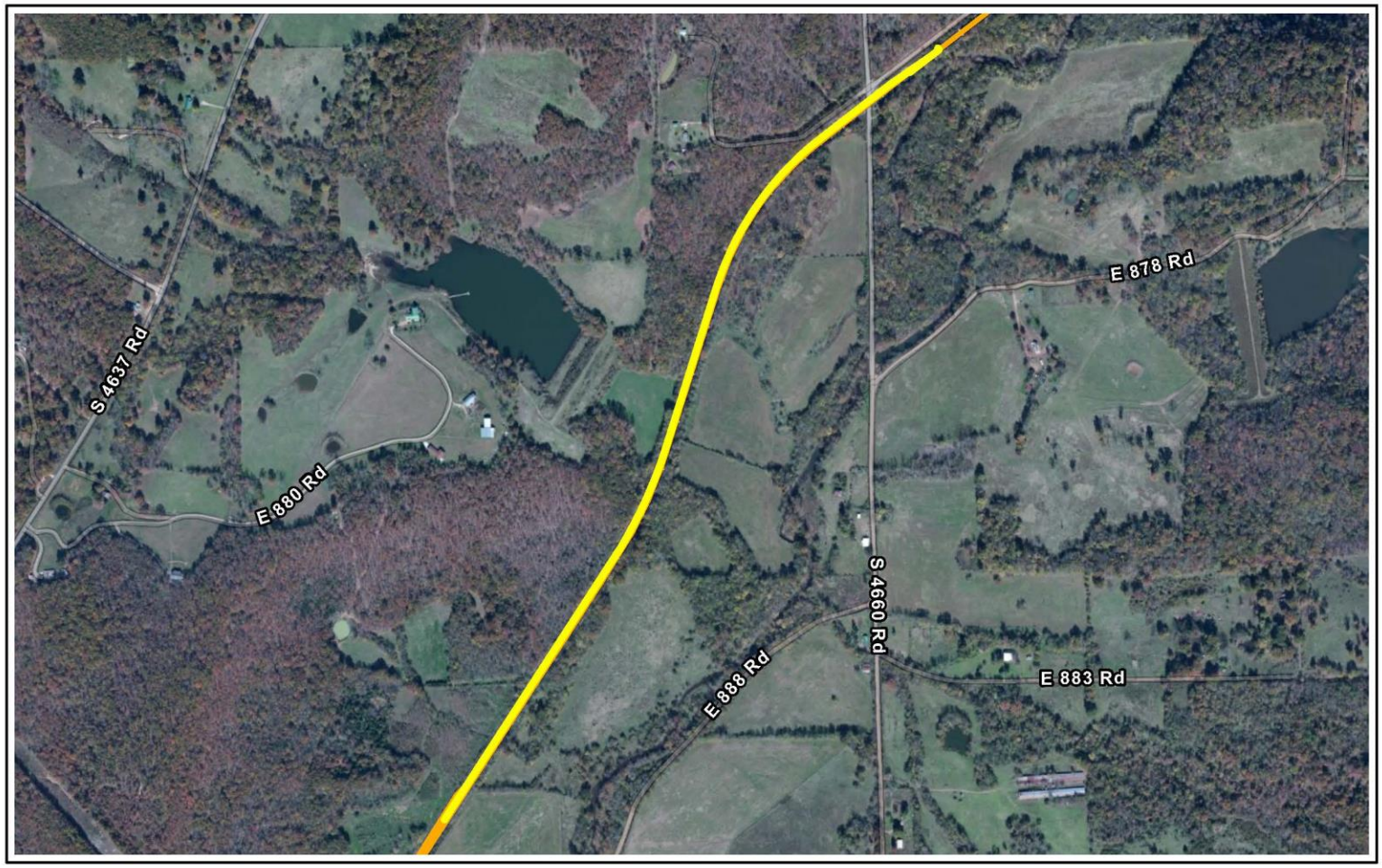
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 247 (Baron)
Adair, Oklahoma | Map 8 of 8

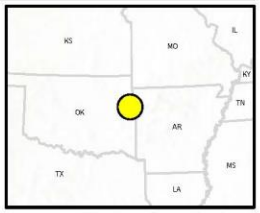


Capital Improvement Project Location
Canadian Pacific Rail Lines
Kansas City Southern Rail Lines
Canadian Pacific Trackage Rights
Kansas City Southern Trackage Rights

N

0 1,000 2,000 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Project Cave Springs
Adair, Oklahoma

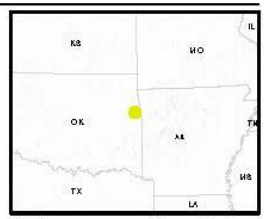


Capital Improvement Location

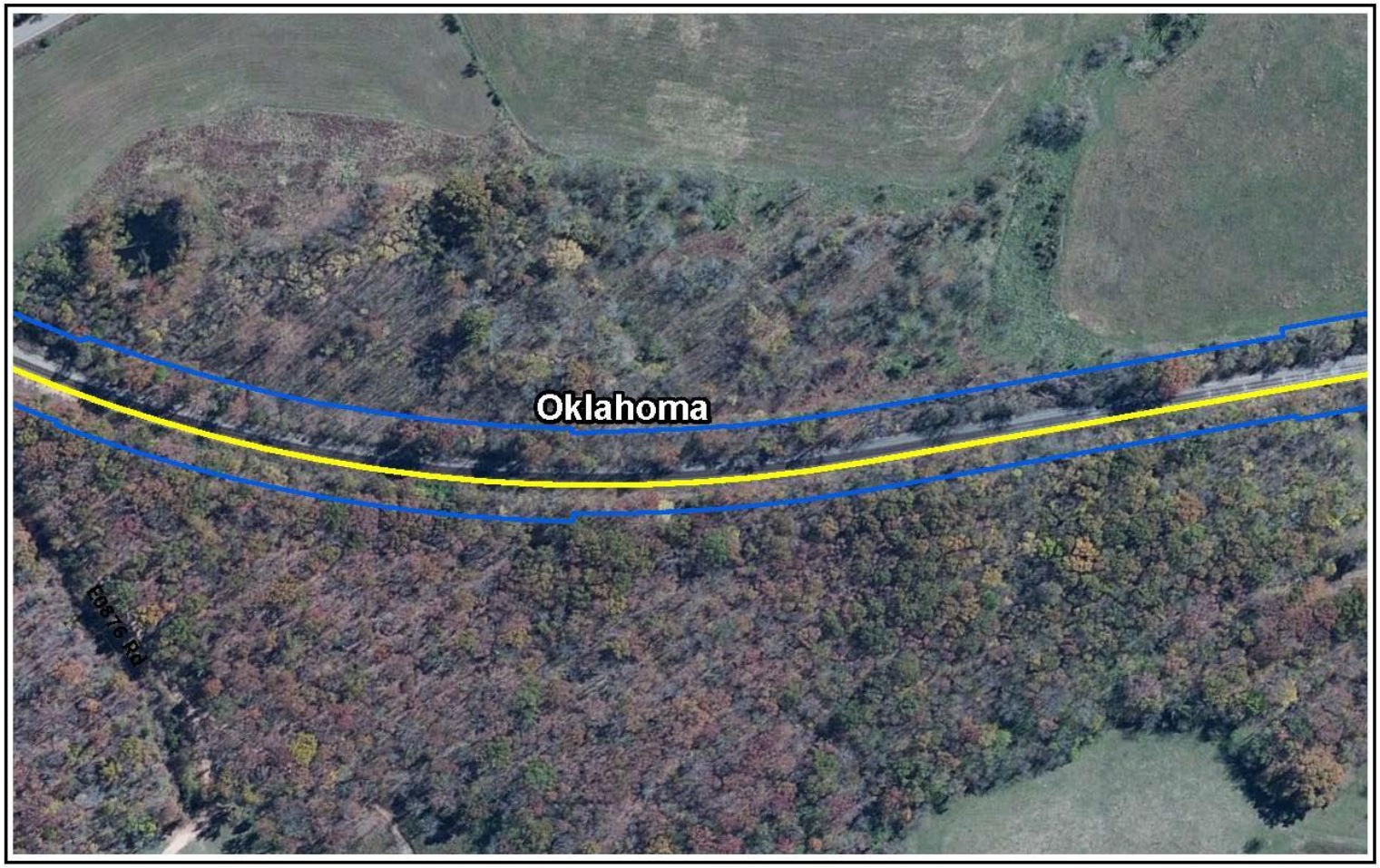
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



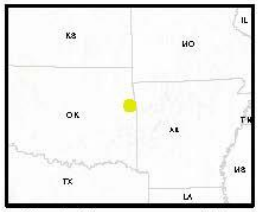
Capital Improvement Cave Springs
Adair, Oklahoma | Map 1 of 4



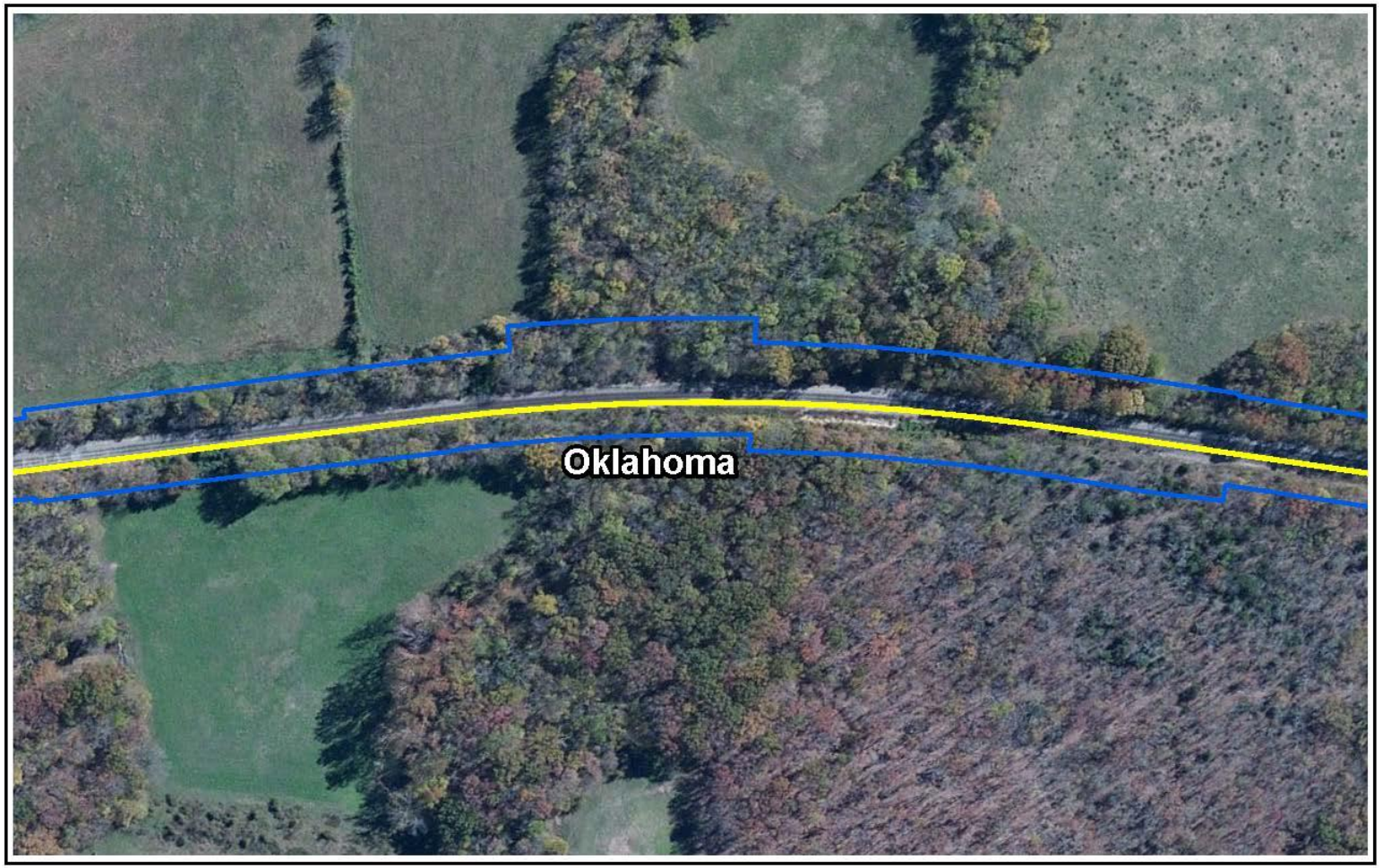
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



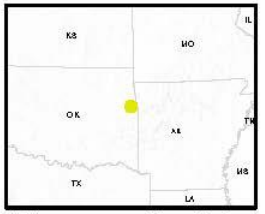
Capital Improvement Cave Springs Adair, Oklahoma | Map



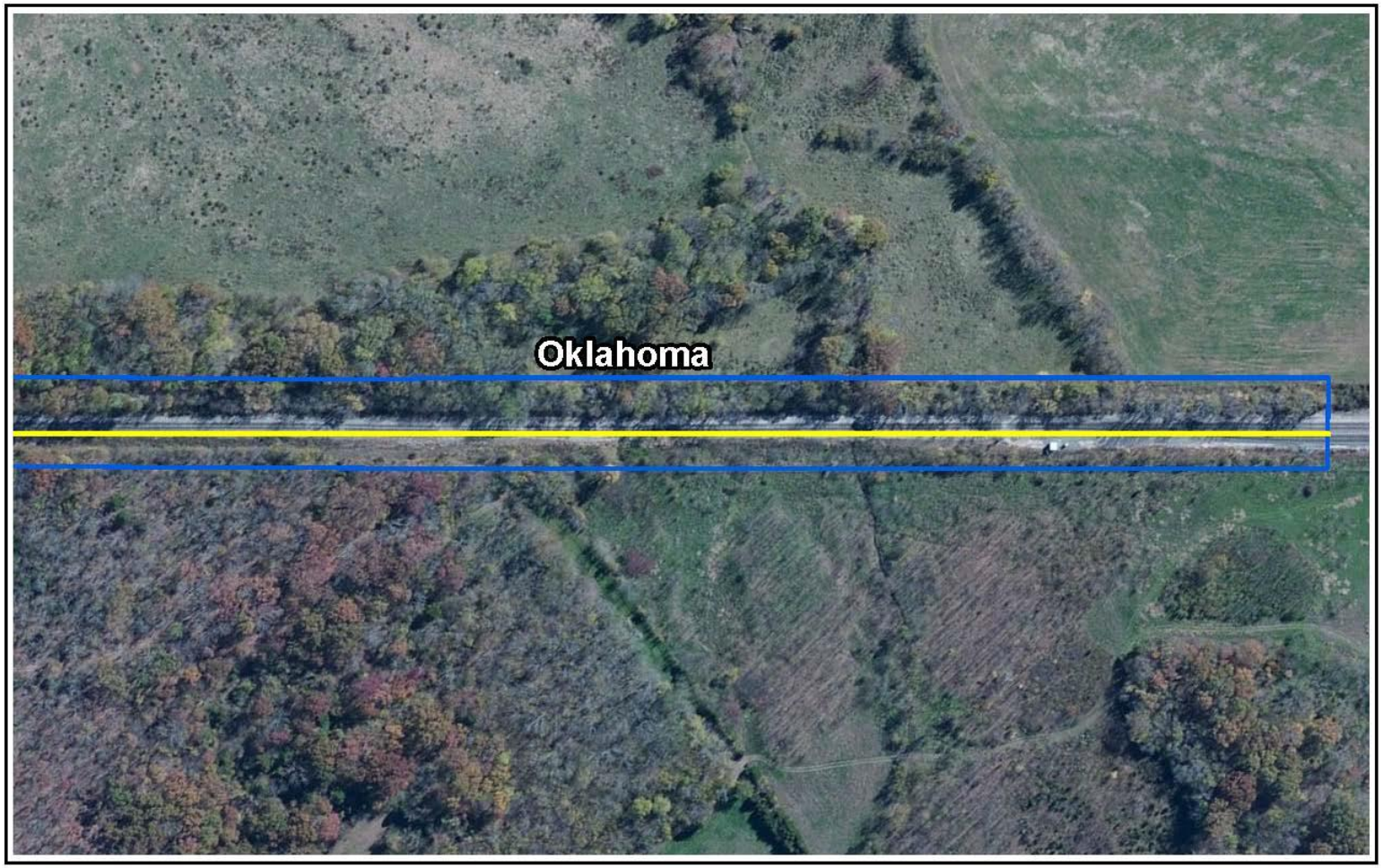
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



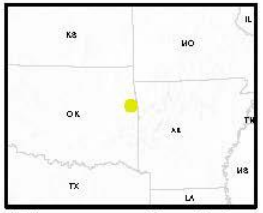
Capital Improvement Cave Springs
Adair, Oklahoma | Map 3 of 4



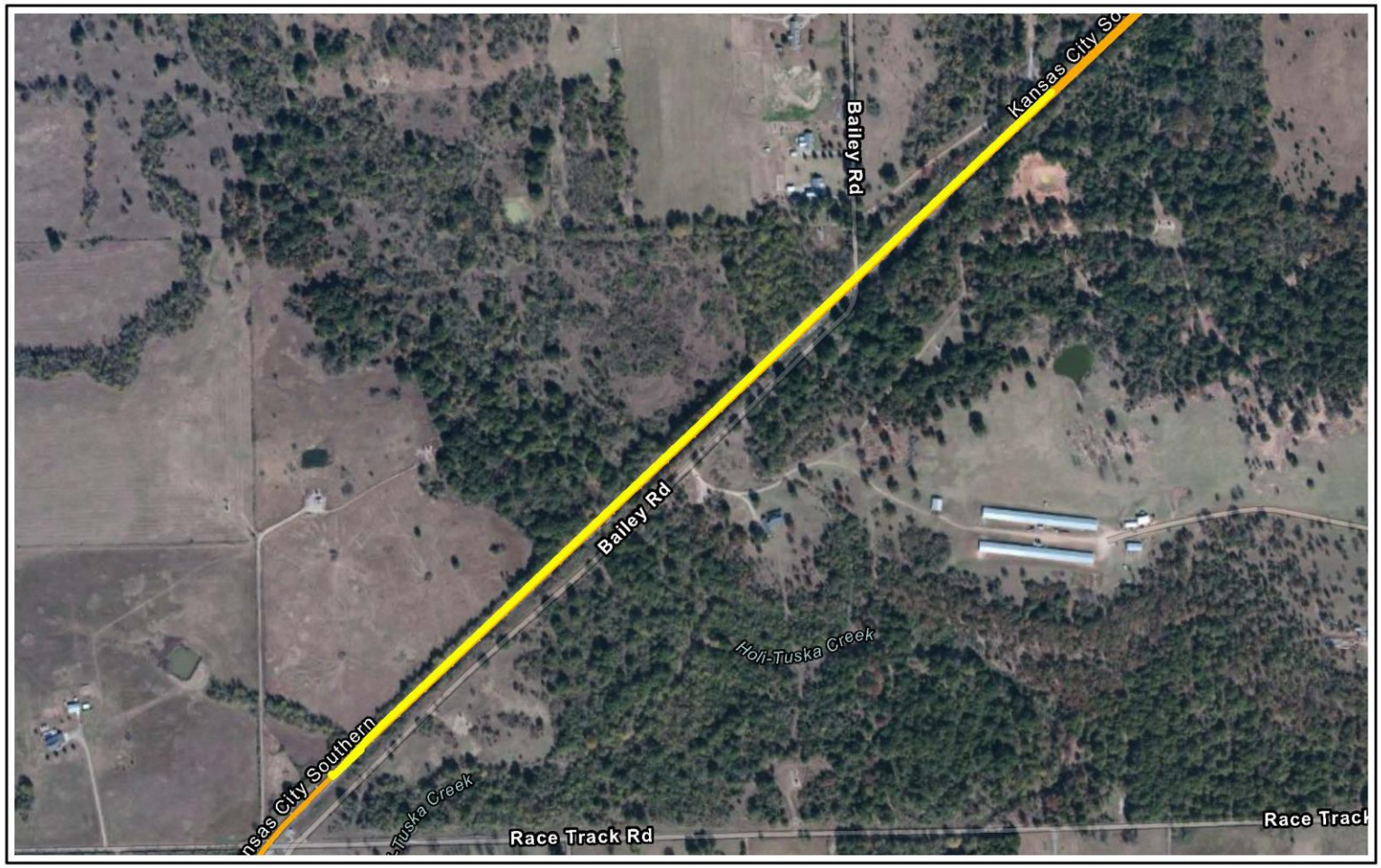
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



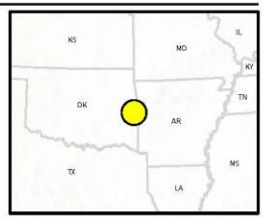
Capital Improvement Cave Springs
Adair, Oklahoma | Map 4 of 4



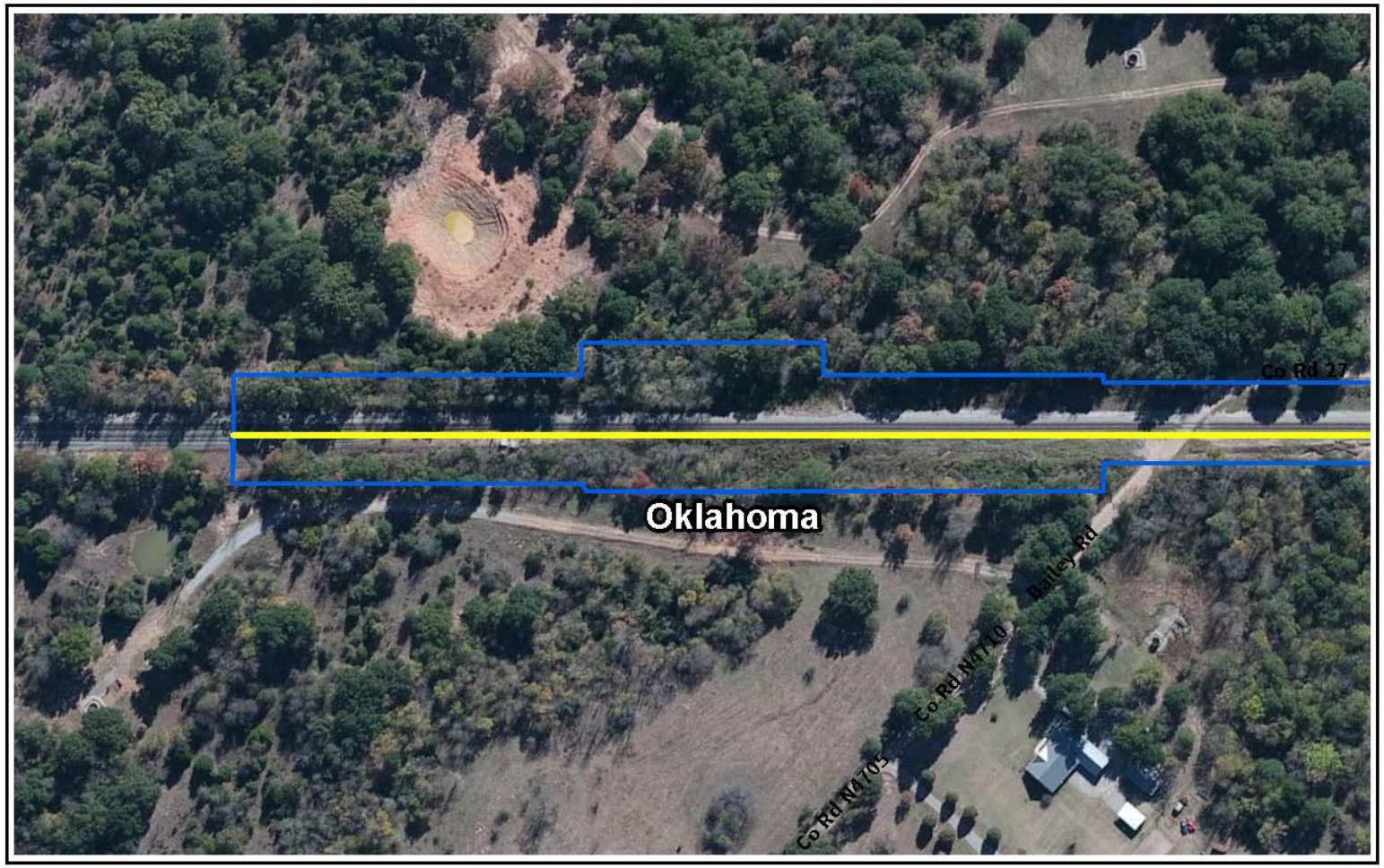
Capital Improvement Project Location
Canadian Pacific Rail Lines
Kansas City Southern Rail Lines
Canadian Pacific Trackage Rights
Kansas City Southern Trackage Rights

N
0 1,000 Feet

Source: FRA, CP, ArcGIS Online



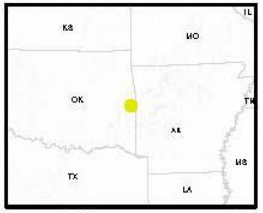
Capital Improvement Project Spiro
Le Flore, Oklahoma



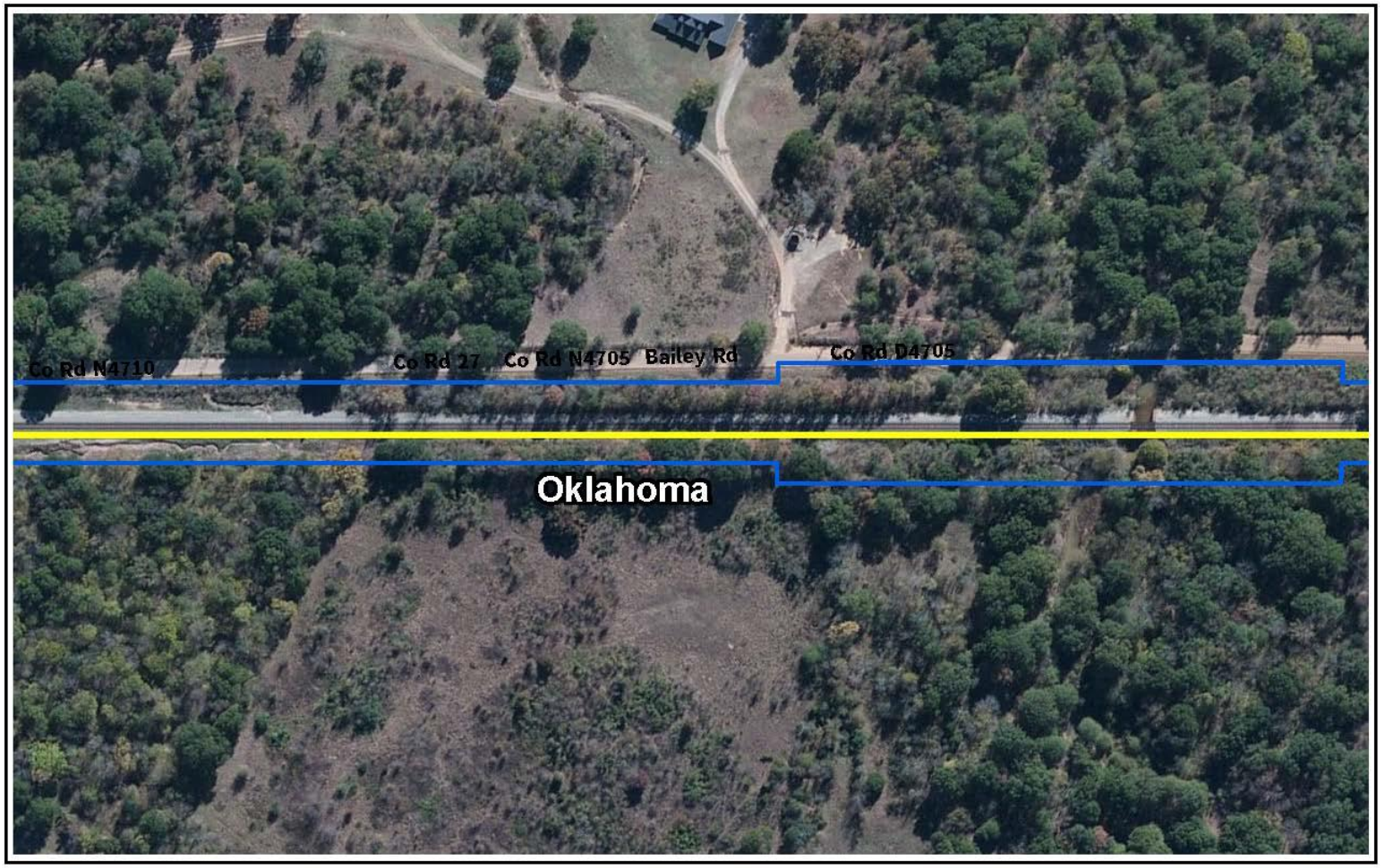
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



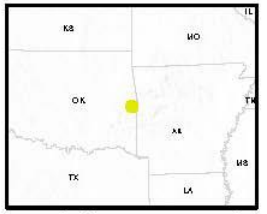
Capital Improvement Spiro
Le Flore, Oklahoma | Map 1 of 3



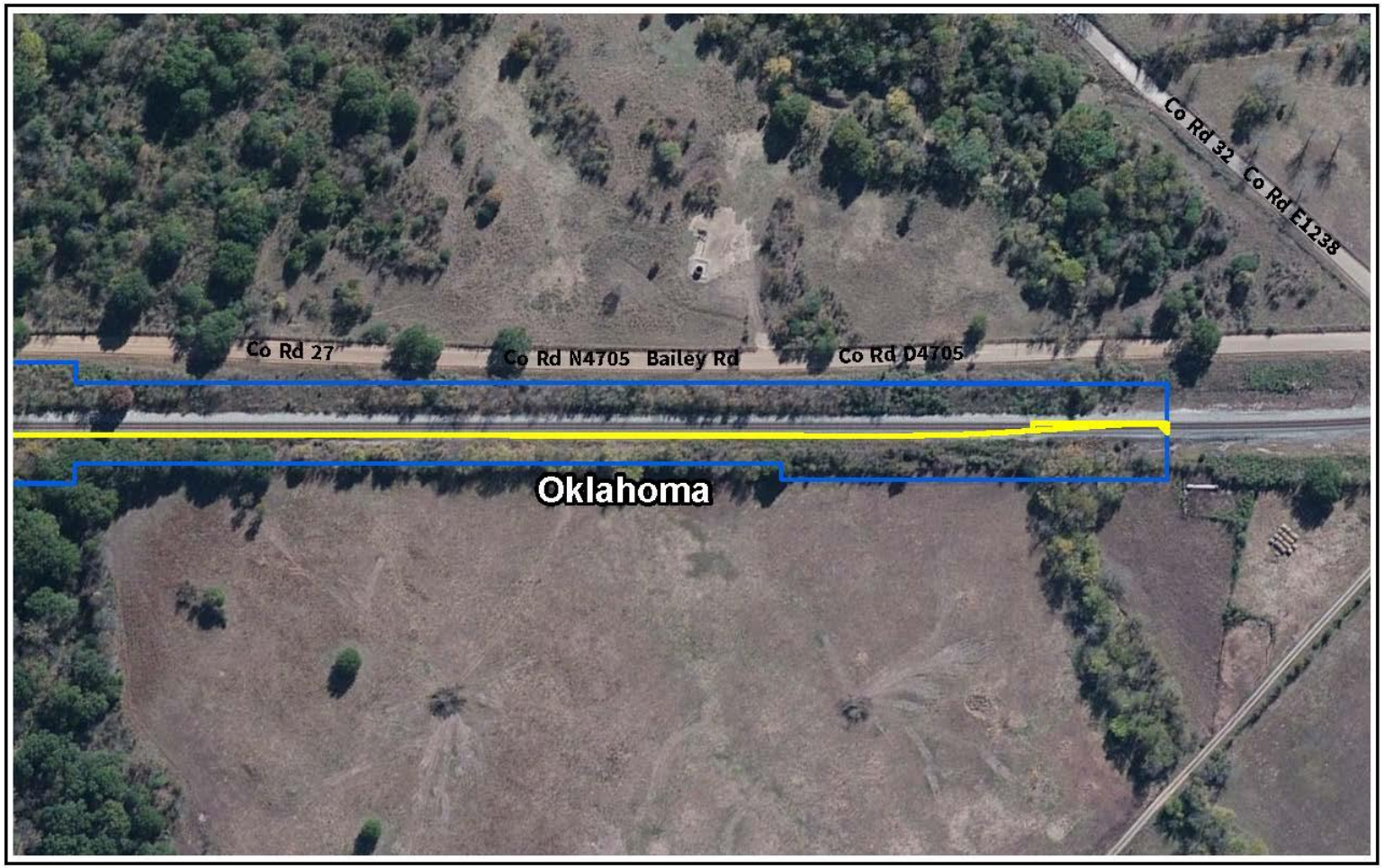
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



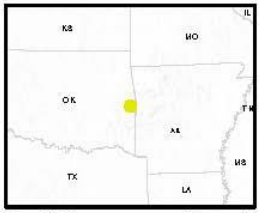
Capital Improvement Spiro
Le Flore, Oklahoma | Map 2 of 3



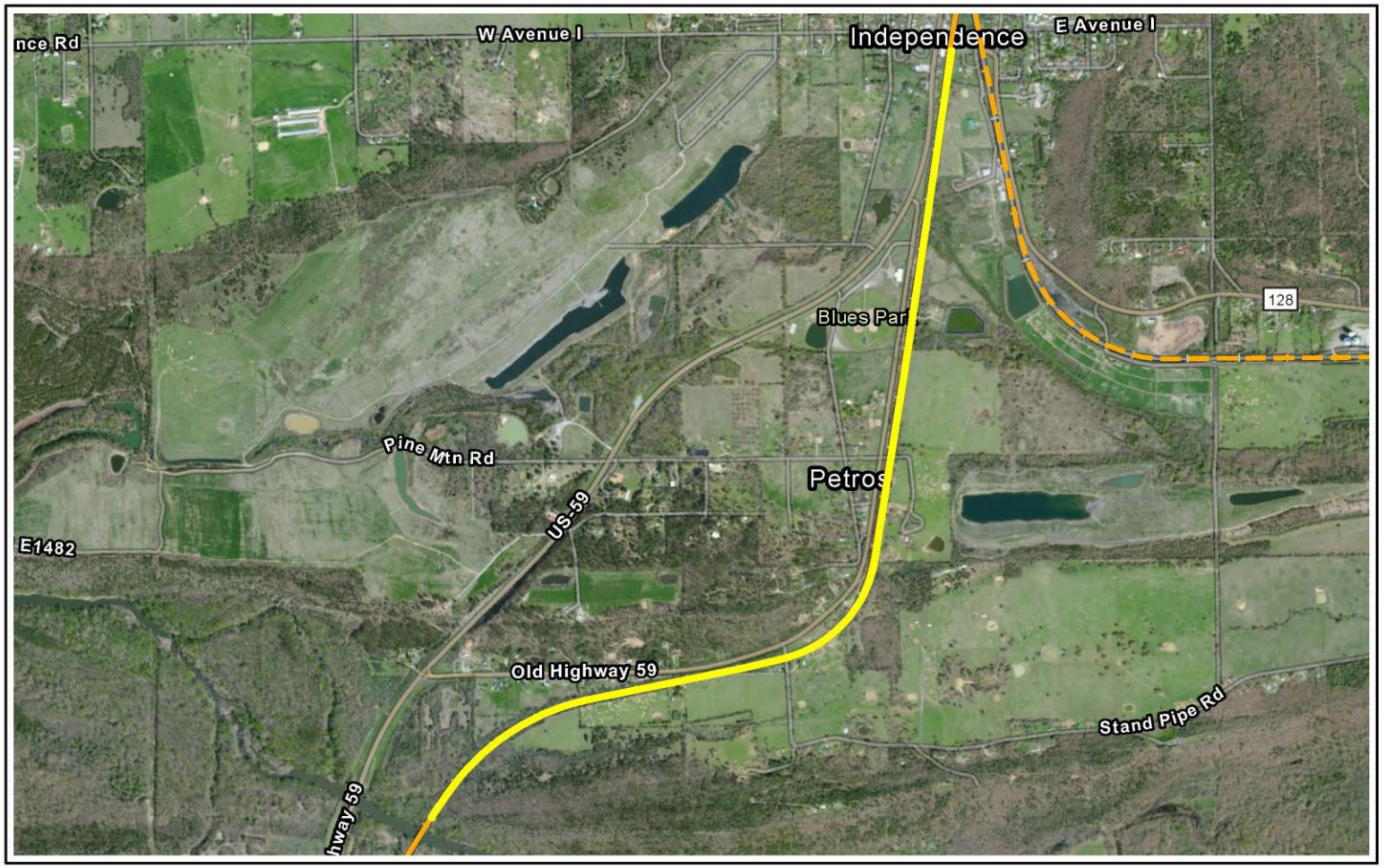
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Spiro Le Flore, Oklahoma | Map 3 of 3

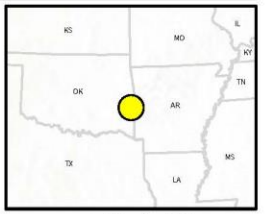


Capital Improvement Project Location
Canadian Pacific Rail Lines
Kansas City Southern Rail Lines
Canadian Pacific Trackage Rights
Kansas City Southern Trackage Rights

N

0 1,000 2,000 3,000 4,000 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Project Heavener
Le Flore, Oklahoma



Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



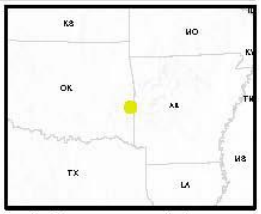
Capital Improvement Heavener
Le Flore, Oklahoma | Map 1 of 9



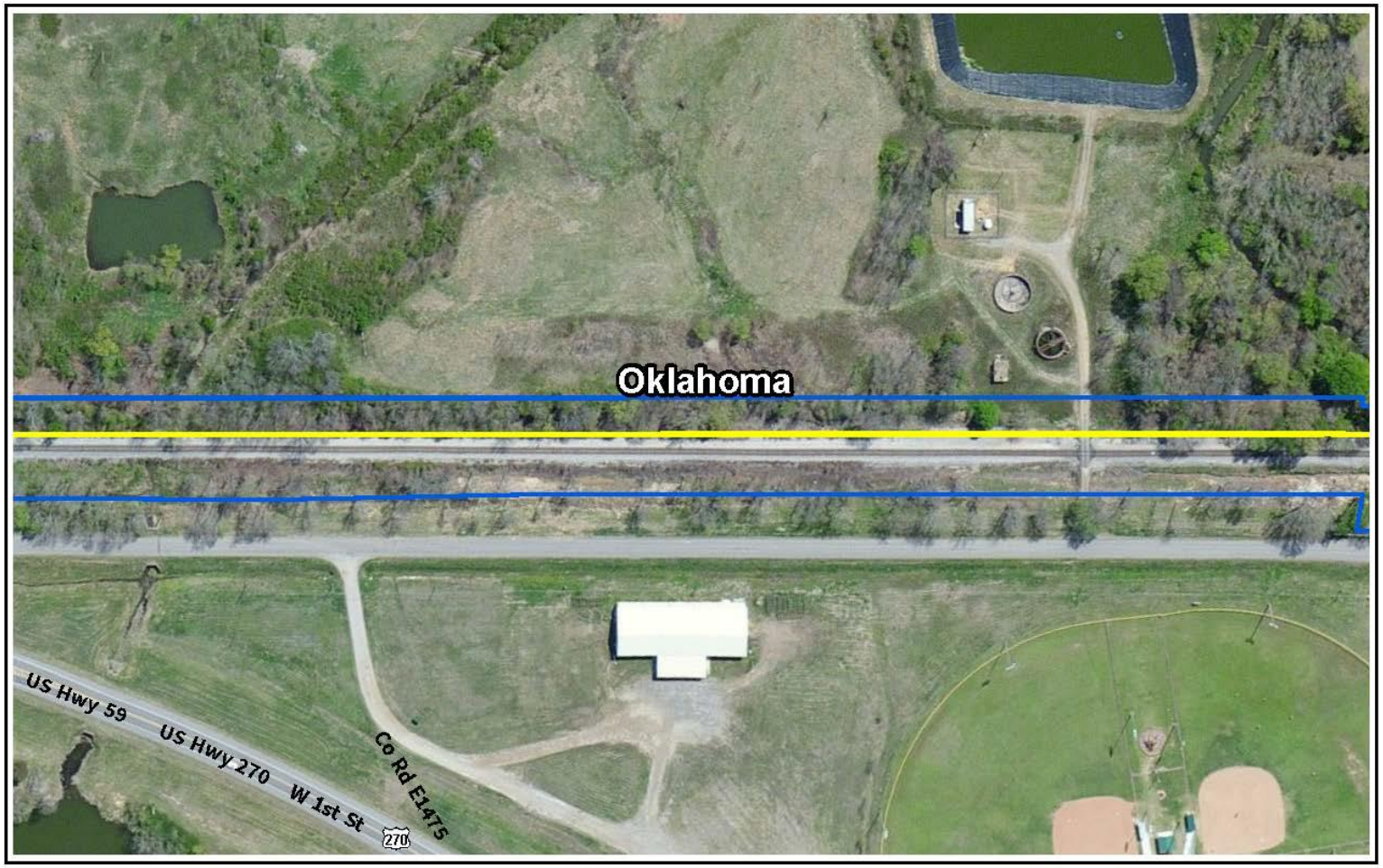
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Heavener
Le Flore, Oklahoma | Map 2 of 9



Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Heavener
Le Flore, Oklahoma | Map 3 of 9

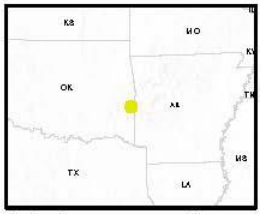


Capital Improvement Location

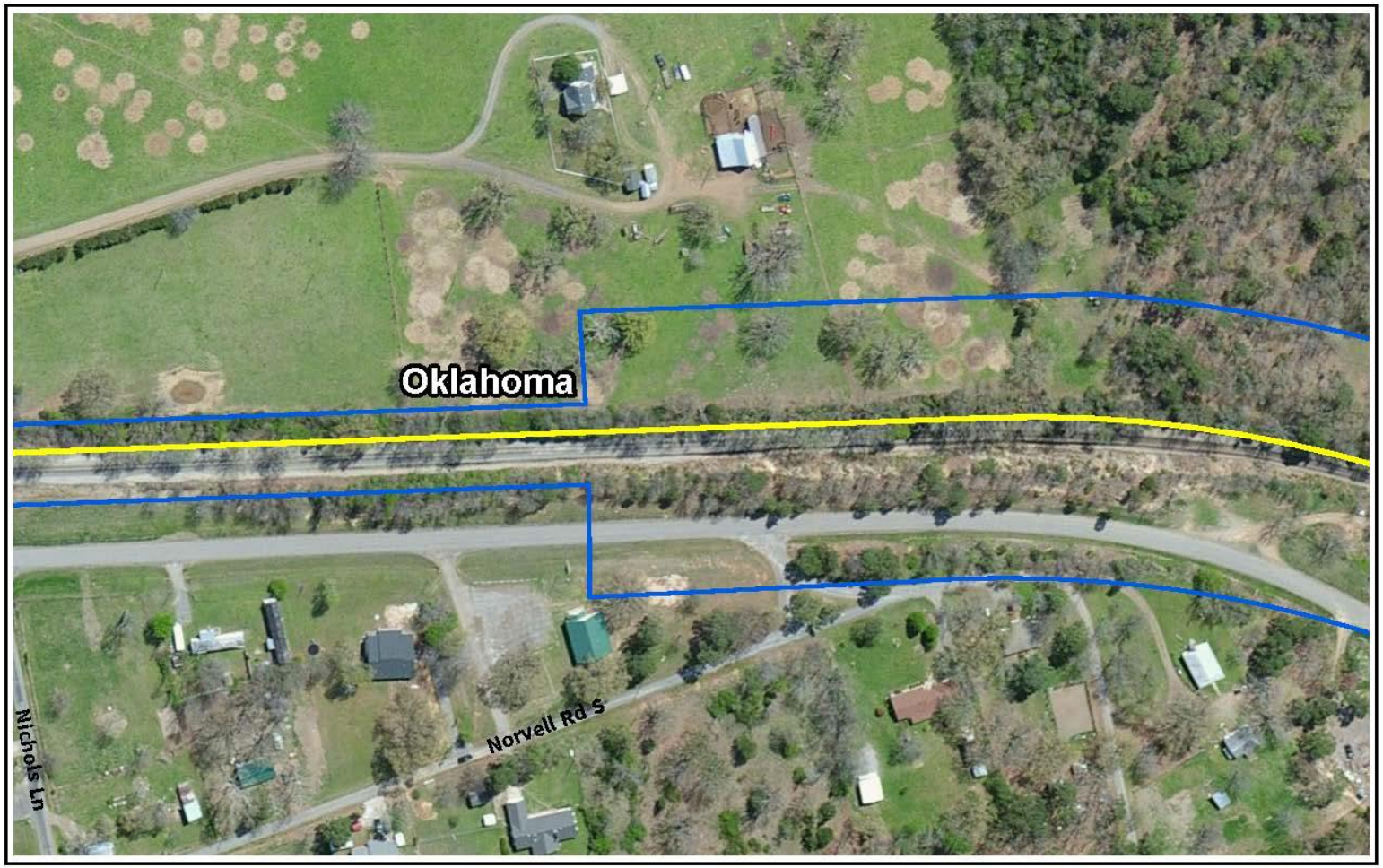
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Heavener
Le Flore, Oklahoma | Map 4 of 9

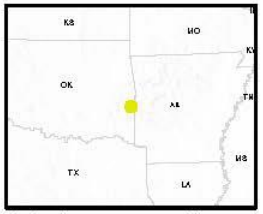


Capital Improvement Location

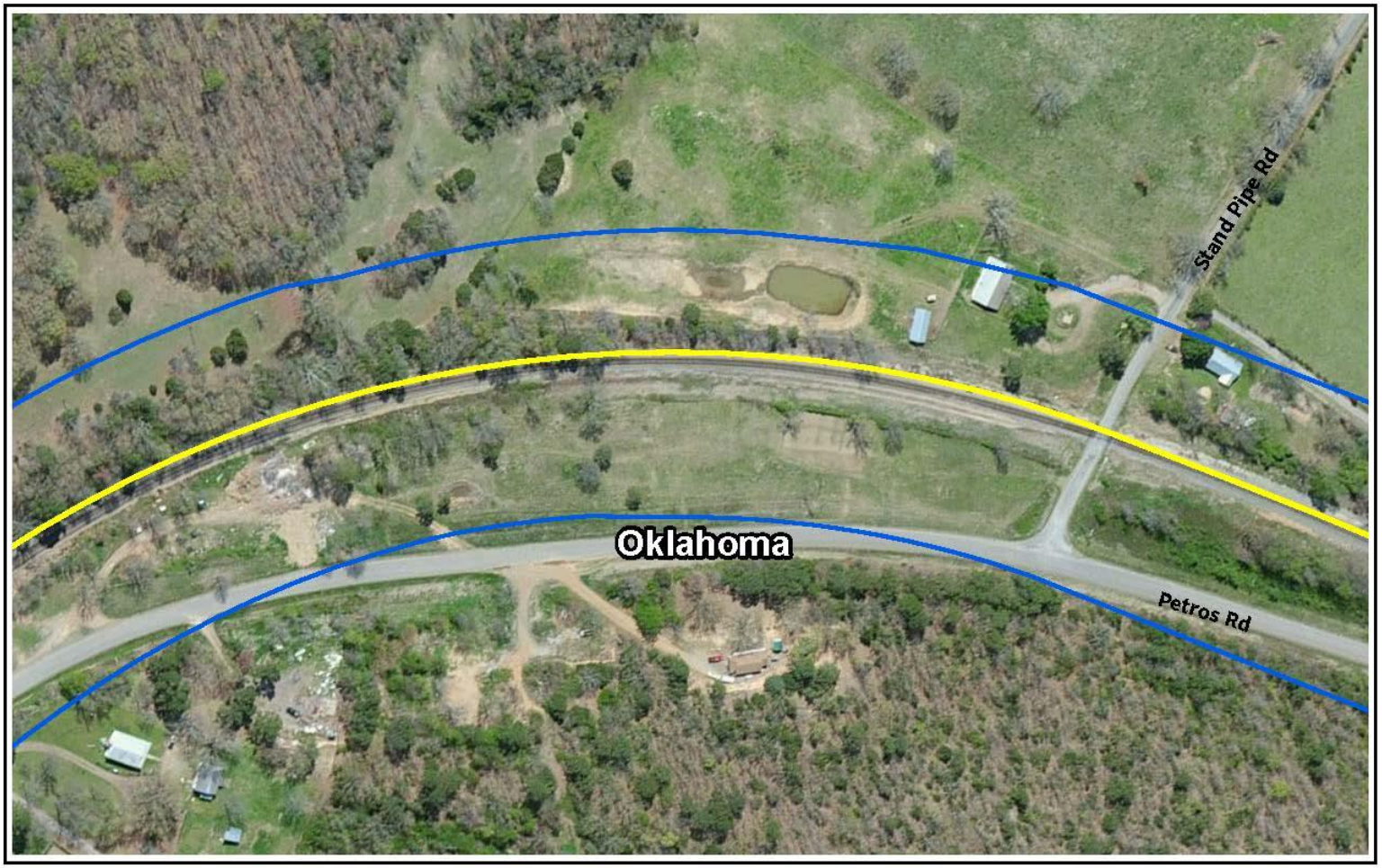
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



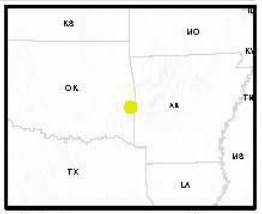
Capital Improvement Heavener
Le Flore, Oklahoma | Map 5 of 9



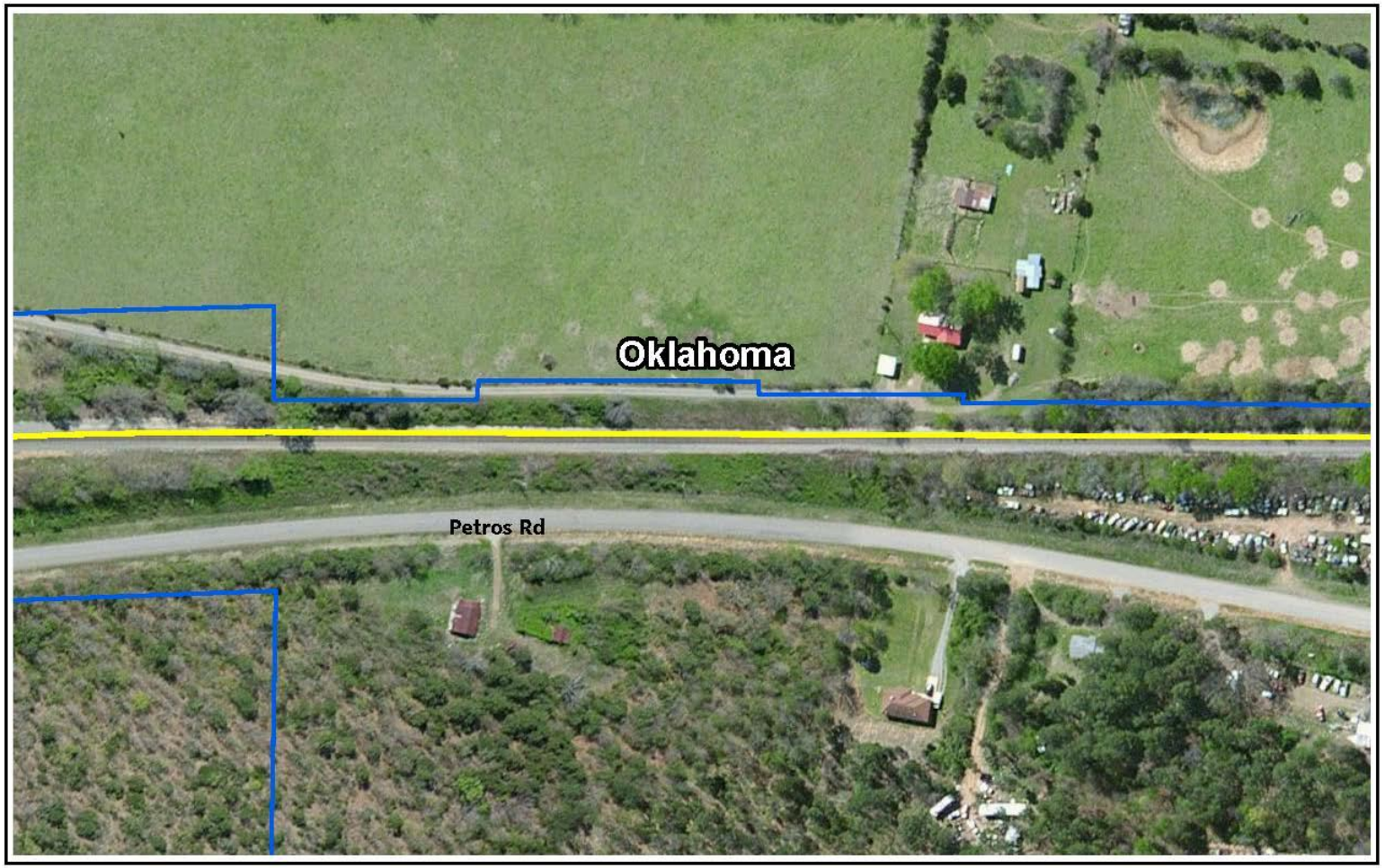
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



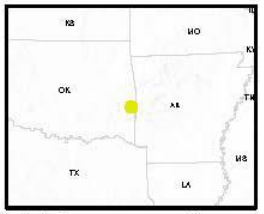
Capital Improvement Heavener
Le Flore, Oklahoma | Map 6 of 9



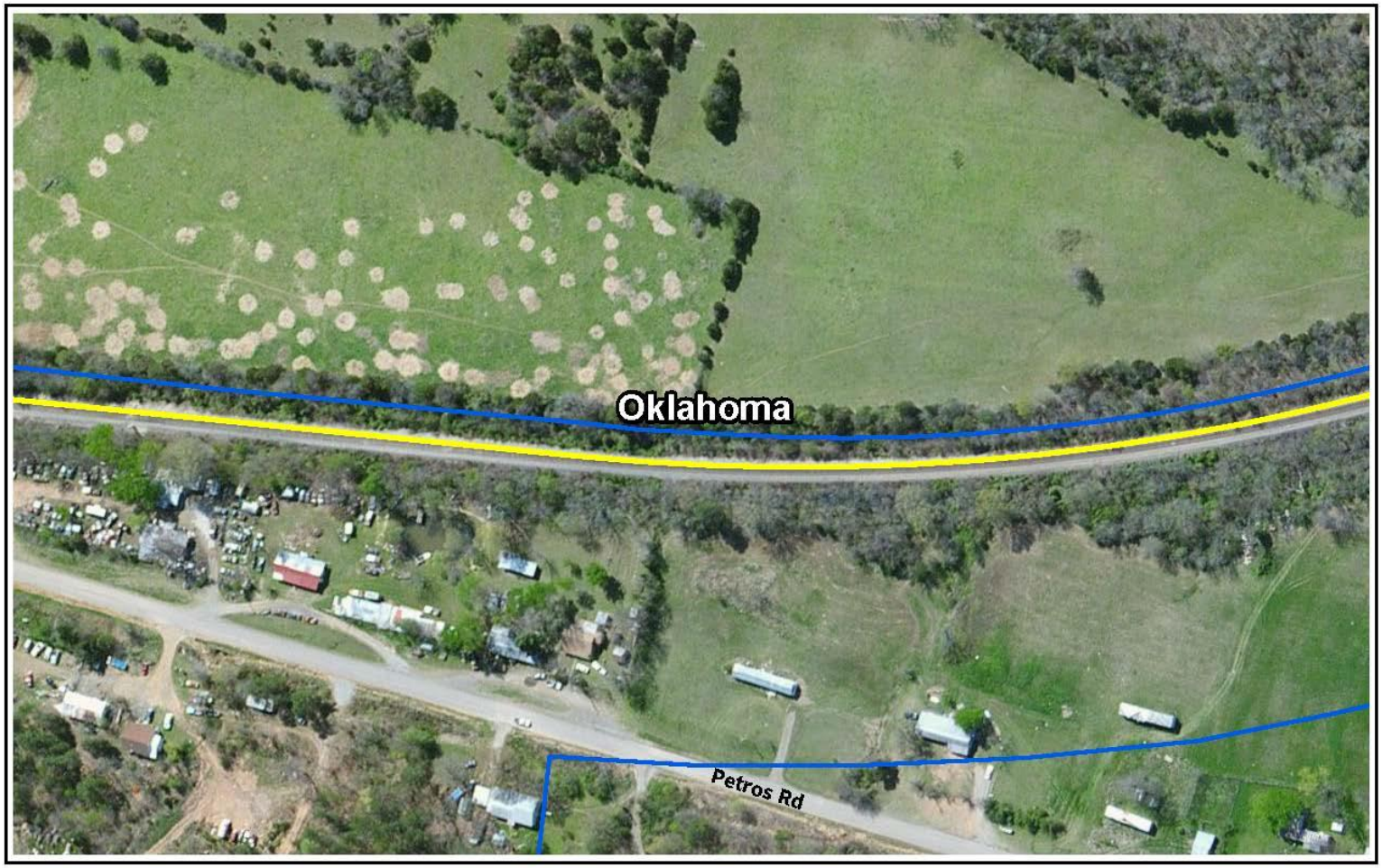
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Heavener
Le Flore, Oklahoma | Map 7 of 9

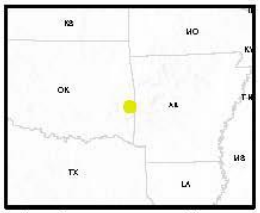


Capital Improvement Location
Existing Right-of-Way

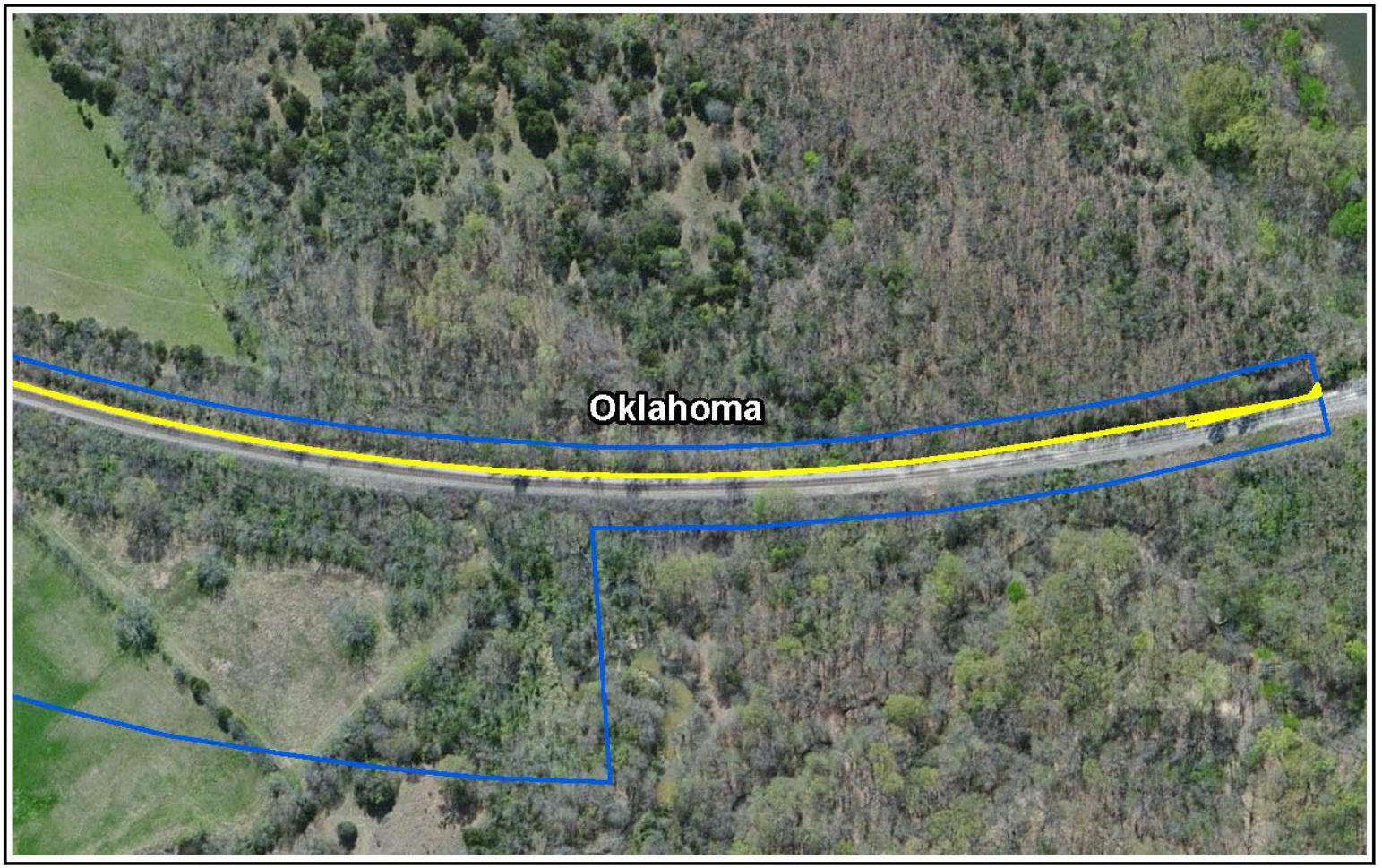


0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Heavener
Le Flore, Oklahoma | Map 8 of 9



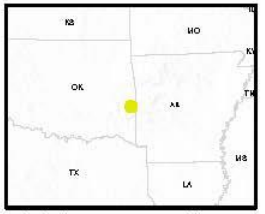
Capital Improvement Location

Existing Right-of-Way

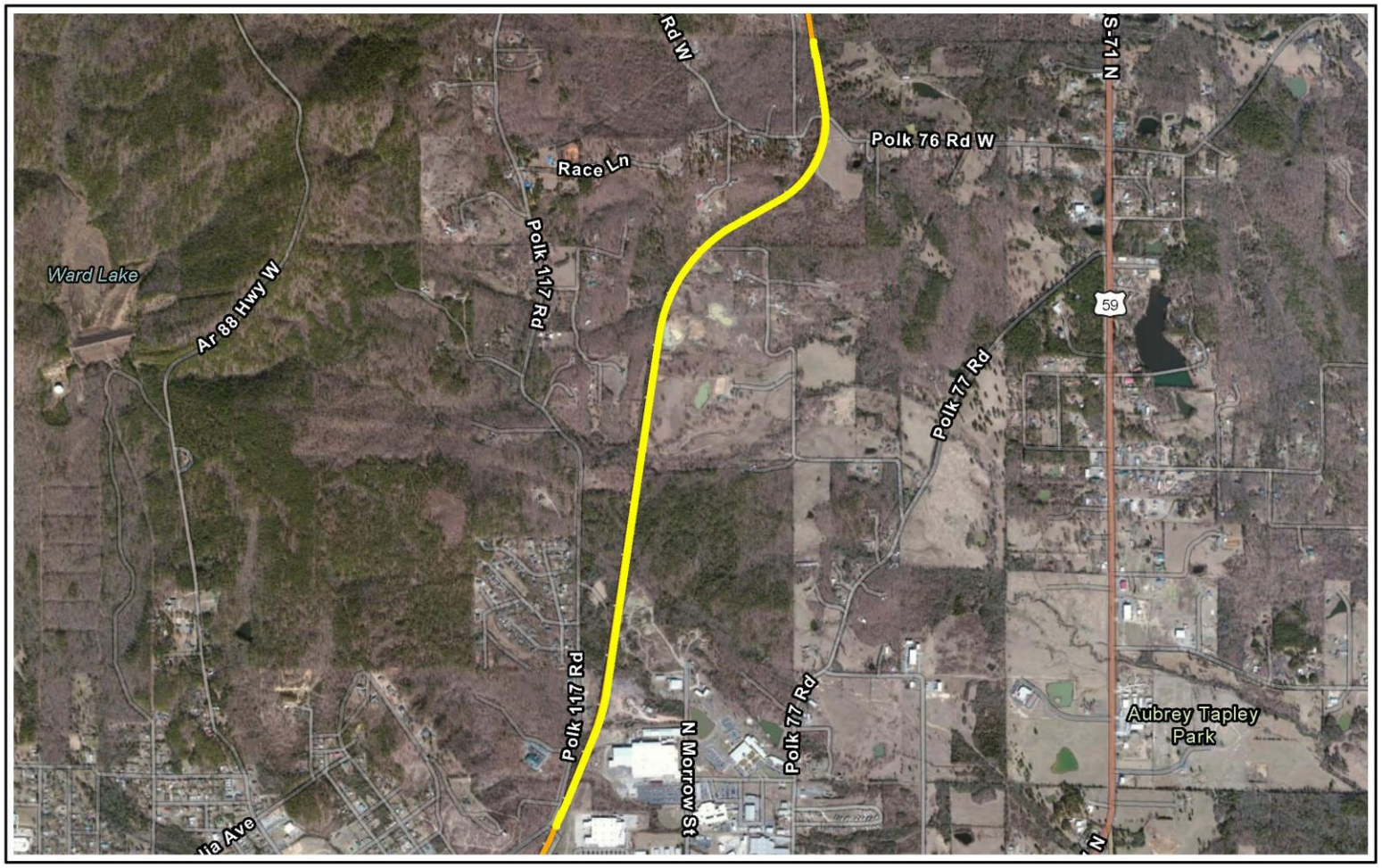


0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Heavener
Le Flore, Oklahoma | Map 9 of 9



Capital Improvement Project Location
Canadian Pacific Rail Lines
Kansas City Southern Rail Lines
Canadian Pacific Trackage Rights
Kansas City Southern Trackage Rights

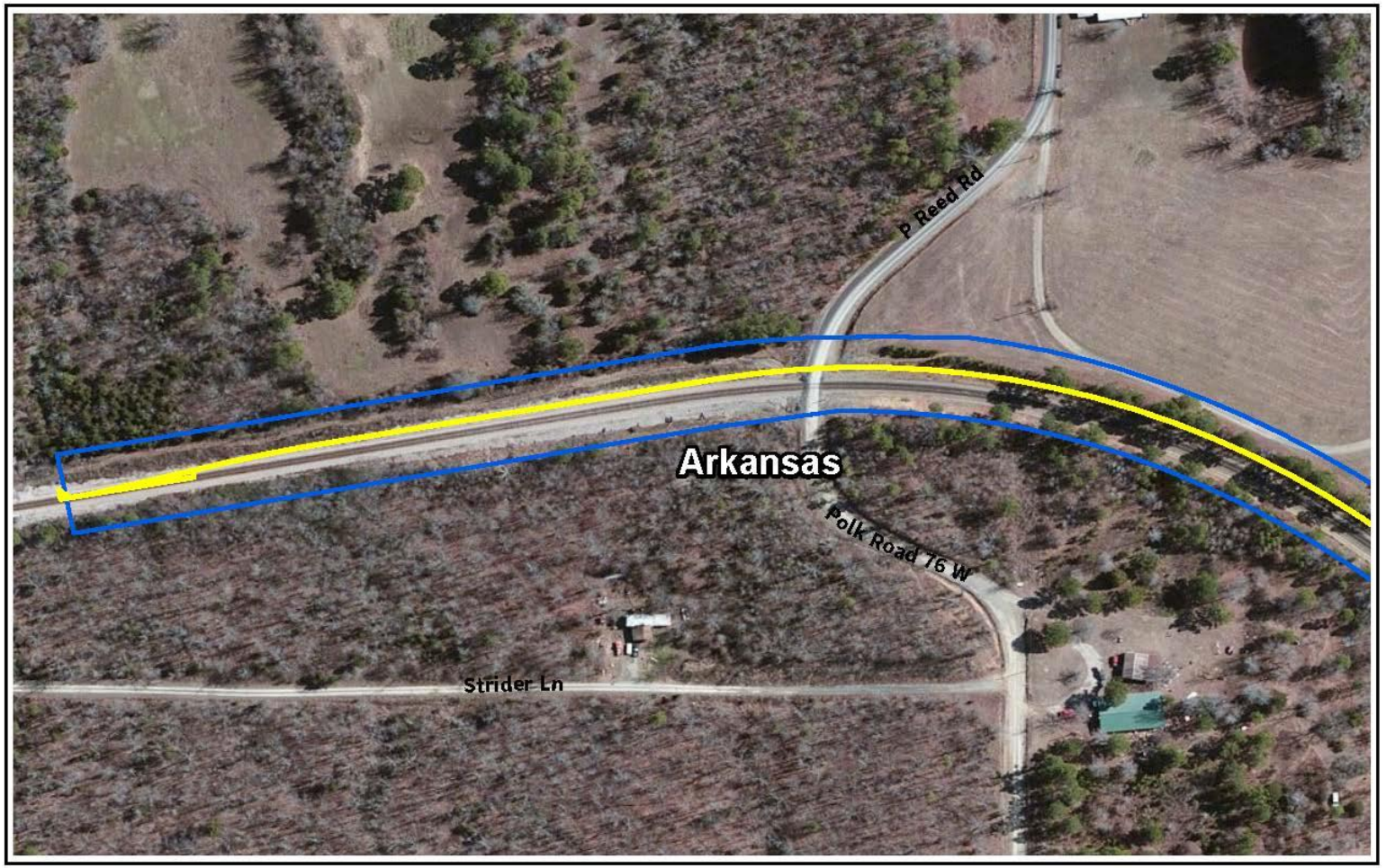
N

0 1,000 2,000 3,000 4,000 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Project MP 377 (Mena)
Polk, Arkansas



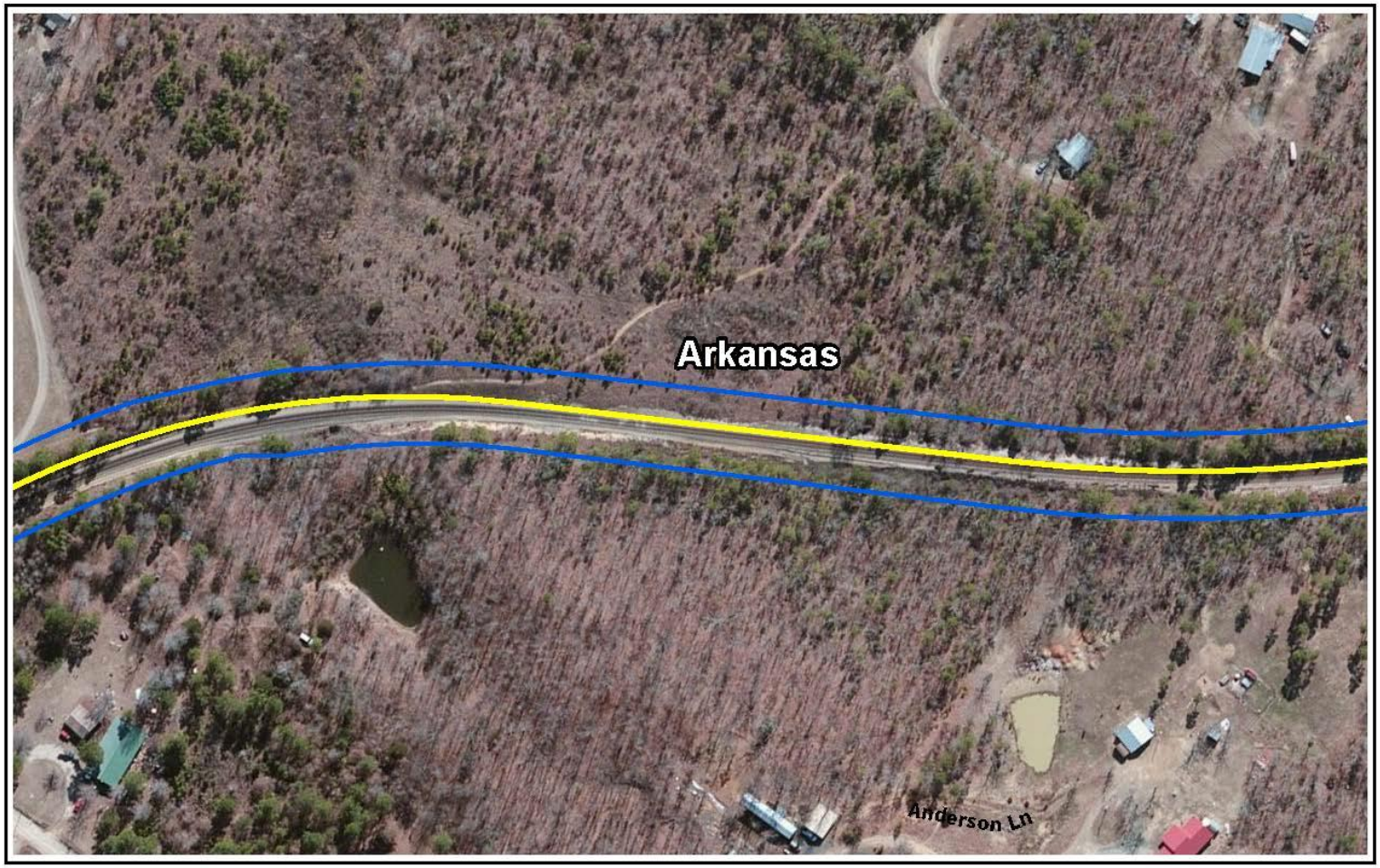
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 377 (Mena)
Polk, Arkansas | Map 1 of 7



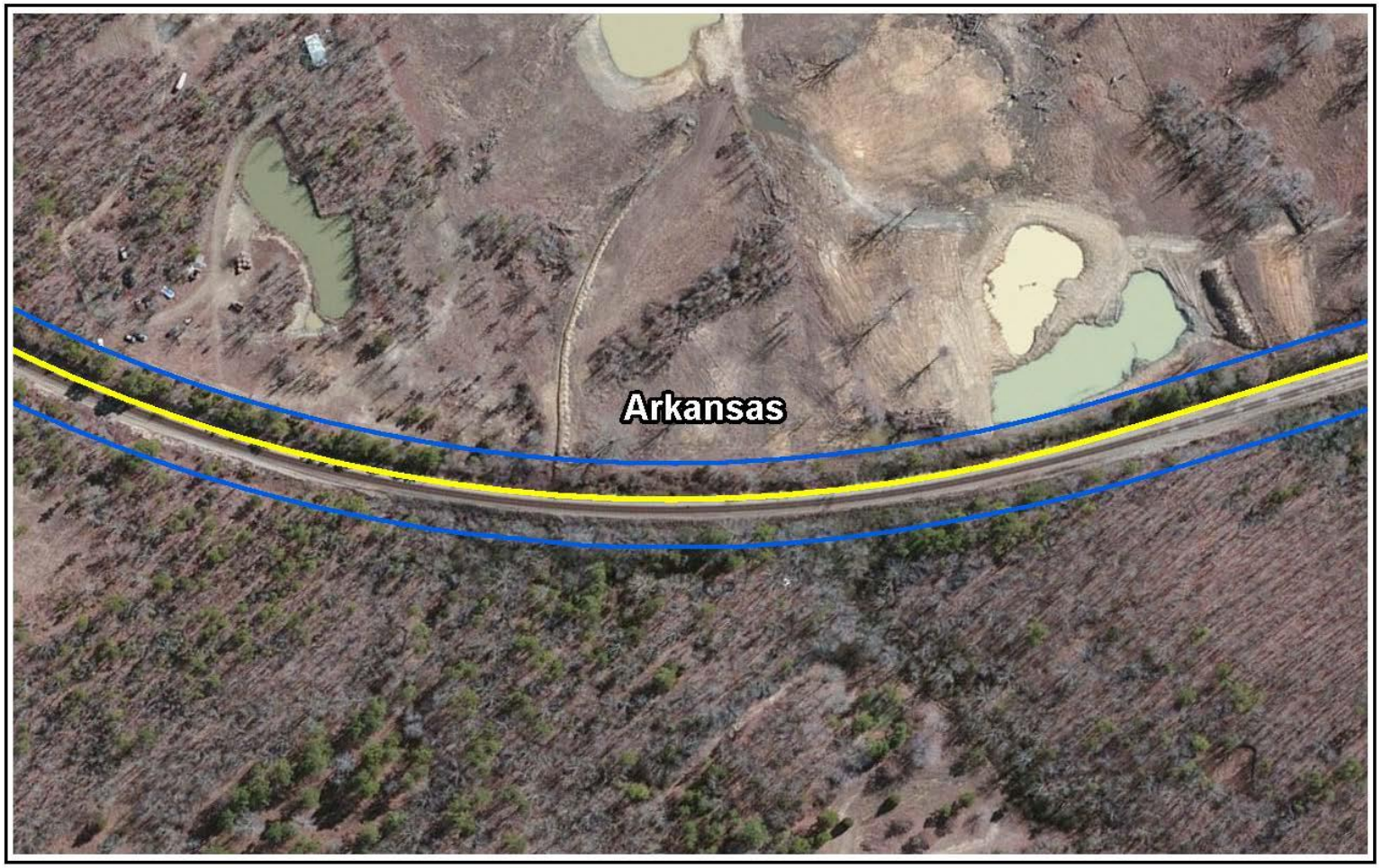
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 377 (Mena)
Polk, Arkansas | Map 2 of 7



Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 377 (Mena)
Polk, Arkansas | Map 3 of 7



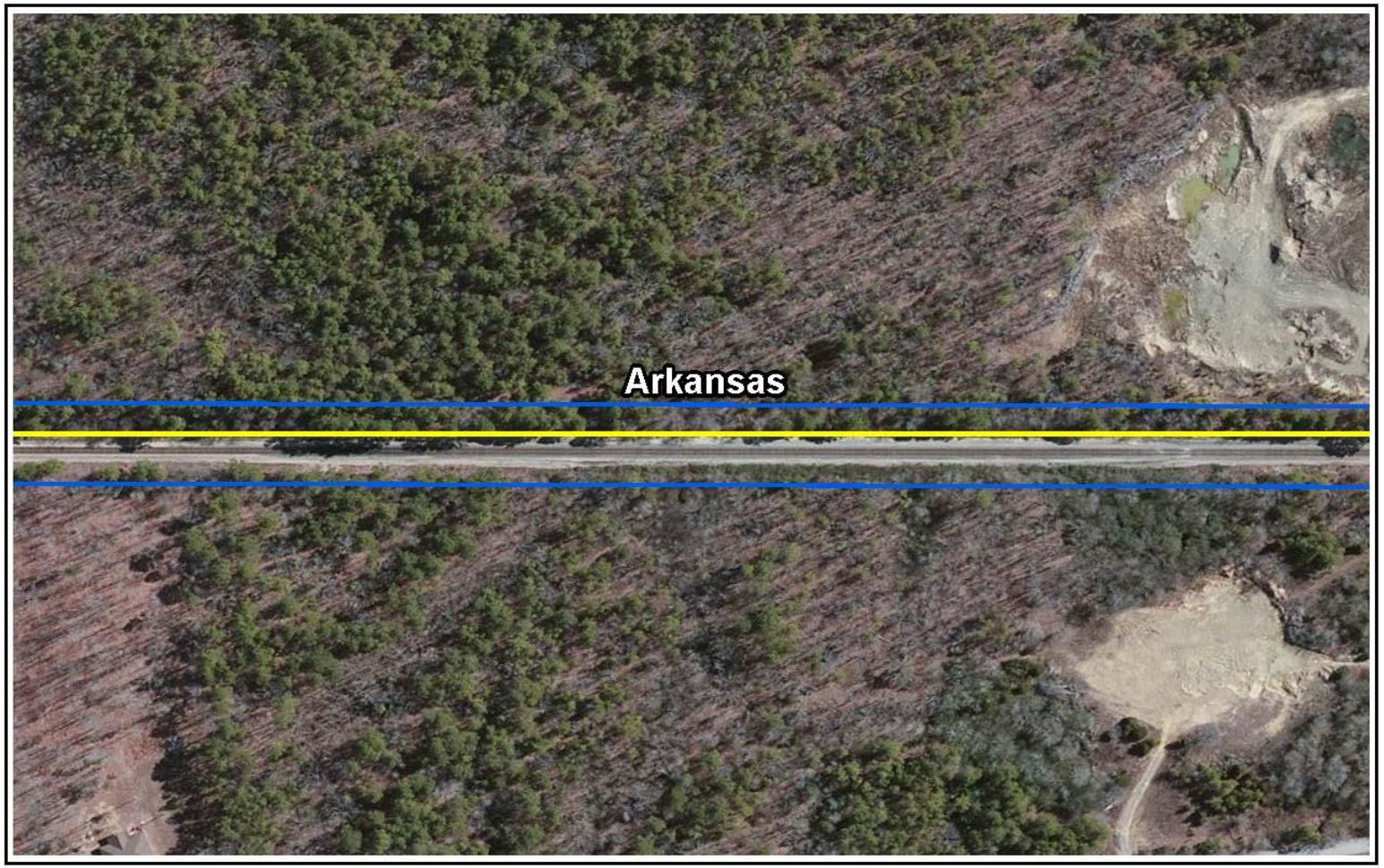
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 377 (Mena)
Polk, Arkansas | Map 4 of 7



Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 377 (Mena)
Polk, Arkansas | Map 5 of 7



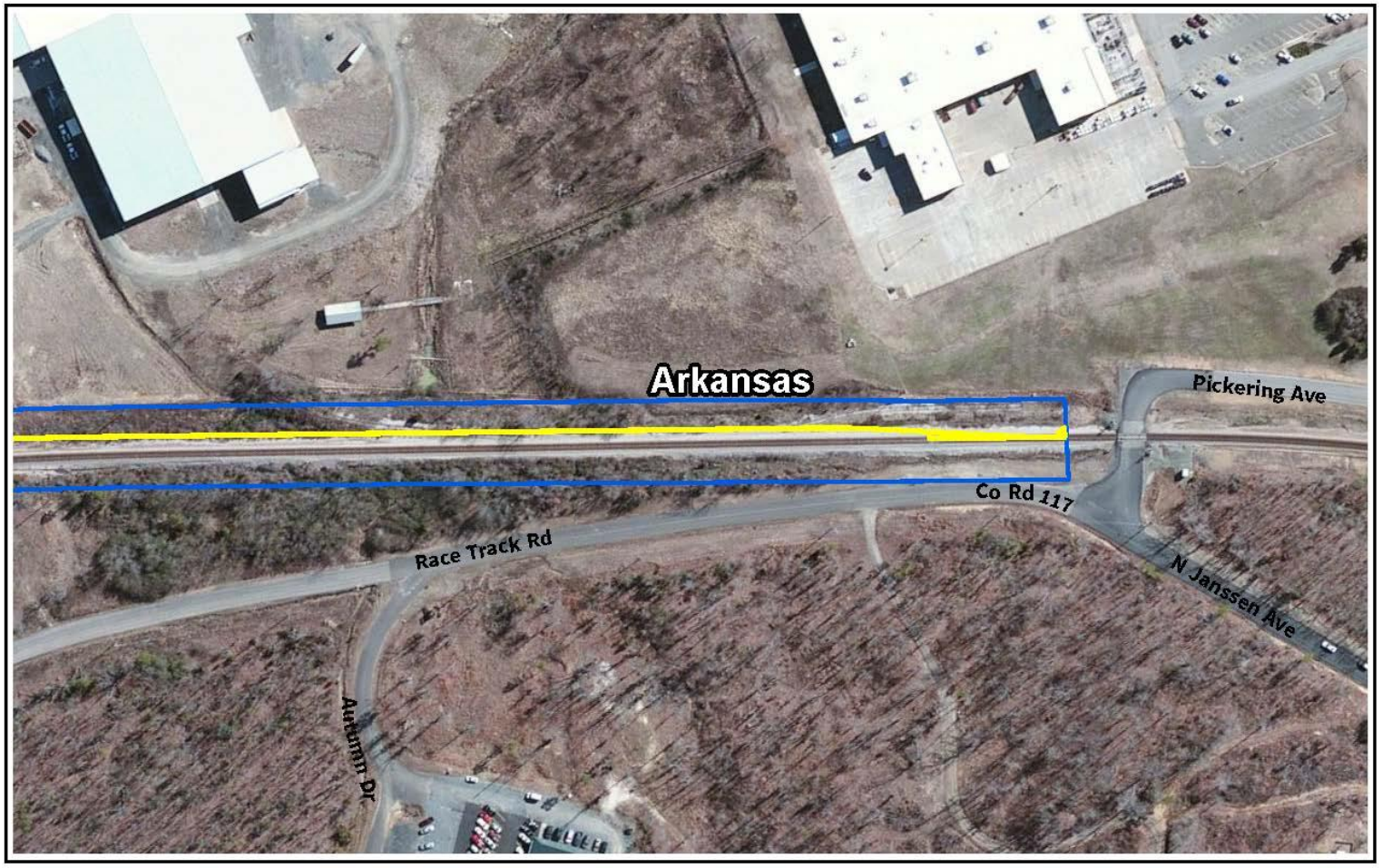
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 377 (Mena)
Polk, Arkansas | Map 6 of 7



Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement MP 377 (Mena)
Polk, Arkansas | Map 7 of 7



Capital Improvement Project Location
Canadian Pacific Rail Lines
Kansas City Southern Rail Lines
Canadian Pacific Trackage Rights
Kansas City Southern Trackage Rights

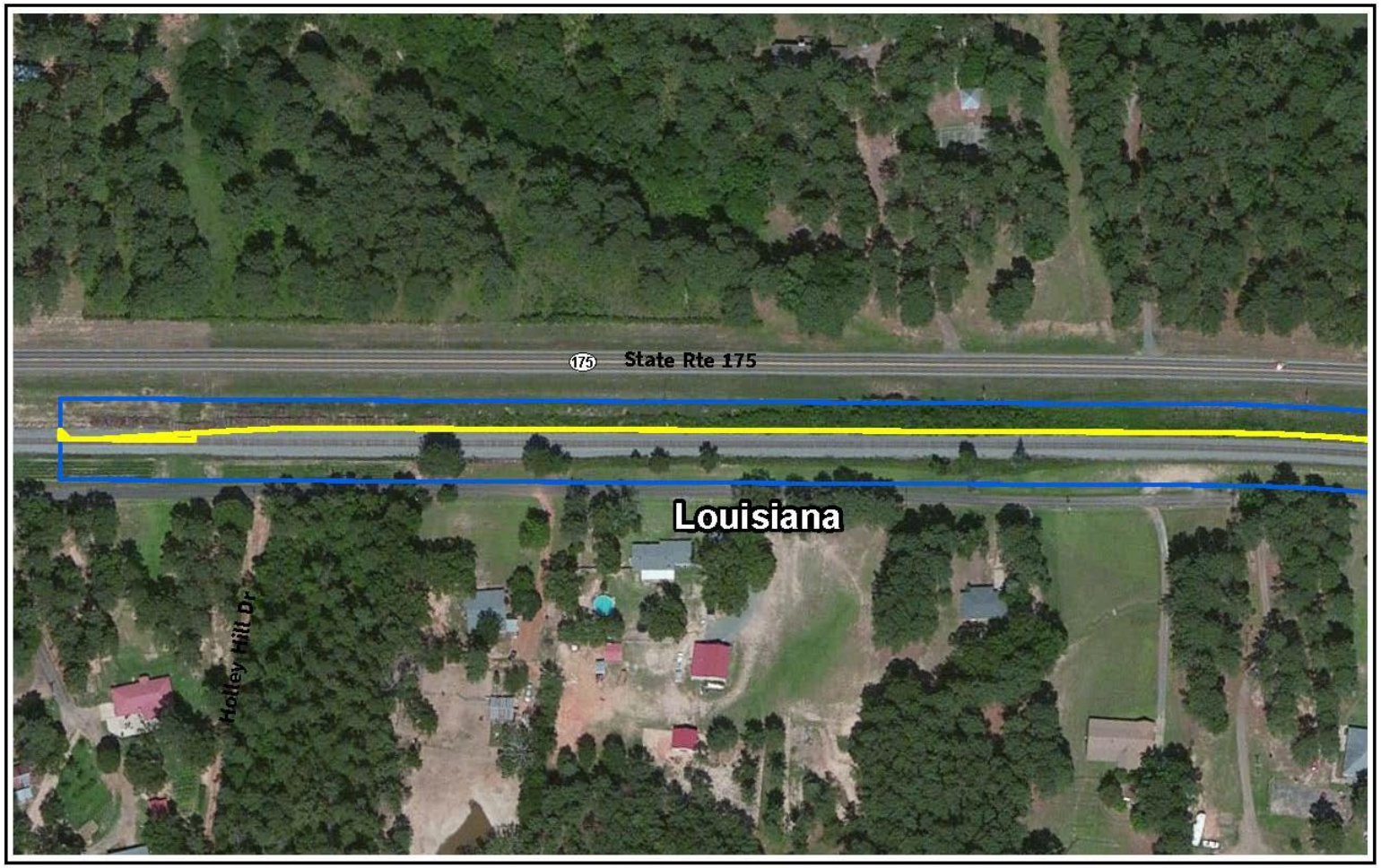
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0 1,000 2,000 3,000 4,000 Feet

Source: FRA, CP, ArcGIS Online



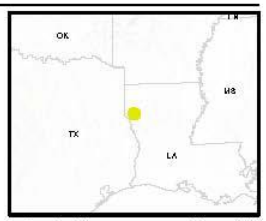
Capital Improvement Project Mansfield
De Soto, Louisiana



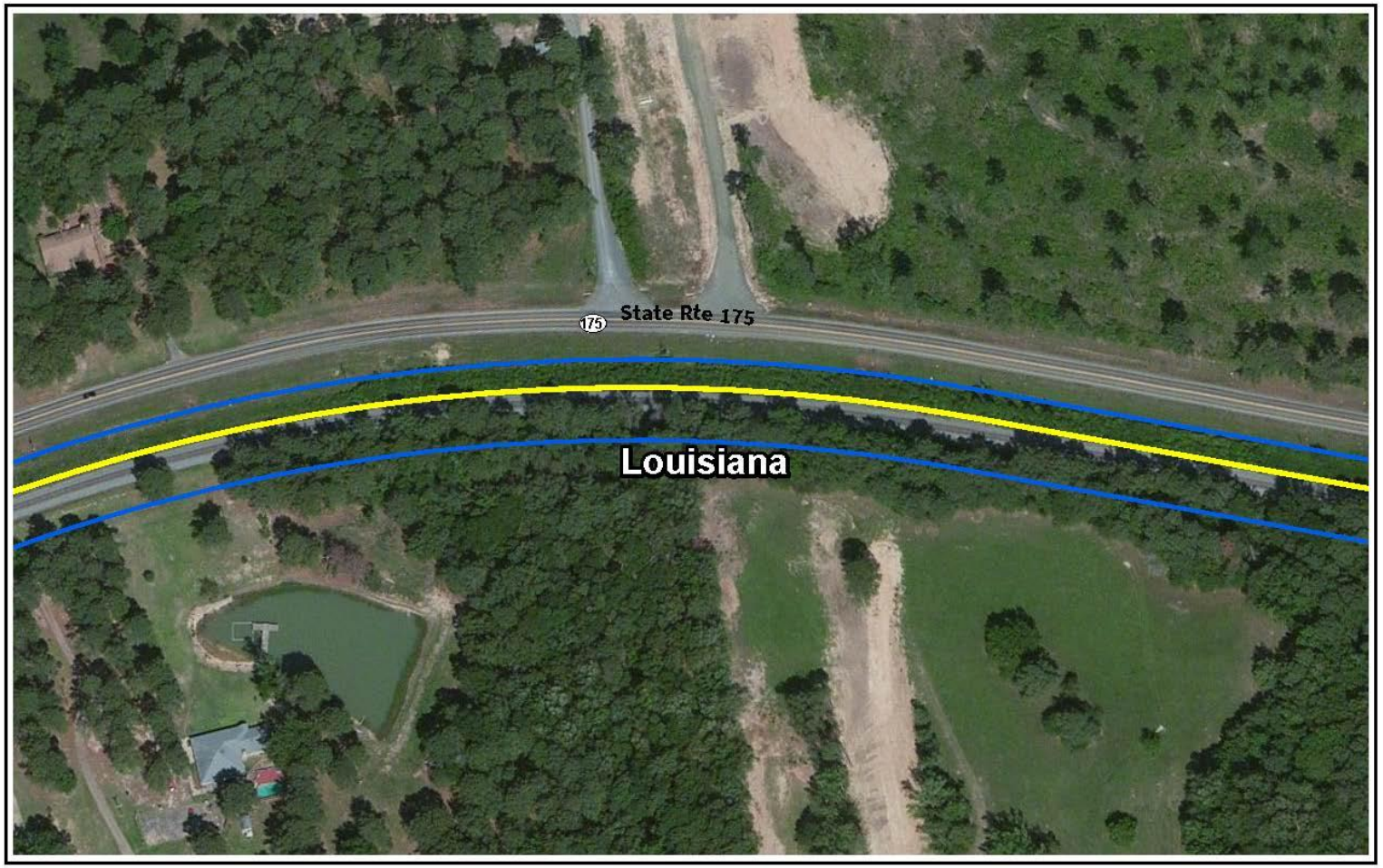
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



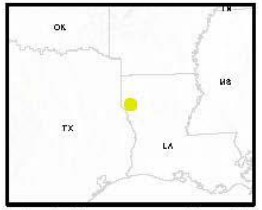
Capital Improvement Mansfield
De Soto, Louisiana | Map 1 of 6



Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



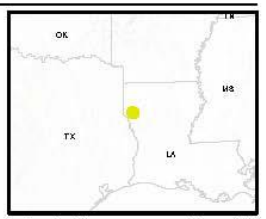
Capital Improvement Mansfield
De Soto, Louisiana | Map 2 of 6



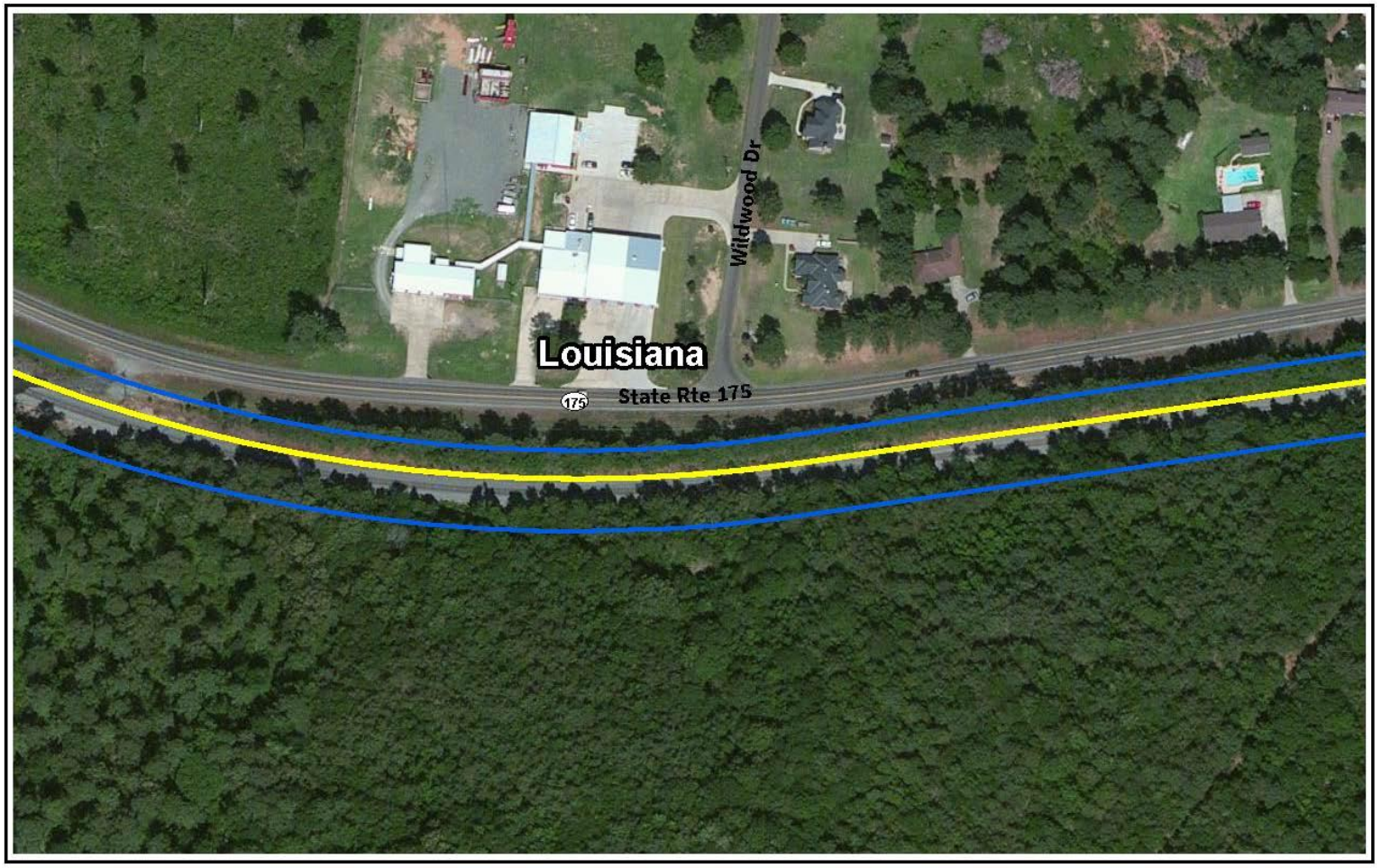
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



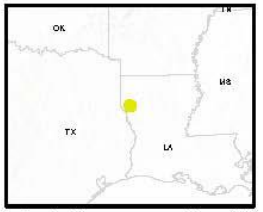
Capital Improvement Mansfield
De Soto, Louisiana | Map 3 of 6



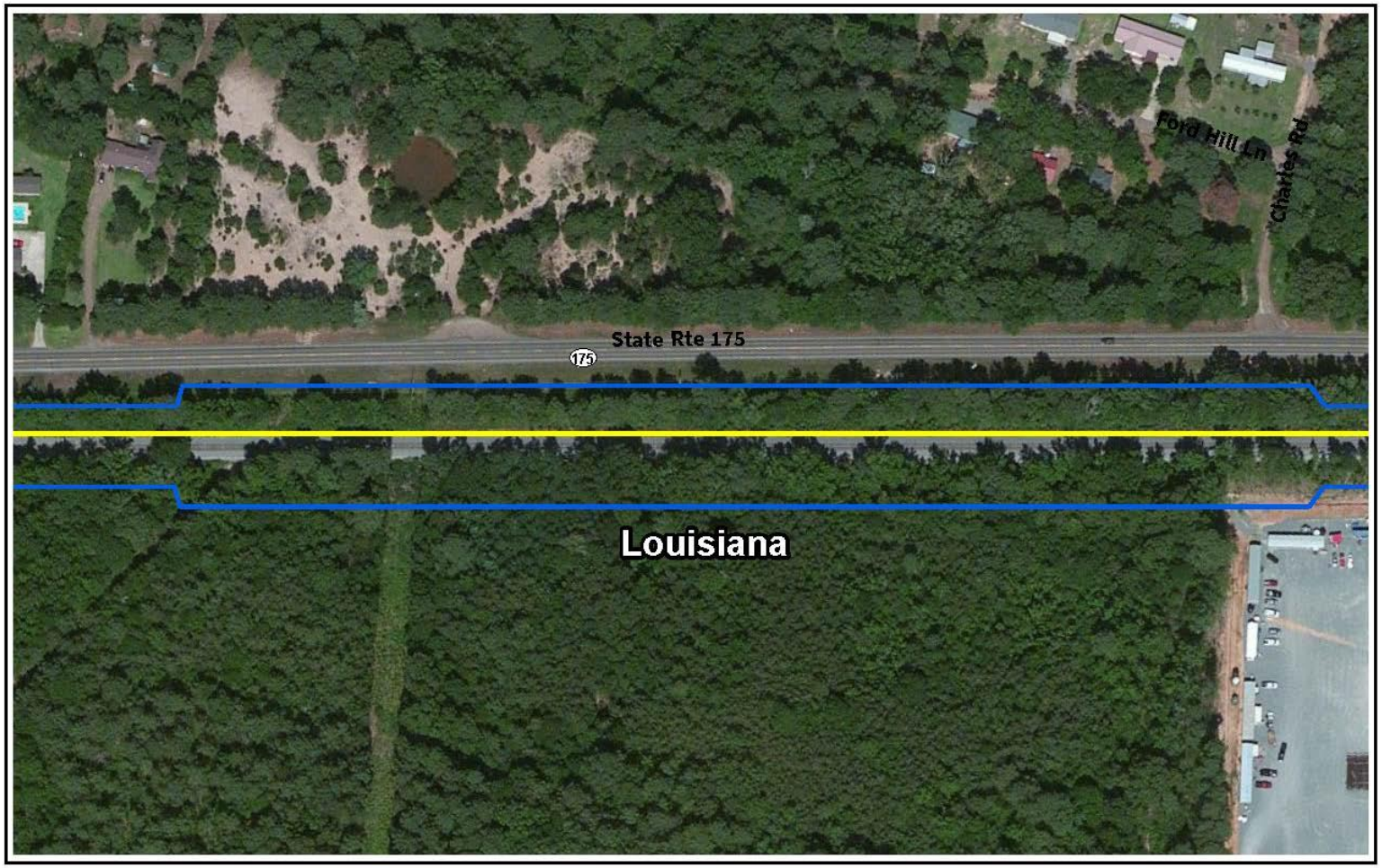
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



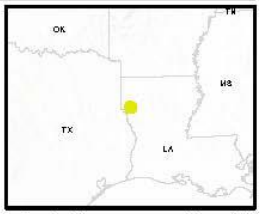
Capital Improvement Mansfield
De Soto, Louisiana | Map 4 of 6



Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



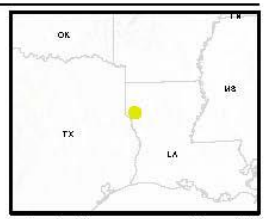
Capital Improvement Mansfield
De Soto, Louisiana | Map 5 of 6



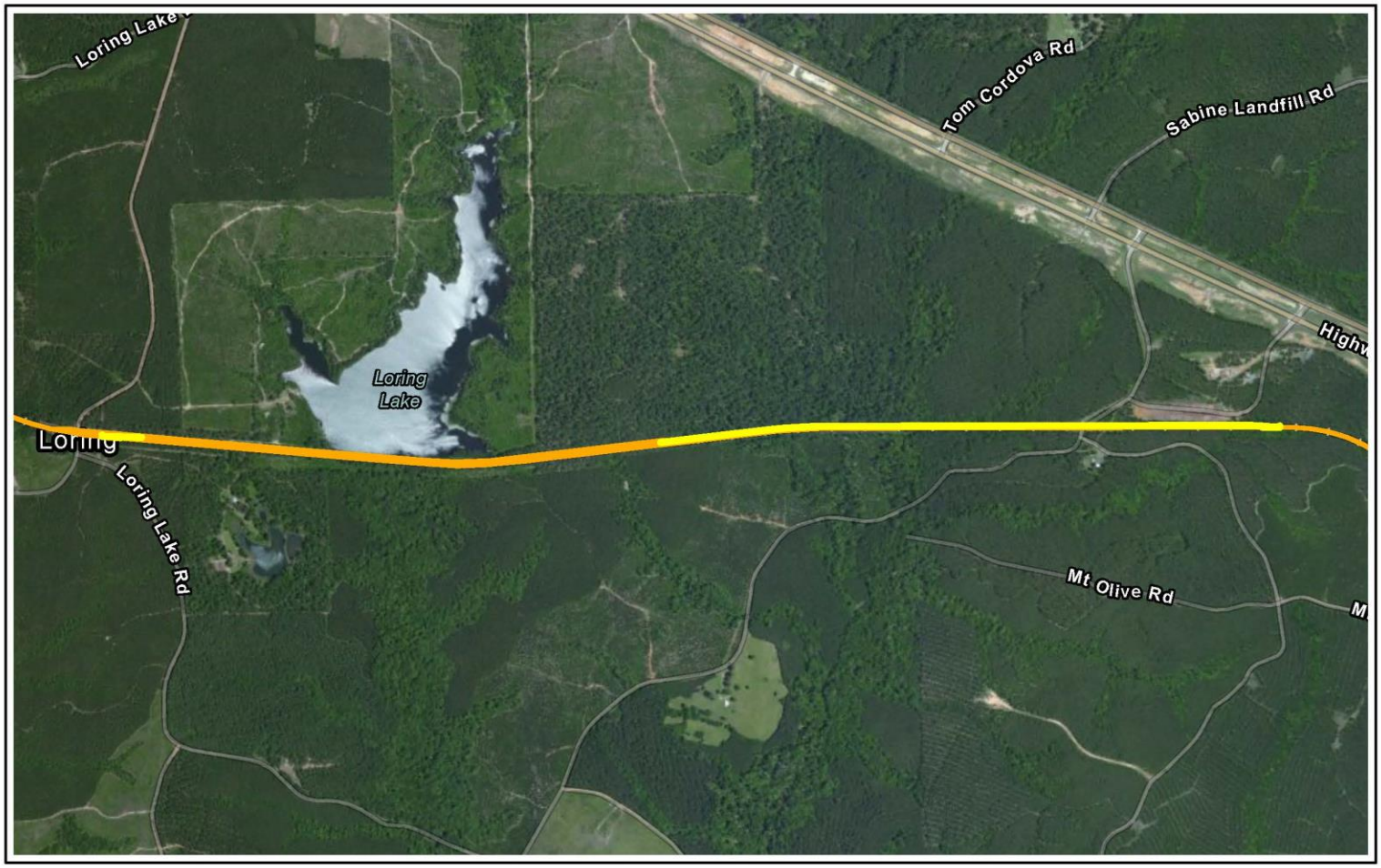
Capital Improvement Location
Existing Right-of-Way



Source: FRA, CP, ArcGIS Online



Capital Improvement Mansfield
De Soto, Louisiana | Map 6 of 6



Capital Improvement Project Loring
Sabine, Louisiana

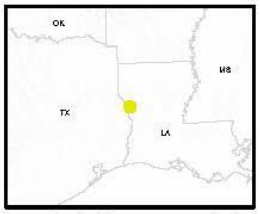


Capital Improvement Location
Existing Right-of-Way

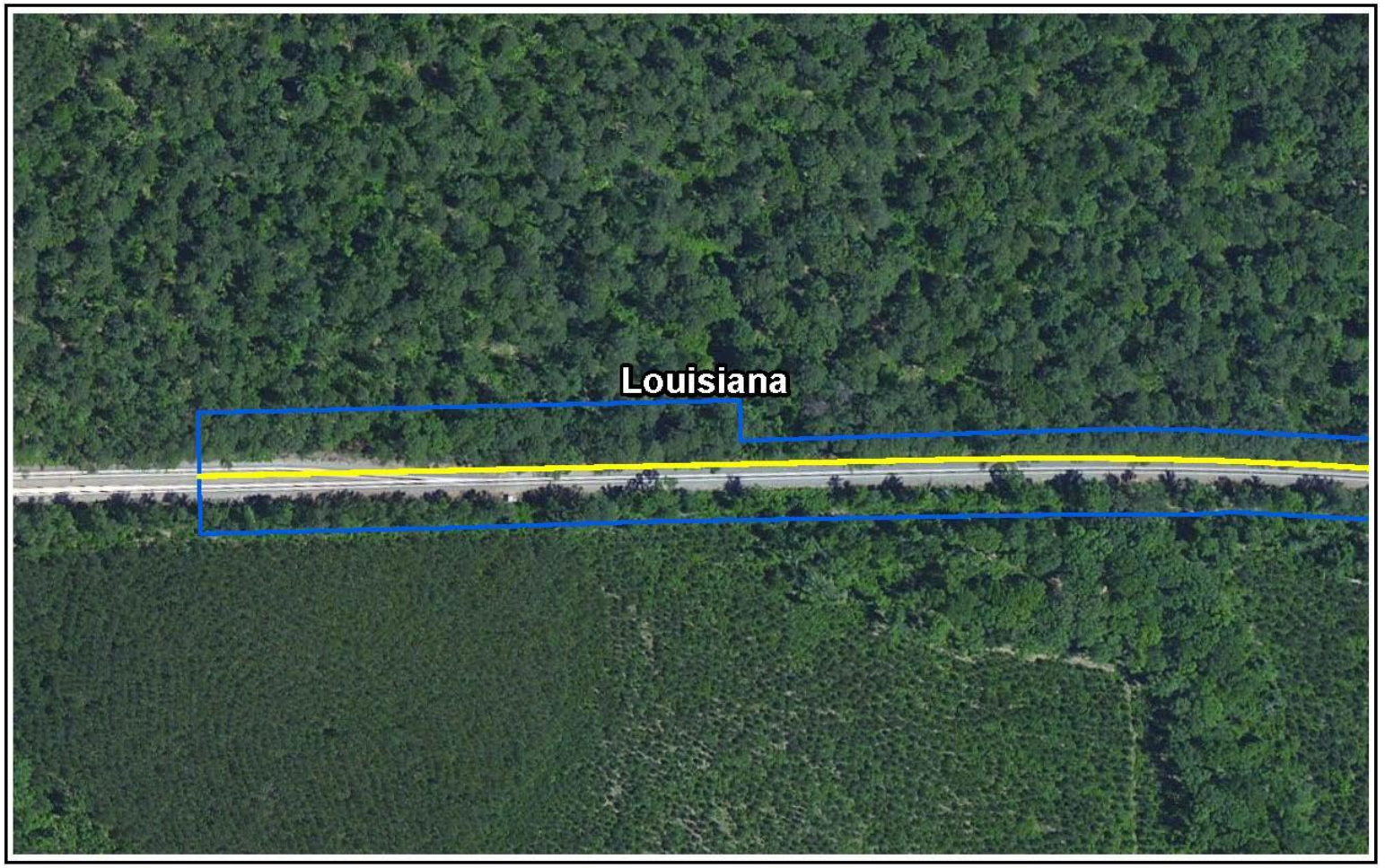
N

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Loring
Sabine, Louisiana | Map 1 of 5

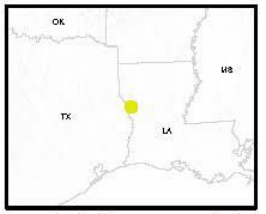


Capital Improvement Location
Existing Right-of-Way

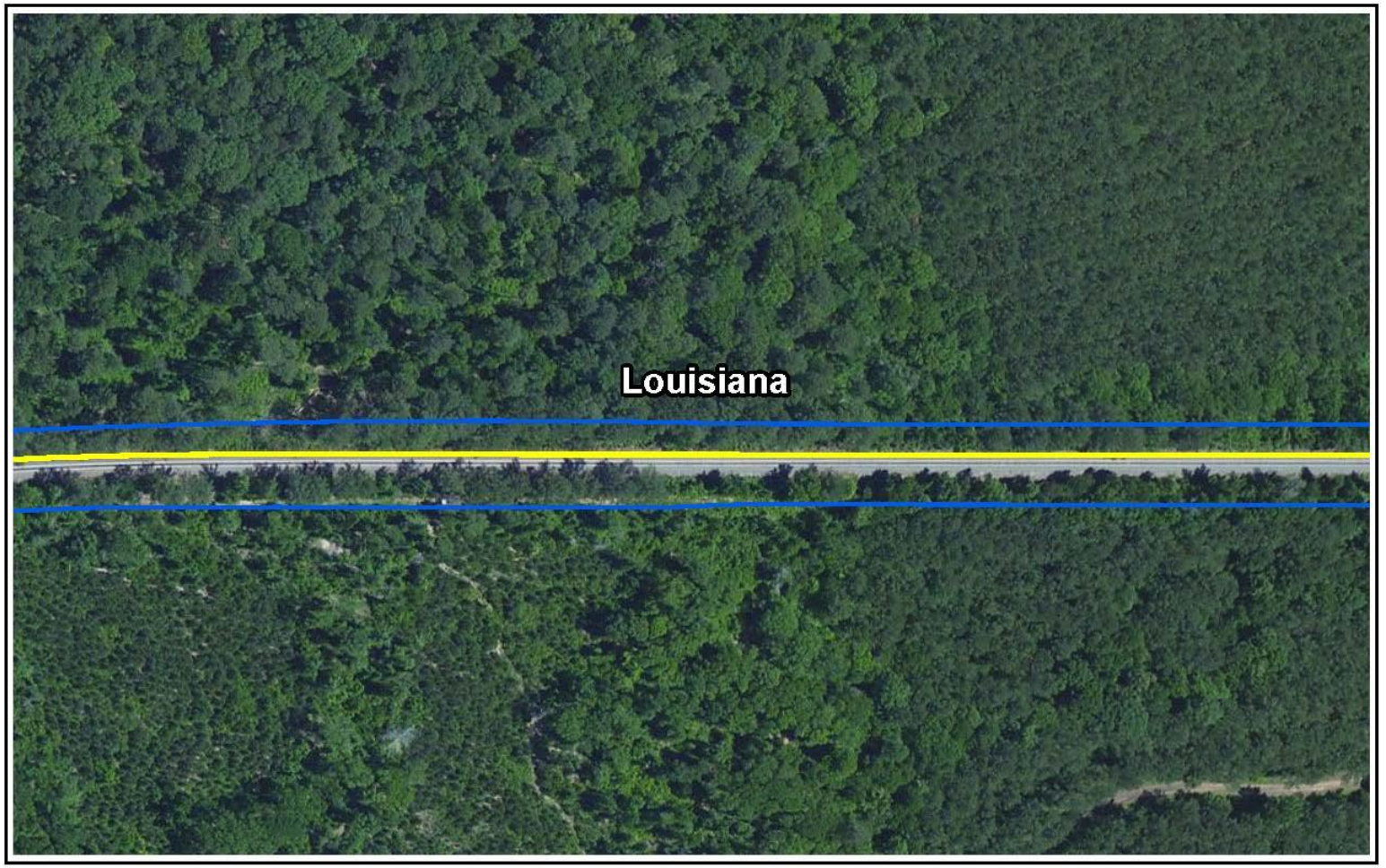
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0 200 400
Feet

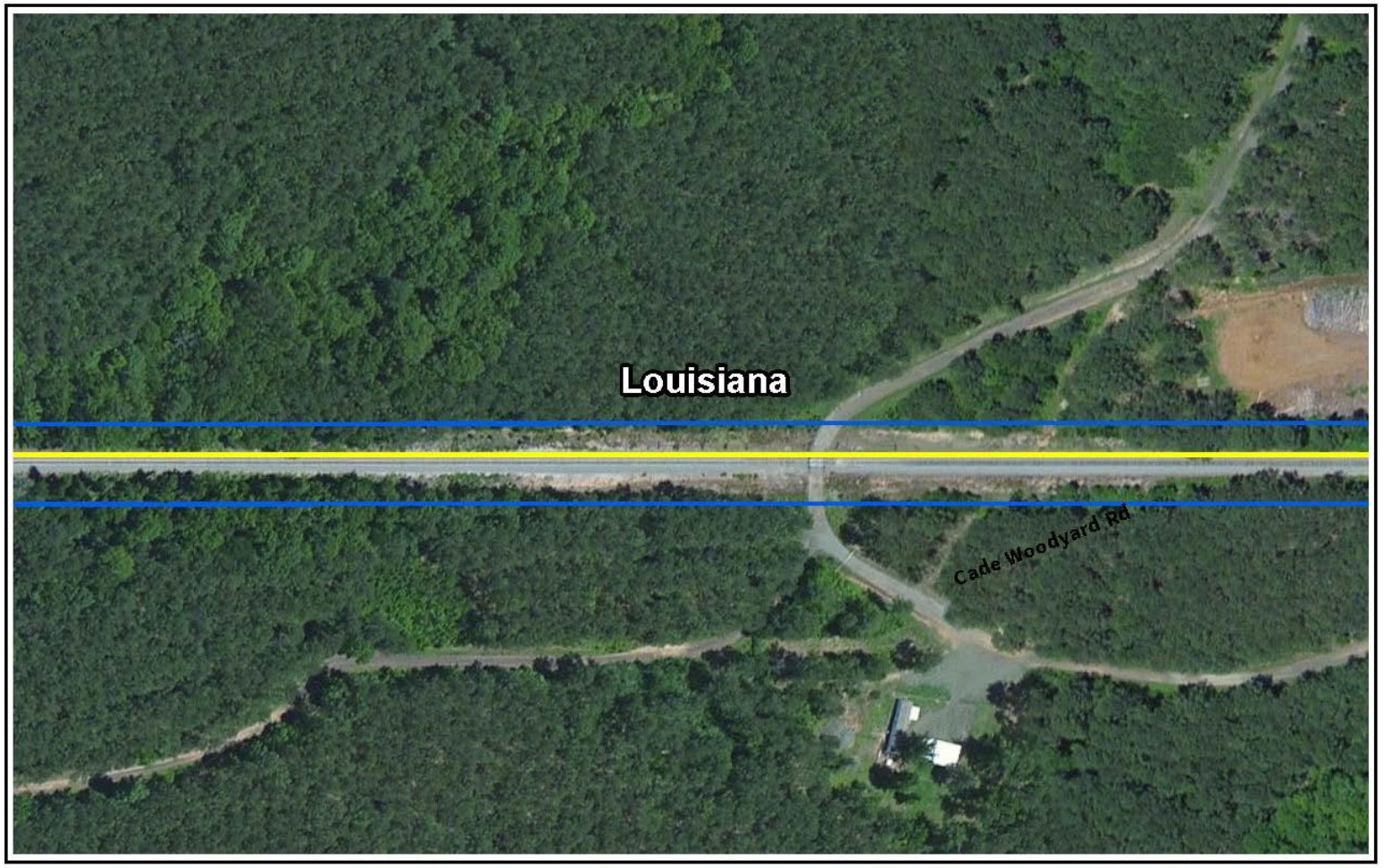
Source: FRA, CP, ArcGIS Online



Capital Improvement Loring
Sabine, Louisiana | Map 2 of 5



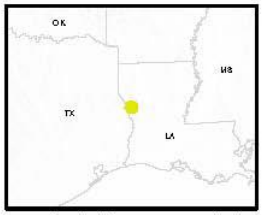
Capital Improvement Loring
Sabine, Louisiana | Map 3 of 5



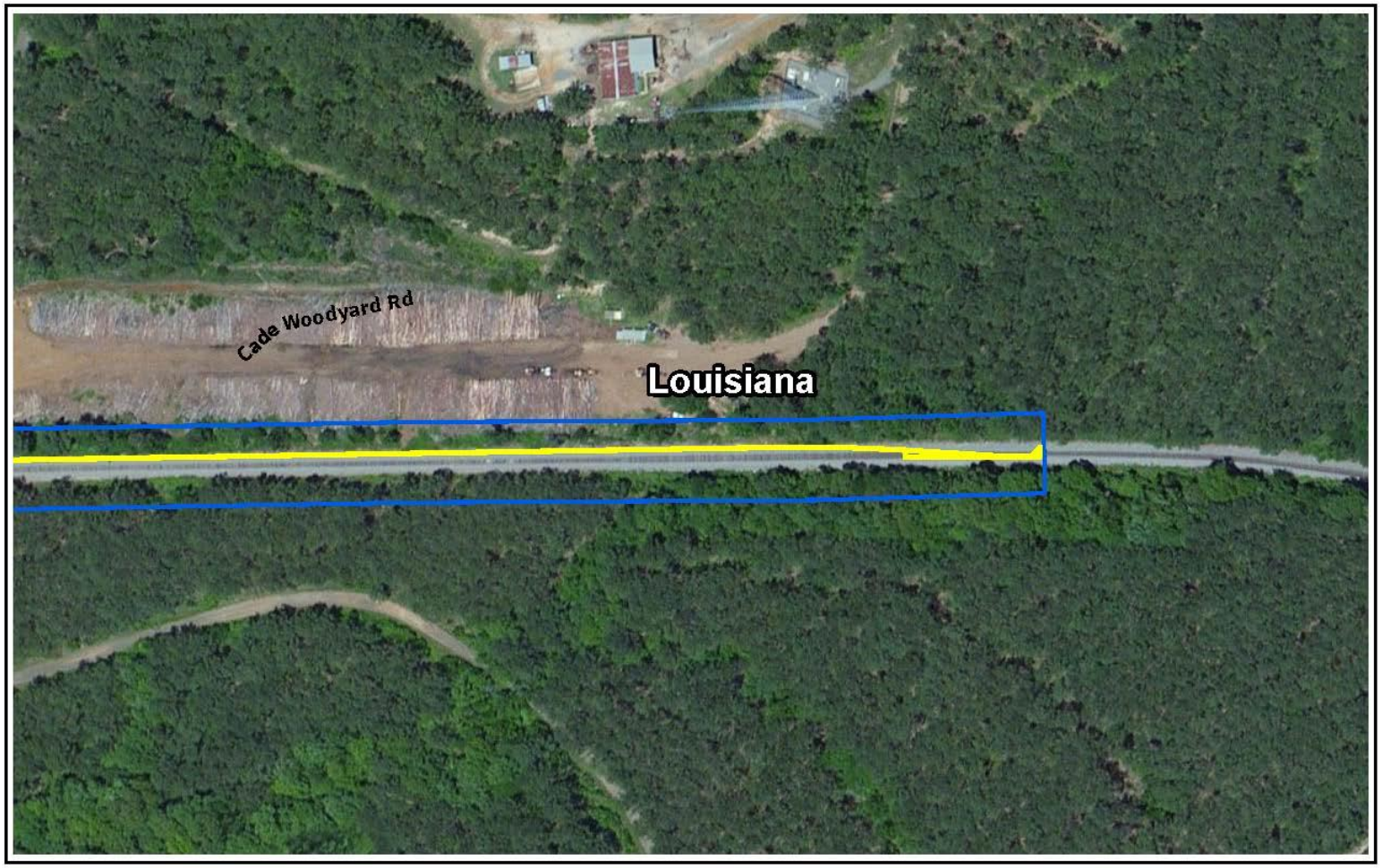
Capital Improvement Location
Existing Right-of-Way



Source: FRA, CP, ArcGIS Online



Capital Improvement Loring
Sabine, Louisiana | Map 4 of 5

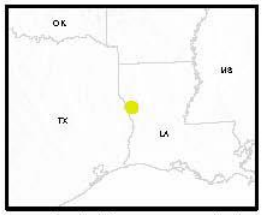


Capital Improvement Location
Existing Right-of-Way

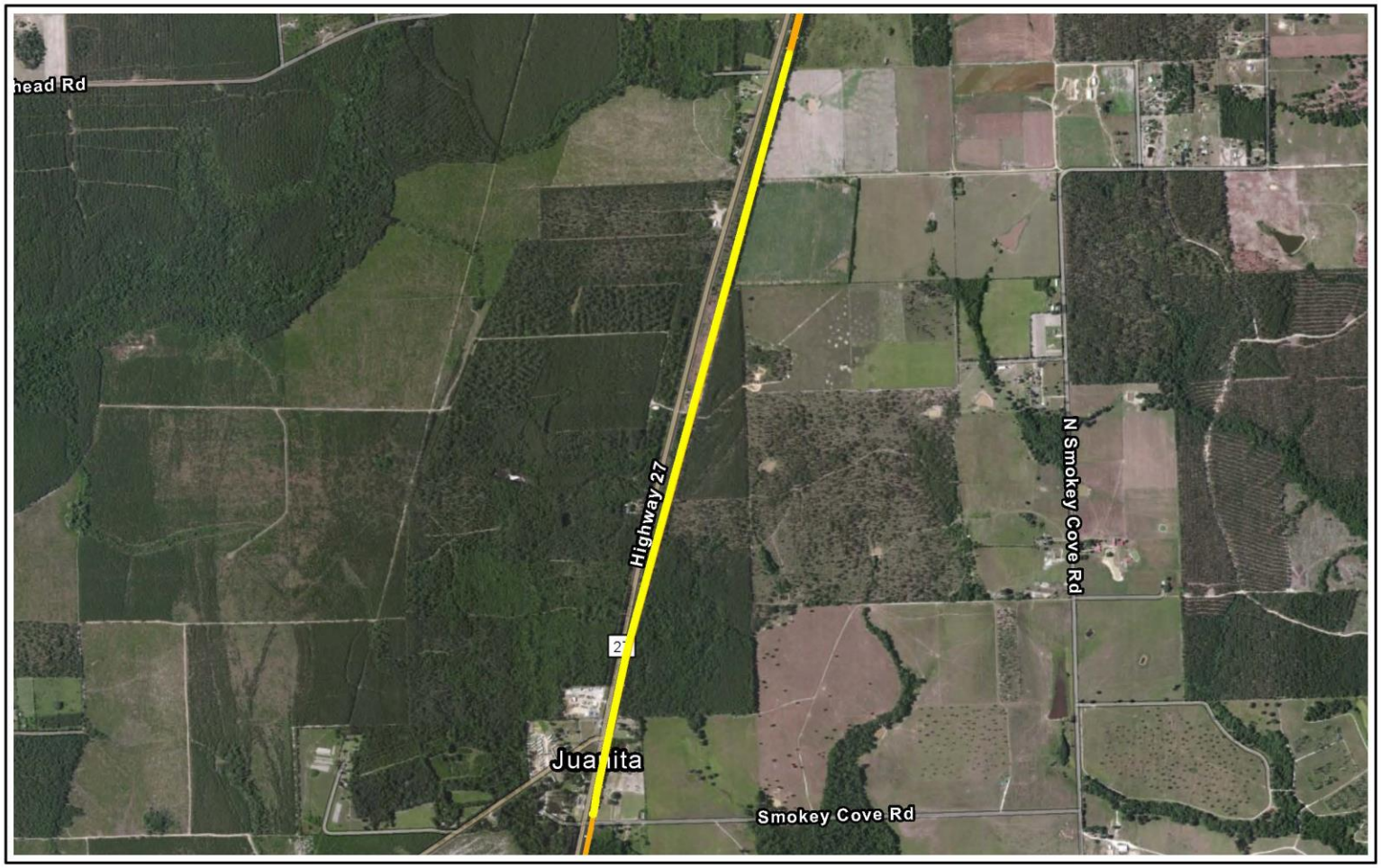
N

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Loring
Sabine, Louisiana | Map 5 of 5

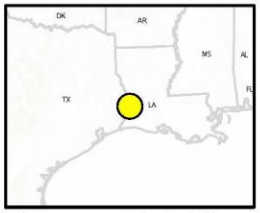


Capital Improvement Project Location
Canadian Pacific Rail Lines
Kansas City Southern Rail Lines
Canadian Pacific Trackage Rights
Kansas City Southern Trackage Rights

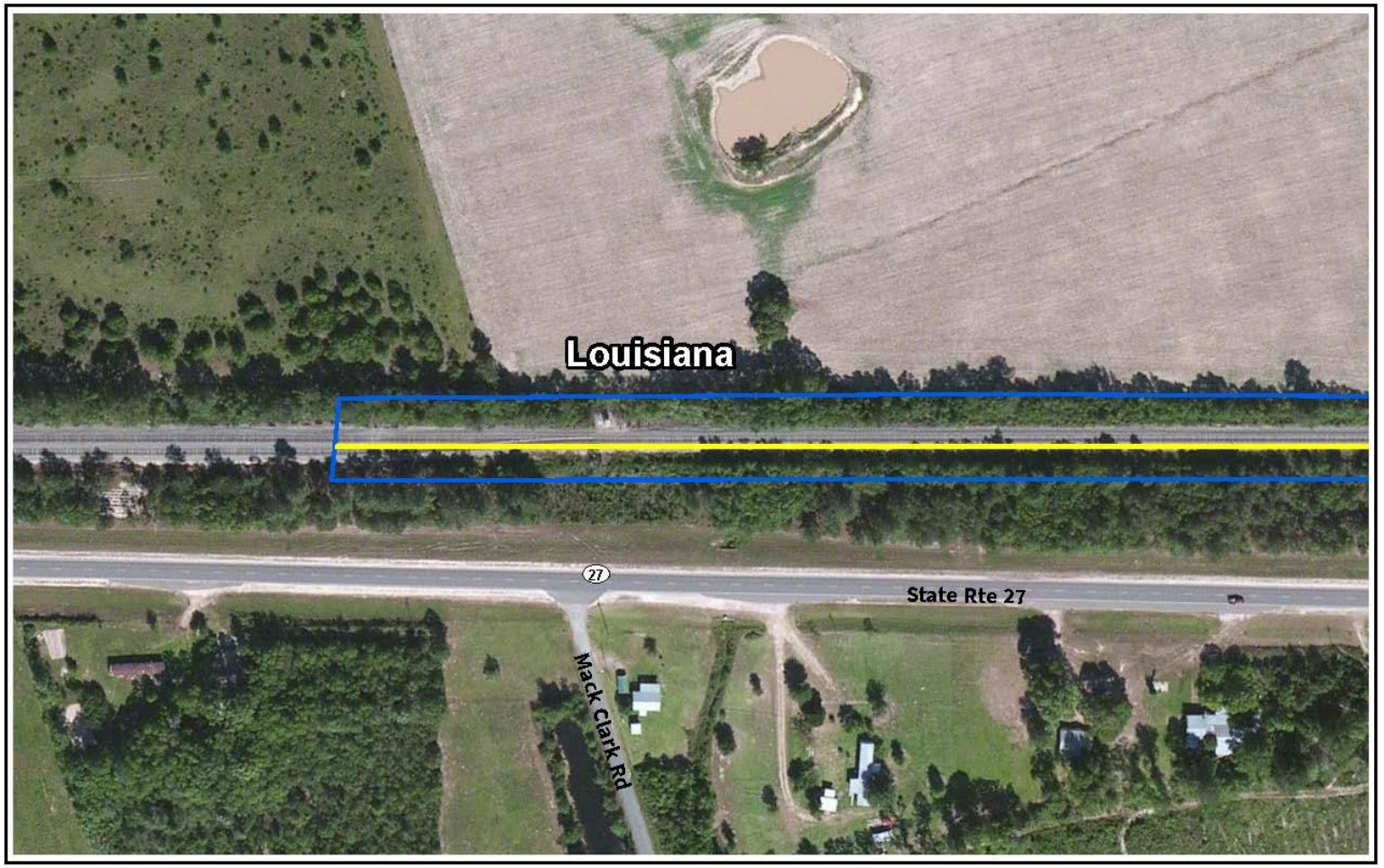
N

0 1,000 2,000 3,000 4,000 Feet

Source: FRA, CP, ArcGIS Online



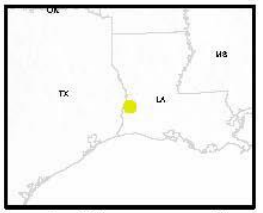
Capital Improvement Project Singer
Beauregard, Louisiana



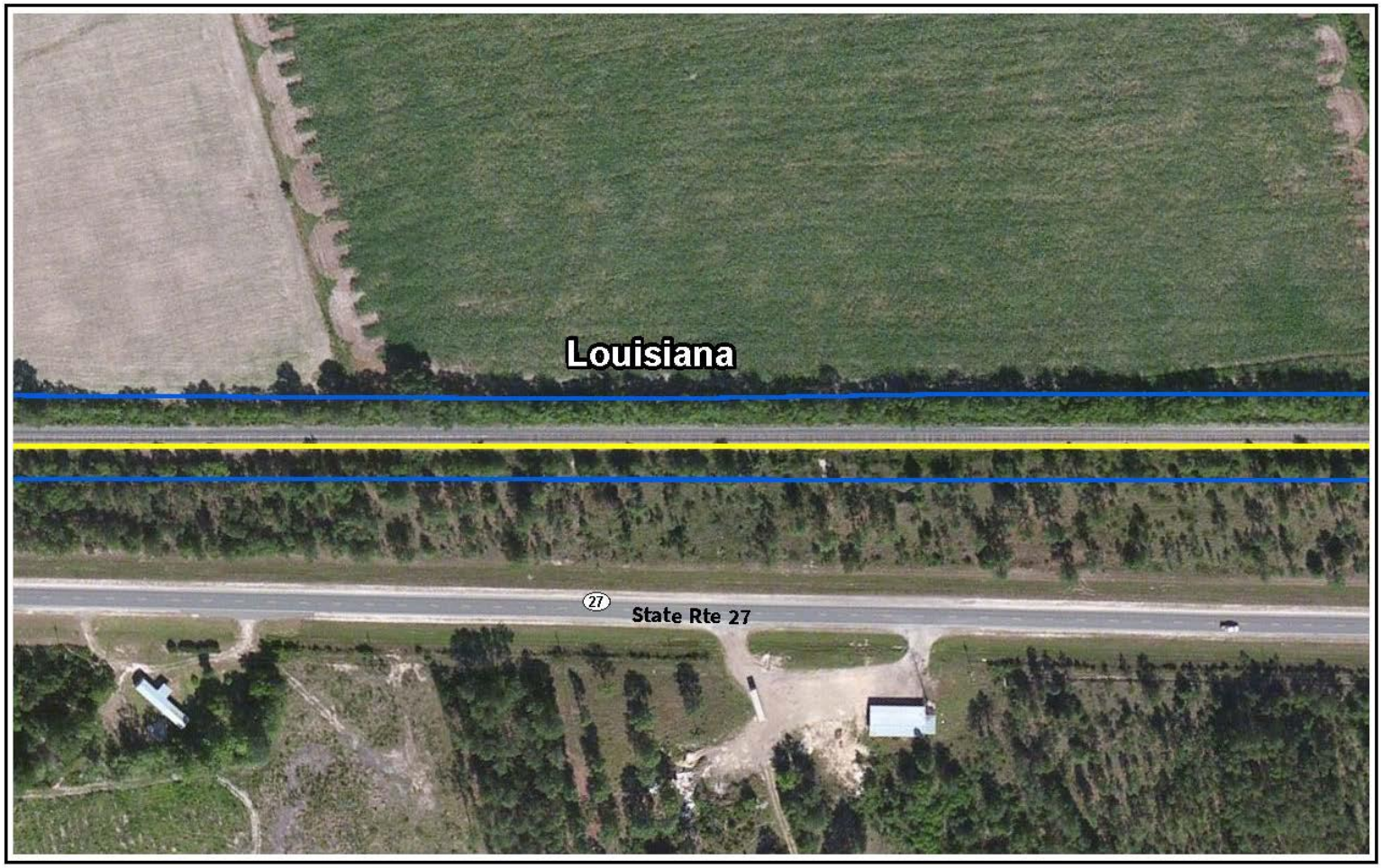
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



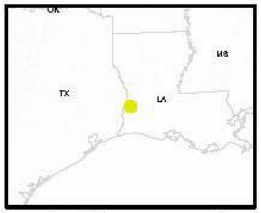
Capital Improvement Singer
Beauregard, Louisiana | Map 1 of 7



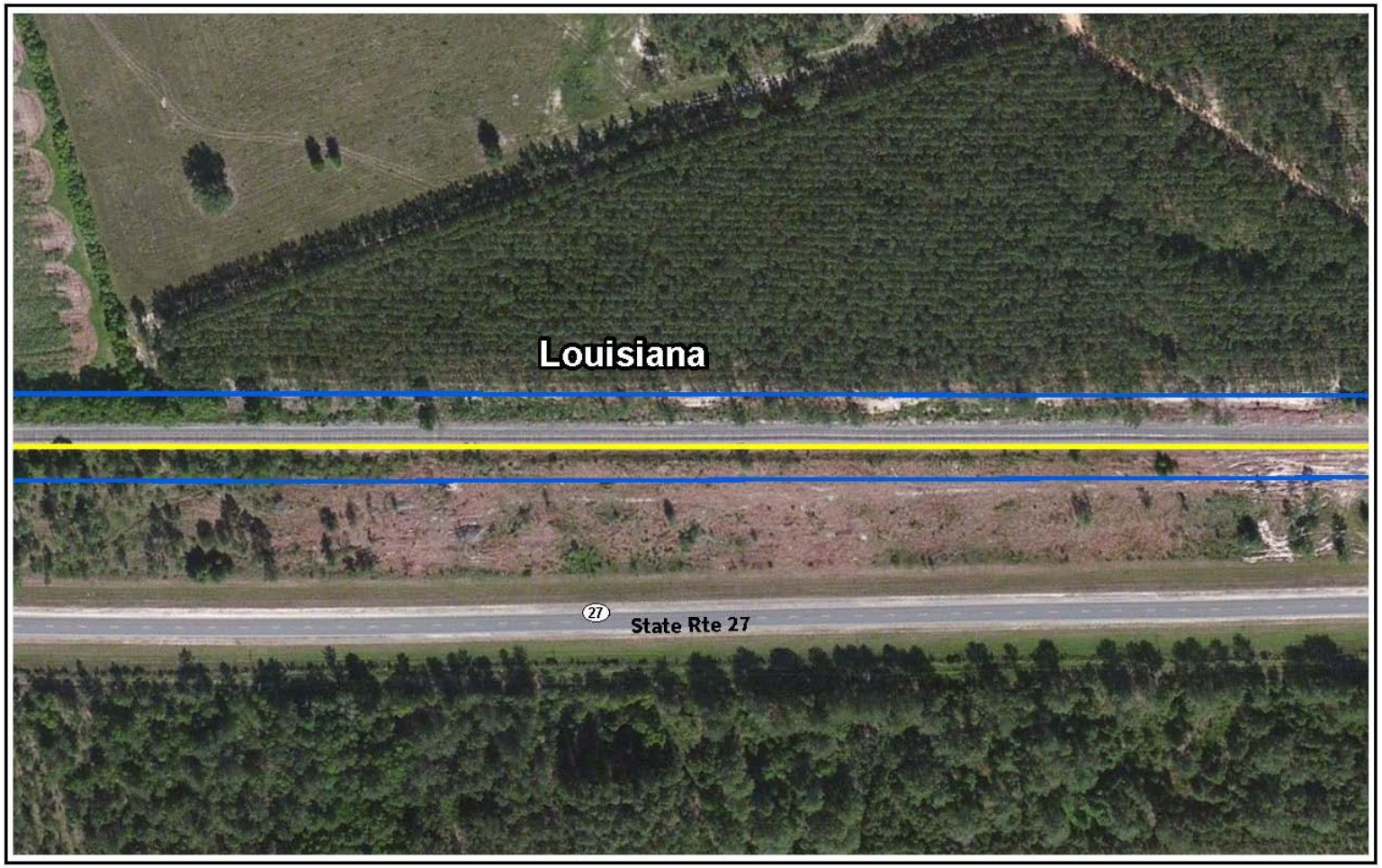
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



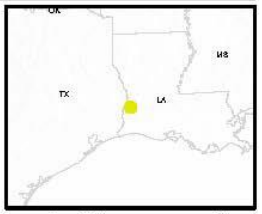
Capital Improvement Singer
Beauregard, Louisiana | Map 2 of 7



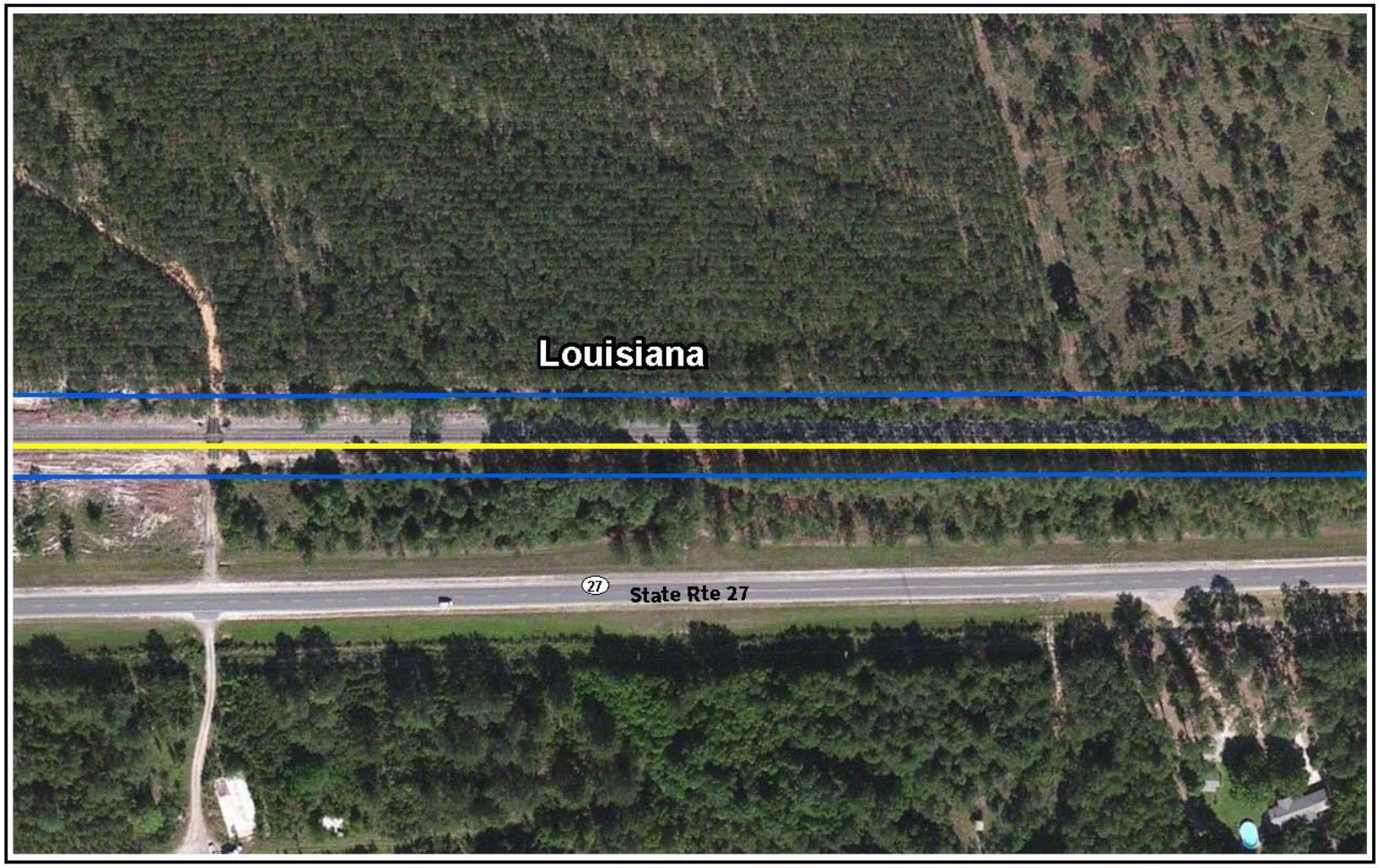
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Singer
Beauregard, Louisiana | Map 3 of 7

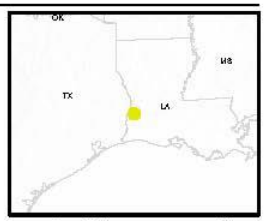


Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



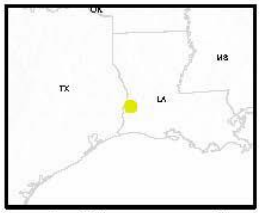
Capital Improvement Singer
Beauregard, Louisiana | Map 4 of 7



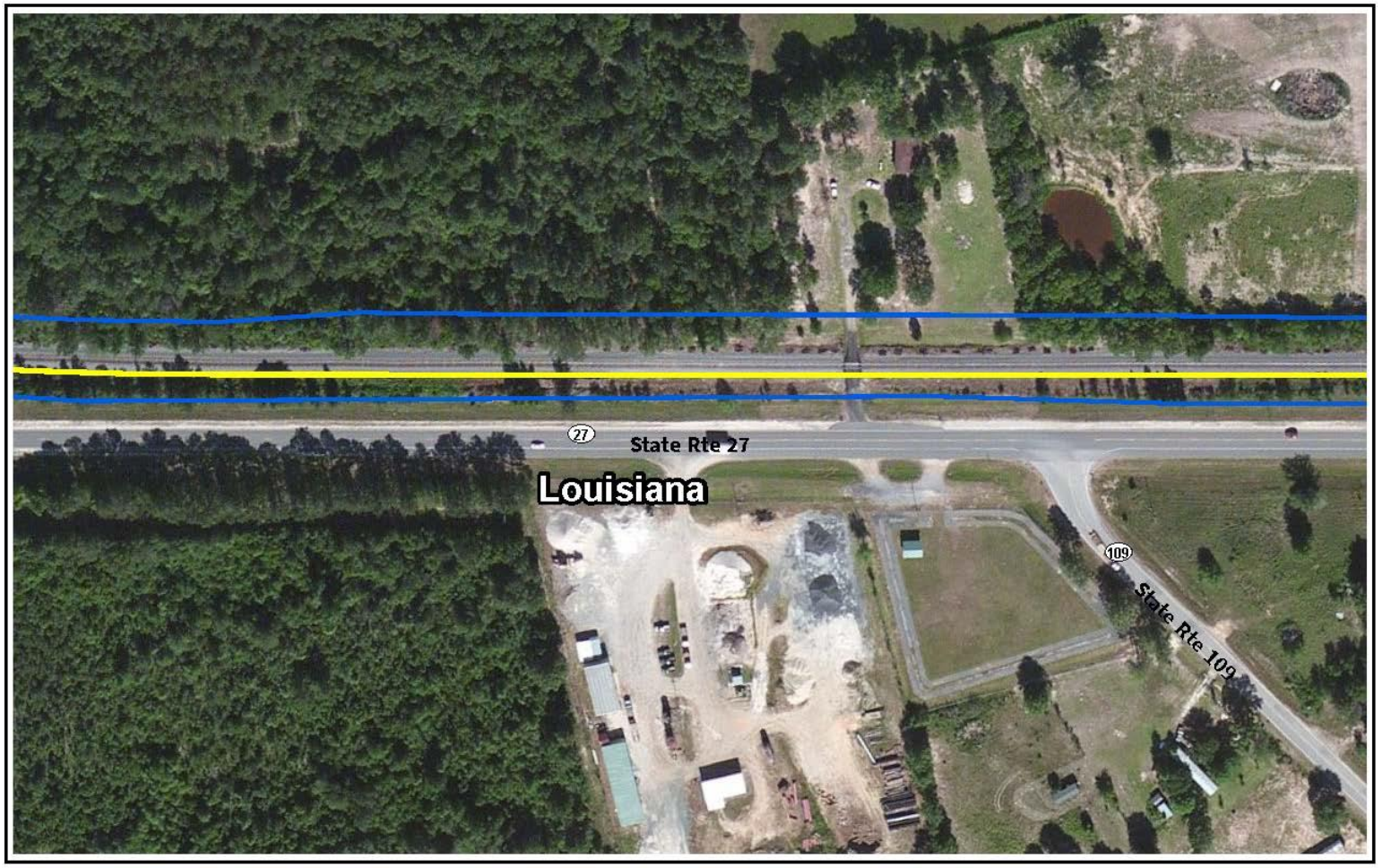
Capital Improvement Location
Existing Right-of-Way

0 200 400
Feet

Source: FRA, CP, ArcGIS Online



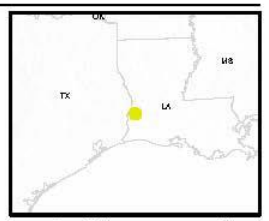
Capital Improvement Singer
Beauregard, Louisiana | Map 5 of 7



Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



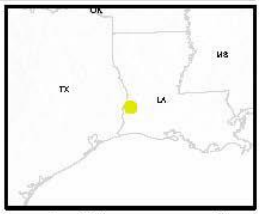
Capital Improvement Singer
Beauregard, Louisiana | Map 6 of 7



Capital Improvement Location
Existing Right-of-Way

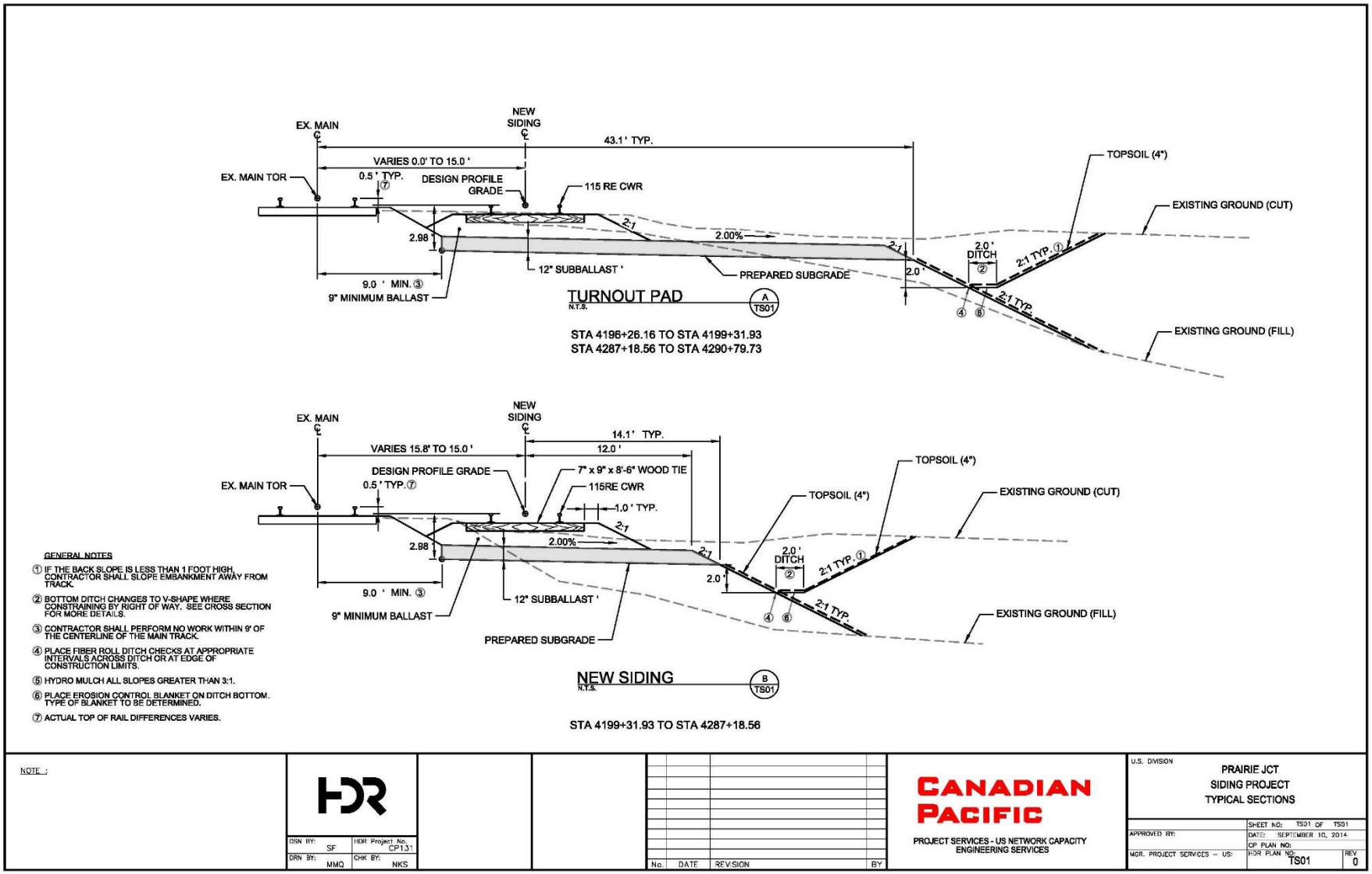
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Feet

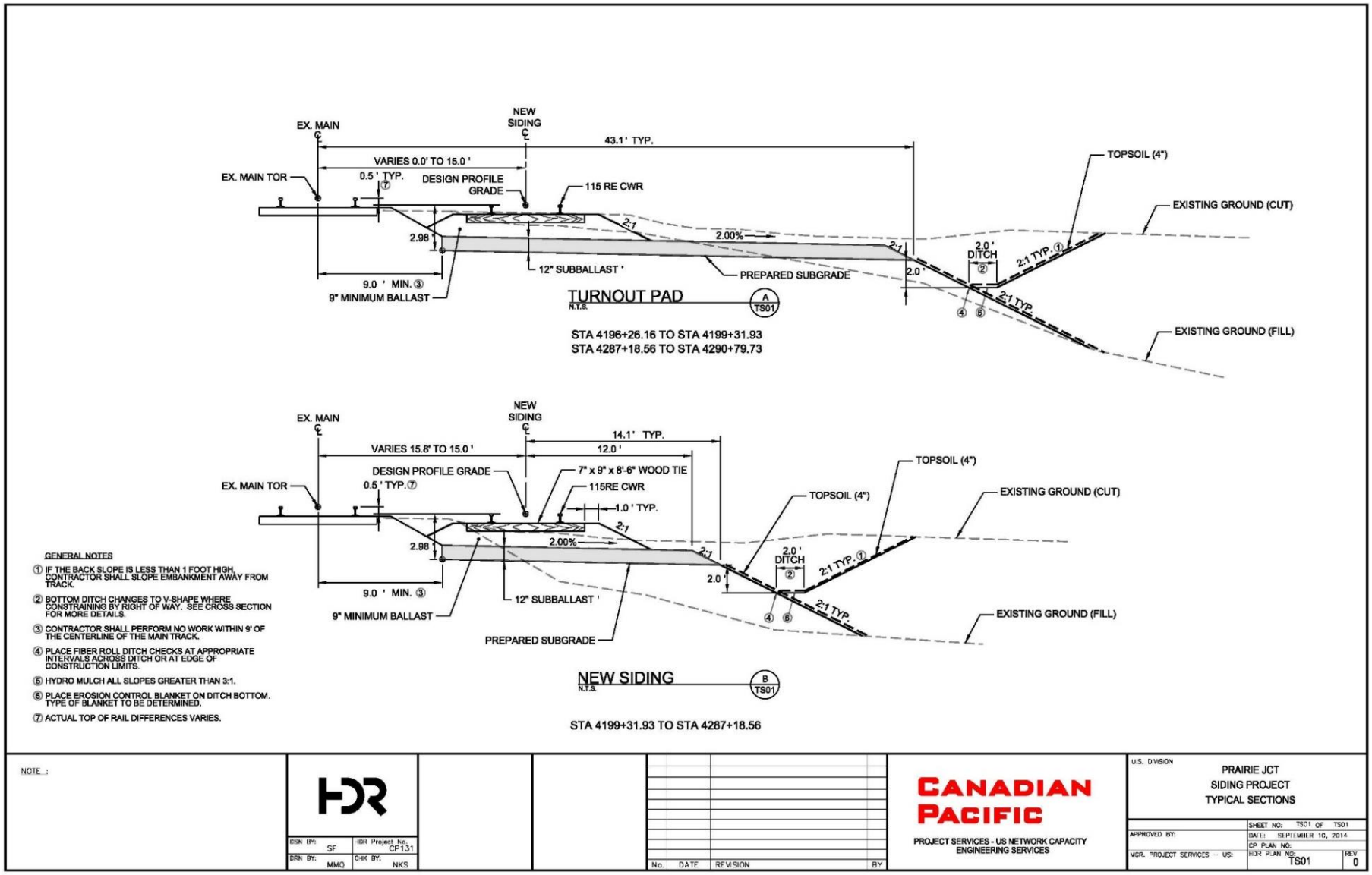
Source: FRA, CP, ArcGIS Online

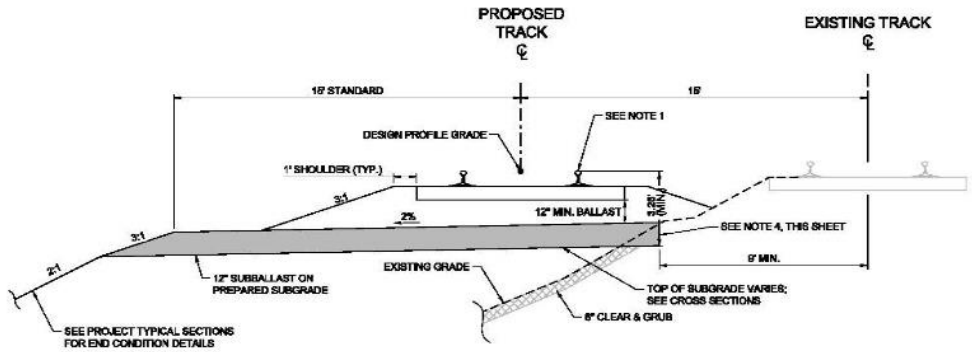


Capital Improvement Singer
Beauregard, Louisiana | Map 7 of 7

D.2 Capital Improvement Sample Cross-Sections


EX. MAIN
NEW SIDING
43.1 ' TYP.
VARIES 0.0' TO 15.0 '
EX. MAIN TOR
0.5 ' TYP. ⑦
DESIGN PROFILE GRADE
115 RE CWR
TOPSOIL (4")
EXISTING GROUND (CUT)
2:1
2.98
2.00%
2:1
2.0 ' DITCH ②
2:1 TYP. ①
2.0 '
12" SUBBALLAST '
PREPARED SUBGRADE
9.0 ' MIN. ③
9" MINIMUM BALLAST
2:1 TYP.
④ ⑥
EXISTING GROUND (FILL)
TURNOUT PAD
N.T.S.
A TS01
STA 4196+26.16 TO STA 4199+31.93
STA 4287+18.56 TO STA 4290+79.73
EX. MAIN
NEW SIDING
14.1 ' TYP.
VARIES 15.8' TO 15.0 '
12.0 '
DESIGN PROFILE GRADE
7" x 9" x 8'-6" WOOD TIE
EX. MAIN TOR
0.5 ' TYP. ⑦
115RE CWR
1.0 ' TYP.
TOPSOIL (4")
TOPSOIL (4")
EXISTING GROUND (CUT)
2:1
2.98
2.00%
2:1
2.0 ' DITCH ②
2:1 TYP. ①
2.0 '
9.0 ' MIN. ③
12" SUBBALLAST '
9" MINIMUM BALLAST
2:1 TYP.
④ ⑥
EXISTING GROUND (FILL)
PREPARED SUBGRADE
NEW SIDING
N.T.S.
B TS01
STA 4199+31.93 TO STA 4287+18.56
GENERAL NOTES
① IF THE BACK SLOPE IS LESS THAN 1 FOOT HIGH, CONTRACTOR SHALL SLOPE EMBANKMENT AWAY FROM TRACK.
② BOTTOM DITCH CHANGES TO V-SHAPE WHERE CONSTRAINING BY RIGHT OF WAY. SEE CROSS SECTION FOR MORE DETAILS.
③ CONTRACTOR SHALL PERFORM NO WORK WITHIN 9' OF THE CENTERLINE OF THE MAIN TRACK.
④ PLACE FIBER ROLL DITCH CHECKS AT APPROPRIATE INTERVALS ACROSS DITCH OR AT EDGE OF CONSTRUCTION LIMITS.
⑤ HYDRO MULCH ALL SLOPES GREATER THAN 3:1.
⑥ PLACE EROSION CONTROL BLANKET ON DITCH BOTTOM. TYPE OF BLANKET TO BE DETERMINED.
⑦ ACTUAL TOP OF RAIL DIFFERENCES VARIES.
NOTE :
HDR
DSN BY: SF
HDR Project No. CP131
DRN BY: MMQ
CHK BY: NKS
No. DATE REVISION BY
CANADIAN PACIFIC
PROJECT SERVICES - US NETWORK CAPACITY ENGINEERING SERVICES
U.S. DIVISION
PRAIRIE JCT
SIDING PROJECT
TYPICAL SECTIONS
APPROVED BY:
MGR. PROJECT SERVICES – US:
SHEET NO: TS01 OF TS01
DATE: SEPTEMBER 10, 2014
CP PLAN NO:
HDR PLAN NO. TS01
REV 0

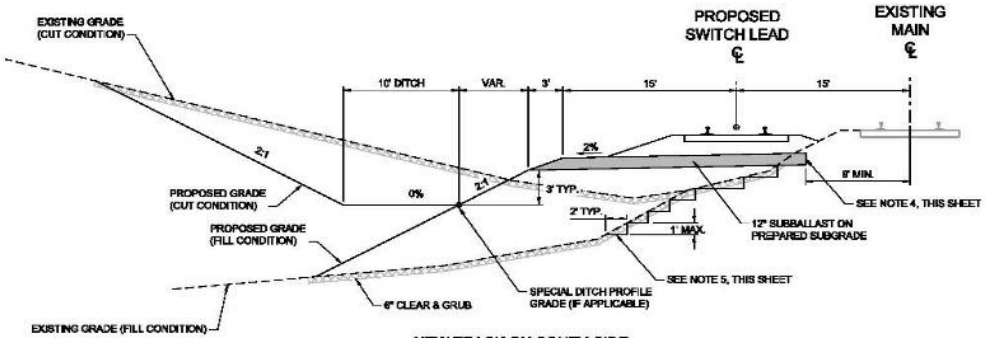

EX. MAIN
NEW SIDING
43.1' TYP.
VARIES 0.0' TO 15.0'
EX. MAIN TOR
0.5' TYP. ⑦
DESIGN PROFILE GRADE
115 RE CWR
TOPSOIL (4")
EXISTING GROUND (CUT)
2:1
2.98
2.00%
2:1
2.0' DITCH ②
2:1 TYP. ①
12" SUBBALLAST'
PREPARED SUBGRADE
2.0'
9.0' MIN. ③
9" MINIMUM BALLAST
2:1 TYP.
④ ⑤
EXISTING GROUND (FILL)
TURNOUT PAD
N.T.S.
A TS01
STA 4196+26.16 TO STA 4199+31.93
STA 4287+18.56 TO STA 4290+79.73
EX. MAIN
NEW SIDING
14.1' TYP.
12.0'
VARIES 15.8' TO 15.0'
DESIGN PROFILE GRADE
7" x 9" x 8'-6" WOOD TIE
EX. MAIN TOR
0.5' TYP. ⑦
115RE CWR
1.0' TYP.
TOPSOIL (4")
TOPSOIL (4")
EXISTING GROUND (CUT)
2:1
2.98
2.00%
2:1
2.0' DITCH ②
2:1 TYP. ①
2.0'
9.0' MIN. ③
12" SUBBALLAST'
9" MINIMUM BALLAST
2:1 TYP.
④ ⑤
PREPARED SUBGRADE
EXISTING GROUND (FILL)
NEW SIDING
N.T.S.
B TS01
STA 4199+31.93 TO STA 4287+18.56
GENERAL NOTES
① IF THE BACK SLOPE IS LESS THAN 1 FOOT HIGH, CONTRACTOR SHALL SLOPE EMBANKMENT AWAY FROM TRACK.
② BOTTOM DITCH CHANGES TO V-SHAPE WHERE CONSTRAINING BY RIGHT OF WAY. SEE CROSS SECTION FOR MORE DETAILS.
③ CONTRACTOR SHALL PERFORM NO WORK WITHIN 9' OF THE CENTERLINE OF THE MAIN TRACK.
④ PLACE FIBER ROLL DITCH CHECKS AT APPROPRIATE INTERVALS ACROSS DITCH OR AT EDGE OF CONSTRUCTION LIMITS.
⑤ HYDRO MULCH ALL SLOPES GREATER THAN 3:1.
⑥ PLACE EROSION CONTROL BLANKET ON DITCH BOTTOM. TYPE OF BLANKET TO BE DETERMINED.
⑦ ACTUAL TOP OF RAIL DIFFERENCES VARIES.
NOTE :
HDR
DSN BY: SF
HDR Project No. CP131
DRN BY: MMQ
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No. DATE REVISION BY
CANADIAN PACIFIC
PROJECT SERVICES - US NETWORK CAPACITY ENGINEERING SERVICES
U.S. DIVISION
PRAIRIE JCT
SIDING PROJECT
TYPICAL SECTIONS
APPROVED BY:
MGR. PROJECT SERVICES – US:
SHEET NO: TS01 OF TS01
DATE: SEPTEMBER 10, 2014
CP PLAN NO:
HDR PLAN NO: TS01
REV 0



MASTER TYPICAL SECTION - NEW ADJACENT TRACK
(EXCLUDING END CONDITIONS)

NOTES:

1. NEW TRACK STRUCTURE IS DESIGNED AS 136RE ON 9"X7"X8' TIMBER TIES WITH 12" OF BALLAST.
2. ALL SUBBALLAST IS 12" THICK UNLESS OTHERWISE NOTED.
3. RE-ESTABLISHMENT OF VEGETATION INCLUDES SEEDING AND EROSION CONTROL BLANKET PER KCS SPECIFICATIONS.
4. CONTRACTOR TO VERIFY THE ELEVATION OF EXISTING SUBBALLAST TO ENSURE POSITIVE DRAINAGE AWAY FROM MAINLINE. SUBBALLAST WILL NOT BE PLACED ABOVE EXISTING SUBBALLAST GRADE.
5. CONTRACTOR TO BENCH NEW EMBANKMENT INTO THE EXISTING EMBANKMENT. THE BENCH HEIGHT SHALL BE A MAXIMUM OF 1-FT WITH THE CORRESPONDING HORIZONTAL LENGTH OF 1.5 TO 2.0 TIMES THE BENCH HEIGHT



NEW TRACK ON SOUTH SIDE
STA. 7954+70 TO STA. 8032+50

PLOT BY: PMEDER
PLOT DATE: Tuesday, December 15, 2020 11:54:43 AM

REMARKS:
CONSTRUCT 1,605 TF OF NEW MAIN
CONSTRUCT 13,880 TF OF NEW SWITCH LEAD (10,000 TF CLEAR)
MAIN LINE FREIGHT SPEED (EXISTING):
20 MPH (MP 8.9 TO MP 10)
40 MPH (MP 10 TO MP 11.2)
FREIGHT SPEED (DESIGN)
45 MPH (MAIN LINE)
20 MPH (SWITCH LEAD)

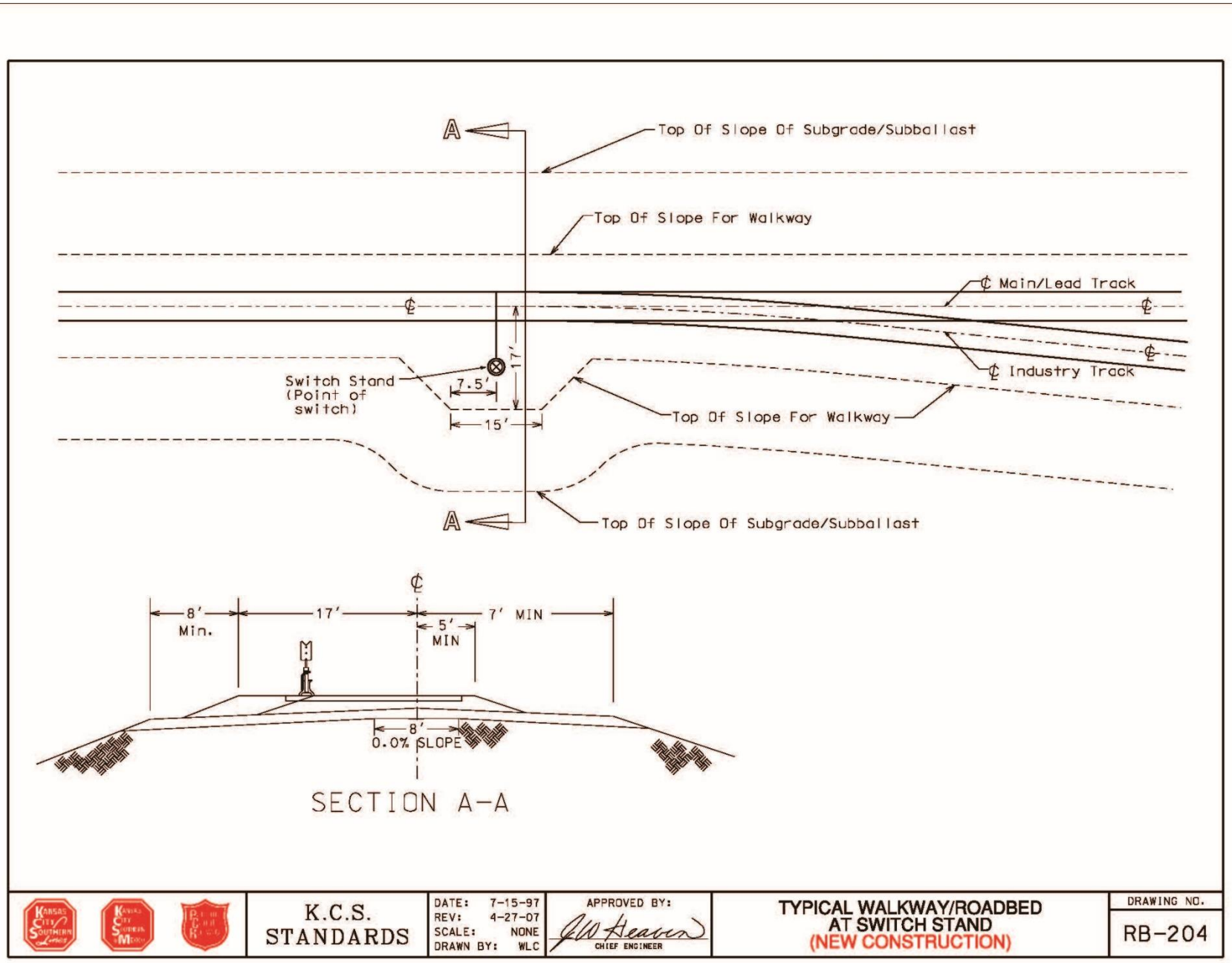
102646
February 15, 2021

LEGEND
EXISTING MAIN (SURVEYED)
EXISTING TRACK TO SHIFT
PROPOSED MAIN ALIGNMENT
PROPOSED SHIFTED TRACK
EXISTING TRACK TO BE REMOVED
EXISTING KCS ROW
PROPOSED KCS ROW

REVISIONS		
ITEM	BY	DATE

SERIES T501 OF T503
DES/CHK: JWR/EJF
DATE: 02/15/2021
VAL SEC: N/A
DRAWING: TS01
DRW/CHK: PBS/JWR
SCALE: AS NOTED
SHEET: 13 OF 68
FILE: LSL-R-TYP01.dgn

KANSAS CITY SOUTHERN RAILWAY
LAREDO SWITCHING LEAD
TYPICAL SECTIONS


A
Top Of Slope Of Subgrade/Subballast
Top Of Slope For Walkway
℄ Main/Lead Track
℄
℄
℄ Industry Track
17'
Switch Stand
(Point of
switch)
7.5'
15'
Top Of Slope For Walkway
A
Top Of Slope Of Subgrade/Subballast
℄
8'
Min.
17'
5'
MIN
7' MIN
8'
0.0% SLOPE
SECTION A-A
K.C.S.
STANDARDS
DATE: 7-15-97
REV: 4-27-07
SCALE: NONE
DRAWN BY: WLC
APPROVED BY:
CHIEF ENGINEER
TYPICAL WALKWAY/ROADBED
AT SWITCH STAND
(NEW CONSTRUCTION)
DRAWING NO.
RB-204

Appendix E

Summary of Impacts by Community

OEA developed the Summary of Impacts by Community Table to provide readers with one source for data about the Proposed Acquisition's potential impacts at a community level. OEA included communities that have receptors that could potentially experience noise impacts, increased trains per day (TPD), and grade crossing safety or delay. For a complete understanding of the approach to the analysis, the affected environment, and the environmental consequences, the reader should consult the individual impact analysis topics in their respective chapters and appendices.

Accompanying notes for the community impacts table are as follows:

[1] TPD – Trains Per Day. Passenger trains are in parentheses where passenger trains use the segment.

[2] For segments where CPKC would maintain trackage rights, the TPD volumes reflect the sum of CPKC and the track owner volumes and may reflect a range if the segment has variable volumes along its length.

[3] Noise sensitive receptors (receptors) include residences, schools, hospitals, nursing homes, and places of worship. The Proposed Acquisition would adversely affect a receptor if increased rail traffic would cause an increase in noise level of 3 or more A-weighted decibels (dBA) at the receptor and would cause the day-night average noise level (Ldn) to reach or exceed 65 dBA. Refer to *Section 3.6, Noise and Vibration* for more information about the noise analysis.

[4] Refer to Table 3.2-9 in *Section 3.2, Grade Crossing Safety* for more information about crossing safety for specific crossings.

[5] Refer to Table 3.3-11 in *Section 3.3, Grade Crossing Delay* for more information about vehicle delay at specific grade crossings.

[6] Environmental Justice (EJ) Block Groups refer to U.S. Census Block Groups that meet the definition of potentially containing an EJ population, such as low-income or minority populations. For more information about the EJ analysis, refer to *Section 3.13, Environmental Justice*.

* Community with planned capital improvements nearby. Refer to **Table 2.2-4** in *Chapter 2* for more information on planned capital improvements.

Table E.1-1. Summary of Impacts by Community

		TPD[2]		Noise	Grade Crossing		Environmental Justice (EJ)
Community Name	**Railroad Segment**	**2027 No Action Freight TPD (Existing Passenger TPD)[1]**	**2027 Proposed Acquisition Freight TPD (Existing Passenger TPD)**	**Number of Receptors Adversely Affected[3] (Within 65 dBA Ldn and 3 dBA Increase)**	**Crossings with Increased Safety Risk[4]**	**Crossings with Increased Delay[5]**	**Percentage of Adversely Affected Receptors within EJ Block Groups[6]**
Acorn, AR	K-SHRE-01	13.78	26.18	0	9	0	N/A
Alleene, AR	K-SHRE-02	16.26	28.67	0	0	0	N/A
Ashdown, AR	K-SHRE-02	16.26	28.67	0	0	2	N/A
	K-SHRE-03	13.49	25.89				
Cove, AR	K-SHRE-01	13.78	26.18	0	4	0	N/A
De Queen, AR	K-SHRE-01	13.78	26.18	0	5	1	N/A
	K-SHRE-02	16.26	28.67				
Decatur, AR	K-HEAV-01	16.17	28.57	0	6	1	N/A
Gentry, AR*	K-HEAV-01	16.17	28.57	0	7	2	N/A
Gillham, AR	K-SHRE-01	13.78	26.18 (0)	0	5	0	N/A
Grannis, AR	K-SHRE-01	13.78	26.18 (0)	0	6	0	N/A

Table E.1-1. Summary of Impacts by Community

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Gravette, AR	K-HEAV-01	16.17	28.57 (0)	0	3	0	N/A
Hatfield, AR	K-SHRE-01	13.78	26.18 (0)	0	5	0	N/A
Mena, AR*	K-SHRE-01	13.78	26.18 (0)	0	14	2	N/A
Ogden, AR	K-SHRE-03	13.49	25.89	0	3	0	N/A
Sulphur Springs, AR	K-HEAV-01	16.17	28.57	0	2	0	N/A
Texarkana, AR	K-SHRE-03	13.49	25.89	0	3	0	N/A
Vandervoort, AR	K-SHRE-01	13.78	26.18	0	5	0	N/A
Wickes, AR	K-SHRE-01	13.78	26.18	0	5	0	N/A
Wilton, AR	K-SHRE-02	16.26	28.67	0	7	0	N/A
Winthrop, AR	K-SHRE-02	16.26	28.67	0	6	0	N/A

Table E.1-1. Summary of Impacts by Community

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Community Name	**Railroad Segment**	**2027 No Action Freight TPD (Existing Passenger TPD)[1]**	**2027 Proposed Acquisition Freight TPD (Existing Passenger TPD)**	**Number of Receptors Adversely Affected[3] (Within 65 dBA Ldn and 3 dBA Increase)**	**Crossings with Increased Safety Risk[4]**	**Crossings with Increased Delay[5]**	**Percentage of Adversely Affected Receptors within EJ Block Groups[6]**
Ainsworth, IA	C-OTTU-02	4.80	19.21	80	5	0	No receptors in EJ Block Group.
Bettendorf, IA	C-DAVE-02	8.26	22.67	88	10	1	40% within EJ Block Group.
Blakesburg, IA	C-LARE-01	3.41	17.81	67	9	0	No receptors in EJ Block Group.
Buffalo, IA	C-OTTU-01	6.38	20.78	62	3	0	No receptors in EJ Block Group.
Camanche, IA*	C-DAVE-02	8.26	22.67	312	8	0	2% within EJ Block Group.
Clinton, IA*	C-DAVE-01	10.73	25.14	252	21	1	49% within EJ Block Group.
	C-DAVE-02	8.26	22.67				
Columbus Junction, IA	C-OTTU-02	4.80	19.21	21	2	1	100% within EJ Block Group.
Cotter, IA	C-OTTU-02	4.80	19.21	15	3	0	No receptors in EJ Block Group.
Davenport, IA	C-DAVE-03	8.26	22.67	66	12	2	27% within EJ Block Group.

Table E.1-1. Summary of Impacts by Community

		TPD[2]		Noise	Grade Crossing		Environmental Justice (EJ)
Community Name	**Railroad Segment**	**2027 No Action Freight TPD (Existing Passenger TPD)[1]**	**2027 Proposed Acquisition Freight TPD (Existing Passenger TPD)**	**Number of Receptors Adversely Affected[3] (Within 65 dBA Ldn and 3 dBA Increase)**	**Crossings with Increased Safety Risk[4]**	**Crossings with Increased Delay[5]**	**Percentage of Adversely Affected Receptors within EJ Block Groups[6]**
Fairport, IA	C-OTTU-01	6.38	20.78	74	0	0	No receptors in EJ Block Group.
Fredonia, IA	C-OTTU-02	4.80	19.21	51	4	0	100% within EJ Block Group.
Fruitland, IA	C-OTTU-02	4.80	19.21	91	1	0	No receptors in EJ Block Group.
Le Claire, IA	C-DAVE-02	8.26	22.67	273	5	0	No receptors in EJ Block Group.
Letts, IA*	C-OTTU-02	4.80	19.21	71	7	0	No receptors in EJ Block Group.
Montpelier, IA	C-OTTU-01	6.38	20.78	52	0	0	No receptors in EJ Block Group.
Moravia, IA*	C-LARE-01	3.41	17.81	72	7	0	No receptors in EJ Block Group.
Muscatine, IA	C-OTTU-01	6.38	20.78	329	15	3	92% within EJ Block Group.
	C-OTTU-02	4.80	19.21				
Mystic, IA	C-LARE-01	3.41	17.81	13	8	0	No receptors in EJ Block Group.

Table E.1-1. Summary of Impacts by Community

		TPD[2]		Noise	Grade Crossing		Environmental Justice (EJ)
Community Name	**Railroad Segment**	**2027 No Action Freight TPD (Existing Passenger TPD)[1]**	**2027 Proposed Acquisition Freight TPD (Existing Passenger TPD)**	**Number of Receptors Adversely Affected[3] (Within 65 dBA Ldn and 3 dBA Increase)**	**Crossings with Increased Safety Risk[4]**	**Crossings with Increased Delay[5]**	**Percentage of Adversely Affected Receptors within EJ Block Groups[6]**
Ottumwa, IA*	C-OTTU-02	4.80	19.21	117	19	3	24% within EJ Block Group.
Princeton, IA	C-DAVE-02	8.26	22.67	206	5	0	No receptors in EJ Block Group.
Rathbun, IA	C-LARE-01	3.41	17.81	8	1	0	No receptors in EJ Block Group.
Riverdale, IA	C-DAVE-02	8.26	22.67	55	12	0	No receptors in EJ Block Group.
Sabula, IA	C-CHIC-01	4.53	4.53	0	1	0	N/A
Seymour, IA	C-LARE-01	3.41	17.81	154	25	0	100% within EJ Block Group.
Washington, IA*	C-OTTU-02	4.80	19.21	206	14	2	82% within EJ Block Group.
Bartlett, IL	C-ELGI-01	3.41 (57)	11.41 (57)	1	6	4	No receptors in EJ Block Group.
Bensenville, IL	C-ELGI-01	3.41 (57)	11.41 (57)	50	4	2	100% within EJ Block Group.
	C-ELGI-02	30.52 (58)	36.95 (58)				

Table E.1-1. Summary of Impacts by Community

		TPD[2]		Noise	Grade Crossing		Environmental Justice (EJ)
Community Name	**Railroad Segment**	**2027 No Action Freight TPD (Existing Passenger TPD)[1]**	**2027 Proposed Acquisition Freight TPD (Existing Passenger TPD)**	**Number of Receptors Adversely Affected[3] (Within 65 dBA Ldn and 3 dBA Increase)**	**Crossings with Increased Safety Risk[4]**	**Crossings with Increased Delay[5]**	**Percentage of Adversely Affected Receptors within EJ Block Groups[6]**
Byron, IL	C-CHIC-02	6.56	14.56	44	6	2	No receptors in EJ Block Group.
Davis Junction, IL	C-CHIC-02	6.56	14.56	82	3	1	No receptors in EJ Block Group.
	C-CHIC-03	3.15	11.15				
Elgin, IL	C-ELGI-01	3.41 (57)	11.41 (57)	9	9	7	89% within EJ Block Group.
Franklin Park, IL	C-ELGI-02	30.52 (58)	36.95 (58)	N/A	0	2	N/A
Genoa, IL	C-CHIC-03	3.15	11.15	93	6	2	38% within EJ Block Group.
Hampshire, IL	C-CHIC-03	3.15	11.15	52	6	0	No receptors in EJ Block Group.
Hanover Park, IL	C-ELGI-01	3.41 (57)	11.41 (57)	22	0	0	18% within EJ Block Group.
Itasca, IL	C-ELGI-01	3.41 (57)	11.41 (57)	42	4	2	7% within EJ Block Group.
Kingston, IL	C-CHIC-03	3.15	11.15	98	5	1	No receptors in EJ Block Group.

Table E.1-1. Summary of Impacts by Community

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Kirkland, IL	C-CHIC-03	3.15	11.15	64	5	0	No receptors in EJ Block Group.
Lanark, IL	C-CHIC-02	6.56	14.56	80	13	2	58% within EJ Block Group.
Leaf River, IL	C-CHIC-02	6.56	14.56	48	5	0	No receptors in EJ Block Group.
Medinah, IL	C-ELGI-01	3.41 (57)	11.41 (57)	0	1	1	N/A
Monroe Center, IL*	C-CHIC-03	3.15	11.15	87	5	0	No receptors in EJ Block Group.
Mount Carroll, IL	C-CHIC-02	6.56	14.56	2	6	0	No receptors in EJ Block Group.
Pingree Grove, IL	C-CHIC-03	3.15	11.15	53	0	0	No receptors in EJ Block Group.
Roselle, IL	C-ELGI-01	3.41 (57)	11.41 (57)	20	3	1	30% within EJ Block Group.
Savanna, IL	C-CHIC-02	6.56	14.56	19	2	0	95% within EJ Block Group.
Schaumburg, IL	C-ELGI-01	3.41 (57)	11.41 (57)	0	1	1	N/A

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Stillman Valley, IL	C-CHIC-02	6.56	14.56	31	1	1	No receptors in EJ Block Group.
Streamwood, IL	C-ELGI-01	3.41 (57)	11.41 (57)	0	0	0	N/A
Wood Dale, IL	C-ELGI-01	3.41 (57)	11.41 (57)	0	3	1	N/A
Frontenac, KS	K-PITT-01	17.57	30.41	0	5	0	N/A
Mulberry, KS	K-PITT-01	17.57	30.41	0	2	0	N/A
Pittsburg, KS	K-PITT-01	17.57	30.41	0	11	3	N/A
	K-HEAV-01	16.17	28.57				
Yale, KS	K-PITT-01	17.57	30.41	0	0	0	N/A
Anacoco, LA	K-BEAU-01	10.71	21.55	0	8	1	N/A
Blanchard, LA	K-SHRE-03	13.49	25.89	0	2	0	N/A

Table E.1-1. Summary of Impacts by Community

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Converse, LA	K-BEAU-01	10.71	21.55	0	6	0	N/A
DeQuincy, LA	K-BEAU-02	10.98	21.82	113	7	3	No receptors in EJ Block Group.
	K-BEAU-03	9.32 (0.9)	20.29 (0.9)				
DeRidder, LA	K-BEAU-02	10.98	21.82	0	12	4	N/A
Fisher, LA	K-BEAU-01	10.71	21.55	0	2	0	N/A
Florien, LA	K-BEAU-01	10.71	21.55	0	7	0	N/A
Frierson, LA	K-BEAU-01	10.71	21.55	0	4	2	N/A
	K-SHRE-04	25.05	36.02				
Hornbeck, LA	K-BEAU-01	10.71	21.55	0	3	1	N/A
Leesville, LA	K-BEAU-01	10.71	21.55	0	14	3	N/A

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	K-BEAU-02	10.98	21.82				
Mansfield, LA*	K-BEAU-01	10.71	21.55	0	11	3	N/A
Many, LA	K-BEAU-01	10.71	21.55	0	4	2	N/A
Mooringsport, LA	K-SHRE-03	13.49	25.89	0	3	0	N/A
New Llano, LA	K-BEAU-02	10.98	21.82	0	3	0	N/A
Noble, LA	K-BEAU-01	10.71	21.55	0	3	0	N/A
Oil City, LA	K-SHRE-03	13.49	25.89	0	5	0	N/A
Oretta, LA	K-BEAU-02	10.98	21.82	0	0	0	N/A
Rodessa, LA	K-SHRE-03	13.49	25.89	0	5	0	N/A
Rosepine, LA	K-BEAU-02	10.98	21.82	0	9	2	N/A

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Shreveport, LA	K-SHRE-03	13.49	25.89	0	11	3	N/A
	K-SHRE-04	25.05	36.02				
Singer, LA*	K-BEAU-02	10.98	21.82	0	6	1	N/A
South Mansfield, LA	K-BEAU-01	10.71	21.55	0	7	0	N/A
Starks, LA	K-BEAU-03	9.32 (0.9)	20.29 (0.9)	68	2	0	No receptors in EJ Block Group.
Vivian, LA	K-SHRE-03	13.49	25.89	0	5	2	N/A
Zwolle, LA	K-BEAU-01	10.71	21.55	0	4	2	N/A
Airport Drive, MO	K-HEAV-01	16.17	28.57	0	0	0	N/A
Amoret. MO	K-PITT-01	17.57	30.41	0	8	0	N/A
Amsterdam, MO	K-PITT-01	17.57	30.41	0	7	0	N/A

Table E.1-1. Summary of Impacts by Community

		TPD[2]		Noise	Grade Crossing		Environmental Justice (EJ)
Community Name	**Railroad Segment**	**2027 No Action Freight TPD (Existing Passenger TPD)[1]**	**2027 Proposed Acquisition Freight TPD (Existing Passenger TPD)**	**Number of Receptors Adversely Affected[3] (Within 65 dBA Ldn and 3 dBA Increase)**	**Crossings with Increased Safety Risk[4]**	**Crossings with Increased Delay[5]**	**Percentage of Adversely Affected Receptors within EJ Block Groups[6]**
Anderson, MO	K-HEAV-01	16.17	28.57	0	6	0	N/A
Asbury, MO*	K-HEAV-01	16.17	28.57	0	5	0	N/A
Belton, MO	K-PITT-01	17.57	30.41	0	2	0	N/A
Birmingham, MO	C-KACI-02	3.83	18.24	28	3	1	No receptors in EJ Block Group.
Braymer, MO	C-KACI-01	3.98	18.38	17	6	0	No receptors in EJ Block Group.
Burgess, MO	K-PITT-01	17.57	30.41	N/A	0	0	N/A
Carl Junction, MO	K-HEAV-01	16.17	28.57	0	6	1	N/A
Chillicothe, MO	C-KACI-01	3.98	18.38	127	7	0	99% within EJ Block Group.
Chula, MO	C-KACI-01	3.98	18.38	10	5	0	No receptors in EJ Block Group.
Cleveland, MO	K-PITT-01	17.57	30.41	0	5	1	N/A

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Community Name	**Railroad Segment**	**2027 No Action Freight TPD (Existing Passenger TPD)[1]**	**2027 Proposed Acquisition Freight TPD (Existing Passenger TPD)**	**Number of Receptors Adversely Affected[3] (Within 65 dBA Ldn and 3 dBA Increase)**	**Crossings with Increased Safety Risk[4]**	**Crossings with Increased Delay[5]**	**Percentage of Adversely Affected Receptors within EJ Block Groups[6]**
Cowgill, MO	C-KACI-01	3.98	18.38	29	5	0	No receptors in EJ Block Group.
Drexel, MO	K-PITT-01	17.57	30.41	0	6	0	N/A
Elmira, MO	C-KACI-02	3.83	18.24	9	1	0	No receptors in EJ Block Group.
Excelsior Estates, MO	C-KACI-02	3.83	18.24	1	0	0	No receptors in EJ Block Group.
Excelsior Springs, MO	C-KACI-02	3.83	18.24	218	4	2	63% within EJ Block Group.
Goodman, MO	K-HEAV-01	16.17	28.57	0	8	0	N/A
Grandview, MO*	K-PITT-01	17.57	30.41	0	2	1	N/A
Harris, MO	C-LARE-02	3.41	17.81	22	2	0	No receptors in EJ Block Group.
Hume, MO	K-PITT-01	17.57	30.41	0	5	0	N/A
Joplin, MO	K-HEAV-01	16.17	28.57	0	6	4	N/A

Table E.1-1. Summary of Impacts by Community

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Community Name	**Railroad Segment**	**2027 No Action Freight TPD (Existing Passenger TPD)[1]**	**2027 Proposed Acquisition Freight TPD (Existing Passenger TPD)**	**Number of Receptors Adversely Affected[3] (Within 65 dBA Ldn and 3 dBA Increase)**	**Crossings with Increased Safety Risk[4]**	**Crossings with Increased Delay[5]**	**Percentage of Adversely Affected Receptors within EJ Block Groups[6]**
Kansas City, MO	K-PITT-01	17.57	30.41	6	2	1	No receptors in EJ Block Group.
Lanagan, MO	K-HEAV-01	16.17	28.57	0	3	0	N/A
Laredo, MO*	C-LARE-02	3.41	17.81	12	3	0	No receptors in EJ Block Group.
Lawson, MO	C-KACI-02	3.83	18.24	215	3	0	No receptors in EJ Block Group.
Liberty, MO	C-KACI-02	3.83	18.24	121	2	0	18 % within EJ Block Group.
Lucerne, MO	C-LARE-02	3.41	17.81	9	2	0	No receptors in EJ Block Group.
Ludlow, MO	C-KACI-01	3.98	18.38	16	5	0	No receptors in EJ Block Group.
Merwin, MO	K-PITT-01	17.57	30.41	0	3	0	N/A
Mosby, MO	C-KACI-02	3.83	18.24	1	1	0	No receptors in EJ Block Group.
Neosho, MO	K-HEAV-01	16.17	28.57	0	6	4	N/A

Table E.1-1. Summary of Impacts by Community

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Newtown, MO*	C-LARE-02	3.41	17.81	10	1	0	No receptors in EJ Block Group.
Noel, MO	K-HEAV-01	16.17	28.57	0	3	1	N/A
Osgood, MO	C-LARE-02	3.41	17.81	3	3	0	No receptors in EJ Block Group.
Polo, MO	C-KACI-02	3.83	18.24	7	5	0	No receptors in EJ Block Group.
Powersville, MO	C-LARE-02	3.41	17.81	19	2	0	No receptors in EJ Block Group.
Prathersville, MO	C-KACI-02	3.83	18.24	2	0	0	No receptors in EJ Block Group.
Richards, MO	K-PITT-01	17.57	30.41	0	8	0	N/A
Saginaw, MO	K-HEAV-01	16.17	28.57	0	2	0	N/A
Stotesbury, MO	K-PITT-01	17.57	30.41	0	4	0	N/A
West Line, MO	K-PITT-01	17.57	30.41	N/A	3	0	N/A

Table E.1-1. Summary of Impacts by Community

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Badger Lee Church, OK	K-HEAV-02	14.15	26.56	N/A	0	0	N/A
Baron, OK*	K-HEAV-02	14.15	26.56	0	0	0	N/A
Brushy, OK	K-HEAV-02	14.15	26.56	N/A	0	0	N/A
Bunch, OK	K-HEAV-02	14.15	26.56	0	4	0	N/A
Cave Spring, OK*	K-HEAV-02	14.15	26.56	0	0	0	N/A
Cherry Tree, OK	K-HEAV-02	14.15	26.56	N/A	0	0	N/A
Dwight Mission, OK	K-HEAV-02	14.15	26.56	N/A	0	0	N/A
Fairfield, OK	K-HEAV-02	14.15	26.56	0	0	0	N/A
Flute Springs, OK	K-HEAV-02	14.15	26.56	0	0	0	N/A
Gans, OK	K-HEAV-02	14.15	26.56	0	2	0	N/A

Table E.1-1. Summary of Impacts by Community

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Community Name	**Railroad Segment**	**2027 No Action Freight TPD (Existing Passenger TPD)[1]**	**2027 Proposed Acquisition Freight TPD (Existing Passenger TPD)**	**Number of Receptors Adversely Affected[3] (Within 65 dBA Ldn and 3 dBA Increase)**	**Crossings with Increased Safety Risk[4]**	**Crossings with Increased Delay[5]**	**Percentage of Adversely Affected Receptors within EJ Block Groups[6]**
Greasy, OK	K-HEAV-02	14.15	26.56	N/A	0	0	N/A
Heavener, OK*	K-HEAV-03	14.59	26.99	0	12	2	N/A
Hodgen, OK	K-SHRE-01	13.78	26.18	0	0	0	N/A
Howe, OK	K-HEAV-03	14.59	26.99	0	2	0	N/A
Lyons Switch, OK	K-HEAV-02	14.15	26.56	0	0	0	N/A
Marble City, OK	K-HEAV-02	14.15	26.56	0	2	0	N/A
Marietta, OK	K-HEAV-02	14.15	26.56	N/A	0	0	N/A
Panama, OK	K-HEAV-02	14.15	26.56	0	0	0	N/A
Peavine, OK	K-HEAV-02	14.15	26.56	0	0	0	N/A
Poteau, OK	K-HEAV-03	14.59	26.99	0	14	1	N/A

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Community Name	**Railroad Segment**	**2027 No Action Freight TPD (Existing Passenger TPD)[1]**	**2027 Proposed Acquisition Freight TPD (Existing Passenger TPD)**	**Number of Receptors Adversely Affected[3] (Within 65 dBA Ldn and 3 dBA Increase)**	**Crossings with Increased Safety Risk[4]**	**Crossings with Increased Delay[5]**	**Percentage of Adversely Affected Receptors within EJ Block Groups[6]**
Sallisaw, OK	K-HEAV-02	14.15	26.56	0	10	0	N/A
Shady Point, OK	K-HEAV-02	14.15	26.56	0	3	0	N/A
Spiro, OK*	K-HEAV-02	14.15	26.56	0	4	0	N/A
Stilwell, OK	K-HEAV-02	14.15	26.56	0	10	1	N/A
Watts, OK	K-HEAV-02	14.15	26.56	0	5	0	N/A
West Peavine, OK	K-HEAV-02	14.15	26.56	0	0	0	N/A
Westville, OK	K-HEAV-02	14.15	26.56	0	7	1	N/A
Zion, OK	K-HEAV-02	14.15	26.56	0	0	0	N/A
Agua Dulce, TX	K-LARE-02	14.77	22.80	0	7	0	N/A
Aguilares, TX	K-LARE-02	14.77	22.80	0	0	0	N/A

Table E.1-1. Summary of Impacts by Community

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Alice, TX	K-LARE-02	14.77	22.80	0	23	8	N/A
Ames, TX	U-BEAU-01	16.309.25 (0.9)	24.0016.82 (0.9)	N/A	0	1	N/A
Banquete, TX	K-LARE-02	14.77	22.80	0	6	0	N/A
Beasley, TX	K-ROSE-01	9.14	17.46	0	4	1	N/A
Beaumont, TX	K-BEAU-03	9.32 (0.9)	20.29 (0.9)	0	1	2	N/A
	U-BEAU-01	17.40-32.68 9.25 (0.9)	25.00-40.0016.82 (0.9)				
	K-BEAU-04	5.14	8.80				
Bellaire, TX	U-BEAU-01	28.325.21 (0.9)	36.008.86 (0.9)	N/A	0	0	N/A
Benavides, TX	K-LARE-02	14.77	22.80	0	6	0	N/A
Bloomburg, TX	K-SHRE-03	13.49	25.89	0	6	0	N/A
Bruni, TX	K-LARE-02	14.77	22.80	0	0	0	N/A

Table E.1-1. Summary of Impacts by Community

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Community Name	**Railroad Segment**	**2027 No Action Freight TPD (Existing Passenger TPD)[1]**	**2027 Proposed Acquisition Freight TPD (Existing Passenger TPD)**	**Number of Receptors Adversely Affected[3] (Within 65 dBA Ldn and 3 dBA Increase)**	**Crossings with Increased Safety Risk[4]**	**Crossings with Increased Delay[5]**	**Percentage of Adversely Affected Receptors within EJ Block Groups[6]**
Central Gardens, TX	K-BEAU-04	5.21	8.86	0	0	0	N/A
China, TX	U-BEAU-01	17.40-27.229.25 (0.9)	25.00-35.0016.82 (0.9)	N/A	0	1	N/A
Corpus Christi, TX	U-VICT-02	17.638.75	26.0017.07	0	4	1	N/A
Crosby, TX	U-BEAU-01	21.76-27.229.25 (0.9)	29.00-35.0016.82 (0.9)	N/A	0	3	N/A
Dayton, TX,	U-BEAU-01	17.40-27.229.25 (0.9)	25.00-35.0016.82 (0.9)	N/A	0	3	N/A
Del Sol Colonia, TX,	U-VICT-02	20.948.75	29.0017.07	N/A	0	0	N/A
Devers, TX	U-BEAU-01	9.25 (0.9)	16.82 (0.9)	N/A	0	0	N/A
Deweyville, TX	K-BEAU-03	9.32 (0.9)	20.29 (0.9)	3	2	0	100% within EJ Block Group.
Edna, TX	K-ROSE-02	9.69	18.01	0	12	3	N/A

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Community Name	**Railroad Segment**	**2027 No Action Freight TPD (Existing Passenger TPD)[1]**	**2027 Proposed Acquisition Freight TPD (Existing Passenger TPD)**	**Number of Receptors Adversely Affected[3] (Within 65 dBA Ldn and 3 dBA Increase)**	**Crossings with Increased Safety Risk[4]**	**Crossings with Increased Delay[5]**	**Percentage of Adversely Affected Receptors within EJ Block Groups[6]**
El Campo, TX	K-ROSE-02	9.69	18.01	0	14	4	N/A
Ganado, TX	K-ROSE-02	9.69	18.01	0	8	1	N/A
Hebbronville, TX	K-LARE-02	14.77	22.80	0	8	1	N/A
Houston, TX	U-BEAU-01	21.76-43.619.25 (0.9)	29.00-51.0016.82 (0.9)	0N/A	0	30	N/A
Hungerford, TX	K-ROSE-02	9.69	18.01	0	4	1	N/A
Inez, TX	K-ROSE-02	9.69	18.01	0	4	0	N/A
Kendleton, TX	K-ROSE-02	9.69	18.01	0	4	1	N/A
La Coma Colonia, TX	K-LARE-02	14.77	22.80	0	0	0	N/A
Laredo, TX	K-LARE-02	14.77	22.80	0	12	2	N/A
Laredo Ranchettes, TX	K-LARE-02	14.77	22.80	N/A	0	0	N/A

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Laredo Ranchettes West, TX	K-LARE-02	14.77	22.80	N/A	0	0	N/A
Liberty, TX	U-BEAU-01	16.30-27.229.25 (0.9)	24.00-35.0016.82 (0.9)	N/A	0	3	N/A
Loma Linda East, TX	K-LARE-02	14.77	22.80	0	0	0	N/A
Louise, TX	K-ROSE-02	9.69	18.01	0	8	0	N/A
Mauriceville, TX	K-BEAU-03	9.32 (0.9)	20.29 (0.9)	21	3		48% within EJ Block Group.
Mirando City, TX	K-LARE-02	14.77	22.80	0	4	0	N/A
Missouri City, TX	U-BEAU-01	37.059.25 (0.9)	45.0016.82 (0.9)	N/A	0	1	N/A
Morgan Farm Colonia, TX	U-VICT-02	20.948.75	29.0017.07	0	0	0	N/A
Nederland, TX	K-BEAU-04	5.21	8.86	0	0	0	N/A
Nome, TX	U-BEAU-01	17.409.25 (0.9)	25.0016.82 (0.9)	N/A	0	1	N/A

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Odem, TX	U-VICT-02	17.63-20.948.75	26.00-29.0017.07	0	6	2	N/A
Oilton, TX	K-LARE-02	14.77	22.80	0	0	0	N/A
Pecan Grove, TX	U-BEAU-01	37.059.25 (0.9)	45.0016.82 (0.9)	N/A	0	0	N/A
Placedo, TX	U-VICT-02	9.928.75	18.0017.07	0	5	0	N/A
Port Arthur, TX	K-BEAU-04	5.21	8.86	0	0	5	N/A
Port Neches, TX	K-BEAU-04	5.21	8.86	0	0	1	N/A
Pueblo Nuevo, TX	K-LARE-02	14.77	22.80	N/A	0	0	N/A
Ranchitos East, TX	K-LARE-02	14.77	22.80	N/A	0	0	N/A
Rancho Alegre, TX	K-LARE-02	14.77	22.80	0	0	0	N/A
Rancho Banquete, TX	K-LARE-02	14.77	22.80	N/A	0	0	N/A

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Realitos, TX	K-LARE-02	14.77	22.80	0	3	0	N/A
Refugio, TX	U-VICT-02	19.84~~15.09~~	28.00~~13.66~~	0	12	1	N/A
Richmond, TX	U-BEAU-01	37.05~~9.25~~ (0.9)	45.00~~16.82~~ (0.9)	N/A	0	3	N/A
Robstown, TX	K-LARE-02	14.78	22.81	0	15	3	N/A
	U-VICT-02	5.51-17.63 ~~15.09~~	14.0-26.00 ~~13.66~~				
Rose City, TX	K-BEAU-03	9.32 (0.9)	20.29 (0.9)	64	4	0	100% within EJ Block Group.
Rosenberg, TX	K-ROSE-01	9.14	17.46	0	6	2	N/A
San Carlos I, TX	K-LARE-02	14.77	22.80	N/A	0	0	N/A
San Carlos II, TX	K-LARE-02	14.77	22.80	N/A	0	0	N/A
San Diego, TX	K-LARE-02	14.77	22.80	0	19	1	N/A

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Sheldon, TX	U-BEAU-01	21.76-25.049.25 (0.9)	29.00-33.0016.82 (0.9)	N/A	0	0	N/A
Sinton, TX	U-VICT-02	19.84-20.948.75	28.00-29.0017.07	0	9	3	N/A
Southside Place, TX	U-BEAU-01	28.329.25 (0.9)	36.0016.82 (0.9)	N/A	0	0	N/A
Stafford, TX	U-BEAU-01	37.059.25 (0.9)	45.0016.82 (0.9)	N/A	0	6	N/A
Sugar Land, TX	U-BEAU-01	37.05-43.619.25 (0.9)	45.00-51.0016.82 (0.9)	N/A	0	9	N/A
Tanquecitos South Acres, TX	K-LARE-02	14.77	22.80	N/A	0	0	N/A
Texarkana, TX	K-SHRE-03	13.49	25.89	0	10	3	N/A
Victoria, TX	U-VICT-01	9.92-15.438.75	18.00-24.0017.07	0	24	10	N/A
Vidor, TX	K-BEAU-03	9.32 (0.9)	20.29 (0.9)	377	6	4	53% within EJ Block Group.

Table E.1-1. Summary of Impacts by Community

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Community Name	**Railroad Segment**	**2027 No Action Freight TPD (Existing Passenger TPD)[1]**	**2027 Proposed Acquisition Freight TPD (Existing Passenger TPD)**	**Number of Receptors Adversely Affected[3] (Within 65 dBA Ldn and 3 dBA Increase)**	**Crossings with Increased Safety Risk[4]**	**Crossings with Increased Delay[5]**	**Percentage of Adversely Affected Receptors within EJ Block Groups[6]**
West University Place, TX	U-BEAU-01	28.329.25 (0.9)	36.0016.82 (0.9)	N/A	0	0	N/A
Wharton, TX	K-ROSE-02	9.69	18.01	0	10	1	N/A
Woodsboro, TX	U-VICT-02	19.848.75	28.0017.07	0	4	0	N/A

Appendix F

Freight and Passenger Rail Safety

F.1 Freight Operations Safety

This appendix provides technical information on the approach used in the analysis of the safety impacts that may result from the Proposed Acquisition (*Chapter 3, Section 3.2.1 Freight Rail Safety*, and *Section 3.2.2, Hazardous Materials*, and *3.2.3 Passenger Rail Safety*).

F.1.1 Data Sources

OEA reviewed all accident/incident[1] data (herein referred to solely as "incident(s)") for the most recent full five years of available historic data (2015-2019), excluding 2020[2], from the Federal Railroad Administration (FRA) Accident/Incident database via the FRA's Office of Safety Analysis website[3]. For freight rail operations safety, OEA only examined "Group II"[4] data. Group I data are covered in *Chapter 3, Section 3.2~~3~~, Grade Crossing Safety ~~Delay~~ and ~~Section 3.4, Grade Crossing Delay~~*.

The FRA's Office of Safety Analysis organizes and reports out a variety of information, including the number of incidents per year, yearly incident rates, and train miles all by railroad and year.

OEA used Group II data for three types of analyses:

1. Using the FRA-calculated historic incident rates, OEA calculated systemwide safety rates for the Proposed Acquisition and No-Action Alternative, for both KCS, CP, and the integrated system to be known as the CPKC network in the year 2027; and
2. Changes in incidents on a segment level for segments with an increase of eight or more trains per day.

1 See 49 C.F.R. § 225.5 Definitions for inclusive definition

2 Year 2020 was excluded due to disruptions in rail traffic because of Covid-19 causing the year to be a statistical outlier.

3 The FRA Office of Safety Analysis website provides railroad safety information, including accidents/incidents, inventory, and highway-rail crossing data readily available to the public.

4 49 C.F.R. § 225.19

(b) Group I – Highway-rail grade crossing accident/incident (Form FRA F 6180.57)

(c) Group II – Rail equipment. Rail equipment accidents/incidents are collisions, derailments, fires, explosions, acts of God, and other events involving the operation of on-track equipment (standing or moving) that result in damages higher than the current reporting threshold to railroad on-track equipment, signals, tracks, track structures, or roadbed, including labor costs and costs for acquiring new equipment and material.

F.1.2 Data

For the systemwide and segment specific safety analyses, OEA reviewed data from FRA's Office of Safety Analysis website, specifically the following data organization outputs:

a. Train Accidents and Rates (Form 54)
   i. Reporting Railroad Codes:
      1. CP
      2. KCS
      3. CMQX
      4. DH
      5. DME
      6. GWWE
      7. STMZ
   ii. Region & State: All
   iii. Type of Accident/Incident: All
   iv. Type of Track:
      1. All for the Systemwide Analysis, which includes:
         a. Main
         b. Yard
         c. Siding
         d. Industry
         e. Not reported
      2. For the Segment Specific Analysis
         a. Main
   v. Track Class: All
   vi. Reporting Years: 2015 – 2019
   vii. *Data excludes accidents/incidents at highway-rail grade crossings*

Delaware & Hudson (DH), Dakota, Minnesota & Eastern (DME), Gateway Eastern Railway (GWWE), Texas Mexican Railway (STMZ) are absent from the data set either because they had no reportable Rail Equipment Accidents or report under their parent markings, CP or KCS. Central Maine & Quebec (CMQX) was removed from the dataset as it was purchased in November 2019 and no full reporting years as outlined above were available.

OEA reviewed and analyzed data to include years 2015 through 2019, and only for CP and KCS (collectively, the Applicants). Duplicate incident entries are produced when multiple pieces of equipment are involved in the same incident. These duplicate entries were identified in the "Accidents by State/Railroad" data output and are labeled by FRA as duplicates via the same Account Number. Since FRA counts duplicate incident entries only once in their calculation of the total incidents per year by railroad, OEA did not have to do any further manipulation to the data.

All data used in this analysis are specific to the U.S. only.

F.1.3 Approach

F.1.3.1 Systemwide Safety Effects Analysis Approach

OEA used FRA's reported annual incident rates for the entire system for each of the five analysis years. FRA calculated these annual incident rates using the equation as follows, and as described below:

$$Annual\ Rate = \frac{Number\ of\ Accidents/Incidents\ (Annually)}{Total\ Million\ Train\ Miles\ (Annually)}$$

The systemwide number of incidents in the FRA database includes incidents that have occurred on all track types. FRA determines systemwide million train miles annually by dividing the total train miles by railroad per year (main track train miles + yard switching miles) by one million.

Under the No-Action Alternative, OEA averaged the five years of data for both CP and KCS individually to determine the expected individual systemwide annual rates for CP and KCS, respectively, in the year 2027 (See **Table F.1-1**). Under the Proposed Acquisition, OEA took CP's five-year average to determine the expected combined CPKC systemwide annual rate in the year 2027.

F.1.3.2 Rail Line Segment-Specific Safety Effects Analysis Approach

For the segment-specific safety analysis, OEA used FRA's reported annual incident rates for mainline incidents only for each of the five analysis years. FRA calculated these annual incident rates for mainlines using the equation as follows, and as described below:

$$Mainline\ Annual\ Rate = \frac{Number\ of\ Main\ Line\ Accidents/Incidents\ (Annually)}{Million\ Train\ Miles\ (Annually) - Yard\ Switching\ Miles}$$

For the segment-specific analysis, OEA calculated the incident rates for the segment-specific analysis using only incidents from the FRA database that occurred on mainlines (see **Table F.1-3**). FRA determines mainline million train miles annually subtracting the yard switching miles from the total train miles.

OEA calculated the five-year average rates for KCS and CP in the same manner as described in *Section F.1.3, Systemwide Safety Effects Analysis Approach*. OEA then applied each railroad's calculated No-Action Alternative mainline incident rate to each of their respective rail segments to calculate the expected risk by segment under the No-Action Alternative. OEA obtained Trains Per Day (TPD) and Segment Length (mi) from the Master Segment Table provided by the Applicants and multiplied by 365 days to calculate train miles per year – or annual train miles. OEA then divided this number by 1,000,000 to convert to million-annual-train-miles. This translates into the following formula:

$$i_{NA} = Mainline\ No\text{-}Action\ Rate \times \frac{(2027\ Without\ Merger\ TPD \times Segment\ Length \times 365\ Days)}{1{,}000{,}000}$$

OEA used CP's five-year incident rate and applied it to all rail segments under the Proposed Acquisition analysis.

Lastly, OEA converted the data from "incidence per year" to "years between incidence" as described below:

$$CP\ Years\ Between\ Incidence = \frac{1\ incidence}{CP\ Incidences\ per\ Year}$$

And

$$KCS\ Years\ Between\ Incidence = \frac{1\ incidence}{KCS\ Incidences\ per\ Year}$$

And

$$CPKC\ Years\ Between\ Incidence = \frac{1\ incidence}{CPKC\ Incidences\ per\ Year}$$

These calculations allowed OEA to evaluate the change in risk on a segment level between the Proposed Acquisition and the No-Action Alternative. **Table F.1-5** presents select segments (those with an increase of eight or more trains per day).

F.1.4 Safety Analysis

F.1.4.1 Systemwide Safety Effects Analysis

OEA calculated the five-year average rates for all Class 1 railroads based off of FRA's 2015-2019 reported data. **Table F.1-1** below presents the annual and average rates.

Table F.1-1. US Class 1 Incident Rates 2015-2019

Railroad	2015	2016	2017	2018	2019	5-Year Average
CP	1.70	1.61	1.56	1.06	1.26	1.44
BNSF	2.28	2.09	2.01	2.14	2.21	2.15
CN	2.67	1.63	2.06	2.90	2.68	2.39
NS	2.21	2.6	2.33	2.76	3.31	2.64
CSX	2.63	2.84	3.14	3.71	2.36	2.94
KCS	4.02	2.62	3.68	3.40	3.03	3.35
UP	3.29	3.25	3.41	3.85	4.76	3.71
All Class 1	**2.69**	**2.38**	**2.60**	**2.83**	**2.80**	**2.66**

Source: https://safetydata.fra.dot.gov/officeofsafety/publicsite/summary.aspx

Under the No-Action Alternative, OEA calculated the year 2027 systemwide incident rates for both CP (1.44) and KCS (3.35), as described in *Section F.1.3, Systemwide Safety Effects Analysis Approach.*

Under the Proposed Acquisition, OEA calculated the year 2027 systemwide incident rate for CPKC (1.44), as described in *Section F.1.3, Systemwide Safety Effects Analysis Approach*.

Table F.1-2 below presents the forecasted 2027 systemwide incident rates.

Table F.1-2. Forecasted 2027 Systemwide Incident Rates

Railroad	No-Action Alternative	Proposed Acquisition
CP	1.44	-
KCS	3.35	-
CPKC	-	1.44

F.1.4.2 Rail Line Segment-Specific Safety Effects Analysis

For the rail line segment-specific safety analysis, OEA calculated the annual mainline incident rates for both railroads for the previous five years as outlined above in *Section F.1.3, Rail Line Segment-Specific Safety Effects Analysis Approach*. OEA then analyzed the data on rail line segments expected to see an increase of eight or more trains per day. **Table F.1-3** below presents the annual and average rates.

Table F.1-3. 2015-2019 Main Line Incident Rates

Year	Incidents	Million-Train-Miles	Incident Rate
Canadian Pacific Railway			
2015	8	10.06	0.80
2016	6	8.05	0.75
2017	7	8.46	0.83
2018	6	8.96	0.67
2019	6	9.10	0.66
Five-year average	**6**	**8.93**	**0.74**
Kansas City Southern Railway			
2015	14	8.79	1.59
2016	4	8.32	0.48
2017	18	8.96	2.01
2018	12	8.65	1.39
2019	**7**	**9.00**	**0.78**
Five-year average	**11**	**8.74**	**1.25**

Under the No-Action Alternative, OEA calculated the year 2027 mainline incident rates for both CP (0.74) and KCS (1.25). OEA then applied these CP and KCS mainline incident rates to each segment, depending on their respective associated railroad, as described in *Section F.1.3. Rail Line Segment-Specific Safety Effects Analysis Approach*.

Under the Proposed Acquisition, OEA applied the five-year average CP mainline incident rate to each segment under the Proposed Acquisition, again as described in *Section F.1.3, Rail Line Segment-Specific Safety Effects Analysis Approach*. **Table F.1-4** below presents the assumed 2027 segment-specific incident rates.

Table F.1-4. Assumed 2027 Segment-Specific Incident Rates

Railroad	No-Action Alternative	Proposed Acquisition
CP	0.74	-
KCS	1.25	-
CPKC	-	0.74

Table F.1-5 presents the outcome of the rates in **Table F.1-4** being applied to rail line segments expected to see an increase of eight or more trains per day under both the No-Action Alternative and the Proposed Acquisition.

Table F.1-5. Incident Rates on CP and KCS Segments with ≥8 Trains Per Day of Merger Related Growth

Between	And	Segment Code	Segment Length	No-Action	Proposed Action	Anticipated Change	Projected Years between incidents No Merger	Projected Years between incidents: Merger
Sabula Drawbridge, IA	Lake, IA	C-CHIC-01	0.7	0.00	0.00	0.00	864.49	374.77
Davis Jct, IL	Sabula Drawbridge, IA	C-CHIC-02	61.5	0.11	0.24	0.13	9.18	4.14
Randall Road, IL	Davis Jct, IL	C-CHIC-03	38.7	0.03	0.12	0.08	30.42	8.59
Bensenville Metra, IL	Randall Road, IL	C-ELGI-01	23.0	0.02	0.07	0.05	47.21	14.11
Sabula Drawbridge, IA	Clinton, IA	C-DAVE-01	17.5	0.05	0.12	0.07	19.73	8.42
Clinton, IA	Water Works,IA	C-DAVE-02	33.2	0.07	0.20	0.13	13.49	4.92
Water Works, IA	Nahant, IA	C-DAVE-03	4.5	0.01	0.03	0.02	100.16	36.51
Nahant, IA	Muscatine, IA	C-OTTU-01	24.6	0.04	0.14	0.10	23.60	7.24
Muscatine, IA	Ottumwa, IA	C-OTTU-02	82.5	0.11	0.43	0.32	9.35	2.34
Ottumwa, IA	Laredo, MO/IA	C-LARE-01	61.2	0.06	0.29	0.24	17.75	3.40
Laredo, MO/IA	Laredo, IA	C-LARE-02	41.1	0.04	0.20	0.16	26.43	5.06
Laredo, IA	Polo, MO	C-KACI-01	51.6	0.06	0.26	0.20	18.04	3.91
Polo, MO	Airline Jct, MO	C-KACI-02	42.1	0.04	0.21	0.16	22.96	4.83
Kansas City, KS	Pittsburg, KS	K-PITT-01	124.5	1.00	1.02	0.02	1.00	0.98
Pittsburg, KS	Watts, OK	K-HEAV-01	107.8	0.79	0.83	0.04	1.26	1.20
Watts, OK	Poteau, OK	K-HEAV-02	90.4	0.58	0.65	0.06	1.71	1.54
Poteau, OK	Heavener, OK	K-HEAV-03	11.6	0.08	0.08	0.01	12.96	11.83
Heavener, OK	De Queen, AR	K-SHRE-01	94.6	0.59	0.67	0.07	1.68	1.50
De Queen, AR	Ashdown, AR	K-SHRE-02	37.1	0.28	0.29	0.01	3.64	3.48
Ashdown, AR	Shreveport, LA	K-SHRE-03	83.2	0.51	0.58	0.07	1.95	1.72

Table F.1-5. Incident Rates on CP and KCS Segments with ≥8 Trains Per Day of Merger Related Growth

Between	And	Segment Code	Segment Length	No-Action	Proposed Action	Anticipated Change	Projected Years between incidents No Merger	Projected Years between incidents: Merger
Shreveport, LA	Frierson, LA	K-SHRE-04	21.8	0.25	0.21	(0.04)	4.02	4.72
Frierson, LA	Leesville, LA	K-BEAU-01	91.4	0.45	0.53	0.09	2.24	1.88
Leesville, LA	De Quincy, LA	K-BEAU-02	50.6	0.25	0.30	0.04	3.95	3.36
De Quincy, LA	Beaumont, TX	K-BEAU-03	47.0	0.20	0.26	0.06	5.01	3.88
Beaumont, TX	Rosenberg, TX	U-BEAU-01	120.0	0.51	0.54	0.04	1.98	1.84
Rosenberg, TX	Kendleton, TX	K-ROSE-01	12.2	0.05	0.06	0.01	19.66	17.39
Kendleton, TX	Victoria, TX	K-ROSE-02	74.8	0.33	0.36	0.03	3.02	2.75
Victoria, TX	Placedo, TX	U-VICT-01	12.8	0.05	0.06	0.01	19.58	16.95
Placedo, TX	Robstown, TX	U-VICT-02	82.8	0.33	0.38	0.05	3.03	2.62
Laredo, TX	Robstown, TX	K-LARE-02	144.0	0.97	0.89	(0.08)	1.03	1.13
Frierson, LA	Leesville, LA	K-BEAU-01	91.4	0.45	0.53	0.09	2.24	1.88

F.2 Freight Hazardous Materials Transport

F.2.1 Data Sources

OEA reviewed hazardous material release records provided by the Applicants in Information Request 2. These data contain records of all hazardous material releases, including locomotive fueling and maintenance-related spills. OEA sorted the data by release location type (main, rail yard), and by locomotive/non-locomotive related releases. Since locomotive fueling and service-related releases do not directly corollate with the increase of hazardous material carloads being transported by the railroad, OEA excluded those release data from the calculations.

OEA additionally used Group II data for the analyses:

- Changes in release rates of hazardous materials on main lines and in rail yards.

F.2.2 Data

For hazardous materials transport safety, OEA reviewed data from the Applicants, specifically:

- Hazardous material release
  - On mains
  - In yards
- Excluding: Hazardous material release from locomotives

All data used in this analysis are specific to the U.S. only.

F.2.3 Approach

F.2.3.1 Mainline Hazardous Materials Safety Effects Analysis Approach

OEA calculated annual mainline release rates for each of the five analysis years for CP, KCS, and a combined historical average of the two networks, using the following equation:

$$Annual\ Release\ Rate = \frac{Number\ of\ Mainline\ Releases\ (Annually)}{Hazardous\ Material\ Carmiles\ (Annually)}$$

The historical release rate data from 2015 to 2019 were generally flat and near zero. OEA chose a five-year average to represent year 2027. OEA took an average of each of the rates (CP and KCS) for each of the five analysis years, as shown in **Table F.2-1**, to get the averaged mainline release rates for CP and KCS under the No-Action Alternative, and for CPKC under the Proposed Acquisition, which OEA assumed would be the same as the five-year release rate for CP.

OEA applied each railroad's No-Action Alternative release rate to each of their respective rail line segments in order to calculate the expected risk without the Proposed Acquisition. OEA

applied the No-Action Alternative mainline release rates, as described above, to the 2027 No-Action Alternative hazmat car-miles.

To determine the release rates under the Proposed Acquisition, OEA applied the five-year mainline release rate for CP, as shown in **Table F.2-1**, to the same segments as in the No-Action Alternative analysis. OEA applied the CP mainline average release rate to the 2027 Proposed Acquisition hazmat carloads count, multiplied by the segment length, to calculate car-miles.

Lastly, OEA converted the data from "releases per year" to "years between releases" as described below:

$$CP\ Years\ Between\ Releases = \frac{1\ release}{CP\ Releases\ per\ Year}$$

And

$$KCS\ Years\ Between\ Releases = \frac{1\ release}{KCS\ Releases\ per\ Year}$$

And

$$CPKC\ Years\ Between\ Releases = \frac{1\ release}{CPKC\ Releases\ per\ Year}$$

These calculations allowed OEA to evaluate the change in release rates, at a segment level, between the Proposed Acquisition and the No-Action Alternative. **Table F.2-2** below presents all segments with an annual increase of one or more hazardous material carloads.

F.2.3.2 Yard Hazardous Materials Safety Effects Analysis Approach

OEA calculated annual yard release rates for each of the five analysis years for CP and KCS, as shown in **Table F.2-3**, using the following equation:

$$Annual\ Rate = \frac{Number\ of\ Yard\ Releases\ (Annually)}{Cars\ Processed\ per\ Day\ (Annually)}$$

OEA took an average of each of the rates (CP and KCS) for each of the five analysis years, as shown in **Table F.2-4**, to get the averaged rail yard release rates for CP and KCS under the No-Action Alternative.

To calculate the expected risk without the Proposed Acquisition, OEA applied each railroad's No-Action Alternative rail yard release rate to each of their respective rail yards. The No-Action Alternative rail yard release rates for CP and KCS, as described above, were respectively applied to the CP or KCS 2027 No-Action Alternative cars processed per day, multiplied by 365:

$$CP\ Releases\ per\ Year = (CP\ Release\ Rate) \times 2027\ No\text{-}Action\ Alternative\ Cars\ Processed\ per\ Day \times 365\ Days$$

And

$$KCS\ Releases\ per\ Year = (KCS\ Release\ Rate) \times 2027\ No\text{-}Action\ Alternative\ Cars\ Proccessed\ per\ Day \times 365\ Days$$

OEA applied the five-year average release rate for CP to the same rail yards to the 2027 Proposed Acquisition cars processed per day, and multiplied by 365 to get annual cars processed under the Proposed Acquisition:

$$CPKC\ Releases\ per\ Year = (CP\ Release\ Rate) \times 2027\ Proposed\ Acquisition\ Cars\ Processed\ per\ Day \times 365\ Days$$

Lastly, OEA converted the data from "releases per year" to "years between releases" as described below:

$$CP\ Years\ Between\ Releases = \frac{1\ release}{CP\ Releases\ per\ Year}$$

And

$$KCS\ Years\ Between\ Releases = \frac{1\ release}{KCS\ Releases\ per\ Year}$$

And

$$CPKC\ Years\ Between\ Releases = \frac{1\ release}{CPKC\ Releases\ per\ Year}$$

These calculations allowed OEA to evaluate the change in release rates at all rail yards between the Proposed Acquisition and the No-Action Alternative. **Table F.2-5** below presents all yards with merger related growth.

F.2.4 Hazardous Materials Transport Analysis

F.2.4.1 Mainline Hazardous Materials Safety Effects Analysis

For the mainline hazardous materials release safety analysis, OEA calculated the release rates as described above and shown in **Table F.2-1.** Additionally, OEA analyzed the data on rail line segments with any Proposed Acquisition-related increase in hazardous materials transport. **Table F.2-2** lists the results sorted by segment miles and filtered by merger related growth greater than or equal to one carload per year.

On average, over the five years period from 2015 to 2019, there has been only one hazardous material release for approximately every 37.8 million miles a hazmat car traveled (see *Chapter 3, Section 3.2.2.2, Affected Environment* for more information). These near zero trends are expected to continue in the future, although the trends would change some due to the overall increase in expected hazmat carloads under the Proposed Acquisition.

Table F.2-1. 2015-2019 Average Mainline Release Rates

Year	Releases	Hazmat Car miles	Release Rate
Canadian Pacific Railway			
Five-year Average	5.4	207,217,406	2.61E-08
Kansas City Southern Railway			
Five-year Average	2.8	102,790,252	2.72E-08

Table F.2-2. Rail Line Segments with Acquisition-Related Hazardous Material Carload Growth

Segment Information			Hazardous Material Carloads Per Year					Projected Releases per Year	
Segment	Railroad	Segment Length	Base Hazmat Carloads	Organic Growth Hazmat Carloads	2027 No Merger Hazmat Carloads	Merger Related Growth Hazmat Carloads	2027 With Merger Hazmat Carloads	2027 No Action Alternative	2027 Proposed Acquisition
C-PORT-01	CP	10.58	126,707	33,451	160,157	39,030	199,188	0.04	0.05
C-PORT-02	CP	20.80	126,707	33,451	160,157	39,030	199,188	0.09	0.11
C-PORT-03	CP	99.20	138,322	36,517	174,838	39,210	214,048	0.45	0.55
C-PORT-04	CP	23.75	148,881	39,304	188,185	39,381	227,566	0.12	0.14
C-CARR-01	CP	139.60	151,476	39,990	191,465	39,346	230,811	0.70	0.84
C-ELLA-01	CP	48.00	102,278	27,001	129,280	39,237	168,517	0.16	0.21
C-ELLA-02	CP	9.97	98,654	26,045	124,699	39,291	163,990	0.03	0.04
C-ELLA-03	CP	6.36	96,660	25,518	122,178	39,291	161,469	0.02	0.03
C-ELLA-04	CP	69.57	96,477	25,470	121,948	39,291	161,239	0.22	0.29
C-NOYE-01	CP	76.60	46,089	12,168	58,257	720	58,977	0.12	0.12
C-DELA-01	CP	19.10	30,882	8,153	39,034	720	39,754	0.02	0.02
C-DELA-02	CP	77.00	30,882	8,153	39,034	720	39,754	0.08	0.08
C-DELA-03	CP	92.30	30,882	8,153	39,034	720	39,754	0.09	0.10
C-PAYN-01	CP	15.43	182,305	48,128	230,433	40,064	270,497	0.09	0.11
C-PAYN-02	CP	97.10	180,538	47,662	228,200	40,115	268,316	0.58	0.68
C-PAYN-03	CP	4.10	186,165	49,147	235,312	40,351	275,663	0.03	0.03
C-PAYN-04	CP	1.10	183,453	48,431	231,884	40,249	272,133	0.01	0.01
C-MNS-01	CP	9.10	26	7	33	102	135	<0.01	<0.01
C-DULU-01	CP	0.30	313	83	395	26	422	<0.01	<0.01
C-DULU-02	CP	4.30	886	234	1,120	79	1,200	<0.01	<0.01
C-DULU-03	CP	0.30	1,564	413	1,977	81	2,058	<0.01	<0.01

Table F.2-2. Rail Line Segments with Acquisition-Related Hazardous Material Carload Growth

Segment Information			Hazardous Material Carloads Per Year					Projected Releases per Year	
Segment	Railroad	Segment Length	Base Hazmat Carloads	Organic Growth Hazmat Carloads	2027 No Merger Hazmat Carloads	Merger Related Growth Hazmat Carloads	2027 With Merger Hazmat Carloads	2027 No Action Alternative	2027 Proposed Acquisition
C-DULU-04	CP	1.90	678	179	857	1	858	<0.01	<0.01
C-DULU-05	CP	5.90	678	179	857	1	858	<0.01	<0.01
B-DULU-01	CP	132.20	2,594	685	3,279	79	3,358	0.01	0.01
B-TWIN-01	CP	17.50	107,480	28,375	135,854	43,571	179,425	0.06	0.08
C-STPA-01	CP	5.30	443	117	560	15	575	<0.01	<0.01
C-WITH-01	CP	6.90	469	124	593	15	608	<0.01	<0.01
C-WITH-02	CP	12.31	443	117	560	15	575	<0.01	<0.01
C-MEPA-01	CP	2.98	-	-	-	32,682	32,682	-	<0.01
C-RIVE-01	CP	4.90	190,295	50,238	240,533	31,456	271,989	0.03	0.03
C-RIVE-02	CP	114.50	200,798	53,011	253,809	41,014	294,823	0.76	0.88
C-OWAT-01	CP	28.40	300	79	379	9	388	<0.01	<0.01
C-OWAT-02	CP	44.10	378	100	478	19	497	<0.01	<0.01
C-OWAT-03	CP	51.30	209	55	264	9	273	<0.01	<0.01
C-TRAC-01	CP	27.10	6,708	1,771	8,479	111	8,589	0.01	0.01
C-TRAC-02	CP	72.10	5,306	1,401	6,707	125	6,832	0.01	0.01
C-TRAC-03	CP	24.90	3,247	857	4,104	68	4,172	<0.01	<0.01
C-WASE-01	CP	53.17	6,570	1,734	8,304	97	8,401	0.01	0.01
C-WASE-02	CP	42.93	5,488	1,449	6,937	97	7,034	0.01	0.01
C-MARQ-01	CP	22.50	71,079	18,765	89,844	40,810	130,654	0.05	0.08
C-MARQ-02	CP	38.50	71,079	18,765	89,844	40,810	130,654	0.09	0.13
C-MARQ-03	CP	98.00	129,465	34,179	163,644	41,668	205,312	0.42	0.52

Table F.2-2. Rail Line Segments with Acquisition-Related Hazardous Material Carload Growth

Segment Information			Hazardous Material Carloads Per Year					Projected Releases per Year	
Segment	Railroad	Segment Length	Base Hazmat Carloads	Organic Growth Hazmat Carloads	2027 No Merger Hazmat Carloads	Merger Related Growth Hazmat Carloads	2027 With Merger Hazmat Carloads	2027 No Action Alternative	2027 Proposed Acquisition
C-TOMA-01	CP	4.30	131,449	34,703	166,152	112	166,264	0.02	0.02
C-TOMA-02	CP	2.60	229,176	60,502	289,679	242	289,921	0.02	0.02
C-TOMA-03	CP	60.00	74,708	19,723	94,431	85	94,516	0.15	0.15
C-TOMA-04	CP	40.80	75,255	19,867	95,123	53	95,176	0.10	0.10
C-MP-01	CP	30.20	35,958	9,493	45,451	28	45,479	0.04	0.04
C-MP-02	CP	1.40	2,920	771	3,691	9	3,700	<0.01	<0.01
C-WATE-01	CP	3.50	41,493	10,954	52,447	46	52,493	<0.01	<0.01
C-WATE-02	CP	43.20	73,495	19,403	92,898	63	92,961	0.10	0.10
C-WATE-03	CP	31.60	73,756	19,472	93,228	129	93,357	0.08	0.08
C-WATE-04	CP	2.70	73,743	19,468	93,211	119	93,331	0.01	0.01
C-WATE-05	CP	11.20	74,369	19,633	94,002	119	94,122	0.03	0.03
C-WATE-06	CP	1.10	34,114	9,006	43,121	17	43,138	<0.01	<0.01
C-CM-01	CP	25.10	163,672	43,209	206,881	323	207,204	0.14	0.14
C-CM-02	CP	14.60	159,891	42,211	202,102	321	202,424	0.08	0.08
C-CM-03	CP	15.10	159,409	42,084	201,493	302	201,795	0.08	0.08
C-CM-04	CP	11.20	71,879	18,976	90,855	302	91,157	0.03	0.03
C-CM-05	CP	0.60	71,879	18,976	90,855	302	91,157	<0.01	<0.01
C-CM-06	CP	20.50	69,011	18,219	87,230	199	87,430	0.05	0.05
C-CM-07	CP	1.30	952	251	1,203	20	1,222	<0.01	<0.01
C-SHEL-01	CP	135.70	13,492	3,562	17,054	1	17,055	0.06	0.06
C-MACI-01	CP	116.70	26,507	6,998	33,505	13	33,518	0.10	0.10

Table F.2-2. Rail Line Segments with Acquisition-Related Hazardous Material Carload Growth

Segment Information			Hazardous Material Carloads Per Year					Projected Releases per Year	
Segment	Railroad	Segment Length	Base Hazmat Carloads	Organic Growth Hazmat Carloads	2027 No Merger Hazmat Carloads	Merger Related Growth Hazmat Carloads	2027 With Merger Hazmat Carloads	2027 No Action Alternative	2027 Proposed Acquisition
C-CHIC-01	CP	0.70	49,432	13,050	62,482	2,864	65,345	<0.01	<0.01
C-CHIC-02	CP	61.50	56,623	14,949	71,572	11,225	82,796	0.11	0.13
C-CHIC-03	CP	38.70	36,244	9,568	45,813	11,175	56,987	0.05	0.06
C-ROCK-01	CP	30.90	-	-	-	419	419	-	<0.01
C-ROCK-02	CP	14.90	-	-	-	34	34	-	<0.01
C-ELGI-01	CP	23.00	47,888	12,642	60,530	10,977	71,507	0.04	0.04
C-ELGI-02	CP	4.60	290,956	76,812	367,768	3,797	371,565	0.04	0.04
C-ELGI-03	CP	6.30	158,098	41,738	199,836	841	200,677	0.03	0.03
C-ELGI-04	CP	1.00	39,082	10,318	49,400	184	49,583	<0.01	<0.01
M-CHIC-01	CP	3.50	33,528	8,851	42,379	118	42,497	<0.01	<0.01
M-CHIC-02	CP	25.50	144,864	38,244	183,107	655	183,762	0.12	0.12
S-CHIC-01	CP	6.90	40,742	10,756	51,498	798	52,296	0.01	0.01
S-CHIC-02	CP	20.80	40,742	10,756	51,498	798	52,296	0.03	0.03
S-CHIC-03	CP	60.40	40,742	10,756	51,498	798	52,296	0.08	0.08
S-CHIC-04	CP	63.10	40,742	10,756	51,498	798	52,296	0.08	0.09
S-HUNT-01	CP	11.90	16,177	4,271	20,448	798	21,246	0.01	0.01
S-DETR-01	CP	17.00	40,742	10,756	51,498	798	52,296	0.02	0.02
S-DETR-02	CP	43.00	40,742	10,756	51,498	798	52,296	0.06	0.06
S-DETR-03	CP	31.00	40,742	10,756	51,498	798	52,296	0.04	0.04
C-DAVE-01	CP	17.50	26,829	7,083	33,912	43,859	77,771	0.02	0.04
C-DAVE-02	CP	33.22	23,379	6,172	29,550	44,466	74,016	0.03	0.06

Table F.2-2. Rail Line Segments with Acquisition-Related Hazardous Material Carload Growth

Segment Information			Hazardous Material Carloads Per Year					Projected Releases per Year	
Segment	Railroad	Segment Length	Base Hazmat Carloads	Organic Growth Hazmat Carloads	2027 No Merger Hazmat Carloads	Merger Related Growth Hazmat Carloads	2027 With Merger Hazmat Carloads	2027 No Action Alternative	2027 Proposed Acquisition
C-DAVE-03	CP	4.48	23,379	6,172	29,550	44,466	74,016	<0.01	0.01
C-NITR-01	CP	19.80	2,099	554	2,653	315	2,968	<0.01	<0.01
C-OTTU-01	CP	24.61	19,884	5,249	25,133	43,984	69,117	0.02	0.04
C-OTTU-02	CP	82.49	21,384	5,645	27,029	43,857	70,886	0.06	0.15
C-LARE-01	CP	61.20	32,208	8,503	40,711	43,714	84,425	0.06	0.13
C-LARE-02	CP	41.10	31,230	8,245	39,475	43,616	83,091	0.04	0.09
C-KACI-01	CP	51.60	11,954	3,156	15,110	44,522	59,631	0.02	0.08
C-KACI-02	CP	42.10	16,473	4,349	20,822	49,394	70,216	0.02	0.08
K-PITT-01	KCS	124.50	17,716	4,677	22,392	48,313	70,705	0.08	0.23
K-MEXI-01	KCS	97.20	4,862	1,284	6,146	142	6,288	0.02	0.02
K-MEXI-02	KCS	67.90	4,862	1,284	6,146	142	6,288	0.01	0.01
K-ROOD-01	KCS	88.40	7,170	1,893	9,062	142	9,204	0.02	0.02
K-GODF-01	KCS	40.10	4,758	1,256	6,014	142	6,156	0.01	0.01
K-ESLT-01	KCS	32.90	3,715	981	4,696	36	4,732	<0.01	<0.01
K-HEAV-01	KCS	107.80	15,643	4,130	19,773	43,850	63,623	0.06	0.18
K-HEAV-02	KCS	90.40	17,337	4,577	21,915	41,100	63,014	0.05	0.15
K-HEAV-03	KCS	11.60	17,337	4,577	21,915	43,316	65,230	0.01	0.02
K-SHRE-01	KCS	94.60	17,403	4,594	21,997	42,481	64,478	0.06	0.16
K-SHRE-02	KCS	37.10	41,310	10,906	52,216	46,399	98,615	0.05	0.10
K-SHRE-03	KCS	83.20	21,326	5,630	26,957	46,627	73,583	0.06	0.16
K-SHRE-04	KCS	21.80	132,977	35,106	168,083	47,439	215,522	0.10	0.12

Table F.2-2. Rail Line Segments with Acquisition-Related Hazardous Material Carload Growth

Segment Information			Hazardous Material Carloads Per Year					Projected Releases per Year	
Segment	Railroad	Segment Length	Base Hazmat Carloads	Organic Growth Hazmat Carloads	2027 No Merger Hazmat Carloads	Merger Related Growth Hazmat Carloads	2027 With Merger Hazmat Carloads	2027 No Action Alternative	2027 Proposed Acquisition
K-SHRE-05	KCS	15.50	71,032	18,752	89,784	4,007	93,791	0.04	0.04
K-GREE-01	KCS	30.30	14,782	3,903	18,685	1,430	20,115	0.02	0.02
K-GREE-02	KCS	171.50	17,572	4,639	22,211	869	23,080	0.10	0.10
K-ALLI-01	KCS	22.00	156	41	198	417	615	<0.01	<0.01
K-ALLI-02	KCS	45.00	156	41	198	417	615	<0.01	<0.01
K-ALLI-03	KCS	9.10	235	62	297	417	714	<0.01	<0.01
K-DALL-01	KCS	18.10	5,579	1,473	7,052	298	7,350	<0.01	<0.01
K-BEAU-01	KCS	91.40	62,609	16,529	79,138	48,997	128,135	0.20	0.31
K-BEAU-02	KCS	50.60	59,424	15,688	75,112	48,991	124,102	0.10	0.16
K-BEAU-03	KCS	47.00	62,355	16,462	78,817	50,364	129,181	0.10	0.16
K-BEAU-04	KCS	20.10	23,832	6,292	30,124	34,367	64,491	0.02	0.03
U-BEAU-01	KCS	120.00	8,082	2,134	10,216	5,374	15,590	0.03	0.05
K-LACH-01	KCS	16.40	25,446	6,718	32,164	606	32,769	0.01	0.01
K-LACH-02	KCS	17.70	12,801	3,379	16,181	145	16,325	0.01	0.01
K-ROSE-01	KCS	12.20	101,187	26,713	127,901	13,586	141,487	0.04	0.04
K-ROSE-02	KCS	74.80	99,915	26,377	126,292	11,852	138,144	0.26	0.27
U-VICT-01	KCS	12.80	31,964	8,438	40,402	11,617	52,019	0.01	0.02
U-VICT-02	KCS	82.80	31,964	8,438	40,402	11,617	52,019	0.09	0.11
K-LARE-01	KCS	10.10	98,506	26,005	124,511	1,216	125,727	0.03	0.03
K-LARE-02	KCS	144.00	190,626	50,325	240,951	25,637	266,589	0.95	1.00
K-ALEX-01	KCS	120.00	24,325	6,422	30,746	2,330	33,077	0.10	0.10

Table F.2-2. Rail Line Segments with Acquisition-Related Hazardous Material Carload Growth

Segment Information			Hazardous Material Carloads Per Year					Projected Releases per Year	
Segment	Railroad	Segment Length	Base Hazmat Carloads	Organic Growth Hazmat Carloads	2027 No Merger Hazmat Carloads	Merger Related Growth Hazmat Carloads	2027 With Merger Hazmat Carloads	2027 No Action Alternative	2027 Proposed Acquisition
K-ALEX-02	KCS	10.90	24,651	6,508	31,158	2,330	33,489	0.01	0.01
K-NEWO-01	KCS	96.50	41,793	11,033	52,826	2,504	55,330	0.14	0.14
K-NEWO-02	KCS	76.60	41,793	11,033	52,826	2,504	55,330	0.11	0.11
K-VICK-01	KCS	23.60	44,882	11,849	56,731	3,576	60,307	0.04	0.04
K-VICK-02	KCS	14.20	44,621	11,780	56,401	3,576	59,978	0.02	0.02
K-VICK-03	KCS	55.70	43,592	11,508	55,100	2,975	58,074	0.08	0.08
K-VICK-04	KCS	71.50	41,962	11,078	53,040	1,047	54,087	0.10	0.10
K-MERD-01	KCS	44.70	44,543	11,759	56,303	220	56,523	0.07	0.07
K-MERD-03	KCS	30.90	30,777	8,125	38,903	5,070	43,973	0.03	0.04
K-ARTE-01	KCS	84.00	29,356	7,750	37,107	16	37,122	0.08	0.08
K-ARTE-02	KCS	13.30	10,376	2,739	13,116	14	13,130	<0.01	<0.01
K-ARTE-03	KCS	46.50	3,246	857	4,103	3	4,106	0.01	<0.01
K-ARTE-04	KCS	49.80	2,138	564	2,702	1	2,704	<0.01	<0.01
K-TUSC-01	KCS	90.10	12,684	3,349	16,032	13	16,045	0.04	0.04
K-ABER-01	KCS	16.40	7,587	2,003	9,590	13	9,603	<0.01	<0.01

F.2.4.2 Yard Hazardous Materials Safety Effects Analysis

For the rail yard hazardous materials release safety analysis, OEA calculated the release rates as described above, and analyzed the data for all rail yards. **Table F.2-4** presents the results.

On average, between 2015 and 2019, there has been only one hazardous material release for approximately every 300,000 carloads processed in yards (see *Chapter 3, Section 3.2.2.2, Affected Environment* for more information). These near zero rate are expected to continue in the future, although the total number of releases would change due to the overall increase in expected hazmat carloads under the Proposed Acquisition.

Table F.2-3. 2015-2019 Historical Yard Hazmat Releases

Year	Releases	Carloads	Release Rate
Canadian Pacific Railway			
2015	16	1,085,863	1.47E-05
2016	9	987,005	9.12E-06
2017	10	1,071,967	9.33E-06
2018	6	1,138,855	5.27E-06
2019	14	1,113,237	1.26E-05
Kansas City Southern Railway			
2015	13	1,206,859	1.08E-05
2016	17	1,149,640	1.48E-05
2017	12	1,214,621	9.88E-06
2018	17	1,253,296	1.36E-05
2019	15	1,263,804	1.19E-05
Combined Systems			
2015	29	2,292,722	1.26E-05
2016	26	2,136,645	1.22E-05
2017	22	2,286,588	9.62E-06
2018	23	2,392,151	9.61E-06
2019	29	2,377,041	1.22E-05

Table F.2-4. Five-Year Averaged Yard Release Rates

Railroad	No-Action Alternative	Proposed Acquisition
CP	2.42E-06	-
KCS	4.50E-06	-

Table F.2-5. Rail Yards with Acquisition-Related Growth Greater than One Carload Processed Per Day

Yard Information			Cars Processed Per Day					Projected Releases Per Year	
Rail Yard Name	Railroad	State	Base	Organic Growth	2027 No-Action Alternative	Acquisition-Related Growth	2027 Proposed Acquisition	2027 No-Action Alternative	2027 Proposed Acquisition
Advance	KCS	Louisiana	38.0	10.0	48.0	1.1	49.1	0.08	0.04
Arbela	KCS	Mississippi	147.7	39.0	186.7	2.1	188.8	0.31	0.17
Artesia	KCS	Mississippi	370.2	97.7	468.0	2.2	470.1	0.77	0.41
Ashdown	KCS	Arkansas	46.2	12.2	58.4	7.9	66.2	0.10	0.06
Baton Rouge	KCS	Louisiana	413.4	109.1	522.5	5.2	527.7	0.86	0.47
Bensenville Yard	CP	Illinois	1,139.2	300.7	1,439.9	367.7	1,807.6	1.27	1.59
Blue Island	CP	Illinois	9.4	2.5	11.9	1.4	13.2	0.01	0.01
Bossier City	KCS	Louisiana	63.1	16.6	79.7	1.5	81.2	0.13	0.07
Calumet	CP	Illinois	180.9	47.8	228.7	2.0	230.7	0.20	0.20
Chicago	CP	Illinois	408.2	107.8	516.0	3.8	519.7	0.46	0.46
Chicago Clearing	CP	Illinois	705.6	186.3	891.9	2.0	893.9	0.79	0.79
Cordova	CP	Illinois	6.9	1.8	8.7	3.4	12.1	0.01	0.01
Cottage Grove	CP	Minnesota	103.3	27.3	130.6	8.6	139.2	0.12	0.12
Cotton Valley	KCS	Louisiana	12.7	3.3	16.0	1.4	17.4	0.03	0.02

Table F.2-5. Rail Yards with Acquisition-Related Growth Greater than One Carload Processed Per Day

Yard Information			Cars Processed Per Day					Projected Releases Per Year	
Rail Yard Name	Railroad	State	Base	Organic Growth	2027 No-Action Alternative	Acquisition-Related Growth	2027 Proposed Acquisition	2027 No-Action Alternative	2027 Proposed Acquisition
Dallas	KCS	Texas	78.7	20.8	99.5	8.4	107.9	0.16	0.10
Davis Junction	CP	Illinois	15.4	4.1	19.5	1.2	20.7	0.02	0.02
Det Con Term	CP	Michigan	26.3	6.9	33.2	23.2	56.5	0.03	0.05
Geismar	KCS	Louisiana	33.8	8.9	42.7	1.3	44.0	0.07	0.04
Gibsland	KCS	Louisiana	45.4	12.0	57.3	1.3	58.6	0.09	0.05
Glenwood	CP	Minnesota	259.8	68.6	328.4	6.3	334.8	0.29	0.30
Hughes Springs	KCS	Texas	29.3	7.7	37.0	3.3	40.3	0.06	0.04
Intl Freight Gate	KCS	Missouri	98.0	25.9	123.8	19.3	143.1	0.20	0.13
Kendleton	KCS	Texas	90.1	23.8	113.9	2.2	116.1	0.19	0.10
Mason City	CP	Iowa	124.4	32.8	157.3	21.4	178.7	0.14	0.16
Milwaukee	CP	Wisconsin	141.2	37.3	178.5	10.5	189.0	0.16	0.17
Minneapolis Humbo	CP	Minnesota	53.6	14.2	67.8	1.0	68.8	0.06	0.06
Muscatine	CP	Iowa	226.7	59.9	286.6	5.4	291.9	0.25	0.26
Nahant	CP	Iowa	363.7	96.0	459.8	8.4	468.1	0.41	0.41

Table F.2-5. Rail Yards with Acquisition-Related Growth Greater than One Carload Processed Per Day

Yard Information			Cars Processed Per Day					Projected Releases Per Year	
Rail Yard Name	Railroad	State	Base	Organic Growth	2027 No-Action Alternative	Acquisition-Related Growth	2027 Proposed Acquisition	2027 No-Action Alternative	2027 Proposed Acquisition
New Orleans	KCS	Louisiana	364.1	96.1	460.2	6.3	466.5	0.76	0.41
Ottumwa	CP	Iowa	217.8	57.5	275.3	1.0	276.3	0.24	0.24
Pittsburg	KCS	Texas	14.7	3.9	18.6	2.7	21.3	0.03	0.02
Port Arthur	KCS	Texas	245.4	64.8	310.2	209.4	519.6	0.51	0.46
Port Neches	KCS	Texas	245.7	64.9	310.6	2.1	312.7	0.51	0.28
Princeton	CP	Iowa	7.7	2.0	9.7	1.5	11.2	0.01	0.01
Schiller Park Yard	CP	Illinois	58.6	15.5	74.0	76.5	150.6	0.07	0.13
Shoreham Yard	CP	Minnesota	70.6	18.6	89.2	28.7	117.8	0.08	0.10
Shreveport	KCS	Louisiana	1,245.4	328.8	1,574.2	80.7	1,654.9	2.58	1.46
Sibley	KCS	Louisiana	19.9	5.3	25.2	1.4	26.6	0.04	0.02
St Paul	CP	Minnesota	1,805.1	476.6	2,281.7	69.7	2,351.3	2.01	2.07
Thief River Falls	CP	Minnesota	97.0	25.6	122.6	6.1	128.8	0.11	0.11
Tracy	CP	Minnesota	176.1	46.5	222.6	21.7	244.3	0.20	0.22
Wylie	KCS	Texas	260.7	68.8	329.6	137.0	466.5	0.54	0.41

F.3 Passenger Rail Operations Safety

This section presents the rail segments where freight trains and passenger train operations overlap within the combined CPKC system and the segments where the number of daily freight trains would increase as a result of the Proposed Acquisition. All segments where freight trains and passenger trains overlap are listed in **Table F.3-1**. The segments where freight trains and passenger trains overlap, in descending order of change in freight activity, are listed in **Table F.3-2**.

Table F.3-1. Rail Segments with Passenger Rail Service

Segment Number	Segment Code	Segment Begin MP	Segment Begin Station	Segment End MP	Segment End Station	Segment Length (Miles)	Owner	Passenger Service Type (Amtrak or Commuter)	Passenger Rail Corridor
147	K-BEAU-03	719	DE QUINCY, LA	766	BEAUMONT, TX	47.6	KCS	AMTRAK	New Orleans to Los Angeles via Houston
81	C-ELGI-01	17.3	BENSENVILLE METRA, IL	40.3	RANDALL ROAD, IL	23.0	NIRC	METRA	Chicago to Big Timber (Elgin)
149	U-BEAU-01	0	BEAUMONT, TX	120	ROSENBERG, TX	120.1	UP	AMTRAK	New Orleans to Los Angeles via Houston
82	C-ELGI-02	12.7	TOWER B12, IL	17.3	BENSENVILLE METRA, IL	4.6	NIRC	METRA	Chicago to Big Timber (Elgin)
40	C-RIVE-02	288	RIVER JCT, MN	402.5	NEWPORT, MN	114.5	CPRS	AMTRAK	Chicago to Seattle via Minneapolis
51	C-MARQ-01	136.5	MN/IA MARQUETTE	158.998	RIVER JCT	28.40	CPRS	AMTRAK	Chicago to Seattle via Minneapolis
34	B-TWIN-01	428	ST PAUL YARD, MN	445.5	NORTHTOWN, MN	14.7	BNSF	AMTRAK, METRO TRANSIT	Minneapolis - Big Lake, Chicago to Seattle
39	C-RIVE-01	402.5	NEWPORT, MN	407.4	MINNEAPOLIS, MN	16.5	CPRS	AMTRAK	Chicago to Seattle via Minneapolis
38	C-MEPA-01	409	HOFFMAN ST PAUL, MN	412	FORDSON JCT, MN	4.9	CPRS	AMTRAK	Chicago to Seattle via Minneapolis
33	B-DULU-01	445.5	NORTHTOWN	577.7	BOYLSTON	132.2	BNSF	AMTRAK, METRO TRANSIT	Minneapolis to Big Lake, Chicago to Seattle
54	C-TOMA-01	283.8	BRIDGE SWITCH	288.1	RIVER JCT WEST	4.3	CPRS	AMTRAK	Chicago to Seattle via Minneapolis
55	C-TOMA-02	281.2	LA CROSSE	283.8	BRIDGE SWITCH	2.6	CPRS	AMTRAK	Chicago to Seattle via Minneapolis

Table F.3-1. Rail Segments with Passenger Rail Service

Segment Number	Segment Code	Segment Begin MP	Segment Begin Station	Segment End MP	Segment End Station	Segment Length (Miles)	Owner	Passenger Service Type (Amtrak or Commuter)	Passenger Rail Corridor
56	C-TOMA-03	221.2	NEW LISBON	281.2	LA CROSSE	60	CPRS	AMTRAK	Chicago to Seattle via Minneapolis
57	C-TOMA-04	180.4	PORTAGE	221.2	NEW LISBON	40.8	CPRS	AMTRAK	Chicago to Seattle via Minneapolis
60	C-WATE-01	176.9	PORTAGE JUNCTION	180.4	PORTAGE	3.5	CPRS	AMTRAK	Chicago to Seattle via Minneapolis
61	C-WATE-02	133.7	WATERTOWN	176.9	PORTAGE JUNCTION	43.2	CPRS	AMTRAK	Chicago to Seattle via Minneapolis
62	C-WATE-03	102.1	DUPLAINVILLE	133.7	WATERTOWN	31.6	CPRS	AMTRAK	Chicago to Seattle via Minneapolis
63	C-WATE-04	99.4	BROOKFIELD	102.1	DUPLAINVILLE	2.7	CPRS	AMTRAK	Chicago to Seattle via Minneapolis
64	C-WATE-05	88.2	GRAND AVE	99.4	BROOKFIELD	11.2	CPRS	AMTRAK	Chicago to Seattle via Minneapolis
65	C-WATE-06	87.1	CUTOFF	88.2	GRAND AVE	1.1	CPRS	AMTRAK	Chicago to Seattle via Minneapolis
66	C-CM-01	62	STURTEVANT	87.1	CUTOFF	25.1	CPRS	AMTRAK	Chicago to Seattle via Minneapolis
67	C-CM-02	47.4	WI/IL C&M	62	STURTEVANT	14.6	CPRS	AMTRAK	Chicago to Seattle via Minneapolis
68	C-CM-03	32.3	RONDOUT	47.4	WI/IL C&M	15.1	CPRS	AMTRAK	Chicago to Seattle via Minneapolis
69	C-CM-04	21.1	NORTHBROOK	32.3	RONDOUT	11.2	NIRC	METRA, AMTRAK	Chicago to Seattle, Chicago to Fox Lake
70	C-CM-05	20.5	TOWER A20	21.1	NORTHBROOK	0.6	NIRC	METRA, AMTRAK	Chicago to Seattle, Chicago to Fox Lake

Table F.3-1. Rail Segments with Passenger Rail Service

Segment Number	Segment Code	Segment Begin MP	Segment Begin Station	Segment End MP	Segment End Station	Segment Length (Miles)	Owner	Passenger Service Type (Amtrak or Commuter)	Passenger Rail Corridor
71	C-CM-06	0	CHGO UNION STATION	20.5	TOWER A20	20.5	NIRC	METRA, AMTRAK	Chicago to Seattle, Chicago to Fox Lake
73	C-FOLA-01	32.3	RONDOUT	49.5	FOX LAKE	17.2	NIRC	METRA	Chicago to Seattle, Chicago to Fox Lake
83	C-ELGI-03	6.4	CRAGIN JCT	12.7	TOWER B12	6.3	NIRC	METRA	Chicago to Big Timber (Elgin)
84	C-ELGI-04	5.4	NORTH AVE	6.4	CRAGIN JUNCTION	1	CPRS	METRA	Chicago to Big Timber (Elgin)
86	M-CHIC-02	4.5	IL/IN BURNHAM/GIB	30	CRAGIN JUNCTION	25.5	CPRS	METRA	Chicago to Big Timber (Elgin)
87	S-CHIC-01	502.8	CP 502	509.7	ROCK ISLAND JCT	6.9	NS	AMTRAK	Chicago to New York City/Washington DC
88	S-CHIC-02	482	PORTER	502.8	CP 502	20.8	NS	AMTRAK	Chicago to New York City/Washington DC
89	S-CHIC-03	421.6	ELKHART	482	PORTER	60.4	NS	AMTRAK	Chicago to New York City/Washington DC
90	S-CHIC-04	358.5	BUTLER	421.6	ELKHART	63.1	NS	AMTRAK	Chicago to New York City/Washington DC
106	C-CANA-01	77.9	WHITEHALL	190.6	ROUSES POINT	112.7	CPRS	AMTRAK	New York City to Montreal
107	C-CANA-02	38.2	CPC 38	77.9	WHITEHALL	39.7	CPRS	AMTRAK	New York City to Montreal/Rutland
108	C-CANA-03	21.7	MOHAWK YARD	38.2	CPC 38	16.5	CPRS	AMTRAK	New York City to Montreal/Rutland
110	C-FRNO-01	468	MECHANICVILLE	482.5	MOHAWK YD	14.5	CPRS	AMTRAK	New York City to Montreal/Rutland

Table F.3-1. Rail Segments with Passenger Rail Service

Segment Number	Segment Code	Segment Begin MP	Segment Begin Station	Segment End MP	Segment End Station	Segment Length (Miles)	Owner	Passenger Service Type (Amtrak or Commuter)	Passenger Rail Corridor
111	C-FRNO-02	482.5	MOHAWK TD	484.8	SCHENECTADY	2.3	CPRS	AMTRAK	New York City to Montreal/Rutland
119	K-MEXI-01	393.6	KANSAS CITY	490.8	KANSAS CITY	97.2	KCS	AMTRAK	Chicago to Los Angeles via Kansas City
124	K-SPRI-03	193.4	COCKRELL	203.7	SPRINGFIELD	10.3	UP	AMTRAK	Chicago to New Orleans via St. Louis
126	K-GODF-01	28.1	GODFREY	68.2	ROODHOUSE	40.1	KCS	AMTRAK	Chicago to New Orleans via St. Louis
127	K-ESLT-01	252.1	GODFREY	285	EAST ST LOUIS	32.9	KCS	AMTRAK	Chicago to New Orleans via St. Louis
140	K-ALLI-01	54.1	METRO	76.1	ALLIANCE	22	BNSF	AMTRAK	Oklahoma City to Fort Worth
142	K-ALLI-03	0	ALLIANCE	9.1	LAVON JCT	9.1	KCS	DART	DART Silver Line
143	K-DALL-01	0	LAVON JCT	18.1	DALLAS	18.1	KCS	AMTRAK	Chicago to San Antonio
161	K-NEWO-02	788.4	BATON ROUGE	865	NEW ORLEANS	76.6	KCS	AMTRAK	Chicago to New Orleans via St. Louis

Table F.3-2. Descending Order of Change in Freight Activity

Segment Number	Segment Code	2019 Base			2027 No Merger			2027 With Merger			Change in Freight 2027 No Merger to With Merger
		Passenger	Freight	Total	Passenger	Freight	Total	Passenger	Freight	Total	
147	K-BEAU-03	0.85	8.67	9.52	0.85	9.32	10.17	0.85	20.29	21.14	10.97
81	C-ELGI-01	57	3.2	60.2	57	3.41	60.41	57	11.41	68.41	8
149	U-BEAU-01	0.85	8.47	9.32	0.85	9.25	10.10	0.85	16.82	17.67	7.57
82	C-ELGI-02	58	29.42	87.42	58	30.52	88.52	58	36.95	94.95	6.43
40	C-RIVE-02	2	16.16	18.16	2	17.06	19.06	2	23.06	25.06	6
51	C-MARQ-01	2	4.66	6.66	2	5.28	7.28	2	11.28	13.28	6
34	B-TWIN-01	14	16.66	30.66	14	17.51	31.51	14	23.1	37.10	5.59
39	C-RIVE-01	2	13.66	15.66	2	14.51	16.51	2	19.1	21.10	4.59
38	C-MEPA-01	2	1	3	2	1	3	2	4.59	6.59	3.59
33	B-DULU-01	14	0.65	14.65	14	0.67	14.67	14	0.67	14.67	0
54	C-TOMA-01	2	8.86	10.86	2	9.69	11.69	2	9.69	11.69	0
55	C-TOMA-02	2	17.09	19.09	2	18.51	20.51	2	18.51	20.51	0
56	C-TOMA-03	2	13.9	15.9	2	15.18	17.18	2	15.18	17.18	0
57	C-TOMA-04	2	13.76	15.76	2	15.04	17.04	2	15.04	17.04	0
60	C-WATE-01	2	7.78	9.78	2	8.66	10.66	2	8.66	10.66	0
61	C-WATE-02	2	11.49	13.49	2	12.37	14.37	2	12.37	14.37	0
62	C-WATE-03	2	11.49	13.49	2	12.37	14.37	2	12.37	14.37	0
63	C-WATE-04	2	11.49	13.49	2	12.37	14.37	2	12.37	14.37	0
64	C-WATE-05	2	12.64	14.64	2	13.52	15.52	2	13.52	15.52	0
65	C-WATE-06	2	8.91	10.91	2	9.79	11.79	2	9.79	11.79	0
66	C-CM-01	9	12.96	21.96	9	13.82	22.82	9	13.82	22.82	0
67	C-CM-02	9	11.81	20.81	9	12.67	21.67	9	12.67	21.67	0
68	C-CM-03	9	11.81	20.81	9	12.67	21.67	9	12.67	21.67	0
69	C-CM-04	79	11.11	90.11	79	11.97	90.97	79	11.97	90.97	0
70	C-CM-05	79	11.1	90.1	79	11.96	90.96	79	11.96	90.96	0
71	C-CM-06	79	1.73	80.73	79	1.73	80.73	79	1.73	80.73	0

Table F.3-2. Descending Order of Change in Freight Activity

Segment Number	Segment Code	2019 Base			2027 No Merger			2027 With Merger			Change in Freight 2027 No Merger to With Merger
		Passenger	Freight	Total	Passenger	Freight	Total	Passenger	Freight	Total	
73	C-FOLA-01	46	0.57	46.57	63	0.57	63.57	63	0.57	63.57	0
83	C-ELGI-03	58	12.31	70.31	58	12.62	70.62	58	12.62	70.62	0
84	C-ELGI-04	58	1.74	59.74	58	1.75	59.75	58	1.75	59.75	0
86	M-CHIC-02	58	6.8	64.8	58	7.12	65.12	58	7.12	65.12	0
87	S-CHIC-01	4	4.4	8.4	4	4.53	8.53	4	4.53	8.53	0
88	S-CHIC-02	4	3.4	7.4	4	3.53	7.53	4	3.53	7.53	0
89	S-CHIC-03	4	3.4	7.4	4	3.53	7.53	4	3.53	7.53	0
90	S-CHIC-04	4	3.4	7.4	4	3.53	7.53	4	3.53	7.53	0
106	C-CANA-01	2	5.51	7.51	2	5.63	7.63	2	5.63	7.63	0
107	C-CANA-02	4	6.22	10.22	4	6.34	10.34	4	6.34	10.34	0
108	C-CANA-03	4	6.22	10.22	4	6.34	10.34	4	6.34	10.34	0
110	C-FRNO-01	4	5.22	9.22	4	5.34	9.34	4	5.34	9.34	0
111	C-FRNO-02	4	8.57	12.57	4	8.57	12.57	4	8.57	12.57	0
119	K-MEXI-01	2	2.74	4.74	2	3.02	5.02	2	3.02	5.02	0
124	K-SPRI-03	10	0.14	10.14	10	0.14	10.14	10	0.14	10.14	0
126	K-GODF-01	10	1.57	11.57	10	1.60	11.60	10	1.60	11.60	0
127	K-ESLT-01	10	3.71	13.71	10	3.74	13.74	10	3.74	13.74	0
140	K-ALLI-01	2	0.83	2.83	2	0.89	2.89	2	0.89	2.89	0
142	K-ALLI-03	0	1.27	1.27	22	1.33	23.33	22	1.33	23.33	0
143	K-DALL-01	2	1.57	3.57	2	1.57	3.57	2	1.57	3.57	0
161	K-NEWO-02	2	5.84	7.84	2	5.87	7.87	2	5.87	7.87	0

Where daily freight train traffic is projected to increase by one or more freight train per day as a result of the Proposed Acquisition, OEA performed a quantitative analysis of collisions between passenger trains and freight trains on all rail line segments carrying both passenger trains and freight trains. The analysis excludes all other accident types. OEA evaluated data for an 11-year period between January 2008 and December 2018 (the most recent year passenger train miles data are available).

OEA determined that the national accident rate for collisions occurring between passenger trains and freight trains is 0.0047 collisions per million commuter and intercity passenger train miles. On rail line segments where daily freight train traffic would increase by one or more trains as a result of the Proposed Acquisition, OEA calculated a collision rate for the future with the Proposed Acquisition using the following formula:

$$A = TM_{WA} * CR/TM_{EC}$$

Where:

A	=	Rail Line Segment Predicted Annual Collision Rate
CR	=	National Collision Rate, which was determined to be 0.0047 collisions per million intercity and commuter train miles
TM_{EC}	=	Train Miles in Existing Conditions (2008-2018), which is a combination of freight and passenger train miles
TM_{WA}	=	Train Miles in the future with the Proposed Acquisition, which is a combination of freight and passenger train miles

OEA calculated the value of the Train Miles (TM) terms by assuming a 365-day operating year for freight trains and intercity (Amtrak) passenger train operations. OEA calculated train miles for commuter trains using a proportion, which reflects the number of weekdays (five), Saturdays (one), and Sundays (one) per seven-day week; OEA used this approach because Metra and Northstar operate a different schedule for different day(s) of the week. OEA multiplied the segment overlap length by the number of daily trains and then 365 (see formula below). In Metra's and Northstar's cases, OEA multiplied the weekday, Saturday, and Sunday respective number of trains per day (TPD) by the proportion of the week that each of the three types of day comprises.

$$\text{TM} = \frac{(\text{TPD} \times \text{Segment Length} \times 365 \text{ Days})}{1{,}000{,}000}$$

For the No-Action Alternative, OEA adjusted the national passenger train – freight train accident rate to account for increases in freight train traffic anticipated by 2027 in the absence of the Proposed Acquisition. OEA multiplied the national accident rate by the total train miles

under the No-Action Alternative divided by the total train miles in the existing condition to get the predicted annual collision rate for the No-Action Alternative. The total train miles reflect a combination of passenger train miles and freight train miles for each segment. OEA then multiplied the adjusted national passenger train – freight train collision rate by the annual total train miles on a rail line segment to get the "No-Action Alternative Predicted Interval between Collisions Expressed in Years."

For the future under the Proposed Acquisition, OEA followed a similar method as above, incorporating the change in the number of freight trains per day as a result of the Proposed Acquisition. OEA determined the change in the number of freight trains per day by subtracting the number of freight trains under the No-Action Alternative from the number under the Proposed Acquisition. The increment reflects the change in total train miles over a segment due to the increase in daily freight trains that would occur as a result of the Proposed Acquisition. OEA multiplied the national accident rate by the total train miles in the future under the Proposed Acquisition divided by the total train miles in the existing condition to get the predicted annual collision rate. OEA then multiplied that number by the total train miles on a segment basis. This predicted the "Proposed Acquisition Predicted Interval between Collisions Expressed in Years." OEA also calculated the percent change between the total train miles under the No-Action Alternative and the Proposed Acquisition.

Appendix G

Safety Integration Plan

Appendix G contains the proposed Safety Integration Plan for the Proposed Acquisition and related correspondence.

304005
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February 28, 2022
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Public Record

U.S. Department of Transportation
Office of the Secretary of Transportation

General Counsel

1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

February 28, 2022

VIA ELECTRONIC FILING

Ms. Cynthia Brown
Chief, Section of Administration
Surface Transportation Board
395 E Street, S.W.
Washington, D.C. 20423

Re: Federal Railroad Administration's Review of Proposed Safety Integration Plan
Canadian Pacific Railway Limited, et al. – Control – Kansas City Southern et al.
Finance Docket No. 36500

Dear Ms. Brown:

Please find enclosed for filing in the above-referenced proceeding a letter from the Federal Railroad Administration, an operating administration of the United States Department of Transportation, regarding the applicants' Safety Integration Plan.

Please feel free to contact me with any questions. Thank you for your assistance.

Respectfully,
/s/ Christopher S. Perry

CHRISTOPHER S. PERRY
Senior Trial Attorney

Tel: (202) 366-9282
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Enclosure

cc: Service List

U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

February 25, 2022

The Honorable Martin J. Oberman
Chairman
Surface Transportation Board
395 E Street, SW
Washington, DC 20423

Re: Federal Railroad Administration's Review of Proposed Safety Integration Plan
Canadian Pacific Railway Limited et al.—Control— Kansas City Southern et al.
Finance Docket No. 36500

Dear Chairman Oberman:

The Federal Railroad Administration (FRA), an operating administration of the United States Department of Transportation (DOT), presents its findings and conclusions related to the proposed acquisition of Kansas City Southern and its affiliates (collectively, KCS) by Canadian Pacific Railway Limited and its affiliates (collectively, CP), as specified in the applicants' submissions to the Board. On December 28, 2021, CP submitted its Safety Integration Plan (SIP), which describes the process and timetable for merging its operations with KCS, as well as the safety implications of merging these operations. FRA staff had previously met periodically with the applicants and other affected parties to review earlier drafts of the SIP and related materials, to ask questions, and to recommend modifications. CP and KCS responded to FRA's safety concerns during this series of meetings, and the SIP submitted to the Board addresses the issues that FRA raised. FRA is therefore satisfied that the SIP provides a reasonable assurance of safety for the proposed transaction, consistent with governing regulations.

Should CP's acquisition of KCS be approved, FRA will monitor CP's implementation of the SIP during the operations integration period, consistent with the governing FRA regulations at 49 C.F.R. part 244 and the Board's regulations at 49 C.F.R. part 1106. In this regard, if the Board approves CP's acquisition of KCS, FRA will periodically review the implementation status and timeliness of the SIP through special field audits and safety reviews consistent with the governing SIP regulations and other applicable law. In addition, FRA will provide the Board with updates as appropriate during the acquisition implementation period.

FRA requests that, as a condition of any approval of the proposed merger and adoption of the SIP, the Board require the applicants to comply with all of their representations in the SIP. Under 49 C.F.R. 1106(b)(4), FRA will advise the Board when, in its view, the integration of the applicants' operations has been fully and safely completed.

Sincerely,

Amit Bose
Administrator

CERTIFICATE OF SERVICE

I hereby certify that on this 28th day of February, 2022, I filed the foregoing document electronically via the Board's e-filing system, and caused a copy to be served via electronic mail upon Parties of Record in this proceeding.

/s/ Christopher S. Perry

Christopher S. Perry
United States Department of Transportation

CP-36/KCS-23

303462

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Public Record

LAW OFFICE OF DAVID L. MEYER
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1105 S STREET, N.W.
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December 28, 2021

BY ELECTRONIC FILING

The Honorable Cynthia T. Brown
Chief, Section of Administration, Office of Proceedings
Surface Transportation Board
395 E Street S.W.
Washington, D.C. 20423

James M. Mecone
Attorney Adviser
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1200 New Jersey Ave, SE
Washington, D.C. 20590

Re: Finance Docket No. 36500, *Canadian Pacific Ry., et al. – Control – Kansas City Southern, et al.*

Dear Ms. Brown and Mr. Mecone:

In accordance with the procedural schedule established in Board Decision No. 11, enclosed for e-filing in the above-referenced proceeding is Applicants'[1] proposed Safety Integration Plan.

Please contact me with any questions.

Respectfully submitted,

/s/ David L. Meyer
David L. Meyer

Attorney for Canadian Pacific Railway Limited

[1] Applicants are Canadian Pacific Railway Limited, Canadian Pacific Railway Company, and their U.S. rail carrier subsidiaries Soo Line Railroad Company, Central Maine & Quebec Railway US Inc., Dakota, Minnesota & Eastern Railroad Corporation, Delaware and Hudson Railway Company, Inc., Kansas City Southern Applicants are Kansas City Southern and its U.S. rail carrier subsidiaries The Kansas City Southern Railway Company, Gateway Eastern Railway Company, and The Texas Mexican Railway Company.

Attachment

cc: All Parties of Record

BEFORE THE SURFACE TRANSPORTATION BOARD

FINANCE DOCKET NO. 36500

CANADIAN PACIFIC RAILWAY LIMITED, *ET AL.* – CONTROL – KANSAS CITY SOUTHERN, *ET AL.*

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Counsel for CP

December 28, 2021

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Appendix 1: Safety Integration Plan Accountabilities Chart

Appendix 2: Highway-Rail Grade Crossings at Existing Quiet Zones where Increased Traffic Is Anticipated as a Result of the Transaction

Appendix 3: List of CP Federal and State Funding Grants

TABLE OF ABBREVIATIONS

AAR	Association of American Railroads
ABS	Automatic Block System
ACC	American Chemistry Council
AEI	Automatic Equipment Identification
Applicants	CP and KCS
AREMA	American Railway Engineering and Maintenance-Of-Way Association
AVP	Assistant Vice President
BCF	Business Continuity Facility
BIMS	Bridge Inspection Management System
Board	Surface Transportation Board
BMP	Bridge Management Plan
CAD	Computer Aided Dispatch System
CBT	Computer-Based Training
CID	Critical Incident Desk
CL	Consequence Leadership
CMA	Crew Management Application
CMDB	Configuration Management Database
CMQ	Central Maine & Quebec Railway U.S. Inc.
COSRP	Comprehensive Oil Spill Response Plan
CP	Canadian Pacific Railway Limited, Canadian Pacific Railway Company, and their U.S. rail carrier subsidiaries Soo Line Railroad Company, Central Maine & Quebec Railway U.S. Inc., Dakota, Minnesota & Eastern Railroad Corporation, and Delaware and Hudson Railway Company, Inc.
CPKC	Canadian Pacific Kansas City
CPPS	CP Police Service
CP Risk Reduction Plan	Risk Reduction Program Implementation Plan
CPRC	Canadian Pacific Railway Company
CRB	Car Repair Billing
CRISI	Consolidated Rail Infrastructure and Safety Improvements
CTC	Centralized Traffic Control
D&H	Delaware and Hudson Railway Company
DER	Designated Employer Representative
DM&E	Dakota, Minnesota & Eastern Railroad Corporation
DSLE	Designated Supervisor of Locomotive Engineers

DSRCO	Designated Supervisor of Remote Control Operators
DTN	Digital Track Notebook
Engineering Red Book	Engineering Red Book of Track & Structures Requirements
EHS&S	Environment, Health, Safety and Security
ENS	Emergency Notification Signs
EWM	Enterprise Workforce Management
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
GCOR	General Code of Operating Rules
GOI	General Operating Instructions
GPS	Global Positioning System
GTB	General Track Bulletin
HOS	Hours of Service
HSE	Health, Safety, and Environmental
HSSE MS	Health, Safety, Security & Environment Management System
ICP	Integrated Contingency Plan
I-ETMS	Interoperable Electronic Train Management System
KCS	Kansas City Southern
KCSM	Kansas City Southern de México, S.A. de C.V.
KCS Risk Reduction Plan	Risk Reduction Program Implementation Plan
KCSR	The Kansas City Southern Railway Company and its U.S. rail carrier subsidiaries
LEPP	Local Emergency Preparedness Plan
LMP	Locomotive Management Planning
MCS	Management Control System
MOP	Manager Operating Practices
MOR	Manager of Rules
MUTCD	Manual on Uniform Traffic Control Devices
NFPA	National Fire Protection Association
NSC	Network Service Center
NSSC	Network Safety Steering Committee
OC	Operations Center
OCS	Occupancy Control System
Operation Lifesaver	Operation Lifesaver, Inc.
OJT	On-the-job-training
OSHA	Occupational Safety and Health Administration
OSRP	Oil Spill Response Plans

OTS	On Track Safety
PHMSA	U.S. Pipeline and Hazardous Materials Safety Administration
PSCC	Public Safety Communication Centre
PSR	Precision Scheduled Railroading
PTC	Positive Train Control
RCL	Remote Control Locomotive
RCMS	Responsible Care Management System
REB	Railroad Education Bureau
RPM	Railway Performance Monitoring
RS&I	Rules Standards and Instructions
SAM	Structures Asset Management
SAP	Systems Applications and Products
Section 130	Railway-Highway Crossings Section 130 Program
SIP	Safety Integration Plan
SMS	Safety Management System
Soo Line	Soo Line Railroad Company
STAR	Safety Through Awareness and Responsibility
STEP	Railroad Safety Grants for the Safe Transportation of Energy Products by Rail Program
STS	Signal Training School
TAM	Track Asset Management
TEaM	Transportation, Engineering, and Mechanical
Tex Mex	The Texas Mexican Railway Company
TGBO	Tabular General Bulletin Order
TMDS	Train Management Dispatch System
TOMS	Track Order Management System
Training Department	CP's Technical Training department
TPE	Trip Plan Engine
TWC	Track Warrant Control
TYES	Train and Yard Execution System
USHMI	United States Hazardous Materials Instructions for Rail
VRU	Voice Response Units
Wabtec	Wabtec Railway Electronics
WHSC	Workplace Health and Safety Committee

I. INTRODUCTION AND OVERVIEW OF THE PROPOSED TRANSACTION

On October 29, 2021, Canadian Pacific Railway Limited, Canadian Pacific Railway Company ("CPRC"), and their U.S. rail carrier subsidiaries Soo Line Railroad Company ("Soo Line"), Central Maine & Quebec Railway US Inc. ("CMQ"), Dakota, Minnesota & Eastern Railroad Corporation ("DM&E"), and Delaware and Hudson Railway Company, Inc. ("D&H") (collectively "CP") and Kansas City Southern ("KCS") filed an application seeking authority from the Surface Transportation Board (the "Board") pursuant to 49 U.S.C. §§ 11323–11325 for the acquisition of control by CP through its wholly owned subsidiary Cygnus Merger Sub 2 Corp., of KCS, and, through it, of The Kansas City Southern Railway Company and its U.S. rail carrier subsidiaries ("KCSR"), and for the resulting common control by CP of its U.S. railroad subsidiaries, and KCSR and its railroad affiliates. The Board issued a decision, effective on November 26, 2021, accepting this application (the "Application") and adopting a procedural schedule. *Canadian Pacific Limited,* et al.*—Control—Kansas City Southern,* et al. FD 36500 (STB Decision No. 11, served November 23, 2021).

In the United States, CPRC owns rail property in Michigan through its subsidiary the Detroit River Tunnel Company, Soo Line owns rail property in Illinois, Minnesota, North Dakota, South Dakota, and Wisconsin, CMQ owns rail property in Maine and Vermont, DM&E owns rail property in Illinois, Iowa, Minnesota, Missouri, and Wisconsin, and D&H owns rail property in New York. CP's main routes in the United States extend from six Canada/United States border crossings: North Portal, SK/Portal, ND; Emerson, MN/Noyes, MN; Windsor, ON/Detroit; Buffalo; Rouses Point, NY; and a point near Jackman, ME, on the Quebec/Maine border. CP also operates a short stretch of branch line trackage between Abercorn, QC and Richford, VT.

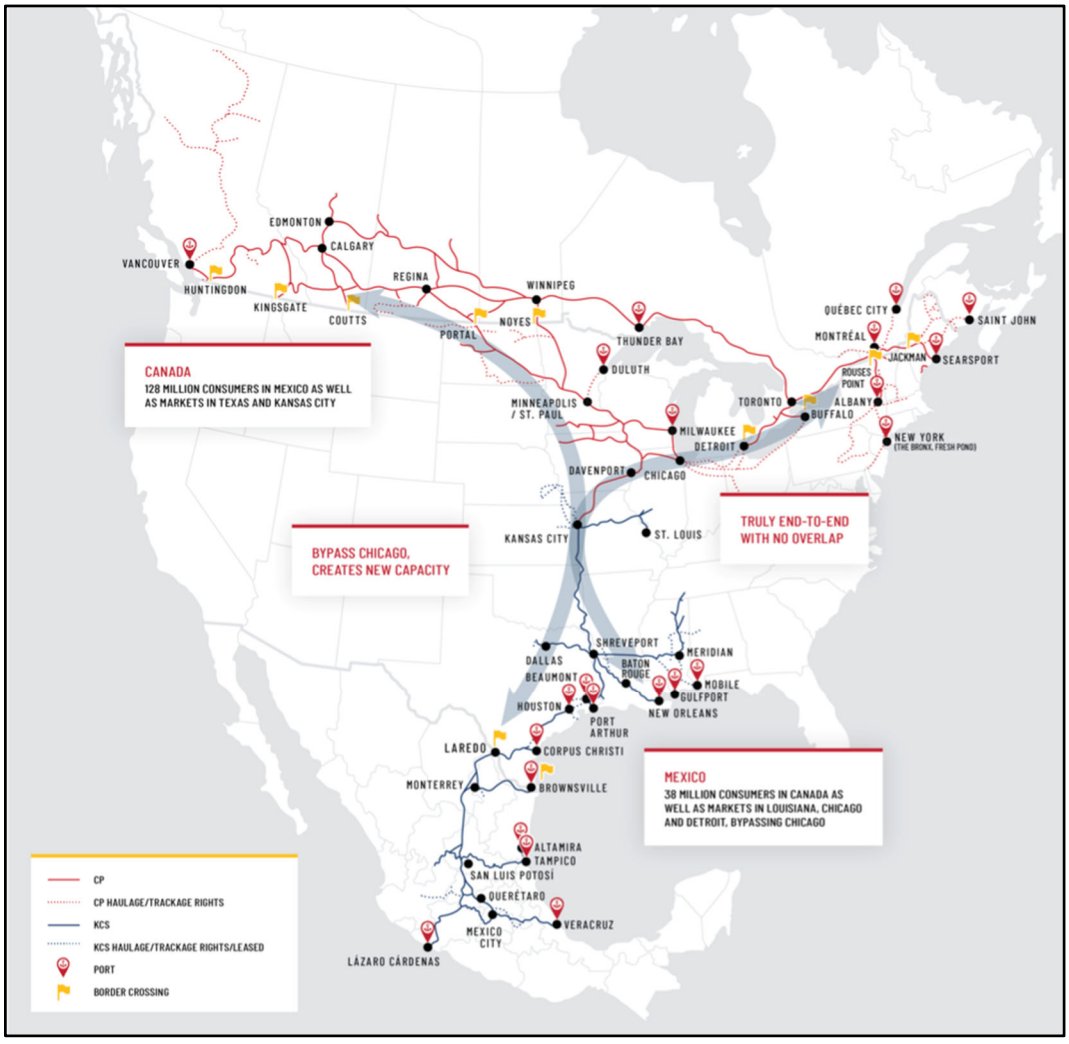
The KCS rail network extends in a north-south corridor from Kansas City south to the Pacific Ocean at the Port of Lazaro Cardenas, Mexico. In the United States, KCSR owns rail property in Alabama, Arkansas, Illinois, Kansas, Louisiana, Mississippi, Missouri, Oklahoma, Tennessee, and Texas while Gateway Eastern Railway Company owns rail property in Illinois, and The Texas Mexican Railway Company ("Tex Mex") owns rail property in Texas. KCSR's network is centered on Shreveport, LA, with lines radiating in five directions. KCSR's key north-south corridor extends from the Mexican border at Laredo, TX, to Kansas City through Shreveport through a combination of KCS's own line and trackage rights. The "Meridian Speedway" line runs east-west through Shreveport, between the Dallas, TX area and a connection with Norfolk Southern Railway Company at Meridian, MS. The portion of this line from Shreveport to Meridian is 70% owned by KCS affiliate Meridian Speedway, LLC and operated by KCSR. In addition, KCSR operates a secondary line that extends southeast from Shreveport to New Orleans, LA. KCSR also operates the former "Gateway Western" lines extending east from Kansas City to Springfield, IL, and East St. Louis, IL, and several former "MidSouth" branch lines in Mississippi and Tennessee.

The proposed CP/KCS combination is purely "end-to-end" because the CP and KCS networks do not overlap anywhere. CP and KCS connect only at Kansas City, with joint agency only at Kansas City, where they already share a joint-facility rail yard (Knoche Yard, also known as the Joint Agency). Because of this end-to-end orientation, the transaction will not result in any internal re-routes, integration of terminal facilities, or downgrading or rationalization of rail lines. In addition, the lack of competitive overlap means that the CP/KCS combination will strengthen competition among rail carriers and with trucks in every market served by the integrated Canadian Pacific Kansas City ("CPKC," the future name of the parent company of CP/KCS following Board

approval) and will result in no shippers facing any reduction in competition. Below is Figure 1, showing both CP's and KCS's networks.

FIGURE 1

FUTURE CPKC SYSTEM



Further, because the CP and KCS systems are complementary, CP and KCS anticipate a smooth and seamless transition to a combined system and will take steps to ensure this smooth and seamless transition.

II. EXECUTIVE SUMMARY

CP is the safest carrier in North America and has been for 15 years. CP will continue to maintain its safety standards during and following its integration with KCS. CPKC will spend more than $275 million to upgrade the main lines between Louisiana and Minnesota by adding double track, adding and lengthening sidings, and installing Centralized Traffic Control ("CTC") to enable increased capacity, service reliability, and safety.

Present in both Canada and the United States for at least one hundred years, CP has also showcased its ability to operate safely across borders and effectively navigate regulations and requirements in two different countries. CP has a well-established track record of careful planning and flawless execution. For example, CP has been successful in implementing precision scheduled railroading ("PSR") and bringing disciplined attention to the level of service every rail shipment receives.

CP intends to keep learning from the best practices in its cross-border operations and to apply them to its integration with KCS and KCS's own cross-border operations.

In addition, CP will bring its deep expertise related to its network and its capabilities and to the integration process. CP's ability to deploy this institutional knowledge to facilitate the smooth integration in the acquisition context was demonstrated during its combination with DM&E in 2009 and most recently with CMQ in 2020, during which there were no material service disruptions. KCS similarly has a proven safety record and maintains strong operating practices. KCS's ability to successfully and safely integrate was demonstrated during its combination with Tex Mex and Transportación Ferroviaria Mexicana in 2005, which, like CP's recent acquisitions, involved no material service disruptions. Particularly because the CP/KCS combination involves two Class I railroads with mature processes, demonstrated safety performance, a history of

successful integrations, and no geographic overlap, CP and KCS ("Applicants") have no doubt that the integration of CP and KCS will be safe and successful.

This Safety Integration Plan ("SIP"), developed in accordance with the regulations of the Federal Railroad Administration ("FRA") and the Board, describes how CP and KCS intend to implement the combination safely and in compliance with applicable safety laws and regulations. While integration planning has already begun, the integration process will continue over the three years following Board approval of CP control (the "Control Date") to ensure that there will be no disruptions in safe operations or the service provided to customers.

This SIP will address all the subjects required to be addressed in a combination involving an amalgamation of operations at 49 C.F.R. § 244.13, including corporate culture, training, operating practices (including operating rules, alcohol drug, qualification and certification of locomotive engineers, and hours of service laws), motive power and equipment, signal and train control, track safety standards and bridge structures, hazardous materials, dispatching operations, highway-rail grade crossing systems, personnel staffing, capital investment, and information systems compatibility. Each section of the SIP will also include the requisite discussion of integration issues.

Because this SIP is being filed early in the process, as required, CP's planning of the integration remains underway. Applicants have been engaging with the FRA in advance of filing the SIP and have incorporated the FRA's input into the SIP. Applicants will continue to engage in these discussions with the FRA as integration plans are refined to ensure that the SIP is comprehensive. **Appendix 1** sets forth the major workstreams, the estimated resource allocation for each, and the corresponding estimated start and completion dates for the elements of the SIP.

Further, CP is committed to using the period before and after the Control Date to assess and understand each company's practices and plan a successful integration while both CP and KCS continue to operate safely. But because the CP/KCS combination is "end-to-end," CP anticipates fewer issues than combinations where overlaps and rationalization were key motivators for the transaction. For these reasons and as described in the SIP, CP does not anticipate any adverse impact to safety as a result of the combination. In fact, as described in various sections throughout the SIP, it is expected that safety will be improved through investment, growth, enhanced use of technology, strengthened processes, and an even greater focus on employees.

The remainder of the Executive Summary provides an overview of the distinct sections of the SIP.

Corporate Culture. CP places a premium on safety, which is reflected in its corporate culture. In fact, one of CP's five foundational principles, as described in Section III.A.1, is to "operate safely." CP's focus on safety starts at the very top with its leadership. Every year, CP's leadership sets goals and targets, establishes strategies and specific tactics to address issues, creates and adjusts policies and processes to manage issues and monitor progress, and recognizes and rewards safety achievements, while recommitting to CP's Corporate Safety Policy. Each territory is represented by a senior manager and a workplace and health safety committee that jointly address and discuss concerns and remedial actions. Employees actively engage in the development and evaluation of safety items through various channels, programs, and committees. These efforts are supported by CP's implementation of manager safety accountabilities and the use of audits as well as CP's prioritization of investments in technology to enhance safety. CP's stellar safety record is proof that these efforts have been successful.

KCS's culture likewise values safety and this like-mindedness ensures CPKC will continue CP's legacy as the safest Class I railroad, particularly once CPKC adopts certain of CP's proven programs. Applicants have identified certain safety aspects it deems critical to CPKC's safety operations, and they intend to implement the following programs, which are further described in the SIP:

- *Adopting CP's coordinated, centralized safety management system ("SMS").*
- *Deploying CP's safety technology across the combined system.*
- *Consequence Leadership program.*
- *Home Safe.*
- *Workplace Health and Safety Committees.*
- *Risk Reduction Program.*
- *Efficiency Testing and Manager Accountabilities.*

Training. Consistent with its focus on safety, CP maintains a robust training program, which involves a dedicated team of safety-minded professional Training Instructors, along with a state-of-the-art training facility in St. Paul, MN. A range of CP professionals participate in the training program, as demonstrated by the fact that CP Training Instructors deliver more than 100 training courses and programs. KCS maintains similar facilities in the United States and Mexico, as well as virtual options.

CP conducted an initial review of CP's and KCS's training programs and determined that both CP and KCS deliver quality training programs that meet or exceed applicable federal requirements. Applicants anticipate that, immediately following the Control Date, the training centers in St. Paul and Shreveport will remain open as their locations in the network will aid in efficient training across the combined system. CPKC will ultimately adopt CP's training

programs, adapted to KCS best practices, but CPKC will maintain separate training programs while KCS training staff are brought up to speed on CP's training material and processes. CP and KCS will work together to identify a comprehensive list of differences surrounding safety and operating rules. Once the differences are appropriately assessed, a comprehensive package of rules will be developed and delivered and CPKC will adopt uniform training across the United States. Maintenance of a single training program will, in turn, enable efficient internal and external oversight, as delivery will be the same at each location across the new property.

Operating Practices. Both CP and KCS have operating practices relating to operating rules, alcohol and drugs, the qualification and certification of locomotive engineers, and hours of service laws. Applicants expect that these operating practices will remain separate for some period post-Control Date. Following the CP/KCS combination, CPKC will perform a comprehensive review of all operating rules and practices to determine the best fit for the combined company. Once CPKC has sufficient information to determine the best path forward toward one common set of operating practices in a safe and efficient manner, it will implement that plan and submit the appropriate joint filings to the FRA.

Motive Power and Equipment. CP maintains eight major locomotive inspection and repair facilities across its network, including a facility in St. Paul, while KCS has locomotive maintenance facilities at Shreveport and San Luis Potosi in Mexico. Following the CP/KCS combination, CP expects the mechanical facilities in St. Paul and Shreveport to remain the primary U.S. locations for locomotive maintenance. Once operations are integrated post-Control Date and operating patterns are established, CPKC will assess the appropriateness of any changes to network repair and service locations.

Qualification standards for mechanical and locomotive personnel will remain separate for a period following the combination but CPKC will eventually adopt CP's qualification standards.

Signal and Train Control. Given the complexity of signal and train control and the Applicants' goal of ensuring a smooth and safe integration, CP and KCS have created a team to lead planning and integration post-Control Date. The team is currently developing a detailed plan to integrate signal and train control design, maintenance, and construction activities, systems, and processes, including integration of the Positive Train Control ("PTC") system by analyzing which processes, standards, and systems are the most appropriate fit for CPKC. Once the team has identified the appropriate processes, standards and systems, it will prepare an integration plan including milestones and checkpoints to determine progress and considerations for testing prior to implementation as well as generating back-up procedures.

Track Safety Standards and Bridge Structures. CP's policies and processes governing inspection and maintenance of bridges, retaining walls, tunnels, and culverts are set forth in its Engineering Red Book of Track & Structures Requirements ("Engineering Red Book") and its Bridge Management Plan ("BMP"). The Engineering Red Book also details CP's standards and processes governing inspection and maintenance of track assets. CP uses the Structures Asset Management ("SAM") system to maintain data on bridge inspections and assets while KCS uses two programs to store the same information: Bridge Inspection Management System ("BIMS") to store data on bridge inspections and Task Order Management System ("TOMS") to monitor the repair of defects found during inspections in the U.S. Though CP and KCS both currently use Digital Track Notebook ("DTN") to ensure inspection compliance, CP has slowly been rolling out Track Asset Management ("TAM") across the CP system as a replacement for DTN.

Post-Control Date, CP and KCS will continue to follow their current guidelines while CPKC employees are trained on the Engineering Red Book and BMP. CPKC will transition to the Engineering Red Book after the requisite training occurs. Similarly, CPKC will use SAM after it migrates all data in BIMS and TOMS to SAM and employees are sufficiently trained on SAM. CPKC will also use DTN until the mapping of assets is complete and all employees are trained on TAM.

Regarding earthquake response protocol and weather monitoring, post-Control Date, CPKC will perform a comprehensive review of earthquake response protocol and weather monitoring, and will determine what practices will be used for CPKC. On track and roadway maintenance and testing and internal rail flaw detection, CP and KCS will continue with the programs and inspections in place at the legacy railroad while evaluating the best way forward for CPKC. This will be accomplished by performing a comprehensive review of Track and Roadway Maintenance and Testing and internal flaw detection practices, while also determining what inspection frequencies and practices are the best fit for CPKC.

Regarding the training of roadway workers, a comprehensive analysis will be completed post-Control Date to determine where and how training on these topics can be effectively handled but, during the process, CPKC will use CP training standards to train all employees. The CP new hire training program will also be implemented across CPKC to ensure proper training and proficiency and safety in tasks being performed.

Hazardous Materials. To ensure the safe handling of hazardous materials, CP employs various training programs, emergency procedures, and communication and notification systems. Additionally, CP conducts periodic inspections and tests to ensure its programs are operating effectively. Applicants anticipate that, following an initial transition period post-Control Date,

KCS will adopt many of CP's program and systems, including CP's training programs, CP's Integrated Contingency Planning process, and CP's documentation system. CPKC will also incorporate KCS's emergency response third-party contract resources into CP's emergency response contractor network and KCS-owned emergency response assets into CP's response network.

For a short period following the combination, CP and KCS will maintain their own sets of United States Hazardous Materials Instructions for Rail ("USHMI") and their own reporting systems for hazardous materials. However, CPKC staff will analyze these plans and work together to develop one set of materials and systems for the combined CP/KCS.

During this process, KCS's staff will be incorporated into CP's Hazardous Materials organizational structure and CPKC will continuously review staffing levels and other resource levels to ensure there are sufficient resources to manage the Hazardous Materials program.

Dispatching. Currently, CP dispatches trains in the United States from an Operations Center ("OC") based in Minneapolis, MN while KCS dispatches trains in the United States from OCs in Kansas City and Spring, TX. During the early stages of integration, the former CP and KCS territories will continue operating separately according to their established train control systems. However, CP plans to migrate the Minneapolis, MN OC to Kansas City, and to integrate CP's OC with KCS's at the appropriate time post-Control Date. While relocation of employees is underway, the move will focus on maintaining safe operational practices in Minneapolis, MN, including the use of qualified train dispatchers to fill vacancies that may result from employee relocation.

With regard to systems, CPKC will carefully evaluate each independent train control system, focusing on operating rule requirements, operational safeguards, efficiencies, and the

ability to accommodate the needs of customers and the newly merged company. Appropriate stakeholders in affected departments will conduct this review and establish implementation plans. CPKC will ensure that train control changes are properly vetted and tested prior to implementation, and that no changes will be made unless and until safe operations can be maintained.

Highway-Rail Grade Crossing Systems. CP and KCS are both committed to the safety of citizens of the local communities in which they operate and CPKC will continue this dedication to safety. CP and KCS have similar established practices and programs for managing and improving the safety of at-grade crossings. Both companies work closely with state and local road authorities and emergency responders to support grade crossing safety improvements. The current practices and programs will continue with CPKC adopting the best practices of both railroads.

Personnel Staffing. CP anticipates that KCS's Kansas City headquarters will become the U.S. headquarters for the combined railroad, creating net-positive impacts on employment there, and that CP's Minneapolis, MN headquarters will eventually close. As a result, the operational consolidations arising from the combination of these two railroads will entail some adjustments in work arrangements, including (1) in the region centered on Kansas City, the one point where CP and KCS's rail networks connect, and (2) as a result of the relocation of CP's U.S. headquarters from Minneapolis to Kansas City. Though these moves will yield some changes in the level of employment and assignment of personnel, CPKC will take action to prevent these changes from raising safety issues. CPKC will ensure that all personnel receive the requisite training and recertification required to prevent any adverse impacts on safety and personnel.

Capital Investment. Both CP and KCS spend heavily to ensure that their respective networks are safe and efficient. For example, CP spent $1.26 billion on capital expenditures in 2020 including on track and roadway, while in the past five years, KCS has invested heavily in

foundational programs, including over $1.8B in roadway (infrastructure) and equipment, and $440M in capacity enhancements to promote service levels for customers and to achieve growth opportunities. As previously discussed, CPKC will invest more than $275 million in capital improvement projects to add capacity and improve safety on its core North-South rail corridor. These capital investments will transform the North-South lines on the combined system into a more efficient and higher-capacity network. CPKC plans to install additional sidings and extend sidings as set out in the Application, to support longer trains and accommodate the expected increase in train volume, expand the railcar fleet, invest in line infrastructure, among others.

Information systems compatibility. Because of the importance of information systems to the safety of a railroad, the overall goal while integrating CP and KCS information technology is to minimize train network disruption by having operations that focus on providing a safe working environment. This goal will be made easier by the fact that the CP/KCS combination is "end-to-end" and lacks geographical overlaps.

Currently, CP and KCS each possess information systems that meet each railroad's freight operations' needs. To ensure a safe and efficient transition, CP and KCS plan to continue to use each railroad's existing systems for an initial period following the Control Date. However, CP and KCS have been and will continue to assess the information systems from multiple angles: their intended functions, their capabilities, and issues relating to integration with comparable systems on the other railroad. Over time, CPKC will migrate operations across both networks to a single set of platforms, choosing the best options based on the following factors: technological capabilities, ability to meet current and future needs of the CPKC network, and the ease with which a platform can accommodate a seamless transition.

III. SAFETY INTEGRATION PLAN

A. CORPORATE CULTURE

1. Focus on Safety at CP

CP's safety culture starts at the top with its leadership. As stated in the Verified Statement of Keith Creel, CP's CEO (filed in Volume 1 of the Application), "CP's commitment to safety is ingrained in every aspect of [its] business and at every level of [its] organization."[1] Safety is foundational to everything CP does, and as such, CP never prioritizes business objectives above safety. CP strongly believes that safeguarding people and communities contributes to long-term sustainable growth and success, and continues to enhance its safety measures to ensure ongoing safety compliance. In addition to its leadership, CP maintains its safety culture through a variety of measures, including its coordinated, centralized SMS, effective employee safety programming, and emergency preparedness. CP's commitment to safety is demonstrated by its safety performance: CP has led the industry with the lowest train accident frequency rate in North America for 15 years, illustrating the effectiveness of its efforts to enhance public safety and protect the environment.

Centralized Safety Management System. The foundation for CP's safety culture is grounded in SMS. SMS is an organizational framework that contains CP's safety activities, programs, and approaches that make up CP's safety culture. SMS provides a structural template for managing all safety-related procedures and standards, and includes CP's efficiency testing, safety accountabilities, employee engagement, and workplace inspections. SMS is based on a plan, do, check, and act model. CP understands the importance of continual improvement and the

[1] Unless otherwise noted, referenced verified statements were submitted in connection with the Application.

importance of system audits, and conducts rigorous internal, external, and regulatory auditing of its SMS.

Leadership. Leadership is the primary driving force behind CP's culture of safety. *See* Keith Creel's Verified Statement. Senior executives in CP's Operations team and Corporate Risk team are responsible for setting the tone and direction for safety management. This includes setting goals and targets, establishing strategies and specific tactics to address issues, creating policies and processes to manage issues and monitor progress and recognizing and rewarding safety achievements. Each year, CP's President/CEO and Executive Vice President of Operations review and recommit to CP's Corporate Safety Policy. This commitment empowers the executive leadership group to develop, maintain and adjust any aspect of its SMS in a continual effort to operate safely. CP's Managing Director of Safety manages CP's safety team, and reports to the Assistant Vice President of Operations Support, who in turn, reports to the Executive Vice President of Operations.

CP believes that feedback is at the core of improving safety. CP created a centralized program for its leadership known as Consequence Leadership ("CL") that equips each leader with the tools necessary to navigate simple and complex situations alike, and implement positive change through feedback and action. CL is founded on sound, data-driven behavioral science that develops the safest, most effective, and efficient railroad in the industry.

Foundations and Values. CP's foundations and values foster a culture of safety. Each employee at CP strives to align with the following five foundational principles: provide service, control costs, optimize assets, operate safely, and develop people. In addition, CP's core values of accountability, diversity, and pride promote a family-like culture, in which employees work together with courage and integrity to provide world-class service. Employees at CP are taught

and incentivized to do what is right, even when it is not easy, which promotes CP's overall safety-centered culture.

***Technology*.** CP prioritizes investments in technology to enhance safety. CP has invested in the following technology: wheel life forecasting, cracked wheel detection technology, wheel impact load detectors, predictive bearing failure using acoustic sensors, broken rail detection in dark territory (non-signaled track), enhanced rail flaw detection, and autonomous track geometry measurement systems. These technological advancements enable CP to approach safety from a preventative standpoint and to enhance CP's operational safety overall.

***Employee Involvement, Collaboration, and Communication*.** CP views its unions and employees as critical partners in its safety culture, success, and systems. In order to achieve safety excellence, CP communicates and collaborates with its employees on safety items, and regularly involves them in safety planning and discussions. CP's employees actively engage in the development and evaluation of the SMS through various channels, including local and executive-level health and safety committees.

For example, CP's Workplace Health and Safety Committees ("WHSCs") identify, evaluate, and control hazards across CP's property by participating in workplace inspections and customer safety audits. WHSC representatives conduct peer observations of various tasks and provide feedback to individual employees on their observations. Management is not provided any individual employee results and receives only the blended results for a given location. This anonymized approach encourages committee representatives to provide open and honest feedback. As a result, management receives direct insight into compliance at the ground level.

CP's quarterly Safety Walkabouts are another example of employee involvement in safety-related processes. The Safety Walkabouts involve all levels of the Operations Department

(including Vice Presidents and General Managers) conducting on-property tours with local managers, WHSC members, and craft employees. During the Safety Walkabouts, leaders in the Operations Department seek employee ideas regarding safety exchange views with employees that drive employee engagement.

CP also employs a reporting feature by which employees are able to report hazards that are not immediately resolvable to protect others from the hazard. Using CP's online application, "Report a Safety Hazard" and the related safety hazard dashboard, employees are instructed to report hazards into the safety hazard reporting tool, which enables any employee to report a safety hazard. Following the report, management informs the employee how the hazard will be resolved. These tools and the supporting policies are designed to facilitate immediate reporting and enhance employee engagement. In 2020, CP management resolved over 1,600 employee-reported hazards.

Programming. CP's employee engagement initiative, "Home Safe," requires the following commitment and action, which work together to create a "team" approach to safety:

- give a heads-up;
- offer and ask for help;
- warn people who are putting themselves at risk; and
- identity, report, and remove hazards.

Home Safe embodies CP's desire to improve safety by tapping into the human side of safety and promoting employee engagement and feedback. This program—among others—conveys the message that every employee is responsible for instilling a culture of safety at CP. Through Home Safe, CP empowers its employees to take responsibility and do everything in their power to make sure that everyone goes home safe, every day. Following the inception of Home

Safe in 2016, CP observed a steady decrease in personal injury frequency rates. In 2020, CP remained a leader in the FRA reportable train accident frequency rate and had the lowest FRA-reportable personal injury frequency rate in CP's company history, demonstrating the effectiveness of its efforts to strengthen safety and protect the environment. Today, CP can proudly characterize its safety culture as being among the most progressive of all North American rail companies.

Public Safety and Emergency Preparedness. CP proactively plans and trains for emergency events to protect its workforce, the environment and the communities in which it operates. CP strategically invests in personnel, infrastructure, resources, and training to maintain high standards for public safety. CP is prepared to quickly deploy hazardous materials and emergency response teams to implement its Integrated Contingency Plan in cooperation with local emergency response organizations and CP's network of emergency response contractors. CP's Emergency Operations Centre personnel interface directly with field operators to ensure that the right resources are in place should an incident arise.

Moreover, CP's emergency preparedness goes beyond its workforce. Each year, CP supports local firefighters across its network to obtain rail-specific hazardous materials training at the Security and Emergency Response Training Center. Since 2012, CP has trained more than 30,000 emergency responders on hazardous materials response.

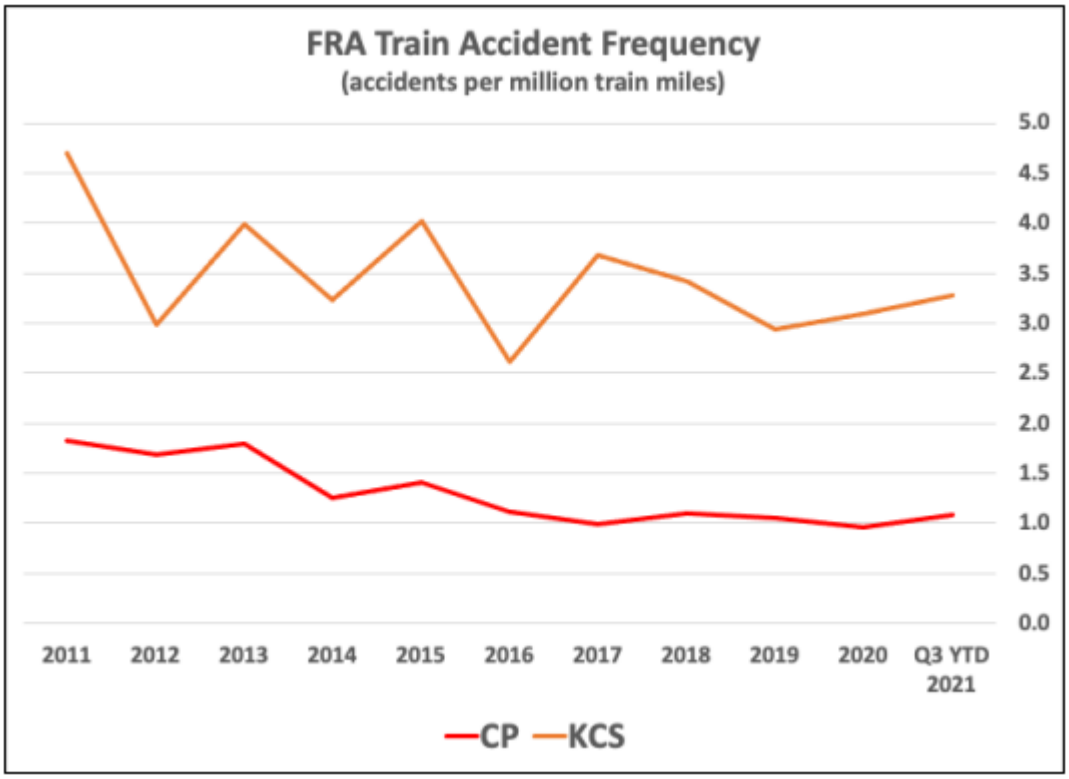
***Supervision and Monitoring*.** The success of any safety requirement or initiative relies not only on a strong plan, but also the ability to validate a successful execution of that plan. CP's supervision and monitoring practices are developed to ensure safety compliance is regularly audited and operational practices are executed according to its safety policies. To ensure the quality and effectiveness of its safety rules, managers conduct efficiency testing to validate employee compliance with safety requirements, and also conduct safety audits to ensure safety

rules regarding operational practices are followed. The Manager Safety Accountabilities standards document prescribes which managers must perform efficiency testing along with the frequency at which the tests should be performed. During efficiency testing, managers observe employees to validate their ability to follow rules and requirements and provide feedback to employees. Managers also engage in joint testing, in which two or more managers provide feedback to each other following safety testing activities. Managers conduct visual inspections of workplace and customer locations to ensure no hazards exist, and also engage in Safety Walkabouts described above. Managers provide mentoring and coaching to employees regarding safety standards, and assist with training new hires during orientation. Select managers utilize locomotive event recorder data and video analysis to monitor whether employees comply with operating rules and practices. Additionally, Road Foremen perform inward facing camera audits to ensure compliance. WHSCs assist in supervision and monitoring by participating in hazard identification, escalation, and correction.

Safety Performance. CP's commitment to safety is reflected in its record-setting performance against two of the FRA's leading safety metrics. CP has achieved the lowest FRA train accident frequency of all large railroads for 15 years straight, and in July 2021, announced that it set a new record all-time low for any large railroad for a calendar quarter. CP's reportable accident rate has fallen 80 percent since 2013, as shown in Figure 2.

FIGURE 2

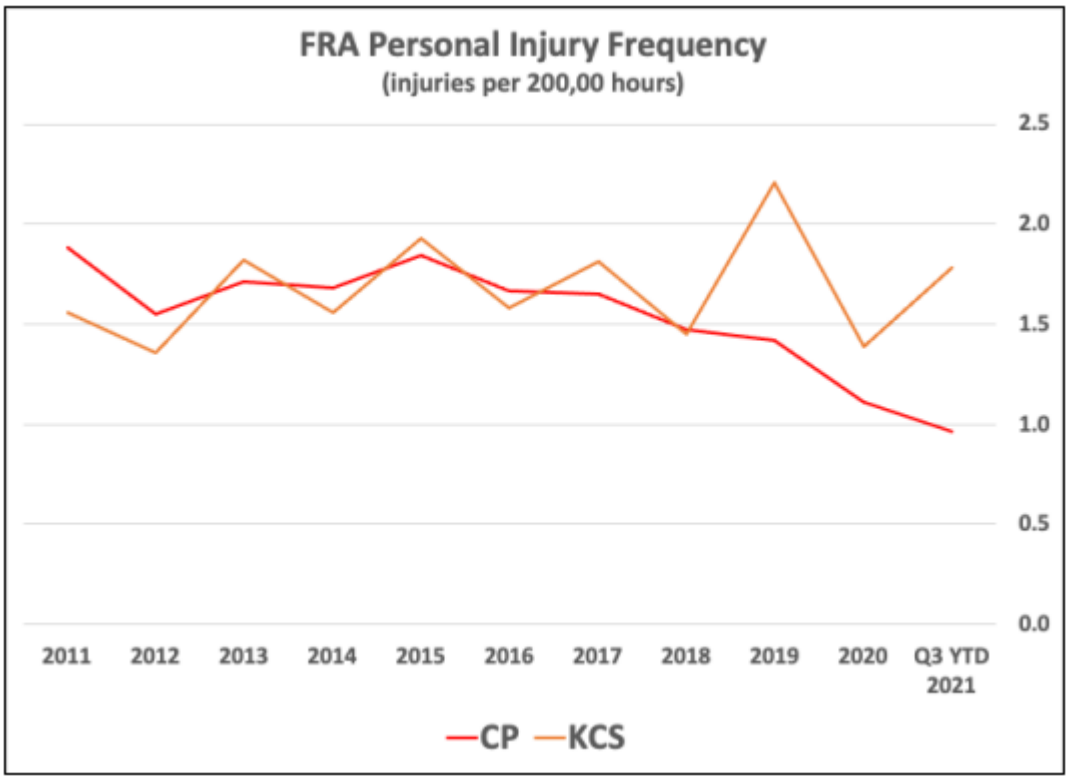
CP SAFETY PERFORMANCE



CP has also achieved steady improvement in the key FRA personal injury frequency metric, as shown in Figure 3 below:

FIGURE 3

CP SAFETY PERFORMANCE



Risk Reduction Program. Separate from the Application, and as required by 49 C.F.R. § 271, CP filed its Risk Reduction Program Implementation Plan ("CP Risk Reduction Plan") prior to the FRA deadline of August 16, 2021. Per regulation, all Class I railroads are required to develop a Risk Reduction Plan. The CP Risk Reduction Plan is designed to be implemented as part of CP's overall SMS. CP's Executive Vice President of Operations will serve as the Risk Reduction Program's Chief Official, and is responsible for overseeing the Risk Reduction Program. CP's Managing Director of Safety will manage the Risk Reduction Program. The CP

Risk Reduction Plan covers topics such as overall objectives, roles and responsibilities, and hazard management for CP's Risk Reduction Program.

2. Focus on Safety at KCS

Safety is the foundation for KCS operations. KCS is similarly deeply committed to operating a safe railroad. To this end, KCS has built a strong corporate culture focused on safety and has instituted a number of supporting safety programs. At KCS, safety is first and foremost, and KCS approaches safety as an obligation rather than an option. KCS always demonstrates its commitment to safety for its employees, customers, contractors and others. KCS's goal is to achieve the highest level of safety performance while meeting or exceeding regulatory standards.

KCS's executive leaders care deeply about their employees and regularly demonstrate the value of safety through their actions. As expressed in KCS's Vision, Values & Culture statement, safety is its most important value. Each year, the Chief Operating Office and Chief Safety Officer together set enterprise goals for safety improvement; achievement of those goals is a critical component of variable compensation for the operations teams. Also, the "President's Award" ranks the Injury Frequency Rate for each operating function (i.e., Transportation, Engineering and Mechanical) by location, recognizing each top-performing group with the Vice President's award, and the overall top performer with the President's award. The KCS Health, Safety, Security and Environmental Statement, publicly available on its website, further affirms top leadership's commitment to, among other things, workplace and public safety.

KCS's Vice President, Health, Safety, and Environmental, leads KCS's Health, Safety, and Environmental group within KCS's Operations Department. This group consolidates occupational health, workplace and public safety, Critical Incident Desk ("CID"), and Environmental, Social, and Governance reporting functions in both the United States and Mexico under a single

management head who is a peer to the Vice Presidents of Transportation, Mechanical, and Engineering Department. These reporting functions work together in the Operations Department and report to KCS's Chief Operating Officer.

In an effort to continuously improve its safety performance, KCS reorganized its safety department in 2021, increasing and realigning its staff of field safety managers. Previously, three subject matter experts (one each for mechanical, transportation and engineering) in the U.S. and the same number in Mexico were responsible for Safety Department responsibilities across the network for their specialty. Following the reorganization, 12 cross-functional field safety managers (six of whom work in the United States) are strategically placed throughout KCS's U.S. and Mexican enterprise. Each safety professional is responsible for all Safety Department responsibilities for his/her assigned territory. These highly trained and experienced safety professionals promptly respond to incidents and assist with investigations, attend all safety committee meetings, routinely audit for hazards, identify mitigation strategies and assure they are implemented, perform operational testing, assist with operational testing plans, are familiar with people, facilities, and safety concerns on a local level, have a deep and personal responsibility for safety on his/her territory, maintain relationships with local managers, front-line workers, and union leadership, and otherwise are a consistent and reliable safety presence for the assigned section of KCS's railroad.

These safety professionals report the Assistant Vice President for Safety in the United States, who reports to KCS's Vice President of Health, Safety and Environmental ("HSE"). Through this organization, KCS strategically manages safety assets through the U.S. and Mexico to provide support to all parts of the cross-border network. KCS's HSE team also includes hazmat

preparedness and response, internal safety reporting, compliance programs, public safety, and critical incident personnel.

At the core of KCS's safety administration is its Health, Safety, Security & Environment Management System ("HSSE MS"), which sets out KCS's safety policies and procedures. The HSSE MS was initially designed in compliance with the American Chemistry Council's ("ACC") Responsible Care Management System 2013 Technical Specification, and the KCSR rail network is certified by an independent, accredited auditing firm as a Responsible Care partner company. HSSE MS uses a risk-based hazard analysis approach to evaluate and prioritize identified potential hazards. Key areas in which KCS monitors risks include workforce health and safety, community awareness, emergency response, product safety, pollution prevention, and security. KCS uses standardized methods to evaluate and continually improve the HSSE MS. The HSSE MS covers topics such as KCS's expectations about how to conduct audits, continuous improvement plans, and safety committee meetings. Most recently, KCS has taken the further step of evolving its Safety Management System to make it International Standards Organization compliant, which KCS aims to accomplish by the first quarter of 2022. KCS continuously improves work practices in consultation with its works and their representatives.

KCS educates and empowers its employees to work safely. Through its *One Team: Living a Speak Up Culture* initiative, KCS fosters an environment of learning and growth by soliciting, embracing, and positively acting on relevant information from all workers so that opportunities are promptly addressed and relationships are strengthened. Among other benefits, the initiative is shifting the safety culture from "compliant" to "committed," as employees learn to speak up confidently and receive feedback in the spirit of continuous improvement. KCS also administers or facilitates a number of other initiatives to promote safety, including:

- CIDs in both the United States and Mexico, 24/7 call service centers that KCS personnel may use to report service interruptions; the Desk also makes phone calls to give important safety-related updates;
- a trained hazardous materials response team;
- safety tariffs that shift the costs of hazardous materials cleanup to customers whose negligence has resulted in spills, incentivizing customers to better secure their cargo for transport;
- safety-related compensation goals for executives;
- local safety committee meetings that allow workers to discuss and resolve concerns with safety conditions and to escalate unresolved issues to KCS's Network Safety Steering Committee, which includes the Vice President for Health, Safety, and Environmental; and
- 50 internal dashboards that allow KCS to dissect and detect trends in safety data.

KCS developed the Transportation, Engineering, and Mechanical ("TEaM") Training Center in the U.S. (Shreveport) and the Technical Training Center in Mexico (TEaM Capacitacion Mexico). These centers offer certification and training programs for all operations groups, both on-site and remotely, as business needs require. Due to the COVID-19 pandemic, many training programs were moved to virtual settings in 2020, but the important work continued:

- In 2020, the TEaM Training Center provided 12,110 employee training hours in the U.S., covering safety, operating rules, and proper work practices.
- In 2020, the KCSM Operations Training Group provided 46,442 employee training hours in Mexico, covering safety, operating rules, and proper work practices.

From 2017 to 2020, KCS's reportable train accidents per million train miles steadily decreased from 3.68 to 3.09, a 16% improvement.[2] KCS has safety committees at every major location on its network. These committees have monthly meetings to discuss safety issues at that location. Some larger locations, such as major yards, will have separate committees for specific functions. For example, at Shreveport there are separate committees for mechanical, engineering, and transportation, with a terminal committee that coordinates for the entire location. These committees are required by law in Mexico but in the United States they are a mix of negotiated agreements with unions and KCS practice, and are required by KCS's HSSE MS. Safety concerns that are not promptly resolved at a local level are referred to the Network Safety Steering Committee ("NSSC") through an escalation process. The NSSC is comprised of the Chief Operating Officer, Chief Transportation Officer, Chief Engineer, Chief Mechanical Officer, and the Chief Safety Officer.

KCS filed its Risk Reduction Program Implementation Plan ("KCS Risk Reduction Plan") with the FRA in advance of the August 16, 2021 filing deadline. The KCS Risk Reduction Plan describes KCS's safety program vision and operation. KCS's U.S. Vice President Health Safety and Environmental will be the KCS Risk Reduction Program's Chief Official. The KCS Risk Reduction Plan covers topics such as overall objectives, roles and responsibilities, and hazard management, to name a few.

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[2] In 2017, there were 3.68 reportable train accidents per million train miles. In 2018, there were 3.40 reportable train accidents per million train miles. In 2019, there were 2.94 reportable train accidents per million train miles.

3. Safety Integration – Corporate Culture

CPKC will bring a new standard of safety to the North American rail landscape. As the Verified Statement of Keith Creel explains, CP has been the safest North American railroad for many years, and it will implement the CP/KCS combination with safety at the forefront of its goals. CP's and KCS's company cultures are complementary to one another. CP's culture of safety will integrate well with KCS's like-minded safety-oriented culture, allowing the combined system to operate at the apex of rail safety. CP and KCS's plan for integration intends to draw from the best aspects of both cultures and the best practices that reinforce the dedication for both cultures to safety. The integration plan includes integration of the following:

- *Safety Management System*. CP's SMS will become the core of the combined system three years following the Control Date. CP will assess KCS's SMS and appropriately augment CP's SMS to enhance the combined SMS.
- *Deploying CP's safety technology across the combined system*. The CP/KCS network will be supported by the infrastructure investments in signaling and line capacity on the core North-South mainline of the combined system. CP and KCS are actively working to plan for the safe integration of the two systems, giving attention to all of the modern threats to safe train operations.
- *Consequence Leadership Program.* CPKC will maintain CP's Consequence Leadership program, and intends to implement this program across the combined entity within two years following the combination.
- *Home Safe*. Consistent with CP's current practice, CPKC will continue CP's Home Safe Program, and train employees of all crafts and locations in line with CP's Home Safe practices.

- *WHSC.* CPKC will adopt CP's WHSC structure within the first year following the combination to facilitate a seamless transition of safety reporting across the combined entity.
- *Risk Reduction Program*. CPKC will adopt CP's Risk Reduction Program by 2024. CP and KCS developed their respective Risk Reduction Programs with integration in mind, and CP and KCS are committed to ensuring safety and compliance are adhered to before integration of the respective programs is complete.
- *Efficiency Testing and Manager Accountabilities*. CPKC will adopt CP's program within three years. CP relies heavily on its efficiency testing program to identify focus areas that require supervisor validation, and coaching opportunities to correct or reinforce existing work practices and ensure compliance with regulatory requirements.

B. TRAINING

1. Training at CP

CP's Technical Training department ("Training Department") is comprised of a dedicated team of safety-minded, professional Training Instructors. CP's Training Instructors are committed to the development of each employee's ability to perform to their highest level of proficiency within their respective craft. CP's state of the art training facility is located in St. Paul, and is CP's main location for major training in the United States. The facility has ten Training Instructors and houses six training rooms and two locomotive simulators. Three additional Rules Instructors are located at remote locations across the network to supplement major training or offer safety and training programs that do not require the use of CP's main training facility.

To facilitate their professional development, CP's Training Instructors are encouraged to participate in continuing education to enhance their technical training abilities. Examples of

continuing education include university course work, completion of certification programs, and computer software skill coursework. Focusing on improvement for CP's Training Instructors increases the quality of delivery for participants in CP's training programs.

In total, CP Training Instructors deliver more than 100 training courses and programs. Training Instructors lead the majority of these programs which are comprised of three categories: safety, rule, and technical training. To enhance the learning experience, many programs include computer-based training ("CBT") and simulations. Simulations are beneficial as they allow employees to engage in realistic activities while maintaining a controlled environment, can be repeated as needed until employees are able to demonstrate knowledge and understanding, and prepare employees for real-life situations they may encounter outside of training or may experience once promoted.

Internal instructional designers or contractors with instructional design credentials design the training programs. Design processes are mapped and reviewed, and train-the-trainer sessions are conducted for all new courses. CP records training results in its Learning Management System and retains them in accordance with regulatory requirements. The Learning Management System allows CP to access historical information and enables appropriate managers to generate reports and monitor progress. Additionally, CP submits its in-house training program to the FRA as 49 C.F.R. § 243 requires.

All training is organized into cycles in alignment with federal requirements. CP provides training programs for the following employees:

Employees who perform train and engine service. CP's Training Department delivers all new hire employee training. New hire Conductor candidates receive classroom training covering all aspects of the Conductor roles and responsibilities. During the course training, each candidate

is required to pass examinations related to operating rules and practices, safety, federal regulations, and hazardous materials. Each examination requires a passing score of 90 percent. The classroom training includes multiple days of simulated training that focuses on job tasks such as paperwork completion, radio communication with various craft employees such as Dispatching and Engineering employees, proper job briefing, and rules compliance. Prior to beginning on-the-job training ("OJT"), new hire Conductors will participate in field exercises and receive critical task sign-off by Training Instructors. During OJT, management will perform evaluation rides with each candidate to validate performance and ensure the employee is on track or ready for promotion.

CP's Training Department also delivers all Locomotive Engineer training programs. Locomotive Engineer students receive instruction on locomotive operation, machinery, air brake systems, relevant FRA regulations, General Code of Operating Rules ("GCOR"), safety, hazardous materials, train handling, track and train dynamics, PTC, and distributed power operations, where required. A minimum score of 90 percent is required on all mechanical and operating rule examinations.

Type II Simulators are incorporated into the Locomotive Engineer training program to connect the theory of practice with hands-on experience. These simulations place the candidate at the controls of a variety of trains operating over different territories. Each simulation introduces the candidate to a rule or practice, and includes instructor oversight and a lecture on proper operation and execution.

Locomotive Engineer trainees are required to perform OJT for a set duration or amount of throttle time. Each candidate participates in evaluation rides with a designated supervisor of Locomotive Engineers who is responsible for validating performance and ensuring the employee is on track or ready for promotion.

Remote Control Operator candidates receive a total of 80 hours of training, including classroom and OJT. The candidate must complete an examination and achieve a passing grade of 90 percent. OJT is conducted under the direction of a qualified Remote Control Operator. A designated supervisor of Remote Control Operators performs an evaluation ride to evaluate whether the candidate is eligible for promotion.

All promoted Conductors, Remote Control Operators, and Locomotive Engineers in the United States receive recertification training and testing within a period not to exceed 36 months as required by regulation.

Employees who inspect and maintain track and bridges. Prior to beginning a rules-qualified position, each Engineering employee attends a four-hour class covering the U.S. Rulebook for Engineering Employees and Timetable Special Instructions, which includes current General Orders. After completing the class, each employee must pass a comprehensive examination with a minimum score of 90 percent.

Engineering employees receive training on FRA track safety standards with a program developed with requirements sourced from CP's Engineering Red Book of Standards and federal regulations. In addition, engineering employees receive training on CP's Standard Practice Circulars, which contain construction standards, best practices and work methods, as well as the Engineering Red Book requirements, which provides Track Inspectors, Track Foremen and other qualified track maintenance staff with specific track standards in a clear and readable format.

Engineering employees who perform track maintenance receive training on various topics including:

- on track safety ("OTS");
- lockout / tag out procedures;

- use of respirators;
- hazardous communication;
- crane operation;
- basic machine operator orientation;
- 49 C.F.R. § 213 awareness;
- track basics and confined spaces; and
- field orientation on the use of tools and basic track components.

Track inspection training at CP includes an FRA-approved seven day track inspection training program, a track maintenance Foreman course, a Foreman leadership skills course, and periodic supervisor best practices workshops. The track inspection course includes classroom training on roadbed and track structure, rail, turnout inspection, track geometry, records input, movement over rail breaks, plan reading, shimming, continuous welded rail, and handling of vehicle track interaction exceptions. The course also includes a hands-on practical where the trainee identifies defects in a track, inspects turnouts, and plots a curve. All new Track Inspector trainees' complete a task-based checklist to ensure feedback is received on their performance. At intervals throughout the training, management performs validation checks to ensure the employee is in compliance with performance standards and on track for completion of the program. The track inspection course must be recertified every three years.

Employees who inspect, maintain and repair any type of on-track equipment, including locomotives, passenger cars, and freight cars of all types. All mechanical car and locomotive employees receive CP Training Department classroom instruction, which covers the GCOR, safety, and other duty specific rules and best practices. Training also covers topics such as job briefings, blue flag protection, hazard communication, annual safety, emergency response, rail

security, and fall protection. After participating in the classroom instruction, each employee is required to pass a comprehensive examination with a minimum score of 90 percent.

CP qualifies all mechanical employees who inspect, maintain, or repair locomotives or freight cars through a combination of Designated Instructor-led classroom-based training, OJT, and CBT under the direct supervision of a Qualified Person. Competency evaluations are conducted by a Designated Instructor. Designated Instructor-led classroom-based training is facilitated through CP's training center located in Saint Paul, Minnesota, and OJT and qualification checks are conducted in each candidate's respective location throughout the network.

Candidates participate in a training program which utilizes periods of directed OJT under the direct supervision of a Qualified Person accompanied with Designated Instructor-led classroom-based training. The program is designed for candidates to develop fundamental skills and competencies, consolidate OJT learning in a Designated Instructor-led classroom-based environment, and graduate to advanced topics upon demonstrating competency of the fundamental learning objective. OJT tracking and progress is facilitated through the use of an application deployed in all facilities, which is used by each candidate's respective supervisor. Qualified management provide sign-off using OJT checklists, required by 49 C.F.R. § 243, which are utilized to ensure trainees can perform the tasks required by their positions.

Employees also receive training specific to their duties covering topics such as:

- freight car inspection;
- locomotive service inspection;
- electrical and mechanical safety;
- track mobile operations (including remote operation);
- utility vehicles;

- shop track operations program (fueling and sanding locomotives); and
- dimensional load measuring and reporting, and FRA equipment safety inspections.

Mechanical Machinists and Electricians receive an extensive training curriculum that covers aspects of inspection and maintenance of locomotives. This training covers topics such as:

- trucks, body, air brake systems;
- draft gear; and
- fuel systems, cooling system, electrical systems, and PTC.

Dispatchers or Operators. CP's Training Department delivers all Train Dispatcher training. The Train Dispatcher training program is up to 20 weeks long and covers GCOR, Timetable Special Instructions, Train Dispatcher Manual, General Operating Instructions, and OTS. Candidates must pass periodic quizzes and receive a score of 90 percent or higher on a promotional exam. Training includes use of the train dispatching computer systems, train control simulation exercises, OJT, and a territory familiarization trip for the candidate's training territory. Train Dispatcher trainees receive simulation training before working on the desk to become familiar with required tasks and controls of the job. Candidates spend multiple weeks on the various subdivision desks working under the guidance of that day's dispatcher—in this program, they perform all facets of the job.

Train Dispatchers are required to pass a GCOR rules exam biannually with a score of 90 percent or higher. In addition, Train Dispatchers attend daily job briefings to ensure they understand any rule changes and any operational abnormalities.

Employees who inspect and maintain signal and train control devices and systems and employees who maintain or upgrade communication systems affecting rail operations. CP's Training Department delivers all signal and communication training programs. Signal Maintainer

trainees attend class in St. Paul, Minnesota where they learn in a training lab, which includes all of the necessary equipment with which a Signal Maintainer must be acquainted. As part of the training, Signal Maintainer trainees simulate trouble calls and make adjustments in an effort to build proficiency. Each employee receives ten weeks of training delivered in classrooms or on-site locations. This training covers numerous topics such as track circuitry, crossings, signalized control methods, and PTC. Employees also receive training specific to the equipment and control systems present on the territories where they will be working.

Job-specific training includes topics such as:

- crane operation;
- fall protection;
- software management control protocols;
- radio and wayside interface training;
- signal and communication standards;
- grade crossing maintenance; and
- trackside warning detectors.

To ensure continual compliance with safety and knowledge standards, CP has an internal efficiency testing system, which is customized for Signals and Communications employees to ensure targeted knowledge-based training.

Hazardous materials personnel, including information technology personnel who affect the transportation of hazardous materials. CP prioritizes training programs for personnel handling dangerous goods and hazardous materials. In the United States, employees covered by DOT's hazardous materials regulations receive hazardous materials training. This includes train crews, dispatchers, engineering maintenance of way employees, mechanical employees, and

customer service staff who produce waybills. This training covers general awareness, familiarization, function specific items, safety training, and rail security training.

Select field managers also attend the Transportation Technology Center in Pueblo, CO, to receive specialized hazardous materials training.

Supervisors of Employees. CP trains its craft supervisors on topics such as:

- job briefings;
- safety training;
- GCOR or OTS rules;
- hazardous materials, hazard communication, and emergency response;
- air brake and train handling;
- switching operations fatality analysis; and
- rail security awareness.

Supervisors must complete efficiency test training in order to conduct efficiency tests in the field. The training covers testing, manuals, and data entry. The training also includes a hands-on piece, which includes exposure to qualified managers entering test results into the compliance management program. Training sessions are followed by OJT in the field with an experienced manager. Final qualification is determined by an experienced manager and reported to the Manager of Rules on the appropriate document.

2. Training at KCS

KCS has a similarly robust set of training programs offered through sites in the United States and Mexico, as well as virtual options. All programs comply with regulatory requirements but also go above and beyond to make sure the workforce is adequately prepared for the array of

challenges they may face. KCS also submits its in-house safety training programs to the FRA under 49 C.F.R § 243.

KCS's catalog of training programs contains hundreds of courses, almost all of which are safety-related. KCS's Technical Training and Organizational Development Group is responsible for the development and delivery of training across KCS's network and reports to the Assistant Vice President of Organizational Development and Employee Relations.

Employees who perform train and engine service. KCS training staff provide formal classroom training, written examinations, and informal training on an ongoing basis to ensure safe operations and rules compliance. Training classes include: operating and safety rules, air brake and train handling, system timetable, system special instructions, emergency response, PTC, Conductor training, Locomotive Engineer training, and Remote Control Operator training.

Initial Locomotive Engineer training in the United States includes five weeks of classroom training and 17 weeks of training with an experienced engineer. Initial Hostler Helper training in Mexico consists of five weeks of classroom training and 12 weeks of training with an experienced Hostler Helper. Subsequent promotions to Hostler, Yard Engineer and Road Engineer require the same classroom and field training as the initial Hostler Helper course. Classroom training is provided at the TEaM training center in Shreveport or San Luis Potosi. All field training is conducted at the trainee's home location.

Initial training for Conductors in the United States includes four weeks of classroom training and 12 weeks of field training with an experienced Conductor. All new Yard Brakeman in Mexico receive five weeks of classroom training and 12 weeks of field training. Subsequent promotions to Yard Foreman, Road Brakeman and Conductor require the same classroom and field

training as the initial Yard Brakeman. Classroom training is provided at the TEaM Training Center in Shreveport or San Luis Potosi. All field training is conducted at the trainee's home location.

All promoted Conductors, Remote Control Operators, and Locomotive Engineers in the United States receive recertification training and testing within a period not to exceed 36 months as required by regulation.

Safety focus blitzes, operations testing, peer coaching and CBT all provide learning opportunities for transportation employees. Testing and observation continue to be an integral part of these programs.

Employees who inspect and maintain track and bridges. All KCS bridge inspectors must successfully complete formal bridge inspection training as provided by KCS. All Track Inspectors (Track Supervisors, Roadmasters and Division Engineers) on KCS are trained on FRA track inspection standards and receive OJT. The Track Inspectors attend FRA track inspection classes that are offered in-house by KCS instructors. Division Engineers provide oversight, records review, and coaching of inspectors to help ensure that high standards are maintained.

Below are some examples of training programs KCS provides to Engineering Department employees:

- GCOR, safety, lone worker, and roadway worker protection;
- fork truck, platforms, man lifts, and ladder safety;
- lockout / tag out procedures and electrical safety;
- crane safety, rigging, and fall protection;
- job briefings, hazard communication, and emergency preparedness;
- CPR / first aid and fire extinguisher training; and
- hazardous materials.

Employees who inspect, maintain and repair any type of on-track equipment, including locomotives, passenger cars, and freight cars of all types. New hire mechanical employees attend rules and safety training at the TEaM Training Center in Shreveport or San Luis Potosi. Based on a three-year topic rotation, the TEaM Training Center also delivers annual Occupational Safety and Health Administration ("OSHA") and OSHA refresher training.

All KCS Carmen must attend an apprentice program delivered by the Railroad Education Bureau ("REB") based in Omaha, NE. The apprentice training program contains 108 lessons, which must be completed within three years as a condition of employment. The apprentice training program complies with FRA regulations.

Locomotive employees at KCS also participate in a formal apprentice program for both Machinists and Electricians through REB. This program also contains 108 lessons, which must be completed within three years as a condition of employment, and complies with FRA regulations.

In order to meet the new training requirements of 49 C.F.R. § 243, all newly hired employees receive OJT checklist assignments, which are specific to each job to ensure they are meeting knowledge and skill levels required for those positions.

Mechanical employees returning to work after having been off for an extended period of time due to injury, illness, discipline or other reasons will also receive manager consultation with any required rules training and / or OJT prior to returning to full duty.

Below are some examples of training programs KCS provides to Mechanical employees:

- operating and safety rules / PTC;
- lockout / tag out procedures and electrical safety;
- emergency preparedness, job briefings, and hazard communication;

- CPR / first aid and fire extinguisher training;
- fall protection, crane safety, and rigging;
- fork truck safety, platforms, man lift, and ladder safety;
- Qualified Mechanical Inspector; and
- Locomotive Mover.

Dispatchers or Operators. New Train Dispatchers participate in a ten-section, 64-hour class which covers all aspects of dispatching and the Train Dispatch Manual. The course includes use of home study modules and as well as a Train Management and Dispatch System simulator for virtual real-world training and assessment. Each candidate is required to participate in on-the-job training under the direction of a qualified dispatcher, which runs for no less than 60 days. Additional training time may be allowed based on railroad assessment. Each week, Train Dispatchers are required to submit an evaluation form for student dispatchers to management.

During the training phase, and when possible, student dispatchers take road trips on the territories or districts for which they will have dispatching responsibility. Upon completion of each road trip, student dispatchers are required to submit a review of their findings to the supervisor.

Train Dispatchers are also required to attend and complete an annual rules class which covers rules related to GCOR, air brake and train handling, train dispatcher manual, hazardous materials, PTC, passenger train emergency preparedness, roadway worker rules, and safety rules. Each course is four to eight hours.

Employees who inspect and maintain signal and train control devices and systems and employees who maintain or upgrade communication systems affecting rail operations. Signal employees receive the same rules training as other Engineering Department employees as

identified above. All new employees also attend Signal Training School for a six-week training course. The course covers basic to advanced signaling. KCS suppliers also provide product-specific training as new products are approved and become available. Remedial training is also offered on a case-by-case basis. Employees and contractors who maintain or upgrade communications systems and equipment on or adjacent to the right-of-way are trained annually in OTS, as Roadway Workers, and Watchmen / Lookouts, and every other year on hazardous materials and GCOR. Changes to the operating rules are communicated through General Order, and all GCOR qualified personnel are required to have copies of all active and current General Orders in their possession prior to fouling track. New employees and contractors are prohibited from fouling the track until they have completed the necessary OTS and/or GCOR classes.

Hazardous materials personnel, including information technology personnel who affect the transportation of hazardous materials. Applicable KCS employees receive hazardous materials training at least once every three years. The course has been customized based on the area of responsibility and complies with the applicable federal regulatory requirements. Applicable Transportation, Engineering, and Mechanical Department employees are provided traditional classroom training and testing. Testing is an integral part of both classroom and CBT.

Supervisors of Employees. Supervisors are expected to attend training equivalent to the individuals under their supervision. In addition, supervisors will receive periodic Management Development Training. Management Development Training includes training in areas such as safety leadership, safety fundamentals, drugs and alcohol, time management, regulatory reporting, operations testing, and derailment prevention.

3. Safety Integration – Training

CP realizes the importance of training and is dedicated to applying the focus and attention necessary to ensure a seamless transition when CP and KCS are combined. Given the remarkable job creation projected as a result of the transaction, CP has analyzed the current estimated maximum training levels at both railroads. Collectively, CP and KCS provide initial training to approximately 540 new hires and re-certifies 2,225 employees each year.

As noted in Table 1 below, in the 36-month period following combination, the projected initial training requirement does not exceed 304 employees in any given year. This equates to only 56% of the average training counts provided by both railroads today. Additionally, it has been determined that each railroad will be able to manage peak training beyond the average initial training provided. For example, in 2021, CP alone is expected to deliver initial training to almost 500 employees, which is substantially higher than the expected initial training needs for CPKC in a typical year. This highlights CPKC's ability to accommodate increased training demands and maintain world-class training for all employees.

TABLE 1

CPKC JOB GROWTH PROJECTIONS

CPKC Job Growth Projections	Job Creation Counts		
	Year		
Role Description	**1**	**2**	**3**
Car Mechanical	28	35	47
Engineers	126	71	113
Locomotive Mechanics	10	10	0
Signals Maintainers	4	4	5
Track Maintainers	8	17	34
Trainmen	119	65	105
Total	295	202	304

To ensure continued safety, CPKC will also monitor staffing requirements and make adjustments to staffing, where necessary.

CPKC's training will continue unabated. Applicants expect the training centers located in St. Paul and Shreveport to remain open as their locations in the network will aid in efficient training across the combined system.

Immediately following the Control Date, CPKC will maintain separate training programs while KCS training staff are brought up to speed with CP training material and processes. CP and KCS each deliver quality training programs that meet or exceed applicable federal requirements. To ensure uniform training exists across the CPKC U.S. network, KCS will adopt CP's training programs and methodology. This will enable efficient internal and external oversight, as delivery will be the same at each location across the new property.

CPKC will also work to identify a comprehensive list of differences between CP and KCS safety and operating rules for employees in Train and Engine, Engineering, Dispatching, Mechanical, and Signal and Communication roles. Once the differences are appropriately assessed, a comprehensive package of rules will be developed and delivered to each KCS craft as needed.

Post-Control Date, CPKC intends to consolidate both Mechanical and Engineering qualification programs and using CP's programming and standards. CPKC programs will meet requirements set forth by the FRA. CPKC will use the FRA-approved CP training program for qualifying new Inspectors and also use a course to retrain existing track Inspectors every three years. This requalification system also meets the requirements set forth by the FRA.

To promote a positive training experience, CP will also assess technological differences that exist between each railroad. CP will look to expand use of its Smart Board system and other

CBT methodologies. These decisions will be based on varying needs and the overall information system review.

Train the trainer sessions will be conducted as needed to familiarize training staff with new content and ensure consistent delivery. CPKC will provide appropriate support and guidance to training staff while delivering new material. The timelines surrounding delivery will be based on the complexity of differences found during the review, training of KCS staff, and timelines associated with rulebook alignment.

C. OPERATING PRACTICES

1. Operating Rules

a) Operating Rules at CP

At CP, responsibility for operating rules and practices falls under the Corporate Risk umbrella. The Manager of Rules – U.S. ("MOR"), based in St. Paul, is responsible for developing, implementing, and enforcing operating rules, OTS Rules, Timetables and Special Instructions, and General Orders. The MOR function reports to the Director of Operations, Standards and Rules. The MOR also oversees CP's Operational Testing Program (pursuant to 49 C.F.R. § 217.9), which has been filed with the FRA. This program contains safety tests and efficiency tests, both of which are performed by field supervisors and documented in CP's Compliance Management system. If an employee fails these tests, this information is communicated to the relevant employee and CP undertakes corrective measures to ensure proper understanding. Progress is monitored closely and completion is compared against pre-defined quarterly standards. Minimum manager requirements are assigned by position and are detailed within CP's 49 C.F.R. § 217.9 Efficiency Testing program.

CP's Manager Operating Practices – U.S. ("MOP") is responsible for developing, implementing, and enforcing rules related to air brake and train handling, conductor and engineer certification, and remote control operations. This position works directly with ten designated supervisors of locomotive engineers, who are located across the United States and are strategically spaced to execute annual monitoring and other federally required activities. The MOP also provides oversight to CP's Random Inward Camera Audit program, which utilizes state-of-the-art in-cab audio, video, and event recorder systems to monitor operations rule compliance. Information regarding the certification of locomotive engineers and conductors is covered later in the Operating Practices section.

Both MOP and MOR positions work closely with the training center to ensure the delivery of current and relevant content and interact with employees in the field to provide uniform interpretation of rules.

CP uses timetables, tabular general bulletin orders, and other circulars to provide operating instructions to operations employees. CP makes updates to rulebooks by General Order or MOP notice. CP groups General Orders by letter. A-Orders are applicable to all employees and contain the following nine streams: Designated Clinics, Utility Radio Instructions Manual, Safety Manual Changes, Manuals in Effect, USHMI, PTC Instructions, Mechanical Safety Manual Changes, Engineering Safety Manual Changes, and Rule Changes. MOP Notices are divided into four streams: Remote Control Locomotive Changes, Technical Bulletins, Positive Train Control Operating Instructions, and General Operating Instructions ("GOI") Changes.

Rulebooks are available on CP-provided electronic devices through an application called "E-Binder." This application allows the Operating Practices and Rules team to deliver newly created or modified rules information to Operating Crews expeditiously.

CP utilizes the following rulebooks and documents to inform its employees, create a safe work environment, and give its employees the information that they need to remain compliant with federal regulations, operating rules, and safety rules:

- GCOR 8th Edition, effective April 1, 2020;
- GOI, effective September 15, 2013;
- Chicago Operating Rules Association Guide in the Chicago Terminal for movements over foreign line railroads;
- Timetable, dated March 25, 2021;
- U.S. Rulebook for Engineering Employees (OTS Manual) in compliance with 49 C.F.R. § 214, effective January 25, 2021;
- Train Dispatcher and Control Operator Manual, which supplements operating rules and procedures;
- Safety Rules and Recommended Practices/Safe Work Procedures for Intermodal, March 2014;
- Train & Engine Safety Rule Book, May 2013;
- Mechanical Safety Book, May 2017;
- Engineering Safety Book, January 2014;
- U.S. Hazardous Material Instructions for Rail, November 2015;
- General Managers Notices; and
- Superintendent Bulletins.

b) Operating Rules at KCS

The Operating Practices group at KCS helps ensure the highest degree of safety and productivity in day-to-day operations. The Operating Practices group is responsible for developing, implementing, and enforcing the Operating Rules, Safety Through Awareness and Responsibility ("STAR") Rules, Air Brake and Train Handling Rules, System Timetables, and System Special Instructions, as well as the Program of Operational Testing and the Locomotive Engineer Certification Program.

KCS has adopted a modified version of the GCOR, and also maintains its own safety rulebook, the STAR Rulebook, which addresses safety rules for all crafts. KCS maintains separate rulebooks for handling hazardous material, air brake and train handling, on-track safety and roadway worker rules, and maintenance of way and signal department rules. KCS's core and general safety rules include rules on air brake and train handling, train dispatch, hazmat, PTC, passenger train emergency preparedness, roadway worker rules, and general safety rules. Train-specific information and restrictions are communicated to the train and engine crews through General Track Bulletins. KCS timely issues General Orders, Circulars, or Bulletins to reflect changes in the GCOR or special instructions for essential operating instructions and information. These rulebooks are updated as necessary.

In compliance with 49 C.F.R. § 217, the KCS Program of Operational Testing ensures each manager has specific testing targets for each month to evaluate employee knowledge and application of the rules. The operational test results are entered into the Operational Testing System to monitor each employee's history and identify non-compliance trends for developing action plans as needed.

KCS utilizes the follow rulebooks and documents:

- Air Brake Systems and Train Handling Rules and Instructions, effective April 1, 2020;
- OTS and Roadway Worker Rules, effective April 1, 2020;
- Maintenance of Way and Signal Department Rules, effective April 1, 2020;
- Remote Control Operating Rules, effective April 1, 2020;
- Safety Rules, effective April 1, 2020;
- GCOR 8th Edition, effective April 1, 2020;
- System Special Instructions and Instructions for Handling Hazardous Materials No. 15, Effective April 1, 2020 and Updated through General Order No. 137 effective October 29, 2021;
- Train Dispatcher's Manual, Effective April 1, 2020 and updated through Corridor Manager Circular #26; and
- System Special Instructions and Instructions for Handling Hazardous Materials No. 15, effective April 1, 2020 and updated through General Order No. 137 effective October 29, 2021.

c) Safety Integration

Applicants expect that Operating Practices governance, operational testing programs, and related rulebook information will remain separate in the early stages of safety integration. CPKC expects to continue utilizing the GCOR rules in the United States, as it was in effect with regards to each railroad prior to the combination. This will minimize integration hurdles with respect to rulebook adoption.

Following the combination, CPKC will perform a comprehensive review of all other operating rules and practices to determine the best fit for the combined company. This review includes Air Brake and Train Handling, Remote Control Operations, Train Dispatcher instructions, System Timetables and Special Instructions, and hazardous materials, as well as the other rulebooks listed above. To ensure proper communication and efficient integration, CPKC's Operating Practices and Rules team will work closely with the Training Department team during an interdepartmental review to ensure that chosen rule sets and training programs are properly aligned. Once the comprehensive review is complete, CPKC will move toward one common set of Operating Rules and Practices.

Applicants anticipate that CPKC will retain each railroad's established Operational Testing program, at least in the near term, following the combination. Applicants anticipate amalgamating Operational Testing programs, with timing dependent on other integration decisions, such as information systems and organizational structure. CPKC will ensure that the consolidation of its Operational Testing program will align with federal requirements and be filed with the FRA as required. CPKC will also ensure that affected employees receive appropriate training.

CPKC will implement a standard format for the communication of rule changes across the United States. To accomplish this, CPKC will perform a review of the processes used by each railroad to update, modify, or otherwise communicate Operating Rules and Practices information to employees. Once complete, CPKC will provide the training necessary to bring employees up to speed on delivery processes and adopted rules.

Finally, CPKC will monitor rules performance throughout the integration process and make adjustments necessary to ensure safe operations. CPKC will carefully consider existing rules before making modifications, and will ensure that it is providing sufficient training to employees.

CPKC will also keep FRA apprised of rule consolidation plans, when necessary, and provide updated rulebooks when consolidation occurs.

2. Alcohol and Drug

a) Alcohol and Drug Program at CP

CP is committed to the safety and health of its employees and the general public and complying with DOT's drug and alcohol testing requirements, including the FRA's Control of Alcohol and Drug Use regulations set forth at 49 C.F.R. § 219. CP's Designated Employer Representative ("DER") manages CP's Federal and Company Regulated Drug and Alcohol Programs.

In accordance with applicable federal regulations, CP's drug and alcohol programs apply to individuals regulated by the federal hours of service laws, i.e., covered employees as defined at 49 C.F.R. § 219.5, as well as roadway workers, i.e., maintenance-of way employees as defined at 49 C.F.R. § 214.7.

Canadian Pacific prohibits:

- Alcohol and drug use as defined by 49 C.F.R. § 219.101
- Abuse of controlled substances as defined by 49 C.F.R. § 219.102

CP's established programs also require employees to submit to the following tests when appropriate:

- urine screens to detect the presence of marijuana, cocaine, opioids, phencyclidine, and amphetamines;
- breath alcohol tests to detect the unauthorized use of alcohol; and

- breath, urine, blood and tissue (fatality) testing after qualifying FRA post-accident events.

There are numerous situations when Federal drug and/or alcohol tests must be administered for the railroad to be in compliance with 49 C.F.R. § 219 and 49 C.F.R. § 40. Personnel performing these functions will be required to submit to a drug and/or alcohol test in the instances set forth, as follows:

- Pre-employment testing (49 C.F.R. Part 219, Subpart F)
- Reasonable suspicion testing (49 C.F.R. Part 219, Subpart D)
- Reasonable cause testing (49 C.F.R. Part 219, Subpart E) (CP performs federal reasonable cause testing when applicable)
- Post-accident testing (49 C.F.R. Part 219, Subpart C)
- Random testing (49 C.F.R. Part 219, Subpart G)
- Return to duty and follow-up testing (49 C.F.R. Part 40, Subpart O)

Supervisors responsible for regulated employees are trained in the signs and symptoms of alcohol and drug influence, intoxication, and misuse, and how to properly identify such circumstances, and in the determination of whether or not an accident or incident meets the qualifying criteria for post-accident toxicological testing contained in 49 C.F.R. Part 219, Subpart C. Training methods are both computer-based and instructor-led programs.

CP has developed and published educational materials, specifically designed for regulated employees, that clearly explain the requirements of 49 C.F.R. § 219.23. Each regulated employee will be given information concerning the available methods of intervening when an alcohol or controlled substance problem is suspected. This information is accessible to each regulated employee through the CP's intranet site and upon hire.

Additionally, resources and programs are available to any employee who is affected by an alcohol or substance use problem. CP's internal policies encourage employees to self-report alcohol and drug abuse problems, and to report employees who appear to be unsafe to work with due to the possible use or misuse of prohibited drugs and/or alcohol.

b) Alcohol and Drug Program at KCS

Like CP, KCS is committed to the safety and health of its employees and the general public and complying with DOT's drug and alcohol testing requirements, including the FRA's Control of Alcohol and Drug Use regulations set forth at 49 C.F.R. § 219. KCS's DER manages KCS's Federal and Company Regulated Drug and Alcohol Programs.

In accordance with applicable federal regulations and in line with CP's practices, KCS's drug and alcohol programs apply to individuals regulated by the federal hours of service laws and roadway workers.

KCS prohibits:

- Alcohol and drug use as defined by 49 C.F.R. § 219.101
- Abuse of controlled substances as defined by 49 C.F.R. § 219.102

KCS's established programs require employees to demonstrate their safety posture with:

- urine screens to detect the presence of marijuana, cocaine, opioids, phencyclidine, and amphetamines;
- breath alcohol tests to detect the unauthorized use of alcohol; and
- breath, urine, blood and tissue (fatality) testing after qualifying FRA post-accident events.

Personnel performing these functions will be required to submit to a drug and/or alcohol test in the instances described at 49 C.F.R. § 219 and 49 C.F.R. § 40, including:

- Pre-employment testing (49 C.F.R. Part 219, Subpart F)
- Reasonable suspicion testing (49 C.F.R. Part 219, Subpart D)
- Reasonable cause testing (49 C.F.R. Part 219, Subpart E) (KCS performs company cause testing)
- Post-accident testing (49 C.F.R. Part 219, Subpart C)
- Random testing (49 C.F.R. Part 219, Subpart G)
- Return to duty and follow-up testing (49 C.F.R. Part 40, Subpart O)

KCS trains its supervisory employees to identify the signs and symptoms of alcohol and drug influence, intoxication, and misuse. The training covers the physical, behavioral, speech and performance indicators of probable alcohol misuse and use of controlled substances. The training also includes information on the qualifying criteria for post-accident toxicological testing contained in 49 C.F.R. Part 219, Subpart C, and the role of the supervisor in post-accident collections described in 49 C.F.R. Part 219, Subpart C, Appendix C. This training is instructor-led.

KCS has developed and published educational materials, specifically designed for regulated employees, that clearly explain the requirements of 49 C.F.R. § 219, as well as the Company's policies and procedures for meeting those requirements. These educational materials are provided to each regulated employee hired for or transferred to a "regulated" position and will be accessible to each regulated employee in the future via the internet.

Additionally, each regulated person is provided access to resources concerning the misuse of alcohol or controlled substances and available methods of intervening when an alcohol or

controlled substance problem is suspected, including referral to an employee assistance program and/or referral to management personnel.

c) Safety Integration

Post-Control Date, CP's and KCS's drug and alcohol programs will operate independently. Recognizing the importance of having a combined program, CPKC will move towards consolidation of the two programs. To accomplish this, CPKC's drug and alcohol program management team will perform a full review of both programs to determine the best course for safe integration and continued compliance. CPKC will ensure all regulated service personnel, both supervisors and employees, are adequately trained on the applicable aspects of 49 C.F.R. § 219.11 and 49 C.F.R. § 219.23 so that CPKC's consolidated program and policy is fully compliant with federal regulations. CPKC will also test international crews when required. The timing for this integration depends on other integration timelines, such as the integration of the human resources department and other information systems.

3. Qualification and Certification of Locomotive Engineers and Conductors

a) Qualification and Certification at CP

49 C.F.R. Part 240. CP's Manager of Operating Practices – U.S. is responsible for developing, implementing, and maintaining operating practices required by 49 C.F.R. Part 240. The FRA prescribes minimum safety standards for eligibility, training, testing, certification, and monitoring of locomotive engineers to ensure that only qualified persons operate a locomotive or train. In response, CP has submitted to the FRA, and the FRA has approved, a comprehensive program which meets or exceeds each minimum FRA standard.

With respect to persons not previously certified, the Student Engineer Training Program is designed to run for a duration of up to 26 weeks. During this Program, classroom training must comprise a minimum of three-and-a-half weeks, and OJT must comprise a minimum of 12 weeks or 480 hours of throttle time, though this timeframe may be adjusted depending on experience. During classroom training, candidates are required to pass exams and simulator evaluations with a score of 90 percent or higher. During OJT, candidates receive a minimum of three evaluation rides with a Designated Supervisor of Locomotive Engineers ("DSLE").

Remote control operators receive a total of 80 hours of training in order to be certified. This consists of two days of classroom, two days of field training, one day of review and testing, and 40 hours of OJT. Each candidate must pass a final exam with a score of 90 percent or higher. Each candidate receives a skills performance evaluation administered by a Designated Supervisor of Remote Control Operators ("DSRCO").

Continuing education is provided for certified Locomotive Engineers and Remote Control Operators during each 36-month certification cycle to ensure these employees maintain the knowledge necessary to perform their duties. Recertification requires classroom training and passing a written exam with a passing score of 90 percent or higher.

CP requires that DSRCOs and DSLEs have at least two years of experience operating as a Locomotive Engineer or Remote Control Operator to be eligible for a supervisorial designation. Both designations require the employee to maintain yearly qualifications over the territory they supervise and to receive continuing education on an annual basis.

49 C.F.R. Part 242. CP's Manager of Operating Practices – U.S. is responsible for developing, implementing, and maintaining operating practices required by 49 C.F.R. Part 242. This federal regulation prescribes minimum safety standards for the eligibility, training, testing,

certification and monitoring to ensure that only persons who meet minimum federal standards serve as Conductors. CP has submitted a comprehensive program to the FRA, which the FRA has approved, and this program meets or exceeds each minimum FRA standard.

The new hire conductor program is designed to run for up to 23 weeks with a minimum of five weeks of classroom training. OJT training lasts up to 18 weeks, depending on the candidate's competence and work location. CP requires student conductors to complete rules exams and achieve a passing score of 90 percent or higher. Each candidate receives a minimum of three evaluation rides with a field placement coordinator or manager to ensure their skills support certification.

Continuing education is provided for certified Conductors during each 36-month certification cycle to ensure these employees maintain the knowledge necessary to perform their duties. Recertification requires classroom training and passing a written exam with a passing score of 90 percent or higher.

b) Qualification and Certification at KCS

49 C.F.R. Part 240. KCS's Assistant Vice President ("AVP") Operating Practices is responsible for developing, implementing, and maintaining operating practices required by 49 C.F.R. Part 240. In regards to this requirement, KCS has submitted a comprehensive program to the FRA, which the FRA has approved that meets or exceeds each minimum FRA standard.

Student engineers, who are not previously certified, receive training and are tested in compliance with regulations. This training includes five weeks of classroom training and a minimum of 500 hours of locomotive operation under the direction of a certified engineer. To become certified, student engineers must successfully pass oral and written exams as well as a

simulator check ride. The student engineer must also pass a check ride over his/her territory as determined by a Road Foreman of Engines.

Remote Control Locomotive ("RCL") operators receive two-and-a-half days of classroom training, which includes exams. Students complete both classroom and field testing and are evaluated to ensure performance standards are met. The field training, classroom instructions, and final exams total 80 hours of training. RCL operators are also reviewed annually by a DSRCO to maintain their certification.

KCS also certifies, through an FRA approved program, some KCSM employees to allow trains to be operated on the approximately 9.2 miles in the United States between the Laredo International Rail Bridge and the Laredo Yard.

Continuing education is provided to Locomotive Engineers and Remote Control Operators during each 36-month certification cycle to ensure these employees maintain the knowledge necessary to perform their duties. Recertification requires classroom training and passage of a written exam with a score of 90 percent or higher.

KCS requires that DSCROs and DSLEs have at least two years of experience operating as a Locomotive Engineer or Remote Control Operator to be eligible for a supervisorial designation. Both designations require the employee to maintain yearly qualifications over the territory they supervise and require continuing education on an annual basis.

49 C.F.R. Part 242. KCS's AVP Operating Practices is responsible for developing, implementing, and maintaining practices required by 49 C.F.R. Part 242. In regards to this requirement, KCS submitted a comprehensive program to the FRA, which the FRA has approved as meeting or exceeding each minimum FRA standard.

New hire Conductors without previous experience are required to complete a minimum of 80 hours of classroom training, covering numerous subjects such as safety rules, operating rules, timetable instructions, applicable federal regulations, and hazardous materials. OJT is conducted with input from a qualified instructor and will last a minimum of 240 hours. Training occurs under the direct supervision of a person who possesses necessary operating experience.

Employees who have worked for the railroad in other capacities (i.e., who have had previous training on the railroad's operating and safety rules) may receive an abbreviated training curriculum based on the evaluation of their proficiency by a qualified instructor. These employees must also complete certain certification requirements.

Continuing education is provided to certified conductors during each 36-month certification cycle to ensure these employees maintain the knowledge necessary to perform their duties. Recertification requires classroom training and passing a written exam with a passing score of 90 percent or higher.

c) Safety Integration

For a period following the combination, Applicants expect that CPKC will continue operating with the above-referenced program submissions to the FRA. During this time, CPKC's Operating Practices team will perform a thorough review of 49 C.F.R. Part 240 and 49 C.F.R. Part 242. Timing will be dependent upon the integration efforts described above in Sections III.B (Training) and III.C.1 (Operating Rules), as each area has the potential to influence certification requirements of 49 C.F.R. Part 240 and C.F.R. Part 242. The consolidated filings will detail CPKC's certification practices and will meet or exceed applicable regulatory requirements. CPKC will obtain FRA approvals where required.

While this review is underway, CPKC's Operating Practices team will also perform a thorough review of 49 C.F.R. Part 240 and 49 C.F.R. Part 242. After this review is conducted, CPKC will generate a combined filing to meet the requirements of 49 C.F.R. Part 240 and 49 C.F.R. Part 242. The new submissions will cover certification practices for the newly formed railroad, and the plans will meet regulatory requirements and acquire federal approval where required. This will ensure full compliance with all applicable laws.

4. Hours of Service Laws

a) Hours of Service at CP

Train Crews. CP utilizes the Crew Management Application ("CMA") system to capture all time on duty, limbo time, and rest cycles of operations employees. The CMA operates in real-time, and employs the use of local rules and regulatory requirements to determine when to call employees to work. The CMA is capable of calling employees automatically and is integrated into other train management applications for managing and monitoring train and crew operations.

CP provides train line-up information to crews through Voice Response Units ("VRU") and internet interfaces, which employees can access from home. Information is updated in real-time as the data in CMA changes. Each system allows employees to identify their position in the pool or extra board, review applicable vacancies, and retrieve planned train schedules. Train accuracy information is recorded and is made available to appropriate stakeholders on an interactive dashboard. All Hours of Service ("HOS") violations are reported to the FRA as required by regulation.

Collective bargaining agreements lay out structured work and rest cycles, depending on assignment and work location. If collective bargaining agreements do not cover rest requirements, HOS requirements are still followed.

Signals and Communication. Signals employees record their HOS information in an electronic tracking system called RailDocs. The system contains an internal reporting functionality that provides visibility to hours worked and HOS violations. All HOS violations are reported to the FRA as required by regulation.

Dispatchers. Regularly assigned Train Dispatcher positions are bulletined and have assigned hours of work and rest each week. Train Dispatchers on the Extra Board are provided two days of rest per week and a minimum of eight hours of notice when called to work on their rest days. For known vacancies, if a regularly assigned Train Dispatcher is required to work on their scheduled rest day, every effort is made to advise them that they will have to work before the day starts.

In addition, the Operations Center Management team considers collective bargaining agreement requirements when building Train Dispatcher schedules. Train Dispatchers are required to enter their time into a Systems, Applications and Products ("SAP") system and hours are monitored by Operations Center management. All HOS violations are reported to the FRA as required by regulation.

b) Hours of Service at KCS

Train Crews. In the United States, KCS documents, monitors, and reports train crew HOS compliance electronically using Enterprise Workforce Management ("EWM"). EWM is a contracted service provided by PS Technology. This program aligns with FRA regulations and ensures compliance for events such as:

- final release cannot be more than three minutes in the future and the employee may not certify a final release time for a current tour of duty that is in the past;
- the employee must have on-duty status to certify any FRA record; and

- Federal rest will be based on a rolling 24-hour period instead of a calendar day.

Train Dispatchers. In the United States, KCS documents, monitors, and reports Train Dispatcher HOS compliance electronically, utilizing EWM. Requirements for accuracy and compliance of Train Dispatchers can be found in the Train Dispatchers manual.

Signals and Communications. In the United States, KCS documents, monitors, and reports Signalmen HOS compliance electronically, utilizing RailDocs, a Wabtec corporation contracted service. Requirements for accuracy and compliance of covered service Signal employees can be found in the Signal department's Rules Standards and Instructions ("RS&I") manual.

c) Safety Integration

CP and KCS are both subject to federal HOS requirements, and each railroad employs compliance processes that meet or exceed those federal requirements. Immediately following the combination, CPKC expects to maintain separate HOS tracking while evaluating available options for moving toward a single unified process. The evaluation will be conducted with insight and feedback from members of affected departments, namely Crew Management and Information Systems, which will steer the direction of HOS tracking at CPKC. CPKC will ensure that HOS integration occurs without disruption while maintaining compliance with applicable federal regulations.

D. MOTIVE POWER AND EQUIPMENT

1. Motive Power and Equipment at CP

CP utilizes eight major locomotive inspection and repair facilities across its network, one of which is located in the United States. The U.S. facility is located in St. Paul. At the St. Paul facility, Locomotive Mechanics, Electricians, and Laborers perform regular inspections,

maintenance, servicing, and repair of locomotives. CP ensures that all repairs comply with federal regulations and manufacturer warranty service agreements. Locomotives are delivered to the nearest facility when they require repairs or become due for scheduled inspections and maintenance.

CP maintains owned and leased freight cars at 20 locations across the network. Three of these locations, St. Paul, Bensenville, IL, and Davenport, IA, are located in the United States. Defective equipment identified en route is repaired by road trucks at designated repair locations filed with the FRA as required by 49 C.F.R § 232. Additionally, CP has other minor freight car and locomotive maintenance locations for U.S. branch lines where light repairs are performed.

Qualification standards for CP employees who inspect, maintain, or repair railroad freight or passenger cars and locomotive meet or exceed federal standards, and the applicable trainings and programs are described in detail above in Section III.B (Training). CP uses a combination of Designated Instructor-led classroom-based training, OJT, and CBT to qualify all mechanical employees who inspect, maintain, or repair locomotives or freight cars. Further, all mechanical car and locomotive employees receive instruction covering the GCOR, safety, and other duty specific rules and best practices.

2. Motive Power and Equipment at KCS

KCS utilizes two main locomotive maintenance facilities which are located in Shreveport and San Luis Potosi. Locomotives can reach either of these two shops within 48 hours of failure. In the United States, the majority of unscheduled repairs and scheduled work occurs at the Shreveport facility. KCS also maintains locomotive service tracks in various locations throughout its network in United States and Mexico. These locomotive service tracks can perform minor

running repairs and servicing such as fueling, sanding, daily inspections, and locomotive derailment response.

KCS has nine main car repair shop facilities in the United States where car repair and service work is performed. In addition, there are seven locations that are equipped with repair tracks, mobile wheel trucks, or some combination thereof. Together, these locations assist KCS in providing timely repair and service to on-track equipment. KCS ensures that all service and repair work complies with federal regulations.

Qualification standards for KCS employees who inspect, maintain, or repair railroad freight or passenger cars and locomotive meet or exceed federal standards, and the applicable trainings and programs are described in detail above in Section III.B (Training). For example, new hire mechanical employees attend rules and safety training at a KCS TEaM Training Center in either Shreveport or San Luis Potosi, and all KCS Carmen must attend an apprentice program delivered by the REB based in Omaha. Locomotive employees at KCS also participate in a formal apprentice program for both Machinists and Electricians through REB.

3. Safety Integration – Motive Power and Equipment

Following the combination, Applicants expect the mechanical facilities in St. Paul and Shreveport to remain the primary locations for locomotive maintenance. CPKC does not anticipate making any changes to mechanical repair locations within the first year following control of KCS. Once operations are integrated and established, CPKC will perform assessments, if necessary, to determine if any changes to network repair and service locations are needed. CPKC will consider equipment differences and intends to repair and service locomotives at all locations across the

combined system. Given the similarities that exist between the CP and KCS equipment that would be serviced on a combined system, Applicants do not anticipate any issues in this area.

Qualification standards for mechanical and locomotive personnel will remain separate for a period following the combination, though CPKC expects to adopt CP's qualification standards. To accomplish this, CPKC will perform a comprehensive review of qualification programs as described above in Section III.B (Training). Employees will be provided with the training necessary to account for any differences in the previous programs. The timelines associated with the adoption of CP practices will be dependent upon the training practice and rules review discussed above in Sections III.B (Training) and III.C (Operating Practices), as well as prioritization of other integration work in relation to safety impact.

E. SIGNAL AND TRAIN CONTROL

1. Signal and Train Control at CP

CP employs over 4,000 miles of CTC, Automatic Block Signal System ("ABS") as a method of train control across the system. Over 1,100 miles of this signaled track is located in the United States. CP's Minneapolis office manages train dispatching (CTC, ABS, Track Warrant Control ("TWC")) in the United States. The disaster recovery system is also located within the United States.

CP's signal system is based on FRA rules and requirements. It is comprised of wayside signals, train detection equipment, switch machines, electric locks, relay-based interlocking, vital microprocessors interlocking, and wayside detectors (i.e., high water, slide detectors, level crossing warning systems, communication systems, yard controllers, power systems and fiber optic systems). CP has implemented signal and communications equipment throughout its network, including approximately 3,242 total crossing warning systems (1,348 of which are

located in the United States, while the remaining 1,894 are located in Canada),[3] 4,251 total miles of CTC, 702 miles of ABS, and 4,943 miles of Occupancy Control System ("OCS") / TWC.

CP's signal system meets all FRA, vendor, and industry best practices and requirements. All vital signal equipment is compliant with the American Railway Engineering and Maintenance-Of-Way Association ("AREMA") standards. All signal systems are also designed, installed, commissioned and maintained in a manner that ensures compliance with CP's Redbook of Requirements and Standard Practices. The wiring of new signal equipment is completed by qualified staff internally and by third-party vendors. CP has a multi-year plan to upgrade aging signal equipment prior to end of lifecycle. In addition, CP has a Signals and Communication Wayside Reliability Lab where the testing and qualification of new signal equipment and technologies is performed.

All signal engineering is performed by qualified individuals using industry best practices. CP uses the regulatory testing compliance tool RailDocs to ensure equipment is maintained at applicable standards. Signal system reliability issues are managed by CP's engineering service desk, which is located at CP's Canadian headquarters. The engineering service desk tracks all system issues, and dispatches appropriate personnel to ensure all system failures are repaired. CP S&C field employees are Efficiency tested per FRA and CP standards**.** Furthermore, employees that are considered covered service employees under FRA regulations have their hours documented and monitored for compliance in the RailDocs Hours of Service system. CP also ensures all Federal Communications Commission requirements for radio licensing are followed.

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[3] The Crossing Warning System numbers change frequently as crossing warning systems are added or removed from service.

CP PTC System. In accordance with U.S. regulations, CP implemented the Interoperable Electronic Train Management System ("I-ETMS") for its PTC system. PTC technology, in conjunction with existing train control systems, functions as an overlay to existing signal systems to prevent train-to-train collisions, over-speed derailments, incursions into work zones, and movements through an improperly lined main track switch in dark territory.

CP's PTC operations are based in its Minneapolis head office, both for Back Office System and dispatching functions. CP's PTC system has met all regulatory requirements and has been certified for mixed-mode service since December of 2020. In addition to its own 806 locomotives that are now PTC-equipped, CP also ensures compliancy by its tenant railroads. With an eye toward continuous improvement, CP is an active participant in numerous PTC committees, including AREMA Committee 39.

CP has successfully installed PTC on 24 subdivisions with over 2,100 miles of PTC track, and has equipped over 800 locomotives. CP identified a PTC test subdivision in 2012 and developed a plan to equip the subdivision with PTC, perform PTC locomotive certifications, and perform PTC revenue demonstration runs. CP amended its PTC safety plan and submitted a mixed mode PTC safety plan to the FRA in June 2020. Since then, CP has received full certification from the FRA. CP has worked closely with the rail industry to ensure interoperability success with each of its tenant and host railways. CP continues to participate in various Association of American Railroads ("AAR") committees, the purpose of which is to enhance the PTC system to provide additional functionality and safety. CP typically operates more than 200 PTC train segments per day and over 1,800 PTC train miles per day.

CP has a 24/7 PTC help desk located in Calgary at its international headquarters. With the goal of keeping train operations efficient and safe, the help desk provides support, triages incidents

and monitors the system. In addition, CP has one designated PTC repair facility in the United States, which is located in St. Paul.

2. Signal and Train Control at KCS

KCS manages the signal and train control function across its United States and Mexican network from facilities in Shreveport and Monterrey, Mexico respectively. The communications function is managed within the information technology department at KCS. This group maintains a radio shop in Shreveport for its U.S. radios, Automatic Equipment Identification ("AEI") systems, and other wayside equipment.

The KCS network includes approximately 2,514 miles of CTC and 2,511 miles of TWC. Of the approximately 2,511 miles of TWC, about 1,163 miles are equipped with Broken Rail Detection and 65 miles are equipped with ABS. KCS's communications infrastructure consists of a combination of leased and owned technologies, including fiber optic, microwave, data radio, and copper circuits. KCS uses a combination of owned and leased facilities to ensure a comprehensive critical communications function. The KCS signals and communications network includes 313 radio base stations (132 of which are in the United States, 181 of which are in Mexico), approximately 1,600 automatic highway grade crossing warning systems, 1,220 power switches, and 160 miles of KCSM-owned fiber along the right-of-way. The fiber along the KCSR right-of-way is not owned or used by KCS. KCS has a multi-year plan to upgrade signal equipment prior to end of lifecycle.

KCS maintains centralized CIDs in Kansas City and Monterrey for S&C incident reporting, including any signal outages for which it needs to dispatch S&C personnel. KCS has a network of approximately 351 wayside inspection systems along its lines in the United States and Mexico, consisting of integrated Wheel Impact Load Detectors, Hot Box Detectors, and Dragging

Equipment Detectors. To enable the proactive identification of any potentially emerging problems, alarm condition information is immediately conveyed to train crews, using radio talkers, and to a central network computer.

KCS utilizes other electronic detection systems as part of its safety technology, including highway grade crossing power monitoring in high-risk areas along with bridge strike, and high water alarm detectors integrated into the PTC systems where deployed.

KCS Signal RS&I describe in detail the processes and procedures necessary to perform the inspections and tests mandated by the FRA. KCS has implemented electronic documentation and scheduling of tests, using laptop computers.

As noted above in Section III.B (Training), KCS signals personnel receive training compliant with 49 C.F.R. Part 243. New hires (assistant signalmen) attend signals training school at FRA-accredited Signal Training Solutions in Grain Valley, MO prior to OJT, development, and certification. Rail tasker software is used to track the progress and qualifications of employees who receive annual or biannual refresher trainings common to all of the engineering department functions on conventional safety, GCOR (biannual), track safety, and roadway worker protection.

KCS PTC System. The FRA approved and certified KCS's Mixed PTC system in July 2021. Like CP, KCS uses the I-ETMS PTC system developed by Wabtec Railway Electronics ("Wabtec"). It operates in conjunction with the Wabtec Train Management Dispatch System ("TMDS") system that KCS uses for dispatch.

KCS's use of PTC has improved safety, achieved interoperability with its tenants, and satisfied the regulatory requirements. The goal of KCS is to deliver the highest quality technology solutions, building on the backbone that enables PTC. KCS is advancing a number of opportunities to automate existing processes, streamline interdepartmental communications, upgrade outdated technology and components to leverage the latest functionality, and visualize its data across the company to drive business decisions. Some of the examples are listed below:

- Brake Event Analysis Tool
    - Through a machine learning model, KCS leverages logs pulled off the locomotive and trackside devices to automatically determine the root cause for locomotive braking events. This reduces the burden of log investigation for the Operations Center and the field. The information is used to continually improve the safety and reliability of PTC.
- Centralized Repository for PTC Component Logs and PTC System Logs
    - Provides a single hub for all KCS operations and PTC data that can be utilized to:
        - automate regulatory reporting requirements;
        - detect systematic problems spread across multiple applications/data sources; and
        - provide operations and field departments with visualizations of current and historical performance data so appropriate action can be taken.
- Automated System Error Monitoring/Alerting

- KCS utilizes several different monitoring platforms to automatically alert signals management when certain errors/events occur including:
  - wayside and locomotive issues;
  - federation links between KCS's partner railroads; and
  - server/Applications utilization and processing.

- Security
  - KCS is compliant with all security requirements for certificates making it secure on the Interoperable Train Control Messaging platform.
- Change Automation/Configuration Management Database ("CMDB") updates for PTC Locomotive Components
  - KCS manages locomotive PTC hardware upgrades by leveraging live locomotive data. This enables KCS to have records of component replacements, thus satisfying regulatory requirements while keeping its CMDB current with the latest installed hardware.
- Autonomous Change Detection – Track Assets
  - KCS has improved auditing and maintenance of track assets in the field, and is increasing safety by reducing the amount of time spent under track warrant authority. KCS has the ability to quickly generate artifact reports to the FRA. Autonomous change detection also has benefits outside of PTC assets with KCS's engineering, real estate, and environmental departments.

KCS remains active with all the industry committees to ensure that it stays in line with any and all interoperable requirements or future enhancements that impact the functionality of PTC.

3. Safety Integration – Signal and Train Control

Applicants expect that the CP and KCS portions of the CPKC system will continue to operate with independent systems on the Control Date. Members of CP's and KCS's signal and operations teams will lead the planning and implementation of the integration. In particular, this group will meet to determine which processes, standards, and systems are most appropriate for CPKC. The team is currently developing a detailed plan to integrate S&C design, maintenance, and construction activities, as well as systems and processes. This includes the integration of the PTC systems. Once the most suitable systems, processes, and standards are identified, this group will make a plan for the safe integration of these systems. This plan will include milestones or checkpoints to determine progress and maintain focus on safety during integration. The plan will also include considerations for testing prior to implementation and back-up procedures to ensure a safe and seamless operation. The plan will maintain compliance with all federal regulations. CPKC will meet with the FRA to ensure compliance with regulatory requirements.

CP will select a new site for data center operations in the United States to host computer systems, including PTC back office and dispatch systems. Current back office and dispatch systems will be migrated to the new site as part of the merger integration scope.

Applicants plan to integrate Signal and Train Control within three years of the Control Date. During the transition period, CPKC's S&C team will have access to all relevant regulatory compliance systems, such as the RailDocs regulatory database and HOS systems. In addition, the team will have access to applications that provide the health status of S&C systems, ensuring regulatory compliance and safe operations.

F. TRACK SAFETY STANDARDS AND BRIDGE STRUCTURES

1. Track Safety Standards and Bridge Structures at CP

Bridges and Structures. CP maintains policies and processes governing the inspection and maintenance of bridges, retaining walls, tunnels, and culverts. These are contained within CP's Engineering Red Book and BMP. CP's inspection of structures meets or exceeds FRA regulatory inspection frequency requirements, and CP employs risk-based protocols to increase the frequency of inspections of bridges and structures as deemed necessary.

Employees inspect bridge and structures' assets for any unusual conditions or changes since the asset's last inspection. If the initial inspection indicates any issues, such as those involving deteriorating timber or high water, railroad bridge engineers determine whether to perform a more detailed inspection or to increase the frequency of inspections over that asset. A more detailed inspection may include taking measurements, taking core samples on timber piles, monitoring the bridge for movement, measuring the thickness of bridge members, and inspecting underwater for evidence of scouring from high-velocity water movement.

CP utilizes special bridge inspection vehicles, which are hi-rail vehicles equipped with a moveable inspection platform. CP bridge inspectors use this platform to access difficult to reach areas of the structure to perform visual inspections as well as take any necessary measurements and photos. Employees are trained based on the requirements of the BMP and use checklists to record inspection results electronically in CP's SAM Program. Inspection records attach photographs where necessary and include condition ratings of individual structural components and overall bridge condition ratings that correlate to the safe load capacity of the structure being inspected.

Employees performing routine bridge inspections receive bridge inspection certification training, while structures specialists are generally either engineers or individuals who have, at minimum, a technical degree from a community college.

Track Infrastructure. CP maintains policies and processes governing the inspection and maintenance of track assets in a manner that meets or exceeds FRA regulations, as detailed in CP's Engineering Red Book. Visual Track inspection frequencies meet or exceed all required regulations. CP has standard protocols for additional special inspections in times of extreme temperatures (hot or cold), flooding, or severe weather.

CP records compliance with inspections frequencies and completed inspections in its electronic system of record, called DTN. This allows management to track and review all inspections and allows for all defects to be recorded, monitored, and closed with remedial actions noted. CP is currently upgrading and replacing DTN with TAM, which has been implemented in some CP territories.

Earthquake Response Protocol. CP's earthquake response protocol minimizes potential consequences of an earthquake on train operations by stopping or slowing rail traffic until the condition of the right-of-way can be assessed. This includes immediate notifications to the field and CP's Operations Center when set thresholds, based on magnitude and distance from the identified epicenter, are exceeded.

Weather Monitoring. CP subscribes to a weather watch service to assist in determining when train operations might be affected. CP has timetable special instructions to slow-order trains during very hot and very cold weather, as well as instructions for severe weather warnings.

Hotbox detectors are equipped with temperature sensors, and the crews are notified by the hotbox "talker" system of the local temperatures. Established procedures govern maximum train speeds during times of extreme hot or cold temperatures.

Track and Roadway Maintenance and Testing. CP owns and employs a fleet of sophisticated technology and testing vehicles to measure and analyze track conditions. The testing and data collected regarding infrastructure conditions are utilized to perform immediate maintenance actions and informs annual capital investment strategies. When geometry defects are identified by any of CP's testing vehicles, the location is Global Positioning System ("GPS") tagged, and employees can locate the exact position of any defect using hand-held GPS devices. In 2021, CP will complete approximate 180,000 miles of geometry testing on its network.

A summary of CP-owned geometry testing assets is provided below:

- one manned Heavy Geometry Testing consist (equipped with gauge restraint measurement system);
- three Autonomous Heavy Geometry Measurement System vehicles (instrumented boxcars operating in revenue service);
- three Heavy Geometry Inspection Vehicle truck (Hi-rail truck, also equipped with rail profile measurement);
- one Light Geometry Inspection Vehicle truck (with load axle and rail profile measurement); and
- three Light Geometry Inspection Vehicle trucks (geometry only).

Internal Rail Flaw Detection. CP utilizes ultrasonic test vehicles for rail flaw detection. CP's approach includes a mix of five owned vehicles operated by CP staff with additional vehicles used on a contract basis. CP performs rail flaw testing at frequencies well above the regulatory

requirements and anticipates completing 72,000 miles of testing in 2021. The Engineering Red Book includes requirements for rail flaw testing completed on maintenance rail.

Rail Grinding and Friction Management. CP uses preventative rail grinding and friction management techniques to control surface cracks before they become internal flaws and to improve the reliability of ultrasonic rail testing. Depending on tonnages carried, rails are re-profiled through grinding from one to four times annually in order to control wheel/rail contact stresses, eccentric loading, and vehicle steering. Each year CP grinds approximately 14,000 miles of track across its entire system.

Automated Tie Inspection. CP employs hi-rail mounted high-definition digital infrared 3-D imaging technology to inspect tie condition. This is a contract service that CP utilizes to validate planned tie renewal projects and to identify any regulatory defect issues.

Training and Qualifications. For information about training and qualifications standards for roadway workers, *see* above Section III (Training Programs).

2. Track Safety Standards and Bridge Structures at KCS

Bridges and Structures. KCS's engineering department has a director of bridges who oversees maintenance, inspections, and bridge construction with a team of approximately 125 craft and management employees in the United States and Mexico. KCS uses BIMS in the United States and Mexico as a repository for bridge inventory, inspection cycles, and rating conditions, which allows supervisors access to real time inspection and trending data. The maintenance of bridges is planned and conducted by incorporating conditions observed through the inspection process and by performing condition load ratings as required.

The inspection of bridges is conducted in conformity with the KCS Bridge Safety Program, which complies with 49 C.F.R. Part 237. In conformity with the KCS Bridge Safety Program,

inspections are performed when special circumstances such as earthquakes or floods warrant, and are in accordance with optimal railway engineering procedures. KCS bridge inspectors attend AREMA-sanctioned or-accredited bridge inspection training courses, or similar certified training offered through various universities.

KCS uses TOMS to monitor the repair of defects found during inspections for bridges in the United States. The TOMS is housed within the BIMS system and uses an electronic workflow to monitor the progress of repairs performed by KCS or contractor crews.

Track Infrastructure. The maintenance and inspection of KCS's roadway in the United States complies with 49 C.F.R. Part 213. The engineering department's track and roadway function is organized by divisions throughout KCS territory. In the United States, division engineers are based in Kendleton TX, Kansas City, and Shreveport. Roadmasters oversee all track maintenance and inspection functions and report to the division engineers. Track inspections are performed in accordance with 49 C.F.R. § 213.233, which establishes the inspection schedule based on the FRA class of track.

KCS uses technology to make data-driven decisions aimed at eliminating hazards and reducing risks. KCS uses technology to supplement visual inspections and deploys various test cars and state-of-the-art equipment to facilitate these activities. KCS uses a third-party test car to measure track geometry and rail in compliance with 49 C.F.R. Part 213 track safety standards, and is in the process of acquiring its own Automated Track Inspection Program Car to augment track inspections. All tracks are tested at least twice per year and are analyzed for surface conditions, elevation, gauge, alignment, and railhead profile.

KCS performs extensive ultrasonic rail testing for purposes of rail flaw detection, using state-of-the-art third-party and owned technologies. KCS meets all FRA requirements under 49

C.F.R. § 213.237, and has worked extensively with the FRA recently to develop and implement a continuous rail testing program at KCS in compliance with 49 C.F.R. Section 213.240, which has provided operational efficiencies in KCS's rail testing program.

Rail grinding is performed annually across KCS's U.S. and Mexican network, with an average of over 3,000 pass miles per year ground across both countries. Grinding optimizes rail head profile, and removes rail defects caused by rail surface conditions or fatigued metal.

Training. In addition to substantive training on bridge-and track-related maintenance and inspection procedures outlined in the training section of this SIP, KCS provides annual training for all roadway worker employees. Additional classroom training is provided on continuous welded rail procedures, track inspection standards, bridge worker fall protection, and boom truck/crane training. OJT of new hires is performed by qualified personnel and the operations testing programs described above in Section III.B (Training), ensure proficiency and safety in the tasks being performed.

3. Safety Integration – Track Safety Standards and Bridge Structure

Bridges and Structures. Following the Control Date, CPKC will continue operating with the bridges and structures plans currently in place. This approach will be maintained until a comprehensive review of assets and programs is completed. After the review is complete, CPKC will incorporate inspection and maintenance software and bridge and structure processes. After the CP/KCS combination, CP's Engineering Red Book will be used by the legacy KCS organization. Employees will be trained on the Engineering Red Book and BMP and the use of risk-based protocols to increase the inspections of bridges and structures as deemed necessary.

As discussed above, CP uses SAM to input and track all bridge inspections, assets, and data, which are stored inside SAP using a linear asset management system, while KCS uses BIMS

to input bridge inspections and TOMS to monitor the repair of defects found during inspections in the United States. Post-Control Date, CP's SAM program will be adopted by the KCS portion of the CPKC network and will replace the BIMS and TOMS systems KCS is currently utilizing. This will be done after details of all the structures assets are recorded, mapped, and inputted into SAM and training is complete. The linear asset management team will determine how structures asset details are integrated.

Track Infrastructure. Following the Control Date, CP and KCS will continue operating their legacy programs while a comprehensive review is conducted. CPKC will use this review to determine what training is required and how long it will take to implement. After the CP/KCS combination, CPKC expects to move from DTN to TAM and to adopt CP's Engineering Red Book. KCS will continue to follow the guidelines of 49 C.F.R. Part 213 until training on CP's Engineering Red Book can be completed.

CP and KCS both use DTN to ensure inspection compliance. CP will continue the rollout of TAM across the CP system as a replacement for DTN. After the CP/KCS combination, KCS will continue the use of DTN in both Mexico and the United States to ensure inspection compliance. Ultimately, TAM will be adopted by KCS once the mapping of assets is complete and all employees are trained. A timeline will be established for the rollout of TAM in KCS post-Control Date. The linear asset management team will be involved in helping to develop a timeline for full implementation.

Earthquake Response Protocol & Weather Monitoring. After the CP/KCS combination, CPKC will perform a comprehensive review of earthquake response protocols and weather monitoring, and will determine what practices will be used for CPKC. The CP protocol for warm

weather and cold weather inspections will be adopted by KCS as the Engineering Red Book is incorporated.

Track and Roadway Maintenance and Testing & Internal Rail Flaw Detection. CP and KCS will continue with the programs and inspections in place at the legacy railroad while evaluating the best way forward for CPKC. This will be accomplished by performing a comprehensive review of Track and Roadway Maintenance and Testing and internal flaw detection practices, while also determining what inspection frequencies and practices are the best fit for CPKC. The timeline for full implementation of CP's methodology of rail flaw testing and geometry testing will be heavily impacted by the availability of both assets and funding. The handling of defects will be based on CP's Engineering Red Book.

Training. CP and KCS have similar training requirements for all track and structures employees as it relates to GCOR and OTS. Both also have training on continuous welded rail procedures, track inspection standards, fall protection, and boom truck/crane training. All employees are required to take annual rules training. Following the Control Date, CPKC will perform a comprehensive analysis to determine the type of training that will be required and performed at the new company. As described above in Section III.B (Training), CP's training standards will be used to train all employees to ensure all required annual training is complete. CPKC will adopt CP's new-hire training program to ensure proper training, proficiency, and safety in tasks being performed.

G. HAZARDOUS MATERIALS

1. Hazardous Materials at CP

Managing the safe and reliable transportation of hazardous materials is an important priority at CP. To ensure the safe handling of hazardous materials, CP employs various training

programs, emergency procedures, and communication and notification systems. Additionally, CP conducts periodic inspections and tests to ensure its programs are operating effectively. CP offers comprehensive training to ensure that its employees are well equipped to handle hazardous materials safely. Additionally, CP has implemented various procedures and systems to appropriately respond to any type of hazardous materials incident, including emergency situations. To ensure that hazardous materials are transported safely, CP conducts internal inspections and audits of its systems.

In the United States, training is provided to all "hazmat employees" covered by DOT's Hazardous Materials Regulations, which includes train crews, dispatchers, engineering maintenance of way employees, mechanical employees, and customer service staff who produce waybills. Training is completed on a three-year cycle in compliance with DOT requirements. Training includes general awareness, familiarization, function specific items, safety training, and security training.

Certain employees receive additional training specific to their roles. For example, select Field Managers responsible for managing or responding to hazardous materials incidents are provided technical training and incident command training applicable to their roles. Specialized training and medical monitoring is provided to CP hazardous materials officers based on OSHA and National Fire Protection Association ("NFPA") standards. Lastly, as a member of the Bureau of Explosives of the AAR, CP employees participate in the annual specialized training programs offered by AAR.

CP is committed to maintaining a safe working environment for all its employees by preventing adverse health effects from occupational exposure to hazardous controlled products used in the workplace. All controlled products used in the workplace must be identified and

handled in accordance with CP's Hazcom[4] Procedures. CP's Health and Safety Procedure is aligned with and satisfies OSHA's Hazard Communication Standard, 29 C.F.R. § 1910.1200.

The CP Public Safety Communication Centre ("PSCC") is CP's primary 24/7 communications center for coordinating with first responders across CP's network. In the United States, the PSCC coordinates with local emergency responders to address and to properly communicate reported emergencies. Additionally, the 24/7 Minneapolis Operations Center is responsible for communicating with various federal and state authorities. Anyone, anywhere on CP's network, can call the PSCC's emergency number at any time to report railroad incidents such as blocked crossings, crossing collisions, signal problems, materials released, theft, vandalism, or trespassing. Once provided with such information, the CP response organization is collectively activated, as warranted, to aid in response actions or management activities. In the case of a derailment or a spill involving hazardous materials, specified individuals within the CP response organization are immediately notified and are responsible for initiating response activities, including the commitment of CP resources.

The CP response organization is comprised of a diverse array of multi-disciplinary personnel who are available to assist local communities with emergency planning and response. For example, Regional CP HazMat Officers coordinate with local fire chiefs, local and state agencies, environmental experts, and shippers' representatives to manage the dangerous commodity/hazardous materials response activities of the railroad. Where required, CP has an

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[4] "Hazcom" refers to the Hazard Communication Standards required by OSHA regulations and other related U.S. legislation.

additional team of environmental officers who are available to manage longer-term site remediation.

Public transparency around the safe movement of hazardous materials on CP's network is an important component of CP's hazardous materials program. As part of its effort to increase transparency in this area, CP has a website dedicated to information regarding dangerous goods and hazardous materials. The website is regularly updated and contains important information for first responders and emergency planners and includes details on how to obtain the types and volumes of dangerous goods and hazardous materials moving through their respective jurisdiction.

The Integrated Contingency Plan (the "ICP" or the "Plan") is CP's all-encompassing emergency response plan for managing any emergency situation. The Plan applies to all operations involving CP property or employees and covers accidents and/or incidents that may present a potential hazard to people, property, or the environment.

The ICP is CP's primary response tool for any emergency on its network. The Plan was broadly constructed to allow CP operations to address a wide range of risks. Despite its breadth, the ICP is able to address each incident in a manner tailored to the specific needs of the event. Additionally, each major facility on CP's network has developed a written Emergency Action Plan to provide CP with a single guidance document for each applicable fixed facility operation.

In addition to the ICP, CP has prepared a Comprehensive Oil Spill Response Plan ("COSRP") in accordance with the U.S. Pipeline and Hazardous Materials Safety Administration's ("PHMSA") Final Rule for Oil Spill Response Plans ("OSRP") and Information Sharing for High-hazard Flammable Trains. A COSRP is required for any railroad with routes or route segments used to transport a single train transporting 20 or more loaded tank cars of liquid petroleum oil in

a continuous block or a single train carrying 35 or more loaded tank cars of liquid petroleum oil throughout the train.

To provide timely, 24-hour emergency response services, CP retained third-party contractors for the provision of specialized response equipment and personnel. By supplementing its in-house resources with third-party services and equipment, CP is well prepared to manage the scope of services listed in the ICP and to provide emergency response services throughout Canada and the United States.

To effectively mitigate a rail response involving hazardous materials and/or non-regulated commodities, a railroad must have the tools and equipment necessary for that particular incident. Further, this specialized equipment must be properly inspected and maintained so that it can be deployed when those assets are needed. Relying on outside resources to provide this equipment in a response-ready condition can lead to gaps or delays in having the necessary equipment on scene during an emergency. To provide better service to CP's customers, protect public safety, and ensure that the necessary equipment is available when it is needed, CP has invested in its own in-house response assets, including the following:

- **Transfer Trailers**: Large units containing the specialized fittings, pumps, transfer hoses and other equipment required to transfer a wide variety of commodities.
- **Fire Trailers**: Assets such as firefighting foam, pumps, hoses, fittings, and water bladder used for fighting fire.
- **Emergency Operations Posts**: Command posts to provide meeting/briefing location and enhanced communication capabilities.
- **Water Response Equipment**: Assets such as containment booms, ropes, buoys, anchoring systems, and deployment vessels used to contain spills in waterways.

- **Cold Water Ice Response**: Units equipped with ice suits, ropes, heaters, and tools to recover oil from frozen bodies of water.

All rail employees regularly interact with the employees of other railroads. By implementing a consistent set of rules and regulations, the safety of rail employees and communities in which CP operates is significantly enhanced. Those railroads, therefore, worked together to develop the USHMI in order to create standardized instructions for employees who transport hazardous materials.

CP was one of the railroads involved in developing the USHMI. These instructions cover all aspects of rail transportation of hazardous materials, including documentation, car inspection, placards and markings, switching, train placement, key trains, and emergency response. Train crews are trained in these instructions and are required to carry a copy while on duty. In addition, train crews and managers carry copies of the Emergency Response Guidebook while on duty. In addition, Key Trains are automatically identified in the header of the train consist lists, to ensure train crews are aware of the need for special train handling measures. Furthermore, if the train consist is modified during its route, train crews must determine their Key Train status.

CP employs numerous automated systems to monitor and document the shipment and transportation of hazardous materials. For example, Train and Yard Execution System ("TYES") is an inventory management system CP uses to track the movement of CP's fleet, build crew work orders, and generate train consists. CP also utilizes various systems and procedures to detect and report errors. For instance, CP's Car Location and Validation Service checks for the proper "in train" placement of hazardous materials. Additionally, train lists include automatically generated emergency response information for hazardous materials in the train.

As an additional component of its hazardous materials documentation program, CP utilizes an interface between the train consist program and CP's network of wayside AEI readers. The AEI readers scan tags affixed to each rail car to verify the location of the equipment and provide a listing of the order of all cars in the train. The information obtained from the AEI readers is automatically compared to the train consist, and if they do not match, a message is sent to TYES, which is monitored by both the Network Service Center ("NSC") and the field support personnel for resolution and train crew notification.

This documentation, including train consists, compressed waybills, and other documents related to hazardous materials shipments, is stored in CP's Train Documents system. Original shipping documents are also stored and cross-referenced in CP's imaging system. This information is readily accessible to CP employees for emergency response purposes, who can then provide the information to first responders in the event of an incident. Providing information related to the commodity involved in the incident and the placement (location) of hazardous materials in a train aids in the emergency response effort. In addition, the NSC obtains safety data sheet information from customers for non-regulated materials to first responders.

CP successfully utilizes existing databases to fulfill a number of regulatory reporting commitments and to share information related to hazardous materials. For example, CP leveraged an internal database to create a dataset of disparate elements particularly suited to the needs of CP's Hazmat Team's. In addition, CP is able to use the data to fulfil the hundreds of Hazardous Materials Commodity Flow studies to the communities through which CP operates, as required by AAR Circular No. OT-55 in the United States. The dataset is also used to report the weekly High Hazardous Flammable Train count to the State Emergency Response Commission and the Tribal Emergency Response Commissions of each state CP traverses, as required by the FAST Act. CP

also utilizes the dataset to determine which of its lines are designated as key routes per AAR Circular No. OT-55.

Finally, CP provides data to AskRail, a safety tool which gives emergency responders immediate access to accurate and timely data about railcar contents so that they can make informed decisions in the event of a rail emergency. Through its simple search function, AskRail gives emergency responders access to vital information, including the type of material that railcars are carrying, railway emergency contact information, and reference resources.

CP employs a variety of inspection practices and audit programs to ensure that hazardous materials are being transported safely. For example, two times per year, the NSC conducts audits of waybill data accuracy by reviewing one in four dangerous commodity waybills over a seven-day period. If any deficiencies are identified, they are reviewed with individual customers or employees. Corrective action is then implemented, and coaching is provided to improve future performance.

In addition, CP conducts a variety of efficiency tests to ensure satisfaction with the appropriate regulations and operating procedures. The U.S. efficiency testing program is designed to comply with 49 C.F.R. § 217.9. This program provides operational testing and inspections under the various operating conditions at CP, focusing on operating rules that relate to activities posing the greatest risk of accidents or other incidents. Additionally, CP conducts tests based on the requirements of the USHMI regarding required documentation, emergency response, train placement, switching, car inspection, placards/markings, and key trains.

Responsible Care® is the chemical industry's world-class environmental, health, safety, and security performance initiative, which CP uses to ensure that certain policies, practices, procedures, and inspections are in place. Developed as a voluntary initiative by member

companies of the Chemistry Industry Association of Canada and the ACC, Responsible Care partners commit to a set of guiding principles to significantly enhance employee safety, community health, and environmental sustainability in the locations in which they operate. CP is an active transportation service provider to the North American chemical industry and has long been a partner of the Responsible Care program since formally joining in 1998. In 2007, CP implemented the Responsible Care Management System ("RCMS"), an integrated, structured management system designed to improve company performance in the following key areas: community awareness and emergency response, security, distribution, employee health and safety, pollution prevention, and process and product safety. CP's RCMS system includes regular third-party verification of a member's management system and programs against the RCMS standard.[5]

2. Hazardous Materials at KCS

KCS is dedicated to working toward zero accidents, zero injuries, and zero harm to the environment and is committed to meeting the principles, practices, and obligations associated with membership in Responsible Care®. KCS has been an ACC – Responsible Care® Partner company since 1999. KCS employs a comprehensive data driven hazmat inspection program to ensure railroad hazmat transportation compliance. KCS routinely partners with local FRA hazmat inspectors to maximize corrective actions and to process improvements with its shippers.

KCS utilizes various methods to effectively communicate hazards to its employees, contractors, and emergency responders. For fixed facilities, KCS employs a written Hazard Communication Program, which inventories and describes all hazardous controlled products used

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[5] The RCMS standard is a management system standard for environment, health, safety, and security ("EHS&S"). Pursuant to RCSM, an independent auditor evaluation is undertaken every three years to ensure CP has policies, practices, and procedures in place for EHS&S.

in the workplace. In addition to providing training, the KCSR Hazard Communication Program equips each applicable employee with the knowledge necessary to access and understand detailed safety and chemical information through Safety Data Sheets.

KCS provides the following training for all railroad hazmat employees: general awareness/familiarization, function-specific requirements, hazmat safety, and security. Employees are then tested on the subjects covered in each course. Employees are retrained on a three-year cycle in compliance with DOT requirements. *See* 49 C.F.R. § 172.704. Selected managers who are responsible for managing or responding to hazmat incidents are provided additional trainings, including technical level training, specialist level training, and incident commander level training. Specialized training and medical surveillance are also provided to first responders, pursuant to OSHA regulations (29 C.F.R. § 1910.120) and NFPA standards (NFPA 472).

Additionally, KCS provides applicable employees with hazmat security plan training as required under the security plan. KCS has also developed a centralized notification process, which directs all emergency notifications to the CIDs. In addition, emergency handling instructions are included with each train consist. Lastly, all applicable employees are required to carry the DOT Emergency Response Guide Book. Copies of the Bureau of Explosives Tariff No. BOE-6000 (49 C.F.R. Parts 105–107, 109, 110, 130, 171–180, 209, 397, and 1580) are available to applicable employees upon request.

KCS has also developed a comprehensive program to communicate, notify, and respond to any release or potential release (of any quantity) of hazmat, chemical, oil or an emergency condition, accident, incident, exposure, evacuation, road closure or fire resulting from or related to such materials. As part of its commitment to public transparency, KCS employs a process that

allows first responders and emergency planners to receive information on the types and volumes of dangerous goods and hazardous materials moving through their jurisdictions for training and planning purposes. All notifications are directed to the KCS CID, located in the Kansas City, Network Operations Center. The CID is KCS's primary communications center and is responsible for coordinating with first responders and communicating with various federal, state, and local authorities. The CID operates a 24-hour emergency number so that anyone can report railroad incidents anywhere on KCS's network. The dedicated and professional staff of the CID is trained to extract, capture, and document all incident information. All incident notifications are then logged directly into the KCS Service Interruption Database. This system provides for immediate incident documentation and event tracking.

Once the information is gathered, the CID then executes internal and external notifications pursuant to the procedures laid out in the applicable plan, including the KCS COSRP, the KCS Emergency Response Plan for Hazmat and Environmental Rail Transportation Incidents, and the Local Emergency Preparedness Plans ("LEPPs") for fixed facility operations. In addition to federal, state, local, and KCS internal notifications, the KCS Environmental and Hazardous Material Department is also informed. Once apprised of the situation, the KCS Environmental and Hazardous Material Department evaluates the incident and responds appropriately.

KCS has established a system-wide network of on-call responders, blending in-house resources with fully contracted, qualified third-party emergency responders. This response network blankets every track mile of the KCS system and provides for the immediate and timely response to any hazmat or environmental incident.

Additionally, KCS has developed LEPPs for individual yards and facilities that are tailored to the applicable KCS facility. LEPPs detail employee roles and responsibilities, communication systems, response equipment, evacuation procedures, and specific emergency response actions.

KCS is an active member of TransCAER, a chemical industry program. TransCAER provides information, training, and support outreach programs for communities through which hazardous materials are transported. KCS engages in outreach efforts with community leaders and responders regarding emergency procedures for responding to incidents involving hazmat. KCS collaborates closely with states, local communities, and first responders where hazardous materials are transported to ensure that emergency response plans are established in the event of an incident. KCS shares its technical expertise with local first responders to ensure preparedness and training.

To further improve communication standards regarding hazardous materials, KCS participated in the roll-out of AskRail. AskRail is an application that was launched in 2014 by North American Class I Railroads to provide participating first responders with immediate access to accurate and timely data about hazardous materials contained in rail equipment. KCS complies with all aspects of the Routing Assessments, per 49 C.F.R. § 172.820 requiring rail carriers to, among other things, compile annual data on certain shipments of explosives, poisonous inhalation hazard materials, and radioactive materials, and to use that information to analyze safety and security risks along rail routes, assess alternative routings, and select the safest and most secure practicable routes for the specified hazardous materials.

Finally, KCS Complies with AAR Circular No. OT-55's recommended operating practices. Accordingly, KCS has identified applicable Key Routes and Key Train operating practices, as outlined in the KCS Instructions for Handling Hazardous Materials. Technology

systems are incorporated into the KCS Management Control System ("MCS") to assist in compliance with AAR's OT-55.

3. Safety Integration – Hazardous Materials

Following the CP/KCS combination, Applicants anticipate that, following an initial transition period, the KCS portion of the CPKC system will adopt many of CP's programs and systems, as described below:

- *Organizational Structure*. Following the combination, existing KCS staff responsible for their Hazardous Materials Program and emergency response will be incorporated into CP's Hazardous Materials organizational structure. As part of the merger of additional staff, CPKC will review staffing levels to determine if there are sufficient resources to manage CP's Hazardous Materials program.
- *Training Programs*. Both CP and KCS provide quality hazardous materials-related training programs that meet or exceed federal requirements. To ensure consistency in the training programs across the United States, the KCS portion of the CPKC system will adopt the majority of CP's training programs and methodology. For a period following the combination, CPKC will maintain separate training programs while KCS training staff are transitioned to CP training material and processes. During the initial integration phase, employees of both CP and KCS will work together to identify a comprehensive list of differences between the Hazcom procedures, "hazmat employee" training, and specialized emergency response training at CP and KCS. CPKC will then assess whether any aspects of KCS's training programs will be retained in the uniform training program. A uniform training program, one in which the delivery is identical

at each location across the new property, will allow for efficient internal and external oversight.

- *Emergency Response Plan*. CP and KCS each have emergency response plans that meet or exceed federal requirements. For a period following the combination, CPKC will maintain separate emergency response plans, as employees of CP and KCS work together to identify the best way to integrate emergency response plans as part of their regular review process. To ensure that uniform emergency response planning exists across the United States, Applicants anticipate that applicable KCS emergency response plans will be incorporated into CP's Integrated Contingency Planning process.
- *Emergency Response Contractor Network*. KCS has an emergency response contractor network that is well positioned to provide emergency response capabilities. Following the combination, CPKC will incorporate KCS's emergency response third-party contract resources into CP's emergency response contractor network for the combined properties.
- *Emergency Response Assets*. KCS has a finite number of emergency response assets and relies primarily on contract resources for emergency response. Following the combination, Applicants anticipate that CPKC will incorporate all KCS-owned emergency response assets into CP's response network and CP's maintenance and inspection program for the combined CPKC network. CPKC will review the capabilities of KCS's third-party emergency response contractors and determine if additional resources are required.

- *U.S. Hazardous Materials Instructions for Rail*. Both CP and KCS have USHMI based on federal requirements that covers all aspects of rail transportation, including documentation, car inspection, placards and markings, switching, train placement, key trains and emergency response. Furthermore, train crews for both CP and KCS are trained in these instructions and are required to carry a copy while on duty. For a period following the combination, CPKC will maintain separate sets of USHMIs. During this time, CP and KCS staff will work together to identify a list of differences between the USHMI for CP and KCS. Once the differences in USHMIs are identified, CP and KCS staff will work together to develop a revised USHMI for the combined CPKC network, if necessary.
- *Hazardous Materials Documentation*. Applicants expect that, following the combination, CPKC will review KCS's existing systems and processes for hazardous materials documentation. For a period following the combination, CPKC will maintain separate hazardous materials documentation systems, while KCS staff are transitioned to CP hazardous material documentation systems and processes. In addition, once CP's and KCS's hazardous materials documentation systems are fully integrated, CP's waybilling audit program will include reviewing KCS waybill information.
- *Data Reporting Systems*. Both CP and KCS have data reporting systems to meet AAR Circular No. OT-55 and High Hazard Flammable train reporting requirements. Following the combination, CPKC will review KCS's existing systems and processes for hazardous materials regulatory reporting. For a period following the combination, CPKC will maintain two separate reporting systems for hazardous materials until all waybill and train data are integrated into a single system.

- *AskRail*. Applicants anticipate that, following the combination, KCS's emergency contact information in the AskRail application will be removed, and all queries entered into the app on KCS property will be directed to CP's emergency response contact information. Once CP's and KCS's data systems are integrated, CPKC will conduct additional testing of the AskRail application to ensure that it is reporting the correct information for hazardous materials car queries and train consist queries on the integrated rail network.
- *Efficiency Testing Programs*. Both CP and KCS have efficiency testing programs to evaluate compliance with operating requirements including the requirements of the USHMI. For a period following the combination, CPKC will maintain separate processes for efficiency testing. Applicants expect to integrate efficiency testing programs based on the integration plan as outlined in the Operating Rules section.
- *Responsible Care*. Following the combination, CPKC will review KCS's last third-party verification of its RCMS. Both CP and KCS have been through multiple verifications as part of their participation in the Responsible Care program. As a result, Applicants expect that KCS's operations will be incorporated into CP's next verification cycle following the combination.

H. DISPATCHING OPERATIONS

1. Dispatching Operations at CP

CP dispatches trains from an OC based in Minneapolis, MN. Territories dispatched from Minneapolis include Soo Line, D&H, DM&E, and CMQ. CP has a second OC located in Calgary, AB. CP has two Business Continuity Facilities ("BCFs"), one in St. Paul to support the U.S.

dispatching function and one in Calgary, AB to support the Canadian function. The BCFs are regularly tested, as described below in Section III.L (Information System Compatibility).

The U.S. East Timetable and U.S. West Timetable contain specific information on dispatching for all hosted trackage. CP dispatches all U.S. main track authority from the Minneapolis OC using the following systems and process:

Track Bulletins. Train Dispatchers issue track bulletins to trains using the Tabular General Bulletin Orders ("TGBO") system. When a track bulletin is created, the TGBO system generates a protection list that advises the Train Dispatcher of all active trains that do not have the track bulletin. The TGBO system creates a list of restrictions for each active train in the order in which the train will encounter the restriction. TGBO are delivered electronically to train crews through automated and manual means.

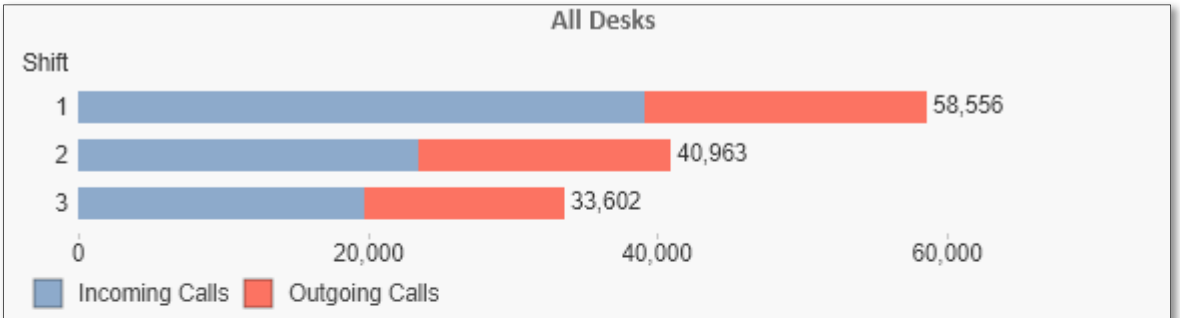
Centralized Traffic Control. Dispatchers use the CTC signal control system, which provides control of signals, switches, bridges, and certain track side devices such as switch heaters. Dispatchers monitor and control the system through a graphic display of the territory. Train and track worker authorities are issued through a text interface that is represented on a graphic screen. Authority issuance involves a two-step process: (1) an initial rules check ensures only valid choices are presented, and (2) a secondary rules check confirms accuracy upon completion of the authority. Written authorities are issued by voice and are underscored word-by-word and digit-by-digit to ensure accuracy. Authorities remain in effect until cancelled or fulfilled.

Track Warrant Control. Train Dispatchers use the system OCS-2 for the issuance and protection of train movement and track worker authorities in a non-signaled TWC territory. OCS-2 verifies continuity among authorities and tracks the position of manual switches. OCS-2 also requires the underscoring of voiced authorities, word-by-word and digit-by-digit, to ensure

accuracy. Further, OCS-2 also provides a graphic representation of all authorities in effect on a given subdivision.

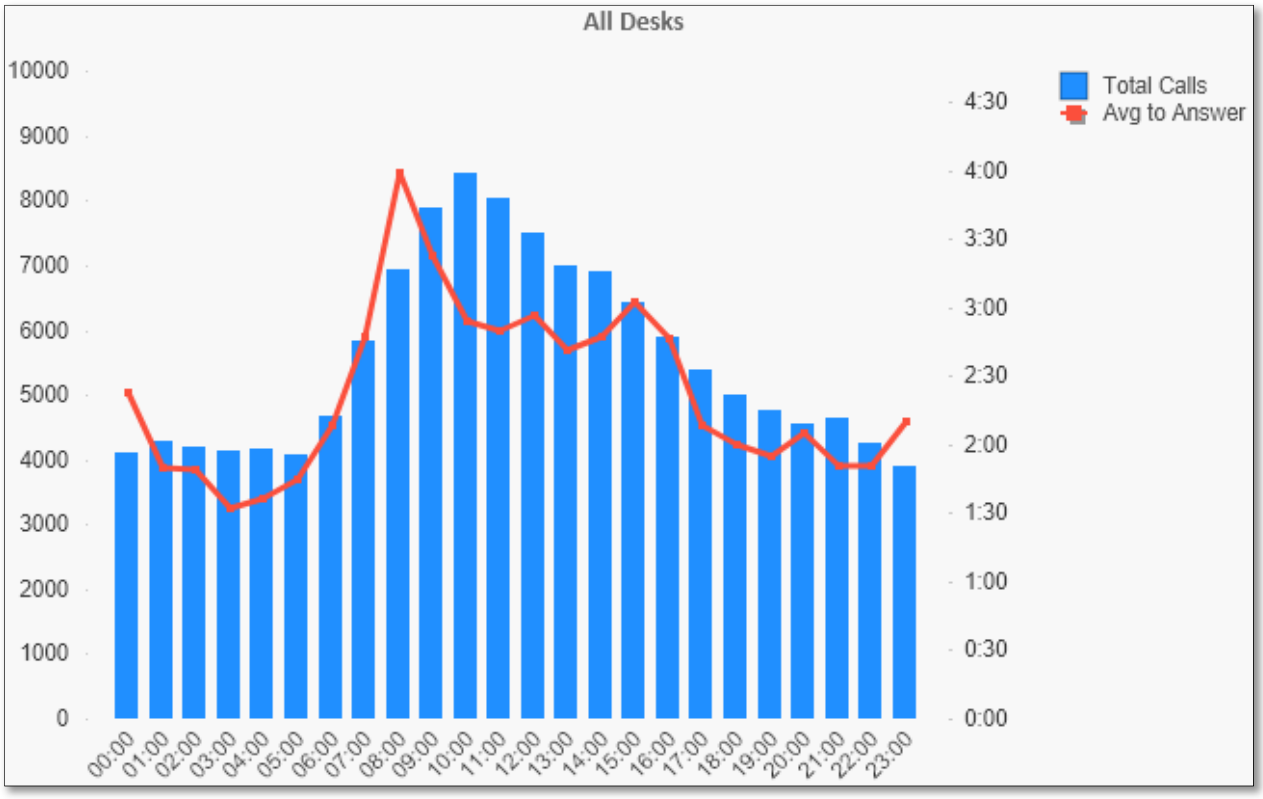
Minneapolis Operations Center TrakCom Dashboard. CP utilizes a workload analysis application referred to as the Minneapolis Operations Center TrakCom Dashboard. This application detects and archives all activity that occurs using the Dispatcher radio and phone systems. The categories of archived information include Dispatcher desk, Dispatcher shift, total calls, incoming calls, outgoing calls, time of call, duration of call, and the delay for Dispatcher to answer each call. Facility management uses customized filters to analyze activity ranges from years down to minutes of a shift, to identify trending workload changes and potential dispatcher territory adjustments for continued optimal customer service. Examples are shown in Tables 2 and 3 below.

TABLE 2



Desk	Total Calls	Avg Calls per Day	Incoming Calls	Outgoing Calls	Total Call Duration	Average Call Length	Average Time to Answer
Iowa	22,866	401	15,792	7,074	918:43:34	0:02:24	0:04:10
Minnesota	18,815	324	12,541	6,274	893:36:39	0:02:51	0:03:03
Portal	16,660	298	10,461	6,199	862:42:54	0:03:06	0:02:48
Wisconsin	16,318	291	9,420	6,898	975:39:25	0:03:36	0:01:33
D&H	15,144	270	9,972	5,172	574:12:42	0:02:16	0:02:14
Kansas City	14,393	257	8,325	6,068	596:01:25	0:02:29	0:01:26
River	8,381	195	5,641	2,740	306:57:52	0:02:12	0:02:01
C&M	7,698	137	3,830	3,868	452:32:57	0:03:32	0:01:34
Missouri	6,399	160	3,976	2,423	253:11:22	0:02:23	0:01:48
Elgin	5,400	93	1,970	3,430	1176:46:42	0:13:06	0:01:43

TABLE 3



2. Dispatching Operations at KCS

KCS has two dispatching centers for the managing and dispatching of trains across KCS's U.S. network: (1) the Network Operations Center in Kansas City and (2) the Spring Dispatch Center in Spring, TX. Kansas City dispatches lines from St. Louis, MO to Dequincy, LA including the Meridian Speedway, former Gateway Western Railway, and former Louisiana and Arkansas Railway. Spring, TX manages train movement from Dequincy, LA to the International Bridge in Laredo, TX.

Train Management and Dispatch System. The IT backbone of dispatch at KCS in the United States is the TMDS. All dispatch functions are performed through TMDS which controls signals, switches, bridges, and switch heaters, issuance of Track and Time, Track Warrants, and

Foul Time, creates General Track Bulletins ("GTBs"), applies required device blocks and restrictive tags, and delivers electronically Mandatory Directives to trains running with Positive Train Control.

KCS provides Dispatchers with detailed training of TMDS as detailed above in Section III.B (Training). KCS utilizes the Train Dispatcher's Manual for Dispatcher specific rules in addition to the GCOR. Specific territory instructions are provided to Dispatchers where applicable.

Centralized Traffic Control. Dispatch functions for CTC territory are done through TMDS and include: lining dual control switches, clearing CTC signals, issuing Track and Time, and applying required blocking devices. When a request is initiated, the track line segment flashes on the TMDS computer monitor for the Dispatcher to verify before executing.

Track Warrant Control. Track Warrants for TWC territory are issued through TMDS. Dispatchers use a mouse to select the requested limits on the TMDS monitor, then the track line segment on the TMDS computer monitor will flash for verification. Once verification is complete, the Track Warrant form will populate for required information to be entered. After all fields in the Track Warrant form are complete, Dispatchers select the "Read" button, and a form is populated for Dispatchers to read information to field personnel. This form is in line format for easy reading and allows Dispatchers to follow along with field repeat. After a line is repeated correctly, Dispatchers click the line changing the color to green to ensure all information is repeated correctly. This same process is used when issuing Track and Time in CTC territory mentioned above.

General Track Bulletins. Train Dispatchers issue Track Bulletins to trains in the form of GTBs in TMDS. TMDS has a System Summary Screen that includes a GTB tab where all bulletins

and GTB's are documented for Dispatchers to view. When a Track Bulletin is created, TMDS generates a protection list that advises the Train Dispatcher of all trains that require the track bulletin. Before executing the bulletin, dispatchers have the ability to remove trains that have passed the location and those that will not traverse the location. After executing the bulletin, the bulletin and the GTB for each train requiring the bulletin will turn red on the System Summary screen to visually notify Dispatchers. At this time, Track Bulletins are delivered verbally and electronically to train crews.

Workload Analysis Tool. KCS utilizes the Workload Analysis Tool to understand certain aspects of Dispatcher workload. This tool utilizes data from the TMDS database and enables teams to assess the number of track authorities issued, GTBs created, and Track Tags and Device Blocks used. Information, as shown in Tables 4 and 5, can be sorted by year, month, console, shift, directive, and Dispatcher. Additionally, KCS management considers power planning, train traffic, duration of radio and phone conversations, and planning work performed with foreign line carriers, to determine an appropriate Dispatcher workload. Management makes adjustments, when necessary, based on the information explained above.

TABLE 4

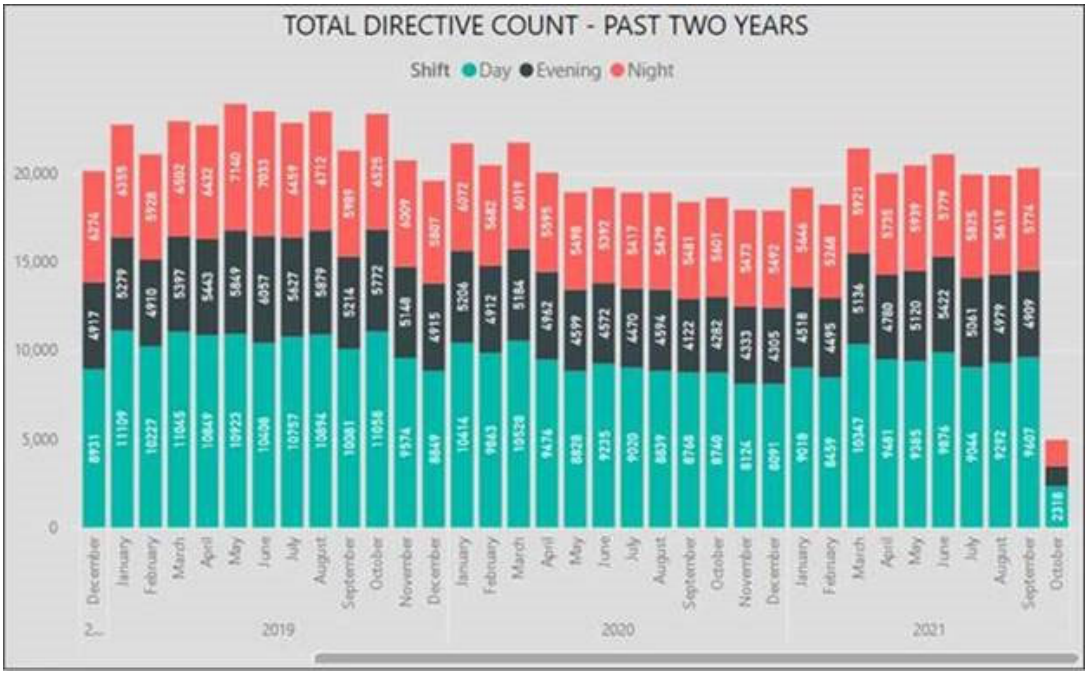
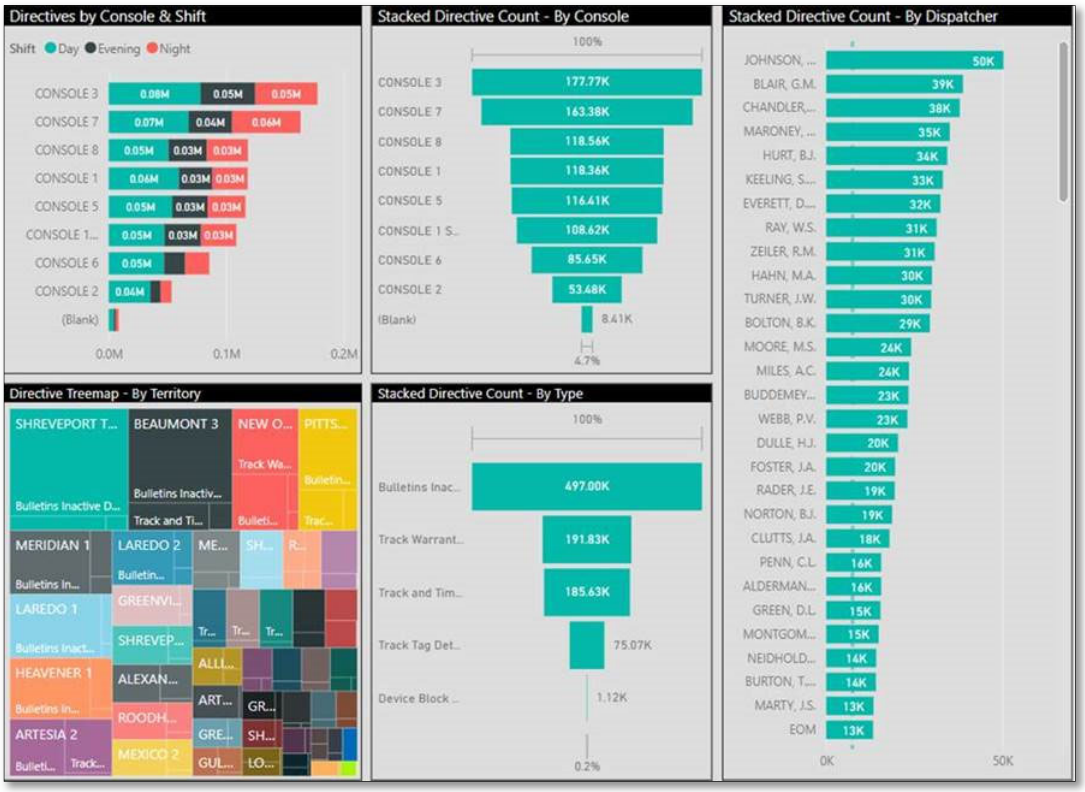


TABLE 5



3. Safety Integration – Dispatching Operations

CPKC will migrate the CP Minneapolis Dispatching Center to Kansas City and integrate it with the KCS Dispatching Center. While the relocation of employees is underway, CPKC will focus on the sustainment of safe operational practices in both Kansas City and Minneapolis. CPKC will utilize qualified Train Dispatchers to fill vacancies that may result from employee relocation.

Dispatch center management will be present in both facilities and provide continual operational oversight during each relocation of dispatched territory. Information Services and Train Control Departments will be available during each movement of Computer Aided Dispatch ("CAD") System equipment. This will provide the necessary quality control and rollback measures necessary for transition.

During early stages of integration, the former CP and KCS territories will continue operating separately, with their established train control systems: TMDS, CTC, and TWC, respectively. Additionally, Dispatcher workloads will continue to be assessed using the tools and processes listed in the railroad specific explanations listed above.

CPKC will carefully evaluate each independent train control system, focusing on operating rule requirements, operational safeguards, efficiencies, and the ability to accommodate the needs of the newly merged company and customers. Appropriate stakeholders in affected departments will conduct this review and establish implementation plans. Applicants anticipate that CPKC will complete the amalgamation of dispatching operations within three years of the Control Date.

Prior to any transition of train control systems, a thorough review of rules specific to KCS and CP, as outlined above in Section III.C.1 (Operating Rules), will take place to ensure differences in dispatching rules and procedures are addressed and mitigated. The Training Department will provide training or certification when changes require.

CPKC will ensure that train control changes are properly vetted and tested prior to implementation, and that no changes will be made unless safe operations can be maintained. CPKC will maintain compliance with all federally mandated requirements.

CPKC will create a process to monitor Dispatcher workloads once a control system is chosen and an integration plan is complete. CPKC will provide regular oversight to Dispatcher workload and make adjustments when necessary. CPKC will ensure that the processes in place regarding Dispatcher workload maintain a safe and effective operation.

I. HIGHWAY-RAIL GRADE CROSSING SYSTEMS

1. Highway-Rail Grade Crossing at CP

CP is committed to the safety of citizens of the local communities in which it operates. CP teams work together around the clock to improve at-grade highway crossing safety. The CP Public Safety Communications Center ("PSCC") handles emergency calls 24 hours a day, 365 days a year, through calls placed to (800) 716-9132. CP has installed and maintains Emergency Notification Signs ("ENS") at all at-grade crossings per federal regulations. ENS provide the emergency contact number and the crossing's FRA/DOT number to allow members of the public to call in an emergency, issue, or concern. Communication from the public to the PSCC allows CP to collect emergency crossing signal information in real time and to forward this information to CP Public Safety Officers, Engineering Teams, and the Signal & Communication Department. CP's vegetation management programs improve at-grade highway crossings equipped with passive warning signs and provide better approaching sight lines to motorists. CP utilizes constant

warning detection technology and regularly identifies locations where upgrades to crossing signals would be beneficial.

CP collaborates with local, state, and federal agencies as stakeholders in CP's Crossing Safety Program. States provide governance over grade crossings in their jurisdictions, and state highway agencies determine appropriate traffic control device requirements at public crossings. The Federal Highway Administration ("FHWA") is responsible for public grade crossing issues affecting highway safety, and the FRA regulates the aspects of grade crossing safety pertaining specifically to the railroads such as track safety, train-activated warning devices, and train safety. CP actively partners with the department of transportation in each state where it operates to obtain federal funding through the Railway-Highway Crossings Section 130 Program ("Section 130"), which provides funding for the elimination of hazards at railroad crossings. Each year, CP identifies potential crossings eligible for funding through Section 130, and for those crossings identified, CP submits Section 130 applications to the relevant states. Local road authorities also identify potential crossings eligible for funding, and CP partners with these local road authorities to submit Section 130 applications for those crossings identified. The Section 130 Program continues to be authorized and appropriated by Congress, most recently through the Infrastructure Investment and Jobs Act.

The DOT's FHWA publishes the Manual on Uniform Traffic Control Devices ("MUTCD") as the national standard for planning, designing, and applying traffic control devices, including all signage and warning devices at railroad crossings. The MUTCD requires uniformity of devices, signage, signals and movement markings to promote safety for highway traffic and for users of railroad crossings. CP's signage and warning devices at crossings are compliant with the MUTCD standards.

CP also actively works with road authorities and government agencies to identify and negotiate crossing closures and consolidation. CP's crossing closure efforts align with the FRA and DOT's goal of reducing the number of at-grade crossings, both public and private, through consolidation, elimination, and grade separation.

CP strives to avoid blocking or obstructing highway-rail crossing systems with trains, locomotives, railroad cars, or other pieces of rolling stock equipment through operational planning, controlled train meets, and dedicated operating rules. Additionally, CP devotes appropriate resources to manage service interruptions, which can help to reduce the duration of any obstruction.

CP actively updates the FRA/DOT crossing database per federal regulations, which includes regular reviews and updates to grade crossing data to ensure accuracy of the database. CP monitors the database to ensure each crossing is updated at least every three years.

CP supports the Operation Lifesaver, Inc. ("Operation Lifesaver") national organization as well as organizational chapters in all states where it operates. Operation Lifesaver presenters train the CP Police Service ("CPPS") officers. CP has representatives on the Operation Lifesaver National Advisory Committee as well as on the Operation Lifesaver Board of Directors. CPPS delivers hundreds of presentations every year to schools, community groups, boys and girls clubs, recreational groups such as snowmobile and ATV clubs, municipal and provincial police agencies, school bus drivers, and truck drivers. In 2020, CPPS made 709 Operation Lifesaver presentations and 453 joint force operations presentations to public groups to raise awareness about trespass and grade-crossing safety. CP has a number of Safety & Security Outreach programs to enhance public awareness—these programs include first responder and law enforcement agency training, as well as 1-800 Safe Passage and Operation Lifesaver training, national programs that educate members

of the public about the potential dangers and penalties related to trespassing on railway Rights-of-ways and disobeying railway crossing warning signs and signals. Along with Operation Lifesaver, CPPS creates fact sheets and educational information about trespassing issues, which it distributes to the public.

2. Highway-Rail Grade Crossing at KCS

KCS has been successful in reducing crossing collisions on its system. KCS employs a full-time public safety director, has more than 47 KCS Operation Lifesaver Authorized Volunteers, and trains law enforcement as well as educates the public. KCS works diligently to maintain and improve crossing conditions by maintaining the right-of-way and clearing vegetation from the four quadrants of the crossing. KCS places emphasis on the consolidation of at-grade crossings and since 2015 has closed 45 public and 40 private at-grade crossings. The latest corridor project completed was in New Roads, LA between 2019 and 2020. The project included building a connector road and two Tee turnarounds. This allowed the closure of five public crossings. The Louisiana Department of Transportation and Development also worked with KCS on this project and used Section 130 funding to install eight sets of flashers and gates. Vertical road approaches were also repaired, and new pavement markings and signage was installed.

Emergency contact numbers have been posted on the ENS at all public and private grade crossings for use in contacting the CID 24 hours per day, seven days per week with concerns regarding crossings or related questions. ENS allow motorists who become stalled or in any way obstruct railroad tracks to call and simply provide the information on the sign. ENS also include the DOT identification number that pinpoints the location for KCS's dispatching center and allows it to warn or stop trains in the affected area.

Grade crossing collision training is provided to local law enforcement officers to enhance their initial response and scene assessment, as well as their understanding of the available enforcement and investigative options. Firefighters and Emergency Medical Services responders are included in KCS's task-specific training—the Operation Lifesaver approved, Railroad Investigation and Safety Course. "No Trespassing" signs have been installed at bridges, crossings, and in areas where pedestrians commonly trespass on railroad property to try to prevent dangerous situations.

KCS also strives to avoid blocked or obstructed highway-rail crossing systems by trains, locomotives, railroad cars, or other pieces of rolling stock equipment through operational planning, controlled train meets, and dedicated operating rules. Additionally, KCS devotes appropriate resources to manage service interruptions which can help to reduce the duration of any obstruction.

3. Safety Integration – Highway-Rail Grade Crossing

CP and KCS have similar established practices and programs for managing and improving crossing safety. Both companies work closely with state and local road authorities and emergency responders to support grade crossing safety improvements. Following the Control Date, CPKC will continue to operate with separate crossing programs. CPKC will perform a comprehensive review of available programs and practices to determine the best fit for the combined company. This review will govern consolidated actions.

Based on an analysis by CP Service Design, CP has identified specific corridors across the future CPKC network where rail traffic is expected to increase. CPKC will coordinate with each state department of transportation to review the anticipated increased traffic and develop a strategy to review the adequacy of existing crossing warning devices. The states have overall oversight and accountability for the adequacy of crossing warning devices and will be critical partners in

this assessment. Each state handles oversight through different procedures and processes, and therefore, strategies will be established based on each state's requirements, and CPKC will work with those agencies to establish programs that implement modifications and improvements at crossings where deemed necessary.

Appendix 2 includes a list of crossings where an increase in rail traffic is anticipated through existing quiet zones.

Where changes to the rail infrastructure are proposed, such as adding a track through a crossing, CPKC will continue current practices—i.e., it will perform crossing diagnostics reviews with the local road authorities and state departments of transportation to evaluate the adequacy of the existing warning devices and consider if changes are required. All changes to warning devices, including signage and active devices, will be designed and installed per the MUTCD. CPKC will continue to strive to avoid blocking or obstructing highway-rail crossing systems with trains, locomotives, railroad cars, or other pieces of rolling stock equipment through a continuation of current practices, including operational planning, controlled train meets, and dedicated operating rules. Additionally, CPKC will continue to devote appropriate resources to manage service interruptions and to alleviate the durations of which a crossing is obstructed.

J. PERSONNEL STAFFING

Applicants anticipate minimal impact to workforce duties or responsibilities for employees covered by 49 C.F.R. § 244.13(j) as a result of changes to operations following the Control Date. As detailed in this section, Applicants do not anticipate the CP/KCS combination to result in any adverse changes to personnel staffing or a reduction in work force, and instead expects the combination to drive growth in employment across the entirety of the combined CPKC system.

The operational consolidations arising from the combination of these two railroads will entail only minor adjustments in work arrangements, limited to (1) the region centered on Kansas City, the one point where CP's and KCS's rail networks connect, and (2) as a result of the relocation of CP's U.S. headquarters from Minneapolis to Kansas City. CP anticipates that KCS's Kansas City headquarters will become the U.S. headquarters for CPKC, creating net-positive impacts on employment there, and that the Minneapolis headquarters will eventually close. The operational consolidations will yield some changes in the level of employment, with changes to safety personnel set forth in Table 6, CPKC Assignment Projections.

Table 6 shows that, within the enumerated categories in 49 C.F.R § 244.13(j), only 38 of the jobs will be affected. Specifically, 38 dispatchers currently working in Minneapolis will be transferred as a result of the headquarters consolidation, and no jobs will be abolished. For any employees affected by the consolidation, CP anticipates that, in accordance with the requirements of 49 U.S.C. § 11326(a), the Board will impose on this Transaction the employee protective conditions as set forth in *New York Dock Ry. – Control – Brooklyn Eastern Dist. Terminal*, 360 I.C.C. 60, *aff'd, New York Dock v. United States*, 609 F.2d 83 (2d Cir. 1979). In instances where Dispatchers choose not to transfer, CP will honor all protective conditions imposed by the STB.

As also shown in Table 6, a total of 801 jobs will be created in the three years following the CP/KCS combination. Applicants do not expect reductions in hazardous materials employees or managers responsible for the oversight of safety programs. Alignment of hazardous employees and oversight managers will be determined following other departmental reviews following the combination. CPKC will provide the necessary training for operating employees in the Consolidated Territory, the area encompassing train and engine, signal, car repair/maintenance, and engineering personnel on certain lines radiating from Kansas City.

CPKC will strive to ensure that no safety issues arise as a result of the CP/KCS combination, and specifically that none occur in the region centered on Kansas City or as a result of the relocation of CP's headquarters from Minneapolis to Kansas City. Given the projected job growth in safety-related positions, CPKC will, through its personnel staffing, continue to maintain and improve its safety operations. Further, to support the anticipated job growth, CPKC will ensure that all safety-related positions receive initial training and recertification training as set forth in Section VII.B Training. Therefore, because CPKC anticipates job growth in safety-related positions and is prepared to support that growth through proper safety-related trainings, Applicants do not expect the CP/KCS combination to result in any adverse impacts related to safety and personnel staffing.

TABLE 6

CPKC ASSIGNMENT PROJECTION

CPKC Assignment Projections		Jobs Created			Jobs Transferred			Jobs Abolished		
		Year			Year			Year		
Role Description	**Role Mapped to 49 C.F.R § 244.13(j)**	1	2	3	1	2	3	1	2	3
Car Mechanical	(5) Freight car and locomotive maintenance	28	35	47	0	0	0	0	0	0
Communications Worker	(6) Maintenance of signal and train control systems, devices, and appliances	0	0	0	1	0	0	0	0	0
Engineers	(1) Train and engine service (2) Yard and terminal service	126	71	113	0	0	0	0	0	0
Locomotive Mechanics	(5) Freight and locomotive maintenance	10	10	0	0	0	0	0	0	0
Signals Maintainers	(6) Maintenance of signal and train control systems, devices, and appliances	4	4	5	0	0	0	0	0	0
Track Maintainers	(4) Roadway maintenance	8	17	34	0	0	0	0	0	0
Train Dispatchers	(3) Dispatching operations	0	0	0	37	0	0	0	0	0
Trainmen	(1) Train and engine service (2) Yard and terminal service	119	65	105	0	0	0	0	0	0
Total		**295**	**202**	**304**	**38**	**0**	**0**	**0**	**0**	**0**

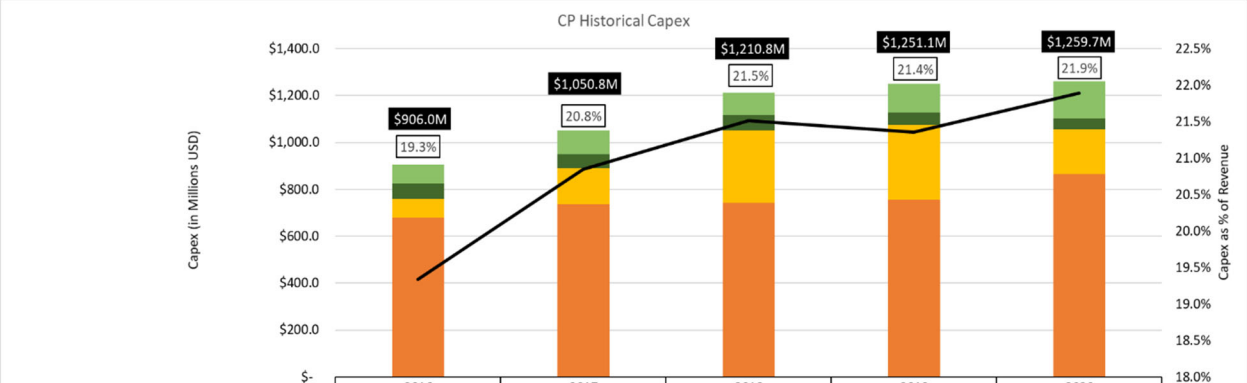
K. CAPITAL INVESTMENT

1. Capital Investment at CP

Each year, CP makes significant investments in capital programs in order to enhance the service, efficiency, and safety of its network. Capital is allocated based on the safety and expansion needs of the business, independent of the jurisdictions in which particular projects are located. As Figure 4 below shows, CP invested $1.26B in 2020 and $1.25B in 2019 in total capital expenditures.

FIGURE 4

CP CAPITAL INVESTMENTS



	2016	2017	2018	2019	2020
Buildings & Other	$81.2	$101.5	$93.8	$123.3	$156.0
Information Systems	$66.2	$60.0	$66.2	$52.6	$46.3
Rolling Stock and Containers	$78.9	$152.3	$308.5	$320.3	$191.04
Track and Roadway	$679.7	$736.9	$742.3	$754.9	$866.4
Total Capital Expenditures	$906.0	$1,050.8	$1,210.8	$1,251.1	$1,259.7
Capital Expenditures as a percentage of revenue	19.3%	20.8%	21.5%	21.4%	21.9%

The largest portion of CP's capital investment program is spent on track and roadway. The vast majority of CP's track and roadway investment is spent on the basic replacement and renewal of depleted assets, including rail, ties, and ballast, among other assets. CP also invests significant resources in rolling stock and containers. CP has already invested $1.107B in capital investments year to date through November 2021. Other key initiatives in the 2021 capital plan include:

- track upgrades on the newly acquired CMQ to improve the efficiency and safety of the operations;
- the modernization of 30-high horsepower locomotives to improve reliability and efficiency;
- the purchase of 1,400 high-capacity covered hopper cars to increase efficiency of the grain handling and transportation system; and
- investments in innovative wayside detectors, broken rail protection, and CTC to improve operational safety.

CP's continued and ongoing investments have allowed it to handle additional volume while also providing "room to grow." These investments have underpinned CP's recent growth. These investments show that CP is committed to improving the reliability and safety of its network while expanding its operations.

CP utilizes a wide variety of technology and testing vehicles to analyze track conditions in the variety of terrains in which it operates in order to determine its annual capital improvement program. CP collects data through visual track and bridge inspections, geometry test vehicles, ultrasonic rail testing vehicles, signals and communications testing, and other specialized inspection technologies. The high frequency with which CP tests and inspects its system provides CP with extensive data under differing conditions. These data are then analyzed to inform CP's short term maintenance projects as well as its medium-and long-term capital investment strategy. This approach ensures the reliability of the network, and has allowed CP to mitigate safety-related risks.

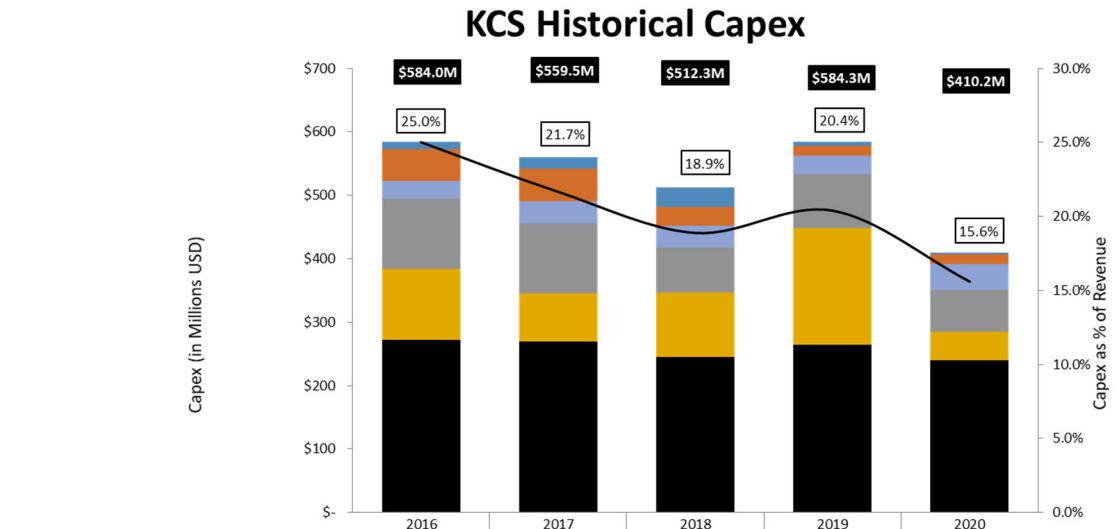
A list of CP federal and state funding grants is available in **Appendix 3** and a list of KCS grants is included below in Table 7. CP will continue to advance these projects, as will CPKC post-Control Date.

2. Capital Investment at KCS

KCS strongly believes in investing in its core business. A sufficient line of road and terminal capacity, ample assets, such as locomotives and equipment, and a solid infrastructure are foundational to the operation of a successful railroad. KCS allocates capital spending based on system-wide project needs, without regard to the jurisdiction in which the work happens to be located. As illustrated in Figure 5 below, over the past five years, KCS has invested in such foundational programs, including over $1.8 billion in roadway (infrastructure) and equipment, and $440 million in capacity enhancements to promote service levels for customers and to achieve growth opportunities. Over the past five years, KCS has allocated 20 percent of revenue to invest back into its core business.

FIGURE 5

KCS CAPITAL INVESTMENTS



	2016	2017	2018	2019	2020
Other	11.1	17.7	31.3	6.5	3.3
Positive train control	49.6	51.7	28.9	15.5	15.9
Information technology	29.3	33.7	35.4	29.8	40.6
Capacity	109.6	111.4	69.8	84.8	65.4
Locomotives and freight cars	112.6	75.7	101.2	182.8	45.2
Roadway capital program	271.8	269.3	245.7	264.9	239.8
Total capital expenditures (accrual basis)	584.0	559.5	512.3	584.3	410.2
Capital Expenditures as a percentage of revenue	25.0%	21.7%	18.9%	20.4%	15.6%

Additionally, ongoing investments in KCS's information systems, including operating systems, data analytics functionality, and customer facing systems, are enabling improvements in efficient network operations.

As set forth in Table 7 below, KCS has two active grant programs: (1) the 2015 FRA Railroad Safety Grants for the Safe Transportation of Energy Products by Rail Program ("STEP") LADOT and (2) the 2020 Consolidated Rail Infrastructure and Safety Improvements ("CRISI") Grant. The 2015 FRA STEP Grant will improve the safety of railroad crossings in high-traffic areas in Louisiana. In order to reduce the potential for grade crossing collisions, the 2020 CRISI Grant will (1) add gates, signals, and predictive controllers to approximately 20 crossings and aging gates, (2) replace four crossings, and (3) close four crossings with low roadway traffic

volumes. KCS remains committed to these projects. CP intends to continue to work on these projects, as does CPKC post-Control Date.

TABLE 7

KCS' ACTIVE GRANT PROGRAMS

Grants Awarded	Project Location	Total Project Amount	RR Contribution
2015 FRA Step Grant	Baton Rouge, Louisiana on the KCSR's New Orleans Subdivision between Mile Post 788 and Mile Post 794	$2,920,269.30	$656,053.86
2020 CRISI Grant	Beaumont Subdivision between Frierson and Starks, Louisiana	Approximately $7,898,900	Approximately $3,949,450

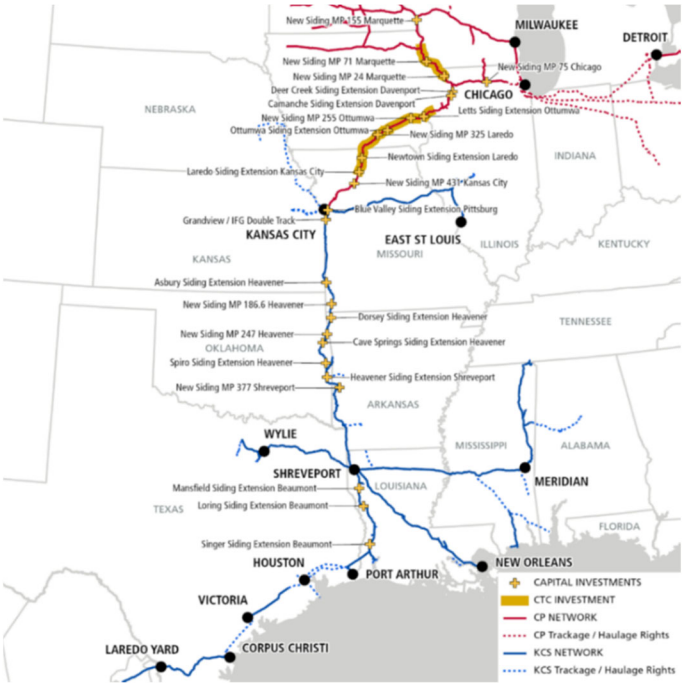
3. Safety Integration – Capital Investment

CPKC will continue steady state levels of investment in maintenance, safety, and technology. CPKC will continue CP's proactive approach to maintenance by continually testing and analyzing track conditions. Similarly, Applicants expect that CPKC will maintain similar levels of maintenance spending, thereby mitigating safety-related risks.

In addition, to integrate KCS and CP and to support the projected growth in traffic, as well as to improve service, CPKC will make significant investments in line infrastructure to support new north-south rail capacity in this corridor. To determine the location, type, and scope of each specific infrastructure investment, detailed capacity modeling was performed. Based on this analysis, CPKC plans to spend a total of $276 million in the first three years on new infrastructure ($157.6 million on CP lines north of Kansas City and $118.8 million on KCS lines between Beaumont and Kansas City). The new investments in CPKC's core North-South Corridor between Louisiana and the Upper Midwest via Kansas City are depicted in Figure 6 below.

FIGURE 6

TRANSACTION-RELATED INVESTMENTS IN CAPACITY AND SAFETY



In particular, CPKC will add double track, add and extend sidings, and install CTC signaling systems on the core CPKC North-South corridor lines between Louisiana and St. Paul/Chicago. These capital investments will expand capacity, improve safety, and ultimately, transform the North-South lines on the combined system into a more efficient and higher-capacity network. CPKC expects that the capital investments described above will be completed within three years of the Control Date.

Given the traffic volumes resulting from the transaction and the rail capacity needed to support the expected growth, Applicants identified 26 locations in the United States to add or extend sidings or add double track. CPKC will also add CTC signaling systems in three previously "dark" territories to improve capacity, operating efficiency, and safety. Additional details regarding the planned infrastructure investments can also be found in Table 8 below.

TABLE 8

TRANSACTION-RELATED CAPITAL PROJECTS

Subdivision	Location	Type	Segment	Estimated Total ($ USD)
Chicago	MP 75	New Siding	Randall Rd - Kittredge	8.47M
Marquette	96 Miles	CTC	Sabula Jct. to Marquette	15.06M
Marquette	MP155 (Brownsville)	New siding	River Jct - Kains	13.31M
Marquette	MP71	New siding	Eckards - Edmore	15.40M
Marquette	MP24	New siding	Dubuque - Green Island	12.42M
Davenport	Deer Creek	Siding Extension	Green Island - Camanche	12.66M
Davenport	Camanche	Siding Extension	Camanche - Nahant	1.95M
Ottumwa	62 Miles	CTC	CTC Subdivision	13.39M
Ottumwa	Letts	Siding Extension	Letts - Nahant	1.31M
Ottumwa	MP 255	New siding	Letts - Ottumwa	9.49M
Laredo	102 Miles	CTC	CTC Subdivision	24.18M
Laredo	Ottumwa	Siding Extension	Ottumwa	2.11M
Laredo	Moravia	New siding	Ottumwa - Newtown	9.84M
Laredo	Newtown	Siding Extension	Laredo - Ottumwa	3.06M
Kansas City	Laredo	Siding Extension	Polo - Newtown	3.70M
Kansas City	MP 431	New siding	Laredo - Polo	11.21M
CP Total				157.56M
Pittsburg	Blue Valley (MP 8.1)	Siding Extension	Blue Valley	30.13M
Pittsburg	Grandview/IFG (MP 28.5)	Double track	Blue Valley – Grandview	12.81M
Heavener	Asbury (MP 140.4)	Siding Extension	Asbury	6.14M
Heavener	MP 186.6	New siding	McElhany - Noel	12.08M
Heavener	Dorsey (MP 214.2)	Siding Extension	Dorsey - Gentry	2.77M
Heavener	MP 247	New Siding	Watts - Stilwell	11.28M
Heavener	Cave Springs	Siding Extension	Stilwell-Cave Springs	4.14M
Heavener	Spiro (MP 311.7)	Siding Extension	Spiro - Shady Point	4.44M
Shreveport	Heavener	Siding Extension	Heavener - Page	10.36M
Shreveport	MP377	New siding	Rich Mountain - Potter	11.28M
Beaumont	Mansfield (591.3)	Siding Extension	Frierson - Mansfield	4.97M
Beaumont	Loring (MP 625.9)	Siding Extension	Converse - Loring	3.82M
Beaumont	Singer (MP 705.1)	Siding Extension	Neame - Singer	4.63M
KCSR Total				**118.82M**
Grand Total				**276.39M**

Execution of these investments will be among the highest priorities of the combined CPKC system in the first three years following the Control Date. Accordingly, in order to stay ahead of the anticipated traffic growth, CPKC has identified concrete steps, beginning with concept and design work, permitting, environmental assessment, and proceeding with grading, track, and signals, necessary to complete these capital projects. CPKC also anticipates reallocating a portion of the infrastructure investment budgets of CP and KCS to adequately fund these projects so they

can be executed in a timely manner.[6] As discussed in the Operating Plan submitted with the Application, CPKC plans to implement these projects in the following phases:

- La Crosse to Davenport
  - Year 1
    - New CTC Installation: 46 miles;
    - environmental permitting and engineering design for one new siding and one siding extension;
    - grading: two new sidings; and
    - track construction and in service one siding extension.
  - Year 2
    - New CTC Installation: 26 miles;
    - environmental permitting and engineering design for one new siding; and
    - grading track, track construction and in service three new sidings and one siding extension.
  - Year 3
    - Grading/Track construction and in service one new siding.
- Davenport to Kansas City
  - Year 1
    - New CTC Installation: 30 miles; and

[6] CPKC expects to reallocate approximately $50mm annually from the two railroads' combined infrastructure investment budgets during the integration period, which represents approximately 2.6 percent of the combined CPKC capital envelope.

        - track construction and in service three new sidings and three siding extensions.
    - Year 2
        - New CTC Installation: 63 miles; and
        - environmental permitting and engineering design for one siding extension.
    - Year 3
        - New CTC Installation: 72 miles; and
        - grading/Track construction and in service one siding extension.
- Kansas City to Shreveport
    - Year 1
        - Environmental permitting and engineering design for two new sidings, and one siding extension;
        - environmental permitting and engineering design/Grading one siding extension; and
        - environmental permitting and engineering design/Grading/Track construction and in service one siding extension.
    - Year 2
        - Environmental permitting and engineering design for one new siding;
        - environmental permitting and engineering design/Grading/Track construction and in service, three siding extensions, portion of Double track; and

        - grading/Track and in service two new sidings and one siding extension and a portion of one siding extension.
    - Year 3
        - Grading, track construction, and in service one double track project, one new siding and one siding extension.
- Shreveport to Beaumont
    - Year 1
        - Environmental permitting, engineering design/Grading/Track construction and in service two siding extensions.
    - Year 2
        - Environmental permitting and engineering design/Grading/Track construction and in service one siding extension.
    - Year 3
        - None

Table 9 shows the planned investment per year by railroad.

Table 9

	Year 1	Year 2	Year 3	Total
CP	$77.3	$47.3	$33.0	$157.6
KCS	$26.2	$63.6	$28.9	$118.8
Total	**$103.5**	**$110.9**	**$61.9**	**$276.4**

To accommodate the anticipated growth in traffic resulting from the combination of CP and KCS, CPKC will also invest in an expanded railcar fleet. To determine the size of the incremental investment in railcars, Applicants compared the forecasted fleet size against projected demand for each car type, taking into consideration network operating improvements. Based on

this analysis, to support the increases in traffic contemplated in the Growth Plan discussed in the Application, CPKC plans to acquire, by Year 3, a minimum of:

- 265 multilevel autorack cars, to support increased business originating in Mexico;
- 831 intermodal cars, to support both domestic and international intermodal services;
- 194 boxcars, to support the growth in manifest traffic originating in Mexico; and
- 604 covered hoppers, to support increased demand for bulk shipments of agricultural products.

Additionally, CPKC will continue to upgrade all fleets as cars age out, continuing the normal operating practice of both CP and KCS. This turnover will improve the quality of the fleet, as, for example, older and smaller "Plate C" boxcars age out and are replaced with more efficient and higher-capacity "Plate F" cars over the next five years. Lastly, CPKC will continue the work related to the grant programs described above.

The combined network will allow for a more optimal and cost-effective deployment of various testing technologies. As discussed above, CP utilizes a wide variety of technology to build its maintenance and capital plans. Combining the assets used for the testing of fixed infrastructure owned by CP and KCS will allow the current approach to continue and expand on the combined network. The higher frequency of testing will provide improved data and trending analytics, such as the development of track quality indices, alerts for growth in defect levels, and triggers for maintenance intervention.

In pursuit of the integration of information systems, Applicants anticipate that CPKC will invest approximately $138.6 million in IT-related capital. Despite this investment in common systems and supporting hardware, it is expected that the combination of the CP and KCS

information systems will actually result in capital savings. The conversion to single-system solutions will reduce duplicative spending, resulting in millions of dollars of discretionary IT capital savings. Ultimately, CPKC estimates that the consolidation of information systems will result in capital savings of approximately $21.6 million annually. CPKC will continue to invest capital in technology, such as the ongoing replacement of certain hardware, in order to maintain and enhance the programs of the combined entity.

L. INFORMATION SYSTEM COMPATIBILITY

1. Information System Compatibility at CP

Given its reputation as the safest North American railroad, CP places a large premium on maintaining top-of-the-line information systems and field devices. Accordingly, CP has invested heavily in IT solutions to support a safe and fluid train operation.

CP employs over 600 employees and 25 contractors who report to the Vice President and Chief Information Office of Information Services. Employees are typically aligned to CP functional business areas, though additional teams, who report directly to the Vice President and Chief Information Office of Information Services, and provide foundational IT internal services, cross all lines of business.

Dispatchers at CP use the advanced CAD system, including CP's CTC and TWC systems, to safely dispatch, monitor and execute train movements. The dispatch systems are fully integrated into CP's PTC ecosystem. Dispatch systems are accompanied by a training program with a proven safety record.

CP developed a proprietary Railway Performance Monitoring ("RPM") system that provides an integrated network view of CP train movements and inventory (including locomotives and shipments), train performance, operating plan adherence, and the overall health of the network.

RPM consolidates information from the NEXUS train management system, the TYES and TRIEX inventory management systems, and the Locomotive Management Planning ("LMP") systems. Together, these systems comprise CP's key operational IT landscape.

RPM captures detailed planned and actual train information for all en route trains with movement events. Operating data are combined with train, customer, shipment, and location information to present train location and performance information in geographical and detailed views. The RPM dashboard provides CP's operating teams with graphical representations of the entire CP network, displaying all trains running and on-time performance with a "red/yellow/green" status and key performance indicators. Using this tool, employees can hover over any train for details (including train type and kind, power, current train speed, destination, last location, origin, length, weight, planned and actual horsepower per ton, load/empty count, last event, crew information, marshalling, key train data, presence of poison inhalation hazard/toxic-inhalation hazard carloads, dangerous cars, and dimensional compliance).

Combined, these systems ensure the ability to quickly terminate operations in times of emergency.

To ensure safe movement of freight, including the handling of hazardous materials, CP has an integrated service design, shipment, order fulfillment, asset distribution, crew management, and train operations suite of applications. These include: (i) MultiRail which is used to create and distribute the operating plan, (ii) FastWay, which provides waybill management, (iii) LMP, which is used for planning, distributing, and assigning locomotives, (iv) CMA, which manages crew assignments and payroll, and (v) NEXUS which, as described above, is a network schedule management tool.

CP's Crew Management suite prevents unintentional violations of hours of service requirements, contributing to CP's stellar safety record. The suite also provides train crews with access to up-to-date train line-up information through VRUs, kiosks across CP's yards and the internet, and has extended functionality available for crew balancing, auto crew calling and inbound/outbound VRU solutions. Access to this information allows individuals to better manage their time off-duty to improve the quality and quantity of rest.

CP also uses other advanced technology to improve the safety and efficacy of its operations such as the Trip Plan Engine ("TPE"). The TPE generates for each carload shipment a plan for handling and train service to get the car from origin to destination. This information is visible to the operating team so they can execute the plan. The TPE is also linked to CP's service design operating model and generates a plan for which a specific train will pick up the railcar from the customer at the "first mile," which specific trains the railcar will be moved in over the road, and which specific local train will deliver the car over the "last mile." This trip-planning function generates a baseline estimated time of arrival for customers and estimated time of interchange for CP's rail carrier interline partners.

To ensure maintenance information is readily available for those planning locomotive assignments, CP tracks locomotive maintenance and defects through SAP. SAP feeds other systems used by Operations to ensure maintenance information is accurate and available. Front-line supervisors record locomotive failures and defects at each major locomotive facility and provide 24-hour, seven-day-a-week support for train crews by radio or telephone. Prior to releasing any locomotive from a maintenance facility, the scheduled and unscheduled notifications in SAP must have all tasks signed off by the employee who completed the work and then be verified and closed by the mechanical supervisor. Similarly, inspection and repairs are tracked

with the Car Repair Billing ("CRB") application. This CRB application feeds both inventory management and other reports to provide the visibility necessary for timely repair and movement of on-track equipment.

CP's BCFs in Calgary, AB and St. Paul protect continuity of rail operations. These facilities are dedicated live back-up facilities that would be used as work locations for employees who perform critical business processes such as train control, crew calling and work order processing if the primary buildings were uninhabitable. BCFs are "live tested" once per year to ensure the facilities, their infrastructure, and their technology are functioning as intended to continue key business functions, and that critical staff remain familiar with these facilities.

In addition, CP continues to advance and evolve its cyber security program through investments, including ongoing reviews of its incident detection identification and response capabilities, continuous improvements of processes and practices to identify risks across the enterprise, and the extension of automation procedures to reduce the time required to identify threats. CP maintains the Enterprise Security Unit that manages the cyber security program following a risk-based, business-focused approach to security. The different teams within the Enterprise Security Unit collaborate with business units across Information Services and CP to identify risks facing information assets and develop the appropriate controls to help mitigate the risk. The Enterprise Security Unit also protects information assets by taking actions such as deploying anti-virus/anti-malware protection to endpoints across the enterprise, enabling encryption on enterprise endpoints (workstations/laptops and mobile devices), deploying endpoint detection and response agents to enterprise endpoints, laptops, workstations, and servers, installing vulnerability management scanning software to provide greater visibility into endpoints and servers, deploying enhanced network access control in exposed network areas identified as being

at risk to rogue devices and unauthorized network access, having a robust assets discovery process that regularly validates assets connected to the network, and working to ensure the security of data in cloud instances through technology and the use of cloud security services.

2. Information System Compatibility at KCS

KCS uses information systems in all aspects of its railroad operation in the United States, including all safety-related functions.

KCS uses MCS as its overall operating system in both the United States and Mexico to switch cars, assemble trains, manage the Transportation Service Plan, and measure performance. Specifically, MCS is a modular system used for numerous operating functions of the railroad involving waybill activities, car and train scheduling, and tracking of car movement records. MCS has built-in safety features to aid in achieving the correct train makeup by enforcing hazardous material in-train placement rules. Additional safety features involve the following categories: train blocking compliance, car placement, hazardous material cars, train make-up profile, bad order car handling, track capacities, and car scheduling. Within each category, KCS maintains checks and specific rules for train marshaling, weight and length capacity, dimensional loads, and speed restriction tables that are linked to waybills.

The KCS Mechanical Department uses third-party software to record railcar bad order defects, communicate which railcars have been inspected, identify repairs made to railcars, and capture CRB information, and this software is integrated with the KCS MCS Operating System and SAP. The Managers of Locomotive Utilization and locomotive mechanical teams use KCS's Locomotive Management System to record locomotive defects, assign locomotives to trains, track inspection dates for scheduled inspections, and release locomotives from maintenance facilities once repairs have been completed. The U.S. car and locomotive parts inventory is recorded in

SAP, while a third-party software program called Infor System allows work orders to be completed to assign parts to locomotives or to deliver the car parts to the shop tracks to consume on railcars. This system allows KCS to order parts from SAP inventory and to install parts on individual locomotives. Only the Shreveport and Kansas City car shops utilize this software for inventory purposes. All other locations order directly out of SAP.

KCS uses Power Bi, which provides an integrated network view of KCS train movements and inventory (including locomotives and shipments), train performance, operating plan adherence, and the overall health of the network. Power Bi consolidates information from KCS's TMDS, MCS, and locomotive distribution systems, which comprise KCS's key operational IT landscape. Power Bi captures detailed planned and actual train information for all en route trains with movement events. Operating data are combined with train, customer, shipment, and location information to present train location and performance information in geographical and detailed views. The Power Bi dashboard provides KCS's operating teams with graphical representations of the entire KCS network displaying all trains running and on-time performance with a "red/yellow/green" status and key performance indicators. Using this tool, employees can drill down any train for details including: train type and kind, power, current train speed, destination, last location, origin, length, weight, planned and actual horsepower per ton, load/empty count, last event, crew information, marshalling, key train data, presence of poison inhalation hazard/toxic-inhalation hazard carloads, dangerous cars, and dimensional compliance.

Combined, these systems ensure the ability to quickly terminate operations in times of emergency.

As previously discussed, for crew management in the United States, KCS uses EWM system. For dispatch, KCS uses TMDS.

The KCS cybersecurity strategy follows the NIST Cybersecurity Framework and utilizes two main defense layers—one on the perimeter and the other at the interior network level. Perimeter defense layers include ISP protection, firewalls, load balancers, dedicated DNS security, and an email gateway to evaluate and "clean" all incoming email. On the interior level, KCS employs firewalls for segmentation, behavioral analysis systems, and robust endpoint protection. Employees and contractors also receive mandatory security training, monthly awareness newsletters, and are subjected to mock phishing campaigns to bring additional awareness to the dangers of phishing attacks.

KCS controls access to its network by using VPN and Citrix. In addition, multi-factor authentication and a 15-character password are required. Privileged account access is protected with SecureAuth and MFA.

KCS has initiated a Threat Intelligence Program based on the MITRE ATT&CK[7] framework. Using specially curated threat feeds from services such as Recorded Future and Crowd Strike, the program will alert KCS to potential threats within the industry and from vendors and will provide information on security trends. If any compromise is indicated, the system will detect it. A third party will also annually test both external and internal networks by attempting to penetrate the systems.

KCS security policies govern KCS and its partners and vendors. The policies are reviewed and updated on an annual basis. An Acceptable Use Policy is an annual mandatory

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[7] MITRE ATT&CK® is a globally-accessible knowledge base of adversary tactics and techniques based on real-world observations. The ATT&CK knowledge base is used as a foundation for the development of KCS-specific threat models and methodologies.

acknowledgment for every employee, as well as any contractor or vendor accessing the KCS network.

3. Safety Integration – Information System Compatibility

The overall goal to integrating CP and KCS information technology is to avoid train network disruption through a concept of operations that focuses on providing a safe working environment. This environment will be achieved during system integration by ensuring operational systems contain accurate information, avoiding or mitigating scheduled outages through operating practices, and maintaining a strict and well-planned migration sequence until all systems are fully integrated.

CP and KCS are assessing each network's information systems from the perspective of their intended functions and capabilities to evaluate issues relating to integration with comparable systems on the other railroad, among many other factors. CP and KCS held a number of joint IT integration planning sessions in November 2021 to understand each carrier's information systems and to begin the advance planning necessary to ensure a smooth IT integration process. CP and KCS will begin detailed planning and design for the first Post-Control Date and End State starting in January 2022.

Currently, CP and KCS each possess information systems that are adequate to meet each railroad's freight operations. To ensure a safe and efficient transition, CPKC will continue to use each railroad's existing systems for an initial period following the Control Date. However, the integration of information systems will begin, on the Control Date, with the integration of KCS information and master data into a CP Service Design system, providing the ability for consolidated strategic operational planning and operating plans to be implemented on day one. The resulting consolidated operating plans will then be published to both the CP and KCS portions

of the CPKC system. Network designs generated using this common system will subsequently be published to both CP and KCS critical traffic systems, so that train movements can continue to be executed by each railroad using their separate existing systems. This will enable the transaction synergies and CP's mature PSR principles to start on day one. CPKC will perform a review of business critical systems that must be integrated on or shortly after the Control Date, CPKC plans to advance test data in "non-production" environments to ensure compatibility of KCS data with CP applications and business processes.

Following the Control Date, as CPKC completes its system integration planning and training, the improved data exchange across the combined system will enable more efficient handling of formerly interlined traffic. Concurrently, CPKC will complete detailed plans for implementing the best practices of the two roads on a system-wide basis. Over time, CPKC will migrate operations across both networks to a single set of platforms, choosing the best options based on the following factors: technological capabilities, the ability to meet current and future needs of the CPKC network, and the ease with which a platform can accommodate a seamless transition for use by additional portions of the CPKC network. Within three years of the Control Date, shipment functions will be moved to the centralized CPKC systems.

BEFORE THE SURFACE TRANSPORTATION BOARD

FINANCE DOCKET NO. 36500

CANADIAN PACIFIC RAILWAY LIMITED, *ET AL.* – CONTROL – KANSAS CITY SOUTHERN, *ET AL*.

APPENDIX 1

SAFETY INTEGRATION PLAN ACCOUNTABILITIES CHART

Table of Contents

A. Corporate Culture

B. Training

C. Operating Practices

D. Motive Power and Equipment

E. Signal and Train Control

F. Track Safety Standards and Bridge Structures

G. Hazardous Materials

H. Dispatching Operations

I. Highway-Rail Grade Crossing Systems

L. Information System Compatibility

Subject Matter Safety Action Items:

Item	Description	SIP Ref. Page	Estimated Start	Estimated Completion	Resource Allocation
A. CORPORATE CULTURE					
A. a.	Review safety management systems	27	Q4 2022[8]	Q4 2025	• Safety
A. b.	Consolidate safety management systems	27	Q2 2022	Q4 2025	• Safety
A. c.	Adopt Consequence Leadership	27	Q4 2022	Q4 2024	• Safety • Operations
A. d.	Adopt CP's Workplace Health and Safety committee structure	28	Q4 2022	Q4 2023	• Safety • Operations
A. e.	Adopt CP's Home Safe program	27	Q4 2022	Q4 2025	• Safety
A. f.	Consolidate and file risk reduction plan	28	Q2 2022	Q4 2024	• Safety
A. g.	Adopt CP's efficiency testing and manager accountabilities	28	Q4 2022	Q4 2025	• Safety • Operating Practices and Rules
A. h.	Deploy CP's safety technology across the combined system	27	Q4 2022	Ongoing	• Safety • Information Systems

[8] Q4 2022 is based on the expected date of approval.

Subject Matter Safety Action Items:

Item	Description	SIP Ref. Page	Estimated Start	Estimated Completion	Resource Allocation
B. TRAINING					
B. a.	Perform review of training programs	43	Q4 2022	Q4 2024	• Training • Operating Rules & Practices
B. b.	Develop differences package	43	Q4 2022	Q4 2024	• Training
B. c.	Consolidate training programs	43	Q4 2022	Q4 2024	• Training
B. d.	Provide train the trainer sessions	44	Q4 2022	Q4 2024	• Training
B. e.	Perform review of Mechanical and Engineering qualification programs	43	Q4 2022	Q4 2024	• Training • Mechanical • Engineering
B.f.	Consolidate Mechanical and Engineering qualification programs	43	Q4 2022	Q4 2024	• Training • Mechanical • Engineering
B. g.	Provide support to training staff	44	Q4 2022	Ongoing	• Training
B. h.	Assess technological differences and expand smart board technology, where applicable	43–44	Q4 2022	Ongoing	• Training • Information Systems

Subject Matter Safety Action Items:

Item	Description	SIP Ref. Page	Estimated Start	Estimated Completion	Resource Allocation
C. OPERATING PRACTICES					
C.1 Operating Rules					
C.1.a.	Review rulebooks and instructions	49	Q4 2022	Q4 2023	• Operating Practices and Rules
C.1.b.	Consolidate rulebooks and instructions	49	Q1 2023	Q4 2025	• Operating Practices and Rules
C.1.c.	Review operational testing programs	49	Q4 2022	Q4 2023	• Operating Practices and Rules
C.1.d.	Consolidate operational testing programs	49	Q4 2022	Q4 2025	• Operating Practices and Rules
C.1.e.	Provide training	49–50	Q4 2022	Ongoing	• Operating Practices and Rules
C.1.f.	Review process for communicating rule changes	49	Q4 2022	Q42024	• Operating Practices and Rules
C.1.g.	Consolidate process for communicating rule changes	49	Q4 2024	Q4 2025	• Operating Practices and Rules
C.1.h.	Monitor rules performance and make adjustments, where necessary	49	Q4 2022	Ongoing	• Operating Practices and Rules
C. 2. Alcohol and Drug					
C.2.a.	Review drug and alcohol programs	54	Q4 2022	Q3 2023	• Drug & Alcohol
C.2.b.	Consolidate drug and alcohol programs	54	Q4 2022	Q4 2023	• Drug & Alcohol
C.2.c.	Train employees on applicable regulations	54	Q4 2023	Ongoing	• Drug & Alcohol • Training

C.3. Qualification and Certification					
C.3.a.	Perform review of 49 C.F.R. Part 240 and 49 C.F.R. Part 242	58	Q4 2022	Q4 2023	• Operating Practices • Training
C.3.b.	Consolidate 49 C.F.R. Part 240 and C.F.R. Part 242 programs	58–59	Q4 2023	Q4 2024	• Operating Practices • Training
C.3.c.	File consolidated 49 C.F.R. Part 240 and C.F.R. Part 242 programs	58–59	Q4 2024	Q4 2025	• Operating Practices
C.4. Hours of Service					
C.4.a.	Review Hours of Service programs and processes	61	Q4 2022	Q4 2024	• Crew Management • Operations • Signals and Communication • Dispatching
C.4.b.	Consolidate Hours of Service programs and processes	61	Q4 2024	Q4 2025	• Crew Management • Operations • Signals and Communication • Dispatching
C.4.c.	Maintain compliance with federal regulation	61	Q4 2022	Ongoing	• Signals & Communication

Subject Matter Safety Action Items:

Item	Description	SIP Ref. Page	Estimated Start	Estimated Completion	Resource Allocation
D. MOTIVE POWER AND EQUIPMENT					
D. a.	Perform review of qualification programs to identify differences	64	Q4 2022	Q4 2024	• Mechanical Training
D. b.	Consolidate qualification programs	64	Q4 2024	Q4 2025	• Mechanical • Training
D. c.	Provide training	64	Q4 2022	Ongoing	• Mechanical

Subject Matter Safety Action Items:

Item	Description	SIP Ref. Page	Estimated Start	Estimated Completion	Resource Allocation
E. SIGNAL AND TRAIN CONTROL					
E. a.	Review processes, standards, and systems	71	Q4 2022	Q4 2023	• Signals and Communication • Dispatching • Engineering
E. b.	Create detailed integration plan	71	Q4 2023	Q4 2024	• Signals and Communication • Dispatching • Engineering
E. c.	Integrate Signal and Train Control	71	Q4 2024	Q4 2025	• Signals and Communication • Dispatching • Engineering
E. d.	Meet with the FRA to ensure compliance with regulatory requirements	71	Q4 2022	Ongoing	• Signals and Communication

Subject Matter Safety Action Items:

Item	Description	SIP Ref. Page	Estimated Start	Estimated Completion	Resource Allocation
F. TRACK SAFETY STANDARDS AND BRIDGE STRUCTURES					
F. a.	Review structure programs and assets	77	Q4 2022	Q4 2023	• Engineering
F. b.	Adopt the Redbook of Track & Structures Requirements	77	Q4 2022	Q4 2023	• Engineering • Training
F. c.	Map and record assets into SAM	78	2023	2025	• Engineering • Information Systems
F. d.	Adopt SAM	78	2025	2026	• Engineering • Information Systems
F. e.	Move from DTN to TAM	78	2027	2030	• Engineering • Information Systems
F. f.	Review and consolidate weather monitoring and earthquake response protocol	78–79	TBD	TBD	• Risk Management
F. g.	Review and consolidate Track and Roadway Maintenance and Testing and Internal Flaw Detection practices	79	Q4 2022	Q4 2025	• Engineering
F. h.	Provide training	79	2023	2024	• Training • Engineering

Subject Matter Safety Action Items:

Item	Description	SIP Ref. Page	Estimated Start	Estimated Completion	Resource Allocation
G. HAZARDOUS MATERIALS					
G. a.	Incorporate KCS Hazmat staff and monitor staffing levels	91	Q4 2022	Ongoing	• Hazmat
G. b.	Review Hazmat-related training programs and determine differences	91–92	Q4 2022	Q2 2023	• Hazmat Training
G. c.	Consolidate Hazmat-related training	91–92	Q3 2023	Q4 2023	• Hazmat • Training
G. d.	Review and consolidate emergency response plan	92	Q4 2022	Q4 2023	• Hazmat
G. e.	Review and incorporate KCS third-party contractors into emergency response network	92	Q4 2022	Q1 2023	• Hazmat
G. f.	Incorporate emergency response assets and adopt maintenance and inspection program	92	Q4 2022	Q2 2023	• Hazmat
G. g.	Review and consolidate USHMI	93	Q4 2022	Q3 2023	• Hazmat • Operating Rules and Practices
G. h.	Review hazardous material documentation systems and processes	93	Q4 2022	Q4 2023	• Hazmat • Information Systems
G. i.	Review regulatory reporting systems and processes	93	Q4 2022	Q4 2023	• Hazmat • Information Systems
G. j.	Continue use of AskRail	94	Q4 2022	Ongoing	• Hazmat • Information Systems

G. k.	Consolidate efficiency testing	94	Q4 2022	Q4 2025	• Hazmat • Operating Rules and Practices
G. l.	Review KCS's last Responsible Care verification and incorporate into CPKC's next verification cycle	94	Q4 2022	2026	• Environmental

Subject Matter Safety Action Items:

Item	Description	SIP Ref. Page	Estimated Start	Estimated Completion	Resource Allocation
H. DISPATCHING OPERATIONS					
H. a.	Migrate Minneapolis Dispatching Center to Kansas City	101	Q4 2022	Q4 2023	• Dispatching • Information Systems
H. b.	Evaluate train control systems	101	Q4 2022	Q4 2023	• Dispatching • Information Systems
H. c.	Amalgamate dispatching operations	101	Q4 2023	Q4 2025	• Dispatching • Information Systems
H. d.	Develop process to determine Dispatcher workload	102	TBD	TBD	• Dispatching • Information Systems

Subject Matter Safety Action Items:

Item	Description	SIP Ref. Page	Estimated Start	Estimated Completion	Resource Allocation
I. HIGHWAY-RAIL GRADE CROSSING SYSTEMS					
I. a.	Perform review of programs	106	Q4 2022	Q4 2023	• Public Works
I. b.	Determine consolidation measures and consolidate, if necessary	106	Q4 2022	Ongoing	• Public Works
I. c.	Coordinate with each state department of transportation and other roadway authorities, where required	107	Q4 2022	Ongoing	• Public Works

Subject Matter Safety Action Items:

Item	Description	SIP Ref. Page	Estimated Start	Estimated Completion	Resource Allocation
L. INFORMATION SYSTEM COMPATIBILITY					
L. a.	Review Information Systems	129	Underway	Q1 2022	• Information Systems
L. b.	Identify business critical systems	130	Underway	Q1 2022	• Information Systems
L. c.	Information System planning and design	129	Q1 2022	TBD	• Information Systems
L. d.	Integrate and publish master data	129	Q4 2022	TBD	• Information Systems
L. e.	Integrate shipment functions	130	Q4 2022	Q4 2024	• Information Systems
L. f.	Integrate Corporate Systems	130	Q4 2022	Q4 2024	• Information Systems

BEFORE THE SURFACE TRANSPORTATION BOARD

FINANCE DOCKET NO. 36500

CANADIAN PACIFIC RAILWAY LIMITED, *ET AL.* – CONTROL – KANSAS CITY SOUTHERN, *ET AL*.

APPENDIX 2

HIGHWAY-RAIL GRADE CROSSINGS AT EXISTING QUIET ZONES WHERE INCREASED TRAFFIC IS ANTICIPATED AS A RESULT OF THE TRANSACTION

CP QUIET ZONES

DOT Number	Subdivision	MP	Street
696404T	Paynesville	2.46	Shoreham Loop West Crossing
696405A	Paynesville	2.55	Shoreham Loop Middle Crossing
688930K	Paynesville	3.27	Lyndale Ave.
688935U	Paynesville	3.68	45th Ave.
688936B	Paynesville	3.93	Humboldt Ave.
696401X	Paynesville	5.74	Azelia Ave. North
688952K	Paynesville	6.94	West Broadway Ave. (CSAH 8)
688953S	Paynesville	7.09	Douglas Dr. (CSAH 102)
688954Y	Paynesville	8.11	Winnetka Ave.
688956M	Paynesville	8.62	Boone Ave.
689113L	Paynesville	10.10	Zachary Ln.
689114T	Paynesville	10.88	Larch Ln.
689115A	Paynesville	11.14	Pineview Ln.
689124Y	Paynesville	15.49	Sioux Dr.
689125F	Paynesville	16.38	Pinto Dr.
689279H	Paynesville	23.98	Greenfield Rd.
696381N	Merriam Park	410.96	Market/Ontario St.
379554D	Merriam Park	411.12	Chestnut St.
379594B	Merriam Park	412.08	Western Ave.
379596P	Merriam Park	412.13	Erie St.
379597W	Merriam Park	412.43	Oneida St.
379617F	Merriam Park	415.48	Carroll Ave.
697448W	River	303.47	Private Crossing
391050F	River	303.71	Jefferson St.
391051M	River	303.89	Homer Ave.
391052U	River	306.72	Louisa St.
391055P	River	307.19	Mankato St.
391060L	River	307.55	Hamilton St.
391061T	River	307.98	Franklin St.
391062A	River	308.35	Main St.
391066C	River	308.63	Huff St.
391069X	River	308.84	Grand St.
391072F	River	309.04	Sioux St./Gilmore
391075B	River	309.26	Howard St.
391078W	River	309.43	Baker/Wabasha St.
391079D	River	309.56	Broadway St.
391080X	River	309.66	Fifth/Jackson St.
391093Y	River	310.11	Bierce St.
391123N	River	311.29	41st Ave.
391124V	River	312.14	54th Ave.
696384J	River	313.19	69th Ave.
391131F	River	314.41	Wenonah Road
391132M	River	314.54	Private Crossings
391133U	River	314.76	Minnesota Street

DOT Number	Subdivision	MP	Street
391232S	River	391.02	3rd Street
391233Y	River	391.92	2nd Street
391259B	River	399.7C	Belden Blvd CP on MT 1
061129U	River	415.20(B)	Inman Ave. BNSF No 2 MT
BNSF	River	420.32 (B)	Pullman Ave.
BNSF	River	420.17(B)	9th Ave.
BNSF	River	421.1	Broadway Ave.
372121Y	Elgin	9.16	Oak Park Ave.
372123M	Elgin	9.48	Sayre Ave.
372124U	Elgin	9.58	Noridca Ave.
372125B	Elgin	9.69	Neva Ave.
372126H	Elgin	9.79	Harlem Ave.
372127P	Elgin	9.95	73rd Ave.
372128W	Elgin	10.18	75th Ave.
	Elgin	10.31	Ped Crossing
372129D	Elgin	10.45	Grand Ave.
	Elgin	10.51	Ped Crossing
372170V	Elgin	17.08	York Rd.
372171C	Elgin	17.16	Center St.
372172J	Elgin	17.23	Addison St.
372174X	Elgin	17.58	Church St.
372176L	Elgin	18.48	Ash Ave.
372177T	Elgin	19.08	Irving Park Rd.
372178A	Elgin	19.17	Wood Dale Rd.
920564Y	Elgin		Wood Dale Station Ped Xing E
920565F	Elgin		Wood Dale Station Ped Xing W
372179G	Elgin	20.25	Prospect Ave.
372180B	Elgin	21.02	Walnut St.
372181H	Elgin	21.07	Station Ped Xing
372181H	Elgin	21.37	Catalpa Ave.
372194J	Elgin	24.37	Park St.
372195R	Elgin	24.46	Prospect St.
372196X	Elgin	24.59	Roselle Rd.
372202Y	Elgin	26.17	Rodenburg Rd.
371997M	Elgin	29.51	Prospect Ave
920580H	Elgin	30.04	Main St Ped Xing
372206B	Elgin	30.09	Oak Ave.
	Elgin	30.12	Depot Ped Xing
372207H	Elgin	30.26	Western Ave.
372210R	Elgin	31.87	Naperville Road
372212E	Elgin	32.67	Spaulding Road
376-080-K	Marquette	20.48	Spruce Street
376-081-S	Marquette	20.54	Rose Street
376-082-Y	Marquette	20.6	Vine Street
376-083-F	Marquette	20.62	Church Street
376-084-M	Marquette	20.72	Chestnut Street

DOT Number	Subdivision	MP	Street
376-085-U	Marquette	20.78	Jefferson Street
376-086-B	Marquette	20.84	Court Street
376-089-W	Marquette	20.95	Market Street
376-090-R	Marquette	21.05	Park Street
376-091-X	Marquette	21.09	Franklin Street
376-092-E	Marquette	21.14	Spring Street
376-094-T	Marquette	21.27	Sylvan Street
376-096-G	Marquette	21.42	High Street
376-097-N	Marquette	21.64	Motte Street
689571A	Ottumwa	218.86	Mad Creek Ped Xing
607204S	Ottumwa	219.24	Cedar St.
607205Y	Ottumwa	219.3	Sycamore Ped Xing
607206F	Ottumwa	219.38	Iowa St.
607207M	Ottumwa	219.45	Chestnut St Ped Xing
689568S	Ottumwa	219.98	Hershey Ave. Ped Xing

KCS QUIET ZONES

DOT Number	Subdivision	MP	Street
	Alliance	92.87	HIGHLAND VILLAGE
	Alliance	93.53	HIGHLAND VILLAGE
021635L	Alliance	74.9	COIT ROAD
021638G	Alliance	76.07	OHIO DRIVE
021749Y	Alliance	78.55	DALLAS N PKWY
919239F	Alliance	78.65	DALLAS N PKWY
021770E	Alliance	78.73	HORIZON NORTH DR
919241G	Alliance	90.5	N SUMMIT AVE
021669F	Alliance	90.99	MCGEE LANE
021774G	Alliance	91.51	GARDEN RIDGE BLVD
330967H	Alliance	580.95	WESTGATE WAY
789648L	Alliance	581.9	COUNTRY CLUB RD
331279Y	Alliance	582.7	SPRINGWELL PKWY
790146W	Alliance	583.2	MCCREARY RD
789646X	Alliance	583.72	MAXWELL CREEK
789645R	Alliance	584.33	MURPHY ROAD
789644J	Alliance	584.95	FM 544
789643C	Alliance	585.4	PARK VISTA ROAD
919268R	Alliance	586.24	PLANO PARKWAY
753583T	Alliance	586.95	LOS RIOS BLVD
789640G	Alliance	587.5	SHILOH ROAD
789638F	Alliance	588.3	JUPITER ROAD
789637Y	Alliance	589.3	N AVENUE
789636S	Alliance	589.53	MUNICIPAL AVE
789635K	Alliance	589.63	K AVE
789633W	Alliance	589.95	10TH STREET
788900U	Alliance	590.11	AVE F
789632P	Alliance	590.16	E PLANO PARKWAY
789631H	Alliance	590.2	US 75 E FRONTAGE
789629G	Alliance	590.4	US 75 W FRONTAGE
789628A	Alliance	591.81	CUSTER
329479H	Beaumont	766.27	PARK
329480C	Beaumont	766.37	NECHES STREET
969618S	Beaumont	766.53	Eastham Forge
329483X	Beaumont	766.71	SS 0380
021620W	Dallas	68.39	BUCKINGHAM ROAD
021736X	Dallas	68.65	CENTENNIAL BLVD
021734J	Dallas	68.99	SPRING VALLEY RD
021623S	Dallas	70.43	ARAPAHOE ROAD
021626M	Dallas	71.68	CAMPBELL ROAD
021627U	Dallas	72.05	CUSTER PARKWAY
021629H	Dallas	72.93	LOOKOUT DRIVE
919214K	Dallas	202.15	kirby st
022362X	Dallas	202.6	WESTGATE WAY

DOT Number	Subdivision	MP	Street
022363E	Dallas	203.1	SANDEN BLVD
022085R	Dallas	206.49	MURPHY ROAD
927065G	Dallas	206.75	PRIVATE
022082V	Dallas	208.17	NAAMAN SCHOOL RD
022080G	Dallas	208.76	CRIST ROAD
022079M	Dallas	209.38	BUCKINGHAM ROAD
022076S	Dallas	209.92	CASTLE DRIVE
022075K	Dallas	210.21	N 1ST ST
022074D	Dallas	210.41	W WALNUT STREET
022072P	Dallas	210.7	W STATE ST
022071H	Dallas	210.76	MAIN STREET
022070B	Dallas	210.81	N 5TH STREET
022069G	Dallas	210.83	W AVENUE A
022068A	Dallas	210.9	W AVENUE B
022067T	Dallas	211.06	W AVENUE D
022066L	Dallas	211.21	W AVENUE F
022064X	Dallas	212.23	W Miller Road
022063R	Dallas	212.42	Devonwood Drive
022061C	Dallas	213.16	Axe Dr
022060V	Dallas	213.48	W Kingsley Road
022360J	Dallas	213.78	Leon Road
022058U	Dallas	214.12	Shiloh Road
331494K	Greenville	82.16	NICHOLS Streeet
331496Y	Greenville	82.58	WEBB ST
919243V	Greenville	199.475	KCS Yard / IMF Xings
022364L	Greenville	199.504	SPRING CREEK PKWY
789654P	Greenville	200.021	RD 389 / Eubanks Lane
789653H	Greenville	200.92	FM 2514 / Ballard Avenue
789652B	Greenville	201.23	FM 3412 / Brown Street
789651U	Greenville	201.37	W Marble St
789650M	Greenville	201.46	Oak Street
330101W	Heavener	173.34	WASHINGTON AVE
330102D	Heavener	173.65	College Street
330112J	Heavener	174.32	SPRING STREET
330113R	Heavener	174.64	McKinney Street
302321S	Meridian	102.92	WICKSTEAD DRIVE
302323F	Meridian	103.21	PARKER DRIVE
302324M	Meridian	103.38	LINDALE DRIVE
302326B	Meridian	103.76	LAKEVIEW DRIVE
302327H	Meridian	103.99	OAKWOOD DRIVE
302328P	Meridian	104.55	MAIN STREET
302329W	Meridian	104.75	LEAKE STREET
302330R	Meridian	104.96	MONROE STREET
302332E	Meridian	107.36	INDUSTRIAL PARK DRIVE
919242N	Meridian	109.11	ST THOMAS PKWY / NORRELL RD

DOT Number	Subdivision	MP	Street
302393V	Meridian	139.03	COURT STREET
302397X	Meridian	139.77	OAK STREET
293574X	Mexico	459.64	ROBINSON RD
293587Y	Mexico	469.14	WOODS CHAPEL ROAD
743359F	Rosenberg	917.31	FM 0102
743361G	Rosenberg	917.8	SPANISH CAMP
743363V	Rosenberg	918	W MILAM ST
927033B	Rosenberg	929.9	SAM BISHKIN ROAD
743432B	Rosenberg	930.58	FM 0653 WHARTON ST
743433H	Rosenberg	930.81	HIGBEE
743434P	Rosenberg	931.12	WASHINGTON
743435W	Rosenberg	931.19	SH 71 MECHANIC ST
743436D	Rosenberg	931.25	ALAMO ST/FAHD
743437K	Rosenberg	931.34	HOSKINS BROADWAY
743438S	Rosenberg	931.8	PALACIOUS STREET
743439Y	Rosenberg	932.13	GLADYS ST
743440T	Rosenberg	932.4	MEADOW LANE
743453U	Rosenberg	941.18	WHARTON
743454B	Rosenberg	941.32	COLORADO ST
743459K	Rosenberg	941.77	Orange Street
746637E	Rosenberg	958.32	EAST ST
746639T	Rosenberg	958.48	SH 0111 WELLS ST
746640M	Rosenberg	958.71	ALLEN ST
746641U	Rosenberg	958.9	PUMPHREY ST
746642B	Rosenberg	959.13	COLORADO ST
746643H	Rosenberg	959.41	FM 1822
330861M	Shreveport	481.88	FOREST LAKE DRIVE
330862U	Shreveport	482.2	LAKERIDGE DRIVE
302496V	Vicksburg	66.185	CHENNAULT PARK DRIVE
302497C	Vicksburg	68.32	KANSAS LANE
302498J	Vicksburg	69.18	POWELL AVE
302505S	Vicksburg	71.58	DESIARD ST
302506Y	Vicksburg	71.687	N 5TH STREET
302507F	Vicksburg	71.761	N 4TH Street
302510N	Vicksburg	71.96	S GRAND ST
302511V	Vicksburg	72.2	RIVER FRONT ST
302514R	Vicksburg	72.54	4TH STREET

BEFORE THE SURFACE TRANSPORTATION BOARD

FINANCE DOCKET NO. 36500

CANADIAN PACIFIC RAILWAY LIMITED, *ET AL.* – CONTROL – KANSAS CITY SOUTHERN, *ET AL*.

APPENDIX 3

LIST OF CP FEDERAL AND STATE FUNDING GRANTS

State	Sub	Mile Post	DOT Number	Type of Project	Funding Type	Agreement Status
Maine - CMQ	Bangor	66.07	051206P	Crossing Warning Devices	FHWA Section 130	Forthcoming
Maine - CMQ	Moosehead	51.43	847792N	Crossing Warning Devices	FHWA Section 130	Forthcoming
Maine - CMQ	Bangor	22.7	051288Y	Crossing Warning Devices	FHWA Section 130	Forthcoming
New York D&H	Canadian Main	1.07	915806G	Crossing Warning Devices	FHWA Section 130	Executed
New York D&H	Canadian Main	1.49	915805A	Crossing Warning Devices	FHWA Section 130	Executed
New York D&H	Canadian Main	1.82	915804T	Crossing Warning Devices	FHWA Section 130	Executed
New York D&H	Canadian Main	2.15	915803L	Crossing Warning Devices	FHWA Section 130	Executed
New York D&H	Canadian Main	0.67	915807N	Crossing Warning Devices	FHWA Section 130	Executed
New York D&H	Canadian Main	168.17	249118G - 249117A	Crossing Warning Devices	FHWA Section 130	Executed
New York D&H	Canadian Main	174.25	249135X	Crossing Warning Devices	FHWA Section 130	Executed
New York D&H	Canadian	24.78	249461B	Crossing Surface	FHWA Section 131	Forthcoming
New York D&H	Colonie	6.32	250021G	Crossing Warning Devices	FHWA Section 132	Forthcoming
New York D&H	Colonie	6.23	250022N	Crossing Warning Devices	FHWA Section 133	Forthcoming
New York D&H	Colonie	6.13	250023V	Crossing Warning Devices	FHWA Section 134	Forthcoming
Illinois DM&E	Chicago	123.05	372414C	Crossing Warning Devices	FHWA Section 130	Executed
Illinois DM&E	Rockford	24.25		Crossing Warning Devices	FHWA Section 130	Forthcoming
Illinois DM&E	Rockford	13.25		Crossing Warning Devices	FHWA Section 130	Forthcoming
Illinois DM&E	Rockford	15.61		Crossing Warning Devices	FHWA Section 130	Forthcoming
Illinois DM&E	Chicago	87.1	372360Y	Crossing Warning Devices	FHWA Section 130	Forthcoming
Illinois DM&E	Nitrin	14.5	372491C	Crossing Warning Devices	FHWA Section 130	Forthcoming
Illinois DM&E	Chicago	92.07	372360Y	Surface	State Funds	Executed
Illinois DM&E	Chicago	44.3	372257L	Surface	State Funds	Forthcoming
Iowa - DM&E	Owatonna	6.06	Plymouth	Crossing Warning Devices	FHWA Section 130	Forthcoming
Iowa - DM&E	Davenport	154.2	Clinton	Crossing Warning Devices	FHWA Section 130	Forthcoming
Iowa - DM&E	Davenport	154	Clinton	Crossing Warning Devices	FHWA Section 130	Forthcoming
Iowa - DM&E	Davenport	156.21	Clinton	Crossing Warning Devices	FHWA Section 130	Forthcoming
Iowa - DM&E	Davenport	154.89	Clinton	Crossing Warning Devices	FHWA Section 130	Forthcoming
Iowa - DM&E	Davenport	156.53	Clinton	Crossing Warning Devices	FHWA Section 130	Forthcoming
Iowa - DM&E	Sheldon	217.06	Spencer	Crossing Warning Devices	FHWA Section 130	Forthcoming
Iowa - DM&E	Sheldon	216.76	Spencer	Crossing Warning Devices	FHWA Section 130	Executed
Iowa - DM&E	Sheldon	126.36	Clear Lake	Crossing Warning Devices	FHWA Section 130	Executed
Iowa - DM&E	Sheldon	252.5	Sheldon	Crossing Warning Devices	FHWA Section 130	Executed
Iowa - DM&E	Mason City	107.64	Nora Springs	Crossing Warning Devices	FHWA Section 130	Executed
Iowa - DM&E	Ottumwa	219.38	Muscatine	Crossing Warning Devices	FHWA Section 130	Executed
Iowa - DM&E	Ottumwa	199.86	Linwood	Crossing Warning Devices	FHWA Section 130	Executed
Iowa - DM&E	City of Ossian	Lydia Street	385219P	Crossing Surface Agreements	Iowa 60/20/20 Funds	Executed

State	Sub	Mile Post	DOT Number	Type of Project	Funding Type	Agreement Status
Iowa - DM&E	Kossuth County	90th Avenue	385614Y	Crossing Surface Agreements	Iowa 60/20/20 Funds	Executed
Iowa - DM&E	O'Brien County	L40/ Oriole Avenue	385769R	Crossing Surface Agreements	Iowa 60/20/20 Funds	Executed
Iowa - DM&E	City of Dickens	Main Street	385696H	Crossing Surface Agreements	Iowa 60/20/20 Funds	Executed
Iowa - DM&E	Cerro Gordo County	Zinnia Avenue	385463L	Crossing Surface Agreements	Iowa 60/20/20 Funds	Executed
Iowa - DM&E	City of Clear Lake	Buddy Holly Place	385516H	Crossing Surface Agreements	Iowa 60/20/20 Funds	Executed
Iowa - DM&E	Floyd County	Underwood Ave.(T66)	385422G	Crossing Surface Agreements	Iowa 60/20/20 Funds	Executed
Iowa - DM&E	O'Brien County	B-20 (Roosevelt Ave)	385762T	Crossing Surface Agreements	Iowa 60/20/20 Funds	Executed
Iowa - DM&E	Chickasaw County	B57 (220th St.)	385301J	Crossing Surface Agreements	Iowa 60/20/20 Funds	Executed
Iowa - DM&E	Palo Alto County	490th Avenue	385645X	Crossing Surface Agreements	Iowa 60/20/20 Funds	Executed
Iowa - DM&E	Cerro Gordo County	305th Street	380019N	Crossing Surface Agreements	Iowa 60/20/20 Funds	Executed
Iowa - DM&E	Washington County	Old Military Road	607335V	Crossing Surface Agreements	Iowa 60/20/20 Funds	Executed
Iowa - DM&E	City of Camanche	4th Avenue	865544M	Crossing Surface Agreements	Iowa 60/20/20 Funds	Executed
Minnesota	Paynesville	BELGRADE	689304W	Crossing Warning Devices	FHWA Section 130	Executed
Minnesota	SOO	MAPLE LAKE	689200P	Crossing Warning Devices	FHWA Section 130	Executed
Minnesota	River	RED WING	696382V	Crossing Warning Devices	FHWA Section 130	Executed
Minnesota	Tracy	OWATONNA	193388V	Crossing Warning Devices	FHWA Section 130	Executed
Minnesota	River	WINONA	391052U	Crossing Warning Devices	FHWA Section 130	Executed
Minnesota	Rockford	JANESVILLE	193344V	Crossing Warning Devices	FHWA Section 130	Executed
Minnesota	Tracy	WASECA	193400A	Crossing Warning Devices	FHWA Section 130	Executed
Minnesota	Tracy	TRACY	193702C	Crossing Warning Devices	FHWA Section 130	Executed
Minnesota	St. Paul	VADNAIS HEIGHTS	691417C	Crossing Warning Devices	FHWA Section 130	Executed
Wisconsin	Watertown	105.19	390530N	Crossing Warning Devices	FHWA Section 130	Executed
Wisconsin	Watertown	97.09 - 97.04	390516T- 695498T	Crossing Warning Devices	FHWA Section 130	Executed
Wisconsin	Menomonee Belt Line	3.04	177221T	Crossing Warning Devices	FHWA Section 130	Executed
Wisconsin	Watertown	98.06	390517A	Crossing Warning Devices	FHWA Section 130	Executed
Wisconsin	Watertown	106.69	390534R	Crossing Warning Devices	FHWA Section 130	Executed
Wisconsin	Watertown	106.18	390533J	Crossing Warning Devices	FHWA Section 130	Executed
Wisconsin	Watertown	105.65	390532C	Crossing Warning Devices	FHWA Section 130	Executed
Wisconsin	Watertown	98.38	390520H	Crossing Warning Devices	FHWA Section 130	Executed
North Dakota	Portal	530.94	699003D	Surface	FHWA Section 130	Executed
North Dakota	Elbow Lake	224.01	691883E	Surface	FHWA Section 130	Executed
North Dakota	Portal	495.1	698966V	Surface	FHWA Section 130	Executed
North Dakota	Elbow Lake	248.32	691864D	Surface	FHWA Section 130	Executed
North Dakota	Elbow Lake	257.3	691880M	Surface	FHWA Section 130	Executed
North Dakota	Newtown	514.3	693323H	Surface	FHWA Section 130	Executed

CERTIFICATE OF SERVICE

I hereby certify that I have caused the foregoing Safety Integration Plan to be served electronically or by first class mail, postage pre-paid, on all parties of record in this proceeding.

/s/ Stefan Mitrovic
Stefan Mitrovic

December 28, 2021

Appendix H

Grade Crossing Safety and Delay

H.1 Grade Crossing Safety Approach

For grade crossing safety, the analyses are based on future conditions under the No-Action Alternative and Proposed Acquisition. Specifically, the No-Action Alternative analysis was conducted for 2027, the future condition of five years after the anticipated year of the Board's final decision. The No-Action condition reflects the projected train and vehicle traffic levels in the analysis year 2027 without the Proposed Acquisition. The Proposed Acquisition analysis was also conducted for 2027, accounting for projected train traffic levels as a result of the acquisition. The following data sources serve as the basis for the grade crossing safety analysis.

Crash data are from the Federal Railroad Administration (FRA) database. During the latest five years (2017-2021), there were ~~168~~ 169 crashes reported at the ~~1,352~~1,365 grade crossings within the study area. This equates to an average of 0.025 crashes per grade crossing per year, or approximately one crash per grade crossing every 40 years. For the ~~1,134~~1,270 grade crossings included in the safety analysis, there were ~~90~~ 156 crashes reported during the five-year analysis period (2017-2021). This equates to an average of 0.~~016~~ 025 crashes per grade crossing per year, or approximately one crash per grade crossing every ~~62.5~~40.7 years. For the 31 pedestrian-only grade crossings included in the safety analysis, there were two crashes reported during the five-year analysis period (2017-2021), both of which were confirmed suicides. In 2020, FRA published a report that includes statistics on the safety performance of similar grade crossings nationally (FRA 2020). The analysis included more than 105,000 public grade crossings in the U.S. that are not closed and not grade separated. During the five-year period from 2014 to 2018, there were 8,467 crashes at those grade crossings, representing an average of 0.016 crashes per grade crossing per year, or approximately one crash per grade crossing every 62.5 years, which is ~~identical to~~less than the average crashes per grade crossing included in the safety analysis for this study.

Average Annual Daily Traffic (AADT) data are from the FRA database (FRA 2021) with updates from state and local transportation agencies where available and adjustments based on field visits. The AADT values are based on data that represent years ranging from 1970 to 2021. As such, there is a need to normalize the AADT values to a common year and then extrapolate the values to the analysis year of 2027. The general approach used to estimate 2027 AADT values was to identify the most recent available AADT value, adjust that value to a common base year of 2019, and then grow all values to the analysis year of 2027. Based on common industry practice, the specific approaches used to adjust historical AADT values 2027 AADT values include:

- If two years of historical traffic data are available and the volume for the more recent year is greater than the volume for the earlier year, then straight-line growth is used to adjust the most recent AADT value to 2019.
- If two years of historical traffic data are available and the volume for the more recent year is equal to or less than the volume for the earlier year, then a growth factor of 1.0 is used to adjust the most recent AADT value to 2019 (such as, assume most recent AADT as 2019 AADT).
- If one year of historical traffic data is available, then data from the United States Census Bureau (Decennial Census data and American Community Survey data) are used to develop growth factors. Specifically, the growth factors are based on the ratio of the number trips to work by car, truck, or van from one year to another.
- For historical AADT values from 2010 or older, the growth factor is based on the ratio of trips to work by car, truck, or van in 2019 compared to 2000. If the growth factor is less than or equal to 1.0, then no growth is assumed from the most recent year to 2019 (such as, assume most recent AADT as 2019 AADT).
- For historical AADT values from 2011 or newer, the growth factor is based on the ratio of trips to work by car, truck, or van in 2019 compared to 2011. If the growth factor is less than or equal to 1.0, then no growth is assumed from most recent year to 2019 (such as, assume most recent AADT as 2019 AADT).
- If 2020 or 2021 traffic data are available, then these values are used instead of growing older values.
- A two-percent annual growth rate is used to grow the AADT values to 2027, starting with 2019, 2020, or 2021 AADT values as applicable.

In one case, OEA's field visit identified a discrepancy between the estimated and actual traffic volume. Specifically, OEA observed very low traffic volumes at the grade crossing for Ripley Street in Davenport, Iowa (Crossing ID 865653R). The historical traffic volume from 1975 was 10,000 vehicles per day, which is inconsistent with OEA's observations and the characteristics of the roadway and adjacent land use. Ripley Street terminates in a parking lot with approximately 100 parking spaces immediately south of the grade crossing. To the north of the grade crossing, Ripley Street is a two-lane road functionally classified as "local" with a posted speed limit of 20 mph. The next street to the east, and adjacent grade crossing, is Harrison Street, which terminates in the same parking lot. Harrison Street is very similar to Ripley Street; a two-lane road functionally classified as "local" with a posted speed limit of 20 mph. The most recent traffic volume for Harrison Street is 700 vehicles per day based on data from 2018. Based on these data and OEA's field observations at the Ripley Street grade crossing, it was hypothesized that the 1975 traffic volume of 10,000 vehicles per day was likely a data entry error such as an extra '0' typed during data entry. As such, OEA adjusted the 1975 traffic volume for Ripley Street to 1,000 vehicles per day and then proceeded with the forecasting procedure described above.

Existing train traffic (average number of trains per day) is based on multiple sources of information, including both freight train and passenger train activity. The number of freight trains on CP and KCS tracks is based on estimates by CP (*Chapter 2, Section 2.2.1, Changes*

in Rail Operations). The freight trains on BNSF Railway (BNSF) and Union Pacific Railroad Company (UP) tracks are based on the FRA database for base values, applying CP organic growth factors to estimate 2027 freight train volumes for the No-Action Alternative, and adding CP Proposed Acquisition-related growth to estimate freight train volumes with the Proposed Acquisition. Passenger trains are based on 2019 General Transit Feed Specification data and confirmed using Metra data. For consistency across the multi-state geography of the project, the assumption is that passenger rail trains per day would be the same in future 2027 as in base year 2019.

Future train traffic (average number of trains per day) is based on estimates by CP (*Chapter 2, Section 2.2.1, Changes in Rail Operations*).

A weighted average of freight train length and passenger train length is used to estimate the average train length for grade crossing safety analyses. Freight train characteristics, including train length ~~and speed~~, are based on data provided by CP ~~and updated~~. For passenger trains, train length is based on the Metra 2018 State of the System Report (Metra 2018), Amtrak website (Amtrak 2022), and Near Map aerial imagery to check a sample of actual train consist lengths. The assumed length is based on an average Amtrak consist of two Amtrak P42 locomotives at 69 feet each, and 10 Amtrak superliner cars at 85 feet each (used on both Sunset Limited and Empire Builder), which results in a typical passenger train length of 988 feet.

Track speeds were identified using CP and KCS ~~using~~ timetables and supplemented using the FRA crossing database to fill in gaps in the timetable data (such as through Houston where the tracks are owned and dispatched by UP and BNSF). Freight maximum authorized speed (MAS) is used for this analysis. In areas with passenger service that can operate at higher speeds than freight, this analysis assumes that Freight MAS represents speeds closer to the average train speed. The analysis speed for segment C-ELGI-01 west of Chicago, which is used by a high volume of Metra commuter trains and by CP freight trains to enter Bensenville Yard, was estimated to be between freight MAS and the yard track speed. For any crossings with head ~~in~~ end speed restrictions, the train speed is based on head ~~in~~ end speeds. ~~For passenger trains, train length is based on the Metra 2018 State of the System Report (Metra 2018), Amtrak website (Amtrak 2022), and Near Map to check a sample of actual train consist lengths. The assumed length is based on an average of two Amtrak P42 locomotives at 69 feet each, and 10 Amtrak superliner cars at 85 feet each (used on both Sunset Limited and Empire Builder), which results in an average passenger train length of 988 feet.~~

Table H.1-1 presents an inventory of all the ~~1,352~~1,365 public grade crossings within the study area. The table includes basic details for the crossing roadway and the railway, including AADT, train speed, train length, number of trains per day, and average gate down time. Separate values are presented for the No-Action Alternative and Proposed Acquisition ~~scenarios~~ as applicable. The crossings are located by State, County, City, Street, and Crossing ID. For subsequent tables in this appendix, the Crossing ID can be used to cross-reference grade crossings. **Table H.1-1** includes 13 additional grade crossings that were identified during the response to comments after the submission of the Draft EIS. These 13 sites are reflected in the remaining tables and analyses as appropriate; six are

included in the grade crossing safety analysis and none meet OEA's AADT threshold of 2,500 or more vehicles per day for inclusion in the grade crossing delay analysis.

Table H.1-1. Inventory of Public Grade Crossings by State, County, and City

State	County	City	Street	Crossing ID	AADT	Train Speed (mph)	Train Length with No-Action (feet)	Train Length with Proposed Acquisition (feet)	Trains Per Day with No-Action	Trains Per Day with Proposed Acquisition	Average Gate Down Time with No-Action (minutes)	Average Gate Down Time with Proposed Acquisition (minutes)
Arkansas	Benton	Decatur	3rd Street	330355L	480	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Arkansas	Benton	Decatur	Mount Olive Road	330349H	82	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Arkansas	Benton	Decatur	Road 329	330358G	47	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Arkansas	Benton	Decatur	Road 335	330357A	23	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Arkansas	Benton	Decatur	Roller Avenue	330354E	4396	30	8508.0	7385.4	16.17	28.58	3.8	3.4
Arkansas	Benton	Decatur	Y City Road	330359N	141	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Arkansas	Benton	Gentry	Collins Avenue	330363D	3866	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Arkansas	Benton	Gentry	Floyd Moore Road	330360H	70	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Arkansas	Benton	Gentry	Main Street	330362W	5155	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Arkansas	Benton	Gentry	Marion Lee Road	330365S	316	30	8508.0	7385.4	16.17	28.58	3.8	3.4
Arkansas	Benton	Gentry	Pioneer Lane	330364K	703	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Arkansas	Benton	Gentry	Private	330361P	12	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Arkansas	Benton	Gentry	Railroad Avenue	330411R	1289	40	8508.0	7385.4	16.17	28.58	3.0	2.7

Table H.1-1. Inventory of Public Grade Crossings by State, County, and City

State	County	City	Street	Crossing ID	AADT	Train Speed (mph)	Train Length with No-Action (feet)	Train Length with Proposed Acquisition (feet)	Trains Per Day with No-Action	Trains Per Day with Proposed Acquisition	Average Gate Down Time with No-Action (minutes)	Average Gate Down Time with Proposed Acquisition (minutes)
Arkansas	Benton	Gravette	Dallas Street	330345F	596	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Arkansas	Benton	Gravette	Limekiln Road	330346M	117	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Arkansas	Benton	Gravette	Mount Olive Road	330347U	731	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Arkansas	Benton	Siloam Springs	Country Club Road	330370N	1113	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Arkansas	Benton	Siloam Springs	Davidson Road	330368M	1465	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Arkansas	Benton	Siloam Springs	Dawn Hill Road	330367F	2322	30	8508.0	7385.4	16.17	28.58	3.8	3.4
Arkansas	Benton	Siloam Springs	Jefferson Street	330375X	5038	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Arkansas	Benton	Siloam Springs	Kenwood Street	330376E	2929	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Arkansas	Benton	Siloam Springs	Lake Francis Road	330382H	1311	35	8508.0	7385.4	16.17	28.58	3.4	3.0
Arkansas	Benton	Siloam Springs	Lincoln Street	330405M	6561	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Arkansas	Benton	Siloam Springs	Road 159 / Waynes Trail	330385D	120	35	8508.0	7385.4	16.17	28.58	3.4	3.0
Arkansas	Benton	Siloam Springs	Road 164 / Elm Road	330384W	22	35	8508.0	7385.4	16.17	28.58	3.4	3.0
Arkansas	Benton	Siloam Springs	Tahlequah Street	330372C	2901	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Arkansas	Benton	Sulphur Spgs	Fickinger Street	330336G	198	30	8508.0	7385.4	16.17	28.58	3.8	3.4

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Arkansas	Benton	Sulphur Spgs	White Avenue	330338V	211	30	8508.0	7385.4	16.17	28.58	3.8	3.4
Arkansas	Little River	Ashdown	Arkansas 108	330573T	1031	55	9650.9	8128.3	16.26	28.67	2.6	2.3
Arkansas	Little River	Ashdown	Commerce Street	330576N	808	50	9650.9	8128.3	16.26	28.67	2.8	2.4
Arkansas	Little River	Ashdown	Domtar Entrance A	330584F	257	50	9650.9	8128.3	13.49	25.89	2.8	2.4
Arkansas	Little River	Ashdown	Domtar Entrance B	330412X	1172	50	9650.9	8128.3	13.49	25.89	2.8	2.4
Arkansas	Little River	Ashdown	Front Street	330578C	4183	50	9650.9	8128.3	13.49	25.89	2.8	2.4
Arkansas	Little River	Ashdown	Fulton Street	330574A	867	55	9650.9	8128.3	16.26	28.67	2.6	2.3
Arkansas	Little River	Ashdown	Main Street	330575G	4335	50	9650.9	8128.3	16.26	28.67	2.8	2.4
Arkansas	Little River	Ashdown	Road 710	330572L	12	55	9650.9	8128.3	16.26	28.67	2.6	2.3
Arkansas	Little River	Ashdown	Whitaker Street	330577V	797	50	9650.9	8128.3	16.26	28.67	2.8	2.4
Arkansas	Little River	Ogden	Grand Street	330594L	436	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Arkansas	Little River	Ogden	Pine Street	330593E	471	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Arkansas	Little River	Ogden	Road 23	330589P	703	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Arkansas	Little River	Wilton	County Route 139	330556C	16	55	9650.9	8128.3	16.26	28.67	2.6	2.3

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Arkansas	Little River	Wilton	County Route 40	330560S	59	55	9650.9	8128.3	16.26	28.67	2.6	2.3
Arkansas	Little River	Wilton	Douglas Street	330567P	1523	55	9650.9	8128.3	16.26	28.67	2.6	2.3
Arkansas	Little River	Wilton	Hinton Road / County Route 64	330570X	159	55	9650.9	8128.3	16.26	28.67	2.6	2.3
Arkansas	Little River	Wilton	Mills Street	330569D	82	55	9650.9	8128.3	16.26	28.67	2.6	2.3
Arkansas	Little River	Wilton	Road 60	330558R	40	55	9650.9	8128.3	16.26	28.67	2.6	2.3
Arkansas	Little River	Wilton	Texarkana Avenue	330568W	47	55	9650.9	8128.3	16.26	28.67	2.6	2.3
Arkansas	Little River	Winthrop	Arkansas 234	330554N	480	55	9650.9	8128.3	16.26	28.67	2.6	2.3
Arkansas	Little River	Winthrop	High Street	330548K	668	55	9650.9	8128.3	16.26	28.67	2.6	2.3
Arkansas	Little River	Winthrop	Post Street	330549S	59	55	9650.9	8128.3	16.26	28.67	2.6	2.3
Arkansas	Little River	Winthrop	Road 19	330551T	23	55	9650.9	8128.3	16.26	28.67	2.6	2.3
Arkansas	Little River	Winthrop	Road 25	330552A	40	55	9650.9	8128.3	16.26	28.67	2.6	2.3
Arkansas	Little River	Winthrop	Road 42	330547D	52	55	9650.9	8128.3	16.26	28.67	2.6	2.3
Arkansas	Miller	Texarkana	Road 3	330598N	105	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Arkansas	Miller	Texarkana	Road 76	330596A	55	55	9650.9	8128.3	13.49	25.89	2.6	2.3

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Arkansas	Miller	Texarkana	Road 80	330599V	12	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Arkansas	Polk	Cove	Barton Avenue	330483U	292	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Cove	East Mill Street	330482M	63	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Cove	Road 21	330485H	95	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Cove	Road 287	330484B	20	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Grannis	Braley Avenue	330503D	429	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Grannis	Frachiseur Drive	330504K	152	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Grannis	Road 1	330505S	95	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Grannis	Road 200	330502W	50	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Grannis	Road 201	330508M	59	30	9650.9	8128.3	13.78	26.18	4.3	3.7
Arkansas	Polk	Hatfield	Johnson Avenue	330477R	281	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Hatfield	Road 30 / Slote Crossing	330474V	114	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Hatfield	Road 38	330467K	123	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Hatfield	South Rhodes Lane	330472G	9	40	9650.9	8128.3	13.78	26.18	3.3	2.9

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Arkansas	Polk	Hatfield	Stevens Road	330476J	738	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Mena	10th Street	330456X	1289	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Mena	4th Street	330453C	308	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Mena	7th Street	330455R	1875	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Mena	Arkansas 375	330464P	469	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Mena	Arkansas 8 Reine Street	330457E	4569	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Mena	Mena Street	330454J	8553	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Mena	Pickering Avenue	919209N	2343	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Mena	Road 167	330463H	114	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Mena	Road 39	330465W	469	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Mena	Road 733	330459T	23	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Mena	Road 76	330448F	84	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Mena	Road 97 / Forest Road	330441H	82	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Mena	Ryder Lane	330440B	12	40	9650.9	8128.3	13.78	26.18	3.3	2.9

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Arkansas	Polk	Mena	US 59/ US 270	330445K	1090	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Vandervoort	Arkansas 246	330488D	644	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Vandervoort	County Road 15	330493A	70	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Vandervoort	Road 18	330487W	105	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Vandervoort	Road 18	330492T	200	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Vandervoort	Road 482	330491L	29	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Wickes	Blanton Road	330500H	129	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Wickes	County Road 13	330495N	20	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Wickes	Oak Street	330499R	27	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Polk	Wickes	Old US 71	330498J	29	30	9650.9	8128.3	13.78	26.18	4.3	3.7
Arkansas	Polk	Wickes	Road 6	330501P	234	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Sevier	De Queen	Avon Road	330520U	33	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Sevier	De Queen	Dequeen Lake Road	330519A	539	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Sevier	De Queen	East Stilwell Avenue	330524W	4804	40	9650.9	8128.3	13.78	26.18	3.3	2.9

Table H.1-1. Inventory of Public Grade Crossings by State, County, and City

State	County	City	Street	Crossing ID	AADT	Train Speed (mph)	Train Length with No-Action (feet)	Train Length with Proposed Acquisition (feet)	Trains Per Day with No-Action	Trains Per Day with Proposed Acquisition	Average Gate Down Time with No-Action (minutes)	Average Gate Down Time with Proposed Acquisition (minutes)
Arkansas	Sevier	De Queen	Robinson Road	330522H	658	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Arkansas	Sevier	De Queen	South 4th Street	330538E	1640	40	9650.9	8128.3	16.26	28.67	3.3	2.9
Arkansas	Sevier	Gillham	Braley Avenue	330511V	862	30	9650.9	8128.3	13.78	26.18	4.3	3.7
Arkansas	Sevier	Gillham	East Cooper Street	330513J	108	30	9650.9	8128.3	13.78	26.18	4.3	3.7
Arkansas	Sevier	Gillham	King School Road	330514R	16	30	9650.9	8128.3	13.78	26.18	4.3	3.7
Arkansas	Sevier	Gillham	Ladd Bridge Road	330515X	237	30	9650.9	8128.3	13.78	26.18	4.3	3.7
Arkansas	Sevier	Gillham	Memory Lane	330516E	37	30	9650.9	8128.3	13.78	26.18	4.3	3.7
Arkansas	Sevier	Grannis	Mineral Road	330509U	94	30	9650.9	8128.3	13.78	26.18	4.3	3.7
Arkansas	Sevier	Horatio	Arkansas 24	330545P	445	40	9650.9	8128.3	16.26	28.67	3.3	2.9
Arkansas	Sevier	Horatio	Arkansas 41	330546W	3046	55	9650.9	8128.3	16.26	28.67	2.6	2.3
Arkansas	Sevier	Horatio	Bear Creek Cutoff	330542U	94	40	9650.9	8128.3	16.26	28.67	3.3	2.9
Illinois	Carroll	Lanark	Boyd Street	372410A	410	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Carroll	Lanark	Broad Street	372409F	4452	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Carroll	Lanark	Center Drive	372405D	176	40	8782.5	6426.2	6.56	14.56	3.1	2.4

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Illinois	Carroll	Lanark	East Lanark Avenue	372406K	59	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Carroll	Lanark	East Straddle County Route	372404W	205	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Carroll	Lanark	Gold Mine Road	372398V	117	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Carroll	Lanark	Grange Road	372400U	117	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Carroll	Lanark	Illinois 64	372414C	4759	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Carroll	Lanark	Maple Grove Road	372403P	59	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Carroll	Lanark	Rochester Street	372407S	205	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Carroll	Lanark	Shannon Road	372402H	1955	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Carroll	Lanark	Stone Bridge Road	372412N	146	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Carroll	Lanark	Vanbuskirk Road	372415J	205	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Carroll	Mount Carroll	Big Cut Road	372428K	59	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Carroll	Mount Carroll	East State Road	372421M	205	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Carroll	Mount Carroll	Jackson Street	372422U	234	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Carroll	Mount Carroll	Mill Road	372424H	146	40	8782.5	6426.2	6.56	14.56	3.1	2.4

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Illinois	Carroll	Mount Carroll	Oil Valley School Road	372425P	293	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Carroll	Mount Carroll	Wacker Road	372427D	205	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Carroll	Savanna	Hickory Grove Road	372431T	29	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Carroll	Savanna	Scenic Bluff Road	372437J	996	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Cook	Bartlett	Gifford Road	372214T	4921	40	1417.5	1960.2	60.41	68.41	1.0	1.2
Illinois	Cook	Bartlett	Naperville Road	372210R	15539	40	1417.5	1960.2	60.41	68.41	1.0	1.2
Illinois	Cook	Bartlett	Oak Avenue	372206B	10677	40	1417.5	1960.2	60.41	68.41	1.0	1.2
Illinois	Cook	Bartlett	Spaulding Road	372212E	1933	40	1417.5	1960.2	60.41	68.41	1.0	1.2
Illinois	Cook	Bartlett	Western Avenue	372207H	791	40	1417.5	1960.2	60.41	68.41	1.0	1.2
Illinois	Cook	Franklin Park	25th Avenue	372138C	14441	254~~0~~	3757.8	3354.1	91.20	97.63	2.3~~1.7~~	2.1~~1.6~~
Illinois	Cook	Franklin Park	Calwagner Street	372139J	542	254~~0~~	3757.8	3354.1	91.20	97.63	2.3~~1.7~~	2.1~~1.6~~

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Illinois	Cook	Franklin Park	Edgington Street	372137V	3398	254~~0~~	3757.8	3354.1	91.20	97.63	2.3~~1.7~~	2.1~~1.6~~
Illinois	Cook	Franklin Park	Ruby Street	372140D	2402	254~~0~~	3757.8	3354.1	91.20	97.63	2.3~~1.7~~	2.1~~1.6~~
Illinois	Cook	Franklin Park	Scott Street	372141K	1054	254~~0~~	3757.8	3354.1	91.20	97.63	2.3~~1.7~~	2.1~~1.6~~
Illinois	Cook	Schaumburg	Rodenburg Road	372202Y	13240	40	1417.5	1960.2	60.41	68.41	1.0	1.2
Illinois	De Kalb	Genoa	Brown Street	372285P	1357	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	De Kalb	Genoa	Genoa Road	372289S	3892	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	De Kalb	Genoa	Illinois Route 23	372279L	2786	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	De Kalb	Genoa	Roosevelt Road	372277X	36	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	De Kalb	Genoa	Sycamore Street	372286W	1187	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	De Kalb	Genoa	Washington Street	372288K	1886	40	8782.5	6426.2	3.15	11.15	3.1	2.4

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Illinois	De Kalb	Hampshire	New Lebanon Road	372274C	214	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	De Kalb	Kingston	Five Points Road	372296C	1776	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	De Kalb	Kingston	Glidden Road	372299X	4127	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	De Kalb	Kingston	Hunter Road	372294N	88	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	De Kalb	Kingston	Pleasant Hill Road	372293G	937	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	De Kalb	Kingston	Thurlby Road	372295V	234	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	De Kalb	Kirkland	1st Street / Pearl Street	372307M	1230	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	De Kalb	Kirkland	Ault Road	372305Y	29	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	De Kalb	Kirkland	Fairdale Road	372320B	117	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	De Kalb	Kirkland	Irene Road	372316L	205	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	De Kalb	Kirkland	Kirkland Road	372312J	820	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	Du Page	Bartlett	Prospect Avenue	371997M	3896	40	1417.5	1960.2	60.41	68.41	1.0	1.2
Illinois	Du Page	Bensenville	Addison Street	372172J	1608	254~~0~~	1417.5	1960.2	60.41	68.41	1.2~~1.0~~	1.5~~1.2~~

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Illinois	Du Page	Bensenville	Center Street	372171C	459	254~~0~~	1417.5	1960.2	60.41	68.41	~~1.0~~1.2	~~1.2~~1.5
Illinois	Du Page	Bensenville	Church Road	372174X	7696	~~40~~25	1417.5	1960.2	60.41	68.41	1.2~~1.0~~	1.5~~1.2~~
Illinois	Du Page	Bensenville	York Road	372170V	18696	254~~0~~	1417.5	1960.2	60.41	68.41	1.2~~1.0~~	1.5~~1.2~~
Illinois	Du Page	Itasca	Catalpa Avenue	372182P	1608	40	1417.5	1960.2	60.41	68.41	1.0	1.2
Illinois	Du Page	Itasca	Prospect Avenue	372179G	9075	40	1417.5	1960.2	60.41	68.41	1.0	1.2
Illinois	Du Page	Itasca	Rohlwing Road	372184D	22379	40	1417.5	1960.2	60.41	68.41	1.0	1.2
Illinois	Du Page	Itasca	Walnut Street	372180B	1723	40	1417.5	1960.2	60.41	68.41	1.0	1.2
Illinois	Du Page	Medinah	Medinah Road	372191N	7064	40	1417.5	1960.2	60.41	68.41	1.0	1.2
Illinois	Du Page	Roselle	Park Street	372194J	689	40	1417.5	1960.2	60.41	68.41	1.0	1.2
Illinois	Du Page	Roselle	Prospect Street	372195R	373	40	1417.5	1960.2	60.41	68.41	1.0	1.2
Illinois	Du Page	Roselle	Roselle Road	372196X	12521	40	1417.5	1960.2	60.41	68.41	1.0	1.2

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Illinois	Du Page	Wood Dale	Ash Avenue	372176L	230	40	1417.5	1960.2	60.41	68.41	1.0	1.2
Illinois	Du Page	Wood Dale	Irving Park Road	372177T	29174	40	1417.5	1960.2	60.41	68.41	1.0	1.2
Illinois	Du Page	Wood Dale	Wooddale Road	372178A	8612	40	1417.5	1960.2	60.41	68.41	1.0	1.2
Illinois	Kane	Elgin	Chicago Street	372240H	16755	40	2654.5	2714.4	72.98	80.98	1.4	1.4
Illinois	Kane	Elgin	Elgin Avenue	372231J	208	~~10~~3 5	1417.5	1960.2	60.41	68.41	1.1~~2.~~ ~~2~~	1.2~~2.8~~ ~~2~~
Illinois	Kane	Elgin	Highland Avenue	372241P	6957	40	2654.5	2714.4	72.98	80.98	1.4	1.4
Illinois	Kane	Elgin	Highland Avenue	372253J	2050	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	Kane	Elgin	Illinois Route 25	372217N	19450	40	1417.5	1960.2	60.41	68.41	1.0	1.2
Illinois	Kane	Elgin	Kimball Street	372242W	23433	40	2654.5	2714.4	72.98	80.98	1.4	1.4
Illinois	Kane	Elgin	McLean Boulevard	372246Y	21559	40	2654.5	2714.4	72.98	80.98	1.4	1.4
Illinois	Kane	Elgin	National Street	372239N	7997	35	1417.5	1960.2	60.41	68.41	1.1	1.2
Illinois	Kane	Elgin	Raymond Street	372235L	3427	35	1417.5	1960.2	60.41	68.41	1.1	1.2
Illinois	Kane	Hampshire	East Street	372270A	107	40	8782.5	6426.2	3.15	11.15	3.1	2.4

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Illinois	Kane	Hampshire	Reinking Road	372257L	2425	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	Kane	Hampshire	State Street	372269F	2211	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	Kane	Hampshire	Thurnau Road	372264W	178	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	Kane	Hampshire	Walker Road	372271G	1284	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	Ogle	Adeline	Adeline Road	372374G	841	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Adeline	Pond Road	372371L	59	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Adeline	White Eagle Road	372379R	248	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Byron	Colfax Street	372355C	6013	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Byron	Conger Road	372360Y	293	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Byron	Kishwaukee Road	372350T	3309	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Byron	Mill Road	372358X	632	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Byron	Mineral Street	372353N	722	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Byron	North Walnut Street	372354V	1805	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Davis Junction	Blackwood Road	372334J	88	25	8782.5	6426.2	3.15	11.15	4.6	3.5

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Illinois	Ogle	Davis Junction	Junction Road	372339T	3515	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Davis Junction	Royster Road	372331N	381	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	Ogle	Forreston	Bailyville Road	372385U	1452	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Forreston	Brookville Road	372396G	59	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Forreston	Columbine Road	372380K	155	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Forreston	Fork Creek Road	372394T	93	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Forreston	Harper Road	372390R	12	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Forreston	Hollywood Road	372383F	93	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Forreston	Illinois Route 72	372388P	4101	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Forreston	Mount Vernon Road	372391X	93	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Leaf River	Main Street	372367W	820	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Leaf River	Mount Morris Road	372369K	146	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Leaf River	Pond Road	372366P	146	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Leaf River	Stone School Road	372362M	29	40	8782.5	6426.2	6.56	14.56	3.1	2.4

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Illinois	Ogle	Leaf River	Triumph Road	372365H	59	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Monroe Center	Bennett Road	372324D	59	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	Ogle	Monroe Center	Kilbuck Road	372330G	732	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	Ogle	Monroe Center	Mulford Road	372326S	1500	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	Ogle	Monroe Center	Pacific Street	372327Y	264	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	Ogle	Monroe Center	Wendorf Road	372332V	293	40	8782.5	6426.2	3.15	11.15	3.1	2.4
Illinois	Ogle	Stillman Valley	North Walnut Street	372345W	1156	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Stillman Valley	Rothwell Road	372342B	439	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Illinois	Ogle	Stillman Valley	Stillman Road	372346D	2653	40	8782.5	6426.2	6.56	14.56	3.1	2.4
Iowa	Appanoose	Moravia	420th Street	375706J	23	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Appanoose	Moravia	West North Street	375710Y	2400	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Appanoose	Mystic	135th Avenue	375681R	129	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Appanoose	Mystic	140th Avenue	375683E	39	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Appanoose	Mystic	200th Avenue	375695Y	187	40	12126.8	7209.8	3.41	17.81	4.0	2.6

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Iowa	Appanoose	Mystic	219th Avenue	375701A	18	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Appanoose	Mystic	461st Street	375699B	32	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Appanoose	Mystic	East Lodwick Street	375693K	339	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Appanoose	Mystic	South 1st Street	375692D	339	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Appanoose	Mystic	South 2nd Street	375691W	339	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Appanoose	Rathbun	Hwy J29	375697M	1227	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Appanoose	Seymour	105th Avenue	375673Y	24	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Appanoose	Seymour	110th Avenue	375675M	35	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Appanoose	Seymour	115th Avenue	375678H	24	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Appanoose	Seymour	125th Avenue	375679P	6	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Appanoose	Seymour	524th Street	375677B	37	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Clinton	Camanche	13th Avenue	865560W	1196	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Clinton	Camanche	291st Street	865570C	442	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Clinton	Camanche	3rd Street	865561D	539	40	10241.4	8544.3	8.26	22.66	3.5	3.0

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Iowa	Clinton	Camanche	4th Avenue	865544M	753	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Clinton	Camanche	5th Avenue	865545U	164	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Clinton	Camanche	7th Avenue	865547H	743	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Clinton	Camanche	9th Avenue	865549W	1213	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Clinton	Camanche	Park Drive	865564Y	251	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Clinton	Clinton	11th Avenue North	376029M	469	20	10241.4	8544.3	10.73	25.13	6.4	5.5
Iowa	Clinton	Clinton	12th Avenue North	376030G	589	20	10241.4	8544.3	10.73	25.13	6.4	5.5
Iowa	Clinton	Clinton	14th Avenue North	376032V	486	20	10241.4	8544.3	10.73	25.13	6.4	5.5
Iowa	Clinton	Clinton	15th Avenue North	376033C	1146	20	10241.4	8544.3	10.73	25.13	6.4	5.5
Iowa	Clinton	Clinton	170th Street	376047K	114	40	10241.4	8544.3	10.73	25.13	3.5	3.0
Iowa	Clinton	Clinton	18th Avenue North	376037E	12	20	10241.4	8544.3	10.73	25.13	6.4	5.5
Iowa	Clinton	Clinton	21st Avenue North	376038L	59	20	10241.4	8544.3	10.73	25.13	6.4	5.5
Iowa	Clinton	Clinton	23rd Avenue North	376039T	141	20	10241.4	8544.3	10.73	25.13	6.4	5.5
Iowa	Clinton	Clinton	24th Avenue North	376040M	2250	20	10241.4	8544.3	10.73	25.13	6.4	5.5

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Iowa	Clinton	Clinton	25th Avenue North	376041U	943	20	10241.4	8544.3	10.73	25.13	6.4	5.5
Iowa	Clinton	Clinton	2nd Avenue South	376024D	1274	20	10241.4	8544.3	10.73	25.13	6.4	5.5
Iowa	Clinton	Clinton	30th Avenue North	376043H	211	20	10241.4	8544.3	10.73	25.13	6.4	5.5
Iowa	Clinton	Clinton	32nd Avenue North	376045W	164	20	10241.4	8544.3	10.73	25.13	6.4	5.5
Iowa	Clinton	Clinton	34th Avenue North / McKinley Street local	376046D	164	20	10241.4	8544.3	10.73	25.13	6.4	5.5
Iowa	Clinton	Clinton	4th Avenue North	376025K	258	20	10241.4	8544.3	10.73	25.13	6.4	5.5
Iowa	Clinton	Clinton	4th Avenue South	376023W	82	20	10241.4	8544.3	10.73	25.13	6.4	5.5
Iowa	Clinton	Clinton	5th Avenue South	376022P	1173	20	10241.4	8544.3	10.73	25.13	6.4	5.5
Iowa	Clinton	Clinton	6th Avenue North	376026S	855	20	10241.4	8544.3	10.73	25.13	6.4	5.5
Iowa	Clinton	Clinton	6th Avenue South	376021H	1927	20	10241.4	8544.3	10.73	25.13	6.4	5.5
Iowa	Clinton	Clinton	9th Avenue North	376027Y	3140	20	10241.4	8544.3	10.73	25.13	6.4	5.5
Iowa	Clinton	Clinton	South 1st Street	190348M	706	20	10241.4	8544.3	10.73	25.13	6.4	5.5
Iowa	Clinton	Sabula	142nd Street	376052G	47	40	10241.4	8544.3	10.73	25.13	3.5	3.0

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Iowa	Jefferson	Richland	110th Street	375824L	246	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Jefferson	Richland	Ash Avenue	375822X	41	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Jefferson	Richland	Cedar Avenue	375827G	18	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Keokuk	Richland	260th Avenue	375831W	23	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Keokuk	Richland	270th Avenue	375834S	931	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Keokuk	Richland	290th Avenue	375838U	6	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Keokuk	Richland	305th Street	375844X	25	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Keokuk	Richland	315th Avenue	375840V	1052	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Keokuk	Richland	320th Avenue	375841C	18	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Keokuk	Richland	328th Avenue	375843R	12	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Keokuk	Richland	335th Street	375835Y	6	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Louisa	Columbus Junction	2nd Street	607245W	2988	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Louisa	Columbus Junction	2nd Street / 70	695494R	1219	40	9448.6	7023.9	4.80	19.21	3.3	2.6

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Iowa	Louisa	Cotter	County Line Road	607254V	70	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Louisa	Cotter	County Road W66	607252G	214	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Louisa	Cotter	V Avenue	607250T	6	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Louisa	Fredonia	160th Street	607241U	59	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Louisa	Fredonia	2nd Street	607243H	1435	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Louisa	Fredonia	3rd Street	607242B	152	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Louisa	Fredonia	P Avenue	607238L	59	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Louisa	Letts	170th Street	607237E	60	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Louisa	Letts	180th Street	607232V	48	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Louisa	Letts	Chestnut Street	607228F	82	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Louisa	Letts	County Road G 40	607230G	709	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Louisa	Letts	I Avenue	607226S	84	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Louisa	Letts	Linn Street	607229M	867	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Louisa	Letts	O Avenue	607234J	36	40	9448.6	7023.9	4.80	19.21	3.3	2.6

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Iowa	Monroe	Blakesburg	256th Place	375732Y	12	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Monroe	Blakesburg	722nd Place	375729R	18	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Monroe	Blakesburg	730th Avenue	375733F	58	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Monroe	Moravia	260th Place	375718D	36	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Monroe	Moravia	652nd Place	375712M	12	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Monroe	Moravia	652nd Place	375714B	12	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Monroe	Moravia	690th Avenue	375721L	41	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Monroe	Moravia	710th Avenue	375727C	82	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Muscatine	Buffalo	Cabins Milepost 2054/ Private City Street	607174C	59	40	9448.6	7023.9	6.38	20.78	3.3	2.6
Iowa	Muscatine	Buffalo	Private Road	607177X	66	40	9448.6	7023.9	6.38	20.78	3.3	2.6
Iowa	Muscatine	Buffalo	Private Road	607190L	60	40	9448.6	7023.9	6.38	20.78	3.3	2.6
Iowa	Muscatine	Buffalo	Tombstone Trail	607175J	228	40	9448.6	7023.9	6.38	20.78	3.3	2.6
Iowa	Muscatine	Fruitland	North Street	607220B	2337	40	9448.6	7023.9	4.80	19.21	3.3	2.6

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Iowa	Muscatine	Muscatine	33rd Street South	607216L	204	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Muscatine	Muscatine	41st Street South	607217T	480	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Muscatine	Muscatine	57th Street	607219G	468	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Muscatine	Muscatine	Canal Street	607208U	30	40	9448.6	7023.9	6.38	20.78	3.3	2.6
Iowa	Muscatine	Muscatine	Cedar Street	607204S	776	40	9448.6	7023.9	6.38	20.78	3.3	2.6
Iowa	Muscatine	Muscatine	Day Street	607212J	410	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Muscatine	Muscatine	Industrial Connector / Dick Drake Highway	393258B	4177	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Muscatine	Muscatine	Iowa Avenue	607206F	926	40	9448.6	7023.9	6.38	20.78	3.3	2.6
Iowa	Muscatine	Muscatine	Jefferson Street	607193G	228	40	9448.6	7023.9	6.38	20.78	3.3	2.6
Iowa	Muscatine	Muscatine	Mississippi Drive	606762G	179	5	9448.6	7023.9	6.38	20.78	22.1	16.6
Iowa	Muscatine	Muscatine	Monroe Street	607192A	36	40	9448.6	7023.9	6.38	20.78	3.3	2.6
Iowa	Muscatine	Muscatine	Musser Street	607213R	729	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Muscatine	Muscatine	Oregon Street	607211C	7440	40	9448.6	7023.9	4.80	19.21	3.3	2.6

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Iowa	Muscatine	Muscatine	Sampson Road	607215E	2558	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Muscatine	Muscatine	Spillway Lane	607202D	30	40	9448.6	7023.9	6.38	20.78	3.3	2.6
Iowa	Scott	Bettendorf	12th Street	865647M	1789	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Bettendorf	13th Street	865646F	2771	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Bettendorf	31st Street	865640P	1589	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Bettendorf	33rd Street	865639V	1789	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Bettendorf	35th Street	865638N	2322	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Bettendorf	42nd Street	865637G	254	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Bettendorf	62nd Street	865629P	1742	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Bettendorf	Shoreline Drive	865627B	1335	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Bettendorf	Spencer Road	865618C	117	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Bettendorf	Valley Drive	865617V	527	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Buffalo	Private Road	607157L	42	40	9448.6	7023.9	6.38	20.78	3.3	2.6
Iowa	Scott	Davenport	Access to Mississippi River	865648U	598	25	10241.4	8544.3	8.26	22.66	5.3	4.5

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Iowa	Scott	Davenport	Brady Street	865650V	316	25	10241.4	8544.3	8.26	22.66	5.3	4.5
Iowa	Scott	Davenport	Gaines Street	865654X	2484	25	10241.4	8544.3	8.26	22.66	5.3	4.5
Iowa	Scott	Davenport	Harrison Street	865652J	820	25	10241.4	8544.3	8.26	22.66	5.3	4.5
Iowa	Scott	Davenport	Marquette Street	865655E	1889	25	10241.4	8544.3	8.26	22.66	5.3	4.5
Iowa	Scott	Davenport	Oneida Avenue	376011C	2470	25	10241.4	8544.3	8.26	22.66	5.3	4.5
Iowa	Scott	Davenport	Perry Street	865649B	4389	25	10241.4	8544.3	8.26	22.66	5.3	4.5
Iowa	Scott	Davenport	Ripley Street	865653R	1172~~17~~	25	10241.4	8544.3	8.26	22.66	5.3	4.5
Iowa	Scott	Davenport	Schmidt Road	605947K	890	20	10241.4	8544.3	8.26	22.66	6.4	5.5
Iowa	Scott	Davenport	South Concord Street	607141P	1172	25	10241.4	8544.3	8.26	22.66	5.3	4.5
Iowa	Scott	Davenport	Utah Avenue	607149U	363	25	9448.6	7023.9	6.38	20.78	4.9	3.8
Iowa	Scott	Davenport	Wapello Avenue	607146Y	305	25	9448.6	7023.9	6.38	20.78	4.9	3.8
Iowa	Scott	Le Claire	Canal Shore Drive Southwest	865614A	551	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Le Claire	Eagle Ridge Road	865612L	1878	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Le Claire	Jones Street	865609D	468	40	10241.4	8544.3	8.26	22.66	3.5	3.0

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Iowa	Scott	Le Claire	West Canal Shore Drive	865616N	1053	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Le Claire	Wisconsin Street	865610X	527	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Pleasant Valley	244th Avenue	865620D	127	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Pleasant Valley	245th Avenue	865619J	117	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Princeton	270th Street	865574E	53	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Princeton	285th Avenue	865575L	53	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Princeton	Chestnut Street	865582W	375	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Princeton	Clay Street	865581P	432	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Princeton	Lost Grove Road	865579N	939	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Riverdale	Fenno Road	865631R	1025	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Riverdale	South Bellingham Street	865635T	562	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Scott	Riverdale	South Kensington Street	865636A	32	40	10241.4	8544.3	8.26	22.66	3.5	3.0
Iowa	Wapello	Blakesburg	215th Avenue	375747N	105	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wapello	Blakesburg	230th Avenue	375745A	124	40	12126.8	7209.8	3.41	17.81	4.0	2.6

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Iowa	Wapello	Blakesburg	64th Street	375742E	55	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wapello	Blakesburg	Hickory Street	375740R	129	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wapello	Blakesburg	Monroe Wapello Road	375736B	931	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wapello	Blakesburg	South Street	375739W	70	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wapello	Ottumwa	105th Avenue	375797S	59	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Wapello	Ottumwa	110th Avenue	375795D	53	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Wapello	Ottumwa	120th Avenue	375792H	199	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Wapello	Ottumwa	140th Street	375798Y	41	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Wapello	Ottumwa	150th Street	375806N	35	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Wapello	Ottumwa	165th Street	375816U	240	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Wapello	Ottumwa	170th Avenue	375759H	29	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wapello	Ottumwa	194th Avenue	375753S	94	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wapello	Ottumwa	22nd Avenue	375820J	35	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Wapello	Ottumwa	35th Avenue	375817B	12	40	9448.6	7023.9	4.80	19.21	3.3	2.6

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Iowa	Wapello	Ottumwa	85th Avenue	375803T	41	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Wapello	Ottumwa	87th Street	375761J	914	20	12126.8	7209.8	3.41	17.81	7.5	4.7
Iowa	Wapello	Ottumwa	Agency Hedrick Road	375808C	797	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Wapello	Ottumwa	Farson Road	375811K	59	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Wapello	Ottumwa	Gateway Drive	375780N	351	20	9448.6	7023.9	4.80	19.21	6.0	4.6
Iowa	Wapello	Ottumwa	North Caldwell Street	375784R	3035	20	9448.6	7023.9	4.80	19.21	6.0	4.6
Iowa	Wapello	Ottumwa	North Quincy Avenue	375779U	4467	20	9448.6	7023.9	4.80	19.21	6.0	4.6
Iowa	Wapello	Ottumwa	West Rochester Street	375787L	469	20	9448.6	7023.9	4.80	19.21	6.0	4.6
Iowa	Wapello	Ottumwa	West Second Street	375781V	6570	20	9448.6	7023.9	4.80	19.21	6.0	4.6
Iowa	Washington	Ainsworth	First Street	607337J	316	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Washington	Ainsworth	Military Road	607335V	1125	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Washington	Ainsworth	Spruce Avenue	607314C	105	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Washington	Ainsworth	Third Street	607336C	433	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Washington	Ainsworth	Yucca Avenue	607257R	12	40	9448.6	7023.9	4.80	19.21	3.3	2.6

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Iowa	Washington	Brighton	Cedar Avenue	375848A	29	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Washington	Brighton	Elm Avenue	375850B	12	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Washington	Brighton	Fir Avenue	375852P	53	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Washington	Richland	Main Street	375846L	164	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Washington	Washington	260th Street	375862V	12	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Washington	Washington	Ivy Avenue	375861N	100	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Washington	Washington	Juniper Avenue	375863C	29	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Washington	Washington	Kiwi Avenue	375866X	29	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Washington	Washington	North 12th Avenue	607323B	6596	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Washington	Washington	North B Avenue	375878S	1542	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Washington	Washington	North C Avenue	375877K	419	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Washington	Washington	North D Avenue	375876D	245	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Washington	Washington	North F Avenue	375875W	159	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Washington	Washington	North Fourth Avenue	607322U	2519	40	9448.6	7023.9	4.80	19.21	3.3	2.6

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Iowa	Washington	Washington	North Iowa Avenue	375880T	1186	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Washington	Washington	North Marion Avenue	375879Y	1517	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Washington	Washington	Palm Avenue	607326W	35	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Washington	Washington	West Main Street	375872B	682	40	9448.6	7023.9	4.80	19.21	3.3	2.6
Iowa	Wayne	Seymour	170th Street	375653M	18	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wayne	Seymour	180th Street	375655B	35	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wayne	Seymour	190th Street	375656H	48	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wayne	Seymour	205th Street	375657P	105	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wayne	Seymour	210th Street	375658W	53	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wayne	Seymour	220th Street	375660X	74	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wayne	Seymour	230th Street	375661E	35	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wayne	Seymour	250th Street	375671K	59	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wayne	Seymour	Birch	375647J	18	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wayne	Seymour	Elm Street	375651Y	29	40	12126.8	7209.8	3.41	17.81	4.0	2.6

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Iowa	Wayne	Seymour	Euclid	375652F	59	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wayne	Seymour	Fifth Street	375668C	1163	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wayne	Seymour	Fillmore Road	375654U	23	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wayne	Seymour	Fourth Street	375669J	47	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wayne	Seymour	Lee Street	375664A	47	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wayne	Seymour	Main Street	378354R	773	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wayne	Seymour	S40	375650S	395	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wayne	Seymour	Seventh Street	375665G	47	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wayne	Seymour	Sixth Street	375667V	23	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Iowa	Wayne	Seymour	Third Street	375670D	30	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Kansas	Cherokee	Opolis	Northeast 110th Street	330268H	63	55	8508.0	7385.4	16.17	28.58	2.4	2.1
Kansas	Cherokee	Opolis	Northeast Coal Valley Road	330267B	7	55	8508.0	7385.4	16.17	28.58	2.4	2.1
Kansas	Cherokee	Opolis	Northeast Weir Road	330270J	86	55	8508.0	7385.4	16.17	28.58	2.4	2.1
Kansas	Crawford	Frontenac	East 600th Avenue	330243M	285	55	8898.7	7974.9	17.57	30.40	2.4	2.2

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Kansas	Crawford	Frontenac	East 610th Avenue	330240S	64	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Kansas	Crawford	Frontenac	East McKay Street	330247P	557	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Kansas	Crawford	Frontenac	North Free King Highway	330245B	973	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Kansas	Crawford	Frontenac	South 260th Street / Military Road	330238R	556	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Kansas	Crawford	Mulberry	270th Street	330236C	680	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Kansas	Crawford	Mulberry	East 620th Avenue	330237J	694	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Kansas	Crawford	Pittsburg	East 10th Street	330251E	1383	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Kansas	Crawford	Pittsburg	East 510th Avenue	330263Y	19	55	8508.0	7385.4	16.17	28.58	2.4	2.1
Kansas	Crawford	Pittsburg	East 515th Avenue	330262S	33	55	8508.0	7385.4	16.17	28.58	2.4	2.1
Kansas	Crawford	Pittsburg	East 520th Avenue	330260D	643	55	8508.0	7385.4	16.17	28.58	2.4	2.1
Kansas	Crawford	Pittsburg	East 7th Street	330252L	1091	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Kansas	Crawford	Pittsburg	East Centennial Drive	330258C	5984	55	8508.0	7385.4	16.17	28.58	2.4	2.1
Kansas	Crawford	Pittsburg	East Jefferson Street	330255G	1991	55	8508.0	7385.4	16.17	28.58	2.4	2.1

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Kansas	Crawford	Pittsburg	East Quincy Street	330256N	3208	55	8508.0	7385.4	16.17	28.58	2.4	2.1
Kansas	Crawford	Pittsburg	East Washington Street	330254A	1428	55	8508.0	7385.4	16.17	28.58	2.4	2.1
Kansas	Crawford	Pittsburg	South 250th Street	330264F	110	55	8508.0	7385.4	16.17	28.58	2.4	2.1
Kansas	Crawford	Pittsburg	South Rouse Street	330257V	8022	55	8508.0	7385.4	16.17	28.58	2.4	2.1
Louisiana	Beauregard	De Ridder	Ampacet Street/L C Lee Road	329315S	120	45	9120.8	8162.3	10.98	21.81	2.9	2.7
Louisiana	Beauregard	De Ridder	Ball Road	329327L	342	59	9120.8	8162.3	10.98	21.81	2.4	2.2
Louisiana	Beauregard	De Ridder	Bolivar Bishop Drive	329321V	401	45	9120.8	8162.3	10.98	21.81	2.9	2.7
Louisiana	Beauregard	De Ridder	Crosby Road	329322C	2569	40	9120.8	8162.3	10.98	21.81	3.2	2.9
Louisiana	Beauregard	De Ridder	East Fourth Street / West Third Street	329320N	4171	45	9120.8	8162.3	10.98	21.81	2.9	2.7
Louisiana	Beauregard	De Ridder	First Street	329319U	27095	45	9120.8	8162.3	10.98	21.81	2.9	2.7
Louisiana	Beauregard	De Ridder	Granberry Road	329325X	80	59	9120.8	8162.3	10.98	21.81	2.4	2.2
Louisiana	Beauregard	De Ridder	Harrison Street	329312W	364	45	9120.8	8162.3	10.98	21.81	2.9	2.7
Louisiana	Beauregard	De Ridder	North Street	329316Y	802	45	9120.8	8162.3	10.98	21.81	2.9	2.7

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Louisiana	Beauregard	De Ridder	Shirley Street / Mahlan Street	329317F	27095	45	9120.8	8162.3	10.98	21.81	2.9	2.7
Louisiana	Beauregard	De Ridder	West Second Street	329318M	134	45	9120.8	8162.3	10.98	21.81	2.9	2.7
Louisiana	Beauregard	Merryville	Smokey Cove Road	329335D	218	59	9120.8	8162.3	10.98	21.81	2.4	2.2
Louisiana	Beauregard	Singer	East Iowa Road	329340A	799	59	9120.8	8162.3	10.98	21.81	2.4	2.2
Louisiana	Beauregard	Singer	Fielding Williams Road	329339F	124	59	9120.8	8162.3	10.98	21.81	2.4	2.2
Louisiana	Beauregard	Singer	Louisiana 110	329332H	1172	59	9120.8	8162.3	10.98	21.81	2.4	2.2
Louisiana	Beauregard	Singer	Louisiana 27	329337S	4159	59	9120.8	8162.3	10.98	21.81	2.4	2.2
Louisiana	Beauregard	Singer	Newlin Cemetery Road	329329A	40	59	9120.8	8162.3	10.98	21.81	2.4	2.2
Louisiana	Beauregard	Singer	Old Seale Road	329338Y	127	59	9120.8	8162.3	10.98	21.81	2.4	2.2
Louisiana	Caddo	Blanchard	Alexander Avenue	329026R	2320	59	9650.9	8128.3	13.49	25.89	2.5	2.2
Louisiana	Caddo	Blanchard	Daugherty Avenue	329027X	2302	59	9650.9	8128.3	13.49	25.89	2.5	2.2
Louisiana	Caddo	Mooringsport	Barnette Road	329020A	147	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Louisiana	Caddo	Mooringsport	Croom Street	329018Y	1781	55	9650.9	8128.3	13.49	25.89	2.6	2.3

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Louisiana	Caddo	Mooringsport	Dixie-Morningsport Road / Louisiana 169	329019F	234	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Louisiana	Caddo	Oil City	Allen Street	329013P	656	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Louisiana	Caddo	Oil City	Furman Street	329014W	351	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Louisiana	Caddo	Oil City	Land Avenue	329015D	117	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Louisiana	Caddo	Oil City	Louisiana 538	329011B	2182	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Louisiana	Caddo	Oil City	Main Street	329012H	586	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Louisiana	Caddo	Rodessa	Broadwell Road	328982K	167	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Louisiana	Caddo	Rodessa	Capps City Road	328983S	241	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Louisiana	Caddo	Rodessa	Journey Street	328988B	902	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Louisiana	Caddo	Rodessa	Main Street	328987U	1084	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Louisiana	Caddo	Rodessa	Standard Oil Road	328986M	65	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Louisiana	Caddo	Shreveport	75th Street	328960K	1172	50	10143.8	9412.1	25.05	36.02	2.9	2.7
Louisiana	Caddo	Shreveport	Bostwick Road	329035P	364	40	9650.9	8128.3	13.49	25.89	3.3	2.9

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Louisiana	Caddo	Shreveport	Bostwick Road	329036W	234	40	9650.9	8128.3	13.49	25.89	3.3	2.9
Louisiana	Caddo	Shreveport	Dalton Street	329152K	1963	50	10143.8	9412.1	25.05	36.02	2.9	2.7
Louisiana	Caddo	Shreveport	East 79th Street	329127C	1757	50	10143.8	9412.1	25.05	36.02	2.9	2.7
Louisiana	Caddo	Shreveport	East 85th Street	329128J	2929	50	10143.8	9412.1	25.05	36.02	2.9	2.7
Louisiana	Caddo	Shreveport	Flournoy Lucas Road	329154Y	20451	50	10143.8	9412.1	25.05	36.02	2.9	2.7
Louisiana	Caddo	Shreveport	Hoadley Street	329114B	62	30	10143.8	9412.1	25.05	36.02	4.4	4.2
Louisiana	Caddo	Shreveport	Norris Ferry Road	329157U	4988	50	10143.8	9412.1	25.05	36.02	2.9	2.7
Louisiana	Caddo	Shreveport	Overton Brooks Road	329156M	1047	50	10143.8	9412.1	25.05	36.02	2.9	2.7
Louisiana	Caddo	Shreveport	Pueblo Lane	329159H	131	50	10143.8	9412.1	25.05	36.02	2.9	2.7
Louisiana	Caddo	Vivian	Camp Vivian Road	329006E	4687	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Louisiana	Caddo	Vivian	East Alabama Avenue	328997A	1338	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Louisiana	Caddo	Vivian	East Arkansas Avenue	328998G	5572	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Louisiana	Caddo	Vivian	Mira-Myrtis Road	328991J	902	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Louisiana	Caddo	Vivian	Roy Hopkins Drive	329007L	1	55	9650.9	8128.3	13.49	25.89	2.6	2.3

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Louisiana	Calcasieu	De Quincy	Arthur Irwin Road	329342N	727	59	9120.8	8162.3	10.98	21.81	2.4	2.2
Louisiana	Calcasieu	De Quincy	East 4th Street	329356W	14267	40	9120.8	8162.3	10.98	21.81	3.2	2.9
Louisiana	Calcasieu	De Quincy	Frazier Street	329347X	1056	40	8441.1	7873.8	10.17	21.14	3.0	2.8
Louisiana	Calcasieu	De Quincy	Holly Street	329343V	407	40	9120.8	8162.3	10.98	21.81	3.2	2.9
Louisiana	Calcasieu	De Quincy	Holly Street	329345J	407	40	9120.8	8162.3	10.98	21.81	3.2	2.9
Louisiana	Calcasieu	De Quincy	Le Blanc Street	329344C	3204	40	9120.8	8162.3	10.98	21.81	3.2	2.9
Louisiana	Calcasieu	De Quincy	West 4th Street	329346R	10896	40	8441.1	7873.8	10.17	21.14	3.0	2.8
Louisiana	Calcasieu	Starks	Bigwoods Stark Road	329353B	889	59	8441.1	7873.8	10.17	21.14	2.2	2.1
Louisiana	Calcasieu	Starks	Church Street	329352U	161	59	8441.1	7873.8	10.17	21.14	2.2	2.1
Louisiana	Calcasieu	Starks	Creek Road	329350F	230	59	8441.1	7873.8	10.17	21.14	2.2	2.1
Louisiana	Calcasieu	Starks	General Box Road	329351M	117	59	8441.1	7873.8	10.17	21.14	2.2	2.1
Louisiana	Calcasieu	Starks	Green-Moore Rd	329355P	492	59	8441.1	7873.8	10.17	21.14	2.2	2.1
Louisiana	Calcasieu	Starks	Louisiana 109	329354H	2460	59	8441.1	7873.8	10.17	21.14	2.2	2.1
Louisiana	De Soto	Benson	Louisiana 512	329206N	492	59	9120.8	8162.3	10.71	21.54	2.4	2.2

Table H.1-1. Inventory of Public Grade Crossings by State, County, and City

State	County	City	Street	Crossing ID	AADT	Train Speed (mph)	Train Length with No-Action (feet)	Train Length with Proposed Acquisition (feet)	Trains Per Day with No-Action	Trains Per Day with Proposed Acquisition	Average Gate Down Time with No-Action (minutes)	Average Gate Down Time with Proposed Acquisition (minutes)
Louisiana	De Soto	Converse	Briar Rose Lane	329204A	1	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	De Soto	Converse	Old US 171	329203T	35	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	De Soto	Converse	Par Road 1384	329205G	38	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	De Soto	Converse	Phillips Road	329208C	38	50	9120.8	8162.3	10.71	21.54	2.7	2.5
Louisiana	De Soto	Frierson	Bloxum Road	329161J	126	50	10143.8	9412.1	25.05	36.02	2.9	2.7
Louisiana	De Soto	Frierson	Farris Lane	329165L	68	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	De Soto	Frierson	Gravel Point Road	329164E	3015	55	10143.8	9412.1	25.05	36.02	2.7	2.5
Louisiana	De Soto	Frierson	Louisiana 175	329162R	7850	55	10143.8	9412.1	25.05	36.02	2.7	2.5
Louisiana	De Soto	Mansfield	Gibbs Street	329183J	9681	40	9120.8	8162.3	10.71	21.54	3.2	2.9
Louisiana	De Soto	Mansfield	Holly Hill Drive	329179U	92	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	De Soto	Mansfield	Janear Circle	329169N	468	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	De Soto	Mansfield	Jefferson Street	329185X	1953	40	9120.8	8162.3	10.71	21.54	3.2	2.9
Louisiana	De Soto	Mansfield	Jenkins Street	329187L	7616	40	9120.8	8162.3	10.71	21.54	3.2	2.9
Louisiana	De Soto	Mansfield	Lewis Lane	329171P	55	59	9120.8	8162.3	10.71	21.54	2.4	2.2

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Louisiana	De Soto	Mansfield	Louisiana 3015	329175S	597	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	De Soto	Mansfield	Oxford Road	329184R	914	40	9120.8	8162.3	10.71	21.54	3.2	2.9
Louisiana	De Soto	Mansfield	Pegues Street	329181V	220	40	9120.8	8162.3	10.71	21.54	3.2	2.9
Louisiana	De Soto	Mansfield	Pinkney Drive	329174K	94	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	De Soto	Mansfield	Polk Street	329182C	13826	40	9120.8	8162.3	10.71	21.54	3.2	2.9
Louisiana	De Soto	South Mansfield	Catuna Road	329202L	138	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	De Soto	South Mansfield	Cavilier Drive	329193P	33	50	9120.8	8162.3	10.71	21.54	2.7	2.5
Louisiana	De Soto	South Mansfield	Hudson Darby Road	329200X	210	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	De Soto	South Mansfield	Oak Hill Street	329191B	895	50	9120.8	8162.3	10.71	21.54	2.7	2.5
Louisiana	De Soto	South Mansfield	Old US 171	329199F	26	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	De Soto	South Mansfield	Old US 171	329201E	146	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	De Soto	South Mansfield	Railroad Avenue / Maple Street	329192H	2335	50	9120.8	8162.3	10.71	21.54	2.7	2.5
Louisiana	De Soto	Stonewall	Mount Zion Road	329166T	937	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	Sabine	Converse	Port Arthur Avenue	329213Y	1664	59	9120.8	8162.3	10.71	21.54	2.4	2.2

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Louisiana	Sabine	Converse	Private Road	329209J	38	50	9120.8	8162.3	10.71	21.54	2.7	2.5
Louisiana	Sabine	Fisher	Lyddy Turnpike Road	329112M	120	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	Sabine	Fisher	Main Street	329110Y	1246	40	9120.8	8162.3	10.71	21.54	3.2	2.9
Louisiana	Sabine	Florien	Addison Road	329251H	36	40	9120.8	8162.3	10.71	21.54	3.2	2.9
Louisiana	Sabine	Florien	Arthur Place	329248A	36	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	Sabine	Florien	Brown Road	329241C	142	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	Sabine	Florien	Gandy Road	329250B	142	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	Sabine	Florien	High School Drive	329109E	211	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	Sabine	Florien	Port Arthur Avenue	329244X	1624	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	Sabine	Florien	West Front Street	329243R	436	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	Sabine	Hornbeck	White City Road	329254D	366	40	9120.8	8162.3	10.71	21.54	3.2	2.9
Louisiana	Sabine	Many	McDonald Drive	329237M	117	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	Sabine	Many	Mcgarrahan Road	329232D	150	40	9120.8	8162.3	10.71	21.54	3.2	2.9

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Louisiana	Sabine	Many	San Antonio Avenue / Texas Highway	329234S	8143	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	Sabine	Many	Sycamore Street	329235Y	834	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	Sabine	Noble	Louisiana 1218	329215M	1044	45	9120.8	8162.3	10.71	21.54	2.9	2.7
Louisiana	Sabine	Noble	Mulberry Lane	329220J	78	45	9120.8	8162.3	10.71	21.54	2.9	2.7
Louisiana	Sabine	Noble	Shiloh Road	329217B	117	59	9120.8	8162.3	10.71	21.54	2.4	2.2
Louisiana	Sabine	Zwolle	Laroux Street	329224L	216	50	9120.8	8162.3	10.71	21.54	2.7	2.5
Louisiana	Sabine	Zwolle	Obrie Street	329226A	9256	50	9120.8	8162.3	10.71	21.54	2.7	2.5
Louisiana	Sabine	Zwolle	Port Arthur Avenue	329227G	2536	50	9120.8	8162.3	10.71	21.54	2.7	2.5
Louisiana	Sabine	Zwolle	Sabine Wildlife Management Area	329231W	83	40	9120.8	8162.3	10.71	21.54	3.2	2.9
Louisiana	Vernon	Anacoco	Beavers Road	329258F	244	40	9120.8	8162.3	10.71	21.54	3.2	2.9
Louisiana	Vernon	Anacoco	Ford Stewart Road	329264J	232	50	9120.8	8162.3	10.71	21.54	2.7	2.5
Louisiana	Vernon	Anacoco	Holly Grove Road	329262V	1759	50	9120.8	8162.3	10.71	21.54	2.7	2.5

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Louisiana	Vernon	Anacoco	L Beauford Drive / Lions Camp Road	329263C	146	50	9120.8	8162.3	10.71	21.54	2.7	2.5
Louisiana	Vernon	Anacoco	Leach Road	329257Y	21	40	9120.8	8162.3	10.71	21.54	3.2	2.9
Louisiana	Vernon	Anacoco	Ronayne Drive	330816T	57	50	9120.8	8162.3	10.71	21.54	2.7	2.5
Louisiana	Vernon	Anacoco	Roy Clark Road	329261N	89	40	9120.8	8162.3	10.71	21.54	3.2	2.9
Louisiana	Vernon	Anacoco	Trigger Trapp Road	329259M	4218	40	9120.8	8162.3	10.71	21.54	3.2	2.9
Louisiana	Vernon	De Ridder	Catfish Hut Road	329311P	571	45	9120.8	8162.3	10.98	21.81	2.9	2.7
Louisiana	Vernon	Hornbeck	Barham Road	329255K	100	40	9120.8	8162.3	10.71	21.54	3.2	2.9
Louisiana	Vernon	Hornbeck	Port Arthur Avenue	329253W	2581	40	9120.8	8162.3	10.71	21.54	3.2	2.9
Louisiana	Vernon	Leesville	Beltz Road	329290Y	476	40	9120.8	8162.3	10.98	21.81	3.2	2.9
Louisiana	Vernon	Leesville	East Court House Street	329278S	431	40	9120.8	8162.3	10.98	21.81	3.2	2.9
Louisiana	Vernon	Leesville	East Lula Street	329279Y	4452	40	9120.8	8162.3	10.98	21.81	3.2	2.9
Louisiana	Vernon	Leesville	East Maggie Street	329280T	1326	40	9120.8	8162.3	10.98	21.81	3.2	2.9
Louisiana	Vernon	Leesville	East Mechanic Street	329273H	1221	40	9120.8	8162.3	10.98	21.81	3.2	2.9

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Louisiana	Vernon	Leesville	East Texas Street	329277K	1118	40	9120.8	8162.3	10.98	21.81	3.2	2.9
Louisiana	Vernon	Leesville	Eissman Road	329292M	670	59	9120.8	8162.3	10.98	21.81	2.4	2.2
Louisiana	Vernon	Leesville	Hawthorne Road	329266X	1563	50	9120.8	8162.3	10.71	21.54	2.7	2.5
Louisiana	Vernon	Leesville	Ind Park Road	329267E	35	50	9120.8	8162.3	10.71	21.54	2.7	2.5
Louisiana	Vernon	Leesville	Louisiana Street	329284V	3515	40	9120.8	8162.3	10.98	21.81	3.2	2.9
Louisiana	Vernon	Leesville	Nona Street	329270M	2296	40	9120.8	8162.3	10.98	21.81	3.2	2.9
Louisiana	Vernon	Leesville	North Third Street	329274P	1398	40	9120.8	8162.3	10.98	21.81	3.2	2.9
Louisiana	Vernon	Leesville	Red Town Road	329286J	1504	40	9120.8	8162.3	10.98	21.81	3.2	2.9
Louisiana	Vernon	Leesville	Warner Street	329641V	3042	40	9120.8	8162.3	10.98	21.81	3.2	2.9
Louisiana	Vernon	Newllano	Jean Chapel Road	329296P	1073	50	9120.8	8162.3	10.98	21.81	2.7	2.5
Louisiana	Vernon	Newllano	Lebleu Road / Pickering High School	329297W	35	50	9120.8	8162.3	10.98	21.81	2.7	2.5
Louisiana	Vernon	Newllano	Lewis Perkins Road	329293U	90	59	9120.8	8162.3	10.98	21.81	2.4	2.2
Louisiana	Vernon	Rosepine	Ambler Road	329305L	664	59	9120.8	8162.3	10.98	21.81	2.4	2.2

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Louisiana	Vernon	Rosepine	Bailey Road	329306T	1185	59	9120.8	8162.3	10.98	21.81	2.4	2.2
Louisiana	Vernon	Rosepine	Calhoun Dairy Drive	331348E	1172	59	9120.8	8162.3	10.98	21.81	2.4	2.2
Louisiana	Vernon	Rosepine	Davis Lane	329310H	584	59	9120.8	8162.3	10.98	21.81	2.4	2.2
Louisiana	Vernon	Rosepine	Graham Road	329299K	180	59	9120.8	8162.3	10.98	21.81	2.4	2.2
Louisiana	Vernon	Rosepine	Louisiana 10	329298D	8436	50	9120.8	8162.3	10.98	21.81	2.7	2.5
Louisiana	Vernon	Rosepine	Main Street	329308G	2929	59	9120.8	8162.3	10.98	21.81	2.4	2.2
Louisiana	Vernon	Rosepine	Pinewood Road	329302R	312	59	9120.8	8162.3	10.98	21.81	2.4	2.2
Louisiana	Vernon	Rosepine	Research Station	329303X	117	59	9120.8	8162.3	10.98	21.81	2.4	2.2
Missouri	Barton	Arcadia	East Zebulon Road	329965X	12	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Barton	Arcadia	Northwest 100th Road	329967L	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Barton	Arcadia	Northwest 80th Road	329974W	233	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Barton	Buffalo	33rd Road	329981G	110	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Barton	Buffalo	35th Road	329979F	68	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Barton	Buffalo	40th Road	329978Y	439	55	8898.7	7974.9	17.57	30.40	2.4	2.2

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Missouri	Barton	Osgood	60th Road	329976K	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Barton	Osgood	Missouri K	329972H	390	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Amoret	Main Street	329890B	739	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Amoret	Northwest County Road 802	329891H	9	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Amoret	Road 12761	329894D	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Amoret	Southwest County Road 4508	329897Y	10	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Amoret	Southwest County Road 5508	329898F	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Amoret	Southwest County Road 6508	329899M	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Amoret	Southwest County Road 7008	329900E	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Amoret	Southwest County Road 7508	329901L	21	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Amsterdam	Main Street	329880V	186	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Amsterdam	Missouri Y	329876F	620	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Amsterdam	North Street	329879B	59	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Amsterdam	Northwest County Road 3002	329889G	102	55	8898.7	7974.9	17.57	30.40	2.4	2.2

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Missouri	Bates	Amsterdam	Northwest County Road 4002	329886L	4	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Amsterdam	Walnut Street	329881C	76	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Amsterdam	Walnut Street	329905N	178	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Drexel	Ethel Street	329865T	2094	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Drexel	Northwest County Road 16002	329866A	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Foster	Missouri U	329896S	251	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Foster	Southwest County Road 8508	329902T	18	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Hume	East Arnold Road	329913F	18	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Hume	Hume Street	329904G	540	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Hume	Southwest County Road 11508	329911S	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Hume	Spring Street	329906V	59	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Merwin	First Street	329870P	80	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Merwin	Northwest County Road 11002	329874S	70	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Bates	Merwin	Poplar Street	329872D	586	55	8898.7	7974.9	17.57	30.40	2.4	2.2

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Missouri	Caldwell	Braymer	Hickory 205 Liv 401	375475D	6	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Caldwell	Braymer	Highway North 9th Street	375473P	441	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Caldwell	Braymer	Main Street	375471B	1526	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Caldwell	Braymer	Southeast Bethany Drive	375467L	6	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Caldwell	Braymer	Southeast Honeysuckle Drive	375474W	6	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Caldwell	Braymer	Southeast Kirkpatrick Road / Road 228	375469A	6	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Caldwell	Cowgill	Main Street	375461V	180	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Caldwell	Cowgill	Southeast Chiefs Road	375466E	6	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Caldwell	Cowgill	Southeast Oliver Road	375465X	23	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Caldwell	Cowgill	Southeast Wildlife Road	375459U	12	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Caldwell	Cowgill	Walnut Street	375462C	23	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Caldwell	Polo	Boulder Road	375453D	6	60	12445.2	7044.6	3.83	18.24	3.0	1.9
Missouri	Caldwell	Polo	Southeast Maggie Road	375456Y	6	40	12445.2	7044.6	3.98	18.38	4.1	2.6

Table H.1-1. Inventory of Public Grade Crossings by State, County, and City

State	County	City	Street	Crossing ID	AADT	Train Speed (mph)	Train Length with No-Action (feet)	Train Length with Proposed Acquisition (feet)	Trains Per Day with No-Action	Trains Per Day with Proposed Acquisition	Average Gate Down Time with No-Action (minutes)	Average Gate Down Time with Proposed Acquisition (minutes)
Missouri	Caldwell	Polo	Southeast Soo Line Road	375457F	12	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Caldwell	Polo	Southwest Holstien Road	375454K	6	60	12445.2	7044.6	3.83	18.24	3.0	1.9
Missouri	Cass	Belton	183rd Street	329818K	479	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Cass	Belton	187th Street	329821T	527	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Cass	Cleveland	233 Road	329834U	12	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Cass	Cleveland	259th Street	329837P	18	45	8898.7	7974.9	17.57	30.40	2.8	2.6
Missouri	Cass	Cleveland	Lone Pine Drive	329836H	6	45	8898.7	7974.9	17.57	30.40	2.8	2.6
Missouri	Cass	Cleveland	Main Street	329835B	2380	45	8898.7	7974.9	17.57	30.40	2.8	2.6
Missouri	Cass	Cleveland	Missouri 2	329839D	3125	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Cass	Drexel	315 Street	329850D	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Cass	Drexel	341 Street	329858H	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Cass	Drexel	347 Street	329860J	13	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Cass	Drexel	Main Street	329863E	294	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Cass	West Line	289 Street	329841E	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2

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Missouri	Cass	West Line	299 Street	329845G	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Cass	West Line	307 Street	329848C	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Clay	Birmingham	Fifth Street	375408J	338	25	12445.2	7044.6	3.83	18.24	6.3	3.8
Missouri	Clay	Birmingham	North Arlington Avenue	375407C	2574	25	12445.2	7044.6	3.83	18.24	6.3	3.8
Missouri	Clay	Birmingham	Saint Louis Avenue	375409R	351	25	12445.2	7044.6	3.83	18.24	6.3	3.8
Missouri	Clay	Excelsior Springs	Dunbar Avenue	375439H	6048	60	12445.2	7044.6	3.83	18.24	3.0	1.9
Missouri	Clay	Excelsior Springs	Italian Way	375440C	3157	60	12445.2	7044.6	3.83	18.24	3.0	1.9
Missouri	Clay	Excelsior Springs	McLaery Road	375434Y	2073	60	12445.2	7044.6	3.83	18.24	3.0	1.9
Missouri	Clay	Excelsior Springs	Salem Road	375442R	1035	60	12445.2	7044.6	3.83	18.24	3.0	1.9
Missouri	Clay	Lawson	174th Street	375445L	293	60	12445.2	7044.6	3.83	18.24	3.0	1.9
Missouri	Clay	Liberty	Lancaster Road	375423L	267	60	12445.2	7044.6	3.83	18.24	3.0	1.9
Missouri	Clay	Liberty	Old Birmingham Road	375414M	1376	60	12445.2	7044.6	3.83	18.24	3.0	1.9
Missouri	Clay	Mosby	Pony Express Road	375433S	234	60	12445.2	7044.6	3.83	18.24	3.0	1.9
Missouri	Grundy	Galt	102nd Avenue	375578D	23	40	12126.8	7209.8	3.41	17.81	4.0	2.6

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Missouri	Grundy	Galt	10th Street Southeast	375577W	12	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Missouri	Grundy	Galt	110th Street	375580E	59	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Missouri	Grundy	Laredo	65th Street	375562G	23	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Grundy	Laredo	Baha Lane	375574B	6	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Missouri	Grundy	Laredo	First Street	375569E	283	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Missouri	Jackson	Grandview	Duck Road	329806R	1757	45	8898.7	7974.9	17.57	30.40	2.8	2.6
Missouri	Jackson	Grandview	Main Street	329807X	6087	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Jackson	Kansas City	12th Street	329762T	1404	40	8898.7	7974.9	17.57	30.40	3.1	2.9
Missouri	Jackson	Kansas City	17th Street	329764G	3189	40	8898.7	7974.9	17.57	30.40	3.1	2.9
Missouri	Jasper	Asbury	Main Street	330014T	152	55	8508.0	7385.4	16.17	28.58	2.4	2.1
Missouri	Jasper	Asbury	Missouri CC	330013L	94	55	8508.0	7385.4	16.17	28.58	2.4	2.1
Missouri	Jasper	Asbury	Pine Road	329987X	60	55	8508.0	7385.4	16.17	28.58	2.4	2.1
Missouri	Jasper	Asbury	Road 300	330015A	88	55	8508.0	7385.4	16.17	28.58	2.4	2.1
Missouri	Jasper	Asbury	State Line Avenue	329986R	19	55	8508.0	7385.4	16.17	28.58	2.4	2.1

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Missouri	Jasper	Carl Junction	East Pennell	330035L	5710	50	8508.0	7385.4	16.17	28.58	2.5	2.3
Missouri	Jasper	Carl Junction	Ivy Street	330033X	229	50	8508.0	7385.4	16.17	28.58	2.5	2.3
Missouri	Jasper	Carl Junction	Kafir Road	330028B	141	55	8508.0	7385.4	16.17	28.58	2.4	2.1
Missouri	Jasper	Carl Junction	Karen Drive	330034E	397	50	8508.0	7385.4	16.17	28.58	2.5	2.3
Missouri	Jasper	Carl Junction	Missouri YY	330031J	1712	50	8508.0	7385.4	16.17	28.58	2.5	2.3
Missouri	Jasper	Carl Junction	Road 284	330029H	7	55	8508.0	7385.4	16.17	28.58	2.4	2.1
Missouri	Jasper	Joplin	12th Street	330054R	419	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Missouri	Jasper	Joplin	15th Street	330055X	11157	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Missouri	Jasper	Joplin	32nd Street	330061B	17557	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Missouri	Jasper	Joplin	4th Street	330045S	8701	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Missouri	Jasper	Joplin	5th Street	330046Y	828	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Missouri	Jasper	Joplin	9th Street	330053J	4280	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Missouri	Jasper	Waco	Missouri KK / Maple Road	330018V	391	55	8508.0	7385.4	16.17	28.58	2.4	2.1
Missouri	Jasper	Waco	Nutmeg Road	330016G	35	55	8508.0	7385.4	16.17	28.58	2.4	2.1

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Missouri	Livingston	Chillicothe	County Road Road 222	375530B	32	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Livingston	Chillicothe	County Road Road 226	375528A	23	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Livingston	Chillicothe	County Road Road 228	375526L	12	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Livingston	Chillicothe	County Road Road 230	375522J	12	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Livingston	Chillicothe	Jackson Street	375515Y	1636	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Livingston	Chillicothe	Third Street	375514S	1367	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Livingston	Chillicothe	Trenton Road	375518U	94	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Livingston	Chula	County Road 204	375545R	6	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Livingston	Chula	County Road 251	375533W	23	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Livingston	Chula	Highway M	375534D	84	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Livingston	Chula	Highway V	375538F	273	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Livingston	Chula	Mansur Street / Highway K	375541N	164	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Livingston	Dawn	County Road 418	375484C	17	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Livingston	Dawn	County Road 419	375482N	6	40	12445.2	7044.6	3.98	18.38	4.1	2.6

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Missouri	Livingston	Dawn	Highway C	375483V	455	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Livingston	Dawn	Highway DD	375481G	397	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Livingston	Ludlow	County Road 403	375476K	12	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Livingston	Ludlow	County Road 424	375479F	35	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Livingston	Ludlow	County Road 426	375477S	12	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Livingston	Ludlow	Mainline County Route 415	375480A	12	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Livingston	Ludlow	South Main Street D	375478Y	466	40	12445.2	7044.6	3.98	18.38	4.1	2.6
Missouri	Mcdonald	Anderson	Beaver Street	330156J	1917	30	8508.0	7385.4	16.17	28.58	3.8	3.4
Missouri	Mcdonald	Anderson	Hagee Road / Northwest 7131	330151A	6	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Missouri	Mcdonald	Anderson	Main Street	330155C	1941	30	8508.0	7385.4	16.17	28.58	3.8	3.4
Missouri	Mcdonald	Anderson	Mill Street	330157R	234	30	8508.0	7385.4	16.17	28.58	3.8	3.4
Missouri	Mcdonald	Anderson	Sellers Road	330153N	368	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Missouri	Mcdonald	Anderson	Splitlog Road	330150T	30	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Missouri	Mcdonald	Goodman	Blackstock Lane	330148S	23	40	8508.0	7385.4	16.17	28.58	3.0	2.7

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Missouri	Mcdonald	Goodman	East Brodie Road	330136X	7	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Missouri	Mcdonald	Goodman	East Garner Avenue	330139T	164	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Missouri	Mcdonald	Goodman	Oak Street	330138L	1	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Missouri	Mcdonald	Goodman	Sarratt Road	330137E	7	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Missouri	Mcdonald	Goodman	School Street	330142B	299	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Missouri	Mcdonald	Goodman	Splitlog Avenue	330143H	299	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Missouri	Mcdonald	Goodman	Whitmore Street	330141U	129	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Missouri	Mcdonald	Lanagan	Eagles Nest Lane	330172T	35	30	8508.0	7385.4	16.17	28.58	3.8	3.4
Missouri	Mcdonald	Lanagan	Oscar Talley Road	330167W	30	30	8508.0	7385.4	16.17	28.58	3.8	3.4
Missouri	Mcdonald	Lanagan	Pebble Street	330168D	195	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Missouri	Mcdonald	Noel	Main Street	330178J	4023	30	8508.0	7385.4	16.17	28.58	3.8	3.4
Missouri	Mcdonald	Noel	South Kings Highway	330184M	59	30	8508.0	7385.4	16.17	28.58	3.8	3.4
Missouri	Mcdonald	Noel	Southwest 5968 / Deer Creek Road Southwest 5968	330186B	193	30	8508.0	7385.4	16.17	28.58	3.8	3.4

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Missouri	Newton	Neosho	College Street	330102D	5077	25	8508.0	7385.4	16.17	28.58	4.5	4.0
Missouri	Newton	Neosho	Landis Road/ Burr Crossing Road	330120B	2528	25	8508.0	7385.4	16.17	28.58	4.5	4.0
Missouri	Newton	Neosho	McKinney Street	330113R	4441	25	8508.0	7385.4	16.17	28.58	4.5	4.0
Missouri	Newton	Neosho	Rhonda Drive	919240A	1439	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Missouri	Newton	Neosho	Spring Street	330112J	1555	25	8508.0	7385.4	16.17	28.58	4.5	4.0
Missouri	Newton	Neosho	Washington Avenue	330101W	2621	25	8508.0	7385.4	16.17	28.58	4.5	4.0
Missouri	Newton	Saginaw	Old UU 71	330078E	347	45	8508.0	7385.4	16.17	28.58	2.7	2.5
Missouri	Newton	Saginaw	Shoal Creek Fish Reserve	330076R	60	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Missouri	Putnam	Lucerne	KK Avenue	375635P	89	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Missouri	Putnam	Lucerne	Private Road	375637D	12	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Missouri	Putnam	Powersville	140th Street	375642A	12	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Missouri	Putnam	Powersville	Route E	375644N	128	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Missouri	Ray	Elmira	North Raum Road	375448G	74	60	12445.2	7044.6	3.83	18.24	3.0	1.9

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Missouri	Ray	Lawson	Garner Street	375486R	176	60	12445.2	7044.6	3.83	18.24	3.0	1.9
Missouri	Ray	Lawson	Moss Street	375446T	234	60	12445.2	7044.6	3.83	18.24	3.0	1.9
Missouri	Ray	Polo	Price Drive	375452W	23	60	12445.2	7044.6	3.83	18.24	3.0	1.9
Missouri	Sullivan	Harris	5th Street/ Leer Drive	375612H	29	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Missouri	Sullivan	Harris	State Highway East	375614W	422	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Missouri	Sullivan	Newtown	Highway EE	375626R	239	49	12126.8	7209.8	3.41	17.81	3.4	2.3
Missouri	Sullivan	Osgood	Eisenhower Street/ County Road PP	375593F	182	40	12126.8	7209.8	3.41	17.81	4.0	2.6
Missouri	Vernon	Arcadia	East Ulysses Road	329960N	12	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Vernon	Arcadia	East Yater Road	329964R	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Vernon	Arcadia	Missouri FF	329961V	230	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Vernon	Arcadia	Waldo Road	329962C	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Vernon	Deerfield	East Katy Track Road	329942R	9	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Vernon	Deerfield	East Panama Road	329949N	23	55	8898.7	7974.9	17.57	30.40	2.4	2.2

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Missouri	Vernon	Deerfield	East Quail Road	329955S	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Vernon	Deerfield	Missouri KK	329956Y	270	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Vernon	Deerfield	Nebo Hill Road	329946T	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Vernon	Hume	East Bailey Road	329917H	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Vernon	Richards	1st Street	329940C	66	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Vernon	Richards	3rd Street	329939H	28	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Vernon	Richards	4th Street	329938B	28	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Vernon	Richards	8th Street	329937U	238	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Vernon	Richards	East Lady Road	329944E	9	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Vernon	Richards	South 400 Road	329930W	47	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Vernon	Richards	Stockade Road	329957F	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Vernon	Richards	Tally Bend Road	329958M	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Vernon	Stotesbury	East Caton Road	329920R	6	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Vernon	Stotesbury	East Trestle Road	329959U	41	55	8898.7	7974.9	17.57	30.40	2.4	2.2

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Missouri	Vernon	Stotesbury	Main Street	329929C	136	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Missouri	Vernon	Stotesbury	North Street	329928V	12	55	8898.7	7974.9	17.57	30.40	2.4	2.2
Oklahoma	Adair	Bunch	North Bunch Road	330647H	117	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Adair	Bunch	Road 4660	330640K	117	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Adair	Bunch	Road 888	330643F	230	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Adair	Bunch	South Bunch Road	330655A	23	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Adair	Stilwell	Ash Street	330626P	23	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Adair	Stilwell	E0778 Road	330620Y	234	35	8508.0	7385.4	14.15	26.56	3.4	3.0
Oklahoma	Adair	Stilwell	E0810 Road	330623U	234	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Adair	Stilwell	Oklahoma 51	330625H	2987	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Adair	Stilwell	Road 4760	330637C	322	30	8508.0	7385.4	14.15	26.56	3.8	3.4
Oklahoma	Adair	Stilwell	Road 772	330619E	293	35	8508.0	7385.4	14.15	26.56	3.4	3.0
Oklahoma	Adair	Stilwell	Road 850	330636V	176	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Adair	Stilwell	South 3rd Street	330635N	703	40	8508.0	7385.4	14.15	26.56	3.0	2.7

Table H.1-1. Inventory of Public Grade Crossings by State, County, and City

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Oklahoma	Adair	Stilwell	Tyson Farms Road	330633A	234	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Adair	Stilwell	Walnut Street	330628D	820	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Adair	Watts	E0653 Road	330398E	162	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Adair	Watts	E0660 Road	330601U	368	30	8508.0	7385.4	14.15	26.56	3.8	3.4
Oklahoma	Adair	Watts	N4740 Road	330390A	59	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Oklahoma	Adair	Watts	N4740 Road	330392N	59	40	8508.0	7385.4	16.17	28.58	3.0	2.7
Oklahoma	Adair	Watts	Twin Falls Road	330389F	69	35	8508.0	7385.4	16.17	28.58	3.4	3.0
Oklahoma	Adair	Westville	Chincapin Street	330612G	3561	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Adair	Westville	E0670 Road	330603H	59	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Adair	Westville	E0690 Road	330605W	59	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Adair	Westville	E0700 Road	330606D	59	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Adair	Westville	East Division Street	330610T	59	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Adair	Westville	Morris Road	330614V	59	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Adair	Westville	RD 754	330616J	176	40	8508	7385.4	14.15	26.56	3.0	2.7

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Oklahoma	Adair	Westville	West Cherry Street	330607K	59	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Le Flore	Heavener	201st Avenue	330797R	117	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Oklahoma	Le Flore	Heavener	Church Road	330792G	1582	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Oklahoma	Le Flore	Heavener	East Avenue F	330785W	6093	20	8508.0	7385.4	14.58	26.99	5.4	4.8
Oklahoma	Le Flore	Heavener	Forest Hill Road	330744S	176	40	8508.0	7385.4	14.58	26.99	3.0	2.7
Oklahoma	Le Flore	Heavener	Haw Creek Road	330799E	154	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Oklahoma	Le Flore	Heavener	Hicks Road	330796J	172	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Oklahoma	Le Flore	Heavener	Hodgens Road	330791A	351	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Oklahoma	Le Flore	Heavener	Industrial Road	330783H	59	40	8508.0	7385.4	14.58	26.99	3.0	2.7
Oklahoma	Le Flore	Heavener	KCS X	330793N	35	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Oklahoma	Le Flore	Heavener	Stand Pipe Road	330789Y	59	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Oklahoma	Le Flore	Heavener	West Avenue C	330784P	6444	20	8508.0	7385.4	14.58	26.99	5.4	4.8
Oklahoma	Le Flore	Heavener	West Avenue I	330786D	2460	40	9650.9	8128.3	13.78	26.18	3.3	2.9
Oklahoma	Le Flore	Howe	Lassiter Road	330739V	59	40	8508.0	7385.4	14.58	26.99	3.0	2.7

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Oklahoma	Le Flore	Howe	Old Pike Road	330741W	117	40	8508.0	7385.4	14.58	26.99	3.0	2.7
Oklahoma	Le Flore	Panama	Choctaw Street	330714A	322	55	8508.0	7385.4	14.15	26.56	2.4	2.1
Oklahoma	Le Flore	Panama	Coal Creek Road	330713T	117	55	8508.0	7385.4	14.15	26.56	2.4	2.1
Oklahoma	Le Flore	Panama	Pierce Road	330718C	35	55	8508.0	7385.4	14.15	26.56	2.4	2.1
Oklahoma	Le Flore	Panama	Tecumseh Street	330716N	234	55	8508.0	7385.4	14.15	26.56	2.4	2.1
Oklahoma	Le Flore	Poteau	290th Street	330723Y	117	55	8508.0	7385.4	14.15	26.56	2.4	2.1
Oklahoma	Le Flore	Poteau	Airport Road	330736A	3515	55	8508.0	7385.4	14.58	26.99	2.4	2.1
Oklahoma	Le Flore	Poteau	Dewey Avenue	330732X	2460	55	8508.0	7385.4	14.58	26.99	2.4	2.1
Oklahoma	Le Flore	Poteau	East Branson Road	330722S	117	55	8508.0	7385.4	14.15	26.56	2.4	2.1
Oklahoma	Le Flore	Poteau	Fairview Road	330712L	88	55	8508.0	7385.4	14.15	26.56	2.4	2.1
Oklahoma	Le Flore	Poteau	Grady Avenue	330733E	2343	55	8508.0	7385.4	14.58	26.99	2.4	2.1
Oklahoma	Le Flore	Poteau	North Witte Street	330729P	1640	50	8508.0	7385.4	14.15	26.56	2.5	2.3
Oklahoma	Le Flore	Poteau	Possum Valley Road	330727B	387	55	8508.0	7385.4	14.15	26.56	2.4	2.1
Oklahoma	Le Flore	Poteau	South Railroad Street	330734L	59	55	8508.0	7385.4	14.58	26.99	2.4	2.1

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Oklahoma	Le Flore	Poteau	Williams Lane	330726U	59	55	8508.0	7385.4	14.15	26.56	2.4	2.1
Oklahoma	Le Flore	Shady Point	Reagan Street	330721K	176	55	8508.0	7385.4	14.15	26.56	2.4	2.1
Oklahoma	Le Flore	Shady Point	Wheelus Street	330719J	88	55	8508.0	7385.4	14.15	26.56	2.4	2.1
Oklahoma	Le Flore	Shady Point	Wheelus Street	330720D	59	55	8508.0	7385.4	14.15	26.56	2.4	2.1
Oklahoma	Le Flore	Spiro	Bailey Road	330709D	59	55	8508.0	7385.4	14.15	26.56	2.4	2.1
Oklahoma	Le Flore	Spiro	County Road D4723	330700S	23	55	8508.0	7385.4	14.15	26.56	2.4	2.1
Oklahoma	Le Flore	Spiro	Race Track Road	330710X	117	55	8508.0	7385.4	14.15	26.56	2.4	2.1
Oklahoma	Le Flore	Spiro	South Ash Street	330706H	176	55	8508.0	7385.4	14.15	26.56	2.4	2.1
Oklahoma	Sequoyah	Gans	South 4710 Road	330695X	264	55	8508.0	7385.4	14.15	26.56	2.4	2.1
Oklahoma	Sequoyah	Gans	South 4715 Road	330697L	80	55	8508.0	7385.4	14.15	26.56	2.4	2.1
Oklahoma	Sequoyah	Gans	South 4715 Road	330698T	23	55	8508.0	7385.4	14.15	26.56	2.4	2.1
Oklahoma	Sequoyah	Marble City	East 991 Road	330669H	117	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Sequoyah	Marble City	First Street	330660W	23	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Sequoyah	Muldrow	East 1140 Road	330693J	59	55	8508.0	7385.4	14.15	26.56	2.4	2.1

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Oklahoma	Sequoyah	Sallisaw	Dogwood Street	330680H	117	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Sequoyah	Sallisaw	East 1040 Road	330671J	234	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Sequoyah	Sallisaw	East 1050 Road	330672R	59	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Sequoyah	Sallisaw	East 1090 Road	330685S	59	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Sequoyah	Sallisaw	East Road 1095	330686Y	23	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Sequoyah	Sallisaw	South 4640 Road	330682W	63	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Sequoyah	Sallisaw	West Chickasaw Avenue	330676T	176	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Sequoyah	Sallisaw	West Port Arthur Place	330677A	293	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Sequoyah	Sallisaw	West Redwood Avenue	330674E	59	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Oklahoma	Sequoyah	Sallisaw	West Taylor Drive	330673X	59	40	8508.0	7385.4	14.15	26.56	3.0	2.7
Texas	Bowie	Texarkana	14th Street	330869S	4242	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Texas	Bowie	Texarkana	3rd Street	330873G	157	40	9650.9	8128.3	13.49	25.89	3.3	2.9
Texas	Bowie	Texarkana	4th Street	330872A	5731	40	9650.9	8128.3	13.49	25.89	3.3	2.9
Texas	Bowie	Texarkana	5th Street	330871T	1741	40	9650.9	8128.3	13.49	25.89	3.3	2.9

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Texas	Bowie	Texarkana	Baroid Road	330887P	434	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Texas	Bowie	Texarkana	Forest Lake Drive	330861M	312	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Texas	Bowie	Texarkana	Hoot Plant Road	330893T	49	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Texas	Bowie	Texarkana	Lakeridge Drive	330862U	760	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Texas	Bowie	Texarkana	Richmond Road	330867D	4044	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Texas	Bowie	Texarkana	South Bend Road	330890X	187	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Texas	Cass	Bloomburg	County Route 3990	330902P	183	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Texas	Cass	Bloomburg	County Route 3992	330903W	166	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Texas	Cass	Bloomburg	County Route 4920	330907Y	116	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Texas	Cass	Bloomburg	Cypress Street	330906S	374	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Texas	Cass	Bloomburg	FM 251	330901H	415	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Texas	Cass	Bloomburg	Main Street	330905K	1994	55	9650.9	8128.3	13.49	25.89	2.6	2.3
Texas	Collin	Dallas	Dallas North Parkway	021749Y	11640	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Collin	Dallas	Horizon North Drive	021770E	6083	35	5644.9	5993.5	1.19	1.19	2.4	2.5

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Texas	Collin	Murphy	FM 544	789644J	34418	35	5644.9	5993.5	1.33	1.33	2.4	2.5
Texas	Collin	Murphy	Maxwell Creek	789646X	1514	35	5644.9	5993.5	1.33	1.33	2.4	2.5
Texas	Collin	Murphy	Murphy Road	789645R	23351	35	5644.9	5993.5	1.33	1.33	2.4	2.5
Texas	Collin	Plano	10th Street	789633W	2641	25	5644.9	5993.5	1.19	1.19	3.2	3.3
Texas	Collin	Plano	Avenue F	788900U	2456	25	5644.9	5993.5	1.19	1.19	3.2	3.3
Texas	Collin	Plano	Coit Road	021635L	44940	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Collin	Plano	Dallas North Parkway	919239F	22167	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Collin	Plano	East Plano Parkway	789632P	26658	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Collin	Plano	Jupiter Road	789638F	29914	35	5644.9	5993.5	1.33	1.33	2.4	2.5
Texas	Collin	Plano	K Avenue	789635K	9598	35	5644.9	5993.5	1.33	1.33	2.4	2.5
Texas	Collin	Plano	Los Rios Boulevard	753583T	11315	35	5644.9	5993.5	1.33	1.33	2.4	2.5
Texas	Collin	Plano	Municipal Avenue	789636S	19658	35	5644.9	5993.5	1.33	1.33	2.4	2.5
Texas	Collin	Plano	North Avenue	789637Y	2299	25	5644.9	5993.5	1.33	1.33	3.2	3.3
Texas	Collin	Plano	Ohio Drive	021638G	22215	35	5644.9	5993.5	1.19	1.19	2.4	2.5

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Texas	Collin	Plano	Park Vista Road	789643C	885	35	5644.9	5993.5	1.33	1.33	2.4	2.5
Texas	Collin	Plano	Plano Parkway	919268R	28734	35	5644.9	5993.5	1.33	1.33	2.4	2.5
Texas	Collin	Plano	Shiloh Road	789640G	6506	35	5644.9	5993.5	1.33	1.33	2.4	2.5
Texas	Collin	Plano	US 75 East Frontage	789631H	42723	25	5644.9	5993.5	1.19	1.19	3.2	3.3
Texas	Collin	Plano	US 75 West Frontage	789629G	20308	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Collin	Richardson	Alma Road	753757M	14802	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Collin	Richardson	Custer Road	789628A	14203	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Collin	Wylie	Country Club Road	789648L	13583	35	5644.9	5993.5	1.33	1.33	2.4	2.5
Texas	Collin	Wylie	Eubanks Lane	789654P	3088	35	5644.9	5993.5	1.33	1.33	2.4	2.5
Texas	Collin	Wylie	FM 2514 / Ballard Avenue	789653H	14731	59	5644.9	5993.5	1.33	1.33	1.7	1.8
Texas	Collin	Wylie	FM 3412 / Brown Street	789652B	11495	59	5644.9	5993.5	1.33	1.33	1.7	1.8
Texas	Collin	Wylie	McCreary Road	790146W	12267	35	5644.9	5993.5	1.33	1.33	2.4	2.5
Texas	Collin	Wylie	Oak Street	789650M	1664	35	5644.9	5993.5	1.33	1.33	2.4	2.5
Texas	Collin	Wylie	Springwell Parkway	331279Y	13223	35	5644.9	5993.5	1.33	1.33	2.4	2.5

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Texas	Collin	Wylie	West Marble Street	789651U	1022	35	5644.9	5993.5	1.33	1.33	2.4	2.5
Texas	Collin	Wylie	Westgate Way	330967H	234	35	5644.9	5993.5	1.33	1.33	2.4	2.5
Texas	Denton	Carrollton	Josey Lane	021765H	35576	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Carrollton	Marsh Lane	021767W	16204	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Copper Canyon	Copper Canyon Road	021691T	4866	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Copper Canyon	Orchid Hill Road	021690L	1679	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Denton	Barthold Road	021727Y	306	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Denton	Barthold Road	021728F	306	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Denton	Bonnie Brea Street	021709B	1140	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Denton	Country Club Road	021700P	8910	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Denton	FM 1173	021726S	11751	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Denton	Hickory Creek Road	021696C	5064	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Denton	Highland Park Road	021708U	545	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Denton	Roselawn Drive	021706F	529	35	5644.9	5993.5	1.19	1.19	2.4	2.5

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State	County	City	Street	Crossing ID	AADT	Train Speed (mph)	Train Length with No-Action (feet)	Train Length with Proposed Acquisition (feet)	Trains Per Day with No-Action	Trains Per Day with Proposed Acquisition	Average Gate Down Time with No-Action (minutes)	Average Gate Down Time with Proposed Acquisition (minutes)
Texas	Denton	Denton	West Oak Street	021780K	2146	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Hebron	Hebron Parkway	021646Y	37345	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Highland Village	Briarhill Boulevard	021771L	346	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Highland Village	Chinns Chapel Road	021684H	1679	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Highland Village	Highland Village	021676R	12970	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Highland Village	Justin Road	021672N	24980	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Highland Village	Village Parkway	331277K	35751	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Justin	Downe Road	020811D	751	79	5247.7	5566.5	23.45	23.45	1.4	1.4
Texas	Denton	Justin	FM 0407	020557D	7156	79	5247.7	5566.5	23.45	23.45	1.4	1.4
Texas	Denton	Justin	Harmoson Road	020553B	398	79	5247.7	5566.5	23.45	23.45	1.4	1.4
Texas	Denton	Justin	Main Street	020556W	751	79	5247.7	5566.5	23.45	23.45	1.4	1.4
Texas	Denton	Justin	Strader Road	020559S	557	79	5309.1	5632.5	27.73	27.73	1.4	1.4
Texas	Denton	Krum	FM 1173	020572F	9665	79	5309.1	5632.5	27.73	27.73	1.4	1.4
Texas	Denton	Krum	Ganzer Road	021731N	599	20	5644.9	5993.5	1.19	1.19	3.8	4.0

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Texas	Denton	Krum	Hopkins Road	020574U	960	79	5309.1	5632.5	27.73	27.73	1.4	1.4
Texas	Denton	Krum	Jackson Road	020571Y	108	79	5309.1	5632.5	27.73	27.73	1.4	1.4
Texas	Denton	Lewisville	Garden Ridge Boulevard	021774G	7850	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Lewisville	Mcgee Lane	021669F	5084	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Lewisville	North Kealy Avenue	021663P	1865	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Lewisville	North Summit Avenue	919241G	4057	35	5644.9	5993.5	1.19	1.19	2.4	2.5
Texas	Denton	Ponder	Bailey Street	020564N	288	79	5247.7	5566.5	23.45	23.45	1.4	1.4
Texas	Denton	Ponder	Blair Road	020561T	1220	79	5309.1	5632.5	27.73	27.73	1.4	1.4
Texas	Denton	Ponder	Eakin Cemetery Road	020560L	225	79	5309.1	5632.5	27.73	27.73	1.4	1.4
Texas	Denton	Ponder	FM 2449	020563G	5029	79	5247.7	5566.5	23.45	23.45	1.4	1.4
Texas	Denton	Ponder	James Street	020565V	288	79	5247.7	5566.5	23.45	23.45	1.4	1.4
Texas	Denton	Ponder	Seaborn Road	020562A	288	79	5309.1	5632.5	27.73	27.73	1.4	1.4
Texas	Denton	Ponder	TN Skiles Road	020566C	288	79	5247.7	5566.5	23.45	23.45	1.4	1.4
Texas	Duval	Alice	Road 132	793798B	293	55	12508.6	9617.1	14.78	22.81	3.2	2.6

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Texas	Duval	Benavides	Clark Street	793681T	350	40	12508.6	9617.1	14.78	22.81	4.2	3.3
Texas	Duval	Benavides	County Park Road	793960N	35	59	12508.6	9617.1	14.78	22.81	3.0	2.5
Texas	Duval	Benavides	Court Street	793679S	350	40	12508.6	9617.1	14.78	22.81	4.2	3.3
Texas	Duval	Benavides	FM 2295	793718F	295	40	12508.6	9617.1	14.78	22.81	4.2	3.3
Texas	Duval	Benavides	FM 3196 / Humble Street	793682A	120	40	12508.6	9617.1	14.78	22.81	4.2	3.3
Texas	Duval	Benavides	Texas Boulevard	793673B	1312	40	12508.6	9617.1	14.78	22.81	4.2	3.3
Texas	Duval	Realitos	Corkill Road	793710B	147	59	12508.6	9617.1	14.78	22.81	3.0	2.5
Texas	Duval	Realitos	Road 271	793712P	1172	59	12508.6	9617.1	14.78	22.81	3.0	2.5
Texas	Duval	Realitos	Shaw Street	793711H	490	59	12508.6	9617.1	14.78	22.81	3.0	2.5
Texas	Duval	San Diego	Bexar Street	793669L	350	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Duval	San Diego	Center Street	793677D	350	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Duval	San Diego	Collins Avenue	793687J	350	35	12508.6	9617.1	14.78	22.81	4.7	3.7
Texas	Duval	San Diego	Garcia Street	793675P	350	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Duval	San Diego	Mier Street	793678K	350	25	12508.6	9617.1	14.78	22.81	6.3	5.0

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Texas	Duval	San Diego	Peres Street	793674H	350	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Duval	San Diego	Saint James Street	793676W	350	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Duval	San Diego	Saint Peters Avenue	793686C	350	35	12508.6	9617.1	14.78	22.81	4.7	3.7
Texas	Duval	San Diego	Texas 44	793688R	10944	35	12508.6	9617.1	14.78	22.81	4.7	3.7
Texas	Duval	San Diego	Tovar Street	793691Y	350	35	12508.6	9617.1	14.78	22.81	4.7	3.7
Texas	Duval	San Diego	Trevino Street	793690S	350	35	12508.6	9617.1	14.78	22.81	4.7	3.7
Texas	Duval	San Diego	Victoria Street	793668E	350	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Fort Bend	Beasley	3rd Street	743473F	1015	59	9794.7	7680.7	9.15	17.47	2.5	2.1
Texas	Fort Bend	Beasley	4th Street	743474M	715	59	9794.7	7680.7	9.15	17.47	2.5	2.1
Texas	Fort Bend	Beasley	FM 1875	743475U	3186	59	9794.7	7680.7	9.15	17.47	2.5	2.1
Texas	Fort Bend	Beasley	Grunewald Road	743477H	750	59	9794.7	7680.7	9.15	17.47	2.5	2.1
Texas	Fort Bend	Houston	Post Oak Southbound	440652H	10960	40	8909.3	8010.8	32.68	40.25	3.1	2.9
Texas	Fort Bend	Kendleton	Darst-Gin Road	743480R	815	59	9794.7	7680.7	9.15	17.47	2.5	2.1
Texas	Fort Bend	Kendleton	FM 2919	743483L	2633	59	9794.7	7680.7	9.70	18.02	2.5	2.1

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Texas	Fort Bend	Kendleton	Park Road / Hill Top Road	927027X	166	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Fort Bend	Missouri City	South Cravens Road	743688E	1804	79	8934.2	8025.6	37.05	44.62	1.9	1.8
Texas	Fort Bend	Missouri City	South Gessner Road	743689L	19452	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Fort Bend	Richmond	Collins Road	743726L	12721	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Fort Bend	Richmond	Douglas Street	743725E	788	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Fort Bend	Richmond	Eighth Street	743723R	421	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Fort Bend	Richmond	Fourth Street	743720V	385	55	8934.2	8025.6	37.05	44.62	2.4	2.3
Texas	Fort Bend	Richmond	Second Street	743719B	4693	55	8934.2	8025.6	37.05	44.62	2.4	2.3
Texas	Fort Bend	Richmond	Sixth Street	743722J	696	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Fort Bend	Richmond	Tenth Street	743724X	7308	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Fort Bend	Rosenberg	3rd Street	743731H	7701	60	9794.7	7680.7	19.61	27.93	2.5	2.1
Texas	Fort Bend	Rosenberg	Daily Road	743471S	350	59	9794.7	7680.7	9.15	17.47	2.5	2.1
Texas	Fort Bend	Rosenberg	Hamlink Road	743472Y	469	59	9794.7	7680.7	9.15	17.47	2.5	2.1
Texas	Fort Bend	Rosenberg	Miller Road	743469R	420	59	9794.7	7680.7	9.15	17.47	2.5	2.1

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Texas	Fort Bend	Rosenberg	Rawson Road	743727T	6299	60	8767.7	7937.7	19.58	27.15	2.3	2.1
Texas	Fort Bend	Rosenberg	Scott Road	743467C	1769	20	9794.7	7680.7	15.25	23.57	6.2	5.0
Texas	Fort Bend	Rosenberg	Stade Road	743470K	227	59	9794.7	7680.7	9.15	17.47	2.5	2.1
Texas	Fort Bend	Stafford	FM 1092 Northbound F	924008H	6337	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Fort Bend	Stafford	FM 1092 Southbound F	924009P	5693	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Fort Bend	Stafford	Kirkwood Road	743695P	23945	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Fort Bend	Stafford	Promenade Boulevard	412514U	5621	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Fort Bend	Stafford	Stafford Northbound	924006U	3715	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Fort Bend	Stafford	Stafford Southbound	924007B	4056	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Fort Bend	Sugar Land	Brooks Street	743704L	368	55	8934.2	8025.6	37.05	44.62	2.4	2.3
Texas	Fort Bend	Sugar Land	Easton Avenue	743709V	1429	79	8934.2	8025.6	37.05	44.62	1.9	1.8
Texas	Fort Bend	Sugar Land	Eldridge Road	743699S	12702	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Fort Bend	Sugar Land	Gillingham Lane	745055W	6119	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Fort Bend	Sugar Land	Harlem Road	743713K	9659	60	8934.2	8025.6	37.05	44.62	2.3	2.1

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Texas	Fort Bend	Sugar Land	Industrial Boulevard	743698K	8464	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Fort Bend	Sugar Land	Main Street	743703E	6336	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Fort Bend	Sugar Land	Pitts Road	743716F	8038	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Fort Bend	Sugar Land	Schlumberger Drive	748393E	1288	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Fort Bend	Sugar Land	South Dairy Ashford Road	745044J	21195	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Fort Bend	Sugar Land	Texas 6 Northbound Frontage	922512N	7275	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Fort Bend	Sugar Land	Texas 6 Southbound Frontage	922513V	6875	60	8962.3	8043.1	43.61	51.18	2.3	2.1
Texas	Fort Bend	Sugar Land	Ulrich Street	743706A	368	55	8934.2	8025.6	37.05	44.62	2.4	2.3
Texas	Fort Bend	Sugar Land	University Boulevard	441027B	12	79	8934.2	8025.6	37.05	44.62	1.9	1.8
Texas	Harris	Crosby	Adlong Johnson Road	762866P	1162	75	8803.2	7954.4	21.76	29.33	1.9	1.8
Texas	Harris	Crosby	Crosby Eastgate Road	762865H	3074	70	8866.9	7987.0	27.22	34.79	2.0	1.9
Texas	Harris	Crosby	FM 2100 Northbound F	440488G	517	75	8866.9	7987.0	27.22	34.79	1.9	1.8
Texas	Harris	Crosby	FM 2100 Southbound F	762873A	2015	70	8866.9	7987.0	27.22	34.79	2.0	1.9
Texas	Harris	Crosby	Lord Road	762861F	750	70	8866.9	7987.0	27.22	34.79	2.0	1.9

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Texas	Harris	Crosby	Miller Wilson Road	762872T	6475	60	8866.9	7987.0	27.22	34.79	2.3	2.1
Texas	Harris	Crosby	Plaza Circle	762860Y	956	75	8844.7	7975.3	25.04	32.61	1.9	1.8
Texas	Harris	Crosby	Ramsey Road	762869K	3064	60	8866.9	7987.0	27.22	34.79	2.3	2.1
Texas	Harris	Crosby	Shady Lane	762859E	485	70	8866.9	7987.0	27.22	34.79	2.0	1.9
Texas	Harris	Houston	Beechnut Street	758519L	21912	60	8876.7	7992.4	28.32	35.89	2.3	2.1
Texas	Harris	Houston	Bellaire Boulevard	758518E	36535	60	8876.7	7992.4	28.32	35.89	2.3	2.1
Texas	Harris	Houston	Bissonnet Street	758517X	22176	60	8876.7	7992.4	28.32	35.89	2.3	2.1
Texas	Harris	Houston	Braeswood Boulevard	758521M	10750	60	8876.7	7992.4	28.32	35.89	2.3	2.1
Texas	Harris	Houston	C.E. King Parkway	762904W	20839	60	8803.2	7954.4	21.76	29.33	2.3	2.1
Texas	Harris	Houston	Champion Paper Drive	762889W	4394	60	8803.2	7954.4	21.76	29.33	2.3	2.1
Texas	Harris	Houston	Chimney Rock Road	755621G	15705	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Harris	Houston	Durham Drive	758533G	21626	60	8894.1	8002.1	30.50	38.07	2.3	2.1
Texas	Harris	Houston	Fondren Road	755624C	25119	79	8934.2	8025.6	37.05	44.62	1.9	1.8
Texas	Harris	Houston	Gregg Street	758289M	1946	30	8928.6	8022.2	35.96	43.53	4.0	3.6

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Texas	Harris	Houston	Harvard Street	758541Y	918	40	8894.1	8002.1	30.50	38.07	3.1	2.9
Texas	Harris	Houston	Haviland Street	755623V	2131	79	8934.2	8025.6	37.05	44.62	1.9	1.8
Texas	Harris	Houston	Heather Row Lane	762905D	1935	70	8866.9	7987.0	27.22	34.79	2.0	1.9
Texas	Harris	Houston	Heights Boulevard	758540S	29257	40	8894.1	8002.1	30.50	38.07	3.1	2.9
Texas	Harris	Houston	Henderson Street	758180W	10279	60	8909.3	8010.8	32.68	40.25	2.3	2.1
Texas	Harris	Houston	Hillcroft Avenue	755622N	17679	60	8934.2	8025.6	37.05	44.62	2.3	2.1
Texas	Harris	Houston	Houston Avenue	758187U	15715	20	8909.3	8010.8	32.68	40.25	5.7	5.2
Texas	Harris	Houston	John Ralston Road	762907S	6016	60	8866.9	7987.0	27.22	34.79	2.3	2.1
Texas	Harris	Houston	Liberty Road	758293C	8201	60	8909.3	8010.8	32.68	40.25	2.3	2.1
Texas	Harris	Houston	Maury Street	743120T	2032	60	8939.6	8028.9	38.14	45.71	2.3	2.1
Texas	Harris	Houston	North Shepherd Drive	758534N	23341	40	8894.1	8002.1	30.50	38.07	3.1	2.9
Texas	Harris	Houston	Oates Road	745074B	2032	50	8803.2	7954.4	21.76	29.33	2.6	2.4

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Texas	Harris	Houston	Oliver Street	758177N	918	60	8909.3	8010.8	32.68	40.25	2.3	2.1
Texas	Harris	Houston	Park Road 138	762895A	48	75	8844.7	7975.3	25.04	32.61	1.9	1.8
Texas	Harris	Houston	Parker Street	758535V	918	60	8894.1	8002.1	30.50	38.07	2.3	2.1
Texas	Harris	Houston	Patterson Street	758536C	918	40	8894.1	8002.1	30.50	38.07	3.1	2.9
Texas	Harris	Houston	Pineland Road	762897N	1570	75	8803.2	7954.4	21.76	29.33	1.9	1.8
Texas	Harris	Houston	Post Oak Northbound	755618Y	11706	40	8909.3	8010.8	32.68	40.25	3.1	2.9
Texas	Harris	Houston	Richmond Avenue	758514C	30689	60	8876.7	7992.4	28.32	35.89	2.3	2.1
Texas	Harris	Houston	Roy Street	758532A	4677	40	8894.1	8002.1	30.50	38.07	3.1	2.9
Texas	Harris	Houston	San Felipe Road	758512N	16251	60	8876.7	7992.4	28.32	35.89	2.3	2.1
Texas	Harris	Houston	Sawyer Street	758178V	16407	60	8909.3	8010.8	32.68	40.25	2.3	2.1
Texas	Harris	Houston	Sheldon Road	762892E	8987	60	8803.2	7954.4	21.76	29.33	2.3	2.1
Texas	Harris	Houston	Sherwin Street	758528K	918	40	8894.1	8002.1	30.50	38.07	3.1	2.9

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Texas	Harris	Houston	Silver Street	758183S	918	60	8909.3	8010.8	32.68	40.25	2.3	2.1
Texas	Harris	Houston	T.C. Jester Street	758531T	16143	40	8894.1	8002.1	30.50	38.07	3.1	2.9
Texas	Harris	Houston	Trentham Place	758192R	825	60	8909.3	8010.8	32.68	40.25	2.3	2.1
Texas	Harris	Houston	US 59 Eastbound Frontage	758610E	6348	60	8876.7	7992.4	28.32	35.89	2.3	2.1
Texas	Harris	Houston	US 59 Westbound Frontage	758611L	6435	60	8876.7	7992.4	28.32	35.89	2.3	2.1
Texas	Harris	Houston	Van Hut Lane	762901B	8501	60	8866.9	7987.0	27.22	34.79	2.3	2.1
Texas	Harris	Houston	West Bellfort Avenue	758523B	11240	60	8876.7	7992.4	28.32	35.89	2.3	2.1
Texas	Harris	Houston	West Street	758284D	472	30	8962.3	8043.1	43.61	51.18	4.0	3.6
Texas	Harris	Houston	Westheimer Road	758513V	29808	60	8876.7	7992.4	28.32	35.89	2.3	2.1
Texas	Harris	Houston	Willowbend Boulevard	758525P	5559	60	8876.7	7992.4	28.32	35.89	2.3	2.1
Texas	Jackson	Edna	Allen Street	746640M	1708	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Jackson	Edna	Colorado Street	746642B	254	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Jackson	Edna	County Route 0300	746644P	127	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Jackson	Edna	County Route 4082	746633C	141	59	9794.7	7680.7	9.70	18.02	2.5	2.1

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Texas	Jackson	Edna	East Street	746637E	1335	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Jackson	Edna	FM 0234	746645W	2774	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Jackson	Edna	FM 1822	746643H	4022	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Jackson	Edna	Pumphrey Street	746641U	1683	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Jackson	Edna	Road 410	927038K	292	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Jackson	Edna	Road 414	746625K	153	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Jackson	Edna	Road 4142 Airport	746628F	25	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Jackson	Edna	State Highway 0111 / Wells Street	746639T	9917	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Jackson	Ganado	Country Club Road	743580V	123	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Jackson	Ganado	FM 2982	746624D	394	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Jackson	Ganado	Fourth Street	746622P	1264	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Jackson	Ganado	Lavaca Ramp Road	746627Y	308	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Jackson	Ganado	Road 203	743581C	31	59	9794.7	7680.7	9.70	18.02	2.5	2.1

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Texas	Jackson	Ganado	Road 2531	927036W	96	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Jackson	Ganado	Sixth Street	746623W	96	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Jackson	Ganado	State Highway 0172	746621H	7607	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Jackson	Inez	Babb Lane	746647K	64	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Jefferson	Beaumont	Crockett Street	450671P	462	20	8803.2	7954.4	21.76	29.33	5.6	5.1
Texas	Jefferson	Beaumont	Keith Road	762723S	461	75	8866.9	7987.0	27.22	34.79	1.9	1.8
Texas	Jefferson	Beaumont	Langham Road	446594K	7645	60	8909.3	8010.8	32.68	40.25	2.3	2.1
Texas	Jefferson	Beaumont	Langham Road	762719C	1609	10	8844.7	7975.3	25.04	32.61	10.7	9.7
Texas	Jefferson	Beaumont	Main Lane	762725F	18	75	8723.4	7918.0	17.40	24.97	1.9	1.8
Texas	Jefferson	Beaumont	Neches Street	329480C	688	20	8441.1	7873.8	10.17	21.14	5.4	5.1
Texas	Jefferson	Beaumont	Olin Road	329504N	258	30	9120.8	8162.3	5.20	8.86	4.1	3.7
Texas	Jefferson	Beaumont	South Major Drive / Texas 364	762721D	15150	75	8723.4	7918.0	17.40	24.97	1.9	1.8
Texas	Jefferson	Beaumont	Todd Avenue	762722K	536	75	8866.9	7987.0	27.22	34.79	1.9	1.8
Texas	Jefferson	Beaumont	Wooten Road	762956N	469	75	8723.4	7918.0	17.40	24.97	1.9	1.8

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Texas	Jefferson	China	Aggie Drive	762735L	858	75	8723.4	7918.0	17.40	24.97	1.9	1.8
Texas	Jefferson	China	Broadway Street	762739N	2963	75	8723.4	7918.0	17.40	24.97	1.9	1.8
Texas	Jefferson	China	East Railroad Street	762738G	172	75	8723.4	7918.0	17.40	24.97	1.9	1.8
Texas	Jefferson	China	Meeker Road	762733X	620	75	8866.9	7987.0	27.22	34.79	1.9	1.8
Texas	Jefferson	China	Turner Road	762737A	1121	75	8723.4	7918.0	17.40	24.97	1.9	1.8
Texas	Jefferson	China	Yorkshire Road	762732R	744	75	8866.9	7987.0	27.22	34.79	1.9	1.8
Texas	Jefferson	Nederland	Avenue B	329528C	508	30	9120.8	8162.3	5.2	8.86	4.1	3.7
Texas	Jefferson	Nederland	Avenue H	329529J	540	30	9120.8	8162.3	5.2	8.86	4.1	3.7
Texas	Jefferson	Nederland	Boston Avenue	329523T	508	30	9120.8	8162.3	5.2	8.86	4.1	3.7
Texas	Jefferson	Nederland	Helena Avenue	329522L	1895	30	9120.8	8162.3	5.2	8.86	4.1	3.7
Texas	Jefferson	Nederland	Nederland Avenue	329527V	508	30	9120.8	8162.3	5.2	8.86	4.1	3.7
Texas	Jefferson	Nome	McDermand Road	762740H	170	75	8723.4	7918.0	17.40	24.97	1.9	1.8
Texas	Jefferson	Nome	Old US 90	763047C	79	75	8723.4	7918.0	17.40	24.97	1.9	1.8
Texas	Jefferson	Nome	Texas 326	762743D	3345	60	8723.4	7918.0	17.40	24.97	2.3	2.1

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Texas	Jefferson	Nome	Third Street	762744K	1058	75	8723.4	7918.0	17.40	24.97	1.9	1.8
Texas	Jefferson	Nome	Thompson Road	762742W	98	75	8723.4	7918.0	17.40	24.97	1.9	1.8
Texas	Jefferson	Port Arthur	25th Street	329544L	5436	30	9120.8	8162.3	5.20	8.86	4.1	3.7
Texas	Jefferson	Port Arthur	29th Street	329543E	326	30	9120.8	8162.3	5.20	8.86	4.1	3.7
Texas	Jefferson	Port Arthur	32nd Street / Lombardy Street	329542X	4938	30	9120.8	8162.3	5.20	8.86	4.1	3.7
Texas	Jefferson	Port Arthur	36th Street	329541R	1154	30	9120.8	8162.3	5.20	8.86	4.1	3.7
Texas	Jefferson	Port Arthur	39th Street	329540J	5095	30	9120.8	8162.3	5.20	8.86	4.1	3.7
Texas	Jefferson	Port Arthur	60th Street	329535M	1398	30	9120.8	8162.3	5.20	8.86	4.1	3.7
Texas	Jefferson	Port Arthur	7th Avenue	329546A	5256	30	9120.8	8162.3	5.20	8.86	4.1	3.7
Texas	Jefferson	Port Arthur	9th Avenue	329545T	7134	30	9120.8	8162.3	5.20	8.86	4.1	3.7
Texas	Jefferson	Port Arthur	Texas 73 Eastbound Frontage Road	329539P	1777	30	9120.8	8162.3	5.20	8.86	4.1	3.7
Texas	Jefferson	Port Arthur	Texas 73 Westbound Frontage Road	329537B	1828	30	9120.8	8162.3	5.20	8.86	4.1	3.7
Texas	Jefferson	Port Neches	Merriman Street	329531K	9744	30	9120.8	8162.3	5.20	8.86	4.1	3.7

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Texas	Jefferson	Port Neches	Twin City Highway	329532S	1364	30	9120.8	8162.3	5.20	8.86	4.1	3.7
Texas	Jim Hogg	Hebbronville	Cedar Street	793695B	293	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Jim Hogg	Hebbronville	North Rigma Road	793699D	937	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Jim Hogg	Hebbronville	Oscar Avenue	793698W	234	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Jim Hogg	Hebbronville	Pine Street	793694U	129	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Jim Hogg	Hebbronville	Sigrid Street	923779H	187	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Jim Hogg	Hebbronville	Smith Avenue/Texas 16	793696H	8951	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Jim Hogg	Hebbronville	Vaello Avenue	793693M	219	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Jim Hogg	Hebbronville	West Galbraith Street	793697P	111	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Jim Wells	Agua Dulce	Road 336	793659F	12	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Jim Wells	Agua Dulce	Road 339	793660A	215	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Jim Wells	Alice	Adams Street	793816W	1823	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Jim Wells	Alice	Almond Street	793817D	1823	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Jim Wells	Alice	Aransas Street	793812U	1823	25	12508.6	9617.1	14.78	22.81	6.3	5.0

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Texas	Jim Wells	Alice	Cameron Street	793818K	5418	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Jim Wells	Alice	County Route 113	793801G	1290	40	12508.6	9617.1	14.78	22.81	4.2	3.3
Texas	Jim Wells	Alice	County Route 114	793802N	81	40	12508.6	9617.1	14.78	22.81	4.2	3.3
Texas	Jim Wells	Alice	County Route 170	793795F	497	55	12508.6	9617.1	14.78	22.81	3.2	2.6
Texas	Jim Wells	Alice	Duval Street	793806R	234	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Jim Wells	Alice	Flournoy Road	793651B	8476	40	12508.6	9617.1	14.78	22.81	4.2	3.3
Texas	Jim Wells	Alice	Goliad Street	793808E	1011	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Jim Wells	Alice	Gulf Street	793807X	1823	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Jim Wells	Alice	Johnson Street	793811M	1823	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Jim Wells	Alice	Kempe Avenue	793810F	7124	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Jim Wells	Alice	King Street	793813B	2238	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Jim Wells	Alice	Reynolds Street	793815P	2191	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Jim Wells	Alice	Road 341	793653P	586	40	12508.6	9617.1	14.78	22.81	4.2	3.3
Texas	Jim Wells	Alice	Sain Drive	793959U	8108	25	12508.6	9617.1	14.78	22.81	6.3	5.0

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Texas	Jim Wells	Alice	Stadium Street	793649A	3149	40	12508.6	9617.1	14.78	22.81	4.2	3.3
Texas	Jim Wells	Alice	Texas 44/Park Street	793819S	24276	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Jim Wells	Alice	Texas Boulevard	793821T	7405	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Jim Wells	Alice	US 0281 Southbound Ramp	793981G	1608	40	12508.6	9617.1	14.78	22.81	4.2	3.3
Texas	Jim Wells	Alice	Wright Street	793814H	25003	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Jim Wells	San Diego	Benavides Street	793793S	1018	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Jim Wells	San Diego	County Route 145	793730M	223	35	12508.6	9617.1	14.78	22.81	4.7	3.7
Texas	Jim Wells	San Diego	County Route 146	793739Y	148	55	12508.6	9617.1	14.78	22.81	3.2	2.6
Texas	Jim Wells	San Diego	Road 160	793732B	586	40	12508.6	9617.1	14.78	22.81	4.2	3.3
Texas	Jim Wells	San Diego	Seguin Street	793670F	1018	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Jim Wells	San Diego	Travis Street	793671M	1018	25	12508.6	9617.1	14.78	22.81	6.3	5.0
Texas	Jim Wells	San Diego	Ventura Street	793794Y	1018	35	12508.6	9617.1	14.78	22.81	4.7	3.7
Texas	Liberty	Ames	FM 160	762761B	2525	75	8696.8	7906.9	16.30	23.87	1.9	1.8

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Texas	Liberty	Dayton	County Route 602	762853N	1525	70	8866.9	7987.0	27.22	34.79	2.0	1.9
Texas	Liberty	Dayton	County Route 603	762855C	938	70	8866.9	7987.0	27.22	34.79	2.0	1.9
Texas	Liberty	Dayton	County Route 604	762856J	798	75	8803.2	7954.4	21.76	29.33	1.9	1.8
Texas	Liberty	Dayton	FM 601	762852G	516	70	8866.9	7987.0	27.22	34.79	2.0	1.9
Texas	Liberty	Dayton	Main Street	762786W	5802	60	8723.4	7918.0	17.40	24.97	2.3	2.1
Texas	Liberty	Dayton	Waco Street	762789S	6585	60	8723.4	7918.0	17.40	24.97	2.3	2.1
Texas	Liberty	Dayton	Winfree Street	762785P	9335	60	8723.4	7918.0	17.40	24.97	2.3	2.1
Texas	Liberty	Devers	Gates Rd	762753J	270	75	8723.4	7918.0	17.40	24.97	1.9	1.8
Texas	Liberty	Liberty	Alabama Street	762772N	260	45	8866.9	7987.0	27.22	34.79	2.8	2.6
Texas	Liberty	Liberty	Austin Street	762768Y	398	45	8723.4	7918.0	17.40	24.97	2.8	2.6
Texas	Liberty	Liberty	Bowie Street	762770A	3227	45	8866.9	7987.0	27.22	34.79	2.8	2.6
Texas	Liberty	Liberty	Crockett Street	762769F	850	45	8866.9	7987.0	27.22	34.79	2.8	2.6

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Texas	Liberty	Liberty	Fannin Street	762764W	637	45	8696.8	7906.9	16.30	23.87	2.8	2.6
Texas	Liberty	Liberty	FM 1909	762760U	177	75	8723.4	7918.0	17.40	24.97	1.9	1.8
Texas	Liberty	Liberty	Independence Street	762762H	1797	75	8723.4	7918.0	17.40	24.97	1.9	1.8
Texas	Liberty	Liberty	Louisiana Street	762771G	519	45	8696.8	7906.9	16.30	23.87	2.8	2.6
Texas	Liberty	Liberty	Main Street	762765D	8573	45	8723.4	7918.0	17.40	24.97	2.8	2.6
Texas	Liberty	Liberty	Milam Street	762767S	1529	45	8866.9	7987.0	27.22	34.79	2.8	2.6
Texas	Liberty	Liberty	San Jacinto Street	762763P	2286	45	8866.9	7987.0	27.22	34.79	2.8	2.6
Texas	Liberty	Liberty	Tennessee Street	762782U	236	45	8696.8	7906.9	16.30	23.87	2.8	2.6
Texas	Liberty	Liberty	Texas 146	763062E	12005	75	8723.4	7918.0	17.40	24.97	1.9	1.8
Texas	Liberty	Liberty	Travis Street	762766K	2097	45	8866.9	7987.0	27.22	34.79	2.8	2.6
Texas	Liberty	Raywood	County Route 190	762755X	387	79	8866.9	7987.0	27.22	34.79	1.9	1.7
Texas	Liberty	Raywood	County Route 193	762756E	118	79	8866.9	7987.0	27.22	34.79	1.9	1.7
Texas	Liberty	Raywood	FM 2830	762758T	1385	75	8723.4	7918.0	17.40	24.97	1.9	1.8
Texas	Liberty	Raywood	FM 770	762757L	887	70	8723.4	7918.0	17.40	24.97	2.0	1.9

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Texas	Newton	Deweyville	County Route 4181	329453F	1336	59	8441.1	7873.8	10.17	21.14	2.2	2.1
Texas	Newton	Deweyville	Ruliff Road	329450K	375	59	8441.1	7873.8	10.17	21.14	2.2	2.1
Texas	Nueces	Agua Dulce	County Route 103	793665J	187	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Nueces	Agua Dulce	County Route 313	793809L	65	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Nueces	Agua Dulce	County Route 93	793823G	111	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Nueces	Agua Dulce	FM 0070	793667X	1513	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Nueces	Agua Dulce	Road 105	793662N	94	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Nueces	Banquete	4th Street	793829X	100	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Nueces	Banquete	County Route 38	793824N	52	45	12508.6	9617.1	14.78	22.81	3.8	3.0
Texas	Nueces	Banquete	County Route 87A	793831Y	104	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Nueces	Banquete	Falmar Street	793830S	117	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Nueces	Banquete	FM 666	793827J	2134	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Nueces	Banquete	Road 83	793834U	13	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Nueces	Corpus Christi	Hearn Road	427587Y	2431	40	9794.7	7680.7	17.63	25.95	3.4	2.8

Table H.1-1. Inventory of Public Grade Crossings by State, County, and City

State	County	City	Street	Crossing ID	AADT	Train Speed (mph)	Train Length with No-Action (feet)	Train Length with Proposed Acquisition (feet)	Trains Per Day with No-Action	Trains Per Day with Proposed Acquisition	Average Gate Down Time with No-Action (minutes)	Average Gate Down Time with Proposed Acquisition (minutes)
Texas	Nueces	Corpus Christi	Interstate 37 Frontage Road	427704S	1531	40	9794.7	7680.7	17.63	25.95	3.4	2.8
Texas	Nueces	Corpus Christi	Leopard Street	427586S	14888	40	9794.7	7680.7	17.63	25.95	3.4	2.8
Texas	Nueces	Corpus Christi	Sharpsburg Road	427584D	878	40	9794.7	7680.7	17.63	25.95	3.4	2.8
Texas	Nueces	Robstown	County Route 44	427591N	1371	40	9794.7	7680.7	17.63	25.95	3.4	2.8
Texas	Nueces	Robstown	County Route 48	427588F	2313	40	9794.7	7680.7	17.63	25.95	3.4	2.8
Texas	Nueces	Robstown	County Route 77	793839D	1396	30	12508.6	9617.1	14.78	22.81	5.3	4.2
Texas	Nueces	Robstown	County Route 81	793835B	496	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Nueces	Robstown	Dunne Street	793745C	1769	30	12508.6	9617.1	14.78	22.81	5.3	4.2
Texas	Nueces	Robstown	George Street	793746J	1371	30	12508.6	9617.1	14.78	22.81	5.3	4.2
Texas	Nueces	Robstown	Jefferson Street	793747R	1769	30	12508.6	9617.1	14.78	22.81	5.3	4.2
Texas	Nueces	Robstown	Lincoln Avenue	793749E	4537	20	12508.6	9617.1	14.78	22.81	7.7	6.1
Texas	Nueces	Robstown	Main Avenue	427597E	3115	40	9794.7	7680.7	5.51	13.83	3.4	2.8
Texas	Nueces	Robstown	Messer Street	793744V	1769	30	12508.6	9617.1	14.78	22.81	5.3	4.2
Texas	Nueces	Robstown	Pat Shutter Street	793743N	2772	30	12508.6	9617.1	14.78	22.81	5.3	4.2

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Texas	Nueces	Robstown	Road 79	793837P	294	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Nueces	Robstown	Third Street	793750Y	1769	20	12508.6	9617.1	14.78	22.81	7.7	6.1
Texas	Nueces	Robstown	Washington Street	793748X	1769	30	12508.6	9617.1	14.78	22.81	5.3	4.2
Texas	Nueces	Robstown	Waste Water Plant	427594J	117	40	9794.7	7680.7	17.63	25.95	3.4	2.8
Texas	Orange	Mauriceville	FM 1130	329455U	1683	59	8441.1	7873.8	10.17	21.14	2.2	2.1
Texas	Orange	Mauriceville	FM 1136	329460R	2774	59	8441.1	7873.8	10.17	21.14	2.2	2.1
Texas	Orange	Mauriceville	Old Highway 62	329457H	586	59	8441.1	7873.8	10.17	21.14	2.2	2.1
Texas	Orange	Rose City	Canary Street	329474Y	117	59	8441.1	7873.8	10.17	21.14	2.2	2.1
Texas	Orange	Rose City	Mockingbird Street	329473S	424	59	8441.1	7873.8	10.17	21.14	2.2	2.1
Texas	Orange	Rose City	Old US 90	329476M	415	59	8441.1	7873.8	10.17	21.14	2.2	2.1
Texas	Orange	Rose City	Rose City Drive	329475F	355	59	8441.1	7873.8	10.17	21.14	2.2	2.1
Texas	Orange	Vidor	Doty Road	329464T	432	59	8441.1	7873.8	10.17	21.14	2.2	2.1
Texas	Orange	Vidor	Eastbound I-10 Service Road	927010U	1578	59	8441.1	7873.8	10.17	21.14	2.2	2.1
Texas	Orange	Vidor	Evangeline Drive	329467N	3433	59	8441.1	7873.8	10.17	21.14	2.2	2.1

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Texas	Orange	Vidor	FM 105 Main Street	329471D	21137	59	8441.1	7873.8	10.17	21.14	2.2	2.1
Texas	Orange	Vidor	North Dewitt Street	329472K	2908	59	8441.1	7873.8	10.17	21.14	2.2	2.1
Texas	Orange	Vidor	Westbound I-10 Service Road	927011B	2797	59	8441.1	7873.8	10.17	21.14	2.2	2.1
Texas	Refugio	Refugio	East Commons Street	427562D	1072	49	9794.7	7680.7	19.84	28.16	2.9	2.4
Texas	Refugio	Refugio	FM 774 / Empresario Street	427570V	6004	40	9794.7	7680.7	19.84	28.16	3.4	2.8
Texas	Refugio	Refugio	King Street	427564S	1018	49	9794.7	7680.7	19.84	28.16	2.9	2.4
Texas	Refugio	Refugio	North Street	427566F	1018	49	9794.7	7680.7	19.84	28.16	2.9	2.4
Texas	Refugio	Refugio	Plasuela Street	427567M	1018	49	9794.7	7680.7	19.84	28.16	2.9	2.4
Texas	Refugio	Refugio	Purisma Street	427569B	1018	40	9794.7	7680.7	19.84	28.16	3.4	2.8
Texas	Refugio	Refugio	Rafael Street	427561W	1018	49	9794.7	7680.7	19.84	28.16	2.9	2.4
Texas	Refugio	Refugio	Santiago Street	427565Y	1018	49	9794.7	7680.7	19.84	28.16	2.9	2.4
Texas	Refugio	Refugio	Suntide Road	427571C	445	49	9794.7	7680.7	19.84	28.16	2.9	2.4
Texas	Refugio	Refugio	Ward Street	427563K	1018	49	9794.7	7680.7	19.84	28.16	2.9	2.4
Texas	Refugio	Refugio	Ymbacion Street	427568U	1018	49	9794.7	7680.7	19.84	28.16	2.9	2.4

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Texas	Refugio	Woodsboro	Chapparal Street	427574X	346	49	9794.7	7680.7	19.84	28.16	2.9	2.4
Texas	Refugio	Woodsboro	FM 1360 / Locke Street	427576L	1816	10	9794.7	7680.7	19.84	28.16	11.7	9.3
Texas	Refugio	Woodsboro	Toup Road	427573R	100	49	9794.7	7680.7	19.84	28.16	2.9	2.4
Texas	Refugio	Woodsboro	Wood Avenue /FM 136	427575E	1108	49	9794.7	7680.7	19.84	28.16	2.9	2.4
Texas	San Patricio	Odem	Baylor Street	436030Y	2521	49	9794.7	7680.7	19.84	28.16	2.9	2.4
Texas	San Patricio	Odem	County Route 1694	436020T	164	49	9794.7	7680.7	20.94	29.26	2.9	2.4
Texas	San Patricio	Odem	County Route 64	436031F	1248	49	9794.7	7680.7	17.63	25.95	2.9	2.4
Texas	San Patricio	Odem	FM 1944	436023N	740	49	9794.7	7680.7	20.94	29.26	2.9	2.4
Texas	San Patricio	Odem	FM 631	436017K	2760	49	9794.7	7680.7	19.84	28.16	2.9	2.4
Texas	San Patricio	Odem	Willis Street	436029E	781	49	9794.7	7680.7	19.84	28.16	2.9	2.4
Texas	San Patricio	Sinton	County Route 1394	436027R	88	49	9794.7	7680.7	20.94	29.26	2.9	2.4
Texas	San Patricio	Sinton	County Route 57	436028X	726	49	9794.7	7680.7	20.94	29.26	2.9	2.4
Texas	San Patricio	Sinton	First Street	436012B	3957	49	9794.7	7680.7	19.84	28.16	2.9	2.4
Texas	San Patricio	Sinton	Fulton Street	848257F	892	49	9794.7	7680.7	19.84	28.16	2.9	2.4

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Texas	San Patricio	Sinton	Market Street	436010M	1499	49	9794.7	7680.7	19.84	28.16	2.9	2.4
Texas	San Patricio	Sinton	South Fifth Street	436015W	2341	49	9794.7	7680.7	19.84	28.16	2.9	2.4
Texas	San Patricio	Sinton	South Fourth Street	436014P	2500	49	9794.7	7680.7	19.84	28.16	2.9	2.4
Texas	San Patricio	Sinton	South Rachal Street	436013H	2271	49	9794.7	7680.7	19.84	28.16	2.9	2.4
Texas	San Patricio	Sinton	US 181 / Sinton Street	436011U	9875	50	9794.7	7680.7	19.84	28.16	2.8	2.3
Texas	Tarrant	Haslet	Blue Mound Road	020545J	4503	79	5354.1	5680.9	32.02	32.02	1.4	1.4
Texas	Victoria	Bloomington	Black Bayou Road	427528W	70	50	9794.7	7680.7	19.84	28.16	2.8	2.3
Texas	Victoria	Bloomington	Levi Road	435911G	105	10	9794.7	7680.7	26.45	34.77	11.7	9.3
Texas	Victoria	Bloomington	Nueces Street	427525B	47	50	9794.7	7680.7	19.84	28.16	2.8	2.3
Texas	Victoria	Bloomington	Phillips Road	435913V	3152	10	9794.7	7680.7	26.45	34.77	11.7	9.3
Texas	Victoria	Bloomington	Texas 185	435914C	7269	50	9794.7	7680.7	26.45	34.77	2.8	2.3
Texas	Victoria	Guadalupe	Apple Street	746536T	70	25	9794.7	7680.7	9.92	18.24	5.1	4.1
Texas	Victoria	Guadalupe	Commerce Street	746527U	166	25	9794.7	7680.7	9.92	18.24	5.1	4.1
Texas	Victoria	Guadalupe	Menke Road	746530C	211	25	9794.7	7680.7	9.92	18.24	5.1	4.1

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Texas	Victoria	Guadalupe	Wood Hi Road	746537A	527	25	9794.7	7680.7	9.92	18.24	5.1	4.1
Texas	Victoria	Inez	FM 0444	746573V	1863	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Victoria	Inez	Kolle Street	746575J	372	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Victoria	Inez	Midway Road	746678J	758	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Victoria	Mcfaddin	FM 445	427536N	180	50	9794.7	7680.7	19.84	28.16	2.8	2.3
Texas	Victoria	Placedo	FM 1686	746526M	723	25	9794.7	7680.7	9.92	18.24	5.1	4.1
Texas	Victoria	Placedo	Henderson Road	746523S	293	25	9794.7	7680.7	9.92	18.24	5.1	4.1
Texas	Victoria	Placedo	Houston Street	746522K	1008	25	9794.7	7680.7	9.92	18.24	5.1	4.1
Texas	Victoria	Placedo	McCoy Road	746524Y	100	25	9794.7	7680.7	9.92	18.24	5.1	4.1
Texas	Victoria	Placedo	Ripple Road	746525F	59	25	9794.7	7680.7	9.92	18.24	5.1	4.1
Texas	Victoria	Refugio	Texas 239	427538C	311	50	9794.7	7680.7	19.84	28.16	2.8	2.3
Texas	Victoria	Victoria	Amhurst Street	746657R	1664	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Victoria	Victoria	Avenue D	746559A	459	25	9794.7	7680.7	9.92	18.24	5.1	4.1
Texas	Victoria	Victoria	Ben Jordan Road	746650T	15643	20	9794.7	7680.7	15.59	23.91	6.2	5.0

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Texas	Victoria	Victoria	Ben Jordan Street	746558T	13909	25	9794.7	7680.7	9.92	18.24	5.1	4.1
Texas	Victoria	Victoria	Ben Wilson Street	746556E	6746	25	9794.7	7680.7	9.92	18.24	5.1	4.1
Texas	Victoria	Victoria	Brownson Street	746561B	2467	25	9794.7	7680.7	9.92	18.24	5.1	4.1
Texas	Victoria	Victoria	Burroughsville Road	746654V	2308	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Victoria	Victoria	Delmar Drive	746550N	3406	25	9794.7	7680.7	9.92	18.24	5.1	4.1
Texas	Victoria	Victoria	Delmar Drive	746653N	16550	10	9794.7	7680.7	15.59	23.91	11.7	9.3
Texas	Victoria	Victoria	East North Street	746510R	3080	20	9794.7	7680.7	15.43	23.75	6.2	5.0
Texas	Victoria	Victoria	FM 1686	746676V	732	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Victoria	Victoria	FM 2615	746541P	652	25	9794.7	7680.7	9.92	18.24	5.1	4.1
Texas	Victoria	Victoria	George Street	746564W	459	20	9794.7	7680.7	9.92	18.24	6.2	5.0
Texas	Victoria	Victoria	Highway 185 / South Laurent Street	746562H	12053	40	9794.7	7680.7	9.92	18.24	3.4	2.8
Texas	Victoria	Victoria	Hill Road	746673A	434	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Victoria	Victoria	Holt Road	746672T	1160	59	9794.7	7680.7	9.70	18.02	2.5	2.1

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Texas	Victoria	Victoria	Hummel Street	746563P	459	25	9794.7	7680.7	9.92	18.24	5.1	4.1
Texas	Victoria	Victoria	Hunitington Road	746670E	223	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Victoria	Victoria	John Stockbauer Drive	912105H	5174	25	9794.7	7680.7	15.59	23.91	5.1	4.1
Texas	Victoria	Victoria	Juan Linn Street	746557L	459	25	9794.7	7680.7	9.92	18.24	5.1	4.1
Texas	Victoria	Victoria	North Ben Wilson Street	746652G	12137	25	9794.7	7680.7	15.59	23.91	5.1	4.1
Texas	Victoria	Victoria	Odem Road	746554R	504	25	9794.7	7680.7	9.92	18.24	5.1	4.1
Texas	Victoria	Victoria	Pleasant Green Drive	746551V	3979	25	9794.7	7680.7	9.92	18.24	5.1	4.1
Texas	Victoria	Victoria	Vogt Road	746543D	926	25	9794.7	7680.7	9.92	18.24	5.1	4.1
Texas	Webb	Laredo	Arkansas Avenue	793598S	22221	20	12508.6	9617.1	14.78	22.81	7.7	6.1
Texas	Webb	Laredo	Bartlett Avenue	917530B	1445	20	12508.6	9617.1	14.78	22.81	7.7	6.1
Texas	Webb	Laredo	Botello Road	793609C	1368	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Webb	Laredo	Buena Vista Avenue	793594P	1330	20	12508.6	9617.1	14.78	22.81	7.7	6.1
Texas	Webb	Laredo	Hendricks Avenue	793588L	1073	20	12508.6	9617.1	14.78	22.81	7.7	6.1
Texas	Webb	Laredo	Jordan Road	793965X	228	59	12508.6	9617.1	14.78	22.81	3.0	2.5

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Texas	Webb	Laredo	Logan Avenue	793586X	377	20	12508.6	9617.1	14.78	22.81	7.7	6.1
Texas	Webb	Laredo	Malinche Avenue	793595W	976	20	12508.6	9617.1	14.78	22.81	7.7	6.1
Texas	Webb	Laredo	Market Street East	793596D	3254	20	12508.6	9617.1	14.78	22.81	7.7	6.1
Texas	Webb	Laredo	Milagro Street	793612K	1278	50	12508.6	9617.1	14.78	22.81	3.4	2.8
Texas	Webb	Laredo	North Stone Avenue	793591U	2198	20	12508.6	9617.1	14.78	22.81	7.7	6.1
Texas	Webb	Laredo	Seymour Avenue	793593H	1858	20	12508.6	9617.1	14.78	22.81	7.7	6.1
Texas	Webb	Mirando City	Behlen Avenue	793623X	176	45	12508.6	9617.1	14.78	22.81	3.8	3.0
Texas	Webb	Mirando City	FM 0649	793625L	1052	45	12508.6	9617.1	14.78	22.81	3.8	3.0
Texas	Webb	Mirando City	Jennings Road	793617U	180	59	12508.6	9617.1	14.78	22.81	3.0	2.5
Texas	Webb	Mirando City	Panther Avenue	793621J	258	45	12508.6	9617.1	14.78	22.81	3.8	3.0
Texas	Wharton	El Campo	Alamo Street / Fahrenthold Street	743436D	1776	23	9794.7	7680.7	9.70	18.02	5.4	4.4
Texas	Wharton	El Campo	County Route 0307	743443N	554	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	El Campo	County Route 0309	743446J	712	59	9794.7	7680.7	9.70	18.02	2.5	2.1

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Texas	Wharton	El Campo	County Route 0405	743378K	122	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	El Campo	County Route 0421	743373B	189	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	El Campo	FM 0653 Wharton Street	743432B	5314	23	9794.7	7680.7	9.70	18.02	5.4	4.4
Texas	Wharton	El Campo	Gladys Street	743439Y	924	23	9794.7	7680.7	9.70	18.02	5.4	4.4
Texas	Wharton	El Campo	Higbee Street	743433H	836	23	9794.7	7680.7	9.70	18.02	5.4	4.4
Texas	Wharton	El Campo	Hoskins Broadway Street	743437K	1672	23	9794.7	7680.7	9.70	18.02	5.4	4.4
Texas	Wharton	El Campo	Meadow Lane	743440T	3443	23	9794.7	7680.7	9.70	18.02	5.4	4.4
Texas	Wharton	El Campo	Palacious Street	743438S	3297	23	9794.7	7680.7	9.70	18.02	5.4	4.4
Texas	Wharton	El Campo	Sam Bishkin Road	927033B	561	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	El Campo	State Highway 71 / Mechanic Street	743435W	11014	23	9794.7	7680.7	9.70	18.02	5.4	4.4
Texas	Wharton	El Campo	Washington Street	743434P	1608	23	9794.7	7680.7	9.70	18.02	5.4	4.4
Texas	Wharton	Hungerford	County Route 0220	743354W	141	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	Hungerford	FM 1161	743353P	1823	59	9794.7	7680.7	9.70	18.02	2.5	2.1

Table H.1-1. Inventory of Public Grade Crossings by State, County, and City

State	County	City	Street	Crossing ID	AADT	Train Speed (mph)	Train Length with No-Action (feet)	Train Length with Proposed Acquisition (feet)	Trains Per Day with No-Action	Trains Per Day with Proposed Acquisition	Average Gate Down Time with No-Action (minutes)	Average Gate Down Time with Proposed Acquisition (minutes)
Texas	Wharton	Hungerford	Miller Road	743351B	398	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	Hungerford	Railroad Street	743352H	4480	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	Kendleton	County Route 0212	743350U	199	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	Louise	Colorado Street	743454B	330	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	Louise	County Route 0312	743452M	528	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	Louise	County Route 0313	743449E	171	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	Louise	County Route 0315	743450Y	119	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	Louise	FM 0441	743447R	281	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	Louise	FM 0647	743461L	195	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	Louise	Orange Street	743459K	396	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	Louise	Wharton Street	743453U	117	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	Wharton	County Road 448	927048R	234	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	Wharton	County Route 0222	743358Y	738	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	Wharton	County Route 0423	743371M	128	59	9794.7	7680.7	9.70	18.02	2.5	2.1

Table H.1-1. Inventory of Public Grade Crossings by State, County, and City

State	County	City	Street	Crossing ID	AADT	Train Speed (mph)	Train Length with No-Action (feet)	Train Length with Proposed Acquisition (feet)	Trains Per Day with No-Action	Trains Per Day with Proposed Acquisition	Average Gate Down Time with No-Action (minutes)	Average Gate Down Time with Proposed Acquisition (minutes)
Texas	Wharton	Wharton	FM 0102	743359F	11628	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	Wharton	Road 229	743355D	305	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	Wharton	Road 448 North	743367X	128	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	Wharton	Road 448 South	743372U	23	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	Wharton	Robert Vonderau Airport Road	743375P	105	59	9794.7	7680.7	9.70	18.02	2.5	2.1
Texas	Wharton	Wharton	Spanish Camp Road	743361G	2203	35	9794.7	7680.7	9.70	18.02	3.8	3.1
Texas	Wharton	Wharton	West Milam Street	743363V	1707	35	9794.7	7680.7	9.70	18.02	3.8	3.1

H.1.2 Grade Crossing Safety Analysis Methods

The predicted crashes at highway/rail at-grade crossings is calculated using Equation (1) (FRA 2019). This method is similar to the method described in FRA's *Summary of the DOT Rail-Highway Crossing Resource Allocation Procedure-Revised* (FRA 1987a), but with updated adjustment factors in Equation (1). The results include expected vehicle/train crash rates at all at-grade crossings that meet the threshold under future conditions with and without the Proposed Acquisition.

$$NC = \frac{(a \times T_0)+N}{T_0+5} \times adj \quad (1)$$

Where:

NC = Predicted number of train-vehicle crashes per year at the grade crossing;

a = Initial predicted train-vehicle crashes per year (based on Equation (2));

T_0 = Weighting factor in the DOT crash prediction formula (based on Equation (3));

N = Number of train-vehicle crashes in previous five years at grade crossing; and

Adj = Coefficient to normalize predicted train-vehicle crashes in year with actual counts (current values are normalized for year 2013).

The initial predicted train-vehicle crashes per year (a) is based on several factors as shown in Equation (2). **Table H.1-2** presents the values and formulas used to compute each of these factors based on the type of grade crossing control. The type of control includes passive, flashing lights, and lights and gates.

$$a=K \times EI \times DT \times MS \times MT \times HP \times HL \quad (2)$$

Where:

K = Basic crash prediction formula constant;

EI = Exposure index factor (Expose = AADT * trains per day);

DT = Factor for the number of through trains per day during daylight (dthru = number of through trains per day during daylight), which is derived from train schedule in combination with train traffic;

MS = Factor for maximum freight timetable speed (ms = maximum timetable speed at crossing);

MT = Factor for number of main tracks (tracks = number of main tracks);

HL = Factor for number of roadway lanes (lanes = number of highway lanes);

HP = Factor for paved roadway (1 if highway is paved; 2 if unpaved); and

Adj = Coefficient to normalize predicted train-vehicle crashes in year with actual counts.

The weighting factor in the DOT crash prediction formula (T_0) is based on Equation (3).

$$T_0 = \frac{1}{0.05+a} \quad (3)$$

Where:

All terms as previously defined.

Table H.1-2. Factors to Predict Train-Vehicle Crashes

Factor	Passive Control	Flashing Lights	Lights and Gates
K	0.0006938	0.0003351	0.0005745
EI	$\left(\frac{Expose+0.2}{0.2}\right)^{0.37}$	$\left(\frac{Expose+0.2}{0.2}\right)^{0.4106}$	$\left(\frac{Expose+0.2}{0.2}\right)^{0.2942}$
DT	$\left(\frac{dthru+0.2}{0.2}\right)^{0.1781}$	$\left(\frac{dthru+0.2}{0.2}\right)^{0.1131}$	$\left(\frac{dthru+0.2}{0.2}\right)^{0.1781}$
MS	$e^{0.0077*ms}$	1	1
MT	1	$e^{0.1917*tracks}$	$e^{0.1512*tracks}$
HL	1	$e^{0.1826*(lanes-1)}$	$e^{0.142*(lanes-1)}$
HP	$e^{-0.5966*(paved-1)}$	1	1
Adj	0.5086	0.3106	0.4846

The predicted number of crashes by severity is based on the predicted number of train-vehicle crashes per year (NC) at the grade crossing. The predicted crash frequency by severity is subdivided into two categories, fatal crashes and casualty crashes. Fatal crashes are those that result in at least one fatality, independent of injuries or property damage. Casualty crashes are those that result in at least one fatality or injury, independent of property damage. The predicted number of injury crashes is simply the difference between the predicted number of fatal crashes and predicted number of casualty crashes. The equations are based on the Rail-Highway Crossing Resource Allocation Procedure-User's Guide (FRA 1987b).

The probability of a fatal crash, given a crash occurs, is based on Equation (4).

$$P(F|C) = \frac{1}{1+KF*MS^{-0.9981}*(TT+1)^{-0.0872}*(TS+1)^{0.0872}*e^{0.3571*UR}} \quad (4)$$

Where:

$P(F|C)$ = Probability of a fatal crash, given a crash occurs;

KF = Constant (440.9);

MS = Maximum freight timetable speed (mph);

TT = Number of thru trains per day;

TS = Number of switch trains per day; and

UR = Urban or rural crossing (urban = 1; otherwise, 0).

The predicted number of fatal crashes is based on Equation (5).

$$F = P(F|C) * NC \quad (5)$$

Where:

F = Predicted fatal crashes per year;

$P(F|C)$ = Probability of a fatal crash, given a crash occurs; and

NC = Predicted number of train-vehicle crashes per year at the grade crossing.

The probability of a casualty crash, given a crash occurs, is based on Equation (6).

$$P(C|C) = \frac{1}{1+KC*MS^{-0.343}*e^{0.1153*TK}*e^{0.296*UR}} \quad (6)$$

Where:

$P(C|C)$ = Probability of a casualty crash, given a crash occurs;

KC = Constant (4.481);

MS = Maximum freight timetable speed (mph);

TK = Number of tracks; and

UR = Urban or rural crossing (urban = 1; otherwise, 0).

The predicted number of casualty crashes is based on Equation (7).

$$C = P(C|C) * NC \quad (7)$$

Where:

C = Predicted casualty crashes per year;

$P(C|C)$ = Probability of a casualty crash, given a crash occurs; and

NC = Predicted number of train-vehicle crashes per year at the grade crossing.

The predicted number of injury crashes is based on Equation (8).

$$I = C - F \quad (8)$$

Where:

I = Predicted injury crashes per year;

C = Predicted casualty crashes per year; and

F = Predicted fatal crashes per year.

H.1.2.1 Quiet Zones

There are many measures that can be employed to reduce the risk of a collision between a train and a road user. Train horns are one such measure. Train horns alert road users of approaching trains near highway-rail at-grade crossings. As per the Code of Federal Regulations Title 49, Part 222 (49 C.F.R. 222), the FRA's Train Horn Rule requires the engineer to sound the horn under specific conditions when a train is approaching and passing through a public highway-rail at-grade crossing.

While train horns reduce crash risk and increase awareness of approaching trains, some oppose the noise generated by horns. A community, in cooperation with the applicable agency(ies), may apply to create a quiet zone. A Quiet Zone is a Federal Railroad Administration exemption to the Train Horn Rule. The Quiet Zone is a section of rail line at least one-half mile in length that contains one or more consecutive public at-grade crossings.

In general, one of the following four conditions must be met to establish a quiet zone:

- One or more Supplemental Safety Measures (SSMs) are installed at each public crossing in the quiet zone.
- The risk at the crossing(s) is less than or equal to the nationwide average risk level.
- Additional safety measures are implemented to reduce the risk at the quiet zone crossing(s) to a level that is less than or equal to the nationwide average risk level.
- Additional safety measures are implemented to reduce the risk at the quiet zone crossing(s) to a level that is less than or equal to the risk level with train horns (such as, the risk level that would exist if train horns were sounded at every public crossing in the quiet zone).

A quiet zone could be disqualified, even after it is established. If the conditions change, resulting in the quiet zone no longer being qualified, then the public authority would have to implement additional measures that create a condition that qualifies. Otherwise, the quiet zone would no longer remain in effect. **Table H.1-3** provides a summary of the four conditions that can help to establish a quiet zone and the corresponding conditions, if applicable, that could disqualify the quiet zone.

Table H.1-3. Conditions to Establish and Disqualify Quiet Zones

Conditions to Establish a Quiet Zone (1 or more must be met)	**Conditions to Disqualify a Quiet Zone**
One or more SSMs are installed at each public crossing in the quiet zone.	Quiet zone could be disqualified if the SSMs are removed and one of the other 3 conditions is not met.
Risk at the crossing(s) is less than or equal to the nationwide average risk level.	Quiet zone could be disqualified if the risk at the crossing(s) exceeds the national average risk. The national average risk changes over time, so there is no guarantee that the quiet zone will remain qualified under this condition.
Additional safety measures are implemented to reduce the risk at the quiet zone crossing(s) to a level that is less than or equal to the nationwide average risk level.	Quiet zone could be disqualified if the risk at the crossing(s) exceeds the national average risk. The national average risk changes over time, so there is no guarantee that the quiet zone will remain qualified under this condition.
Additional safety measures are implemented to reduce the risk at the quiet zone crossing(s) to a level that is less than or equal to the risk level with train horns (such as, the risk level that would exist if train horns were sounded at every public crossing in the quiet zone).	Quiet zone could be disqualified if the SSMs are removed and one of the other 3 conditions is not met.

H.1.3 Grade Crossing Safety Results

Table H.1-4 presents the grade crossing safety results by individual crossing, organized by state and city. The AADT, train speed, type of protection, number of roadway lanes, and road surface type represent the expected 2027 conditions common to both the No-Action Alternative and the Proposed Acquisition. The trains per day, train length, and safety-related performance measures represent the expected conditions and estimated performance in 2027 for the No-Action Alternative and Proposed Acquisition. The final two columns indicate the expected change in predicted crashes and years between crashes, representing the expected impact of the Proposed Acquisition compared to the No-Action Alternative.

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Arkansas																					
Ashdown	Arkansas 108	330573T	1031	55	Lights and Gates	2	Yes	16.3	9651	0.0139	72	0.0012	0.0051	28.7	8128	0.0174	57	0.0016	0.0064	0.0035	-14
Ashdown	Commerce Street	330576N	808	50	Passive	2	No	16.3	9651	0.0474	21	0.0037	0.0171	28.7	8128	0.0552	18	0.0045	0.0200	0.0078	-3
Ashdown	Domtar Entrance A	330584F	257	50	Lights and Gates	2	Yes	13.5	9651	0.0103	97	0.0011	0.0042	25.9	8128	0.0135	74	0.0015	0.0054	0.0032	-23
Ashdown	Domtar Entrance B	330412X	1	50	Lights and Gates	3	Yes	13.5	9651	0.0027	376	0.0002	0.0009	25.9	8128	0.0036	280	0.0003	0.0012	0.0009	-96
Ashdown	Front Street	330578C	4183	50	Lights and Gates	2	Yes	13.5	9651	0.0206	48	0.0016	0.0069	25.9	8128	0.026	38	0.0021	0.0087	0.0054	-10
Ashdown	Fulton Street	330574A	867	55	Lights and Gates	2	Yes	16.3	9651	0.0134	75	0.0013	0.0049	28.7	8128	0.0167	60	0.0017	0.0062	0.0034	-15

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Ashdown	Main Street	330575G	4335	50	Lights and Gates	2	Yes	16.3	9651	0.0198	51	0.0016	0.0072	28.7	8128	0.0243	41	0.0020	0.0088	0.0045	-9
Ashdown	Road 710	330572L	12	55	Passive	1	No	16.3	9651	0.0162	62	0.0022	0.0071	28.7	8128	0.0208	48	0.0030	0.0092	0.0047	-14
Ashdown	Whitaker Street	330577V	797	50	Lights and Gates	2	Yes	16.3	9651	0.0131	77	0.0010	0.0047	28.7	8128	0.0164	61	0.0013	0.0059	0.0033	-15
Cove	Barton Avenue	330483U	292	40	Flashing Lights	2	Yes	13.8	9651	0.0287	35	0.0029	0.0119	26.2	8128	0.0339	29	0.0036	0.014	0.0052	-5
Cove	East Mill Street	330482M	63	40	Passive	1	No	13.8	9651	0.0227	44	0.0023	0.0094	26.2	8128	0.0295	34	0.0032	0.0122	0.0067	-10
Cove	Road 21	330485H	95	40	Lights and Gates	2	Yes	13.8	9651	0.0069	144	0.0007	0.0029	26.2	8128	0.0091	109	0.001	0.0038	0.0022	-35
Cove	Road 287	330484B	20	40	Passive	2	No	13.8	9651	0.0161	62	0.0016	0.0066	26.2	8128	0.0214	47	0.0023	0.0088	0.0053	-15

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
De Queen	Avon Road	330520U	33	40	Passive	2	No	13.8	9651	0.0187	53	0.0019	0.0077	26.2	8128	0.0247	41	0.0026	0.0102	0.0059	-13
De Queen	Dequeen Lake Road	330519A	539	40	Flashing Lights	2	Yes	13.8	9651	0.0112	89	0.0011	0.0046	26.2	8128	0.0146	69	0.0016	0.006	0.0034	-21
De Queen	East Stilwell Avenue	330524W	4804	40	Lights and Gates	2	Yes	13.8	9651	0.0191	52	0.0019	0.0079	26.2	8128	0.0241	42	0.0026	0.01	0.005	-11
De Queen	Robinson Road	330522H	658	40	Lights and Gates	2	Yes	13.8	9651	0.0116	86	0.0012	0.0048	26.2	8128	0.0151	66	0.0016	0.0062	0.0034	-20
De Queen	South 4th Street	330538E	1640	40	Lights and Gates	2	Yes	16.3	9651	0.0157	64	0.0016	0.0065	28.7	8128	0.0195	51	0.0021	0.0081	0.0038	-13
Decatur	3rd Street	330355L	480	40	Lights and Gates	2	Yes	16.2	8508	0.0114	87	0.0009	0.0039	28.6	7385	0.0144	69	0.0011	0.005	0.003	-18
Decatur	Mt Olive Road	330349H	82	40	Passive	2	No	16.2	8508	0.0261	38	0.0027	0.0108	28.6	7385	0.0326	31	0.0035	0.0135	0.0065	-8

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Decatur	Road 329	330358G	47	40	Passive	2	No	16.2	8508	0.0223	45	0.0023	0.0092	28.6	7385	0.0282	36	0.003	0.0116	0.0059	-9
Decatur	Road 335	330357A	23	40	Passive	2	No	16.2	8508	0.0182	55	0.0019	0.0075	28.6	7385	0.0232	43	0.0025	0.0096	0.0051	-12
Decatur	Roller Avenue	330354E	4396	30	Lights and Gates	2	Yes	16.2	8508	0.0198	50	0.0011	0.0064	28.6	7385	0.0244	41	0.0015	0.0078	0.0045	-9
Decatur	Y City Road	330359N	141	40	Passive	2	Yes	16.2	8508	0.0192	52	0.002	0.0079	28.6	7385	0.0245	41	0.0026	0.0101	0.0053	-11
Gentry	Collins Avenue	330363D	3866	40	Lights and Gates	2	Yes	16.2	8508	0.0192	52	0.0014	0.0066	28.6	7385	0.0237	42	0.0018	0.0081	0.0044	-10
Gentry	Floyd Moore Road	330360H	70	40	Passive	2	No	16.2	8508	0.025	40	0.0026	0.0103	28.6	7385	0.0313	32	0.0034	0.0129	0.0063	-8
Gentry	Main Street	330362W	5155	40	Lights and Gates	2	Yes	16.2	8508	0.0206	49	0.0015	0.0071	28.6	7385	0.0252	40	0.002	0.0087	0.0047	-9

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Gentry	Marion Lee Road	330365S	316	30	Lights and Gates	2	No	16.2	8508	0.0103	97	0.0008	0.0040	28.6	7385	0.013	77	0.0011	0.0051	0.0027	-20
Gentry	Pioneer Lane	330364K	703	40	Lights and Gates	2	Yes	16.2	8508	0.0126	79	0.0009	0.0043	28.6	7385	0.0159	63	0.0012	0.0055	0.0032	-16
Gentry	Private	330361P	12	40	Passive	1	No	16.2	8508	0.0146	68	0.0015	0.0061	28.6	7385	0.019	53	0.002	0.0078	0.0043	-16
Gentry	Railroad Avenue	330411R	1289	40	Lights and Gates	2	Yes	16.2	8508	0.0147	68	0.0011	0.0051	28.6	7385	0.0184	54	0.0014	0.0063	0.0037	-14
Gillham	Braley Avenue	330511V	862	30	Lights and Gates	2	Yes	13.8	9651	0.0125	80	0.0010	0.0049	26.2	8128	0.0161	62	0.0013	0.0063	0.0036	-18
Gillham	East Cooper Street	330513J	108	30	Passive	2	No	13.8	9651	0.0249	40	0.0020	0.0097	26.2	8128	0.0320	31	0.0027	0.0125	0.0071	-9
Gillham	King School Road	330514R	16	30	Passive	1	No	13.8	9651	0.0142	71	0.0011	0.0055	26.2	8128	0.0190	53	0.0016	0.0074	0.0048	-18

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Gillham	Ladd Bridge Road	330515X	237	30	Passive	2	No	13.8	9651	0.0308	32	0.0024	0.0120	26.2	8128	0.0388	26	0.0032	0.0151	0.0080	-7
Gillham	Memory Lane	330516E	37	30	Passive	1	No	13.8	9651	0.0183	55	0.0014	0.0071	26.2	8128	0.0241	41	0.0020	0.0094	0.0058	-13
Grannis	Braley Avenue	330503D	429	40	Flashing Lights	2	Yes	13.8	9651	0.0103	97	0.0011	0.0043	26.2	8128	0.0136	74	0.0015	0.0056	0.0032	-23
Grannis	Frachiseur Drive	330504K	152	40	Passive	2	Yes	13.8	9651	0.0183	55	0.0019	0.0076	26.2	8128	0.0241	41	0.0026	0.01	0.0058	-13
Grannis	Mineral Road	330509U	94	30	Passive	2	Yes	13.8	9651	0.0147	68	0.0012	0.0057	26.2	8128	0.0197	51	0.0016	0.0077	0.0050	-17
Grannis	Road 1	330505S	95	40	Passive	2	Yes	13.8	9651	0.0158	63	0.0016	0.0065	26.2	8128	0.021	48	0.0023	0.0087	0.0052	-16
Grannis	Road 200	330502W	50	40	Passive	2	No	13.8	9651	0.0586	17	0.006	0.0242	26.2	8128	0.0703	14	0.0075	0.029	0.0116	-3

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Grannis	Road 201	330508M	59	30	Passive	2	No	13.8	9651	0.0209	48	0.0016	0.0081	26.2	8128	0.0273	37	0.0023	0.0106	0.0064	-11
Gravette	Dallas Street	330345F	596	40	Lights and Gates	2	Yes	16.2	8508	0.0121	83	0.0013	0.005	28.6	7385	0.0152	66	0.0016	0.0063	0.0031	-17
Gravette	Limekiln Road	330346M	117	40	Passive	2	No	16.2	8508	0.0288	35	0.003	0.0119	28.6	7385	0.0356	28	0.0038	0.0147	0.0068	-7
Gravette	Mt Olive Road	330347U	731	40	Passive	2	Yes	16.2	8508	0.0751	13	0.0078	0.0311	28.6	7385	0.0877	11	0.0095	0.0363	0.0126	-2
Hatfield	Johnson Avenue	330477R	281	40	Flashing Lights	2	Yes	13.8	9651	0.0089	112	0.0009	0.0037	26.2	8128	0.0118	85	0.0013	0.0049	0.0029	-27
Hatfield	Road 30 / Slote Crossing	330474V	114	40	Passive	2	Yes	13.8	9651	0.0167	60	0.0017	0.0069	26.2	8128	0.0222	45	0.0024	0.0092	0.0055	-15

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Hatfield	Road 38	330467K	123	40	Lights and Gates	2	Yes	13.8	9651	0.0074	134	0.0008	0.0031	26.2	8128	0.0098	102	0.0011	0.0041	0.0023	-32
Hatfield	South Rhodes Lane	330472G	9	40	Passive	1	No	13.8	9651	0.0126	79	0.0013	0.0052	26.2	8128	0.017	59	0.0018	0.007	0.0044	-20
Hatfield	Stevens Road	330476J	738	40	Lights and Gates	2	Yes	13.8	9651	0.012	83	0.0012	0.005	26.2	8128	0.0155	64	0.0017	0.0064	0.0035	-19
Horatio	Arkansas 24	330545P	445	40	Lights and Gates	2	Yes	16.3	9651	0.0112	89	0.0012	0.0047	28.7	8128	0.0142	71	0.0015	0.0059	0.0029	-18
Horatio	Arkansas 41	330546W	3046	55	Lights and Gates	2	Yes	16.3	9651	0.0182	55	0.0025	0.0080	28.7	8128	0.0225	45	0.0032	0.0099	0.0043	-10
Horatio	Bear Creek Cutoff	330542U	94	40	Passive	2	No	16.3	9651	0.0271	37	0.0028	0.0112	28.7	8128	0.0337	30	0.0036	0.0139	0.0066	-7

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Mena	10th Street	330456X	1289	40	Lights and Gates	2	Yes	13.8	9651	0.0138	72	0.001	0.0047	26.2	8128	0.0178	56	0.0014	0.0061	0.004	-16
Mena	4th Street	330453C	308	40	Lights and Gates	2	Yes	13.8	9651	0.0095	105	0.0007	0.0033	26.2	8128	0.0124	80	0.001	0.0043	0.0029	-25
Mena	7th Street	330455R	1875	40	Lights and Gates	2	Yes	13.8	9651	0.0152	66	0.0011	0.0052	26.2	8128	0.0194	51	0.0015	0.0067	0.0043	-14
Mena	Arkansas 375	330464P	469	40	Lights and Gates	2	Yes	13.8	9651	0.0106	94	0.0011	0.0044	26.2	8128	0.0138	72	0.0015	0.0057	0.0032	-22
Mena	Arkansas 8 Reine Street	330457E	4569	40	Lights and Gates	2	Yes	13.8	9651	0.0188	53	0.0014	0.0065	26.2	8128	0.0238	42	0.0018	0.0082	0.005	-11
Mena	Mena Street	330454J	8553	40	Lights and Gates	4	Yes	13.8	9651	0.0269	37	0.002	0.0093	26.2	8128	0.0332	30	0.0026	0.0114	0.0062	-7

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Mena	Pickering Avenue	919209N	2343	40	Lights and Gates	2	Yes	13.8	9651	0.016	62	0.0012	0.0055	26.2	8128	0.0205	49	0.0016	0.007	0.0044	-14
Mena	Road 167	330463H	114	40	Passive	2	Yes	13.8	9651	0.0167	60	0.0017	0.0069	26.2	8128	0.0222	45	0.0024	0.0092	0.0055	-15
Mena	Road 39	330465W	469	40	Passive	2	Yes	13.8	9651	0.066	15	0.0068	0.0273	26.2	8128	0.079	13	0.0085	0.0327	0.013	-2
Mena	Road 733	330459T	23	40	Passive	2	No	13.8	9651	0.0169	59	0.0012	0.0058	26.2	8128	0.0224	45	0.0017	0.0077	0.0055	-15
Mena	Road 76	330448F	84	40	Passive	2	No	13.8	9651	0.0247	41	0.0025	0.0102	26.2	8128	0.0317	32	0.0034	0.0131	0.0071	-9
Mena	Road 97 / Forest Road	330441H	82	40	Passive	2	No	13.8	9651	0.0245	41	0.0025	0.0101	26.2	8128	0.0315	32	0.0034	0.013	0.0071	-9
Mena	Ryder Lane	330440B	12	40	Passive	2	No	13.8	9651	0.0136	74	0.0014	0.0056	26.2	8128	0.0182	55	0.002	0.0075	0.0047	-19
Mena	US 59/ US 270	330445K	1090	40	Lights and Gates	2	Yes	13.8	9651	0.0132	76	0.0014	0.0055	26.2	8128	0.0171	59	0.0018	0.0071	0.0038	-17

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Ogden	Grand Street	330594L	436	55	Lights and Gates	2	Yes	13.5	9651	0.0104	97	0.0014	0.0046	25.9	8128	0.0135	74	0.0019	0.006	0.0032	-23
Ogden	Pine Street	330593E	471	55	Lights and Gates	2	Yes	13.5	9651	0.0106	95	0.0014	0.0046	25.9	8128	0.0138	72	0.0020	0.0061	0.0032	-22
Ogden	Road 23	330589P	703	55	Passive	2	Yes	13.5	9651	0.0305	33	0.0041	0.0134	25.9	8128	0.0386	26	0.0055	0.0170	0.0081	-7
Siloam Springs	Country Club Road	330370N	1113	40	Lights and Gates	2	Yes	16.2	8508	0.0142	70	0.0011	0.0049	28.6	7385	0.0177	56	0.0014	0.0061	0.0035	-14
Siloam Springs	Davidson Road	330368M	1465	40	Lights and Gates	2	Yes	16.2	8508	0.0152	66	0.0016	0.0063	28.6	7385	0.0189	53	0.002	0.0078	0.0037	-13
Siloam Springs	Dawn Hill Road	330367F	2322	30	Lights and Gates	2	Yes	16.2	8508	0.017	59	0.0014	0.0066	28.6	7385	0.0211	47	0.0018	0.0082	0.0041	-11
Siloam Springs	Jefferson Street	330375X	5038	40	Lights and Gates	2	Yes	16.2	8508	0.0204	49	0.0015	0.007	28.6	7385	0.0251	40	0.002	0.0086	0.0046	-9

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Siloam Springs	Kenwood Street	330376E	2929	40	Lights and Gates	2	Yes	16.2	8508	0.018	56	0.0013	0.0062	28.6	7385	0.0222	45	0.0016	0.0076	0.0042	-11
Siloam Springs	Lake Francis Road	330382H	1311	35	Lights and Gates	2	Yes	16.2	8508	0.0148	68	0.0010	0.0049	28.6	7385	0.0184	54	0.0013	0.0062	0.0037	-13
Siloam Springs	Lincoln Street	330405M	6561	40	Lights and Gates	2	Yes	16.2	8508	0.0217	46	0.0016	0.0075	28.6	7385	0.0266	38	0.0021	0.0091	0.0048	-8
Siloam Springs	Road 159 / Waynes Trail	330385D	120	35	Passive	1	No	16.2	8508	0.0282	36	0.0026	0.0113	28.6	7385	0.0349	29	0.0033	0.0140	0.0067	-7
Siloam Springs	Road 164 Elm Road	330384W	22	35	Passive	2	No	16.2	8508	0.0515	19	0.0047	0.0207	28.6	7385	0.0604	17	0.0058	0.0243	0.0089	-3
Siloam Springs	Tahlequah Street	330372C	2901	40	Lights and Gates	2	Yes	16.2	8508	0.018	56	0.0013	0.0062	28.6	7385	0.0222	45	0.0017	0.0076	0.0042	-11

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Sulphur Springs	Fickinger	330336G	198	30	Lights and Gates	2	Yes	16.2	8508	0.0091	110	0.0007	0.0035	28.6	7385	0.0115	87	0.0010	0.0045	0.0024	-23
Sulphur Springs	White Avenue	330338V	211	30	Passive	2	Yes	16.2	8508	0.0203	49	0.0012	0.0065	28.6	7385	0.0258	39	0.0015	0.0083	0.0055	-11
Texarkana	Road 3	330598N	105	55	Passive	2	Yes	13.5	9651	0.0178	56	0.0024	0.0078	25.9	8128	0.0236	42	0.0033	0.0104	0.0058	-14
Texarkana	Road 76	330596A	55	55	Passive	2	Yes	13.5	9651	0.0145	69	0.0020	0.0064	25.9	8128	0.0195	51	0.0028	0.0086	0.0050	-18
Texarkana	Road 80	330599V	12	55	Passive	2	Yes	13.5	9651	0.0088	114	0.0012	0.0039	25.9	8128	0.0120	83	0.0017	0.0053	0.0033	-31
Vandervoort	Arkansas 246	330488D	644	40	Lights and Gates	2	Yes	13.8	9651	0.0116	86	0.0012	0.0048	26.2	8128	0.015	67	0.0016	0.0062	0.0034	-20
Vandervoort	County Road 15	330493A	70	40	Passive	2	No	13.8	9651	0.0234	43	0.0024	0.0097	26.2	8128	0.0303	33	0.0032	0.0125	0.0069	-10
Vandervoort	Road 18	330487W	105	40	Passive	2	Yes	13.8	9651	0.0163	61	0.0017	0.0068	26.2	8128	0.0217	46	0.0023	0.009	0.0054	-15

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Vandervoort	Road 18	330492T	200	40	Passive	2	Yes	13.8	9651	0.0199	50	0.002	0.0082	26.2	8128	0.026	38	0.0028	0.0108	0.0062	-12
Vandervoort	Road 482	330491L	29	40	Passive	2	Yes	13.8	9651	0.0108	92	0.0011	0.0045	26.2	8128	0.0147	68	0.0016	0.0061	0.0039	-24
Wickes	Blanton Road	330500H	129	40	Passive	2	Yes	13.8	9651	0.0174	58	0.0018	0.0072	26.2	8128	0.023	43	0.0025	0.0095	0.0056	-14
Wickes	Cord 13	330495N	20	40	Lights and Gates	2	Yes	13.8	9651	0.0045	222	0.0005	0.0019	26.2	8128	0.006	167	0.0006	0.0025	0.0015	-55
Wickes	Oak Street	330499R	27	40	Passive	2	Yes	13.8	9651	0.0105	95	0.0011	0.0044	26.2	8128	0.0143	70	0.0015	0.0059	0.0038	-25
Wickes	Old US 71	330498J	29	30	Passive	2	No	13.8	9651	0.0170	59	0.0013	0.0066	26.2	8128	0.0225	44	0.0019	0.0088	0.0055	-14
Wickes	Road 6	330501P	234	40	Passive	2	Yes	13.8	9651	0.0208	48	0.0021	0.0086	26.2	8128	0.0272	37	0.0029	0.0112	0.0064	-11
Wilton	County Road 139	330556C	16	55	Passive	1	No	16.3	9651	0.0180	56	0.0025	0.0079	28.7	8128	0.0230	44	0.0033	0.0101	0.0050	-12

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Wilton	County Road 40	330560S	59	55	Passive	2	No	16.3	9651	0.0260	38	0.0036	0.0114	28.7	8128	0.0324	31	0.0046	0.0143	0.0064	-8
Wilton	Douglas Street	330567P	1523	55	Lights and Gates	2	Yes	16.3	9651	0.0154	65	0.0021	0.0068	28.7	8128	0.0191	52	0.0027	0.0084	0.0038	-13
Wilton	Hinton Road - County Road 64	330570X	159	55	Lights and Gates	2	Yes	16.3	9651	0.0086	117	0.0012	0.0038	28.7	8128	0.0109	92	0.0016	0.0048	0.0023	-25
Wilton	Mills Street	330569D	82	55	Passive	2	Yes	16.3	9651	0.0179	56	0.0025	0.0079	28.7	8128	0.0230	44	0.0033	0.0101	0.0050	-12
Wilton	Road 60	330558R	40	55	Lights and Gates	2	Yes	16.3	9651	0.03	33	0.0041	0.0132	28.7	8128	0.0329	30	0.0047	0.0145	0.003	-3
Wilton	Texarkana Avenue	330568W	47	55	Lights and Gates	2	Yes	16.3	9651	0.0061	163	0.0008	0.0027	28.7	8128	0.0079	127	0.0011	0.0035	0.0017	-36

Table H.1-4. Grade Crossing Safety by State and City

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								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Winthrop	Arkansas 234	330554N	480	55	Lights and Gates	2	Yes	16.3	9651	0.0115	87	0.0016	0.0050	28.7	8128	0.0144	69	0.0021	0.0064	0.003	-18
Winthrop	High Street	330548K	668	55	Lights and Gates	2	Yes	16.3	9651	0.0125	80	0.0017	0.0055	28.7	8128	0.0157	64	0.0022	0.0069	0.0032	-16
Winthrop	Post Street	330549S	59	55	Passive	2	No	16.3	9651	0.0260	38	0.0036	0.0114	28.7	8128	0.0324	31	0.0046	0.0143	0.0064	-8
Winthrop	Road 19	330551T	23	55	Passive	2	No	16.3	9651	0.0200	50	0.0027	0.0088	28.7	8128	0.0254	39	0.0036	0.0112	0.0054	-11
Winthrop	Road 25	330552A	40	55	Passive	2	No	16.3	9651	0.0233	43	0.0032	0.0103	28.7	8128	0.0293	34	0.0042	0.0129	0.0060	-9
Winthrop	Road 42	330547D	52	55	Passive	1	No	16.3	9651	0.0251	40	0.0034	0.0110	28.7	8128	0.0314	32	0.0045	0.0138	0.0063	-8
Illinois																					
Adeline	Adeline Road	372374G	841	40	Flashing Lights	2	Yes	6.6	8783	0.0094	106	0.0009	0.0039	14.6	6426	0.0133	75	0.0013	0.0055	0.0038	-30

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Adeline	Pond Road	372371L	59	40	Lights and Gates	1	No	6.6	8783	0.0038	261	0.0004	0.0016	14.6	6426	0.0054	183	0.0005	0.0023	0.0016	-78
Adeline	White Eagle Road	372379R	248	40	Flashing Lights	1	No	6.6	8783	0.0051	194	0.0005	0.0021	14.6	6426	0.0075	134	0.0007	0.0031	0.0023	-60
Bartlett	Gifford Road	372214T	4921	40	Lights and Gates	2	Yes	60.4	1418	0.0353	28	0.0026	0.0113	68.4	1960	0.0367	27	0.0027	0.0117	0.0013	-1
Bartlett	Naperville Road	372210R	15539	40	Lights and Gates	2	Yes	60.4	1418	0.0432	23	0.0036	0.0138	68.4	1960	0.0446	22	0.0037	0.0142	0.0014	-1
Bartlett	Oak Avenue	372206B	10677	40	Lights and Gates	2	Yes	60.4	1418	0.0925	11	0.0077	0.0294	68.4	1960	0.095	11	0.0079	0.0302	0.0025	0
Bartlett	Prospect Avenue	371997M	3896	40	Lights and Gates	2	Yes	60.4	1418	0.0338	30	0.0028	0.0108	68.4	1960	0.0351	28	0.0029	0.0112	0.0013	-1

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Bartlett	Spaulding Road	372212E	1933	40	Lights and Gates	2	Yes	60.4	1418	0.0294	34	0.0024	0.0094	68.4	1960	0.0306	33	0.0026	0.0098	0.0012	-1
Bartlett	Western Avenue	372207H	791	40	Lights and Gates	2	Yes	60.4	1418	0.0243	41	0.0020	0.0077	68.4	1960	0.0254	39	0.0021	0.0081	0.0011	-2
Bensenville	Addison Street	372172J	1608	25 ~~40~~	Lights and Gates	2	Yes	60.4	1418	0.0283	35	0.0015 ~~0.0023~~	0.0081~~0~~ ~~.0090~~	68.4	1960	0.0295	34	0.0016 ~~0.0025~~	0.0084~~0~~ ~~.0094~~	0.0012	-1
Bensenville	Center Street	372171C	459	25 ~~40~~	Lights and Gates	2	Yes	60.4	1418	0.0215	46	0.0012 ~~0.0018~~	0.0061~~0~~ ~~.0069~~	68.4	1960	0.0225	44	0.0012 ~~0.0019~~	0.0064~~0~~ ~~.0072~~	0.001	-2
Bensenville	Church Road	372174X	7696	25 ~~40~~	Lights and Gates	3	Yes	60.4	1418	0.0417	24	0.0022 ~~0.0035~~	0.0119~~0~~ ~~.0133~~	68.4	1960	0.0431	23	0.0023 ~~0.0036~~	0.0123~~0~~ ~~.0137~~	0.0014	-1
Bensenville	York Road	372170V	18696	25 ~~40~~	Lights and Gates	4	Yes	60.4	1418	0.0514	19	0.0027 ~~0.0043~~	0.0146~~0~~ ~~.0164~~	68.4	1960	0.0528	19	0.0029 ~~0.0044~~	0.0150~~0~~ ~~.0168~~	0.0014	-1

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Byron	Colfax Street	372355C	6013	40	Lights and Gates	2	Yes	6.6	8783	0.0151	66	0.001	0.0052	14.6	6426	0.0205	49	0.0014	0.007	0.0054	-17
Byron	Conger Road	372360Y	293	40	Flashing Lights	2	No	6.6	8783	0.0065	155	0.0006	0.0027	14.6	6426	0.0093	108	0.0009	0.0038	0.0028	-47
Byron	Kishwaukee Road	372350T	3309	40	Lights and Gates	2	Yes	6.6	8783	0.013	77	0.0012	0.0054	14.6	6426	0.0178	56	0.0017	0.0074	0.0048	-21
Byron	Mill Road	372358X	632	40	Flashing Lights	1	No	6.6	8783	0.0073	137	0.0007	0.003	14.6	6426	0.0104	96	0.001	0.0043	0.0031	-41
Byron	Mineral Street	372353N	722	40	Lights and Gates	2	Yes	6.6	8783	0.0087	114	0.0006	0.003	14.6	6426	0.0122	82	0.0009	0.0042	0.0034	-32
Byron	North Walnut Street	372354V	1805	40	Lights and Gates	2	Yes	6.6	8783	0.0111	90	0.0007	0.0038	14.6	6426	0.0154	65	0.0011	0.0053	0.0042	-25

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Davis Junction	Blackwood Road	372334J	88	25	Passive	1	No	3.2	8783	0.0118	85	0.0007	0.0044	11.2	6426	0.0209	48	0.0013	0.0078	0.0091	-37
Davis Junction	Junction Road	372339T	3515	40	Lights and Gates	2	Yes	6.6	8783	0.0432	23	0.004	0.0179	14.6	6426	0.0519	19	0.005	0.0215	0.0087	-4
Davis Junction	Royster Road	372331N	381	40	Lights and Gates	2	Yes	3.2	8783	0.0054	186	0.0005	0.0022	11.2	6426	0.0092	108	0.0009	0.0038	0.0038	-77
Elgin	Chicago Street	372240H	16755	40	Lights and Gates	2	Yes	60.4	1418	0.1525	7	0.0111	0.0486	68.4	1960	0.1562	6	0.0115	0.0497	0.0037	0
Elgin	Elgin Avenue	372231J	208	35 ~~10~~	Passive	2	Yes	60.4	1418	0.0352 ~~0.0309~~	28~~3~~ ~~2~~	0.0024 ~~0.0006~~	0.0118~~0~~ ~~.0076~~	68.4	1960	0.0368 ~~0.0324~~	27~~31~~	0.0026 ~~0.0007~~	0.0123~~0~~ ~~.0080~~	0.0016 ~~0.0015~~	-1
Elgin	Highland Avenue	372241P	6957	40	Lights and Gates	2	Yes	60.4	1418	0.0872	11	0.0063	0.0278	68.4	1960	0.0896	11	0.0066	0.0285	0.0024	0

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Elgin	Highland Avenue	372253J	2050	40	Lights and Gates	2	Yes	3.2	8783	0.0085	117	0.0005	0.0029	11.2	6426	0.0143	70	0.001	0.0049	0.0057	-47
Elgin	Illinois Route 25	372217N	19450	40	Lights and Gates	2	Yes	60.4	1418	0.0448	22	0.0033	0.0143	68.4	1960	0.0462	22	0.0034	0.0147	0.0014	-1
Elgin	Kimball Street	372242W	23433	40	Lights and Gates	4	Yes	60.4	1418	0.053	19	0.0039	0.0169	68.4	1960	0.0544	18	0.0040	0.0173	0.0014	0
Elgin	Mclean Boulevard	372246Y	21559	40	Lights and Gates	5	Yes	60.4	1418	0.1198	8	0.0087	0.0382	68.4	1960	0.1223	8	0.0090	0.0389	0.0025	0
Elgin	National Street	372239N	7997	35	Lights and Gates	2	Yes	60.4	1418	0.0386	26	0.0025	0.0119	68.4	1960	0.04	25	0.0026	0.0123	0.0014	-1
Elgin	Raymond Street	372235L	3427	35	Lights and Gates	2	Yes	60.4	1418	0.033	30	0.0021	0.0102	68.4	1960	0.0343	29	0.0022	0.0106	0.0013	-1

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Forreston	Bailyville Road	372385U	1452	40	Lights and Gates	2	Yes	6.6	8783	0.0105	95	0.001	0.0044	14.6	6426	0.0145	69	0.0014	0.006	0.004	-26
Forreston	Brookville Road	372396G	59	40	Passive	1	No	6.6	8783	0.016	62	0.0015	0.0066	14.6	6426	0.0227	44	0.0022	0.0094	0.0067	-18
Forreston	Columbine Road	372380K	155	40	Flashing Lights	2	No	6.6	8783	0.0051	196	0.0005	0.0021	14.6	6426	0.0074	135	0.0007	0.0031	0.0023	-61
Forreston	Fork Creek Road	372394T	93	40	Passive	1	No	6.6	8783	0.0185	54	0.0017	0.0076	14.6	6426	0.0259	39	0.0025	0.0107	0.0074	-15
Forreston	Harper Road	372390R	12	40	Lights and Gates	2	No	6.6	8783	0.0028	354	0.0003	0.0012	14.6	6426	0.004	247	0.0004	0.0017	0.0012	-106
Forreston	Hollywood Road	372383F	93	40	Lights and Gates	2	No	6.6	8783	0.005	200	0.0005	0.0021	14.6	6426	0.0071	141	0.0007	0.0029	0.0021	-59

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Forreston	Illinois Route 72	372388P	4101	40	Lights and Gates	3	Yes	6.6	8783	0.0155	64	0.0014	0.0064	14.6	6426	0.021	48	0.002	0.0087	0.0055	-17
Forreston	Mt Vernon Road	372391X	93	40	Lights and Gates	2	No	6.6	8783	0.005	200	0.0005	0.0021	14.6	6426	0.0071	141	0.0007	0.0029	0.0021	-59
Genoa	Brown Street	372285P	1357	40	Lights and Gates	2	Yes	3.2	8783	0.0076	131	0.0005	0.0026	11.2	6426	0.0128	78	0.0009	0.0044	0.0052	-53
Genoa	Genoa Road	372289S	3892	40	Lights and Gates	2	Yes	3.2	8783	0.0101	99	0.0006	0.0035	11.2	6426	0.0167	60	0.0011	0.0057	0.0066	-39
Genoa	Ill Route 23	372279L	2786	40	Lights and Gates	2	Yes	3.2	8783	0.036	28	0.0032	0.0149	11.2	6426	0.0471	21	0.0045	0.0195	0.0111	-7
Genoa	Roosevelt Road	372277X	36	40	Passive	2	No	3.2	8783	0.0097	103	0.0009	0.004	11.2	6426	0.0175	57	0.0017	0.0072	0.0078	-46

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Genoa	Sycamore Street	372286W	1187	40	Flashing Lights	2	Yes	3.2	8783	0.0077	130	0.0005	0.0026	11.2	6426	0.0133	75	0.0009	0.0046	0.0056	-54
Genoa	Washington Street	372288K	1886	40	Lights and Gates	2	No	3.2	8783	0.0083	120	0.0005	0.0029	11.2	6426	0.014	72	0.001	0.0048	0.0056	-48
Hampshire	East Street	372270A	107	40	Flashing Lights	2	Yes	3.2	8783	0.0031	321	0.0002	0.0011	11.2	6426	0.0057	175	0.0004	0.002	0.0026	-146
Hampshire	New Lebanon Road	372274C	214	40	Passive	1	Yes	3.2	8783	0.0103	97	0.0009	0.0043	11.2	6426	0.0185	54	0.0018	0.0076	0.0082	-43
Hampshire	Reinking Road	372257L	2425	40	Lights and Gates	2	Yes	3.2	8783	0.0089	112	0.0006	0.0031	11.2	6426	0.0149	67	0.001	0.0051	0.006	-45
Hampshire	State Street	372269F	2211	40	Lights and Gates	2	Yes	3.2	8783	0.0087	115	0.0005	0.003	11.2	6426	0.0145	69	0.001	0.005	0.0058	-46

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Hampshire	Thurnau Road	372264W	178	40	Passive	1	Yes	3.2	8783	0.0097	103	0.0006	0.0033	11.2	6426	0.0175	57	0.0012	0.006	0.0078	-46
Hampshire	Walker Road	372271G	1284	40	Lights and Gates	2	Yes	3.2	8783	0.0075	133	0.0007	0.0031	11.2	6426	0.0127	79	0.0012	0.0052	0.0052	-54
Itasca	Catalpa Avenue	372182P	1608	40	Lights and Gates	2	Yes	60.4	1418	0.0283	35	0.0023	0.0090	68.4	1960	0.0295	34	0.0025	0.0094	0.0012	-1
Itasca	Prospect Avenue	372179G	9075	40	Lights and Gates	2	Yes	60.4	1418	0.0395	25	0.0033	0.0126	68.4	1960	0.0408	24	0.0034	0.0130	0.0014	-1
Itasca	Rohlwing Road	372184D	22379	40	Lights and Gates	2	Yes	60.4	1418	0.0458	22	0.0038	0.0146	68.4	1960	0.0472	21	0.0039	0.0150	0.0014	-1
Itasca	Walnut Street	372180B	1723	40	Lights and Gates	3	Yes	60.4	1418	0.0317	32	0.0026	0.0101	68.4	1960	0.0329	30	0.0028	0.0105	0.0013	-1

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Kingston	Five Points Road	372296C	1776	40	Flashing Lights	2	Yes	3.2	8783	0.0089	112	0.0006	0.0031	11.2	6426	0.0151	66	0.001	0.0052	0.0062	-46
Kingston	Glidden Road	372299X	4127	40	Lights and Gates	2	Yes	3.2	8783	0.0103	97	0.0006	0.0035	11.2	6426	0.017	59	0.0012	0.0058	0.0067	-38
Kingston	Hunter Road	372294N	88	40	Lights and Gates	2	Yes	3.2	8783	0.0036	281	0.0002	0.0012	11.2	6426	0.0062	161	0.0004	0.0021	0.0026	-119
Kingston	Pleasant Hl Road	372293G	937	40	Lights and Gates	2	No	3.2	8783	0.0069	145	0.0004	0.0024	11.2	6426	0.0117	86	0.0008	0.004	0.0048	-59
Kingston	Thurlby Road	372295V	234	40	Flashing Lights	2	Yes	3.2	8783	0.0042	237	0.0003	0.0014	11.2	6426	0.0076	131	0.0005	0.0026	0.0034	-106
Kirkland	1st Street Pearl Street	372307M	1230	40	Lights and Gates	2	Yes	3.2	8783	0.0074	135	0.0007	0.0031	11.2	6426	0.0125	80	0.0012	0.0052	0.0051	-55
Kirkland	Ault Road	372305Y	29	40	Passive	1	No	3.2	8783	0.0091	110	0.0008	0.0038	11.2	6426	0.0164	61	0.0016	0.0068	0.0074	-49

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Kirkland	Fairdale Road	372320B	117	40	Flashing Lights	2	No	3.2	8783	0.0032	310	0.0003	0.0013	11.2	6426	0.0059	169	0.0006	0.0024	0.0027	-141
Kirkland	Irene Road	372316L	205	40	Lights and Gates	2	No	3.2	8783	0.0045	221	0.0004	0.0019	11.2	6426	0.0078	128	0.0007	0.0032	0.0033	-93
Kirkland	Kirkland Road	372312J	820	40	Flashing Lights	2	Yes	3.2	8783	0.0067	148	0.0006	0.0028	11.2	6426	0.0118	85	0.0011	0.0049	0.005	-63
Lanark	Boyd	372410A	410	40	Lights and Gates	2	No	6.6	8783	0.0075	133	0.0007	0.0031	14.6	6426	0.0105	95	0.001	0.0043	0.003	-38
Lanark	Broad Street	372409F	4452	40	Lights and Gates	2	Yes	6.6	8783	0.014	71	0.0013	0.0058	14.6	6426	0.0191	52	0.0019	0.0079	0.0051	-19
Lanark	Center Drive	372405D	176	40	Lights and Gates	2	No	6.6	8783	0.006	168	0.0005	0.0025	14.6	6426	0.0084	119	0.0008	0.0035	0.0024	-49

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Lanark	East Lanark Avenue	372406K	59	40	Passive	1	No	6.6	8783	0.016	62	0.0015	0.0066	14.6	6426	0.0227	44	0.0022	0.0094	0.0067	-18
Lanark	East Straddle County Road	372404W	205	40	Lights and Gates	2	No	6.6	8783	0.0062	161	0.0006	0.0026	14.6	6426	0.0088	114	0.0009	0.0036	0.0025	-47
Lanark	Gold Mine Road	372398V	117	40	Lights and Gates	2	No	6.6	8783	0.0053	188	0.0005	0.0022	14.6	6426	0.0075	133	0.0007	0.0031	0.0022	-55
Lanark	Grange Road	372400U	117	40	Passive	2	No	6.6	8783	0.056	18	0.0051	0.0232	14.6	6426	0.07	14	0.0068	0.0289	0.014	-4
Lanark	Illinois 64	372414C	4759	40	Lights and Gates	2	Yes	6.6	8783	0.0143	70	0.0013	0.0059	14.6	6426	0.0194	52	0.0019	0.008	0.0051	-19
Lanark	Maple Grove Road	372403P	59	40	Lights and Gates	2	No	6.6	8783	0.0044	228	0.0004	0.0018	14.6	6426	0.0062	161	0.0006	0.0026	0.0018	-67
Lanark	Rochester	372407S	205	40	Lights and Gates	2	No	6.6	8783	0.0062	161	0.0006	0.0026	14.6	6426	0.0088	114	0.0009	0.0036	0.0025	-47

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Lanark	Shannon Road	372402H	1955	40	Lights and Gates	2	Yes	6.6	8783	0.0114	88	0.001	0.0047	14.6	6426	0.0157	64	0.0015	0.0065	0.0043	-24
Lanark	Stone Bridge Road	372412N	146	40	Lights and Gates	2	No	6.6	8783	0.0057	177	0.0005	0.0023	14.6	6426	0.008	125	0.0008	0.0033	0.0023	-52
Lanark	Vanbuskirk Road	372415J	205	40	Lights and Gates	1	No	6.6	8783	0.0054	184	0.0005	0.0022	14.6	6426	0.0077	130	0.0007	0.0032	0.0022	-54
Leaf River	Main Street	372367W	820	40	Lights and Gates	2	No	6.6	8783	0.0091	110	0.0008	0.0037	14.6	6426	0.0126	79	0.0012	0.0052	0.0035	-31
Leaf River	Mt Morris Road	372369K	146	40	Flashing Lights	2	No	6.6	8783	0.005	200	0.0005	0.0021	14.6	6426	0.0073	138	0.0007	0.003	0.0023	-62
Leaf River	Pond Road	372366P	146	40	Lights and Gates	1	No	6.6	8783	0.005	202	0.0005	0.002	14.6	6426	0.007	143	0.0007	0.0029	0.0021	-59

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Leaf River	Stone School Road	372362M	29	40	Passive	2	No	6.6	8783	0.0129	78	0.0012	0.0053	14.6	6426	0.0185	54	0.0018	0.0077	0.0057	-24
Leaf River	Triumph Road	372365H	59	40	Lights and Gates	2	No	6.6	8783	0.0044	228	0.0004	0.0018	14.6	6426	0.0062	161	0.0006	0.0026	0.0018	-67
Medinah	Medinah Road	372191N	7064	40	Lights and Gates	4	Yes	60.4	1418	0.0445	22	0.0037	0.0142	68.4	1960	0.0459	22	0.0038	0.0146	0.0014	-1
Monroe Center	Bennett Road	372324D	59	40	Lights and Gates	2	Yes	3.2	8783	0.0032	315	0.0003	0.0013	11.2	6426	0.0055	181	0.0005	0.0023	0.0024	-134
Monroe Center	Kilbuck Road	372330G	732	40	Flashing Lights	2	No	3.2	8783	0.0065	155	0.0006	0.0027	11.2	6426	0.0113	88	0.0011	0.0047	0.0049	-66
Monroe Center	Mulford Road	372326S	1500	40	Lights and Gates	2	Yes	3.2	8783	0.0078	128	0.0007	0.0032	11.2	6426	0.0132	76	0.0013	0.0054	0.0053	-52

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Monroe Center	Pacific Street	372327Y	264	40	Lights and Gates	2	No	3.2	8783	0.0049	206	0.0004	0.002	11.2	6426	0.0084	120	0.0008	0.0035	0.0035	-86
Monroe Center	Wendorf Road	372332V	293	40	Lights and Gates	2	No	3.2	8783	0.005	200	0.0004	0.0021	11.2	6426	0.0086	116	0.0008	0.0036	0.0036	-84
Mt Carroll	Big Cut Road	372428K	59	40	Passive	2	No	6.6	8783	0.016	62	0.0015	0.0066	14.6	6426	0.0227	44	0.0022	0.0094	0.0067	-18
Mt Carroll	East State Road	372421M	205	40	Lights and Gates	2	No	6.6	8783	0.0062	161	0.0006	0.0026	14.6	6426	0.0088	114	0.0009	0.0036	0.0025	-47
Mt Carroll	Jackson Street	372422U	234	40	Lights and Gates	2	Yes	6.6	8783	0.0064	155	0.0006	0.0027	14.6	6426	0.0091	110	0.0009	0.0037	0.0026	-45
Mt Carroll	Mill Road	372424H	146	40	Lights and Gates	2	No	6.6	8783	0.0057	177	0.0005	0.0023	14.6	6426	0.008	125	0.0008	0.0033	0.0023	-52

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Mt Carroll	Oil Valley School	372425P	293	40	Lights and Gates	2	Yes	6.6	8783	0.0069	146	0.0006	0.0028	14.6	6426	0.0096	104	0.0009	0.004	0.0028	-42
Mt Carroll	Wacker Road	372427D	205	40	Lights and Gates	2	No	6.6	8783	0.0062	161	0.0006	0.0026	14.6	6426	0.0088	114	0.0009	0.0036	0.0025	-47
Roselle	Park Street	372194J	689	40	Lights and Gates	2	Yes	60.4	1418	0.0236	42	0.0020	0.0075	68.4	1960	0.0247	41	0.0021	0.0079	0.0011	-2
Roselle	Prospect Street	372195R	373	40	Lights and Gates	2	Yes	60.4	1418	0.0563	18	0.0047	0.0179	68.4	1960	0.0581	17	0.0049	0.0185	0.0017	-1
Roselle	Roselle Road	372196X	12521	40	Lights and Gates	4	Yes	60.4	1418	0.1068	9	0.0088	0.0340	68.4	1960	0.1093	9	0.0091	0.0348	0.0026	0
Savanna	Hickory Grove R	372431T	29	40	Passive	1	No	6.6	8783	0.0129	78	0.0012	0.0053	14.6	6426	0.0185	54	0.0018	0.0077	0.0057	-24

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Savanna	Scenic Bluff Road	372437J	996	40	Lights and Gates	2	No	6.6	8783	0.0095	105	0.0009	0.0039	14.6	6426	0.0132	76	0.0013	0.0055	0.0037	-29
Schaumburg	Rodenburg Road	372202Y	13240	40	Lights and Gates	2	Yes	60.4	1418	0.0421	24	0.0035	0.0134	68.4	1960	0.0435	23	0.0036	0.0138	0.0014	-1
Stillman Valley	North Walnut Street	372345W	1156	40	Flashing Lights	2	Yes	6.6	8783	0.0105	95	0.0007	0.0036	14.6	6426	0.0147	68	0.001	0.005	0.0041	-27
Stillman Valley	Rothwell Road	372342B	439	40	Flashing Lights	2	No	6.6	8783	0.0075	133	0.0007	0.0031	14.6	6426	0.0107	94	0.001	0.0044	0.0032	-40
Stillman Valley	Stillman Road	372346D	2653	40	Lights and Gates	2	Yes	6.6	8783	0.0123	81	0.0008	0.0042	14.6	6426	0.0169	59	0.0012	0.0058	0.0046	-22
Wood Dale	Ash Avenue	372176L	230	40	Lights and Gates	2	Yes	60.4	1418	0.0183	55	0.0015	0.0058	68.4	1960	0.0192	52	0.0016	0.0061	0.0009	-3

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Wood Dale	Irving Park Road	372177T	29174	40	Lights and Gates	2	Yes	60.4	1418	0.0477	21	0.0039	0.0152	68.4	1960	0.0491	20	0.0041	0.0156	0.0014	-1
Wood Dale	Wooddale Road	372178A	8612	40	Lights and Gates	6	Yes	60.4	1418	0.0527	19	0.0044	0.0168	68.4	1960	0.0541	18	0.0045	0.0172	0.0014	0
Iowa																					
Ainsworth	First Street	607337J	316	40	Lights and Gates	2	Yes	4.8	9449	0.0061	163	0.0006	0.0025	19.2	7024	0.011	91	0.0011	0.0046	0.0049	-73
Ainsworth	Military Road	607335V	1125	40	Lights and Gates	2	Yes	4.8	9449	0.0086	116	0.0008	0.0036	19.2	7024	0.0152	66	0.0015	0.0063	0.0066	-50
Ainsworth	Spruce Avenue	607314C	105	40	Passive	2	No	4.8	9449	0.0167	60	0.0015	0.0069	19.2	7024	0.0299	33	0.003	0.0124	0.0132	-26
Ainsworth	Third Street	607336C	433	40	Lights and Gates	2	Yes	4.8	9449	0.0314	32	0.0028	0.013	19.2	7024	0.0409	24	0.0041	0.0169	0.0095	-7

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Ainsworth	Yucca Avenue	607257R	12	40	Passive	2	No	4.8	9449	0.0082	122	0.0007	0.0034	19.2	7024	0.0159	63	0.0016	0.0066	0.0077	-59
Bettendorf	12th Street	865647M	1789	40	Lights and Gates	2	Yes	8.3	10241	0.0122	82	0.0009	0.0042	22.7	8544	0.0182	55	0.0014	0.0063	0.006	-27
Bettendorf	13th Street	865646F	2771	40	Passive	2	No	8.3	10241	0.0477	21	0.0034	0.0164	22.7	8544	0.0615	16	0.0047	0.0211	0.0138	-5
Bettendorf	31st Street	865640P	1589	40	Lights and Gates	2	Yes	8.3	10241	0.0118	84	0.0008	0.0041	22.7	8544	0.0177	57	0.0014	0.0061	0.0058	-28
Bettendorf	33rd Street	865639V	1789	40	Lights and Gates	2	Yes	8.3	10241	0.0122	82	0.0009	0.0042	22.7	8544	0.0182	55	0.0014	0.0063	0.006	-27
Bettendorf	35th Street	865638N	2322	40	Lights and Gates	2	Yes	8.3	10241	0.0131	77	0.0009	0.0045	22.7	8544	0.0193	52	0.0015	0.0067	0.0063	-25
Bettendorf	42nd Street	865637G	254	40	Flashing Lights	2	Yes	8.3	10241	0.0068	146	0.0005	0.0023	22.7	8544	0.0107	93	0.0008	0.0037	0.0039	-53

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Bettendorf	62nd Street	865629P	1742	40	Lights and Gates	2	Yes	8.3	10241	0.0121	82	0.0009	0.0042	22.7	8544	0.0181	55	0.0014	0.0062	0.0059	-27
Bettendorf	Shoreline Drive	865627B	1335	40	Lights and Gates	2	Yes	8.3	10241	0.0113	88	0.0008	0.0039	22.7	8544	0.0169	59	0.0013	0.0058	0.0056	-29
Bettendorf	Spencer Road	865618C	117	40	Lights and Gates	2	Yes	8.3	10241	0.0059	170	0.0006	0.0024	22.7	8544	0.0091	110	0.001	0.0038	0.0032	-60
Bettendorf	Valley Drive	865617V	527	40	Lights and Gates	2	Yes	8.3	10241	0.0089	113	0.0009	0.0037	22.7	8544	0.0135	74	0.0014	0.0056	0.0046	-39
Blakesburg	215th Avenue	375747N	105	40	Passive	2	No	3.4	12127	0.0143	70	0.0013	0.0059	17.8	7210	0.029	34	0.003	0.012	0.0147	-35
Blakesburg	230th Avenue	375745A	124	40	Passive	2	No	3.4	12127	0.0151	66	0.0014	0.0062	17.8	7210	0.0303	33	0.0032	0.0125	0.0152	-33
Blakesburg	256th Place	375732Y	12	40	Passive	2	No	3.4	12127	0.0069	145	0.0006	0.0029	17.8	7210	0.0153	65	0.0016	0.0063	0.0084	-79

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Blakesburg	64th Street	375742E	55	40	Passive	2	No	3.4	12127	0.0116	86	0.0011	0.0048	17.8	7210	0.0243	41	0.0025	0.0101	0.0127	-45
Blakesburg	722nd Place	375729R	18	40	Passive	2	No	3.4	12127	0.0079	126	0.0007	0.0033	17.8	7210	0.0174	58	0.0018	0.0072	0.0094	-68
Blakesburg	730th Avenue	375733F	58	40	Passive	2	No	3.4	12127	0.0118	85	0.0011	0.0049	17.8	7210	0.0247	41	0.0026	0.0102	0.0128	-44
Blakesburg	Hickory Street	375740R	129	40	Passive	2	Yes	3.4	12127	0.009	111	0.0008	0.0037	17.8	7210	0.0195	51	0.002	0.0081	0.0105	-60
Blakesburg	Monroe Wapello Road	375736B	931	40	Lights and Gates	2	Yes	3.4	12127	0.0071	141	0.0007	0.0029	17.8	7210	0.0141	71	0.0015	0.0058	0.007	-70
Blakesburg	South Street	375739W	70	40	Passive	2	No	3.4	12127	0.0126	79	0.0012	0.0052	17.8	7210	0.026	38	0.0027	0.0108	0.0134	-41
Brighton	Cedar Avenue	375848A	29	40	Passive	2	No	4.8	9449	0.0111	90	0.001	0.0046	19.2	7024	0.0209	48	0.0021	0.0087	0.0098	-42

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Brighton	Elm Avenue	375850B	12	40	Passive	2	No	4.8	9449	0.0082	122	0.0007	0.0034	19.2	7024	0.0159	63	0.0016	0.0066	0.0077	-59
Brighton	Fir Avenue	375852P	53	40	Passive	2	No	4.8	9449	0.0134	74	0.0012	0.0056	19.2	7024	0.0248	40	0.0025	0.0102	0.0113	-34
Buffalo	Cabins MP 2054	607174C	59	40	Passive	1	No	6.4	9449	0.0158	63	0.0015	0.0061	20.8	7024	0.0263	38	0.0026	0.0102	0.0105	-25
Buffalo	Private Road	607157L	42	40	Passive	2	No	6.4	9449	0.0143	70	0.0013	0.0055	20.8	7024	0.024	42	0.0024	0.0093	0.0098	-28
Buffalo	Private Road	607177X	66	40	Passive	1	No	6.4	9449	0.0164	61	0.0015	0.0063	20.8	7024	0.0272	37	0.0027	0.0105	0.0108	-24
Buffalo	Private Road	607190L	60	40	Passive	1	No	6.4	9449	0.0159	63	0.0015	0.0061	20.8	7024	0.0265	38	0.0026	0.0102	0.0106	-25
Buffalo	Tombstone Trail	607175J	228	40	Lights and Gates	2	Yes	6.4	9449	0.0073	137	0.0007	0.0028	20.8	7024	0.012	84	0.0012	0.0046	0.0047	-54
Camanche	13th Avenue	865560W	1196	40	Flashing Lights	2	Yes	8.3	10241	0.0118	85	0.0012	0.0049	22.7	8544	0.0176	57	0.0019	0.0073	0.0058	-28

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Camanche	291st Street	865570C	442	40	Lights and Gates	2	No	8.3	10241	0.0085	118	0.0008	0.0035	22.7	8544	0.0129	78	0.0014	0.0053	0.0044	-41
Camanche	3rd Street	865561D	539	40	Flashing Lights	2	Yes	8.3	10241	0.0089	112	0.0009	0.0037	22.7	8544	0.0138	73	0.0015	0.0057	0.0048	-39
Camanche	4th Avenue	865544M	753	40	Lights and Gates	2	Yes	8.3	10241	0.0369	27	0.0023	0.0127	22.7	8544	0.0459	22	0.0031	0.0158	0.009	-5
Camanche	5th Avenue	865545U	164	40	Lights and Gates	2	Yes	8.3	10241	0.0065	155	0.0006	0.0027	22.7	8544	0.0099	101	0.0011	0.0041	0.0035	-54
Camanche	7th Avenue	865547H	743	40	Lights and Gates	2	Yes	8.3	10241	0.0097	103	0.001	0.004	22.7	8544	0.0147	68	0.0016	0.0061	0.005	-35
Camanche	9th Avenue	865549W	1213	40	Lights and Gates	2	Yes	8.3	10241	0.011	91	0.0011	0.0046	22.7	8544	0.0166	60	0.0018	0.0068	0.0055	-30

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Camanche	Park Drive	865564Y	251	40	Flashing Lights	2	Yes	8.3	10241	0.0068	147	0.0007	0.0028	22.7	8544	0.0107	94	0.0011	0.0044	0.0039	-54
Clinton	11th Avenue North	376029M	469	20	Passive	2	Yes	10.7	10241	0.0203	49	0.0007	0.0059	25.1	8544	0.0288	35	0.001	0.0084	0.0085	-15
Clinton	12th Avenue North	376030G	589	20	Passive	2	Yes	10.7	10241	0.0217	46	0.0007	0.0063	25.1	8544	0.0306	33	0.0011	0.0089	0.0089	-13
Clinton	14th Avenue North	376032V	486	20	Passive	2	Yes	10.7	10241	0.0205	49	0.0007	0.006	25.1	8544	0.0291	34	0.001	0.0085	0.0086	-14
Clinton	15th Avenue North	376033C	1146	20	Passive	2	Yes	10.7	10241	0.0262	38	0.0009	0.0076	25.1	8544	0.0361	28	0.0013	0.0106	0.0099	-11
Clinton	170th Street	376047K	114	40	Passive	2	No	10.7	10241	0.0242	41	0.0022	0.01	25.1	8544	0.0337	30	0.0033	0.0139	0.0095	-12
Clinton	18th Avenue North	376037E	12	20	Passive	2	Yes	10.7	10241	0.0061	165	0.0002	0.0018	25.1	8544	0.0093	107	0.0003	0.0027	0.0032	-57

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State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Clinton	21st Avenue North	376038L	59	20	Passive	2	No	10.7	10241	0.0176	57	0.0006	0.0051	25.1	8544	0.0254	39	0.0009	0.0074	0.0078	-17
Clinton	23rd Avenue North	376039T	141	20	Passive	2	Yes	10.7	10241	0.014	72	0.0005	0.0041	25.1	8544	0.0205	49	0.0007	0.006	0.0066	-23
Clinton	24th Avenue North	376040M	2250	20	Lights and Gates	2	Yes	10.7	10241	0.0144	70	0.0005	0.0042	25.1	8544	0.02	50	0.0007	0.0058	0.0056	-19
Clinton	25th Avenue North	376041U	943	20	Passive	2	Yes	10.7	10241	0.0248	40	0.0008	0.0072	25.1	8544	0.0344	29	0.0012	0.0101	0.0096	-11
Clinton	2nd Avenue South	376024D	1274	20	Lights and Gates	2	Yes	10.7	10241	0.0124	80	0.0004	0.0036	25.1	8544	0.0174	57	0.0006	0.0051	0.005	-23
Clinton	30th Avenue North	376043H	211	20	Passive	2	Yes	10.7	10241	0.0159	63	0.0005	0.0046	25.1	8544	0.0231	43	0.0008	0.0068	0.0072	-20

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Clinton	32nd Avenue North	376045W	164	20	Passive	2	Yes	10.7	10241	0.0147	68	0.0005	0.0043	25.1	8544	0.0215	47	0.0008	0.0063	0.0068	-22
Clinton	34th Avenue North	376046D	164	20	Passive	2	Yes	10.7	10241	0.0147	68	0.0005	0.0043	25.1	8544	0.0215	47	0.0008	0.0063	0.0068	-22
Clinton	4th Avenue North	376025K	258	20	Passive	2	Yes	10.7	10241	0.0169	59	0.0006	0.0049	25.1	8544	0.0245	41	0.0009	0.0072	0.0076	-18
Clinton	4th Avenue South	376023W	82	20	Passive	2	Yes	10.7	10241	0.0117	85	0.0004	0.0034	25.1	8544	0.0175	57	0.0006	0.0051	0.0057	-28
Clinton	5th Avenue South	376022P	1173	20	Lights and Gates	2	Yes	10.7	10241	0.0122	82	0.0004	0.0036	25.1	8544	0.0171	59	0.0006	0.005	0.0049	-24
Clinton	6th Avenue North	376026S	855	20	Lights and Gates	2	Yes	10.7	10241	0.0112	89	0.0004	0.0033	25.1	8544	0.0158	63	0.0006	0.0046	0.0046	-26

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Clinton	6th Avenue South	376021H	1927	20	Lights and Gates	2	Yes	10.7	10241	0.0138	72	0.0005	0.004	25.1	8544	0.0192	52	0.0007	0.0056	0.0054	-20
Clinton	9th Avenue North	376027Y	3140	20	Flashing Lights	2	Yes	10.7	10241	0.0177	57	0.0006	0.0052	25.1	8544	0.0238	42	0.0008	0.0069	0.0061	-15
Clinton	South 1st Street	190348M	706	20	Lights and Gates	2	Yes	10.7	10241	0.0107	94	0.0004	0.0031	25.1	8544	0.0151	66	0.0005	0.0044	0.0044	-27
Columbus Junction	2nd Street	607245W	2988	40	Lights and Gates	2	Yes	4.8	9449	0.0112	89	0.001	0.0046	19.2	7024	0.0193	52	0.0019	0.008	0.0081	-38
Columbus Junction	Sth 70	695494R	1219	40	Lights and Gates	2	Yes	4.8	9449	0.0353	28	0.0032	0.0146	19.2	7024	0.0474	21	0.0047	0.0196	0.0121	-7
Cotter	County Line Road	607254V	70	40	Passive	2	No	4.8	9449	0.0147	68	0.0013	0.0061	19.2	7024	0.0268	37	0.0027	0.0111	0.0121	-31

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								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Cotter	County Road W66	607252G	214	40	Flashing Lights	2	Yes	4.8	9449	0.005	201	0.0004	0.0021	19.2	7024	0.0094	106	0.0009	0.0039	0.0044	-95
Cotter	V Avenue	607250T	6	40	Passive	2	No	4.8	9449	0.0064	155	0.0006	0.0027	19.2	7024	0.0127	79	0.0013	0.0053	0.0063	-76
Davenport	Access To Miss River	865648U	598	25	Flashing Lights	2	Yes	8.3	10241	0.0093	108	0.0004	0.0029	22.7	8544	0.0142	70	0.0007	0.0044	0.0049	-37
Davenport	Brady Street	865650V	316	25	Flashing Lights	2	No	8.3	10241	0.0074	135	0.0003	0.0023	22.7	8544	0.0116	87	0.0005	0.0036	0.0042	-49
Davenport	Gaines Street	865654X	2484	25	Lights and Gates	2	Yes	8.3	10241	0.0133	75	0.0006	0.0041	22.7	8544	0.0197	51	0.0009	0.0061	0.0064	-24
Davenport	Harrison Street	865652J	820	25	Lights and Gates	4	Yes	8.3	10241	0.0128	78	0.0005	0.004	22.7	8544	0.019	53	0.0009	0.0059	0.0062	-25
Davenport	Marquette Street	865655E	1889	25	Lights and Gates	2	Yes	8.3	10241	0.0124	81	0.0005	0.0038	22.7	8544	0.0184	54	0.0008	0.0057	0.006	-26

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Davenport	Oneida Avenue	376011C	2470	25	Lights and Gates	2	Yes	8.3	10241	0.0133	75	0.0006	0.0041	22.7	8544	0.0196	51	0.0010	0.0061	0.0064	-24
Davenport	Perry Street	865649B	4389	25	Flashing Lights	2	Yes	8.3	10241	0.0177	57	0.0007	0.0055	22.7	8544	0.025	40	0.0011	0.0077	0.0073	-17
Davenport	Ripley Street	865653R	11721~~1~~ ~~7~~	25	Flashing Lights	2	Yes	8.3	10241	0.0117 ~~232~~	~~43~~8 6	0.0005 ~~1~~	0.00367~~2~~	22.7	8544	0.~~0312~~ 0175	~~32~~57	0.0008 ~~14~~	0.00549~~6~~	0.0058	- ~~11~~28
Davenport	Schmidt Road	605947K	890	20	Lights and Gates	2	Yes	8.3	10241	0.0102	98	0.0003	0.003	22.7	8544	0.0153	65	0.0006	0.0045	0.0052	-33
Davenport	South Concord Street	607141P	1172	25	Lights and Gates	2	Yes	8.3	10241	0.0109	91	0.0005	0.0034	22.7	8544	0.0164	61	0.0007	0.0051	0.0055	-30
Davenport	Utah Avenue	607149U	363	25	Lights and Gates	2	No	6.4	9449	0.0072	139	0.0003	0.0022	20.8	7024	0.0118	85	0.0005	0.0036	0.0046	-55

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Davenport	Wapello Avenue	607146Y	305	25	Lights and Gates	2	Yes	6.4	9449	0.0068	146	0.0003	0.0021	20.8	7024	0.0113	89	0.0005	0.0035	0.0044	-57
Fredonia	160th Street	607241U	59	40	Passive	2	No	4.8	9449	0.0139	72	0.0013	0.0057	19.2	7024	0.0255	39	0.0025	0.0105	0.0116	-33
Fredonia	2nd Street	607243H	1435	40	Lights and Gates	2	Yes	4.8	9449	0.0092	108	0.0008	0.0038	19.2	7024	0.0162	62	0.0016	0.0067	0.007	-47
Fredonia	3rd Street	607242B	152	40	Lights and Gates	2	Yes	4.8	9449	0.005	200	0.0004	0.0021	19.2	7024	0.0091	110	0.0009	0.0038	0.0041	-90
Fredonia	P Avenue	607238L	59	40	Passive	2	No	4.8	9449	0.0139	72	0.0013	0.0057	19.2	7024	0.0255	39	0.0025	0.0105	0.0116	-33
Fruitland	North Street	607220B	2337	40	Lights and Gates	2	Yes	4.8	9449	0.0105	95	0.0009	0.0043	19.2	7024	0.0182	55	0.0018	0.0075	0.0077	-40
Le Claire	Canal Shore Drive SW	865614A	551	40	Passive	2	Yes	8.3	10241	0.0215	47	0.0021	0.0089	22.7	8544	0.0322	31	0.0034	0.0133	0.0107	-16

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Le Claire	Eagle Ridge Road	865612L	1878	40	Lights and Gates	3	Yes	8.3	10241	0.014	72	0.0014	0.0058	22.7	8544	0.0206	49	0.0022	0.0085	0.0066	-23
Le Claire	Jones Street	865609D	468	40	Passive	2	Yes	8.3	10241	0.0205	49	0.002	0.0085	22.7	8544	0.0308	32	0.0033	0.0128	0.0104	-16
Le Claire	West Canal Shore Drive	865616N	1053	40	Passive	2	Yes	8.3	10241	0.0258	39	0.0025	0.0107	22.7	8544	0.0376	27	0.004	0.0156	0.0119	-12
Le Claire	Wisconsin Street	865610X	527	40	Passive	2	Yes	8.3	10241	0.0212	47	0.0021	0.0088	22.7	8544	0.0318	31	0.0034	0.0131	0.0106	-16
Letts	170th Street	607237E	60	40	Lights and Gates	2	No	4.8	9449	0.0038	260	0.0003	0.0016	19.2	7024	0.0071	142	0.0007	0.0029	0.0032	-119
Letts	180th Street	607232V	48	40	Passive	2	No	4.8	9449	0.013	77	0.0012	0.0054	19.2	7024	0.0241	42	0.0024	0.01	0.0111	-35
Letts	Chestnut Street	607228F	82	40	Lights and Gates	2	Yes	4.8	9449	0.0042	238	0.0004	0.0017	19.2	7024	0.0077	130	0.0008	0.0032	0.0035	-108

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Letts	County Road G 40	607230G	709	40	Lights and Gates	2	Yes	4.8	9449	0.0076	131	0.0007	0.0032	19.2	7024	0.0136	74	0.0013	0.0056	0.0059	-57
Letts	I Avenue	607226S	84	40	Lights and Gates	2	No	4.8	9449	0.0042	237	0.0004	0.0017	19.2	7024	0.0077	129	0.0008	0.0032	0.0035	-108
Letts	Linn Street	607229M	867	40	Lights and Gates	2	Yes	4.8	9449	0.0081	124	0.0007	0.0033	19.2	7024	0.0143	70	0.0014	0.0059	0.0062	-54
Letts	O Avenue	607234J	36	40	Passive	2	No	4.8	9449	0.0119	84	0.0011	0.0049	19.2	7024	0.0222	45	0.0022	0.0092	0.0103	-39
Moravia	260th Place	375718D	36	40	Passive	2	No	3.4	12127	0.0101	99	0.0009	0.0042	17.8	7210	0.0215	47	0.0022	0.0089	0.0114	-53
Moravia	420th Street	375706J	23	40	Passive	2	No	3.4	12127	0.0087	114	0.0008	0.0036	17.8	7210	0.019	53	0.002	0.0078	0.0102	-62
Moravia	652nd Pl	375712M	12	40	Passive	2	No	3.4	12127	0.0069	145	0.0006	0.0029	17.8	7210	0.0153	65	0.0016	0.0063	0.0084	-79
Moravia	652nd Pl	375714B	12	40	Passive	2	No	3.4	12127	0.0069	145	0.0006	0.0029	17.8	7210	0.0153	65	0.0016	0.0063	0.0084	-79

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Moravia	690th Avenue	375721L	41	40	Passive	2	No	3.4	12127	0.0105	95	0.001	0.0044	17.8	7210	0.0224	45	0.0023	0.0092	0.0118	-50
Moravia	710th Avenue	375727C	82	40	Flashing Lights	2	No	3.4	12127	0.0029	343	0.0003	0.0012	17.8	7210	0.0064	155	0.0007	0.0027	0.0035	-188
Moravia	West North Street	375710Y	2400	40	Flashing Lights	2	Yes	3.4	12127	0.0308	32	0.0029	0.0127	17.8	7210	0.0478	21	0.005	0.0198	0.017	-12
Muscatine	33rd Street South	607216L	204	40	Flashing Lights	2	No	4.8	9449	0.0049	205	0.0004	0.002	19.2	7024	0.0093	108	0.0009	0.0038	0.0044	-97
Muscatine	41st Street South	607217T	480	40	Flashing Lights	2	Yes	4.8	9449	0.0067	149	0.0006	0.0028	19.2	7024	0.0124	81	0.0012	0.0051	0.0057	-68
Muscatine	57th Street	607219G	468	40	Flashing Lights	2	Yes	4.8	9449	0.0067	150	0.0006	0.0028	19.2	7024	0.0123	81	0.0012	0.0051	0.0056	-69
Muscatine	Canal Street	607208U	30	40	Passive	1	No	6.4	9449	0.0129	78	0.0008	0.0041	20.8	7024	0.0219	46	0.0016	0.007	0.009	-32

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Muscatine	Cedar Street	607204S	776	40	Lights and Gates	2	Yes	6.4	9449	0.0088	113	0.0006	0.003	20.8	7024	0.0143	70	0.001	0.0049	0.0055	-44
Muscatine	Day Street	607212J	410	40	Lights and Gates	2	Yes	4.8	9449	0.0066	152	0.0004	0.0023	19.2	7024	0.0118	85	0.0008	0.0041	0.0052	-67
Muscatine	Industrial Connector/Dick	393258B	4177	40	Lights and Gates	2	Yes	4.8	9449	0.0122	82	0.0008	0.0042	19.2	7024	0.0209	48	0.0015	0.0072	0.0087	-34
Muscatine	Iowa Avenue	607206F	926	40	Lights and Gates	2	Yes	6.4	9449	0.0092	108	0.0006	0.0032	20.8	7024	0.015	67	0.0011	0.0051	0.0057	-41
Muscatine	Jefferson Street	607193G	228	40	Lights and Gates	2	No	6.4	9449	0.0063	158	0.0006	0.0026	20.8	7024	0.0105	96	0.0010	0.0043	0.0041	-63
Muscatine	Mississippi Drive	606762G	179	5	Passive	2	Yes	6.4	9449	0.0107	94	0.0001	0.0022	20.8	7024	0.0185	54	0.0002	0.0038	0.0078	-40

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Muscatine	Monroe Street	607192A	36	40	Passive	2	No	6.4	9449	0.0136	74	0.0012	0.0052	20.8	7024	0.023	44	0.0023	0.0089	0.0094	-30
Muscatine	Musser Street	607213R	729	40	Lights and Gates	3	Yes	4.8	9449	0.0088	114	0.0006	0.003	19.2	7024	0.0154	65	0.0011	0.0053	0.0067	-49
Muscatine	Oregon Street	607211C	7440	40	Lights and Gates	2	Yes	4.8	9449	0.0141	71	0.0009	0.0049	19.2	7024	0.0238	42	0.0017	0.0082	0.0096	-29
Muscatine	Sampson Road	607215E	2558	40	Lights and Gates	2	Yes	4.8	9449	0.0107	93	0.0007	0.0037	19.2	7024	0.0186	54	0.0013	0.0064	0.0079	-39
Muscatine	Spillway Lane	607202D	30	40	Passive	2	No	6.4	9449	0.0129	78	0.0008	0.0044	20.8	7024	0.0219	46	0.0015	0.0075	0.009	-32
Mystic	135th Avenue	375681R	129	40	Passive	2	No	3.4	12127	0.0153	65	0.0014	0.0063	17.8	7210	0.0306	33	0.0032	0.0126	0.0153	-33

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Mystic	140th Avenue	375683E	39	40	Passive	2	No	3.4	12127	0.0103	97	0.001	0.0043	17.8	7210	0.022	45	0.0023	0.0091	0.0116	-51
Mystic	200th Avenue	375695Y	187	40	Flashing Lights	2	No	3.4	12127	0.004	249	0.0004	0.0017	17.8	7210	0.0087	115	0.0009	0.0036	0.0047	-134
Mystic	219th Avenue	375701A	18	40	Passive	2	No	3.4	12127	0.0079	126	0.0007	0.0033	17.8	7210	0.0174	58	0.0018	0.0072	0.0094	-68
Mystic	461st Street	375699B	32	40	Passive	2	No	3.4	12127	0.0097	103	0.0009	0.004	17.8	7210	0.0208	48	0.0022	0.0086	0.0111	-55
Mystic	East Lodwick Street	375693K	339	40	Passive	2	No	3.4	12127	0.0205	49	0.0019	0.0085	17.8	7210	0.0387	26	0.004	0.016	0.0182	-23
Mystic	South 1st Street	375692D	339	40	Flashing Lights	2	Yes	3.4	12127	0.005	199	0.0005	0.0021	17.8	7210	0.0107	94	0.0011	0.0044	0.0056	-105

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Mystic	South 2nd Street	375691W	339	40	Passive	2	No	3.4	12127	0.0205	49	0.0019	0.0085	17.8	7210	0.0387	26	0.004	0.016	0.0182	-23
Ottumwa	105th Avenue	375797S	59	40	Passive	2	No	4.8	9449	0.0139	72	0.0013	0.0057	19.2	7024	0.0255	39	0.0025	0.0105	0.0116	-33
Ottumwa	110th Avenue	375795D	53	40	Passive	2	No	4.8	9449	0.0134	74	0.0012	0.0056	19.2	7024	0.0248	40	0.0025	0.0102	0.0113	-34
Ottumwa	120th Avenue	375792H	199	40	Passive	2	No	4.8	9449	0.0568	18	0.0037	0.0195	19.2	7024	0.0835	12	0.006	0.0287	0.0267	-6
Ottumwa	140th Street	375798Y	41	40	Passive	2	No	4.8	9449	0.0124	81	0.0011	0.0051	19.2	7024	0.0231	43	0.0023	0.0095	0.0107	-37
Ottumwa	150th Street	375806N	35	40	Passive	2	No	4.8	9449	0.0118	85	0.0011	0.0049	19.2	7024	0.0221	45	0.0022	0.0091	0.0103	-40
Ottumwa	165th Street	375816U	240	40	Lights and Gates	2	Yes	4.8	9449	0.0057	176	0.0005	0.0023	19.2	7024	0.0103	97	0.001	0.0042	0.0046	-79

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Ottumwa	170th Avenue	375759H	29	40	Passive	2	No	3.4	12127	0.0094	106	0.0009	0.0039	17.8	7210	0.0203	49	0.0021	0.0084	0.0108	-57
Ottumwa	194th Avenue	375753S	94	40	Passive	2	No	3.4	12127	0.0138	72	0.0013	0.0057	17.8	7210	0.0281	36	0.0029	0.0116	0.0143	-37
Ottumwa	22nd Avenue	375820J	35	40	Passive	2	No	4.8	9449	0.0118	85	0.0011	0.0049	19.2	7024	0.0221	45	0.0022	0.0091	0.0103	-40
Ottumwa	35th Avenue	375817B	12	40	Passive	2	No	4.8	9449	0.0082	122	0.0007	0.0034	19.2	7024	0.0159	63	0.0016	0.0066	0.0077	-59
Ottumwa	85th Avenue	375803T	41	40	Passive	2	No	4.8	9449	0.0124	81	0.0011	0.0051	19.2	7024	0.0231	43	0.0023	0.0095	0.0107	-37
Ottumwa	87th Street	375761J	914	20	Lights and Gates	2	Yes	3.4	12127	0.0071	141	0.0003	0.0025	17.8	7210	0.014	71	0.0008	0.005	0.007	-70
Ottumwa	Agency Hedrick Road	375808C	797	40	Lights and Gates	2	Yes	4.8	9449	0.0079	127	0.0007	0.0033	19.2	7024	0.014	72	0.0014	0.0058	0.0061	-55

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Ottumwa	Farson Road	375811K	59	40	Passive	2	No	4.8	9449	0.0139	72	0.0013	0.0057	19.2	7024	0.0255	39	0.0025	0.0105	0.0116	-33
Ottumwa	Gateway Drive	375780N	351	20	Passive	2	Yes	4.8	9449	0.0435	23	0.0015	0.0127	19.2	7024	0.0633	16	0.0024	0.0185	0.0198	-7
Ottumwa	North Caldwell Street	375784R	3035	20	Lights and Gates	2	Yes	4.8	9449	0.0112	89	0.0004	0.0033	19.2	7024	0.0194	52	0.0007	0.0057	0.0081	-37
Ottumwa	North Quincy Avenue	375779U	4467	20	Lights and Gates	2	Yes	4.8	9449	0.0124	81	0.0004	0.0036	19.2	7024	0.0212	47	0.0008	0.0062	0.0088	-33
Ottumwa	West Rochester Street	375787L	469	20	Lights and Gates	2	Yes	4.8	9449	0.0068	147	0.0002	0.002	19.2	7024	0.0122	82	0.0005	0.0036	0.0054	-65
Ottumwa	West Second Street	375781V	6570	20	Lights and Gates	2	Yes	4.8	9449	0.0137	73	0.0005	0.0040	19.2	7024	0.0231	43	0.0009	0.0068	0.0094	-30

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Pleasant Valley	244th Avenue	865620D	1	40	Passive	1	No	8.3	10241	0.0293	34	0.0029	0.0121	22.7	8544	0.0353	28	0.0037	0.0146	0.006	-6
Pleasant Valley	245th Avenue	865619J	1	40	Passive	1	No	8.3	10241	0.0049	206	0.0005	0.002	22.7	8544	0.0081	124	0.0009	0.0033	0.0032	-82
Princeton	270th Street	865574E	53	40	Passive	2	No	8.3	10241	0.0172	58	0.0017	0.0071	22.7	8544	0.0265	38	0.0028	0.011	0.0093	-20
Princeton	285th Avenue	865575L	53	40	Lights and Gates	2	No	8.3	10241	0.0047	212	0.0005	0.0019	22.7	8544	0.0073	136	0.0008	0.003	0.0026	-76
Princeton	Chestnut Street	865582W	375	40	Lights and Gates	2	Yes	8.3	10241	0.0081	124	0.0008	0.0033	22.7	8544	0.0123	81	0.0013	0.0051	0.0042	-43
Princeton	Clay Street	865581P	432	40	Lights and Gates	2	Yes	8.3	10241	0.0084	119	0.0008	0.0035	22.7	8544	0.0128	78	0.0014	0.0053	0.0044	-41
Princeton	Lost Grove Road	865579N	939	40	Lights and Gates	2	Yes	8.3	10241	0.038	26	0.0037	0.0157	22.7	8544	0.0474	21	0.005	0.0196	0.0094	-5

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Rathbun	Highway J29	375697M	1227	40	Flashing Lights	2	Yes	3.4	12127	0.0081	124	0.0008	0.0033	17.8	7210	0.0162	62	0.0017	0.0067	0.0081	-62
Richland	110th Street	375824L	246	40	Lights and Gates	2	Yes	4.8	9449	0.0057	175	0.0005	0.0024	19.2	7024	0.0103	97	0.001	0.0043	0.0046	-78
Richland	260th Avenue	375831W	23	40	Passive	2	No	4.8	9449	0.0103	97	0.0009	0.0043	19.2	7024	0.0196	51	0.0019	0.0081	0.0093	-46
Richland	270th Avenue	375834S	931	40	Lights and Gates	2	Yes	4.8	9449	0.0082	122	0.0007	0.0034	19.2	7024	0.0145	69	0.0014	0.006	0.0063	-53
Richland	290th Avenue	375838U	6	40	Passive	2	No	4.8	9449	0.0064	155	0.0006	0.0027	19.2	7024	0.0127	79	0.0013	0.0053	0.0063	-76
Richland	305th Street	375844X	25	40	Passive	2	No	4.8	9449	0.0105	95	0.0009	0.0043	19.2	7024	0.02	50	0.002	0.0082	0.0094	-45
Richland	315th Avenue	375840V	1052	40	Lights and Gates	2	Yes	4.8	9449	0.0085	118	0.0008	0.0035	19.2	7024	0.015	67	0.0015	0.0062	0.0065	-51

Table H.1-4. Grade Crossing Safety by State and City

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Richland	320th Avenue	375841C	18	40	Passive	2	No	4.8	9449	0.0094	107	0.0008	0.0039	19.2	7024	0.018	56	0.0018	0.0074	0.0086	-51
Richland	328th Avenue	375843R	12	40	Passive	2	No	4.8	9449	0.0082	122	0.0007	0.0034	19.2	7024	0.0159	63	0.0015	0.0066	0.0077	-59
Richland	335th Street	375835Y	6	40	Passive	2	No	4.8	9449	0.0064	155	0.0006	0.0027	19.2	7024	0.0127	79	0.0013	0.0053	0.0063	-76
Richland	Ash Avenue	375822X	41	40	Passive	2	No	4.8	9449	0.0124	81	0.0011	0.0051	19.2	7024	0.0231	43	0.0023	0.0095	0.0107	-37
Richland	Cedar Avenue	375827G	18	40	Passive	2	No	4.8	9449	0.0094	107	0.0008	0.0039	19.2	7024	0.018	56	0.0018	0.0074	0.0086	-51
Richland	Main Street	375846L	164	40	Lights and Gates	2	Yes	4.8	9449	0.0051	196	0.0005	0.0021	19.2	7024	0.0093	108	0.0009	0.0038	0.0042	-88
Riverdale	Fenno Road	865631R	1025	40	Lights and Gates	2	Yes	8.3	10241	0.0106	95	0.001	0.0044	22.7	8544	0.0159	63	0.0017	0.0066	0.0053	-32

Table H.1-4. Grade Crossing Safety by State and City

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								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Riverdale	South Bellingham Street	865635T	562	40	Lights and Gates	2	Yes	8.3	10241	0.009	111	0.0009	0.0037	22.7	8544	0.0137	73	0.0015	0.0057	0.0047	-38
Riverdale	South Kensington Street	865636A	32	40	Passive	2	Yes	8.3	10241	0.0087	115	0.0009	0.0036	22.7	8544	0.0141	71	0.0015	0.0058	0.0054	-45
Sabula	142nd Street	376052G	47	40	Passive	2	No	10.7	10241	0.0187	54	0.0017	0.0077	25.1	8544	0.0268	37	0.0026	0.0111	0.0081	-16
Seymour	105th Avenue	375673Y	24	40	Passive	2	No	3.4	12127	0.0088	114	0.0008	0.0036	17.8	7210	0.019	53	0.002	0.0079	0.0102	-61
Seymour	110th Avenue	375675M	35	40	Passive	2	No	3.4	12127	0.01	100	0.0009	0.0041	17.8	7210	0.0214	47	0.0022	0.0088	0.0114	-53
Seymour	115th Avenue	375678H	24	40	Passive	2	No	3.4	12127	0.0088	114	0.0008	0.0036	17.8	7210	0.019	53	0.002	0.0079	0.0102	-61

Table H.1-4. Grade Crossing Safety by State and City

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								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Seymour	125th Avenue	375679P	6	40	Passive	2	No	3.4	12127	0.0056	178	0.0005	0.0023	17.8	7210	0.0127	79	0.0013	0.0052	0.007	-99
Seymour	170th	375653M	18	40	Passive	2	No	3.4	12127	0.0079	126	0.0007	0.0033	17.8	7210	0.0174	58	0.0018	0.0072	0.0094	-68
Seymour	180th	375655B	35	40	Passive	2	No	3.4	12127	0.01	100	0.0009	0.0041	17.8	7210	0.0214	47	0.0022	0.0088	0.0114	-53
Seymour	190th	375656H	48	40	Passive	2	No	3.4	12127	0.0111	90	0.001	0.0046	17.8	7210	0.0233	43	0.0024	0.0096	0.0122	-47
Seymour	205th Street	375657P	105	40	Lights and Gates	2	No	3.4	12127	0.0039	257	0.0004	0.0016	17.8	7210	0.008	125	0.0008	0.0033	0.0041	-132
Seymour	210th	375658W	53	40	Passive	2	No	3.4	12127	0.0115	87	0.0011	0.0047	17.8	7210	0.024	42	0.0025	0.0099	0.0126	-46
Seymour	220th	375660X	74	40	Passive	2	No	3.4	12127	0.0128	78	0.0012	0.0053	17.8	7210	0.0264	38	0.0028	0.0109	0.0136	-40
Seymour	230th	375661E	35	40	Passive	2	No	3.4	12127	0.01	100	0.0009	0.0041	17.8	7210	0.0214	47	0.0022	0.0088	0.0114	-53
Seymour	250th	375671K	59	40	Passive	2	No	3.4	12127	0.0119	84	0.0011	0.0049	17.8	7210	0.0247	40	0.0026	0.0102	0.0129	-44

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Seymour	524th Street	375677B	37	40	Passive	2	No	3.4	12127	0.0102	98	0.0009	0.0042	17.8	7210	0.0216	46	0.0023	0.0089	0.0115	-52
Seymour	Birch	375647J	18	40	Passive	2	No	3.4	12127	0.0079	126	0.0007	0.0033	17.8	7210	0.0174	58	0.0018	0.0072	0.0094	-68
Seymour	Elm Street	375651Y	29	40	Passive	2	No	3.4	12127	0.0094	106	0.0009	0.0039	17.8	7210	0.0203	49	0.0021	0.0084	0.0108	-57
Seymour	Euclid	375652F	59	40	Passive	2	No	3.4	12127	0.0119	84	0.0011	0.0049	17.8	7210	0.0247	40	0.0026	0.0102	0.0129	-44
Seymour	Fifth Street	375668C	1163	40	Lights and Gates	2	Yes	3.4	12127	0.0076	132	0.0007	0.0031	17.8	7210	0.0149	67	0.0016	0.0062	0.0073	-65
Seymour	Fillmore	375654U	23	40	Passive	2	No	3.4	12127	0.0087	114	0.0008	0.0036	17.8	7210	0.019	53	0.002	0.0078	0.0102	-62
Seymour	Fourth Street	375669J	47	40	Passive	2	No	3.4	12127	0.011	91	0.001	0.0046	17.8	7210	0.0232	43	0.0024	0.0096	0.0122	-48
Seymour	Lee Street	375664A	47	40	Lights and Gates	2	Yes	3.4	12127	0.0249	40	0.0023	0.0103	17.8	7210	0.0309	32	0.0032	0.0128	0.006	-8

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Seymour	Main Street	378354R	773	40	Flashing Lights	2	Yes	3.4	12127	0.0068	146	0.0006	0.0028	17.8	7210	0.014	71	0.0015	0.0058	0.0072	-75
Seymour	S40	375650S	395	40	Flashing Lights	2	Yes	3.4	12127	0.0053	188	0.0005	0.0022	17.8	7210	0.0112	89	0.0012	0.0046	0.0059	-99
Seymour	Seventh Street	375665G	47	40	Passive	2	No	3.4	12127	0.011	91	0.001	0.0046	17.8	7210	0.0232	43	0.0024	0.0096	0.0122	-48
Seymour	Sixth Street	375667V	23	40	Passive	2	No	3.4	12127	0.0087	114	0.0008	0.0036	17.8	7210	0.019	53	0.002	0.0078	0.0102	-62
Seymour	Third Street	375670D	30	40	Passive	2	No	3.4	12127	0.0095	106	0.0009	0.0039	17.8	7210	0.0203	49	0.0021	0.0084	0.0109	-56
Washington	260th Street	375862V	12	40	Passive	2	No	4.8	9449	0.0082	122	0.0007	0.0034	19.2	7024	0.0159	63	0.0016	0.0066	0.0077	-59
Washington	Ivy Avenue	375861N	100	40	Passive	2	No	4.8	9449	0.0164	61	0.0015	0.0068	19.2	7024	0.0294	34	0.0029	0.0122	0.0130	-27
Washington	Juniper Avenue	375863C	29	40	Passive	2	No	4.8	9449	0.0111	90	0.001	0.0046	19.2	7024	0.0209	48	0.0021	0.0087	0.0098	-42

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Washington	Kiwi Avenue	375866X	29	40	Passive	2	No	4.8	9449	0.0111	90	0.001	0.0046	19.2	7024	0.0209	48	0.0021	0.0087	0.0098	-42
Washington	North 12th Avenue	607323B	6596	40	Lights and Gates	2	Yes	4.8	9449	0.0137	73	0.0009	0.0047	19.2	7024	0.0231	43	0.0017	0.0080	0.0094	-30
Washington	North B Avenue	375878S	1542	40	Lights and Gates	2	Yes	4.8	9449	0.0094	106	0.0006	0.0032	19.2	7024	0.0165	61	0.0012	0.0057	0.0071	-46
Washington	North C Avenue	375877K	419	40	Flashing Lights	2	Yes	4.8	9449	0.0064	157	0.0004	0.0022	19.2	7024	0.0118	85	0.0008	0.0041	0.0054	-72
Washington	North D Avenue	375876D	245	40	Lights and Gates	2	Yes	4.8	9449	0.0057	175	0.0004	0.002	19.2	7024	0.0103	97	0.0007	0.0035	0.0046	-78
Washington	North F Avenue	375875W	159	40	Lights and Gates	2	Yes	4.8	9449	0.0051	198	0.0003	0.0017	19.2	7024	0.0092	109	0.0007	0.0032	0.0041	-89
Washington	North Fourth Avenue	607322U	2519	40	Lights and Gates	2	Yes	4.8	9449	0.0107	93	0.0007	0.0037	19.2	7024	0.0185	54	0.0013	0.0064	0.0078	-39

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Washington	North Iowa Avenue	375880T	1186	40	Lights and Gates	2	Yes	4.8	9449	0.0088	114	0.0006	0.003	19.2	7024	0.0154	65	0.0011	0.0053	0.0067	-49
Washington	North Marion Avenue	375879Y	1517	40	Lights and Gates	2	Yes	4.8	9449	0.0094	107	0.0006	0.0032	19.2	7024	0.0164	61	0.0012	0.0056	0.007	-46
Washington	Palm Avenue	607326W	35	40	Passive	2	No	4.8	9449	0.0118	85	0.0011	0.0049	19.2	7024	0.0221	45	0.0022	0.0091	0.0103	-40
Washington	West Main Street	375872B	682	40	Lights and Gates	2	Yes	4.8	9449	0.0076	132	0.0005	0.0026	19.2	7024	0.0134	74	0.001	0.0046	0.0059	-58
Kansas																					
Frontenac	East 600th Avenue	330243M	285	55	Lights and Gates	2	Yes	17.6	8899	0.0103	97	0.0014	0.0046	30.4	7975	0.013	77	0.0019	0.0057	0.0026	-20
Frontenac	East 610th Avenue	330240S	64	55	Lights and Gates	2	No	17.6	8899	0.0069	144	0.001	0.0031	30.4	7975	0.0088	114	0.0013	0.0039	0.0019	-30

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Frontenac	East Mckay Street	330247P	557	55	Lights and Gates	2	Yes	17.6	8899	0.0123	81	0.0012	0.0045	30.4	7975	0.0153	65	0.0016	0.0057	0.003	-16
Frontenac	North Free King Highway	330245B	973	55	Lights and Gates	2	Yes	17.6	8899	0.0142	71	0.0020	0.0062	30.4	7975	0.0176	57	0.0025	0.0077	0.0034	-14
Frontenac	South 260th Street Or Military	330238R	556	55	Lights and Gates	2	Yes	17.6	8899	0.0123	81	0.0017	0.0054	30.4	7975	0.0153	65	0.0022	0.0068	0.003	-16
Mulberry	270th Street	330236C	680	55	Lights and Gates	2	Yes	17.6	8899	0.013	77	0.0018	0.0057	30.4	7975	0.0161	62	0.0023	0.0071	0.0032	-15
Mulberry	East 620th Avenue	330237J	694	55	Lights and Gates	2	Yes	17.6	8899	0.013	77	0.0018	0.0057	30.4	7975	0.0162	62	0.0023	0.0071	0.0032	-15
Opolis	NE 110th Street	330268H	63	55	Lights and Gates	2	No	16.2	8508	0.0067	150	0.0009	0.0029	28.6	7385	0.0085	117	0.0012	0.0037	0.0019	-33

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Opolis	NE Coal Valley Road	330267B	7	55	Passive	2	No	16.2	8508	0.0140	72	0.0019	0.0062	28.6	7385	0.0182	55	0.0026	0.0080	0.0042	-16
Opolis	NE Weir Road	330270J	86	55	Lights and Gates	2	No	16.2	8508	0.0072	138	0.0010	0.0032	28.6	7385	0.0092	108	0.0013	0.0041	0.002	-30
Pittsburg	East 10th Street	330251E	1383	40	Lights and Gates	2	Yes	16.2	8508	0.015	67	0.0011	0.0052	28.6	7385	0.0187	54	0.0015	0.0064	0.0037	-13
Pittsburg	East 510th Avenue	330263Y	19	55	Passive	2	No	16.2	8508	0.0186	54	0.0025	0.0082	28.6	7385	0.0238	42	0.0034	0.0105	0.0052	-12
Pittsburg	East 515th Avenue	330262S	33	55	Lights and Gates	2	No	16.2	8508	0.0056	179	0.0008	0.0025	28.6	7385	0.0072	140	0.0010	0.0032	0.0016	-40
Pittsburg	East 520th Avenue	330260D	643	55	Lights and Gates	2	Yes	16.2	8508	0.0123	81	0.0017	0.0054	28.6	7385	0.0155	64	0.0022	0.0068	0.0032	-17

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Pittsburg	East 7th Street	330252L	1091	40	Lights and Gates	2	Yes	16.2	8508	0.0141	71	0.0011	0.0049	28.6	7385	0.0177	57	0.0014	0.0061	0.0035	-14
Pittsburg	East Centennial Drive	330258C	5984	55	Lights and Gates	2	Yes	16.2	8508	0.0213	47	0.0021	0.0079	28.6	7385	0.026	38	0.0027	0.0096	0.0048	-9
Pittsburg	East Jefferson Street	330255G	1991	55	Lights and Gates	2	Yes	16.2	8508	0.0164	61	0.0016	0.0060	28.6	7385	0.0204	49	0.0021	0.0075	0.004	-12
Pittsburg	East Quincy Street	330256N	3208	55	Lights and Gates	2	Yes	16.2	8508	0.0525	19	0.0052	0.0194	28.6	7385	0.0602	17	0.0063	0.0222	0.0078	-2
Pittsburg	East Washington Street	330254A	1428	55	Lights and Gates	2	Yes	16.2	8508	0.0151	66	0.0015	0.0056	28.6	7385	0.0188	53	0.0020	0.0069	0.0037	-13

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Pittsburg	South 250th Street	330264F	110	55	Lights and Gates	2	No	16.2	8508	0.0077	129	0.0011	0.0034	28.6	7385	0.0099	101	0.0014	0.0043	0.0021	-28
Pittsburg	South Rouse Street	330257V	8022	55	Lights and Gates	4	Yes	16.2	8508	0.0281	36	0.0028	0.0104	28.6	7385	0.0337	30	0.0035	0.0124	0.0056	-6
Louisiana																					
Anacoco	Beavers Road	329258F	244	40	Passive	2	Yes	10.7	9121	0.0189	53	0.0014	0.0065	21.5	8162	0.0254	39	0.0019	0.0087	0.0065	-14
Anacoco	Ford Stewart Road	329264J	232	50	Lights and Gates	2	Yes	10.7	9121	0.0079	126	0.0007	0.0029	21.5	8162	0.0107	94	0.0010	0.0039	0.0027	-32
Anacoco	Holly Grove Road	329262V	1759	50	Lights and Gates	2	Yes	10.7	9121	0.0135	74	0.0012	0.0049	21.5	8162	0.0178	56	0.0017	0.0064	0.0043	-18

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Anacoco	L Beauford Drive / Lions Camna	329263C	146	50	Lights and Gates	2	Yes	10.7	9121	0.007	143	0.0009	0.0030	21.5	8162	0.0094	106	0.0012	0.0041	0.0024	-37
Anacoco	Leach Road	329257Y	21	40	Passive	1	Yes	10.7	9121	0.0085	117	0.0006	0.0029	21.5	8162	0.0120	83	0.0009	0.0041	0.0035	-34
Anacoco	Ronayne Drive	330816T	57	50	Passive	2	Yes	10.7	9121	0.0128	78	0.0016	0.0055	21.5	8162	0.0177	57	0.0023	0.0076	0.0049	-22
Anacoco	Roy Clark Road	329261N	89	40	Passive	2	Yes	10.7	9121	0.0138	73	0.0010	0.0047	21.5	8162	0.0190	53	0.0014	0.0065	0.0052	-20
Anacoco	Trigger Trapp Road	329259M	4218	40	Lights and Gates	2	Yes	10.7	9121	0.0496	20	0.0050	0.0205	21.5	8162	0.0586	17	0.0062	0.0242	0.009	-3
Benson	Louisiana 512	329206N	492	59	Lights and Gates	2	Yes	10.7	9121	0.0097	103	0.0014	0.0043	21.5	8162	0.013	77	0.0019	0.0058	0.0032	-26

Table H.1-4. Grade Crossing Safety by State and City

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								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Blanchard	Alexander Avenue	329026R	2320	59	Lights and Gates	2	Yes	13.5	9651	0.018	56	0.0019	0.0063	25.9	8128	0.0229	44	0.0025	0.008	0.0049	-12
Blanchard	Daugherty Avenue / Blanc	329027X	2302	59	Lights and Gates	2	Yes	13.5	9651	0.0179	56	0.0019	0.0062	25.9	8128	0.0228	44	0.0025	0.0079	0.0049	-12
Converse	Briar Rose Lane	329204A	1	59	Passive	1	No	10.7	9121	0.0065	153	0.0007	0.0025	21.5	8162	0.0093	108	0.001	0.0035	0.0027	-45
Converse	Old US 171	329203T	35	59	Passive	2	Yes	10.7	9121	0.0116	86	0.0012	0.0043	21.5	8162	0.0161	62	0.0017	0.006	0.0045	-24
Converse	Par Road 1384	329205G	38	59	Passive	1	Yes	10.7	9121	0.0119	84	0.0012	0.0045	21.5	8162	0.0165	61	0.0018	0.0062	0.0046	-23
Converse	Phillips Road	329208C	38	50	Passive	2	No	10.7	9121	0.0187	54	0.0017	0.0067	21.5	8162	0.0252	40	0.0024	0.0091	0.0065	-14
Converse	Port Arthur Avenue	329213Y	1664	59	Lights and Gates	2	Yes	10.7	9121	0.0133	75	0.0019	0.0059	21.5	8162	0.0175	57	0.0026	0.0078	0.0042	-18

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Converse	Private Road	329209J	38	50	Passive	1	No	10.7	9121	0.0187	54	0.0015	0.0067	21.5	8162	0.0252	40	0.0022	0.0091	0.0065	-14
De Quincy	Arthur Irwin Road	329342N	727	59	Lights and Gates	2	Yes	11	9121	0.0109	92	0.0011	0.0041	21.8	8162	0.0144	70	0.0016	0.0054	0.0035	-22
De Quincy	East 4th Street	329356W	14267	40	Lights and Gates	2	Yes	11	9121	0.0225	44	0.0023	0.0093	21.8	8162	0.0286	35	0.0030	0.0118	0.006	-9
De Quincy	Frazier Street	329347X	1056	40	Lights and Gates	2	Yes	10.2	8441	0.0116	86	0.0008	0.0040	21.1	7874	0.0156	64	0.0011	0.0054	0.004	-22
De Quincy	Holly Street	329343V	407	40	Passive	2	Yes	11	9121	0.0222	45	0.0016	0.0076	21.8	8162	0.0293	34	0.0022	0.0101	0.0071	-11
De Quincy	Holly Street	329345J	407	40	Lights and Gates	2	Yes	11	9121	0.0093	107	0.0007	0.0032	21.8	8162	0.0124	81	0.0009	0.0043	0.0031	-27
De Quincy	Le Blanc Street	329344C	3204	40	Lights and Gates	2	Yes	11	9121	0.0158	63	0.0011	0.0054	21.8	8162	0.0206	49	0.0016	0.0071	0.0047	-15

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
De Quincy	West 4th Street	329346R	10896	40	Lights and Gates	2	Yes	10.2	8441	0.0206	49	0.0019	0.0085	21.1	7874	0.0267	37	0.0026	0.0110	0.0061	-11
De Ridder	Ampacet Street	329315S	120	45	Lights and Gates	2	Yes	11	9121	0.0067	149	0.0005	0.0024	21.8	8162	0.009	111	0.0007	0.0032	0.0023	-38
De Ridder	Ball Road	329327L	342	59	Lights and Gates	2	Yes	11	9121	0.0354	28	0.005	0.0158	21.8	8162	0.0407	25	0.006	0.0182	0.0053	-4
De Ridder	Bolivar Bishop Drive	329321V	401	45	Lights and Gates	2	Yes	11	9121	0.0093	108	0.0008	0.0033	21.8	8162	0.0124	81	0.0011	0.0044	0.0031	-27
De Ridder	Catfish Hut Road	329311P	571	45	Lights and Gates	2	Yes	11	9121	0.0102	98	0.0008	0.0036	21.8	8162	0.0135	74	0.0011	0.0048	0.0033	-24
De Ridder	Crosby Road	329322C	2569	40	Lights and Gates	2	Yes	11	9121	0.015	67	0.0011	0.0052	21.8	8162	0.0195	51	0.0015	0.0067	0.0045	-15

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
De Ridder	East Fourth Street/ West Third Street	329320N	4171	45	Lights and Gates	2	Yes	11	9121	0.0169	59	0.0014	0.0060	21.8	8162	0.0218	46	0.0019	0.0077	0.005	-13
De Ridder	First Street	329319U	27095	45	Lights and Gates	2	Yes	11	9121	0.026	39	0.0021	0.0092	21.8	8162	0.0325	31	0.0028	0.0115	0.0065	-8
De Ridder	Granberry Road	329325X	80	59	Lights and Gates	2	Yes	11	9121	0.006	167	0.0006	0.0022	21.8	8162	0.0081	124	0.0009	0.003	0.0021	-43
De Ridder	Harrison Street	329312W	364	45	Lights and Gates	2	Yes	11	9121	0.009	111	0.0007	0.0032	21.8	8162	0.012	83	0.0010	0.0043	0.003	-28
De Ridder	Mahlan Street	329317F	27095	45	Lights and Gates	2	Yes	11	9121	0.026	39	0.0019	0.0092	21.8	8162	0.0325	31	0.0025	0.0115	0.0065	-8
De Ridder	North Street	329316Y	802	45	Lights and Gates	2	Yes	11	9121	0.0111	90	0.0008	0.0039	21.8	8162	0.0147	68	0.0011	0.0052	0.0036	-22

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
De Ridder	West Second Street	329318M	134	45	Passive	2	Yes	11	9121	0.0164	61	0.0013	0.0058	21.8	8162	0.0222	45	0.0019	0.0078	0.0058	-16
Fisher	Lyddy Turnpike Road	329112M	120	59	Lights and Gates	2	Yes	10.7	9121	0.0066	151	0.0007	0.0025	21.5	8162	0.009	112	0.001	0.0034	0.0023	-39
Fisher	Main Street	329110Y	1246	40	Lights and Gates	2	Yes	10.7	9121	0.0124	81	0.0009	0.0043	21.5	8162	0.0163	61	0.0012	0.0056	0.004	-20
Florien	Addison Road	329251H	36	40	Passive	1	No	10.7	9121	0.0172	58	0.0012	0.0059	21.5	8162	0.0233	43	0.0018	0.0080	0.0061	-15
Florien	Arthur Place	329248A	36	59	Passive	1	No	10.7	9121	0.0194	51	0.002	0.0073	21.5	8162	0.0261	38	0.0028	0.0098	0.0067	-13
Florien	Brown Road	329241C	142	59	Passive	2	No	10.7	9121	0.0286	35	0.0027	0.0107	21.5	8162	0.037	27	0.0037	0.0139	0.0084	-8
Florien	Gandy Road	329250B	142	59	Lights and Gates	2	No	10.7	9121	0.0069	144	0.0007	0.0026	21.5	8162	0.0094	107	0.001	0.0035	0.0024	-37

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Florien	High School	329109E	211	59	Lights and Gates	2	Yes	10.7	9121	0.0077	129	0.0008	0.0029	21.5	8162	0.0104	96	0.0011	0.0039	0.0027	-33
Florien	Port Arthur Avenue	329244X	1624	59	Lights and Gates	2	Yes	10.7	9121	0.0132	76	0.0019	0.0059	21.5	8162	0.0174	57	0.0026	0.0078	0.0042	-18
Florien	West Front Street	329243R	436	59	Lights and Gates	2	Yes	10.7	9121	0.0094	106	0.001	0.0035	21.5	8162	0.0126	80	0.0014	0.0047	0.0032	-27
Frierson	Bloxum Road	329161J	126	50	Passive	2	Yes	25.1	10144	0.0238	42	0.0031	0.0103	36	9412	0.0276	36	0.0037	0.0119	0.0038	-6
Frierson	Farris Lane	329165L	68	59	Passive	2	Yes	10.7	9121	0.0144	70	0.0015	0.0054	21.5	8162	0.0197	51	0.0021	0.0074	0.0053	-19
Frierson	Gravel Point Road	329164E	3015	55	Lights and Gates	2	Yes	25.1	10144	0.0213	47	0.0022	0.0079	36	9412	0.0243	41	0.0026	0.0090	0.003	-6
Frierson	Louisiana 175	329162R	7850	55	Lights and Gates	2	Yes	25.1	10144	0.0264	38	0.0037	0.0116	36	9412	0.0298	34	0.0043	0.0131	0.0034	-4

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Hornbeck	Barham Road	329255K	100	40	Lights and Gates	2	Yes	10.7	9121	0.0063	159	0.0005	0.0022	21.5	8162	0.0085	117	0.0007	0.0029	0.0022	-41
Hornbeck	Port Arthur Avenue	329253W	2581	40	Lights and Gates	2	Yes	10.7	9121	0.0149	67	0.0015	0.0061	21.5	8162	0.0195	51	0.0021	0.0080	0.0046	-16
Hornbeck	White City Road	329254D	366	40	Lights and Gates	2	Yes	10.7	9121	0.009	111	0.0006	0.0031	21.5	8162	0.012	83	0.0009	0.0041	0.003	-28
Leesville	Beltz Road	329290Y	476	40	Lights and Gates	2	Yes	11	9121	0.0097	103	0.0007	0.0033	21.8	8162	0.0129	77	0.0010	0.0044	0.0032	-25
Leesville	East Court House	329278S	431	40	Lights and Gates	2	Yes	11	9121	0.0095	106	0.0007	0.0033	21.8	8162	0.0126	79	0.0010	0.0043	0.0031	-26
Leesville	East Lula Street	329279Y	4452	40	Lights and Gates	2	Yes	11	9121	0.0172	58	0.0015	0.0071	21.8	8162	0.0222	45	0.0020	0.0092	0.005	-13

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Leesville	East Maggie Street	329280T	1326	40	Lights and Gates	2	Yes	11	9121	0.0127	79	0.0008	0.0044	21.8	8162	0.0167	60	0.0010	0.0057	0.004	-19
Leesville	East Mechanic Street	329273H	1221	40	Lights and Gates	2	Yes	11	9121	0.0124	80	0.0009	0.0043	21.8	8162	0.0163	61	0.0012	0.0056	0.0039	-19
Leesville	East Texas Street	329277K	1118	40	Lights and Gates	2	Yes	11	9121	0.0121	82	0.0009	0.0042	21.8	8162	0.016	63	0.0012	0.0055	0.0038	-20
Leesville	Eissman Road	329292M	670	59	Lights and Gates	2	Yes	11	9121	0.0106	94	0.0011	0.004	21.8	8162	0.0141	71	0.0015	0.0053	0.0034	-23
Leesville	Hawthorne Road	329266X	1563	50	Lights and Gates	2	Yes	10.7	9121	0.043	23	0.0038	0.0155	21.5	8162	0.0505	20	0.0047	0.0182	0.0075	-3
Leesville	Ind Park Road	329267E	35	50	Lights and Gates	2	Yes	10.7	9121	0.0047	212	0.0004	0.0017	21.5	8162	0.0064	156	0.0006	0.0023	0.0017	-56

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Leesville	Louisiana Street	329284V	3515	40	Lights and Gates	2	Yes	11	9121	0.0162	62	0.0013	0.0067	21.8	8162	0.021	48	0.0018	0.0087	0.0048	-14
Leesville	Nona Street	329270M	2296	40	Lights and Gates	2	Yes	11	9121	0.0146	69	0.0011	0.0050	21.8	8162	0.019	53	0.0015	0.0065	0.0044	-16
Leesville	North Third Street	329274P	1398	40	Lights and Gates	2	Yes	11	9121	0.0129	78	0.0009	0.0044	21.8	8162	0.0169	59	0.0013	0.0058	0.004	-19
Leesville	Red Town Road	329286J	1504	40	Lights and Gates	2	Yes	11	9121	0.0131	76	0.0008	0.0045	21.8	8162	0.0172	58	0.0011	0.0059	0.0041	-18
Leesville	Warner Street	329641V	3042	40	Lights and Gates	2	Yes	11	9121	0.0156	64	0.0011	0.0054	21.8	8162	0.0203	49	0.0016	0.0070	0.0047	-15
Mansfield	Gibbs Street	329183J	9681	40	Lights and Gates	2	Yes	10.7	9121	0.0204	49	0.0015	0.0070	21.5	8162	0.0262	38	0.0020	0.0090	0.0058	-11

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State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Mansfield	Holly Hill Drive	329179U	92	59	Passive	2	Yes	10.7	9121	0.0158	63	0.0016	0.0059	21.5	8162	0.0215	46	0.0023	0.0081	0.0057	-17
Mansfield	Janear Circle	329169N	468	59	Lights and Gates	2	Yes	10.7	9121	0.0096	104	0.001	0.0036	21.5	8162	0.0128	78	0.0014	0.0048	0.0032	-26
Mansfield	Jefferson Street	329185X	1953	40	Lights and Gates	2	Yes	10.7	9121	0.0139	72	0.0010	0.0048	21.5	8162	0.0182	55	0.0014	0.0063	0.0044	-17
Mansfield	Jenkins Street	329187L	7616	40	Lights and Gates	4	Yes	10.7	9121	0.0241	41	0.0017	0.0083	21.5	8162	0.0305	33	0.0023	0.0105	0.0064	-9
Mansfield	Lewis Lane	329171P	55	59	Passive	1	No	10.7	9121	0.022	45	0.0023	0.0082	21.5	8162	0.0292	34	0.0032	0.011	0.0072	-11
Mansfield	Louisiana 3015	329175S	597	59	Lights and Gates	2	Yes	10.7	9121	0.0102	98	0.0011	0.0038	21.5	8162	0.0136	74	0.0015	0.0051	0.0034	-24
Mansfield	Oxford Road	329184R	914	40	Lights and Gates	2	Yes	10.7	9121	0.0114	88	0.0008	0.0039	21.5	8162	0.0151	66	0.0012	0.0052	0.0037	-22

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Mansfield	Pegues Street	329181V	220	40	Lights and Gates	2	Yes	10.7	9121	0.0078	128	0.0006	0.0027	21.5	8162	0.0105	95	0.0008	0.0036	0.0027	-33
Mansfield	Pinkney Drive	329174K	94	59	Passive	2	Yes	10.7	9121	0.0489	20	0.0051	0.0183	21.5	8162	0.0593	17	0.0064	0.0222	0.0104	-4
Mansfield	Polk Street	329182C	13826	40	Lights and Gates	4	Yes	10.7	9121	0.0274	36	0.0020	0.0094	21.5	8162	0.0343	29	0.0026	0.0118	0.0068	-7
Many	McDonald Drive	329237M	1	59	Lights and Gates	2	Yes	10.7	9121	0.0018	556	0.0002	0.0007	21.5	8162	0.0025	405	0.0003	0.0009	0.0007	-151
Many	McGarrahan Road	329232D	150	40	Lights and Gates	2	No	10.7	9121	0.0071	142	0.0005	0.0024	21.5	8162	0.0095	105	0.0007	0.0033	0.0025	-37
Many	San Antonio Avenue / Texas	329234S	8143	59	Lights and Gates	2	Yes	10.7	9121	0.0547	18	0.0057	0.0205	21.5	8162	0.0648	15	0.007	0.0243	0.0101	-3

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Many	Sycamore Street	329235Y	834	59	Lights and Gates	2	Yes	10.7	9121	0.0111	90	0.0012	0.0042	21.5	8162	0.0148	68	0.0016	0.0055	0.0037	-22
Merryville	Smokey Cove Road	329335D	218	59	Lights and Gates	2	Yes	11	9121	0.0079	127	0.0008	0.003	21.8	8162	0.0105	95	0.0011	0.004	0.0027	-32
Mooringsport	Barnette Road	329020A	147	55	Lights and Gates	2	No	13.5	9651	0.0077	129	0.001	0.0034	25.9	8128	0.0102	98	0.0014	0.0045	0.0025	-31
Mooringsport	Croom Street	329018Y	1781	55	Lights and Gates	2	Yes	13.5	9651	0.0148	67	0.0015	0.0055	25.9	8128	0.0191	52	0.002	0.007	0.0043	-15
Mooringsport	Dixie-Mooringsport Rola 169	329019F	234	55	Lights and Gates	2	Yes	13.5	9651	0.0088	114	0.0012	0.0039	25.9	8128	0.0115	87	0.0016	0.0051	0.0028	-27
New Llano	Jean Chapel Road	329296P	1073	50	Lights and Gates	2	Yes	11	9121	0.012	83	0.0011	0.0043	21.8	8162	0.0158	63	0.0015	0.0057	0.0038	-20

Table H.1-4. Grade Crossing Safety by State and City

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								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
New Llano	Lebleu Road / Pickering	329297W	35	50	Lights and Gates	2	Yes	11	9121	0.0048	210	0.0004	0.0017	21.8	8162	0.0065	155	0.0006	0.0023	0.0017	-55
New Llano	Lewis Perkins Road	329293U	90	59	Passive	2	Yes	11	9121	0.0489	20	0.0051	0.0183	21.8	8162	0.0591	17	0.0064	0.0221	0.0102	-4
Noble	Louisiana 1218	329215M	1044	45	Lights and Gates	2	Yes	10.7	9121	0.0118	85	0.0013	0.0050	21.5	8162	0.0156	64	0.0018	0.0066	0.0038	-21
Noble	Mulberry Ln	329220J	78	45	Passive	1	Yes	10.7	9121	0.0137	73	0.0015	0.0058	21.5	8162	0.0188	53	0.0022	0.0080	0.0051	-20
Noble	Shiloh Road	329217B	117	59	Lights and Gates	2	No	10.7	9121	0.0066	152	0.0007	0.0025	21.5	8162	0.0089	112	0.001	0.0033	0.0023	-39
Oil City	Allen Street	329013P	656	55	Lights and Gates	2	Yes	13.5	9651	0.0115	87	0.0011	0.0042	25.9	8128	0.015	67	0.0016	0.0055	0.0035	-20
Oil City	Furman Street	329014W	351	55	Flashing Lights	2	Yes	13.5	9651	0.0096	104	0.0009	0.0035	25.9	8128	0.0127	79	0.0013	0.0047	0.0031	-25

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Oil City	Land Avenue	329015D	117	55	Lights and Gates	2	Yes	13.5	9651	0.0073	137	0.0007	0.0027	25.9	8128	0.0096	104	0.001	0.0036	0.0023	-33
Oil City	Louisiana 538	329011B	2182	55	Lights and Gates	2	Yes	13.5	9651	0.0156	64	0.0021	0.0069	25.9	8128	0.02	50	0.0028	0.0088	0.0044	-14
Oil City	Main Street	329012H	586	55	Lights and Gates	2	Yes	13.5	9651	0.0112	89	0.0011	0.0041	25.9	8128	0.0146	69	0.0015	0.0054	0.0034	-21
Rodessa	Broadwell Road	328982K	167	55	Passive	2	Yes	13.5	9651	0.0204	49	0.0020	0.0075	25.9	8128	0.0269	37	0.0028	0.0099	0.0064	-12
Rodessa	Capps City Road	328983S	241	55	Lights and Gates	2	Yes	13.5	9651	0.0088	113	0.0009	0.0033	25.9	8128	0.0116	86	0.0012	0.0043	0.0028	-27
Rodessa	Journey Street	328988B	902	55	Lights and Gates	2	Yes	13.5	9651	0.0125	80	0.0012	0.0046	25.9	8128	0.0162	62	0.0017	0.006	0.0037	-18

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Rodessa	Main Street	328987U	1084	55	Lights and Gates	2	Yes	13.5	9651	0.0131	76	0.0018	0.0058	25.9	8128	0.017	59	0.0024	0.0075	0.0039	-17
Rodessa	Standard Oil Road	328986M	65	55	Passive	2	Yes	13.5	9651	0.0153	65	0.0015	0.0057	25.9	8128	0.0205	49	0.0021	0.0076	0.0052	-17
Rosepine	Ambler Road	329305L	664	59	Lights and Gates	2	Yes	11	9121	0.0106	94	0.0011	0.004	21.8	8162	0.014	71	0.0015	0.0053	0.0034	-23
Rosepine	Bailey Road	329306T	1185	59	Lights and Gates	2	Yes	11	9121	0.0123	81	0.0013	0.0046	21.8	8162	0.0162	62	0.0018	0.0061	0.0039	-19
Rosepine	Calhoun Dairy Drive	331348E	1172	59	Lights and Gates	2	Yes	11	9121	0.0415	24	0.0059	0.0185	21.8	8162	0.0485	21	0.0072	0.0216	0.007	-3
Rosepine	Davis Lane	329310H	584	59	Lights and Gates	2	Yes	11	9121	0.0379	26	0.0037	0.0142	21.8	8162	0.0439	23	0.0045	0.0164	0.006	-4

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Rosepine	Graham Road	329299K	180	59	Passive	2	No	11	9121	0.0308	32	0.0032	0.0115	21.8	8162	0.0393	25	0.0043	0.0147	0.0085	-7
Rosepine	Louisiana 10	329298D	8436	50	Lights and Gates	2	Yes	11	9121	0.02	50	0.0016 ~~0.0019~~	0.0072~~0~~ ~~.0075~~	21.8	8162	0.0256	39	0.0022 ~~0.0026~~	0.0092~~0~~ ~~.0096~~	0.0056	-11
Rosepine	Main Street	329308G	2929	59	Lights and Gates	2	Yes	11	9121	0.0155	65	0.0016	0.0058	21.8	8162	0.0201	50	0.0022	0.0075	0.0046	-15
Rosepine	Pinewood Road	329302R	312	59	Lights and Gates	2	Yes	11	9121	0.0087	115	0.0009	0.0033	21.8	8162	0.0116	86	0.0013	0.0043	0.0029	-29
Rosepine	Research Station	329303X	117	59	Passive	2	Yes	11	9121	0.0172	58	0.0018	0.0064	21.8	8162	0.0232	43	0.0025	0.0087	0.006	-15
Shreveport	75th Street	328960K	1172	50	Lights and Gates	2	Yes	25.1	10144	0.0171	59	0.0016	0.0062	36	9412	0.0196	51	0.0019	0.0071	0.0025	-8

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Shreveport	Bostwick Road	329035P	364	40	Lights and Gates	2	Yes	13.5	9651	0.0113	89	0.0008	0.0036	25.9	8128	0.0147	68	0.0011	0.0047	0.0034	-21
Shreveport	Bostwick Road	329036W	234	40	Lights and Gates	2	Yes	13.5	9651	0.0101	99	0.0007	0.0032	25.9	8128	0.0132	76	0.001	0.0042	0.0031	-23
Shreveport	Dalton Street	329152K	1963	50	Lights and Gates	2	Yes	25.1	10144	0.0193	52	0.0018	0.007	36	9412	0.0221	45	0.0022	0.008	0.0028	-7
Shreveport	East 79th Street	329127C	1757	50	Lights and Gates	2	Yes	25.1	10144	0.0188	53	0.0018	0.0068	36	9412	0.0215	46	0.0021	0.0078	0.0027	-7
Shreveport	East 85th Street	329128J	2929	50	Lights and Gates	2	Yes	25.1	10144	0.0212	47	0.002	0.0077	36	9412	0.0242	41	0.0024	0.0087	0.003	-6
Shreveport	Flournoy Lucas Road	329154Y	20451	50	Lights and Gates	2	Yes	25.1	10144	0.0321	31	0.003	0.0116	36	9412	0.0359	28	0.0035	0.013	0.0038	-3

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Shreveport	Hoadley Street	329114B	62	30	Flashing Lights	1	Yes	25.1	10144	0.0058	173	0.0003	0.0019	36	9412	0.0068	146	0.0004	0.0022	0.0011	-27
Shreveport	Norris Ferry Road	329157U	4988	50	Lights and Gates	2	Yes	25.1	10144	0.0239	42	0.0031	0.0103	36	9412	0.0271	37	0.0036	0.0117	0.0032	-5
Shreveport	Overton Brooks Road	329156M	1047	50	Lights and Gates	2	Yes	25.1	10144	0.0166	60	0.0022	0.0072	36	9412	0.0191	52	0.0026	0.0082	0.0025	-8
Shreveport	Pueblo Lane	329159H	131	50	Lights and Gates	2	Yes	25.1	10144	0.0098	102	0.0013	0.0042	36	9412	0.0114	88	0.0015	0.0049	0.0016	-14
Singer	East Iowa Road	329340A	799	59	Lights and Gates	2	Yes	11	9121	0.0111	90	0.0012	0.0042	21.8	8162	0.0147	68	0.0016	0.0055	0.0036	-22
Singer	Fielding Williams Road Rt	329339F	124	59	Passive	2	Yes	11	9121	0.0175	57	0.0018	0.0066	21.8	8162	0.0236	42	0.0026	0.0088	0.0061	-15

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Singer	Louisiana 110	329332H	1172	59	Lights and Gates	2	Yes	11	9121	0.0415	24	0.0059	0.0185	21.8	8162	0.0485	21	0.0072	0.0216	0.007	-3
Singer	Louisiana 27	329337S	4159	59	Lights and Gates	2	Yes	11	9121	0.0169	59	0.0024	0.0075	21.8	8162	0.0218	46	0.0032	0.0097	0.005	-13
Singer	Newlin Cemetery Road	329329A	40	59	Passive	2	Yes	11	9121	0.0122	82	0.0017	0.0055	21.8	8162	0.0169	59	0.0025	0.0075	0.0046	-22
Singer	Old Seale Road	329338Y	127	59	Lights and Gates	2	Yes	11	9121	0.0068	147	0.001	0.003	21.8	8162	0.0091	109	0.0014	0.0041	0.0023	-38
South Mansfield	Catuna Road	329202L	138	59	Lights and Gates	2	Yes	10.7	9121	0.0069	145	0.0007	0.0026	21.5	8162	0.0093	107	0.001	0.0035	0.0024	-38
South Mansfield	Cavilier Drive	329193P	33	50	Lights and Gates	2	Yes	10.7	9121	0.0046	216	0.0004	0.0017	21.5	8162	0.0063	159	0.0006	0.0023	0.0017	-57

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
South Mansfield	Hudson Darby Road	329200X	210	59	Lights and Gates	2	Yes	10.7	9121	0.0077	129	0.0008	0.0029	21.5	8162	0.0104	96	0.0011	0.0039	0.0027	-33
South Mansfield	Oak Hill Street	329191B	895	50	Lights and Gates	2	Yes	10.7	9121	0.0683	15	0.0061	0.0247	21.5	8162	0.0779	13	0.0073	0.0282	0.0096	-2
South Mansfield	Old US 171	329199F	26	59	Passive	2	Yes	10.7	9121	0.0105	96	0.0011	0.0039	21.5	8162	0.0146	68	0.0016	0.0055	0.0041	-27
South Mansfield	Old US 171	329201E	146	59	Passive	1	No	10.7	9121	0.0289	35	0.003	0.0108	21.5	8162	0.0373	27	0.0041	0.014	0.0084	-8
South Mansfield	Railroad Avenue / Map	329192H	2335	50	Lights and Gates	2	Yes	10.7	9121	0.0145	69	0.0013	0.0052	21.5	8162	0.019	53	0.0018	0.0069	0.0045	-16
Starks	Bigwoods Stark Road	329353B	889	59	Lights and Gates	2	Yes	10.2	8441	0.0111	90	0.0016	0.0049	21.1	7874	0.0149	67	0.0022	0.0067	0.0038	-23

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Starks	Church Street	329352U	161	59	Passive	2	Yes	10.2	8441	0.0183	55	0.0019	0.0069	21.1	7874	0.025	40	0.0027	0.0094	0.0067	-15
Starks	Creek Road	329350F	230	59	Passive	2	No	10.2	8441	0.0318	31	0.0045	0.0142	21.1	7874	0.0411	24	0.0061	0.0183	0.0093	-7
Starks	General Box Road	329351M	117	59	Passive	2	No	10.2	8441	0.0266	38	0.0037	0.0119	21.1	7874	0.0351	28	0.0052	0.0157	0.0085	-9
Starks	Green-Moore Rd	329355P	492	59	Lights and Gates	2	Yes	10.2	8441	0.0095	105	0.0013	0.0042	21.1	7874	0.0129	78	0.0019	0.0057	0.0034	-28
Starks	Louisiana 109	329354H	2460	59	Lights and Gates	2	Yes	10.2	8441	0.0453	22	0.0064	0.0202	21.1	7874	0.0538	19	0.008	0.024	0.0085	-3
Stonewall	Mount Zion Road	329166T	937	59	Lights and Gates	2	Yes	10.7	9121	0.0115	87	0.0016	0.0051	21.5	8162	0.0152	66	0.0023	0.0068	0.0037	-21
Vivian	Camp Vivian Road	329006E	4687	55	Lights and Gates	2	Yes	13.5	9651	0.0188	53	0.0025	0.0083	25.9	8128	0.0239	42	0.0034	0.0105	0.0051	-11

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Vivian	East Alabama Avenue	328997A	1338	55	Lights and Gates	2	Yes	13.5	9651	0.0138	72	0.0014	0.0051	25.9	8128	0.0178	56	0.0018	0.0066	0.004	-16
Vivian	East Arkansas Avenue	328998G	5572	55	Lights and Gates	2	Yes	13.5	9651	0.0196	51	0.0019	0.0072	25.9	8128	0.0248	40	0.0026	0.0091	0.0052	-11
Vivian	Mira-Myrtis Road	328991J	902	55	Lights and Gates	2	Yes	13.5	9651	0.0419	24	0.0057	0.0184	25.9	8128	0.0486	21	0.0069	0.0214	0.0067	-3
Vivian	Roy Hopkins Drive	329007L	1	55	Lights and Gates	2	Yes	13.5	9651	0.002	501	0.0002	0.0007	25.9	8128	0.0027	372	0.0003	0.001	0.0007	-128
Zwolle	Laroux Street	329224L	216	50	Lights and Gates	2	Yes	10.7	9121	0.0078	128	0.0007	0.0028	21.5	8162	0.0105	96	0.0010	0.0038	0.0027	-33
Zwolle	Obrie Street	329226A	9256	50	Lights and Gates	2	Yes	10.7	9121	0.0202	49	0.0025	0.0087	21.5	8162	0.026	39	0.0033	0.0112	0.0057	-11

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Zwolle	Port Arthur Avenue	329227G	2536	50	Lights and Gates	2	Yes	10.7	9121	0.0148	68	0.0013	0.0053	21.5	8162	0.0194	52	0.0018	0.0070	0.0046	-16
Zwolle	Sabine Wildlife M	329231W	83	40	Passive	2	No	10.7	9121	0.0221	45	0.0016	0.0076	21.5	8162	0.0293	34	0.0022	0.0101	0.0073	-11
Missouri																					
Amoret	Main Street	329890B	739	55	Lights and Gates	2	Yes	17.6	8899	0.0132	76	0.0018	0.0058	30.4	7975	0.0165	61	0.0024	0.0072	0.0032	-15
Amoret	NW 802	329891H	9	55	Passive	1	No	17.6	8899	~~0.0157~~ 0.0153	66	0.0021	0.0067	30.4	7975	0.0196	51	0.0028	0.0086	0.0043	-14
Amoret	Road 12761	329894D	6	55	Passive	1	No	17.6	8899	0.0134	75	0.0018	0.0059	30.4	7975	0.0173	58	0.0025	0.0076	0.0039	-17
Amoret	SW 4508	329897Y	10	55	Passive	1	No	17.6	8899	0.0161	62	0.0022	0.0071	30.4	7975	0.0206	49	0.0030	0.0091	0.0045	-13
Amoret	SW 5508	329898F	6	55	Passive	1	No	17.6	8899	0.0135	74	0.0019	0.0060	30.4	7975	0.0175	57	0.0025	0.0077	0.0039	-17

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Amoret	SW 6508	329899M	6	55	Passive	2	No	17.6	8899	0.0135	74	0.0019	0.0060	30.4	7975	0.0175	57	0.0025	0.0077	0.0039	-17
Amoret	SW 7008	329900E	6	55	Passive	2	No	17.6	8899	0.0135	74	0.0019	0.0060	30.4	7975	0.0175	57	0.0025	0.0077	0.0039	-17
Amoret	SW 7508	329901L	21	55	Passive	2	No	17.6	8899	0.0199	50	0.0027	0.0088	30.4	7975	0.0251	40	0.0036	0.0111	0.0052	-10
Amsterdam	Main Street	329880V	186	55	Lights and Gates	2	Yes	17.6	8899	0.0092	108	0.0013	0.0041	30.4	7975	0.0116	86	0.0017	0.0051	0.0024	-22
Amsterdam	Missouri Y	329876F	620	55	Lights and Gates	2	Yes	17.6	8899	0.0126	79	0.0017	0.0056	30.4	7975	0.0158	63	0.0023	0.0069	0.0031	-16
Amsterdam	North Street	329879B	59	55	Passive	2	No	17.6	8899	0.0268	37	0.0037	0.0118	30.4	7975	0.0331	30	0.0047	0.0146	0.0063	-7
Amsterdam	NW 3002	329889G	102	55	Passive	1	No	17.6	8899	0.0311	32	0.0043	0.0137	30.4	7975	0.0379	26	0.0054	0.0167	0.0068	-6
Amsterdam	NW 4002	329886L	4	55	Passive	1	No	17.6	8899	0.0122	82	0.0017	0.0054	30.4	7975	0.0158	63	0.0023	0.0070	0.0036	-19

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Amsterdam	Walnut Street	329881C	76	55	Passive	2	Yes	17.6	8899	0.0181	55	0.0025	0.0080	30.4	7975	0.0230	43	0.0033	0.0101	0.0049	-12
Amsterdam	Walnut Street	329905N	178	55	Passive	2	Yes	17.6	8899	0.0233	43	0.0032	0.0103	30.4	7975	0.0291	34	0.0042	0.0128	0.0058	-9
Anderson	Beaver Street	330156J	1917	30	Lights and Gates	2	Yes	16.2	8508	0.0162	62	0.0009	0.0052	28.6	7385	0.0202	50	0.0012	0.0065	0.0039	-12
Anderson	Hagee Road / Nw7131	330151A	6	40	Passive	1	No	16.2	8508	0.012	84	0.0012	0.0049	28.6	7385	0.0156	64	0.0017	0.0065	0.0037	-20
Anderson	Main Street	330155C	1941	30	Lights and Gates	1	Yes	16.2	8508	0.0145	69	0.0008	0.0047	28.6	7385	0.0181	55	0.0011	0.0058	0.0036	-14
Anderson	Mill Street	330157R	234	30	Lights and Gates	2	Yes	16.2	8508	0.0095	105	0.0008	0.0037	28.6	7385	0.012	83	0.0010	0.0047	0.0025	-22

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Anderson	Sellers Road	330153N	368	40	Lights and Gates	2	Yes	16.2	8508	0.0107	94	0.0011	0.0044	28.6	7385	0.0135	74	0.0015	0.0056	0.0028	-20
Anderson	Splitlog Road	330150T	30	40	Lights and Gates	2	Yes	16.2	8508	0.0054	185	0.0006	0.0022	28.6	7385	0.007	144	0.0008	0.0029	0.0015	-41
Arcadia	East Ulysses Road	329960N	12	55	Passive	1	No	17.6	8899	0.0168	60	0.0023	0.0074	30.4	7975	0.0214	47	0.0031	0.0094	0.0046	-13
Arcadia	East Yater Road	329964R	6	55	Passive	2	No	17.6	8899	0.0135	74	0.0019	0.0059	30.4	7975	0.0174	58	0.0025	0.0076	0.0039	-17
Arcadia	East Zebulon Road	329965X	12	55	Passive	1	No	17.6	8899	0.0168	60	0.0023	0.0074	30.4	7975	0.0214	47	0.0031	0.0094	0.0046	-13
Arcadia	Missouri FF	329961V	230	55	Lights and Gates	2	Yes	17.6	8899	0.0098	102	0.0013	0.0043	30.4	7975	0.0123	82	0.0018	0.0054	0.0025	-21

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Arcadia	NW 100th Road	329967L	6	55	Passive	1	No	17.6	8899	0.0135	74	0.0019	0.0059	30.4	7975	0.0174	58	0.0025	0.0076	0.0039	-17
Arcadia	NW 80th Road	329974W	2	55	Passive	1	No	17.6	8899	0.0100	100	0.0014	0.0044	30.4	7975	0.0130	77	0.0019	0.0057	0.0030	-23
Arcadia	Waldo Road	329962C	6	55	Passive	1	No	17.6	8899	0.0135	74	0.0019	0.0059	30.4	7975	0.0174	58	0.0025	0.0076	0.0039	-17
Asbury	Main Street	330014T	152	55	Lights and Gates	2	Yes	16.2	8508	0.0085	118	0.0008	0.0031	28.6	7385	0.0108	93	0.0011	0.004	0.0023	-25
Asbury	Missouri CC	330013L	94	55	Lights and Gates	2	Yes	16.2	8508	0.0074	135	0.0010	0.0033	28.6	7385	0.0095	106	0.0013	0.0042	0.002	-29
Asbury	Pine	329987X	60	55	Passive	2	No	16.2	8508	0.0261	38	0.0036	0.0115	28.6	7385	0.0325	31	0.0046	0.0143	0.0065	-8
Asbury	Road 300	330015A	88	55	Passive	2	No	16.2	8508	0.0724	14	0.0099	0.0319	28.6	7385	0.0847	12	0.0121	0.0373	0.0123	-2

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Asbury	State Line Avenue	329986R	19	55	Passive	2	No	16.2	8508	0.0186	54	0.0025	0.0082	28.6	7385	0.0238	42	0.0034	0.0105	0.0052	-12
Belton	183rd Street	329818K	479	55	Lights and Gates	2	Yes	17.6	8899	0.0118	84	0.0016	0.0052	30.4	7975	0.0148	68	0.0021	0.0065	0.0029	-17
Belton	187th Street	329821T	527	55	Lights and Gates	2	Yes	17.6	8899	0.0412	24	0.0041	0.0152	30.4	7975	0.0466	21	0.0049	0.0172	0.0054	-3
Birmingham	Fifth Street	375408J	338	25	Lights and Gates	2	Yes	3.8	12445	0.0065	153	0.0004	0.0023	18.2	7045	0.0125	80	0.0009	0.0044	0.006	-74
Birmingham	North Arlington Avenue	375407C	2574	25	Lights and Gates	2	Yes	3.8	12445	0.0112	89	0.0007	0.0039	18.2	7045	0.0206	49	0.0014	0.0072	0.0094	-41
Birmingham	Street Louis Avenue	375409R	351	25	Passive	2	No	3.8	12445	0.0199	50	0.0012	0.0069	18.2	7045	0.0366	27	0.0025	0.0128	0.0168	-23

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Braymer	Hickory 205 Liv 401	375475D	6	40	Passive	1	No	4	12445	0.0059	170	0.0006	0.0024	18.4	7045	0.0125	80	0.0013	0.0051	0.0066	-90
Braymer	Highway North 9th Street	375473P	441	40	Flashing Lights	2	Yes	4	12445	0.006	168	0.0006	0.0025	18.4	7045	0.0118	85	0.0012	0.0049	0.0058	-83
Braymer	Main Street	375471B	1526	40	Flashing Lights	2	Yes	4	12445	0.0093	107	0.0009	0.0039	18.4	7045	0.0175	57	0.0018	0.0072	0.0081	-50
Braymer	SE Bethany Drive/ 22nd	375467L	6	40	Passive	1	No	4	12445	0.0059	170	0.0006	0.0024	18.4	7045	0.0125	80	0.0013	0.0051	0.0066	-90
Braymer	SE Honeysuckle Drive	375474W	6	40	Passive	2	No	4	12445	0.0059	170	0.0006	0.0024	18.4	7045	0.0125	80	0.0013	0.0051	0.0066	-90

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Braymer	SE Kirkpatrick Road 22	375469A	6	40	Passive	2	No	4	12445	0.0059	170	0.0006	0.0024	18.4	7045	0.0125	80	0.0013	0.0051	0.0066	-90
Buffalo	33rd Road	329981G	110	55	Lights and Gates	2	No	17.6	8899	0.008	125	0.0011	0.0035	30.4	7975	0.0101	99	0.0014	0.0045	0.0021	-26
Buffalo	35th Road	329979F	68	55	Passive	2	No	17.6	8899	0.0280	36	0.0039	0.0123	30.4	7975	0.0344	29	0.0049	0.0151	0.0064	-7
Buffalo	40th Road	329978Y	439	55	Passive	2	No	17.6	8899	0.0437	23	0.0060	0.0192	30.4	7975	0.0513	19	0.0073	0.0226	0.0076	-3
Carl Junction	East Pennell	330035L	5710	50	Lights and Gates	2	Yes	16.2	8508	0.021	48	0.0027	0.0091	28.6	7385	0.0258	39	0.0034	0.0111	0.0047	-9
Carl Junction	Ivy Street	330033X	229	50	Lights and Gates	2	Yes	16.2	8508	0.0094	106	0.0012	0.0041	28.6	7385	0.012	84	0.0016	0.0052	0.0025	-22
Carl Junction	Kafir Road	330028B	141	55	Lights and Gates	2	Yes	16.2	8508	0.0343	29	0.0047	0.0151	28.6	7385	0.0384	26	0.0055	0.0169	0.0041	-3

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Carl Junction	Karen Drive	330034E	397	50	Lights and Gates	2	Yes	16.2	8508	0.0109	92	0.0014	0.0047	28.6	7385	0.0138	73	0.0018	0.0059	0.0029	-19
Carl Junction	Missouri YY	330031J	1712	50	Lights and Gates	2	Yes	16.2	8508	0.0478	21	0.006	0.0207	28.6	7385	0.0547	18	0.0072	0.0237	0.0069	-3
Carl Junction	Road 284	330029H	7	55	Lights and Gates	2	Yes	16.2	8508	0.0035	282	0.0005	0.0016	28.6	7385	0.0046	219	0.0007	0.002	0.001	-64
Chillicothe	County Road 222	375530B	32	40	Passive	1	No	4	12445	0.0105	95	0.001	0.0043	18.4	7045	0.0211	47	0.0022	0.0087	0.0106	-48
Chillicothe	County Road 226	375528A	23	40	Passive	1	No	4	12445	0.0094	107	0.0009	0.0039	18.4	7045	0.0191	52	0.002	0.0079	0.0097	-54
Chillicothe	County Road 228	375526L	12	40	Passive	1	No	4	12445	0.0075	134	0.0007	0.0031	18.4	7045	0.0155	64	0.0016	0.0064	0.0081	-70

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Chillicothe	County Road 230	375522J	12	40	Lights and Gates	2	No	4	12445	0.0022	450	0.0002	0.0009	18.4	7045	0.0044	227	0.0005	0.0018	0.0022	-223
Chillicothe	Jackson Street	375515Y	1636	40	Lights and Gates	2	Yes	4	12445	0.0088	113	0.0006	0.003	18.4	7045	0.0164	61	0.0012	0.0056	0.0076	-52
Chillicothe	Third Street	375514S	1367	40	Lights and Gates	2	No	4	12445	0.0084	119	0.0006	0.0029	18.4	7045	0.0157	64	0.0012	0.0054	0.0073	-55
Chillicothe	Trenton Road	375518U	94	40	Passive	1	No	4	12445	0.0148	68	0.001	0.0051	18.4	7045	0.0285	35	0.0021	0.0098	0.0137	-32
Chula	County Road 204	375545R	6	40	Passive	1	No	4	12445	0.0059	170	0.0006	0.0024	18.4	7045	0.0125	80	0.0013	0.0051	0.0066	-90
Chula	County Road 251	375533W	23	40	Passive	1	No	4	12445	0.0094	107	0.0009	0.0039	18.4	7045	0.0191	52	0.002	0.0079	0.0097	-54
Chula	Highway M	375534D	84	40	Passive	2	Yes	4	12445	0.0084	119	0.0008	0.0035	18.4	7045	0.0173	58	0.0018	0.0072	0.0089	-61

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Chula	Highway V	375538F	273	40	Flashing Lights	2	Yes	4	12445	0.005	201	0.0005	0.0021	18.4	7045	0.01	100	0.001	0.0042	0.0051	-101
Chula	Mansur Street Highway K	375541N	164	40	Flashing Lights	2	Yes	4	12445	0.0041	243	0.0004	0.0017	18.4	7045	0.0084	119	0.0009	0.0035	0.0043	-124
Cleveland	233 Road	329834U	12	55	Passive	2	No	17.6	8899	0.0170	59	0.0023	0.0075	30.4	7975	0.0216	46	0.0031	0.0095	0.0047	-13
Cleveland	259th Street	329837P	18	45	Lights and Gates	2	No	17.6	8899	0.0049	204	0.0006	0.0021	30.4	7975	0.0062	160	0.0008	0.0026	0.0013	-44
Cleveland	Lone Pine Drive	329836H	6	45	Lights and Gates	2	Yes	17.6	8899	0.0036	278	0.0004	0.0015	30.4	7975	0.0046	217	0.0006	0.0019	0.001	-61
Cleveland	Main Street	329835B	2380	45	Lights and Gates	2	Yes	17.6	8899	0.0177	57	0.0020	0.0075	30.4	7975	0.0217	46	0.0026	0.0092	0.004	-10

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Cleveland	Missouri 2	329839D	3125	55	Lights and Gates	2	Yes	17.6	8899	0.0189	53	0.0026	0.0083	30.4	7975	0.0231	43	0.0033	0.0102	0.0042	-10
Cowgill	Main Street	375461V	180	40	Flashing Lights	2	Yes	4	12445	0.0043	235	0.0004	0.0018	18.4	7045	0.0087	115	0.0009	0.0036	0.0044	-120
Cowgill	SE Chiefs Road	375466E	6	40	Passive	1	No	4	12445	0.0059	170	0.0006	0.0024	18.4	7045	0.0125	80	0.0013	0.0051	0.0066	-90
Cowgill	SE Oliver Road	375465X	23	40	Passive	1	No	4	12445	0.0094	106	0.0009	0.0039	18.4	7045	0.0192	52	0.002	0.0079	0.0098	-54
Cowgill	SE Wildlife Road	375459U	12	40	Passive	2	No	4	12445	0.0075	134	0.0007	0.0031	18.4	7045	0.0155	64	0.0016	0.0064	0.0081	-70
Cowgill	Walnut Street	375462C	23	40	Passive	2	No	4	12445	0.0094	106	0.0009	0.0039	18.4	7045	0.0192	52	0.002	0.0079	0.0098	-54

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Dawn	County Road 418	375484C	17	40	Passive	1	No	4	12445	0.0084	119	0.0008	0.0035	18.4	7045	0.0174	58	0.0018	0.0072	0.009	-61
Dawn	County Road 419	375482N	6	40	Passive	1	No	4	12445	0.0059	170	0.0006	0.0024	18.4	7045	0.0125	80	0.0013	0.0051	0.0066	-90
Dawn	Highway C	375483V	455	40	Flashing Lights	2	Yes	4	12445	0.006	166	0.0006	0.0025	18.4	7045	0.0119	84	0.0012	0.0049	0.0059	-82
Dawn	Highway Dd	375481G	397	40	Flashing Lights	2	Yes	4	12445	0.0057	174	0.0005	0.0024	18.4	7045	0.0114	88	0.0012	0.0047	0.0057	-87
Deerfield	East Katy Track Road	329942R	9	55	Passive	2	No	17.6	8899	0.0156	64	0.0022	0.0069	30.4	7975	0.0200	50	0.0029	0.0088	0.0044	-14
Deerfield	East Panama Road	329949N	23	55	Passive	2	No	17.6	8899	0.0207	48	0.0028	0.0091	30.4	7975	0.0260	38	0.0037	0.0115	0.0054	-10

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Deerfield	East Quail Road	329955S	6	55	Passive	1	No	17.6	8899	0.0135	74	0.0019	0.0059	30.4	7975	0.0174	58	0.0025	0.0076	0.0039	-17
Deerfield	Missouri KK	329956Y	270	55	Lights and Gates	2	Yes	17.6	8899	0.0102	98	0.0014	0.0045	30.4	7975	0.0128	78	0.0018	0.0056	0.0026	-20
Deerfield	Nebo Hill Road	329946T	6	55	Passive	1	No	17.6	8899	0.0135	74	0.0019	0.0059	30.4	7975	0.0174	58	0.0025	0.0076	0.0039	-17
Drexel	315 Street	329850D	6	55	Lights and Gates	2	No	17.6	8899	0.0037	274	0.0005	0.0016	30.4	7975	0.0047	214	0.0007	0.0021	0.001	-60
Drexel	341 Street	329858H	6	55	Passive	2	No	17.6	8899	0.0139	72	0.0019	0.0061	30.4	7975	0.0179	56	0.0026	0.0079	0.0040	-16
Drexel	347 Street	329860J	13	55	Lights and Gates	2	No	17.6	8899	0.0044	225	0.0006	0.002	30.4	7975	0.0057	176	0.0008	0.0025	0.0012	-49
Drexel	Ethel Street	329865T	2094	55	Lights and Gates	2	Yes	17.6	8899	0.0171	58	0.0024	0.0075	30.4	7975	0.0211	47	0.0030	0.0093	0.0039	-11

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Drexel	Main Street	329863E	294	55	Lights and Gates	2	Yes	17.6	8899	0.0104	96	0.0014	0.0046	30.4	7975	0.0131	77	0.0019	0.0058	0.0026	-19
Drexel	NW 16002	329866A	6	55	Lights and Gates	2	No	17.6	8899	0.0037	274	0.0005	0.0016	30.4	7975	0.0047	214	0.0007	0.0021	0.001	-60
Elmira	North Raum Road	375448G	74	60	Passive	2	No	3.8	12445	0.0154	65	0.0021	0.0069	18.2	7045	0.0297	34	0.0044	0.0133	0.0144	-31
Excelsior Springs	Dunbar Avenue	375439H	6048	60	Lights and Gates	2	Yes	3.8	12445	0.014	72	0.0014	0.0049	18.2	7045	0.025	40	0.0027	0.0087	0.011	-32
Excelsior Springs	Italian Way	375440C	3157	60	Lights and Gates	2	Yes	3.8	12445	0.0118	84	0.0016	0.005	18.2	7045	0.0216	46	0.0032	0.0091	0.0098	-38
Excelsior Springs	McLaery Road	375434Y	2073	60	Lights and Gates	2	No	3.8	12445	0.0106	94	0.0014	0.0044	18.2	7045	0.0196	51	0.0029	0.0082	0.009	-43

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Excelsior Springs	Salem Road	375442R	1035	60	Lights and Gates	2	Yes	3.8	12445	0.0088	113	0.0012	0.0037	18.2	7045	0.0166	60	0.0025	0.007	0.0078	-53
Foster	Missouri U	329896S	251	55	Lights and Gates	2	Yes	17.6	8899	0.01	100	0.0014	0.0044	30.4	7975	0.0126	80	0.0018	0.0055	0.0026	-20
Foster	SW 8508	329902T	18	55	Passive	2	No	17.6	8899	0.0191	52	0.0026	0.0084	30.4	7975	0.0241	41	0.0035	0.0106	0.0051	-11
Galt	102nd Avenue	375578D	23	40	Passive	1	No	3.4	12127	0.0087	114	0.0008	0.0036	17.8	7210	0.019	53	0.002	0.0078	0.0102	-62
Galt	10th Street SE	375577W	12	40	Passive	1	No	3.4	12127	0.0069	145	0.0006	0.0029	17.8	7210	0.0153	65	0.0016	0.0063	0.0084	-79
Galt	110th Street	375580E	59	40	Passive	1	No	3.4	12127	0.0119	84	0.0011	0.0049	17.8	7210	0.0247	40	0.0026	0.0102	0.0129	-44
Goodman	Blackstock Lane	330148S	23	40	Passive	1	No	16.2	8508	0.018	55	0.0019	0.0075	28.6	7385	0.0231	43	0.0025	0.0096	0.0051	-12

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Goodman	East Brodie Road	330136X	7	40	Passive	1	No	16.2	8508	0.0429	23	0.0044	0.0177	28.6	7385	0.0498	20	0.0054	0.0206	0.0069	-3
Goodman	East Garner Avenue	330139T	164	40	Lights and Gates	2	Yes	16.2	8508	0.0086	116	0.0009	0.0036	28.6	7385	0.011	91	0.0012	0.0045	0.0023	-25
Goodman	Oak Street	330138L	1	40	Passive	1	No	16.2	8508	0.0073	137	0.0008	0.003	28.6	7385	0.0097	103	0.001	0.004	0.0024	-34
Goodman	Sarratt Road	330137E	7	40	Passive	1	No	16.2	8508	0.0429	23	0.0044	0.0177	28.6	7385	0.0498	20	0.0054	0.0206	0.0069	-3
Goodman	School Street	330142B	299	40	Lights and Gates	2	Yes	16.2	8508	0.0101	99	0.0008	0.0035	28.6	7385	0.0128	78	0.001	0.0044	0.0027	-21
Goodman	Splitlog Avenue	330143H	299	40	Lights and Gates	2	Yes	16.2	8508	0.0101	99	0.001	0.0042	28.6	7385	0.0128	78	0.0014	0.0053	0.0027	-21
Goodman	Whitmore Street	330141U	129	40	Passive	2	Yes	16.2	8508	0.0187	53	0.0019	0.0077	28.6	7385	0.0239	42	0.0026	0.0099	0.0052	-12

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Grandview	Duck Road	329806R	1757	45	Lights and Gates	2	Yes	17.6	8899	0.0164	61	0.0014	0.0058	30.4	7975	0.0202	49	0.0018	0.0071	0.0038	-11
Grandview	Main Street	329807X	6087	55	Lights and Gates	3	Yes	17.6	8899	0.0245	41	0.0025	0.0090	30.4	7975	0.0295	34	0.0031	0.0109	0.005	-7
Harris	5th Street/ Leer Drive	375612H	29	40	Passive	2	No	3.4	12127	0.0094	106	0.0009	0.0039	17.8	7210	0.0203	49	0.0021	0.0084	0.0108	-57
Harris	State Highway East	375614W	422	40	Flashing Lights	2	Yes	3.4	12127	0.0055	183	0.0005	0.0023	17.8	7210	0.0115	87	0.0012	0.0047	0.006	-96
Hume	East Arnold Road	329913F	18	55	Passive	2	No	17.6	8899	0.0547	18	0.0075	0.0241	30.4	7975	0.0638	16	0.0091	0.0281	0.0091	-3
Hume	East Bailey Road	329917H	6	55	Passive	2	No	17.6	8899	0.0135	74	0.0019	0.0060	30.4	7975	0.0175	57	0.0025	0.0077	0.0039	-17

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Hume	Hume Street	329904G	540	55	Lights and Gates	2	Yes	17.6	8899	0.0122	82	0.0017	0.0054	30.4	7975	0.0152	66	0.0022	0.0067	0.003	-16
Hume	Spring Street	329906V	59	55	Passive	2	Yes	17.6	8899	0.0168	59	0.0023	0.0074	30.4	7975	0.0215	47	0.0031	0.0094	0.0046	-13
Hume	SW 11508	329911S	6	55	Passive	2	No	17.6	8899	0.0135	74	0.0019	0.0060	30.4	7975	0.0175	57	0.0025	0.0077	0.0039	-17
Joplin	12th Street	330054R	419	40	Flashing Lights	2	Yes	16.2	8508	0.011	91	0.0008	0.0038	28.6	7385	0.014	72	0.0011	0.0048	0.003	-19
Joplin	15th Street	330055X	11157	40	Lights and Gates	4	Yes	16.2	8508	0.03	33	0.0022	0.0103	28.6	7385	0.0358	28	0.0028	0.0123	0.0058	-5
Joplin	32nd Street	330061B	17557	40	Lights and Gates	4	Yes	16.2	8508	0.0329	30	0.0025	0.0113	28.6	7385	0.0389	26	0.0030	0.0134	0.006	-5
Joplin	4th Street	330045S	8701	40	Lights and Gates	4	Yes	16.2	8508	0.0707	14	0.0053	0.0243	28.6	7385	0.0809	12	0.0063	0.0278	0.0102	-2

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Joplin	5th Street	330046Y	828	40	Lights and Gates	2	Yes	16.2	8508	0.0132	76	0.0010	0.0045	28.6	7385	0.0165	61	0.0013	0.0057	0.0033	-15
Joplin	9th Street	330053J	4280	40	Lights and Gates	2	Yes	16.2	8508	0.0197	51	0.0015	0.0068	28.6	7385	0.0242	41	0.0019	0.0083	0.0045	-9
Kansas City	12th Street	329762T	1404	40	Lights and Gates	2	Yes	17.6	8899	0.0155	64	0.0012	0.0053	30.4	7975	0.0192	52	0.0015	0.0066	0.0037	-12
Kansas City	17th Street	329764G	3189	40	Lights and Gates	2	Yes	17.6	8899	0.0189	53	0.0014	0.0065	30.4	7975	0.0232	43	0.0018	0.008	0.0042	-10
Lanagan	Eagles Nest Lane	330172T	35	30	Passive	2	No	16.2	8508	0.0193	52	0.0015	0.0075	28.6	7385	0.0246	41	0.0020	0.0096	0.0053	-11
Lanagan	Oscar Talley Road	330167W	30	30	Passive	2	Yes	16.2	8508	0.0110	91	0.0009	0.0043	28.6	7385	0.0144	69	0.0012	0.0056	0.0034	-22
Lanagan	Pebble Street	330168D	195	40	Passive	2	No	16.2	8508	0.0328	31	0.0034	0.0136	28.6	7385	0.04	25	0.0043	0.0165	0.0072	-6

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Laredo	65th	375562G	23	40	Passive	1	No	4	12445	0.0094	106	0.0009	0.0039	18.4	7045	0.0192	52	0.002	0.0079	0.0098	-54
Laredo	Baha Lane	375574B	6	40	Passive	1	No	3.4	12127	0.0054	184	0.0005	0.0022	17.8	7210	0.0123	82	0.0013	0.0051	0.0068	-102
Laredo	First Street	375569E	283	40	Lights and Gates	2	Yes	3.4	12127	0.0051	195	0.0005	0.0021	17.8	7210	0.0104	96	0.0011	0.0043	0.0053	-99
Lawson	174th Street	375445L	293	60	Passive	2	No	3.8	12445	0.0233	43	0.0031	0.0098	18.2	7045	0.0415	24	0.0062	0.0174	0.0182	-19
Lawson	Garner Street	375486R	176	60	Lights and Gates	2	Yes	3.8	12445	0.0054	184	0.0007	0.0023	18.2	7045	0.0106	94	0.0016	0.0044	0.0051	-89
Lawson	Moss Street	375446T	234	60	Lights and Gates	2	Yes	3.8	12445	0.0059	170	0.0008	0.0025	18.2	7045	0.0114	88	0.0017	0.0048	0.0055	-82
Liberty	Lancaster Road	375423L	267	60	Lights and Gates	2	No	3.8	12445	0.0061	164	0.0008	0.0026	18.2	7045	0.0118	85	0.0018	0.0049	0.0057	-79

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Liberty	Old Birmingham Road	375414M	1376	60	Lights and Gates	2	No	3.8	12445	0.0095	105	0.0013	0.004	18.2	7045	0.0178	56	0.0026	0.0075	0.0083	-49
Lucerne	KK	375635P	89	40	Passive	1	No	3.4	12127	0.0136	74	0.0013	0.0056	17.8	7210	0.0277	36	0.0029	0.0115	0.0142	-38
Lucerne	Private Road	375637D	12	40	Passive	1	No	3.4	12127	0.0069	144	0.0006	0.0029	17.8	7210	0.0154	65	0.0016	0.0064	0.0084	-79
Ludlow	County Road 403	375476K	12	40	Passive	1	No	4	12445	0.0075	134	0.0007	0.0031	18.4	7045	0.0155	64	0.0016	0.0064	0.0081	-70
Ludlow	County Road 424	375479F	35	40	Passive	1	No	4	12445	0.0108	93	0.001	0.0045	18.4	7045	0.0217	46	0.0023	0.009	0.0109	-47
Ludlow	County Road 426	375477S	12	40	Passive	1	No	4	12445	0.0075	134	0.0007	0.0031	18.4	7045	0.0155	64	0.0016	0.0064	0.0081	-70

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Ludlow	Mainline County Road 415	375480A	12	40	Passive	1	No	4	12445	0.0075	134	0.0007	0.0031	18.4	7045	0.0155	64	0.0016	0.0064	0.0081	-70
Ludlow	South Main Street D	375478Y	466	40	Flashing Lights	2	Yes	4	12445	0.0061	164	0.0006	0.0025	18.4	7045	0.012	83	0.0013	0.005	0.0059	-81
Merwin	First Street	329870P	80	55	Lights and Gates	2	Yes	17.6	8899	0.0074	136	0.0010	0.0032	30.4	7975	0.0093	107	0.0013	0.0041	0.002	-28
Merwin	NW 11002	329874S	70	55	Passive	2	No	17.6	8899	0.0281	36	0.0039	0.0124	30.4	7975	0.0346	29	0.0050	0.0152	0.0065	-7
Merwin	Poplar Street	329872D	586	55	Lights and Gates	2	Yes	17.6	8899	0.0125	80	0.0017	0.0055	30.4	7975	0.0155	64	0.0022	0.0068	0.0031	-16
Mosby	Pony Express	375433S	234	60	Passive	1	No	3.8	12445	0.0218	46	0.0029	0.0092	18.2	7045	0.0395	25	0.0059	0.0165	0.0176	-20

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								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Neosho	College Street	330102D	5077	25	Lights and Gates	2	Yes	16.2	8508	0.0205	49	0.0010	0.0063	28.6	7385	0.0251	40	0.0013	0.0078	0.0046	-9
Neosho	Landis Road/ Burr Crossinna	330120B	2528	25	Lights and Gates	2	Yes	16.2	8508	0.0174	58	0.0008	0.0054	28.6	7385	0.0215	47	0.0011	0.0066	0.0041	-11
Neosho	McKinney Street	330113R	4441	25	Lights and Gates	2	Yes	16.2	8508	0.0199	50	0.0010	0.0061	28.6	7385	0.0244	41	0.0012	0.0075	0.0045	-9
Neosho	Rhonda Drive	919240A	1439	40	Lights and Gates	2	No	16.2	8508	0.0151	66	0.0016	0.0063	28.6	7385	0.0189	53	0.002	0.0078	0.0037	-13
Neosho	Spring Street	330112J	1555	25	Lights and Gates	2	Yes	16.2	8508	0.0154	65	0.0007	0.0048	28.6	7385	0.0192	52	0.0010	0.0059	0.0038	-13
Neosho	Washington Avenue	330101W	2621	25	Lights and Gates	2	Yes	16.2	8508	0.0175	57	0.0008	0.0054	28.6	7385	0.0217	46	0.0011	0.0067	0.0042	-11

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Newtown	Highway EE	375626R	239	49	Flashing Lights	2	Yes	3.4	12127	0.0044	227	0.0005	0.0019	17.8	7210	0.0095	106	0.0012	0.0041	0.0051	-121
Noel	Main Street	330178J	4023	30	Lights and Gates	2	Yes	16.2	8508	0.0194	52	0.0011	0.0062	28.6	7385	0.0239	42	0.0014	0.0077	0.0045	-10
Noel	South Kings Highway	330184M	59	30	Lights and Gates	2	Yes	16.2	8508	0.0065	153	0.0005	0.0025	28.6	7385	0.0083	120	0.0007	0.0033	0.0018	-34
Noel	SW 5968/Deer Creek Road	330186B	193	30	Passive	2	Yes	16.2	8508	0.0198	50	0.0016	0.0077	28.6	7385	0.0252	40	0.0021	0.0098	0.0054	-11
Osgood	60th Road	329976K	6	55	Passive	2	No	17.6	8899	0.0135	74	0.0019	0.0059	30.4	7975	0.0174	58	0.0025	0.0076	0.0039	-17
Osgood	Eisenhower Street/ County Road Pp	375593F	182	40	Flashing Lights	2	Yes	3.4	12127	0.004	252	0.0004	0.0016	17.8	7210	0.0086	116	0.0009	0.0036	0.0046	-136

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Osgood	Missouri K	329972H	390	55	Lights and Gates	2	Yes	17.6	8899	0.0112	89	0.0015	0.0049	30.4	7975	0.014	71	0.0020	0.0062	0.0028	-18
Polo	Boulder Road	375453D	6	60	Passive	1	No	3.8	12445	0.0323	31	0.0043	0.0145	18.2	7045	0.0459	22	0.0068	0.0205	0.0136	-9
Polo	Price Drive 4	375452W	23	60	Flashing Lights	1	No	3.8	12445	0.0016	634	0.0002	0.0007	18.2	7045	0.0034	292	0.0005	0.0015	0.0019	-343
Polo	SE Maggie Road	375456Y	6	40	Passive	1	No	4	12445	0.0059	170	0.0006	0.0024	18.4	7045	0.0125	80	0.0013	0.0051	0.0066	-90
Polo	SE Soo Line Road	375457F	12	40	Passive	2	No	4	12445	0.0075	134	0.0007	0.0031	18.4	7045	0.0155	64	0.0016	0.0064	0.0081	-70
Polo	SW Holstien Road	375454K	6	60	Passive	1	No	3.8	12445	0.0067	150	0.0009	0.003	18.2	7045	0.0142	70	0.0021	0.0063	0.0075	-80
Powersville	140th Street	375642A	12	40	Passive	1	No	3.4	12127	0.0069	144	0.0006	0.0029	17.8	7210	0.0154	65	0.0016	0.0064	0.0084	-79

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Powersville	Route East	375644N	128	40	Lights and Gates	2	Yes	3.4	12127	0.0041	244	0.0004	0.0017	17.8	7210	0.0084	119	0.0009	0.0035	0.0043	-125
Richards	1st Street	329940C	66	55	Passive	2	No	17.6	8899	0.0277	36	0.0038	0.0122	30.4	7975	0.0341	29	0.0049	0.0150	0.0064	-7
Richards	3rd Street	329939H	28	55	Passive	2	No	17.6	8899	0.0218	46	0.0030	0.0096	30.4	7975	0.0274	37	0.0039	0.0120	0.0056	-9
Richards	4th Street	329938B	28	55	Passive	2	No	17.6	8899	0.0596	17	0.0082	0.0262	30.4	7975	0.0696	14	0.0100	0.0306	0.0100	-2
Richards	8th Street	329937U	238	55	Lights and Gates	2	Yes	17.6	8899	0.0099	101	0.0014	0.0043	30.4	7975	0.0124	81	0.0018	0.0054	0.0025	-21
Richards	East Lady Road	329944E	9	55	Passive	2	No	17.6	8899	0.0156	64	0.0022	0.0069	30.4	7975	0.0200	50	0.0029	0.0088	0.0044	-14
Richards	South 400 Road	329930W	47	55	Passive	2	No	17.6	8899	0.0252	40	0.0035	0.0111	30.4	7975	0.0313	32	0.0045	0.0138	0.0061	-8

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Richards	Stockade Road	329957F	6	55	Passive	1	No	17.6	8899	0.0135	74	0.0019	0.0059	30.4	7975	0.0174	58	0.0025	0.0076	0.0039	-17
Richards	Tally Bend Road	329958M	6	55	Passive	1	No	17.6	8899	0.0135	74	0.0019	0.0059	30.4	7975	0.0174	58	0.0025	0.0076	0.0039	-17
Saginaw	Old Us71	330078E	347	45	Lights and Gates	2	Yes	16.2	8508	0.0105	95	0.0012	0.0045	28.6	7385	0.0133	75	0.0016	0.0056	0.0028	-20
Saginaw	Shoal Creek Fish Reserve	330076R	60	40	Passive	2	No	16.2	8508	0.0239	42	0.0025	0.0099	28.6	7385	0.0300	33	0.0032	0.0124	0.0061	-9
Stotesbury	East Caton Road	329920R	6	55	Passive	2	No	17.6	8899	0.0135	74	0.0019	0.0060	30.4	7975	0.0175	57	0.0025	0.0077	0.0039	-17
Stotesbury	East Trestle Road	329959U	41	55	Passive	1	No	17.6	8899	0.0243	41	0.0033	0.0107	30.4	7975	0.0302	33	0.0043	0.0133	0.0059	-8

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Stotesbury	Main Street	329929C	136	55	Lights and Gates	2	Yes	17.6	8899	0.0085	118	0.0012	0.0037	30.4	7975	0.0107	93	0.0015	0.0047	0.0022	-24
Stotesbury	North Street	329928V	12	55	Passive	2	No	17.6	8899	0.0168	59	0.0023	0.0074	30.4	7975	0.0215	47	0.0031	0.0095	0.0046	-13
Waco	Missouri KK / Maple Road	330018V	391	55	Lights and Gates	2	Yes	16.2	8508	0.0109	92	0.0015	0.0048	28.6	7385	0.0137	73	0.0020	0.0060	0.0029	-19
Waco	Nutmeg	330016G	35	55	Passive	2	No	16.2	8508	0.0225	45	0.0031	0.0099	28.6	7385	0.0283	35	0.0040	0.0125	0.0059	-9
West Line	289 Street	329841E	6	55	Passive	2	No	17.6	8899	0.0136	73	0.0019	0.0060	30.4	7975	0.0176	57	0.0025	0.0077	0.0039	-16
West Line	299 Street	329845G	6	55	Passive	2	No	17.6	8899	0.0139	72	0.0019	0.0061	30.4	7975	0.0179	56	0.0026	0.0079	0.0040	-16
West Line	307 Street	329848C	6	55	Passive	2	No	17.6	8899	0.0139	72	0.0019	0.0061	30.4	7975	0.0179	56	0.0026	0.0079	0.0040	-16
Oklahoma																					

Table H.1-4. Grade Crossing Safety by State and City

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								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Bunch	North Bunch Road	330647H	117	40	Lights and Gates	2	Yes	14.2	8508	0.0074	135	0.0008	0.0031	26.6	7385	0.0097	103	0.001	0.004	0.0023	-32
Bunch	Road 4660	330640K	117	40	Lights and Gates	2	Yes	14.2	8508	0.0074	135	0.0008	0.0031	26.6	7385	0.0097	103	0.001	0.004	0.0023	-32
Bunch	Road 888	330643F	230	40	Passive	2	No	14.2	8508	0.0325	31	0.0033	0.0134	26.6	7385	0.0405	25	0.0044	0.0168	0.008	-6
Bunch	South Bunch Road	330655A	23	40	Passive	2	No	14.2	8508	0.0171	58	0.0018	0.0071	26.6	7385	0.0225	44	0.0024	0.0093	0.0054	-14
Gans	South 4710 Road	330695X	264	59	Lights and Gates	2	Yes	14.2	8508	0.0092	108	0.0013	0.0041	26.6	7385	0.012	83	0.0018	0.0054	0.0028	-25
Gans	South 4715 Road	330697L	80	55	Lights and Gates	2	Yes	14.2	8508	0.0067	149	0.0009	0.003	26.6	7385	0.0088	114	0.0012	0.0039	0.0021	-35
Gans	South 4715 Road	330698T	23	55	Passive	2	No	14.2	8508	0.0188	53	0.0026	0.0083	26.6	7385	0.0246	41	0.0035	0.0108	0.0058	-13

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Heavener	201st Avenue	330797R	117	40	Passive	2	No	13.8	9651	0.027	37	0.0028	0.0112	26.2	8128	0.0345	29	0.0037	0.0142	0.0075	-8
Heavener	Church Road	330792G	1582	40	Passive	2	No	13.8	9651	0.0495	20	0.0051	0.0204	26.2	8128	0.0583	17	0.0063	0.0241	0.0088	-3
Heavener	East Avenue F	330785W	6093	20	Lights and Gates	2	Yes	14.6	8508	0.0231	43	0.0010	0.0077	27	7385	0.0286	35	0.0013	0.0095	0.0055	-8
Heavener	Forest Hill Road	330744S	176	40	Lights and Gates	2	Yes	14.6	8508	0.0084	119	0.0009	0.0035	27	7385	0.0109	92	0.0012	0.0045	0.0025	-27
Heavener	Haw Creek Road	330799E	154	40	Lights and Gates	2	Yes	13.8	9651	0.0079	126	0.0008	0.0033	26.2	8128	0.0104	96	0.0011	0.0043	0.0025	-30
Heavener	Hicks Road	330796J	172	40	Passive	2	Yes	13.8	9651	0.019	53	0.0019	0.0078	26.2	8128	0.025	40	0.0027	0.0103	0.006	-13
Heavener	Hodgens Road	330791A	351	40	Flashing Lights	2	Yes	13.8	9651	0.0097	104	0.001	0.004	26.2	8128	0.0127	79	0.0014	0.0053	0.0031	-25

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Heavener	Industrial Road	330783H	59	40	Lights and Gates	2	Yes	14.6	8508	0.0072	139	0.0007	0.0028	27	7385	0.0093	107	0.001	0.0036	0.0022	-32
Heavener	KCS X	330793N	35	40	Passive	2	No	13.8	9651	0.0547	18	0.0056	0.0226	26.2	8128	0.0656	15	0.007	0.0271	0.0108	-3
Heavener	Stand Pipe Road	330789Y	59	40	Passive	2	Yes	13.8	9651	0.0136	74	0.0014	0.0056	26.2	8128	0.0182	55	0.002	0.0075	0.0047	-19
Heavener	West Avenue C	330784P	6444	20	Lights and Gates	2	Yes	14.6	8508	0.0234	43	0.0010	0.0078	27	7385	0.0289	35	0.0013	0.0096	0.0055	-8
Heavener	West Avenue I	330786D	2460	40	Lights and Gates	2	Yes	13.8	9651	0.0184	54	0.0011	0.0058	26.2	8128	0.0233	43	0.0015	0.0074	0.0049	-11
Howe	Lassiter Road	330739V	59	40	Lights and Gates	2	Yes	14.6	8508	0.0062	160	0.0006	0.0026	27	7385	0.0081	123	0.0009	0.0034	0.0019	-38
Howe	Old Pike Road	330741W	117	40	Lights and Gates	2	Yes	14.6	8508	0.0075	133	0.0008	0.0031	27	7385	0.0098	102	0.0011	0.0041	0.0023	-31

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Marble City	East 991 Road	330669H	117	40	Lights and Gates	2	Yes	14.2	8508	0.0074	135	0.0006	0.0026	26.6	7385	0.0097	103	0.0008	0.0033	0.0023	-32
Marble City	First Street	330660W	23	40	Passive	1	Yes	14.2	8508	0.0387	26	0.004	0.016	26.6	7385	0.0452	22	0.0048	0.0187	0.0065	-4
Muldrow	East 1140 Road	330693J	59	55	Lights and Gates	2	Yes	14.2	8508	0.0062	163	0.0008	0.0027	26.6	7385	0.0081	124	0.0011	0.0036	0.0019	-39
Panama	Choctaw Street	330714A	322	55	Lights and Gates	2	Yes	14.2	8508	0.0098	103	0.0013	0.0043	26.6	7385	0.0127	79	0.0018	0.0056	0.0029	-24
Panama	Coal Creek Road	330713T	117	55	Passive	1	Yes	14.2	8508	0.0188	53	0.0025	0.0083	26.6	7385	0.0246	41	0.0035	0.0108	0.0058	-13
Panama	Pierce Road	330718C	35	55	Passive	1	Yes	14.2	8508	0.0129	78	0.0017	0.0057	26.6	7385	0.0173	58	0.0024	0.0076	0.0044	-20
Panama	Tecumseh Street	330716N	234	55	Lights and Gates	2	Yes	14.2	8508	0.009	112	0.0012	0.0039	26.6	7385	0.0117	86	0.0017	0.0051	0.0027	-26

Table H.1-4. Grade Crossing Safety by State and City

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Poteau	290th Street	330723Y	117	55	Lights and Gates	2	Yes	14.2	8508	0.0074	135	0.0010	0.0033	26.6	7385	0.0097	103	0.0014	0.0043	0.0023	-32
Poteau	Airport Road	330736A	3515	55	Lights and Gates	2	Yes	14.6	8508	0.0181	55	0.0025	0.0080	27	7385	0.0227	44	0.0032	0.0100	0.0046	-11
Poteau	Dewey Avenue	330732X	2460	55	Lights and Gates	2	Yes	14.6	8508	0.0166	60	0.0023	0.0073	27	7385	0.0209	48	0.0030	0.0092	0.0043	-13
Poteau	East Branson Road	330722S	117	55	Lights and Gates	2	Yes	14.2	8508	0.0074	135	0.0010	0.0033	26.6	7385	0.0097	103	0.0014	0.0043	0.0023	-32
Poteau	Fairview Road	330712L	88	55	Lights and Gates	2	Yes	14.2	8508	0.0069	145	0.0009	0.0030	26.6	7385	0.009	111	0.0013	0.004	0.0021	-35
Poteau	Grady Avenue	330733E	2343	55	Lights and Gates	2	Yes	14.6	8508	0.0164	61	0.0022	0.0072	27	7385	0.0207	48	0.0029	0.0091	0.0043	-13

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								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Poteau	North Witte Street	330729P	1640	50	Lights and Gates	2	Yes	14.2	8508	0.0168	59	0.0015	0.0056	26.6	7385	0.0213	47	0.0020	0.0072	0.0045	-13
Poteau	Possum Valley Road	330727B	387	55	Lights and Gates	2	Yes	14.2	8508	0.0102	98	0.0014	0.0045	26.6	7385	0.0133	75	0.0019	0.0058	0.003	-22
Poteau	South Railroad Street	330734L	59	55	Passive	2	Yes	14.6	8508	0.0807	12	0.0110	0.0355	27	7385	0.0934	11	0.0133	0.0411	0.0128	-2
Poteau	Williams Ln	330726U	59	55	Passive	2	Yes	14.2	8508	0.0152	66	0.0021	0.0067	26.6	7385	0.0201	50	0.0029	0.0089	0.0050	-16
Sallisaw	Dogwood Street	330680H	117	40	Lights and Gates	2	Yes	14.2	8508	0.0074	135	0.0008	0.0031	26.6	7385	0.0097	103	0.001	0.004	0.0023	-32
Sallisaw	East 1040 Road	330671J	234	40	Lights and Gates	2	Yes	14.2	8508	0.009	112	0.0009	0.0037	26.6	7385	0.0117	86	0.0013	0.0048	0.0027	-26

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Sallisaw	East 1050 Road	330672R	59	40	Passive	2	Yes	14.2	8508	0.0137	73	0.0014	0.0057	26.6	7385	0.0183	55	0.002	0.0076	0.0046	-18
Sallisaw	East 1090 Road	330685S	59	40	Passive	2	No	14.2	8508	0.0225	45	0.0023	0.0093	26.6	7385	0.029	34	0.0031	0.012	0.0066	-10
Sallisaw	East Road 1095	330686Y	23	40	Lights and Gates	2	Yes	14.2	8508	0.0048	210	0.0005	0.002	26.6	7385	0.0063	159	0.0007	0.0026	0.0015	-51
Sallisaw	South 4640 Road	330682W	63	40	Passive	2	Yes	14.2	8508	0.0141	71	0.0014	0.0058	26.6	7385	0.0188	53	0.002	0.0078	0.0047	-18
Sallisaw	West Chickasaw Avenue	330676T	176	40	Lights and Gates	2	Yes	14.2	8508	0.0083	121	0.0009	0.0034	26.6	7385	0.0108	92	0.0012	0.0045	0.0025	-28
Sallisaw	West Port Arthur Pl	330677A	293	40	Flashing Lights	2	Yes	14.2	8508	0.0092	109	0.0009	0.0038	26.6	7385	0.012	83	0.0013	0.005	0.0029	-26

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Sallisaw	West Redwood Avenue	330674E	59	40	Lights and Gates	2	Yes	14.2	8508	0.0062	163	0.0006	0.0025	26.6	7385	0.0081	124	0.0009	0.0033	0.0019	-39
Sallisaw	West Taylor Drive	330673X	59	40	Passive	1	No	14.2	8508	0.0225	45	0.0023	0.0093	26.6	7385	0.029	34	0.0031	0.012	0.0066	-10
Shady Point	Reagan Street	330721K	176	55	Passive	2	No	14.2	8508	0.0329	30	0.0045	0.0145	26.6	7385	0.0409	24	0.0058	0.0180	0.0080	-6
Shady Point	Wheelus Street	330719J	88	55	Passive	2	Yes	14.2	8508	0.0172	58	0.0023	0.0076	26.6	7385	0.0227	44	0.0032	0.0100	0.0055	-14
Shady Point	Wheelus Street	330720D	59	55	Lights and Gates	2	Yes	14.2	8508	0.0062	163	0.0008	0.0027	26.6	7385	0.0081	124	0.0011	0.0036	0.0019	-39
Spiro	Bailey Road	330709D	59	55	Passive	2	Yes	14.2	8508	0.0152	66	0.0021	0.0067	26.6	7385	0.0201	50	0.0029	0.0089	0.0050	-16

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Spiro	County Road D4723	330700S	23	55	Passive	1	No	14.2	8508	0.0188	53	0.0026	0.0083	26.6	7385	0.0246	41	0.0035	0.0108	0.0058	-13
Spiro	Race Track Road	330710X	117	55	Lights and Gates	2	No	14.2	8508	0.0074	135	0.0010	0.0033	26.6	7385	0.0097	103	0.0014	0.0043	0.0023	-32
Spiro	South Ash Street	330706H	176	55	Lights and Gates	2	Yes	14.2	8508	0.0083	121	0.0011	0.0037	26.6	7385	0.0108	92	0.0015	0.0048	0.0025	-28
Stilwell	Ash Street	330626P	23	40	Passive	2	No	14.2	8508	0.0171	58	0.0018	0.0071	26.6	7385	0.0225	44	0.0024	0.0093	0.0054	-14
Stilwell	E0778 Road	330620Y	234	35	Lights and Gates	1	Yes	14.2	8508	0.0079	127	0.0007	0.0032	26.6	7385	0.0103	97	0.0010	0.0041	0.0024	-30
Stilwell	E0810 Road	330623U	234	40	Lights and Gates	2	Yes	14.2	8508	0.009	112	0.0009	0.0037	26.6	7385	0.0117	86	0.0013	0.0048	0.0027	-26
Stilwell	Oklahoma 51	330625H	2987	40	Lights and Gates	3	Yes	14.2	8508	0.0541	18	0.0055	0.0224	26.6	7385	0.063	16	0.0068	0.0261	0.0089	-3

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Stilwell	Road 4760	330637C	322	30	Passive	2	No	14.2	8508	0.0336	30	0.0027	0.0131	26.6	7385	0.0417	24	0.0035	0.0162	0.0081	-6
Stilwell	Road 772	330619E	293	35	Lights and Gates	2	Yes	14.2	8508	0.0095	105	0.0009	0.0038	26.6	7385	0.0124	81	0.0012	0.0050	0.0028	-24
Stilwell	Road 850	330636V	176	40	Lights and Gates	2	Yes	14.2	8508	0.0083	121	0.0009	0.0034	26.6	7385	0.0108	92	0.0012	0.0045	0.0025	-28
Stilwell	South 3rd Street	330635N	703	40	Lights and Gates	2	Yes	14.2	8508	0.012	84	0.0012	0.0049	26.6	7385	0.0154	65	0.0017	0.0064	0.0035	-19
Stilwell	Tyson Farms Road	330633A	234	40	Passive	2	Yes	14.2	8508	0.021	48	0.0022	0.0087	26.6	7385	0.0273	37	0.0029	0.0113	0.0063	-11
Stilwell	Walnut Street	330628D	820	40	Lights and Gates	2	Yes	14.2	8508	0.0124	80	0.0013	0.0051	26.6	7385	0.016	62	0.0017	0.0066	0.0036	-18
Watts	E0653 Road	330398E	162	40	Lights and Gates	2	Yes	14.2	8508	0.0081	123	0.0008	0.0034	26.6	7385	0.0106	94	0.0011	0.0044	0.0025	-29

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Watts	E0660 Road	330601U	368	30	Passive	2	Yes	14.2	8508	0.0226	44	0.0018	0.0088	26.6	7385	0.0292	34	0.0024	0.0114	0.0066	-10
Watts	N4740 Road	330390A	59	40	Passive	2	No	16.2	8508	0.0238	42	0.0025	0.0098	28.6	7385	0.0299	33	0.0032	0.0124	0.0061	-9
Watts	N4740 Road	330392N	59	40	Lights and Gates	2	Yes	16.2	8508	0.0065	153	0.0007	0.0027	28.6	7385	0.0083	120	0.0009	0.0034	0.0018	-34
Watts	Twin Falls Road	330389F	69	35	Lights and Gates	2	Yes	16.2	8508	0.0068	147	0.0006	0.0027	28.6	7385	0.0087	115	0.0008	0.0035	0.0019	-32
Westville	Chincapin Street	330612G	3561	40	Lights and Gates	2	Yes	14.2	8508	0.0179	56	0.0018	0.0074	26.6	7385	0.0226	44	0.0024	0.0094	0.0047	-12
Westville	E0670 Road	330603H	59	40	Passive	2	Yes	14.2	8508	0.0137	73	0.0014	0.0057	26.6	7385	0.0183	55	0.002	0.0076	0.0046	-18
Westville	E0690 Road	330605W	59	40	Passive	2	No	14.2	8508	0.0225	45	0.0023	0.0093	26.6	7385	0.029	34	0.0031	0.012	0.0066	-10
Westville	E0700 Road	330606D	59	40	Passive	2	Yes	14.2	8508	0.0451	22	0.0046	0.0186	26.6	7385	0.0534	19	0.0057	0.0221	0.0083	-3

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Westville	East Division Street	330610T	59	40	Lights and Gates	2	Yes	14.2	8508	0.0062	163	0.0006	0.0025	26.6	7385	0.0081	124	0.0009	0.0033	0.0019	-39
Westville	Morris Road	330614V	59	40	Passive	1	Yes	14.2	8508	0.0137	73	0.0014	0.0057	26.6	7385	0.0183	55	0.002	0.0076	0.0046	-18
Westville	RD 754	330616J	176	40	Lights and Gates	2	Yes	14.2	8508	0.0083	121	0.0009	0.0034	26.6	7385	0.0108	92	0.0012	0.0045	0.0025	-28
Westville	West Cherry Street	330607K	59	40	Lights and Gates	2	Yes	14.2	8508	0.0062	163	0.0006	0.0025	26.6	7385	0.0081	124	0.0009	0.0033	0.0019	-39
Texas																					
Agua Dulce	County Road 103	793665J	187	50	Lights and Gates	2	Yes	14.8	12509	0.0086	116	0.0011	0.0037	22.8	9617	0.0103	97	0.0013	0.0045	0.0017	-19
Agua Dulce	County Road 313	793809L	65	50	Passive	1	Yes	14.8	12509	0.0482	21	0.0060	0.0208	22.8	9617	0.0543	18	0.0070	0.0235	0.0061	-2

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Agua Dulce	County Road 93	793823G	111	50	Passive	2	Yes	14.8	12509	0.0532	19	0.0067	0.0230	22.8	9617	0.0601	17	0.0078	0.0259	0.0069	-2
Agua Dulce	FM 0070	793667X	1513	50	Lights and Gates	2	Yes	14.8	12509	0.046	22	0.0058	0.0199	22.8	9617	0.0509	20	0.0066	0.0220	0.0049	-2
Agua Dulce	Road 105	793662N	94	50	Lights and Gates	2	Yes	14.8	12509	0.0071	140	0.0009	0.0031	22.8	9617	0.0086	116	0.0011	0.0037	0.0015	-24
Agua Dulce	Road 336	793659F	12	50	Lights and Gates	2	Yes	14.8	12509	0.004	250	0.0005	0.0017	22.8	9617	0.0049	206	0.0006	0.0021	0.0009	-44
Agua Dulce	Road 339	793660A	215	50	Lights and Gates	2	Yes	14.8	12509	0.0089	112	0.0011	0.0039	22.8	9617	0.0107	93	0.0014	0.0046	0.0018	-19
Alice	Adams Street	793816W	1823	25	Lights and Gates	2	Yes	14.8	12509	0.0155	65	0.0007	0.0048	22.8	9617	0.0183	55	0.0009	0.0056	0.0028	-10

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Alice	Almond Street	793817D	1823	25	Lights and Gates	2	Yes	14.8	12509	0.0155	65	0.0007	0.0048	22.8	9617	0.0183	55	0.0009	0.0056	0.0028	-10
Alice	Aransas Street	793812U	1823	25	Lights and Gates	2	Yes	14.8	12509	0.0155	65	0.0007	0.0048	22.8	9617	0.0183	55	0.0009	0.0056	0.0028	-10
Alice	Cameron Street	793818K	5418	25	Lights and Gates	2	Yes	14.8	12509	0.0201	50	0.0010	0.0062	22.8	9617	0.0235	42	0.0012	0.0073	0.0034	-7
Alice	County Road 113	793801G	1290	40	Lights and Gates	2	Yes	14.8	12509	0.0142	70	0.0015	0.0059	22.8	9617	0.0169	59	0.0018	0.0070	0.0026	-11
Alice	County Road 114	793802N	81	40	Passive	2	Yes	14.8	12509	0.0155	64	0.0016	0.0064	22.8	9617	0.0189	53	0.0020	0.0078	0.0034	-11
Alice	County Road 170	793795F	497	55	Lights and Gates	2	Yes	14.8	12509	0.0111	90	0.0015	0.0049	22.8	9617	0.0133	75	0.0019	0.0059	0.0022	-15

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Alice	Duval Street	793806R	234	25	Lights and Gates	2	Yes	14.8	12509	0.0091	110	0.0004	0.0028	22.8	9617	0.011	91	0.0005	0.0034	0.0018	-18
Alice	Flournoy Road	793651B	8476	40	Lights and Gates	4	Yes	14.8	12509	0.0275	36	0.0020	0.0095	22.8	9617	0.0317	32	0.0024	0.0109	0.0042	-5
Alice	Goliad Street	793808E	1011	25	Lights and Gates	2	Yes	14.8	12509	0.0134	75	0.0006	0.0041	22.8	9617	0.0159	63	0.0008	0.0049	0.0025	-12
Alice	Gulf Street	793807X	1823	25	Lights and Gates	2	Yes	14.8	12509	0.0155	65	0.0007	0.0048	22.8	9617	0.0183	55	0.0009	0.0056	0.0028	-10
Alice	Johnson Street	793811M	1823	25	Lights and Gates	2	Yes	14.8	12509	0.0155	65	0.0007	0.0048	22.8	9617	0.0183	55	0.0009	0.0056	0.0028	-10
Alice	Kempe Avenue	793810F	7124	25	Lights and Gates	2	Yes	14.8	12509	0.0214	47	0.0010	0.0066	22.8	9617	0.025	40	0.0012	0.0077	0.0036	-7

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Alice	King Street	793813B	2238	25	Lights and Gates	2	Yes	14.8	12509	0.0163	61	0.0008	0.0050	22.8	9617	0.0192	52	0.0010	0.0059	0.0029	-9
Alice	Reynolds Street	793815P	2191	25	Lights and Gates	2	Yes	14.8	12509	0.0162	62	0.0008	0.0050	22.8	9617	0.0191	52	0.0009	0.0059	0.0029	-9
Alice	Road 132	793798B	293	55	Lights and Gates	2	Yes	14.8	12509	0.0097	103	0.0013	0.0043	22.8	9617	0.0116	86	0.0016	0.0051	0.0019	-17
Alice	Road 341	793653P	586	40	Passive	2	No	14.8	12509	0.0412	24	0.0042	0.0170	22.8	9617	0.0471	21	0.0050	0.0195	0.0059	-3
Alice	Sain Drive	793959U	8108	25	Lights and Gates	4	Yes	14.8	12509	0.0273	37	0.0013	0.0084	22.8	9617	0.0314	32	0.0016	0.0097	0.0042	-5
Alice	Stadium Street	793649A	3149	40	Lights and Gates	4	Yes	14.8	12509	0.0222	45	0.0016	0.0076	22.8	9617	0.0258	39	0.0020	0.0089	0.0037	-6

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Alice	Texas 44/Park Street	793819S	24276	25	Lights and Gates	4	Yes	14.8	12509	0.034	29	0.0016	0.0105	22.8	9617	0.0386	26	0.0019	0.0119	0.0046	-4
Alice	Texas Blvd	793821T	7405	25	Lights and Gates	4	Yes	14.8	12509	0.0268	37	0.0013	0.0083	22.8	9617	0.0309	32	0.0015	0.0095	0.0041	-5
Alice	US 0281 Sb Ramp	793981G	1608	40	Lights and Gates	2	Yes	14.8	12509	0.015	67	0.0015	0.0062	22.8	9617	0.0178	56	0.0019	0.0073	0.0028	-10
Alice	Wright Street	793814H	25003	25	Lights and Gates	2	Yes	14.8	12509	0.0282	35	0.0013	0.0087	22.8	9617	0.0325	31	0.0016	0.0100	0.0042	-5
Ames	FM 160	762761B	2525	75	Lights and Gates	2	Yes	16.3	8697	0.0507	20	0.009	0.0237	23.9	7907	0.0556	18	0.0101	0.0259	0.0049	-2
Banquete	4th Street	793829X	100	50	Lights and Gates	2	Yes	14.8	12509	0.0072	138	0.0009	0.0031	22.8	9617	0.0087	114	0.0011	0.0038	0.0015	-23

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Banquete	County Road 38	793824N	52	45	Lights and Gates	2	Yes	14.8	12509	0.0061	165	0.0007	0.0026	22.8	9617	0.0073	136	0.0009	0.0031	0.0013	-28
Banquete	County Road 87a	793831Y	104	50	Passive	2	Yes	14.8	12509	0.0179	56	0.0022	0.0077	22.8	9617	0.0217	46	0.0028	0.0094	0.0038	-10
Banquete	Falmar Street	793830S	117	50	Lights and Gates	2	Yes	14.8	12509	0.0076	132	0.0009	0.0033	22.8	9617	0.0091	110	0.0012	0.0039	0.0015	-22
Banquete	FM 666	793827J	2134	50	Lights and Gates	2	Yes	14.8	12509	0.0161	62	0.0020	0.0070	22.8	9617	0.019	53	0.0025	0.0082	0.0029	-10
Banquete	Road 83	793834U	13	50	Passive	1	No	14.8	12509	0.0155	64	0.0019	0.0067	22.8	9617	0.0189	53	0.0024	0.0082	0.0034	-11
Beasley	3rd Street	743473F	1015	59	Lights and Gates	2	Yes	9.2	9795	0.011	91	0.0015	0.0049	17.5	7681	0.0143	70	0.0021	0.0064	0.0033	-21
Beasley	4th Street	743474M	715	59	Lights and Gates	2	No	9.2	9795	0.01	100	0.0014	0.0045	17.5	7681	0.0131	76	0.0019	0.0058	0.0031	-23

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State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Beasley	FM 1875	743475U	3186	59	Lights and Gates	2	Yes	9.2	9795	0.0459	22	0.0064	0.0205	17.5	7681	0.0534	19	0.0078	0.0238	0.0075	-3
Beasley	Grunewald Road	743477H	750	59	Lights and Gates	2	Yes	9.2	9795	0.0102	98	0.0014	0.0045	17.5	7681	0.0132	75	0.0019	0.0059	0.0031	-23
Beaumont	Crockett Street	450671P	462	20	Lights and Gates	2	Yes	21.8	8803	0.0165	60	0.0005	0.0041	29.3	7954	0.0186	54	0.0006	0.0046	0.0020	-7
Beaumont	Keith Road	762723S	461	75	Lights and Gates	2	Yes	27.2	8867	0.014	71	0.0019	0.0055	34.8	7987	0.0154	65	0.0021	0.0061	0.0014	-7
Beaumont	Langham Road	446594K	7645	60	Lights and Gates	2	Yes	32.7	8909	0.0287	35	0.0027	0.0108	40.3	8011	0.0307	33	0.0029	0.0115	0.0020	-2
Beaumont	Langham Road	762719C	1609	10	Lights and Gates	2	Yes	25	8845	0.0568	18	0.0009	0.0128	32.6	7975	0.0606	17	0.001	0.0136	0.0038	-1

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State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Beaumont	Main Lane	762725F	18	75	Lights and Gates	2	Yes	17.4	8723	0.0049	205	0.0009	0.0023	25	7918	0.0057	174	0.0011	0.0027	0.0008	-30
Beaumont	Neches Street	329480C	688	20	Lights and Gates	2	Yes	10.2	8441	0.0119	84	0.0004	0.0032	21.1	7874	0.0159	63	0.0006	0.0043	0.004	-21
Beaumont	South Major Drive / Texas 364	762721D	15150	75	Lights and Gates	4	Yes	17.4	8723	0.1237	8	0.0163	0.0487	25	7918	0.1335	7	0.0181	0.0526	0.0098	-1
Beaumont	Todd Avenue	762722K	536	75	Lights and Gates	2	Yes	27.2	8867	0.0145	69	0.002	0.0057	34.8	7987	0.016	62	0.0022	0.0063	0.0015	-6
Beaumont	Wooten Road	762956N	469	75	Lights and Gates	2	Yes	17.4	8723	0.0117	85	0.0015	0.0046	25	7918	0.0136	74	0.0018	0.0054	0.0019	-12
Benavides	Clark Street	793681T	350	40	Lights and Gates	2	Yes	14.8	12509	0.0102	98	0.0010	0.0042	22.8	9617	0.0122	82	0.0013	0.0050	0.002	-16

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Benavides	County Park Road	793960N	35	59	Passive	1	No	14.8	12509	0.0221	45	0.0032	0.0099	22.8	9617	0.0265	38	0.0039	0.0118	0.0044	-7
Benavides	Court Street	793679S	350	40	Lights and Gates	2	Yes	14.8	12509	0.0102	98	0.0010	0.0042	22.8	9617	0.0122	82	0.0013	0.0050	0.002	-16
Benavides	FM 2295	793718F	295	40	Lights and Gates	2	Yes	14.8	12509	0.0097	103	0.0010	0.0040	22.8	9617	0.0116	86	0.0012	0.0048	0.0019	-17
Benavides	FM 3196 - Humble Street	793682A	120	40	Lights and Gates	2	Yes	14.8	12509	0.0076	131	0.0008	0.0031	22.8	9617	0.0092	109	0.0010	0.0038	0.0016	-22
Benavides	Texas Blvd	793673B	1312	40	Lights and Gates	2	Yes	14.8	12509	0.0451	22	0.0046	0.0186	22.8	9617	0.0498	20	0.0053	0.0206	0.0048	-2
Bloomburg	County Road 3990	330902P	183	55	Lights and Gates	2	Yes	13.5	9651	0.0082	122	0.0011	0.0036	25.9	8128	0.0108	92	0.0015	0.0048	0.0026	-29

Table H.1-4. Grade Crossing Safety by State and City

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								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Bloomburg	County Road 3992	330903W	166	55	Lights and Gates	2	Yes	13.5	9651	0.008	125	0.0011	0.0035	25.9	8128	0.0106	95	0.0015	0.0046	0.0025	-30
Bloomburg	County Road 4920	330907Y	116	55	Passive	2	Yes	13.5	9651	0.0534	19	0.0072	0.0235	25.9	8128	0.0641	16	0.0091	0.0282	0.0107	-3
Bloomburg	Cypress Street	330906S	374	55	Lights and Gates	2	Yes	13.5	9651	0.0099	101	0.0013	0.0044	25.9	8128	0.013	77	0.0018	0.0057	0.0031	-24
Bloomburg	FM 251	330901H	415	55	Lights and Gates	2	Yes	13.5	9651	0.0102	98	0.0014	0.0045	25.9	8128	0.0134	75	0.0019	0.0059	0.0031	-23
Bloomburg	Main Street	330905K	1994	55	Lights and Gates	2	Yes	13.5	9651	0.0153	65	0.0015	0.0056	25.9	8128	0.0196	51	0.0020	0.0072	0.0044	-15
Bloomington	Black Bayou	427528W	70	50	Passive	2	Yes	19.8	9795	0.0181	55	0.0023	0.0078	28.2	7681	0.0211	47	0.0028	0.0091	0.003	-8
Bloomington	Levi Road	435911G	105	10	Lights and Gates	2	Yes	26.4	9795	0.0094	106	0.0002	0.0029	34.8	7681	0.0106	94	0.0002	0.0032	0.0012	-12

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Bloomington	Nueces Street	427525B	47	50	Passive	2	Yes	19.8	9795	0.016	63	0.0017	0.0069	28.2	7681	0.0187	53	0.002	0.0081	0.0027	-9
Bloomington	Phillips Road	435913V	3152	10	Lights and Gates	2	Yes	26.4	9795	0.022	45	0.0005	0.0067	34.8	7681	0.0242	41	0.0005	0.0074	0.0023	-4
Bloomington	Texas 185	435914C	7269	50	Lights and Gates	3	Yes	26.4	9795	0.1148	9	0.0115	0.0496	34.8	7681	0.1218	8	0.0125	0.0526	0.007	0
China	Aggie Drive	762735L	858	75	Lights and Gates	2	Yes	17.4	8723	0.0137	73	0.0024	0.0064	25	7918	0.0158	63	0.0029	0.0074	0.0021	-10
China	Broadway Street	762739N	2963	75	Lights and Gates	2	Yes	17.4	8723	0.0186	54	0.0033	0.0087	25	7918	0.0212	47	0.0039	0.0099	0.0027	-7
China	East Railroad Street	762738G	172	75	Lights and Gates	2	Yes	17.4	8723	0.009	111	0.0016	0.0042	25	7918	0.0105	95	0.0019	0.0049	0.0015	-16

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China	Meeker Road	762733X	620	75	Lights and Gates	2	Yes	27.2	8867	0.0151	66	0.0028	0.007	34.8	7987	0.0166	60	0.0031	0.0077	0.0015	-6
China	Turner Road	762737A	1121	75	Lights and Gates	2	Yes	17.4	8723	0.0146	68	0.0026	0.0068	25	7918	0.0169	59	0.0031	0.0079	0.0022	-9
China	Yorkshire Road	762732R	744	75	Lights and Gates	2	Yes	27.2	8867	0.0158	63	0.0029	0.0074	34.8	7987	0.0174	58	0.0033	0.0081	0.0016	-6
Corpus Christi	Hearn	427587Y	2431	40	Lights and Gates	2	Yes	17.6	9795	0.0178	56	0.0013	0.0061	26	7681	0.0206	49	0.0016	0.0071	0.0028	-8
Corpus Christi	I 37 Frontage Road	427704S	1531	40	Lights and Gates	2	Yes	17.6	9795	0.0159	63	0.0012	0.0055	26	7681	0.0185	54	0.0014	0.0063	0.0026	-9
Corpus Christi	Leopard Street	427586S	14888	40	Lights and Gates	4	Yes	17.6	9795	0.0327	31	0.0025	0.0112	26	7681	0.0367	27	0.0028	0.0126	0.004	-3

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Corpus Christi	Sharpsburg Road	427584D	878	40	Lights and Gates	2	Yes	17.6	9795	0.0138	72	0.001	0.0048	26	7681	0.0161	62	0.0012	0.0055	0.0023	-10
Crosby	Adlong Johnson Road	762866P	1162	75	Lights and Gates	2	Yes	21.8	8803	0.0161	62	0.0029	0.0075	29.3	7954	0.0181	55	0.0034	0.0084	0.0020	-7
Crosby	Crosby Eastgate Road	762865H	3074	70	Lights and Gates	2	Yes	27.2	8867	0.0221	45	0.0038	0.0102	34.8	7987	0.0241	41	0.0043	0.0111	0.0020	-4
Crosby	FM 2100 Northbound F	440488G	517	75	Lights and Gates	2	Yes	27.2	8867	0.0144	69	0.002	0.0057	34.8	7987	0.0159	63	0.0022	0.0063	0.0015	-6
Crosby	FM 2100 Southbound F	762873A	2015	70	Lights and Gates	1	Yes	27.2	8867	0.0516	19	0.0066	0.02	34.8	7987	0.0547	18	0.0072	0.0212	0.0031	-1

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Crosby	Lord Road	762861F	750	70	Lights and Gates	2	Yes	27.2	8867	0.0158	63	0.0028	0.0073	34.8	7987	0.0174	57	0.0031	0.008	0.0016	-6
Crosby	Miller Wilson Road	762872T	6475	60	Lights and Gates	2	Yes	27.2	8867	0.0663	15	0.0074	0.0249	34.8	7987	0.0703	14	0.008	0.0264	0.0041	-1
Crosby	Plaza Circle	762860Y	956	75	Lights and Gates	2	Yes	25	8845	0.0162	62	0.003	0.0076	32.6	7975	0.018	56	0.0034	0.0084	0.0017	-6
Crosby	Ramsey Road	762869K	3064	60	Lights and Gates	2	Yes	27.2	8867	0.0221	45	0.0034	0.0099	34.8	7987	0.0241	41	0.0038	0.0108	0.0020	-4
Crosby	Shady Lane	762859E	485	70	Lights and Gates	2	Yes	27.2	8867	0.0142	70	0.0025	0.0065	34.8	7987	0.0156	64	0.0028	0.0072	0.0015	-7
Dayton	County Route 602	762853N	1525	70	Lights and Gates	2	Yes	27.2	8867	0.0188	53	0.0033	0.0086	34.8	7987	0.0206	49	0.0036	0.0095	0.0018	-5

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Dayton	County Route 603	762855C	938	70	Lights and Gates	2	Yes	27.2	8867	0.0167	60	0.0029	0.0077	34.8	7987	0.0184	54	0.0033	0.0085	0.0017	-5
Dayton	County Route 604	762856J	798	75	Lights and Gates	2	Yes	21.8	8803	0.0147	68	0.0025	0.0069	29.3	7954	0.0165	61	0.0028	0.0077	0.0018	-8
Dayton	FM 601	762852G	516	70	Lights and Gates	2	Yes	27.2	8867	0.0144	69	0.0025	0.0066	34.8	7987	0.0159	63	0.0028	0.0073	0.0015	-6
Dayton	Main Street	762786W	5802	60	Lights and Gates	2	Yes	17.4	8723	0.0217	46	0.0021	0.0082	25	7918	0.0247	41	0.0024	0.0093	0.0030	-6
Dayton	Waco Street	762789S	6585	60	Lights and Gates	2	Yes	17.4	8723	0.0223	45	0.0024	0.0084	25	7918	0.0254	39	0.0028	0.0095	0.0030	-5
Dayton	Winfree Street	762785P	9335	60	Lights and Gates	2	Yes	17.4	8723	0.1015	10	0.011	0.0382	25	7918	0.1099	9	0.0123	0.0413	0.0083	-1

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Devers	Gates Road	762753J	270	75	Lights and Gates	2	Yes	17.4	8723	0.0101	99	0.0018	0.0047	25	7918	0.0118	85	0.0022	0.0055	0.0016	-14
Deweyville	County Road 4181	329453F	1336	59	Lights and Gates	2	Yes	10.2	8441	0.0123	81	0.0017	0.0055	21.1	7874	0.0165	61	0.0024	0.0074	0.0042	-21
Deweyville	Ruliff Road	329450K	375	59	Lights and Gates	2	Yes	10.2	8441	0.0088	113	0.0012	0.0039	21.1	7874	0.012	83	0.0018	0.0053	0.0032	-30
Edna	Allen Street	746640M	1708	59	Lights and Gates	2	Yes	9.7	9795	0.0129	78	0.0013	0.0048	18	7681	0.0165	61	0.0018	0.0062	0.0036	-17
Edna	Colorado Street	746642B	254	59	Lights and Gates	2	Yes	9.7	9795	0.0078	128	0.0008	0.0029	18	7681	0.0101	99	0.0011	0.0038	0.0023	-30
Edna	County Road 0300	746644P	127	59	Passive	2	Yes	9.7	9795	0.0167	60	0.0023	0.0074	18	7681	0.0219	46	0.0032	0.0098	0.0052	-14

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Edna	County Road 4082	746633C	141	59	Lights and Gates	2	Yes	9.7	9795	0.0066	151	0.0009	0.003	18	7681	0.0087	115	0.0013	0.0039	0.002	-35
Edna	East Street	746637E	1335	59	Lights and Gates	2	Yes	9.7	9795	0.0121	83	0.0012	0.0045	18	7681	0.0155	65	0.0017	0.0058	0.0034	-18
Edna	FM 0234	746645W	2774	59	Lights and Gates	2	Yes	9.7	9795	0.0146	69	0.002	0.0065	18	7681	0.0185	54	0.0027	0.0083	0.004	-15
Edna	FM 1822	746643H	4022	59	Lights and Gates	2	Yes	9.7	9795	0.016	63	0.0016	0.006	18	7681	0.0202	50	0.0022	0.0076	0.0042	-13
Edna	Pumphrey Street	746641U	1683	59	Lights and Gates	2	Yes	9.7	9795	0.0128	78	0.0013	0.0048	18	7681	0.0164	61	0.0018	0.0061	0.0036	-17
Edna	Road 410	927038K	292	59	Lights and Gates	2	Yes	9.7	9795	0.0081	123	0.0011	0.0036	18	7681	0.0105	95	0.0015	0.0047	0.0024	-28
Edna	Road 414	746625K	153	59	Passive	2	No	9.7	9795	0.0281	36	0.0039	0.0125	18	7681	0.0354	28	0.0052	0.0158	0.0073	-7

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Edna	Road 4142 Airport	746628F	25	59	Passive	2	Yes	9.7	9795	0.0099	101	0.0014	0.0044	18	7681	0.0134	75	0.002	0.006	0.0034	-26
Edna	SH 0111 Wells Street	746639T	9917	59	Lights and Gates	4	Yes	9.7	9795	0.0247	41	0.0025	0.0092	18	7681	0.0304	33	0.0033	0.0114	0.0057	-8
El Campo	Alamo Street/Fahd	743436D	1776	23	Lights and Gates	2	Yes	9.7	9795	0.013	77	0.0006	0.0039	18	7681	0.0166	60	0.0007	0.0050	0.0036	-17
El Campo	County Road 0307	743443N	554	59	Lights and Gates	2	Yes	9.7	9795	0.0096	104	0.0013	0.0043	18	7681	0.0124	81	0.0018	0.0055	0.0028	-24
El Campo	County Road 0309	743446J	712	59	Lights and Gates	2	Yes	9.7	9795	0.0103	97	0.0014	0.0046	18	7681	0.0132	76	0.0019	0.0059	0.003	-22
El Campo	County Road 0405	743378K	122	59	Passive	1	No	9.7	9795	0.0264	38	0.0037	0.0118	18	7681	0.0335	30	0.0049	0.0149	0.0071	-8

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
El Campo	County Road 0421	743373B	189	59	Passive	2	No	9.7	9795	0.0297	34	0.0042	0.0133	18	7681	0.0372	27	0.0055	0.0166	0.0075	-7
El Campo	FM 0653 Wharton Street	743432B	5314	23	Lights and Gates	2	Yes	9.7	9795	0.0171	59	0.0007	0.0052	18	7681	0.0215	46	0.0010	0.0065	0.0045	-12
El Campo	Gladys Street	743439Y	924	23	Lights and Gates	2	Yes	9.7	9795	0.011	91	0.0005	0.0033	18	7681	0.0141	71	0.0006	0.0043	0.0031	-20
El Campo	Higbee	743433H	836	23	Lights and Gates	2	Yes	9.7	9795	0.0107	93	0.0005	0.0032	18	7681	0.0138	73	0.0006	0.0042	0.0031	-21
El Campo	Hoskins Broadway	743437K	1672	23	Lights and Gates	2	Yes	9.7	9795	0.0128	78	0.0005	0.0039	18	7681	0.0164	61	0.0007	0.0050	0.0036	-17
El Campo	Meadow Lane	743440T	3443	23	Lights and Gates	2	Yes	9.7	9795	0.0154	65	0.0007	0.0046	18	7681	0.0195	51	0.0009	0.0059	0.0041	-14

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
El Campo	Palacious Street	743438S	3297	23	Lights and Gates	2	Yes	9.7	9795	0.0152	66	0.0006	0.0046	18	7681	0.0193	52	0.0009	0.0058	0.0041	-14
El Campo	Sam Bishkin Road	927033B	561	59	Lights and Gates	2	Yes	9.7	9795	0.0096	104	0.001	0.0036	18	7681	0.0125	80	0.0013	0.0047	0.0028	-23
El Campo	SH 71 Mechanic Street	743435W	11014	23	Lights and Gates	4	Yes	9.7	9795	0.0648	15	0.0028	0.0196	18	7681	0.0752	13	0.0034	0.0227	0.0104	-2
El Campo	Washington	743434P	1608	23	Lights and Gates	2	Yes	9.7	9795	0.0127	79	0.0005	0.0038	18	7681	0.0162	62	0.0007	0.0049	0.0035	-17
Ganado	Country Club Road	743580V	123	59	Passive	2	Yes	9.7	9795	0.0165	61	0.0023	0.0074	18	7681	0.0217	46	0.0032	0.0097	0.0052	-14
Ganado	FM 2982	746624D	394	59	Lights and Gates	2	Yes	9.7	9795	0.0088	114	0.0012	0.0039	18	7681	0.0114	88	0.0017	0.0051	0.0026	-26

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Ganado	Fourth Street	746622P	1264	59	Lights and Gates	2	Yes	9.7	9795	0.0119	84	0.0017	0.0053	18	7681	0.0153	65	0.0022	0.0068	0.0034	-18
Ganado	Lavaca Ramp Road	746627Y	308	59	Passive	2	Yes	9.7	9795	0.0218	46	0.0031	0.0097	18	7681	0.0281	36	0.0041	0.0125	0.0063	-10
Ganado	Road 203	743581C	31	59	Passive	2	No	9.7	9795	0.0522	19	0.0073	0.0233	18	7681	0.0621	16	0.0091	0.0277	0.0098	-3
Ganado	Road 2531	927036W	96	59	Passive	2	Yes	9.7	9795	0.0153	66	0.0021	0.0068	18	7681	0.0202	50	0.003	0.009	0.0049	-16
Ganado	SH 0172	746621H	7607	59	Lights and Gates	2	Yes	9.7	9795	0.0186	54	0.0026	0.0083	18	7681	0.0234	43	0.0034	0.0104	0.0047	-11
Ganado	Sixth Street	746623W	96	59	Lights and Gates	2	Yes	9.7	9795	0.006	168	0.0006	0.0022	18	7681	0.0078	128	0.0008	0.0029	0.0018	-39
Guadalupe	Apple Street	746536T	70	25	Passive	2	Yes	9.9	9795	0.0111	90	0.0007	0.0042	18.2	7681	0.0148	67	0.001	0.0056	0.0037	-23

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Guadalupe	Commerce Street	746527U	166	25	Passive	2	Yes	9.9	9795	0.0147	68	0.0009	0.0055	18.2	7681	0.0194	52	0.0012	0.0073	0.0047	-16
Guadalupe	Menke Road	746530C	211	25	Passive	2	Yes	9.9	9795	0.0488	20	0.0032	0.0183	18.2	7681	0.0577	17	0.0039	0.0216	0.0089	-3
Guadalupe	Wood Hi Road	746537A	527	25	Lights and Gates	2	Yes	9.9	9795	0.0096	104	0.0006	0.0036	18.2	7681	0.0123	81	0.0008	0.0046	0.0027	-23
Hebbronville	Cedar Street	793695B	293	50	Lights and Gates	2	Yes	14.8	12509	0.0097	103	0.0012	0.0042	22.8	9617	0.0116	86	0.0015	0.0050	0.0019	-17
Hebbronville	North Rigma Road	793699D	937	50	Lights and Gates	2	Yes	14.8	12509	0.0131	76	0.0016	0.0057	22.8	9617	0.0156	64	0.0020	0.0067	0.0025	-12
Hebbronville	Oscar Avenue	793698W	234	50	Lights and Gates	2	Yes	14.8	12509	0.0091	110	0.0011	0.0039	22.8	9617	0.011	91	0.0014	0.0047	0.0018	-18
Hebbronville	Pine Street	793694U	129	50	Lights and Gates	2	Yes	14.8	12509	0.0078	129	0.0010	0.0034	22.8	9617	0.0094	107	0.0012	0.0040	0.0016	-22

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Hebbronville	Sigrid Street	923779H	187	50	Lights and Gates	2	Yes	14.8	12509	0.0086	116	0.0011	0.0037	22.8	9617	0.0103	97	0.0013	0.0045	0.0017	-19
Hebbronville	Smith Avenue/Texas 16	793696H	8951	50	Lights and Gates	4	Yes	14.8	12509	0.1112	9	0.0139	0.0480	22.8	9617	0.1221	8	0.0158	0.0528	0.0109	-1
Hebbronville	Vaello Avenue	793693M	219	50	Lights and Gates	2	No	14.8	12509	0.009	112	0.0011	0.0039	22.8	9617	0.0108	93	0.0014	0.0046	0.0018	-19
Hebbronville	West Galbraith Street	793697P	111	50	Lights and Gates	2	Yes	14.8	12509	0.0075	134	0.0009	0.0032	22.8	9617	0.009	111	0.0012	0.0039	0.0015	-23
Houston	Beechnut Street	758519L	21912	60	Lights and Gates	4	Yes	28.3	8877	0.0439	23	0.0045	0.0153	35.9	7992	0.0466	21	0.0049	0.0163	0.0027	-1
Houston	Bellaire Boulevard	758518E	36535	60	Lights and Gates	6	Yes	28.3	8877	0.1173	9	0.0121	0.041	35.9	7992	0.122	8	0.0128	0.0426	0.0047	0

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Houston	Bissonnet Street	758517X	22176	60	Lights and Gates	4	Yes	28.3	8877	0.044	23	0.0045	0.0154	35.9	7992	0.0467	21	0.0049	0.0163	0.0027	-1
Houston	Braeswood Boulevard	758521M	10750	60	Lights and Gates	4	Yes	28.3	8877	0.0389	26	0.004	0.0136	35.9	7992	0.0416	24	0.0044	0.0145	0.0026	-2
Houston	C.E. King Parkway	762904W	20839	60	Lights and Gates	5	Yes	21.8	8803	0.0404	25	0.0045	0.0152	29.3	7954	0.0437	23	0.0049	0.0164	0.0033	-2
Houston	Champion Paper Drive	762889W	4394	60	Lights and Gates	2	Yes	21.8	8803	0.0221	45	0.0024	0.0083	29.3	7954	0.0246	41	0.0028	0.0092	0.0025	-5
Houston	Chimney Rock Road	755621G	15705	60	Lights and Gates	5	Yes	37.1	8934	0.1058	9	0.0122	0.037	44.6	8026	0.1096	9	0.0128	0.0383	0.0038	0
Houston	Durham Drive	758533G	21626	60	Lights and Gates	4	Yes	30.5	8894	0.041	24	0.0039	0.0154	38.1	8002	0.0435	23	0.0043	0.0164	0.0025	-1

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Houston	Fondren Road	755624C	25119	79	Lights and Gates	7	Yes	37.1	8934	0.4534	2	0.0661	0.1682	44.6	8026	0.4651	2	0.0688	0.1726	0.0117	0
Houston	Gregg Street	758289M	1946	30	Lights and Gates	2	Yes	36	8929	0.0247	40	0.0015	0.0073	43.5	8022	0.0264	38	0.0016	0.0079	0.0017	-3
Houston	Harvard Street	758541Y	918	40	Lights and Gates	2	Yes	30.5	8894	0.0196	51	0.0013	0.0062	38.1	8002	0.0213	47	0.0014	0.0068	0.0017	-4
Houston	Haviland Street	755623V	2131	79	Lights and Gates	2	Yes	37.1	8934	0.105	10	0.0153	0.039	44.6	8026	0.1093	9	0.0162	0.0406	0.0044	0
Houston	Heather Row Lane	762905D	1935	70	Lights and Gates	2	Yes	27.2	8867	0.0199	50	0.0026	0.0077	34.8	7987	0.0217	46	0.0028	0.0084	0.0019	-4
Houston	Heights Boulevard	758540S	29257	40	Lights and Gates	4	Yes	30.5	8894	0.3309	3	0.0219	0.1054	38.1	8002	0.3435	3	0.0232	0.1094	0.0126	0

Table H.1-4. Grade Crossing Safety by State and City

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Houston	Henderson Street	758180W	10279	60	Lights and Gates	2	Yes	32.7	8909	0.0305	33	0.0029	0.0115	40.3	8011	0.0326	31	0.0031	0.0122	0.0021	-2
Houston	Hillcroft Avenue	755622N	17679	60	Lights and Gates	5	Yes	37.1	8934	0.2828	4	0.0325	0.0988	44.6	8026	0.2917	3	0.034	0.1019	0.0089	0
Houston	Houston Avenue	758187U	15715	20	Lights and Gates	4	Yes	32.7	8909	0.0396	25	0.0013	0.0116	40.3	8011	0.0419	24	0.0014	0.0123	0.0023	-1
Houston	John Ralston Road	762907S	6016	60	Lights and Gates	2	Yes	27.2	8867	0.0256	39	0.0029	0.0096	34.8	7987	0.0279	36	0.0032	0.0105	0.0022	-3
Houston	Liberty Road	758293C	8201	60	Lights and Gates	2	Yes	32.7	8909	0.0775	13	0.0069	0.0271	40.3	8011	0.0814	12	0.0074	0.0284	0.0039	-1
Houston	Maury Street	743120T	2032	60	Lights and Gates	2	Yes	38.1	8940	0.0652	15	0.0075	0.0228	45.7	8029	0.0681	15	0.008	0.0238	0.0029	-1

Table H.1-4. Grade Crossing Safety by State and City

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								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Houston	North Shepherd Drive	758534N	23341	40	Lights and Gates	4	Yes	30.5	8894	0.0416	24	0.0028	0.0143	38.1	8002	0.0441	23	0.003	0.0152	0.0025	-1
Houston	Oates Road	745074B	2032	50	Lights and Gates	2	Yes	21.8	8803	0.0929	11	0.0087	0.0311	29.3	7954	0.0991	10	0.0095	0.0332	0.0062	-1
Houston	Oliver Street	758177N	918	60	Lights and Gates	2	Yes	32.7	8909	0.0178	56	0.0017	0.0067	40.3	8011	0.0193	52	0.0019	0.0073	0.0015	-4
Houston	Park Road 138	762895A	48	75	Lights and Gates	2	Yes	25	8845	0.0075	134	0.001	0.0029	32.6	7975	0.0084	119	0.0012	0.0033	0.0009	-14
Houston	Parker Street	758535V	918	60	Lights and Gates	2	Yes	30.5	8894	0.0196	51	0.0019	0.0069	38.1	8002	0.0213	47	0.0021	0.0074	0.0017	-4
Houston	Patterson Street	758536C	918	40	Lights and Gates	2	Yes	30.5	8894	0.0196	51	0.0013	0.0062	38.1	8002	0.0213	47	0.0014	0.0068	0.0017	-4

Table H.1-4. Grade Crossing Safety by State and City

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								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Houston	Pineland Road	762897N	1570	75	Lights and Gates	2	Yes	21.8	8803	0.0506	20	0.0068	0.0199	29.3	7954	0.0544	18	0.0075	0.0214	0.0038	-1
Houston	Post Oak Northbound	755618Y	11706	40	Lights and Gates	2	Yes	32.7	8909	0.0346	29	0.0024	0.011	40.3	8011	0.0368	27	0.0026	0.0117	0.0022	-2
Houston	Post Oak Southbound	440652H	10960	40	Lights and Gates	2	Yes	32.7	8909	0.0341	29	0.0024	0.0109	40.3	8011	0.0363	28	0.0026	0.0116	0.0022	-2
Houston	Richmond Avenue	758514C	30689	60	Lights and Gates	6	Yes	28.3	8877	0.0532	19	0.0055	0.0186	35.9	7992	0.0558	18	0.0059	0.0195	0.0027	-1
Houston	Roy Street	758532A	4677	40	Lights and Gates	2	Yes	30.5	8894	0.1539	6	0.0102	0.049	38.1	8002	0.1612	6	0.0109	0.0513	0.0072	0
Houston	San Felipe Road	758512N	16251	60	Lights and Gates	4	Yes	28.3	8877	0.1475	7	0.0152	0.0515	35.9	7992	0.1544	6	0.0162	0.0539	0.0069	0

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Houston	Sawyer Street	758178V	16407	60	Lights and Gates	2	Yes	32.7	8909	0.0334	30	0.0032	0.0126	40.3	8011	0.0356	28	0.0034	0.0134	0.0022	-2
Houston	Sheldon Road	762892E	8987	60	Lights and Gates	2	Yes	21.8	8803	0.066	15	0.0073	0.0248	29.3	7954	0.0709	14	0.008	0.0267	0.0049	-1
Houston	Sherwin Street	758528K	918	40	Lights and Gates	1	Yes	30.5	8894	0.0843	12	0.0056	0.0268	38.1	8002	0.0883	11	0.006	0.0281	0.0040	-1
Houston	Silver Street	758183S	918	60	Lights and Gates	2	Yes	32.7	8909	0.0178	56	0.0017	0.0067	40.3	8011	0.0193	52	0.0019	0.0073	0.0015	-4
Houston	T.C. Jester Street	758531T	16143	40	Lights and Gates	4	Yes	30.5	8894	0.0426	23	0.0028	0.0136	38.1	8002	0.0451	22	0.003	0.0144	0.0025	-1
Houston	Trentham Place	758192R	825	60	Passive	2	Yes	32.7	8909	0.0441	23	0.0037	0.0166	40.3	8011	0.0469	21	0.0041	0.0176	0.0029	-1

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Houston	US 59 Eastbound Frontage	758610E	6348	60	Lights and Gates	2	Yes	28.3	8877	0.0293	34	0.0033	0.0102	35.9	7992	0.0316	32	0.0036	0.011	0.0023	-3
Houston	US 59 Westbound Frontage	758611L	6435	60	Lights and Gates	2	Yes	28.3	8877	0.0722	14	0.0081	0.0252	35.9	7992	0.0764	13	0.0088	0.0267	0.0042	-1
Houston	Van Hut Lane	762901B	8501	60	Lights and Gates	2	Yes	27.2	8867	0.0691	14	0.0078	0.026	34.8	7987	0.0733	14	0.0084	0.0275	0.0042	-1
Houston	West Bellfort Avenue	758523B	11240	60	Lights and Gates	4	Yes	28.3	8877	0.0392	25	0.0041	0.0137	35.9	7992	0.0419	24	0.0044	0.0146	0.0026	-2
Houston	West Street	758284D	472	30	Lights and Gates	2	Yes	43.6	8962	0.0216	46	0.001	0.0059	51.2	8043	0.0229	44	0.0011	0.0063	0.0013	-3
Houston	Westheimer Road	758513V	29808	60	Lights and Gates	5	Yes	28.3	8877	0.0495	20	0.0051	0.0173	35.9	7992	0.0522	19	0.0055	0.0182	0.0027	-1

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Houston	Willowbend Boulevard	758525P	5559	60	Lights and Gates	4	Yes	28.3	8877	0.0345	29	0.0036	0.0121	35.9	7992	0.037	27	0.0039	0.0129	0.0025	-2
Hungerford	County Road 0220	743354W	141	59	Passive	2	Yes	9.7	9795	0.0513	19	0.0072	0.0229	18	7681	0.061	16	0.0089	0.0272	0.0096	-3
Hungerford	FM 1161	743353P	1823	59	Lights and Gates	2	Yes	9.7	9795	0.043	23	0.006	0.0192	18	7681	0.0495	20	0.0073	0.0221	0.0065	-3
Hungerford	Miller Road	743351B	398	59	Passive	2	Yes	9.7	9795	0.1798	6	0.0252	0.0802	18	7681	0.2075	5	0.0304	0.0926	0.0277	-1
Hungerford	Railroad Street	743352H	4480	59	Lights and Gates	2	Yes	9.7	9795	0.0164	61	0.0023	0.0073	18	7681	0.0207	48	0.003	0.0092	0.0043	-13
Inez	Babb Ln	746647K	64	59	Passive	2	No	9.7	9795	0.022	45	0.0031	0.0098	18	7681	0.0283	35	0.0041	0.0126	0.0063	-10
Inez	FM 0444	746573V	1863	59	Lights and Gates	2	Yes	9.7	9795	0.0132	76	0.0018	0.0059	18	7681	0.0168	59	0.0025	0.0075	0.0036	-16

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Inez	Kolle Street	746575J	372	59	Passive	2	Yes	9.7	9795	0.0617	16	0.0087	0.0275	18	7681	0.0734	14	0.0108	0.0328	0.0117	-3
Inez	Midway Road	746678J	758	59	Lights and Gates	2	Yes	9.7	9795	0.0104	96	0.0015	0.0047	18	7681	0.0135	74	0.002	0.006	0.003	-21
Kendleton	County Road 0212	743350U	199	59	Passive	2	Yes	9.7	9795	0.0548	18	0.0077	0.0244	18	7681	0.0652	15	0.0095	0.0291	0.0104	-3
Kendleton	Darst-Gin Road	743480R	815	59	Lights and Gates	2	Yes	9.2	9795	0.0381	26	0.0053	0.017	17.5	7681	0.0437	23	0.0064	0.0195	0.0057	-3
Kendleton	FM 2919	743483L	2633	59	Lights and Gates	2	Yes	9.7	9795	0.0144	70	0.002	0.0064	18	7681	0.0183	55	0.0027	0.0082	0.0039	-15
Kendleton	Park Road / Hill Top Ro Na	927027X	166	59	Lights and Gates	2	Yes	9.7	9795	0.0069	144	0.001	0.0031	18	7681	0.0091	110	0.0013	0.004	0.0021	-34

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Laredo	Arkansas Avenue	793598S	22221	20	Lights and Gates	2	Yes	14.8	12509	0.0275	36	0.0011	0.0081	22.8	9617	0.0317	32	0.0013	0.0093	0.0042	-5
Laredo	Bartlett Avenue	917530B	1445	20	Lights and Gates	2	Yes	14.8	12509	0.0146	68	0.0006	0.0043	22.8	9617	0.0173	58	0.0007	0.0051	0.0027	-11
Laredo	Botello Road	793609C	1368	50	Passive	2	No	14.8	12509	0.1733	6	0.0217	0.0749	22.8	9617	0.1889	5	0.0244	0.0816	0.0155	0
Laredo	Buena Vista Avenue	793594P	1330	20	Lights and Gates	2	Yes	14.8	12509	0.0143	70	0.0006	0.0042	22.8	9617	0.017	59	0.0007	0.005	0.0027	-11
Laredo	Hendricks Avenue	793588L	1073	20	Lights and Gates	2	Yes	14.8	12509	0.0136	74	0.0005	0.004	22.8	9617	0.0161	62	0.0006	0.0047	0.0025	-12
Laredo	Jordan Road	793965X	228	59	Passive	2	No	14.8	12509	0.0363	28	0.0052	0.0162	22.8	9617	0.042	24	0.0063	0.0187	0.0057	-4
Laredo	Logan Avenue	793586X	377	20	Lights and Gates	2	Yes	14.8	12509	0.0104	97	0.0004	0.003	22.8	9617	0.0124	81	0.0005	0.0036	0.002	-16

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Laredo	Malinche Avenue	793595W	976	20	Lights and Gates	2	Yes	14.8	12509	0.0132	76	0.0005	0.0039	22.8	9617	0.0157	64	0.0006	0.0046	0.0025	-12
Laredo	Market Street East	793596D	3254	20	Lights and Gates	2	Yes	14.8	12509	0.0178	56	0.0007	0.0052	22.8	9617	0.021	48	0.0008	0.0061	0.0031	-8
Laredo	Milagro Street	793612K	1278	50	Lights and Gates	2	Yes	14.8	12509	0.0142	71	0.0018	0.0061	22.8	9617	0.0168	59	0.0022	0.0073	0.0026	-11
Laredo	North Stone Avenue	793591U	2198	20	Lights and Gates	2	Yes	14.8	12509	0.0162	62	0.0006	0.0047	22.8	9617	0.0191	52	0.0008	0.0056	0.0029	-9
Laredo	Seymour Avenue	793593H	1858	20	Lights and Gates	2	Yes	14.8	12509	0.0156	64	0.0006	0.0045	22.8	9617	0.0184	54	0.0007	0.0054	0.0028	-10
Liberty	Alabama Street	762772N	260	45	Lights and Gates	2	Yes	27.2	8867	0.0121	83	0.001	0.0043	34.8	7987	0.0134	75	0.0012	0.0047	0.0013	-8

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Liberty	Austin Street	762768Y	398	45	Lights and Gates	2	Yes	17.4	8723	0.0112	89	0.0009	0.004	25	7918	0.013	77	0.0011	0.0046	0.0018	-12
Liberty	Bowie Street	762770A	3227	45	Lights and Gates	2	Yes	27.2	8867	0.0223	45	0.0019	0.0079	34.8	7987	0.0244	41	0.0022	0.0086	0.0020	-4
Liberty	Crockett Street	762769F	850	45	Lights and Gates	2	Yes	27.2	8867	0.0163	61	0.0014	0.0058	34.8	7987	0.0179	56	0.0016	0.0063	0.0016	-6
Liberty	Fannin Street	762764W	637	45	Lights and Gates	2	Yes	16.3	8697	0.0124	81	0.001	0.0044	23.9	7907	0.0144	69	0.0012	0.0051	0.0021	-12
Liberty	FM 1909	762760U	177	75	Lights and Gates	2	Yes	17.4	8723	0.0091	110	0.0016	0.0042	25	7918	0.0106	95	0.0019	0.0049	0.0015	-16
Liberty	Independence Street	762762H	1797	75	Lights and Gates	2	Yes	17.4	8723	0.0164	61	0.0022	0.0065	25	7918	0.0189	53	0.0026	0.0074	0.0024	-8

Table H.1-4. Grade Crossing Safety by State and City

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								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Liberty	Louisiana Street	762771G	519	45	Lights and Gates	2	Yes	16.3	8697	0.0117	85	0.0009	0.0041	23.9	7907	0.0137	73	0.0011	0.0048	0.0020	-12
Liberty	Main Street	762765D	8573	45	Lights and Gates	2	Yes	17.4	8723	0.0237	42	0.002	0.0084	25	7918	0.0269	37	0.0023	0.0095	0.0032	-5
Liberty	Milam Street	762767S	1529	45	Lights and Gates	2	Yes	27.2	8867	0.0188	53	0.0016	0.0066	34.8	7987	0.0206	49	0.0018	0.0073	0.0018	-5
Liberty	San Jacinto Street	762763P	2286	45	Lights and Gates	2	Yes	27.2	8867	0.0206	48	0.0018	0.0073	34.8	7987	0.0226	44	0.002	0.008	0.0019	-4
Liberty	Tennessee Street	762782U	236	45	Lights and Gates	2	Yes	16.3	8697	0.0095	105	0.0008	0.0034	23.9	7907	0.0112	89	0.001	0.0039	0.0017	-15
Liberty	Texas 146	763062E	12005	75	Lights and Gates	4	Yes	17.4	8723	0.0755	13	0.01	0.0298	25	7918	0.0822	12	0.0111	0.0324	0.0066	-1

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								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Liberty	Travis Street	762766K	2097	45	Lights and Gates	2	Yes	27.2	8867	0.0202	49	0.0018	0.0071	34.8	7987	0.0221	45	0.002	0.0078	0.0019	-4
Louise	Colorado Street	743454B	330	59	Lights and Gates	2	Yes	9.7	9795	0.0084	120	0.0012	0.0037	18	7681	0.0109	92	0.0016	0.0048	0.0025	-27
Louise	County Road 0312	743452M	528	59	Lights and Gates	2	Yes	9.7	9795	0.0095	105	0.0013	0.0042	18	7681	0.0123	82	0.0018	0.0055	0.0028	-24
Louise	County Road 0313	743449E	171	59	Passive	2	Yes	9.7	9795	0.0183	55	0.0026	0.0082	18	7681	0.0239	42	0.0035	0.0106	0.0056	-13
Louise	County Road 0315	743450Y	119	59	Passive	2	Yes	9.7	9795	0.0163	61	0.0023	0.0073	18	7681	0.0215	47	0.0031	0.0096	0.0051	-15
Louise	FM 0441	743447R	281	59	Lights and Gates	2	Yes	9.7	9795	0.008	125	0.0011	0.0036	18	7681	0.0104	96	0.0015	0.0046	0.0024	-29

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								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Louise	FM 0647	743461L	195	59	Lights and Gates	2	Yes	9.7	9795	0.0073	138	0.001	0.0032	18	7681	0.0095	106	0.0014	0.0042	0.0022	-32
Louise	Orange Street	743459K	396	59	Lights and Gates	2	Yes	9.7	9795	0.0088	114	0.0012	0.0039	18	7681	0.0114	88	0.0017	0.0051	0.0026	-26
Louise	Wharton	743453U	117	59	Lights and Gates	2	Yes	9.7	9795	0.0063	158	0.0009	0.0028	18	7681	0.0083	121	0.0012	0.0037	0.0019	-37
Mauriceville	FM 1130	329455U	1683	59	Lights and Gates	2	Yes	10.2	8441	0.0429	23	0.006	0.0191	21.1	7874	0.0508	20	0.0075	0.0227	0.0079	-4
Mauriceville	FM 1136	329460R	2774	59	Lights and Gates	2	Yes	10.2	8441	0.0148	67	0.0021	0.0066	21.1	7874	0.0197	51	0.0029	0.0088	0.0048	-17
Mauriceville	Old Highway 62	329457H	586	59	Lights and Gates	2	Yes	10.2	8441	0.0099	101	0.0014	0.0044	21.1	7874	0.0134	74	0.002	0.006	0.0035	-26

Table H.1-4. Grade Crossing Safety by State and City

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								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
McFaddin	FM 445	427536N	180	50	Lights and Gates	2	Yes	19.8	9795	0.0096	104	0.0012	0.0042	28.2	7681	0.0112	90	0.0015	0.0048	0.0015	-14
Mirando City	Behlen Avenue	793623X	176	45	Lights and Gates	2	Yes	14.8	12509	0.0085	118	0.0010	0.0036	22.8	9617	0.0102	98	0.0012	0.0043	0.0017	-20
Mirando City	FM 0649	793625L	1052	45	Lights and Gates	2	Yes	14.8	12509	0.0135	74	0.0015	0.0057	22.8	9617	0.016	62	0.0019	0.0068	0.0025	-12
Mirando City	Jennings Road	793617U	180	59	Lights and Gates	2	Yes	14.8	12509	0.0085	118	0.0012	0.0038	22.8	9617	0.0102	98	0.0015	0.0046	0.0017	-20
Mirando City	Panther Avenue	793621J	258	45	Lights and Gates	2	Yes	14.8	12509	0.0094	107	0.0011	0.0040	22.8	9617	0.0112	89	0.0013	0.0048	0.0019	-18
Missouri City	South Cravens Road	743688E	1804	79	Lights and Gates	3	Yes	37.1	8934	0.3567	3	0.052	0.1324	44.6	8026	0.3696	3	0.0546	0.1372	0.0129	0

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Missouri City	South Gessner Road	743689L	19452	60	Lights and Gates	4	Yes	37.1	8934	0.1586	6	0.0182	0.0554	44.6	8026	0.1642	6	0.0191	0.0573	0.0055	0
Nome	McDermand Road	762740H	170	75	Lights and Gates	2	Yes	17.4	8723	0.0621	16	0.0111	0.029	25	7918	0.0659	15	0.0121	0.0308	0.0038	-1
Nome	Old US 90	763047C	79	75	Lights and Gates	2	Yes	17.4	8723	0.0073	137	0.0013	0.0034	25	7918	0.0085	117	0.0016	0.004	0.0012	-20
Nome	Texas 326	762743D	3345	60	Lights and Gates	2	Yes	17.4	8723	0.0191	52	0.0028	0.0085	25	7918	0.0218	46	0.0033	0.0098	0.0027	-7
Nome	Third Street	762744K	1058	75	Lights and Gates	2	Yes	17.4	8723	0.0144	69	0.0026	0.0067	25	7918	0.0166	60	0.003	0.0078	0.0022	-9
Nome	Thompson Road	762742W	98	75	Lights and Gates	2	Yes	17.4	8723	0.0333	30	0.006	0.0155	25	7918	0.0356	28	0.0065	0.0166	0.0023	-2

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Odem	Baylor Street	436030Y	2521	49	Lights and Gates	2	Yes	19.8	9795	0.0188	53	0.0019	0.0081	28.2	7681	0.0214	47	0.0022	0.0092	0.0026	-7
Odem	County Road 1694	436020T	164	49	Lights and Gates	2	Yes	20.9	9795	0.0096	104	0.001	0.0041	29.3	7681	0.0111	90	0.0011	0.0048	0.0014	-14
Odem	County Road 64	436031F	1248	49	Lights and Gates	2	Yes	17.6	9795	0.0151	66	0.0019	0.0065	26	7681	0.0176	57	0.0023	0.0076	0.0025	-9
Odem	FM 1944	436023N	740	49	Lights and Gates	2	Yes	20.9	9795	0.0142	70	0.0018	0.0061	29.3	7681	0.0162	62	0.0021	0.007	0.002	-9
Odem	FM 631	436017K	2760	49	Lights and Gates	2	Yes	19.8	9795	0.0192	52	0.0019	0.0082	28.2	7681	0.0218	46	0.0023	0.0094	0.0027	-6
Odem	Willis Street	436029E	781	49	Lights and Gates	2	Yes	19.8	9795	0.0141	71	0.0014	0.0061	28.2	7681	0.0162	62	0.0016	0.007	0.0021	-9

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Placedo	FM 1686	746526M	723	25	Lights and Gates	2	Yes	9.9	9795	0.0104	96	0.0007	0.0039	18.2	7681	0.0134	75	0.0009	0.005	0.003	-21
Placedo	Henderson Road	746523S	293	25	Lights and Gates	2	Yes	9.9	9795	0.0082	122	0.0005	0.0031	18.2	7681	0.0106	95	0.0007	0.004	0.0024	-28
Placedo	Houston Street	746522K	1008	25	Lights and Gates	2	Yes	9.9	9795	0.0113	88	0.0007	0.0043	18.2	7681	0.0145	69	0.001	0.0054	0.0032	-19
Placedo	Mccoy Road	746524Y	100	25	Passive	2	Yes	9.9	9795	0.0125	80	0.0008	0.0047	18.2	7681	0.0166	60	0.0011	0.0062	0.0041	-20
Placedo	Ripple Road	746525F	59	25	Passive	2	Yes	9.9	9795	0.0105	96	0.0007	0.0039	18.2	7681	0.014	71	0.001	0.0053	0.0035	-24
Raywood	County Route 190	762755X	387	79	Lights and Gates	2	Yes	27.2	8867	0.0134	75	0.0026	0.0063	34.8	7987	0.0148	68	0.0029	0.007	0.0014	-7
Raywood	County Route 193	762756E	118	79	Lights and Gates	2	Yes	27.2	8867	0.0099	102	0.0019	0.0046	34.8	7987	0.0109	92	0.0021	0.0051	0.0011	-10

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Raywood	FM 2830	762758T	1385	75	Lights and Gates	2	Yes	17.4	8723	0.0154	65	0.0028	0.0072	25	7918	0.0177	56	0.0032	0.0083	0.0023	-8
Raywood	FM 770	762757L	887	70	Lights and Gates	2	Yes	17.4	8723	0.0138	72	0.0023	0.0064	25	7918	0.0159	63	0.0028	0.0073	0.0021	-10
Realitos	Corkill Road	793710B	147	59	Lights and Gates	2	Yes	14.8	12509	0.0081	124	0.0012	0.0036	22.8	9617	0.0097	103	0.0014	0.0043	0.0016	-21
Realitos	Road 271	793712P	1172	59	Passive	2	Yes	14.8	12509	0.0365	27	0.0053	0.0163	22.8	9617	0.0422	24	0.0063	0.0188	0.0057	-4
Realitos	Shaw Street	793711H	490	59	Passive	2	Yes	14.8	12509	0.0294	34	0.0042	0.0131	22.8	9617	0.0346	29	0.0051	0.0154	0.0052	-5
Refugio	East Commons Street	427562D	1072	49	Lights and Gates	2	Yes	19.8	9795	0.0152	66	0.0014	0.0055	28.2	7681	0.0175	57	0.0016	0.0063	0.0022	-8
Refugio	FM 774 Empresario	427570V	6004	40	Lights and Gates	4	Yes	19.8	9795	0.0283	35	0.003	0.0117	28.2	7681	0.0317	32	0.0034	0.0131	0.0034	-4

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Refugio	King Street	427564S	1018	49	Lights and Gates	2	Yes	19.8	9795	0.0151	66	0.0019	0.0065	28.2	7681	0.0173	58	0.0022	0.0074	0.0022	-9
Refugio	North Street	427566F	1018	49	Lights and Gates	2	Yes	19.8	9795	0.0151	66	0.0014	0.0054	28.2	7681	0.0173	58	0.0016	0.0062	0.0022	-9
Refugio	Plasuela Street	427567M	1018	49	Lights and Gates	2	Yes	19.8	9795	0.0151	66	0.0019	0.0065	28.2	7681	0.0173	58	0.0022	0.0074	0.0022	-9
Refugio	Purisma	427569B	1018	40	Lights and Gates	2	Yes	19.8	9795	0.0151	66	0.0016	0.0062	28.2	7681	0.0173	58	0.0019	0.0071	0.0022	-9
Refugio	Rafael Street	427561W	1018	49	Lights and Gates	2	Yes	19.8	9795	0.0151	66	0.0014	0.0054	28.2	7681	0.0173	58	0.0016	0.0062	0.0022	-9
Refugio	Santiago Street	427565Y	1018	49	Lights and Gates	2	Yes	19.8	9795	0.0151	66	0.0019	0.0065	28.2	7681	0.0173	58	0.0022	0.0074	0.0022	-9

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Refugio	Suntide Road	427571C	445	49	Lights and Gates	2	Yes	19.8	9795	0.0122	82	0.0015	0.0053	28.2	7681	0.0141	71	0.0018	0.0061	0.0019	-11
Refugio	Texas 239	427538C	311	50	Lights and Gates	2	Yes	19.8	9795	0.0111	90	0.0014	0.0048	28.2	7681	0.0129	78	0.0017	0.0056	0.0017	-12
Refugio	Ward Street	427563K	1018	49	Lights and Gates	2	Yes	19.8	9795	0.0151	66	0.0014	0.0054	28.2	7681	0.0173	58	0.0016	0.0062	0.0022	-9
Refugio	Ymbacion Street	427568U	1018	49	Lights and Gates	2	Yes	19.8	9795	0.0151	66	0.0019	0.0065	28.2	7681	0.0173	58	0.0022	0.0074	0.0022	-9
Richmond	Collins Road	743726L	12721	60	Lights and Gates	2	Yes	37.1	8934	0.0331	30	0.0038	0.0124	44.6	8026	0.035	29	0.0041	0.0132	0.0019	-2
Richmond	Douglas Street	743725E	788	60	Lights and Gates	2	Yes	37.1	8934	0.018	55	0.0021	0.0068	44.6	8026	0.0194	52	0.0023	0.0073	0.0013	-4

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Richmond	Eighth Street	743723R	421	60	Lights and Gates	2	Yes	37.1	8934	0.0155	65	0.0018	0.0058	44.6	8026	0.0167	60	0.0019	0.0063	0.0012	-5
Richmond	Fourth Street	743720V	385	55	Lights and Gates	2	Yes	37.1	8934	0.0151	66	0.0016	0.0056	44.6	8026	0.0163	61	0.0018	0.006	0.0012	-5
Richmond	Second Street	743719B	4693	55	Lights and Gates	2	Yes	37.1	8934	0.109	9	0.0116	0.0402	44.6	8026	0.1135	9	0.0122	0.0419	0.0045	0
Richmond	Sixth Street	743722J	696	60	Lights and Gates	2	Yes	37.1	8934	0.0175	57	0.002	0.0066	44.6	8026	0.0188	53	0.0022	0.0071	0.0013	-4
Richmond	Tenth Street	743724X	7308	60	Lights and Gates	2	Yes	37.1	8934	0.0296	34	0.0034	0.0111	44.6	8026	0.0315	32	0.0037	0.0118	0.0018	-2
Robstown	County Road 44	427591N	1371	40	Lights and Gates	2	Yes	17.6	9795	0.0155	65	0.0012	0.0053	26	7681	0.018	56	0.0014	0.0062	0.0025	-9

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Robstown	County Road 48	427588F	2313	40	Lights and Gates	2	Yes	17.6	9795	0.0176	57	0.0018	0.0073	26	7681	0.0203	49	0.0022	0.0084	0.0028	-8
Robstown	County Road 77	793839D	1396	30	Lights and Gates	2	Yes	14.8	12509	0.0145	69	0.0011	0.0056	22.8	9617	0.0172	58	0.0014	0.0067	0.0027	-11
Robstown	County Road 81	793835B	496	50	Lights and Gates	2	Yes	14.8	12509	0.0394	25	0.0049	0.0170	22.8	9617	0.0433	23	0.0056	0.0187	0.0039	-2
Robstown	Dunne Street	793745C	1769	30	Lights and Gates	2	Yes	14.8	12509	0.0154	65	0.0009	0.0049	22.8	9617	0.0182	55	0.0011	0.0059	0.0028	-10
Robstown	George Street	793746J	1371	30	Lights and Gates	2	Yes	14.8	12509	0.0144	69	0.0008	0.0046	22.8	9617	0.0171	58	0.0010	0.0055	0.0027	-11
Robstown	Jefferson Street	793747R	1769	30	Lights and Gates	2	Yes	14.8	12509	0.0154	65	0.0009	0.0049	22.8	9617	0.0182	55	0.0011	0.0059	0.0028	-10

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Robstown	Lincoln Avenue	793749E	4537	20	Lights and Gates	2	Yes	14.8	12509	0.0193	52	0.0007	0.0056	22.8	9617	0.0226	44	0.0009	0.0066	0.0033	-8
Robstown	Main Avenue	427597E	3115	40	Lights and Gates	2	Yes	5.5	9795	0.012	84	0.0008	0.0041	13.8	7681	0.0172	58	0.0012	0.0059	0.0052	-25
Robstown	Messer Street	793744V	1769	30	Lights and Gates	2	Yes	14.8	12509	0.0154	65	0.0009	0.0049	22.8	9617	0.0182	55	0.0011	0.0059	0.0028	-10
Robstown	Pat Shutter Street	793743N	2772	30	Lights and Gates	2	Yes	14.8	12509	0.0172	58	0.0010	0.0055	22.8	9617	0.0202	49	0.0012	0.0065	0.0031	-9
Robstown	Road 79	793837P	294	50	Passive	2	Yes	14.8	12509	0.0243	41	0.0030	0.0105	22.8	9617	0.0289	35	0.0037	0.0125	0.0046	-7
Robstown	Third Street	793750Y	1769	20	Lights and Gates	2	Yes	14.8	12509	0.0154	65	0.0006	0.0045	22.8	9617	0.0182	55	0.0007	0.0053	0.0028	-10
Robstown	Washington Street	793748X	1769	30	Lights and Gates	2	Yes	14.8	12509	0.0154	65	0.0009	0.0049	22.8	9617	0.0182	55	0.0011	0.0059	0.0028	-10

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Robstown	Waste Water Plant	427594J	117	40	Passive	2	No	17.6	9795	0.0297	34	0.0022	0.0102	26	7681	0.0344	29	0.0027	0.0118	0.0046	-5
Rose City	Canary Street	329474Y	117	59	Lights and Gates	2	Yes	10.2	8441	0.0064	155	0.0007	0.0024	21.1	7874	0.0088	113	0.001	0.0033	0.0024	-42
Rose City	Mockingbird Street	329473S	424	59	Lights and Gates	2	Yes	10.2	8441	0.0358	28	0.0037	0.0134	21.1	7874	0.0417	24	0.0045	0.0156	0.0058	-4
Rose City	Old US 90	329476M	415	59	Lights and Gates	2	Yes	10.2	8441	0.0091	110	0.0009	0.0034	21.1	7874	0.0123	81	0.0013	0.0046	0.0032	-29
Rose City	Rose City Drive	329475F	355	59	Lights and Gates	2	Yes	10.2	8441	0.0087	115	0.0012	0.0039	21.1	7874	0.0118	85	0.0018	0.0053	0.0031	-30
Rosenberg	3rd Street	743731H	7701	60	Lights and Gates	2	Yes	19.6	9795	0.027	37	0.003	0.0094	27.9	7681	0.0303	33	0.0034	0.0106	0.0033	-4

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Rosenberg	Daily Road	743471S	350	59	Lights and Gates	2	Yes	9.2	9795	0.0083	121	0.0012	0.0037	17.5	7681	0.0109	92	0.0016	0.0049	0.0026	-29
Rosenberg	Hamlink Road	743472Y	469	59	Lights and Gates	2	No	9.2	9795	0.009	112	0.0013	0.004	17.5	7681	0.0117	85	0.0017	0.0052	0.0028	-26
Rosenberg	Miller Road	743469R	420	59	Lights and Gates	2	Yes	9.2	9795	0.0087	115	0.0009	0.0033	17.5	7681	0.0114	88	0.0012	0.0043	0.0027	-27
Rosenberg	Rawson Road	743727T	6299	60	Lights and Gates	2	Yes	19.6	8768	0.0258	39	0.0028	0.009	27.1	7938	0.0288	35	0.0032	0.0101	0.0030	-4
Rosenberg	Scott Road	743467C	1769	20	Lights and Gates	2	Yes	15.3	9795	0.0156	64	0.0008	0.0056	23.6	7681	0.0184	54	0.001	0.0066	0.0029	-10
Rosenberg	Stade Road	743470K	227	59	Lights and Gates	2	Yes	9.2	9795	0.0074	136	0.0008	0.0028	17.5	7681	0.0097	103	0.001	0.0036	0.0023	-33

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
San Diego	Benavides Street	793793S	1018	25	Lights and Gates	2	Yes	14.8	12509	0.0134	75	0.0006	0.0041	22.8	9617	0.0159	63	0.0008	0.0049	0.0025	-12
San Diego	Bexar Street	793669L	350	25	Lights and Gates	2	Yes	14.8	12509	0.0102	98	0.0005	0.0031	22.8	9617	0.0122	82	0.0006	0.0038	0.002	-16
San Diego	Center Street	793677D	350	25	Lights and Gates	2	Yes	14.8	12509	0.0102	98	0.0005	0.0031	22.8	9617	0.0122	82	0.0006	0.0038	0.002	-16
San Diego	Collins Avenue	793687J	350	35	Lights and Gates	2	Yes	14.8	12509	0.0102	98	0.0007	0.0034	22.8	9617	0.0122	82	0.0008	0.0041	0.002	-16
San Diego	County Road 145	793730M	223	35	Lights and Gates	2	Yes	14.8	12509	0.009	111	0.0008	0.0036	22.8	9617	0.0108	93	0.0010	0.0043	0.0018	-19
San Diego	County Road 146	793739Y	148	55	Passive	2	Yes	14.8	12509	0.0205	49	0.0028	0.0090	22.8	9617	0.0247	41	0.0035	0.0109	0.0041	-8

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
San Diego	Garcia Street	793675P	350	25	Lights and Gates	2	Yes	14.8	12509	0.0102	98	0.0005	0.0031	22.8	9617	0.0122	82	0.0006	0.0038	0.002	-16
San Diego	Mier Street	793678K	350	25	Lights and Gates	2	Yes	14.8	12509	0.0102	98	0.0005	0.0031	22.8	9617	0.0122	82	0.0006	0.0038	0.002	-16
San Diego	Peres Street	793674H	350	25	Lights and Gates	2	Yes	14.8	12509	0.0102	98	0.0005	0.0031	22.8	9617	0.0122	82	0.0006	0.0038	0.002	-16
San Diego	Road 160	793732B	586	40	Lights and Gates	2	Yes	14.8	12509	0.0403	25	0.0041	0.0167	22.8	9617	0.0443	23	0.0047	0.0183	0.004	-2
San Diego	Seguin Street	793670F	1018	25	Lights and Gates	2	Yes	14.8	12509	0.0435	23	0.0021	0.0134	22.8	9617	0.048	21	0.0024	0.0148	0.0045	-2
San Diego	Street James Street	793676W	350	25	Lights and Gates	2	Yes	14.8	12509	0.0102	98	0.0005	0.0031	22.8	9617	0.0122	82	0.0006	0.0038	0.002	-16

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
San Diego	Street Peters Avenue	793686C	350	35	Lights and Gates	2	Yes	14.8	12509	0.0102	98	0.0007	0.0034	22.8	9617	0.0122	82	0.0008	0.0041	0.002	-16
San Diego	Texas 44	793688R	10944	35	Lights and Gates	4	Yes	14.8	12509	0.029	34	0.0019	0.0097	22.8	9617	0.0333	30	0.0023	0.0111	0.0043	-4
San Diego	Tovar Street	793691Y	350	35	Lights and Gates	2	Yes	14.8	12509	0.0102	98	0.0007	0.0034	22.8	9617	0.0122	82	0.0008	0.0041	0.002	-16
San Diego	Travis Street	793671M	1018	25	Lights and Gates	2	Yes	14.8	12509	0.0134	75	0.0006	0.0041	22.8	9617	0.0159	63	0.0008	0.0049	0.0025	-12
San Diego	Trevino Street	793690S	350	35	Lights and Gates	2	Yes	14.8	12509	0.0102	98	0.0007	0.0034	22.8	9617	0.0122	82	0.0008	0.0041	0.002	-16
San Diego	Ventura Street	793794Y	1018	35	Lights and Gates	2	Yes	14.8	12509	0.0134	75	0.0009	0.0045	22.8	9617	0.0159	63	0.0011	0.0053	0.0025	-12

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
San Diego	Victoria Street	793668E	350	25	Lights and Gates	2	Yes	14.8	12509	0.0377	27	0.0018	0.0116	22.8	9617	0.0413	24	0.0020	0.0127	0.0036	-2
Sinton	County Road 1394	436027R	88	49	Passive	2	No	20.9	9795	0.0309	32	0.0039	0.0133	29.3	7681	0.035	29	0.0045	0.0151	0.0041	-4
Sinton	County Road 57	436028X	726	49	Lights and Gates	2	Yes	20.9	9795	0.0141	71	0.0014	0.0061	29.3	7681	0.0161	62	0.0016	0.0069	0.002	-9
Sinton	First Street	436012B	3957	49	Lights and Gates	2	Yes	19.8	9795	0.0208	48	0.0019	0.0075	28.2	7681	0.0237	42	0.0022	0.0085	0.0028	-6
Sinton	Fulton Street	848257F	892	49	Lights and Gates	2	Yes	19.8	9795	0.0146	69	0.0013	0.0052	28.2	7681	0.0167	60	0.0016	0.006	0.0022	-9
Sinton	Market Street	436010M	1499	49	Lights and Gates	2	Yes	19.8	9795	0.0166	60	0.0015	0.006	28.2	7681	0.0189	53	0.0018	0.0068	0.0024	-8

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Sinton	South Fifth Street	436015W	2341	49	Lights and Gates	2	Yes	19.8	9795	0.0184	54	0.0017	0.0066	28.2	7681	0.021	48	0.002	0.0076	0.0026	-7
Sinton	South Fourth Street	436014P	2500	49	Lights and Gates	2	Yes	19.8	9795	0.0187	53	0.0017	0.0067	28.2	7681	0.0213	47	0.002	0.0077	0.0026	-7
Sinton	South Rachal Street	436013H	2271	49	Lights and Gates	2	Yes	19.8	9795	0.0523	19	0.0048	0.0188	28.2	7681	0.0569	18	0.0053	0.0205	0.0046	-2
Sinton	US 181 Sinton Street	436011U	9875	50	Lights and Gates	4	Yes	19.8	9795	0.0313	32	0.0029	0.0113	28.2	7681	0.0349	29	0.0033	0.0126	0.0036	-3
Stafford	FM 1092 Northbound F	924008H	6337	60	Lights and Gates	2	Yes	37.1	8934	0.0319	31	0.0037	0.0112	44.6	8026	0.0338	30	0.0039	0.0118	0.0019	-2
Stafford	FM 1092 Southbound F	924009P	5693	60	Lights and Gates	4	Yes	37.1	8934	0.0375	27	0.0043	0.0131	44.6	8026	0.0396	25	0.0046	0.0138	0.0020	-1

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Stafford	Kirkwood Road	743695P	23945	60	Lights and Gates	4	Yes	37.1	8934	0.0476	21	0.0055	0.0166	44.6	8026	0.0497	20	0.0058	0.0174	0.0021	-1
Stafford	Promenade Boulevard	412514U	5621	60	Lights and Gates	4	Yes	37.1	8934	0.0375	27	0.0043	0.0131	44.6	8026	0.0395	25	0.0046	0.0138	0.0020	-1
Stafford	Stafford Northbound	924006U	3715	60	Lights and Gates	2	Yes	37.1	8934	0.0287	35	0.0033	0.01	44.6	8026	0.0304	33	0.0035	0.0106	0.0018	-2
Stafford	Stafford Southbound	924007B	4056	60	Lights and Gates	2	Yes	37.1	8934	0.0292	34	0.0034	0.0102	44.6	8026	0.031	32	0.0036	0.0108	0.0018	-2
Sugar Land	Brooks Street	743704L	368	55	Lights and Gates	4	Yes	37.1	8934	0.0213	47	0.0023	0.0073	44.6	8026	0.0228	44	0.0025	0.0078	0.0015	-3
Sugar Land	Easton Avenue	743709V	1429	79	Lights and Gates	2	Yes	37.1	8934	0.0233	43	0.0034	0.0087	44.6	8026	0.0249	40	0.0037	0.0092	0.0016	-3

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Sugar Land	Eldridge Road	743699S	12702	60	Lights and Gates	4	Yes	37.1	8934	0.0969	10	0.0111	0.0339	44.6	8026	0.1007	10	0.0117	0.0352	0.0038	0
Sugar Land	Gillingham Lane	745055W	6119	60	Lights and Gates	2	Yes	37.1	8934	0.0317	32	0.0036	0.0111	44.6	8026	0.0336	30	0.0039	0.0117	0.0019	-2
Sugar Land	Harlem Road	743713K	9659	60	Lights and Gates	5	Yes	37.1	8934	0.0931	11	0.0107	0.035	44.6	8026	0.0968	10	0.0113	0.0364	0.0037	0
Sugar Land	Industrial Boulevard	743698K	8464	60	Lights and Gates	3	Yes	37.1	8934	0.037	27	0.0042	0.0129	44.6	8026	0.039	26	0.0045	0.0136	0.0020	-1
Sugar Land	Main Street	743703E	6336	60	Lights and Gates	4	Yes	37.1	8934	0.1383	7	0.0159	0.0483	44.6	8026	0.1436	7	0.0167	0.0501	0.0053	0
Sugar Land	Pitts Road	743716F	8038	60	Lights and Gates	2	Yes	37.1	8934	0.0302	33	0.0035	0.0114	44.6	8026	0.0321	31	0.0037	0.0121	0.0018	-2

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Sugar Land	Schlumberger Drive	748393E	1288	60	Lights and Gates	2	Yes	37.1	8934	0.0228	44	0.0036	0.0096	44.6	8026	0.0243	41	0.0039	0.0102	0.0016	-3
Sugar Land	South Dairy Ashford Road	745044J	21195	60	Lights and Gates	6	Yes	37.1	8934	0.0536	19	0.0062	0.0187	44.6	8026	0.0557	18	0.0065	0.0194	0.0021	-1
Sugar Land	Texas 6 Northbound Frontage	922512N	7275	60	Lights and Gates	2	Yes	37.1	8934	0.0328	30	0.0038	0.0115	44.6	8026	0.0347	29	0.004	0.0121	0.0019	-2
Sugar Land	Texas 6 Southbound Frontage	922513V	6875	60	Lights and Gates	4	Yes	43.6	8962	0.1444	7	0.0168	0.0504	51.2	8043	0.149	7	0.0175	0.0521	0.0046	0
Sugar Land	Ulrich Street	743706A	368	55	Lights and Gates	2	Yes	37.1	8934	0.017	59	0.0018	0.0058	44.6	8026	0.0183	55	0.002	0.0063	0.0013	-4

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Sugar Land	University Boulevard	441027B	12	79	Lights and Gates	5	Yes	37.1	8934	0.0379	26	0.0055	0.0141	44.6	8026	0.0394	25	0.0058	0.0146	0.0015	-1
Texarkana	14th Street	330869S	4242	55	Lights and Gates	2	Yes	13.5	9651	0.0184	54	0.0018	0.0068	25.9	8128	0.0233	43	0.0024	0.0086	0.005	-12
Texarkana	3rd Street	330873G	157	40	Flashing Lights	2	Yes	13.5	9651	0.0072	139	0.0005	0.0025	25.9	8128	0.0096	104	0.0007	0.0033	0.0025	-35
Texarkana	4th Street	330872A	5731	40	Lights and Gates	4	Yes	13.5	9651	0.0635	16	0.0047	0.0219	25.9	8128	0.0744	13	0.0058	0.0256	0.0108	-2
Texarkana	5th Street	330871T	1741	40	Lights and Gates	2	Yes	13.5	9651	0.0148	68	0.0011	0.0051	25.9	8128	0.019	53	0.0015	0.0065	0.0042	-15
Texarkana	Baroid Road	330887P	434	55	Lights and Gates	2	Yes	13.5	9651	0.0103	97	0.0014	0.0045	25.9	8128	0.0135	74	0.0019	0.0059	0.0032	-23

Table H.1-4. Grade Crossing Safety by State and City

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								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Texarkana	Forest Lake Drive	330861M	312	55	Lights and Gates	2	Yes	13.5	9651	0.0095	106	0.0009	0.0035	25.9	8128	0.0124	80	0.0013	0.0046	0.003	-25
Texarkana	Hoot Plant Road	330893T	49	55	Lights and Gates	2	Yes	13.5	9651	0.0057	174	0.0008	0.0025	25.9	8128	0.0076	131	0.0011	0.0034	0.0019	-43
Texarkana	Lakeridge Drive	330862U	760	55	Lights and Gates	2	Yes	13.5	9651	0.012	84	0.0016	0.0053	25.9	8128	0.0156	64	0.0022	0.0068	0.0036	-19
Texarkana	Richmond Road	330867D	4044	55	Lights and Gates	2	Yes	13.5	9651	0.0181	55	0.0018	0.0067	25.9	8128	0.0231	43	0.0024	0.0085	0.0049	-12
Texarkana	South Bend Road	330890X	187	55	Lights and Gates	2	Yes	13.5	9651	0.0083	121	0.0011	0.0036	25.9	8128	0.0109	92	0.0015	0.0048	0.0026	-29
Victoria	Amhurst	746657R	1664	59	Lights and Gates	2	Yes	9.7	9795	0.0128	78	0.0013	0.0048	18	7681	0.0164	61	0.0018	0.0061	0.0036	-17

Table H.1-4. Grade Crossing Safety by State and City

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								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Victoria	Avenue D	746559A	459	25	Lights and Gates	2	No	9.9	9795	0.0092	108	0.0004	0.0028	18.2	7681	0.0119	84	0.0006	0.0037	0.0027	-24
Victoria	Ben Jordan Road	746650T	15643	20	Lights and Gates	4	Yes	15.6	9795	0.0318	31	0.0012	0.0093	23.9	7681	0.0362	28	0.0015	0.0106	0.0044	-4
Victoria	Ben Jordan Street	746558T	13909	25	Lights and Gates	4	Yes	9.9	9795	0.0267	37	0.0012	0.0083	18.2	7681	0.0326	31	0.0016	0.0101	0.0058	-7
Victoria	Ben Wilson Street	746556E	6746	25	Lights and Gates	4	Yes	9.9	9795	0.0228	44	0.0011	0.007	18.2	7681	0.0282	36	0.0014	0.0087	0.0053	-8
Victoria	Brownson Street	746561B	2467	25	Lights and Gates	2	Yes	9.9	9795	0.0451	22	0.0021	0.0139	18.2	7681	0.0519	19	0.0025	0.016	0.0069	-3
Victoria	Burroughsville Road	746654V	2308	59	Lights and Gates	2	Yes	9.7	9795	0.0139	72	0.0014	0.0052	18	7681	0.0177	56	0.0019	0.0066	0.0038	-15

Table H.1-4. Grade Crossing Safety by State and City

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								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Victoria	Delmar Drive	746550N	3406	25	Lights and Gates	2	Yes	9.9	9795	0.0155	65	0.0007	0.0048	18.2	7681	0.0195	51	0.0009	0.006	0.0041	-13
Victoria	Delmar Drive	746653N	16550	10	Lights and Gates	4	Yes	15.6	9795	0.0321	31	0.0006	0.0079	23.9	7681	0.0366	27	0.0007	0.009	0.0044	-4
Victoria	East North Street	746510R	3080	20	Lights and Gates	2	Yes	15.4	9795	0.0179	56	0.0006	0.0052	23.7	7681	0.021	48	0.0008	0.0061	0.0031	-8
Victoria	FM 1686	746676V	732	59	Lights and Gates	2	Yes	9.7	9795	0.0103	97	0.0011	0.0039	18	7681	0.0133	75	0.0014	0.005	0.003	-22
Victoria	FM 2615	746541P	652	25	Lights and Gates	2	Yes	9.9	9795	0.0101	99	0.0007	0.0038	18.2	7681	0.013	77	0.0009	0.0049	0.0029	-22
Victoria	George Street	746564W	459	20	Lights and Gates	2	Yes	9.9	9795	0.0092	108	0.0003	0.0027	18.2	7681	0.0119	84	0.0005	0.0035	0.0027	-24

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Victoria	Highway 185 Laurent South	746562H	12053	40	Lights and Gates	4	Yes	9.9	9795	0.0259	39	0.0019	0.0089	18.2	7681	0.0317	32	0.0024	0.0109	0.0057	-7
Victoria	Hill Road	746673A	434	59	Lights and Gates	2	Yes	9.7	9795	0.009	111	0.0009	0.0034	18	7681	0.0117	86	0.0012	0.0044	0.0027	-25
Victoria	Holt Road	746672T	1160	59	Lights and Gates	2	Yes	9.7	9795	0.0117	86	0.0016	0.0052	18	7681	0.015	67	0.0022	0.0067	0.0033	-19
Victoria	Hummel Street	746563P	459	25	Passive	2	Yes	9.9	9795	0.0201	50	0.0009	0.0062	18.2	7681	0.0259	39	0.0013	0.008	0.0059	-11
Victoria	Hunitington Road	746670E	223	59	Passive	2	Yes	9.7	9795	0.0559	18	0.0057	0.021	18	7681	0.0666	15	0.0071	0.0249	0.0106	-3
Victoria	John Stockbauer Drive	912105H	5174	25	Lights and Gates	4	Yes	15.6	9795	0.0252	40	0.0016	0.0095	23.9	7681	0.0291	34	0.0019	0.0109	0.0039	-5

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Victoria	Juan Linn Street	746557L	459	25	Passive	2	Yes	9.9	9795	0.0201	50	0.0009	0.0062	18.2	7681	0.0259	39	0.0013	0.008	0.0059	-11
Victoria	North Ben Wilson Street	746652G	12137	25	Lights and Gates	4	Yes	15.6	9795	0.0302	33	0.0012	0.0093	23.9	7681	0.0345	29	0.0014	0.0106	0.0043	-4
Victoria	Odem Road	746554R	504	25	Lights and Gates	2	Yes	9.9	9795	0.0095	106	0.0004	0.0029	18.2	7681	0.0122	82	0.0006	0.0038	0.0027	-24
Victoria	Pleasant Green Drive	746551V	3979	25	Lights and Gates	2	Yes	9.9	9795	0.0161	62	0.0007	0.005	18.2	7681	0.0202	49	0.001	0.0062	0.0042	-13
Victoria	Vogt Road	746543D	926	25	Lights and Gates	2	Yes	9.9	9795	0.0111	90	0.0007	0.0042	18.2	7681	0.0142	70	0.001	0.0053	0.0031	-20
Vidor	Doty Road	329464T	432	59	Lights and Gates	2	Yes	10.2	8441	0.0092	109	0.0013	0.0041	21.1	7874	0.0124	80	0.0018	0.0055	0.0033	-29

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Vidor	Eb I-10 Service Road	927010U	1578	59	Lights and Gates	2	Yes	10.2	8441	0.0129	78	0.0013	0.0048	21.1	7874	0.0172	58	0.0019	0.0064	0.0043	-20
Vidor	Evangeline Drive	329467N	3433	59	Lights and Gates	2	Yes	10.2	8441	0.0156	64	0.0016	0.0059	21.1	7874	0.0207	48	0.0022	0.0077	0.005	-16
Vidor	FM 105 Main Street	329471D	21137	59	Lights and Gates	4	Yes	10.2	8441	0.0294	34	0.003	0.011	21.1	7874	0.0369	27	0.004	0.0138	0.0074	-7
Vidor	North Dewitt Street	329472K	2908	59	Lights and Gates	2	Yes	10.2	8441	0.0464	22	0.0048	0.0174	21.1	7874	0.0552	18	0.006	0.0207	0.0088	-3
Vidor	Wb I-10 Service Road	927011B	2797	59	Lights and Gates	2	Yes	10.2	8441	0.0149	67	0.0015	0.0056	21.1	7874	0.0197	51	0.0021	0.0074	0.0048	-17
Wharton	County Road 0222	743358Y	738	59	Lights and Gates	2	Yes	9.7	9795	0.0104	96	0.0015	0.0046	18	7681	0.0134	75	0.002	0.006	0.003	-22

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Wharton	County Road 0423	743371M	128	59	Passive	2	No	9.7	9795	0.0268	37	0.0038	0.0119	18	7681	0.0339	30	0.005	0.0151	0.0071	-8
Wharton	County Road 448	927048R	234	59	Passive	2	Yes	9.7	9795	0.0201	50	0.0028	0.009	18	7681	0.0261	38	0.0038	0.0116	0.006	-11
Wharton	FM 0102	743359F	11628	59	Lights and Gates	2	Yes	9.7	9795	0.0206	49	0.0021	0.0077	18	7681	0.0256	39	0.0028	0.0096	0.0051	-10
Wharton	Road 229	743355D	305	59	Lights and Gates	2	Yes	9.7	9795	0.0082	122	0.0011	0.0037	18	7681	0.0106	94	0.0016	0.0047	0.0024	-28
Wharton	Road 448 North	743367X	128	59	Passive	2	No	9.7	9795	0.0268	37	0.0038	0.0119	18	7681	0.0339	30	0.005	0.0151	0.0071	-8
Wharton	Road 448 South	743372U	23	59	Passive	2	Yes	9.7	9795	0.0377	26	0.0053	0.0168	18	7681	0.0438	23	0.0064	0.0195	0.0061	-4

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Wharton	Spanish Camp	743361G	2203	35	Lights and Gates	2	Yes	9.7	9795	0.0137	73	0.0009	0.0046	18	7681	0.0175	57	0.0012	0.0058	0.0038	-16
Wharton	Vonderau Airport	743375P	105	59	Passive	2	Yes	9.7	9795	0.0157	64	0.0022	0.007	18	7681	0.0207	48	0.003	0.0093	0.005	-15
Wharton	West Milam Street	743363V	1707	35	Lights and Gates	2	Yes	9.7	9795	0.0129	78	0.0008	0.0043	18	7681	0.0165	61	0.0011	0.0055	0.0036	-17
Woodsboro	Chapparal Street	427574X	346	49	Lights and Gates	2	Yes	19.8	9795	0.0114	87	0.0014	0.0049	28.2	7681	0.0132	76	0.0017	0.0057	0.0018	-12
Woodsboro	FM 1360-Locke	427576L	1816	10	Lights and Gates	2	Yes	19.8	9795	0.0173	58	0.0005	0.0053	28.2	7681	0.0198	50	0.0006	0.006	0.0025	-7
Woodsboro	Toup Road	427573R	100	49	Lights and Gates	2	Yes	19.8	9795	0.0082	122	0.001	0.0035	28.2	7681	0.0096	105	0.0012	0.0041	0.0013	-17

Table H.1-4. Grade Crossing Safety by State and City

State / City	Street	Crossing ID	AADT	Train Speed (mph)	Type of Protection	Number of Roadway Lanes	Road Surface Type Paved (Yes/No)	2027 No-Action						2027 Proposed Acquisition						Change	
								Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Woodsboro	Wood Avenue/FM 136	427575E	1108	49	Lights and Gates	2	Yes	19.8	9795	0.0154	65	0.0019	0.0066	28.2	7681	0.0176	57	0.0023	0.0076	0.0022	-8

H.1.3.1 Quiet Zones

Table H.1-5 presents the grade crossing safety results for the ~~44~~ 77 at-grade crossings within the threshold area that are in quiet zones. The trains per day, train length, and safety-related performance measures represent the expected conditions and estimated performance in 2027 for the No-Action Alternative and Proposed Acquisition. The final two columns indicate the expected change in predicted crashes and years between crashes, representing the expected impact of the Proposed Acquisition compared to the No-Action Alternative. All ~~44~~ 77 of the crossings have lights and gates installed as crossing protection and ~~39~~ 72 of the ~~44~~ 77 crossings have a supplemental safety measure installed such as a median barrier. The Final EIS includes updated values in **Table H.1-5** to reflect the latest information on train length and to match the values in **Table H.1-4** as well as additional sites from the Houston area (U-BEAU-01 segment) in response to comments received on the Draft EIS.

Table H.1-5. Grade Crossing Safety for Quiet Zones

State / City	Street	Crossing ID	Type of Protection	Supplemental Safety Measures	2027 No-Action				2027 Proposed Acquisition								Change	
					Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Illinois																		
Bartlett	Naperville Road	372210R	Lights and Gates	None	60.4	1418~~1~~ 522	0.0432	23	0.0036	0.0138	68.4	1960 ~~2284~~	0.0446	22	0.0037	0.0142	0.0014	-1
Bartlett	Oak Avenue	372206B	Lights and Gates	None	60.4	1418~~1~~ 522	0.0925~~0~~ ~~.0406~~	11~~25~~	0.0077 ~~0.0034~~	0.0294 ~~0.0129~~	68.4	1960 ~~2284~~	0.095~~0~~ ~~.0420~~	11~~24~~	0.0079 ~~0.0035~~	0.0302 ~~0.0134~~	0.0025 ~~0.0014~~	0 ~~-1~~
Bartlett	Western Avenue	372207H	Lights and Gates	None	60.4	1418~~1~~ 522	0.0243	41	0.0020	0.0077	68.4	1960 ~~2284~~	0.0254	39	0.0021	0.0081	0.0011	-2
Bartlett	Prospect Avenue	371997M	Lights and Gates	Median Barrier	60.4	1418~~1~~ 522	0.0338	30	0.0028	0.0108	68.4	1960 ~~2284~~	0.0351	28	0.0029	0.0112	0.0013	-1
Bensenville	Addison Street	372172J	Lights and Gates	Median Barrier	60.4	1418~~1~~ 522	0.0283	35	0.0015 ~~0.0023~~	0.0081 ~~0.0090~~	68.4	1960 ~~2284~~	0.0295	34	0.0016 ~~0.0025~~	0.0084 ~~0.0094~~	0.0012	-1

Table H.1-5. Grade Crossing Safety for Quiet Zones

State / City	Street	Crossing ID	Type of Protection	Supplemental Safety Measures	2027 No-Action				2027 Proposed Acquisition								Change	
					Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Bensenville	Center Street	372171C	Lights and Gates	Median Barrier	60.4	1418~~1 522~~	0.0215	46	0.0012 ~~0.0018~~	0.0061 ~~0.0069~~	68.4	1960 ~~2284~~	0.0225	44	0.0012 ~~0.0019~~	0.0064 ~~0.0072~~	0.0010	-2
Bensenville	Church Road	372174X	Lights and Gates	Median Barrier	60.4	1418~~1 522~~	0.0417	24	0.0022 ~~0.0035~~	0.0119 ~~0.0133~~	68.4	1960 ~~2284~~	0.0431	23	0.0023 ~~0.0036~~	0.0123 ~~0.0137~~	0.0014	-1
Bensenville	York Road	372170V	Lights and Gates	None	60.4	1418~~1 522~~	0.0514	19	0.0027 ~~0.0043~~	0.0146 ~~0.0164~~	68.4	1960 ~~2284~~	0.0528	19	0.0029 ~~0.0044~~	0.015 ~~0.0168~~	0.0014	-1
Itasca	Catalpa Avenue	372182P	Lights and Gates	Median Barrier	60.4	1418~~1 522~~	0.0283	35	0.0023	0.0090	68.4	1960 ~~2284~~	0.0295	34	0.0025	0.0094	0.0012	-1
Itasca	Prospect Avenue	372179G	Lights and Gates	Median Barrier	60.4	1418~~1 522~~	0.0395	25	0.0033	0.0126	68.4	1960 ~~2284~~	0.0408	24	0.0034	0.0130	0.0014	-1

Table H.1-5. Grade Crossing Safety for Quiet Zones

State / City	Street	Crossing ID	Type of Protection	Supplemental Safety Measures	2027 No-Action				2027 Proposed Acquisition								Change	
					Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Itasca	Walnut Street	372180B	Lights and Gates	Median Barrier	60.4	1418~~1~~ ~~522~~	0.0317	32	0.0026	0.0101	68.4	1960 ~~2284~~	0.0329	30	0.0028	0.0105	0.0013	-1
Schaumburg	Rodenburg Road	372202Y	Lights and Gates	Median Barrier	60.4	1418~~1~~ ~~522~~	0.0421	24	0.0035	0.0134	68.4	1960 ~~2284~~	0.0435	23	0.0036	0.0138	0.0014	-1
Iowa																		
Muscatine	Iowa Avenue	607206F	Lights and Gates	Quad Gates	6.4	9449~~1~~ ~~1761~~	0.0092	108	0.0006	0.0032	20.8	7024 ~~8496~~	0.015	67	0.0011	0.0051	0.0057	-41
Missouri																		
Neosho	College Street	330102D	Lights and Gates	Median Barrier	16.2~~14~~ ~~.0~~	8508~~8~~ ~~481~~	0.0205~~0~~ ~~.0194~~	49~~51~~	0.001 ~~0.0009~~	0.0063 ~~0.0060~~	28.6 ~~26.4~~	7385 ~~8770~~	0.0251 ~~0.0245~~	40~~41~~	0.0013 ~~0.0012~~	0.0078 ~~0.0075~~	0.0046 ~~0.0050~~	-9~~-11~~

Table H.1-5. Grade Crossing Safety for Quiet Zones

State / City	Street	Crossing ID	Type of Protection	Supplemental Safety Measures	2027 No-Action				2027 Proposed Acquisition								Change	
					Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Neosho	McKinney Street	330113R	Lights and Gates	Median Barrier	16.214 .0	85088 481	0.01990 .0188	5053	0.001 0.0009	0.0061 0.0058	28.6 26.4	7385 8770	0.0244 0.0237	4142	0.0012	0.0075 0.0073	0.0045 0.0049	-9- 11
Neosho	Spring Street	330112J	Lights and Gates	Median Barrier	16.214 .0	85088 481	0.01540 .0146	6569	0.0007	0.0048 0.0045	28.6 26.4	7385 8770	0.0192 0.0186	5254	0.001 0.0009	0.0059 0.0058	0.0038 0.0041	-13- 15
Neosho	Washington Avenue	330101W	Lights and Gates	Median Barrier	16.214 .0	85088 481	0.01750 .0166	5760	0.0008	0.0054 0.0051	28.6 26.4	7385 8770	0.0217 0.0211	4647	0.0011	0.0067 0.0065	0.0042 0.0045	-11- 13
Texas																		
Beaumont	Neches Street	329480C	Lights and Gates	Median Barrier	10.29. 7	84418 206	0.01190 .0116	8486	0.0004	0.0032 0.0031	21.1 20.7	7874 9938	0.0159 0.0158	63	0.0006	0.0043 0.0042	0.004 0.0041	-21- 23

Table H.1-5. Grade Crossing Safety for Quiet Zones

State / City	Street	Crossing ID	Type of Protection	Supplemental Safety Measures	2027 No-Action				2027 Proposed Acquisition								Change	
					Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Beaumont	South Major Drive/Texas 364	762721D	Lights and Gates	Median Barrier	17.4	8723	0.1237	8	0.0163	0.0487	25	7918	0.1335	7	0.0181	0.0526	0.0098	-1
Edna	Allen Street	746640M	Lights and Gates	Median Barrier	9.79.4	979598 21	0.01290 .0127	7879	0.0013	0.0048	181 7.7	7681 7995	0.0165 0.0164	61	0.0018	0.00620 .0061	0.0036	-17
Edna	Colorado Street	746642B	Lights and Gates	Median Barrier	9.79.4	979598 21	0.00780 .0077	128130	0.0008	0.0029	181 7.7	7681 7995	0.0101	99	0.0011	0.0038	0.0023 0.0024	-30-31
Edna	East Street	746637E	Lights and Gates	Median Barrier	9.79.4	979598 21	0.01210 .0119	8384	0.0012	0.0045	181 7.7	7681 7995	0.0155 0.0154	65	0.00170 .0016	0.0058	0.0034 0.0035	-18-19
Edna	FM 1822	746643H	Lights and Gates	Median Barrier	9.79.4	979598 21	0.0160. 0158	63	0.0016	0.00600.0059	181 7.7	7681 7995	0.0202 0.0201	50	0.0022	0.00760 .0075	0.0042 0.0043	-13-14

Table H.1-5. Grade Crossing Safety for Quiet Zones

State / City	Street	Crossing ID	Type of Protection	Supplemental Safety Measures	2027 No-Action				2027 Proposed Acquisition								Change	
					Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Edna	Pumphrey Street	746641U	Lights and Gates	Median Barrier	9.79.4	979598 21	0.01280 .0127	7879	0.0013	0.00480. 0047	181 7.7	7681 7995	0.0164 0.0163	61	0.00180 .0017	0.0061	0.0036	-17- 18
Edna	SH 0111 Wells Street	746639T	Lights and Gates	None	9.79.4	979598 21	0.02470 .0244	41	0.0025	0.00920. 0091	181 7.7	7681 7995	0.0304 0.0302	33	0.00330 .0032	0.01140 .0113	0.0057 0.0058	-8
El Campo	Alamo Street/Fahd	743436D	Lights and Gates	Median Barrier	9.79.4	979598 21	0.0130. 0128	7778	0.0006 0.0005	0.0039	181 7.7	7681 7995	0.0166 0.0165	6061	0.0007	0.0050	0.0036 0.0037	-17
El Campo	FM 0653 Wharton Street	743432B	Lights and Gates	Median Barrier	9.79.4	979598 21	0.01710 .0169	59	0.0007	0.0052 0.0051	181 7.7	7681 7995	0.0215 0.0214	4647	0.0010	0.0065	0.0045	-12- 13
El Campo	Gladys Street	743439Y	Lights and Gates	Median Barrier	9.79.4	979598 21	0.0110. 0109	9192	0.0005	0.0033	181 7.7	7681 7995	0.0141 0.0140	71	0.0006	0.0043 0.0042	0.0031 0.0032	-20- 21

Table H.1-5. Grade Crossing Safety for Quiet Zones

State / City	Street	Crossing ID	Type of Protection	Supplemental Safety Measures	2027 No-Action				2027 Proposed Acquisition								Change	
					Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
El Campo	Higbee	743433H	Lights and Gates	Median Barrier	9.79.4	979598 21	0.01070 .0106	9395	0.0005	0.0032	181 7.7	7681 7995	0.0138 0.0137	73	0.0006	0.0042 0.0041	0.0031	-21- 22
El Campo	Hoskins Broadway	743437K	Lights and Gates	Median Barrier	9.79.4	979598 21	0.01280 .0127	7879	0.0005	0.0039 0.0038	181 7.7	7681 7995	0.0164 0.0163	61	0.0007	0.005 0.0049	0.0036	-17- 18
El Campo	Meadow Lane	743440T	Lights and Gates	Median Barrier	9.79.4	979598 21	0.01540 .0152	6566	0.0007 0.0006	0.0046	181 7.7	7681 7995	0.0195 0.0194	5152	0.0009	0.0059	0.0041 0.0042	-14
El Campo	Palacious Street	743438S	Lights and Gates	Median Barrier	9.79.4	979598 21	0.01520 .0150	6667	0.0006	0.0046 0.0045	181 7.7	7681 7995	0.0193 0.0192	52	0.0009	0.0058	0.0041	-14
El Campo	Sam Bishkin Road	927033B	Lights and Gates	Median Barrier	9.79.4	979598 21	0.00960 .0095	104105	0.001	0.0036	181 7.7	7681 7995	0.0125 0.0124	8081	0.0013	0.00470 .0046	0.0028 0.0029	-23- 24

Table H.1-5. Grade Crossing Safety for Quiet Zones

State / City	Street	Crossing ID	Type of Protection	Supplemental Safety Measures	2027 No-Action				2027 Proposed Acquisition								Change	
					Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
El Campo	SH 71 Mechanic Street	743435W	Lights and Gates	Median Barrier	9.79.4	97959 821	0.06480 .0250	1540	0.0028 0.0011	0.0196 0.0076	181 7.7	7681 7995	0.0752 0.0308	1332	0.0034 0.0014	0.0227 0.0093	0.0104 0.0059	-2-8
El Campo	Washington	743434P	Lights and Gates	Median Barrier	9.79.4	97959 821	0.01270 .0125	7980	0.0005	0.0038	181 7.7	7681 7995	0.0162 0.0161	62	0.0007	0.0049	0.0035 0.0036	-17-18
Houston	Beechnut Street	758519L	Lights and Gates	Quad Gates	28.3	8877	0.0439	23	0.0045	0.0153	35.9	7992	0.0466	21	0.0049	0.0163	0.0027	-1
Houston	Bellaire Boulevard	758518E	Lights and Gates	Median Barrier	28.3	8877	0.1173	9	0.0121	0.041	35.9	7992	0.122	8	0.0128	0.0426	0.0047	0
Houston	Bissonnet Street	758517X	Lights and Gates	Median Barrier	28.3	8877	0.044	23	0.0045	0.0154	35.9	7992	0.0467	21	0.0049	0.0163	0.0027	-1

Table H.1-5. Grade Crossing Safety for Quiet Zones

State / City	Street	Crossing ID	Type of Protection	Supplemental Safety Measures	2027 No-Action				2027 Proposed Acquisition								Change	
					Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Houston	Chimney Rock Road	755621G	Lights and Gates	Quad Gates	37.1	8934	0.1058	9	0.0122	0.037	44.6	8026	0.1096	9	0.0128	0.0383	0.0038	0
Houston	Durham Drive	758533G	Lights and Gates	Quad Gates	30.5	8894	0.041	24	0.0039	0.0154	38.1	8002	0.0435	23	0.0043	0.0164	0.0025	-1
Houston	Fondren Road	755624C	Lights and Gates	Quad Gates	37.1	8934	0.4534	2	0.0661	0.1682	44.6	8026	0.4651	2	0.0688	0.1726	0.0117	0
Houston	Heights Boulevard	758540S	Lights and Gates	Quad Gates	30.5	8894	0.3309	3	0.0219	0.1054	38.1	8002	0.3435	3	0.0232	0.1094	0.0126	0
Houston	Henderson Street	758180W	Lights and Gates	Quad Gates	32.7	8909	0.0305	33	0.0029	0.0115	40.3	8011	0.0326	31	0.0031	0.0122	0.0021	-2

Table H.1-5. Grade Crossing Safety for Quiet Zones

State / City	Street	Crossing ID	Type of Protection	Supplemental Safety Measures	2027 No-Action				2027 Proposed Acquisition								Change	
					Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Houston	Hillcroft Avenue	755622N	Lights and Gates	Quad Gates	37.1	8934	0.2828	4	0.0325	0.0988	44.6	8026	0.2917	3	0.034	0.1019	0.0089	0
Houston	Houston Avenue	758187U	Lights and Gates	Median Barrier and Quad Gates	32.7	8909	0.0396	25	0.0013	0.0116	40.3	8011	0.0419	24	0.0014	0.0123	0.0023	-1
Houston	North Shepherd Drive	758534N	Lights and Gates	Quad Gates	30.5	8894	0.0416	24	0.0028	0.0143	38.1	8002	0.0441	23	0.003	0.0152	0.0025	-1
Houston	Post Oak Northbound	755618Y	Lights and Gates	Quad Gates	32.7	8909	0.0346	29	0.0024	0.011	40.3	8011	0.0368	27	0.0026	0.0117	0.0022	-2
Houston	Post Oak Southbound	440652H	Lights and Gates	Quad Gates	32.7	8909	0.0341	29	0.0024	0.0109	40.3	8011	0.0363	28	0.0026	0.0116	0.0022	-2

Table H.1-5. Grade Crossing Safety for Quiet Zones

State / City	Street	Crossing ID	Type of Protection	Supplemental Safety Measures	2027 No-Action				2027 Proposed Acquisition								Change	
					Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Houston	Richmond Avenue	758514C	Lights and Gates	Median Barrier	28.3	8877	0.0532	19	0.0055	0.0186	35.9	7992	0.0558	18	0.0059	0.0195	0.0027	-1
Houston	Roy Street	758532A	Lights and Gates	Median Barrier	30.5	8894	0.1539	6	0.0102	0.049	38.1	8002	0.1612	6	0.0109	0.0513	0.0072	0
Houston	San Felipe Road	758512N	Lights and Gates	Median Barrier	28.3	8877	0.1475	7	0.0152	0.0515	35.9	7992	0.1544	6	0.0162	0.0539	0.0069	0
Houston	Sawyer Street	758178V	Lights and Gates	Median Barrier	32.7	8909	0.0334	30	0.0032	0.0126	40.3	8011	0.0356	28	0.0034	0.0134	0.0022	-2
Houston	Tc Jester Street	758531T	Lights and Gates	Median Barrier	30.5	8894	0.0426	23	0.0028	0.0136	38.1	8002	0.0451	22	0.003	0.0144	0.0025	-1

Table H.1-5. Grade Crossing Safety for Quiet Zones

State / City	Street	Crossing ID	Type of Protection	Supplemental Safety Measures	2027 No-Action				2027 Proposed Acquisition								Change	
					Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Houston	US 59 Eastbound Frontage	758610E	Lights and Gates	Quad Gates	28.3	8877	0.0293	34	0.0033	0.0102	35.9	7992	0.0316	32	0.0036	0.011	0.0023	-3
Houston	US 59 Westbound Frontage	758611L	Lights and Gates	Quad Gates	28.3	8877	0.0722	14	0.0081	0.0252	35.9	7992	0.0764	13	0.0088	0.0267	0.0042	-1
Houston	West Bellfort Avenue	758523B	Lights and Gates	Median Barrier and Quad Gates	28.3	8877	0.0392	25	0.0041	0.0137	35.9	7992	0.0419	24	0.0044	0.0146	0.0026	-2
Houston	Westheimer Road	758513V	Lights and Gates	Median Barrier and Quad Gates	28.3	8877	0.0495	20	0.0051	0.0173	35.9	7992	0.0522	19	0.0055	0.0182	0.0027	-1

Table H.1-5. Grade Crossing Safety for Quiet Zones

State / City	Street	Crossing ID	Type of Protection	Supplemental Safety Measures	2027 No-Action				2027 Proposed Acquisition								Change	
					Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Houston	Willowbend Boulevard	758525P	Lights and Gates	Median Barrier and Quad Gates	28.3	8877	0.0345	29	0.0036	0.0121	35.9	7992	0.037	27	0.0039	0.0129	0.0025	-2
Louise	Colorado Street	743454B	Lights and Gates	Median Barrier	9.79.4	979598 21	0.00840 .0083	12012 1	0.0012	0.0037	181 7.7	7681 7995	0.0109 0.0108	9293	0.0016	0.0048	0.0025	-27-28
Louise	Orange Street	743459K	Lights and Gates	Median Barrier	9.79.4	979598 21	0.00880 .0087	11411 5	0.0012	0.0039	181 7.7	7681 7995	0.0114 0.0113	88	0.0017	0.00510 .0050	0.0026	-26-27
Louise	Wharton	743453U	Lights and Gates	Median Barrier	9.79.4	979598 21	0.00630 .0062	15816 0	0.0009	0.0028	181 7.7	7681 7995	0.0083 0.0082	1211 22	0.0012	0.0037	0.0019 0.0020	-37-38
Stafford	FM 1092 Northbound F	924008H	Lights and Gates	Quad Gates	37.1	8934	0.0319	31	0.0037	0.0112	44.6	8026	0.0338	30	0.0039	0.0118	0.0019	-2

Table H.1-5. Grade Crossing Safety for Quiet Zones

State / City	Street	Crossing ID	Type of Protection	Supplemental Safety Measures	2027 No-Action				2027 Proposed Acquisition								Change	
					Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Stafford	FM 1092 Southbound F	924009P	Lights and Gates	Quad Gates	37.1	8934	0.0375	27	0.0043	0.0131	44.6	8026	0.0396	25	0.0046	0.0138	0.002	-1
Stafford	Kirkwood Road	743695P	Lights and Gates	Quad Gates	37.1	8934	0.0476	21	0.0055	0.0166	44.6	8026	0.0497	20	0.0058	0.0174	0.0021	-1
Stafford	Promenade Boulevard Na	412514U	Lights and Gates	Quad Gates	37.1	8934	0.0375	27	0.0043	0.0131	44.6	8026	0.0395	25	0.0046	0.0138	0.002	-1
Stafford	Stafford Northbound	924006U	Lights and Gates	Median Barrier	37.1	8934	0.0287	35	0.0033	0.01	44.6	8026	0.0304	33	0.0035	0.0106	0.0018	-2
Stafford	Stafford Southbound	924007B	Lights and Gates	Median Barrier	37.1	8934	0.0292	34	0.0034	0.0102	44.6	8026	0.031	32	0.0036	0.0108	0.0018	-2

Table H.1-5. Grade Crossing Safety for Quiet Zones

State / City	Street	Crossing ID	Type of Protection	Supplemental Safety Measures	2027 No-Action				2027 Proposed Acquisition								Change	
					Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Sugar Land	Texas 6 Northbound Frontage	922512N	Lights and Gates	Quad Gates	37.1	8934	0.0328	30	0.0038	0.0115	44.6	8026	0.0347	29	0.004	0.0121	0.0019	-2
Sugar Land	Texas 6 Southbound Frontage	922513V	Lights and Gates	Quad Gates	43.6	8962	0.1444	7	0.0168	0.0504	51.2	8043	0.149	7	0.0175	0.0521	0.0046	0
Texarkana	Forest Lake Drive	330861M	Lights and Gates	Median Barrier	13.511.1	965199680	0.00950.0087	10611 5	0.00090.0008	0.00350.0032	25.923.5	81289785	0.01240.0119	8084	0.00130.0012	0.00460.0044	0.0030.0032	-25-31
Texarkana	Lakeridge Drive	330862U	Lights and Gates	Median Barrier	13.511.1	965199680	0.0120.0110	8491	0.00160.0015	0.00530.0049	25.923.5	81289785	0.01560.0150	6467	0.00220.0021	0.00680.0066	0.00360.0039	-19-24
Victoria	Delmar Drive	746653N	Lights and Gates	Median Barrier	15.6	97959821	0.0321	31	0.0006	0.0079	23.9	76817995	0.03660.0365	27	0.0007	0.009	0.0044	-4

Table H.1-5. Grade Crossing Safety for Quiet Zones

State / City	Street	Crossing ID	Type of Protection	Supplemental Safety Measures	2027 No-Action				2027 Proposed Acquisition								Change	
					Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Trains Per Day	Train Length (feet)	Predicted Total Crashes (crashes/year)	Years between Predicted Crashes	Predicted Fatal Crashes (crashes/year)	Predicted Casualty Crashes (crashes/year)	Predicted Crashes	Years between Crashes
Victoria	John Stockbauer Drive	912105H	Lights and Gates	Median Barrier	15.6	97959 821	0.0252	40	0.0016	0.0095	23.9	7681 7995	0.0291	34	0.0019	0.0109	0.0039	-5
Victoria	North Ben Wilson Street	746652G	Lights and Gates	Median Barrier	15.6	97959 821	0.0302	33	0.0012	0.0093	23.9	7681 7995	0.0345	29	0.0014	0.0106	0.0043	-4
Wharton	FM 0102	743359F	Lights and Gates	Median Barrier	9.79.4	97959 821	0.02060 .0203	49	0.0021	0.00770. 0076	181 7.7	7681 7995	0.0256 0.0255	39	0.00280 .0027	0.0096	0.0051 0.0052	-10
Wharton	Spanish Camp	743361G	Lights and Gates	Median Barrier	9.79.4	97959 821	0.01370 .0136	7374	0.0009	0.0046 0.0045	181 7.7	7681 7995	0.0175 0.0174	57	0.0012	0.0058	0.0038	-16
Wharton	West Milam Street	743363V	Lights and Gates	Median Barrier	9.79.4	97959 821	0.01290 .0127	7879	0.0008	0.0043 0.0042	181 7.7	7681 7995	0.0165 0.0164	61	0.0011	0.0055	0.0036	-17

H.1.3.2 Pedestrian-Only Grade Crossings

Table H.1-6 presents the 31 pedestrian-only grade crossings within the study area along with the current protection and historical fatal and casualty crashes from 2017-2021.

Table H.1-6. Pedestrian-Only Grade Crossing Safety

Location	Crossing ID	Type of Protection	Fatal and Casualty Crashes (2017 - 2021)
Main Street, Gravette, Arkansas	330049U	None	0
Duck Creek Trail Parkway, Davenport, Iowa	375996U	Warning signs	0
Harbor Drive, Muscatine, Iowa	607205Y	Warning signs ("look," "no train horn") and horizontal deflection fence	0
Harbor Drive, Muscatine, Iowa	607207M	Warning signs ("look," "no train horn") and horizontal deflection fence	0
Running River Trail System, Muscatine, Iowa	689568S	Warning signs ("look," "no train horn") and horizontal deflection fence	0
Running River Trail System, Muscatine, Iowa	689571A	Warning signs ("look," "no train horn") and horizontal deflection fence	0
N 3rd Street, Kirkland, Illinois	372308U	None	0
Louisiana Avenue, Shreveport, Louisiana	302651X	Warning signs	0
Texas Avenue, Vivian, Louisiana	328996T	Warning signs and bollards	0
Franklin Park Metra Station, Franklin Park, Illinois	920560W	Flashing lights	0
Mannheim Metra Station, Franklin Park, Illinois	920561D	None	1
Wood Dale Metra Station, Wood Dale, Illinois	920564Y	Flashing lights and warning signs	0
Wood Dale Metra Station, Wood Dale, Illinois	920565F	Flashing lights and warning signs	1
Itasca Metra Station, Itasca, Illinois	372181H	Flashing lights and warning signs	0
Medinah Metra Station, Medinah, Illinois	920567U	Flashing lights and warning signs	0
Roselle Metra Station, Roselle Illinois	920568B	Warning signs	0

Table H.1-6. Pedestrian-Only Grade Crossing Safety

Location	Crossing ID	Type of Protection	Fatal and Casualty Crashes (2017 - 2021)
Roselle Metra Station, Roselle, Illinois	920569H	Warning signs	0
Roselle Metra Station, Roselle, Illinois	920570C	Warning signs	0
Schaumburg Metra Station, Schaumburg, Illinois	920571J	Flashing lights and warning signs	0
Schaumburg Metra Station, Schaumburg, Illinois	920572R	Flashing lights and warning signs	0
Schaumburg Metra Station, Schaumburg, Illinois	920573X	Flashing lights and warning signs	0
Hanover Park Metra Station, Hanover Park, Illinois	920577A	Warning signs	0
Hanover Park Metra Station, Hanover Park, Illinois	920579N	Warning signs	0
Bartlett Metra Station, Bartlett, Illinois	920580H	Flashing lights and warning signs	0
National Street Metra Station, Elgin, Illinois	920582W	Flashing lights	0
National Street Metra Station, Elgin, Illinois	920583D	Flashing lights	0
National Street Metra Station, Elgin, Illinois	920584K	Flashing lights and warning signs	0
Elgin Metra Station, Elgin, Illinois	920586Y	Warning signs	0
Elgin Metra Station, Elgin, Illinois	920587F	Warning signs	0
Big Timber Road Station, Elgin, Illinois	920588M	None	0
Big Timber Road Station, Elgin, Illinois	920589U	None	0

H.2 Grade Crossing Delay

H.2.1 Grade Crossing Delay Approach

For grade crossing delay, the analyses are based on future conditions under the No-Action Alternative and Proposed Acquisition. Specifically, the No-Action Alternative analysis was conducted for 2027, the future condition of five years after the anticipated year of the Board's final decision. The No-Action condition reflects the projected train and vehicle traffic levels in the analysis year 2027 without the Acquisition. The Proposed Acquisition analysis was also conducted for 2027, accounting for projected train traffic levels as a result of the acquisition. The following data sources serve as the basis for the grade crossing delay analysis.

AADT data are from the FRA database (FRA 2021) with updates from state and local transportation agencies where available and adjustments based on field visits. The AADT values are based on data that represent years ranging from 1970 to 2021. As such, there is a need to normalize the AADT values to a common year and then grow the values to the analysis year of 2027. The general approach used to estimate 2027 AADT values was to identify the most recent available AADT value, adjust that value to a common base year of 2019, and then grow all values to the analysis year of 2027. Based on common industry practice, the specific approaches used to adjust historical AADT values to 2019 and to grow 2019 AADT values to 2027 include:

- If two years of historical traffic data are available and the volume for the more recent year is greater than the volume for the earlier year, then straight-line growth is used to adjust the most recent AADT value to 2019.
- If two years of historical traffic data are available and the volume for the more recent year is equal to or less than the volume for the earlier year, then a growth factor of 1.0 is used to adjust the most recent AADT value to 2019 (such as, assume most recent AADT as 2019 AADT).
- If one year of historical traffic data is available, then data from the United States Census Bureau (Decennial Census data and American Community Survey data) are used to develop growth factors. Specifically, the growth factors are based on the ratio of the number trips to work by car, truck, or van from one year to another.
- For historical AADT values from 2010 or older, the growth factor is based on the ratio of trips to work by car, truck, or van in 2019 compared to 2000. If the growth factor is less than or equal to 1.0, then no growth is assumed from the most recent year to 2019 (such as, assume most recent AADT as 2019 AADT).
- For historical AADT values from 2011 or newer, the growth factor is based on the ratio of trips to work by car, truck, or van in 2019 compared to 2011. If the growth factor is less than or equal to 1.0, then no growth is assumed from most recent year to 2019 (such as, assume most recent AADT as 2019 AADT).
- If 2020 or 2021 traffic data are available, then these values are used instead of growing older values.

- A two-percent annual growth rate is used to grow the AADT values to 2027, starting with 2019, 2020, or 2021 AADT values as applicable.

In one case, OEA's field visit identified a discrepancy between the estimated and actual traffic volume. Specifically, OEA observed very low traffic volumes at the grade crossing for Ripley Street in Davenport, Iowa (Crossing ID 865653R). The historical traffic volume from 1975 was 10,000 vehicles per day, which is inconsistent with OEA's observations and the characteristics of the roadway and adjacent land use. Ripley Street terminates in a parking lot with approximately 100 parking spaces immediately south of the grade crossing. To the north of the grade crossing, Ripley Street is a two-lane road functionally classified as "local" with a posted speed limit of 20 mph. The next street to the east, and adjacent grade crossing, is Harrison Street, which terminates in the same parking lot. Harrison Street is very similar to Ripley Street; a two-lane road functionally classified as "local" with a posted speed limit of 20 mph. The most recent traffic volume for Harrison Street is 700 vehicles per day based on data from 2018. Based on these data and OEA's field observations at the Ripley Street grade crossing, it was hypothesized that the 1975 traffic volume of 10,000 vehicles per day was likely a data entry error such as an extra '0' typed during data entry. As such, OEA adjusted the 1975 traffic volume for Ripley Street to 1,000 vehicles per day and then proceeded with the forecasting procedure described above.

Existing train traffic (average number of trains per day) is based on multiple sources of information, including both freight train and passenger train activity. The number of freight trains on CP and KCS tracks is based on estimates by CP (*Chapter 2, Section 2.2.1 Changes in Rail Operations*). The freight trains on BNSF and UP tracks are based on the FRA database for base values, applying CP organic growth factors to estimate 2027 freight train volumes for the No-Action Alternative, and adding CP Proposed Acquisition-related growth to estimate freight train volumes with the Proposed Acquisition. Passenger trains are based on 2019 General Transit Feed Specification data and confirmed using Metra data. For consistency across the multi-state geography of the project, the assumption is that passenger rail trains per day would be the same in future 2027 as in base year 2019.

Future train traffic (average number of trains per day) is based on estimates by CP (*Chapter 2, Section 2.2.1, Changes in Rail Operations*).

A weighted average of freight train length and passenger train length is used to estimate the average train length for grade crossing delay analyses. Freight train characteristics, including length and speed, are based on data provided by CP. Track speeds were identified using CP and KCS timetables and supplemented using the FRA crossing database to fill in gaps in the timetable data (such as through Houston where the tracks are owned and dispatched by Union Pacific and BNSF). Freight maximum authorized speed (MAS) is used for this analysis. In areas with passenger service that can operate at higher speeds than freight, this analysis assumes that Freight MAS represents speeds closer to the average train speed. The analysis speed for segment C-ELGI-01 west of Chicago, which is used by a high volume of Metra commuter trains and by CP freight trains to enter Bensenville Yard, was estimated to be between freight MAS and the yard track speed. For any crossings with head end speed restrictions, the train speed is based on head end speeds. For passenger trains, train length is based on the Metra 2018 State of the System Report (Metra 2018), Amtrak website (Amtrak 2022), and Near Map to check a sample of actual train consist lengths. The

assumed length is based on an average of two Amtrak P42 locomotives at 69 feet each, and 10 Amtrak superliner cars at 85 feet each (used on both Sunset Limited and Empire Builder), which results in an average passenger train length of 988 feet. ~~and updated using timetables and the Federal Railroad Administration database (FRA 2021). For any crossings with head-in restrictions, the train speed is based on head-in speeds. For passenger trains, train length is based on the Metra 2018 State of the System Report (Metra 2018), Amtrak website (Amtrak 2022), and Near Map to check a sample of actual train consist lengths. The assumed length is based on an average of two Amtrak P42 locomotives at 69 feet each, and 10 Amtrak superliner cars at 85 feet each (used on both Sunset Limited and Empire Builder), which results in an average passenger train length of 988 feet.~~

H.2.1.1 Grade Crossing Delay Analysis Methods

The grade crossing delay analysis includes the two general components, one focused on individual train crossings and one focused on cumulative events over an entire day. The performance measures for individual train crossings include blocked crossing time per train, crossing delay per stopped vehicle, and maximum vehicle queue. The performance measures for cumulative events over an entire day include number of vehicles delayed per day, average delay for all vehicles, and level of service (LOS) for vehicular traffic. For simplification purposes, it is assumed that both rail and road traffic are uniform throughout the day.

The blocked crossing time per train (T) includes the time for the train to pass and the time for any warning device to engage and disengage as shown in Equation (4) (FRA 2019). The blocked crossing time per train is based on Equation (9).

$$T = T_W + \frac{L}{V*88} \qquad (9)$$

Where:

T = Blocked crossing time per train (minutes);

T_W = Lead time (assumed 0.6 minutes for gate closing and opening as well as for passive crossings at which point motorists would not venture a crossing);

L = Average train length (feet);

V = Average train speed (miles per hour); and

88 = Conversion factor from miles per hour to feet per minute.

The number of vehicles delayed per day (N_V) is the number of vehicles that would be stopped for trains in a 24-hour period as shown in Equation (10).

$$N_V = \frac{T}{1{,}440} N * AADT \qquad (10)$$

Where:

N_V = Number of vehicles delayed per day;

T = Blocked crossing time per train (minutes);

1,440 = Factor to convert vehicles per day to vehicles per minute;

N = Number of trains per day; and

AADT = Annual average daily traffic (vehicles per day).

The average delay per vehicle in a 24-hour period (D_V) is shown in Equation (11).

$$D_V = \frac{N_V}{AADT} * \frac{T * \frac{R_D}{R_D - R_A}}{2} \quad (11)$$

Where:

D_V = Average delay per vehicle in a 24-hour period (minutes);

N_V = Number of vehicles delayed per day;

T = Blocked crossing time per train (minutes);

R_D = Vehicle departure rate (vehicles per minute per lane), which can vary by location;[1]

R_A = Vehicle arrival rate (vehicles per minute per lane), which is based on AADT data from the FRA database with updates from state and local transportation agencies where available;

AADT = annual average daily traffic volume for the highway at the grade crossing (in vehicles per day), which is based on AADT data from the FRA database with updates from state and local transportation agencies where available; and

2 = Averaging factor to account for vehicles that do not experience delays from the entire time the train blocks the crossing.

Total vehicle delay (D) is the product of average delay per vehicle (D_V) and the AADT as shown in Equation (12).

$$D = D_V * AADT \quad (12)$$

Where:

D = Total vehicle delay (minutes);

[1] Vehicle departure rate varies by location based on factors such as number of lanes, lane width, grade, and sight distances. This information is not readily available for the grade crossings included in this analysis. As such, this analysis assumed common values based on the Highway Capacity Manual (Transportation Research Board 2016). The assumed vehicle departure rates (in vehicles/minute/lane) are 30 for highways, 23.3 for arterials, 15 for collectors, and 11.7 for local roads.

D_V = Average delay per vehicle in a 24-hour period (minutes); and

AADT = annual average daily traffic volume for the highway at the grade crossing (in vehicles per day), which is based on AADT data from the FRA database with updates from state and local transportation agencies where available.

The LOS for vehicular traffic in this analysis is based on the average delay per vehicle at each grade crossing and the LOS criteria for signalized intersections from the 2016 Highway Capacity Manual (Transportation Research Board 2016). LOS is a qualitative measure of motor vehicle traffic flow, indicated by letters from A to F, where A represents free-flow conditions and F indicates extreme congestion. **Table H.2-1** presents the LOS categories along with the applicable ranges of average delay per vehicle and general descriptions.

Table H.2-1. Level of Service Designations

LOS	Average Delay per Vehicle (DV) (seconds/vehicle)	General Description
A	DV ≤ 10	Free flow
B	10 < DV ≤ 20	Stable flow (slight delays)
C	20 < DV ≤ 35	Stable flow (acceptable delays)
D	35 < DV ≤ 55	Approaching unstable flow
E	55 < DV ≤ 80	Unstable flow
F	80 < DV	Forced flow (congested and queues fail to clear)

Source: Highway Capacity Manual, Sixth Edition: A Guide for Multimodal Mobility Analysis. (Transportation Research Board 2016)

The maximum vehicle queue (Q) is the estimated length of the longest line of vehicles expected to occur at the grade crossing. It is assumed that the maximum vehicle queue would occur during the peak hour for vehicle traffic and that the peak-hour traffic represents 10 percent of the AADT. The calculation is given by Equation (13).

$$Q = AADT * \frac{0.1*0.6}{60} * \frac{T}{NL/2} \quad (13)$$

Where:

Q = Maximum vehicle queue length (in number of vehicles);

AADT = annual average daily traffic volume for the highway at the grade crossing (in vehicles per day), which is based on AADT data from the FRA database with updates from state and local transportation agencies where available;

0.1 = Factor to convert AADT (in vehicles per day) to peak-hour traffic (in vehicles per hour);

0.6 = Factor to convert two-way traffic to peak direction traffic, assuming traffic is split 60/40 during the peak hour;

60 = Factor to convert vehicles per hour to vehicles per minute;

T = Blocked crossing time per train (minutes);

NL = Number of highway lanes at the grade crossing, which was obtained from the FRA database; and

2 = Factor to convert total lanes to lanes in peak direction.

H.2.1.2 Emergency Vehicle Delay

The same general methods apply to estimating the potential delay for emergency vehicles, including fire, police, and emergency medical service vehicles at ~~at~~ grade crossings. While an emergency vehicle could cross any ~~at~~ grade crossing, there are some ~~at~~ grade crossings where an emergency vehicle would be more likely to cross. The OEA delay threshold is used to determine which ~~at~~ grade crossings should be analyzed for potential changes in delay, and hence changes in emergency vehicle response time. Recall for non-attainment areas, this includes all grade crossings on rail segments with three or more additional freight trains per day or a 50 percent increase in annual gross ton-miles (49 C.F.R. 1105.7(e)). In air quality attainment areas, the threshold is all grade crossings on rail segments with eight or more additional freight trains per day or 100 percent increase in annual gross ton-miles (49 C.F.R. 1105.7(e)) **(Table H.2-2)**.

In addition, the FRA grade crossing inventory ~~database~~ is used to identify those highways designated is as "emergency vehicle route" within the threshold areas for a separate summary of potential delay impacts.

For ~~at~~ grade crossings that would meet or exceed the threshold for freight train traffic increases, and are located on highways designated as "emergency vehicle route" in the FRA grade crossing inventory~~database~~, OEA analyzed the effects on emergency vehicle response by evaluating site-specific conditions including:

- Emergency service routes;
- Existing highway and road networks;
- Locations of nearby at-grade or grade-separated crossings; and
- Time to access the opposite side of the grade crossing if a train is encountered.

In response to public comments on the Draft EIS, OEA further analyzed the potential delay impacts on emergency vehicles across the entire study area. While those grade crossings designated as emergency routes are where an emergency vehicle would be more likely to cross, an emergency vehicle could cross at any grade crossing. As such, OEA analyzed the gate down time at all 1,365 grade crossings in the study area for particular types of freight and passenger trains. **Table H.2-2** presents the estimated gate down time for passenger trains (for grade crossings located along passenger routes); shorter, bulk freight trains; and longer intermodal, automotive, manifest freight trains, using the estimated length and maximum train speed of each type. **Figures H-1** to **H-318** of this appendix show maps of emergency service facilities, including hospitals, fire stations, and police stations, in relation

to grade crossings and grade-separated crossings throughout the study area. The table and corresponding maps are intended to be used simultaneously to provide context for reviewers.

Under normal conditions, trains are moving and, as shown in **Table H.2-4**, the average gate down time is relatively short. As such, emergency vehicles would typically wait for the train to pass. Although an infrequent occurrence, a grade crossing can become blocked when a train comes to a stop before clearing the crossing. While also infrequent, it is possible that an emergency could occur at the same time that a stopped train blocks a grade crossing. These simultaneous events are rare, but represent a potentially serious situation. Therefore, OEA analyzed 751 of the total 1,365 grade crossings along the study area in greater detail for potential impacts of stopped trains on emergency response vehicles. These include all grade crossings in the study area with an AADT of 2,500 vehicles per day or greater as well as grade crossings with an AADT less than 2,500 vehicles per day that are "isolated" because they are more than 2 miles from a grade-separated crossing and more than 2 miles from a grade crossing with an AADT of 2,500 or higher. OEA identified 19 grade-separated crossings within the study area that were within the parameters for analysis, however, did not actually provide a viable alternate route (i.e., those on limited access roadways or cut off by geographic features like a river); thus, these grade separations were excluded from potential alternate routing options. For the 751 grade crossings that met these criteria, **Table H.2-2** presents the length of the closest alternative route that an emergency vehicle could take in the event that a long freight train (10,000 feet long) were to block the grade crossing.

In identifying alternative routes, OEA made two very conservative assumptions that may tend to overestimate the length of the alternative route. First, because there is no way of knowing exactly where a train could become stopped, OEA assumed that a freight train that could block a grade crossing would also block any other grade crossings within 2 miles in either direction, measured along the track. By definition, therefore, all alternative routes that do not involve a grade-separated crossing are more 2 two miles long. In reality, it would not be possible for a single train to block all grade crossings within 2 miles in either direction, so shorter alternative routes could be available for many grade crossings depending on where a train became stopped.

Second, OEA calculated the length of the alternative route as the distance from one side of each grade crossing to the opposite side of the same grade crossing. In reality, the destination of most vehicles would not be the opposite side of the railroad tracks and vehicles would most likely use only a portion of the alternative route to reach their destination. The alternate route distance is essentially a round-trip mileage from one side of the blocked grade crossing to the other, using only grade separated crossings or crossings more than two miles away, measured along the tracks. Therefore, the alternative route lengths reported in **Appendix H** represent the upper limit of the additional mileage that a vehicle would need to travel to go around a train blocking a grade crossing.

Within **Table H.2-2** for the alternate route analysis, grade crossings are indicated as "--" if they were excluded from the analysis, "NVA" if there was no viable alternate route (i.e., dead-end roads), or "NVAP" (no viable alternate within parameters) if all possible alternate crossing locations were within 2 miles of the grade crossing being analyzed. NVAP designation indicates that there is potential that a 10,000-foot train is blocking all potential

alternate grade crossing locations at a given point in time. The table and corresponding maps are intended to be used simultaneously to provide context for reviewers.

Table H.2-3 presents the number of grade crossings designated as NVA and NVAP within the emergency vehicle alternative route analysis data set. In total, there were 73 NVA grade crossings and 37 NVAP grade crossings. A high concentration of these lie along the Mississippi River in Iowa, with 18 NVA grade crossings and 20 NVAP grade crossings; roughly a third of these serve non-residential areas such as parks or industrial complexes. Most of the 73 total NVA grade crossings are in rural areas and roughly half of the NVAP grade crossings are in rural areas. Of the 73 total NVA grade crossings, 43 serve 10 or fewer residences. Of the 37 NVAP grade crossings, several were in communities that could be fully isolated by a 10,000-foot train, including: riverfront area in Camanche, Iowa; parts of Princeton, Iowa; riverfront housing near I-80 in Le Claire, Iowa; southwest side of Ogden, Arkansas; the Spindle Top neighborhoods near Crosby, Texas; southeastern portion of Louise, Texas; and the northwestern side of Richmond, Texas.

Examples of NVAP and NVA grade crossings are shown below for reference.

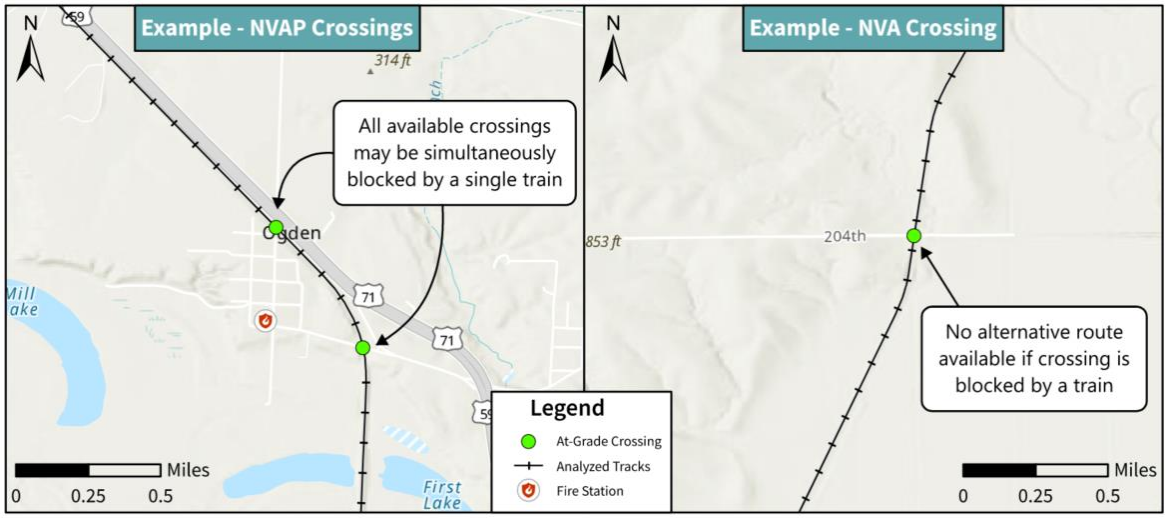


Table H.2-2 also shows the Acquisition-related increase or decrease in three measures of delay: total delay per day, average delay per delayed vehicle, and total gate down time per day. Note the increase in total delay per day and total gate down time per day are the same for grade crossings with AADT less than 2,500 vehicles per day because these grade crossings did not meet OEA's AADT threshold of 2,500 or more vehicles per day for inclusion in the grade crossing delay analysis. As such, total gate down time was used as an estimate of total delay per day for these grade crossings. With the Proposed Acquisition, the total gate down time per day is expected increase by an average of 23.2 minutes per grade crossing, while the average delay per delayed vehicle is expected to decrease by 15.7 seconds. Comparing the Proposed Acquisition to the No-Action Alternative, the average delay per delayed vehicle would decrease by 16.0 seconds for the 73 NVA grade crossings and 15.9 seconds for the 37 NVAP grade crossings; however, the total gate down time per day would increase by an average of 28 minutes for the 73 NVA grade crossings and 29.3 minutes for the 37 NVAP grade crossings.

Delay Impacts from New Sidings

One final aspect of the delay analysis is related to sidings. In particular, the construction of new sidings near ~~at-~~grade crossings can impact delay beyond the through trains at the crossing. The sidings and related grade crossings considered for potential delay impacts are all new sidings proposed under the Proposed Acquisition where the location of the new siding crosses a highway at-grade with the potential to block vehicle traffic.

For ~~at-~~grade crossings that would meet these criteria, OEA analyzed the potential delay impacts on vehicle traffic by evaluating site-specific conditions including:

- Existing highway and road networks;
- Locations of nearby at-grade or grade-separated crossings; and
- Time to access the opposite side of the grade crossing if a train is encountered.

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Arkansas	Ashdown	Arkansas 108	330573T	--	2.2	2.7	--	--	23.2	-9.6	23.2
Arkansas	Ashdown	Commerce Street	330576N	--	2.3	2.9	--	--	24.7	-10.6	24.7
Arkansas	Ashdown	Domtar Entrance A	330584F	--	2.3	2.9	--	--	25.7	-10.5	25.7
Arkansas	Ashdown	Domtar Entrance B	330412X	--	2.3	2.9	--	--	25.7	-10.6	25.7
Arkansas	Ashdown	Front Street	330578C	--	2.3	2.9	Yes	4.3	82.6	-11.9	25.7
Arkansas	Ashdown	Fulton Street	330574A	--	2.2	2.7	--	--	23.2	-9.6	23.2
Arkansas	Ashdown	Main Street	330575G	--	2.3	2.9	Yes	4.8	72.2	-11.1	24.7
Arkansas	Ashdown	Road 710	330572L	--	2.2	2.7	No	4.4	23.2	-9.4	23.2
Arkansas	Ashdown	Whitaker Street	330577V	--	2.3	2.9	--	--	24.7	-10.5	24.7
Arkansas	Cove	Barton Avenue	330483U	--	2.8	3.4	Yes	5.6	30.1	-13.1	30.1
Arkansas	Cove	East Mill Street	330482 M	--	2.8	3.4	--	--	30.1	-13.0	30.1
Arkansas	Cove	Road 21	330485H	--	2.8	3.4	No	7.7	30.1	-13.0	30.1
Arkansas	Cove	Road 287	330484B	--	2.8	3.4	No	7.3	30.1	-13.0	30.1
Arkansas	De Queen	Avon Road	330520U	--	2.8	3.4	No	7.9	30.1	-13.0	30.1

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Arkansas	De Queen	Dequeen Lake Road	330519A	--	2.8	3.4	No	9.6	30.1	-13.1	30.1
Arkansas	De Queen	East Stilwell Avenue	330524 W	--	2.8	3.4	Yes	2.5	127.0	-14.6	30.1
Arkansas	De Queen	Robinson Road	330522H	--	2.8	3.4	--	--	30.1	-13.2	30.1
Arkansas	De Queen	South 4th Street	330538E	--	2.8	3.4	--	--	29.1	-13.6	29.1
Arkansas	Decatur	3rd Street	330355L	--	2.8	3.4	--	--	28.3	-9.7	28.3
Arkansas	Decatur	Mount Olive Road	330349H	--	2.8	3.4	Yes	8.2	28.3	-9.6	28.3
Arkansas	Decatur	Road 329	330358G	--	2.8	3.4	--	--	28.3	-9.6	28.3
Arkansas	Decatur	Road 335	330357A	--	2.8	3.4	--	--	28.3	-9.6	28.3
Arkansas	Decatur	Roller Avenue	330354E	--	3.5	4.4	Yes	0.6	159.0	-14.2	35.3
Arkansas	Decatur	Y City Road	330359N	--	2.8	3.4	No	6.3	28.3	-9.6	28.3
Arkansas	Gentry	Collins Avenue	330363D	--	2.8	3.4	Yes	0.7	89.8	-10.5	28.3
Arkansas	Gentry	Floyd Moore Road	330360H	--	2.8	3.4	No	4.8	28.3	-9.6	28.3
Arkansas	Gentry	Main Street	330362 W	--	2.8	3.4	Yes	0.9	123.7	-10.9	28.3

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Arkansas	Gentry	Marion Lee Road	330365S	--	3.5	4.4	--	--	35.3	-12.9	35.3
Arkansas	Gentry	Pioneer Lane	330364K	--	2.8	3.4	--	--	28.3	-9.8	28.3
Arkansas	Gentry	Private	330361P	--	2.8	3.4	--	--	28.3	-9.6	28.3
Arkansas	Gentry	Railroad Avenue	330411R	--	2.8	3.4	--	--	28.3	-9.9	28.3
Arkansas	Gillham	Braley Avenue	330511V	--	3.5	4.4	--	--	37.7	-17.8	37.7
Arkansas	Gillham	East Cooper Street	330513J	--	3.5	4.4	--	--	37.7	-17.4	37.7
Arkansas	Gillham	King School Road	330514R	--	3.5	4.4	--	--	37.7	-17.3	37.7
Arkansas	Gillham	Ladd Bridge Road	330515X	--	3.5	4.4	--	--	37.7	-17.4	37.7
Arkansas	Gillham	Memory Lane	330516E	--	3.5	4.4	--	--	37.7	-17.3	37.7
Arkansas	Grannis	Braley Avenue	330503D	--	2.8	3.4	No	5.2	30.1	-13.1	30.1
Arkansas	Grannis	Frachiseur Drive	330504K	--	2.8	3.4	No	5.6	30.1	-13.0	30.1
Arkansas	Grannis	Mineral Road	330509U	--	3.5	4.4	--	--	37.7	-17.3	37.7
Arkansas	Grannis	Road 1	330505S	--	2.8	3.4	No	10.8	30.1	-13.0	30.1

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Arkansas	Grannis	Road 200	330502W	--	2.8	3.4	No	5.2	30.1	-13.0	30.1
Arkansas	Grannis	Road 201	330508M	--	3.5	4.4	No	8.3	37.7	-17.3	37.7
Arkansas	Gravette	Dallas Street	330345F	--	2.8	3.4	--	--	28.3	-9.7	28.3
Arkansas	Gravette	Limekiln Road	330346M	--	2.8	3.4	No	8	28.3	-9.6	28.3
Arkansas	Gravette	Mount Olive Road	330347U	--	2.8	3.4	Yes	10.3	28.3	-9.8	28.3
Arkansas	Hatfield	Johnson Avenue	330477R	--	2.8	3.4	No	10.5	30.1	-13.1	30.1
Arkansas	Hatfield	Road 30 / Slote Crossing	330474V	--	2.8	3.4	No	8.4	30.1	-13.0	30.1
Arkansas	Hatfield	Road 38	330467K	--	2.8	3.4	No	8.4	30.1	-13.0	30.1
Arkansas	Hatfield	South Rhodes Lane	330472G	--	2.8	3.4	NVA	NVA	30.1	-13.0	30.1
Arkansas	Hatfield	Stevens Road	330476J	--	2.8	3.4	No	10.2	30.1	-13.2	30.1
Arkansas	Horatio	Arkansas 24	330545P	--	2.8	3.4	No	15.1	29.1	-13.1	29.1
Arkansas	Horatio	Arkansas 41	330546W	--	2.2	2.7	No	51.1	43.8	-9.9	23.2

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Arkansas	Horatio	Bear Creek Cutoff	330542U	--	2.8	3.4	No	14.4	29.1	-13.0	29.1
Arkansas	Mena	10th Street	330456X	--	2.8	3.4	--	--	30.1	-13.4	30.1
Arkansas	Mena	4th Street	330453C	--	2.8	3.4	--	--	30.1	-13.1	30.1
Arkansas	Mena	7th Street	330455R	--	2.8	3.4	--	--	30.1	-13.7	30.1
Arkansas	Mena	Arkansas 375	330464P	--	2.8	3.4	No	11.2	30.1	-13.1	30.1
Arkansas	Mena	Arkansas 8 Reine Street	330457E	--	2.8	3.4	No	10.2	115.2	-13.9	30.1
Arkansas	Mena	Mena Street	330454J	--	2.8	3.4	No	7.5	214.7	-13.9	30.1
Arkansas	Mena	Pickering Avenue	919209N	--	2.8	3.4	--	--	30.1	-13.9	30.1
Arkansas	Mena	Road 167	330463H	--	2.8	3.4	No	8.8	30.1	-13.0	30.1
Arkansas	Mena	Road 39	330465 W	--	2.8	3.4	No	12.1	30.1	-13.2	30.1
Arkansas	Mena	Road 733	330459T	--	2.8	3.4	--	--	30.1	-13.0	30.1
Arkansas	Mena	Road 76	330448F	--	2.8	3.4	No	7.8	30.1	-13.0	30.1
Arkansas	Mena	Road 97 / Forest Road	330441H	--	2.8	3.4	No	25.3	30.1	-13.0	30.1
Arkansas	Mena	Ryder Lane	330440B	--	2.8	3.4	NVA	NVA	30.1	-13.0	30.1
Arkansas	Mena	US 59/ US 270	330445K	--	2.8	3.4	No	25.2	30.1	-13.2	30.1

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Arkansas	Ogden	Grand Street	330594L	--	2.2	2.7	NVAP	NVAP	24.0	-9.6	24.0
Arkansas	Ogden	Pine Street	330593E	--	2.2	2.7	NVAP	NVAP	24.0	-9.6	24.0
Arkansas	Ogden	Road 23	330589P	--	2.2	2.7	Yes	16.3	24.0	-9.6	24.0
Arkansas	Siloam Springs	Country Club Road	330370N	--	2.8	3.4	--	--	28.3	-9.9	28.3
Arkansas	Siloam Springs	Davidson Road	330368M	--	2.8	3.4	--	--	28.3	-10.0	28.3
Arkansas	Siloam Springs	Dawn Hill Road	330367F	--	3.5	4.4	No	7.3	35.3	-13.5	35.3
Arkansas	Siloam Springs	Jefferson Street	330375X	--	2.8	3.4	Yes	0.8	120.5	-10.8	28.3
Arkansas	Siloam Springs	Kenwood Street	330376E	--	2.8	3.4	Yes	1.1	67.8	-10.5	28.3
Arkansas	Siloam Springs	Lake Francis Road	330382H	--	3.1	3.8	--	--	31.3	-11.3	31.3
Arkansas	Siloam Springs	Lincoln Street	330405M	--	2.8	3.4	Yes	1	153.7	-10.6	28.3
Arkansas	Siloam Springs	Road 159 / Waynes Trail	330385D	--	3.1	3.8	NVA	NVA	31.3	-11.0	31.3
Arkansas	Siloam Springs	Road 164 / Elm Road	330384W	--	3.1	3.8	--	--	31.3	-10.9	31.3
Arkansas	Siloam Springs	Tahlequah Street	330372C	--	2.8	3.4	yes	1.8	65.7	-10.3	28.3

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Arkansas	Sulphur Spgs	Fickinger Street	330336G	--	3.5	4.4	--	--	35.3	-12.8	35.3
Arkansas	Sulphur Spgs	White Avenue	330338V	--	3.5	4.4	--	--	35.3	-12.8	35.3
Arkansas	Texarkana	Road 3	330598N	--	2.2	2.7	no	10.3	24.0	-9.5	24.0
Arkansas	Texarkana	Road 76	330596A	--	2.2	2.7	no	8.6	24.0	-9.5	24.0
Arkansas	Texarkana	Road 80	330599V	--	2.2	2.7	no	8.5	24.0	-9.4	24.0
Arkansas	Vandervoort	Arkansas 246	330488D	--	2.8	3.4	No	5.9	30.1	-13.2	30.1
Arkansas	Vandervoort	County Road 15	330493A	--	2.8	3.4	No	6.7	30.1	-13.0	30.1
Arkansas	Vandervoort	Road 18	330487 W	--	2.8	3.4	No	9.3	30.1	-13.0	30.1
Arkansas	Vandervoort	Road 18	330492T	--	2.8	3.4	No	5.7	30.1	-13.1	30.1
Arkansas	Vandervoort	Road 482	330491L	--	2.8	3.4	No	6.5	30.1	-13.0	30.1
Arkansas	Wickes	Blanton Road	330500H	--	2.8	3.4	No	8.8	30.1	-13.0	30.1
Arkansas	Wickes	County Road 13	330495N	--	2.8	3.4	Yes	4.8	30.1	-13.0	30.1
Arkansas	Wickes	Oak Street	330499R	--	2.8	3.4	No	5.9	30.1	-13.0	30.1
Arkansas	Wickes	Old US 71	330498J	--	3.5	4.4	Yes	2.3	37.7	-17.3	37.7
Arkansas	Wickes	Road 6	330501P	--	2.8	3.4	No	6.8	30.1	-13.1	30.1

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Arkansas	Wilton	County Route 139	330556C	--	2.2	2.7	No	10.1	23.2	-9.4	23.2
Arkansas	Wilton	County Route 40	330560S	--	2.2	2.7	No	11	23.2	-9.5	23.2
Arkansas	Wilton	Douglas Street	330567P	--	2.2	2.7	No	9.7	23.2	-9.8	23.2
Arkansas	Wilton	Hinton Road/ County Route 64	330570X	--	2.2	2.7	No	11.8	23.2	-9.5	23.2
Arkansas	Wilton	Mills Street	330569D	--	2.2	2.7	No	10.4	23.2	-9.5	23.2
Arkansas	Wilton	Road 60	330558R	--	2.2	2.7	No	9.6	23.2	-9.4	23.2
Arkansas	Wilton	Texarkana Avenue	330568 W	--	2.2	2.7	No	9.9	23.2	-9.5	23.2
Arkansas	Winthrop	Arkansas 234	330554N	--	2.2	2.7	No	10.1	23.2	-9.5	23.2
Arkansas	Winthrop	High Street	330548K	--	2.2	2.7	No	13.7	23.2	-9.6	23.2
Arkansas	Winthrop	Post Street	330549S	--	2.2	2.7	No	13.6	23.2	-9.5	23.2
Arkansas	Winthrop	Road 19	330551T	--	2.2	2.7	No	9.9	23.2	-9.4	23.2
Arkansas	Winthrop	Road 25	330552A	--	2.2	2.7	No	8.5	23.2	-9.4	23.2
Arkansas	Winthrop	Road 42	330547D	--	2.2	2.7	No	10.7	23.2	-9.5	23.2
Illinois	Adeline	Adeline Road	372374G	--	2.8	3.4	No	7	15.0	-20.5	15.0

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Illinois	Adeline	Pond Road	372371L	--	2.8	3.4	No	6.1	15.0	-20.2	15.0
Illinois	Adeline	White Eagle Road	372379R	--	2.8	3.4	No	6.8	15.0	-20.4	15.0
Illinois	Bartlett	Gifford Road	372214T	**0.8**	2.8	3.4	Yes	7.4	61.7	5.4	18.6
Illinois	Bartlett	Naperville Road	372210R	**0.8**	2.8	3.4	Yes	3.8	308.6	8.6	18.6
Illinois	Bartlett	Oak Avenue	372206B	**0.8**	2.8	3.4	Yes	3.8	135.9	5.5	18.6
Illinois	Bartlett	Prospect Avenue	371997M	**0.8**	2.8	3.4	Yes	5.5	45.8	5.1	18.6
Illinois	Bartlett	Spaulding Road	372212E	**0.8**	2.8	3.4	--	--	18.6	4.9	18.6
Illinois	Bartlett	Western Avenue	372207H	**0.8**	2.8	3.4	--	--	18.6	4.7	18.6
Illinois	Bensenville	Addison Street	372172J	**0.8**	4.1	5.1	--	--	41.5	12.8	26.8
Illinois	Bensenville	Center Street	372171C	**0.8**	4.1	5.1	--	--	41.5	12.5	26.8
Illinois	Bensenville	Church Road	372174X	**0.8**	4.1	5.1	Yes	2.3	388.6	14.0	26.8
Illinois	Bensenville	York Road	372170V	**0.8**	4.1	5.1	Yes	3.4	232.5	5.4	26.8
Illinois	Byron	Colfax Street	372355C	--	2.8	3.4	Yes	8.7	55.4	-23.3	15.0
Illinois	Byron	Conger Road	372360Y	--	2.8	3.4	Yes	6.4	15.0	-20.3	15.0

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Illinois	Byron	Kishwaukee Road	372350T	--	2.8	3.4	No	6.7	28.4	-21.7	15.0
Illinois	Byron	Mill Road	372358X	--	2.8	3.4	--	--	15.0	-20.9	15.0
Illinois	Byron	Mineral Street	372353N	--	2.8	3.4	--	--	15.0	-20.5	15.0
Illinois	Byron	North Walnut Street	372354V	--	2.8	3.4	--	--	15.0	-21.2	15.0
Illinois	Davis Junction	Blackwood Road	372334J	--	4.1	5.1	No	7.1	24.8	-32.3	24.8
Illinois	Davis Junction	Junction Road	372339T	--	2.8	3.4	No	7.1	31.1	-22.4	15.0
Illinois	Davis Junction	Royster Road	372331N	--	2.8	3.4	NVA	NVA	17.3	-20.3	17.3
Illinois	Elgin	Chicago Street	372240H	**0.8**	2.8	3.4	Yes	3.5	142.9	0.7	12.2
Illinois	Elgin	Elgin Avenue	372231J	**0.8**	3.1	3.8	--	--	20.5	5.3	20.5
Illinois	Elgin	Highland Avenue	372241P	**0.8**	2.8	3.4	Yes	3.8	49.7	0.6	12.2
Illinois	Elgin	Highland Avenue	372253J	--	2.8	3.4	--	--	17.3	-21.4	17.3
Illinois	Elgin	Illinois Route 25	372217N	**0.8**	--	--	Yes	6.1	293.1	6.5	18.6

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Illinois	Elgin	Kimball Street	372242W	**0.8**	2.8	3.4	Yes	4.7	181.6	0.6	12.2
Illinois	Elgin	McLean Boulevard	372246Y	**0.8**	2.8	3.4	Yes	3.7	172.3	0.6	12.2
Illinois	Elgin	National Street	372239N	**0.8**	3.1	3.8	Yes	2.7	115.6	6.0	20.5
Illinois	Elgin	Raymond Street	372235L	**0.8**	3.1	3.8	Yes	5.4	47.4	5.7	20.5
Illinois	Forreston	Bailyville Road	372385U	--	2.8	3.4	--	--	15.0	-20.8	15.0
Illinois	Forreston	Brookville Road	372396G	--	2.8	3.4	No	5.9	15.0	-20.2	15.0
Illinois	Forreston	Columbine Road	372380K	--	2.8	3.4	No	8.8	15.0	-20.2	15.0
Illinois	Forreston	Fork Creek Road	372394T	--	2.8	3.4	No	5.9	15.0	-20.2	15.0
Illinois	Forreston	Harper Road	372390R	--	2.8	3.4	--	--	15.0	-20.1	15.0
Illinois	Forreston	Hollywood Road	372383F	--	2.8	3.4	No	8.3	15.0	-20.1	15.0
Illinois	Forreston	Illinois Route 72	372388P	--	2.8	3.4	No	7.9	33.9	-20.9	15.0
Illinois	Forreston	Mount Vernon Road	372391X	--	2.8	3.4	--	--	15.0	-20.1	15.0

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Illinois	Franklin Park	25th Avenue	372138C	**0.8**	4.1	5.1	Yes	3.1	-253.7	-6.2	-3.1
Illinois	Franklin Park	Calwagner Street	372139J	**0.8**	4.1	5.1	--	--	-3.1	-5.6	-3.1
Illinois	Franklin Park	Edgington Street	372137V	**0.8**	4.1	5.1	Yes	3.4	-59.3	-6.1	-3.1
Illinois	Franklin Park	Ruby Street	372140D	**0.8**	4.1	5.1	--	--	-3.1	-5.8	-3.1
Illinois	Franklin Park	Scott Street	372141K	**0.8**	4.1	5.1	--	--	-3.1	-5.6	-3.1
Illinois	Genoa	Brown Street	372285P	--	2.8	3.4	--	--	17.3	-20.7	17.3
Illinois	Genoa	Genoa Road	372289S	--	2.8	3.4	No	8	50.8	-21.3	17.3
Illinois	Genoa	Illinois Route 23	372279L	--	2.8	3.4	No	7.8	35.8	-21.0	17.3
Illinois	Genoa	Roosevelt Road	372277X	--	2.8	3.4	--	--	17.3	-20.1	17.3
Illinois	Genoa	Sycamore Street	372286 W	--	2.8	3.4	--	--	17.3	-20.8	17.3
Illinois	Genoa	Washington Street	372288K	--	2.8	3.4	--	--	17.3	-20.7	17.3
Illinois	Hampshire	East Street	372270A	--	2.8	3.4	No	6.9	17.3	-20.1	17.3
Illinois	Hampshire	New Lebanon Road	372274C	--	2.8	3.4	No	8.7	17.3	-20.3	17.3
Illinois	Hampshire	Reinking Road	372257L	--	2.8	3.4	--	--	17.3	-21.3	17.3

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Illinois	Hampshire	State Street	372269F	--	2.8	3.4	No	6.7	17.3	-21.2	17.3
Illinois	Hampshire	Thurnau Road	372264W	--	2.8	3.4	--	--	17.3	-20.3	17.3
Illinois	Hampshire	Walker Road	372271G	--	2.8	3.4	No	6.7	17.3	-20.7	17.3
Illinois	Itasca	Catalpa Avenue	372182P	**0.8**	2.8	3.4	--	--	18.6	4.9	18.6
Illinois	Itasca	Prospect Avenue	372179G	**0.8**	2.8	3.4	Yes	7.5	112.3	5.3	18.6
Illinois	Itasca	Rohlwing Road	372184D	**0.8**	2.8	3.4	Yes	5.6	359.3	6.9	18.6
Illinois	Itasca	Walnut Street	372180B	**0.8**	2.8	3.4	--	--	18.6	4.8	18.6
Illinois	Kingston	Five Points Road	372296C	--	2.8	3.4	--	--	17.3	-20.9	17.3
Illinois	Kingston	Glidden Road	372299X	--	2.8	3.4	No	8.6	56.1	-22.2	17.3
Illinois	Kingston	Hunter Road	372294N	--	2.8	3.4	--	--	17.3	-20.1	17.3
Illinois	Kingston	Pleasant Hill Road	372293G	--	2.8	3.4	--	--	17.3	-20.7	17.3
Illinois	Kingston	Thurlby Road	372295V	--	2.8	3.4	--	--	17.3	-20.2	17.3
Illinois	Kirkland	1st Street / Pearl Street	372307M	--	2.8	3.4	Yes	8.7	17.3	-20.8	17.3
Illinois	Kirkland	Ault Road	372305Y	--	2.8	3.4	NVA	NVA	17.3	-20.1	17.3

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Illinois	Kirkland	Fairdale Road	372320B	--	2.8	3.4	yes	6.6	17.3	-20.2	17.3
Illinois	Kirkland	Irene Road	372316L	--	2.8	3.4	--	--	17.3	-20.2	17.3
Illinois	Kirkland	Kirkland Road	372312J	--	2.8	3.4	--	--	17.3	-20.5	17.3
Illinois	Lanark	Boyd Street	372410A	--	2.8	3.4	--	--	15.0	-20.3	15.0
Illinois	Lanark	Broad Street	372409F	--	2.8	3.4	No	8	37.8	-21.5	15.0
Illinois	Lanark	Center Drive	372405D	--	2.8	3.4	--	--	15.0	-20.2	15.0
Illinois	Lanark	East Lanark Avenue	372406K	--	2.8	3.4	--	--	15.0	-20.2	15.0
Illinois	Lanark	East Straddle County Route	372404 W	--	2.8	3.4	No	7.8	15.0	-20.2	15.0
Illinois	Lanark	Gold Mine Road	372398V	--	2.8	3.4	No	6	15.0	-20.2	15.0
Illinois	Lanark	Grange Road	372400U	--	2.8	3.4	No	5.9	15.0	-20.2	15.0
Illinois	Lanark	Illinois 64	372414C	--	2.8	3.4	No	9.8	40.6	-21.6	15.0
Illinois	Lanark	Maple Grove Road	372403P	--	2.8	3.4	No	6.9	15.0	-20.1	15.0
Illinois	Lanark	Rochester Street	372407S	--	2.8	3.4	--	--	15.0	-20.2	15.0
Illinois	Lanark	Shannon Road	372402H	--	2.8	3.4	No	6.9	15.0	-21.0	15.0

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Illinois	Lanark	Stone Bridge Road	372412N	--	2.8	3.4	--	--	15.0	-20.2	15.0
Illinois	Lanark	Vanbuskirk Road	372415J	--	2.8	3.4	--	--	15.0	-20.3	15.0
Illinois	Leaf River	Main Street	372367 W	--	2.8	3.4	Yes	7.6	15.0	-20.5	15.0
Illinois	Leaf River	Mount Morris Road	372369K	--	2.8	3.4	No	9.3	15.0	-20.2	15.0
Illinois	Leaf River	Pond Road	372366P	--	2.8	3.4	--	--	15.0	-20.3	15.0
Illinois	Leaf River	Stone School Road	372362 M	--	2.8	3.4	--	--	15.0	-20.1	15.0
Illinois	Leaf River	Triumph Road	372365H	--	2.8	3.4	--	--	15.0	-20.1	15.0
Illinois	Medinah	Medinah Road	372191N	**0.8**	2.8	3.4	Yes	3.1	79.8	4.9	18.6
Illinois	Monroe Center	Bennett Road	372324D	--	2.8	3.4	No	8.8	17.3	-20.1	17.3
Illinois	Monroe Center	Kilbuck Road	372330G	--	2.8	3.4	No	7.6	17.3	-20.5	17.3
Illinois	Monroe Center	Mulford Road	372326S	--	2.8	3.4	No	8.5	17.3	-20.8	17.3
Illinois	Monroe Center	Pacific Street	372327Y	--	2.8	3.4	No	8.9	17.3	-20.2	17.3

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Illinois	Monroe Center	Wendorf Road	372332V	--	2.8	3.4	NVA	NVA	17.3	-20.3	17.3
Illinois	Mount Carroll	Big Cut Road	372428K	--	2.8	3.4	--	--	15.0	-20.1	15.0
Illinois	Mount Carroll	East State Road	372421M	--	2.8	3.4	--	--	15.0	-20.2	15.0
Illinois	Mount Carroll	Jackson Street	372422U	--	2.8	3.4	--	--	15.0	-20.2	15.0
Illinois	Mount Carroll	Mill Road	372424H	--	2.8	3.4	--	--	15.0	-20.2	15.0
Illinois	Mount Carroll	Oil Valley School Road	372425P	--	2.8	3.4	--	--	15.0	-20.3	15.0
Illinois	Mount Carroll	Wacker Road	372427D	--	2.8	3.4	--	--	15.0	-20.2	15.0
Illinois	Roselle	Park Street	372194J	**0.8**	2.8	3.4	--	--	18.6	4.7	18.6
Illinois	Roselle	Prospect Street	372195R	**0.8**	2.8	3.4	--	--	18.6	4.7	18.6
Illinois	Roselle	Roselle Road	372196X	**0.8**	2.8	3.4	yes	1.5	147.8	5.1	18.6
Illinois	Savanna	Hickory Grove Road	372431T	--	2.8	3.4	--	--	15.0	-20.1	15.0
Illinois	Savanna	Scenic Bluff Road	372437J	--	2.8	3.4	--	--	15.0	-20.7	15.0

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Illinois	Schaumburg	Rodenburg Road	372202Y	**0.8**	2.8	3.4	yes	5.4	233.4	7.6	18.6
Illinois	Stillman Valley	North Walnut Street	372345W	--	2.8	3.4	--	--	15.0	-20.8	15.0
Illinois	Stillman Valley	Rothwell Road	372342B	--	2.8	3.4	--	--	15.0	-20.3	15.0
Illinois	Stillman Valley	Stillman Road	372346D	--	2.8	3.4	No	5.9	22.4	-21.4	15.0
Illinois	Wood Dale	Ash Avenue	372176L	**0.8**	2.8	3.4	--	--	18.6	4.7	18.6
Illinois	Wood Dale	Irving Park Road	372177T	**0.8**	2.8	3.4	Yes	3.1	552.4	8.2	18.6
Illinois	Wood Dale	Wooddale Road	372178A	**0.8**	2.8	3.4	Yes	3.2	96.3	4.8	18.6
Iowa	Ainsworth	First Street	607337J	--	2.8	3.4	--	--	34.1	-20.9	34.1
Iowa	Ainsworth	Military Road	607335V	--	2.8	3.4	--	--	34.1	-21.4	34.1
Iowa	Ainsworth	Spruce Avenue	607314C	--	2.8	3.4	No	6.4	34.1	-20.7	34.1
Iowa	Ainsworth	Third Street	607336C	--	2.8	3.4	--	--	34.1	-20.9	34.1
Iowa	Ainsworth	Yucca Avenue	607257R	--	2.8	3.4	--	--	34.1	-20.7	34.1
Iowa	Bettendorf	12th Street	865647M	--	2.8	3.4	--	--	39.6	-15.3	39.6

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Iowa	Bettendorf	13th Street	865646F	--	2.8	3.4	NVA	NVA	111.1	-15.8	39.6
Iowa	Bettendorf	31st Street	865640P	--	2.8	3.4	--	--	39.6	-15.2	39.6
Iowa	Bettendorf	33rd Street	865639V	--	2.8	3.4	--	--	39.6	-15.3	39.6
Iowa	Bettendorf	35th Street	865638N	--	2.8	3.4	--	--	39.6	-15.5	39.6
Iowa	Bettendorf	42nd Street	865637G	--	2.8	3.4	--	--	39.6	-14.6	39.6
Iowa	Bettendorf	62nd Street	865629P	--	2.8	3.4	NVAP	NVAP	39.6	-15.3	39.6
Iowa	Bettendorf	Shoreline Drive	865627B	--	2.8	3.4	NVAP	NVAP	39.6	-15.1	39.6
Iowa	Bettendorf	Spencer Road	865618C	--	2.8	3.4	NVA	NVA	39.6	-14.5	39.6
Iowa	Bettendorf	Valley Drive	865617V	--	2.8	3.4	NVA	NVA	39.6	-14.7	39.6
Iowa	Blakesburg	215th Avenue	375747N	--	2.8	3.4	--	--	33.4	-42.0	33.4
Iowa	Blakesburg	230th Avenue	375745A	--	2.8	3.4	No	6.8	33.4	-42.1	33.4
Iowa	Blakesburg	256th Place	375732Y	--	2.8	3.4	No	10.8	33.4	-41.9	33.4
Iowa	Blakesburg	64th Street	375742E	--	2.8	3.4	--	--	33.4	-42.0	33.4
Iowa	Blakesburg	722nd Place	375729R	--	2.8	3.4	No	8.2	33.4	-41.9	33.4
Iowa	Blakesburg	730th Avenue	375733F	--	2.8	3.4	Yes	11.1	33.4	-42.0	33.4
Iowa	Blakesburg	Hickory Street	375740R	--	2.8	3.4	--	--	33.4	-42.1	33.4

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Iowa	Blakesburg	Monroe Wapello Road	375736B	--	2.8	3.4	--	--	33.4	-42.8	33.4
Iowa	Blakesburg	South Street	375739 W	--	2.8	3.4	--	--	33.4	-42.0	33.4
Iowa	Brighton	Cedar Avenue	375848A	--	2.8	3.4	--	--	34.1	-20.7	34.1
Iowa	Brighton	Elm Avenue	375850B	--	2.8	3.4	--	--	34.1	-20.7	34.1
Iowa	Brighton	Fir Avenue	375852P	--	2.8	3.4	--	--	34.1	-20.7	34.1
Iowa	Buffalo	Cabins Milepost 2054/ Private City Street	607174C	--	2.8	3.4	--	--	33.0	-20.7	33.0
Iowa	Buffalo	Private Road	607157L	--	2.8	3.4	NVA	NVA	33.0	-20.7	33.0
Iowa	Buffalo	Private Road	607177X	--	2.8	3.4	NVA	NVA	33.0	-20.7	33.0
Iowa	Buffalo	Private Road	607190L	--	2.8	3.4	NVA	NVA	33.0	-20.7	33.0
Iowa	Buffalo	Tombstone Trail	607175J	--	2.8	3.4	NVA	NVA	33.0	-20.8	33.0
Iowa	Camanche	13th Avenue	865560 W	--	2.8	3.4	NVAP	NVAP	39.6	-15.0	39.6
Iowa	Camanche	291st Street	865570C	--	2.8	3.4	NVA	NVA	39.6	-14.6	39.6

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Iowa	Camanche	3rd Street	865561D	--	2.8	3.4	NVAP	NVAP	39.6	-14.6	39.6
Iowa	Camanche	4th Avenue	865544M	--	2.8	3.4	NVAP	NVAP	39.6	-14.6	39.6
Iowa	Camanche	5th Avenue	865545U	--	2.8	3.4	NVAP	NVAP	39.6	-14.5	39.6
Iowa	Camanche	7th Avenue	865547H	--	2.8	3.4	NVAP	NVAP	39.6	-14.8	39.6
Iowa	Camanche	9th Avenue	865549W	--	2.8	3.4	NVAP	NVAP	39.6	-14.7	39.6
Iowa	Camanche	Park Drive	865564Y	--	2.8	3.4	NVAP	NVAP	39.6	-14.6	39.6
Iowa	Clinton	11th Avenue North	376029M	--	4.9	6.3	--	--	68.2	-29.3	68.2
Iowa	Clinton	12th Avenue North	376030G	--	4.9	6.3	--	--	68.2	-29.4	68.2
Iowa	Clinton	14th Avenue North	376032V	--	4.9	6.3	--	--	68.2	-29.4	68.2
Iowa	Clinton	15th Avenue North	376033C	--	4.9	6.3	--	--	68.2	-29.9	68.2
Iowa	Clinton	170th Street	376047K	--	2.8	3.4	NVA	NVA	38.4	-14.5	38.4
Iowa	Clinton	18th Avenue North	376037E	--	4.9	6.3	--	--	68.2	-28.9	68.2
Iowa	Clinton	21st Avenue North	376038L	--	4.9	6.3	--	--	68.2	-29.0	68.2

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Iowa	Clinton	23rd Avenue North	376039T	--	4.9	6.3	--	--	68.2	-29.0	68.2
Iowa	Clinton	24th Avenue North	376040M	--	4.9	6.3	--	--	68.2	-30.5	68.2
Iowa	Clinton	25th Avenue North	376041U	--	4.9	6.3	--	--	68.2	-29.8	68.2
Iowa	Clinton	2nd Avenue South	376024D	--	4.9	6.3	--	--	68.2	-30.1	68.2
Iowa	Clinton	30th Avenue North	376043H	--	4.9	6.3	--	--	68.2	-29.1	68.2
Iowa	Clinton	32nd Avenue North	376045W	--	4.9	6.3	--	--	68.2	-29.1	68.2
Iowa	Clinton	34th Avenue North / McKinley_Street local	376046D	--	4.9	6.3	--	--	68.2	-29.1	68.2
Iowa	Clinton	4th Avenue North	376025K	--	4.9	6.3	--	--	68.2	-29.2	68.2
Iowa	Clinton	4th Avenue South	376023W	--	4.9	6.3	--	--	68.2	-29.0	68.2
Iowa	Clinton	5th Avenue South	376022P	--	4.9	6.3	--	--	68.2	-30.0	68.2
Iowa	Clinton	6th Avenue North	376026S	--	4.9	6.3	--	--	68.2	-29.7	68.2

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Iowa	Clinton	6th Avenue South	376021H	--	4.9	6.3	--	--	68.2	-30.7	68.2
Iowa	Clinton	9th Avenue North	376027Y	--	4.9	6.3	NVAP	NVAP	367.4	-31.9	68.2
Iowa	Clinton	South 1st Street	190348M	--	4.9	6.3	--	--	68.2	-29.5	68.2
Iowa	Columbus Junction	2nd Street	607245W	--	2.8	3.4	Yes	6.8	86.5	-22.2	34.1
Iowa	Columbus Junction	2nd Street / 70	695494R	--	2.8	3.4	--	--	34.1	-21.0	34.1
Iowa	Cotter	County Line Road	607254V	--	2.8	3.4	Yes	3.1	34.1	-20.7	34.1
Iowa	Cotter	County Road W66	607252G	--	2.8	3.4	No	7.1	34.1	-20.8	34.1
Iowa	Cotter	V Avenue	607250T	--	2.8	3.4	--	--	34.1	-20.7	34.1
Iowa	Davenport	Access to Mississippi River	865648U	--	4.1	5.1	--	--	58.2	-23.4	58.2
Iowa	Davenport	Brady Street	865650V	--	4.1	5.1	--	--	58.2	-23.4	58.2
Iowa	Davenport	Gaines Street	865654X	--	4.1	5.1	--	--	58.2	-25.0	58.2
Iowa	Davenport	Harrison Street	865652J	--	4.1	5.1	--	--	58.2	-23.4	58.2

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Iowa	Davenport	Marquette Street	865655E	--	4.1	5.1	--	--	58.2	-24.5	58.2
Iowa	Davenport	Oneida Avenue	376011C	--	4.1	5.1	--	--	58.2	-24.0	58.2
Iowa	Davenport	Perry Street	865649B	--	4.1	5.1	--	--	398.6	-26.6	58.2
Iowa	Davenport	Ripley Street	865653R	--	4.1	5.1	NVAP	NVAP	58.2	-24.0	58.2
Iowa	Davenport	Schmidt Road	605947K	--	4.9	6.3	--	--	70.6	-29.7	70.6
Iowa	Davenport	South Concord Street	607141P	--	4.1	5.1	--	--	58.2	-24.0	58.2
Iowa	Davenport	Utah Avenue	607149U	--	4.1	5.1	No	6.2	47.6	-33.4	47.6
Iowa	Davenport	Wapello Avenue	607146Y	--	4.1	5.1	--	--	47.6	-33.4	47.6
Iowa	Fredonia	160th Street	607241U	--	2.8	3.4	NVA	NVA	34.1	-20.7	34.1
Iowa	Fredonia	2nd Street	607243H	--	2.8	3.4	--	--	34.1	-21.4	34.1
Iowa	Fredonia	3rd Street	607242B	--	2.8	3.4	--	--	34.1	-20.8	34.1
Iowa	Fredonia	P Avenue	607238L	--	2.8	3.4	No	8.8	34.1	-20.7	34.1
Iowa	Fruitland	North Street	607220B	--	2.8	3.4	No	6.7	34.1	-22.2	34.1

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Iowa	Le Claire	Canal Shore Drive Southwest	865614A	--	2.8	3.4	NVAP	NVAP	39.6	-14.7	39.6
Iowa	Le Claire	Eagle Ridge Road	865612L	--	2.8	3.4	NVAP	NVAP	39.6	-15.0	39.6
Iowa	Le Claire	Jones Street	865609D	--	2.8	3.4	NVA	NVA	39.6	-14.7	39.6
Iowa	Le Claire	West Canal Shore Drive	865616N	--	2.8	3.4	NVA	NVA	39.6	-14.9	39.6
Iowa	Le Claire	Wisconsin Street	865610X	--	2.8	3.4	NVA	NVA	39.6	-14.7	39.6
Iowa	Letts	170th Street	607237E	--	2.8	3.4	No	9.7	34.1	-20.7	34.1
Iowa	Letts	180th Street	607232V	--	2.8	3.4	No	10.6	34.1	-20.7	34.1
Iowa	Letts	Chestnut Street	607228F	--	2.8	3.4	--	--	34.1	-20.7	34.1
Iowa	Letts	County Road G 40	607230G	--	2.8	3.4	No	9.6	34.1	-21.0	34.1
Iowa	Letts	I Avenue	607226S	--	2.8	3.4	--	--	34.1	-20.7	34.1
Iowa	Letts	Linn Street	607229 M	--	2.8	3.4	--	--	34.1	-21.1	34.1
Iowa	Letts	O Avenue	607234J	--	2.8	3.4	No	9.6	34.1	-20.7	34.1
Iowa	Moravia	260th Place	375718D	--	2.8	3.4	--	--	33.4	-42.0	33.4

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Iowa	Moravia	420th Street	375706J	--	2.8	3.4	--	--	33.4	-41.9	33.4
Iowa	Moravia	652nd Place	375712M	--	2.8	3.4	--	--	33.4	-41.9	33.4
Iowa	Moravia	652nd Place	375714B	--	2.8	3.4	--	--	33.4	-41.9	33.4
Iowa	Moravia	690th Avenue	375721L	--	2.8	3.4	--	--	33.4	-42.0	33.4
Iowa	Moravia	710th Avenue	375727C	--	2.8	3.4	No	5.8	33.4	-42.0	33.4
Iowa	Moravia	West North Street	375710Y	--	2.8	3.4	--	--	33.4	-44.4	33.4
Iowa	Muscatine	33rd Street South	607216L	--	2.8	3.4	--	--	34.1	-20.8	34.1
Iowa	Muscatine	41st Street South	607217T	--	2.8	3.4	--	--	34.1	-21.0	34.1
Iowa	Muscatine	57th Street	607219G	--	2.8	3.4	No	7	34.1	-21.0	34.1
Iowa	Muscatine	Canal Street	607208U	--	2.8	3.4	--	--	33.0	-20.7	33.0
Iowa	Muscatine	Cedar Street	607204S	--	2.8	3.4	--	--	33.0	-21.2	33.0
Iowa	Muscatine	Day Street	607212J	--	2.8	3.4	--	--	34.1	-20.9	34.1
Iowa	Muscatine	Industrial Connector / Dick Drake Highway	393258B	--	2.8	3.4	No	8.1	120.1	-22.0	34.1
Iowa	Muscatine	Iowa Avenue	607206F	--	2.8	3.4	--	--	33.0	-21.2	33.0

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Iowa	Muscatine	Jefferson Street	607193G	--	2.8	3.4	NVAP	NVAP	33.0	-20.8	33.0
Iowa	Muscatine	Mississippi Drive	606762G	--	17.9	23.3	--	--	203.4	-166.2	203.4
Iowa	Muscatine	Monroe Street	607192A	--	2.8	3.4	NVAP	NVAP	33.0	-20.7	33.0
Iowa	Muscatine	Musser Street	607213R	--	2.8	3.4	--	--	34.1	-21.0	34.1
Iowa	Muscatine	Oregon Street	607211C	--	2.8	3.4	No	5.5	225.5	-23.2	34.1
Iowa	Muscatine	Sampson Road	607215E	--	2.8	3.4	No	6.2	74.6	-22.4	34.1
Iowa	Muscatine	Spillway Lane	607202D	--	2.8	3.4	NVA	NVA	33.0	-20.7	33.0
Iowa	Mystic	135th Avenue	375681R	--	2.8	3.4	--	--	33.4	-42.0	33.4
Iowa	Mystic	140th Avenue	375683E	--	2.8	3.4	--	--	33.4	-42.0	33.4
Iowa	Mystic	200th Avenue	375695Y	--	2.8	3.4	No	7.6	33.4	-42.1	33.4
Iowa	Mystic	219th Avenue	375701A	--	2.8	3.4	--	--	33.4	-41.9	33.4
Iowa	Mystic	461st Street	375699B	--	2.8	3.4	--	--	33.4	-41.9	33.4
Iowa	Mystic	East Lodwick Street	375693K	--	2.8	3.4	--	--	33.4	-42.3	33.4
Iowa	Mystic	South 1st Street	375692D	--	2.8	3.4	--	--	33.4	-42.2	33.4

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Iowa	Mystic	South 2nd Street	375691 W	--	2.8	3.4	--	--	33.4	-42.3	33.4
Iowa	Ottumwa	105th Avenue	375797S	--	2.8	3.4	--	--	34.1	-20.7	34.1
Iowa	Ottumwa	110th Avenue	375795D	--	2.8	3.4	--	--	34.1	-20.7	34.1
Iowa	Ottumwa	120th Avenue	375792H	--	2.8	3.4	--	--	34.1	-20.8	34.1
Iowa	Ottumwa	140th Street	375798Y	--	2.8	3.4	--	--	34.1	-20.7	34.1
Iowa	Ottumwa	150th Street	375806N	--	2.8	3.4	--	--	34.1	-20.7	34.1
Iowa	Ottumwa	165th Street	375816U	--	2.8	3.4	--	--	34.1	-20.8	34.1
Iowa	Ottumwa	170th Avenue	375759H	--	2.8	3.4	No	6.3	33.4	-41.9	33.4
Iowa	Ottumwa	194th Avenue	375753S	--	2.8	3.4	--	--	33.4	-42.0	33.4
Iowa	Ottumwa	22nd Avenue	375820J	--	2.8	3.4	--	--	34.1	-20.7	34.1
Iowa	Ottumwa	35th Avenue	375817B	--	2.8	3.4	--	--	34.1	-20.7	34.1
Iowa	Ottumwa	85th Avenue	375803T	--	2.8	3.4	Yes	7.4	34.1	-20.7	34.1
Iowa	Ottumwa	87th Street	375761J	--	4.9	6.3	--	--	58.1	-86.1	58.1
Iowa	Ottumwa	Agency Hedrick Road	375808C	--	2.8	3.4	--	--	34.1	-21.1	34.1
Iowa	Ottumwa	Farson Road	375811K	--	2.8	3.4	--	--	34.1	-20.7	34.1
Iowa	Ottumwa	Gateway Drive	375780N	--	4.9	6.3	--	--	59.5	-41.8	59.5

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Iowa	Ottumwa	North Caldwell Street	375784R	--	4.9	6.3	Yes	0.5	270.8	-45.4	59.5
Iowa	Ottumwa	North Quincy Avenue	375779U	--	4.9	6.3	No	6.3	404.6	-46.1	59.5
Iowa	Ottumwa	West Rochester Street	375787L	--	4.9	6.3	--	--	59.5	-41.9	59.5
Iowa	Ottumwa	West Second Street	375781V	--	4.9	6.3	Yes	0.8	591.4	-45.8	59.5
Iowa	Pleasant Valley	244th Avenue	865620D	--	2.8	3.4	NVA	NVA	39.6	-14.5	39.6
Iowa	Pleasant Valley	245th Avenue	865619J	--	2.8	3.4	NVA	NVA	39.6	-14.5	39.6
Iowa	Princeton	270th Street	865574E	--	2.8	3.4	NVAP	NVAP	39.6	-14.5	39.6
Iowa	Princeton	285th Avenue	865575L	--	2.8	3.4	NVAP	NVAP	39.6	-14.5	39.6
Iowa	Princeton	Chestnut Street	865582W	--	2.8	3.4	NVAP	NVAP	39.6	-14.6	39.6
Iowa	Princeton	Clay Street	865581P	--	2.8	3.4	NVAP	NVAP	39.6	-14.7	39.6
Iowa	Princeton	Lost Grove Road	865579N	--	2.8	3.4	NVAP	NVAP	39.6	-14.9	39.6
Iowa	Rathbun	Hwy J29	375697M	--	2.8	3.4	Yes	10.9	33.4	-43.1	33.4

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Iowa	Richland	110th Street	375824L	--	2.8	3.4	Yes	5.8	34.1	-20.8	34.1
Iowa	Richland	260th Avenue	375831 W	--	2.8	3.4	--	--	34.1	-20.7	34.1
Iowa	Richland	270th Avenue	375834S	--	2.8	3.4	--	--	34.1	-21.1	34.1
Iowa	Richland	290th Avenue	375838U	--	2.8	3.4	--	--	34.1	-20.7	34.1
Iowa	Richland	305th Street	375844X	--	2.8	3.4	No	8.5	34.1	-20.7	34.1
Iowa	Richland	315th Avenue	375840V	--	2.8	3.4	--	--	34.1	-21.2	34.1
Iowa	Richland	320th Avenue	375841C	--	2.8	3.4	Yes	9.1	34.1	-20.7	34.1
Iowa	Richland	328th Avenue	375843R	--	2.8	3.4	Yes	10.2	34.1	-20.7	34.1
Iowa	Richland	335th Street	375835Y	--	2.8	3.4	--	--	34.1	-20.7	34.1
Iowa	Richland	Ash Avenue	375822X	--	2.8	3.4	Yes	7.1	34.1	-20.7	34.1
Iowa	Richland	Cedar Avenue	375827G	--	2.8	3.4	--	--	34.1	-20.7	34.1
Iowa	Richland	Main Street	375846L	--	2.8	3.4	No	10.1	34.1	-20.7	34.1
Iowa	Riverdale	Fenno Road	865631R	--	2.8	3.4	NVA	NVA	39.6	-14.9	39.6
Iowa	Riverdale	South Bellingham Street	865635T	--	2.8	3.4	NVA	NVA	39.6	-14.7	39.6

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Iowa	Riverdale	South Kensington Street	865636A	--	2.8	3.4	--	--	39.6	-14.5	39.6
Iowa	Sabula	142nd Street	376052G	--	2.8	3.4	NVA	NVA	38.4	-14.5	38.4
Iowa	Seymour	105th Avenue	375673Y	--	2.8	3.4	No	9.7	33.4	-41.9	33.4
Iowa	Seymour	110th Avenue	375675 M	--	2.8	3.4	No	8	33.4	-41.9	33.4
Iowa	Seymour	115th Avenue	375678H	--	2.8	3.4	No	8.9	33.4	-41.9	33.4
Iowa	Seymour	125th Avenue	375679P	--	2.8	3.4	NVA	NVA	33.4	-41.9	33.4
Iowa	Seymour	170th Street	375653 M	--	2.8	3.4	--	--	33.4	-41.9	33.4
Iowa	Seymour	180th Street	375655B	--	2.8	3.4	No	6.9	33.4	-42.0	33.4
Iowa	Seymour	190th Street	375656H	--	2.8	3.4	No	7.9	33.4	-42.0	33.4
Iowa	Seymour	205th Street	375657P	--	2.8	3.4	No	8.5	33.4	-42.0	33.4
Iowa	Seymour	210th Street	375658 W	--	2.8	3.4	No	7.9	33.4	-42.0	33.4
Iowa	Seymour	220th Street	375660X	--	2.8	3.4	No	8.7	33.4	-42.0	33.4
Iowa	Seymour	230th Street	375661E	--	2.8	3.4	No	8	33.4	-42.0	33.4
Iowa	Seymour	250th Street	375671K	--	2.8	3.4	No	7.9	33.4	-42.0	33.4
Iowa	Seymour	524th Street	375677B	--	2.8	3.4	No	9.9	33.4	-41.9	33.4

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Iowa	Seymour	Birch	375647J	--	2.8	3.4	Yes	8.9	33.4	-41.9	33.4
Iowa	Seymour	Elm Street	375651Y	--	2.8	3.4	--	--	33.4	-41.9	33.4
Iowa	Seymour	Euclid	375652F	--	2.8	3.4	--	--	33.4	-42.0	33.4
Iowa	Seymour	Fifth Street	375668C	--	2.8	3.4	No	9.5	33.4	-43.1	33.4
Iowa	Seymour	Fillmore Road	375654U	--	2.8	3.4	--	--	33.4	-41.9	33.4
Iowa	Seymour	Fourth Street	375669J	--	2.8	3.4	No	9.6	33.4	-42.0	33.4
Iowa	Seymour	Lee Street	375664A	--	2.8	3.4	No	9.9	33.4	-42.0	33.4
Iowa	Seymour	Main Street	378354R	--	2.8	3.4	No	9.9	33.4	-42.7	33.4
Iowa	Seymour	S40	375650S	--	2.8	3.4	--	--	33.4	-42.3	33.4
Iowa	Seymour	Seventh Street	375665G	--	2.8	3.4	No	9.7	33.4	-42.0	33.4
Iowa	Seymour	Sixth Street	375667V	--	2.8	3.4	No	9.6	33.4	-41.9	33.4
Iowa	Seymour	Third Street	375670D	--	2.8	3.4	No	9.5	33.4	-41.9	33.4
Iowa	Washington	260th Street	375862V	--	2.8	3.4	Yes	7.9	34.1	-20.7	34.1
Iowa	Washington	Ivy Avenue	375861N	--	2.8	3.4	Yes	5.9	34.1	-20.7	34.1
Iowa	Washington	Juniper Avenue	375863C	--	2.8	3.4	Yes	8	34.1	-20.7	34.1
Iowa	Washington	Kiwi Avenue	375866X	--	2.8	3.4	--	--	34.1	-20.7	34.1

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Iowa	Washington	North 12th Avenue	607323B	--	2.8	3.4	Yes	1.8	197.2	-22.9	34.1
Iowa	Washington	North B Avenue	375878S	--	2.8	3.4	--	--	34.1	-21.7	34.1
Iowa	Washington	North C Avenue	375877K	--	2.8	3.4	--	--	34.1	-20.9	34.1
Iowa	Washington	North D Avenue	375876D	--	2.8	3.4	--	--	34.1	-20.8	34.1
Iowa	Washington	North F Avenue	375875W	--	2.8	3.4	--	--	34.1	-20.8	34.1
Iowa	Washington	North Fourth Avenue	607322U	--	2.8	3.4	Yes	0.5	70.5	-21.5	34.1
Iowa	Washington	North Iowa Avenue	375880T	--	2.8	3.4	--	--	34.1	-21.4	34.1
Iowa	Washington	North Marion Avenue	375879Y	--	2.8	3.4	--	--	34.1	-21.6	34.1
Iowa	Washington	Palm Avenue	607326W	--	2.8	3.4	--	--	34.1	-20.7	34.1
Iowa	Washington	West Main Street	375872B	--	2.8	3.4	--	--	34.1	-21.0	34.1
Kansas	Frontenac	East 600th Avenue	330243M	--	2.2	2.7	--	--	25.5	-5.8	25.5

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Kansas	Frontenac	East 610th Avenue	330240S	--	2.2	2.7	No	6.1	25.5	-5.7	25.5
Kansas	Frontenac	East McKay Street	330247P	--	2.2	2.7	--	--	25.5	-5.8	25.5
Kansas	Frontenac	North Free King Highway	330245B	--	2.2	2.7	--	--	25.5	-5.9	25.5
Kansas	Frontenac	South 260th Street / Military Road	330238R	--	2.2	2.7	No	6.1	25.5	-5.8	25.5
Kansas	Mulberry	270th Street	330236C	--	2.2	2.7	--	--	25.5	-5.8	25.5
Kansas	Mulberry	East 620th Avenue	330237J	--	2.2	2.7	No	5	25.5	-5.8	25.5
Kansas	Opolis	Northeast 110th Street	330268H	--	2.2	2.7	--	--	22.6	-7.0	22.6
Kansas	Opolis	Northeast Coal Valley Road	330267B	--	2.2	2.7	--	--	22.6	-7.0	22.6
Kansas	Opolis	Northeast Weir Road	330270J	--	2.2	2.7	No	7.3	22.6	-7.0	22.6
Kansas	Pittsburg	East 10th Street	330251E	--	2.8	3.4	--	--	28.3	-9.8	28.3

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Kansas	Pittsburg	East 510th Avenue	330263Y	--	2.2	2.7	--	--	22.6	-7.0	22.6
Kansas	Pittsburg	East 515th Avenue	330262S	--	2.2	2.7	--	--	22.6	-7.0	22.6
Kansas	Pittsburg	East 520th Avenue	330260D	--	2.2	2.7	--	--	22.6	-7.1	22.6
Kansas	Pittsburg	East 7th Street	330252L	--	2.8	3.4	--	--	28.3	-9.7	28.3
Kansas	Pittsburg	East Centennial Drive	330258C	--	2.2	2.7	Yes	7.5	99.2	-8.5	22.6
Kansas	Pittsburg	East Jefferson Street	330255G	--	2.2	2.7	--	--	22.6	-7.4	22.6
Kansas	Pittsburg	East Quincy Street	330256N	--	2.2	2.7	Yes	6.3	45.9	-7.3	22.6
Kansas	Pittsburg	East Washington Street	330254A	--	2.2	2.7	--	--	22.6	-7.2	22.6
Kansas	Pittsburg	South 250th Street	330264F	--	2.2	2.7	--	--	22.6	-7.0	22.6
Kansas	Pittsburg	South Rouse Street	330257V	--	2.2	2.7	Yes	4.1	116.3	-7.4	22.6
Louisiana	Anacoco	Beavers Road	329258F	--	2.8	3.4	--	--	28.7	-8.2	28.7

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Louisiana	Anacoco	Ford Stewart Road	329264J	--	2.3	2.9	No	12.5	24.3	-6.6	24.3
Louisiana	Anacoco	Holly Grove Road	329262V	--	2.3	2.9	--	--	24.3	-6.9	24.3
Louisiana	Anacoco	L Beauford Drive / Lions Camp Road	329263C	--	2.3	2.9	No	12.7	24.3	-6.6	24.3
Louisiana	Anacoco	Leach Road	329257Y	--	2.8	3.4	NVA	NVA	28.7	-8.2	28.7
Louisiana	Anacoco	Ronayne Drive	330816T	--	2.3	2.9	NVA	NVA	24.3	-6.5	24.3
Louisiana	Anacoco	Roy Clark Road	329261N	--	2.8	3.4	--	--	28.7	-8.2	28.7
Louisiana	Anacoco	Trigger Trapp Road	329259 M	--	2.8	3.4	No	18.3	120.8	-9.1	28.7
Louisiana	Benson	Louisiana 512	329206N	--	2.1	2.5	No	8.5	21.5	-5.6	21.5
Louisiana	Blanchard	Alexander Avenue	329026R	--	2.1	2.5	Yes	12.5	22.9	-9.4	22.9
Louisiana	Blanchard	Daugherty Avenue	329027X	--	2.1	2.5	Yes	12.3	22.9	-9.4	22.9
Louisiana	Converse	Briar Rose Lane	329204A	--	2.1	2.5	NVA	NVA	21.5	-5.5	21.5
Louisiana	Converse	Old US 171	329203T	--	2.1	2.5	No	5.6	21.5	-5.5	21.5

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Louisiana	Converse	Par Road 1384	329205G	--	2.1	2.5	NVA	NVA	21.5	-5.6	21.5
Louisiana	Converse	Phillips Road	329208C	--	2.3	2.9	NVA	NVA	24.3	-6.5	24.3
Louisiana	Converse	Port Arthur Avenue	329213Y	--	2.1	2.5	No	12.2	21.5	-5.8	21.5
Louisiana	Converse	Private Road	329209J	--	2.3	2.9	NVA	NVA	24.3	-6.6	24.3
Louisiana	De Quincy	Arthur Irwin Road	329342N	--	2.1	2.5	--	--	21.5	-5.7	21.5
Louisiana	De Quincy	East 4th Street	329356 W	--	2.8	3.4	No	7.5	465.6	-10.4	28.6
Louisiana	De Quincy	Frazier Street	329347X	**0.8**	2.8	3.4	--	--	29.5	-5.0	29.5
Louisiana	De Quincy	Holly Street	329343V	--	2.8	3.4	--	--	28.6	-8.3	28.6
Louisiana	De Quincy	Holly Street	329345J	--	2.8	3.4	--	--	28.6	-8.3	28.6
Louisiana	De Quincy	Le Blanc Street	329344C	--	2.8	3.4	No	11.9	88.9	-8.8	28.6
Louisiana	De Quincy	West 4th Street	329346R	**0.8**	2.8	3.4	No	12.3	355.6	-5.8	29.5
Louisiana	De Ridder	Ampacet Street/L C Lee Road	329315S	--	2.5	3.1	--	--	26.2	-7.3	26.2
Louisiana	De Ridder	Ball Road	329327L	--	2.1	2.5	No	11.3	21.5	-5.6	21.5

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Louisiana	De Ridder	Bolivar Bishop Drive	329321V	--	2.5	3.1	--	--	26.2	-7.3	26.2
Louisiana	De Ridder	Catfish Hut Road	329311P	--	2.5	3.1	--	--	26.2	-7.4	26.2
Louisiana	De Ridder	Crosby Road	329322C	--	2.8	3.4	No	11.5	70.2	-8.7	28.6
Louisiana	De Ridder	East Fourth Street / West Third Street	329320N	--	2.5	3.1	No	7.6	102.3	-8.3	26.2
Louisiana	De Ridder	First Street	329319U	--	2.5	3.1	No	7.8	976.9	-12.2	26.2
Louisiana	De Ridder	Granberry Road	329325X	--	2.1	2.5	--	--	21.5	-5.6	21.5
Louisiana	De Ridder	Harrison Street	329312 W	--	2.5	3.1	--	--	26.2	-7.3	26.2
Louisiana	De Ridder	North Street	329316Y	--	2.5	3.1	--	--	26.2	-7.4	26.2
Louisiana	De Ridder	Shirley Street / Mahlan Street	329317F	--	2.5	3.1	No	8	976.9	-12.2	26.2
Louisiana	De Ridder	West Second Street	329318 M	--	2.5	3.1	--	--	26.2	-7.3	26.2
Louisiana	Fisher	Lyddy Turnpike Road	329112 M	--	2.1	2.5	No	6.7	21.5	-5.6	21.5

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				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Louisiana	Fisher	Main Street	329110Y	--	2.8	3.4	No	7.2	28.7	-8.5	28.7
Louisiana	Florien	Addison Road	329251H	--	2.8	3.4	--	--	28.7	-8.2	28.7
Louisiana	Florien	Arthur Place	329248A	--	2.1	2.5	NVA	NVA	21.5	-5.6	21.5
Louisiana	Florien	Brown Road	329241C	--	2.1	2.5	No	6.6	21.5	-5.6	21.5
Louisiana	Florien	Gandy Road	329250B	--	2.1	2.5	No	8.6	21.5	-5.6	21.5
Louisiana	Florien	High School Drive	329109E	--	2.1	2.5	No	8.7	21.5	-5.6	21.5
Louisiana	Florien	Port Arthur Avenue	329244X	--	2.1	2.5	No	8.1	21.5	-5.8	21.5
Louisiana	Florien	West Front Street	329243R	--	2.1	2.5	NVA	NVA	21.5	-5.6	21.5
Louisiana	Frierson	Bloxum Road	329161J	--	2.3	2.9	No	8.6	25.9	-5.0	25.9
Louisiana	Frierson	Farris Lane	329165L	--	2.1	2.5	--	--	21.5	-5.5	21.5
Louisiana	Frierson	Gravel Point Road	329164E	--	2.2	2.7	No	9.9	58.8	-5.0	24.1
Louisiana	Frierson	Louisiana 175	329162R	--	2.2	2.7	No	8.6	170.5	-5.5	24.1
Louisiana	Hornbeck	Barham Road	329255K	--	2.8	3.4	--	--	28.7	-8.2	28.7
Louisiana	Hornbeck	Port Arthur Avenue	329253W	--	2.8	3.4	No	18.4	71.0	-8.7	28.7

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Louisiana	Hornbeck	White City Road	329254D	--	2.8	3.4	--	--	28.7	-8.3	28.7
Louisiana	Leesville	Beltz Road	329290Y	--	2.8	3.4	NVA	NVA	28.6	-8.3	28.6
Louisiana	Leesville	East Court House Street	329278S	--	2.8	3.4	--	--	28.6	-8.3	28.6
Louisiana	Leesville	East Lula Street	329279Y	--	2.8	3.4	Yes	1.5	122.5	-8.7	28.6
Louisiana	Leesville	East Maggie Street	329280T	--	2.8	3.4	--	--	28.6	-8.5	28.6
Louisiana	Leesville	East Mechanic Street	329273H	--	2.8	3.4	--	--	28.6	-8.4	28.6
Louisiana	Leesville	East Texas Street	329277K	--	2.8	3.4	--	--	28.6	-8.4	28.6
Louisiana	Leesville	Eissman Road	329292M	--	2.1	2.5	--	--	21.5	-5.7	21.5
Louisiana	Leesville	Hawthorne Road	329266X	--	2.3	2.9	No	10	24.3	-6.9	24.3
Louisiana	Leesville	Ind Park Road	329267E	--	2.3	2.9	--	--	24.3	-6.5	24.3
Louisiana	Leesville	Louisiana Street	329284V	--	2.8	3.4	Yes	2.4	98.3	-8.9	28.6

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Louisiana	Leesville	Nona Street	329270M	--	2.8	3.4	--	--	28.6	-8.6	28.6
Louisiana	Leesville	North Third Street	329274P	--	2.8	3.4	--	--	28.6	-8.4	28.6
Louisiana	Leesville	Red Town Road	329286J	--	2.8	3.4	--	--	28.6	-8.6	28.6
Louisiana	Leesville	Warner Street	329641V	--	2.8	3.4	Yes	1.4	84.1	-8.8	28.6
Louisiana	Mansfield	Gibbs Street	329183J	--	2.8	3.4	No	15.8	292.4	-9.5	28.7
Louisiana	Mansfield	Holly Hill Drive	329179U	--	2.1	2.5	NVA	NVA	21.5	-5.6	21.5
Louisiana	Mansfield	Janear Circle	329169N	--	2.1	2.5	--	--	21.5	-5.6	21.5
Louisiana	Mansfield	Jefferson Street	329185X	--	2.8	3.4	--	--	28.7	-8.6	28.7
Louisiana	Mansfield	Jenkins Street	329187L	--	2.8	3.4	No	10.1	208.7	-8.7	28.7
Louisiana	Mansfield	Lewis Lane	329171P	--	2.1	2.5	--	--	21.5	-5.6	21.5
Louisiana	Mansfield	Louisiana 3015	329175S	--	2.1	2.5	No	14	21.5	-5.6	21.5
Louisiana	Mansfield	Oxford Road	329184R	--	2.8	3.4	--	--	28.7	-8.3	28.7
Louisiana	Mansfield	Pegues Street	329181V	--	2.8	3.4	--	--	28.7	-8.2	28.7
Louisiana	Mansfield	Pinkney Drive	329174K	--	2.1	2.5	Yes	15.5	21.5	-5.6	21.5

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Louisiana	Mansfield	Polk Street	329182C	--	2.8	3.4	No	7.7	398.4	-9.1	28.7
Louisiana	Many	McDonald Drive	329237M	--	2.1	2.5	--	--	21.5	-5.6	21.5
Louisiana	Many	Mcgarrahan Road	329232D	--	2.8	3.4	No	5.8	28.7	-8.2	28.7
Louisiana	Many	San Antonio Avenue / Texas Highway	329234S	--	2.1	2.5	No	8.9	135.6	-6.3	21.5
Louisiana	Many	Sycamore Street	329235Y	--	2.1	2.5	--	--	21.5	-5.7	21.5
Louisiana	Merryville	Smokey Cove Road	329335D	--	2.1	2.5	No	7.7	21.5	-5.6	21.5
Louisiana	Mooringsport	Barnette Road	329020A	--	2.2	2.7	NVA	NVA	24.0	-9.5	24.0
Louisiana	Mooringsport	Croom Street	329018Y	--	2.2	2.7	Yes	15	24.0	-9.8	24.0
Louisiana	Mooringsport	Dixie-Morningsport Road / louisiana 169	329019F	--	2.2	2.7	Yes	12.7	24.0	-9.5	24.0
Louisiana	Newllano	Jean Chapel Road	329296P	--	2.3	2.9	--	--	24.2	-6.8	24.2

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Louisiana	Newllano	Lebleu Road / Pickering High School	329297W	--	2.3	2.9	--	--	24.2	-6.5	24.2
Louisiana	Newllano	Lewis Perkins Road	329293U	--	2.1	2.5	--	--	21.5	-5.6	21.5
Louisiana	Noble	Louisiana 1218	329215M	--	2.5	3.1	--	--	26.2	-7.4	26.2
Louisiana	Noble	Mulberry Lane	329220J	--	2.5	3.1	--	--	26.2	-7.3	26.2
Louisiana	Noble	Shiloh Road	329217B	--	2.1	2.5	--	--	21.5	-5.6	21.5
Louisiana	Oil City	Allen Street	329013P	--	2.2	2.7	Yes	4.9	24.0	-9.6	24.0
Louisiana	Oil City	Furman Street	329014W	--	2.2	2.7	Yes	4.5	24.0	-9.5	24.0
Louisiana	Oil City	Land Avenue	329015D	--	2.2	2.7	Yes	3.7	24.0	-9.5	24.0
Louisiana	Oil City	Louisiana 538	329011B	--	2.2	2.7	No	5.4	24.0	-9.9	24.0
Louisiana	Oil City	Main Street	329012H	--	2.2	2.7	No	5.4	24.0	-9.6	24.0
Louisiana	Rodessa	Broadwell Road	328982K	--	2.2	2.7	NVA	NVA	24.0	-9.5	24.0
Louisiana	Rodessa	Capps City Road	328983S	--	2.2	2.7	No	7.8	24.0	-9.5	24.0

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Louisiana	Rodessa	Journey Street	328988B	--	2.2	2.7	No	8.9	24.0	-9.7	24.0
Louisiana	Rodessa	Main Street	328987U	--	2.2	2.7	No	9.2	24.0	-9.7	24.0
Louisiana	Rodessa	Standard Oil Road	328986M	--	2.2	2.7	No	10.8	24.0	-9.5	24.0
Louisiana	Rosepine	Ambler Road	329305L	--	2.1	2.5	--	--	21.5	-5.6	21.5
Louisiana	Rosepine	Bailey Road	329306T	--	2.1	2.5	--	--	21.5	-5.7	21.5
Louisiana	Rosepine	Calhoun Dairy Drive	331348E	--	2.1	2.5	NVA	NVA	21.5	-5.7	21.5
Louisiana	Rosepine	Davis Lane	329310H	--	2.1	2.5	--	--	21.5	-5.6	21.5
Louisiana	Rosepine	Graham Road	329299K	--	2.1	2.5	No	11.6	21.5	-5.6	21.5
Louisiana	Rosepine	Louisiana 10	329298D	--	2.3	2.9	No	8.9	193.0	-8.1	24.2
Louisiana	Rosepine	Main Street	329308G	--	2.1	2.5	No	8.2	45.7	-5.9	21.5
Louisiana	Rosepine	Pinewood Road	329302R	--	2.1	2.5	No	11	21.5	-5.6	21.5
Louisiana	Rosepine	Research Station	329303X	--	2.1	2.5	--	--	21.5	-5.6	21.5
Louisiana	Shreveport	75th Street	328960K	--	2.3	2.9	--	--	25.9	-5.2	25.9
Louisiana	Shreveport	Bostwick Road	329035P	--	2.8	3.4	--	--	30.2	-13.1	30.2

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Louisiana	Shreveport	Bostwick Road	329036 W	--	2.8	3.4	--	--	30.2	-13.1	30.2
Louisiana	Shreveport	Dalton Street	329152K	--	2.3	2.9	--	--	25.9	-5.3	25.9
Louisiana	Shreveport	East 79th Street	329127C	--	2.3	2.9	--	--	25.9	-5.3	25.9
Louisiana	Shreveport	East 85th Street	329128J	--	2.3	2.9	Yes	2.9	65.5	-5.5	25.9
Louisiana	Shreveport	Flournoy Lucas Road	329154Y	--	2.3	2.9	Yes	2.9	792.8	-9.5	25.9
Louisiana	Shreveport	Hoadley Street	329114B	--	3.5	4.4	--	--	38.7	-8.3	38.7
Louisiana	Shreveport	Norris Ferry Road	329157U	--	2.3	2.9	No	6.6	110.0	-5.4	25.9
Louisiana	Shreveport	Overton Brooks Road	329156 M	--	2.3	2.9	--	--	25.9	-5.1	25.9
Louisiana	Shreveport	Pueblo Lane	329159H	--	2.3	2.9	--	--	25.9	-5.0	25.9
Louisiana	Singer	East Iowa Road	329340A	--	2.1	2.5	No	9	21.5	-5.7	21.5
Louisiana	Singer	Fielding Williams Road	329339F	--	2.1	2.5	NVA	NVA	21.5	-5.6	21.5
Louisiana	Singer	Louisiana 110	329332H	--	2.1	2.5	No	7.7	21.5	-5.7	21.5

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Louisiana	Singer	Louisiana 27	329337S	--	2.1	2.5	NVA	NVA	67.0	-6.1	21.5
Louisiana	Singer	Newlin Cemetery Road	329329A	--	2.1	2.5	No	12.3	21.5	-5.5	21.5
Louisiana	Singer	Old Seale Road	329338Y	--	2.1	2.5	--	--	21.5	-5.6	21.5
Louisiana	South Mansfield	Catuna Road	329202L	--	2.1	2.5	No	5.3	21.5	-5.6	21.5
Louisiana	South Mansfield	Cavilier Drive	329193P	--	2.3	2.9	--	--	24.3	-6.5	24.3
Louisiana	South Mansfield	Hudson Darby Road	329200X	--	2.1	2.5	--	--	21.5	-5.6	21.5
Louisiana	South Mansfield	Oak Hill Street	329191B	--	2.3	2.9	--	--	24.3	-6.7	24.3
Louisiana	South Mansfield	Old US 171	329199F	--	2.1	2.5	--	--	21.5	-5.5	21.5
Louisiana	South Mansfield	Old US 171	329201E	--	2.1	2.5	No	4.3	21.5	-5.6	21.5
Louisiana	South Mansfield	Railroad Avenue / Maple Street	329192H	--	2.3	2.9	--	--	24.3	-7.0	24.3
Louisiana	Starks	Bigwoods Stark Road	329353B	**0.8**	2.1	2.5	No	14.8	22.1	-3.3	22.1

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Louisiana	Starks	Church Street	329352U	**0.8**	2.1	2.5	No	5.9	22.1	-3.3	22.1
Louisiana	Starks	Creek Road	329350F	**0.8**	2.1	2.5	No	13.8	22.1	-3.3	22.1
Louisiana	Starks	General Box Road	329351M	**0.8**	2.1	2.5	NVA	NVA	22.1	-3.3	22.1
Louisiana	Starks	Green-Moore Rd	329355P	**0.8**	2.1	2.5	No	5.9	22.1	-3.3	22.1
Louisiana	Starks	Louisiana 109	329354H	**0.8**	2.1	2.5	No	51.4	22.1	-3.5	22.1
Louisiana	Stonewall	Mount Zion Road	329166T	--	2.1	2.5	--	--	21.5	-5.7	21.5
Louisiana	Vivian	Camp Vivian Road	329006E	--	2.2	2.7	No	14.5	79.8	-10.6	24.0
Louisiana	Vivian	East Alabama Avenue	328997A	--	2.2	2.7	--	--	24.0	-9.8	24.0
Louisiana	Vivian	East Arkansas Avenue	328998G	--	2.2	2.7	No	7.8	101.4	-11.3	24.0
Louisiana	Vivian	Mira-Myrtis Road	328991J	--	2.2	2.7	No	8.9	24.0	-9.7	24.0
Louisiana	Vivian	Roy Hopkins Drive	329007L	--	2.2	2.7	--	--	24.0	-9.4	24.0
Louisiana	Zwolle	Laroux Street	329224L	--	2.3	2.9	--	--	24.3	-6.6	24.3

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Louisiana	Zwolle	Obrie Street	329226A	--	2.3	2.9	Yes	6.5	236.2	-9.0	24.3
Louisiana	Zwolle	Port Arthur Avenue	329227G	--	2.3	2.9	Yes	6.4	50.8	-7.1	24.3
Louisiana	Zwolle	Sabine Wildlife Management Area	329231 W	--	2.8	3.4	No	5.9	28.7	-8.2	28.7
Missouri	Amoret	Main Street	329890B	--	2.2	2.7	--	--	25.5	-5.9	25.5
Missouri	Amoret	Northwest County Road 802	329891H	--	2.2	2.7	--	--	25.5	-5.7	25.5
Missouri	Amoret	Road 12761	329894D	--	2.2	2.7	--	--	25.5	-5.7	25.5
Missouri	Amoret	Southwest County Road 4508	329897Y	--	2.2	2.7	No	5.7	25.5	-5.7	25.5
Missouri	Amoret	Southwest County Road 5508	329898F	--	2.2	2.7	NVA	NVA	25.5	-5.7	25.5
Missouri	Amoret	Southwest County Road 6508	329899 M	--	2.2	2.7	No	5.8	25.5	-5.7	25.5

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Missouri	Amoret	Southwest County Road 7008	329900E	--	2.2	2.7	NVA	NVA	25.5	-5.7	25.5
Missouri	Amoret	Southwest County Road 7508	329901L	--	2.2	2.7	No	9.8	25.5	-5.7	25.5
Missouri	Amsterdam	Main Street	329880V	--	2.2	2.7	--	--	25.5	-5.8	25.5
Missouri	Amsterdam	Missouri Y	329876F	--	2.2	2.7	No	6.2	25.5	-5.8	25.5
Missouri	Amsterdam	North Street	329879B	--	2.2	2.7	--	--	25.5	-5.7	25.5
Missouri	Amsterdam	Northwest County Road 3002	329889G	--	2.2	2.7	No	7.4	25.5	-5.8	25.5
Missouri	Amsterdam	Northwest County Road 4002	329886L	--	2.2	2.7	No	7.7	25.5	-5.7	25.5
Missouri	Amsterdam	Walnut Street	329881C	--	2.2	2.7	--	--	25.5	-5.7	25.5
Missouri	Amsterdam	Walnut Street	329905N	--	2.2	2.7	No	6.2	25.5	-5.8	25.5
Missouri	Anderson	Beaver Street	330156J	--	3.5	4.4	--	--	35.3	-13.5	35.3
Missouri	Anderson	Hagee Road / Northwest 7131	330151A	--	2.8	3.4	--	--	28.3	-9.6	28.3

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				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Missouri	Anderson	Main Street	330155C	--	3.5	4.4	--	--	35.3	-14.4	35.3
Missouri	Anderson	Mill Street	330157R	--	3.5	4.4	--	--	35.3	-12.8	35.3
Missouri	Anderson	Sellers Road	330153N	--	2.8	3.4	--	--	28.3	-9.7	28.3
Missouri	Anderson	Splitlog Road	330150T	--	2.8	3.4	--	--	28.3	-9.6	28.3
Missouri	Arcadia	East Ulysses Road	329960N	--	2.2	2.7	No	8.2	25.5	-5.7	25.5
Missouri	Arcadia	East Yater Road	329964R	--	2.2	2.7	No	6.5	25.5	-5.7	25.5
Missouri	Arcadia	East Zebulon Road	329965X	--	2.2	2.7	No	7.9	25.5	-5.7	25.5
Missouri	Arcadia	Missouri FF	329961V	--	2.2	2.7	No	12.4	25.5	-5.8	25.5
Missouri	Arcadia	Northwest 100th Road	329967L	--	2.2	2.7	No	6.5	25.5	-5.7	25.5
Missouri	Arcadia	Northwest 80th Road	329974 W	--	2.2	2.7	No	8.5	25.5	-5.8	25.5
Missouri	Arcadia	Waldo Road	329962C	--	2.2	2.7	No	6	25.5	-5.7	25.5
Missouri	Asbury	Main Street	330014T	--	2.2	2.7	No	6	22.6	-7.0	22.6
Missouri	Asbury	Missouri CC	330013L	--	2.2	2.7	No	6	22.6	-7.0	22.6
Missouri	Asbury	Pine Road	329987X	--	2.2	2.7	No	6.7	22.6	-7.0	22.6
Missouri	Asbury	Road 300	330015A	--	2.2	2.7	No	7.9	22.6	-7.0	22.6

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Missouri	Asbury	State Line Avenue	329986R	--	2.2	2.7	No	7.5	22.6	-7.0	22.6
Missouri	Belton	183rd Street	329818K	--	2.2	2.7	--	--	25.5	-5.8	25.5
Missouri	Belton	187th Street	329821T	--	2.2	2.7	--	--	25.5	-5.8	25.5
Missouri	Birmingham	Fifth Street	375408J	--	4.1	5.1	--	--	45.4	-74.4	45.4
Missouri	Birmingham	North Arlington Avenue	375407C	--	4.1	5.1	Yes	2.4	110.1	-79.7	45.4
Missouri	Birmingham	Saint Louis Avenue	375409R	--	4.1	5.1	--	--	45.4	-74.4	45.4
Missouri	Braymer	Hickory 205 Liv 401	375475D	--	2.8	3.4	No	9.8	31.4	-46.0	31.4
Missouri	Braymer	Highway North 9th Street	375473P	--	2.8	3.4	No	9.7	31.4	-46.6	31.4
Missouri	Braymer	Main Street	375471B	--	2.8	3.4	No	9.8	31.4	-47.7	31.4
Missouri	Braymer	Southeast Bethany Drive	375467L	--	2.8	3.4	No	7.8	31.4	-46.0	31.4
Missouri	Braymer	Southeast Honeysuckle Drive	375474W	--	2.8	3.4	No	7.9	31.4	-46.0	31.4

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Missouri	Braymer	Southeast Kirkpatrick Road / Road 228	375469A	--	2.8	3.4	No	7.7	31.4	-46.0	31.4
Missouri	Buffalo	33rd Road	329981G	--	2.2	2.7	--	--	25.5	-5.7	25.5
Missouri	Buffalo	35th Road	329979F	--	2.2	2.7	--	--	25.5	-5.7	25.5
Missouri	Buffalo	40th Road	329978Y	--	2.2	2.7	--	--	25.5	-5.8	25.5
Missouri	Carl Junction	East Pennell	330035L	--	2.3	2.9	No	5.7	101.8	-8.8	24.2
Missouri	Carl Junction	Ivy Street	330033X	--	2.3	2.9	--	--	24.2	-7.7	24.2
Missouri	Carl Junction	Kafir Road	330028B	--	2.2	2.7	No	6.6	22.6	-7.0	22.6
Missouri	Carl Junction	Karen Drive	330034E	--	2.3	2.9	--	--	24.2	-7.7	24.2
Missouri	Carl Junction	Missouri YY	330031J	--	2.3	2.9	No	5.8	24.2	-8.0	24.2
Missouri	Carl Junction	Road 284	330029H	--	2.2	2.7	No	5.3	22.6	-7.0	22.6
Missouri	Chillicothe	County Road Road 222	375530B	--	2.8	3.4	Yes	11.1	31.4	-46.1	31.4
Missouri	Chillicothe	County Road Road 226	375528A	--	2.8	3.4	--	--	31.4	-46.1	31.4
Missouri	Chillicothe	County Road Road 228	375526L	--	2.8	3.4	--	--	31.4	-46.1	31.4
Missouri	Chillicothe	County Road Road 230	375522J	--	2.8	3.4	--	--	31.4	-46.0	31.4

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Missouri	Chillicothe	Jackson Street	375515Y	--	2.8	3.4	--	--	31.4	-47.8	31.4
Missouri	Chillicothe	Third Street	375514S	--	2.8	3.4	--	--	31.4	-48.0	31.4
Missouri	Chillicothe	Trenton Road	375518U	--	2.8	3.4	--	--	31.4	-46.3	31.4
Missouri	Chula	County Road 204	375545R	--	2.8	3.4	NVA	NVA	31.4	-46.0	31.4
Missouri	Chula	County Road 251	375533 W	--	2.8	3.4	--	--	31.4	-46.1	31.4
Missouri	Chula	Highway M	375534D	--	2.8	3.4	--	--	31.4	-46.1	31.4
Missouri	Chula	Highway V	375538F	--	2.8	3.4	--	--	31.4	-46.3	31.4
Missouri	Chula	Mansur Street / Highway K	375541N	--	2.8	3.4	Yes	12.1	31.4	-46.2	31.4
Missouri	Cleveland	233 Road	329834U	--	2.2	2.7	--	--	25.5	-5.7	25.5
Missouri	Cleveland	259th Street	329837P	--	2.5	3.1	--	--	29.4	-7.0	29.4
Missouri	Cleveland	Lone Pine Drive	329836H	--	2.5	3.1	Yes	6.9	29.4	-7.0	29.4
Missouri	Cleveland	Main Street	329835B	--	2.5	3.1	Yes	8.3	29.4	-7.4	29.4
Missouri	Cleveland	Missouri 2	329839D	--	2.2	2.7	Yes	5.5	57.4	-6.2	25.5
Missouri	Cowgill	Main Street	375461V	--	2.8	3.4	--	--	31.4	-46.2	31.4
Missouri	Cowgill	Southeast Chiefs Road	375466E	--	2.8	3.4	NVA	NVA	31.4	-46.0	31.4

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Missouri	Cowgill	Southeast Oliver Road	375465X	--	2.8	3.4	--	--	31.4	-46.1	31.4
Missouri	Cowgill	Southeast Wildlife Road	375459U	--	2.8	3.4	--	--	31.4	-46.0	31.4
Missouri	Cowgill	Walnut Street	375462C	--	2.8	3.4	--	--	31.4	-46.1	31.4
Missouri	Dawn	County Road 418	375484C	--	2.8	3.4	NVA	NVA	31.4	-46.1	31.4
Missouri	Dawn	County Road 419	375482N	--	2.8	3.4	NVA	NVA	31.4	-46.0	31.4
Missouri	Dawn	Highway C	375483V	--	2.8	3.4	No	16.2	31.4	-46.7	31.4
Missouri	Dawn	Highway DD	375481G	--	2.8	3.4	No	13.8	31.4	-46.6	31.4
Missouri	Deerfield	East Katy Track Road	329942R	--	2.2	2.7	Yes	12.1	25.5	-5.7	25.5
Missouri	Deerfield	East Panama Road	329949N	--	2.2	2.7	--	--	25.5	-5.7	25.5
Missouri	Deerfield	East Quail Road	329955S	--	2.2	2.7	Yes	6	25.5	-5.7	25.5
Missouri	Deerfield	Missouri KK	329956Y	--	2.2	2.7	No	6	25.5	-5.8	25.5
Missouri	Deerfield	Nebo Hill Road	329946T	--	2.2	2.7	--	--	25.5	-5.7	25.5
Missouri	Drexel	315 Street	329850D	--	2.2	2.7	No	4.8	25.5	-5.7	25.5

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Missouri	Drexel	341 Street	329858H	--	2.2	2.7	NVA	NVA	25.5	-5.7	25.5
Missouri	Drexel	347 Street	329860J	--	2.2	2.7	No	6.3	25.5	-5.7	25.5
Missouri	Drexel	Ethel Street	329865T	--	2.2	2.7	No	12.9	25.5	-6.0	25.5
Missouri	Drexel	Main Street	329863E	--	2.2	2.7	No	13.2	25.5	-5.8	25.5
Missouri	Drexel	Northwest County Road 16002	329866A	--	2.2	2.7	No	7.6	25.5	-5.7	25.5
Missouri	Elmira	North Raum Road	375448G	--	2.0	2.5	--	--	24.0	-30.8	24.0
Missouri	Excelsior Springs	Dunbar Avenue	375439H	--	2.0	2.5	Yes	0.9	88.9	-37.4	24.0
Missouri	Excelsior Springs	Italian Way	375440C	--	2.0	2.5	Yes	4.8	42.0	-33.9	24.0
Missouri	Excelsior Springs	McLaery Road	375434Y	--	2.0	2.5	--	--	24.0	-32.7	24.0
Missouri	Excelsior Springs	Salem Road	375442R	--	2.0	2.5	--	--	24.0	-31.7	24.0
Missouri	Foster	Missouri U	329896S	--	2.2	2.7	No	9.7	25.5	-5.8	25.5
Missouri	Foster	Southwest County Road 8508	329902T	--	2.2	2.7	No	11.4	25.5	-5.7	25.5

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Missouri	Galt	102nd Avenue	375578D	--	2.8	3.4	Yes	14.1	33.4	-42.0	33.4
Missouri	Galt	10th Street Southeast	375577W	--	2.8	3.4	No	15.4	33.4	-41.9	33.4
Missouri	Galt	110th Street	375580E	--	2.8	3.4	--	--	33.4	-42.1	33.4
Missouri	Goodman	Blackstock Lane	330148S	--	2.8	3.4	--	--	28.3	-9.6	28.3
Missouri	Goodman	East Brodie Road	330136X	--	2.8	3.4	NVA	NVA	28.3	-9.6	28.3
Missouri	Goodman	East Garner Avenue	330139T	--	2.8	3.4	Yes	5.9	28.3	-9.6	28.3
Missouri	Goodman	Oak Street	330138L	--	2.8	3.4	NVA	NVA	28.3	-9.6	28.3
Missouri	Goodman	Sarratt Road	330137E	--	2.8	3.4	NVA	NVA	28.3	-9.6	28.3
Missouri	Goodman	School Street	330142B	--	2.8	3.4	--	--	28.3	-9.7	28.3
Missouri	Goodman	Splitlog Avenue	330143H	--	2.8	3.4	--	--	28.3	-9.6	28.3
Missouri	Goodman	Whitmore Street	330141U	--	2.8	3.4	--	--	28.3	-9.6	28.3
Missouri	Grandview	Duck Road	329806R	--	2.5	3.1	--	--	29.4	-7.4	29.4
Missouri	Grandview	Main Street	329807X	--	2.2	2.7	Yes	2	118.0	-6.5	25.5
Missouri	Harris	5th Street/ Leer Drive	375612H	--	2.8	3.4	NVA	NVA	33.4	-41.9	33.4

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Missouri	Harris	State Highway East	375614W	--	2.8	3.4	No	13.7	33.4	-42.3	33.4
Missouri	Hume	East Arnold Road	329913F	--	2.2	2.7	No	8.2	25.5	-5.7	25.5
Missouri	Hume	East Bailey Road	329917H	--	2.2	2.7	--	--	25.5	-5.7	25.5
Missouri	Hume	Hume Street	329904G	--	2.2	2.7	No	6.2	25.5	-5.8	25.5
Missouri	Hume	Southwest County Road 11508	329911S	--	2.2	2.7	No	6.2	25.5	-5.7	25.5
Missouri	Hume	Spring Street	329906V	--	2.2	2.7	No	6.2	25.5	-5.7	25.5
Missouri	Joplin	12th Street	330054R	--	2.8	3.4	--	--	28.3	-9.7	28.3
Missouri	Joplin	15th Street	330055X	--	2.8	3.4	Yes	1.3	282.6	-11.5	28.3
Missouri	Joplin	32nd Street	330061B	--	2.8	3.4	Yes	2.8	501.8	-12.9	28.3
Missouri	Joplin	4th Street	330045S	--	2.8	3.4	Yes	0.9	211.2	-11.0	28.3
Missouri	Joplin	5th Street	330046Y	--	2.8	3.4	--	--	28.3	-9.8	28.3
Missouri	Joplin	9th Street	330053J	--	2.8	3.4	Yes	0.8	103.6	-11.0	28.3
Missouri	Kansas City	12th Street	329762T	--	2.8	3.4	--	--	32.2	-8.1	32.2
Missouri	Kansas City	17th Street	329764G	--	2.8	3.4	Yes	1.9	95.0	-8.7	32.2

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Missouri	Lanagan	Eagles Nest Lane	330172T	--	3.5	4.4	--	--	35.3	-12.8	35.3
Missouri	Lanagan	Oscar Talley Road	330167W	--	3.5	4.4	--	--	35.3	-12.8	35.3
Missouri	Lanagan	Pebble Street	330168D	--	2.8	3.4	--	--	28.3	-9.6	28.3
Missouri	Laredo	65th Street	375562G	--	2.8	3.4	NVA	NVA	31.4	-46.1	31.4
Missouri	Laredo	Baha Lane	375574B	--	2.8	3.4	NVA	NVA	33.4	-41.9	33.4
Missouri	Laredo	First Street	375569E	--	2.8	3.4	no	15.6	33.4	-42.2	33.4
Missouri	Lawson	174th Street	375445L	--	2.0	2.5	yes	5.4	24.0	-31.0	24.0
Missouri	Lawson	Garner Street	375486R	--	2.0	2.5	--	--	24.0	-30.8	24.0
Missouri	Lawson	Moss Street	375446T	--	2.0	2.5	--	--	24.0	-30.9	24.0
Missouri	Liberty	Lancaster Road	375423L	--	2.0	2.5	--	--	24.0	-30.9	24.0
Missouri	Liberty	Old Birmingham Road	375414M	--	2.0	2.5	--	--	24.0	-32.0	24.0
Missouri	Lucerne	KK Avenue	375635P	--	2.8	3.4	--	--	33.4	-42.1	33.4
Missouri	Lucerne	Private Road	375637D	--	2.8	3.4	--	--	33.4	-41.9	33.4
Missouri	Ludlow	County Road 403	375476K	--	2.8	3.4	No	7.9	31.4	-46.1	31.4

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Missouri	Ludlow	County Road 424	375479F	--	2.8	3.4	NVAP	NVAP	31.4	-46.1	31.4
Missouri	Ludlow	County Road 426	375477S	--	2.8	3.4	NVA	NVA	31.4	-46.1	31.4
Missouri	Ludlow	Mainline County Route 415	375480A	--	2.8	3.4	NVAP	NVAP	31.4	-46.1	31.4
Missouri	Ludlow	South Main Street D	375478Y	--	2.8	3.4	No	8.9	31.4	-46.7	31.4
Missouri	Merwin	First Street	329870P	--	2.2	2.7	No	10.2	25.5	-5.7	25.5
Missouri	Merwin	Northwest County Road 11002	329874S	--	2.2	2.7	No	10.9	25.5	-5.7	25.5
Missouri	Merwin	Poplar Street	329872D	--	2.2	2.7	No	11	25.5	-5.8	25.5
Missouri	Mosby	Pony Express Road	375433S	--	2.0	2.5	--	--	24.0	-31.1	24.0
Missouri	Neosho	College Street	330102D	--	4.1	5.1	Yes	4.4	249.3	-17.3	40.9
Missouri	Neosho	Landis Road/ Burr Crossing Road	330120B	--	4.1	5.1	Yes	3.5	118.4	-16.5	40.9
Missouri	Neosho	McKinney Street	330113R	--	4.1	5.1	Yes	2	206.1	-16.4	40.9

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Missouri	Neosho	Rhonda Drive	919240A	--	2.8	3.4	NVA	NVA	28.3	-9.9	28.3
Missouri	Neosho	Spring Street	330112J	--	4.1	5.1	--	--	40.9	-15.9	40.9
Missouri	Neosho	Washington Avenue	330101 W	--	4.1	5.1	Yes	4.8	118.2	-15.9	40.9
Missouri	Newtown	Highway EE	375626R	--	2.4	2.9	No	13.7	28.8	-34.4	28.8
Missouri	Noel	Main Street	330178J	--	3.5	4.4	No	8.1	144.2	-14.1	35.3
Missouri	Noel	South Kings Highway	330184 M	--	3.5	4.4	--	--	35.3	-12.8	35.3
Missouri	Noel	Southwest 5968 / Deer Creek Road Southwest 5968	330186B	--	3.5	4.4	--	--	35.3	-12.8	35.3
Missouri	Osgood	60th Road	329976K	--	2.2	2.7	No	7.4	25.5	-5.7	25.5
Missouri	Osgood	Eisenhower Street/ County Road PP	375593F	--	2.8	3.4	Yes	13.5	33.4	-42.1	33.4
Missouri	Osgood	Missouri K	329972H	--	2.2	2.7	No	7.9	25.5	-5.8	25.5
Missouri	Polo	Boulder Road	375453D	--	2.0	2.5	Yes	9.9	24.0	-30.7	24.0

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Missouri	Polo	Price Drive	375452W	--	2.0	2.5	Yes	6.8	24.0	-30.7	24.0
Missouri	Polo	Southeast Maggie Road	375456Y	--	2.8	3.4	--	--	31.4	-46.0	31.4
Missouri	Polo	Southeast Soo Line Road	375457F	--	2.8	3.4	--	--	31.4	-46.0	31.4
Missouri	Polo	Southwest Holstien Road	375454K	--	2.0	2.5	--	--	24.0	-30.7	24.0
Missouri	Powersville	140th Street	375642A	--	2.8	3.4	Yes	13.1	33.4	-41.9	33.4
Missouri	Powersville	Route E	375644N	--	2.8	3.4	No	8.7	33.4	-42.0	33.4
Missouri	Richards	1st Street	329940C	--	2.2	2.7	Yes	10.9	25.5	-5.7	25.5
Missouri	Richards	3rd Street	329939H	--	2.2	2.7	Yes	10.6	25.5	-5.7	25.5
Missouri	Richards	4th Street	329938B	--	2.2	2.7	Yes	10.5	25.5	-5.7	25.5
Missouri	Richards	8th Street	329937U	--	2.2	2.7	No	5.9	25.5	-5.8	25.5
Missouri	Richards	East Lady Road	329944E	--	2.2	2.7	No	5.9	25.5	-5.7	25.5
Missouri	Richards	South 400 Road	329930W	--	2.2	2.7	--	--	25.5	-5.7	25.5
Missouri	Richards	Stockade Road	329957F	--	2.2	2.7	No	6	25.5	-5.7	25.5

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Missouri	Richards	Tally Bend Road	329958M	--	2.2	2.7	No	7	25.5	-5.7	25.5
Missouri	Saginaw	Old UU 71	330078E	--	2.5	3.1	--	--	26.0	-8.6	26.0
Missouri	Saginaw	Shoal Creek Fish Reserve	330076R	--	2.8	3.4	--	--	28.3	-9.6	28.3
Missouri	Stotesbury	East Caton Road	329920R	--	2.2	2.7	--	--	25.5	-5.7	25.5
Missouri	Stotesbury	East Trestle Road	329959U	--	2.2	2.7	No	7.5	25.5	-5.7	25.5
Missouri	Stotesbury	Main Street	329929C	--	2.2	2.7	--	--	25.5	-5.7	25.5
Missouri	Stotesbury	North Street	329928V	--	2.2	2.7	--	--	25.5	-5.7	25.5
Missouri	Waco	Missouri KK / Maple Road	330018V	--	2.2	2.7	No	6.9	22.6	-7.0	22.6
Missouri	Waco	Nutmeg Road	330016G	--	2.2	2.7	No	8.1	22.6	-7.0	22.6
Missouri	West Line	289 Street	329841E	--	2.2	2.7	--	--	25.5	-5.7	25.5
Missouri	West Line	299 Street	329845G	--	2.2	2.7	No	4.9	25.5	-5.7	25.5
Missouri	West Line	307 Street	329848C	--	2.2	2.7	No	12.9	25.5	-5.7	25.5
Oklahoma	Bunch	North Bunch Road	330647H	--	2.8	3.4	No	9.5	29.0	-9.6	29.0
Oklahoma	Bunch	Road 4660	330640K	--	2.8	3.4	No	8.4	29.0	-9.6	29.0
Oklahoma	Bunch	Road 888	330643F	--	2.8	3.4	No	8.5	29.0	-9.6	29.0

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Oklahoma	Bunch	South Bunch Road	330655A	--	2.8	3.4	No	9.5	29.0	-9.6	29.0
Oklahoma	Gans	South 4710 Road	330695X	--	2.2	2.7	No	6.2	23.1	-7.0	23.1
Oklahoma	Gans	South 4715 Road	330697L	--	2.2	2.7	No	8.9	23.1	-7.0	23.1
Oklahoma	Gans	South 4715 Road	330698T	--	2.2	2.7	No	6.2	23.1	-7.0	23.1
Oklahoma	Heavener	201st Avenue	330797R	--	2.8	3.4	NVA	NVA	30.1	-13.0	30.1
Oklahoma	Heavener	Church Road	330792G	--	2.8	3.4	NVA	NVA	30.1	-13.6	30.1
Oklahoma	Heavener	East Avenue F	330785 W	--	4.9	6.3	No	7	491.5	-23.4	50.2
Oklahoma	Heavener	Forest Hill Road	330744S	--	2.8	3.4	--	--	28.8	-9.6	28.8
Oklahoma	Heavener	Haw Creek Road	330799E	--	2.8	3.4	No	17.7	30.1	-13.0	30.1
Oklahoma	Heavener	Hicks Road	330796J	--	2.8	3.4	No	17.7	30.1	-13.0	30.1
Oklahoma	Heavener	Hodgens Road	330791A	--	2.8	3.4	No	11.4	30.1	-13.1	30.1
Oklahoma	Heavener	Industrial Road	330783H	--	2.8	3.4	--	--	28.8	-9.6	28.8
Oklahoma	Heavener	KCS_X	330793N	--	2.8	3.4	NVA	NVA	30.1	-13.0	30.1

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Oklahoma	Heavener	Stand Pipe Road	330789Y	--	2.8	3.4	--	--	30.1	-13.0	30.1
Oklahoma	Heavener	West Avenue C	330784P	--	4.9	6.3	No	6.7	526.6	-23.7	50.2
Oklahoma	Heavener	West Avenue I	330786D	--	2.8	3.4	--	--	30.1	-13.8	30.1
Oklahoma	Howe	Lassiter Road	330739V	--	2.8	3.4	--	--	28.8	-9.6	28.8
Oklahoma	Howe	Old Pike Road	330741W	--	2.8	3.4	--	--	28.8	-9.6	28.8
Oklahoma	Marble City	East 991 Road	330669H	--	2.8	3.4	No	15.5	29.0	-9.6	29.0
Oklahoma	Marble City	First Street	330660W	--	2.8	3.4	NVA	NVA	29.0	-9.6	29.0
Oklahoma	Muldrow	East 1140 Road	330693J	--	2.2	2.7	No	8	23.1	-7.0	23.1
Oklahoma	Panama	Choctaw Street	330714A	--	2.2	2.7	No	29.3	23.1	-7.0	23.1
Oklahoma	Panama	Coal Creek Road	330713T	--	2.2	2.7	No	5.3	23.1	-7.0	23.1
Oklahoma	Panama	Pierce Road	330718C	--	2.2	2.7	No	5.3	23.1	-7.0	23.1
Oklahoma	Panama	Tecumseh Street	330716N	--	2.2	2.7	No	29.3	23.1	-7.0	23.1
Oklahoma	Poteau	290th Street	330723Y	--	2.2	2.7	--	--	23.1	-7.0	23.1

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Oklahoma	Poteau	Airport Road	330736A	--	2.2	2.7	Yes	13.9	55.8	-7.8	23.0
Oklahoma	Poteau	Dewey Avenue	330732X	--	2.2	2.7	--	--	23.0	-7.2	23.0
Oklahoma	Poteau	East Branson Road	330722S	--	2.2	2.7	--	--	23.1	-7.0	23.1
Oklahoma	Poteau	Fairview Road	330712L	--	2.2	2.7	No	8.6	23.1	-7.0	23.1
Oklahoma	Poteau	Grady Avenue	330733E	--	2.2	2.7	--	--	23.0	-7.5	23.0
Oklahoma	Poteau	North Witte Street	330729P	--	2.3	2.9	--	--	24.7	-8.0	24.7
Oklahoma	Poteau	Possum Valley Road	330727B	--	2.2	2.7	--	--	23.1	-7.0	23.1
Oklahoma	Poteau	South Railroad Street	330734L	--	2.2	2.7	--	--	23.0	-7.0	23.0
Oklahoma	Poteau	Williams Lane	330726U	--	2.2	2.7	--	--	23.1	-7.0	23.1
Oklahoma	Sallisaw	Dogwood Street	330680H	--	2.8	3.4	--	--	29.0	-9.6	29.0
Oklahoma	Sallisaw	East 1040 Road	330671J	--	2.8	3.4	No	14	29.0	-9.6	29.0

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Oklahoma	Sallisaw	East 1050 Road	330672R	--	2.8	3.4	NVA	NVA	29.0	-9.6	29.0
Oklahoma	Sallisaw	East 1090 Road	330685S	--	2.8	3.4	No	7.6	29.0	-9.6	29.0
Oklahoma	Sallisaw	East Road 1095	330686Y	--	2.8	3.4	NVA	NVA	29.0	-9.6	29.0
Oklahoma	Sallisaw	South 4640 Road	330682 W	--	2.8	3.4	--	--	29.0	-9.6	29.0
Oklahoma	Sallisaw	West Chickasaw Avenue	330676T	--	2.8	3.4	--	--	29.0	-9.6	29.0
Oklahoma	Sallisaw	West Port Arthur Place	330677A	--	2.8	3.4	--	--	29.0	-9.7	29.0
Oklahoma	Sallisaw	West Redwood Avenue	330674E	--	2.8	3.4	--	--	29.0	-9.6	29.0
Oklahoma	Sallisaw	West Taylor Drive	330673X	--	2.8	3.4	--	--	29.0	-9.6	29.0
Oklahoma	Shady Point	Reagan Street	330721K	--	2.2	2.7	Yes	6.8	23.1	-7.0	23.1
Oklahoma	Shady Point	Wheelus Street	330719J	--	2.2	2.7	No	9.9	23.1	-7.0	23.1
Oklahoma	Shady Point	Wheelus Street	330720D	--	2.2	2.7	No	9.7	23.1	-7.0	23.1

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Oklahoma	Spiro	Bailey Road	330709D	--	2.2	2.7	--	--	23.1	-7.0	23.1
Oklahoma	Spiro	County Road D4723	330700S	--	2.2	2.7	Yes	6.6	23.1	-7.0	23.1
Oklahoma	Spiro	Race Track Road	330710X	--	2.2	2.7	No	6.6	23.1	-7.0	23.1
Oklahoma	Spiro	South Ash Street	330706H	--	2.2	2.7	--	--	23.1	-7.0	23.1
Oklahoma	Stilwell	Ash Street	330626P	--	2.8	3.4	--	--	29.0	-9.6	29.0
Oklahoma	Stilwell	E0778 Road	330620Y	--	3.1	3.8	No	8	32.0	-11.1	32.0
Oklahoma	Stilwell	E0810 Road	330623U	--	2.8	3.4	--	--	29.0	-9.6	29.0
Oklahoma	Stilwell	Oklahoma 51	330625H	--	2.8	3.4	Yes	8	70.2	-10.0	29.0
Oklahoma	Stilwell	Road 4760	330637C	--	3.5	4.4	No	13.4	36.1	-12.9	36.1
Oklahoma	Stilwell	Road 772	330619E	--	3.1	3.8	No	9.2	32.0	-11.0	32.0
Oklahoma	Stilwell	Road 850	330636V	--	2.8	3.4	No	7.1	29.0	-9.6	29.0
Oklahoma	Stilwell	South 3rd Street	330635N	--	2.8	3.4	--	--	29.0	-9.8	29.0
Oklahoma	Stilwell	Tyson Farms Road	330633A	--	2.8	3.4	--	--	29.0	-9.6	29.0
Oklahoma	Stilwell	Walnut Street	330628D	--	2.8	3.4	--	--	29.0	-9.8	29.0
Oklahoma	Watts	E0653 Road	330398E	--	2.8	3.4	Yes	6.6	29.0	-9.6	29.0

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Oklahoma	Watts	E0660 Road	330601U	--	3.5	4.4	--	--	36.1	-12.9	36.1
Oklahoma	Watts	N4740 Road	330390A	--	2.8	3.4	NVA	NVA	28.3	-9.6	28.3
Oklahoma	Watts	N4740 Road	330392N	--	2.8	3.4	No	12.7	28.3	-9.6	28.3
Oklahoma	Watts	Twin Falls Road	330389F	--	3.1	3.8	No	9.8	31.3	-11.0	31.3
Oklahoma	Westville	Chincapin Street	330612G	--	2.8	3.4	No	5.4	84.3	-10.1	29.0
Oklahoma	Westville	E0670 Road	330603H	--	2.8	3.4	--	--	29.0	-9.6	29.0
Oklahoma	Westville	E0690 Road	330605 W	--	2.8	3.4	--	--	29.0	-9.6	29.0
Oklahoma	Westville	E0700 Road	330606D	--	2.8	3.4	--	--	29.0	-9.6	29.0
Oklahoma	Westville	East Division Street	330610T	--	2.8	3.4	--	--	29.0	-9.6	29.0
Oklahoma	Westville	Morris Road	330614V	--	2.8	3.4	No	5.4	29.0	-9.6	29.0
Oklahoma	Westville	RD 754	330616J	--	2.8	3.4	No	10.1	29.0	-9.6	29.0
Oklahoma	Westville	West Cherry Street	330607K	--	2.8	3.4	--	--	29.0	-9.6	29.0
Texas	Agua Dulce	County Route 103	793665J	--	2.3	2.9	No	5.3	12.7	-19.8	12.7
Texas	Agua Dulce	County Route 313	793809L	--	2.3	2.9	No	4.2	12.7	-19.8	12.7

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Agua Dulce	County Route 93	793823G	--	2.3	2.9	No	6.6	12.7	-19.8	12.7
Texas	Agua Dulce	FM 0070	793667X	--	2.3	2.9	No	4.3	12.7	-20.4	12.7
Texas	Agua Dulce	Road 105	793662N	--	2.3	2.9	No	6.4	12.7	-19.8	12.7
Texas	Agua Dulce	Road 336	793659F	--	2.3	2.9	No	13.5	12.7	-19.7	12.7
Texas	Agua Dulce	Road 339	793660A	--	2.3	2.9	No	13.5	12.7	-19.8	12.7
Texas	Alice	Adams Street	793816W	--	4.1	5.1	--	--	20.5	-41.7	20.5
Texas	Alice	Almond Street	793817D	--	4.1	5.1	--	--	20.5	-41.7	20.5
Texas	Alice	Aransas Street	793812U	--	4.1	5.1	--	--	20.5	-41.7	20.5
Texas	Alice	Cameron Street	793818K	--	4.1	5.1	Yes	2.3	-41.4	-42.9	20.5
Texas	Alice	County Route 113	793801G	--	2.8	3.4	--	--	14.6	-25.6	14.6
Texas	Alice	County Route 114	793802N	--	2.8	3.4	--	--	14.6	-24.7	14.6
Texas	Alice	County Route 170	793795F	--	2.2	2.7	--	--	11.9	-18.2	11.9
Texas	Alice	Duval Street	793806R	--	4.1	5.1	--	--	20.5	-39.7	20.5

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Alice	Flournoy Road	793651B	--	2.8	3.4	No	5.6	-5.4	-26.3	14.6
Texas	Alice	Goliad Street	793808E	--	4.1	5.1	--	--	20.5	-40.4	20.5
Texas	Alice	Gulf Street	793807X	--	4.1	5.1	--	--	20.5	-41.7	20.5
Texas	Alice	Johnson Street	793811M	--	4.1	5.1	--	--	20.5	-41.7	20.5
Texas	Alice	Kempe Avenue	793810F	--	4.1	5.1	Yes	1	-59.9	-47.2	20.5
Texas	Alice	King Street	793813B	--	4.1	5.1	--	--	20.5	-41.6	20.5
Texas	Alice	Reynolds Street	793815P	--	4.1	5.1	--	--	20.5	-41.5	20.5
Texas	Alice	Road 132	793798B	--	2.2	2.7	--	--	11.9	-18.1	11.9
Texas	Alice	Road 341	793653P	--	2.8	3.4	--	--	14.6	-25.0	14.6
Texas	Alice	Sain Drive	793959U	--	4.1	5.1	Yes	3.7	-60.6	-42.0	20.5
Texas	Alice	Stadium Street	793649A	--	2.8	3.4	Yes	4.9	-2.0	-25.6	14.6
Texas	Alice	Texas 44/Park Street	793819S	--	4.1	5.1	Yes	2.8	-208.0	-48.1	20.5
Texas	Alice	Texas Boulevard	793821T	--	4.1	5.1	Yes	3.2	-55.0	-41.7	20.5

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Alice	US 0281 Southbound Ramp	793981G	--	2.8	3.4	--	--	14.6	-25.2	14.6
Texas	Alice	Wright Street	793814H	--	4.1	5.1	Yes	2	-279.7	-62.8	20.5
Texas	Ames	FM 160	762761B	**0.7**	1.8	2.1	No	4.9	16.0	-3.8	11.7
Texas	Banquete	4th Street	793829X	--	2.3	2.9	No	8.4	12.7	-19.8	12.7
Texas	Banquete	County Route 38	793824N	--	2.5	3.1	No	5.7	13.5	-21.9	13.5
Texas	Banquete	County Route 87A	793831Y	--	2.3	2.9	NVA	NVA	12.7	-19.8	12.7
Texas	Banquete	Falmar Street	793830S	--	2.3	2.9	NVA	NVA	12.7	-19.8	12.7
Texas	Banquete	FM 666	793827J	--	2.3	2.9	No	7.5	12.7	-20.7	12.7
Texas	Banquete	Road 83	793834U	--	2.3	2.9	No	6.3	12.7	-19.7	12.7
Texas	Beasley	3rd Street	743473F	--	2.1	2.5	--	--	13.6	-12.6	13.6
Texas	Beasley	4th Street	743474M	--	2.1	2.5	--	--	13.6	-12.5	13.6
Texas	Beasley	FM 1875	743475U	--	2.1	2.5	No	13.8	22.7	-13.2	13.6
Texas	Beasley	Grunewald Road	743477H	--	2.1	2.5	--	--	13.6	-12.5	13.6
Texas	Beaumont	Crockett Street	450671P	**1.2**	4.9	6.3	--	--	28.3	-14.7	28.3

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Beaumont	Keith Road	762723S	**0.7**	1.8	2.1	--	--	10.1	-4.0	10.1
Texas	Beaumont	Langham Road	446594K	**0.8**	2.0	2.5	--	--	28.3	-5.8	10.5
Texas	Beaumont	Langham Road	762719C	**1.7**	9.2	12.0	--	--	48.4	-30.4	48.4
Texas	Beaumont	Main Lane	762725F	**0.7**	1.8	2.1	--	--	11.5	-3.7	11.5
Texas	Beaumont	Neches Street	329480C	**0.8**	4.9	6.3	--	--	52.4	-9.8	52.4
Texas	Beaumont	Olin Road	329504N	--	3.5	4.4	--	--	11.6	-11.0	11.6
Texas	Beaumont	South Major Drive / Texas 364	762721D	**0.7**	1.8	2.1	Yes	3.3	98.5	-4.1	11.5
Texas	Beaumont	Todd Avenue	762722K	**0.7**	1.8	2.1	--	--	10.1	-4.1	10.1
Texas	Beaumont	Wooten Road	762956N	**0.7**	1.8	2.1	--	--	11.5	-3.7	11.5
Texas	Benavides	Clark Street	793681T	--	2.8	3.4	No	42.3	14.6	-24.9	14.6
Texas	Benavides	County Park Road	793960N	--	2.1	2.5	No	45.5	11.5	-16.7	11.5
Texas	Benavides	Court Street	793679S	--	2.8	3.4	No	42.7	14.6	-24.9	14.6
Texas	Benavides	FM 2295	793718F	--	2.8	3.4	No	58.3	14.6	-24.8	14.6
Texas	Benavides	FM 3196 / Humble Street	793682A	--	2.8	3.4	No	42.3	14.6	-24.7	14.6

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Benavides	Texas Boulevard	793673B	--	2.8	3.4	No	43	14.6	-25.4	14.6
Texas	Bloomburg	County Route 3990	330902P	--	2.2	2.7	No	8	24.0	-9.5	24.0
Texas	Bloomburg	County Route 3992	330903W	--	2.2	2.7	No	8.3	24.0	-9.5	24.0
Texas	Bloomburg	County Route 4920	330907Y	--	2.2	2.7	No	8.1	24.0	-9.5	24.0
Texas	Bloomburg	Cypress Street	330906S	--	2.2	2.7	No	8.2	24.0	-9.5	24.0
Texas	Bloomburg	FM 251	330901H	--	2.2	2.7	No	7.6	24.0	-9.5	24.0
Texas	Bloomburg	Main Street	330905K	--	2.2	2.7	No	8	24.0	-9.9	24.0
Texas	Bloomington	Black Bayou Road	427528W	--	2.3	2.9	NVAP	NVAP	10.0	-14.4	10.0
Texas	Bloomington	Levi Road	435911G	--	9.2	12.0	--	--	14.1	-72.3	14.1
Texas	Bloomington	Nueces Street	427525B	--	2.3	2.9	--	--	10.0	-14.4	10.0
Texas	Bloomington	Phillips Road	435913V	--	9.2	12.0	Yes	9.3	-741.3	-79.5	14.1
Texas	Bloomington	Texas 185	435914C	--	2.3	2.9	No	6.6	-54.2	-15.5	6.8
Texas	Carrollton	Josey Lane	021765H	--	3.1	3.8	Yes	4	12.8	5.2	0.1
Texas	Carrollton	Marsh Lane	021767W	--	3.1	3.8	Yes	3	4.3	3.9	0.1

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	China	Aggie Drive	762735L	**0.7**	1.8	2.1	No	9.5	11.5	-3.7	11.5
Texas	China	Broadway Street	762739N	**0.7**	1.8	2.1	No	4.6	18.4	-3.9	11.5
Texas	China	East Railroad Street	762738G	**0.7**	1.8	2.1	--	--	11.5	-3.7	11.5
Texas	China	Meeker Road	762733X	**0.7**	1.8	2.1	No	8.9	10.1	-4.1	10.1
Texas	China	Turner Road	762737A	**0.7**	1.8	2.1	--	--	11.5	-3.8	11.5
Texas	China	Yorkshire Road	762732R	**0.7**	1.8	2.1	NVA	NVA	10.1	-4.1	10.1
Texas	Copper Canyon	Copper Canyon Road	021691T	--	3.1	3.8	yes	3.9	1.3	4.0	0.1
Texas	Copper Canyon	Orchid Hill Road	021690L	--	3.1	3.8	--	--	0.1	3.6	0.1
Texas	Corpus Christi	Hearn Road	427587Y	--	2.8	3.4	--	--	12.6	-19.1	12.6
Texas	Corpus Christi	Interstate 37 Frontage Road	427704S	--	2.8	3.4	--	--	12.6	-18.7	12.6
Texas	Corpus Christi	Leopard Street	427586S	--	2.8	3.4	Yes	2.5	-5.5	-21.8	12.6
Texas	Corpus Christi	Sharpsburg Road	427584D	--	2.8	3.4	--	--	12.6	-18.4	12.6

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Crosby	Adlong Johnson Road	762866P	**0.7**	1.8	2.1	--	--	10.9	-4.0	10.9
Texas	Crosby	Crosby Eastgate Road	762865H	**0.8**	1.8	2.2	No	8.1	14.0	-4.7	10.5
Texas	Crosby	FM 2100 Northbound F	440488G	**0.7**	1.8	2.1	--	--	10.1	-4.0	10.1
Texas	Crosby	FM 2100 Southbound F	762873A	**0.8**	1.8	2.2	--	--	10.5	-4.6	10.5
Texas	Crosby	Lord Road	762861F	**0.8**	1.8	2.2	--	--	10.5	-4.4	10.5
Texas	Crosby	Miller Wilson Road	762872T	**0.8**	2.0	2.5	Yes	0.9	36.7	-5.9	11.5
Texas	Crosby	Plaza Circle	762860Y	**0.7**	1.8	2.1	NVAP	NVAP	10.4	-4.1	10.4
Texas	Crosby	Ramsey Road	762869K	**0.8**	2.0	2.5	Yes	3.5	16.2	-5.5	11.5
Texas	Crosby	Shady Lane	762859E	**0.8**	1.8	2.2	NVAP	NVAP	10.5	-4.3	10.5
Texas	Dallas	Dallas North Parkway	021749Y	--	3.1	3.8	Yes	4.3	3.3	4.1	0.1
Texas	Dallas	Horizon North Drive	021770E	--	3.1	3.8	Yes	1.7	1.5	3.7	0.1
Texas	Dayton	County Route 602	762853N	**0.8**	1.8	2.2	No	5.9	10.5	-4.4	10.5

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Dayton	County Route 603	762855C	**0.8**	1.8	2.2	No	5.9	10.5	-4.4	10.5
Texas	Dayton	County Route 604	762856J	**0.7**	1.8	2.1	No	7.4	10.9	-4.0	10.9
Texas	Dayton	FM 601	762852G	**0.8**	1.8	2.2	--	--	10.5	-4.4	10.5
Texas	Dayton	Main Street	762786 W	**0.8**	2.0	2.5	Yes	0.6	50.8	-5.3	13.2
Texas	Dayton	Waco Street	762789S	**0.8**	2.0	2.5	Yes	1.6	58.9	-5.4	13.2
Texas	Dayton	Winfree Street	762785P	**0.8**	2.0	2.5	Yes	0.9	82.2	-5.3	13.2
Texas	Denton	Barthold Road	021727Y	--	3.1	3.8	--	--	0.1	3.4	0.1
Texas	Denton	Barthold Road	021728F	--	3.1	3.8	--	--	0.1	3.4	0.1
Texas	Denton	Bonnie Brea Street	021709B	--	3.1	3.8	--	--	0.1	3.5	0.1
Texas	Denton	Country Club Road	021700P	--	3.1	3.8	Yes	6.2	2.4	3.9	0.1
Texas	Denton	FM 1173	021726S	--	3.1	3.8	Yes	9.1	3.3	4.1	0.1
Texas	Denton	Hickory Creek Road	021696C	--	3.1	3.8	Yes	7.7	1.3	3.8	0.1
Texas	Denton	Highland Park Road	021708U	--	3.1	3.8	--	--	0.1	3.5	0.1

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Denton	Roselawn Drive	021706F	--	3.1	3.8	--	--	0.1	3.4	0.1
Texas	Denton	West Oak Street	021780K	--	3.1	3.8	--	--	0.1	3.6	0.1
Texas	Devers	Gates Road	762753J	**0.7**	1.8	2.1	No	19.6	11.5	-3.7	11.5
Texas	Deweyville	County Route 4181	329453F	**0.8**	2.1	2.5	--	--	22.1	-3.4	22.1
Texas	Deweyville	Ruliff Road	329450K	**0.8**	2.1	2.5	No	7.5	22.1	-3.3	22.1
Texas	Edna	Allen Street	746640M	--	2.1	2.5	--	--	13.4	-12.7	13.4
Texas	Edna	Colorado Street	746642B	--	2.1	2.5	--	--	13.4	-12.3	13.4
Texas	Edna	County Route 0300	746644P	--	2.1	2.5	--	--	13.4	-12.3	13.4
Texas	Edna	County Route 4082	746633C	--	2.1	2.5	--	--	13.4	-12.3	13.4
Texas	Edna	East Street	746637E	--	2.1	2.5	--	--	13.4	-12.7	13.4
Texas	Edna	FM 0234	746645W	--	2.1	2.5	No	6.6	18.5	-13.1	13.4
Texas	Edna	FM 1822	746643H	--	2.1	2.5	No	12	26.6	-13.0	13.4
Texas	Edna	Pumphrey Street	746641U	--	2.1	2.5	--	--	13.4	-12.7	13.4

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Edna	Road 410	927038K	--	2.1	2.5	No	6.6	13.4	-12.3	13.4
Texas	Edna	Road 414	746625K	--	2.1	2.5	No	10.1	13.4	-12.3	13.4
Texas	Edna	Road 4142 Airport	746628F	--	2.1	2.5	NVA	NVA	13.4	-12.2	13.4
Texas	Edna	State Highway 0111 / Wells Street	746639T	--	2.1	2.5	No	6.6	66.7	-13.2	13.4
Texas	El Campo	Alamo Street / Fahrenthold Street	743436D	--	4.4	5.5	--	--	26.4	-32.7	26.4
Texas	El Campo	County Route 0307	743443N	--	2.1	2.5	--	--	13.4	-12.4	13.4
Texas	El Campo	County Route 0309	743446J	--	2.1	2.5	--	--	13.4	-12.5	13.4
Texas	El Campo	County Route 0405	743378K	--	2.1	2.5	--	--	13.4	-12.3	13.4
Texas	El Campo	County Route 0421	743373B	--	2.1	2.5	Yes	9	13.4	-12.3	13.4
Texas	El Campo	FM 0653 Wharton Street	743432B	--	4.4	5.5	Yes	6.7	122.4	-34.0	26.4
Texas	El Campo	Gladys Street	743439Y	--	4.4	5.5	--	--	26.4	-32.2	26.4

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	El Campo	Higbee Street	743433H	--	4.4	5.5	--	--	26.4	-32.1	26.4
Texas	El Campo	Hoskins Broadway Street	743437K	--	4.4	5.5	--	--	26.4	-33.0	26.4
Texas	El Campo	Meadow Lane	743440T	--	4.4	5.5	Yes	5.2	81.3	-34.9	26.4
Texas	El Campo	Palacious Street	743438S	--	4.4	5.5	Yes	5.7	77.5	-34.7	26.4
Texas	El Campo	Sam Bishkin Road	927033B	--	2.1	2.5	--	--	13.4	-12.4	13.4
Texas	El Campo	State HIghway 71 / Mechanic Street	743435 W	--	4.4	5.5	Yes	7.2	254.4	-34.1	26.4
Texas	El Campo	Washington Street	743434P	--	4.4	5.5	--	--	26.4	-32.9	26.4
Texas	Ganado	Country Club Road	743580V	--	2.1	2.5	No	7.8	13.4	-12.3	13.4
Texas	Ganado	FM 2982	746624D	--	2.1	2.5	--	--	13.4	-12.3	13.4
Texas	Ganado	Fourth Street	746622P	--	2.1	2.5	--	--	13.4	-12.7	13.4
Texas	Ganado	Lavaca Ramp Road	746627Y	--	2.1	2.5	No	6.2	13.4	-12.3	13.4

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Ganado	Road 203	743581C	--	2.1	2.5	--	--	13.4	-12.2	13.4
Texas	Ganado	Road 2531	927036W	--	2.1	2.5	--	--	13.4	-12.2	13.4
Texas	Ganado	Sixth Street	746623W	--	2.1	2.5	--	--	13.4	-12.2	13.4
Texas	Ganado	State Highway 0172	746621H	--	2.1	2.5	No	6.2	57.5	-14.8	13.4
Texas	Guadalupe	Apple Street	746536T	--	4.1	5.1	No	9.1	24.5	-28.9	24.5
Texas	Guadalupe	Commerce Street	746527U	--	4.1	5.1	No	5.5	24.5	-29.0	24.5
Texas	Guadalupe	Menke Road	746530C	--	4.1	5.1	No	9.2	24.5	-29.0	24.5
Texas	Guadalupe	Wood Hi Road	746537A	--	4.1	5.1	No	8.5	24.5	-29.3	24.5
Texas	Haslet	Blue Mound Road	020545J	**0.7**	1.7	2.0	Yes	4.6	7.3	1.6	1.5
Texas	Hebbronville	Cedar Street	793695B	--	2.3	2.9	--	--	12.7	-19.9	12.7
Texas	Hebbronville	North Rigma Road	793699D	--	2.3	2.9	--	--	12.7	-20.3	12.7
Texas	Hebbronville	Oscar Avenue	793698W	--	2.3	2.9	--	--	12.7	-19.9	12.7
Texas	Hebbronville	Pine Street	793694U	--	2.3	2.9	--	--	12.7	-19.8	12.7

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Texas	Hebbronville	Sigrid Street	923779H	--	2.3	2.9	--	--	12.7	-19.8	12.7
Texas	Hebbronville	Smith Avenue/Texas 16	793696H	--	2.3	2.9	Yes	38.8	6.1	-21.1	12.7
Texas	Hebbronville	Vaello Avenue	793693M	--	2.3	2.9	--	--	12.7	-19.8	12.7
Texas	Hebbronville	West Galbraith Street	793697P	--	2.3	2.9	--	--	12.7	-19.8	12.7
Texas	Hebron	Hebron Parkway	021646Y	--	3.1	3.8	Yes	3.5	10.1	3.9	0.1
Texas	Highland Village	Briarhill Boulevard	021771L	--	3.1	3.8	--	--	0.1	3.4	0.1
Texas	Highland Village	Chinns Chapel Road	021684H	--	3.1	3.8	--	--	0.1	3.5	0.1
Texas	Highland Village	Highland Village	021676R	--	3.1	3.8	Yes	7.1	4.3	4.9	0.1
Texas	Highland Village	Justin Road	021672N	--	3.1	3.8	Yes	5.7	7.1	4.2	0.1
Texas	Highland Village	Village Parkway	331277K	--	3.1	3.8	No	7.4	11.3	4.6	0.1
Texas	Houston	Beechnut Street	758519L	**0.8**	2.0	2.5	Yes	3.9	118.0	-6.0	11.3

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Texas	Houston	Bellaire Boulevard	758518E	**0.8**	2.0	2.5	Yes	4	201.1	-6.1	11.3
Texas	Houston	Bissonnet Street	758517X	**0.8**	2.0	2.5	Yes	2.4	119.7	-6.0	11.3
Texas	Houston	Braeswood Boulevard	758521M	**0.8**	2.0	2.5	Yes	3.4	52.7	-5.5	11.3
Texas	Houston	C.E. King Parkway	762904W	**0.7**	2.0	2.5	Yes	7.3	151.1	-5.5	12.4
Texas	Houston	Champion Paper Drive	762889W	**0.7**	2.0	2.5	No	9.3	32.1	-5.5	12.4
Texas	Houston	Chimney Rock Road	755621G	**0.7**	2.0	2.5	Yes	4.4	35.4	-5.7	9.7
Texas	Houston	Durham Drive	758533G	**0.8**	2.0	2.5	Yes	2	100.3	-6.0	10.9
Texas	Houston	Fondren Road	755624C	**0.7**	1.7	2.0	Yes	2.4	55.4	-4.4	8.4
Texas	Houston	Gregg Street	758289M	**1.0**	3.5	4.4	--	--	15.2	-10.8	15.2
Texas	Houston	Harvard Street	758541Y	**0.9**	2.8	3.4	--	--	14.0	-7.8	14.0
Texas	Houston	Haviland Street	755623V	**0.7**	1.7	2.0	--	--	8.4	-4.2	8.4

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Texas	Houston	Heather Row Lane	762905D	**0.8**	1.8	2.2	--	--	10.5	-4.5	10.5
Texas	Houston	Heights Boulevard	758540S	**0.9**	2.8	3.4	Yes	1.6	209.4	-9.7	14.0
Texas	Houston	Henderson Street	758180 W	**0.8**	2.0	2.5	Yes	2.1	39.8	-6.0	10.5
Texas	Houston	Hillcroft Avenue	755622N	**0.7**	2.0	2.5	Yes	4.3	40.4	-5.8	9.7
Texas	Houston	Houston Avenue	758187U	**1.2**	4.9	6.3	Yes	3.5	126.5	-17.3	22.3
Texas	Houston	John Ralston Road	762907S	**0.8**	2.0	2.5	Yes	6.9	31.8	-5.5	11.5
Texas	Houston	Liberty Road	758293C	**0.8**	2.0	2.5	Yes	2.3	30.6	-5.8	10.5
Texas	Houston	Maury Street	743120T	**0.8**	2.0	2.5	--	--	9.5	-5.5	9.5
Texas	Houston	North Shepherd Drive	758534N	**0.9**	2.8	3.4	Yes	1.9	158.2	-9.2	14.0
Texas	Houston	Oates Road	745074B	**0.8**	2.3	2.9	--	--	14.0	-6.2	14.0
Texas	Houston	Oliver Street	758177N	**0.8**	2.0	2.5	--	--	10.5	-5.2	10.5
Texas	Houston	Park Road 138	762895A	**0.7**	1.8	2.1	--	--	10.4	-4.0	10.4
Texas	Houston	Parker Street	758535V	**0.8**	2.0	2.5	--	--	10.9	-5.2	10.9

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Houston	Patterson Street	758536C	**0.9**	2.8	3.4	--	--	14.0	-7.8	14.0
Texas	Houston	Pineland Road	762897N	**0.7**	1.8	2.1	--	--	10.9	-4.0	10.9
Texas	Houston	Post Oak Northbound	755618Y	**0.9**	2.8	3.4	Yes	1.4	69.6	-10.5	13.4
Texas	Houston	Post Oak Southbound	440652H	**0.9**	2.8	3.4	Yes	1.7	63.7	-10.3	13.4
Texas	Houston	Richmond Avenue	758514C	**0.8**	2.0	2.5	Yes	3.9	163.2	-5.9	11.3
Texas	Houston	Roy Street	758532A	**0.9**	2.8	3.4	Yes	2.2	30.4	-8.8	14.0
Texas	Houston	San Felipe Road	758512N	**0.8**	2.0	2.5	Yes	4.6	83.3	-5.7	11.3
Texas	Houston	Sawyer Street	758178V	**0.8**	2.0	2.5	Yes	1.7	71.1	-6.8	10.5
Texas	Houston	Sheldon Road	762892E	**0.7**	2.0	2.5	No	7.6	65.9	-5.6	12.4
Texas	Houston	Sherwin Street	758528K	**0.9**	2.8	3.4	--	--	14.0	-8.0	14.0
Texas	Houston	Silver Street	758183S	**0.8**	2.0	2.5	--	--	10.5	-5.2	10.5
Texas	Houston	T.C. Jester Street	758531T	**0.9**	2.8	3.4	Yes	2.2	102.7	-8.6	14.0
Texas	Houston	Trentham Place	758192R	**0.8**	2.0	2.5	--	--	10.5	-5.2	10.5

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Houston	US 59 Eastbound Frontage	758610E	**0.8**	2.0	2.5	Yes	1.7	33.5	-5.9	11.3
Texas	Houston	US 59 Westbound Frontage	758611L	**0.8**	2.0	2.5	Yes	1.4	34.1	-5.9	11.3
Texas	Houston	Van Hut Lane	762901B	**0.7**	2.0	2.5	Yes	5.1	46.9	-5.7	11.5
Texas	Houston	West Bellfort Avenue	758523B	**0.8**	2.0	2.5	Yes	3.5	55.3	-5.5	11.3
Texas	Houston	West Street	758284D	**1.0**	3.5	4.4	--	--	12.4	-10.6	12.4
Texas	Houston	Westheimer Road	758513V	**0.8**	2.0	2.5	Yes	3.9	163.4	-6.1	11.3
Texas	Houston	Willowbend Boulevard	758525P	**0.8**	2.0	2.5	Yes	3.3	26.1	-5.2	11.3
Texas	Hungerford	County Route 0220	743354 W	--	2.1	2.5	--	--	13.4	-12.3	13.4
Texas	Hungerford	FM 1161	743353P	--	2.1	2.5	--	--	13.4	-12.8	13.4
Texas	Hungerford	Miller Road	743351B	--	2.1	2.5	--	--	13.4	-12.4	13.4
Texas	Hungerford	Railroad Street	743352H	--	2.1	2.5	No	11.1	31.1	-13.6	13.4
Texas	Inez	Babb Lane	746647K	--	2.1	2.5	No	6.6	13.4	-12.2	13.4

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Inez	FM 0444	746573V	--	2.1	2.5	No	9.6	13.4	-12.8	13.4
Texas	Inez	Kolle Street	746575J	--	2.1	2.5	No	9.9	13.4	-12.4	13.4
Texas	Inez	Midway Road	746678J	--	2.1	2.5	No	6.7	13.4	-12.5	13.4
Texas	Justin	Downe Road	020811D	**0.7**	1.7	2.0	--	--	1.1	1.4	1.1
Texas	Justin	FM 0407	020557D	**0.7**	1.7	2.0	No	8.2	8.2	1.5	1.1
Texas	Justin	Harmoson Road	020553B	**0.7**	1.7	2.0	--	--	1.1	1.4	1.1
Texas	Justin	Main Street	020556W	**0.7**	1.7	2.0	--	--	1.1	1.4	1.1
Texas	Justin	Strader Road	020559S	**0.7**	1.7	2.0	No	8.3	1.3	1.4	1.3
Texas	Kendleton	County Route 0212	743350U	--	2.1	2.5	No	11	13.4	-12.3	13.4
Texas	Kendleton	Darst-Gin Road	743480R	--	2.1	2.5	--	--	13.6	-12.5	13.6
Texas	Kendleton	FM 2919	743483L	--	2.1	2.5	No	17.6	17.5	-13.0	13.4
Texas	Kendleton	Park Road / Hill Top Road	927027X	--	2.1	2.5	--	--	13.4	-12.3	13.4
Texas	Krum	FM 1173	020572F	**0.7**	1.7	2.0	Yes	6.8	14.0	1.6	1.3
Texas	Krum	Ganzer Road	021731N	--	4.9	6.3	--	--	0.2	6.0	0.2

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Krum	Hopkins Road	020574U	**0.7**	1.7	2.0	--	--	1.3	1.4	1.3
Texas	Krum	Jackson Road	020571Y	**0.7**	1.7	2.0	--	--	1.3	1.4	1.3
Texas	Laredo	Arkansas Avenue	793598S	--	4.9	6.3	Yes	0.7	-450.9	-73.7	24.4
Texas	Laredo	Bartlett Avenue	917530B	--	4.9	6.3	--	--	24.4	-51.0	24.4
Texas	Laredo	Botello Road	793609C	--	2.3	2.9	Yes	27.5	12.7	-20.4	12.7
Texas	Laredo	Buena Vista Avenue	793594P	--	4.9	6.3	--	--	24.4	-51.3	24.4
Texas	Laredo	Hendricks Avenue	793588L	--	4.9	6.3	--	--	24.4	-50.1	24.4
Texas	Laredo	Jordan Road	793965X	--	2.1	2.5	NVA	NVA	11.5	-16.8	11.5
Texas	Laredo	Logan Avenue	793586X	--	4.9	6.3	--	--	24.4	-49.8	24.4
Texas	Laredo	Malinche Avenue	793595W	--	4.9	6.3	--	--	24.4	-50.4	24.4
Texas	Laredo	Market Street East	793596D	--	4.9	6.3	Yes	0.7	-47.8	-53.3	24.4
Texas	Laredo	Milagro Street	793612K	--	2.3	2.9	Yes	26.8	12.7	-20.3	12.7
Texas	Laredo	North Stone Avenue	793591U	--	4.9	6.3	--	--	24.4	-52.7	24.4

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Laredo	Seymour Avenue	793593H	--	4.9	6.3	--	--	24.4	-52.2	24.4
Texas	Lewisville	Garden Ridge Boulevard	021774G	--	3.1	3.8	Yes	4	1.9	3.6	0.1
Texas	Lewisville	Mcgee Lane	021669F	--	3.1	3.8	Yes	3.2	1.3	3.6	0.1
Texas	Lewisville	North Kealy Avenue	021663P	--	3.1	3.8	--	--	0.1	3.5	0.1
Texas	Lewisville	North Summit Avenue	919241G	--	3.1	3.8	Yes	1.2	1.0	3.6	0.1
Texas	Liberty	Alabama Street	762772N	**0.8**	2.5	3.1	--	--	13.8	-6.7	13.8
Texas	Liberty	Austin Street	762768Y	**0.8**	2.5	3.1	--	--	16.1	-6.2	16.1
Texas	Liberty	Bowie Street	762770A	**0.8**	2.5	3.1	No	7.4	22.8	-7.2	13.8
Texas	Liberty	Crockett Street	762769F	**0.8**	2.5	3.1	--	--	13.8	-6.8	13.8
Texas	Liberty	Fannin Street	762764W	**0.8**	2.5	3.1	--	--	16.4	-6.1	16.4
Texas	Liberty	FM 1909	762760U	**0.7**	1.8	2.1	--	--	11.5	-3.7	11.5
Texas	Liberty	Independence Street	762762H	**0.7**	1.8	2.1	--	--	11.5	-3.9	11.5

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Liberty	Louisiana Street	762771G	**0.8**	2.5	3.1	--	--	16.4	-6.1	16.4
Texas	Liberty	Main Street	762765D	**0.8**	2.5	3.1	No	6.6	109.3	-7.0	16.1
Texas	Liberty	Milam Street	762767S	**0.8**	2.5	3.1	--	--	13.8	-6.8	13.8
Texas	Liberty	San Jacinto Street	762763P	**0.8**	2.5	3.1	--	--	13.8	-6.9	13.8
Texas	Liberty	Tennessee Street	762782U	**0.8**	2.5	3.1	--	--	16.4	-6.0	16.4
Texas	Liberty	Texas 146	763062E	**0.7**	1.8	2.1	No	4.4	76.1	-4.0	11.5
Texas	Liberty	Travis Street	762766K	**0.8**	2.5	3.1	--	--	13.8	-7.1	13.8
Texas	Louise	Colorado Street	743454B	--	2.1	2.5	NVAP	NVAP	13.4	-12.3	13.4
Texas	Louise	County Route 0312	743452 M	--	2.1	2.5	No	6.4	13.4	-12.4	13.4
Texas	Louise	County Route 0313	743449E	--	2.1	2.5	No	8.5	13.4	-12.3	13.4
Texas	Louise	County Route 0315	743450Y	--	2.1	2.5	No	6.4	13.4	-12.3	13.4
Texas	Louise	FM 0441	743447R	--	2.1	2.5	No	8.2	13.4	-12.3	13.4
Texas	Louise	FM 0647	743461L	--	2.1	2.5	No	16.1	13.4	-12.3	13.4
Texas	Louise	Orange Street	743459K	--	2.1	2.5	NVAP	NVAP	13.4	-12.4	13.4

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Texas	Louise	Wharton Street	743453U	--	2.1	2.5	NVAP	NVAP	13.4	-12.3	13.4
Texas	Mauriceville	FM 1130	329455U	**0.8**	2.1	2.5	No	8.7	22.1	-3.4	22.1
Texas	Mauriceville	FM 1136	329460R	**0.8**	2.1	2.5	Yes	9.4	45.6	-3.5	22.1
Texas	Mauriceville	Old Highway 62	329457H	**0.8**	2.1	2.5	--	--	22.1	-3.3	22.1
Texas	Mcfaddin	FM 445	427536N	--	2.3	2.9	NVAP	NVAP	10.0	-14.5	10.0
Texas	Mirando City	Behlen Avenue	793623X	--	2.5	3.1	No	27.8	13.5	-22.0	13.5
Texas	Mirando City	FM 0649	793625L	--	2.5	3.1	No	27.8	13.5	-22.5	13.5
Texas	Mirando City	Jennings Road	793617U	--	2.1	2.5	--	--	11.5	-16.8	11.5
Texas	Mirando City	Panther Avenue	793621J	--	2.5	3.1	No	28	13.5	-22.1	13.5
Texas	Missouri City	South Cravens Road	743688E	**0.7**	1.7	2.0	--	--	8.4	-4.0	8.4
Texas	Missouri City	South Gessner Road	743689L	**0.7**	2.0	2.5	Yes	3.9	46.5	-6.0	9.7
Texas	Murphy	FM 544	789644J	--	3.1	3.8	No	6.4	10.8	4.1	0.2
Texas	Murphy	Maxwell Creek	789646X	--	3.1	3.8	--	--	0.2	3.5	0.2
Texas	Murphy	Murphy Road	789645R	--	3.1	3.8	No	7.2	6.9	3.8	0.2

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Texas	Nederland	Avenue B	329528C	--	3.5	4.4	Yes	3.5	11.6	-11.0	11.6
Texas	Nederland	Avenue H	329529J	--	3.5	4.4	Yes	2.5	11.6	-11.0	11.6
Texas	Nederland	Boston Avenue	329523T	--	3.5	4.4	Yes	3	11.6	-11.0	11.6
Texas	Nederland	Helena Avenue	329522L	--	3.5	4.4	Yes	2.9	11.6	-11.4	11.6
Texas	Nederland	Nederland Avenue	329527V	--	3.5	4.4	Yes	3.2	11.6	-11.0	11.6
Texas	Nome	McDermand Road	762740H	**0.7**	1.8	2.1	--	--	11.5	-3.7	11.5
Texas	Nome	Old US 90	763047C	**0.7**	1.8	2.1	No	4.3	11.5	-3.7	11.5
Texas	Nome	Texas 326	762743D	**0.7**	2.0	2.5	No	4.2	27.5	-5.0	13.2
Texas	Nome	Third Street	762744K	**0.7**	1.8	2.1	--	--	11.5	-3.8	11.5
Texas	Nome	Thompson Road	762742 W	**0.7**	1.8	2.1	--	--	11.5	-3.7	11.5
Texas	Odem	Baylor Street	436030Y	--	2.4	2.9	No	6.5	-3.7	-15.9	10.1
Texas	Odem	County Route 1694	436020T	--	2.4	2.9	--	--	9.5	-14.8	9.5
Texas	Odem	County Route 64	436031F	--	2.4	2.9	--	--	11.2	-15.3	11.2
Texas	Odem	FM 1944	436023N	--	2.4	2.9	--	--	9.5	-15.0	9.5

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Texas	Odem	FM 631	436017K	--	2.4	2.9	No	13.3	-4.0	-15.7	10.1
Texas	Odem	Willis Street	436029E	--	2.4	2.9	--	--	10.1	-15.1	10.1
Texas	Placedo	FM 1686	746526M	--	4.1	5.1	No	5.1	24.5	-29.3	24.5
Texas	Placedo	Henderson Road	746523S	--	4.1	5.1	--	--	24.5	-29.1	24.5
Texas	Placedo	Houston Street	746522K	--	4.1	5.1	--	--	24.5	-29.7	24.5
Texas	Placedo	McCoy Road	746524Y	--	4.1	5.1	--	--	24.5	-28.9	24.5
Texas	Placedo	Ripple Road	746525F	--	4.1	5.1	No	4.6	24.5	-28.9	24.5
Texas	Plano	10th Street	789633W	--	4.1	5.1	Yes	4.1	1.2	5.2	0.2
Texas	Plano	Avenue F	788900U	--	4.1	5.1	--	--	0.2	5.0	0.2
Texas	Plano	Coit Road	021635L	--	3.1	3.8	Yes	3.4	13.5	4.4	0.1
Texas	Plano	Dallas North Parkway	919239F	--	3.1	3.8	Yes	3.8	6.6	4.4	0.1
Texas	Plano	East Plano Parkway	789632P	--	3.1	3.8	Yes	2.4	7.2	3.9	0.1
Texas	Plano	Jupiter Road	789638F	--	3.1	3.8	Yes	4.7	10.1	4.4	0.2
Texas	Plano	K Avenue	789635K	--	3.1	3.8	Yes	4	2.8	3.8	0.2

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Texas	Plano	Los Rios Boulevard	753583T	--	3.1	3.8	No	5.7	3.1	3.6	0.2
Texas	Plano	Municipal Avenue	789636S	--	3.1	3.8	Yes	4.5	8.4	5.6	0.2
Texas	Plano	North Avenue	789637Y	--	4.1	5.1	--	--	0.2	5.1	0.2
Texas	Plano	Ohio Drive	021638G	--	3.1	3.8	Yes	2.2	6.2	4.1	0.1
Texas	Plano	Park Vista Road	789643C	--	3.1	3.8	--	--	0.2	3.5	0.2
Texas	Plano	Plano Parkway	919268R	--	3.1	3.8	No	5.7	9.6	4.4	0.2
Texas	Plano	Shiloh Road	789640G	--	3.1	3.8	No	5.8	1.8	3.6	0.2
Texas	Plano	US 75 East Frontage	789631H	--	4.1	5.1	Yes	2.5	53.3	14.0	0.2
Texas	Plano	US 75 West Frontage	789629G	--	3.1	3.8	Yes	4.4	6.9	4.9	0.1
Texas	Ponder	Bailey Street	020564N	**0.7**	1.7	2.0	--	--	1.1	1.4	1.1
Texas	Ponder	Blair Road	020561T	**0.7**	1.7	2.0	--	--	1.3	1.4	1.3
Texas	Ponder	Eakin Cemetery Road	020560L	**0.7**	1.7	2.0	No	8.5	1.3	1.4	1.3
Texas	Ponder	FM 2449	020563G	**0.7**	1.7	2.0	No	6.6	5.6	1.5	1.1

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Texas	Ponder	James Street	020565V	**0.7**	1.7	2.0	--	--	1.1	1.4	1.1
Texas	Ponder	Seaborn Road	020562A	**0.7**	1.7	2.0	--	--	1.3	1.4	1.3
Texas	Ponder	TN Skiles Road	020566C	**0.7**	1.7	2.0	--	--	1.1	1.4	1.1
Texas	Port Arthur	25th Street	329544L	--	3.5	4.4	Yes	2.7	72.4	-11.9	11.6
Texas	Port Arthur	29th Street	329543E	--	3.5	4.4	--	--	11.6	-11.0	11.6
Texas	Port Arthur	32nd Street / Lombardy Street	329542X	--	3.5	4.4	Yes	3.9	65.3	-11.8	11.6
Texas	Port Arthur	36th Street	329541R	--	3.5	4.4	--	--	11.6	-11.2	11.6
Texas	Port Arthur	39th Street	329540J	--	3.5	4.4	Yes	2.4	67.5	-11.8	11.6
Texas	Port Arthur	60th Street	329535 M	--	3.5	4.4	--	--	11.6	-11.3	11.6
Texas	Port Arthur	7th Avenue	329546A	--	3.5	4.4	Yes	1.4	69.8	-11.8	11.6
Texas	Port Arthur	9th Avenue	329545T	--	3.5	4.4	Yes	2.4	97.7	-12.2	11.6
Texas	Port Arthur	Texas 73 Eastbound Frontage Road	329539P	--	3.5	4.4	--	--	11.6	-11.4	11.6
Texas	Port Arthur	Texas 73 Westbound	329537B	--	3.5	4.4	--	--	11.6	-11.4	11.6

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
		Frontage Road									
Texas	Port Neches	Merriman Street	329531K	--	3.5	4.4	Yes	1.9	132.1	-12.1	11.6
Texas	Port Neches	Twin City Highway	329532S	--	3.5	4.4	--	--	11.6	-11.1	11.6
Texas	Raywood	County Route 190	762755X	**0.7**	1.7	2.0	No	10.7	9.8	-3.8	9.8
Texas	Raywood	County Route 193	762756E	**0.7**	1.7	2.0	NVA	NVA	9.8	-3.8	9.8
Texas	Raywood	FM 2830	762758T	**0.7**	1.8	2.1	No	7.8	11.5	-3.8	11.5
Texas	Raywood	FM 770	762757L	**0.8**	1.8	2.2	No	9.4	12.0	-4.0	12.0
Texas	Realitos	Corkill Road	793710B	--	2.1	2.5	NVAP	NVAP	11.5	-16.8	11.5
Texas	Realitos	Road 271	793712P	--	2.1	2.5	NVA	NVA	11.5	-17.0	11.5
Texas	Realitos	Shaw Street	793711H	--	2.1	2.5	NVAP	NVAP	11.5	-17.0	11.5
Texas	Refugio	East Commons Street	427562D	--	2.4	2.9	--	--	10.1	-15.1	10.1
Texas	Refugio	FM 774 / Empresario Street	427570V	--	2.8	3.4	No	27.7	-20.3	-19.4	11.2
Texas	Refugio	King Street	427564S	--	2.4	2.9	--	--	10.1	-15.2	10.1

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Refugio	North Street	427566F	--	2.4	2.9	--	--	10.1	-15.2	10.1
Texas	Refugio	Plasuela Street	427567M	--	2.4	2.9	--	--	10.1	-15.2	10.1
Texas	Refugio	Purisma Street	427569B	--	2.8	3.4	--	--	11.2	-18.6	11.2
Texas	Refugio	Rafael Street	427561W	--	2.4	2.9	--	--	10.1	-15.2	10.1
Texas	Refugio	Santiago Street	427565Y	--	2.4	2.9	--	--	10.1	-15.2	10.1
Texas	Refugio	Suntide Road	427571C	--	2.4	2.9	--	--	10.1	-14.9	10.1
Texas	Refugio	Texas 239	427538C	--	2.3	2.9	--	--	10.0	-14.5	10.0
Texas	Refugio	Ward Street	427563K	--	2.4	2.9	--	--	10.1	-15.2	10.1
Texas	Refugio	Ymbacion Street	427568U	--	2.4	2.9	--	--	10.1	-15.2	10.1
Texas	Richardson	Alma Road	753757M	--	3.1	3.8	Yes	3.6	3.9	3.8	0.1
Texas	Richardson	Custer Road	789628A	--	3.1	3.8	Yes	1.7	3.6	3.7	0.1
Texas	Richmond	Collins Road	743726L	**0.8**	2.0	2.5	NVAP	NVAP	32.1	-6.4	9.7
Texas	Richmond	Douglas Street	743725E	**0.8**	2.0	2.5	--	--	9.7	-5.3	9.7
Texas	Richmond	Eighth Street	743723R	**0.8**	2.0	2.5	--	--	9.7	-5.2	9.7

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Richmond	Fourth Street	743720V	**0.8**	2.2	2.7	--	--	10.1	-5.7	10.1
Texas	Richmond	Second Street	743719B	**0.8**	2.2	2.7	NVAP	NVAP	10.8	-6.3	10.1
Texas	Richmond	Sixth Street	743722J	**0.8**	2.0	2.5	--	--	9.7	-5.3	9.7
Texas	Richmond	Tenth Street	743724X	**0.8**	2.0	2.5	NVAP	NVAP	19.1	-6.6	9.7
Texas	Robstown	County Route 44	427591N	--	2.8	3.4	--	--	12.6	-18.6	12.6
Texas	Robstown	County Route 48	427588F	--	2.8	3.4	--	--	12.6	-19.0	12.6
Texas	Robstown	County Route 77	793839D	--	3.5	4.4	No	6	17.9	-34.3	17.9
Texas	Robstown	County Route 81	793835B	--	2.3	2.9	No	6	12.7	-19.9	12.7
Texas	Robstown	Dunne Street	793745C	--	3.5	4.4	--	--	17.9	-34.7	17.9
Texas	Robstown	George Street	793746J	--	3.5	4.4	--	--	17.9	-33.9	17.9
Texas	Robstown	Jefferson Street	793747R	--	3.5	4.4	--	--	17.9	-34.7	17.9
Texas	Robstown	Lincoln Avenue	793749E	--	4.9	6.3	Yes	4.3	-66.1	-52.9	24.4
Texas	Robstown	Main Avenue	427597E	--	2.8	3.4	Yes	2.3	51.3	-19.4	19.8
Texas	Robstown	Messer Street	793744V	--	3.5	4.4	--	--	17.9	-34.7	17.9

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Robstown	Pat Shutter Street	793743N	--	3.5	4.4	Yes	5.5	-10.8	-35.1	17.9
Texas	Robstown	Road 79	793837P	--	2.3	2.9	No	6.3	12.7	-19.9	12.7
Texas	Robstown	Third Street	793750Y	--	4.9	6.3	--	--	24.4	-52.0	24.4
Texas	Robstown	Washington Street	793748X	--	3.5	4.4	--	--	17.9	-34.7	17.9
Texas	Robstown	Waste Water Plant	427594J	--	2.8	3.4	--	--	12.6	-18.1	12.6
Texas	Rose City	Canary Street	329474Y	**0.8**	2.1	2.5	No	4.8	22.1	-3.3	22.1
Texas	Rose City	Mockingbird Street	329473S	**0.8**	2.1	2.5	--	--	22.1	-3.3	22.1
Texas	Rose City	Old US 90	329476M	**0.8**	2.1	2.5	Yes	1.3	22.1	-3.3	22.1
Texas	Rose City	Rose City Drive	329475F	**0.8**	2.1	2.5	Yes	3.4	22.1	-3.3	22.1
Texas	Rosenberg	3rd Street	743731H	--	2.0	2.5	Yes	1.1	-0.9	-14.6	9.2
Texas	Rosenberg	Daily Road	743471S	--	2.1	2.5	--	--	13.6	-12.3	13.6
Texas	Rosenberg	Hamlink Road	743472Y	--	2.1	2.5	--	--	13.6	-12.4	13.6
Texas	Rosenberg	Miller Road	743469R	--	2.1	2.5	--	--	13.6	-12.4	13.6
Texas	Rosenberg	Rawson Road	743727T	**0.8**	2.0	2.5	NVAP	NVAP	54.0	-5.8	12.8

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Rosenberg	Scott Road	743467C	--	4.9	6.3	--	--	23.0	-38.0	23.0
Texas	Rosenberg	Stade Road	743470K	--	2.1	2.5	--	--	13.6	-12.3	13.6
Texas	San Diego	Benavides Street	793793S	--	4.1	5.1	--	--	20.5	-40.7	20.5
Texas	San Diego	Bexar Street	793669L	--	4.1	5.1	--	--	20.5	-39.8	20.5
Texas	San Diego	Center Street	793677D	--	4.1	5.1	--	--	20.5	-39.8	20.5
Texas	San Diego	Collins Avenue	793687J	--	3.1	3.8	--	--	16.0	-28.5	16.0
Texas	San Diego	County Route 145	793730 M	--	3.1	3.8	--	--	16.0	-28.4	16.0
Texas	San Diego	County Route 146	793739Y	--	2.2	2.7	no	10.6	11.9	-18.0	11.9
Texas	San Diego	Garcia Street	793675P	--	4.1	5.1	--	--	20.5	-39.8	20.5
Texas	San Diego	Mier Street	793678K	--	4.1	5.1	--	--	20.5	-39.8	20.5
Texas	San Diego	Peres Street	793674H	--	4.1	5.1	--	--	20.5	-39.8	20.5
Texas	San Diego	Road 160	793732B	--	2.8	3.4	No	29.6	14.6	-25.1	14.6
Texas	San Diego	Saint James Street	793676 W	--	4.1	5.1	--	--	20.5	-39.8	20.5
Texas	San Diego	Saint Peters Avenue	793686C	--	3.1	3.8	--	--	16.0	-28.5	16.0
Texas	San Diego	Seguin Street	793670F	--	4.1	5.1	--	--	20.5	-40.7	20.5

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	San Diego	Texas 44	793688R	--	3.1	3.8	No	30.2	-20.9	-30.7	16.0
Texas	San Diego	Tovar Street	793691Y	--	3.1	3.8	--	--	16.0	-28.5	16.0
Texas	San Diego	Travis Street	793671M	--	4.1	5.1	--	--	20.5	-40.7	20.5
Texas	San Diego	Trevino Street	793690S	--	3.1	3.8	--	--	16.0	-28.5	16.0
Texas	San Diego	Ventura Street	793794Y	--	3.1	3.8	--	--	16.0	-29.0	16.0
Texas	San Diego	Victoria Street	793668E	--	4.1	5.1	--	--	20.5	-39.8	20.5
Texas	Sinton	County Route 1394	436027R	--	2.4	2.9	No	7.1	9.5	-14.7	9.5
Texas	Sinton	County Route 57	436028X	--	2.4	2.9	--	--	9.5	-15.0	9.5
Texas	Sinton	First Street	436012B	--	2.4	2.9	No	7.7	-5.7	-15.6	10.1
Texas	Sinton	Fulton Street	848257F	--	2.4	2.9	--	--	10.1	-15.0	10.1
Texas	Sinton	Market Street	436010M	--	2.4	2.9	--	--	10.1	-15.4	10.1
Texas	Sinton	South Fifth Street	436015W	--	2.4	2.9	--	--	10.1	-15.2	10.1
Texas	Sinton	South Fourth Street	436014P	--	2.4	2.9	No	7.3	-3.6	-15.6	10.1

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Sinton	South Rachal Street	436013H	--	2.4	2.9	--	--	10.1	-15.2	10.1
Texas	Sinton	US 181 / Sinton Street	436011U	--	2.3	2.9	Yes	5.8	-13.0	-15.6	10.0
Texas	Stafford	FM 1092 Northbound F	924008H	**0.7**	2.0	2.5	Yes	2	14.3	-5.7	9.7
Texas	Stafford	FM 1092 Southbound F	924009P	**0.7**	2.0	2.5	Yes	2	12.2	-5.4	9.7
Texas	Stafford	Kirkwood Road	743695P	**0.7**	2.0	2.5	Yes	2.6	59.6	-6.3	9.7
Texas	Stafford	Promenade Boulevard	412514U	**0.7**	2.0	2.5	Yes	1.7	12.5	-5.6	9.7
Texas	Stafford	Stafford Northbound	924006U	**0.7**	2.0	2.5	Yes	1.5	8.3	-5.6	9.7
Texas	Stafford	Stafford Southbound	924007B	**0.7**	2.0	2.5	Yes	2.5	9.2	-5.7	9.7
Texas	Sugar Land	Brooks Street	743704L	**0.8**	2.2	2.7	--	--	10.1	-5.7	10.1
Texas	Sugar Land	Easton Avenue	743709V	**0.7**	1.7	2.0	--	--	8.4	-4.1	8.4
Texas	Sugar Land	Eldridge Road	743699S	**0.8**	2.0	2.5	Yes	6.2	28.7	-5.7	9.7
Texas	Sugar Land	Gillingham Lane	745055W	**0.8**	2.0	2.5	Yes	5.6	15.3	-6.3	9.7

Table H.2-2. Emergency Vehicle Alternate Route Analysis

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Sugar Land	Harlem Road	743713K	**0.7**	2.0	2.5	Yes	6.6	21.7	-5.7	9.7
Texas	Sugar Land	Industrial Boulevard	743698K	**0.7**	2.0	2.5	Yes	4.4	18.9	-5.6	9.7
Texas	Sugar Land	Main Street	743703E	**0.7**	2.0	2.5	Yes	4.2	13.6	-5.4	9.7
Texas	Sugar Land	Pitts Road	743716F	**0.7**	2.0	2.5	Yes	4.8	20.2	-6.3	9.7
Texas	Sugar Land	Schlumberger Drive	748393E	**0.8**	2.0	2.5	--	--	9.7	-5.4	9.7
Texas	Sugar Land	South Dairy Ashford Road	745044J	**0.8**	2.0	2.5	Yes	3.5	48.5	-5.8	9.7
Texas	Sugar Land	Texas 6 Northbound Frontage	922512N	**0.7**	2.0	2.5	Yes	3	16.7	-5.8	9.7
Texas	Sugar Land	Texas 6 Southbound Frontage	922513V	**0.7**	2.0	2.5	Yes	4.2	1.4	-5.5	8.5
Texas	Sugar Land	Ulrich Street	743706A	**0.8**	2.2	2.7	--	--	10.1	-5.7	10.1
Texas	Sugar Land	University Boulevard	441027B	**0.7**	1.7	2.0	--	--	8.4	-3.9	8.4
Texas	Texarkana	14th Street	330869S	--	2.2	2.7	Yes	1.2	68.8	-10.1	24.0
Texas	Texarkana	3rd Street	330873G	--	2.8	3.4	--	--	30.2	-13.0	30.2
Texas	Texarkana	4th Street	330872A	--	2.8	3.4	Yes	0.8	142.3	-13.6	30.2

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Texarkana	5th Street	330871T	--	2.8	3.4	--	--	30.2	-13.7	30.2
Texas	Texarkana	Baroid Road	330887P	--	2.2	2.7	NVA	NVA	24.0	-9.6	24.0
Texas	Texarkana	Forest Lake Drive	330861M	--	2.2	2.7	--	--	24.0	-9.5	24.0
Texas	Texarkana	Hoot Plant Road	330893T	--	2.2	2.7	Yes	9.1	24.0	-9.4	24.0
Texas	Texarkana	Lakeridge Drive	330862U	--	2.2	2.7	--	--	24.0	-9.7	24.0
Texas	Texarkana	Richmond Road	330867D	--	2.2	2.7	Yes	1.6	67.8	-10.4	24.0
Texas	Texarkana	South Bend Road	330890X	--	2.2	2.7	NVA	NVA	24.0	-9.5	24.0
Texas	Victoria	Amhurst Street	746657R	--	2.1	2.5	--	--	13.4	-12.8	13.4
Texas	Victoria	Avenue D	746559A	--	4.1	5.1	--	--	24.5	-29.2	24.5
Texas	Victoria	Ben Jordan Road	746650T	--	4.9	6.3	Yes	2.2	-21.1	-40.8	22.6
Texas	Victoria	Ben Jordan Street	746558T	--	4.1	5.1	Yes	3.6	280.8	-32.2	24.5
Texas	Victoria	Ben Wilson Street	746556E	--	4.1	5.1	Yes	2.8	128.6	-30.4	24.5
Texas	Victoria	Brownson Street	746561B	--	4.1	5.1	--	--	24.5	-31.1	24.5

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Victoria	Burroughsville Road	746654V	--	2.1	2.5	--	--	13.4	-13.1	13.4
Texas	Victoria	Delmar Drive	746550N	--	4.1	5.1	Yes	4.1	64.9	-30.4	24.5
Texas	Victoria	Delmar Drive	746653N	--	9.2	12.0	Yes	4.7	-425.3	-82.2	40.2
Texas	Victoria	East North Street	746510R	--	4.9	6.3	Yes	1.1	-1.4	-38.8	22.8
Texas	Victoria	FM 1686	746676V	--	2.1	2.5	--	--	13.4	-12.4	13.4
Texas	Victoria	FM 2615	746541P	--	4.1	5.1	--	--	24.5	-29.3	24.5
Texas	Victoria	George Street	746564W	--	4.9	6.3	--	--	29.4	-36.5	29.4
Texas	Victoria	Highway 185 / South Laurent Street	746562H	--	2.8	3.4	Yes	2	127.2	-19.8	17.2
Texas	Victoria	Hill Road	746673A	--	2.1	2.5	--	--	13.4	-12.4	13.4
Texas	Victoria	Holt Road	746672T	--	2.1	2.5	--	--	13.4	-12.7	13.4
Texas	Victoria	Hummel Street	746563P	--	4.1	5.1	--	--	24.5	-29.2	24.5
Texas	Victoria	Hunitington Road	746670E	--	2.1	2.5	--	--	13.4	-12.3	13.4

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State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Victoria	John Stockbauer Drive	912105H	--	4.1	5.1	No	6.6	4.2	-30.0	19.1
Texas	Victoria	Juan Linn Street	746557L	--	4.1	5.1	--	--	24.5	-29.2	24.5
Texas	Victoria	North Ben Wilson Street	746652G	--	4.1	5.1	Yes	3.3	10.5	-31.7	19.1
Texas	Victoria	Odem Road	746554R	--	4.1	5.1	--	--	24.5	-29.3	24.5
Texas	Victoria	Pleasant Green Drive	746551V	--	4.1	5.1	Yes	4.2	76.5	-30.6	24.5
Texas	Victoria	Vogt Road	746543D	--	4.1	5.1	--	--	24.5	-29.6	24.5
Texas	Vidor	Doty Road	329464T	**0.8**	2.1	2.5	--	--	22.1	-3.3	22.1
Texas	Vidor	Eastbound I-10 Service Road	927010U	**0.8**	2.1	2.5	--	--	22.1	-3.4	22.1
Texas	Vidor	Evangeline Drive	329467N	**0.8**	2.1	2.5	Yes	6	55.7	-3.5	22.1
Texas	Vidor	FM 105 Main Street	329471D	**0.8**	2.1	2.5	Yes	4.4	386.1	-3.9	22.1
Texas	Vidor	North Dewitt Street	329472K	**0.8**	2.1	2.5	No	4.8	46.8	-3.4	22.1

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Vidor	Westbound I-10 Service Road	927011B	**0.8**	2.1	2.5	Yes	4.7	44.9	-3.4	22.1
Texas	Wharton	County Road 448	927048R	--	2.1	2.5	--	--	13.4	-12.3	13.4
Texas	Wharton	County Route 0222	743358Y	--	2.1	2.5	--	--	13.4	-12.5	13.4
Texas	Wharton	County Route 0423	743371M	--	2.1	2.5	No	9.7	13.4	-12.3	13.4
Texas	Wharton	FM 0102	743359F	--	2.1	2.5	No	6.4	87.6	-14.8	13.4
Texas	Wharton	Road 229	743355D	--	2.1	2.5	--	--	13.4	-12.3	13.4
Texas	Wharton	Road 448 North	743367X	--	2.1	2.5	--	--	13.4	-12.3	13.4
Texas	Wharton	Road 448 South	743372U	--	2.1	2.5	--	--	13.4	-12.2	13.4
Texas	Wharton	Robert Vonderau Airport Road	743375P	--	2.1	2.5	--	--	13.4	-12.3	13.4
Texas	Wharton	Spanish Camp Road	743361G	--	3.1	3.8	--	--	19.1	-21.7	19.1
Texas	Wharton	West Milam Street	743363V	--	3.1	3.8	--	--	19.1	-21.4	19.1

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Woodsboro	Chapparal Street	427574X	--	2.4	2.9	No	10.2	10.1	-14.9	10.1
Texas	Woodsboro	FM 1360 / Locke Street	427576L	--	9.2	12.0	No	8.3	30.0	-75.2	30.0
Texas	Woodsboro	Toup Road	427573R	--	2.4	2.9	No	8.3	10.1	-14.8	10.1
Texas	Woodsboro	Wood Avenue /FM 136	427575E	--	2.4	2.9	No	10.4	10.1	-15.1	10.1
Texas	Wylie	Country Club Road	789648L	--	3.1	3.8	No	4.6	3.8	3.6	0.2
Texas	Wylie	Eubanks Lane	789654P	--	3.1	3.8	No	7.7	0.9	3.7	0.2
Texas	Wylie	FM 2514 / Ballard Avenue	789653H	--	2.1	2.5	No	6.4	2.4	3.1	0.1
Texas	Wylie	FM 3412 / Brown Street	789652B	--	2.1	2.5	No	4.6	1.3	2.2	0.1
Texas	Wylie	McCreary Road	790146W	--	3.1	3.8	No	7.4	3.7	4.0	0.2
Texas	Wylie	Oak Street	789650M	--	3.1	3.8	--	--	0.2	3.5	0.2
Texas	Wylie	Springwell Parkway	331279Y	--	3.1	3.8	No	6.5	4.1	4.0	0.2

Table H.2-2. Emergency Vehicle Alternate Route Analysis

				Gate Down Time (minutes)			Alternative Route		Acquisition-related Increase in Delay		
State	City	Street	Crossing ID	Passenger Trains (assumed 988-ft. length)	Bulk Freight Trains (assumed 7,600-ft length)	Intermodal, Automotive, and Manifest Freight Trains (assumed 10,000-ft length)	Grade Separated (Yes/No)	Distance (miles)	Total Delay per Day (minutes)	Average Delay per Delayed Vehicle (seconds)	Total Gate Down Time per Day (minutes)
Texas	Wylie	West Marble Street	789651U	--	3.1	3.8	--	--	0.2	3.5	0.2
Texas	Wylie	Westgate Way	330967H	--	3.1	3.8	--	--	0.2	3.4	0.2

Table H.2-3. Summary of Emergency Vehicle Routes with No Viable Alternative

State	City	NVA Crossings	NVAP Crossings
Arkansas	Hatfield	1	0
Arkansas	Mena	1	0
Arkansas	Ogden	0	2
Arkansas	Siloam Springs	1	0
Illinois	Davis Junction	1	0
Illinois	Kirkland	1	0
Illinois	Monroe Center	1	0
Iowa	Bettendorf	3	2
Iowa	Buffalo	4	0
Iowa	Camanche	1	7
Iowa	Clinton	1	1
Iowa	Davenport	0	1
Iowa	Fredonia	1	0
Iowa	Le Claire	3	2
Iowa	Muscatine	1	2
Iowa	Pleasant Valley	2	0
Iowa	Princeton	0	5
Iowa	Riverdale	2	0
Iowa	Sabula	1	0
Iowa	Seymour	1	0
Louisiana	Anacoco	2	0
Louisiana	Converse	4	0
Louisiana	Florien	2	0
Louisiana	Leesville	1	0
Louisiana	Mansfield	1	0
Louisiana	Mooringsport	1	0
Louisiana	Rodessa	1	0
Louisiana	Rosepine	1	0
Louisiana	Singer	2	0
Louisiana	Starks	1	0
Missouri	Amoret	2	0
Missouri	Chula	1	0
Missouri	Cowgill	1	0
Missouri	Dawn	2	0
Missouri	Drexel	1	0
Missouri	Goodman	3	0
Missouri	Harris	1	0
Missouri	Laredo	2	0

Table H.2-3. Summary of Emergency Vehicle Routes with No Viable Alternative

State	City	NVA Crossings	NVAP Crossings
Missouri	Ludlow	1	2
Missouri	Neosho	1	0
Oklahoma	Heavener	3	0
Oklahoma	Marble City	1	0
Oklahoma	Sallisaw	2	0
Oklahoma	Watts	1	0
Texas	Banquete	2	0
Texas	Bloomington	0	1
Texas	China	1	0
Texas	Crosby	0	2
Texas	Edna	1	0
Texas	Laredo	1	0
Texas	Louise	0	3
Texas	Mcfaddin	0	1
Texas	Raywood	1	0
Texas	Realitos	1	2
Texas	Richmond	0	3
Texas	Rosenberg	0	1
Texas	Texarkana	2	0

H.2.2 Grade Crossing Delay Results

Table H.2-4~~H.2-2~~ presents the grade crossing delay results by individual crossing, organized by state and city. The AADT, train speed, and number of roadway lanes represent the expected 2027 conditions common to both the No-Action Alternative and the Proposed Acquisition. The trains per day, train length, and delay-related performance measures represent the expected conditions and estimated performance in 2027 for the No-Action Alternative and Proposed Acquisition. The final two columns indicate the expected change in average delay per vehicle and level of service, representing the expected impact of the Proposed Acquisition compared to the No-Action Alternative.

~~*Table H.2-2.*~~*Table H.2-4.* ***Grade Crossing Delay by State and City***

						2027 No-Action							2027 Proposed Acquisition							Change	
State/ City	Street	Crossing ID	AADT	Train Speed (mph)	Number of Roadway Lanes	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Average Delay per Vehicle (seconds)	Level of Service
Arkansas																					
Ashdown	Front Street	330578C	4183	50	2	13.5	9651	109.5	2.5	2.9	A	12	25.9	8128	184.0	3.7	4.3	A	10	1.2	A to A
Ashdown	Main Street	330575G	4335	50	2	16.3	9651	136.7	2.8	3.4	A	12	28.7	8128	211.2	3.8	4.6	A	11	1.0	A to A
De Queen	East Stilwell Avenue	330524W	4804	40	2	13.8	9651	153.6	3.6	4.8	A	16	26.2	8128	254.1	5.2	6.9	A	14	1.6	A to A
Decatur	Roller Avenue	330354E	4396	30	2	16.2	8508	188.7	5.5	6.7	A	17	28.6	7385	296.4	7.7	9.3	A	15	2.2	A to A
Gentry	Collins Avenue	330363D	3866	40	2	16.2	8508	131.0	3.4	3.6	A	12	28.6	7385	207.1	4.8	5.1	A	10	1.4	A to A
Gentry	Main Street	330362W	5155	40	2	16.2	8508	174.7	3.5	5.0	A	16	28.6	7385	276.1	4.9	7.0	A	14	1.4	A to A
Horatio	Arkansas 41	330546W	3046	55	2	16.3	9651	89.2	2.4	2.0	A		28.7	8128	138.2	3.3	2.8	A	7	0.9	A to A
Mena	Arkansas 8 Reine Street	330457E	4569	40	2	13.8	9651	146.1	3.4	4.4	A	15	26.2	8128	241.7	5.0	6.3	A	13	1.5	A to A
Mena	Mena Street	330454J	8553	40	4	13.8	9651	273.5	3.4	8.1	A	14	26.2	8128	452.4	4.9	11.7	A	12	1.5	A to A
Siloam Springs	Jefferson Street	330375X	5038	40	2	16.2	8508	170.7	3.5	4.9	A	15	28.6	7385	269.8	4.9	6.9	A	14	1.4	A to A
Siloam Springs	Kenwood Street	330376E	2929	40	2	16.2	8508	99.2	3.4	2.7	A	9	28.6	7385	156.9	4.7	3.9	A	8	1.4	A to A
Siloam Springs	Lincoln Street	330405M	6561	40	2	16.2	8508	222.3	3.4	6.2	A	20	28.6	7385	351.4	4.8	8.8	A	18	1.4	A to A
Siloam Springs	Tahlequah Street	330372C	2901	40	2	16.2	8508	98.3	3.3	2.6	A	9	28.6	7385	155.4	4.6	3.7	A	8	1.4	A to A
Illinois																					

~~Table H.2-2.~~Table H.2-4. Grade Crossing Delay by State and City

						2027 No-Action							2027 Proposed Acquisition							Change	
State/ City	Street	Crossing ID	AADT	Train Speed (mph)	Number of Roadway Lanes	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Average Delay per Vehicle (seconds)	Level of Service
Bartlett	Gifford Road	372214T	4921	40	2	60.4	1418	207.0	1.5	2.0	A	5	68.4	1960	270.5	2.2	3.1	A	6	0.8	A to A
Bartlett	Naperville Road	372210R	15539	40	2	60.4	1418	653.7	2.3	10.1	A	16	68.4	1960	854.0	3.5	15.3	A	18	1.2	A to A
Bartlett	Oak Avenue	372206B	10677	40	2	60.4	1418	449.1	1.5	4.5	A	11	68.4	1960	586.8	2.3	6.7	A	12	0.8	A to A
Bartlett	Prospect Avenue	371997M	3896	40	2	60.4	1418	163.9	1.4	1.5	A	4	68.4	1960	214.1	2.1	2.3	A	5	0.7	A to A
Bensenville	Church Road	372174X	7696	25 40	3	60.4	1418	401.8 323.7	2.241. 4	4.7 3.1	A	695	68.4	1960	545.2 423.0	3.6 2.2	7.7 4.6	A	8 6	1.4 0.7	A to A
Bensenville	York Road	372170V	18696	254 0	4	60.4	1418	976786. 4	2.31.5	11.87. 6	A	129	68.4	1960	1324.3 1027.5	3.72.2	19.111 .5	A	1411	1.40.7	A to A
Byron	Colfax Street	372355C	6013	40	2	6.6	8783	84.8	1.5	2.5	A	19	14.6	6426	147.5	2.1	3.5	A	15	0.6	A to A
Byron	Kishwaukee Road	372350T	3309	40	2	6.6	8783	46.7	1.4	1.3	A	10	14.6	6426	81.2	1.9	1.8	A	8	0.5	A to A
Davis Junction	Junction Road	372339T	3515	40	2	6.6	8783	49.6	1.5	1.4	A	11	14.6	6426	86.2	2.0	1.9	A	9	0.5	A to A
Elgin	Chicago Street	372240H	16755	40	2	60.4	1418	704.8	1.7	7.8	A	17	68.4	1960	920.8	2.5	11.8	A	19	0.9	A to A
Elgin	Highland Avenue	372241P	6957	40	2	60.4	1418	292.6	1.4	2.7	A	7	68.4	1960	382.3	2.1	4.1	A	8	0.7	A to A
Elgin	Illinois Route 25	372217N	19450	40	2	60.4	1418	818.1	1.8	9.6	A	20	68.4	1960	1069.0	2.7	14.5	A	23	0.9	A to A
Elgin	Kimball Street	372242W	23433	40	4	60.4	1418	985.7	1.5	10.0	A	12	68.4	1960	1287.9	2.3	15.0	A	14	0.8	A to A
Elgin	Mclean Boulevard	372246Y	21559	40	5	60.4	1418	906.9	1.6	9.5	A	9	68.4	1960	1184.9	2.4	14.3	A	10	0.8	A to A
Elgin	National Street	372239N	7997	35	2	60.4	1418	355.7	1.6	3.6	A	8	68.4	1960	469.7	2.5	5.5	A	10	0.9	A to A
Elgin	Raymond Street	372235L	3427	35	2	60.4	1418	152.4	1.5	1.5	A	4	68.4	1960	201.3	2.4	2.3	A	4	0.8	A to A

~~Table H.2-2.~~Table H.2-4. Grade Crossing Delay by State and City

						2027 No-Action							2027 Proposed Acquisition							Change	
State/ City	Street	Crossing ID	AADT	Train Speed (mph)	Number of Roadway Lanes	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Average Delay per Vehicle (seconds)	Level of Service
Forreston	Illinois Route 72	372388P	4101	40	3	6.6	8783	57.8	1.4	1.6	A	8	14.6	6426	100.6	1.9	2.1	A	7	0.5	A to A
Franklin Park	25th Avenue	372138C	14441	254~~0~~	4	88.5	3611	1989.91~~443.4~~	10.45~~.5~~	41.721~~.9~~	B~~A~~	1612~~2~~	95.0	3256	1980.7~~1452.2~~	9.65~~.2~~	38.520~~.7~~	A	1511~~1~~	-0.8~~-0.3~~	B to A~~A to A~~
Franklin Park	Edgington Street	372137V	3398	254~~0~~	2	88.5	3611	468.233~~9.6~~	10.35~~.4~~	9.75~~.1~~	B~~A~~	8~~6~~	95.0	3256	466.13~~41.7~~	9.55~~.1~~	94~~.8~~	A	7~~5~~	-0.8~~-0.3~~	B to A~~A to A~~
Genoa	Genoa Road	372289S	3892	40	2	3.2	8783	26.4	0.7	0.7	A	12	11.2	6426	73.1	1.5	1.6	A	9	0.8	A to A
Genoa	Ill Route 23	372279L	2786	40	2	3.2	8783	18.9	0.7	0.5	A	9	11.2	6426	52.3	1.4	1.1	A	7	0.8	A to A
Itasca	Prospect Avenue	372179G	9075	40	2	60.4	1418	381.7	1.5	3.7	A	9	68.4	1960	498.7	2.2	5.6	A	10	0.7	A to A
Itasca	Rohlwing Road	372184D	22379	40	2	60.4	1418	941.4	1.9	11.8	A	22	68.4	1960	1229.9	2.9	17.8	A	26	1.0	A to A
Kingston	Glidden Road	372299X	4127	40	2	3.2	8783	27.9	0.7	0.8	A	13	11.2	6426	77.5	1.5	1.7	A	10	0.8	A to A
Lanark	Broad Street	372409F	4452	40	2	6.6	8783	62.8	1.4	1.7	A	14	14.6	6426	109.2	1.9	2.4	A	11	0.5	A to A
Lanark	Illinois 64	372414C	4759	40	2	6.6	8783	67.1	1.4	1.9	A	15	14.6	6426	116.7	1.9	2.5	A	12	0.5	A to A
Medinah	Medinah Road	372191N	7064	40	4	60.4	1418	297.2	1.3	2.6	A	4	68.4	1960	388.3	2.0	4.0	A	4	0.7	A to A
Roselle	Roselle Road	372196X	12521	40	4	60.4	1418	526.7	1.4	4.9	A	6	68.4	1960	688.1	2.1	7.3	A	7	0.7	A to A
Schaumburg	Rodenburg Road	372202Y	13240	40	2	60.4	1418	556.9	2.1	7.7	A	13	68.4	1960	727.7	3.1	11.6	A	15	1.1	A to A
Stillman Valley	Stillman Road	372346D	2653	40	2	6.6	8783	37.4	1.4	1.0	A	8	14.6	6426	65.1	1.9	1.4	A	6	0.5	A to A
Wood Dale	Irving Park Road	372177T	29174	40	2	60.4	1418	1227.2	2.2	18.1	A	29	68.4	1960	1603.4	3.4	27.3	A	34	1.1	A to A

~~*Table H.2-2.*~~*Table H.2-4.* *Grade Crossing Delay by State and City*

						2027 No-Action							2027 Proposed Acquisition							Change	
State/ City	Street	Crossing ID	AADT	Train Speed (mph)	Number of Roadway Lanes	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Average Delay per Vehicle (seconds)	Level of Service
Wood Dale	Wooddale Road	372178A	8612	40	6	60.4	1418	362.2	1.3	3.2	A	3	68.4	1960	473.3	2.0	4.8	A	3	0.7	A to A
Iowa																					
Bettendorf	13th Street	865646F	2771	40	2	8.3	10241	55.8	2.3	1.8	A	10	22.7	8544	132.0	4.7	3.6	A	8	2.4	A to A
Clinton	9th Avenue North	376027Y	3140	20	2	10.7	10241	150.2	10.2	8.9	B	20	25.1	8544	298.9	17.2	15.0	B	17	7.0	B to B
Columbus Junction	2nd Street	607245W	2988	40	2	4.8	9449	32.7	1.2	1.0	A	10	19.2	7024	103.4	2.9	2.4	A	8	1.7	A to A
Davenport	Perry Street	865649B	4389	25	2	8.3	10241	132.3	5.5	6.7	A	23	22.7	8544	309.7	10.9	13.3	B	20	5.4	A to B
~~Davenport~~	~~Ripley Street~~	~~865653R~~	~~11717~~	~~25~~	~~2~~	~~8.3~~	~~10241~~	~~353.2~~	~~7.3~~	~~23.7~~	~~A~~	~~62~~	~~22.7~~	~~8544~~	~~826.7~~	~~14.6~~	~~47.4~~	~~B~~	~~53~~	~~7.3~~	~~A to B~~
Muscatine	Industrial Connector/Dick	393258B	4177	40	2	4.8	9449	45.7	1.2	1.3	A	14	19.2	7024	144.6	2.9	3.3	A	11	1.7	A to A
Muscatine	Oregon Street	607211C	7440	40	2	4.8	9449	81.5	1.2	2.5	A	24	19.2	7024	257.6	3.0	6.3	A	19	1.8	A to A
Muscatine	Sampson Road	607215E	2558	40	2	4.8	9449	28.0	1.2	0.8	A	8	19.2	7024	88.6	2.9	2.1	A	7	1.8	A to A
Ottumwa	North Caldwell Street	375784R	3035	20	2	4.8	9449	60.4	3.9	3.3	A	18	19.2	7024	185.8	9.3	7.8	A	14	5.4	A to A
Ottumwa	North Quincy Avenue	375779U	4467	20	2	4.8	9449	88.9	4.0	4.9	A	27	19.2	7024	273.6	9.4	11.7	A	21	5.4	A to A
Ottumwa	West Second Street	375781V	6570	20	2	4.8	9449	130.7	3.9	7.2	A	39	19.2	7024	402.4	9.4	17.1	A	30	5.4	A to A
Washington	North 12th Avenue	607323B	6596	40	2	4.8	9449	72.2	1.2	2.2	A	22	19.2	7024	228.4	3.0	5.5	A	17	1.8	A to A
Washington	North Fourth Avenue	607322U	2519	40	2	4.8	9449	27.6	1.1	0.8	A	8	19.2	7024	87.2	2.8	2.0	A	7	1.7	A to A
Kansas																					

~~Table H.2-2.~~Table H.2-4. Grade Crossing Delay by State and City

						2027 No-Action							2027 Proposed Acquisition							Change	
State/ City	**Street**	**Crossing ID**	**AADT**	**Train Speed (mph)**	**Number of Roadway Lanes**	**Trains Per Day**	**Train Length (feet)**	**Number of Stopped Vehicles Delayed Per Day**	**Average Delay per Vehicle in 24-hour Period (seconds)**	**Total Delay in 24-hour Period (hours)**	**Level of Service**	**Maximum Queue (vehicles)**	**Trains Per Day**	**Train Length (feet)**	**Number of Stopped Vehicles Delayed Per Day**	**Average Delay per Vehicle in 24-hour Period (seconds)**	**Total Delay in 24-hour Period (hours)**	**Level of Service**	**Maximum Queue (vehicles)**	**Average Delay per Vehicle (seconds)**	**Level of Service**
Pittsburg	East Centennial Drive	330258C	5984	55	2	16.2	8508	158.4	2.3	3.8	A	14	28.6	7385	252.5	3.3	5.4	A	13	1.0	A to A
Pittsburg	East Quincy Street	330256N	3208	55	2	16.2	8508	84.9	2.0	1.8	A	8	28.6	7385	135.4	2.8	2.5	A	7	0.9	A to A
Pittsburg	South Rouse Street	330257V	8022	55	4	16.2	8508	212.4	2.0	4.4	A	9	28.6	7385	338.5	2.9	6.4	A	9	0.9	A to A
Louisiana																					
Anacoco	Trigger Trapp Road	329259M	4218	40	2	10.7	9121	100.1	2.5	3.0	A	13	21.5	8162	184.2	4.2	5.0	A	12	1.7	A to A
De Quincy	East 4th Street	329356W	14267	40	2	11.0	9121	347.1	3.0	11.7	A	46	21.8	8162	630.7	4.9	19.5	A	42	2.0	A to A
De Quincy	Le Blanc Street	329344C	3204	40	2	11.0	9121	78.0	2.5	2.2	A	10	21.8	8162	141.6	4.2	3.7	A	9	1.7	A to A
De Quincy	West 4th Street	329346R	10896	40	2	10.2	8441	230.7	2.3	6.9	A	33	21.1	7874	453.8	4.2	12.8	A	31	2.0	A to A
De Ridder	Crosby Road	329322C	2569	40	2	11.0	9121	62.5	2.5	1.8	A	8	21.8	8162	113.6	4.1	2.9	A	7	1.6	A to A
De Ridder	East Fourth Street/ West Third Street	329320N	4171	45	2	11.0	9121	92.3	2.2	2.5	A	12	21.8	8162	168.1	3.7	4.3	A	11	1.5	A to A
De Ridder	First Street	329319U	27095	45	2	11.0	9121	599.8	3.2	24.3	A	79	21.8	8162	1092.1	5.4	40.6	A	72	2.2	A to A
De Ridder	Mahlan Street	329317F	27095	45	2	11.0	9121	599.8	3.2	24.3	A	79	21.8	8162	1092.1	5.4	40.6	A	72	2.2	A to A
Frierson	Gravel Point Road	329164E	3015	55	2	25.1	10144	141.4	4.2	3.5	A	8	36.0	9412	191.9	5.3	4.5	A	8	1.2	A to A
Frierson	Louisiana 175	329162R	7850	55	2	25.1	10144	368.1	4.6	10.1	A	21	36.0	9412	499.7	5.9	12.9	A	20	1.3	A to A
Hornbeck	Port Arthur Avenue	329253W	2581	40	2	10.7	9121	61.3	2.4	1.7	A	8	21.5	8162	112.7	4.1	2.9	A	8	1.6	A to A
Leesville	East Lula Street	329279Y	4452	40	2	11.0	9121	108.3	2.5	3.1	A	14	21.8	8162	196.8	4.1	5.1	A	13	1.7	A to A
Leesville	Louisiana Street	329284V	3515	40	2	11.0	9121	85.5	2.5	2.5	A	11	21.8	8162	155.4	4.2	4.1	A	10	1.7	A to A
Leesville	Warner Street	329641V	3042	40	2	11.0	9121	74.0	2.5	2.1	A	10	21.8	8162	134.5	4.2	3.5	A	9	1.7	A to A

~~Table H.2-2.~~Table H.2-4. Grade Crossing Delay by State and City

						2027 No-Action							2027 Proposed Acquisition							Change	
State/ City	Street	Crossing ID	AADT	Train Speed (mph)	Number of Roadway Lanes	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Average Delay per Vehicle (seconds)	Level of Service
Mansfield	Gibbs Street	329183J	9681	40	2	10.7	9121	229.8	2.7	7.1	A	31	21.5	8162	422.7	4.5	12.0	A	28	1.8	A to A
Mansfield	Jenkins Street	329187L	7616	40	4	10.7	9121	180.8	2.4	5.1	A	12	21.5	8162	332.5	4.1	8.6	A	11	1.6	A to A
Mansfield	Polk Street	329182C	13826	40	4	10.7	9121	328.1	2.5	9.7	A	22	21.5	8162	603.6	4.3	16.4	A	20	1.7	A to A
Many	San Antonio Avenue / Texas	329234S	8143	59	2	10.7	9121	142.7	1.4	3.2	A	19	21.5	8162	264.6	2.4	5.5	A	18	1.0	A to A
Rosepine	Louisiana 10	329298D	8436	50	2	11.0	9121	171.9	2.0	4.8	A	23	21.8	8162	313.7	3.4	8.0	A	21	1.4	A to A
Rosepine	Main Street	329308G	2929	59	2	11.0	9121	52.6	1.4	1.1	A	7	21.8	8162	96.4	2.3	1.9	A	6	0.9	A to A
Shreveport	East 85th Street	329128J	2929	50	2	25.1	10144	148.0	4.8	3.9	A	9	36.0	9412	200.7	6.2	5.0	A	8	1.3	A to A
Shreveport	Flournoy Lucas Road	329154Y	20451	50	2	25.1	10144	1033.6	8.4	47.5	A	59	36.0	9412	1401.2	10.7	60.7	B	56	2.3	A to B
Shreveport	Norris Ferry Road	329157U	4988	50	2	25.1	10144	252.1	4.8	6.6	A	14	36.0	9412	341.7	6.1	8.4	A	14	1.3	A to A
Singer	Louisiana 27	329337S	4159	59	2	11.0	9121	74.7	1.4	1.6	A	10	21.8	8162	136.8	2.4	2.7	A	9	1.0	A to A
Vivian	Camp Vivian Road	329006E	4687	55	2	13.5	9651	113.9	2.1	2.8	A	12	25.9	8128	192.1	3.1	4.1	A	11	1.0	A to A
Vivian	East Arkansas Avenue	328998G	5572	55	2	13.5	9651	135.4	2.3	3.5	A	14	25.9	8128	228.4	3.4	5.2	A	13	1.1	A to A
Zwolle	Obrie Street	329226A	9256	50	2	10.7	9121	184.0	2.2	5.7	A	25	21.5	8162	339.9	3.7	9.6	A	23	1.5	A to A
Zwolle	Port Arthur Avenue	329227G	2536	50	2	10.7	9121	50.4	1.7	1.2	A	7	21.5	8162	93.1	2.9	2.1	A	6	1.2	A to A
Missouri																					
Birmingham	North Arlington Avenue	375407C	2574	25	2	3.8	12445	42.8	3.4	2.4	A	16	18.2	7045	124.0	5.9	4.3	A	10	2.6	A to A
Carl Junction	East Pennell	330035L	5710	50	2	16.2	8508	162.5	2.5	4.0	A	14	28.6	7385	258.2	3.6	5.6	A	13	1.1	A to A

~~*Table H.2-2.*~~*Table H.2-4.* ***Grade Crossing Delay by State and City***

						2027 No-Action							2027 Proposed Acquisition							Change	
State/ City	Street	Crossing ID	AADT	Train Speed (mph)	Number of Roadway Lanes	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Average Delay per Vehicle (seconds)	Level of Service
Cleveland	Missouri 2	329839D	3125	55	2	17.6	8899	93.0	2.3	2.0	A	8	30.4	7975	148.3	3.4	3.0	A	7	1.1	A to A
Excelsior Springs	Dunbar Avenue	375439H	6048	60	2	3.8	12445	47.6	0.9	1.4	A	18	18.2	7045	148.2	1.7	2.9	A	12	0.9	A to A
Excelsior Springs	Italian Way	375440C	3157	60	2	3.8	12445	24.8	0.8	0.7	A	9	18.2	7045	77.3	1.6	1.4	A	6	0.8	A to A
Grandview	Main Street	329807X	6087	55	3	17.6	8899	181.1	2.5	4.2	A	10	30.4	7975	288.9	3.6	6.2	A	9	1.2	A to A
Joplin	15th Street	330055X	11157	40	4	16.2	8508	378.0	3.7	11.4	A	17	28.6	7385	597.4	5.2	16.1	A	15	1.5	A to A
Joplin	32nd Street	330061B	17557	40	4	16.2	8508	594.8	4.1	20.2	A	26	28.6	7385	940.2	5.9	28.6	A	24	1.7	A to A
Joplin	4th Street	330045S	8701	40	4	16.2	8508	294.8	3.5	8.5	A	13	28.6	7385	465.9	5.0	12.0	A	12	1.5	A to A
Joplin	9th Street	330053J	4280	40	2	16.2	8508	145.0	3.5	4.2	A	13	28.6	7385	229.2	5.0	5.9	A	12	1.5	A to A
Kansas City	17th Street	329764G	3189	40	2	17.6	8899	121.7	4.0	3.5	A	10	30.4	7975	192.9	5.7	5.1	A	9	1.8	A to A
Neosho	College Street	330102D	5077	25	2	16.2	8508	254.7	7.6	10.7	A	23	28.6	7385	398.7	10.6	14.9	B	20	2.9	A to B
Neosho	Landis Road/ Burr Crossinna	330120B	2528	25	2	16.2	8508	126.8	7.3	5.1	A	11	28.6	7385	198.5	10.1	7.1	B	10	2.8	A to B
Neosho	McKinney Street	330113R	4441	25	2	16.2	8508	222.8	7.2	8.9	A	20	28.6	7385	348.7	10.0	12.3	A	18	2.8	A to A
Neosho	Washington Avenue	330101W	2621	25	2	16.2	8508	131.5	7.0	5.1	A	12	28.6	7385	205.8	9.7	7.1	A	10	2.7	A to A
Noel	Main Street	330178J	4023	30	2	16.2	8508	172.7	5.4	6.1	A	15	28.6	7385	271.3	7.6	8.5	A	14	2.2	A to A
Oklahoma																					
Heavener	East Avenue F	330785W	6093	20	2	14.6	8508	335.2	10.9	18.5	B	33	27.0	7385	547.7	15.8	26.7	B	29	4.8	B to B
Heavener	West Avenue C	330784P	6444	20	2	14.6	8508	354.6	11.1	19.9	B	35	27.0	7385	579.3	16.0	28.6	B	31	4.9	B to B

~~Table H.2-2.~~ Table H.2-4. *Grade Crossing Delay by State and City*

						2027 No-Action							2027 Proposed Acquisition							Change	
State/ City	Street	Crossing ID	AADT	Train Speed (mph)	Number of Roadway Lanes	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Average Delay per Vehicle (seconds)	Level of Service
Poteau	Airport Road	330736A	3515	55	2	14.6	8508	83.9	1.9	1.8	A	8	27.0	7385	140.1	2.8	2.8	A	7	1.0	A to A
Stilwell	Oklahoma 51	330625H	2987	40	3	14.2	8508	88.5	2.8	2.3	A	6	26.6	7385	148.6	4.2	3.5	A	5	1.4	A to A
Westville	Chincapin Street	330612G	3561	40	2	14.2	8508	105.6	2.8	2.8	A	11	26.6	7385	177.2	4.3	4.2	A	10	1.4	A to A
Texas																					
Alice	Cameron Street	793818K	5418	25	2	14.8	12509	349.5	13.2	19.9	B	34	22.8	9617	426.6	12.8	19.2	B	27	-0.5	B to B
Alice	Flournoy Road	793651B	8476	40	4	14.8	12509	361.3	5.7	13.4	A	18	22.8	9617	447.4	5.6	13.3	A	14	0.0	A to A
Alice	Kempe Avenue	793810F	7124	25	2	14.8	12509	459.6	14.6	28.8	B	45	22.8	9617	561.0	14.1	27.8	B	35	-0.5	B to B
Alice	Sain Drive	793959U	8108	25	4	14.8	12509	523.1	12.9	29.2	B	25	22.8	9617	638.5	12.5	28.2	B	20	-0.4	B to B
Alice	Stadium Street	793649A	3149	40	4	14.8	12509	134.3	5.5	4.8	A	7	22.8	9617	166.2	5.5	4.8	A	5	0.0	A to A
Alice	Texas 44/Park Street	793819S	24276	25	4	14.8	12509	1566.2	14.9	100.2	B	76	22.8	9617	1911.7	14.3	96.7	B	60	-0.5	B to B
Alice	Texas Blvd	793821T	7405	25	4	14.8	12509	477.7	12.9	26.5	B	23	22.8	9617	583.1	12.4	25.6	B	18	-0.4	B to B
Alice	Wright Street	793814H	25003	25	2	14.8	12509	1613.1	19.4	134.7	B	157	22.8	9617	1968.9	18.7	130.0	B	124	-0.7	B to B
Ames	FM 160	762761B	2525	75	2	16.3	8697	54.8	1.3	0.9	A	5	23.9	7907	75.3	1.7	1.2	A	5	0.4	A to A
Beasley	FM 1875	743475U	3186	59	2	9.2	9795	50.3	1.3	1.1	A	8	17.5	7681	80.4	1.7	1.5	A	7	0.4	A to A
Beaumont	Langham Road	446594K	7645	60	2	32.7	8909	396.9	4.0	8.5	A	17	40.3	8011	452.5	4.2	9.0	A	16	0.2	A to A
Beaumont	South Major Drive/Texas 364	762721D	15150	75	4	17.4	8723	351.7	1.5	6.3	A	15	25.0	7918	472.7	1.9	8.0	A	14	0.4	A to A
Bloomington	Phillips Road	435913V	3152	10	2	26.4	9795	679.0	83.6	73.2	F	37	34.8	7681	709.9	69.5	60.9	E	29	-14.1	F to E

~~Table H.2-2.~~Table H.2-4. Grade Crossing Delay by State and City

						2027 No-Action							2027 Proposed Acquisition							Change	
State/ City	Street	Crossing ID	AADT	Train Speed (mph)	Number of Roadway Lanes	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Average Delay per Vehicle (seconds)	Level of Service
Bloomington	Texas 185	435914C	7269	50	3	26.4	9795	377.3	4.7	9.6	A	14	34.8	7681	411.7	4.3	8.7	A	11	-0.4	A to A
Carrollton	Josey Lane	021765H	35576	35	6	1.2	5645	71.5	0.2	2.2	A	29	1.2	5994	74.8	0.2	2.5	A	30	0.0	A to A
Carrollton	Marsh Lane	021767W	16204	35	4	1.2	5645	32.6	0.2	0.8	A	20	1.2	5994	34.1	0.2	0.8	A	21	0.0	A to A
China	Broadway	762739N	2963	75	2	17.4	8723	68.8	1.4	1.2	A	6	25.0	7918	92.5	1.8	1.5	A	5	0.4	A to A
Copper Canyon	Copper Canyon Road	021691T	4866	35	2	1.2	5645	9.8	0.2	0.2	A	12	1.2	5994	10.2	0.2	0.3	A	12	0.0	A to A
Corpus Christi	Leopard Street	427586S	14888	40	4	17.6	9795	616.7	5.1	21.0	A	25	26.0	7681	746.5	5.1	20.9	A	21	0.0	A to A
Crosby	Crosby Eastgate Road	762865H	3074	70	2	27.2	8867	118.5	2.6	2.2	A	6	34.8	7987	140.9	2.9	2.5	A	6	0.3	A to A
Crosby	Miller Wilson Road	762872T	6475	60	2	27.2	8867	279.0	3.5	6.2	A	15	34.8	7987	330.5	3.8	6.8	A	14	0.3	A to A
Crosby	Ramsey Road	762869K	3064	60	2	27.2	8867	132.0	3.2	2.8	A	7	34.8	7987	156.4	3.6	3.0	A	6	0.3	A to A
Dallas	Dallas North Pkwy	021749Y	11640	35	3	1.2	5645	23.4	0.2	0.6	A	19	1.2	5994	24.5	0.2	0.6	A	20	0.0	A to A
Dallas	Horizon North Drive	021770E	6083	35	4	1.2	5645	12.2	0.2	0.3	A	7	1.2	5994	12.8	0.2	0.3	A	8	0.0	A to A
Dayton	Main Street	762786W	5802	60	2	17.4	8723	157.9	2.1	3.4	A	13	25.0	7918	211.2	2.6	4.3	A	12	0.5	A to A
Dayton	Waco Street	762789S	6585	60	2	17.4	8723	179.2	2.2	4.0	A	15	25.0	7918	239.7	2.7	4.9	A	14	0.5	A to A
Dayton	Winfree Street	762785P	9335	60	2	17.4	8723	254.0	2.1	5.5	A	21	25.0	7918	339.8	2.7	6.9	A	20	0.5	A to A
Denton	Country Club Road	021700P	8910	35	2	1.2	5645	17.9	0.2	0.4	A	22	1.2	5994	18.7	0.2	0.5	A	23	0.0	A to A

~~Table H.2-2.~~Table H.2-4. Grade Crossing Delay by State and City

						2027 No-Action							2027 Proposed Acquisition							Change	
State/ City	Street	Crossing ID	AADT	Train Speed (mph)	Number of Roadway Lanes	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Average Delay per Vehicle (seconds)	Level of Service
Denton	FM 1173	021726S	11751	35	2	1.2	5645	23.6	0.2	0.6	A	29	1.2	5994	24.7	0.2	0.6	A	30	0.0	A to A
Denton	Hickory Creek Road	021696C	5064	35	2	1.2	5645	10.2	0.2	0.2	A	12	1.2	5994	10.7	0.2	0.3	A	13	0.0	A to A
Edna	FM 0234	746645W	2774	59	2	9.7	9795	46.5	1.3	1.0	A	7	18.0	7681	72.2	1.7	1.3	A	6	0.4	A to A
Edna	FM 1822	746643H	4022	59	2	9.7	9795	67.4	1.3	1.5	A	10	18.0	7681	104.6	1.7	1.9	A	8	0.4	A to A
Edna	SH 0111 Wells Street	746639T	9917	59	4	9.7	9795	166.1	1.3	3.7	A	12	18.0	7681	258.0	1.8	4.8	A	10	0.4	A to A
El Campo	FM 0653 Wharton Street	743432B	5314	23	2	9.7	9795	194.7	6.5	9.6	A	29	18.0	7681	292.2	7.9	11.6	A	23	1.4	A to A
El Campo	Meadow Lane	743440T	3443	23	2	9.7	9795	126.1	6.7	6.4	A	19	18.0	7681	189.4	8.1	7.7	A	15	1.4	A to A
El Campo	Palacious Street	743438S	3297	23	2	9.7	9795	120.8	6.6	6.1	A	18	18.0	7681	181.3	8.0	7.4	A	14	1.4	A to A
El Campo	SH 71 Mechanic Street	743435W	11014	23	4	9.7	9795	403.5	6.5	19.9	A	30	18.0	7681	605.7	7.9	24.2	A	24	1.4	A to A
Ganado	SH 0172	746621H	7607	59	2	9.7	9795	127.4	1.5	3.2	A	19	18.0	7681	197.9	2.0	4.2	A	16	0.5	A to A
Haslet	Blue Mound Road	020545J	4503	79	2	32.0	5354	137.2	1.4	1.7	A	6	32.0	5681	141.9	1.5	1.9	A	6	0.1	A to A
Hebbronville	Smith Avenue/Texas 16	793696H	8951	50	4	14.8	12509	316.3	3.9	9.7	A	15	22.8	9617	395.0	4.0	9.8	A	12	0.0	A to A
Hebron	Hebron Parkway	021646Y	37345	35	8	1.2	5645	75.1	0.2	1.8	A	23	1.2	5994	78.6	0.2	1.9	A	24	0.0	A to A
Highland Village	Highland Village	021676R	12970	35	2	1.2	5645	26.1	0.2	0.8	A	32	1.2	5994	27.3	0.2	0.8	A	33	0.0	A to A
Highland Village	Justin Road	021672N	24980	35	4	1.2	5645	50.2	0.2	1.3	A	30	1.2	5994	52.6	0.2	1.4	A	32	0.0	A to A

~~*Table H.2-2.*~~*Table H.2-4.* ***Grade Crossing Delay by State and City***

						2027 No-Action							2027 Proposed Acquisition							Change	
State/ City	Street	Crossing ID	AADT	Train Speed (mph)	Number of Roadway Lanes	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Average Delay per Vehicle (seconds)	Level of Service
Highland Village	Village Pkwy	331277K	35751	35	4	1.2	5645	71.9	0.2	2.0	A	43	1.2	5994	75.2	0.2	2.2	A	46	0.0	A to A
Houston	Beechnut Street	758519L	21912	60	4	28.3	8877	982.9	3.7	22.3	A	25	35.9	7992	1154.2	4.0	24.3	A	23	0.3	A to A
Houston	Bellaire Boulevard	758518E	36535	60	6	28.3	8877	1638.8	3.8	38.1	A	28	35.9	7992	1924.5	4.1	41.4	A	26	0.3	A to A
Houston	Bissonnet Street	758517X	22176	60	4	28.3	8877	994.8	3.7	22.7	A	25	35.9	7992	1168.1	4.0	24.6	A	23	0.3	A to A
Houston	Braeswood Boulevard	758521M	10750	60	4	28.3	8877	482.2	3.3	10.0	A	12	35.9	7992	566.3	3.6	10.8	A	11	0.3	A to A
Houston	Ce King Parkway	762904W	20839	60	5	21.8	8803	714.1	2.7	15.4	A	19	29.3	7954	894.2	3.1	17.9	A	18	0.4	A to A
Houston	Champion Paper Drive	762889W	4394	60	2	21.8	8803	150.6	2.7	3.3	A	10	29.3	7954	188.5	3.1	3.8	A	9	0.4	A to A
Houston	Chimney Rock Road	755621G	15705	60	5	37.1	8934	926.3	4.5	19.5	A	14	44.6	8026	1031.8	4.6	20.1	A	13	0.1	A to A
Houston	Durham Drive	758533G	21626	60	4	30.5	8894	1046.4	4.0	23.7	A	25	38.1	8002	1209.6	4.2	25.4	A	23	0.3	A to A
Houston	Fondren Road	755624C	25119	79	7	37.1	8934	1218.4	3.1	21.4	A	14	44.6	8026	1365.6	3.2	22.4	A	13	0.1	A to A
Houston	Heights Boulevard	758540S	29257	40	4	30.5	8894	1937.6	7.9	64.6	A	46	38.1	8002	2222.5	8.4	68.1	A	42	0.4	A to A
Houston	Henderson Street	758180W	10279	60	2	32.7	8909	533.7	4.2	12.0	A	24	40.3	8011	608.4	4.4	12.7	A	22	0.2	A to A
Houston	Hillcroft Avenue	755622N	17679	60	5	37.1	8934	1042.7	4.5	22.3	A	16	44.6	8026	1161.4	4.7	22.9	A	15	0.1	A to A
Houston	Houston Avenue	758187U	15715	20	4	32.7	8909	2019.7	24.7	107.9	C	44	40.3	8011	2263.2	25.2	110.0	C	40	0.5	C to C
Houston	John Ralston Road	762907S	6016	60	2	27.2	8867	259.2	3.2	5.4	A	14	34.8	7987	307.1	3.6	5.9	A	13	0.3	A to A

~~Table H.2-2.~~Table H.2-4. Grade Crossing Delay by State and City

						2027 No-Action							2027 Proposed Acquisition							Change	
State/ City	Street	Crossing ID	AADT	Train Speed (mph)	Number of Roadway Lanes	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Average Delay per Vehicle (seconds)	Level of Service
Houston	Liberty Road	758293C	8201	60	2	32.7	8909	425.8	4.1	9.2	A	19	40.3	8011	485.4	4.3	9.8	A	17	0.2	A to A
Houston	North Shepherd Drive	758534N	23341	40	4	30.5	8894	1545.8	7.5	48.8	A	36	38.1	8002	1773.1	7.9	51.4	A	34	0.4	A to A
Houston	Post Oak Northbound	755618Y	11706	40	2	32.7	8909	831.9	9.2	29.8	A	37	40.3	8011	941.1	9.5	30.9	A	34	0.4	A to A
Houston	Post Oak Southbound	440652H	10960	40	2	32.7	8909	778.9	8.9	27.2	A	34	40.3	8011	881.1	9.3	28.3	A	32	0.3	A to A
Houston	Richmond Avenue	758514C	30689	60	6	28.3	8877	1376.6	3.6	30.9	A	23	35.9	7992	1616.6	3.9	33.6	A	22	0.3	A to A
Houston	Roy Street	758532A	4677	40	2	30.5	8894	309.7	7.2	9.4	A	15	38.1	8002	355.3	7.6	9.9	A	13	0.4	A to A
Houston	San Felipe Road	758512N	16251	60	4	28.3	8877	729.0	3.5	15.8	A	19	35.9	7992	856.0	3.8	17.2	A	17	0.3	A to A
Houston	Sawyer Street	758178V	16407	60	2	32.7	8909	851.8	4.7	21.5	A	38	40.3	8011	971.0	5.0	22.7	A	35	0.3	A to A
Houston	Sheldon Road	762892E	8987	60	2	21.8	8803	307.9	2.7	6.7	A	20	29.3	7954	385.6	3.1	7.8	A	19	0.4	A to A
Houston	Tc Jester Street	758531T	16143	40	4	30.5	8894	1069.1	7.1	31.7	A	25	38.1	8002	1226.3	7.4	33.4	A	23	0.4	A to A
Houston	US 59 Eastbound Frontage	758610E	6348	60	2	28.3	8877	284.8	3.6	6.3	A	14	35.9	7992	334.4	3.9	6.9	A	13	0.3	A to A
Houston	US 59 Westbound Frontage	758611L	6435	60	2	28.3	8877	288.6	3.6	6.4	A	15	35.9	7992	339.0	3.9	7.0	A	14	0.3	A to A
Houston	Van Hut Lane	762901B	8501	60	2	27.2	8867	366.3	3.4	8.0	A	19	34.8	7987	434.0	3.7	8.7	A	18	0.3	A to A

~~Table H.2-2.~~Table H.2-4. Grade Crossing Delay by State and City

						2027 No-Action							2027 Proposed Acquisition							Change	
State/ City	Street	Crossing ID	AADT	Train Speed (mph)	Number of Roadway Lanes	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Average Delay per Vehicle (seconds)	Level of Service
Houston	West Bellfort Avenue	758523B	11240	60	4	28.3	8877	504.2	3.4	10.5	A	13	35.9	7992	592.1	3.6	11.4	A	12	0.3	A to A
Houston	Westheimer Road	758513V	29808	60	5	28.3	8877	1337.1	3.7	30.9	A	27	35.9	7992	1570.2	4.1	33.6	A	25	0.3	A to A
Houston	Willowbend Boulevard	758525P	5559	60	4	28.3	8877	249.4	3.2	4.9	A	6	35.9	7992	292.8	3.5	5.4	A	6	0.3	A to A
Hungerford	Railroad Street	743352H	4480	59	2	9.7	9795	75.0	1.4	1.7	A	11	18.0	7681	116.6	1.8	2.3	A	9	0.4	A to A
Justin	FM 0407	020557D	7156	79	2	23.4	5248	157.9	1.0	2.0	A	10	23.4	5567	163.2	1.1	2.1	A	10	0.1	A to A
Kendleton	FM 2919	743483L	2633	59	2	9.7	9795	44.1	1.3	1.0	A	7	18.0	7681	68.5	1.7	1.3	A	5	0.4	A to A
Krum	FM 1173	020572F	9665	79	2	27.7	5309	253.9	1.3	3.4	A	13	27.7	5633	262.5	1.3	3.6	A	14	0.1	A to A
Laredo	Arkansas Avenue	793598S	22221	20	2	14.8	12509	1757.8	27.3	168.8	C	171	22.8	9617	2134.5	26.1	161.3	C	135	-1.2	C to C
Laredo	Market Street East	793596D	3254	20	2	14.8	12509	257.4	19.8	17.9	B	25	22.8	9617	312.6	18.9	17.1	B	20	-0.9	B to B
Lewisville	Garden Ridge Blvd	021774G	7850	35	4	1.2	5645	15.8	0.2	0.3	A	10	1.2	5994	16.5	0.2	0.4	A	10	0.0	A to A
Lewisville	McGee Lane	021669F	5084	35	4	1.2	5645	10.2	0.2	0.2	A	6	1.2	5994	10.7	0.2	0.2	A	6	0.0	A to A
Lewisville	North Summit Avenue	919241G	4057	35	4	1.2	5645	8.2	0.2	0.2	A	5	1.2	5994	8.5	0.2	0.2	A	5	0.0	A to A
Liberty	Bowie Street	762770A	3227	45	2	27.2	8867	173.2	4.9	4.4	A	9	34.8	7987	204.0	5.4	4.8	A	8	0.4	A to A
Liberty	Main Street	762765D	8573	45	2	17.4	8723	290.3	3.3	7.8	A	24	25.0	7918	386.3	4.0	9.6	A	22	0.8	A to A
Liberty	Texas 146	763062E	12005	75	4	17.4	8723	278.7	1.5	4.9	A	12	25.0	7918	374.6	1.9	6.2	A	11	0.4	A to A
Mauriceville	FM 1136	329460R	2774	59	2	10.2	8441	43.6	1.1	0.9	A	6	21.1	7874	86.2	2.1	1.6	A	6	1.0	A to A

~~Table H.2-2.~~Table H.2-4. Grade Crossing Delay by State and City

						2027 No-Action							2027 Proposed Acquisition							Change	
State/ City	Street	Crossing ID	AADT	Train Speed (mph)	Number of Roadway Lanes	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Average Delay per Vehicle (seconds)	Level of Service
Missouri City	South Gessner Road	743689L	19452	60	4	37.1	8934	1147.3	4.7	25.6	A	22	44.6	8026	1277.9	4.9	26.4	A	21	0.1	A to A
Murphy	FM 544	789644J	34418	35	6	1.3	5645	77.3	0.2	1.9	A	28	1.3	5994	80.9	0.2	2.1	A	29	0.0	A to A
Murphy	Murphy Road	789645R	23351	35	6	1.3	5645	52.5	0.2	1.2	A	19	1.3	5994	54.9	0.2	1.3	A	20	0.0	A to A
Nome	Texas 326	762743D	3345	60	2	17.4	8723	91.0	2.0	1.9	A	8	25.0	7918	121.8	2.5	2.3	A	7	0.5	A to A
Odem	Baylor Street	436030Y	2521	49	2	19.8	9795	99.7	3.7	2.6	A	7	28.2	7681	117.4	3.6	2.5	A	6	-0.1	A to A
Odem	FM 631	436017K	2760	49	2	19.8	9795	109.2	3.6	2.8	A	8	28.2	7681	128.5	3.6	2.7	A	7	-0.1	A to A
Plano	10th Street	789633W	2641	25	2	1.2	5645	6.9	0.3	0.2	A	8	1.2	5994	7.3	0.3	0.2	A	9	0.0	A to A
Plano	Coit Road	021635L	44940	35	6	1.2	5645	90.3	0.2	2.4	A	36	1.2	5994	94.6	0.2	2.6	A	38	0.0	A to A
Plano	Dallas North Pkwy	919239F	22167	35	3	1.2	5645	44.6	0.2	1.2	A	36	1.2	5994	46.6	0.2	1.3	A	38	0.0	A to A
Plano	East Plano Parkway	789632P	26658	35	6	1.2	5645	53.6	0.2	1.3	A	22	1.2	5994	56.1	0.2	1.4	A	23	0.0	A to A
Plano	Jupiter Road	789638F	29914	35	6	1.3	5645	67.2	0.2	1.8	A	24	1.3	5994	70.3	0.2	1.9	A	25	0.0	A to A
Plano	K Avenue	789635K	9598	35	3	1.3	5645	21.6	0.2	0.5	A	16	1.3	5994	22.6	0.2	0.5	A	16	0.0	A to A
Plano	Los Rios Blvd	753583T	11315	35	6	1.3	5645	25.4	0.2	0.5	A	9	1.3	5994	26.6	0.2	0.6	A	10	0.0	A to A
Plano	Municipal Avenue	789636S	19658	35	3	1.3	5645	44.2	0.3	1.5	A	32	1.3	5994	46.2	0.3	1.6	A	33	0.0	A to A
Plano	Ohio Drive	021638G	22215	35	4	1.2	5645	44.7	0.2	1.1	A	27	1.2	5994	46.7	0.2	1.2	A	28	0.0	A to A
Plano	Plano Parkway	919268R	28734	35	6	1.3	5645	64.6	0.2	1.7	A	23	1.3	5994	67.6	0.2	1.8	A	24	0.0	A to A
Plano	Shiloh Road	789640G	6506	35	6	1.3	5645	14.6	0.2	0.3	A	5	1.3	5994	15.3	0.2	0.3	A	6	0.0	A to A
Plano	US 75 East Frontage	789631H	42723	25	3	1.2	5645	111.8	0.7	8.7	A	90	1.2	5994	117.4	0.8	9.5	A	95	0.1	A to A
Plano	US 75 West Frontage	789629G	20308	35	3	1.2	5645	40.8	0.2	1.2	A	33	1.2	5994	42.7	0.2	1.3	A	34	0.0	A to A

~~*Table H.2-2.*~~*Table H.2-4.* ***Grade Crossing Delay by State and City***

						2027 No-Action							2027 Proposed Acquisition							Change	
State/ City	Street	Crossing ID	AADT	Train Speed (mph)	Number of Roadway Lanes	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Average Delay per Vehicle (seconds)	Level of Service
Ponder	FM 2449	020563G	5029	79	2	23.4	5248	110.9	1.0	1.4	A	7	23.4	5567	114.7	1.0	1.4	A	7	0.1	A to A
Port Arthur	25th Street	329544L	5436	30	2	5.2	9121	79.6	1.9	2.9	A	22	8.9	8162	123.5	2.7	4.1	A	20	0.8	A to A
Port Arthur	32nd Street /Lombardy	329542X	4938	30	2	5.2	9121	72.3	1.9	2.6	A	20	8.9	8162	112.2	2.7	3.7	A	18	0.8	A to A
Port Arthur	39th Street	329540J	5095	30	2	5.2	9121	74.6	1.9	2.7	A	21	8.9	8162	115.7	2.7	3.9	A	19	0.8	A to A
Port Arthur	7th Avenue	329546A	5256	30	2	5.2	9121	77.0	1.9	2.8	A	21	8.9	8162	119.4	2.7	4.0	A	19	0.8	A to A
Port Arthur	9th Avenue	329545T	7134	30	2	5.2	9121	104.5	2.0	3.9	A	29	8.9	8162	162.1	2.8	5.6	A	26	0.8	A to A
Port Neches	Merriman Street	329531K	9744	30	3	5.2	9121	142.7	2.0	5.3	A	26	8.9	8162	221.3	2.8	7.5	A	24	0.8	A to A
Refugio	FM 774 Empresario	427570V	6004	40	4	19.8	9795	279.8	5.1	8.5	A	10	28.2	7681	326.6	4.9	8.1	A	8	-0.2	A to A
Richardson	Alma Road	753757M	14802	35	6	1.2	5645	29.8	0.2	0.7	A	12	1.2	5994	31.1	0.2	0.7	A	13	0.0	A to A
Richardson	Custer	789628A	14203	35	6	1.2	5645	28.6	0.2	0.6	A	12	1.2	5994	29.9	0.2	0.7	A	12	0.0	A to A
Richmond	Collins Road	743726L	12721	60	2	37.1	8934	750.3	5.0	17.7	A	29	44.6	8026	835.7	5.2	18.2	A	27	0.2	A to A
Richmond	Second Street	743719B	4693	55	2	37.1	8934	295.3	5.2	6.8	A	11	44.6	8026	328.4	5.3	6.9	A	11	0.1	A to A
Richmond	Tenth Street	743724X	7308	60	2	37.1	8934	431.0	5.2	10.5	A	17	44.6	8026	480.1	5.3	10.8	A	15	0.2	A to A
Robstown	Lincoln Avenue	793749E	4537	20	2	14.8	12509	358.9	19.6	24.7	B	35	22.8	9617	435.9	18.7	23.6	B	28	-0.9	B to B
Robstown	Main Avenue	427597E	3115	40	2	5.5	9795	40.3	1.4	1.2	A	11	13.8	7681	83.2	2.4	2.1	A	9	1.0	A to A
Robstown	Pat Shutter Street	793743N	2772	30	2	14.8	12509	151.9	9.4	7.2	A	15	22.8	9617	186.3	9.1	7.0	A	12	-0.2	A to A
Rosenberg	3rd Street	743731H	7701	60	2	19.6	9795	257.4	3.0	6.4	A	19	27.9	7681	306.9	3.0	6.4	A	16	0.0	A to A
Rosenberg	Rawson Road	743727T	6299	60	2	19.6	8768	193.6	2.6	4.5	A	14	27.1	7938	249.8	3.1	5.4	A	13	0.5	A to A

~~*Table H.2-2.*~~*Table H.2-4.* ***Grade Crossing Delay by State and City***

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State/ City	Street	Crossing ID	AADT	Train Speed (mph)	Number of Roadway Lanes	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Average Delay per Vehicle (seconds)	Level of Service
San Diego	Texas 44	793688R	10944	35	4	14.8	12509	523.6	7.3	22.1	A	26	22.8	9617	645.3	7.2	21.8	A	20	-0.1	A to A
Sinton	First Street	436012B	3957	49	2	19.8	9795	156.5	3.6	4.0	A	11	28.2	7681	184.2	3.5	3.9	A	9	-0.1	A to A
Sinton	South Fourth Street	436014P	2500	49	2	19.8	9795	98.9	3.6	2.5	A	7	28.2	7681	116.4	3.5	2.5	A	6	-0.1	A to A
Sinton	US 181 Sinton Street	436011U	9875	50	4	19.8	9795	384.4	3.6	9.8	A	14	28.2	7681	452.9	3.5	9.6	A	12	-0.1	A to A
Stafford	FM 1092 Northbound F	924008H	6337	60	2	37.1	8934	373.7	4.5	7.9	A	15	44.6	8026	416.3	4.6	8.1	A	13	0.1	A to A
Stafford	FM 1092 Southbound F	924009P	5693	60	4	37.1	8934	335.7	4.2	6.7	A	7	44.6	8026	374.0	4.4	6.9	A	6	0.1	A to A
Stafford	Kirkwood Road	743695P	23945	60	4	37.1	8934	1412.2	4.9	32.8	A	27	44.6	8026	1573.1	5.1	33.8	A	25	0.1	A to A
Stafford	Promenade Boulevard Na	412514U	5621	60	4	37.1	8934	331.5	4.4	6.9	A	6	44.6	8026	369.2	4.6	7.1	A	6	0.1	A to A
Stafford	Stafford Northbound	924006U	3715	60	2	37.1	8934	219.1	4.4	4.6	A	9	44.6	8026	244.1	4.6	4.7	A	8	0.1	A to A
Stafford	Stafford Southbound	924007B	4056	60	2	37.1	8934	239.2	4.5	5.0	A	9	44.6	8026	266.5	4.6	5.2	A	9	0.1	A to A
Sugar Land	Eldridge Road	743699S	12702	60	4	37.1	8934	749.1	4.5	15.8	A	15	44.6	8026	834.5	4.6	16.3	A	13	0.1	A to A
Sugar Land	Gillingham Lane	745055W	6119	60	2	37.1	8934	360.9	5.0	8.4	A	14	44.6	8026	402.0	5.1	8.7	A	13	0.1	A to A
Sugar Land	Harlem Road	743713K	9659	60	5	37.1	8934	569.7	4.5	11.9	A	9	44.6	8026	634.5	4.6	12.3	A	8	0.1	A to A
Sugar Land	Industrial Boulevard	743698K	8464	60	3	37.1	8934	499.2	4.4	10.4	A	13	44.6	8026	556.0	4.6	10.7	A	12	0.1	A to A
Sugar Land	Main Street	743703E	6336	60	4	37.1	8934	373.7	4.3	7.5	A	7	44.6	8026	416.3	4.4	7.7	A	7	0.1	A to A
Sugar Land	Pitts Road	743716F	8038	60	2	37.1	8934	474.0	5.0	11.1	A	18	44.6	8026	528.0	5.1	11.5	A	17	0.2	A to A
Sugar Land	South Dairy Ashford R	745044J	21195	60	6	37.1	8934	1250.0	4.5	26.7	A	16	44.6	8026	1392.4	4.7	27.5	A	15	0.1	A to A

~~Table H.2-2.~~Table H.2-4. Grade Crossing Delay by State and City

						2027 No-Action							2027 Proposed Acquisition							Change	
State/ City	Street	Crossing ID	AADT	Train Speed (mph)	Number of Roadway Lanes	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Average Delay per Vehicle (seconds)	Level of Service
Sugar Land	Texas 6 Northbound Frontage	922512N	7275	60	2	37.1	8934	429.0	4.4	8.9	A	17	44.6	8026	477.9	4.6	9.2	A	15	0.1	A to A
Sugar Land	Texas 6 Southbound Frontage	922513V	6875	60	4	43.6	8962	478.3	5.1	9.7	A	8	51.2	8043	518.8	5.1	9.7	A	7	0.0	A to A
Texarkana	14th Street	330869S	4242	55	2	13.5	9651	103.1	2.0	2.4	A	11	25.9	8128	173.8	3.0	3.5	A	10	1.0	A to A
Texarkana	4th Street	330872A	5731	40	4	13.5	9651	179.4	3.3	5.2	A	10	25.9	8128	299.7	4.8	7.6	A	8	1.5	A to A
Texarkana	Richmond Road	330867D	4044	55	2	13.5	9651	98.3	2.1	2.3	A	10	25.9	8128	165.7	3.1	3.5	A	9	1.0	A to A
Victoria	Ben Jordan Road	746650T	15643	20	4	15.6	9795	1044.3	14.0	60.7	B	48	23.9	7681	1289.5	13.9	60.4	B	39	-0.1	B to B
Victoria	Ben Jordan Street	746558T	13909	25	4	9.9	9795	484.0	5.9	22.7	A	35	18.2	7681	720.7	7.1	27.4	A	28	1.2	A to A
Victoria	Ben Wilson Street	746556E	6746	25	4	9.9	9795	234.7	5.6	10.4	A	17	18.2	7681	349.6	6.7	12.5	A	14	1.1	A to A
Victoria	Delmar Drive	746550N	3406	25	2	9.9	9795	118.5	5.6	5.3	A	17	18.2	7681	176.5	6.7	6.3	A	14	1.1	A to A
Victoria	Delmar Drive	746653N	16550	10	4	15.6	9795	2102.3	51.0	234.4	D	97	23.9	7681	2563.7	49.4	227.3	D	77	-1.5	D to D
Victoria	East North Street	746510R	3080	20	2	15.4	9795	203.5	13.2	11.3	B	19	23.7	7681	252.2	13.1	11.2	B	15	0.0	B to B
Victoria	Highway 185 Laurent South	746562H	12053	40	4	9.9	9795	280.8	2.6	8.7	A	20	18.2	7681	424.7	3.2	10.8	A	17	0.6	A to A
Victoria	John Stockbauer Drive	912105H	5174	25	4	15.6	9795	283.0	8.6	12.4	A	13	23.9	7681	351.5	8.7	12.5	A	11	0.0	A to A
Victoria	North Ben Wilson Street	746652G	12137	25	4	15.6	9795	664.0	9.1	30.7	A	31	23.9	7681	824.6	9.2	30.9	A	25	0.1	A to A
Victoria	Pleasant Green Drive	746551V	3979	25	2	9.9	9795	138.4	5.6	6.2	A	20	18.2	7681	206.2	6.8	7.5	A	16	1.2	A to A
Vidor	Evangeline Drive	329467N	3433	59	2	10.2	8441	54.0	1.1	1.1	A	8	21.1	7874	106.7	2.1	2.0	A	7	1.0	A to A

~~Table H.2-2.~~Table H.2-4. Grade Crossing Delay by State and City

						2027 No-Action							2027 Proposed Acquisition							Change	
State/ City	Street	Crossing ID	AADT	Train Speed (mph)	Number of Roadway Lanes	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Trains Per Day	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (hours)	Level of Service	Maximum Queue (vehicles)	Average Delay per Vehicle (seconds)	Level of Service
Vidor	FM 105 Main Street	329471D	21137	59	4	10.2	8441	332.3	1.2	7.3	A	24	21.1	7874	656.8	2.3	13.7	A	22	1.1	A to A
Vidor	North Dewitt Street	329472K	2908	59	2	10.2	8441	45.7	1.1	0.9	A	6	21.1	7874	90.4	2.1	1.7	A	6	1.0	A to A
Vidor	Wb I-10 Service Road	927011B	2797	59	2	10.2	8441	44.0	1.1	0.9	A	6	21.1	7874	86.9	2.1	1.6	A	6	1.0	A to A
Wharton	FM 0102	743359F	11628	59	2	9.7	9795	194.8	1.5	4.9	A	29	18.0	7681	302.6	2.0	6.3	A	24	0.5	A to A
Wylie	Country Club Road	789648L	13583	35	7	1.3	5645	30.5	0.2	0.7	A	9	1.3	5994	31.9	0.2	0.7	A	10	0.0	A to A
Wylie	Eubanks Lane	789654P	3088	35	2	1.3	5645	6.9	0.2	0.2	A	8	1.3	5994	7.3	0.2	0.2	A	8	0.0	A to A
Wylie	FM 2514 / Ballard Avenue	789653H	14731	59	2	1.3	5645	23.0	0.1	0.5	A	25	1.3	5994	23.9	0.1	0.5	A	26	0.0	A to A
Wylie	FM 3412 / Brown Street	789652B	11495	59	4	1.3	5645	17.9	0.1	0.3	A	10	1.3	5994	18.6	0.1	0.3	A	10	0.0	A to A
Wylie	McCreary Road	790146W	12267	35	4	1.3	5645	27.6	0.2	0.7	A	15	1.3	5994	28.8	0.2	0.7	A	16	0.0	A to A
Wylie	Springwell Parkway	331279Y	13223	35	4	1.3	5645	29.7	0.2	0.7	A	16	1.3	5994	31.1	0.2	0.8	A	17	0.0	A to A

H.2.3 Evaluation of Potential New Grade Separations

In response to public comments, OEA analyzed existing grade crossings for consideration of grade separation. This evaluation used the Federal Highway Administration (FHWA) criteria for identifying grade crossings where grade separation could be considered. According to FHWA guidelines (FHWA and FRA 2019), grade separation should be considered when:

- The road is a limited access facility;
- The posted highway speed equals or exceeds 55 mph;
- AADT exceeds 30,000 in urban areas or 20,000 in rural areas;
- Maximum authorized train speed exceeds 79 mph;
- Freight trains average 30 or more trains per day;
- Passenger trains average 75 or more per day in urban areas or 30 or more per day in rural areas;
- Transit trains average 150 or more per day in urban areas or 60 or more per day in rural areas;
- Freight train crossing exposure (the product of the number of freight trains per day and AADT) exceeds 900,000 in urban areas or 600,000 in rural areas;
- Passenger train crossing exposure (the product of the number of passenger trains per day and AADT) exceeds 2,250,000 in urban areas or 600,000 in rural areas;
- Transit train crossing exposure (the product of the number of transit trains per day and AADT) exceeds 4,500,000 in urban areas or 1,200,000 in rural areas;
- The expected accident frequency for active devices with gates, as calculated by the USDOT Accident Prediction Formula, including five-year history, exceeds 0.5 per year. If the highway is a part of the designated National Highway System, the expected accident frequency for active devices with gates, as calculated by the USDOT Accident Prediction Formula including five-year accident history, exceeds 0.2 per year; or
- Vehicle delay exceeds 30 vehicle hours per day with consideration for cost effectiveness.

Note that while OEA considered the above criteria, these are not federal requirements for grade separation. Further, only select criteria are applicable to evaluating the potential impacts of the Proposed Acquisition. There are many criteria that would remain the same in both the No-Action Alternative and the Proposed Acquisition, including road facility type, posted speed of the roadway, AADT, train speed, number of passenger and transit trains, and the crossing exposure for passenger and transit trains. As such, OEA focused on the number of freight trains per day, freight train crossing exposure, expected accident frequency, and vehicle delay.

H.2.3.1 Thresholds for Mitigation

Of the 276 grade crossings that OEA analyzed for delay, **Table H.2-5** presents 23 that would exceed the FHWA threshold for freight volume per day or vehicle hours of delay per day for grade separation consideration under the Proposed Acquisition but not under the No-Action Alternative. While several additional grade crossings within the study area would exceed one or more of the other FHWA criteria under the Proposed Acquisition, those grade crossings would also exceed one or more criteria under the No-Action Alternative. OEA did not identify any grade crossings where new grade separation would be warranted.

Table H.2-5. Grade Crossings Exceeding FHWA Threshold for Separation Consideration

State	City	Street	Crossing ID	30+ freight trains/day	Vehicle delay > 30 hours/day
Louisiana	De Ridder	First Street	329319U	--	Yes
Louisiana	De Ridder	Mahlan Street	329317F	--	Yes
Louisiana	Frierson	Gravel Point Road	329164E	Yes	--
Louisiana	Frierson	Louisiana 175	329162R	Yes	--
Louisiana	Shreveport	East 85th Street	329128J	Yes	--
Louisiana	Shreveport	Norris Ferry Road	329157U	Yes	--
Missouri	Grandview	Main Street	329807X	Yes	--
Missouri	Kansas City	17th Street	329764G	Yes	--
Texas	Bloomington	Texas 185	435914C	Yes	--
Texas	Crosby	Crosby Eastgate Road	762865H	Yes	--
Texas	Crosby	Miller Wilson Road	762872T	Yes	--
Texas	Crosby	Ramsey Road	762869K	Yes	--
Texas	Houston	Beechnut Street	758519L	Yes	--
Texas	Houston	Bissonnet Street	758517X	Yes	--
Texas	Houston	Braeswood Boulevard	758521M	Yes	--
Texas	Houston	John Ralston Road	762907S	Yes	--
Texas	Houston	Roy Street	758532A	Yes	--
Texas	Houston	San Felipe Road	758512N	Yes	--
Texas	Houston	US 59 Westbound Frontage	758611L	Yes	--
Texas	Houston	Van Hut Lane	762901B	Yes	--
Texas	Houston	West Bellfort Avenue	758523B	Yes	--
Texas	Houston	Willowbend Boulevard	758525P	Yes	--
Texas	Liberty	Bowie Street	762770A	Yes	--

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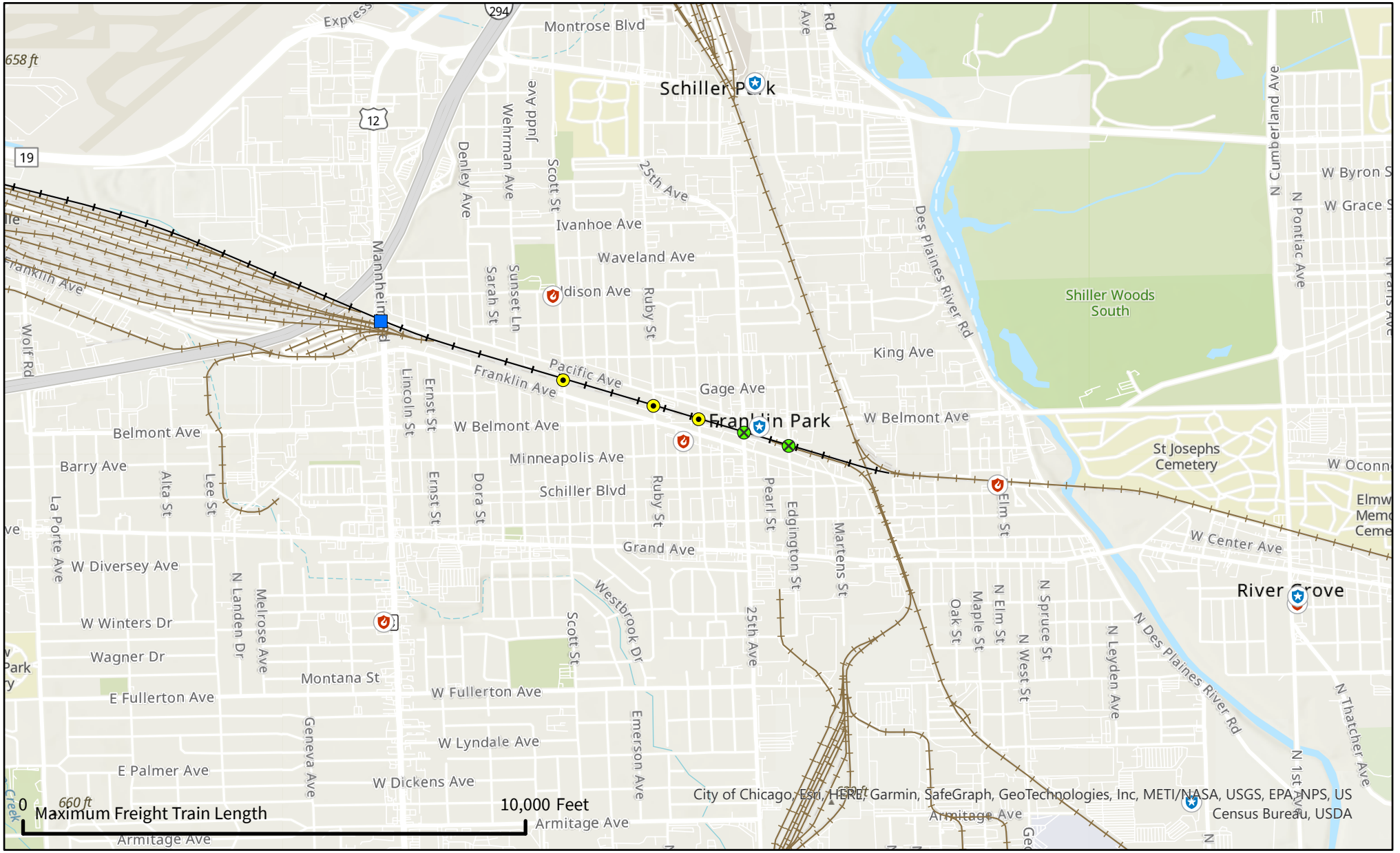
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Appendix H – Attachment 1: Emergency Services Routing Analysis Maps



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

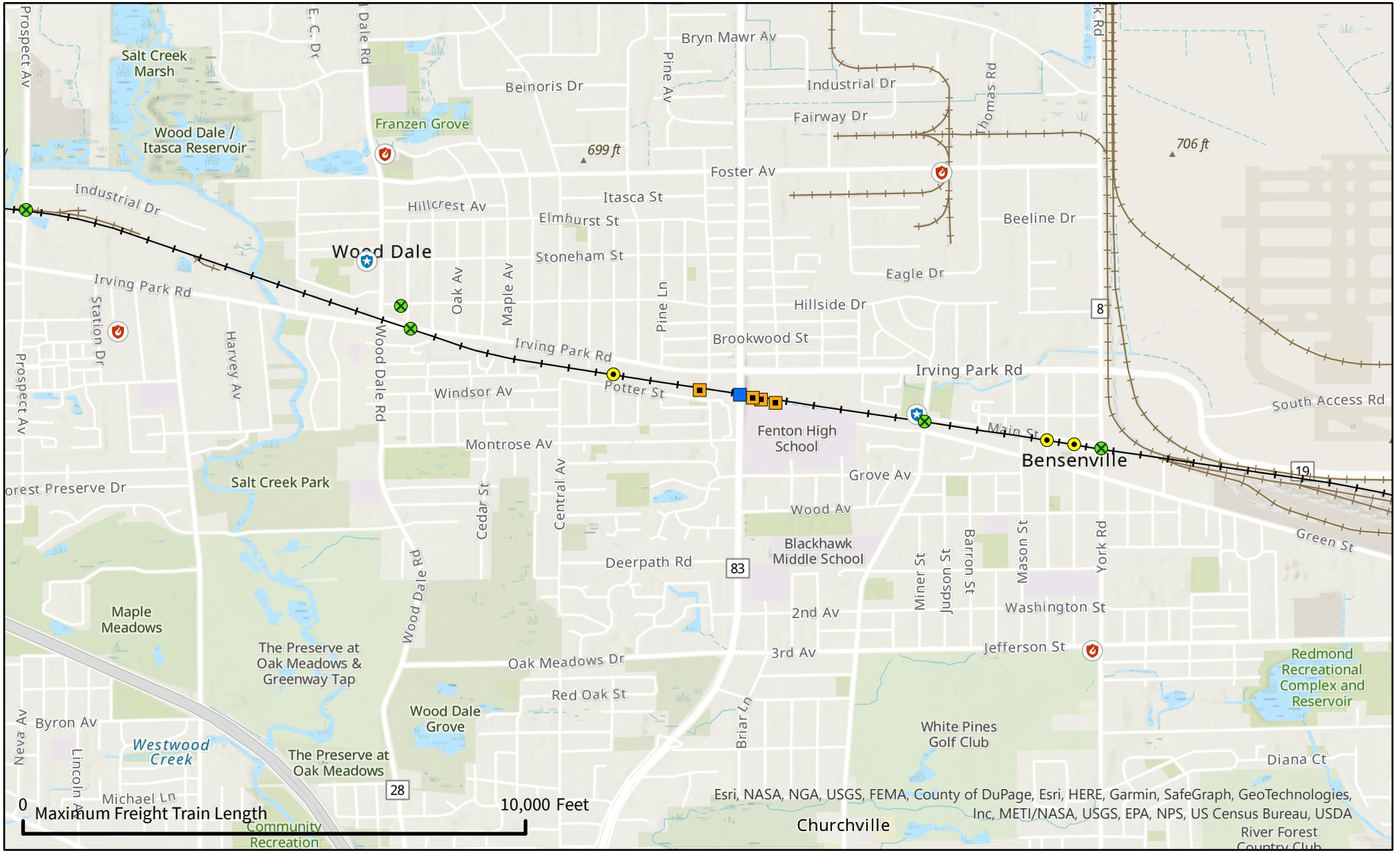


Emergency Services Routing Analysis
Franklin Park, IL

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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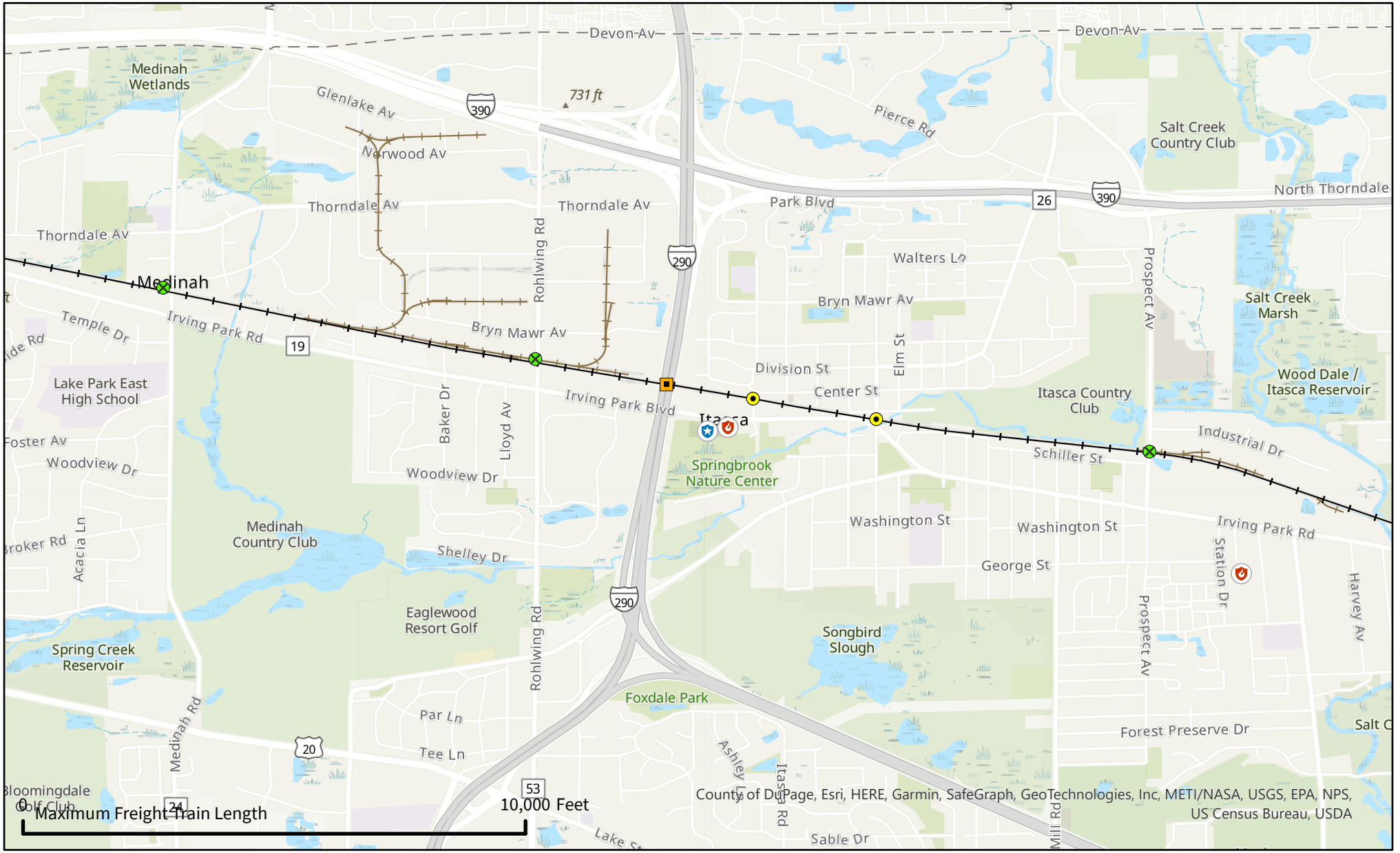
Emergency Services Routing Analysis

Wood Dale, IL

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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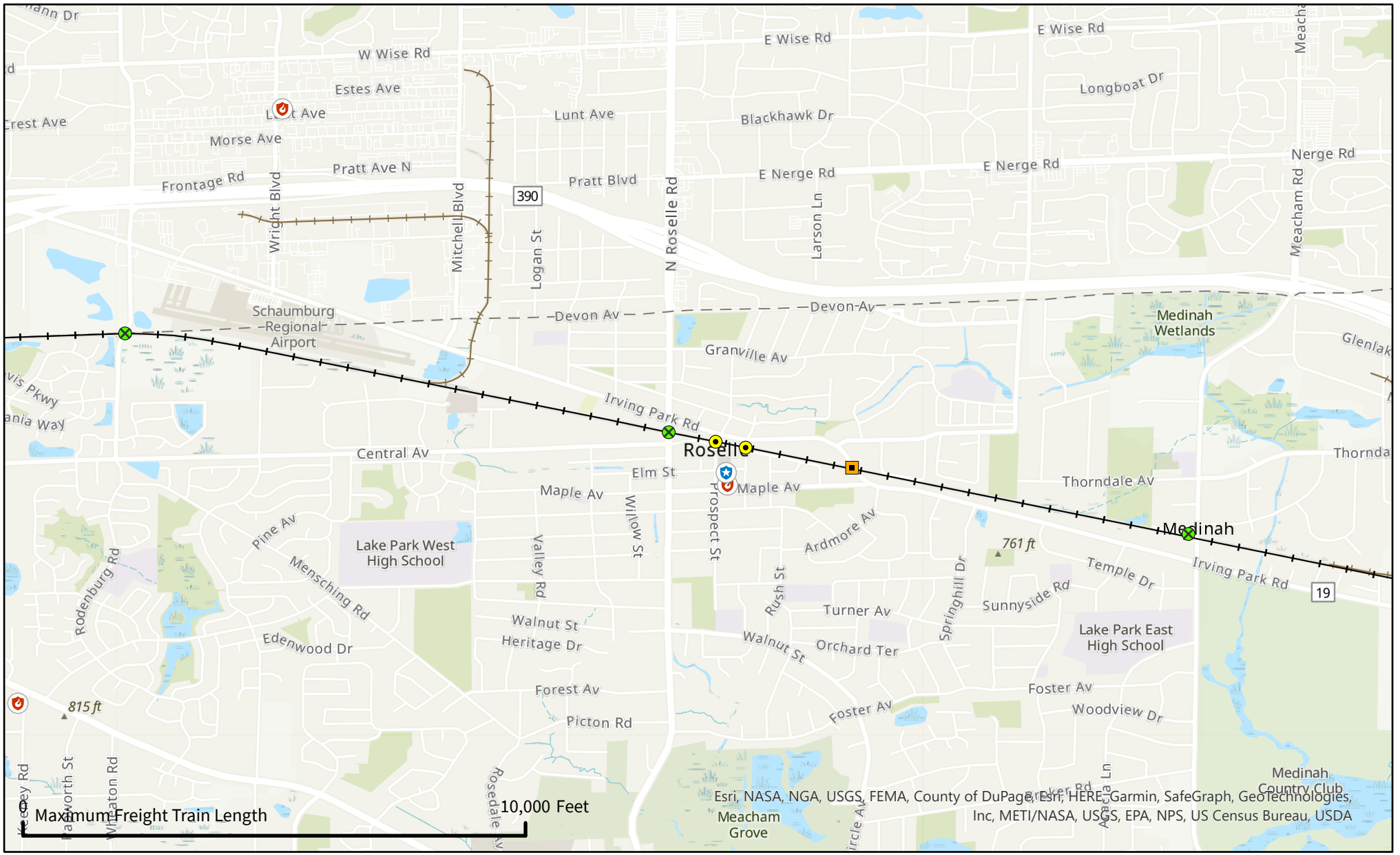
Emergency Services Routing Analysis

Itasca, IL

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



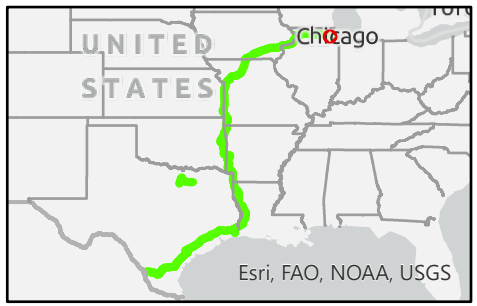
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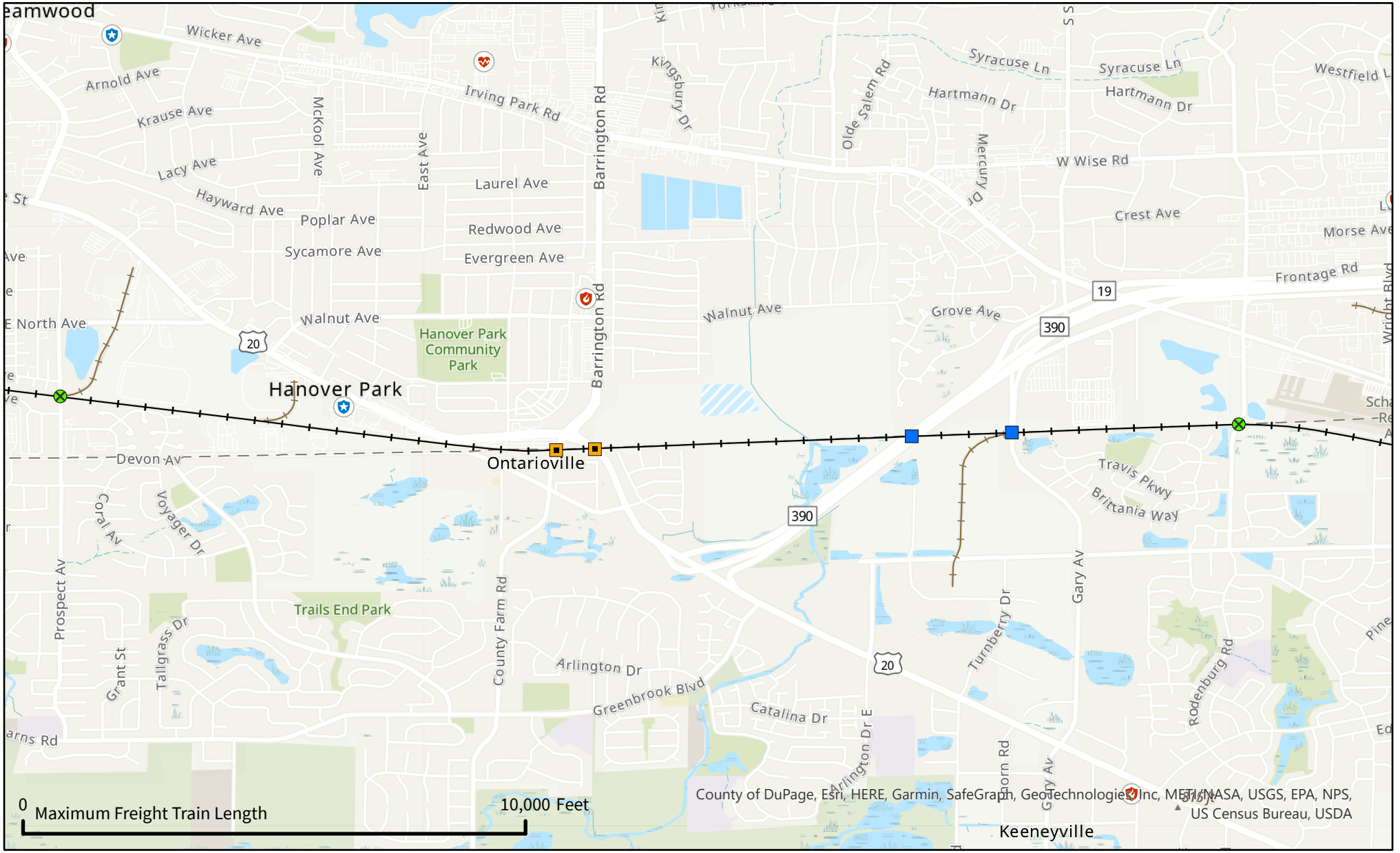


Emergency Services Routing Analysis
Roselle, IL

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



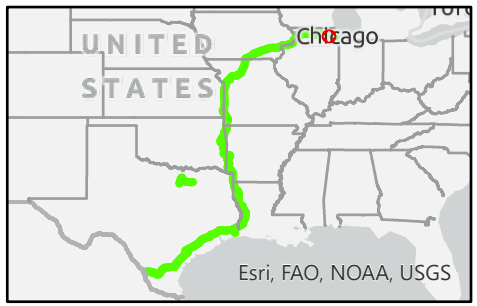
Legend

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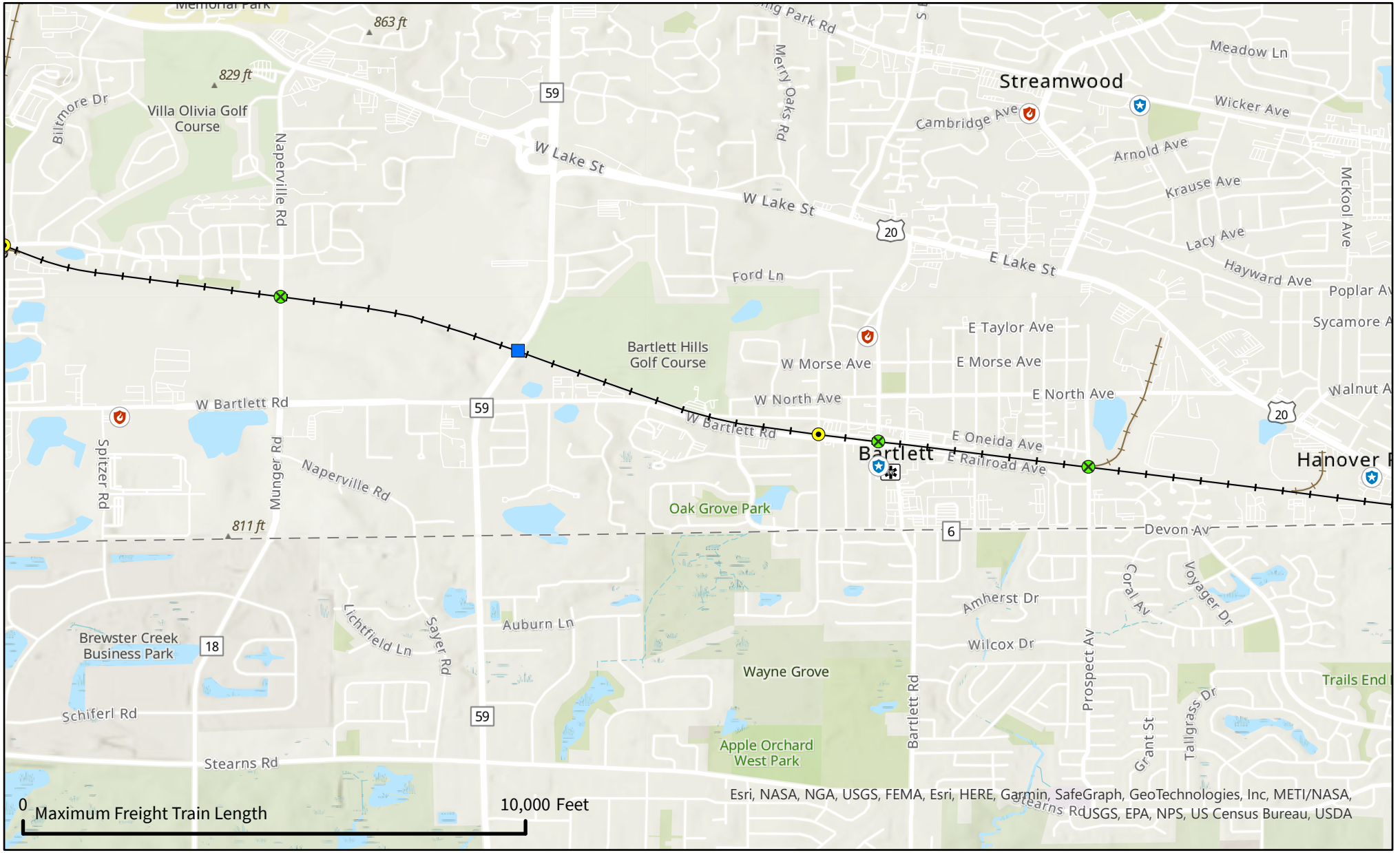


Emergency Services Routing Analysis
Hanover Park, IL

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



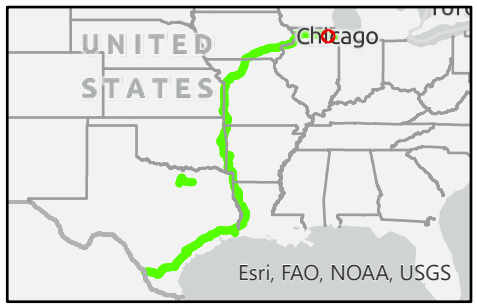
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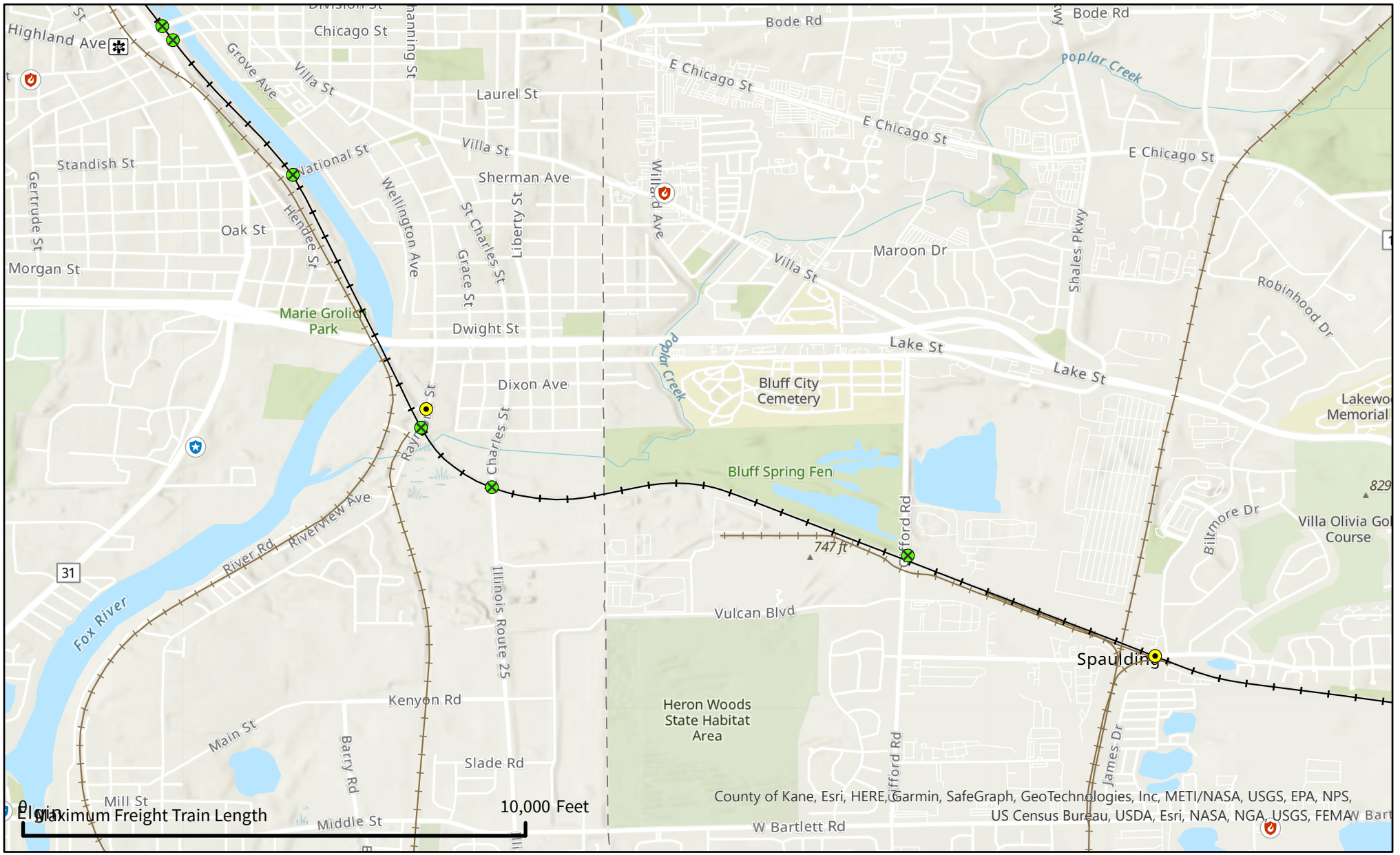


Emergency Services Routing Analysis
Bartlett, IL

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



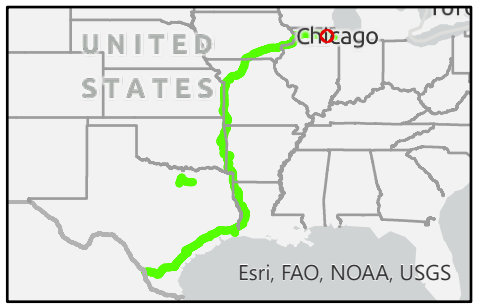
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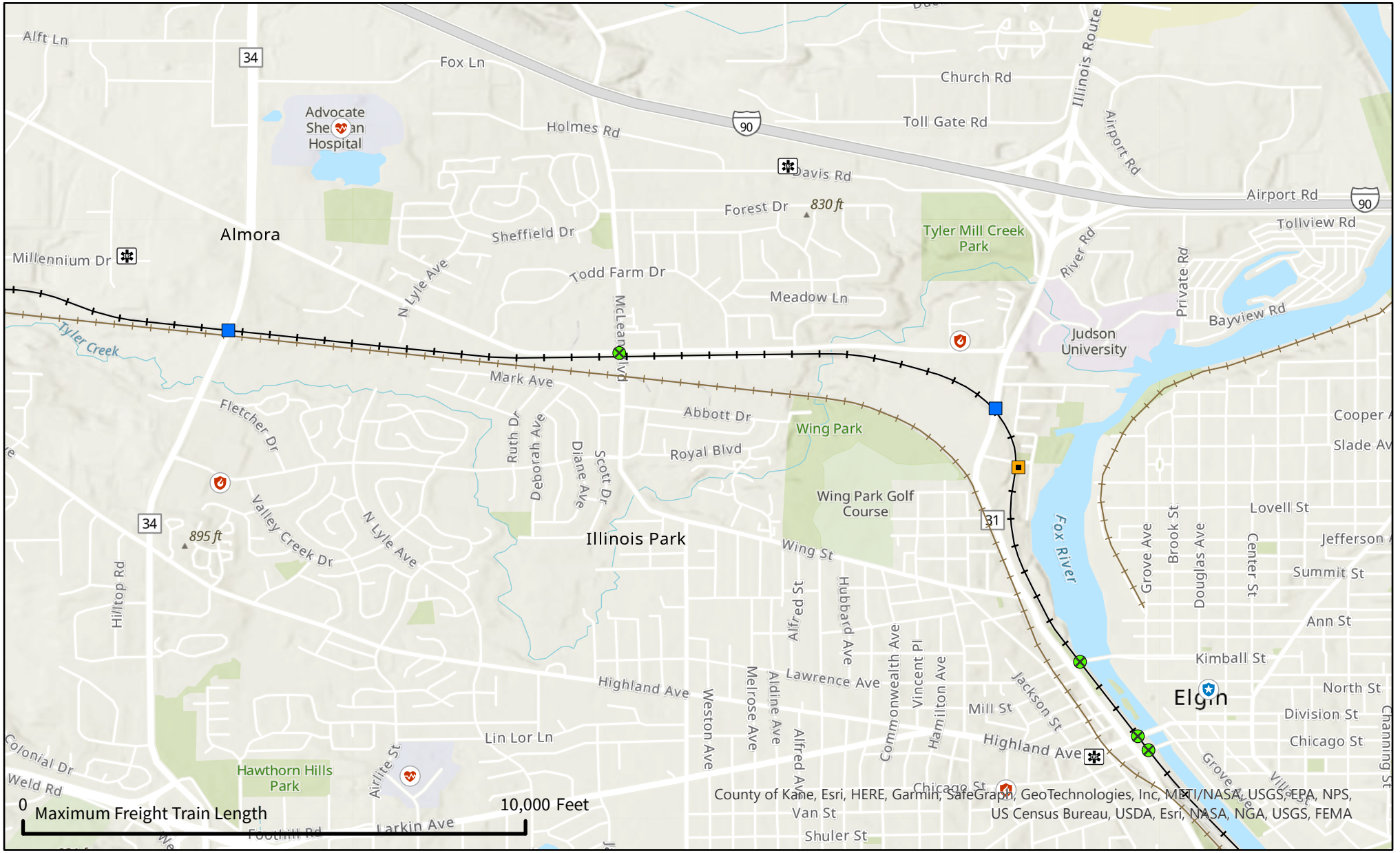


Emergency Services Routing Analysis
Spaulding, IL

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



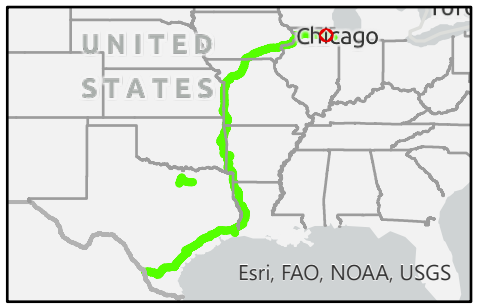
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Crossing Position

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- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



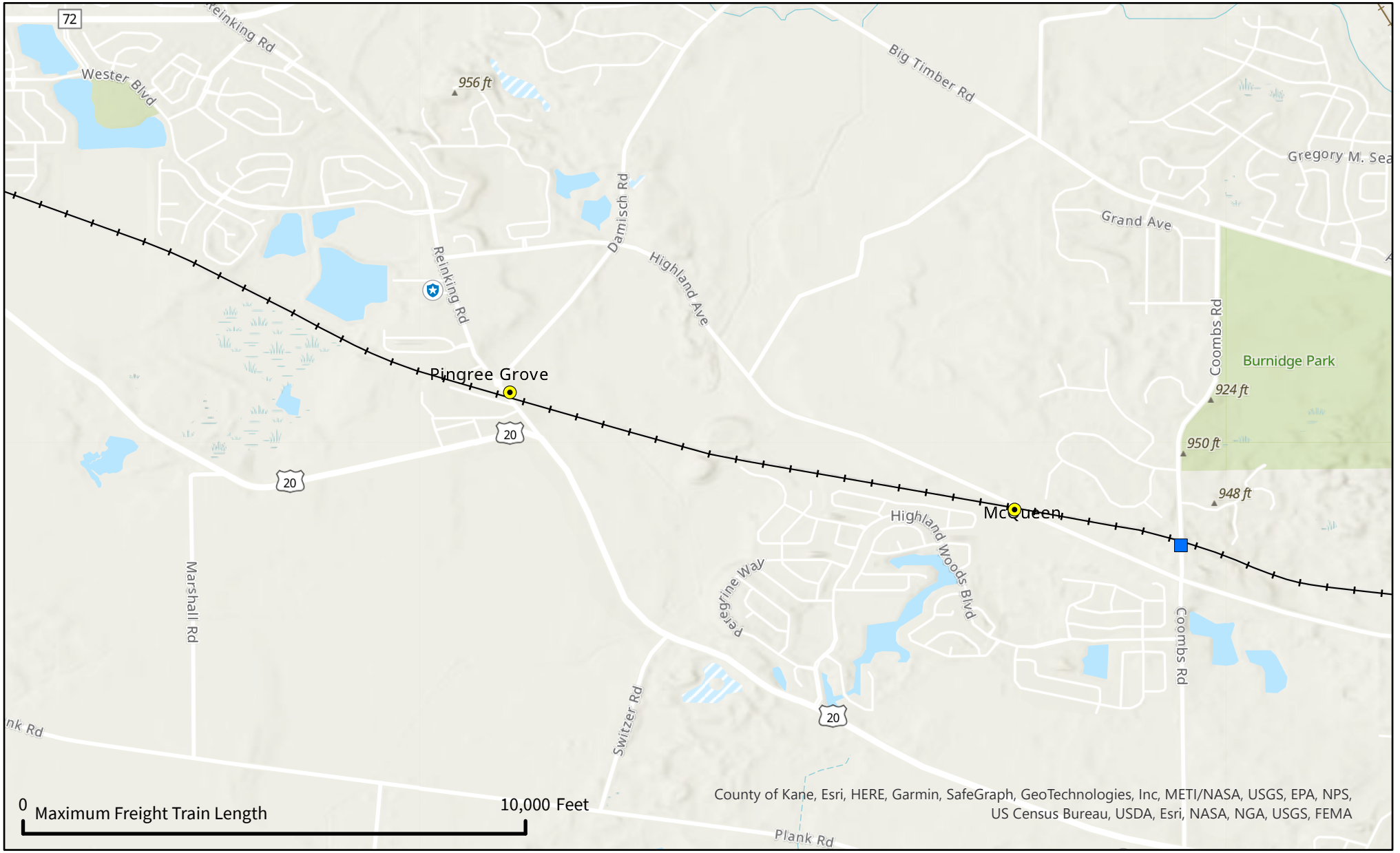
Emergency Services Routing Analysis

Elgin, IL

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



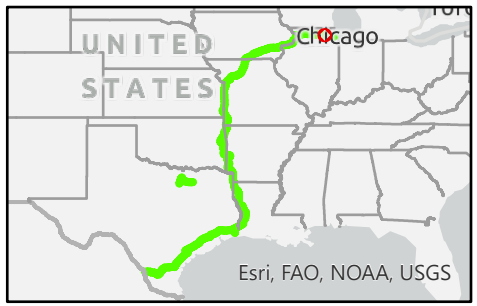
Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
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- Hospital
- Police



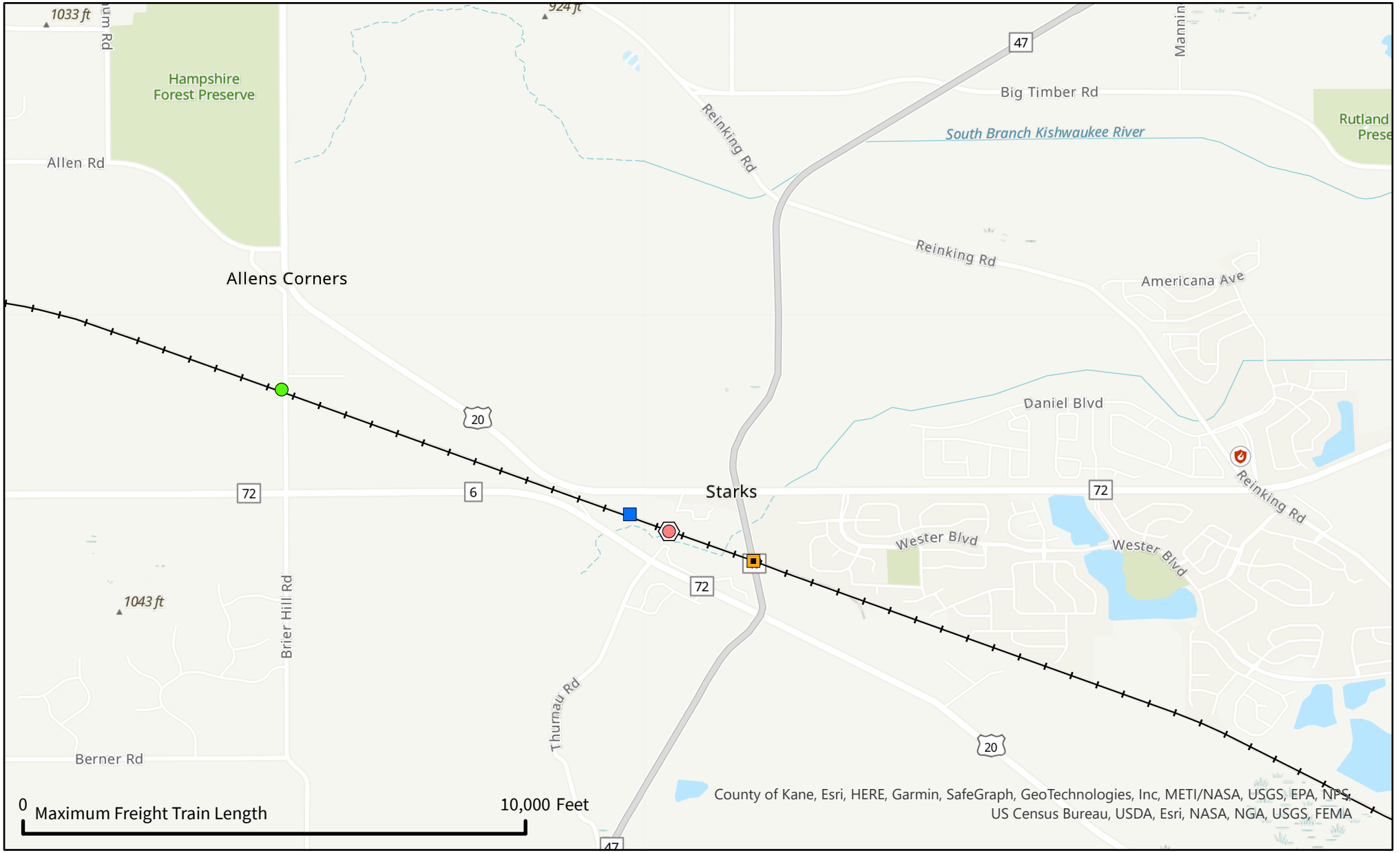
Emergency Services Routing Analysis

Pingree Grove, IL

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



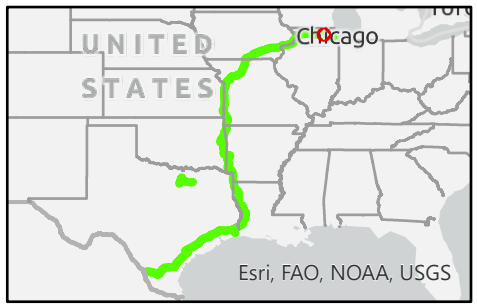
Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- Other Tracks
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- Hospital
- Police



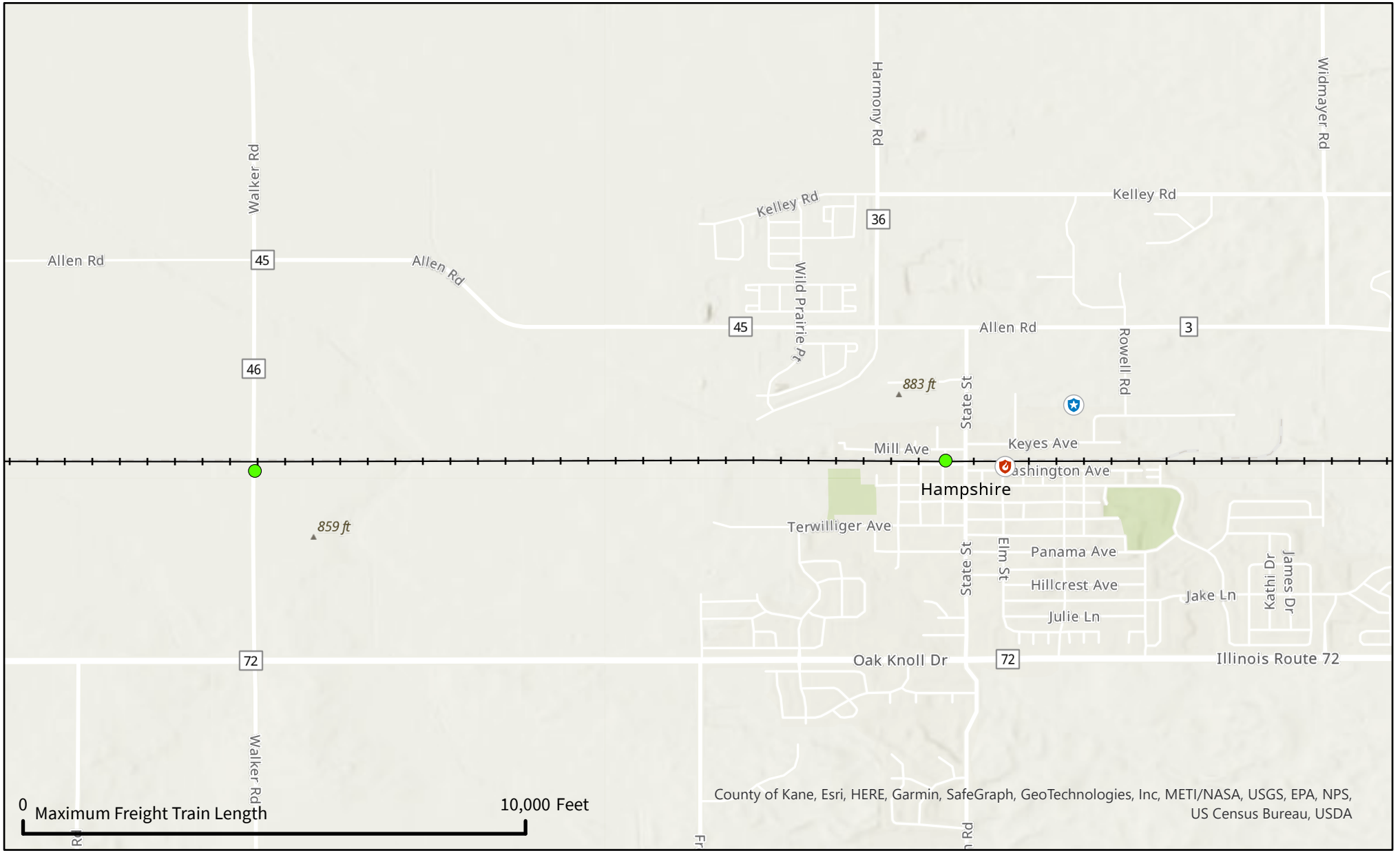
Emergency Services Routing Analysis

Starks, IL

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



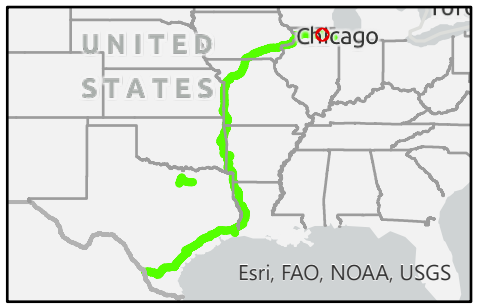
Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
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- Hospital
- Police

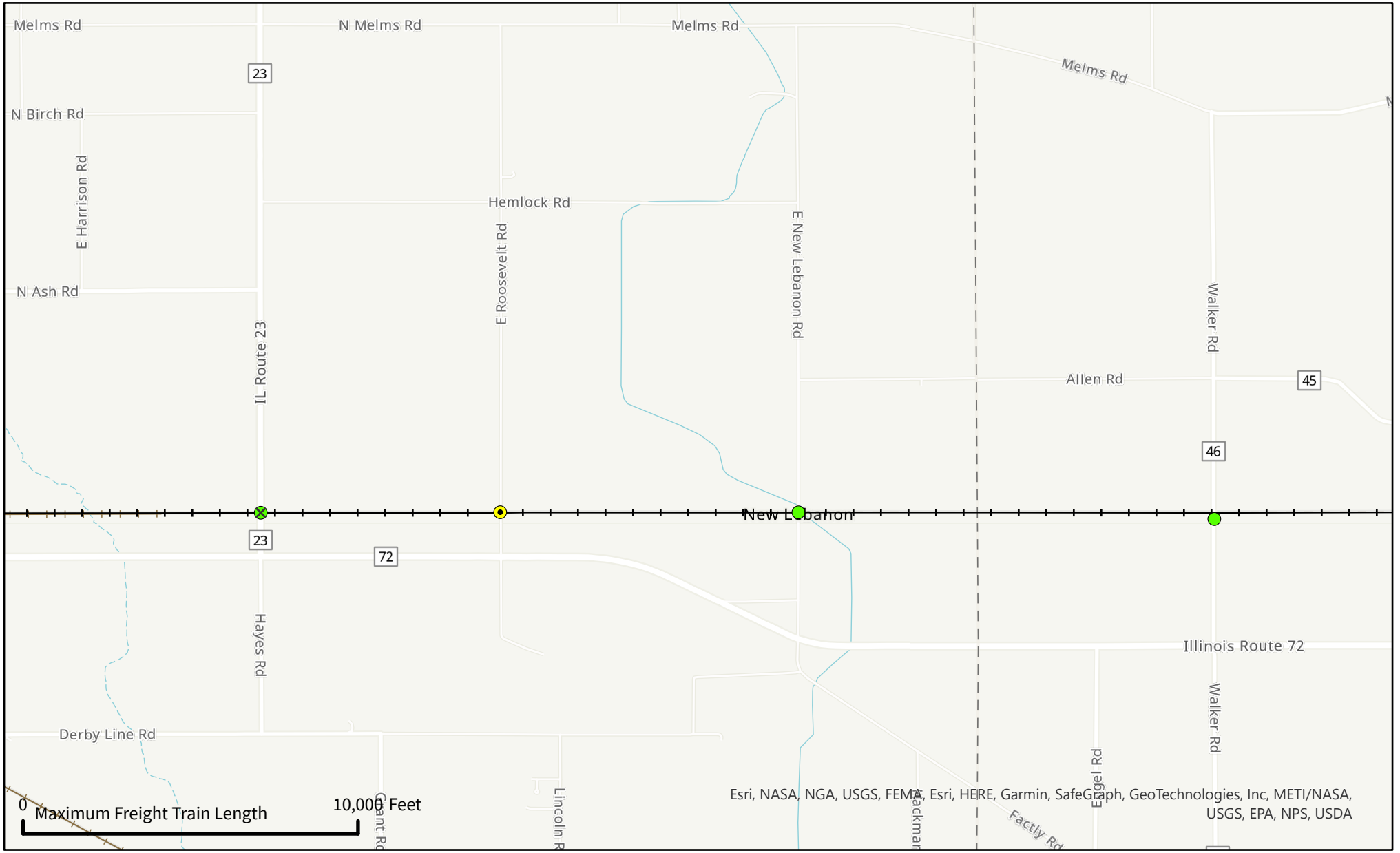


Emergency Services Routing Analysis
Hampshire, IL

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



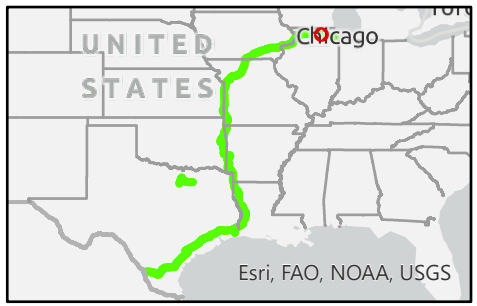
Legend

Crossing Position

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- Key Map: Analyzed Tracks
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- Police

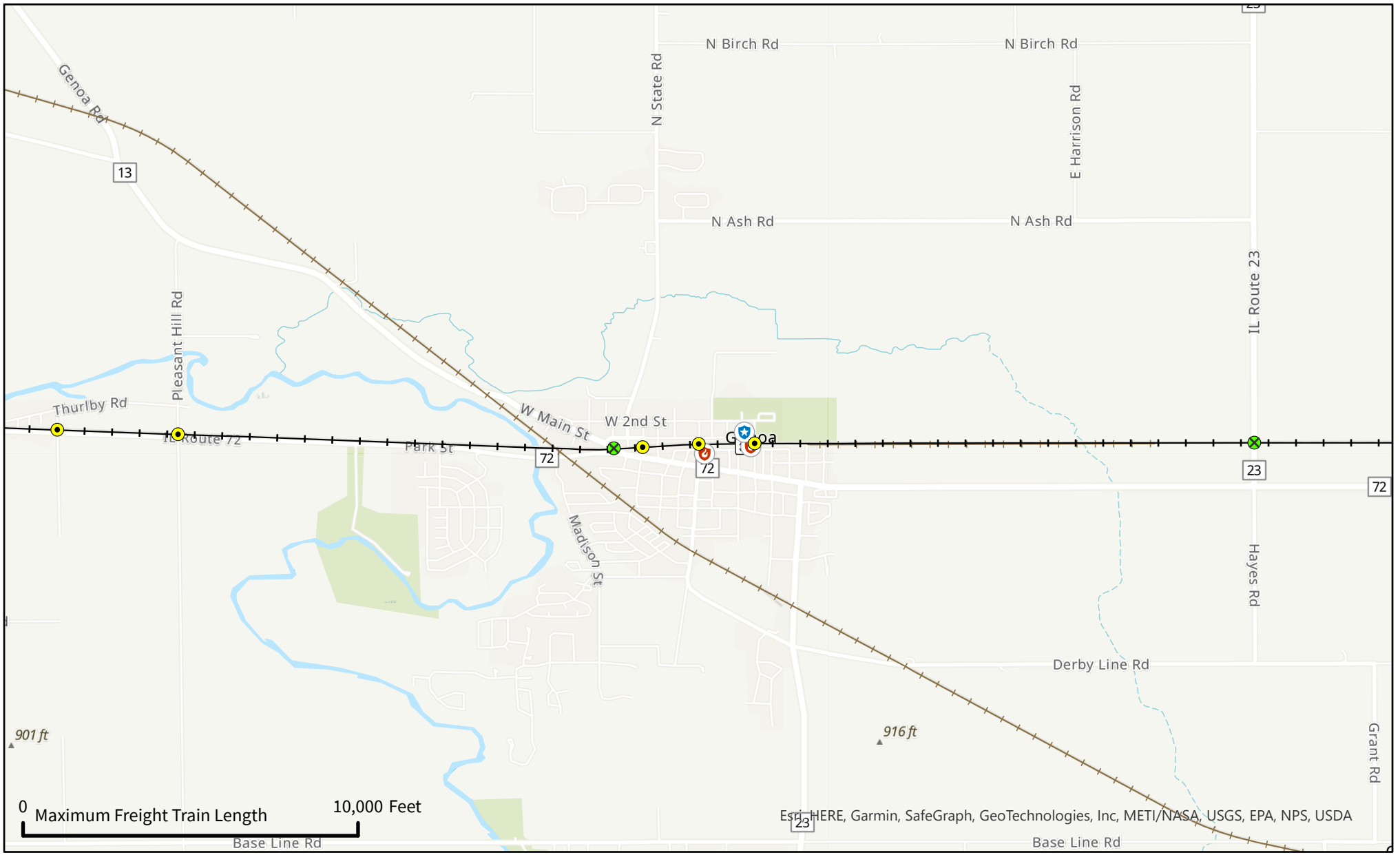


Emergency Services Routing Analysis
New Lebanon, IL

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



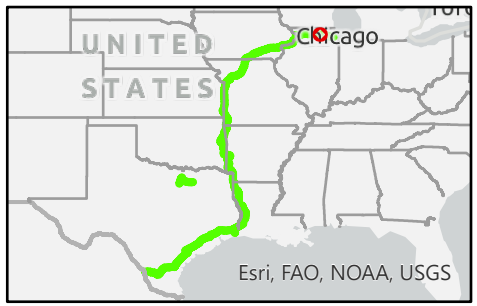
Legend

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- Hospital
- Police



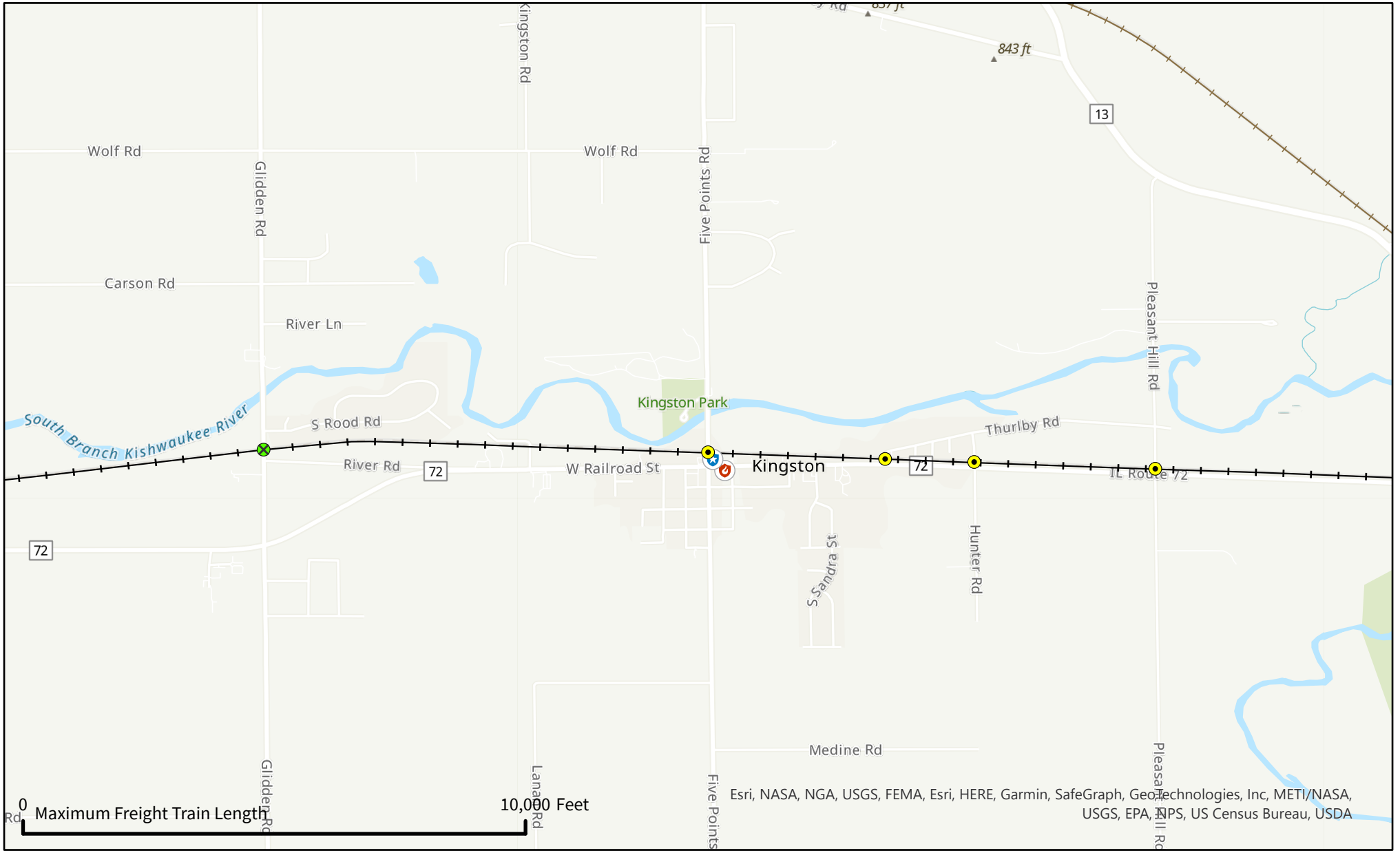
Emergency Services Routing Analysis

Genoa, IL

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



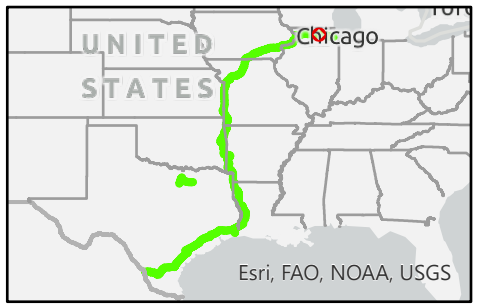
Legend

Crossing Position

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- Police

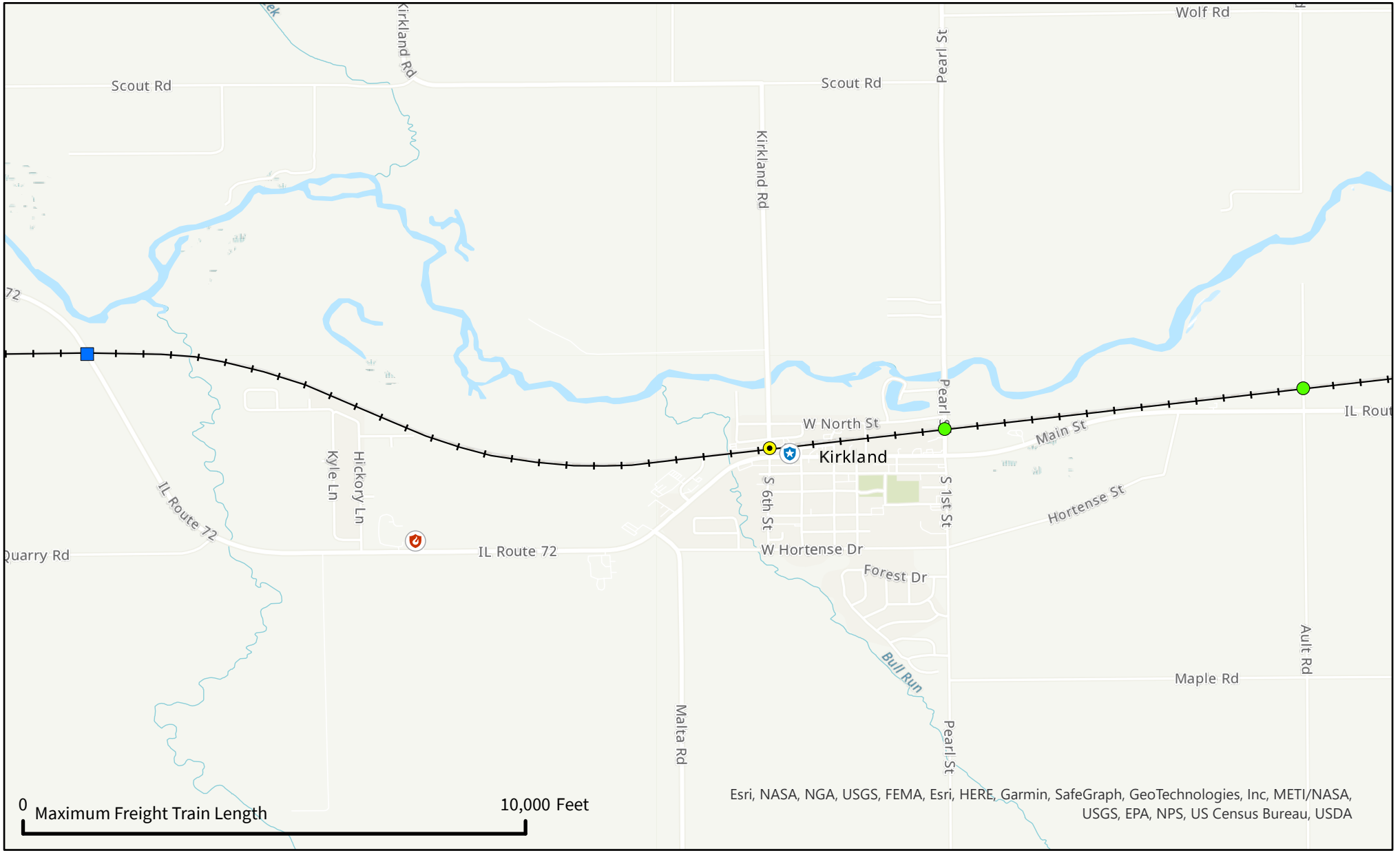


Emergency Services Routing Analysis
Kingston, IL

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



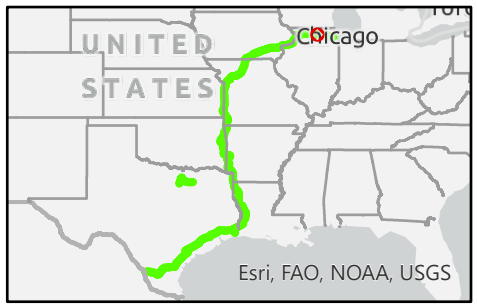
Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

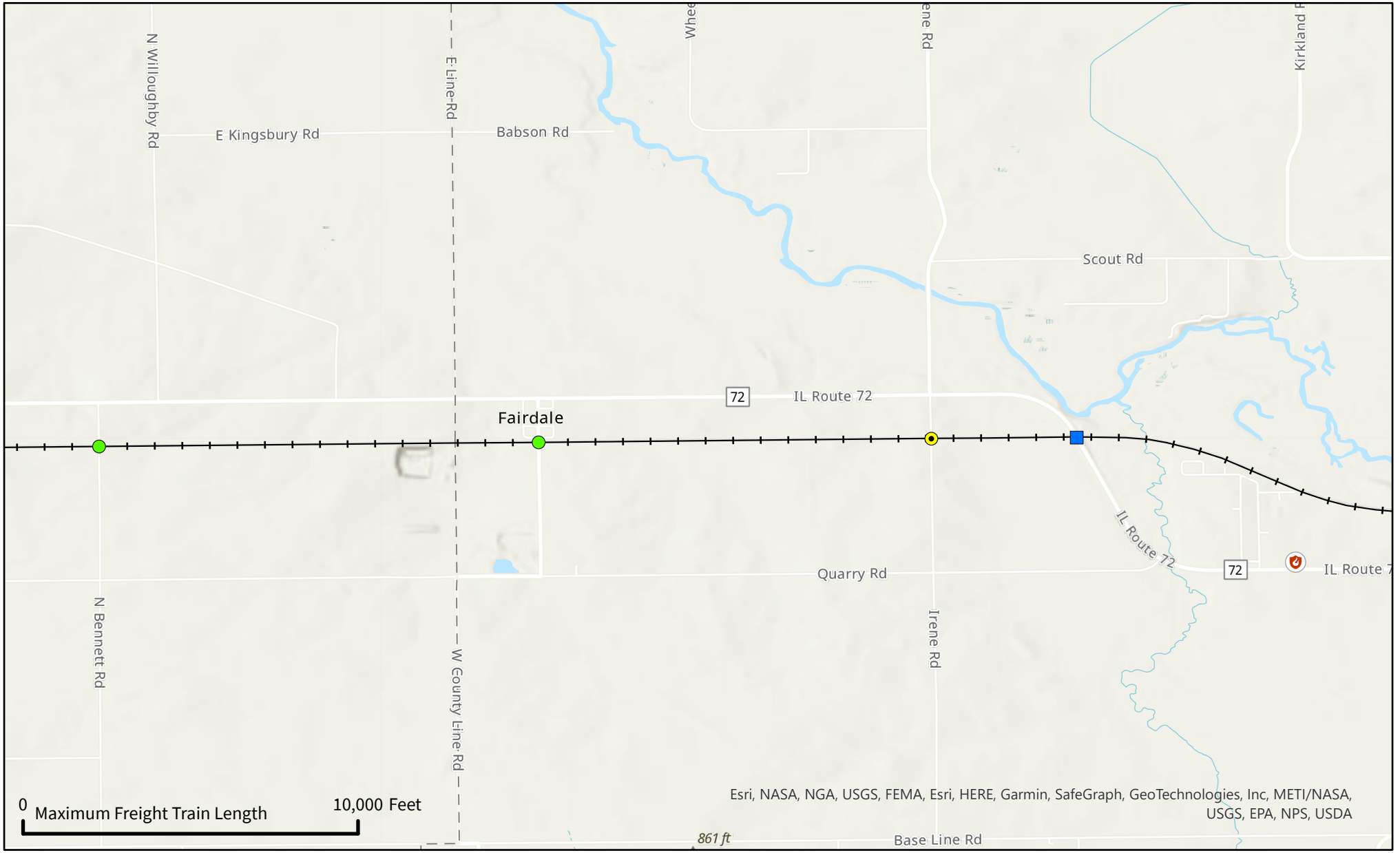


Emergency Services Routing Analysis
Kirkland, IL

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

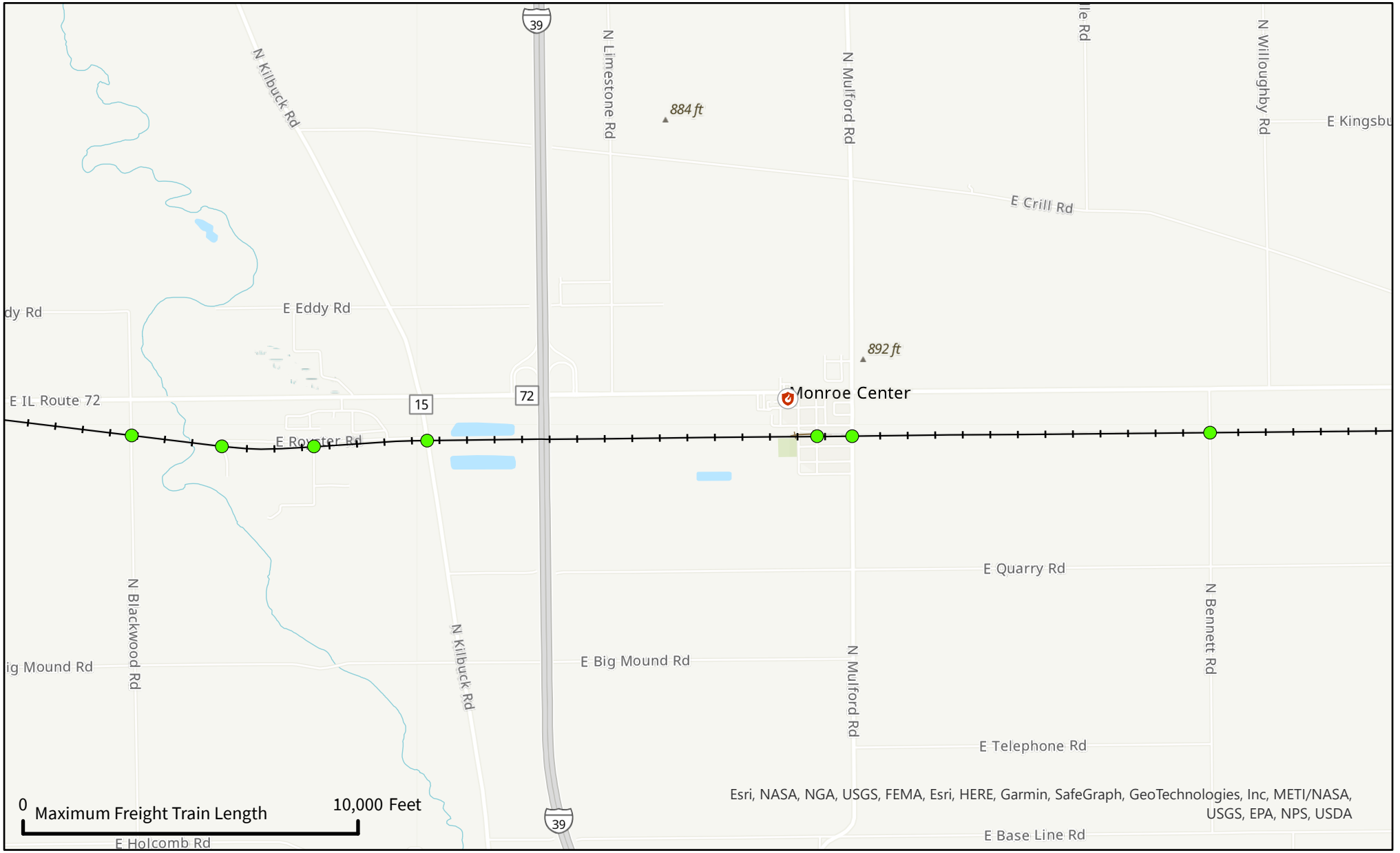


Emergency Services Routing Analysis
Fairdale, IL

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

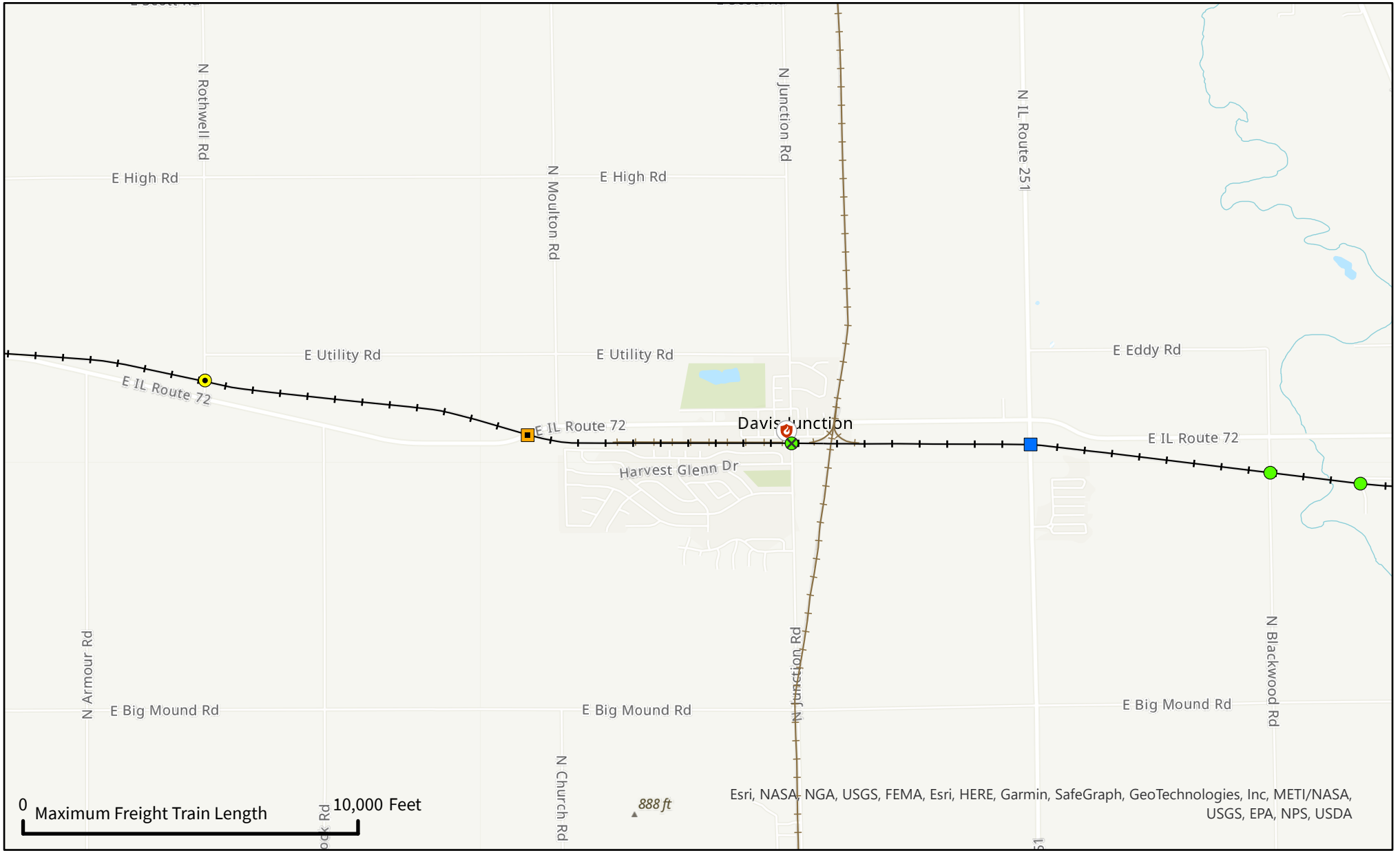


Emergency Services Routing Analysis
Monroe Center, IL

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



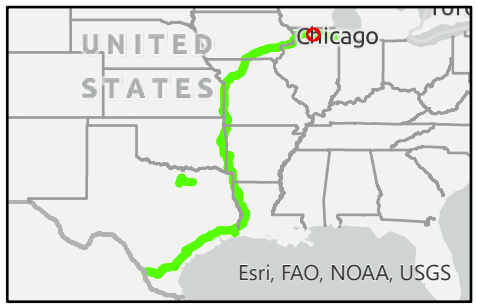
Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
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- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

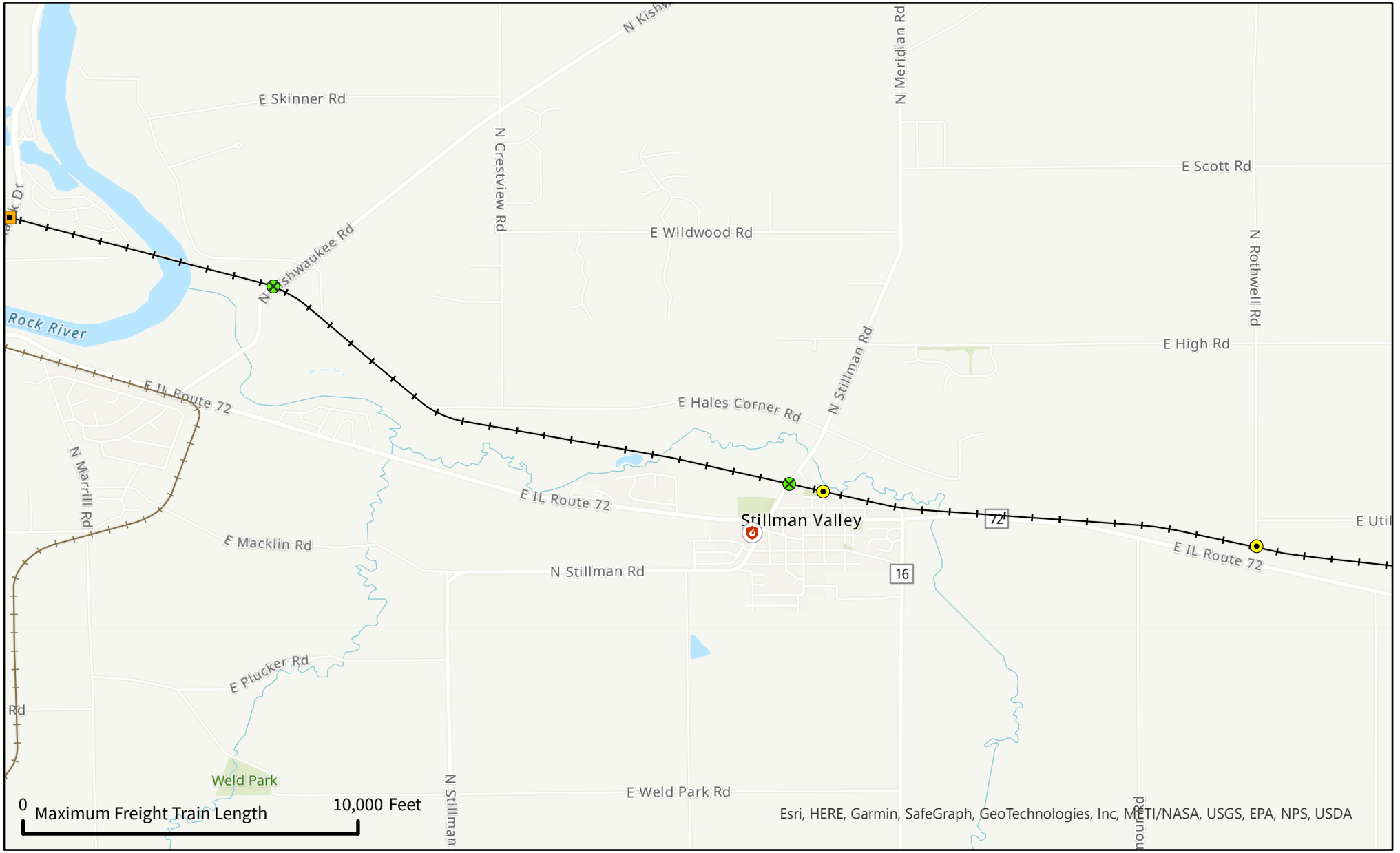


Emergency Services Routing Analysis
Davis Junction, IL

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



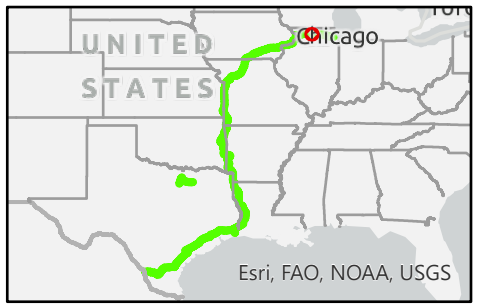
Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
- Analyzed Tracks
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- Fire Station
- EMS Dispatch
- Hospital
- Police

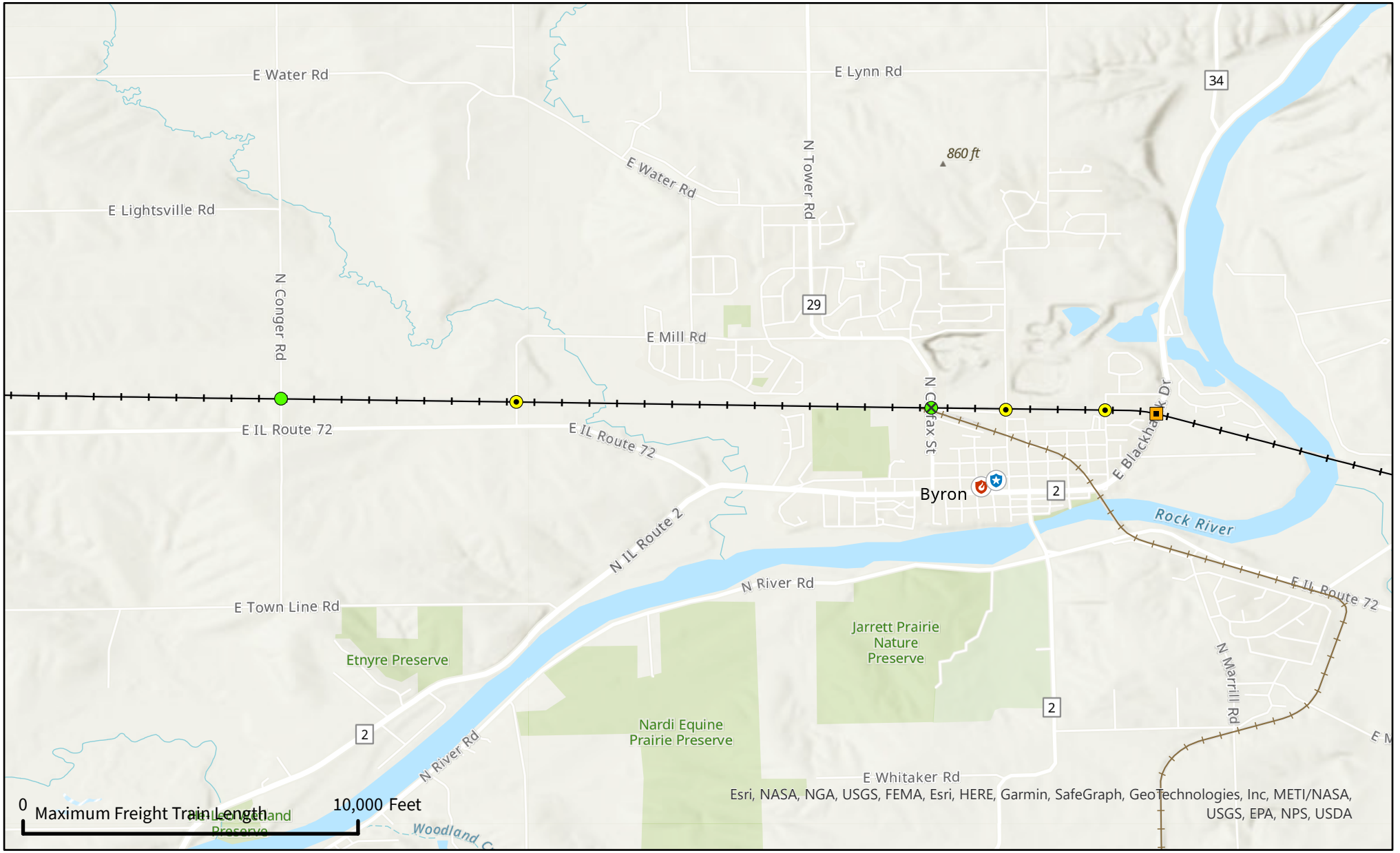


Emergency Services Routing Analysis
Stillman Valley, IL

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
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- Key Map: Analyzed Tracks
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- Fire Station
- EMS Dispatch
- Hospital
- Police



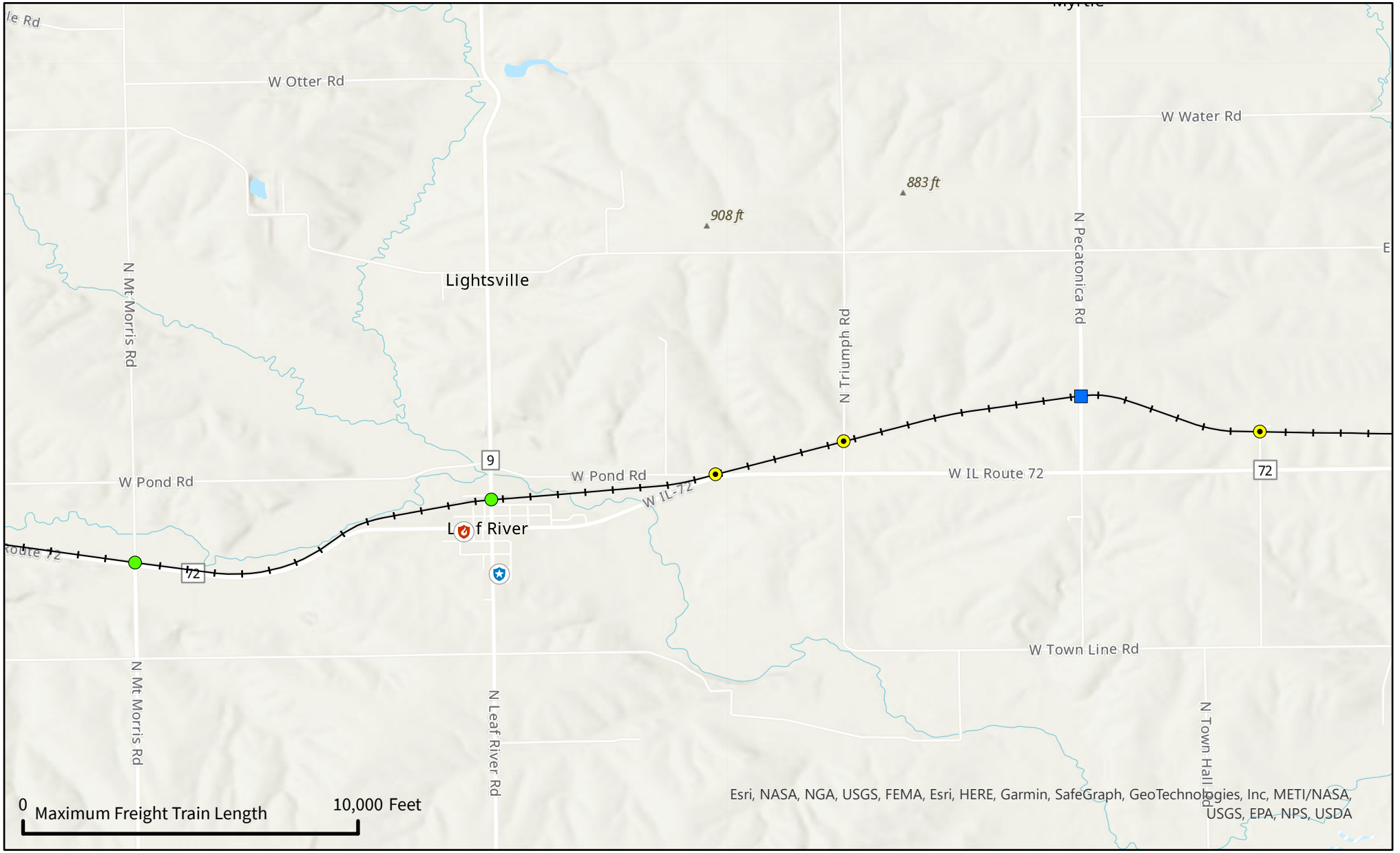
Emergency Services Routing Analysis

Byron, IL

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Leaf River, IL

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
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- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Adeline, IL

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
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- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

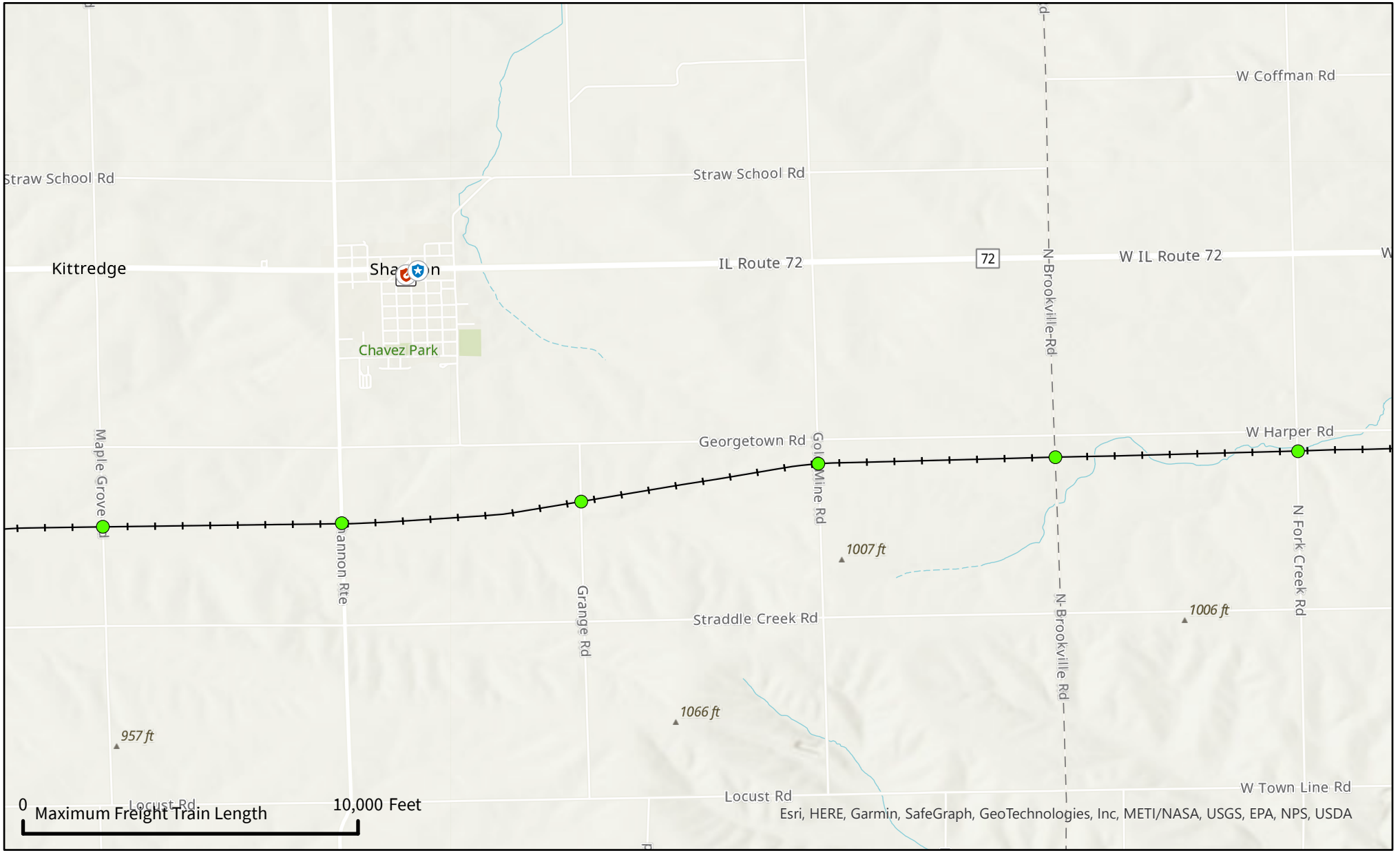


Emergency Services Routing Analysis
Forreston, IL

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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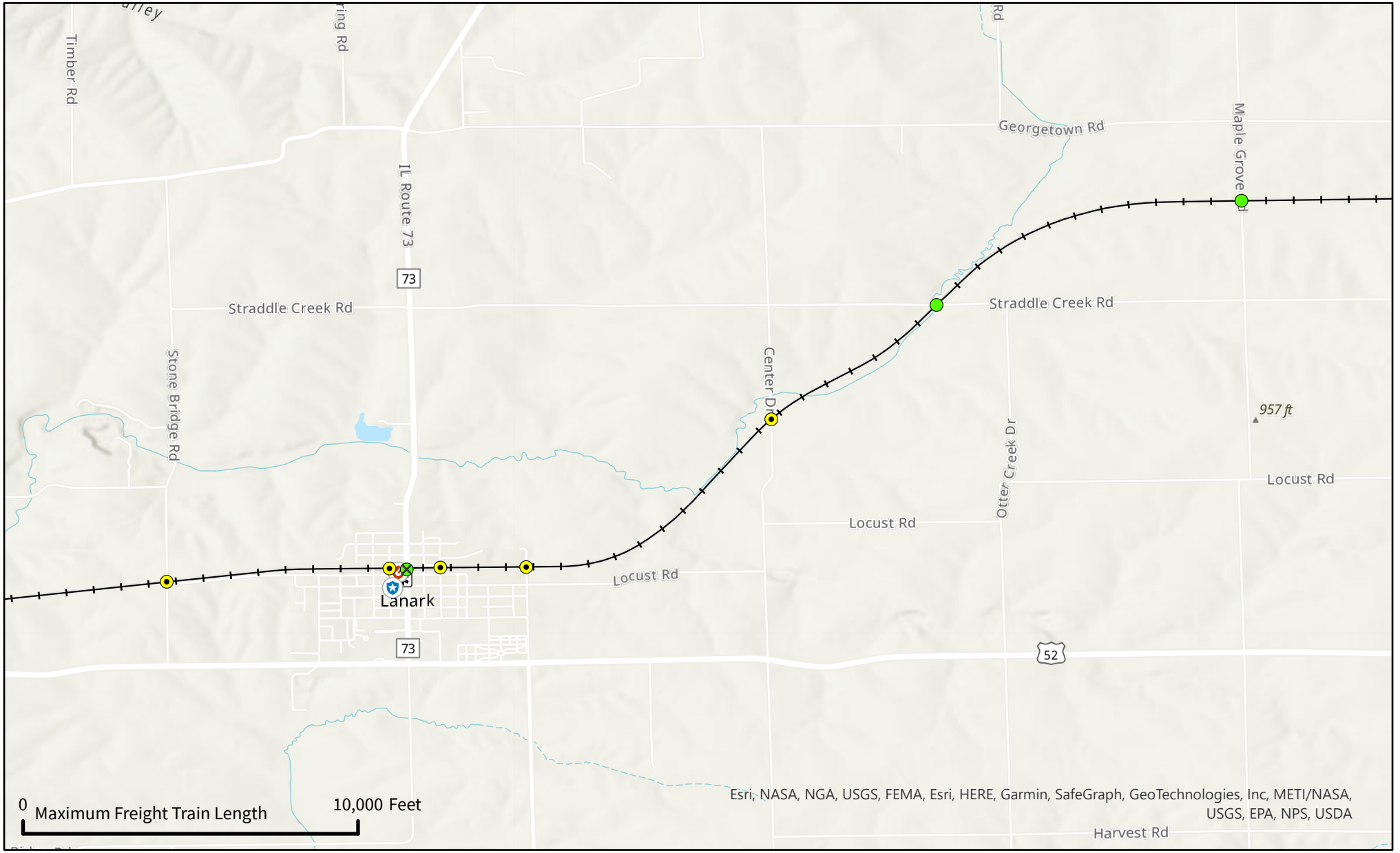


Emergency Services Routing Analysis
Shannon, IL

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Lanark, IL

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



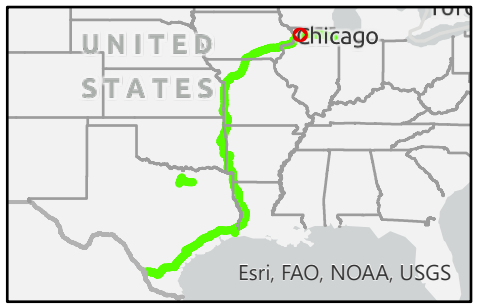
Legend

Crossing Position

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- Other Tracks
- Fire Station
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- Hospital
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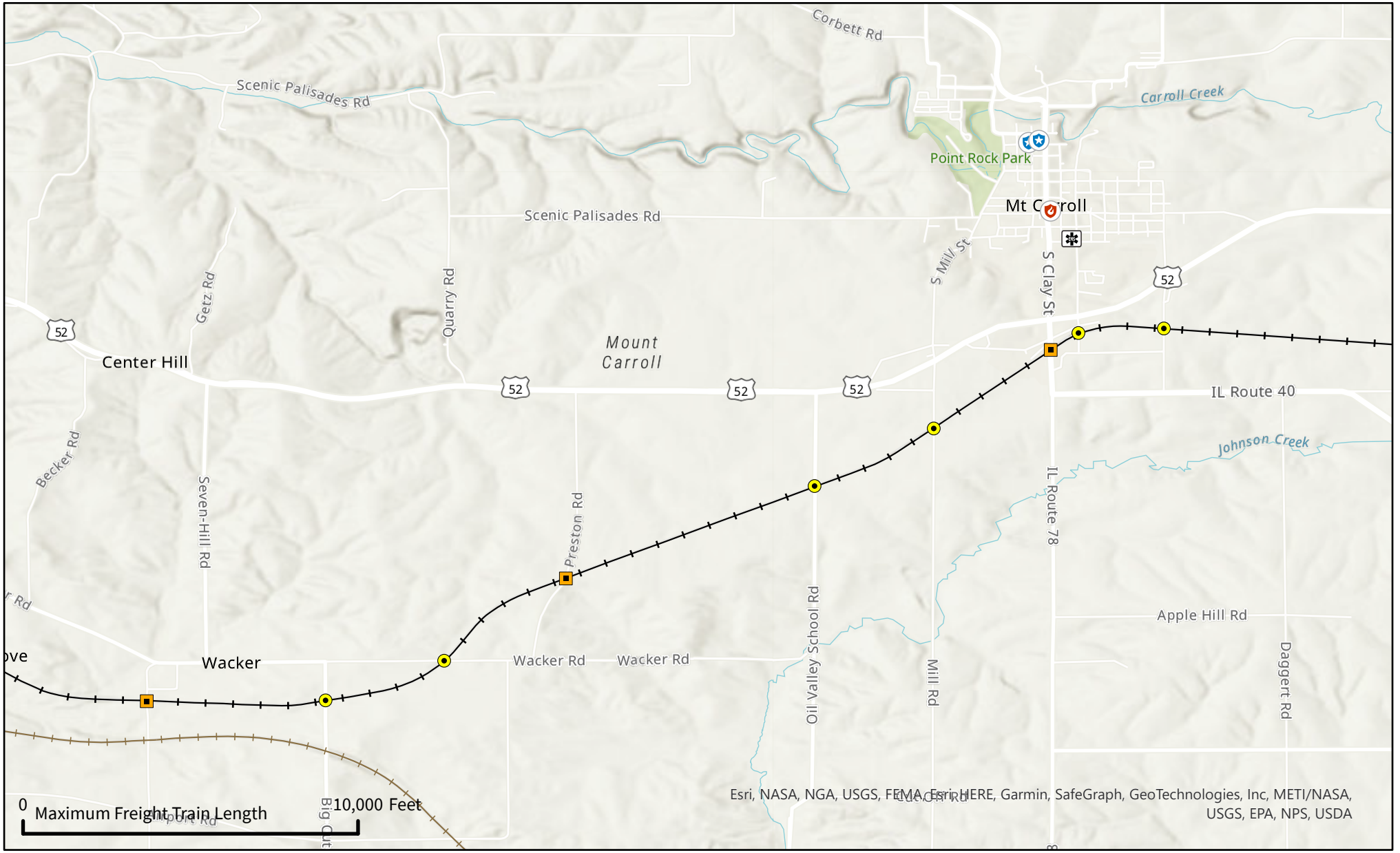


Emergency Services Routing Analysis
Ashdale Junction, IL

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



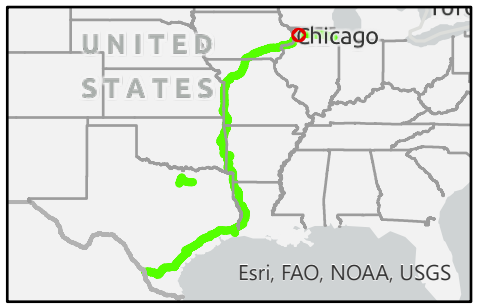
Legend

Crossing Position

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Other

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- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis

Mt Carroll, IL

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



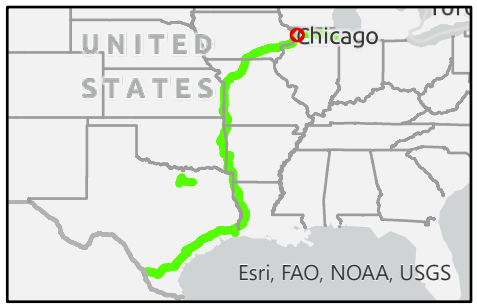
Legend

Crossing Position

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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

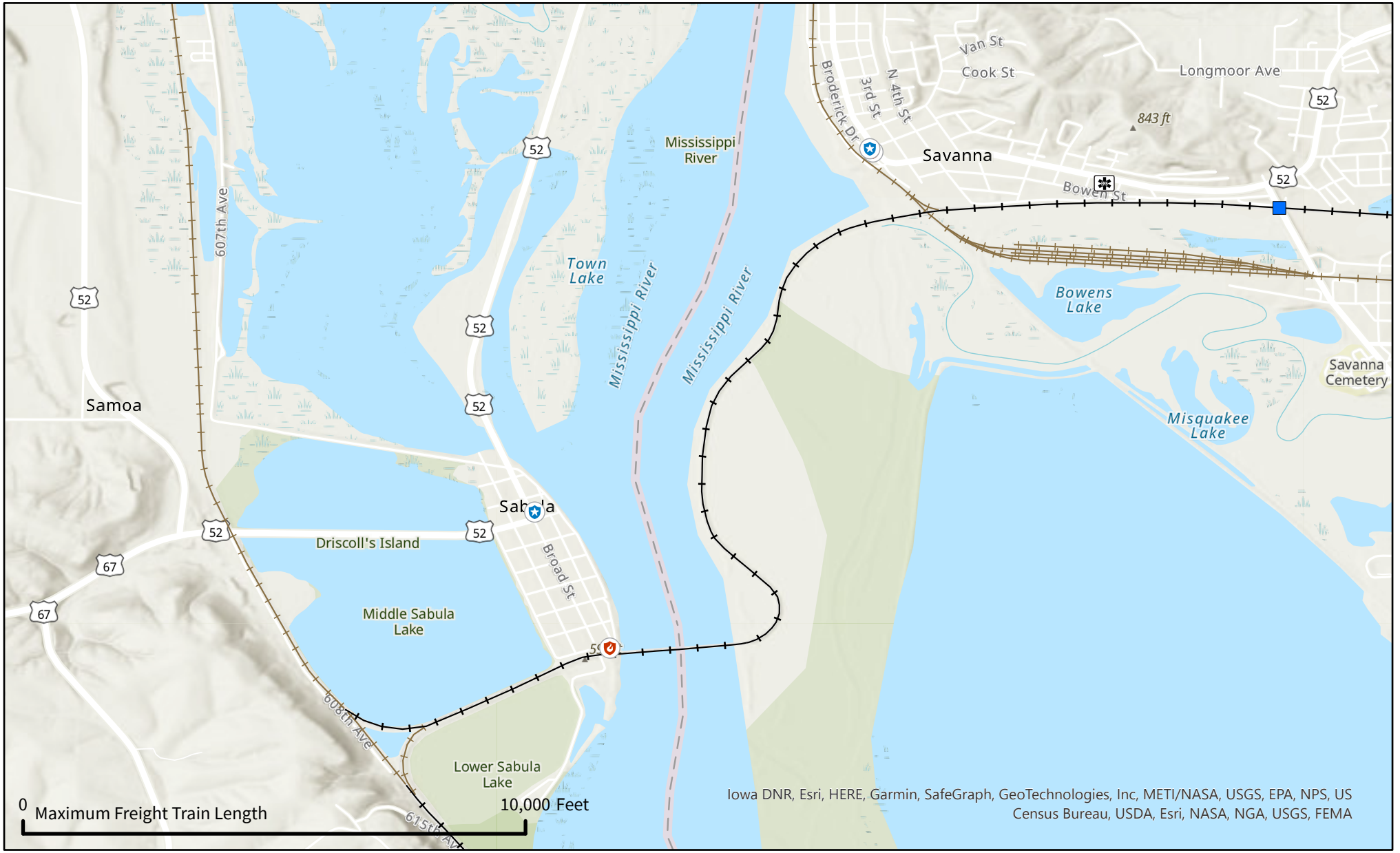


Emergency Services Routing Analysis
Hickory Grove, IL

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



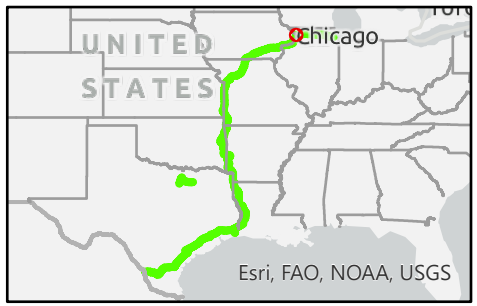
Legend

Crossing Position

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- Or At-Grade Crossing (Closed)
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

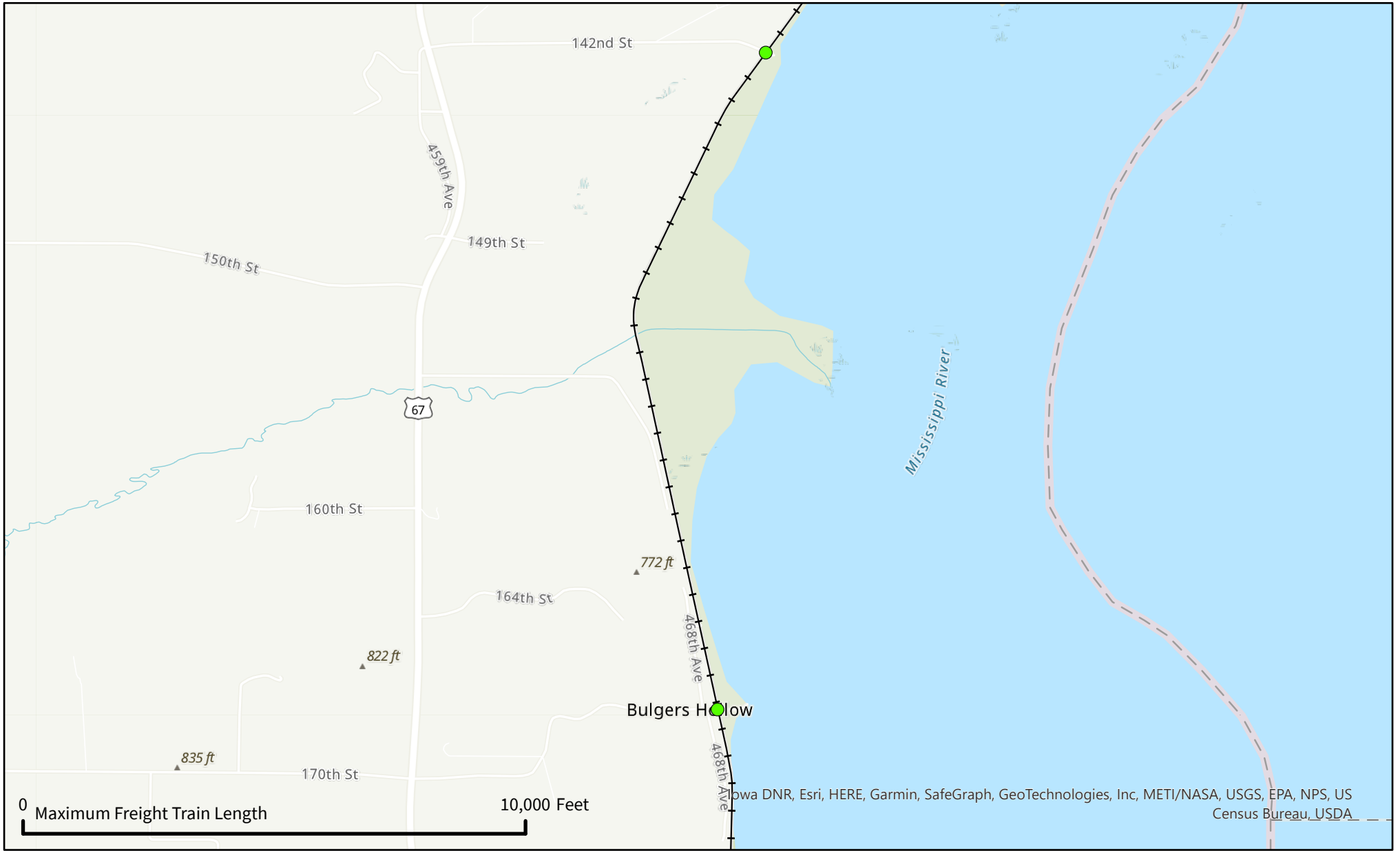


Emergency Services Routing Analysis
Savanna IL and Sabula IA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



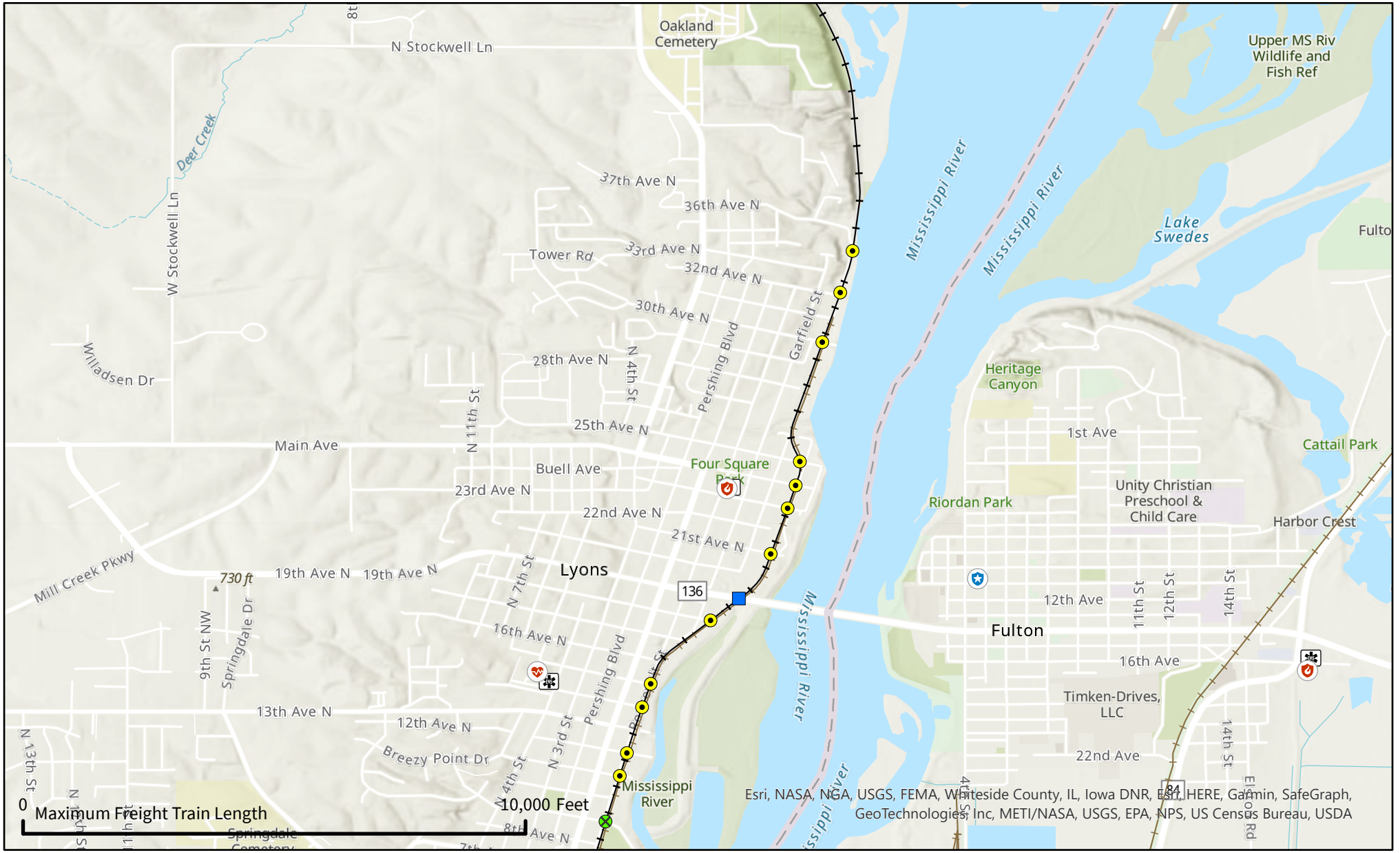
Emergency Services Routing Analysis

Bulgers Hollow, IA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



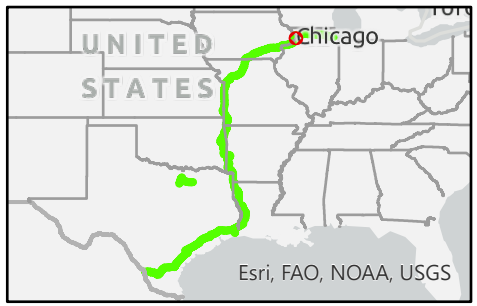
Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Lyons IA and Fulton IL

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



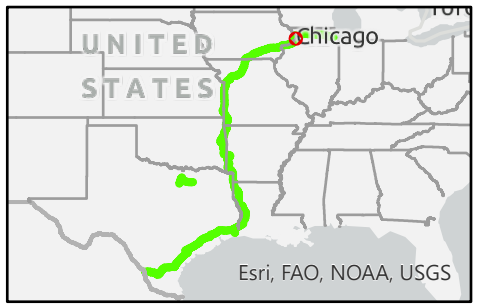
Legend

Crossing Position

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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

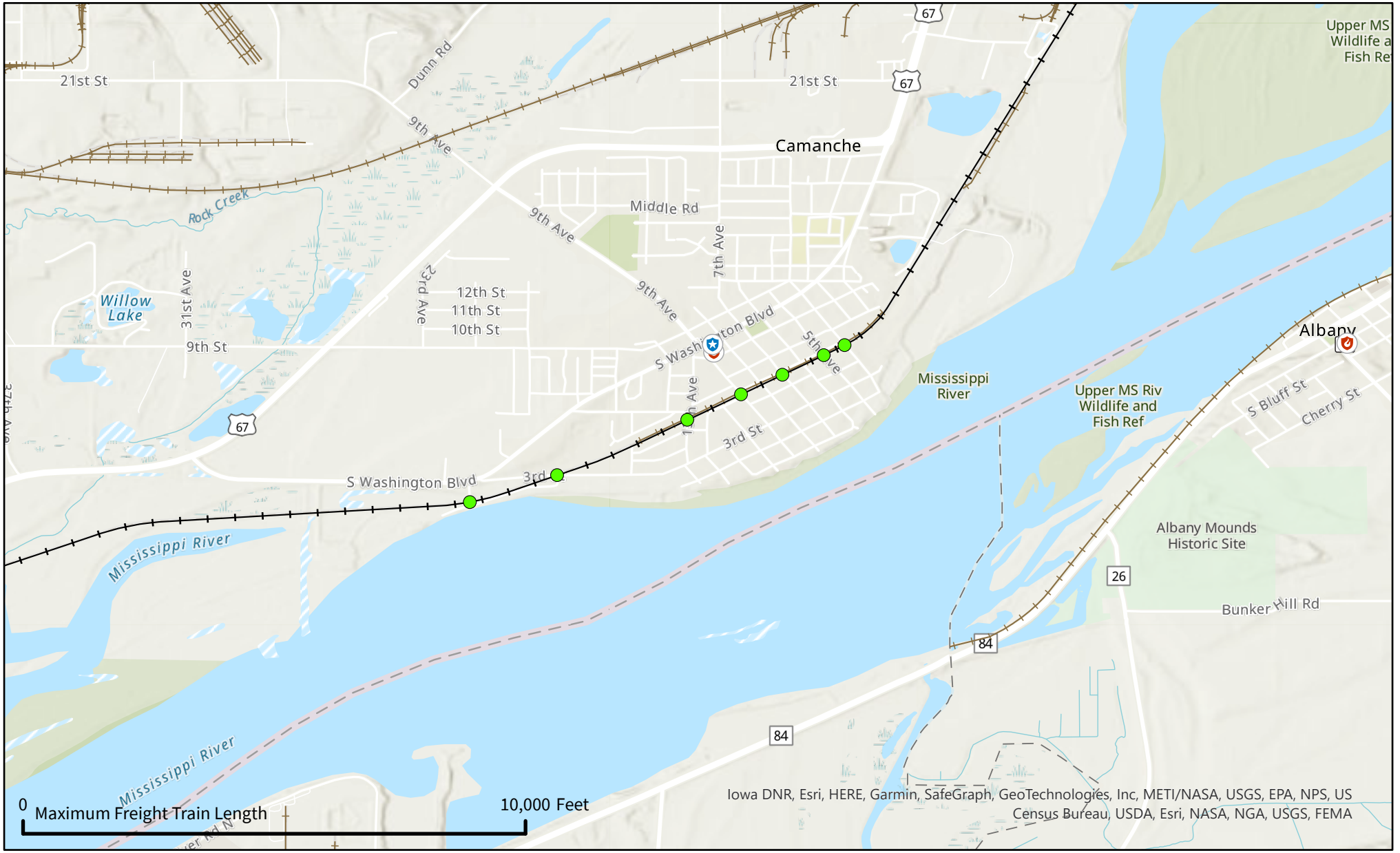


Emergency Services Routing Analysis
Clinton, IA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



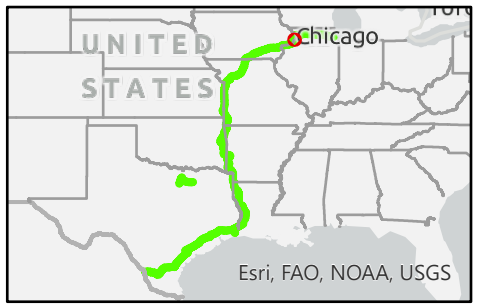
Legend

Crossing Position

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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

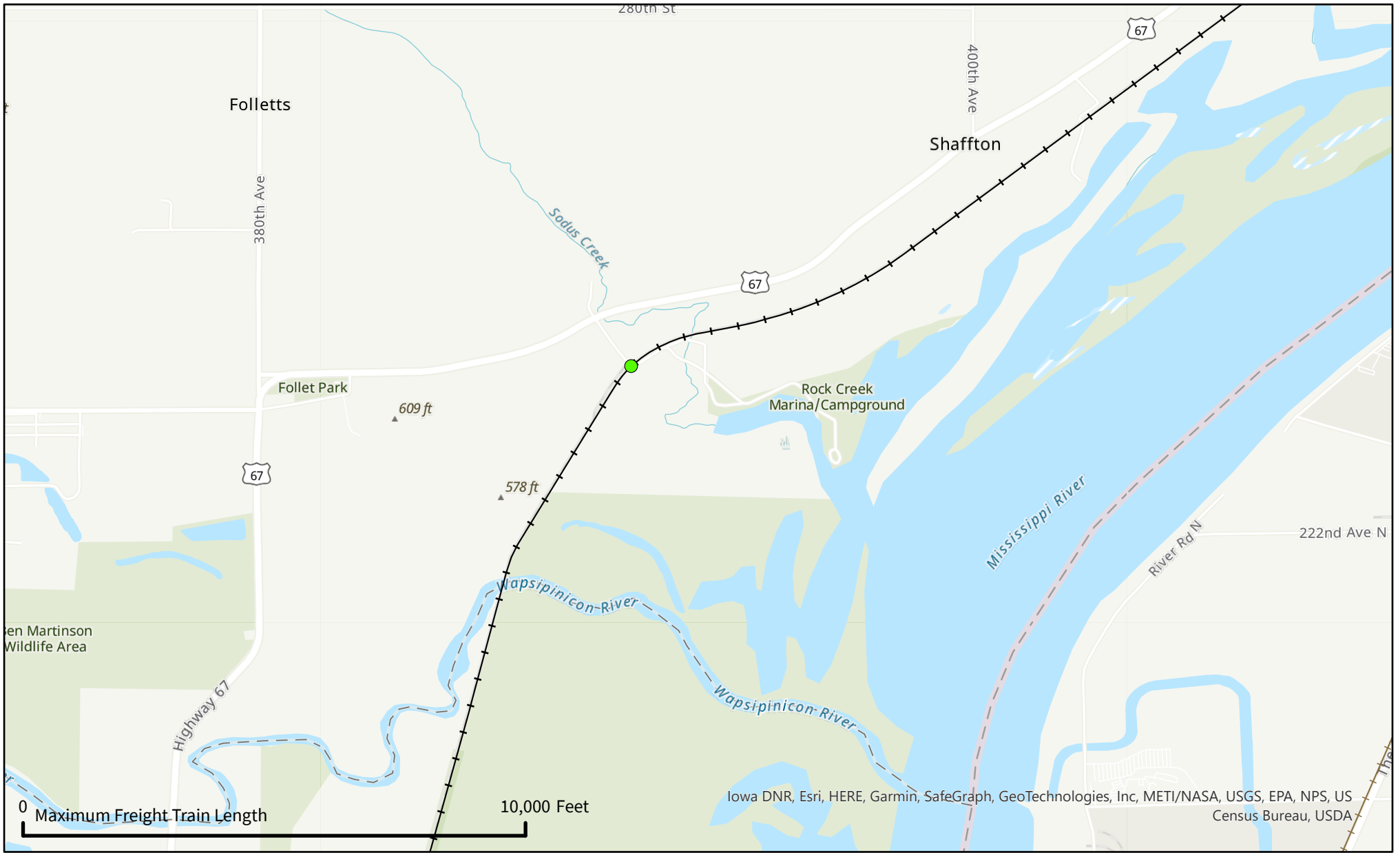


Emergency Services Routing Analysis
Camanche, IA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



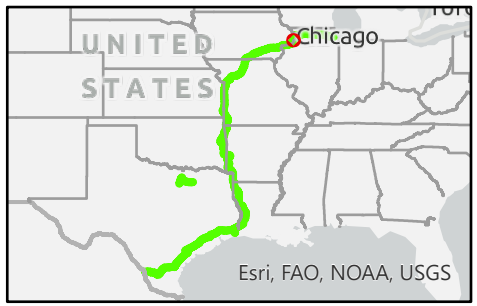
Legend

Crossing Position

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- Key Map: Analyzed Tracks
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- Fire Station
- EMS Dispatch
- Hospital
- Police

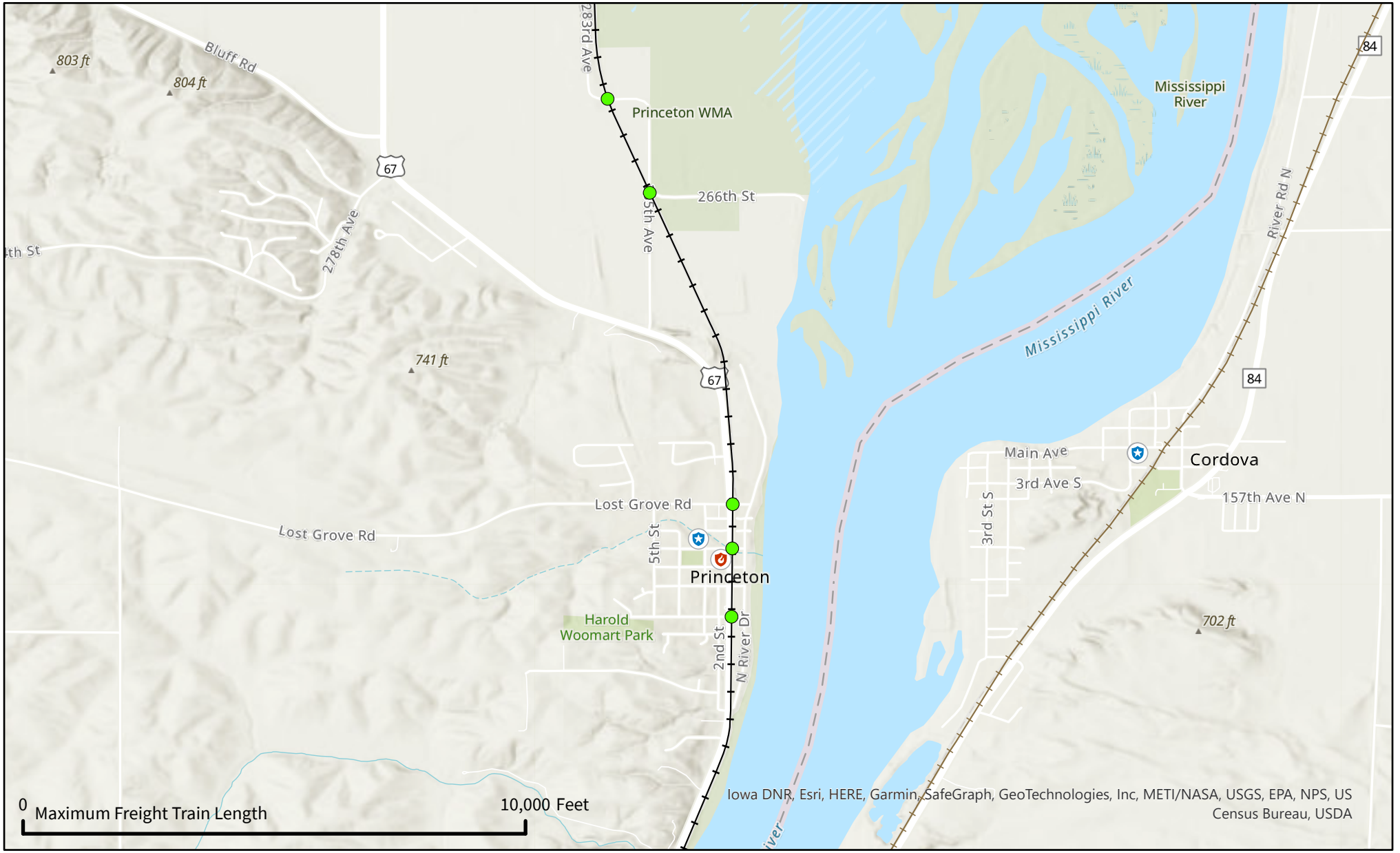


Emergency Services Routing Analysis
Shaffton, IA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis

Princeton, IA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
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- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



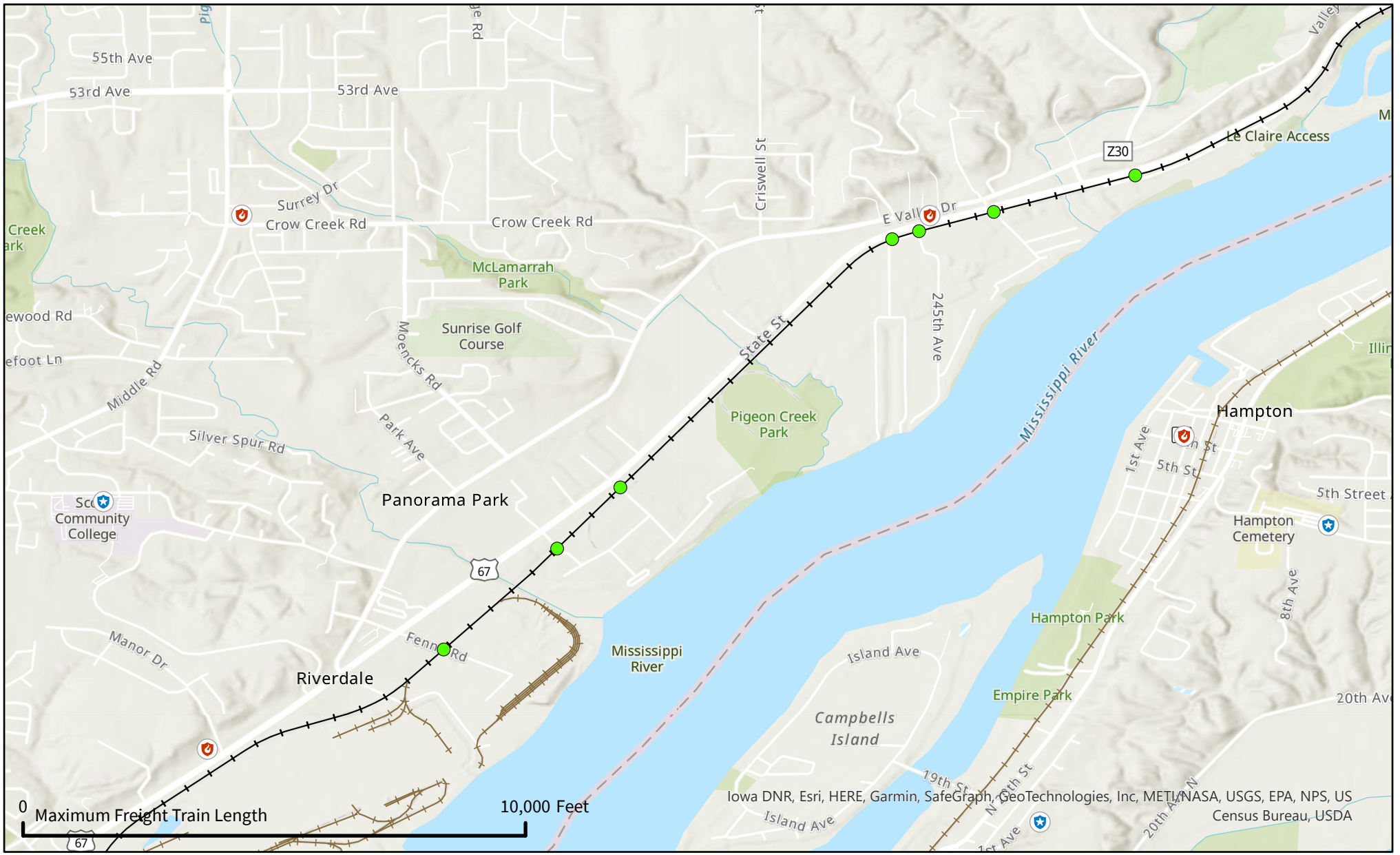
Emergency Services Routing Analysis

Le Claire, IA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Hospital
- Police



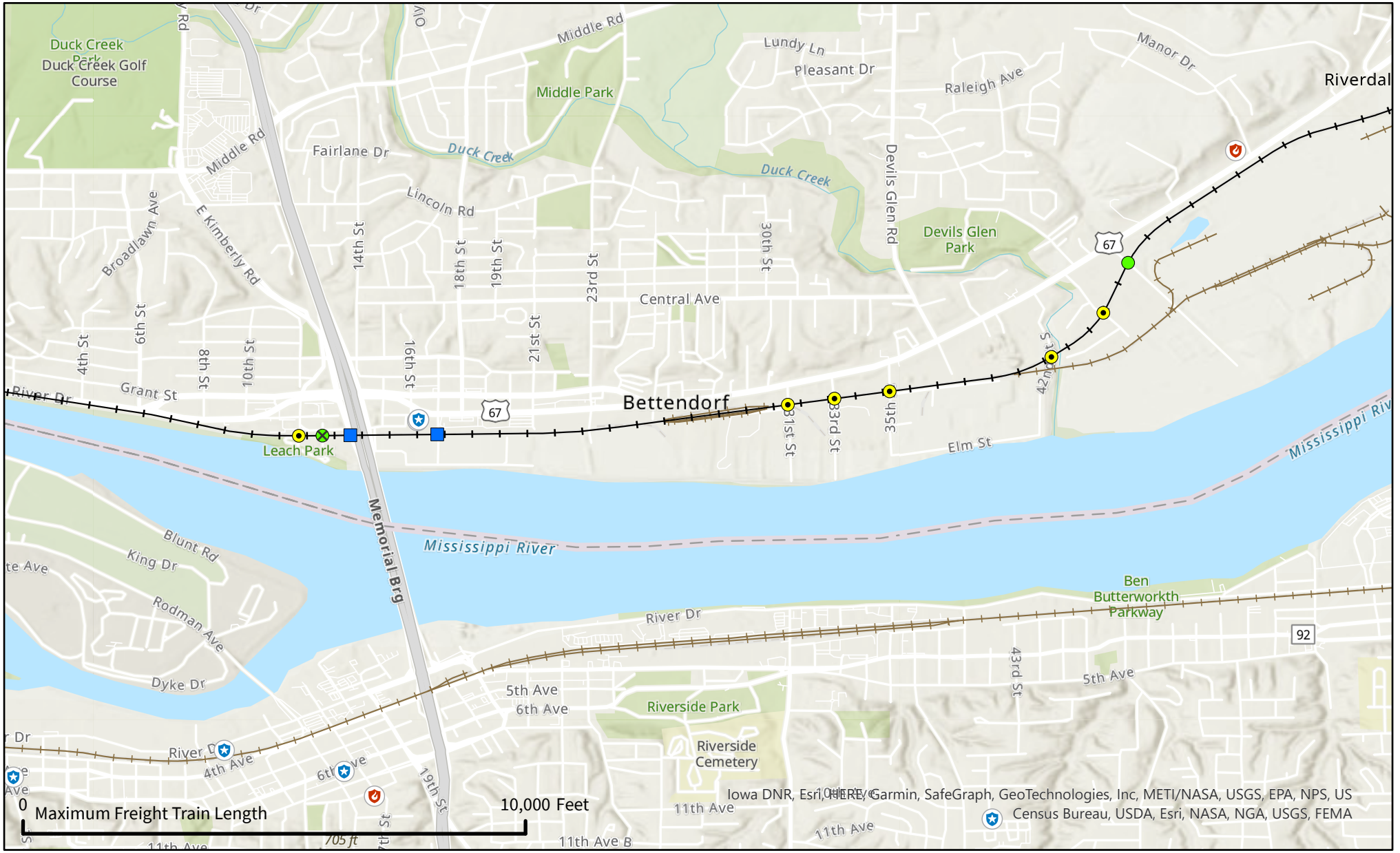
Emergency Services Routing Analysis

Panorama Park, IA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

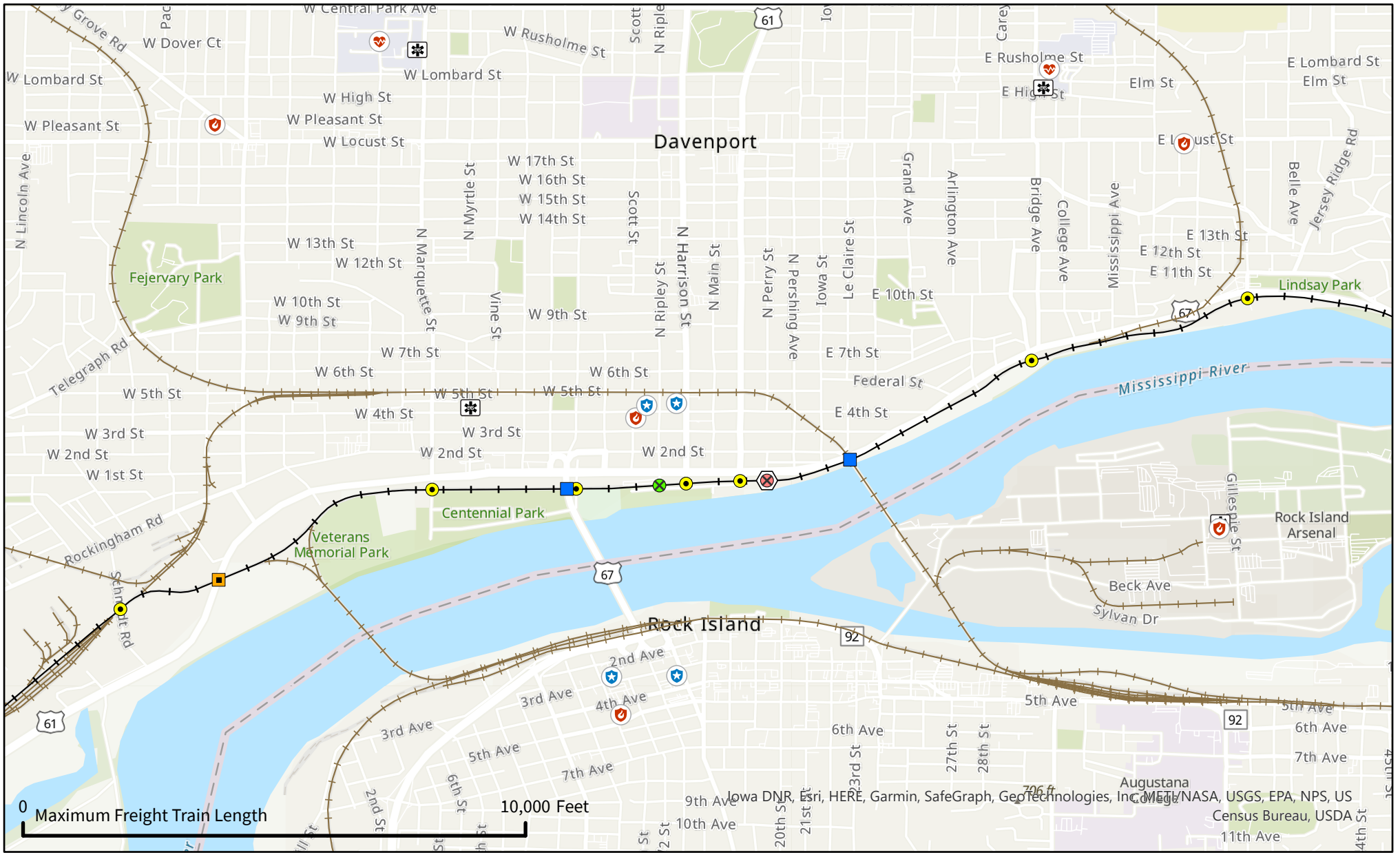


Emergency Services Routing Analysis
Bettendorf, IA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

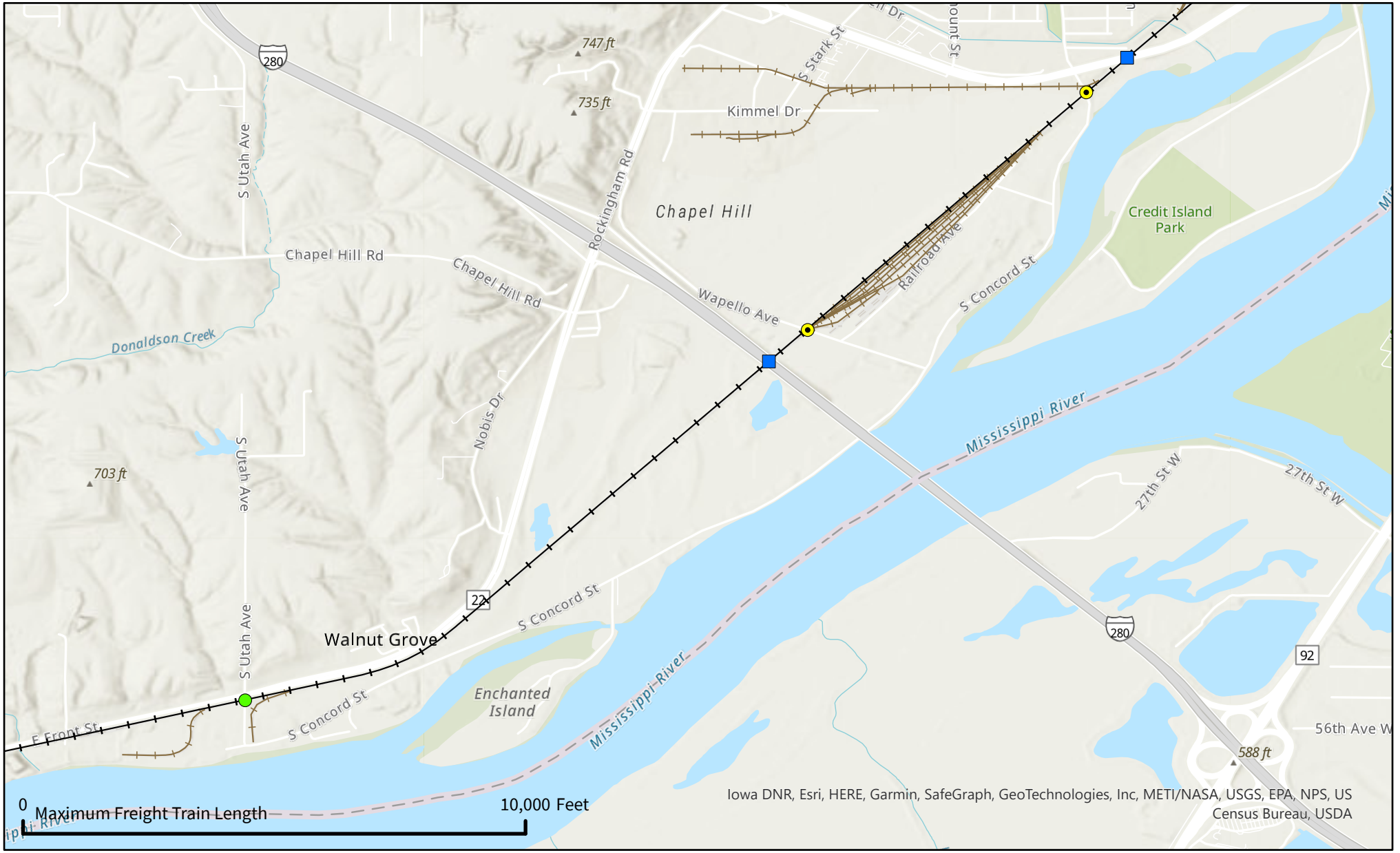


Emergency Services Routing Analysis
Davenport, IA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

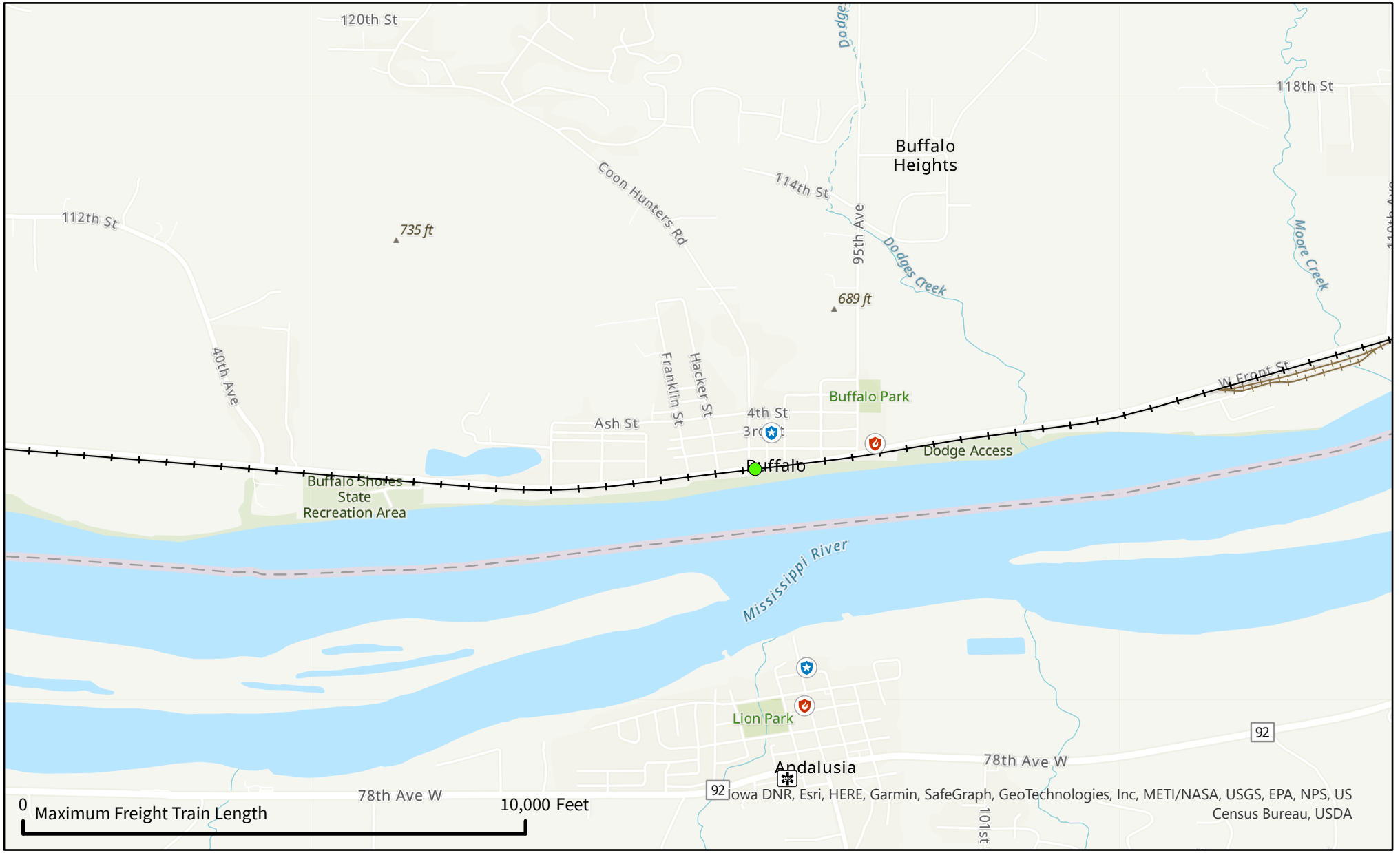


Emergency Services Routing Analysis
Walnut Grove, IA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

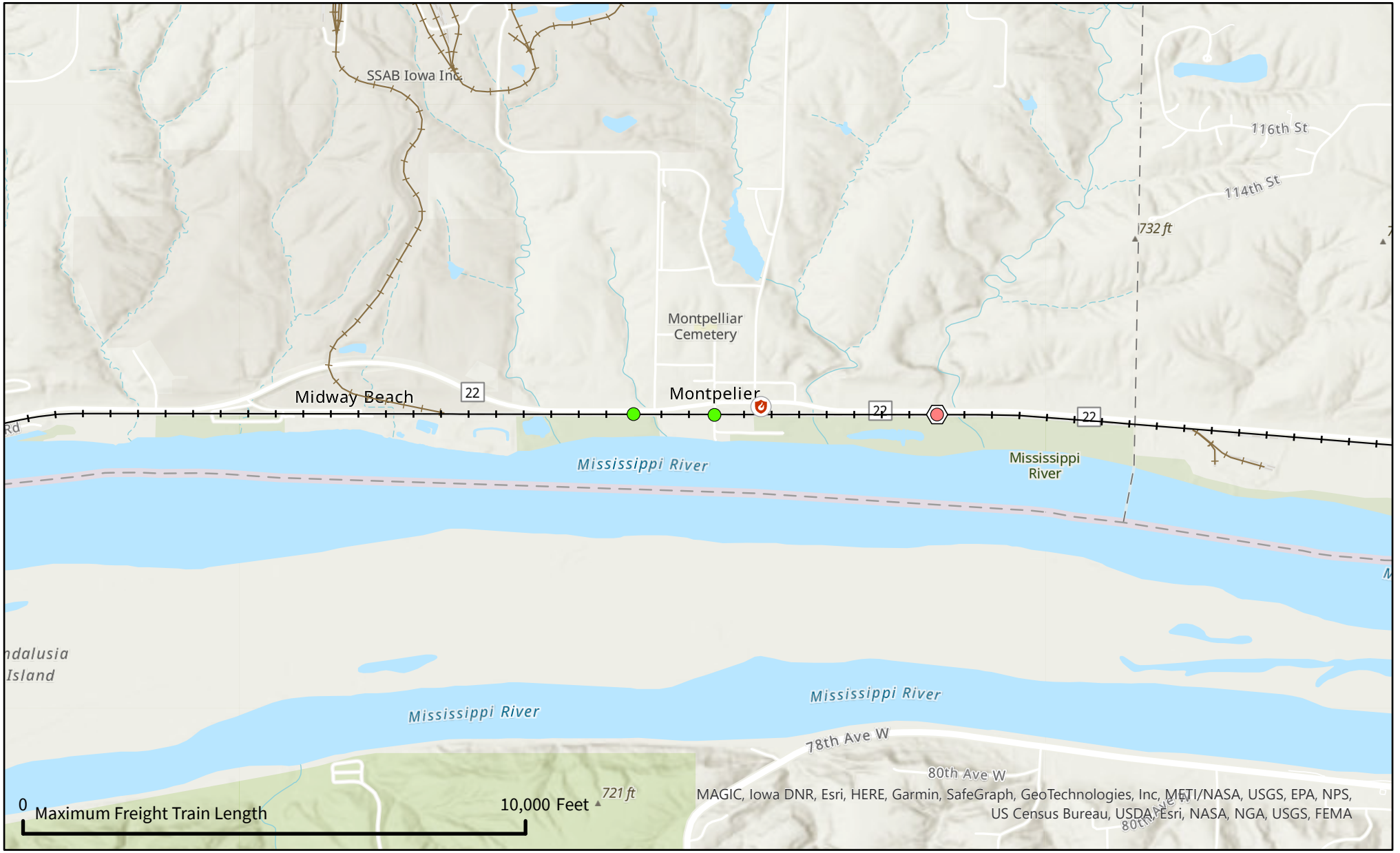


Emergency Services Routing Analysis
Buffalo, IA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- Fire Station
- EMS Dispatch
- Hospital
- Police



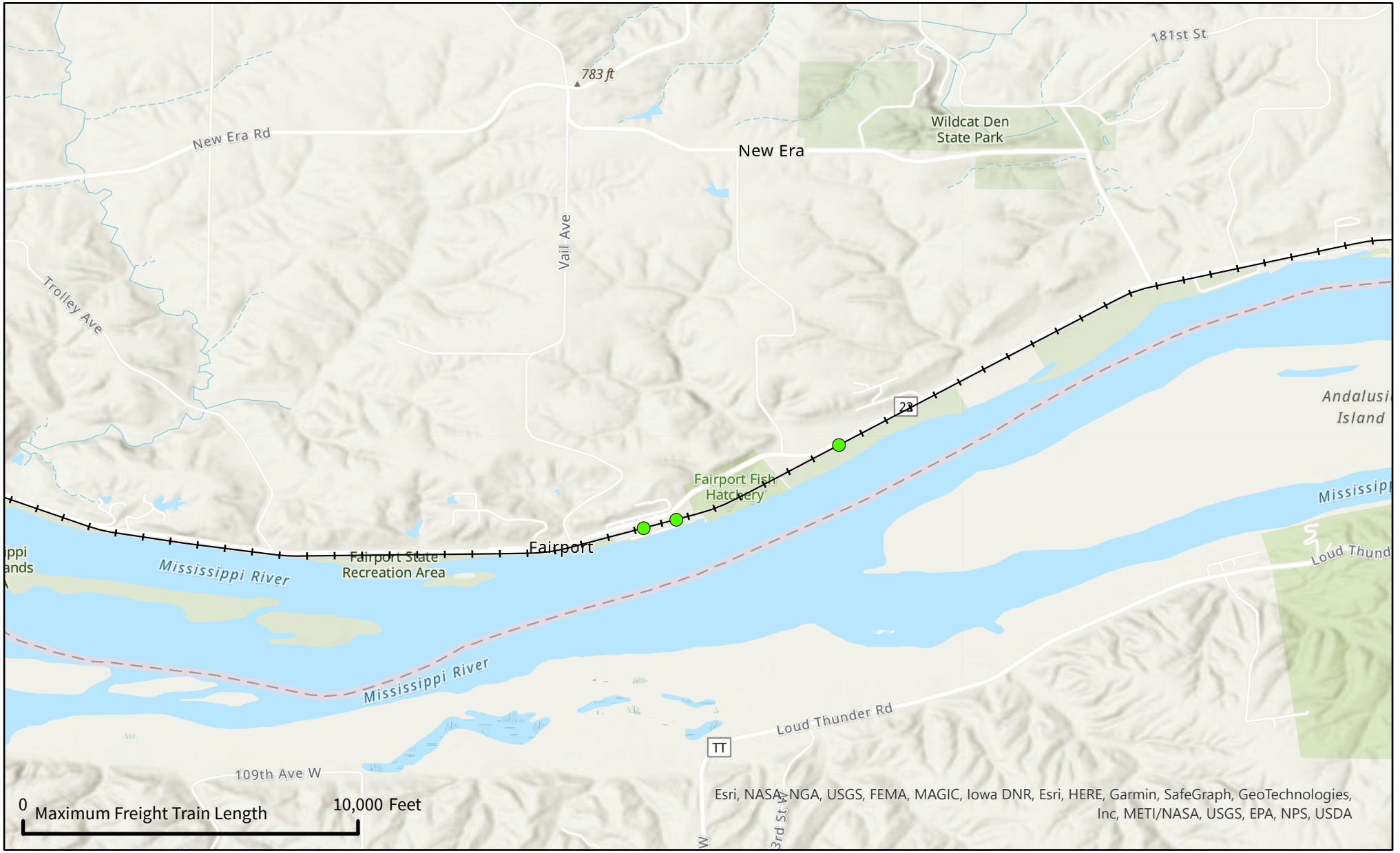
Emergency Services Routing Analysis

Montpelier, IA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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Other

- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Fairport, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

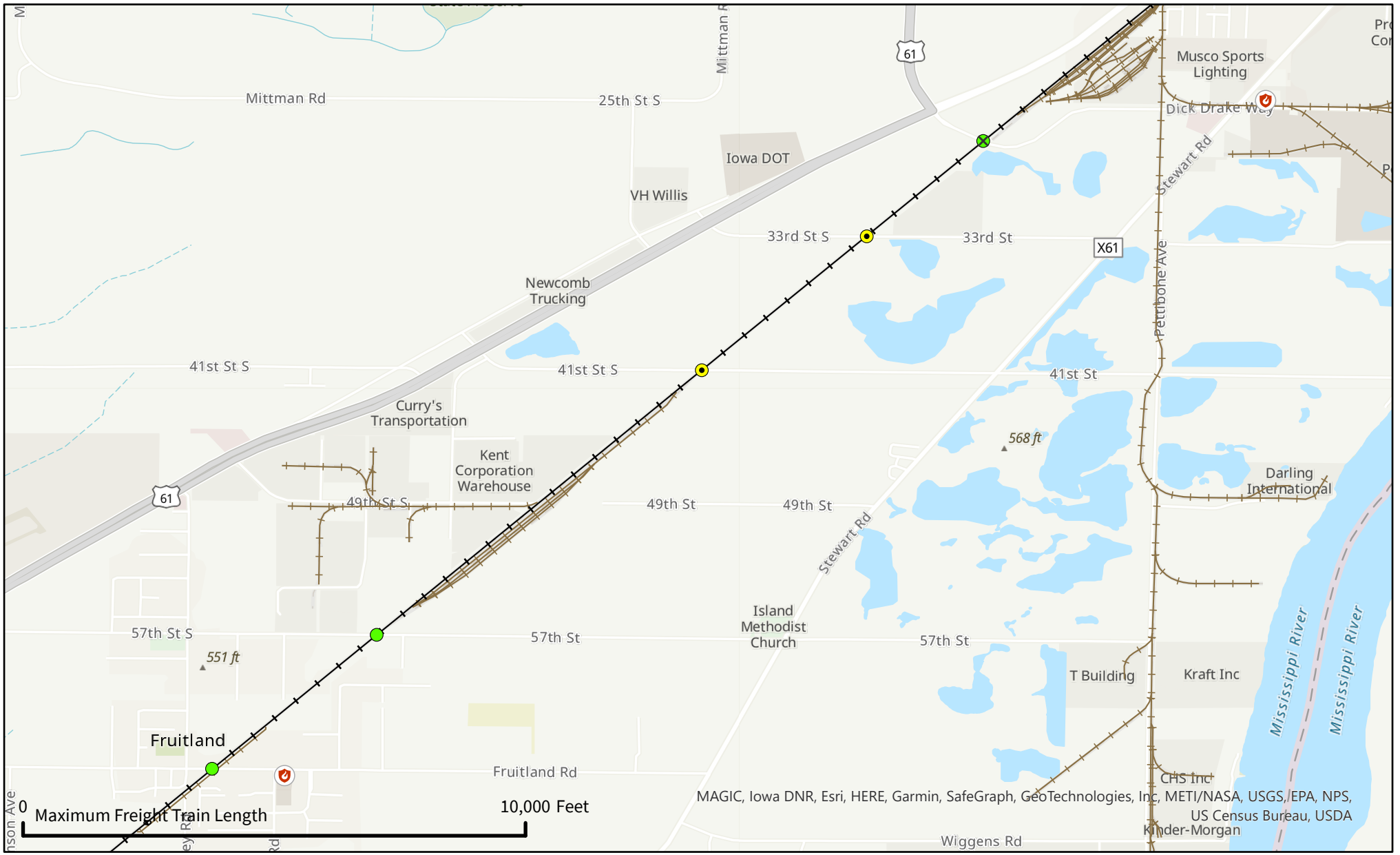


Emergency Services Routing Analysis
Muscatine, IA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
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- Fire Station
- EMS Dispatch
- Hospital
- Police

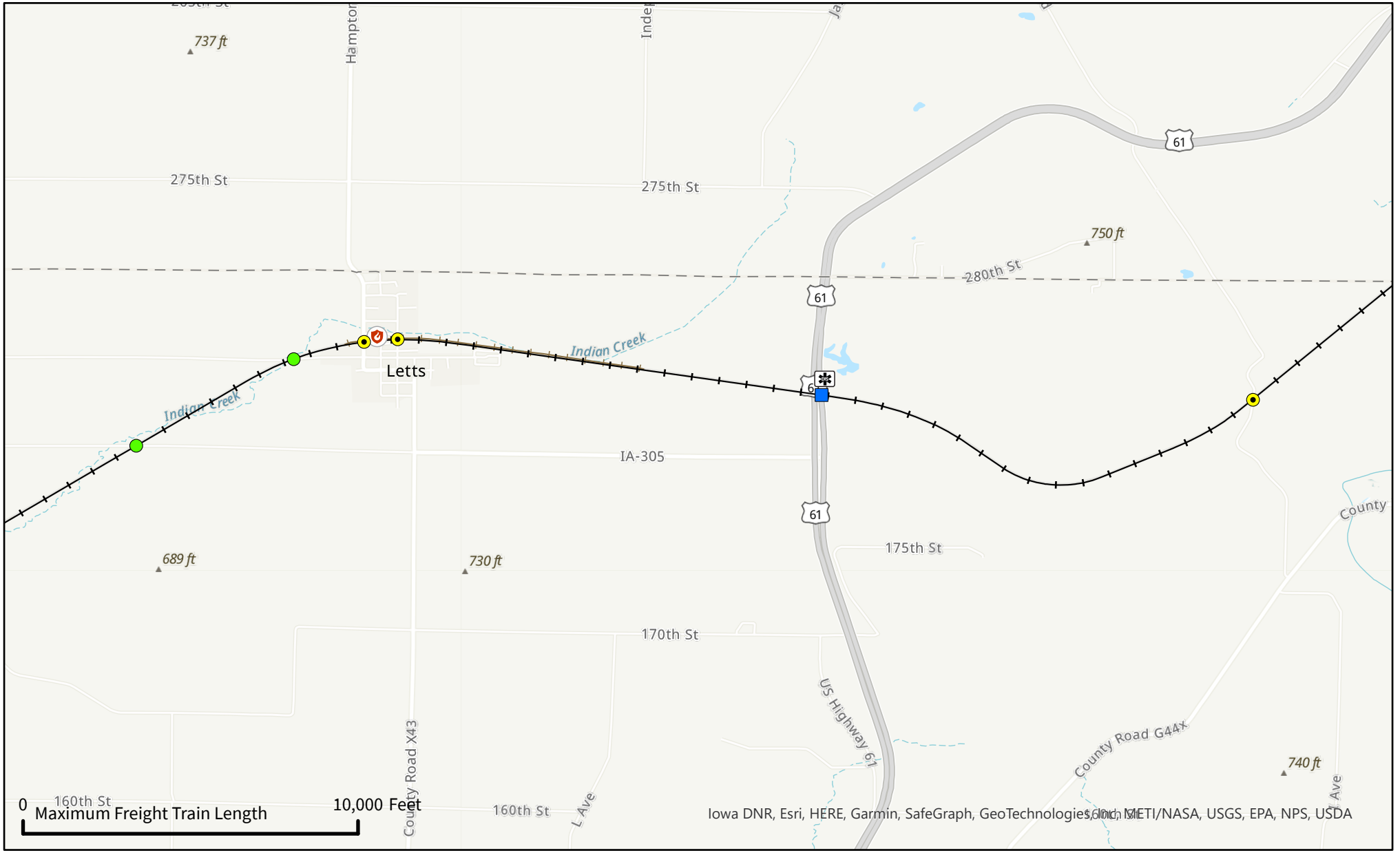


Emergency Services Routing Analysis
Fruitland, IA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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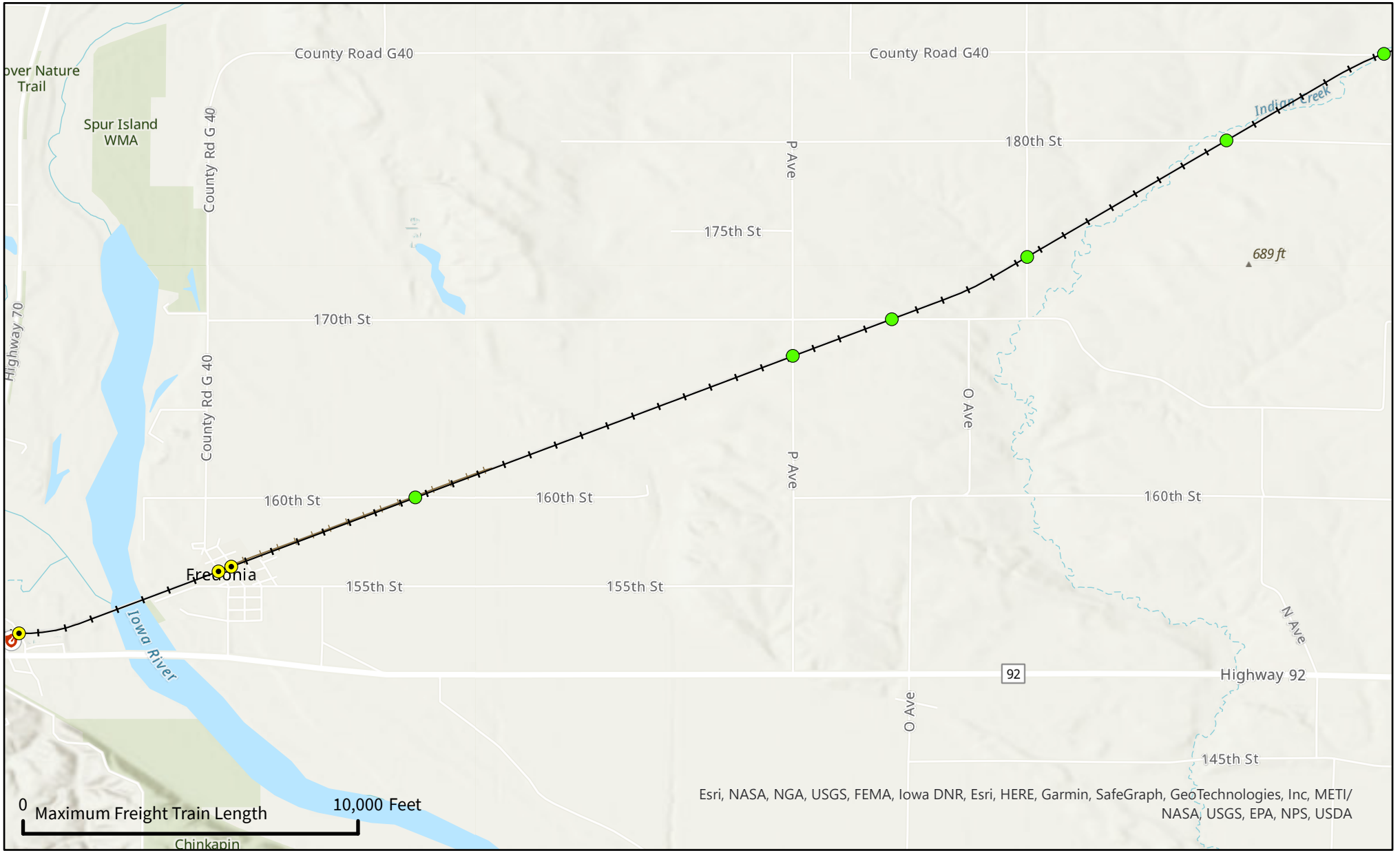
Emergency Services Routing Analysis

Letts, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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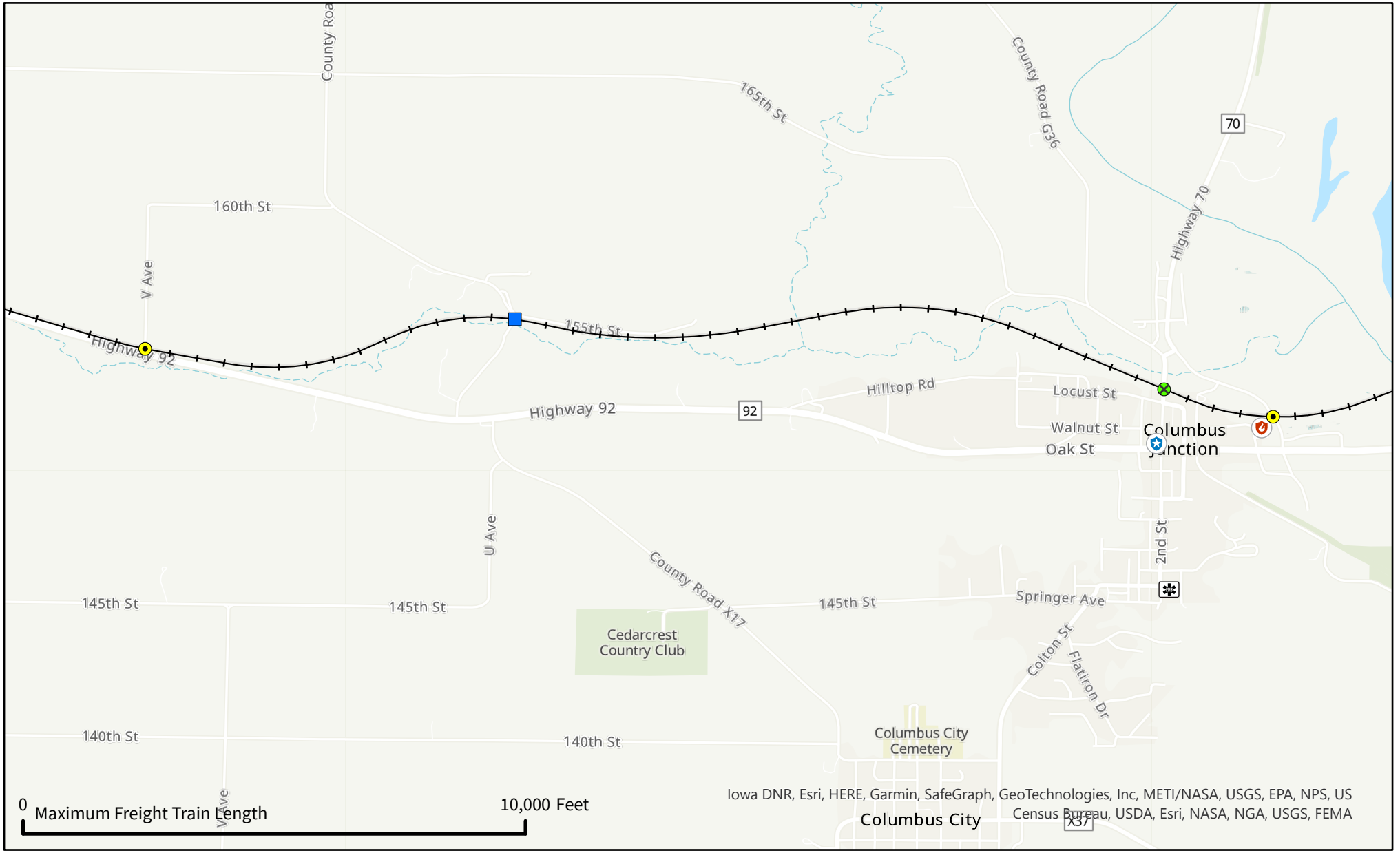


Emergency Services Routing Analysis
Fredonia, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Key Map: Analyzed Tracks
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- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Columbus Junction, IA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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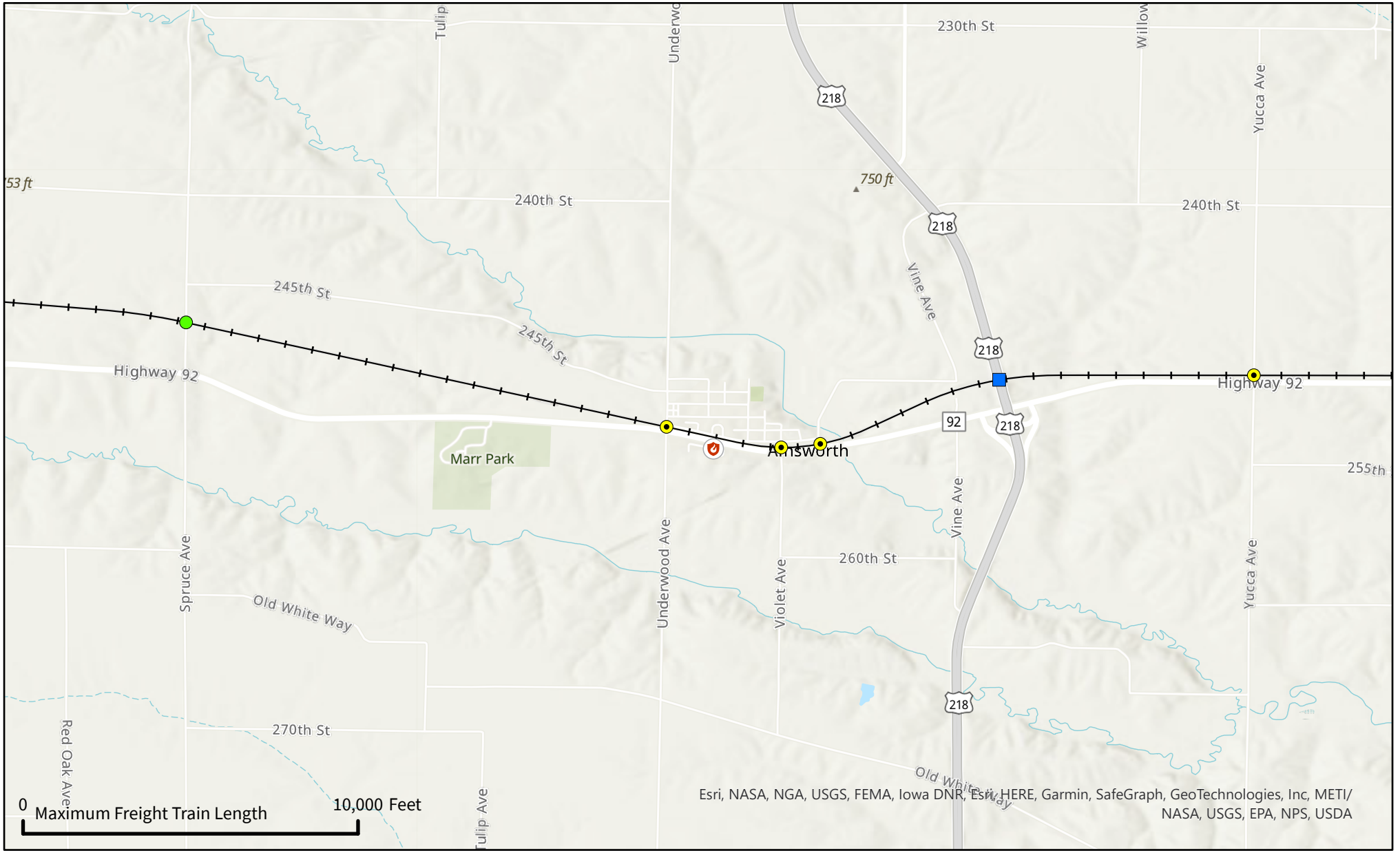
Emergency Services Routing Analysis

Cotter, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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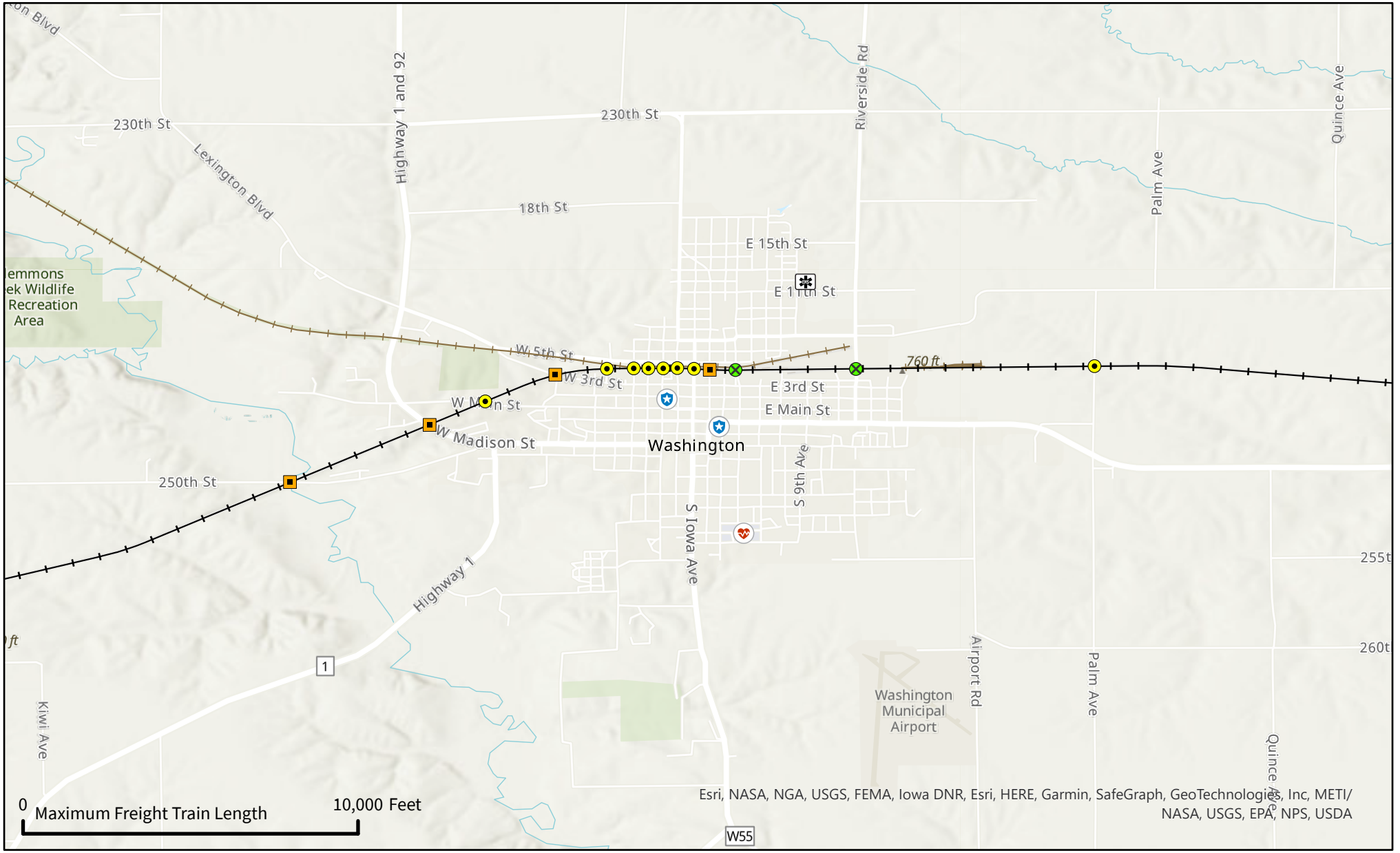


Emergency Services Routing Analysis
Ainsworth, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Washington, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



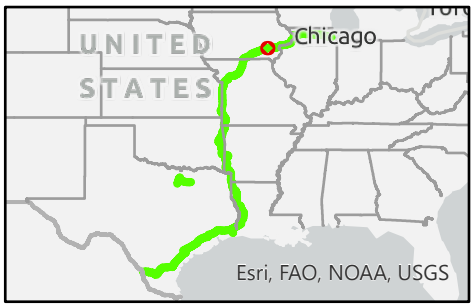
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- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
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- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Grace Hill, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



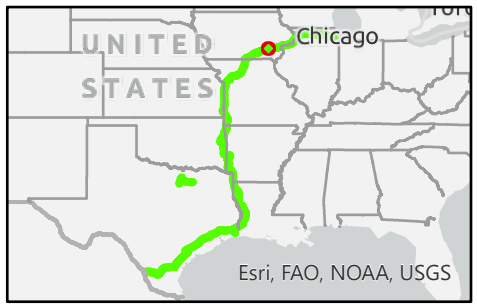
Legend

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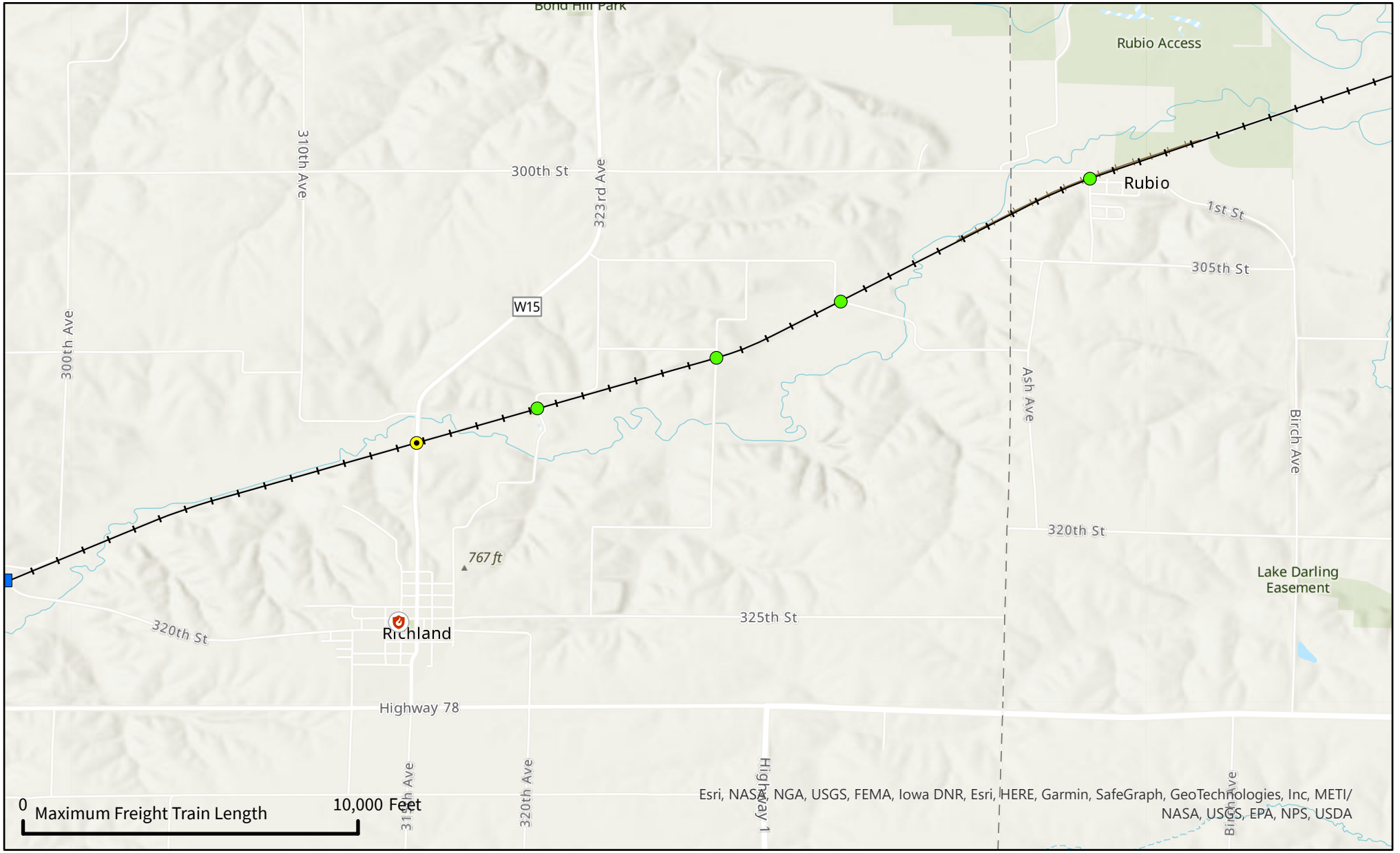
Emergency Services Routing Analysis

Grace Hill, IA

N

Scale:
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Miles
0 0.25 0.5



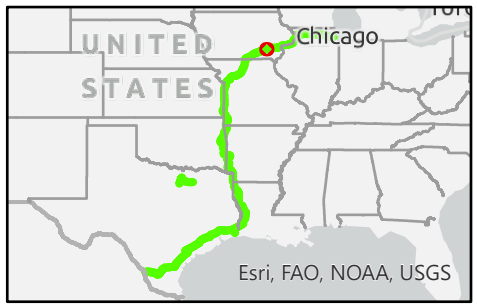
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Richland, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



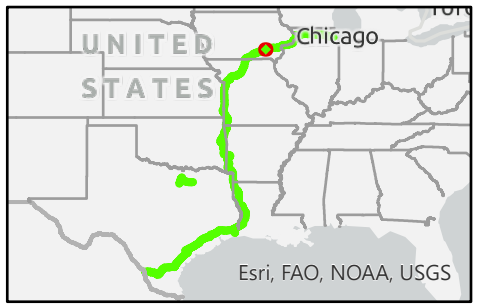
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- Police

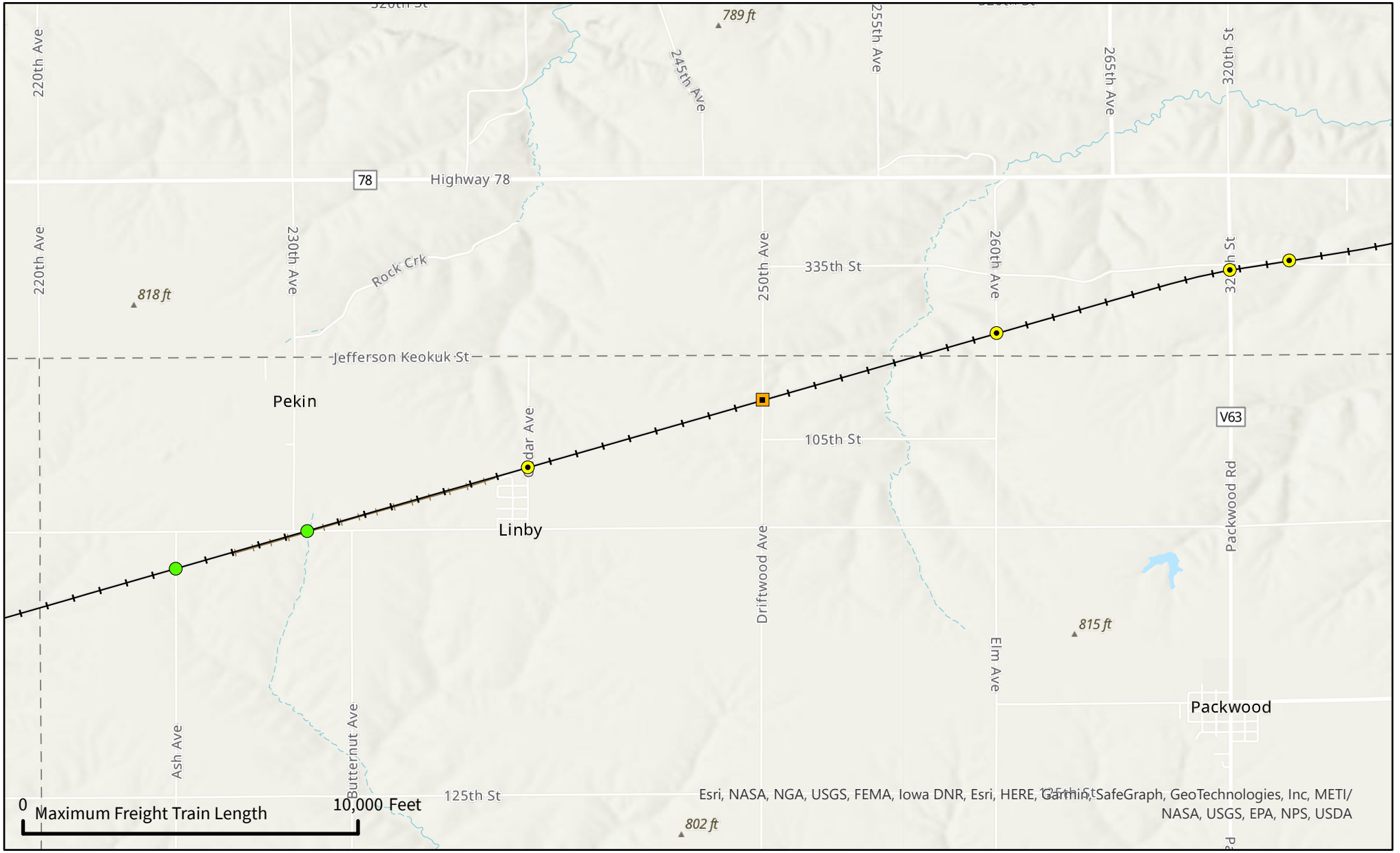


Emergency Services Routing Analysis
Richland, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



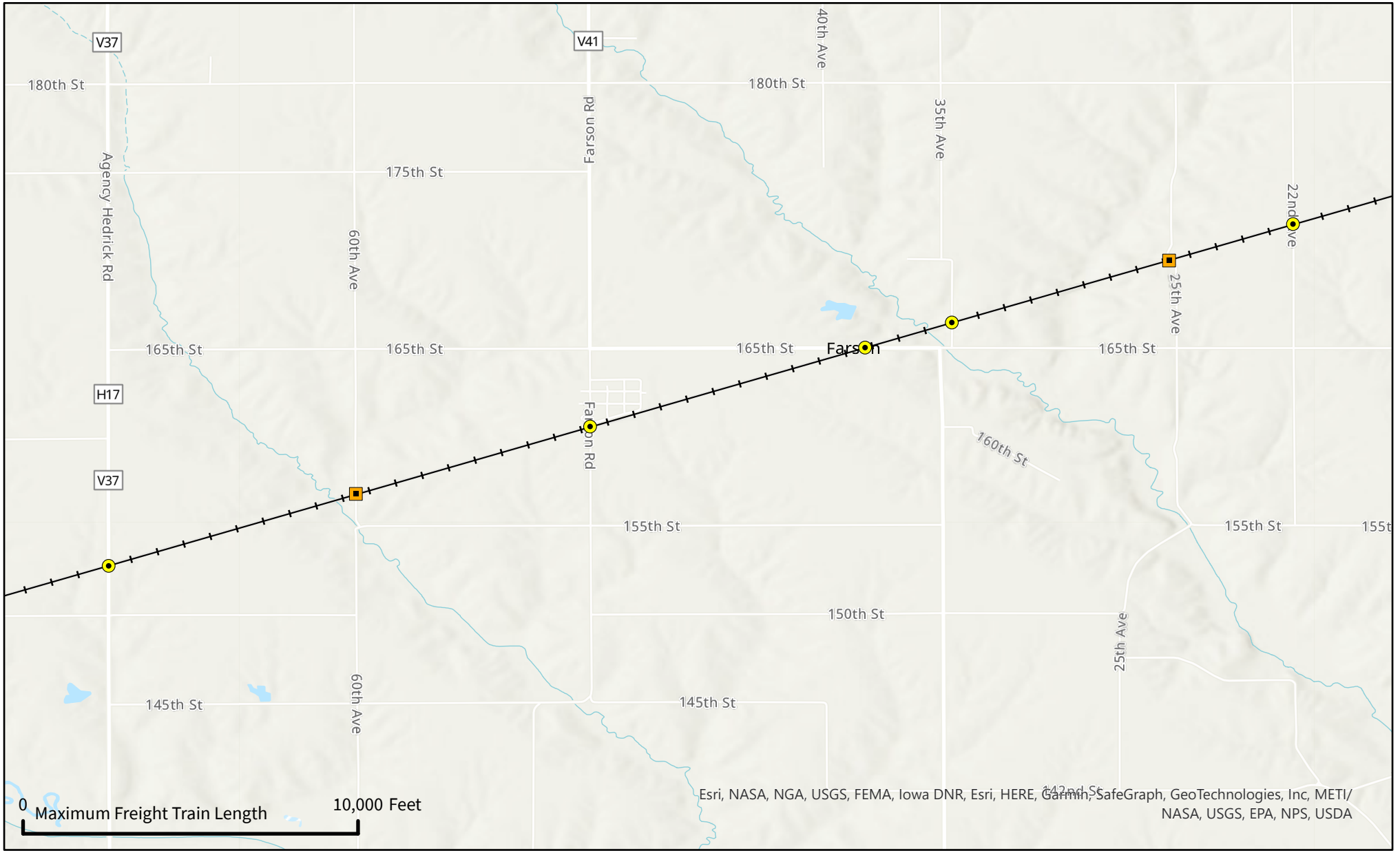
Emergency Services Routing Analysis

Linby, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
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- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis

Farson, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
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- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

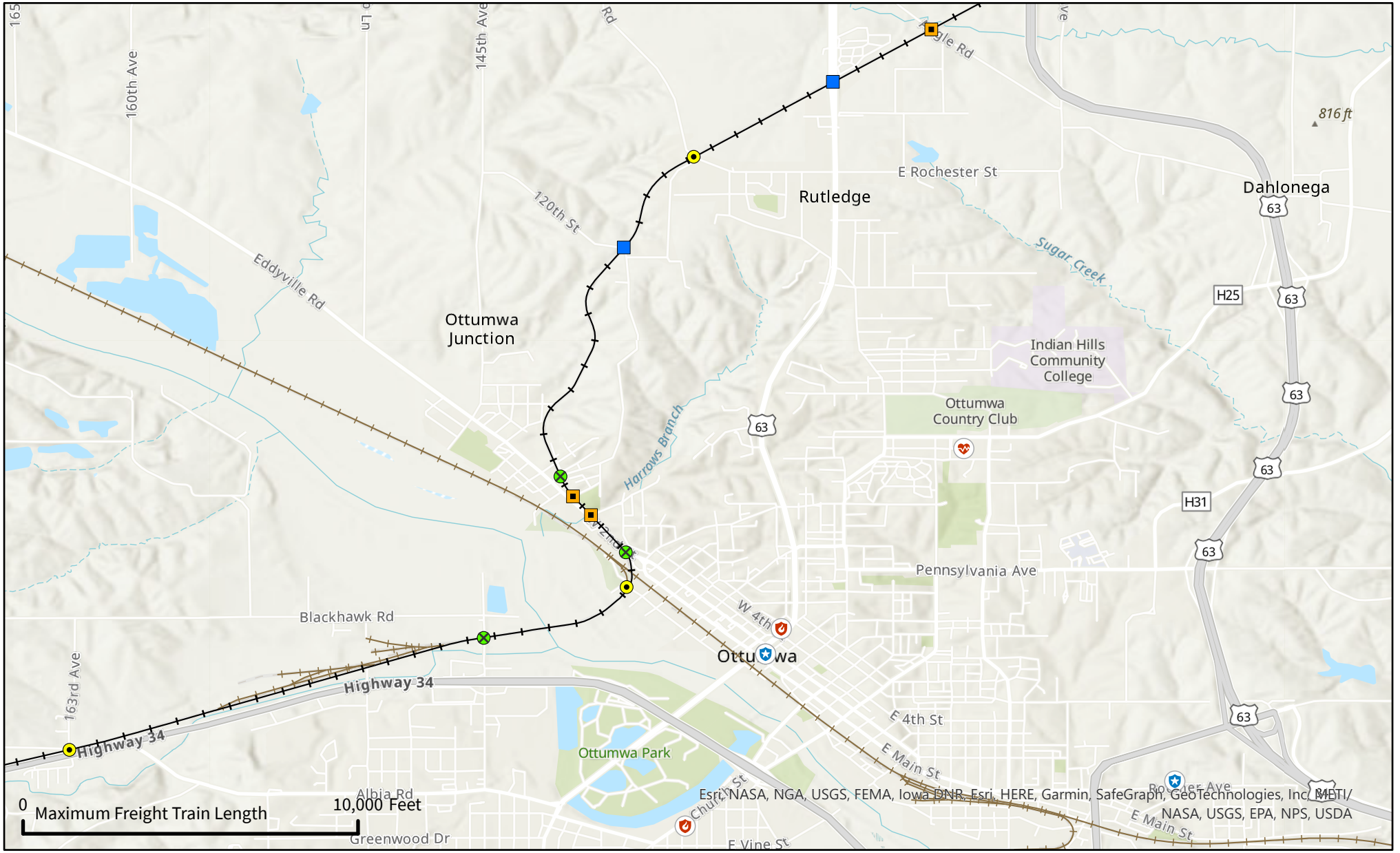


Emergency Services Routing Analysis
Dahlonega, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
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- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



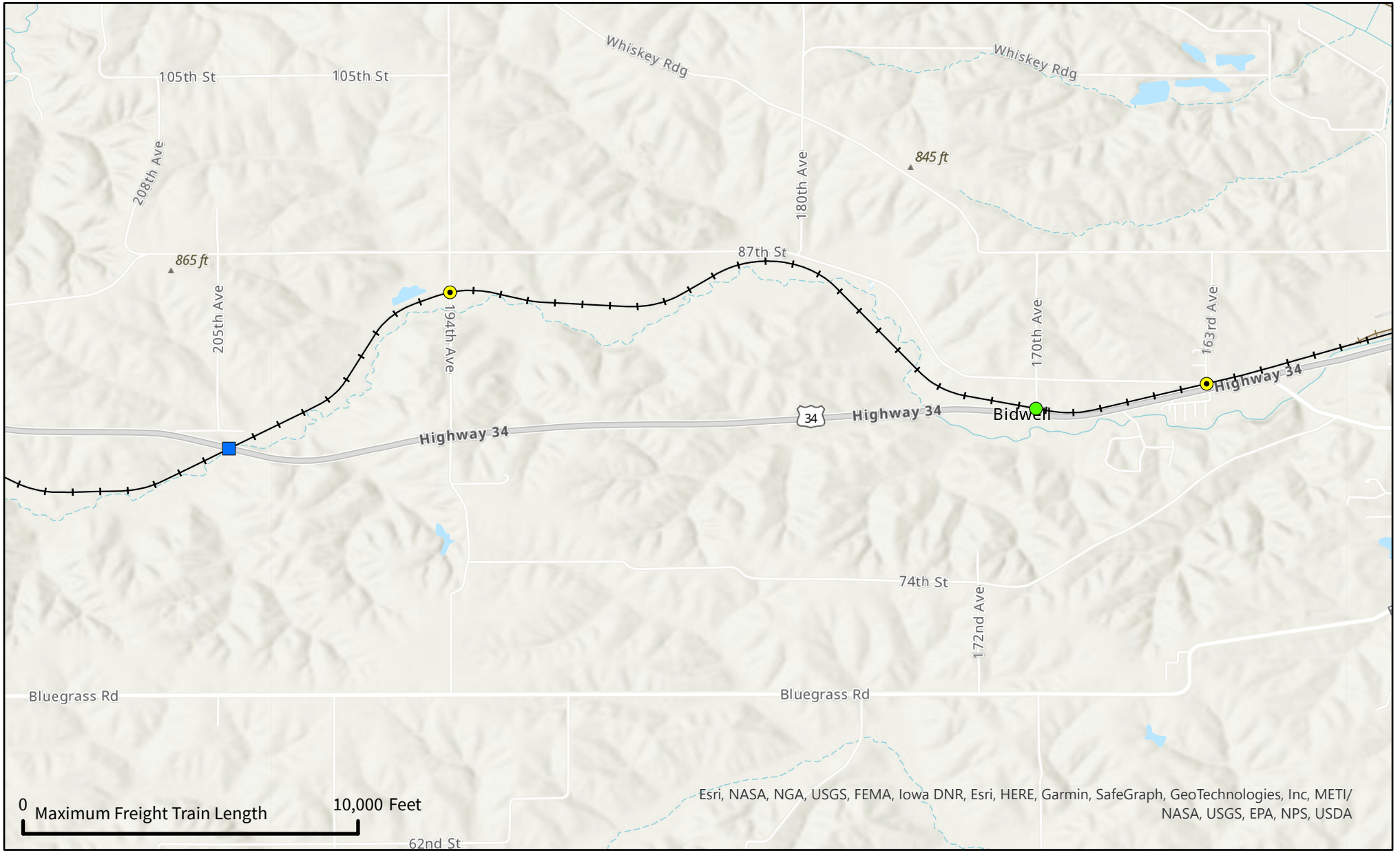
Emergency Services Routing Analysis

Ottumwa, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

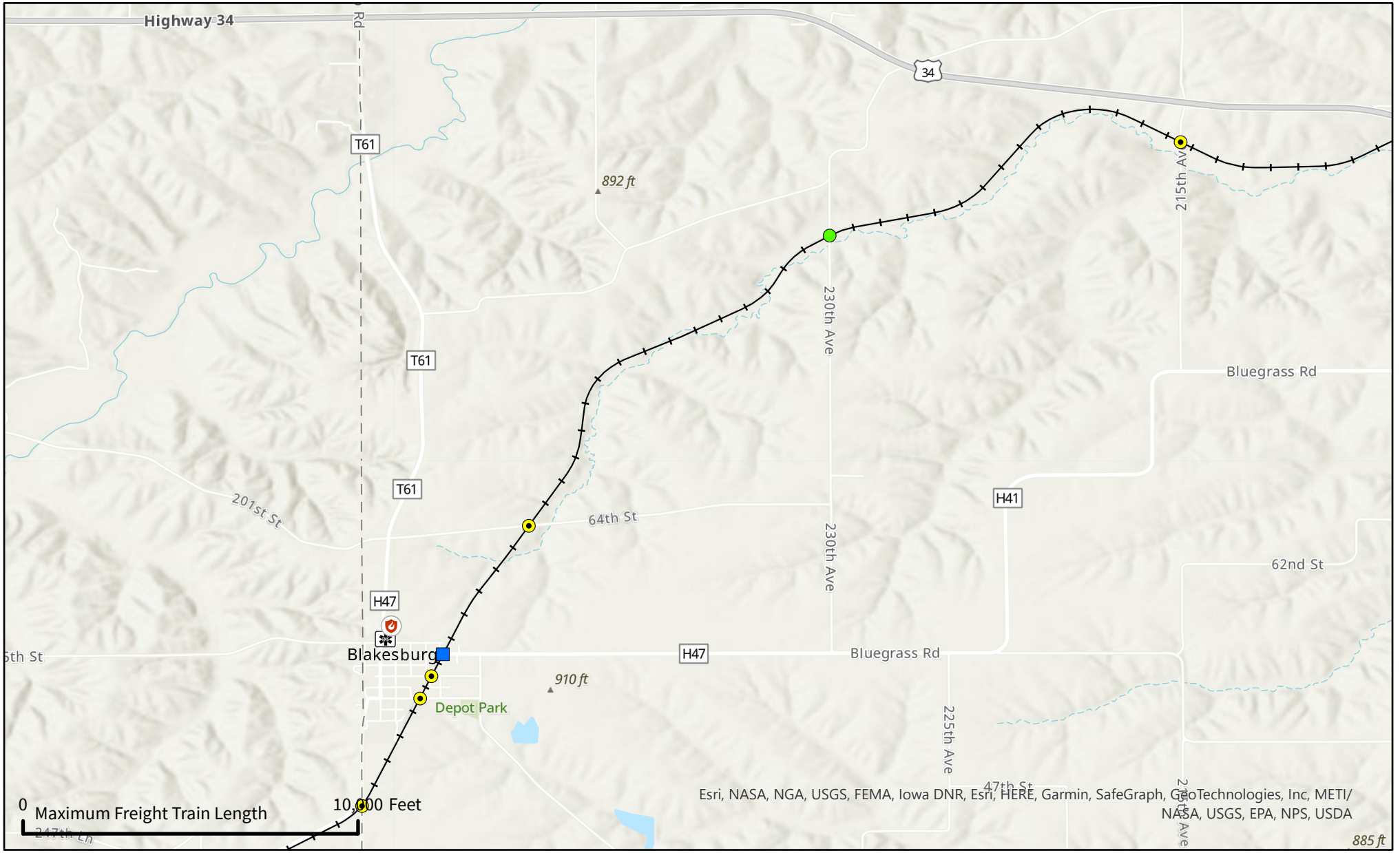


Emergency Services Routing Analysis
Bidwell, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

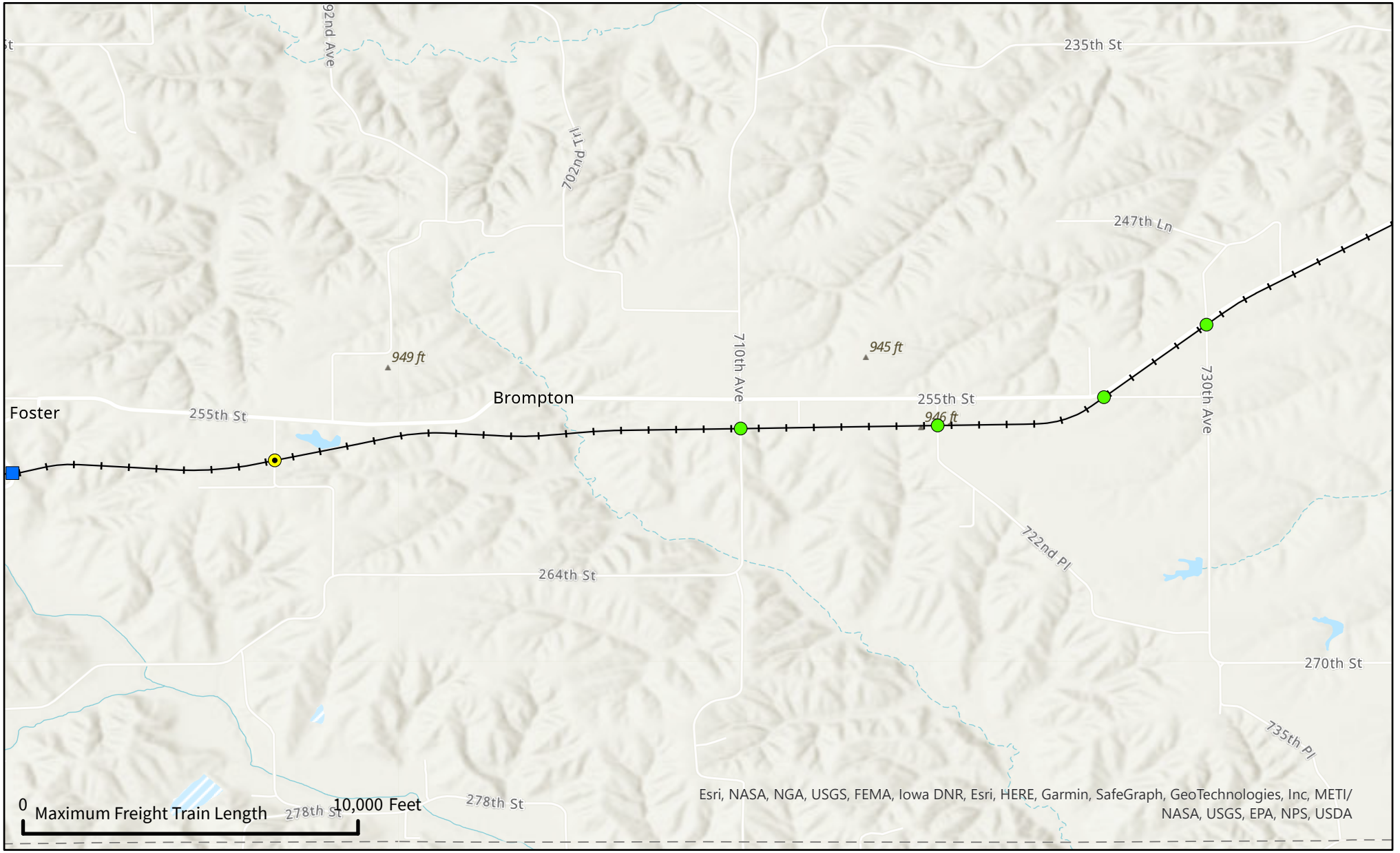


Emergency Services Routing Analysis
Blakesburg, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

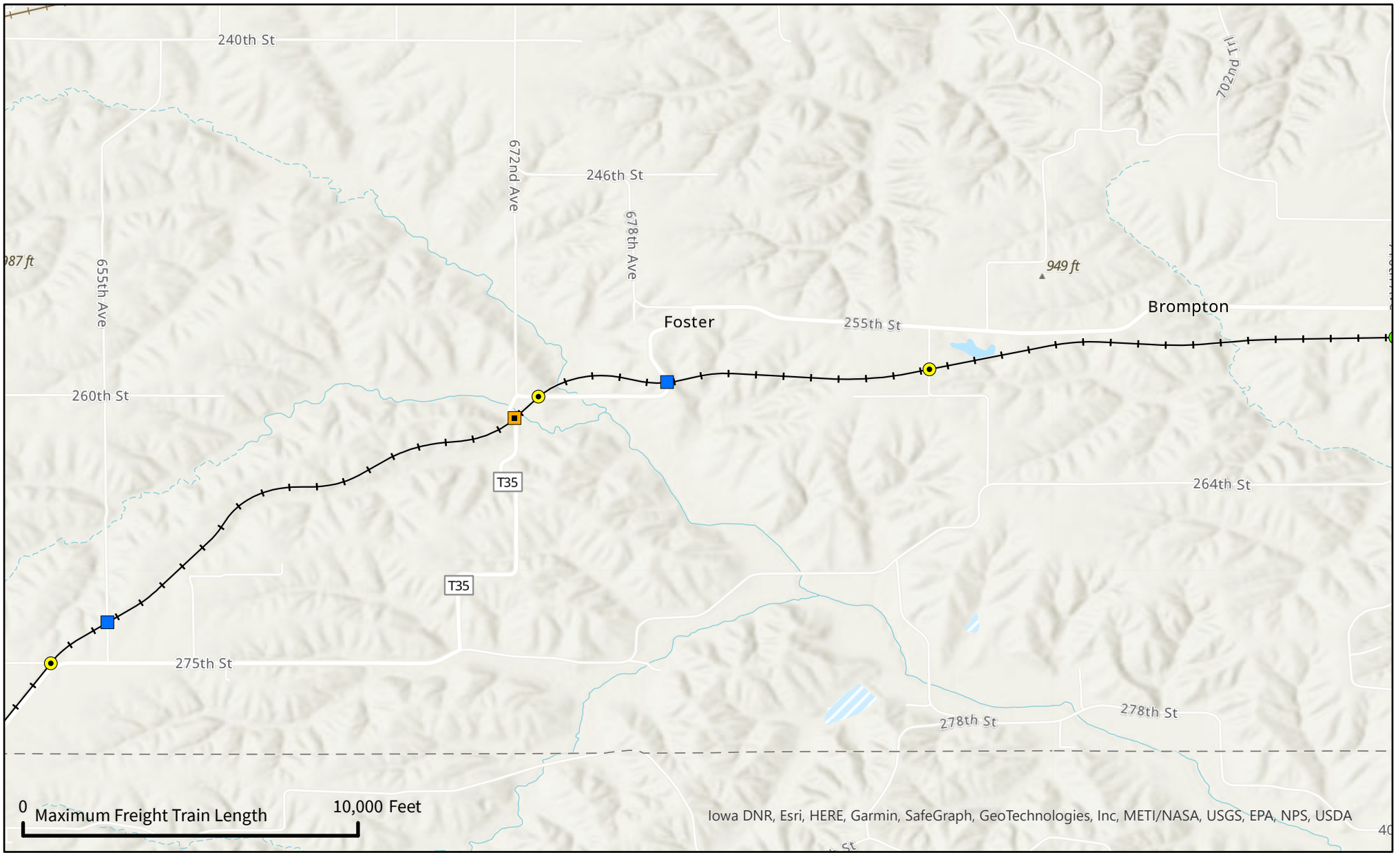


Emergency Services Routing Analysis
Brompton, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



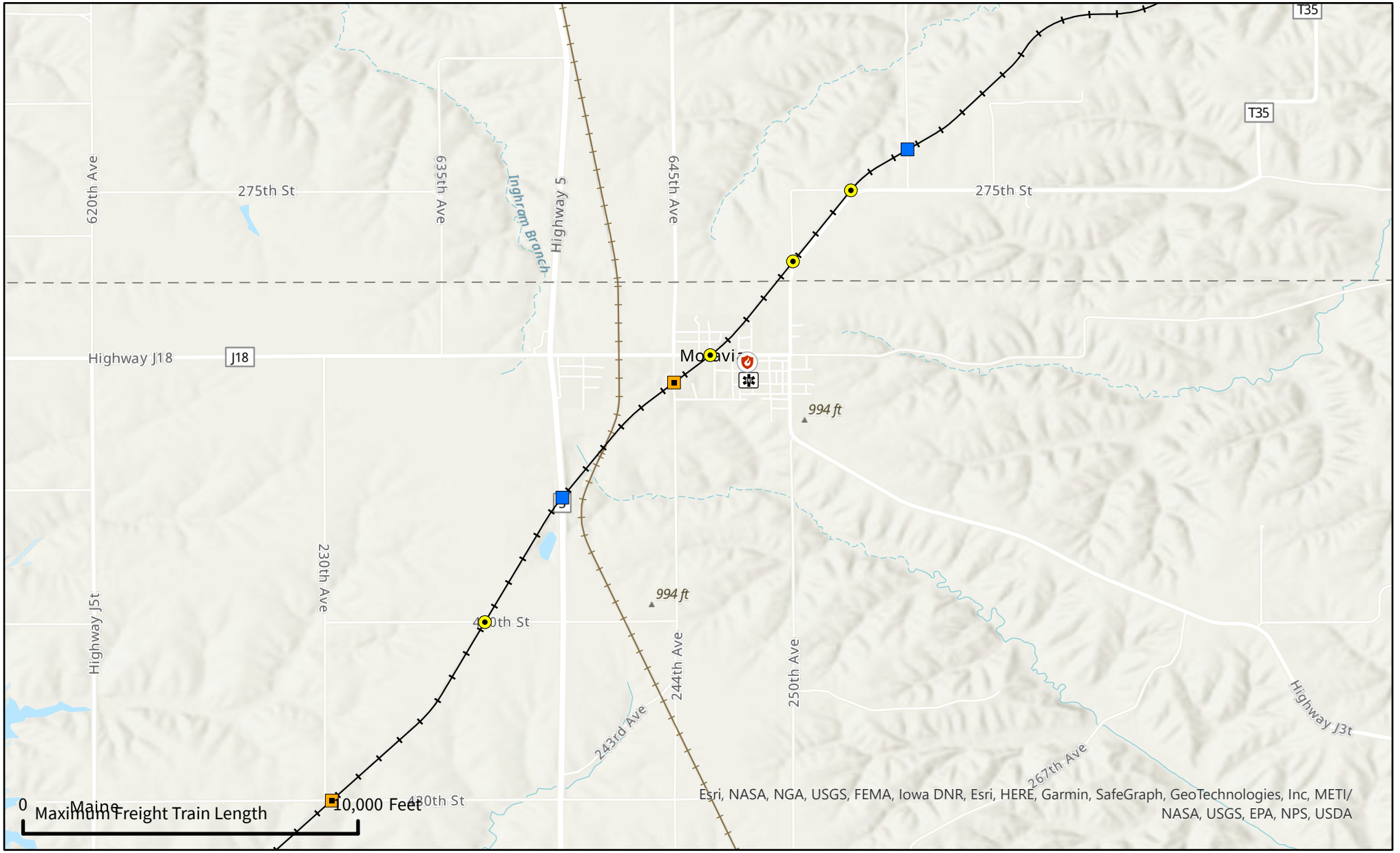
Emergency Services Routing Analysis

Foster, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- Hospital
- Police

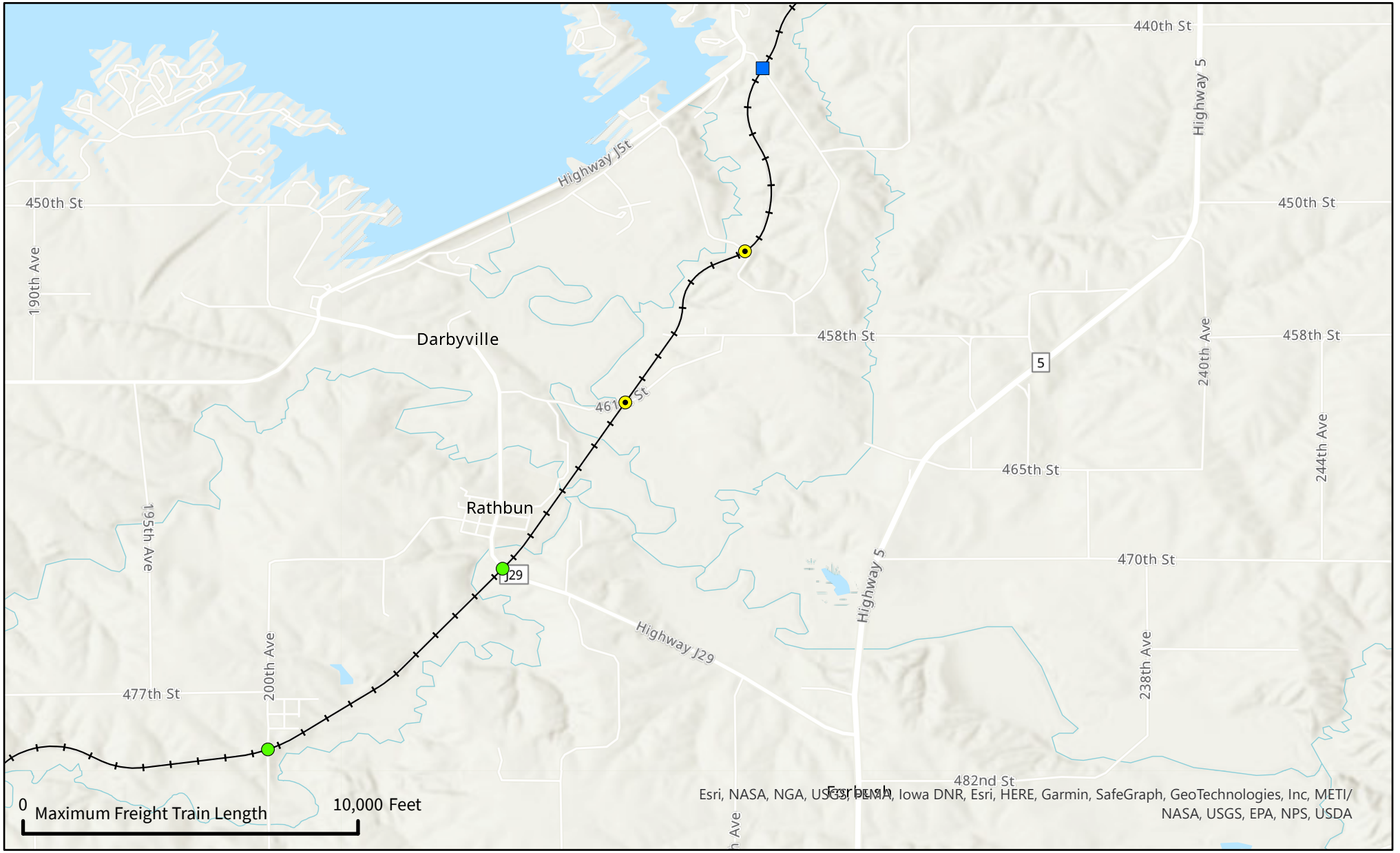


Emergency Services Routing Analysis
Moravia, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- EMS Dispatch
- Hospital
- Police

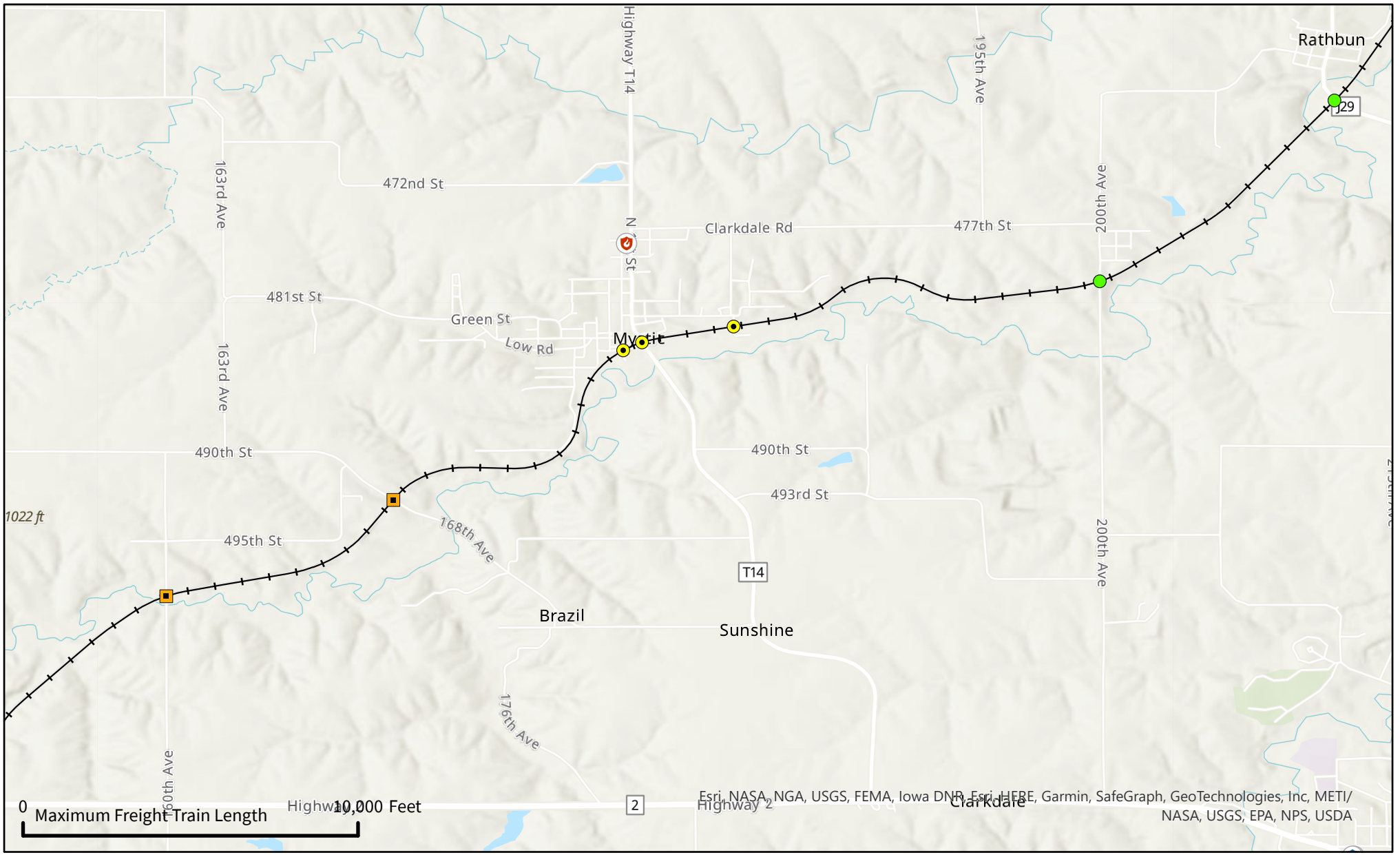


Emergency Services Routing Analysis
Rathbun, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- Other Tracks
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- EMS Dispatch
- Hospital
- Police



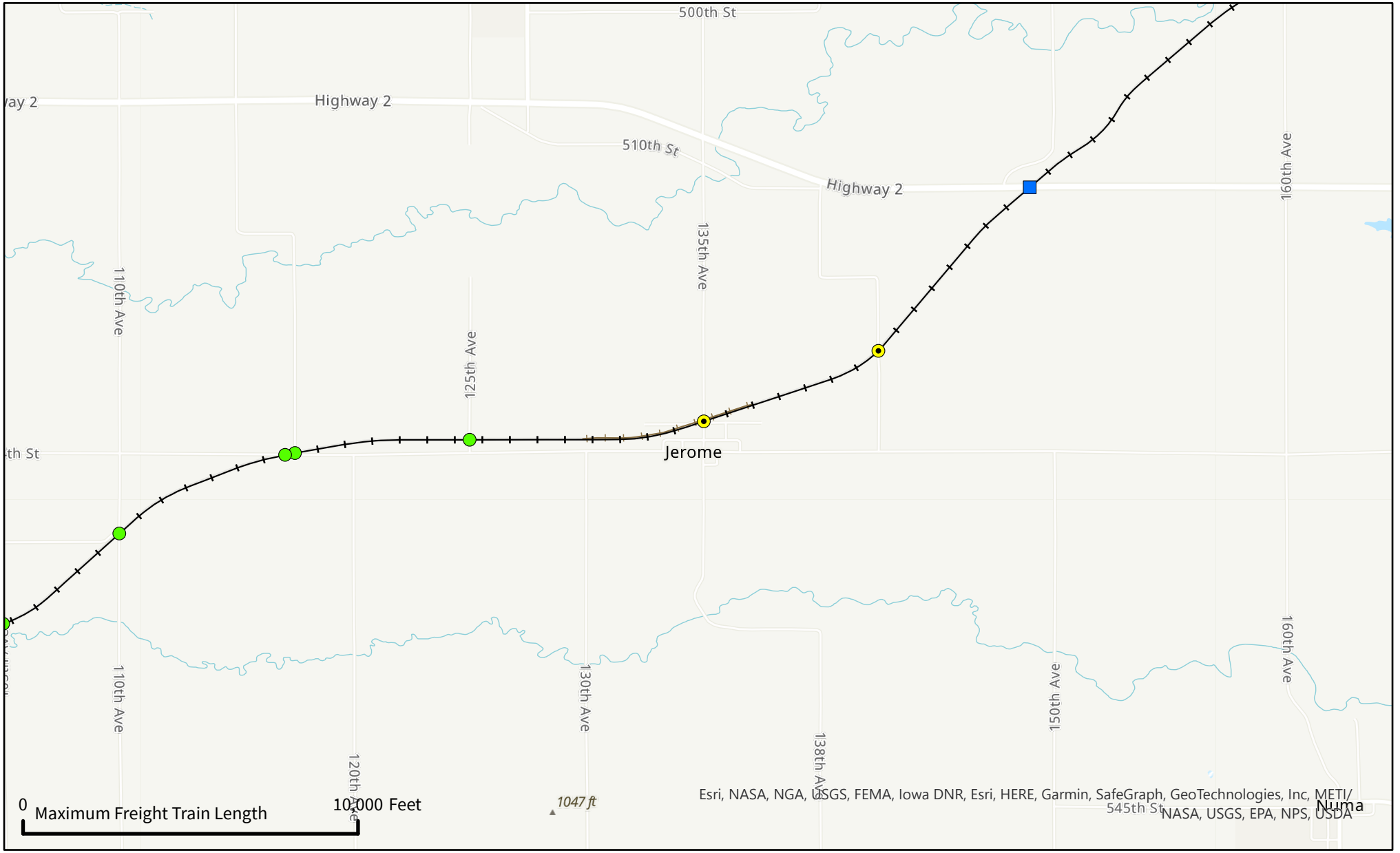
Emergency Services Routing Analysis

Mystic, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

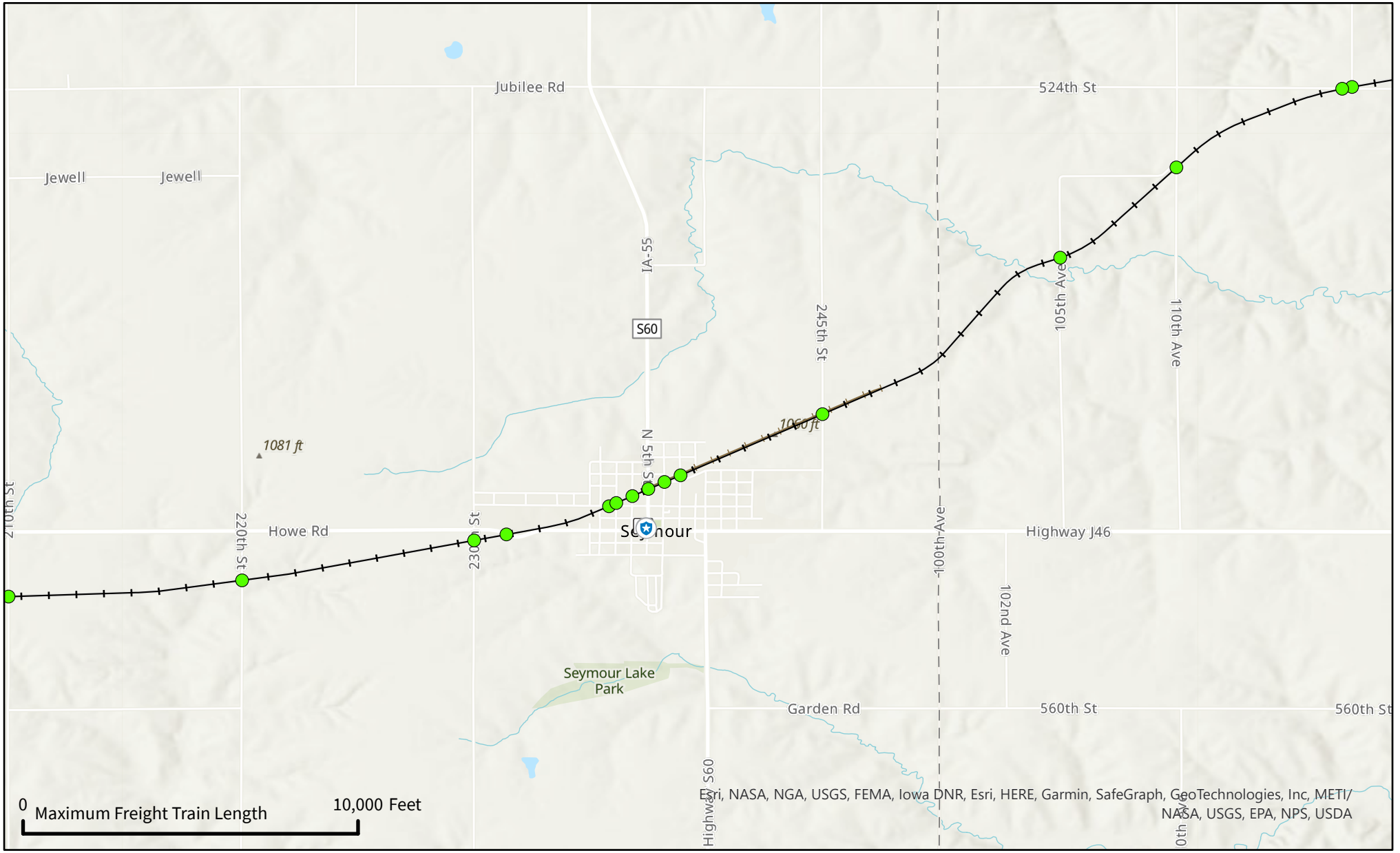


Emergency Services Routing Analysis
Jerome, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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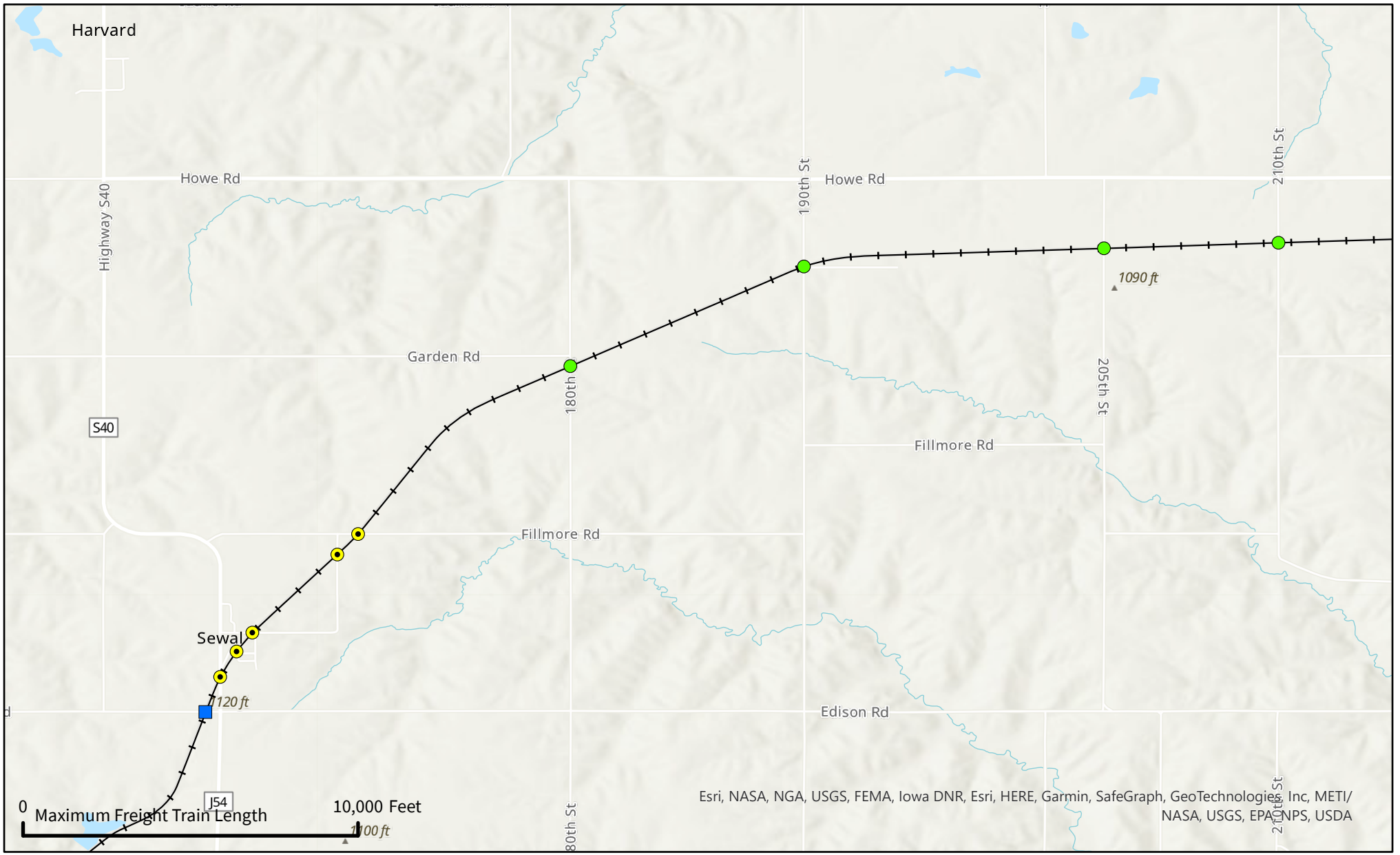
Emergency Services Routing Analysis

Seymour, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Hospital
- Police

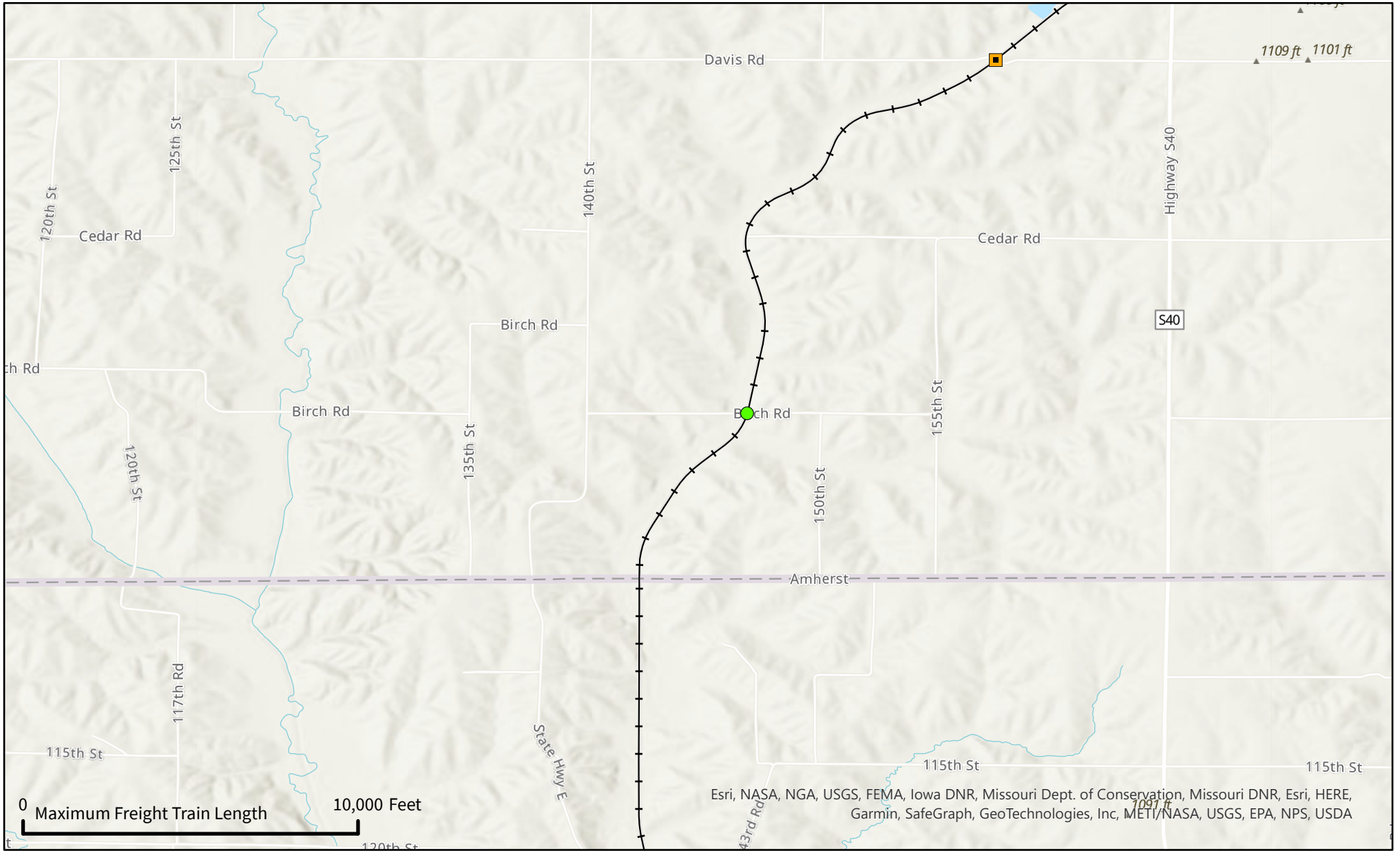


Emergency Services Routing Analysis
Sewal, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- Hospital
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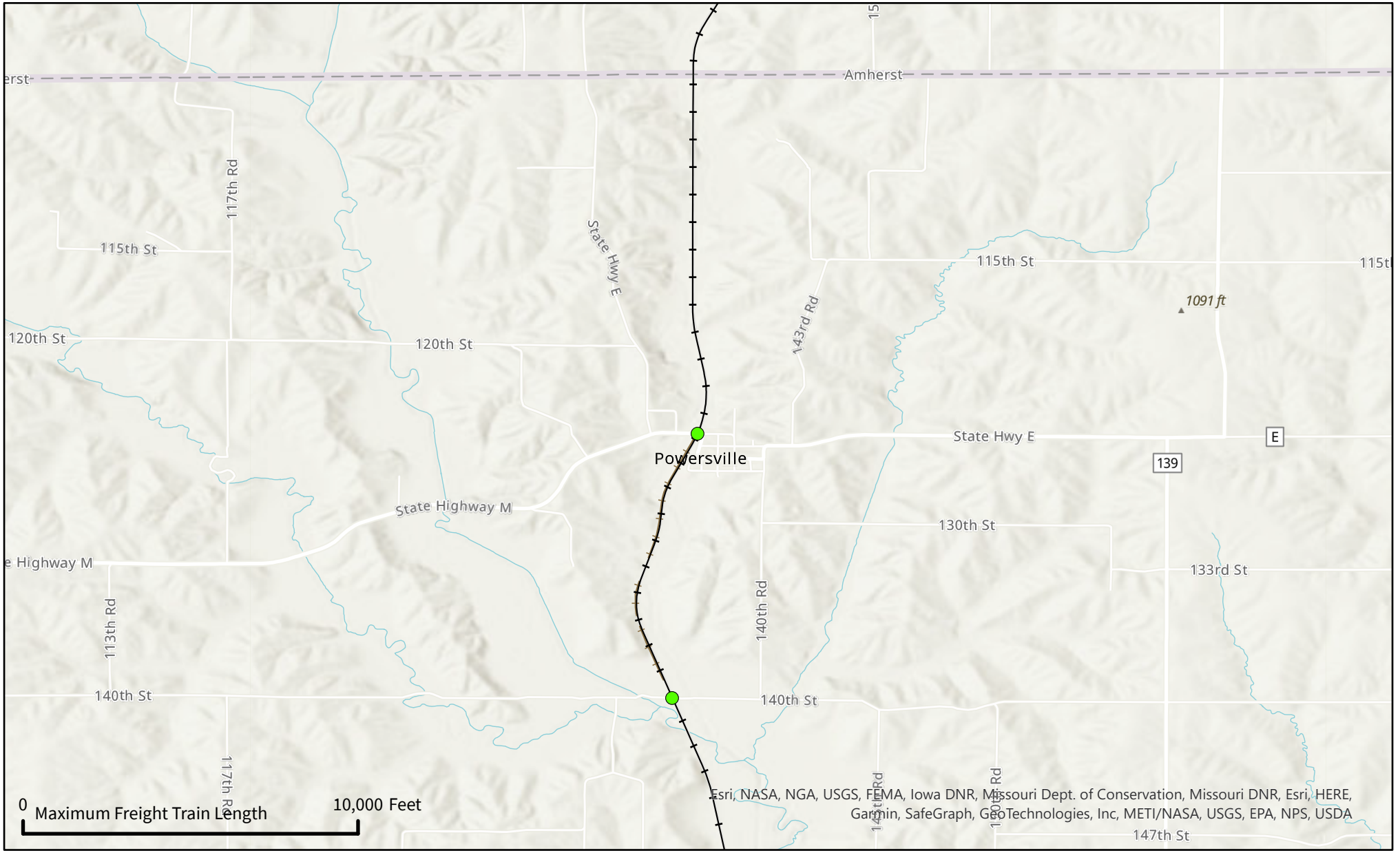


Emergency Services Routing Analysis
SW of Sewal, IA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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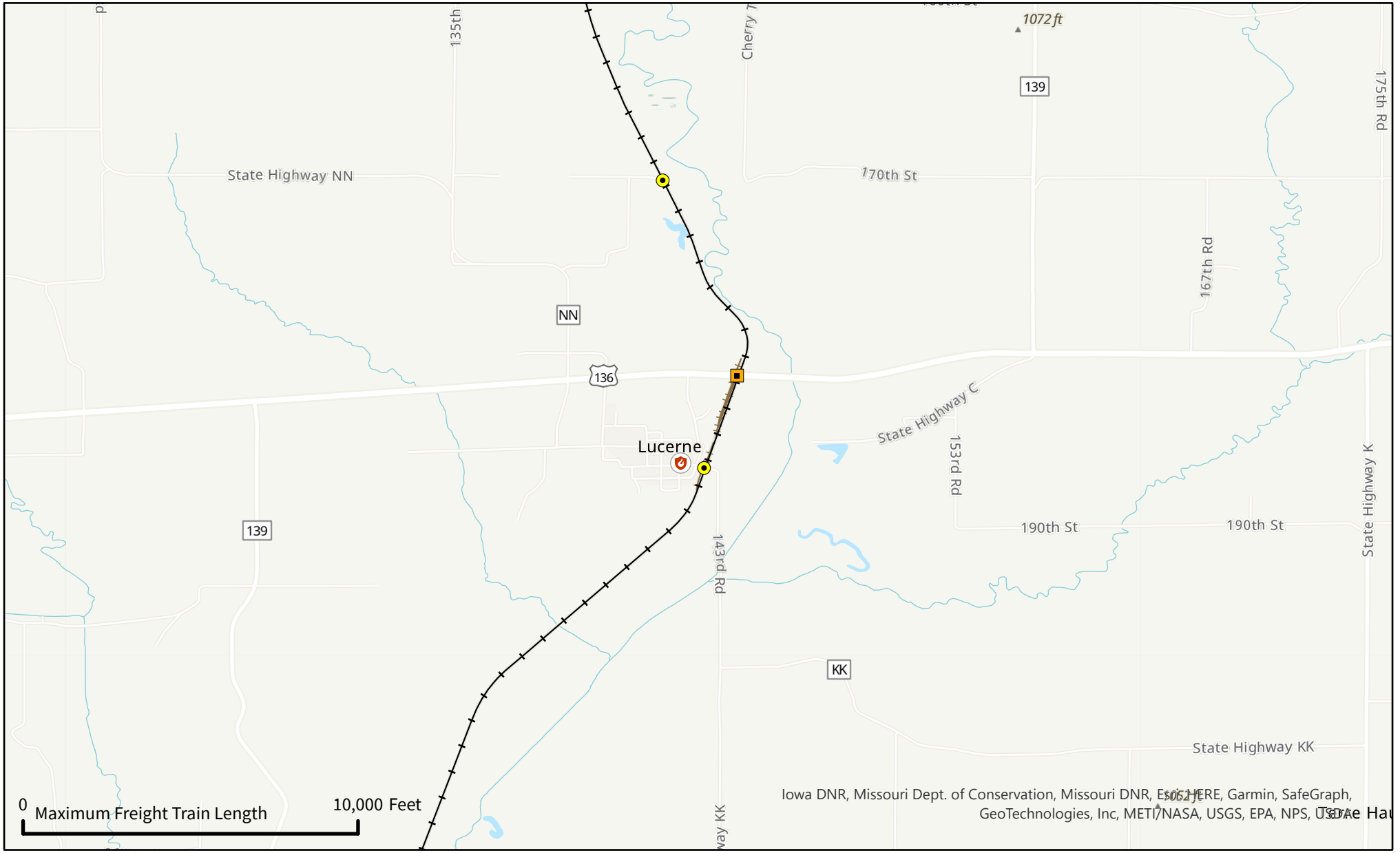


Emergency Services Routing Analysis
Powersville, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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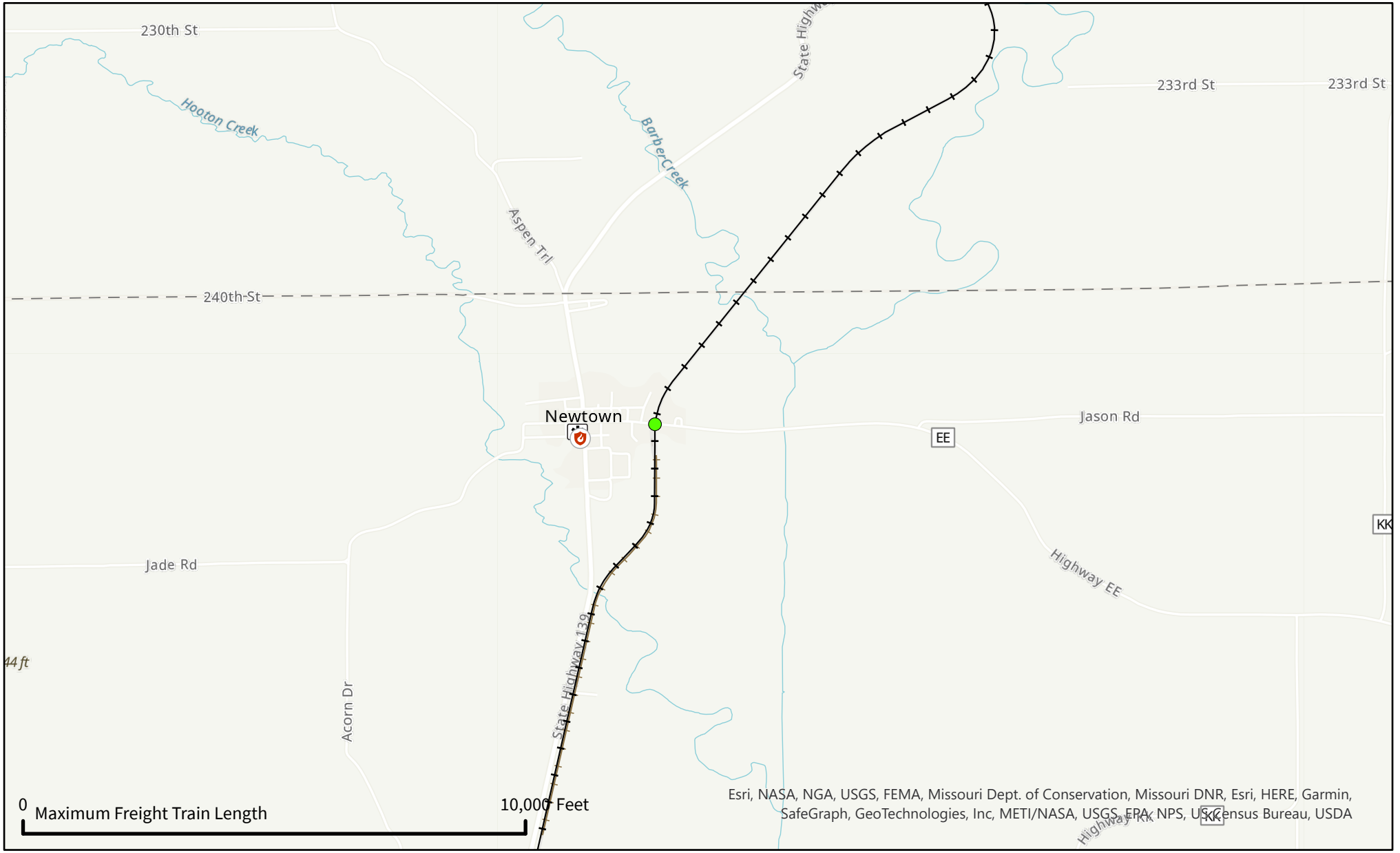
Emergency Services Routing Analysis

Lucerne, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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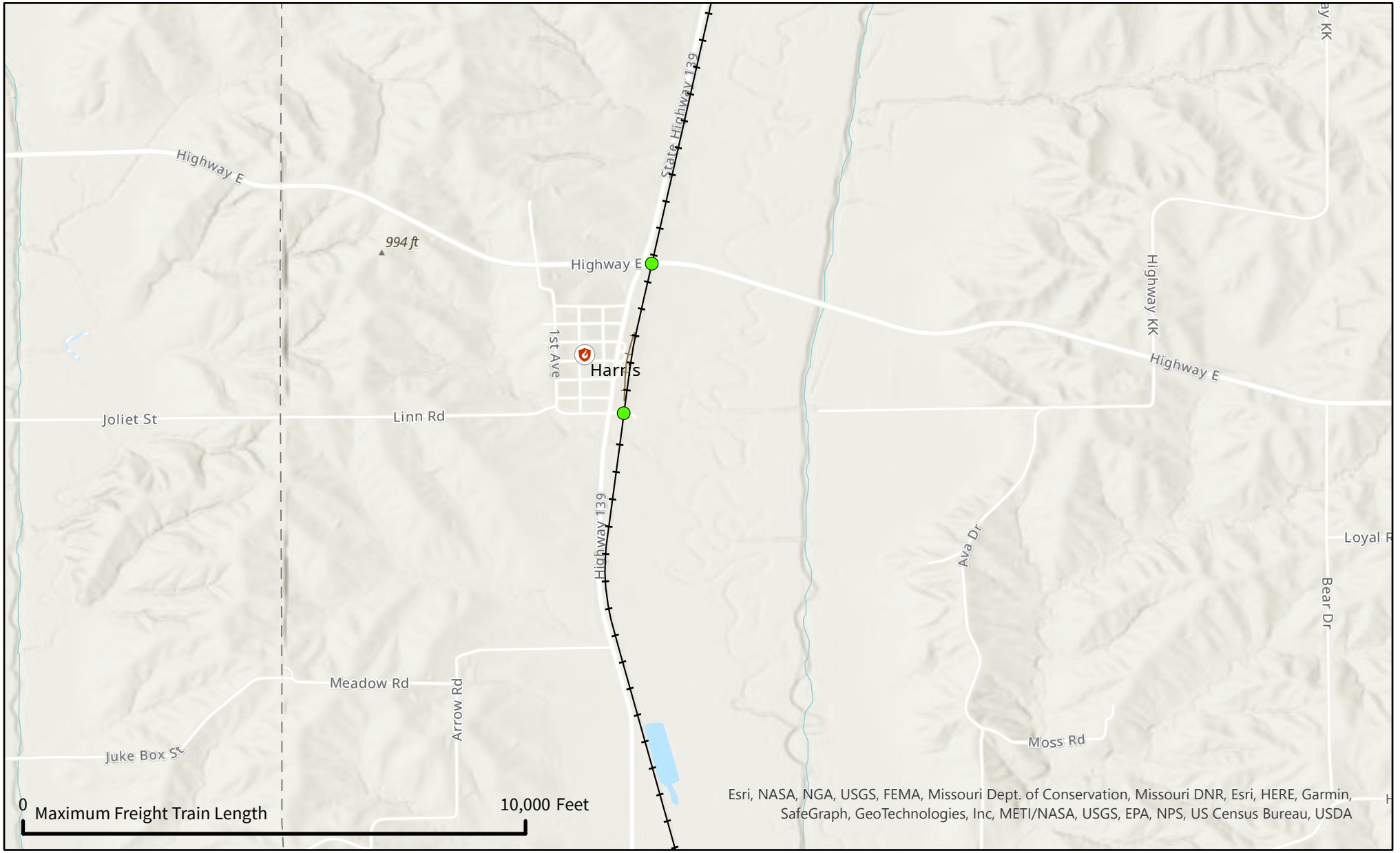
Emergency Services Routing Analysis

Newtown, MO

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



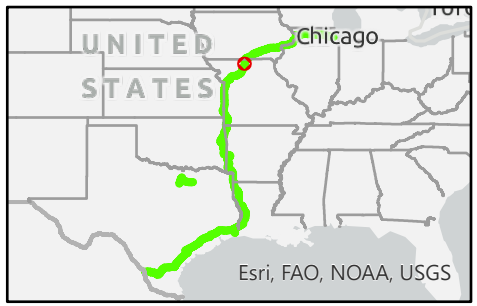
Legend

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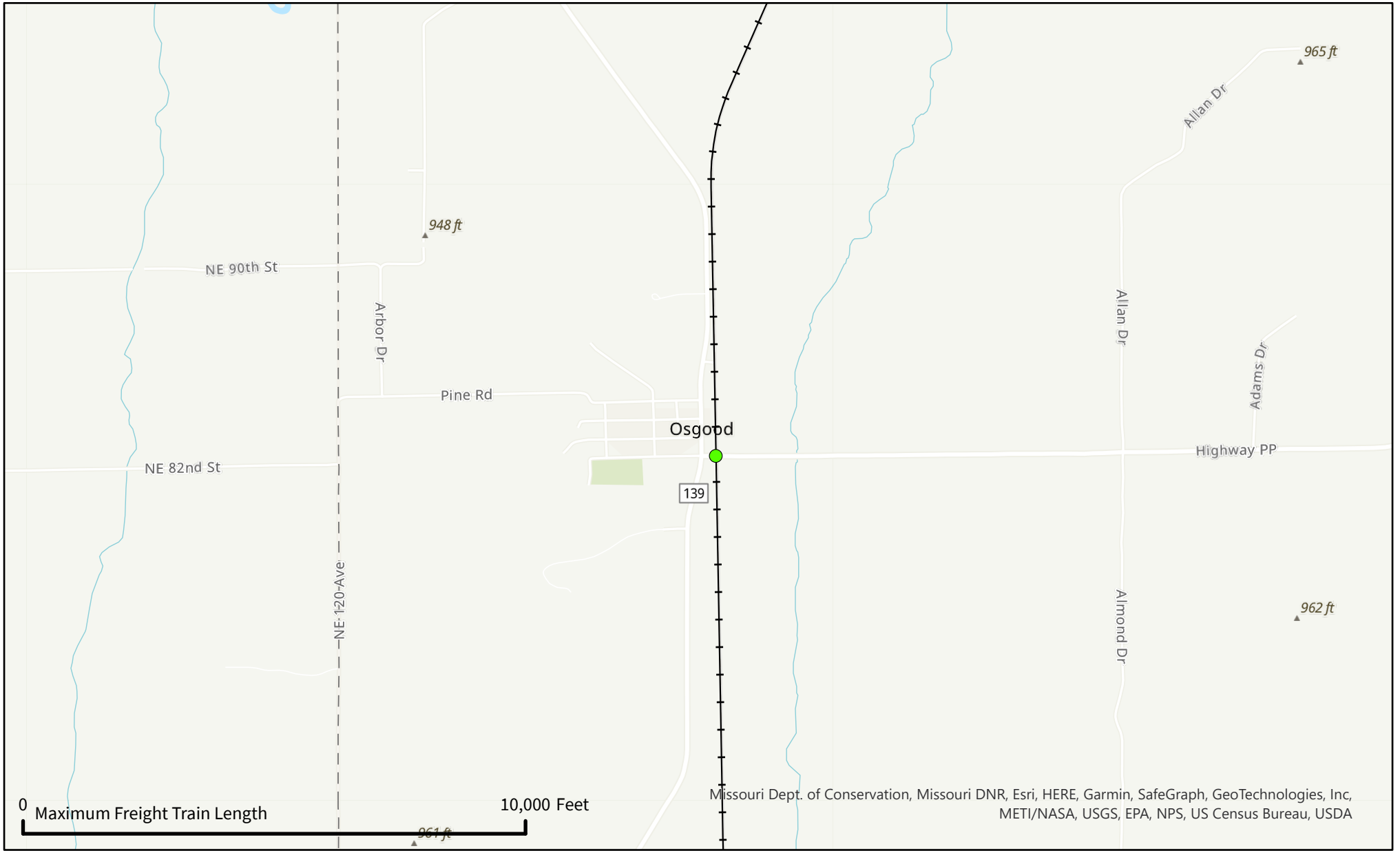


Emergency Services Routing Analysis
Harris, MO

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



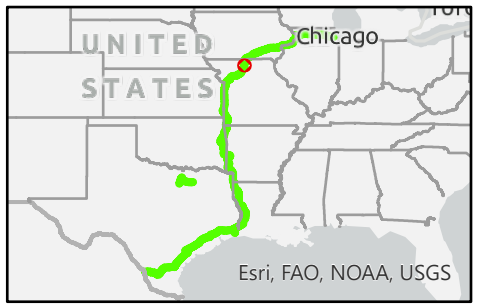
Legend

Crossing Position

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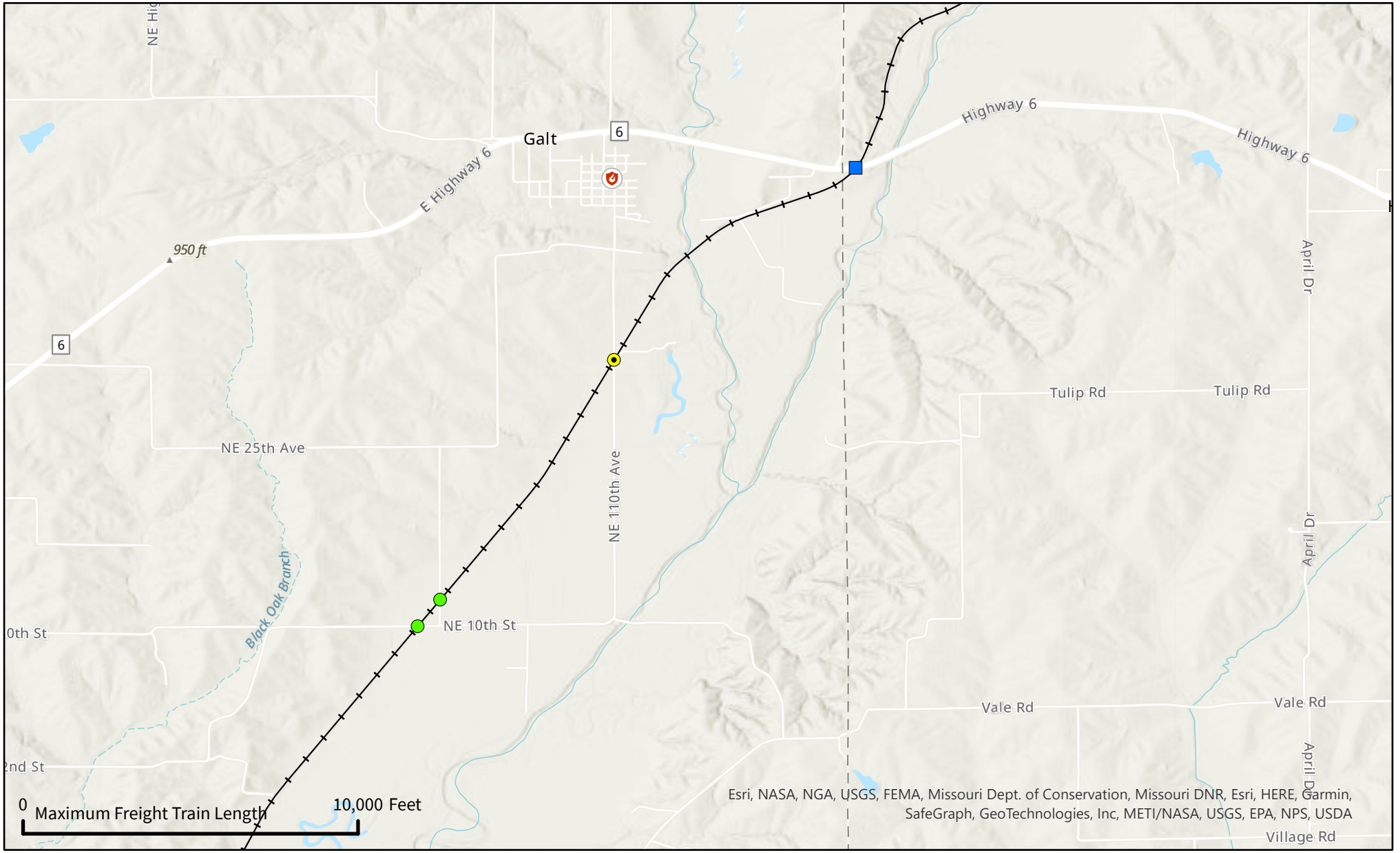


Emergency Services Routing Analysis
Osgood, MO

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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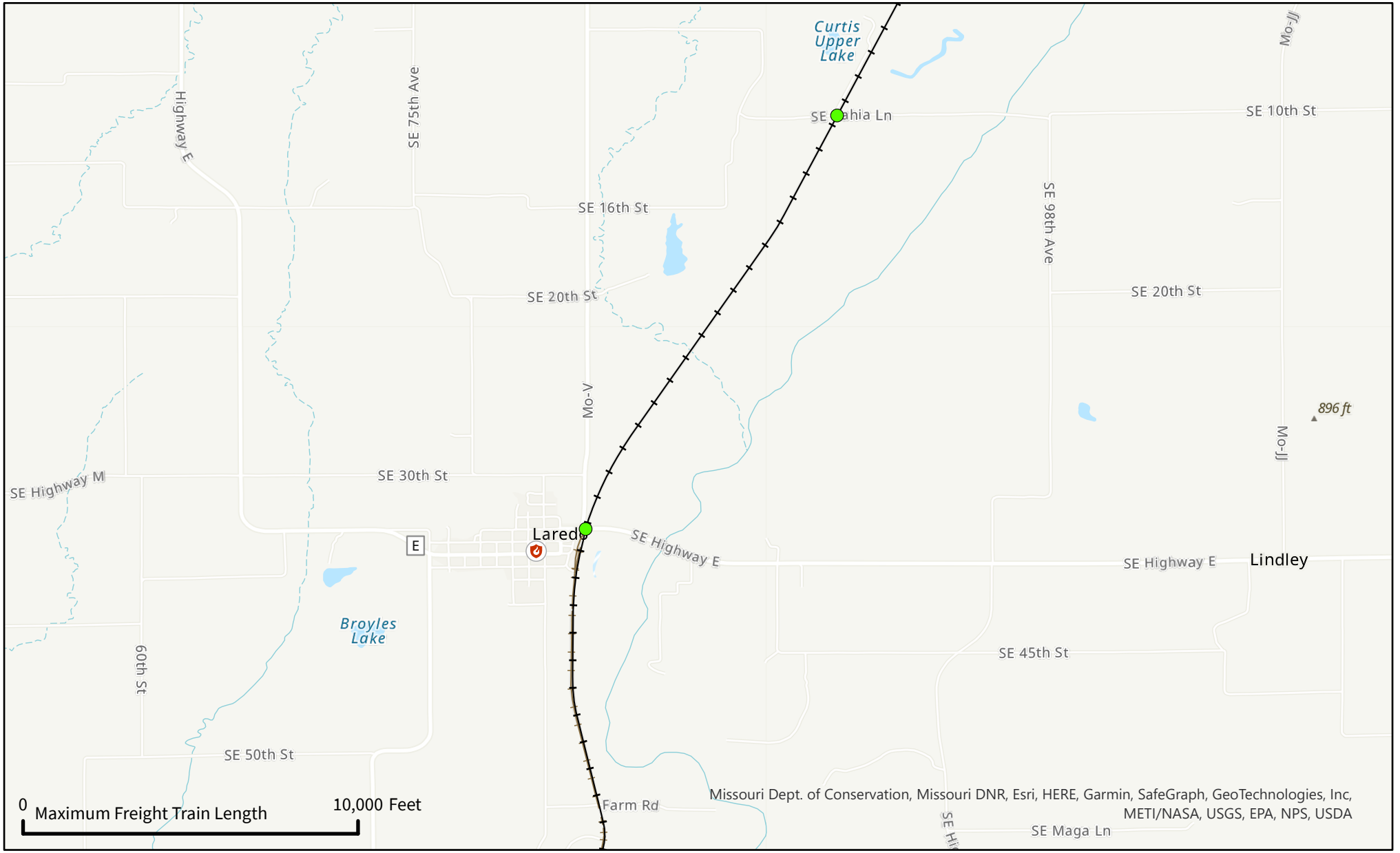


Emergency Services Routing Analysis
Galt, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



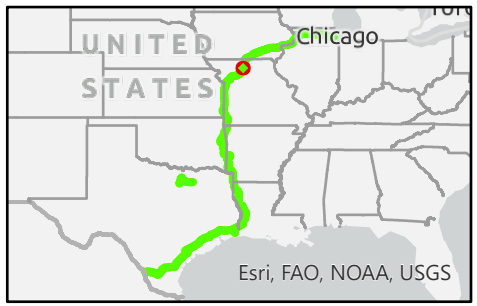
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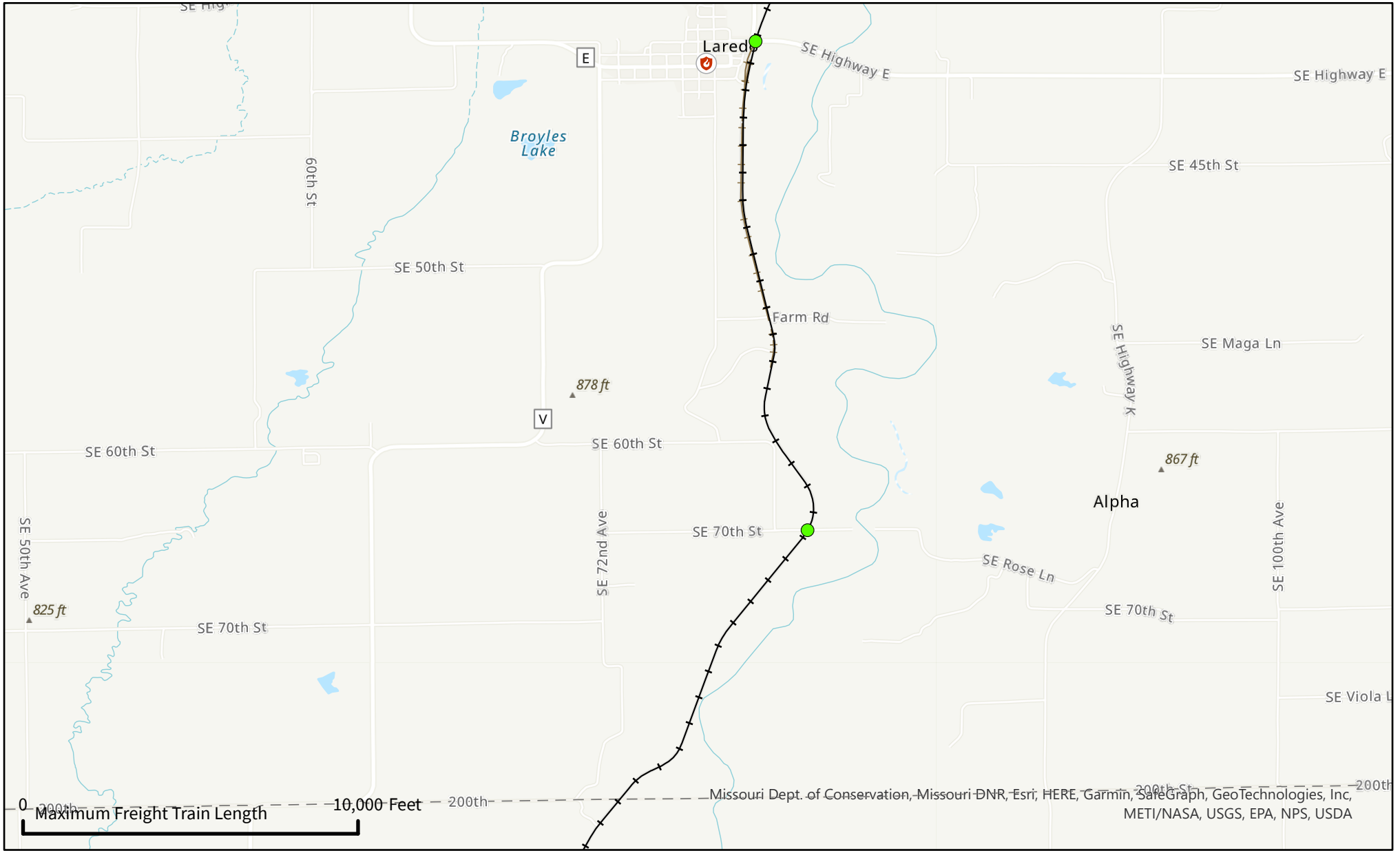
Emergency Services Routing Analysis

Laredo, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



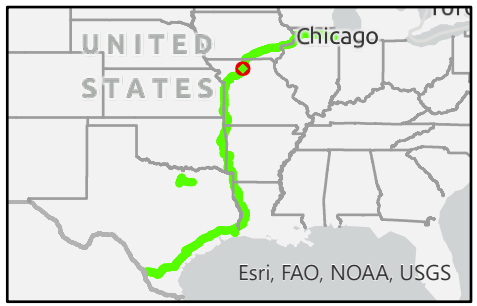
Legend

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- Hospital
- Police

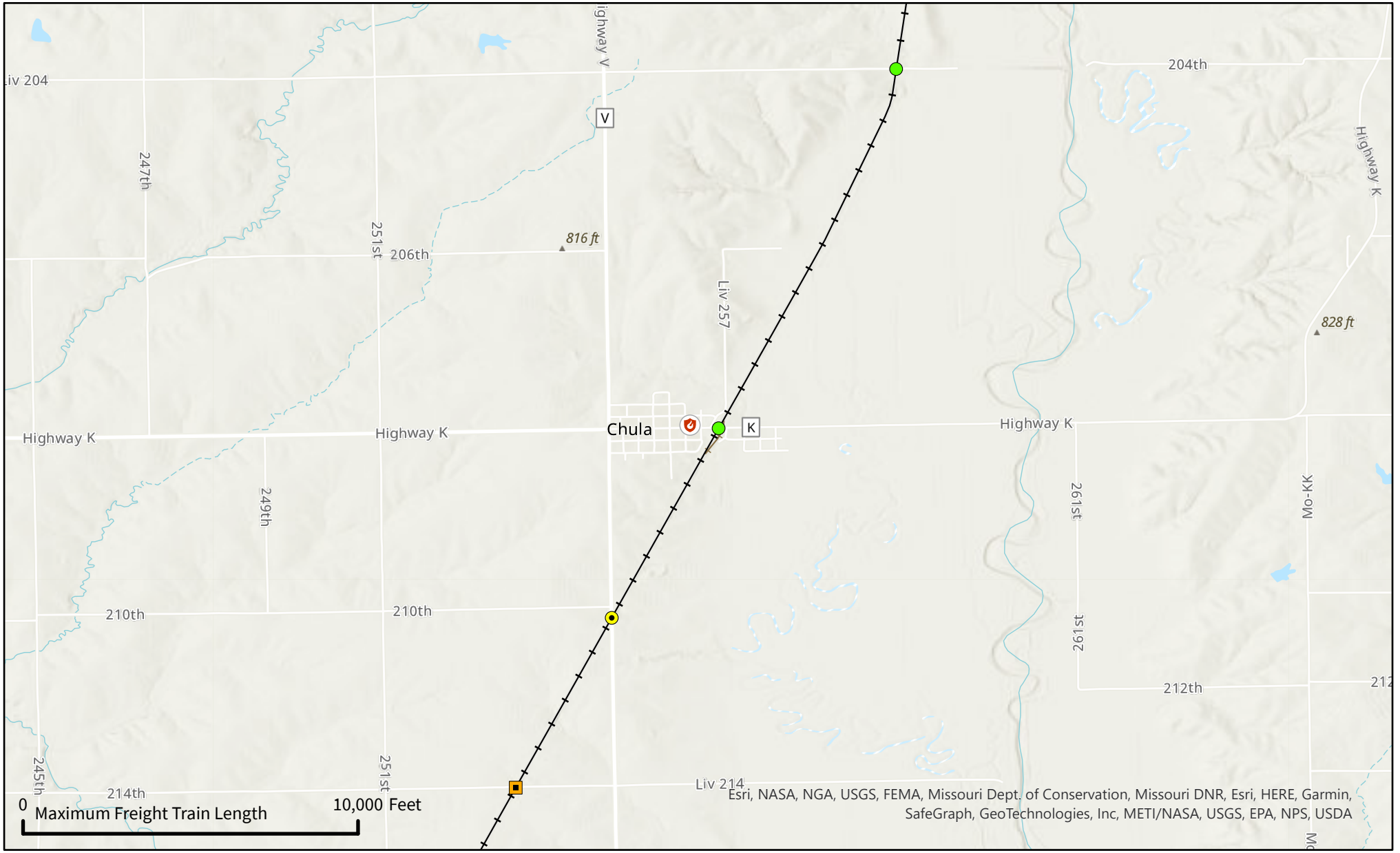


Emergency Services Routing Analysis
S of Laredo, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



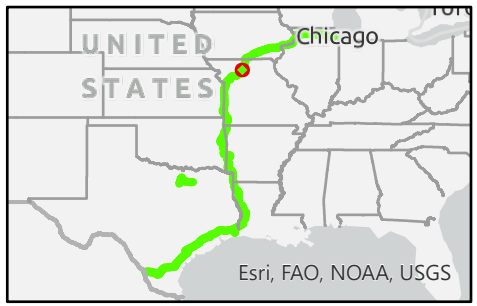
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- Hospital
- Police



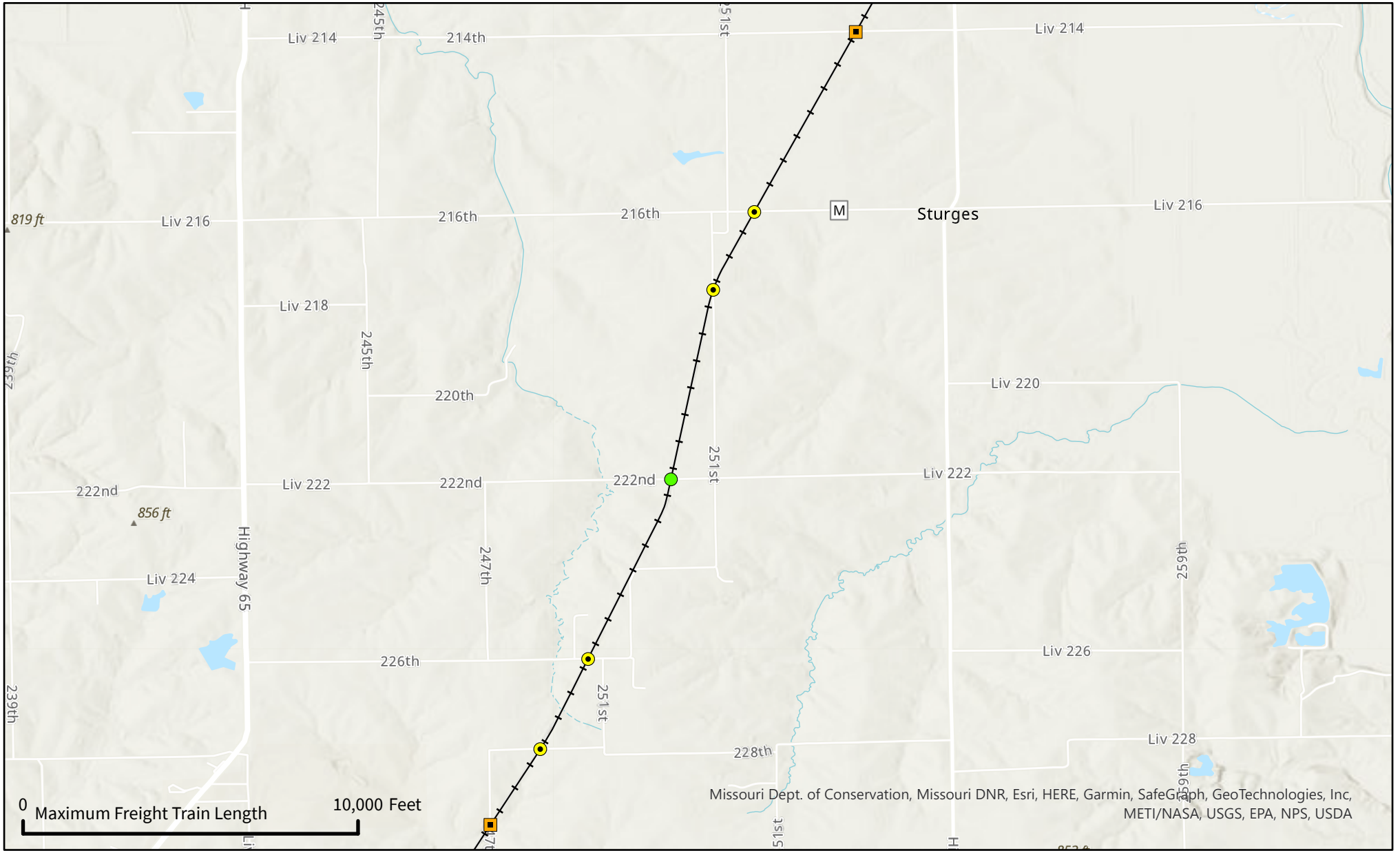
Emergency Services Routing Analysis

Chula, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



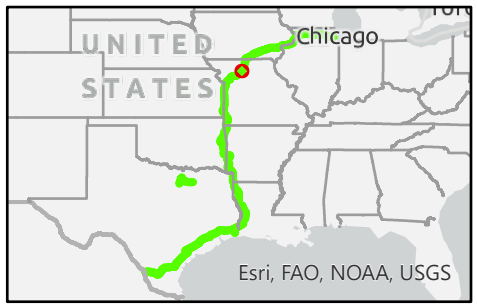
Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

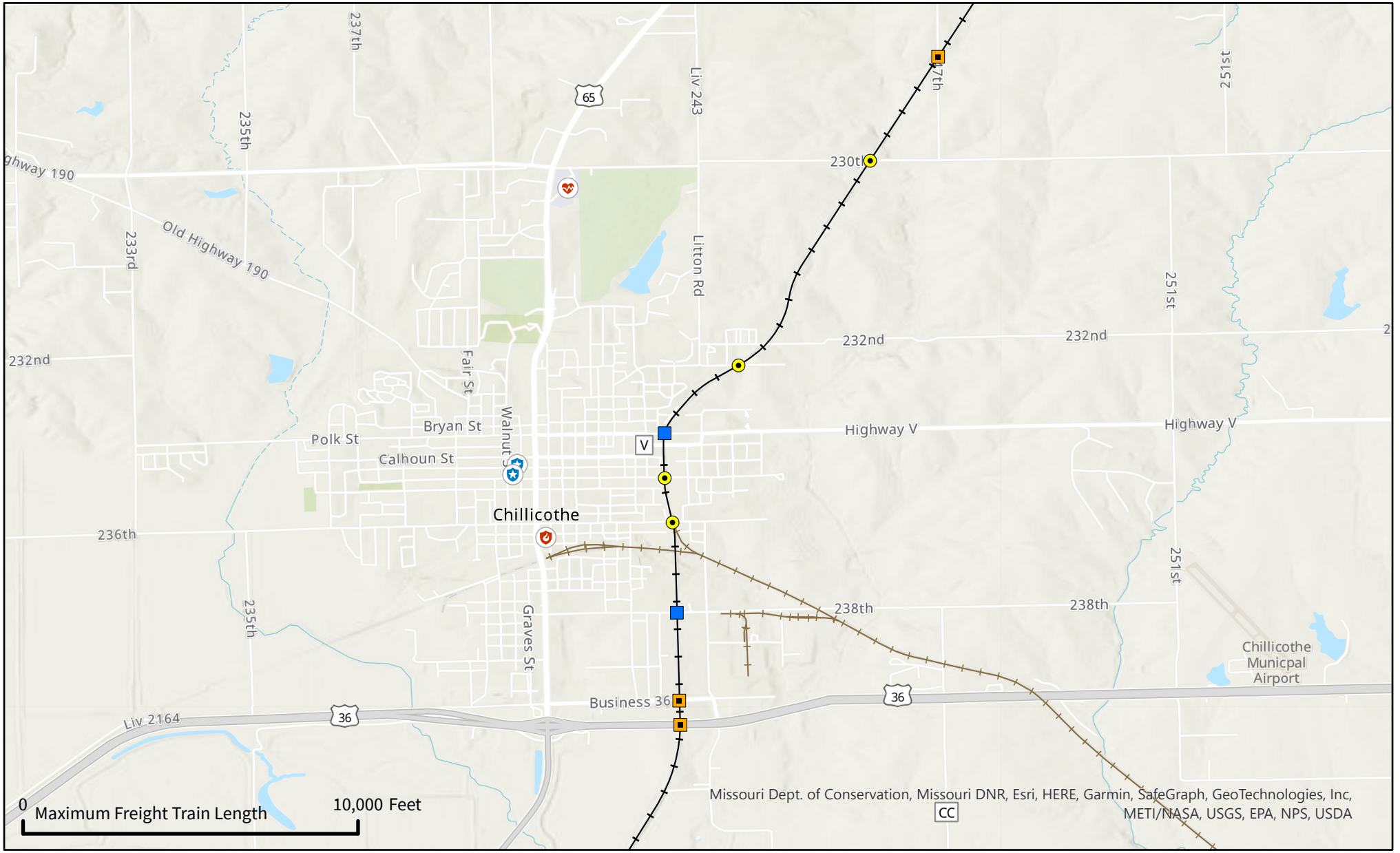


Emergency Services Routing Analysis
Sturges, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



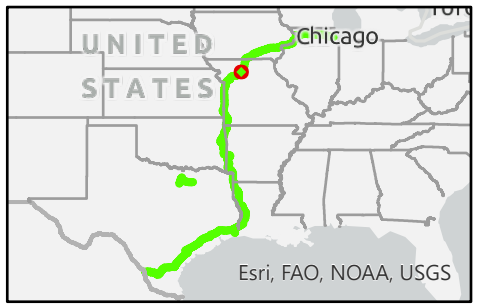
Legend

Crossing Position

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- At-Grade Crossing (Excluded from EMS Analysis)
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Chillicothe, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



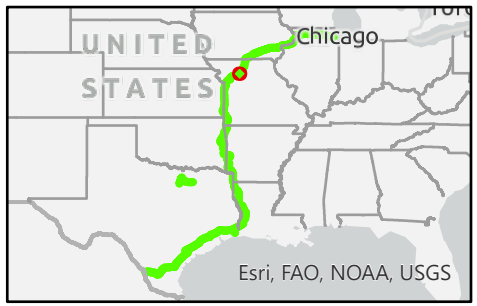
Legend

Crossing Position

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- Other Tracks
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- EMS Dispatch
- Hospital
- Police



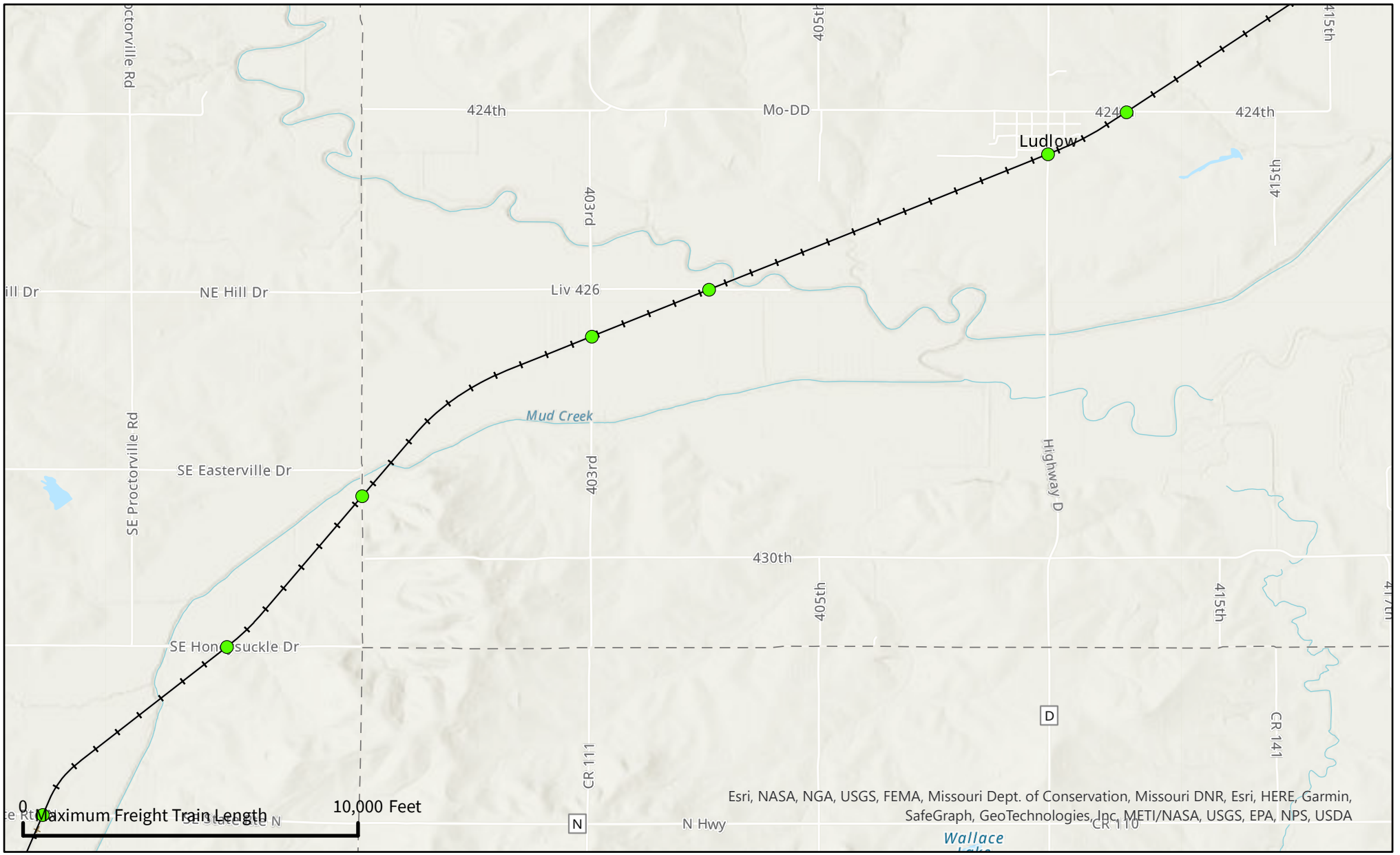
Emergency Services Routing Analysis

Dawn, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



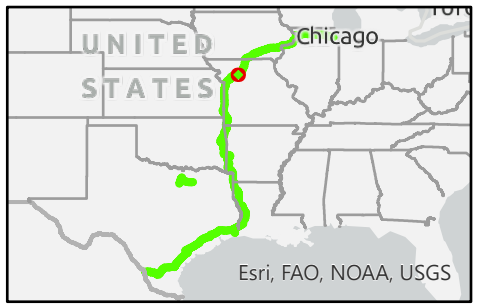
Legend

Crossing Position

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Other

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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Ludlow, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



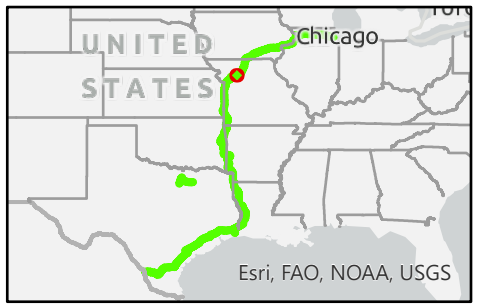
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- Hospital
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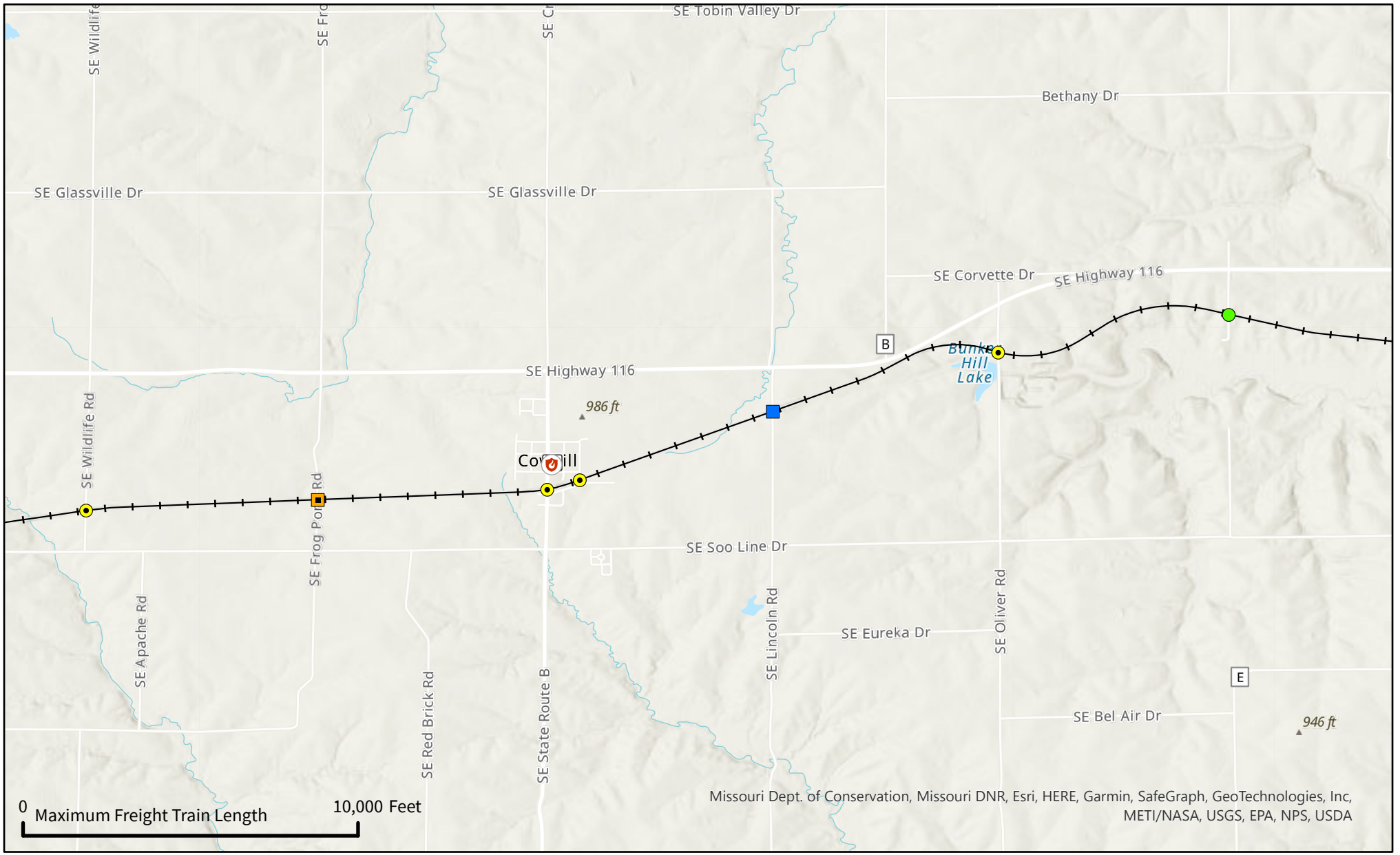
Emergency Services Routing Analysis

Braymer, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



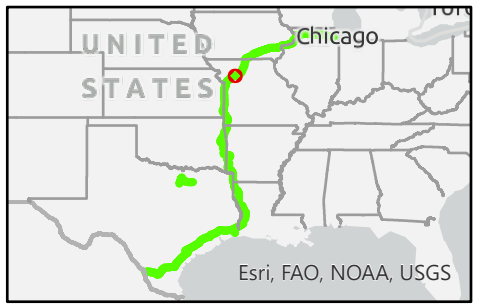
Legend

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- Fire Station
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- Hospital
- Police

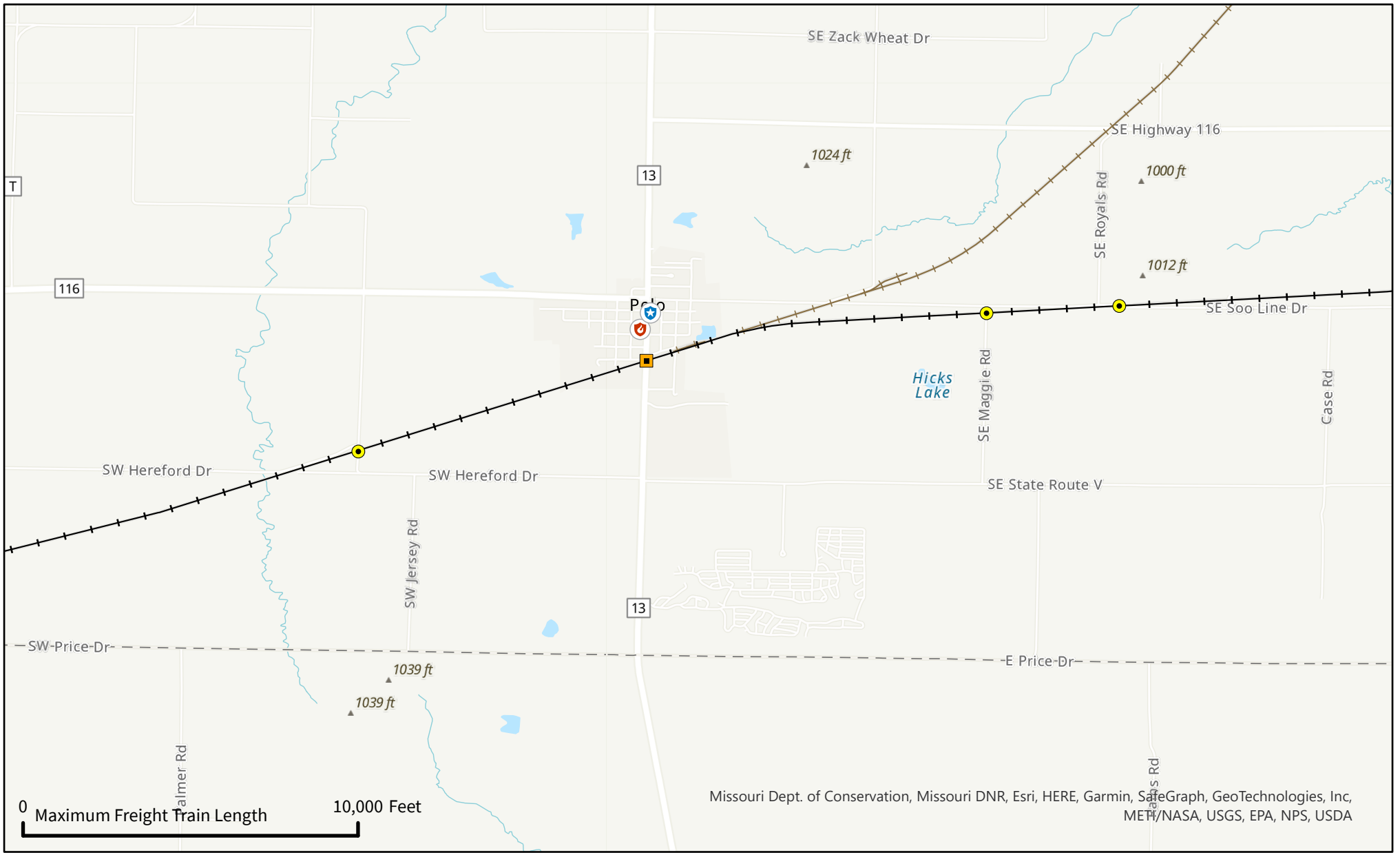


Emergency Services Routing Analysis
Cowgill, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



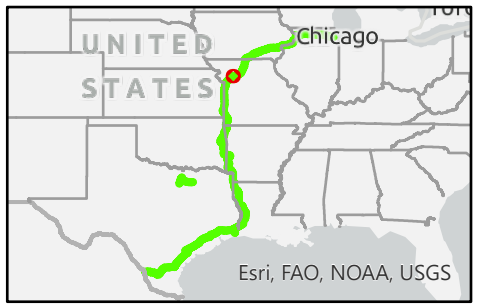
Legend

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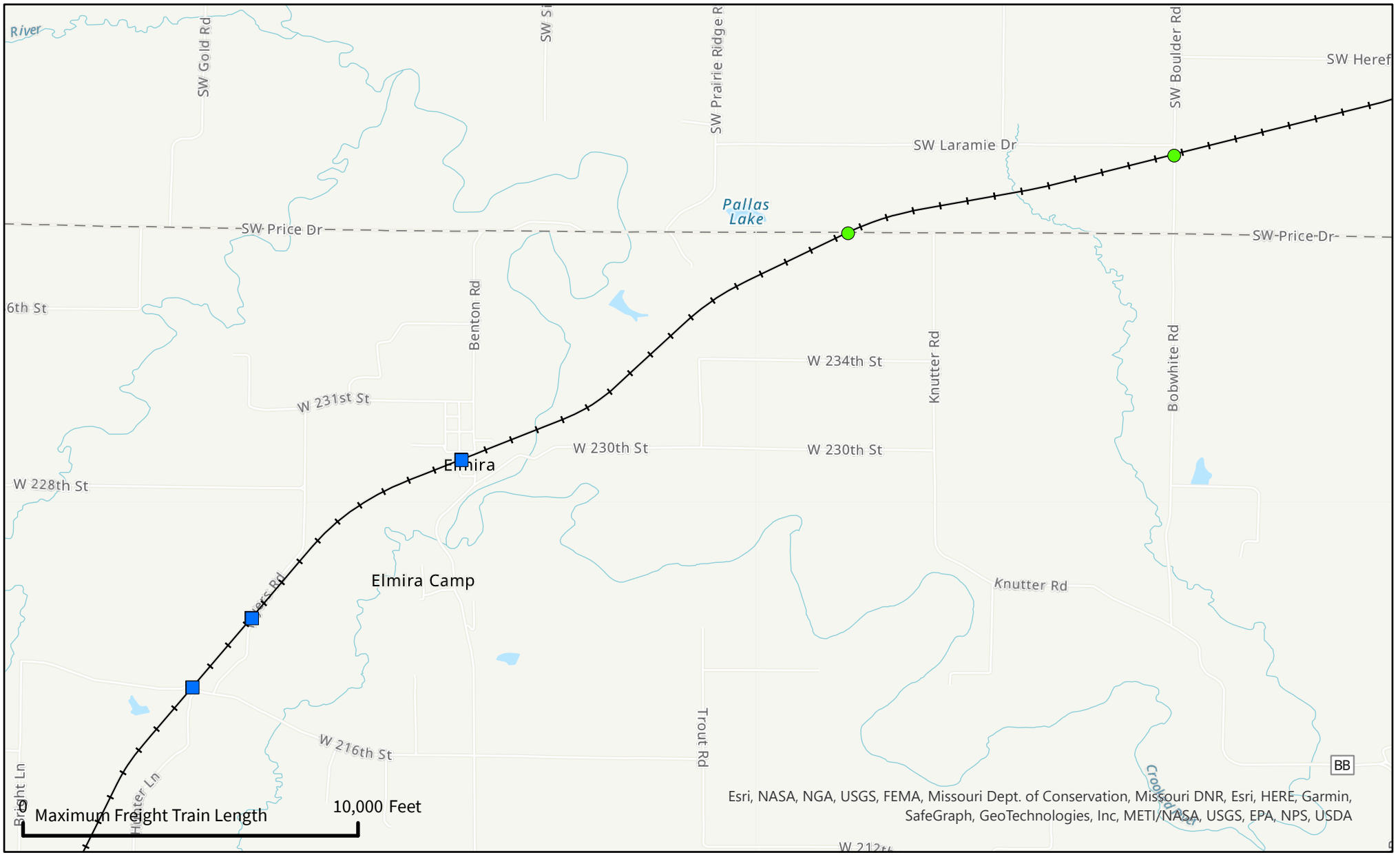
Emergency Services Routing Analysis

Polo, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



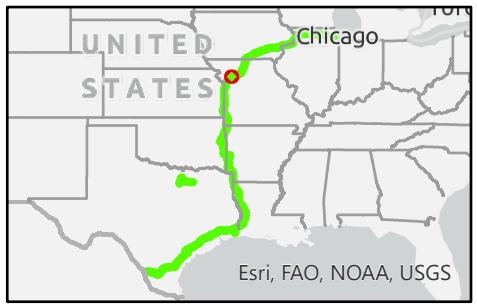
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- Hospital
- Police

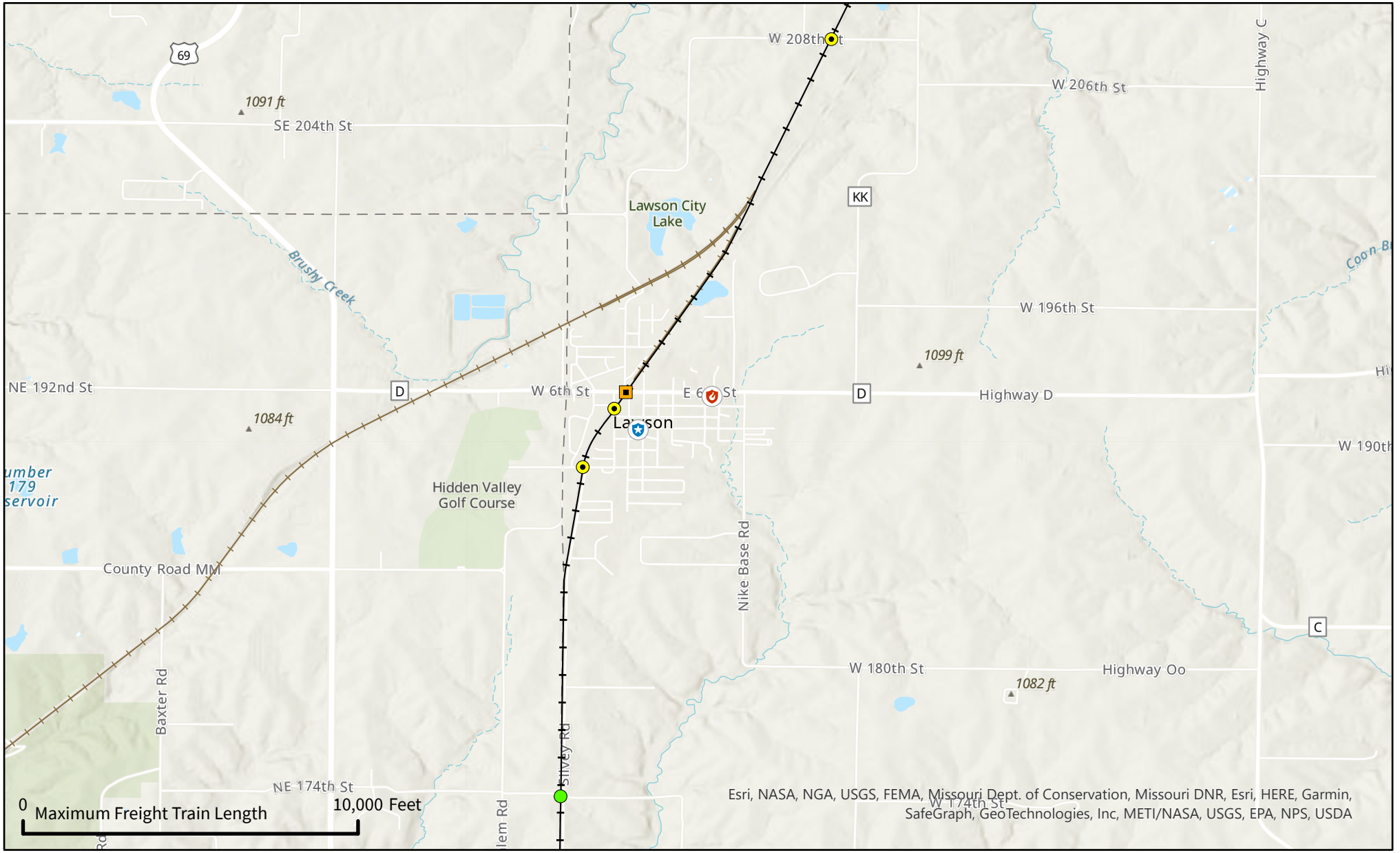


Emergency Services Routing Analysis
Elmira, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



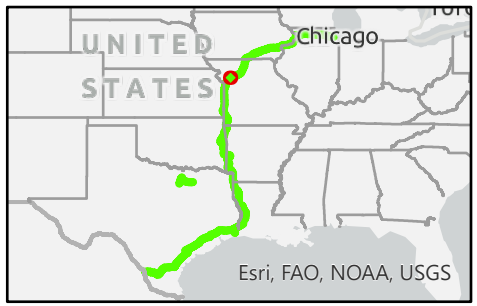
Legend

Crossing Position

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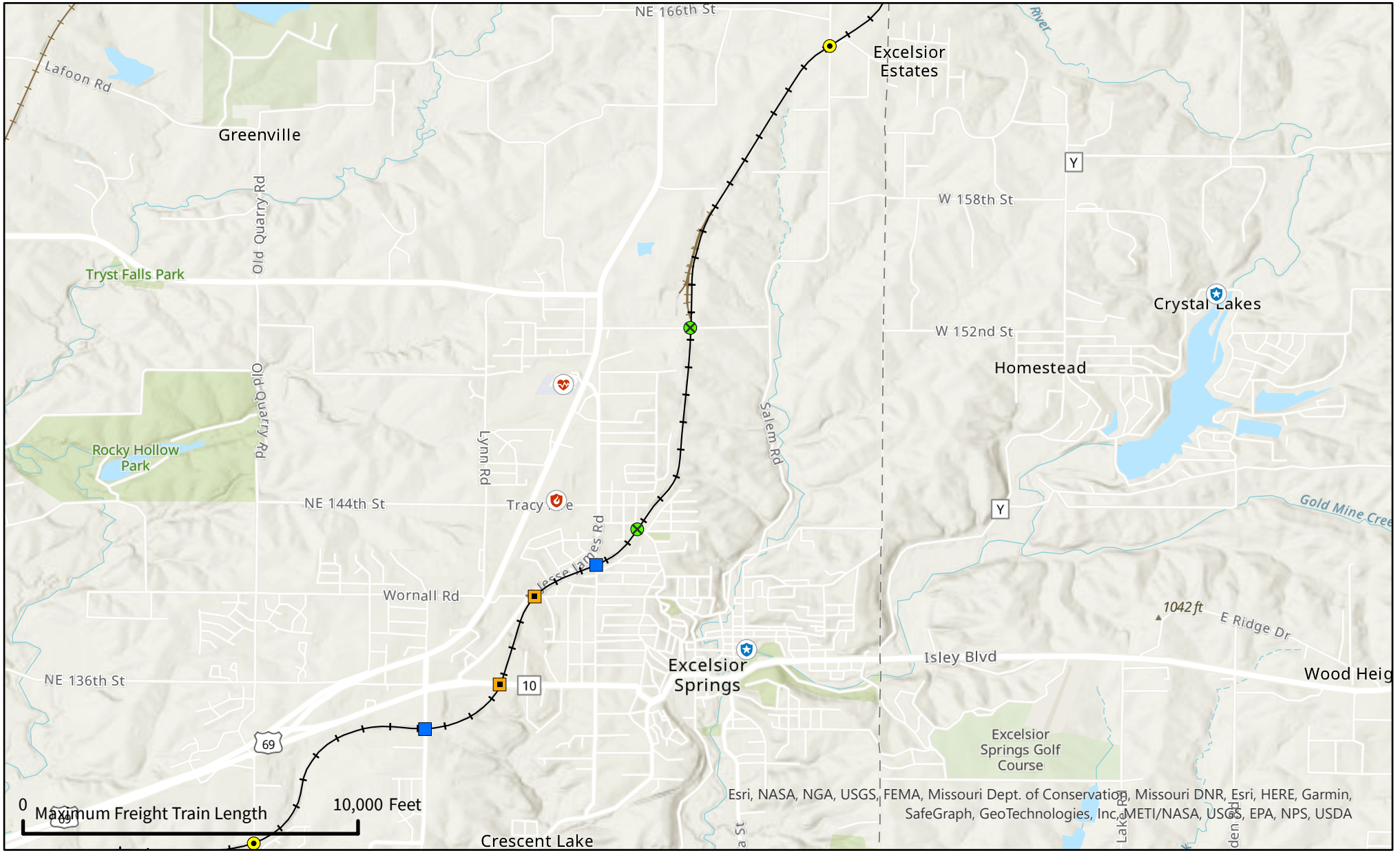
Emergency Services Routing Analysis

Lawson, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



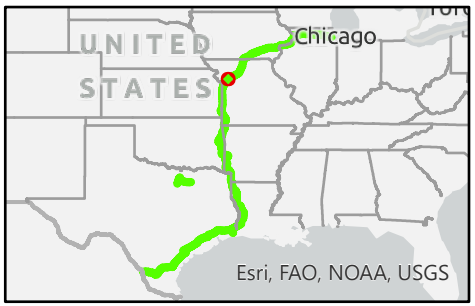
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- Key Map: Analyzed Tracks
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- Police



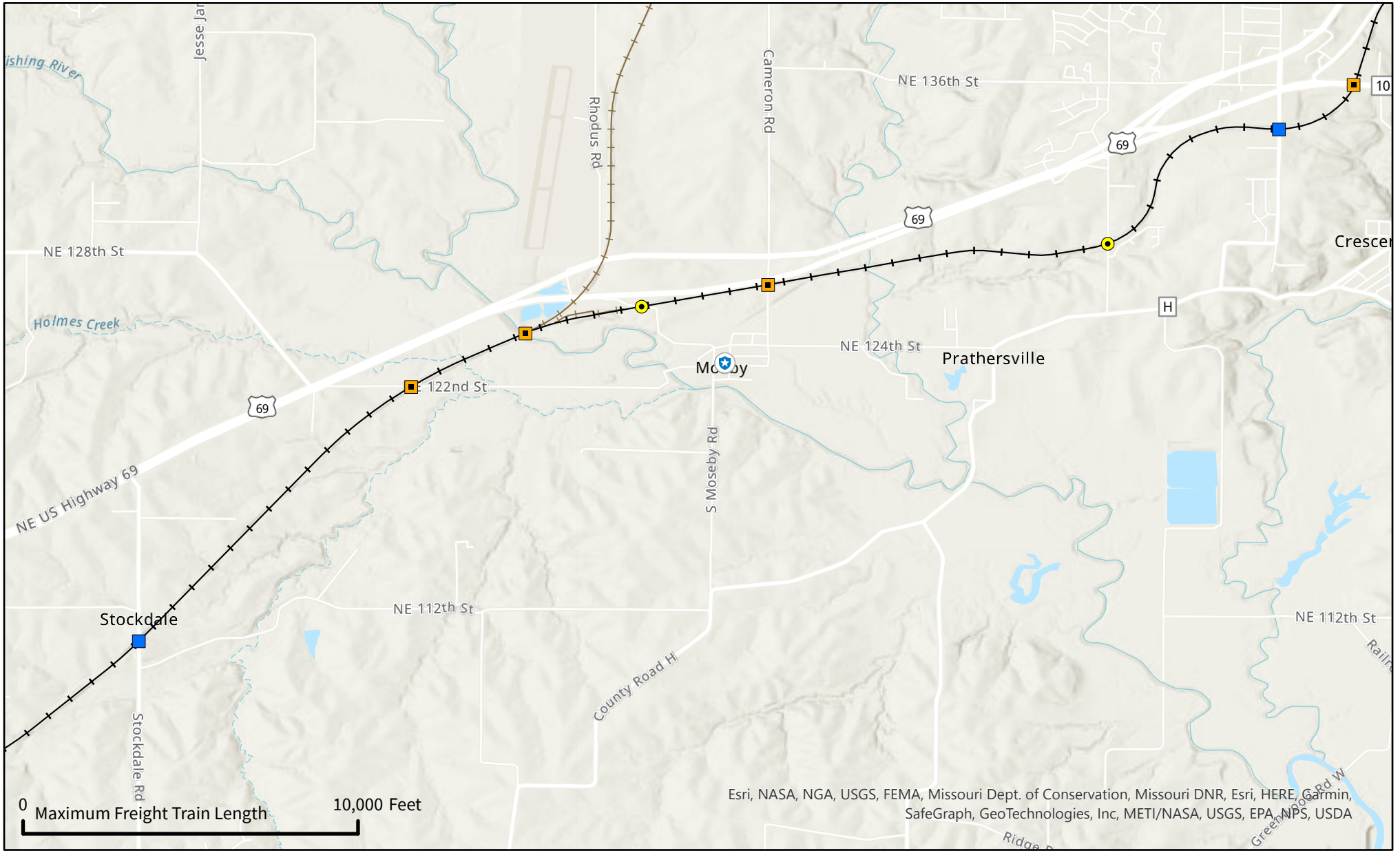
Emergency Services Routing Analysis

Excelsior Springs, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Hospital
- Police

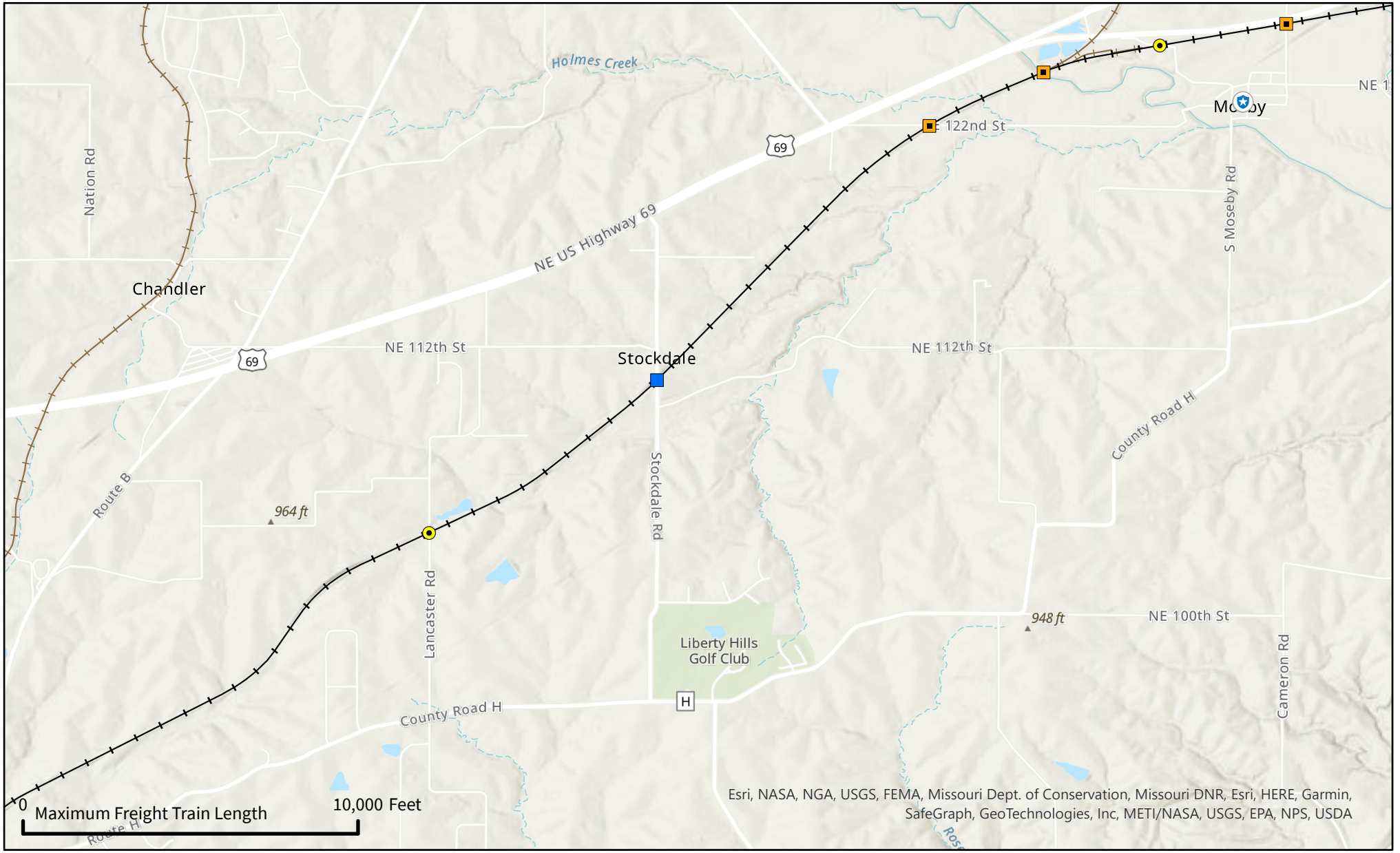


Emergency Services Routing Analysis
Mosby, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- EMS Dispatch
- Hospital
- Police

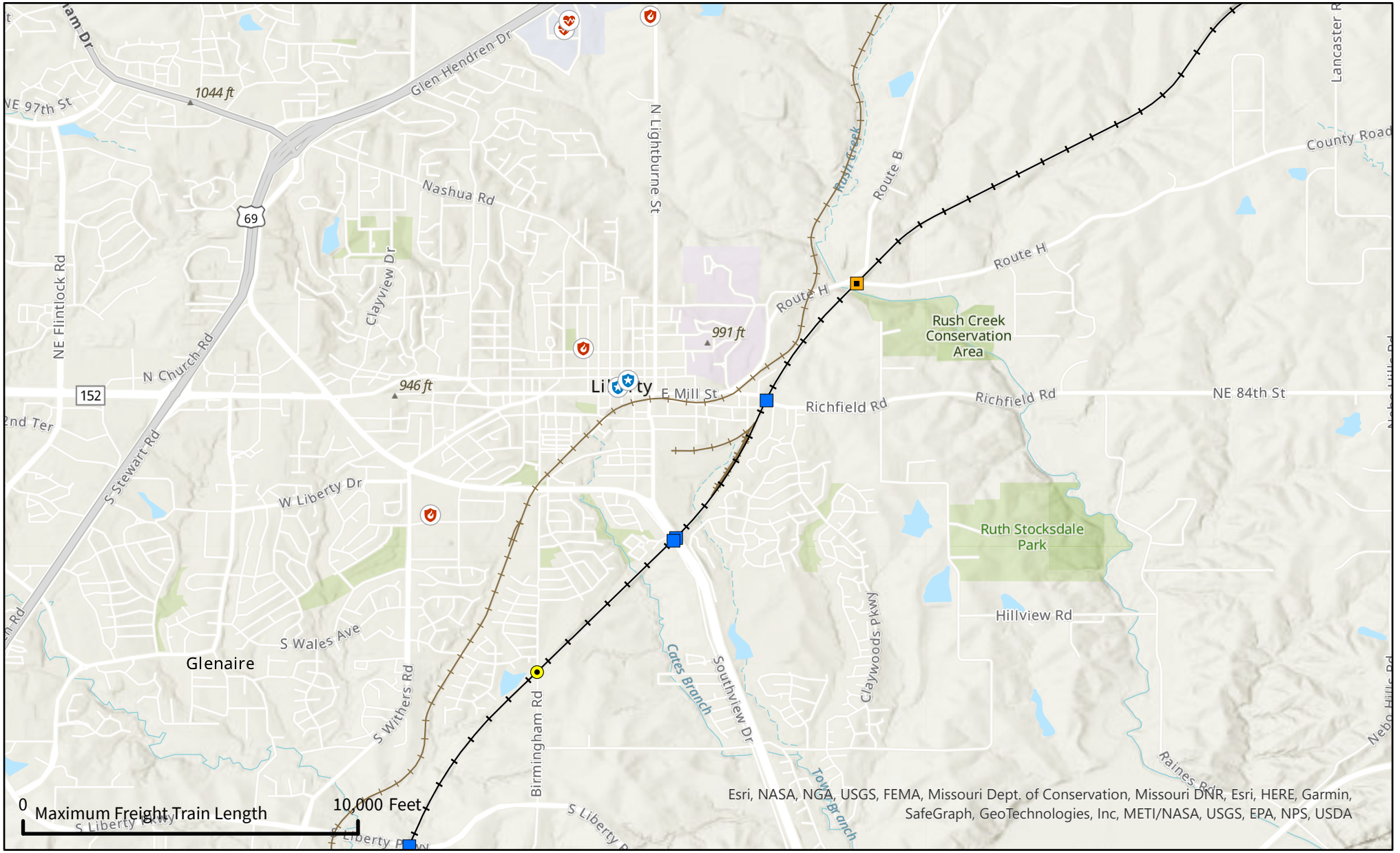


Emergency Services Routing Analysis
Stockdale, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Hospital
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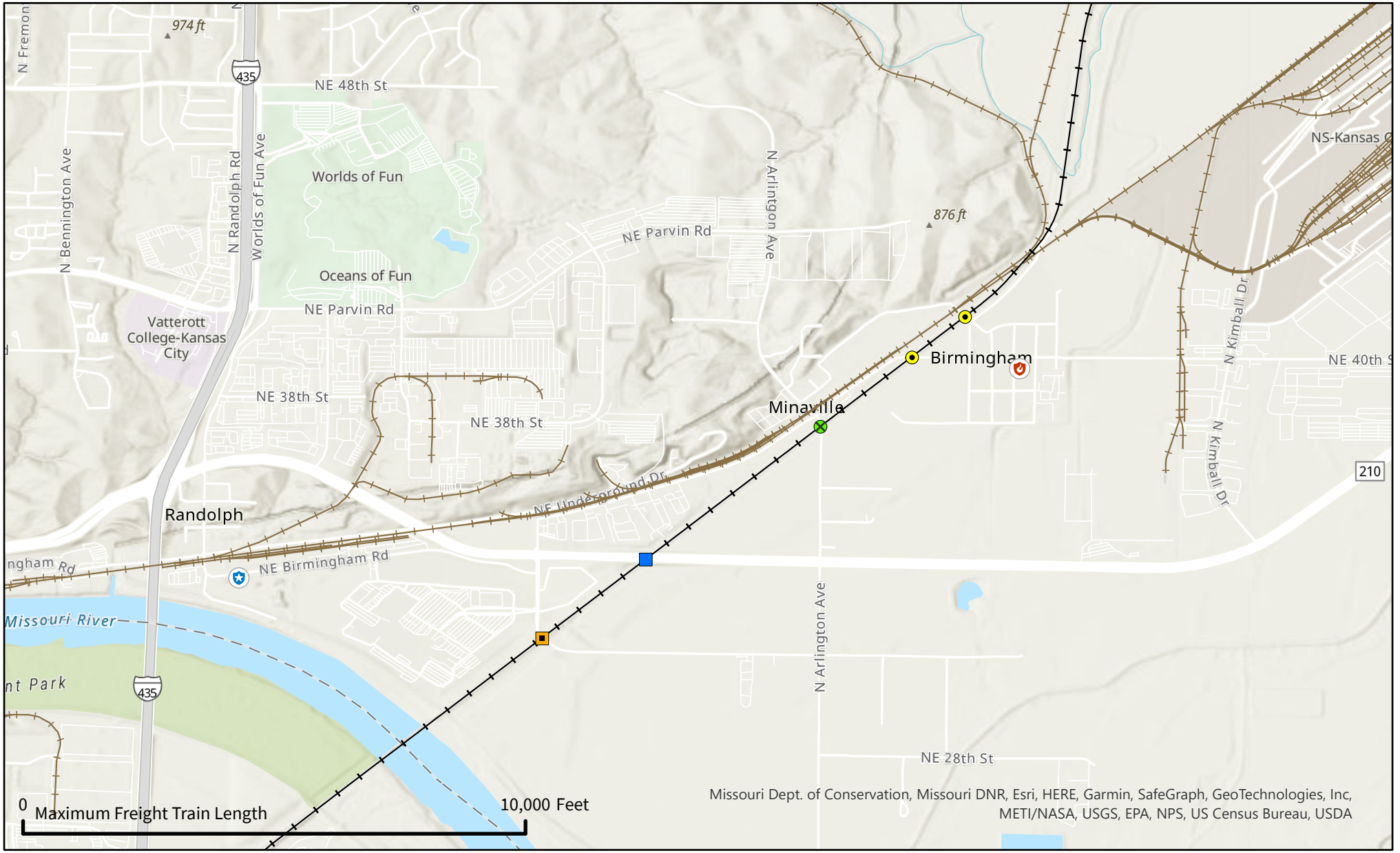


Emergency Services Routing Analysis
Liberty, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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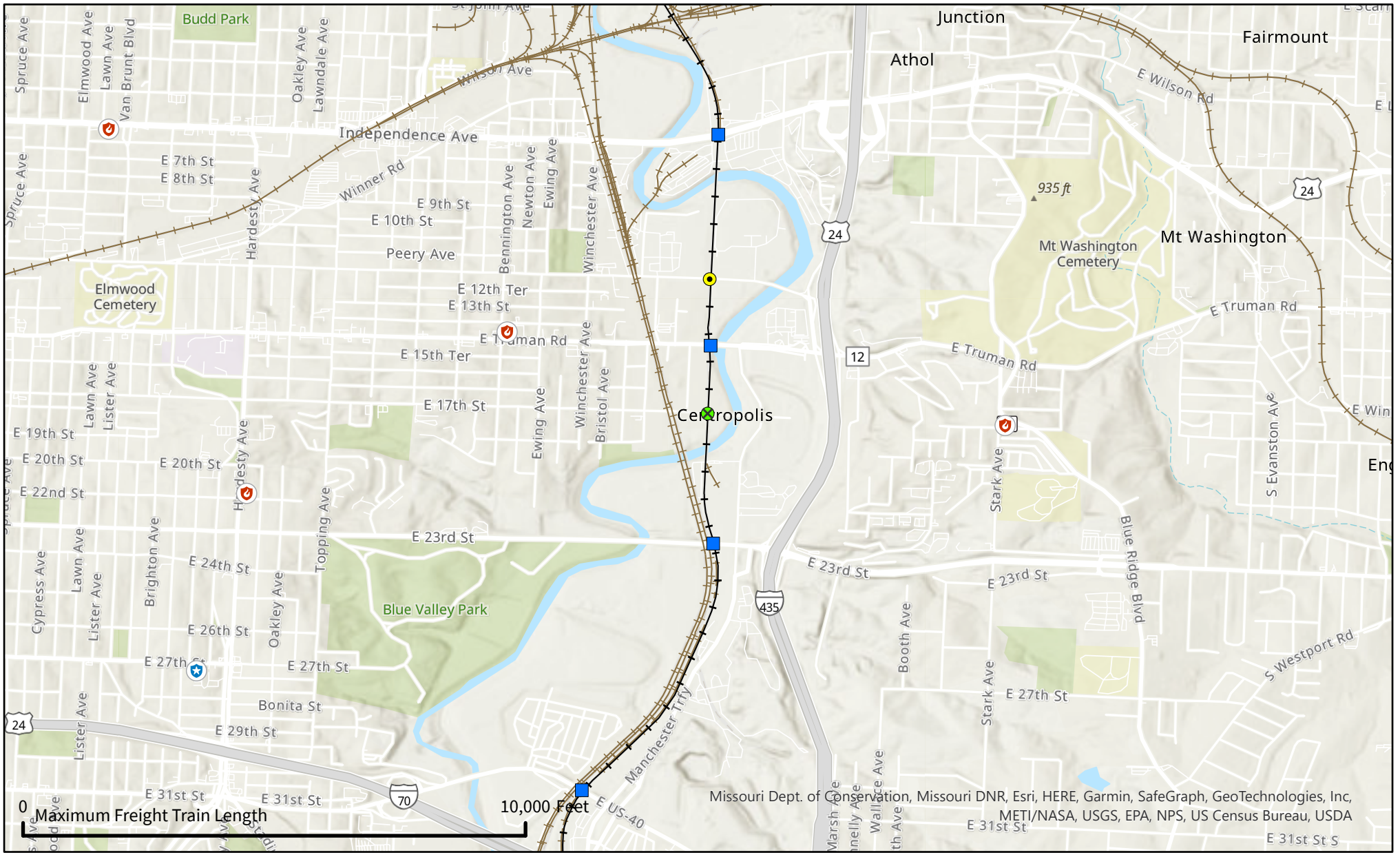


Emergency Services Routing Analysis
Birmingham, MO

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
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- Hospital
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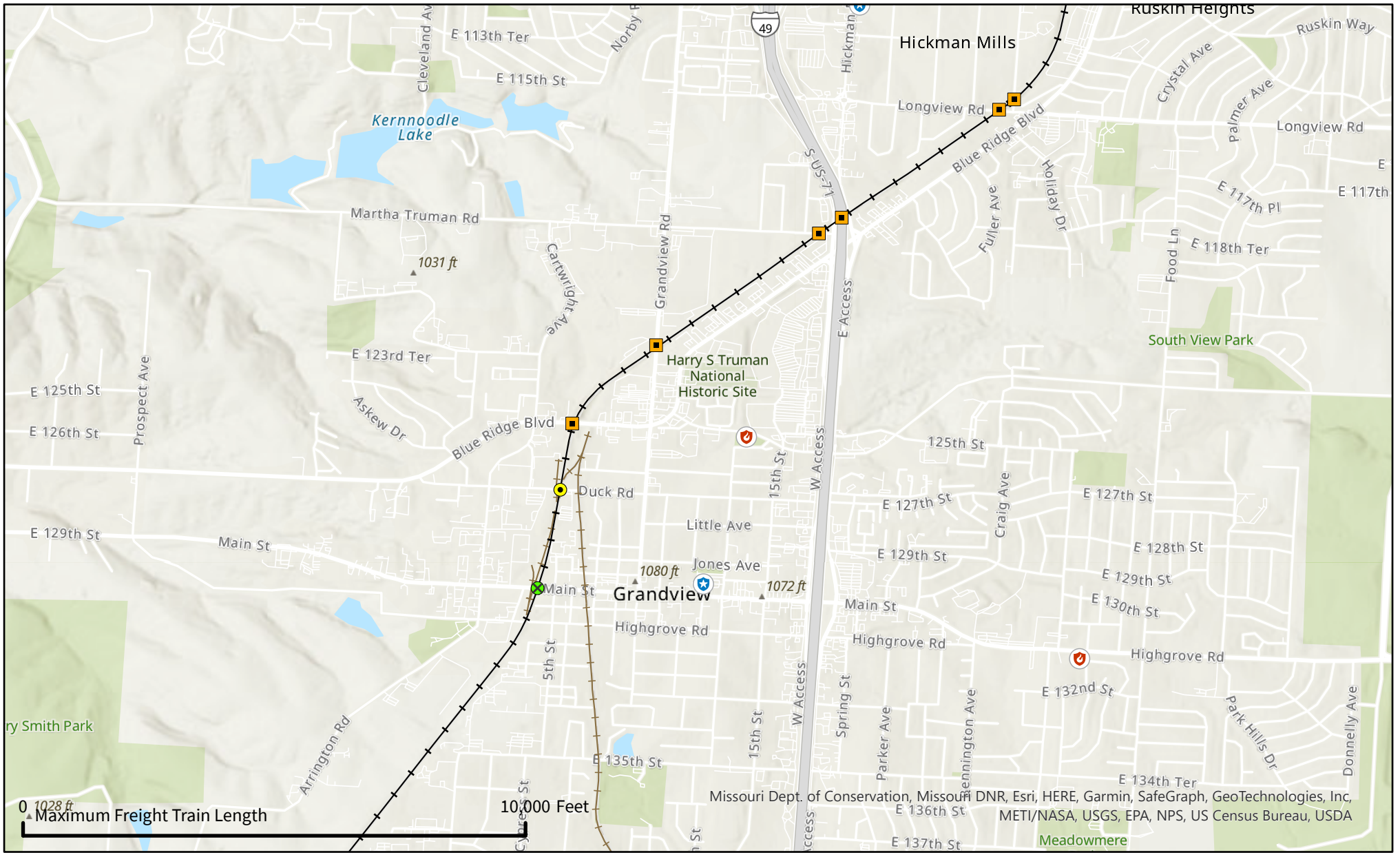
Emergency Services Routing Analysis

Kansas City, MO

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Hospital
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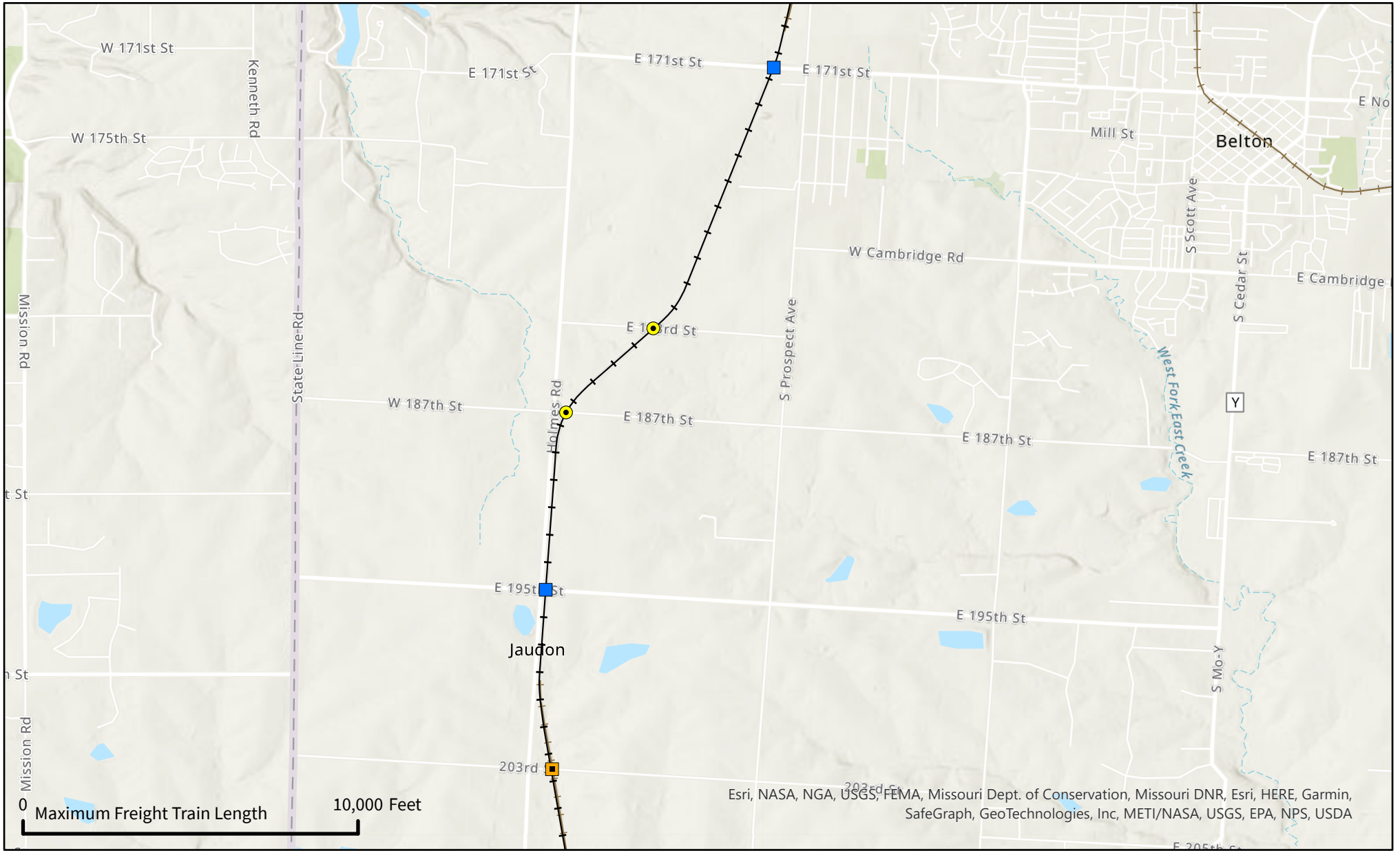


Emergency Services Routing Analysis
Grandview, MO

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Hospital
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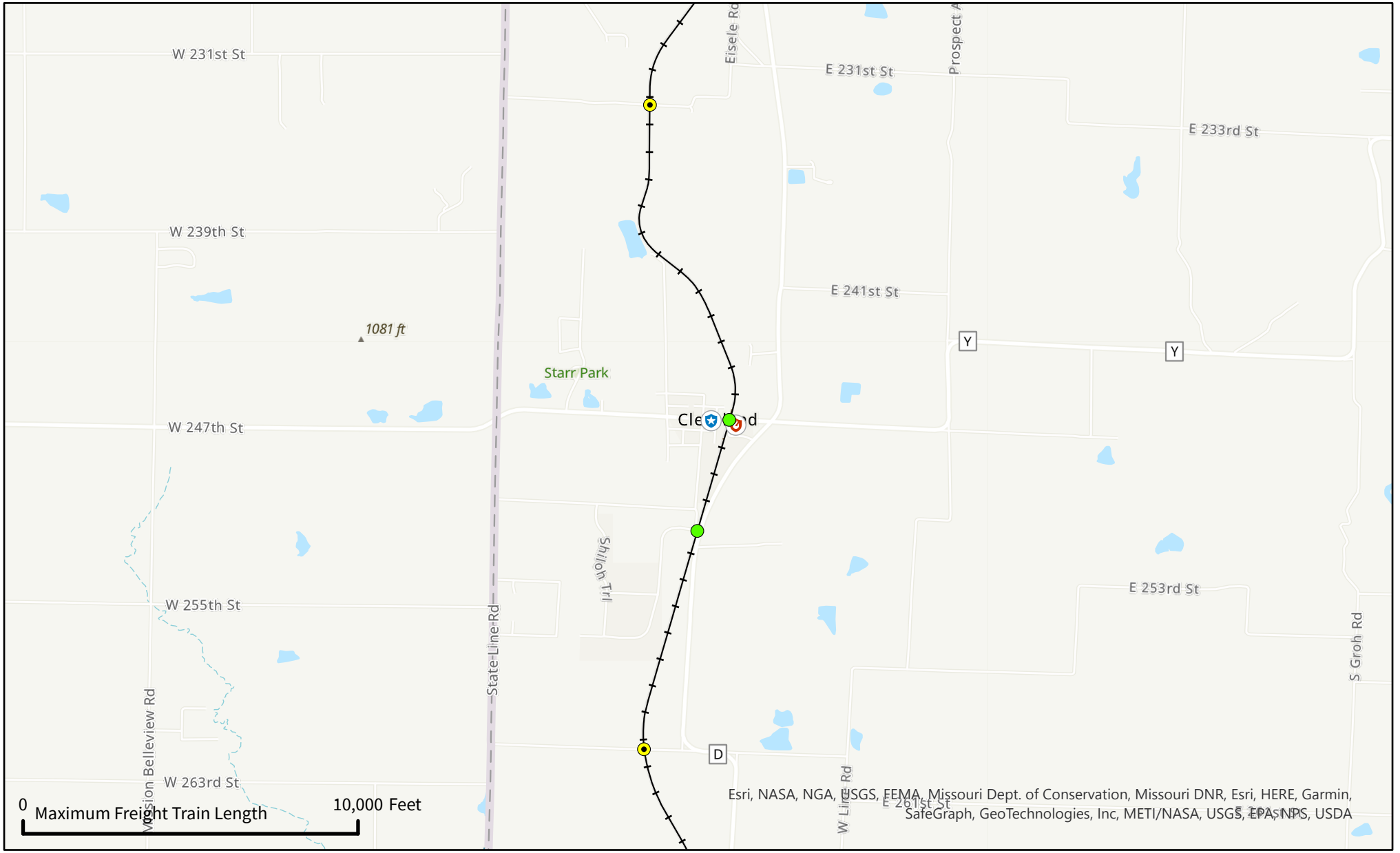


Emergency Services Routing Analysis
Belton, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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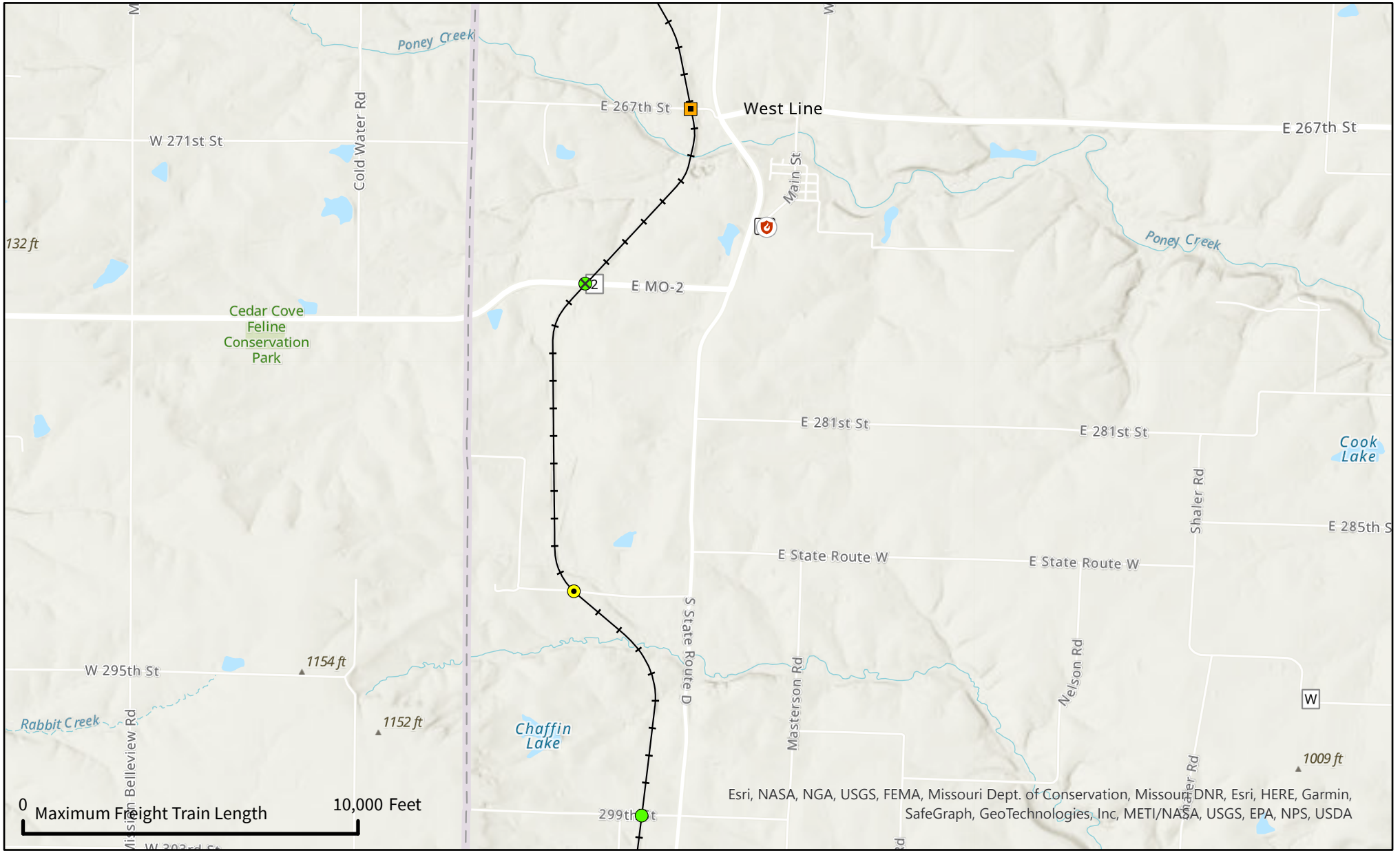


Emergency Services Routing Analysis
Cleveland, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Hospital
- Police



Emergency Services Routing Analysis
West Line, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Hospital
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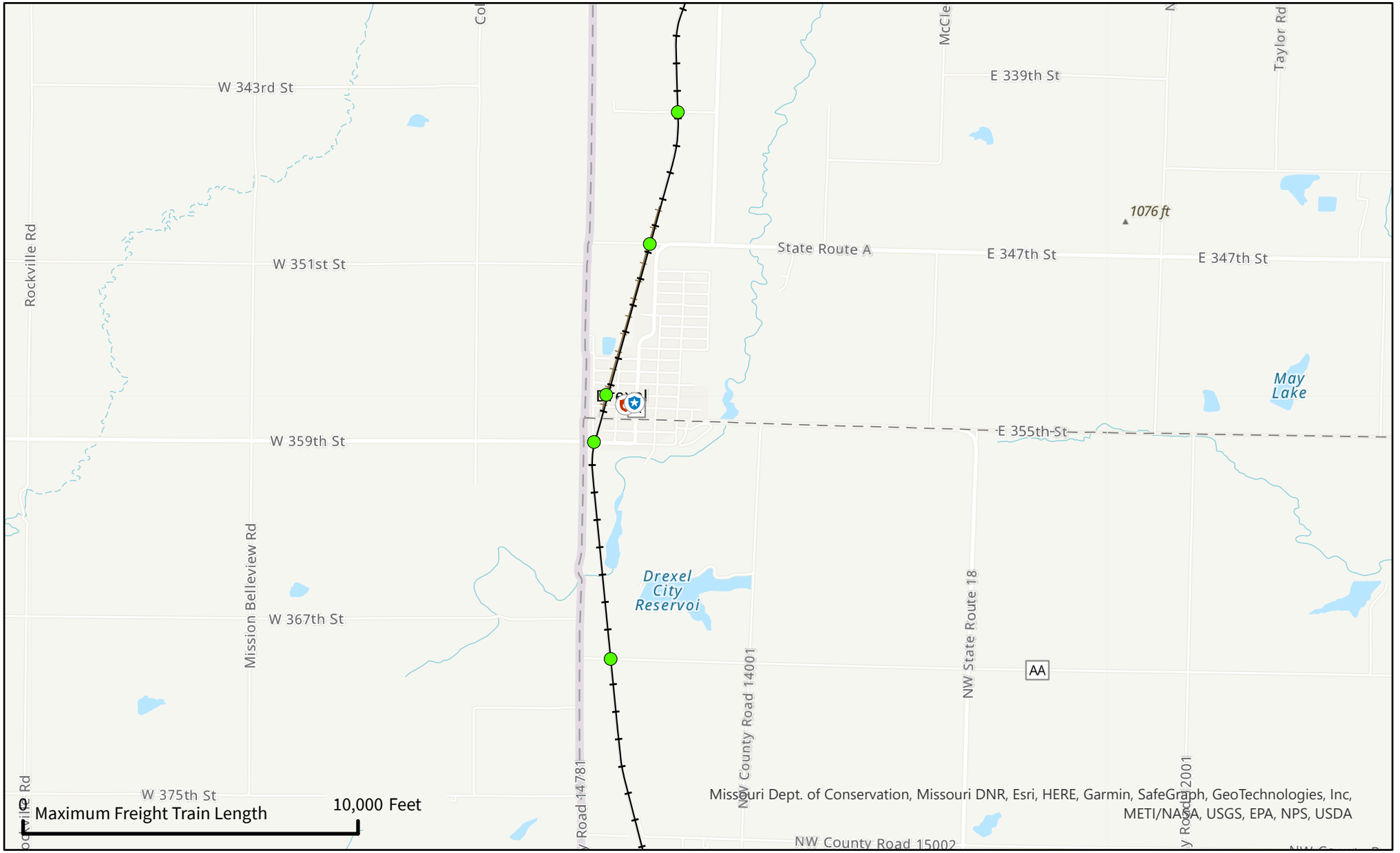
Emergency Services Routing Analysis

Lisle, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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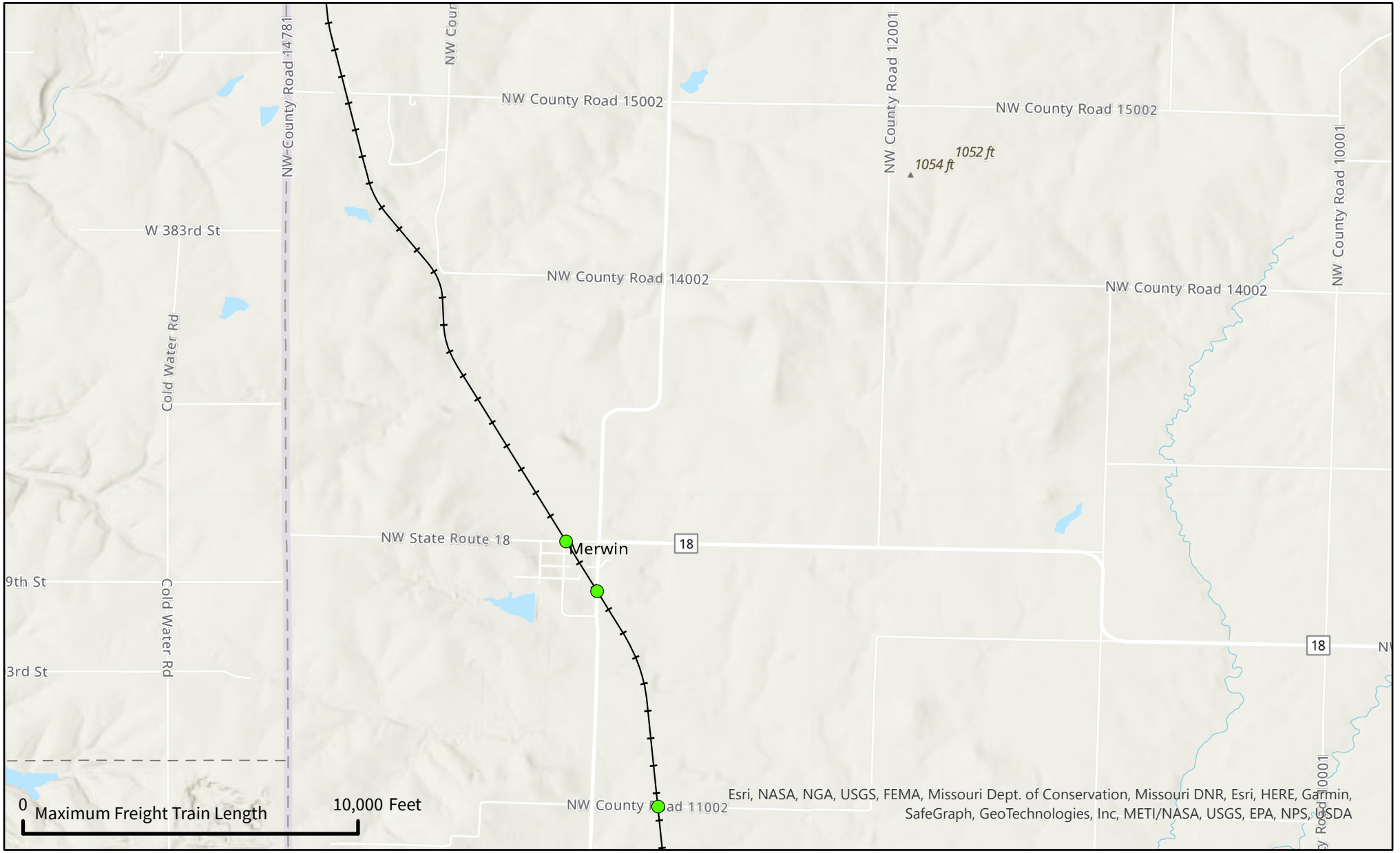


Emergency Services Routing Analysis
Drexel, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Other Tracks
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- Hospital
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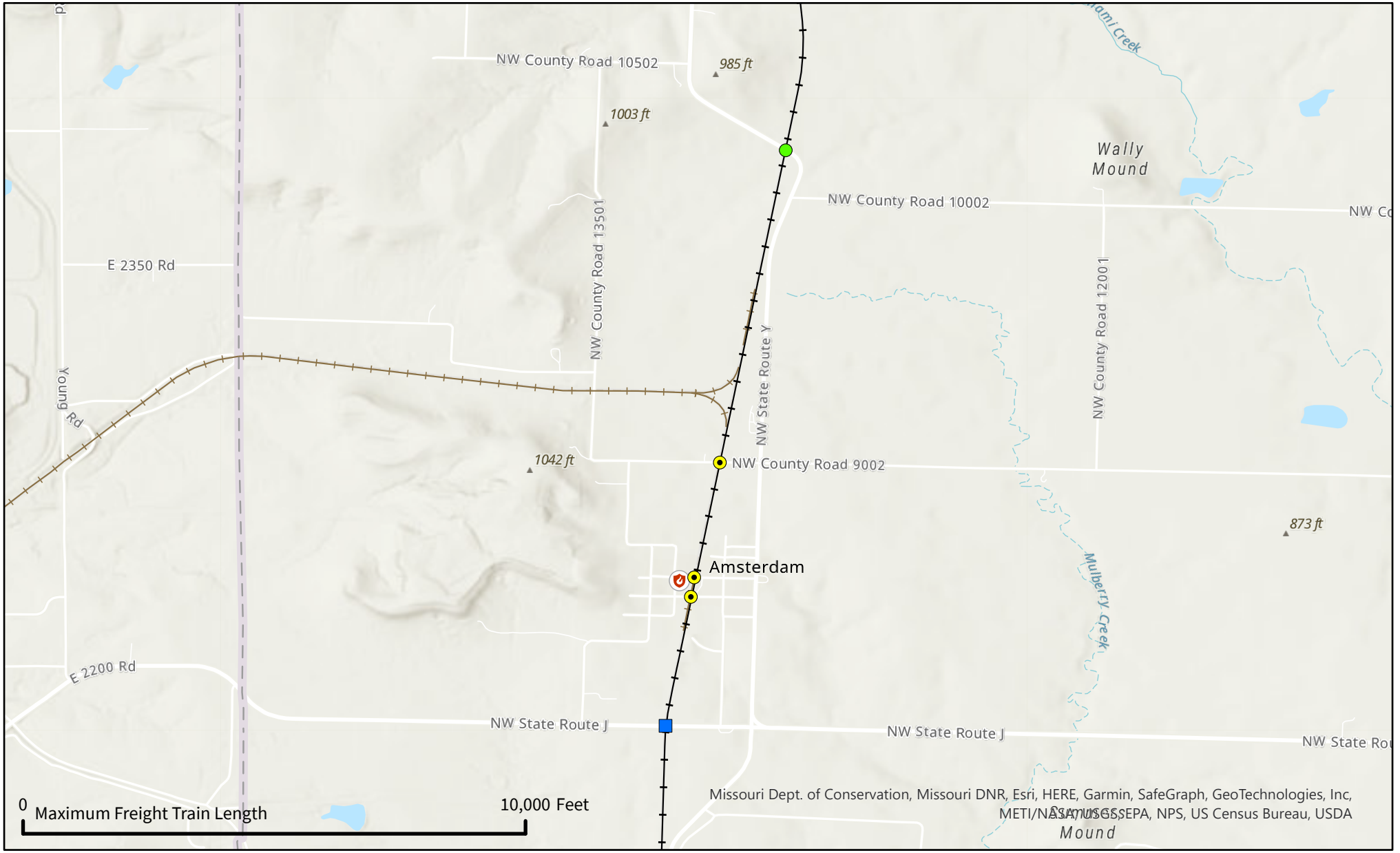
Emergency Services Routing Analysis

Merwin, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Hospital
- Police

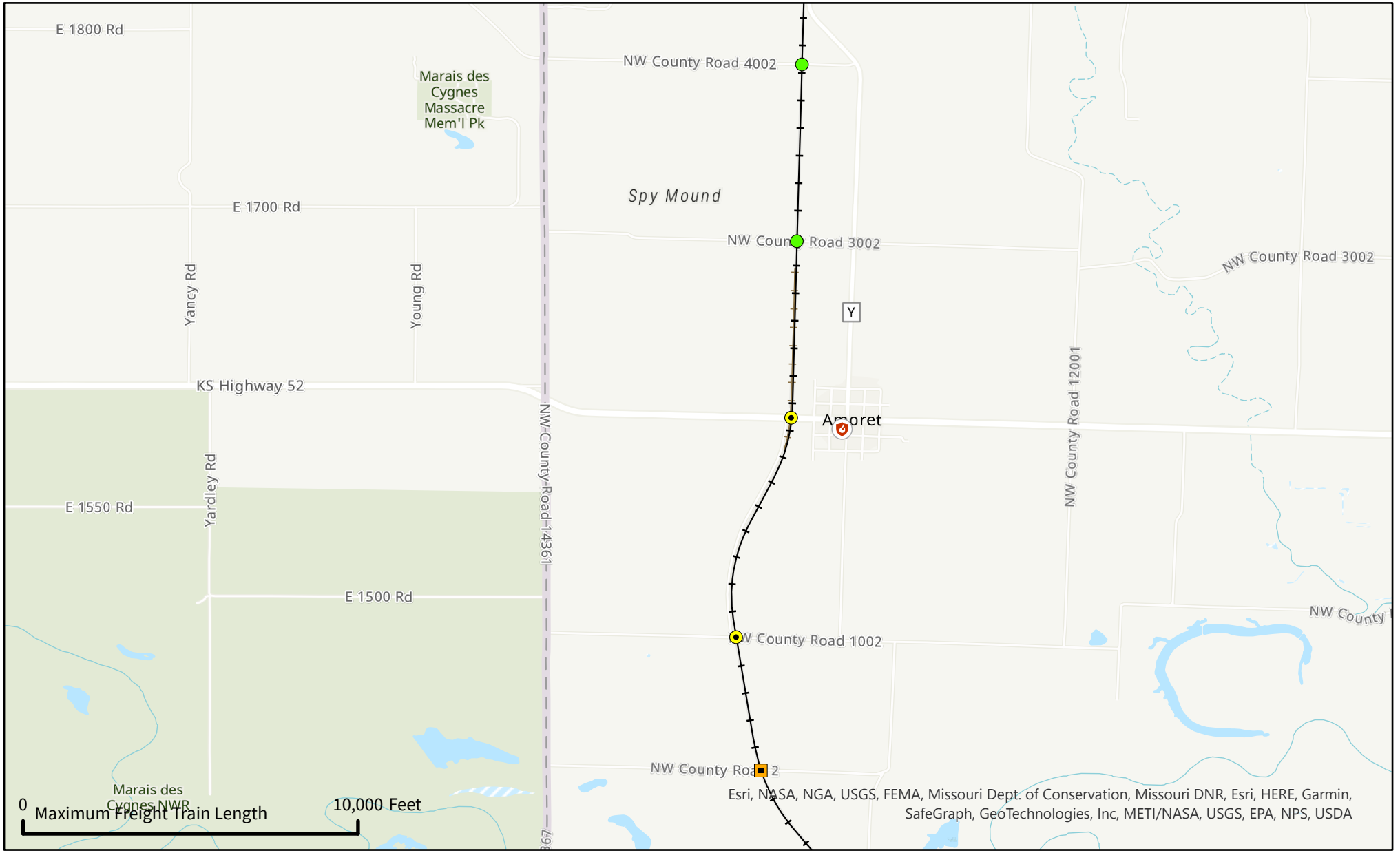


Emergency Services Routing Analysis
Amsterdam, MO

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



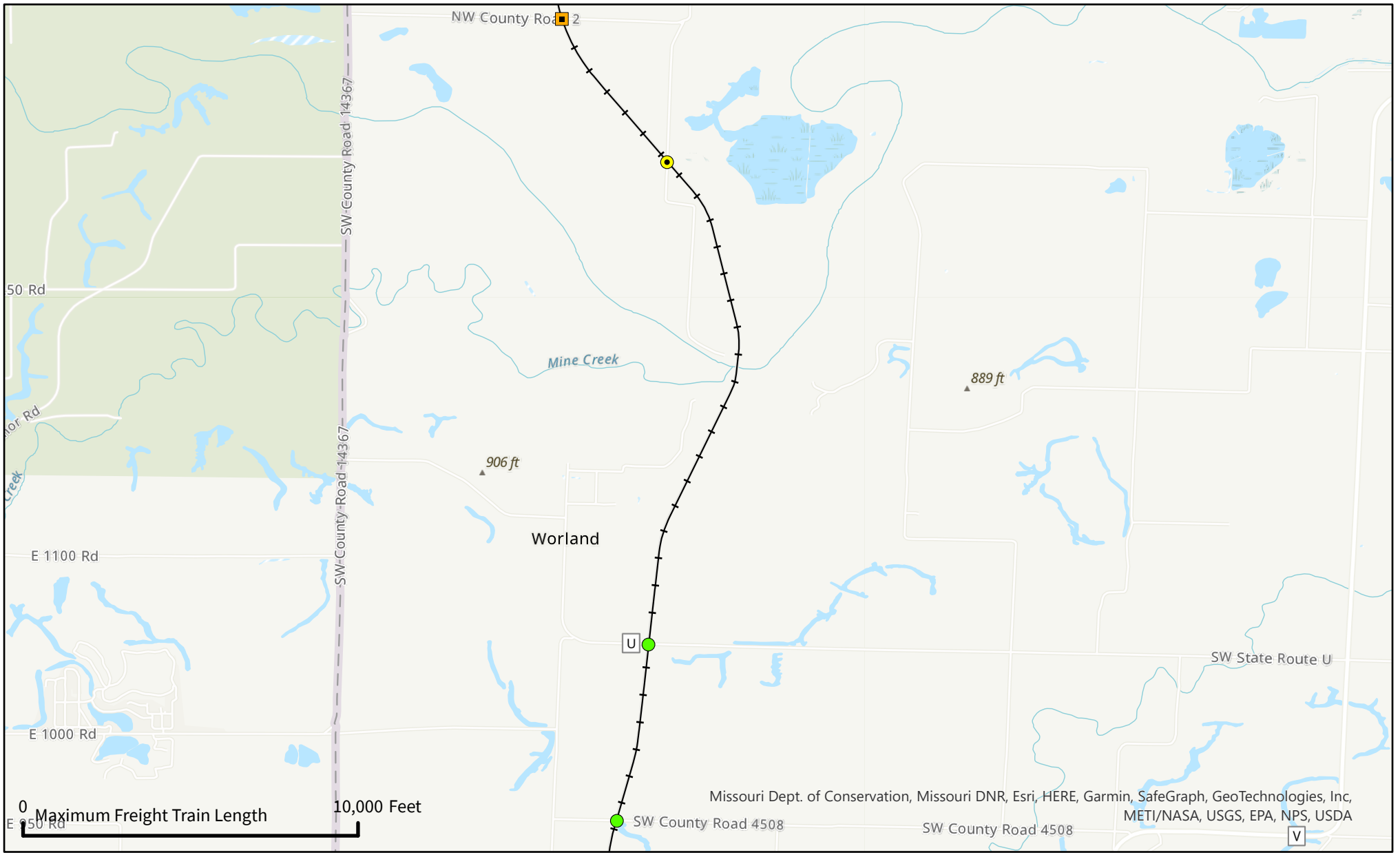
Emergency Services Routing Analysis

Amoret, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
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- Key Map: Analyzed Tracks
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- Fire Station
- EMS Dispatch
- Hospital
- Police

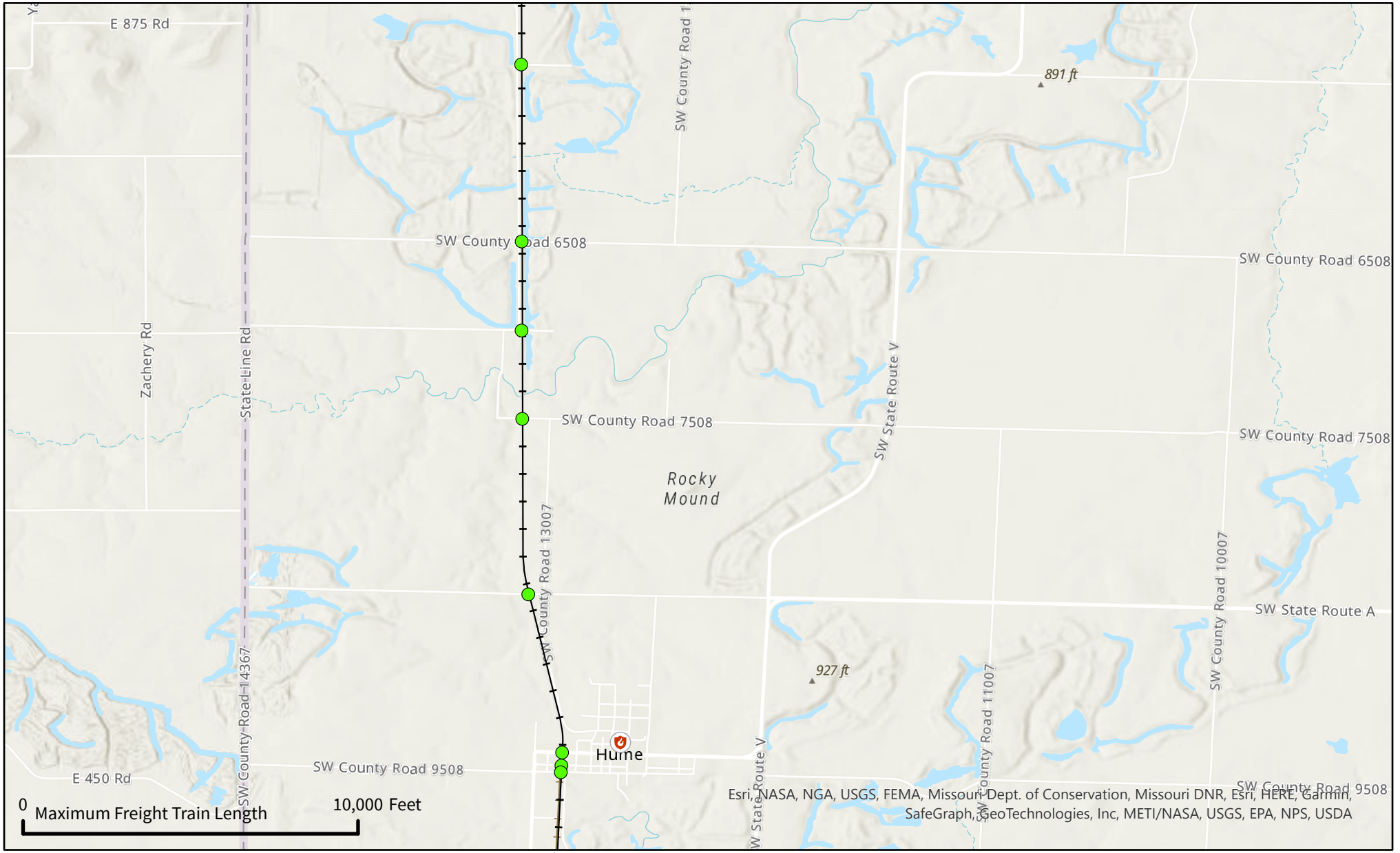


Emergency Services Routing Analysis
Worland, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Crossings Analyzed for Delay Impacts (277 Total)

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- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



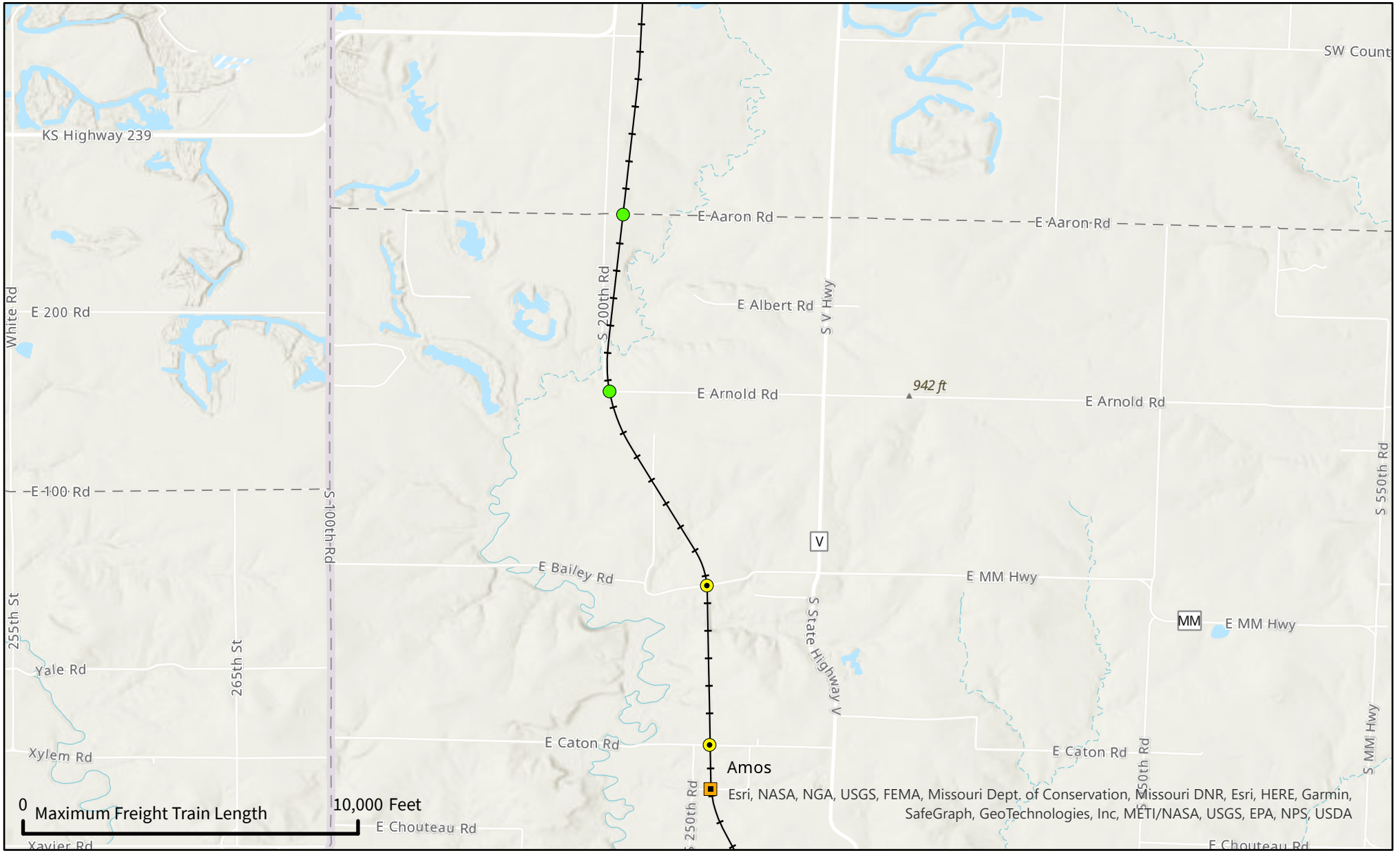
Emergency Services Routing Analysis

Hume, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
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- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



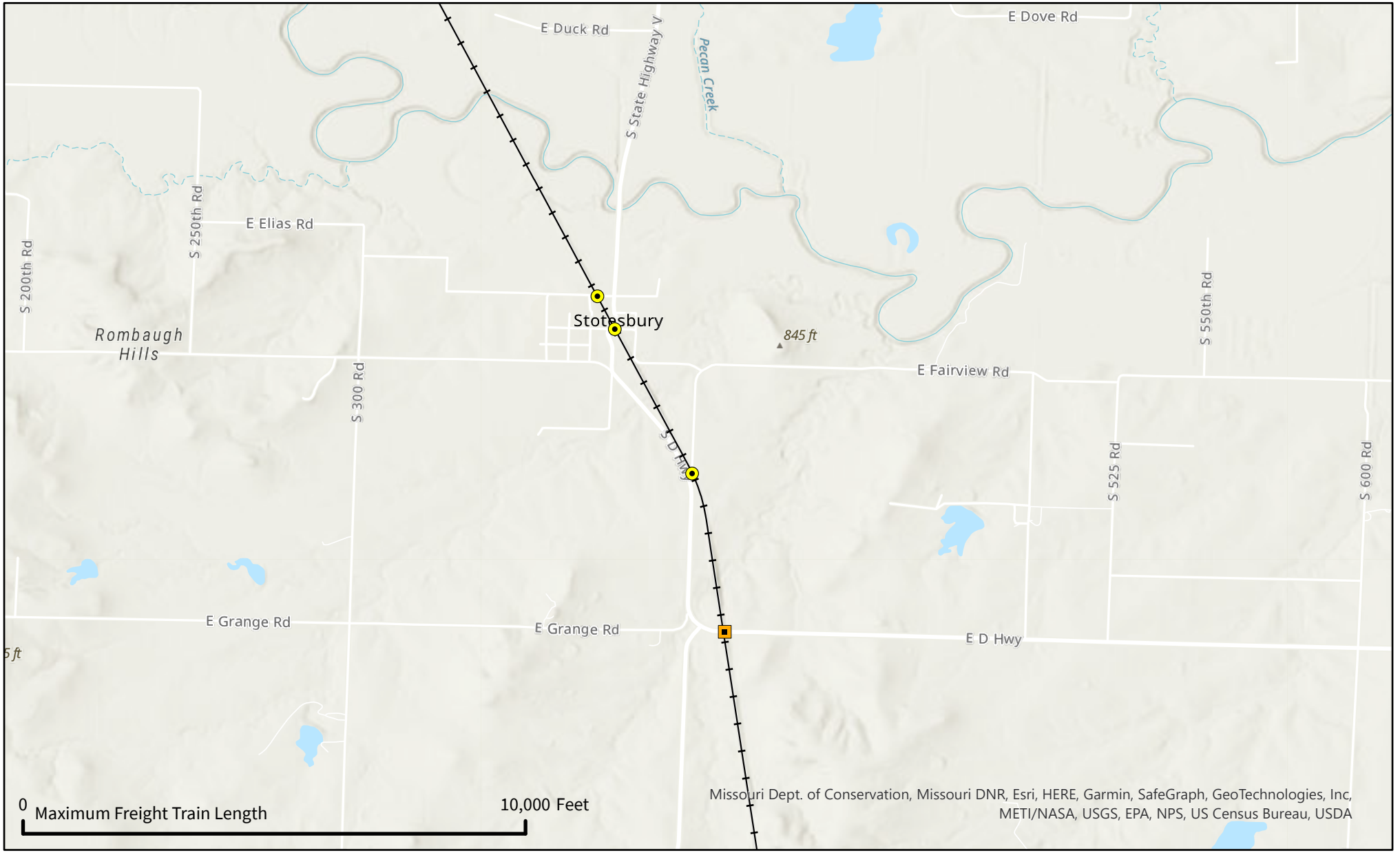
Emergency Services Routing Analysis

Amos, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
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- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

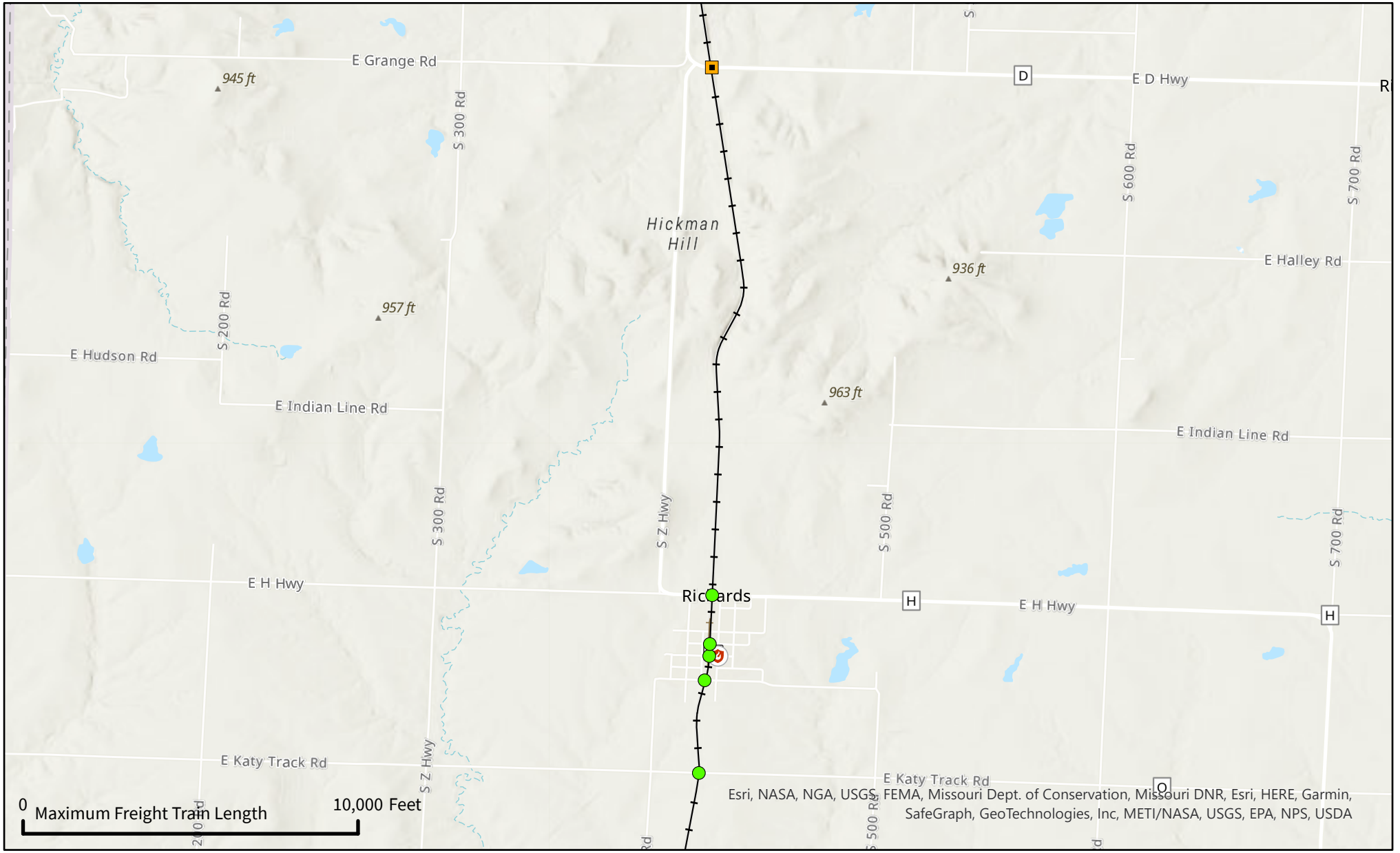


Emergency Services Routing Analysis
Stotesbury, MO

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

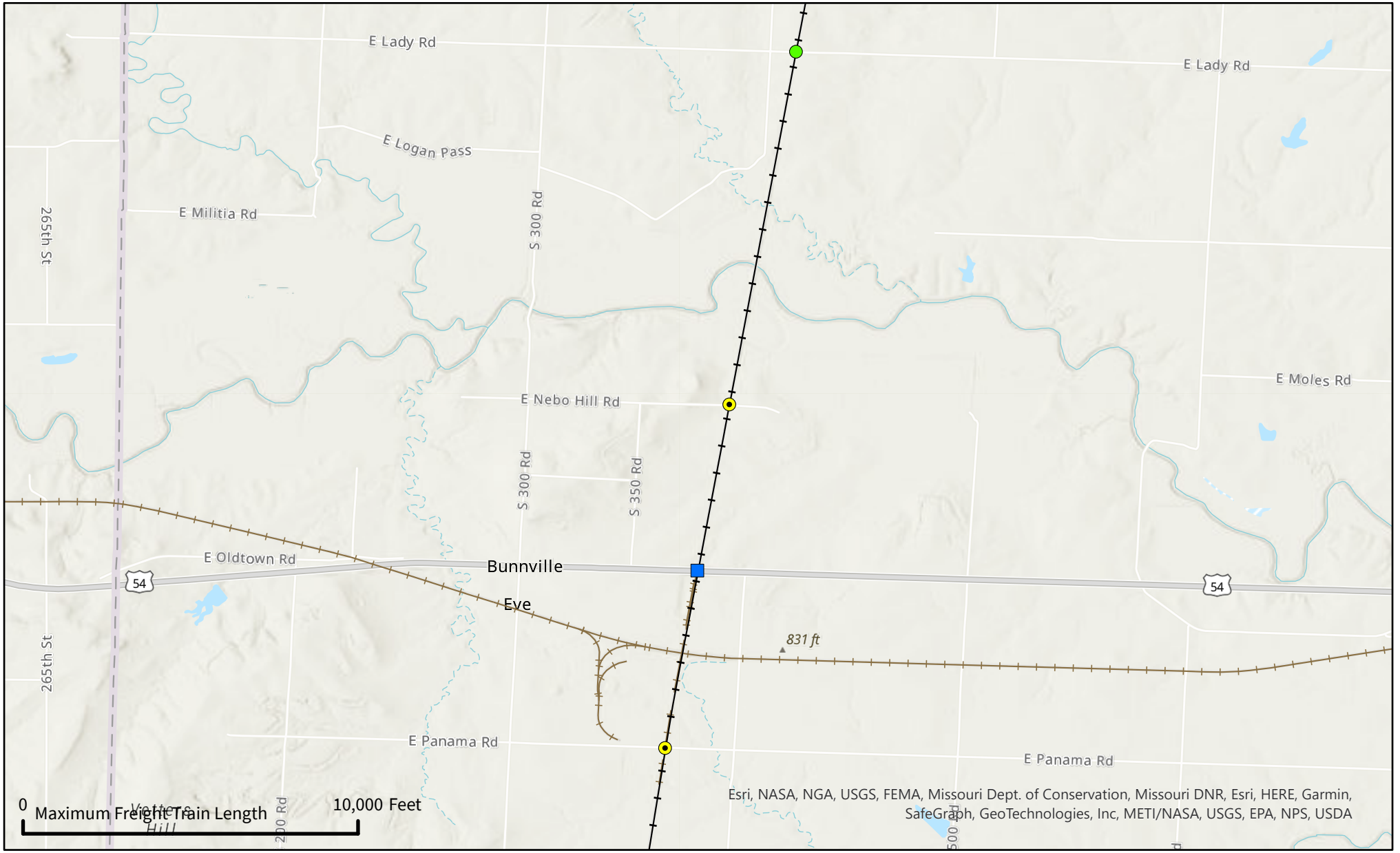


Emergency Services Routing Analysis
Richards, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Bunnville, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
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- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



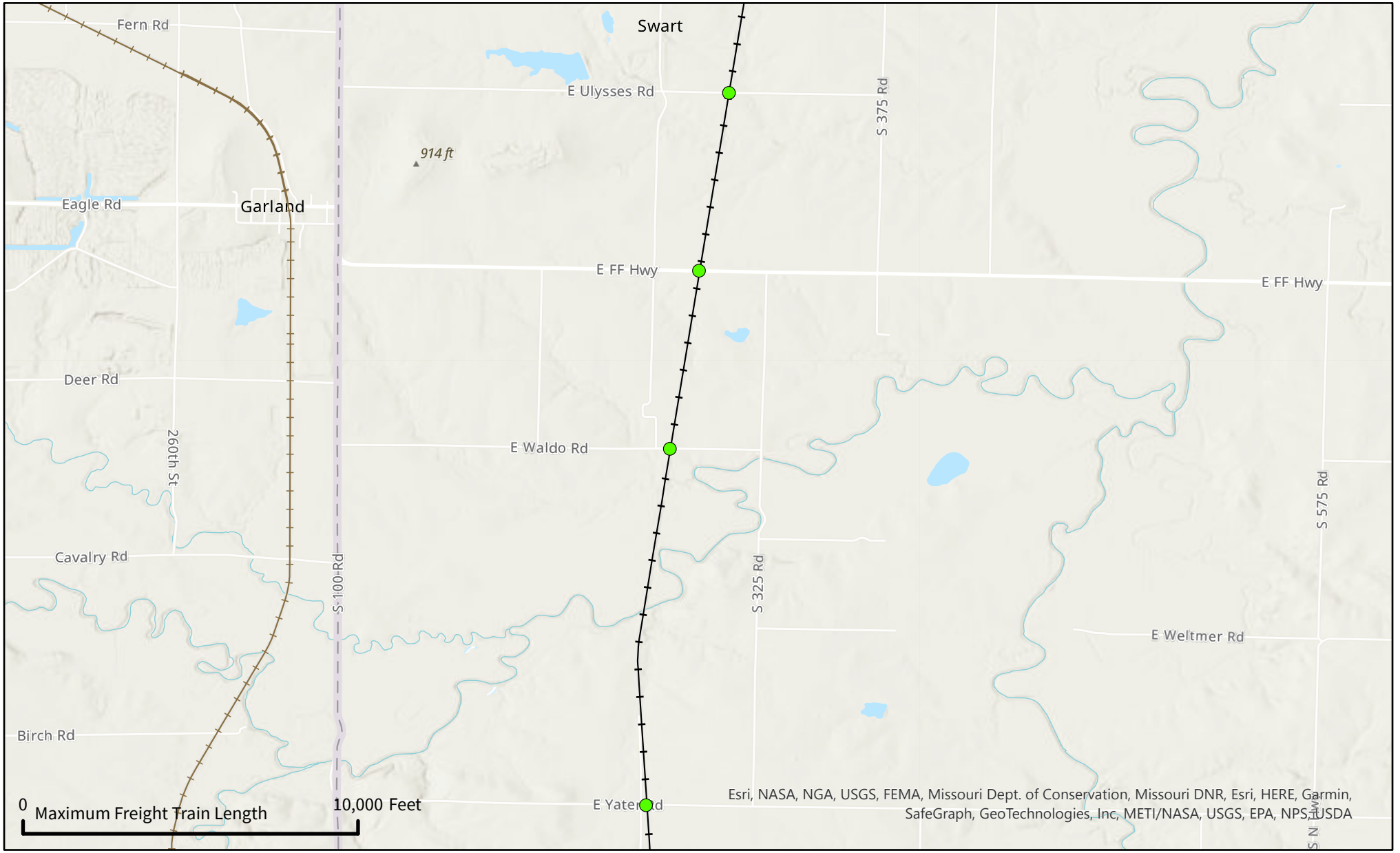
Emergency Services Routing Analysis

N of Swart, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
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- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

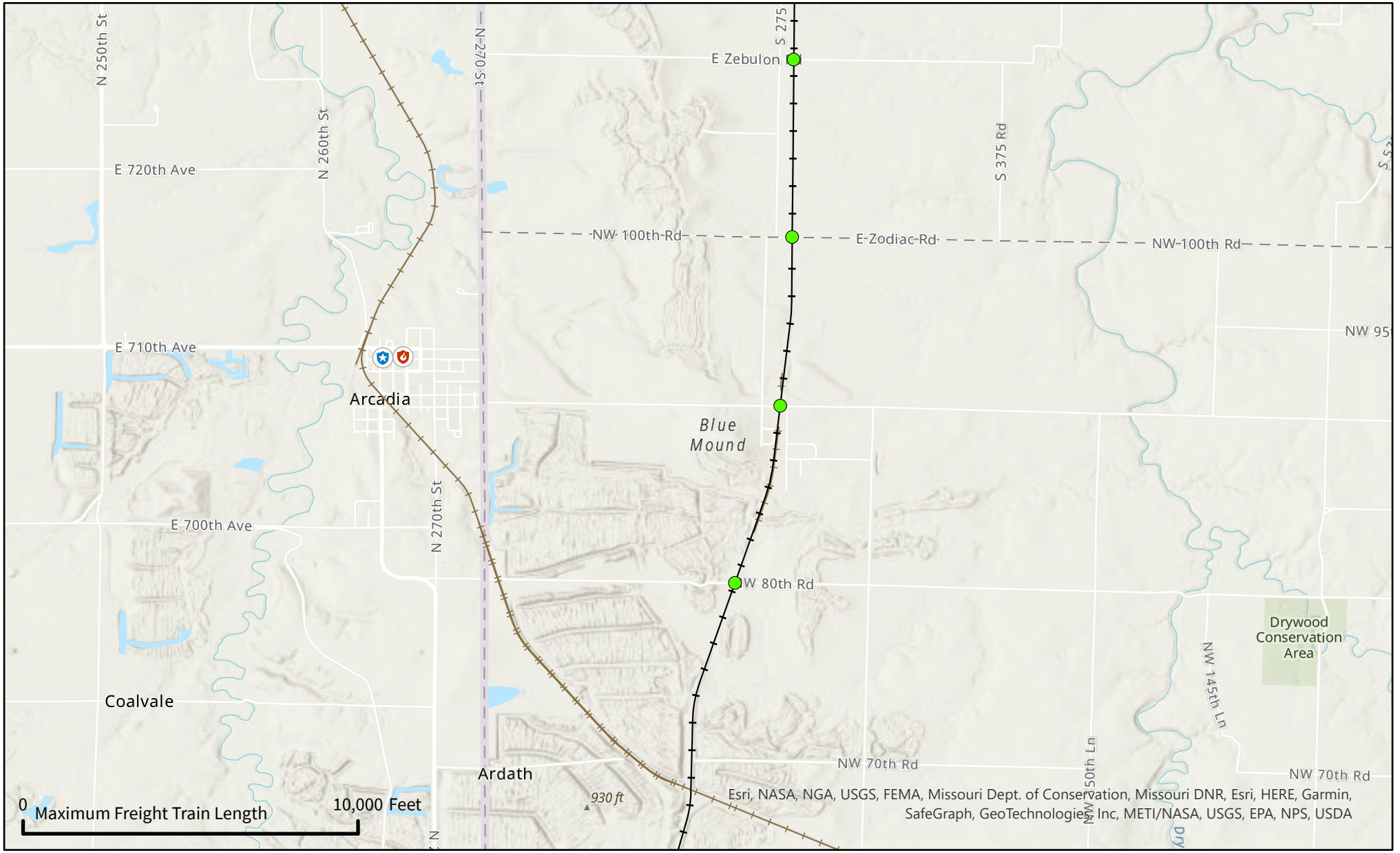


Emergency Services Routing Analysis
S of Swart, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- Hospital
- Police



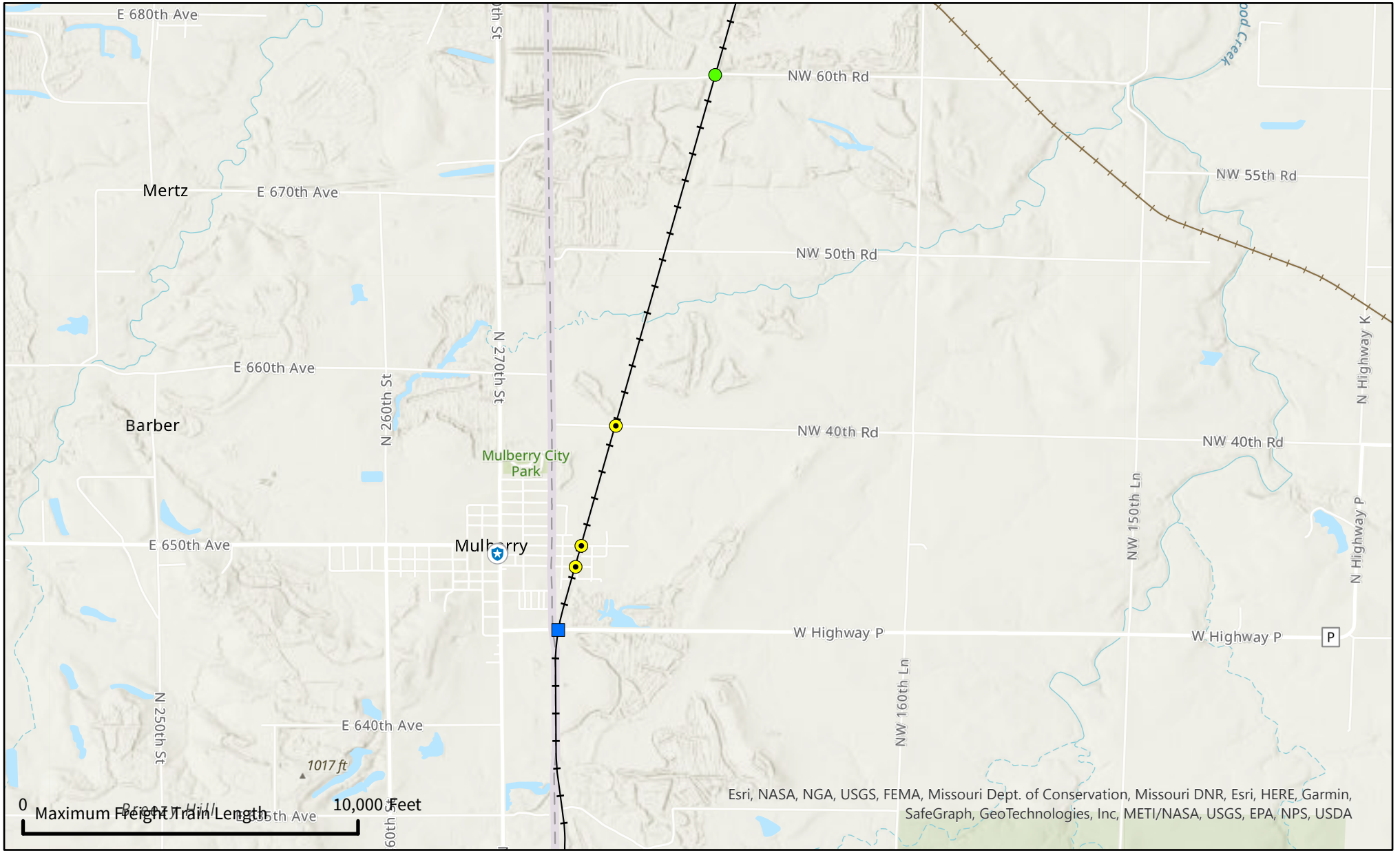
Emergency Services Routing Analysis

E of Arcadia, KS

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Hospital
- Police

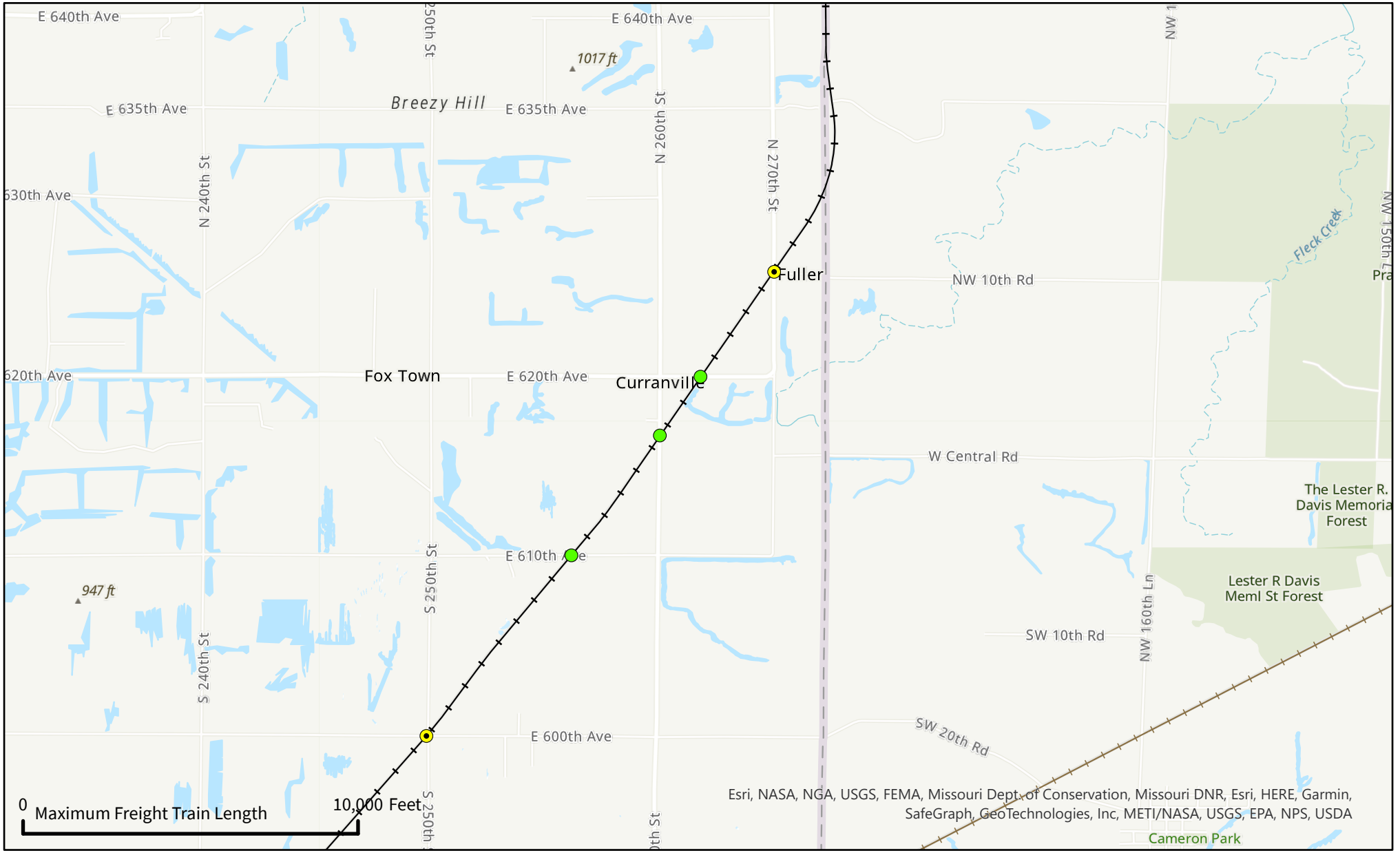


Emergency Services Routing Analysis
Mulberry, KS

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Key Map: Analyzed Tracks
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- EMS Dispatch
- Hospital
- Police

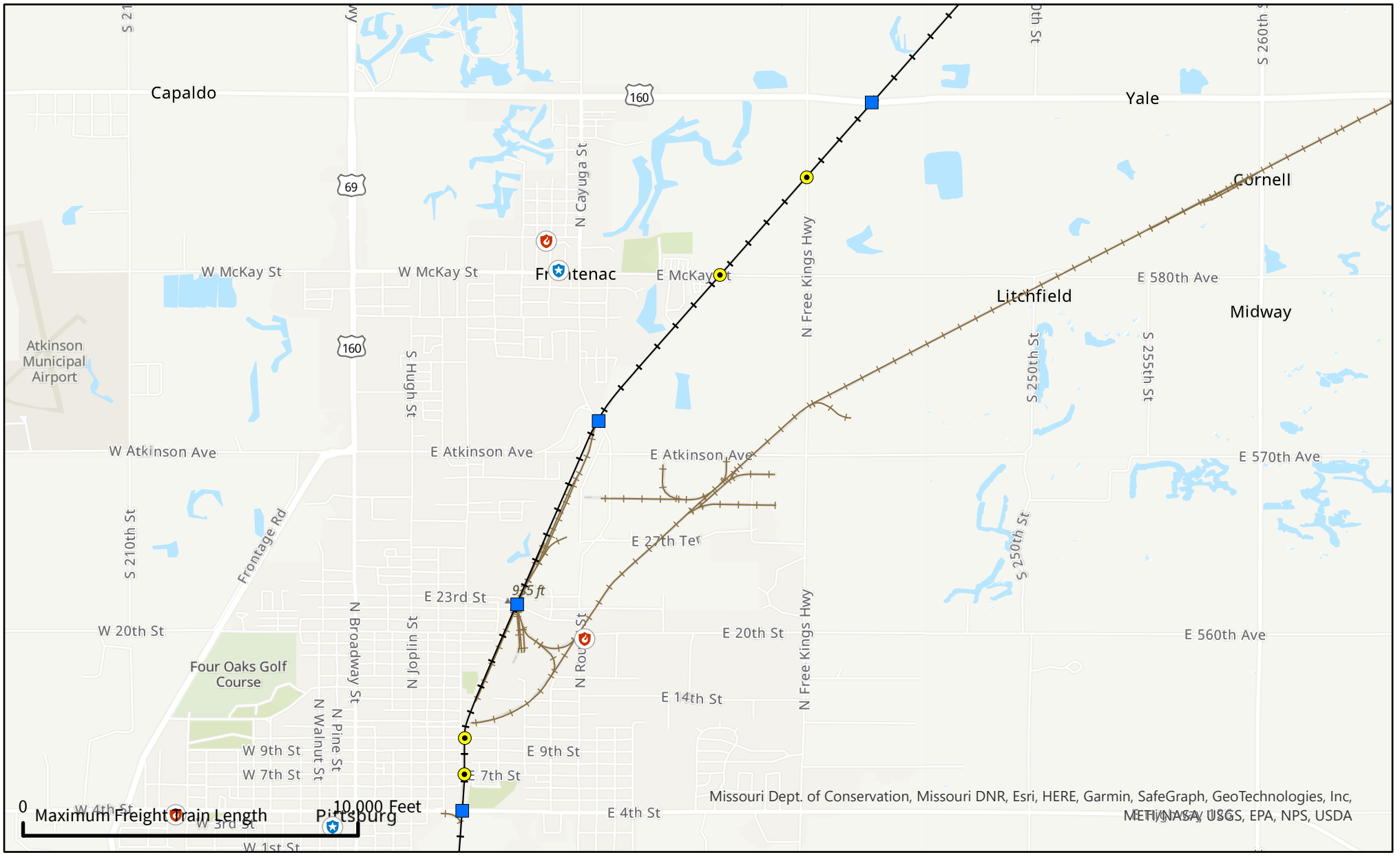


Emergency Services Routing Analysis
Curranville, KS

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Hospital
- Police

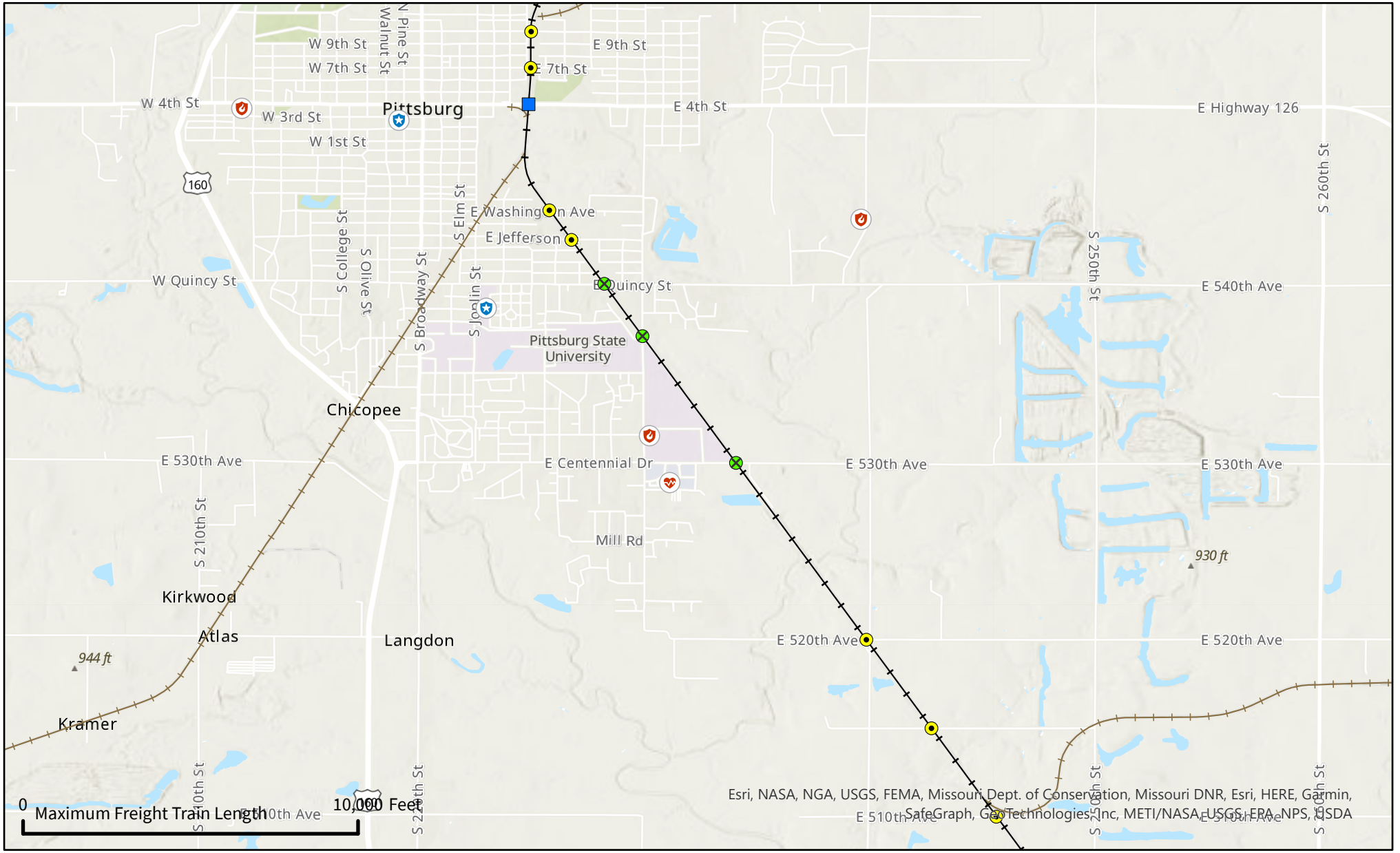


Emergency Services Routing Analysis
Frontenac, KS

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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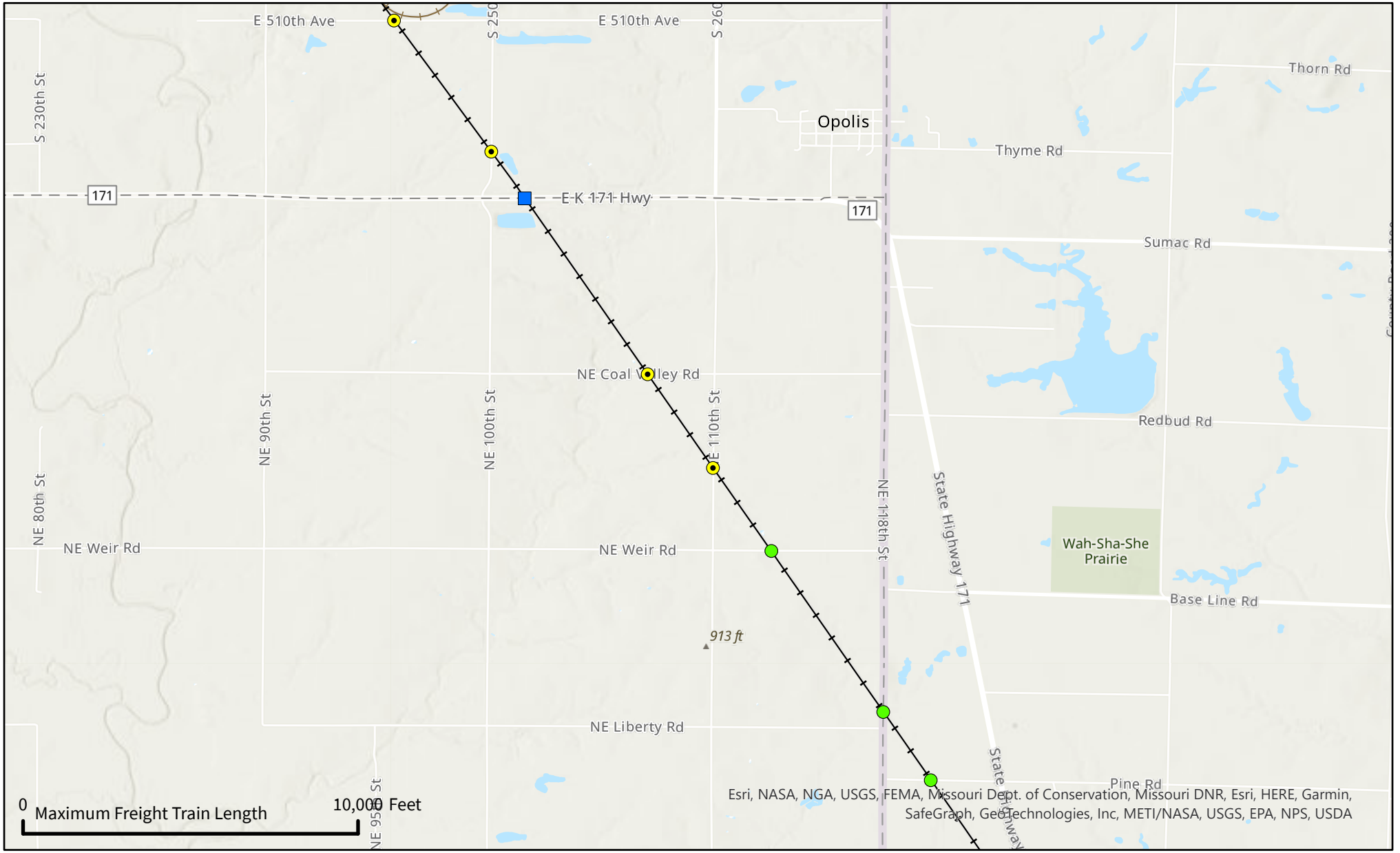


Emergency Services Routing Analysis
Pittsburg, KS

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Hospital
- Police

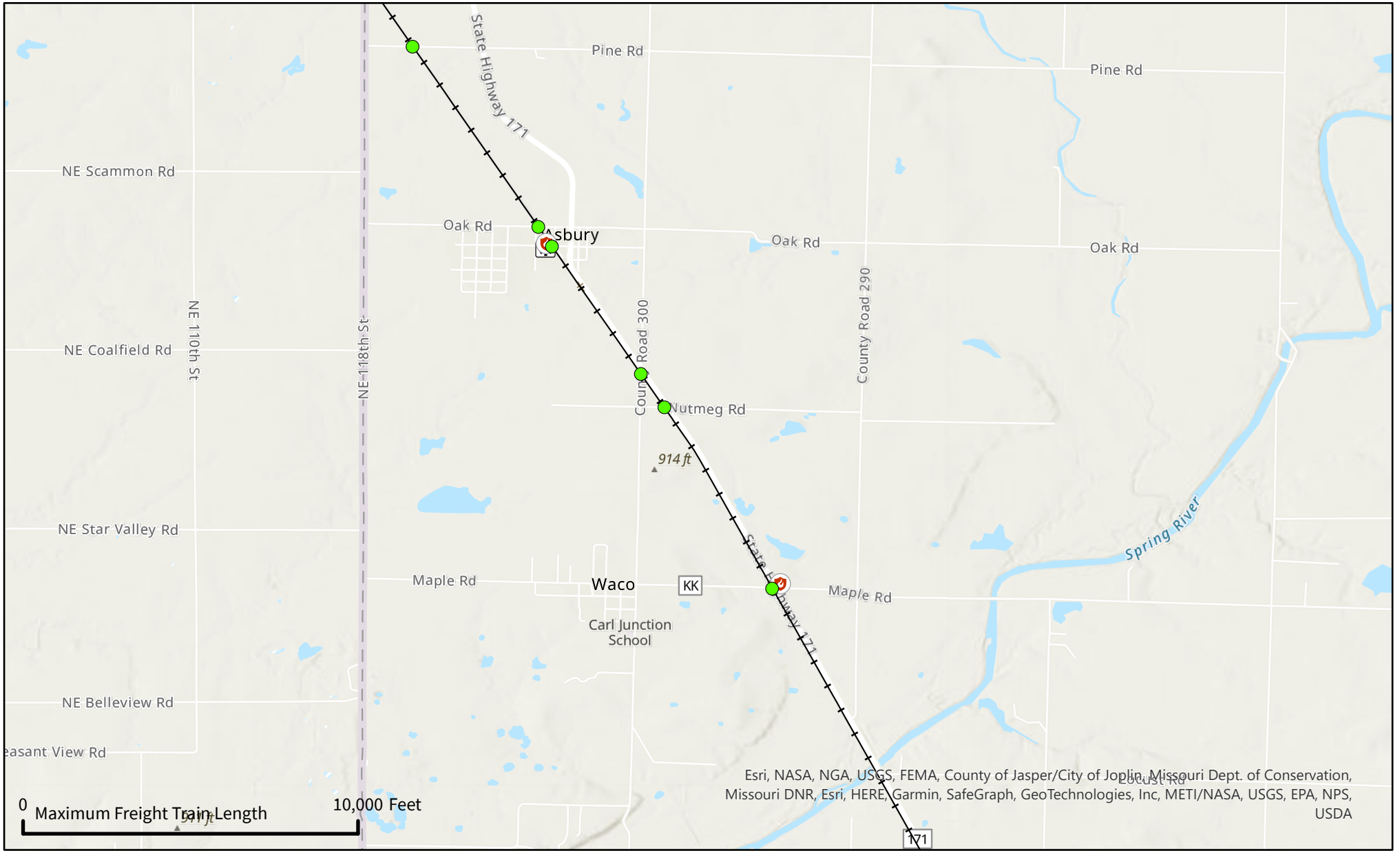


Emergency Services Routing Analysis
SW of Opolis, KS

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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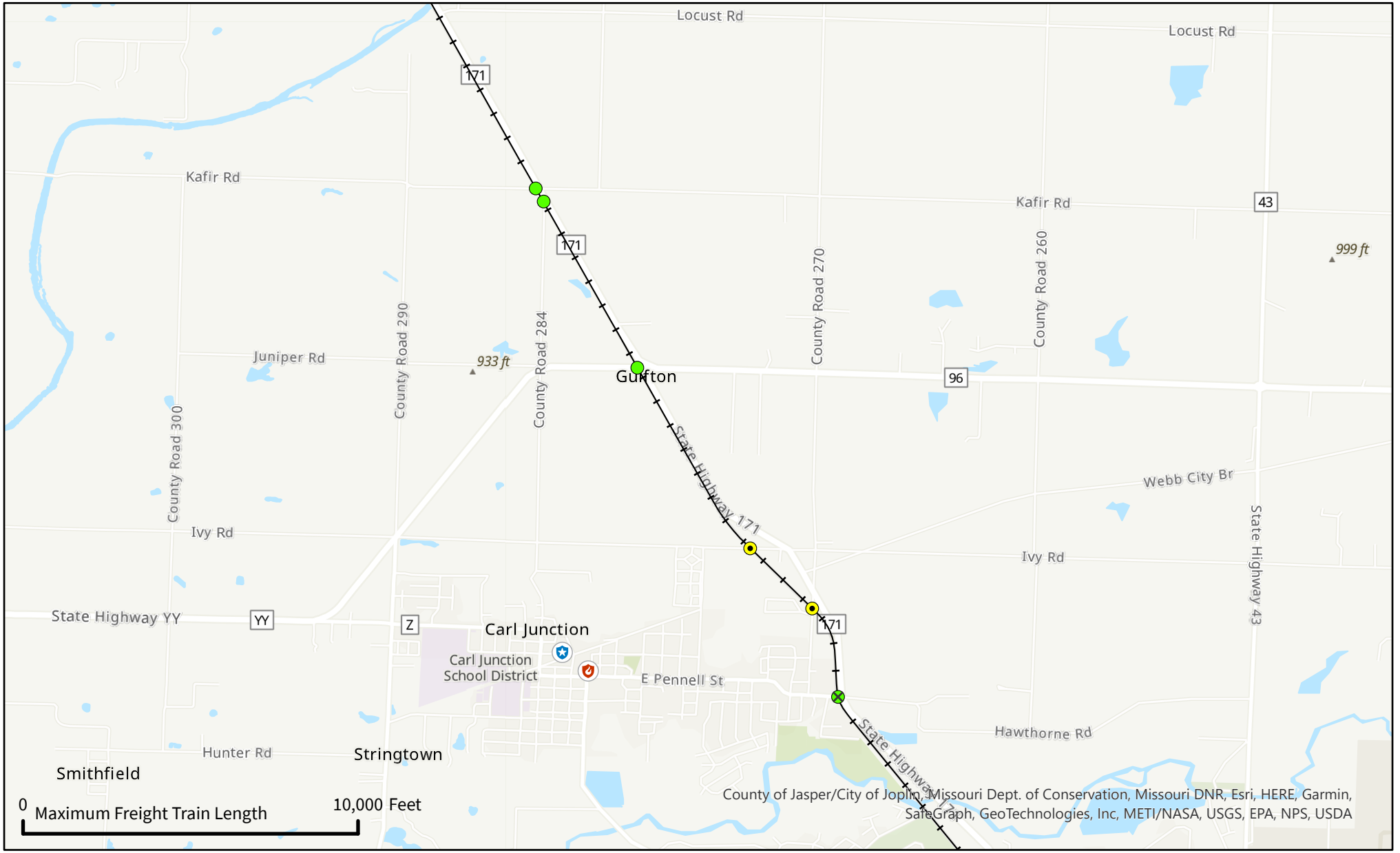


Emergency Services Routing Analysis
Asbury and Waco, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Police

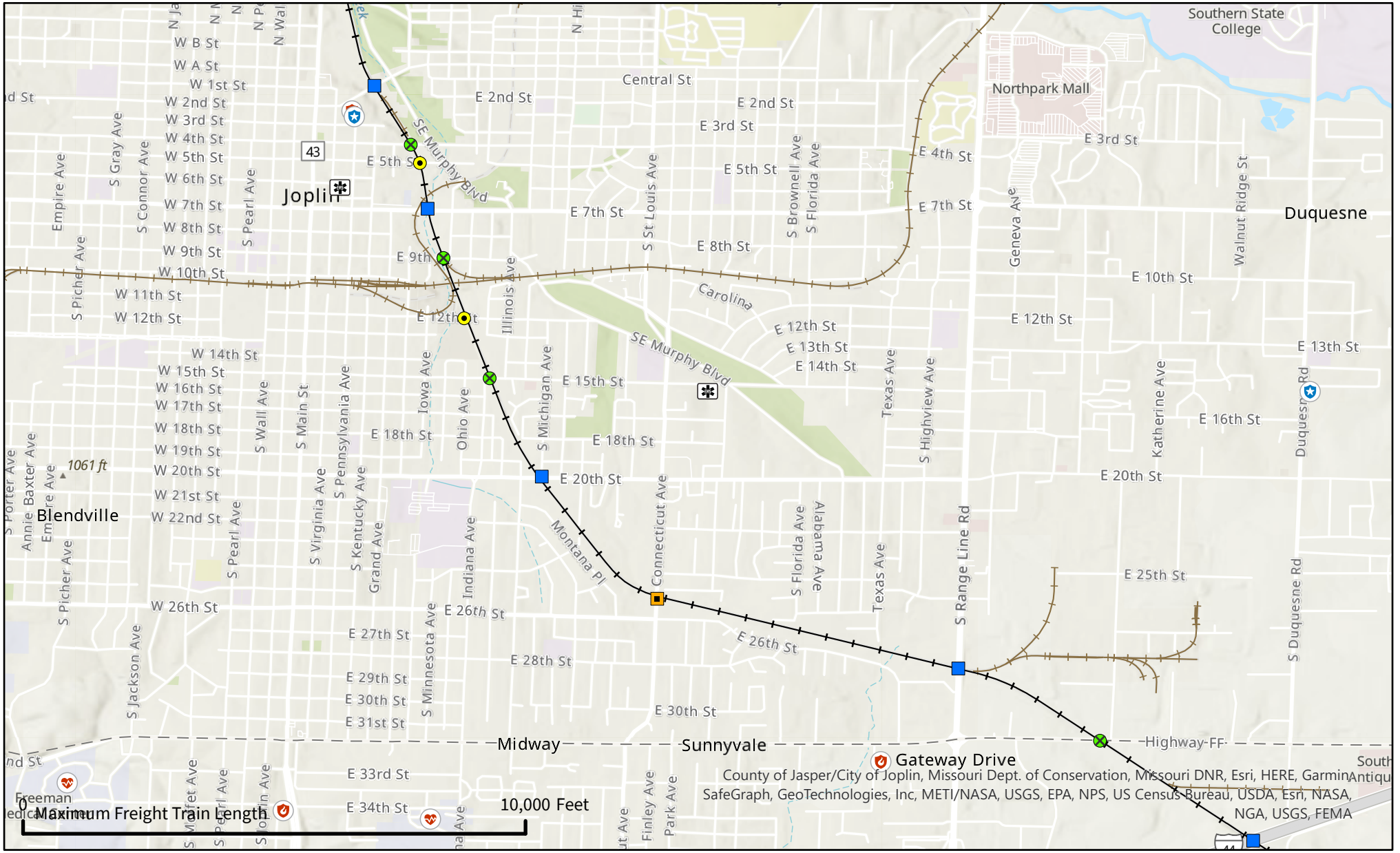


Emergency Services Routing Analysis
Carl Junction, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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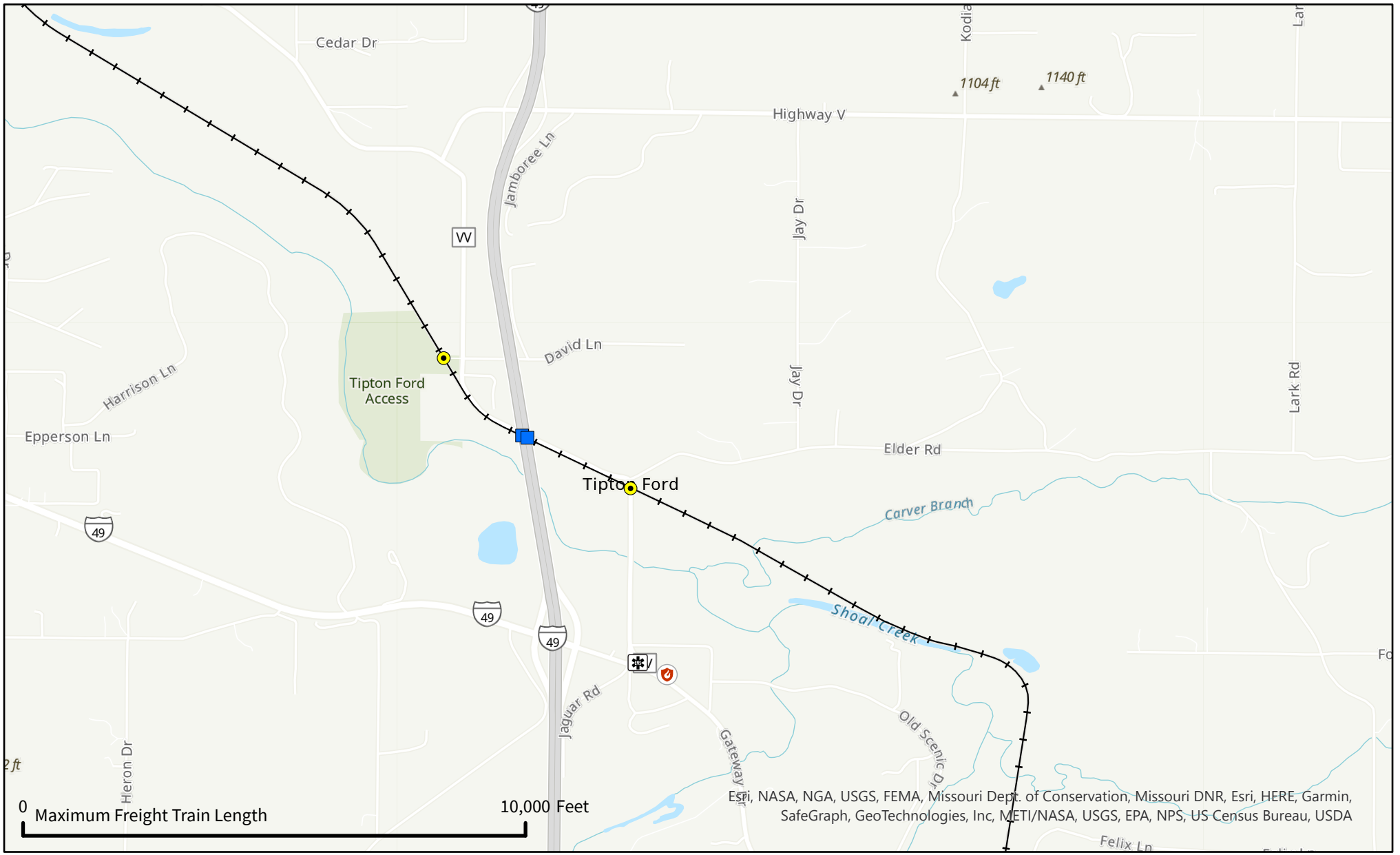


Emergency Services Routing Analysis
Joplin, MO

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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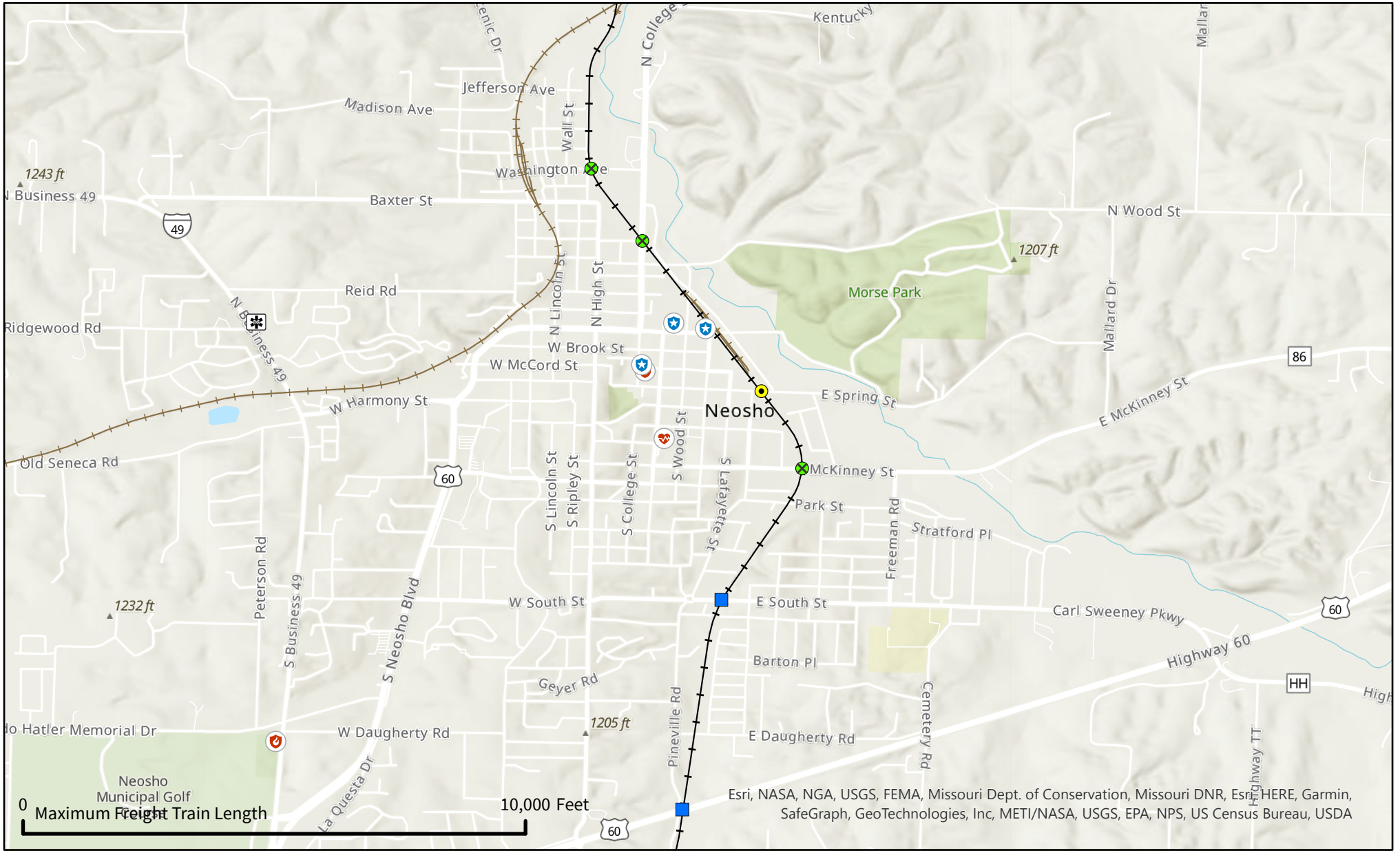
Emergency Services Routing Analysis

Tipton Ford, MO

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- EMS Dispatch
- Hospital
- Police



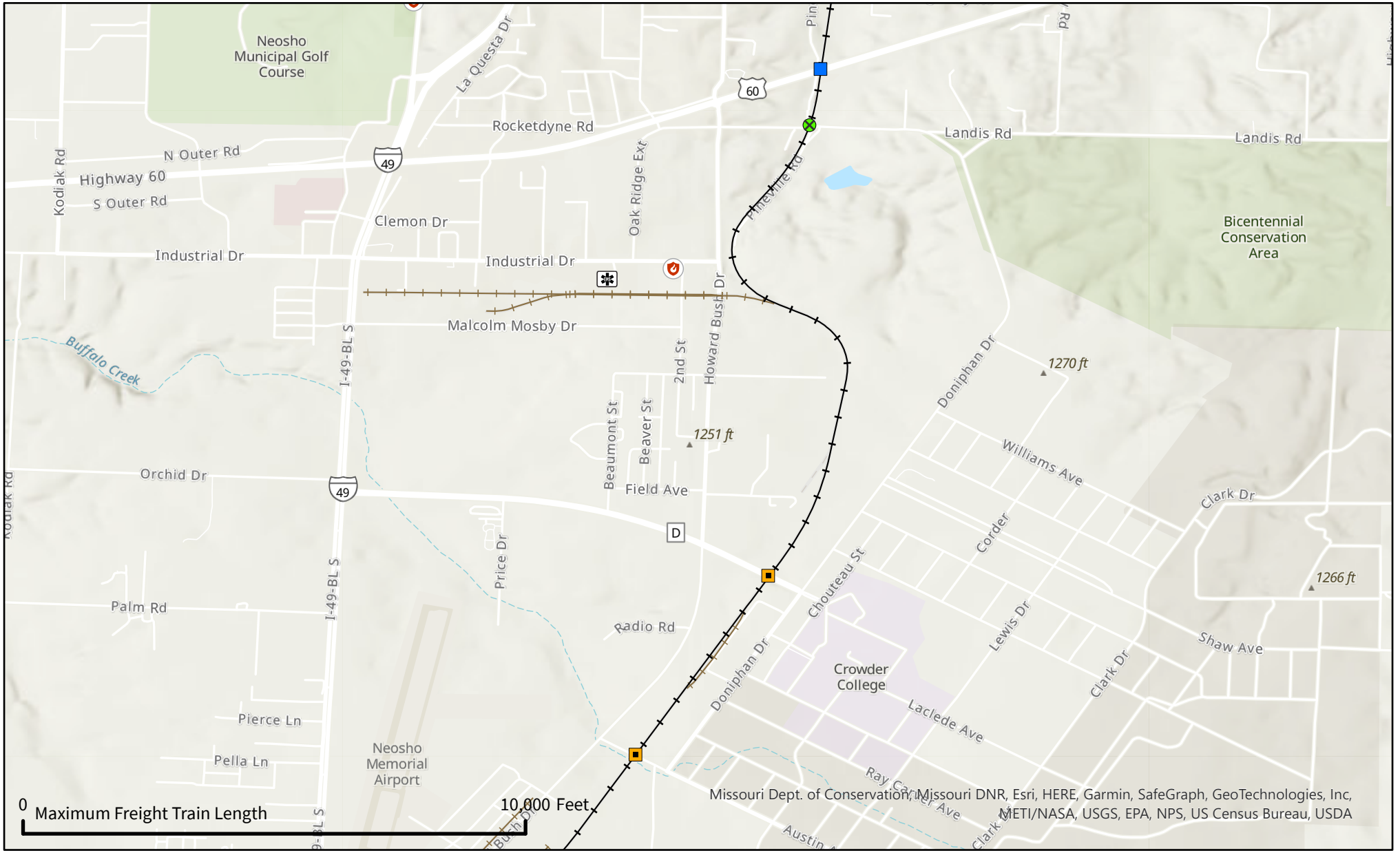
Emergency Services Routing Analysis

Neosho, MO

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Other Tracks
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- Hospital
- Police



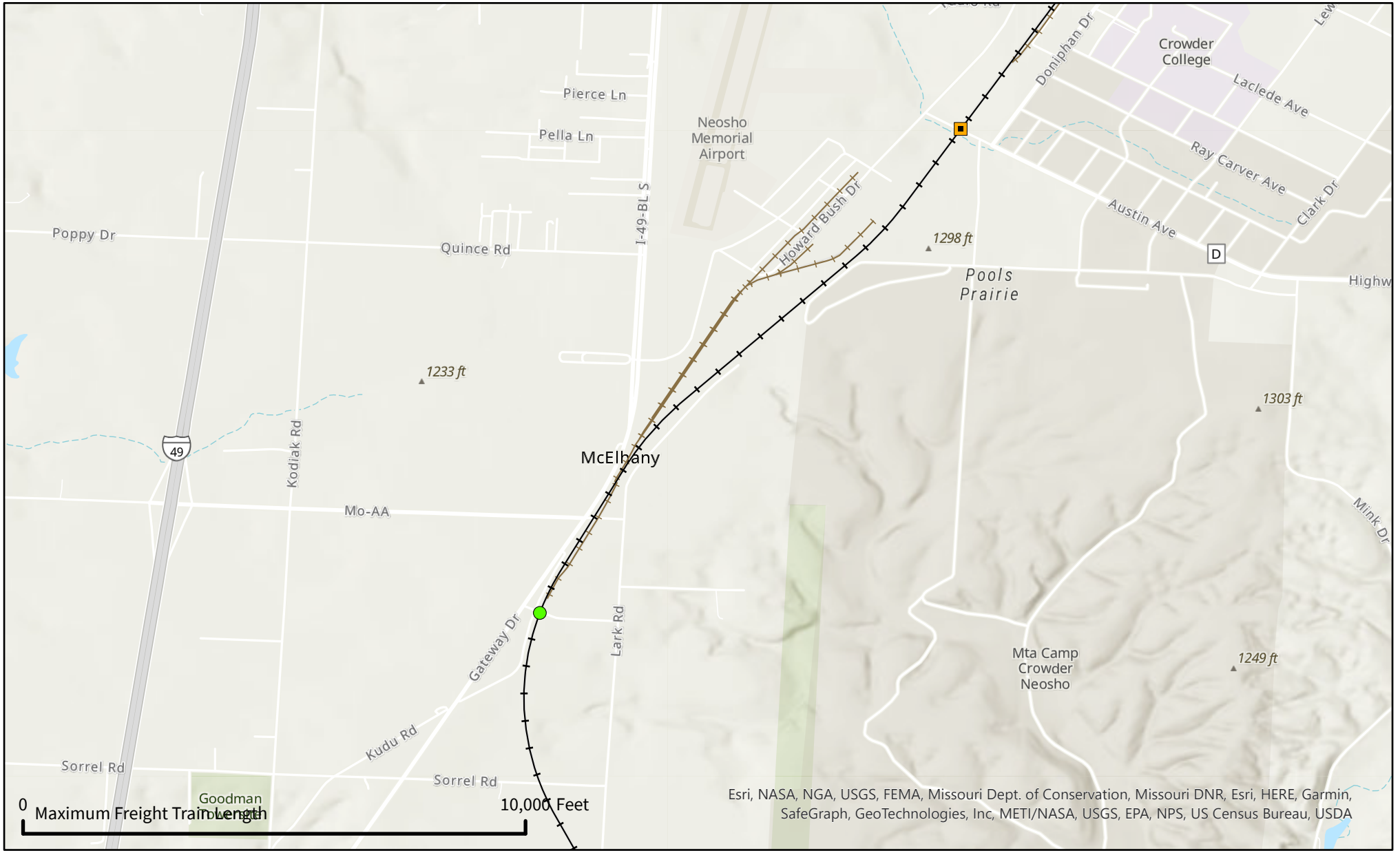
Emergency Services Routing Analysis

S of Neosho, MO

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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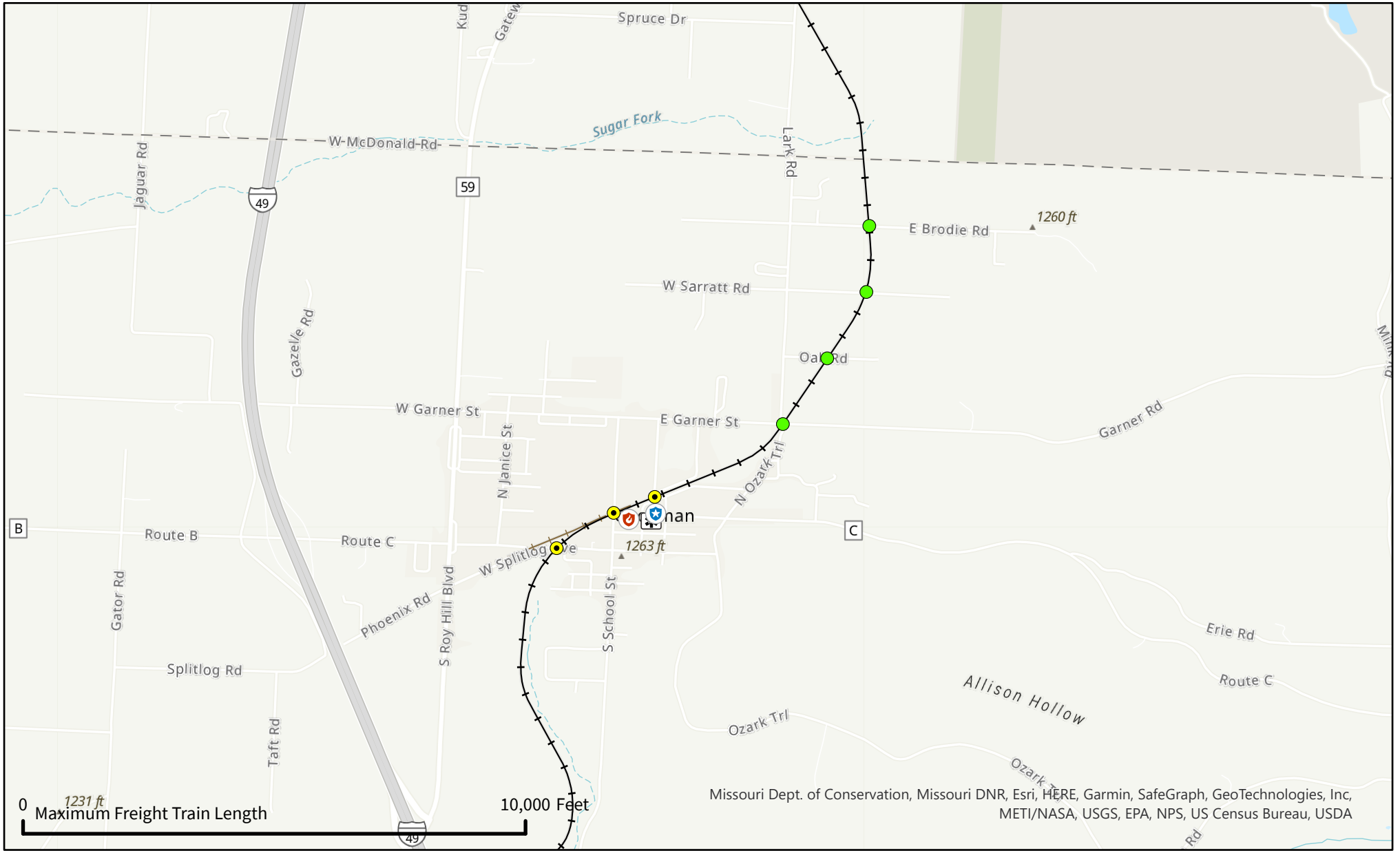


Emergency Services Routing Analysis
McElhany, MO

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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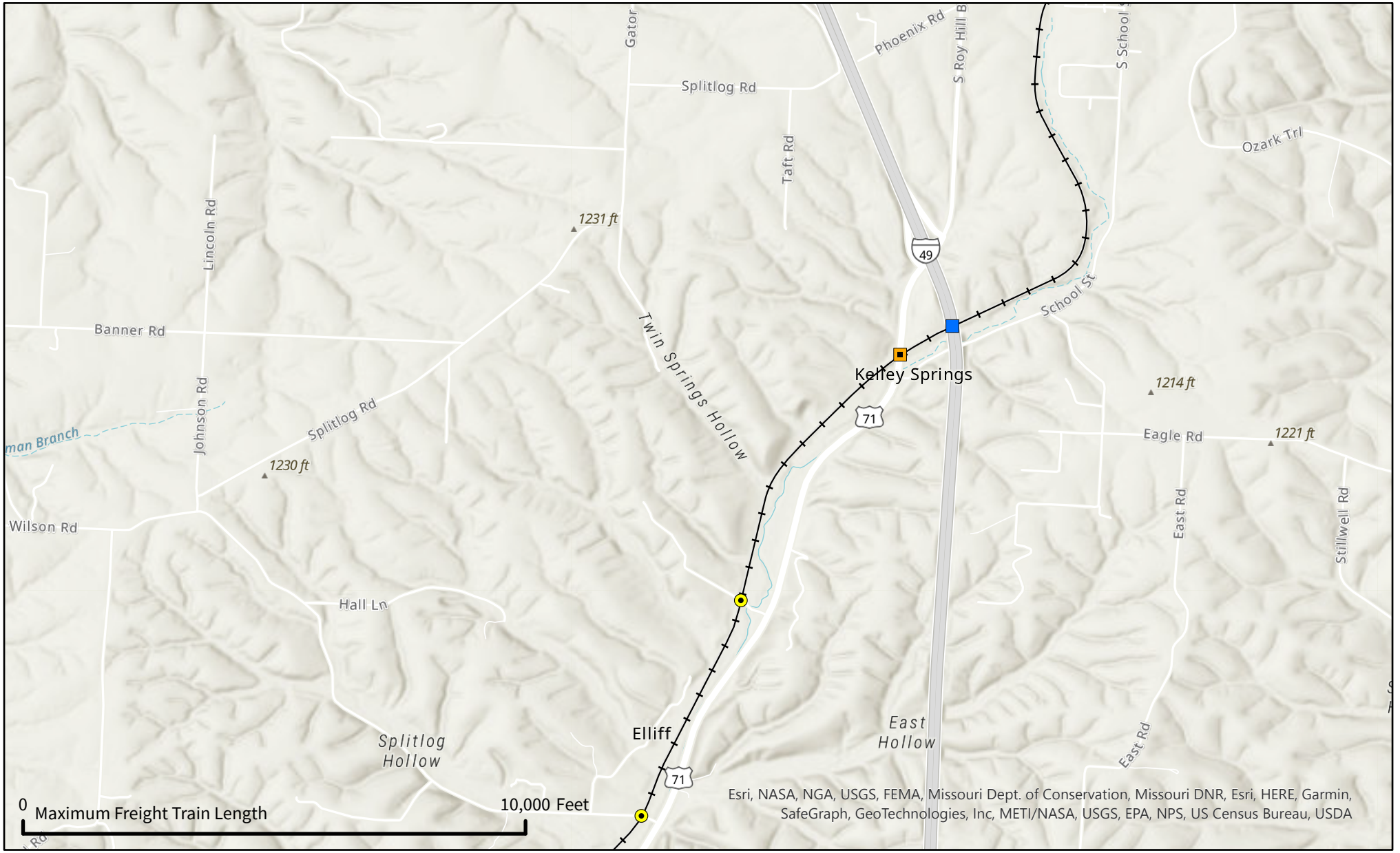


Emergency Services Routing Analysis
Goodman, MO

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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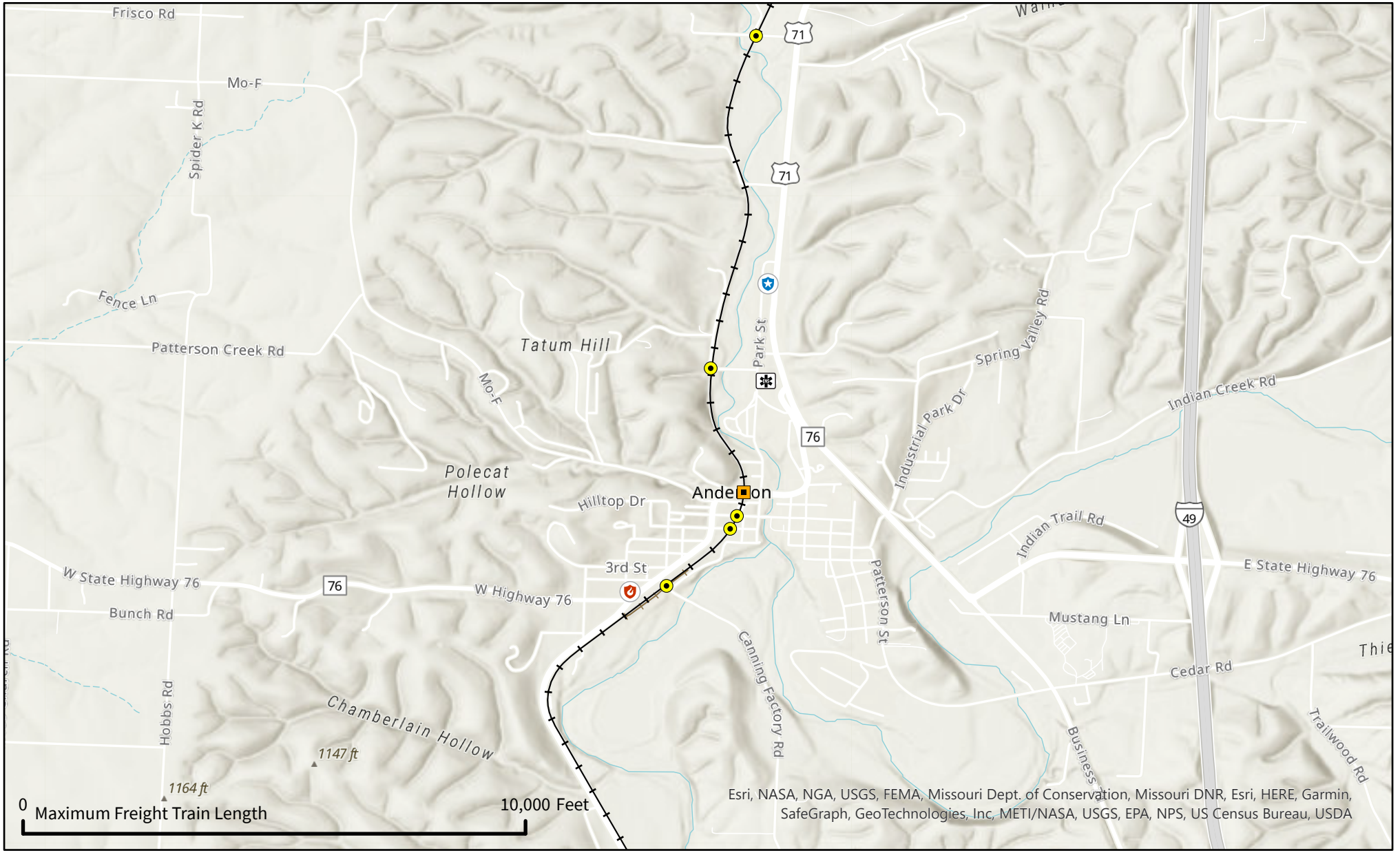
Emergency Services Routing Analysis

Kelley Springs, MO

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- EMS Dispatch
- Hospital
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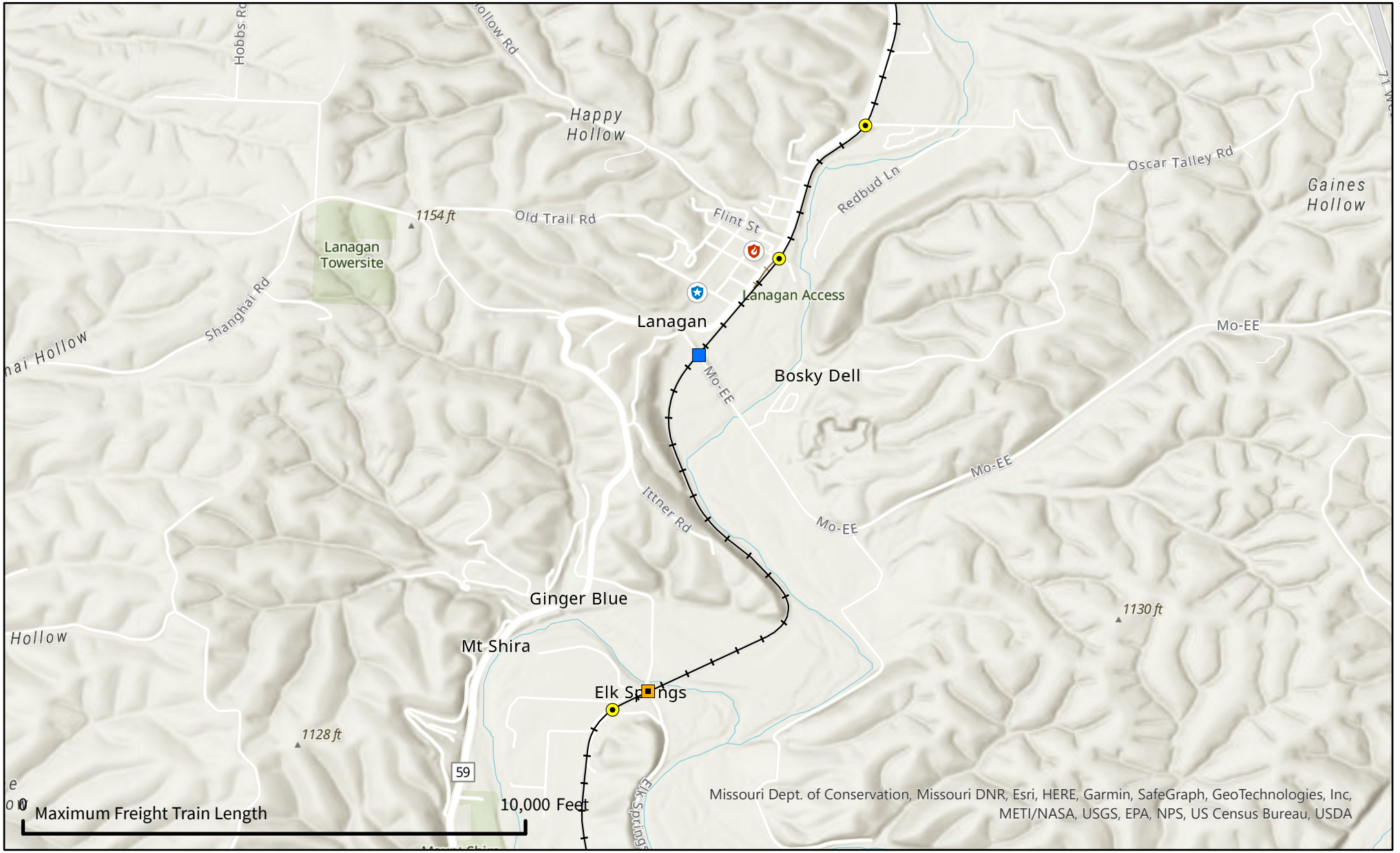


Emergency Services Routing Analysis
Anderson, MO

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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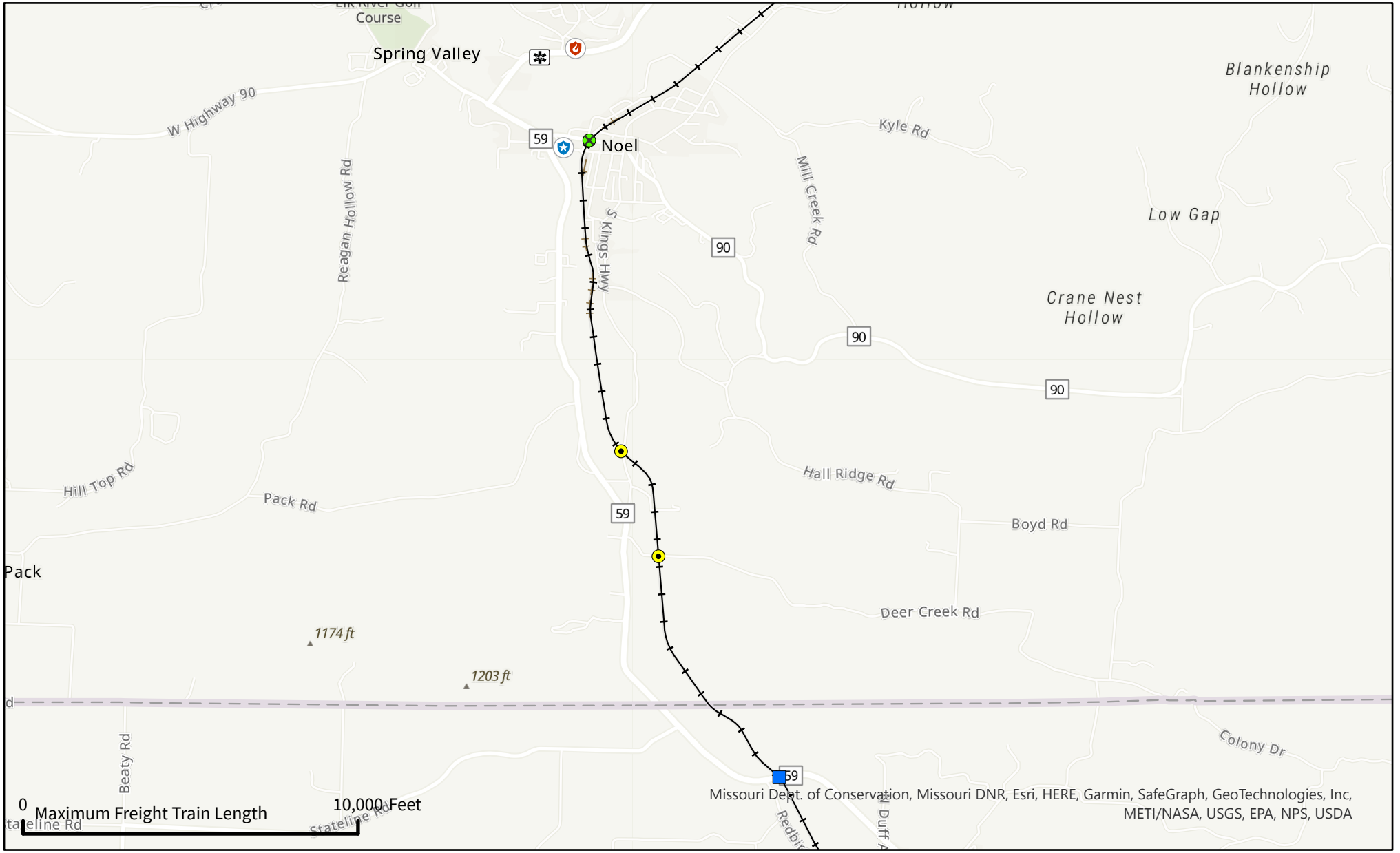
Emergency Services Routing Analysis

Lanagan, MO

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



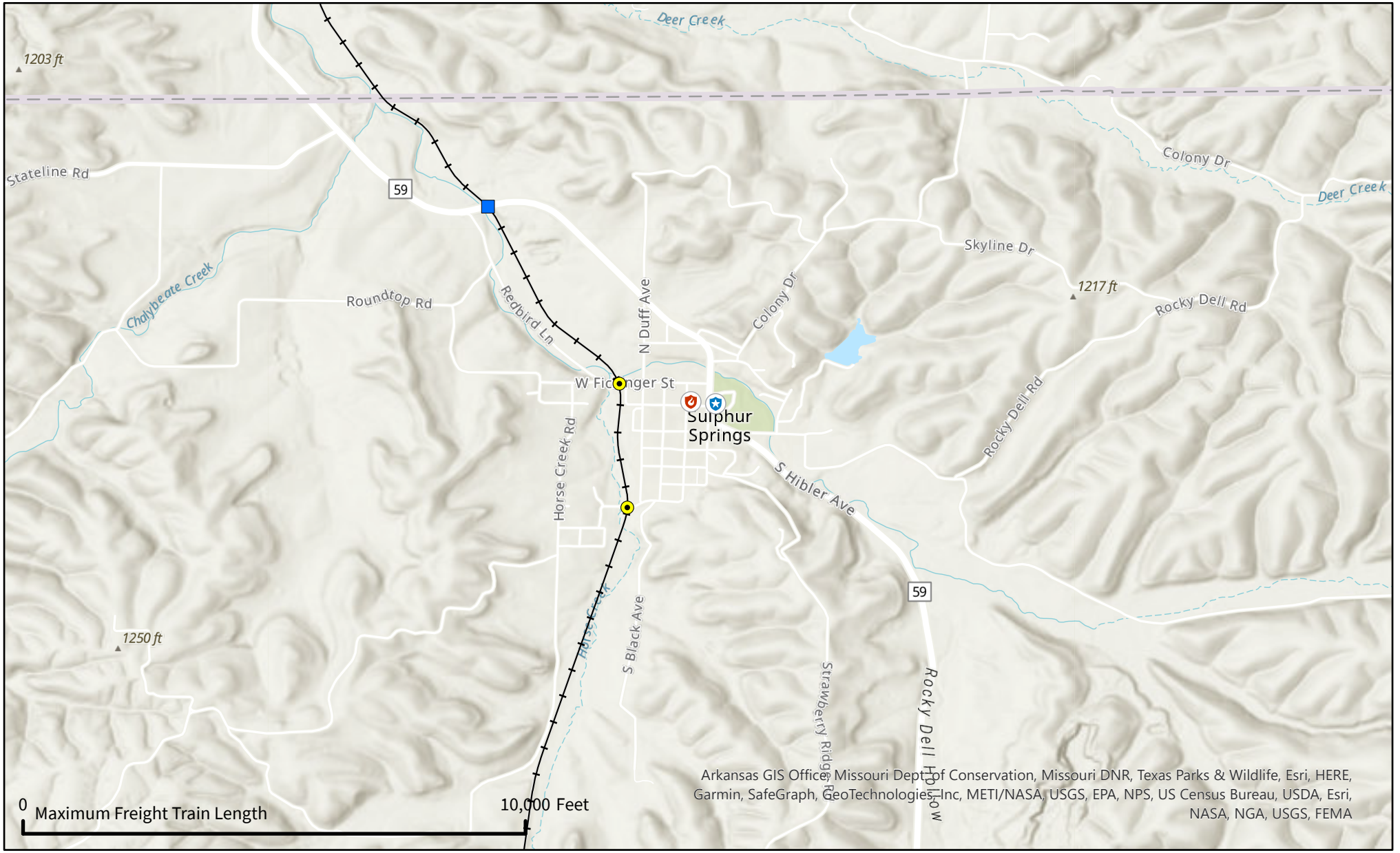
Emergency Services Routing Analysis

Noel, MO

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- EMS Dispatch
- Hospital
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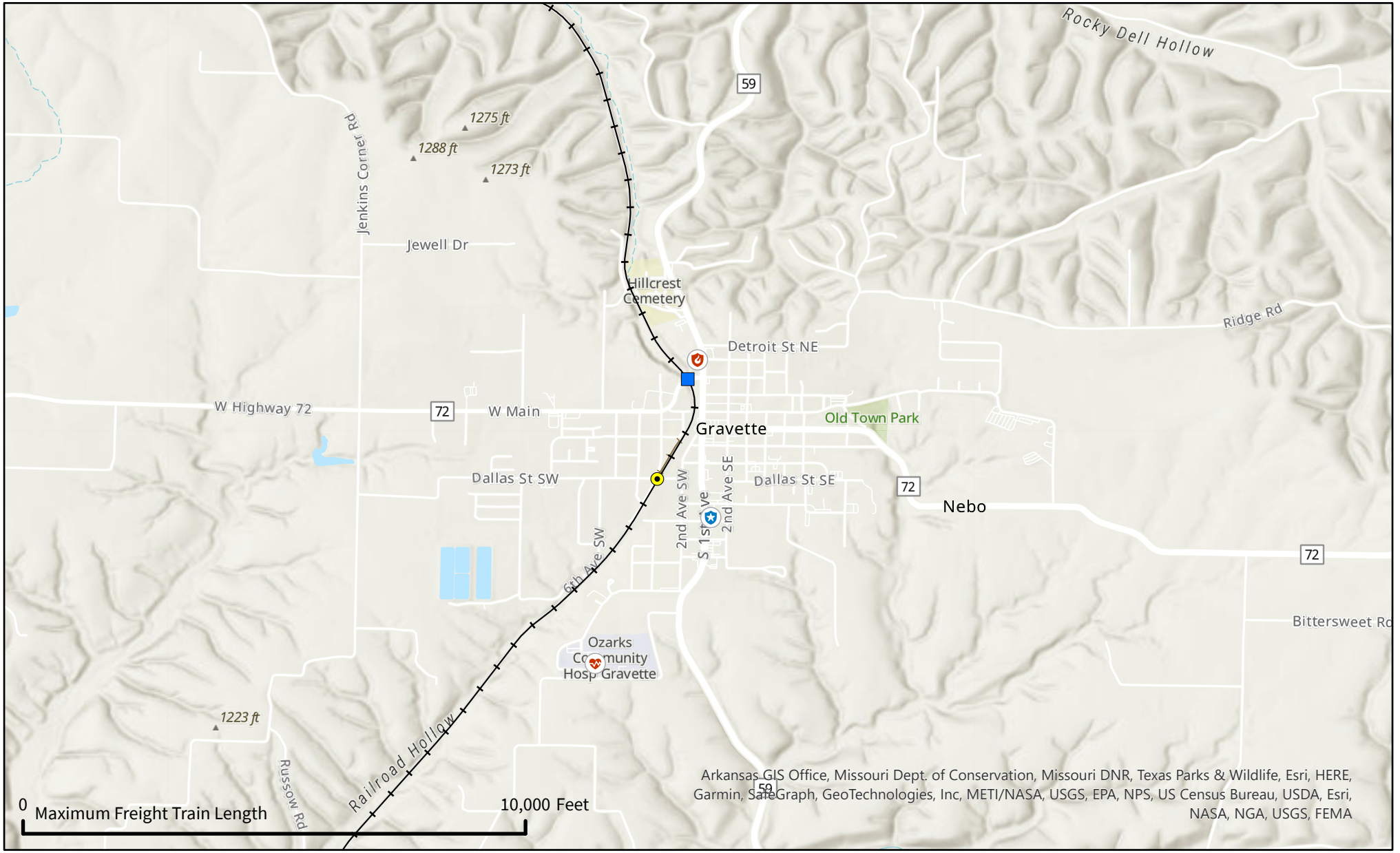


Emergency Services Routing Analysis
Sulphur Springs, AR

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Hospital
- Police

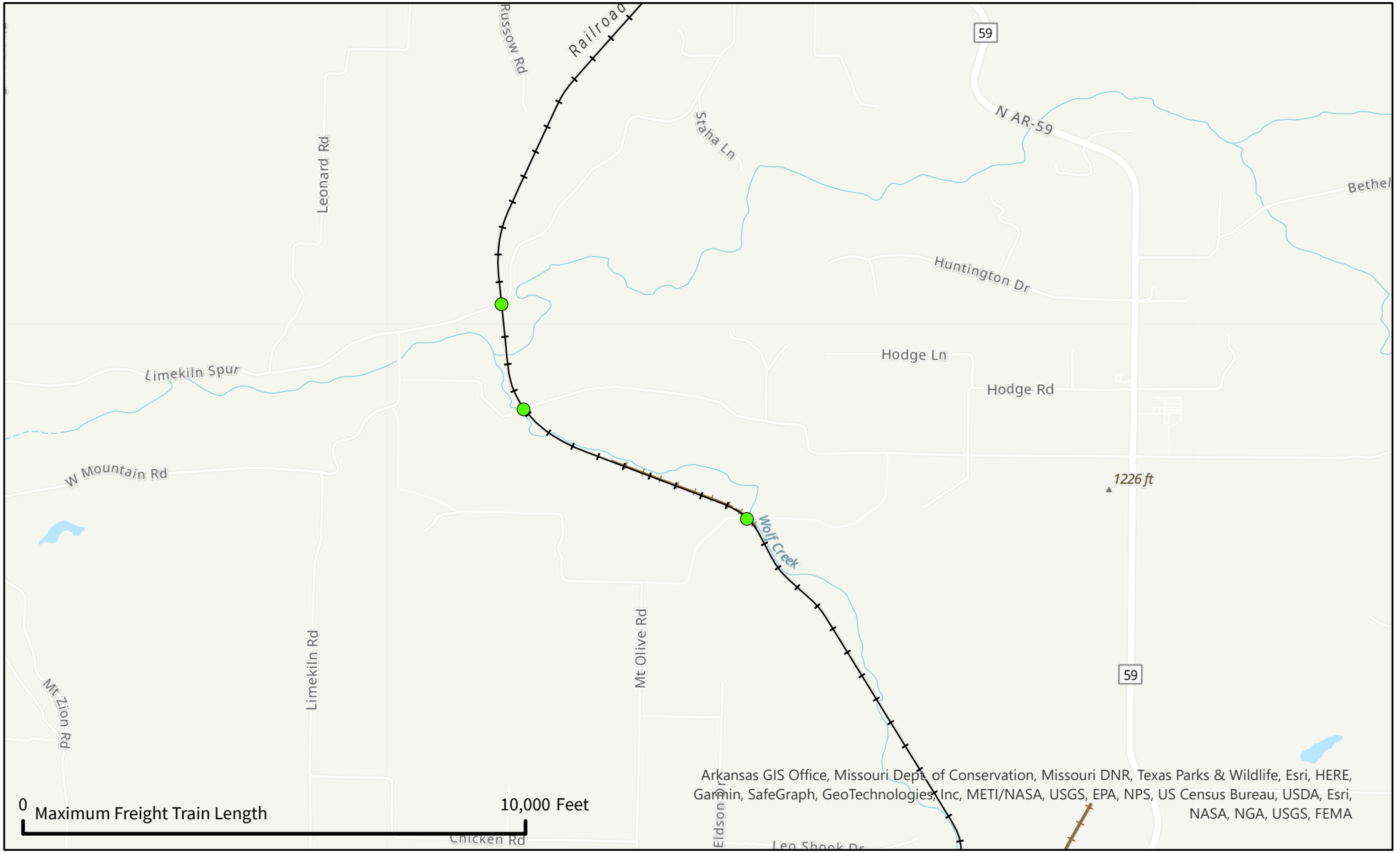


Emergency Services Routing Analysis
Gravette, AR

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Other Tracks
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- Hospital
- Police

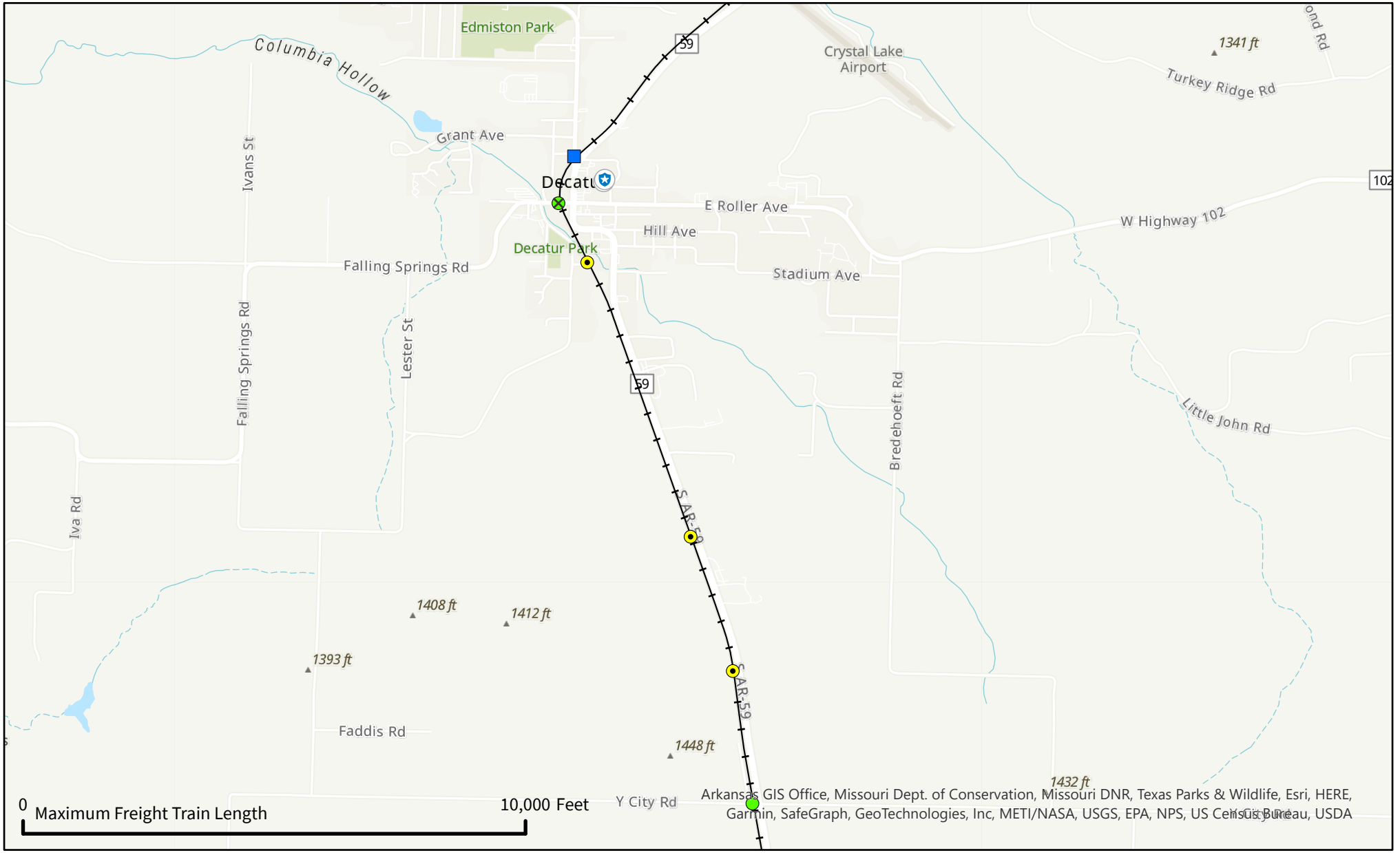


Emergency Services Routing Analysis
S of Gravette, AR

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Decatur, AR

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



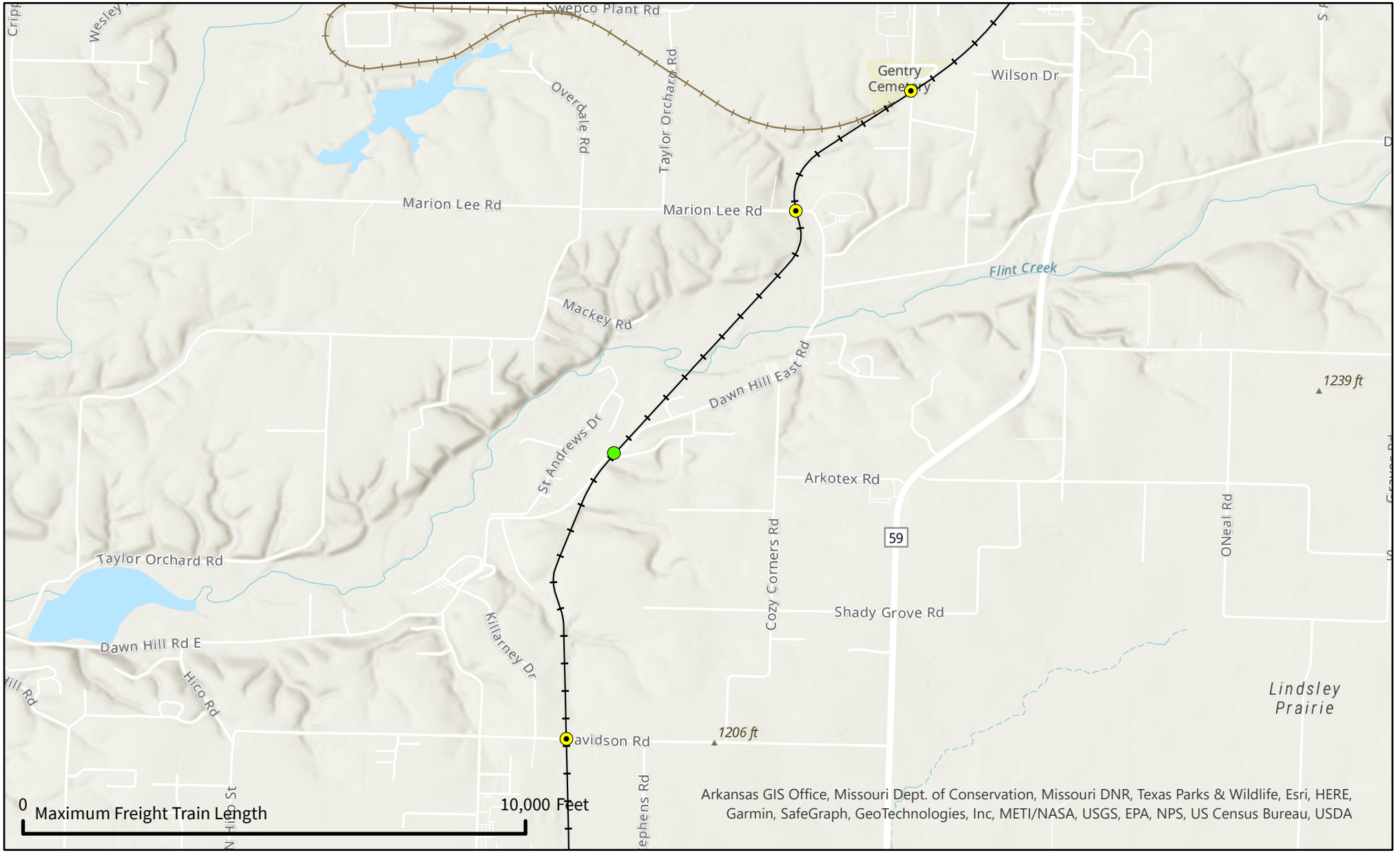
Emergency Services Routing Analysis

Gentry, AR

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- Fire Station
- EMS Dispatch
- Hospital
- Police



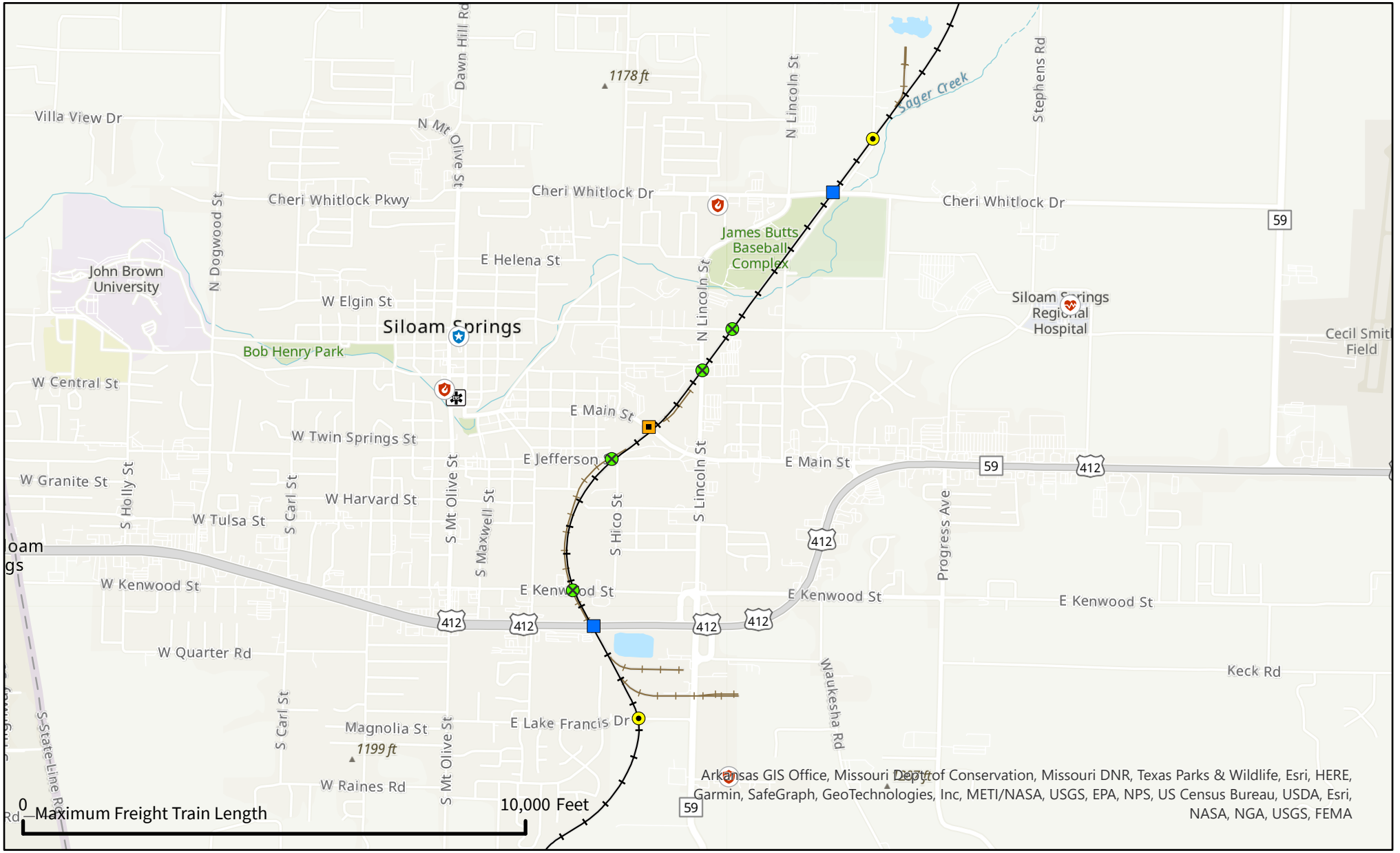
Emergency Services Routing Analysis

S of Gentry, AR

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- Fire Station
- EMS Dispatch
- Hospital
- Police

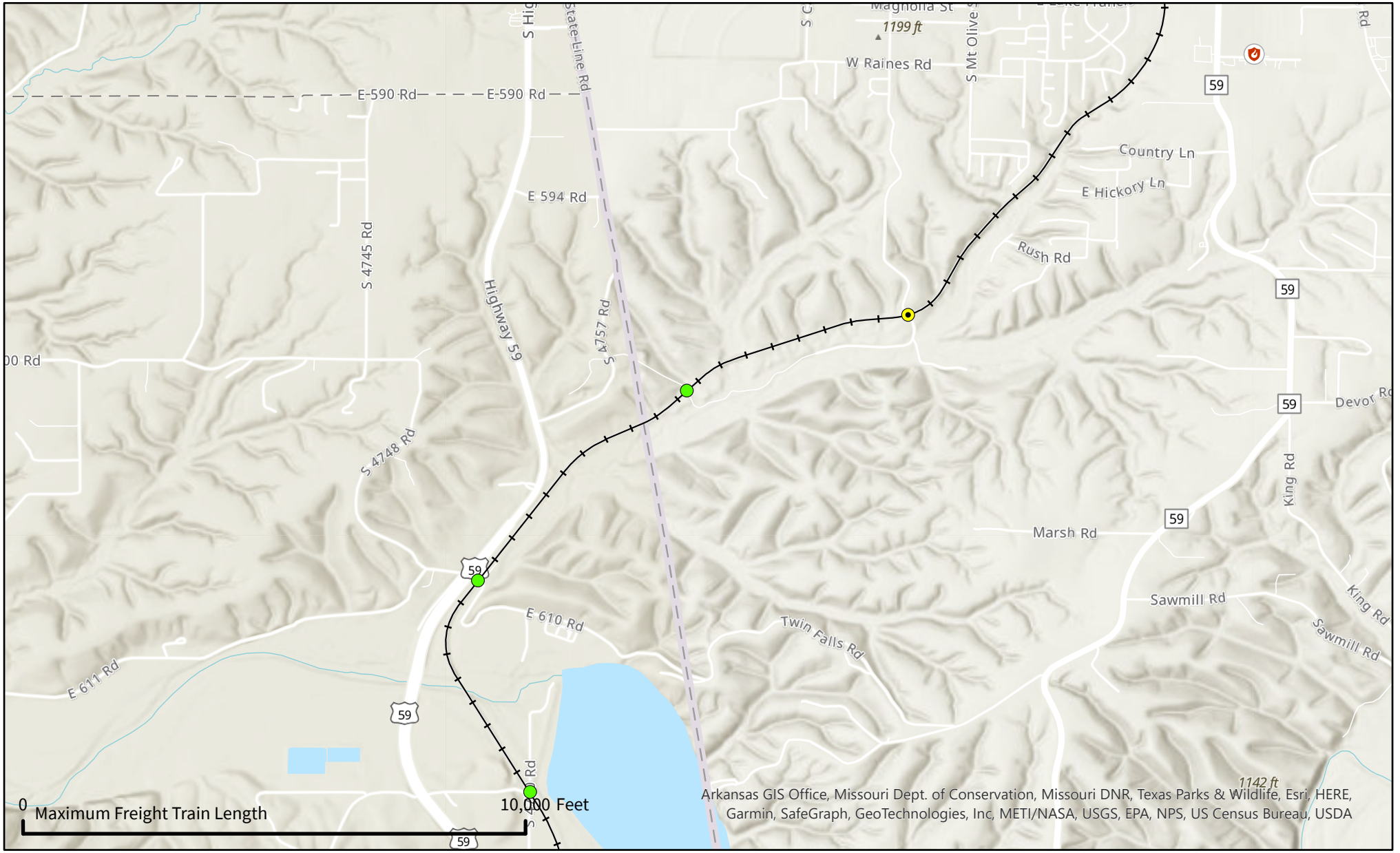


Emergency Services Routing Analysis
Siloam Springs, AR

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- Other Tracks
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- EMS Dispatch
- Hospital
- Police

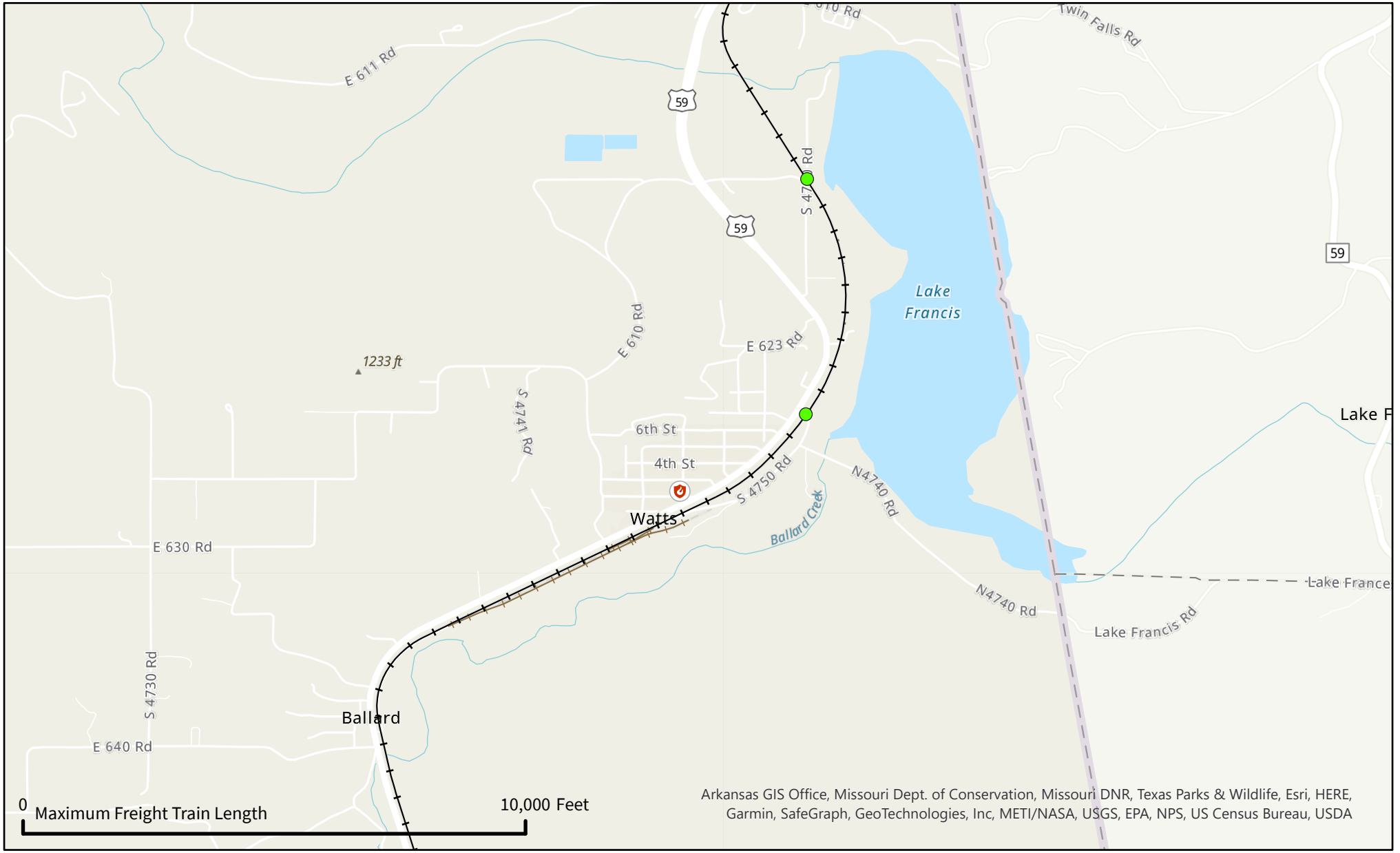


Emergency Services Routing Analysis
SW of Siloam Springs, MO

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- Other Tracks
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- EMS Dispatch
- Hospital
- Police



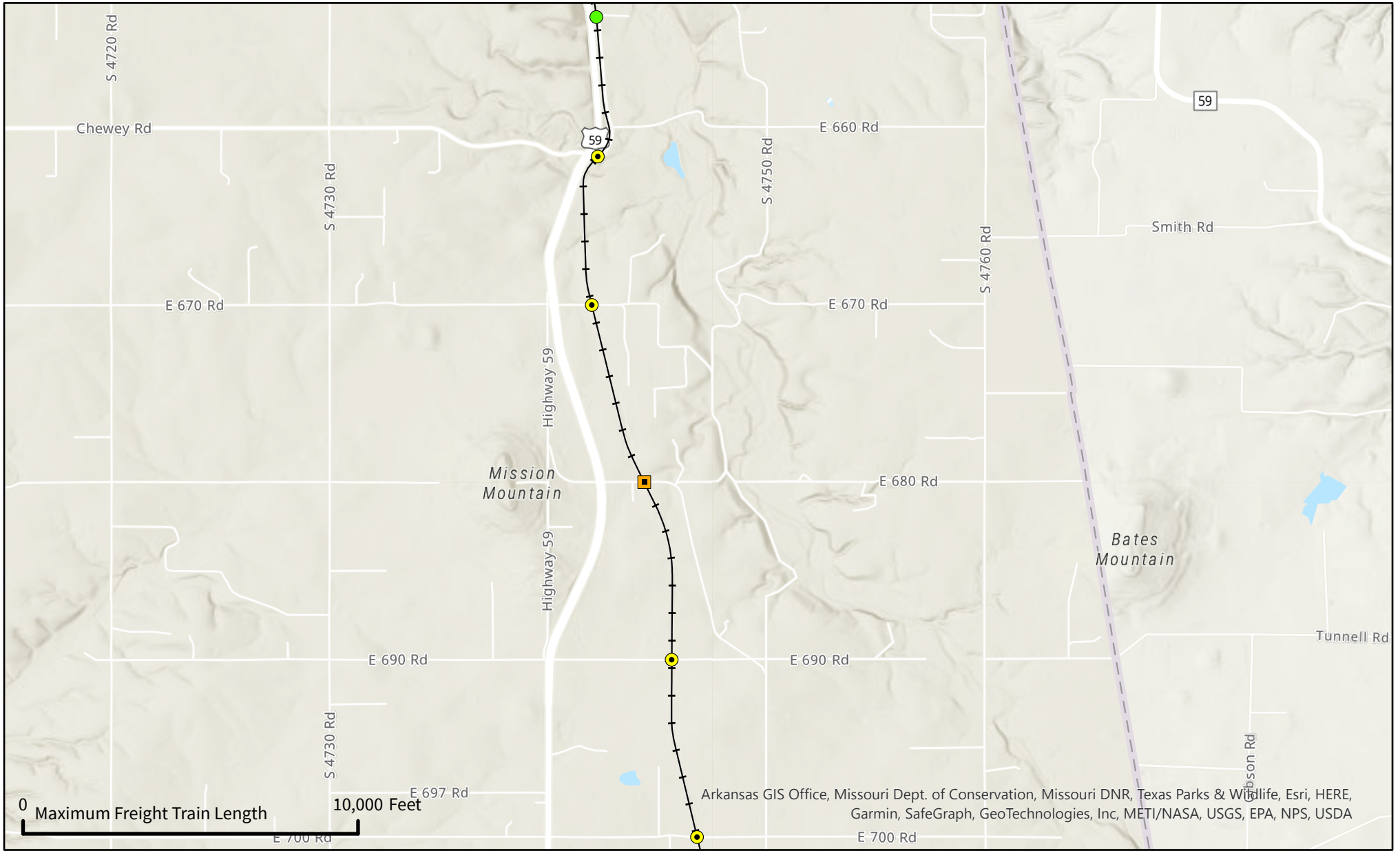
Emergency Services Routing Analysis

Watts, OK

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- EMS Dispatch
- Hospital
- Police



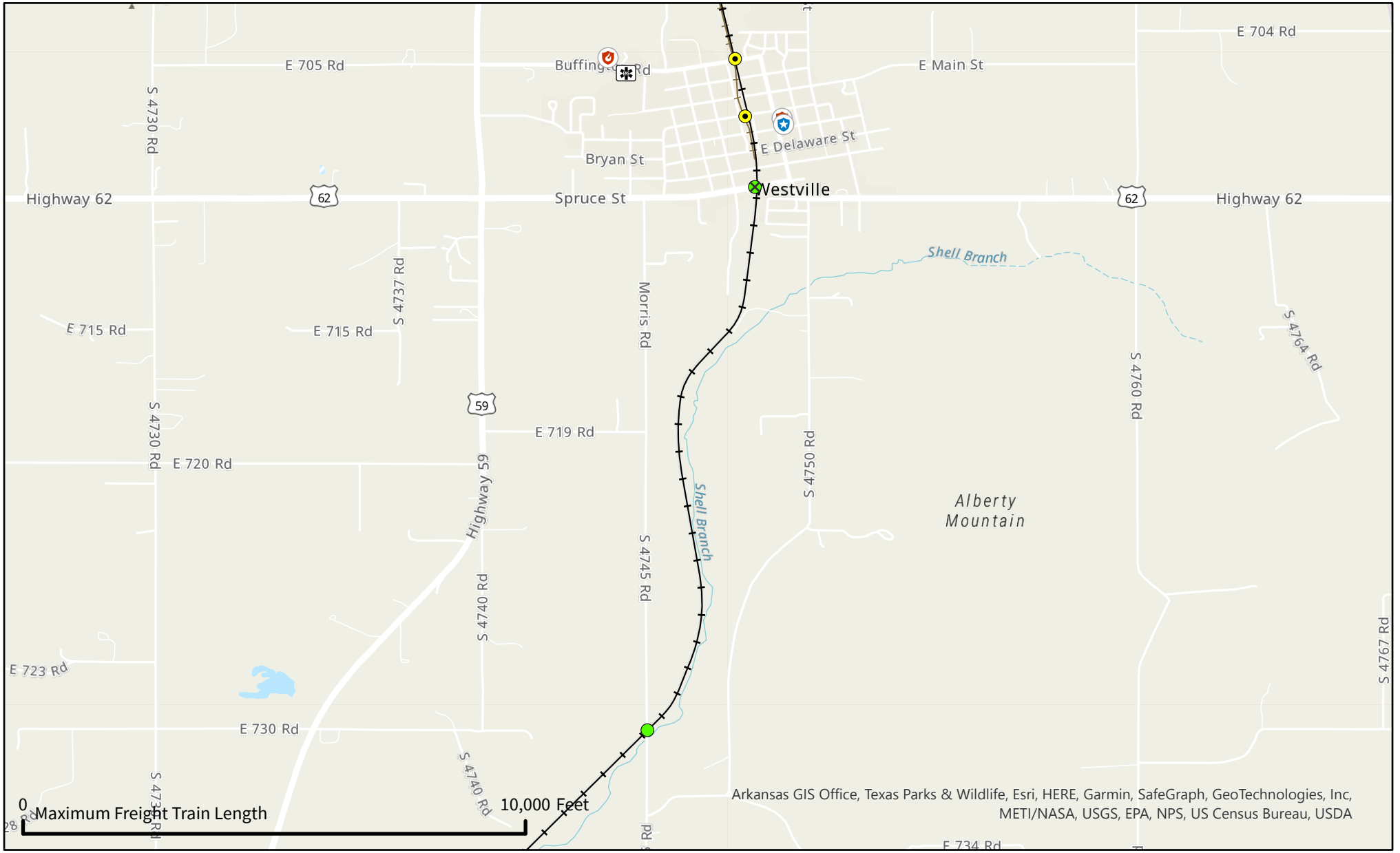
Emergency Services Routing Analysis

N of Westville, OK

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- Other Tracks
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- EMS Dispatch
- Hospital
- Police

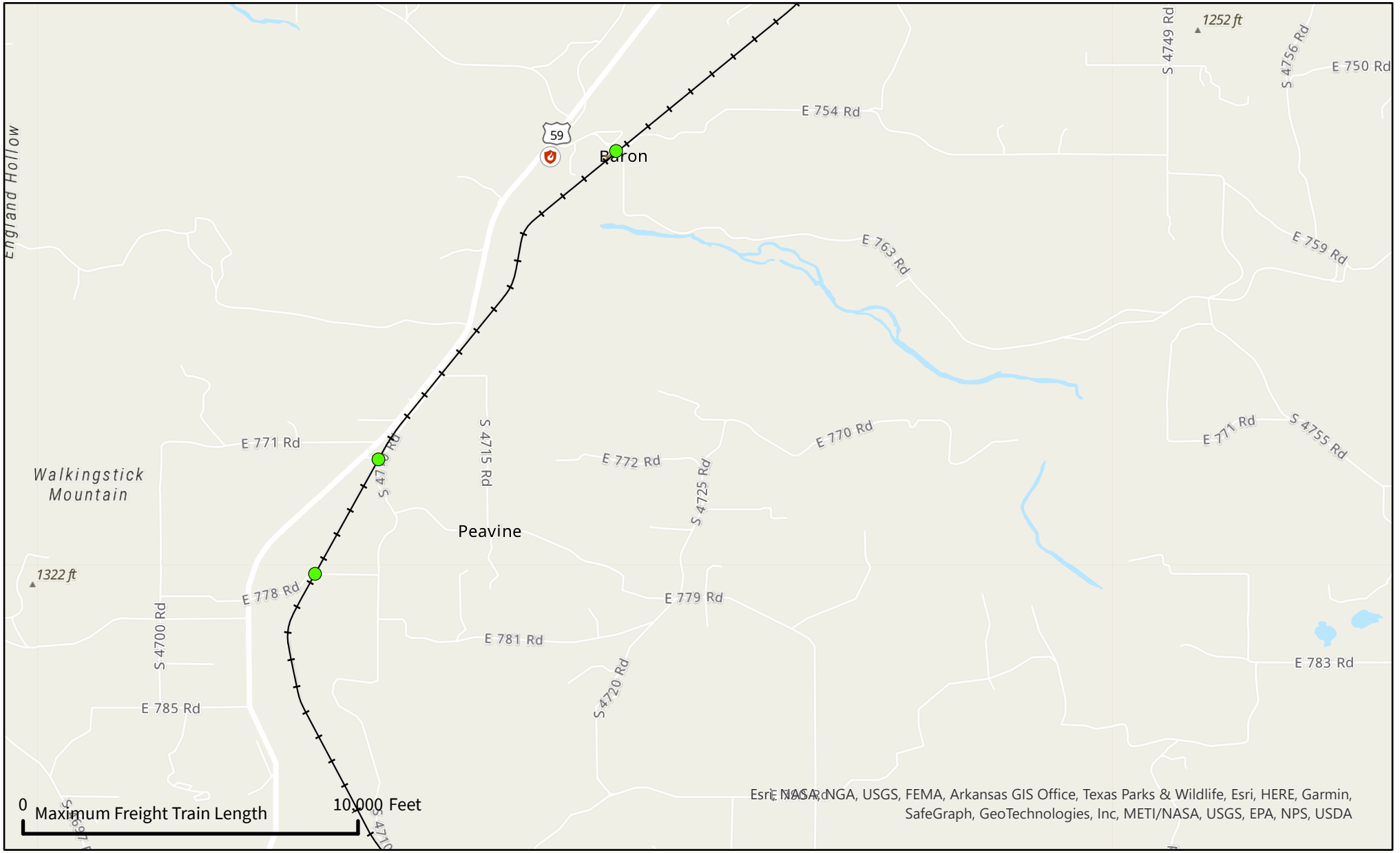


Emergency Services Routing Analysis
Westville, OK

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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Other

- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
- EMS Dispatch
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- Police



Emergency Services Routing Analysis

Baron, OK

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
- Analyzed Tracks
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- Police

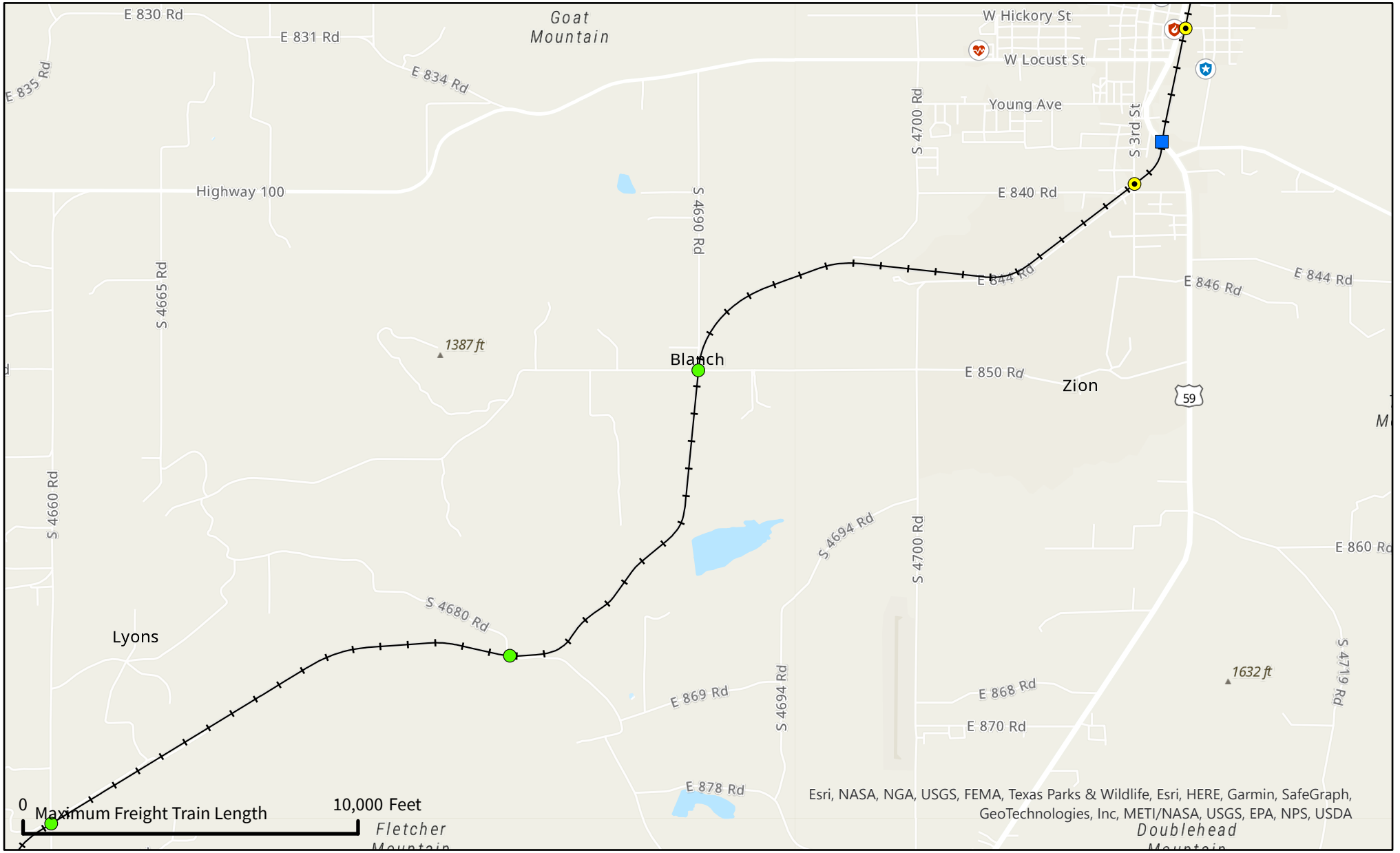


Emergency Services Routing Analysis
Stilwell, OK

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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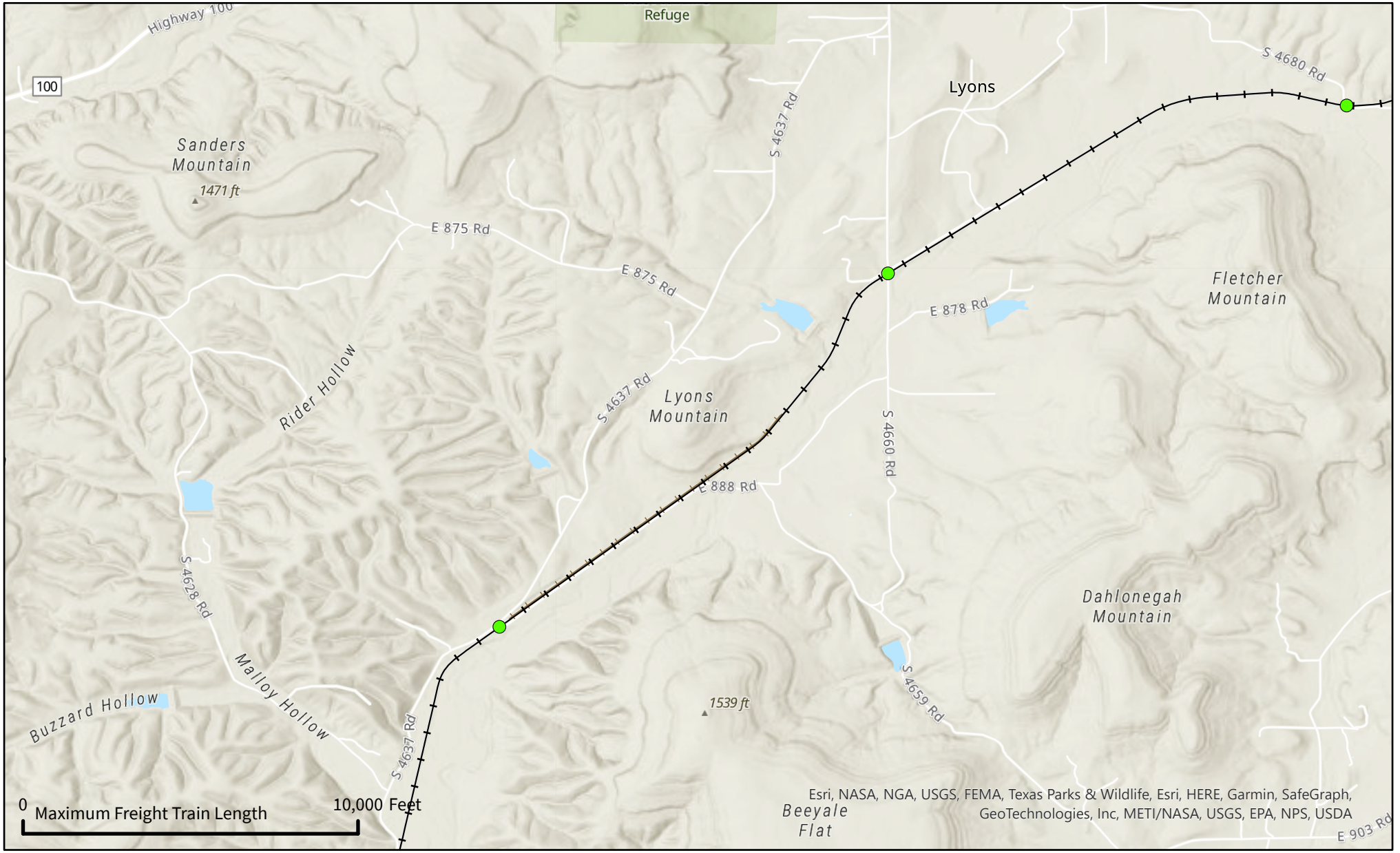
Emergency Services Routing Analysis

Blanch, OK

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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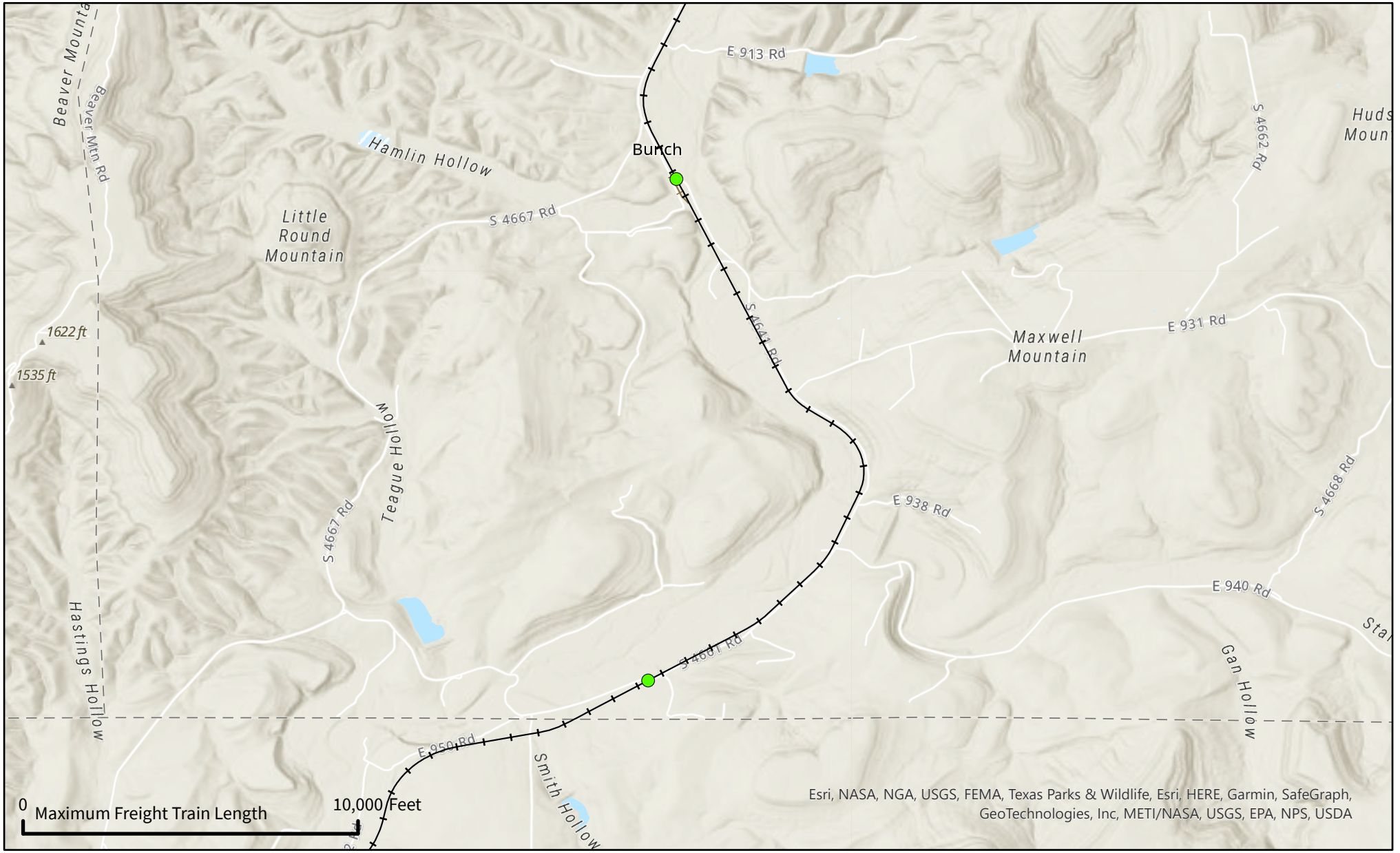
Emergency Services Routing Analysis

S of Lyons, OK

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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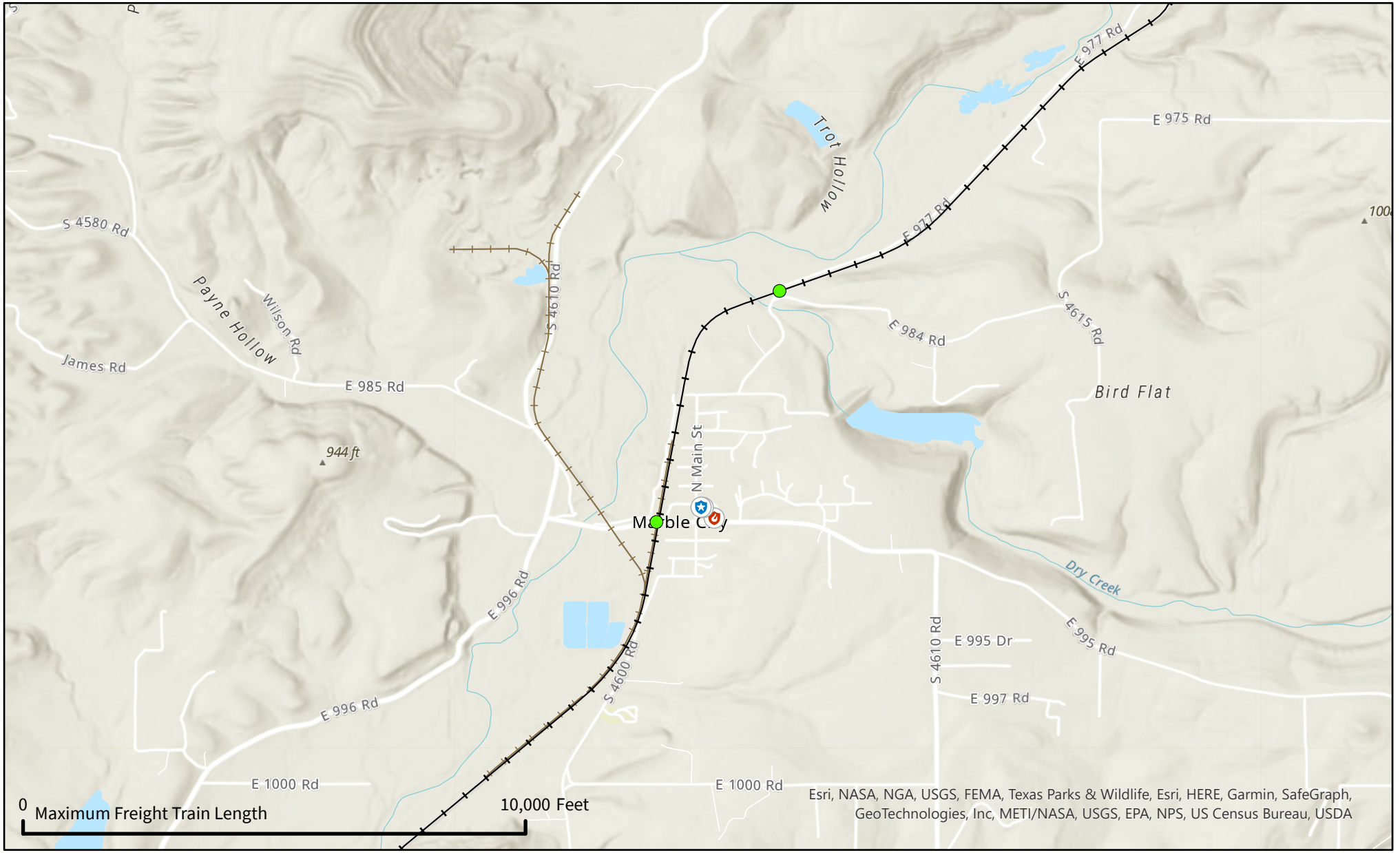
Emergency Services Routing Analysis

Bunch, OK

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



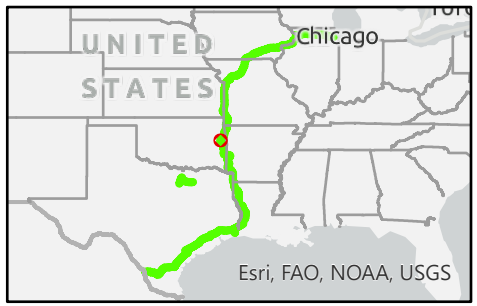
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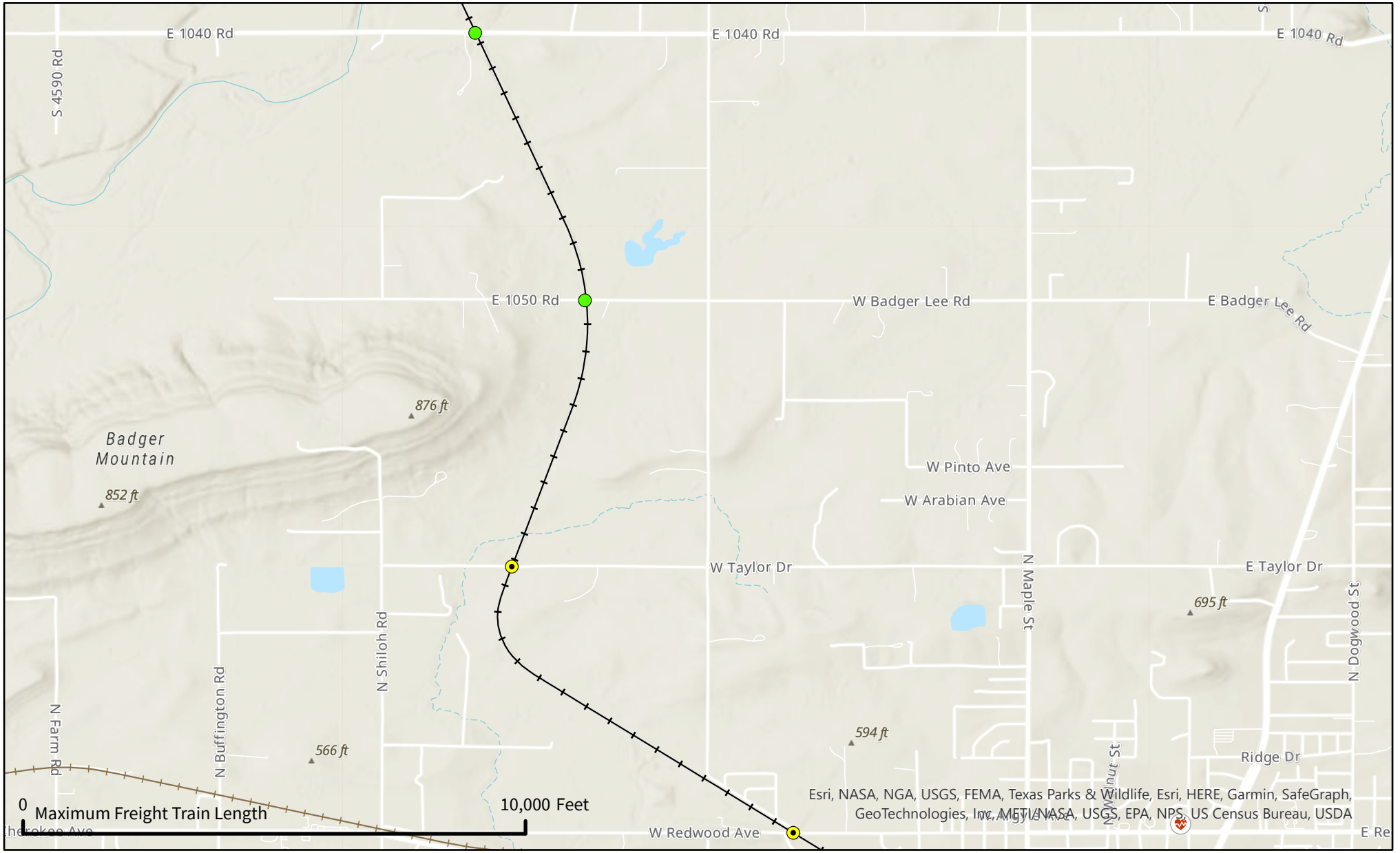
Emergency Services Routing Analysis

Marble City, OK

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



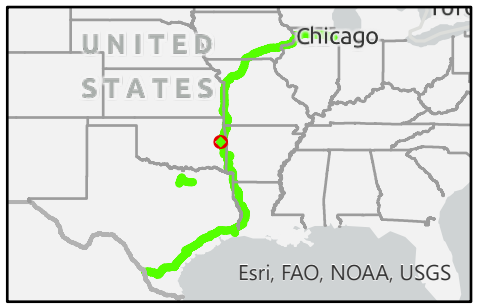
Legend

Crossing Position

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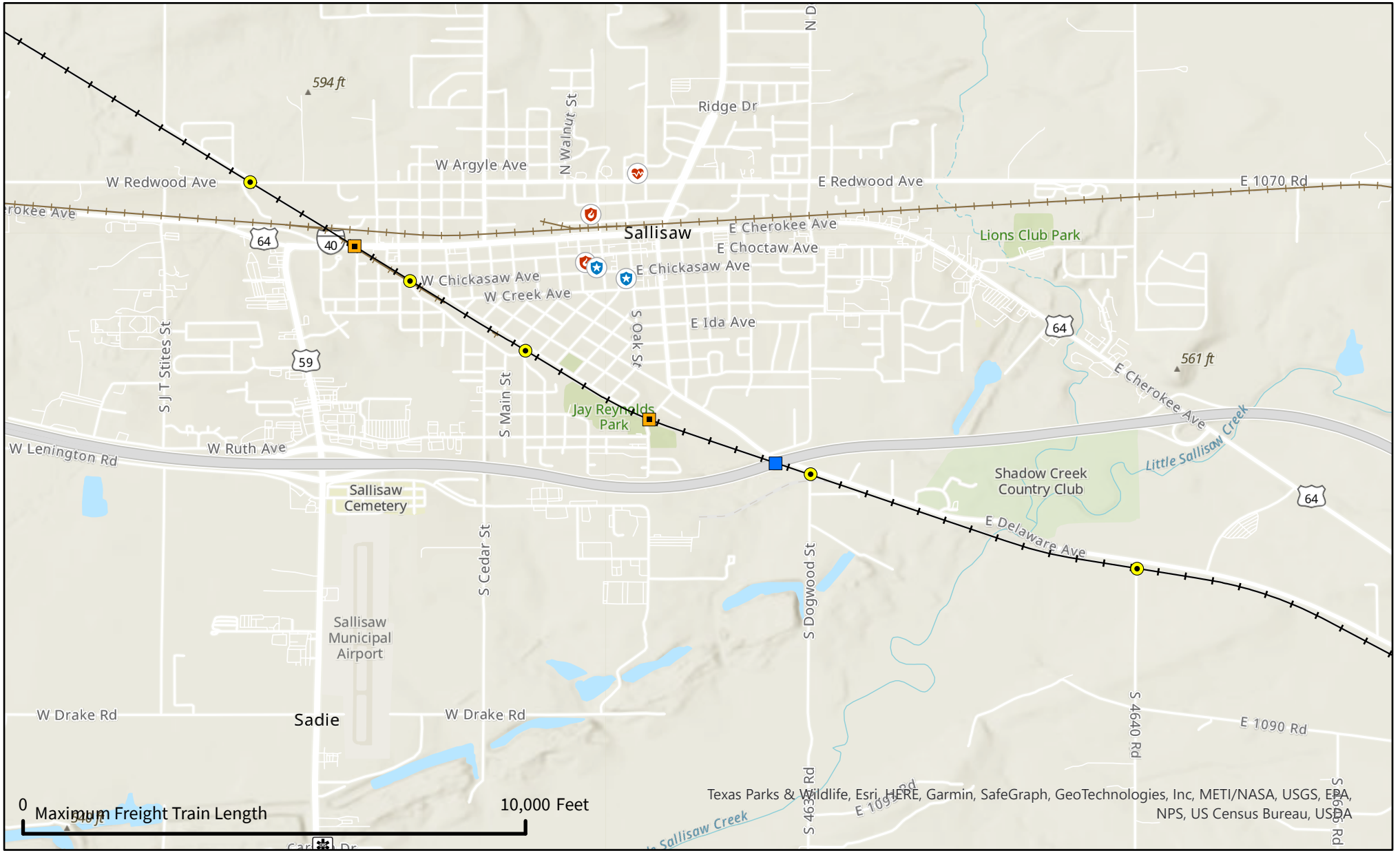
Emergency Services Routing Analysis

N of Sallisaw, OK

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



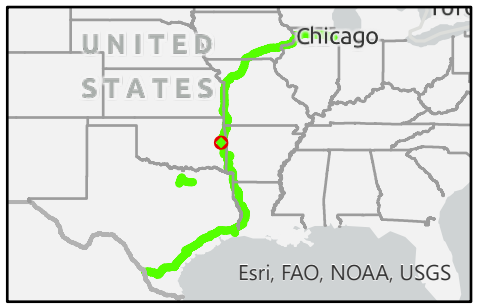
Legend

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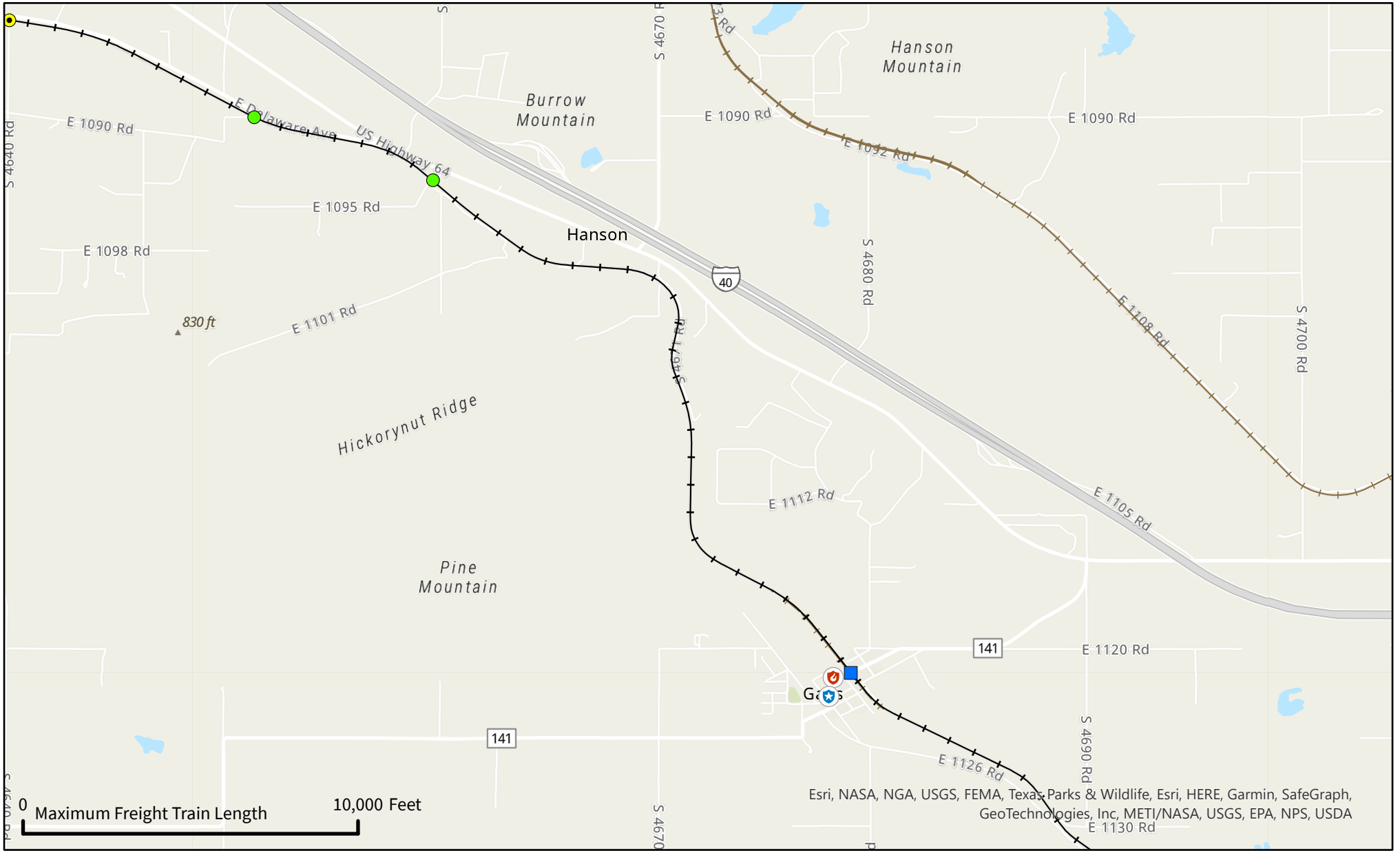


Emergency Services Routing Analysis
Sallisaw, OK

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



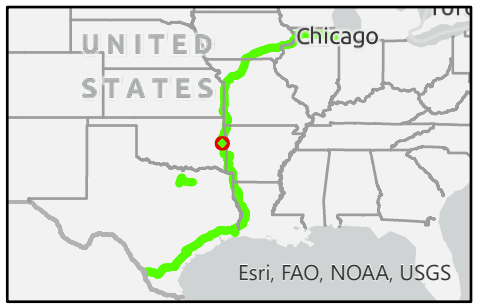
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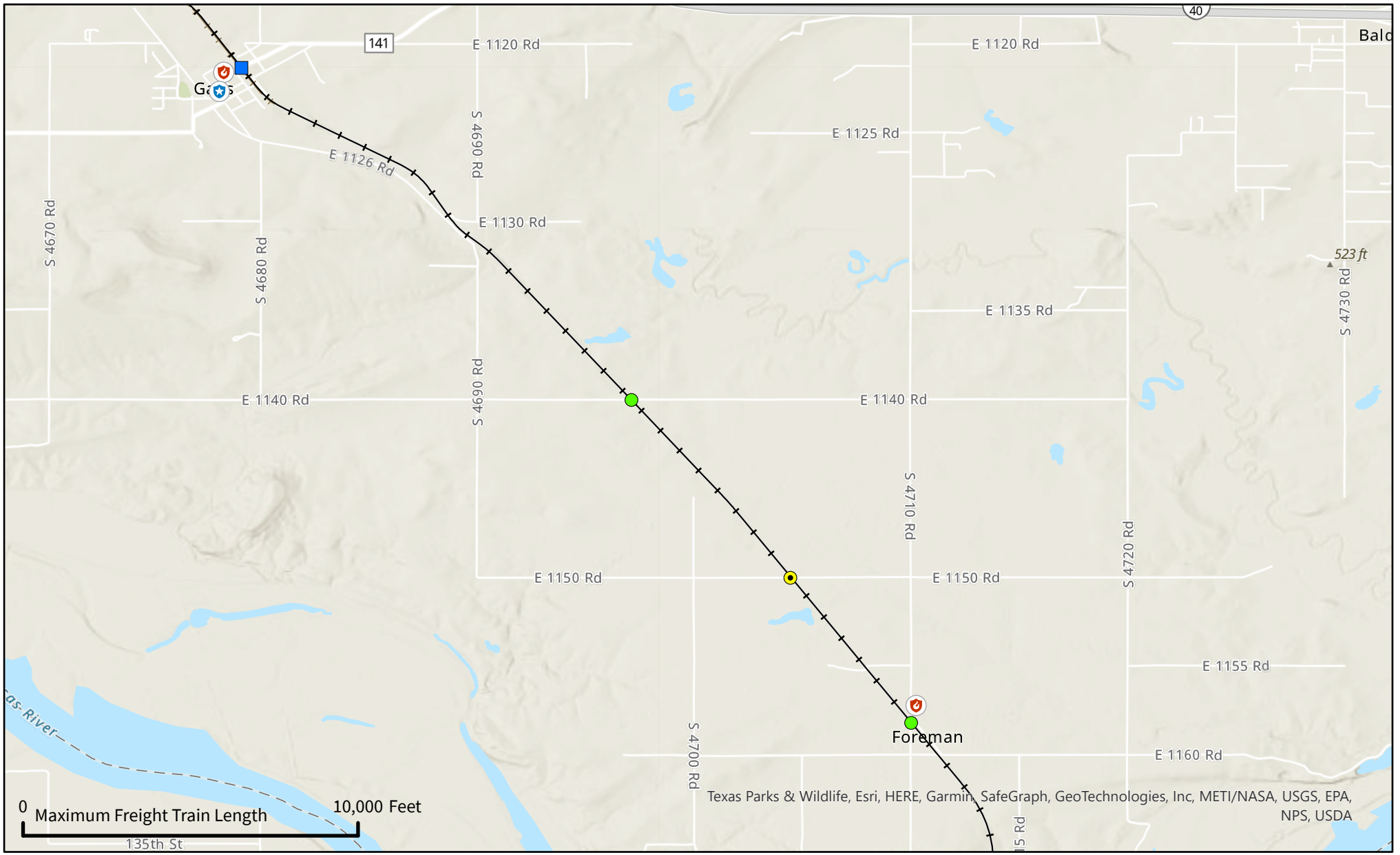
Emergency Services Routing Analysis

Gans, OK

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

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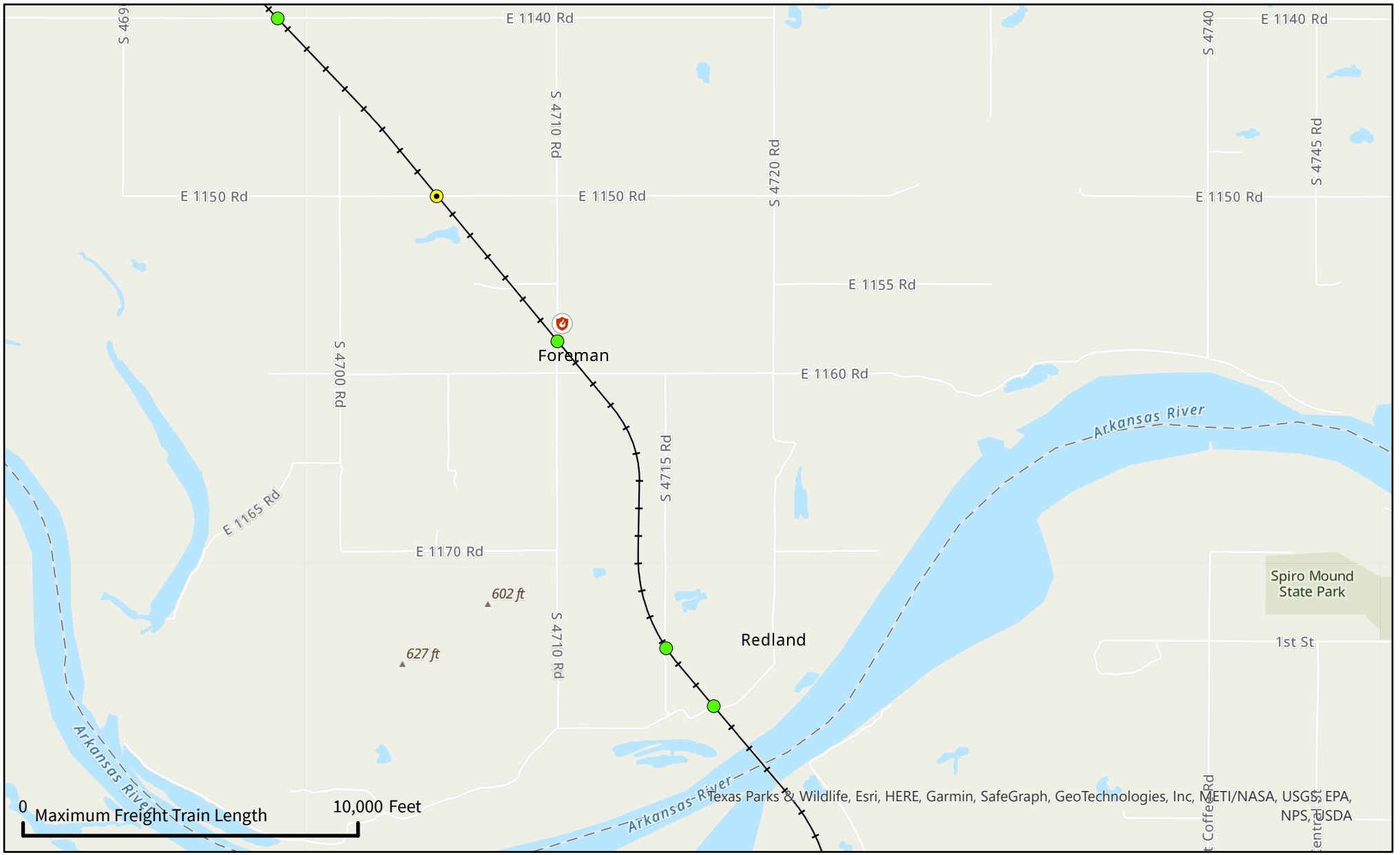
Emergency Services Routing Analysis

S of Gans, OK

N

Scale:
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Miles
0 0.25 0.5



Legend

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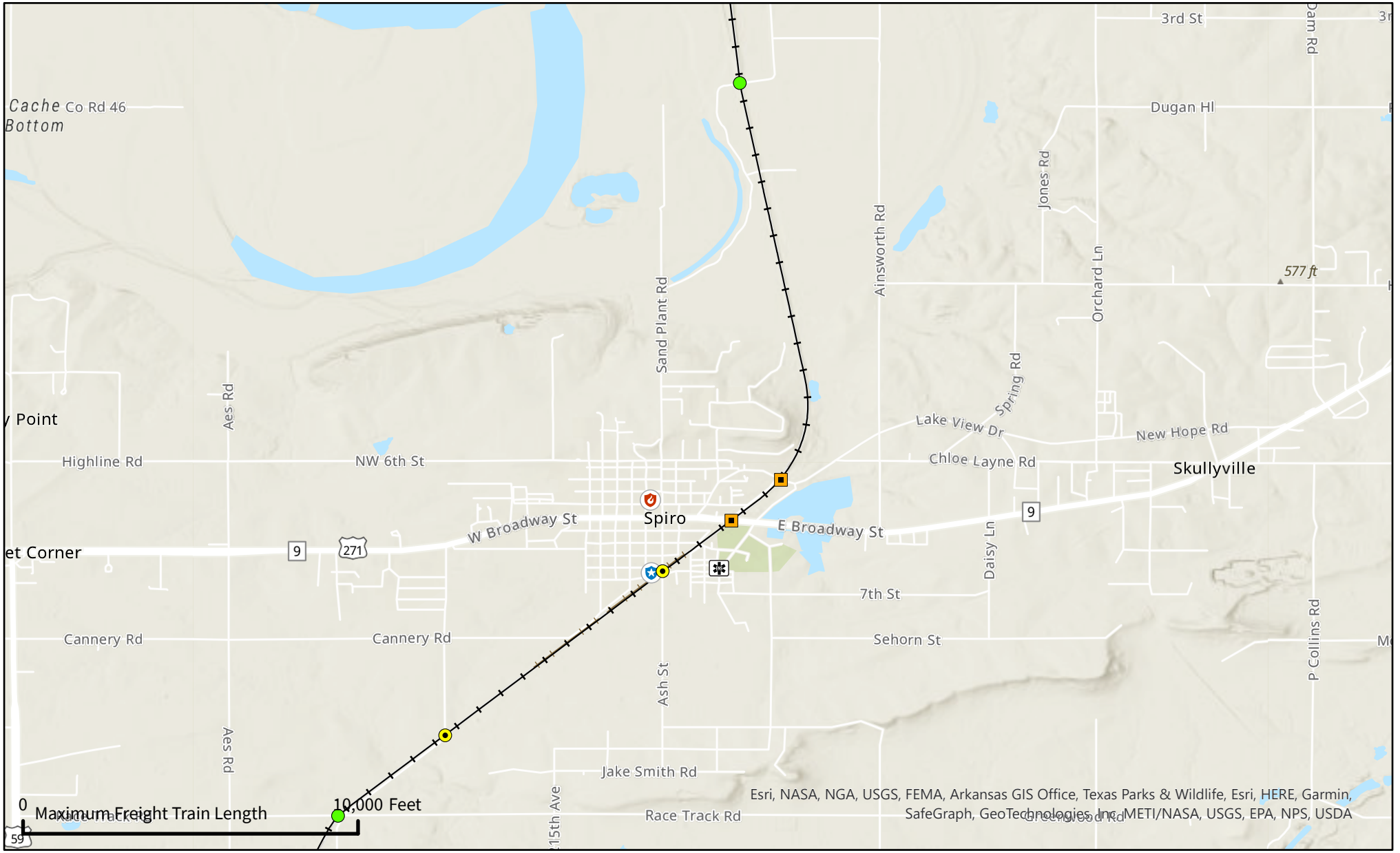
Emergency Services Routing Analysis

Redland, OK

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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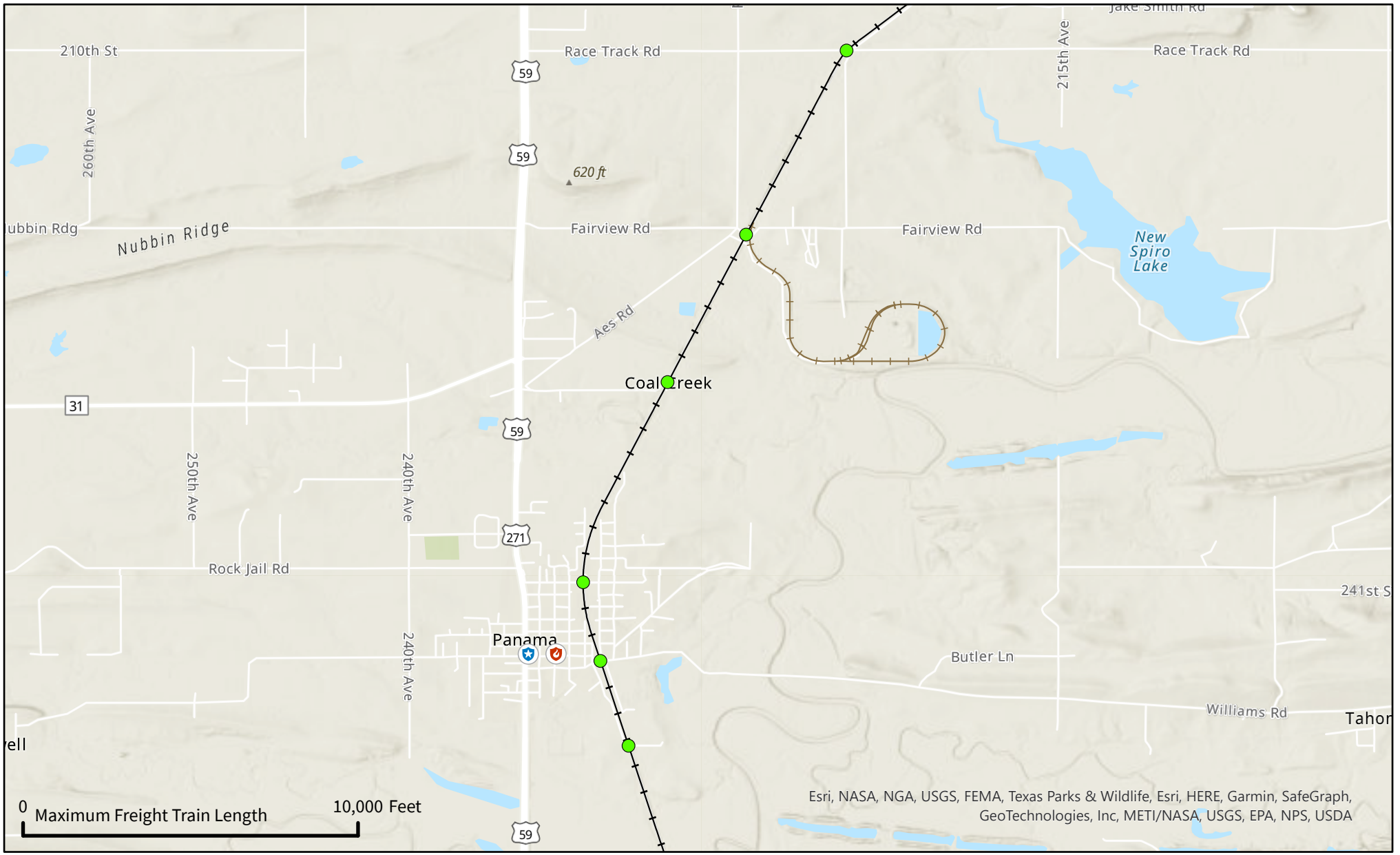


Emergency Services Routing Analysis
Spiro, OK

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Hospital
- Police



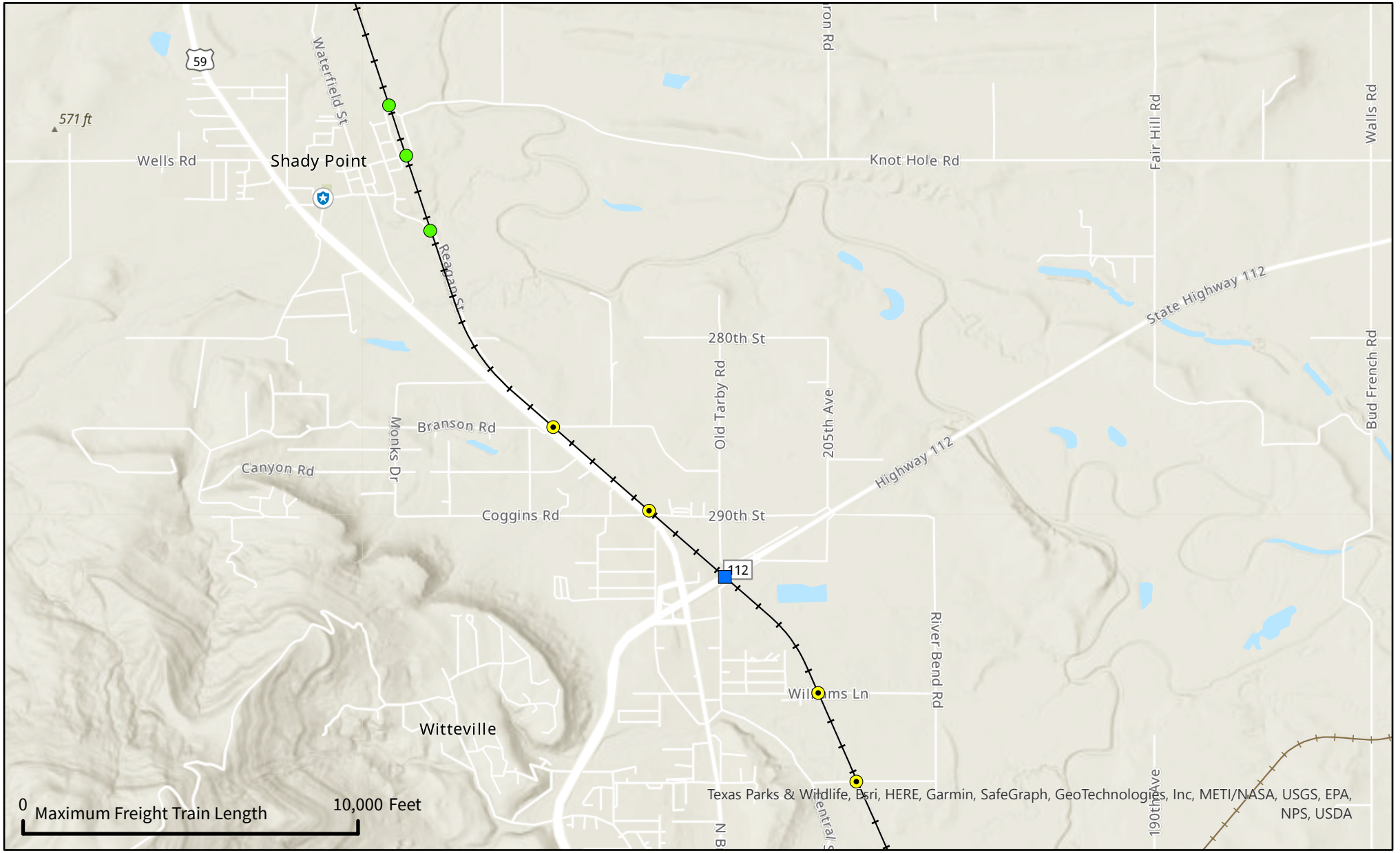
Emergency Services Routing Analysis

Panama, OK

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
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Other

- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

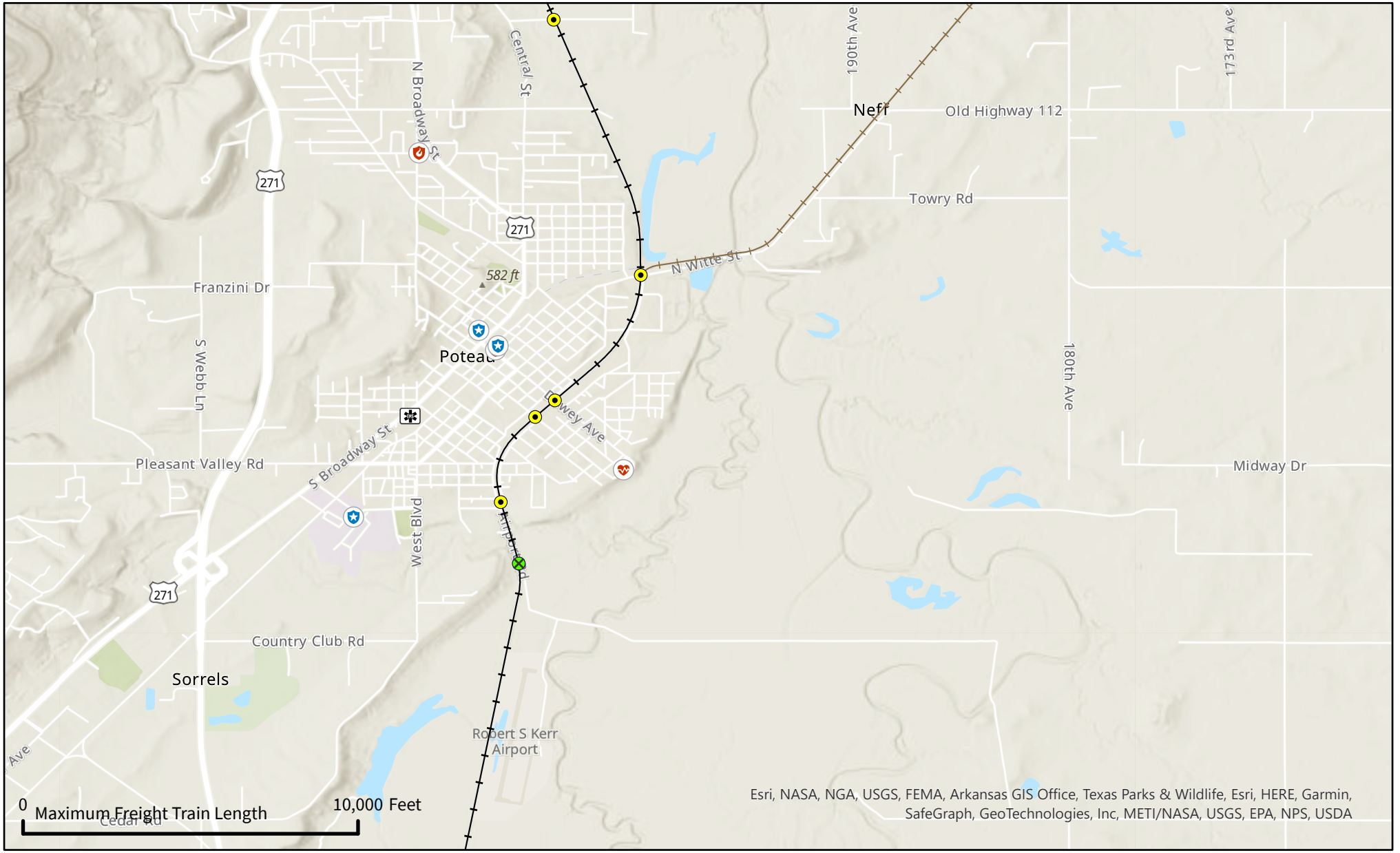


Emergency Services Routing Analysis
Shady Point, OK

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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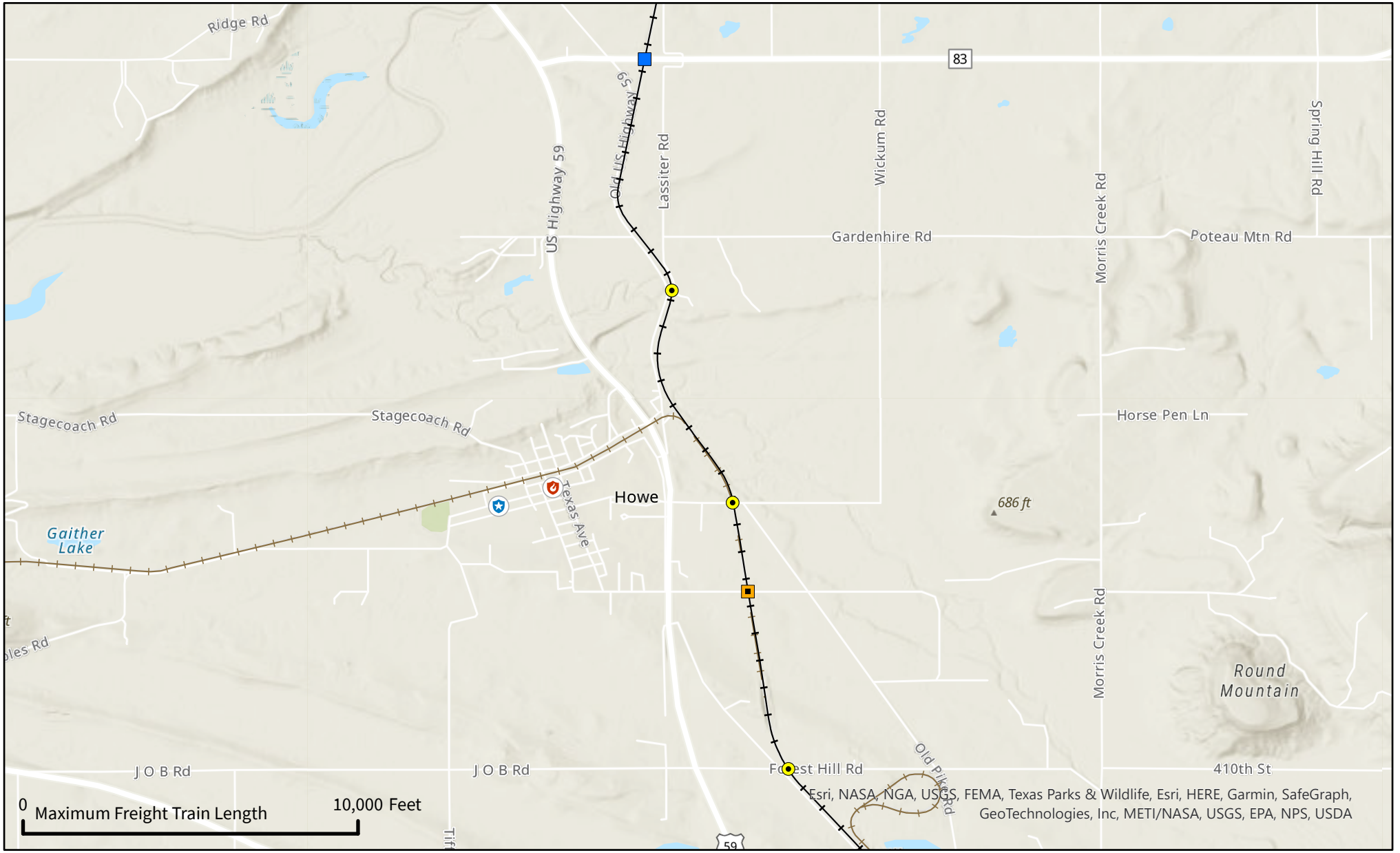
Emergency Services Routing Analysis

Poteau, OK

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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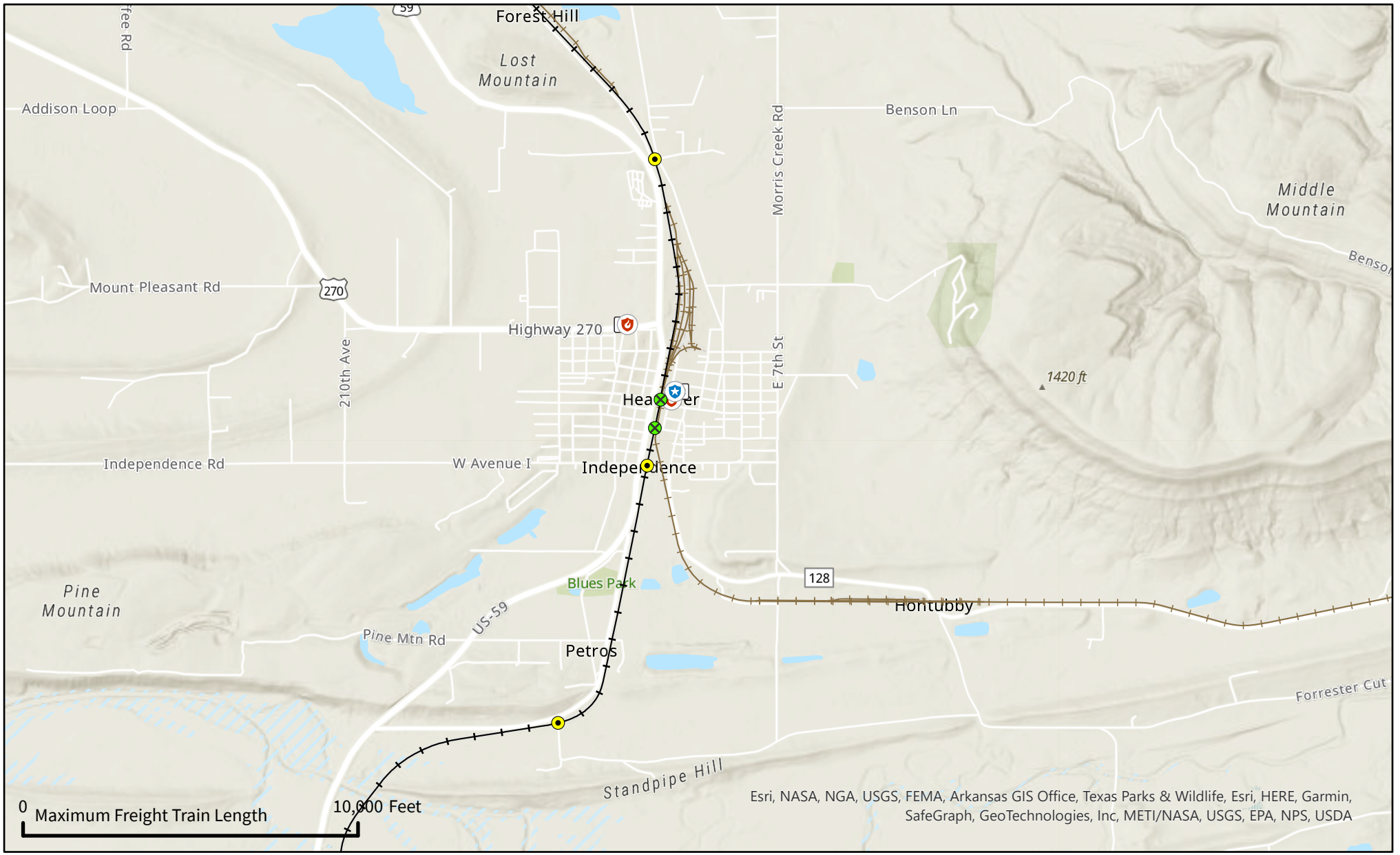
Emergency Services Routing Analysis

Howe, OK

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Hospital
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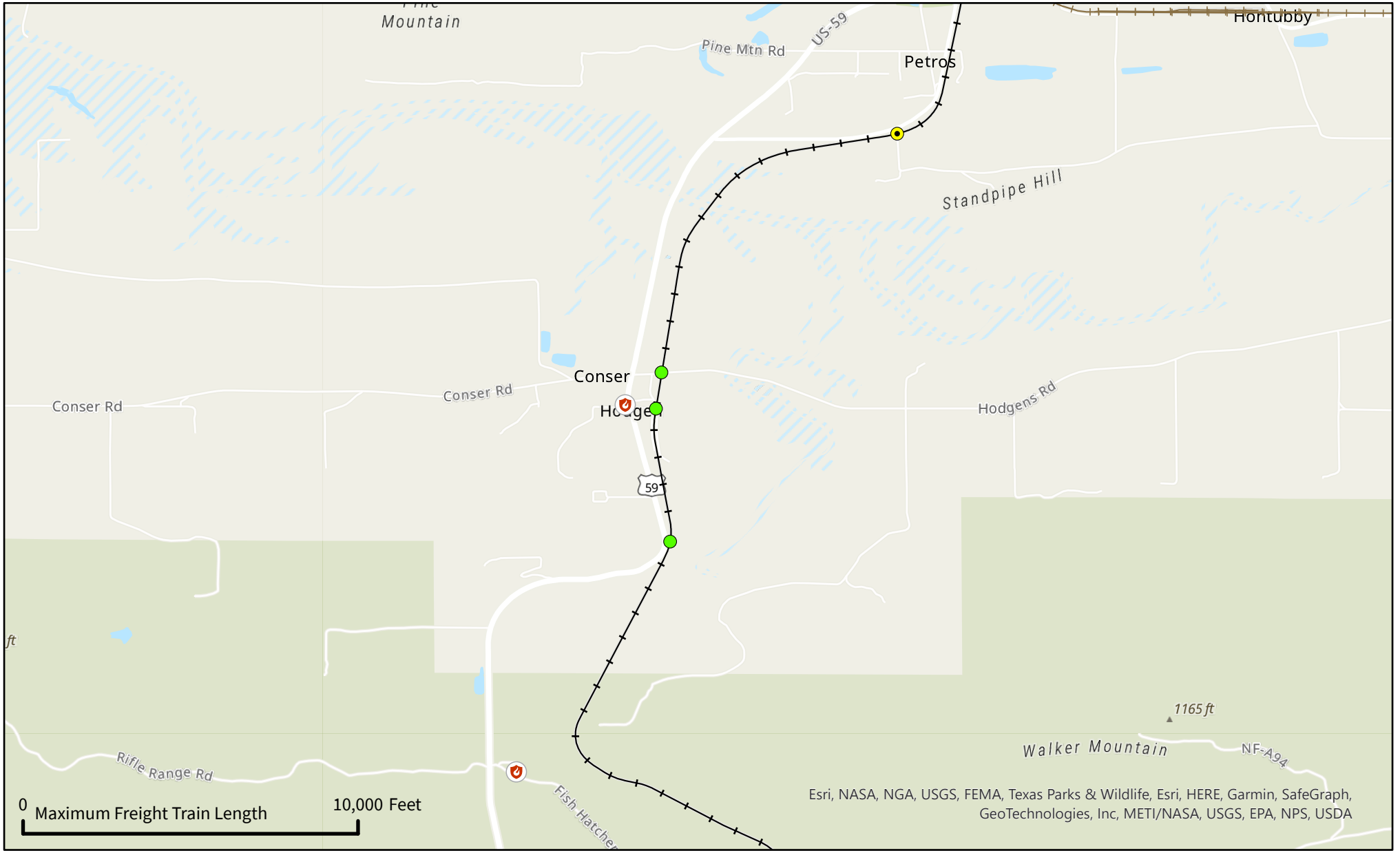
Emergency Services Routing Analysis

Heavener, OK

N

Scale:
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Miles
0 0.25 0.5



Legend

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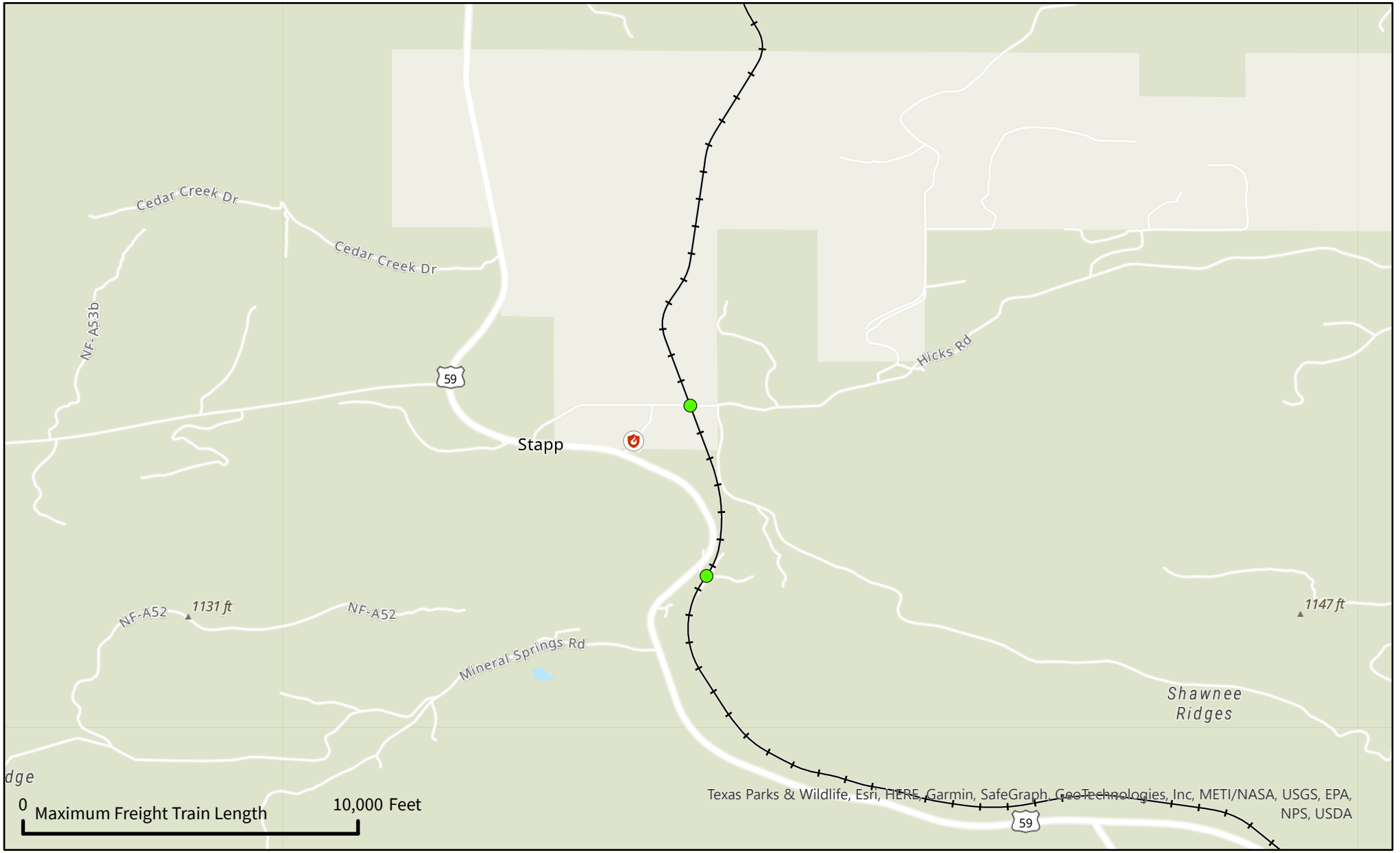
Emergency Services Routing Analysis

Hodgen, OK

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Scale:
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Miles
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Legend

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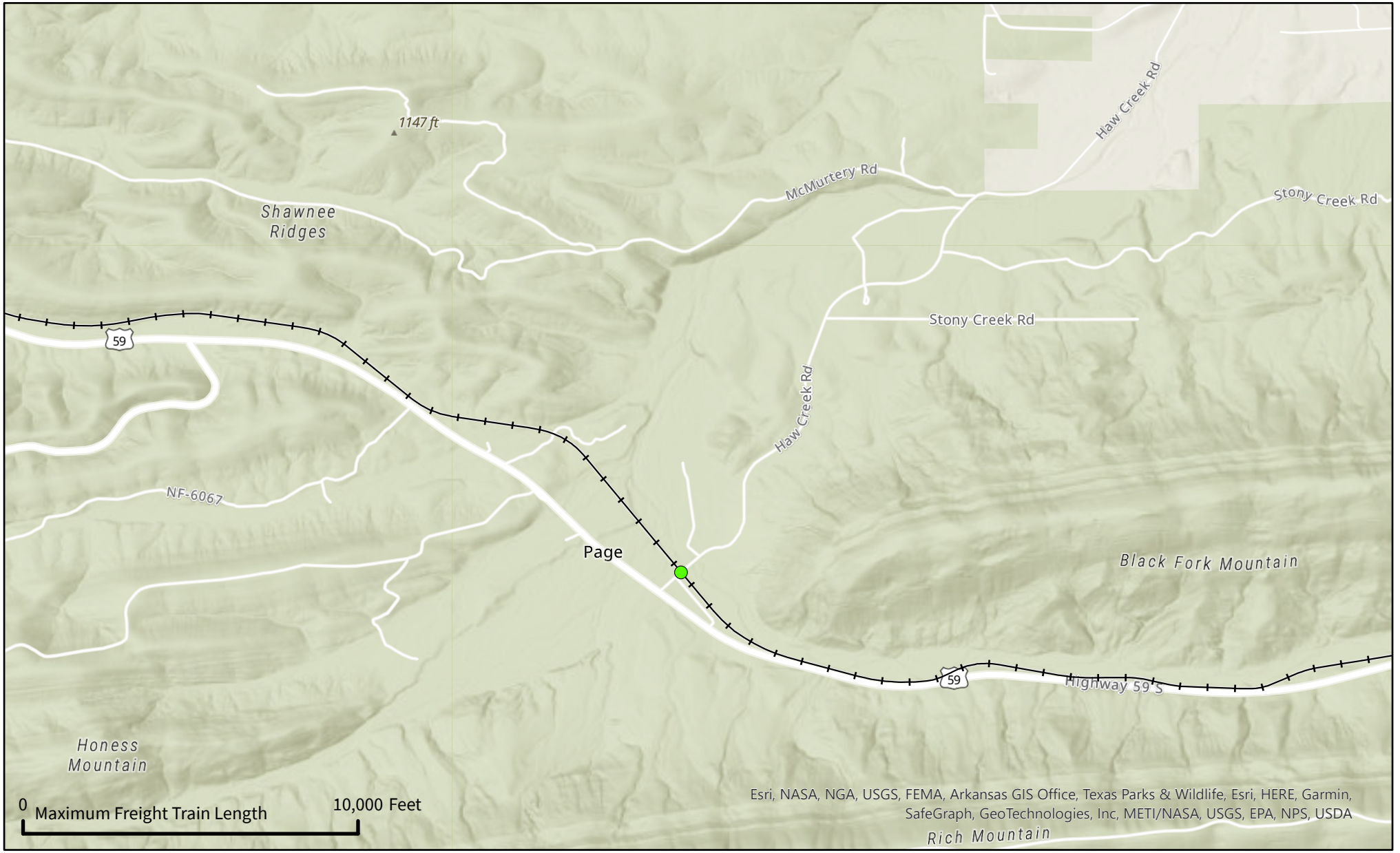
Emergency Services Routing Analysis

Stapp, OK

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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Emergency Services Routing Analysis

Page, OK

N

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Miles
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Legend

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- Hospital
- Police

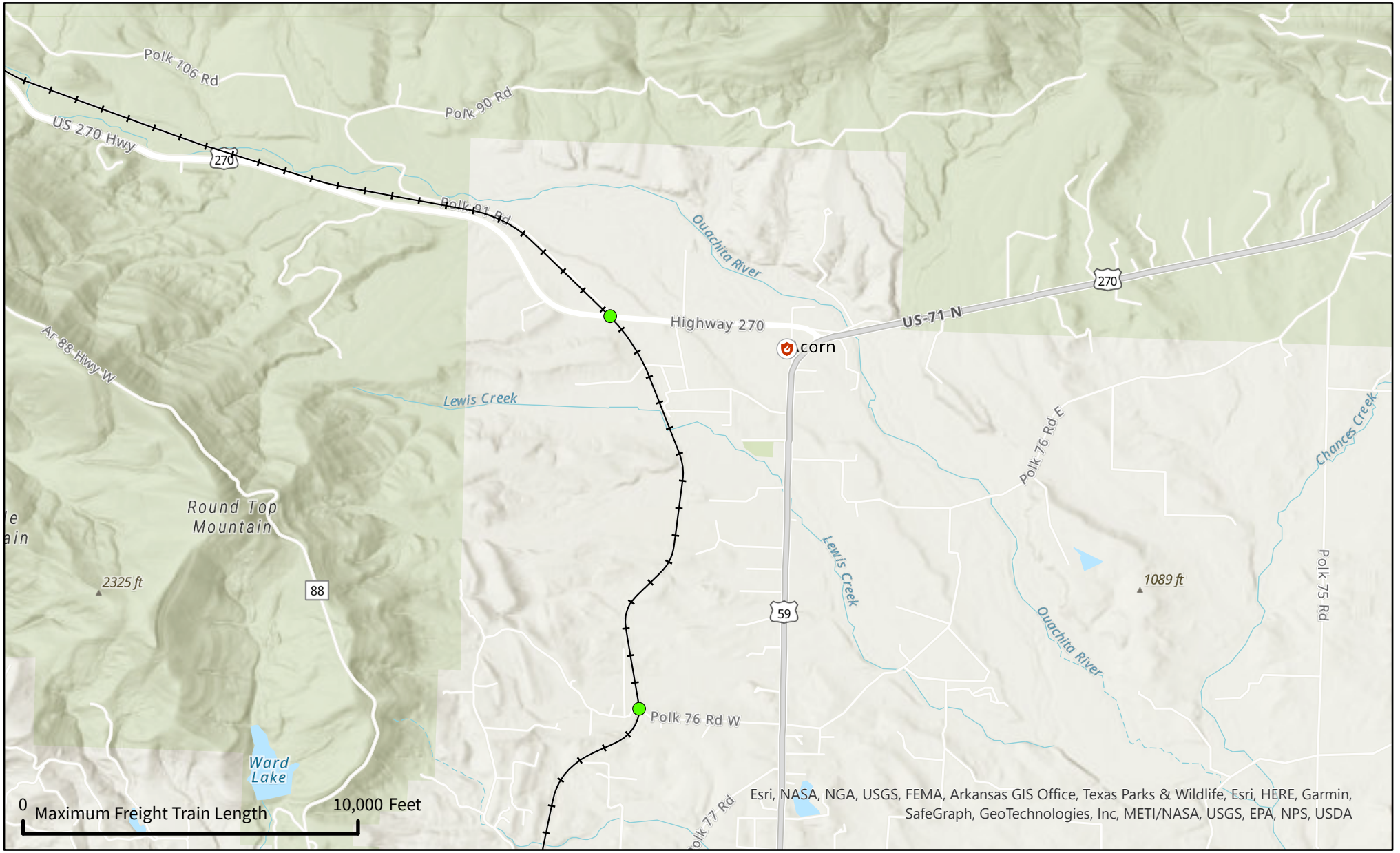


Emergency Services Routing Analysis
Rich Mountain, AR

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Fire Station
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- Hospital
- Police



Emergency Services Routing Analysis

Acorn, AR

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Hospital
- Police



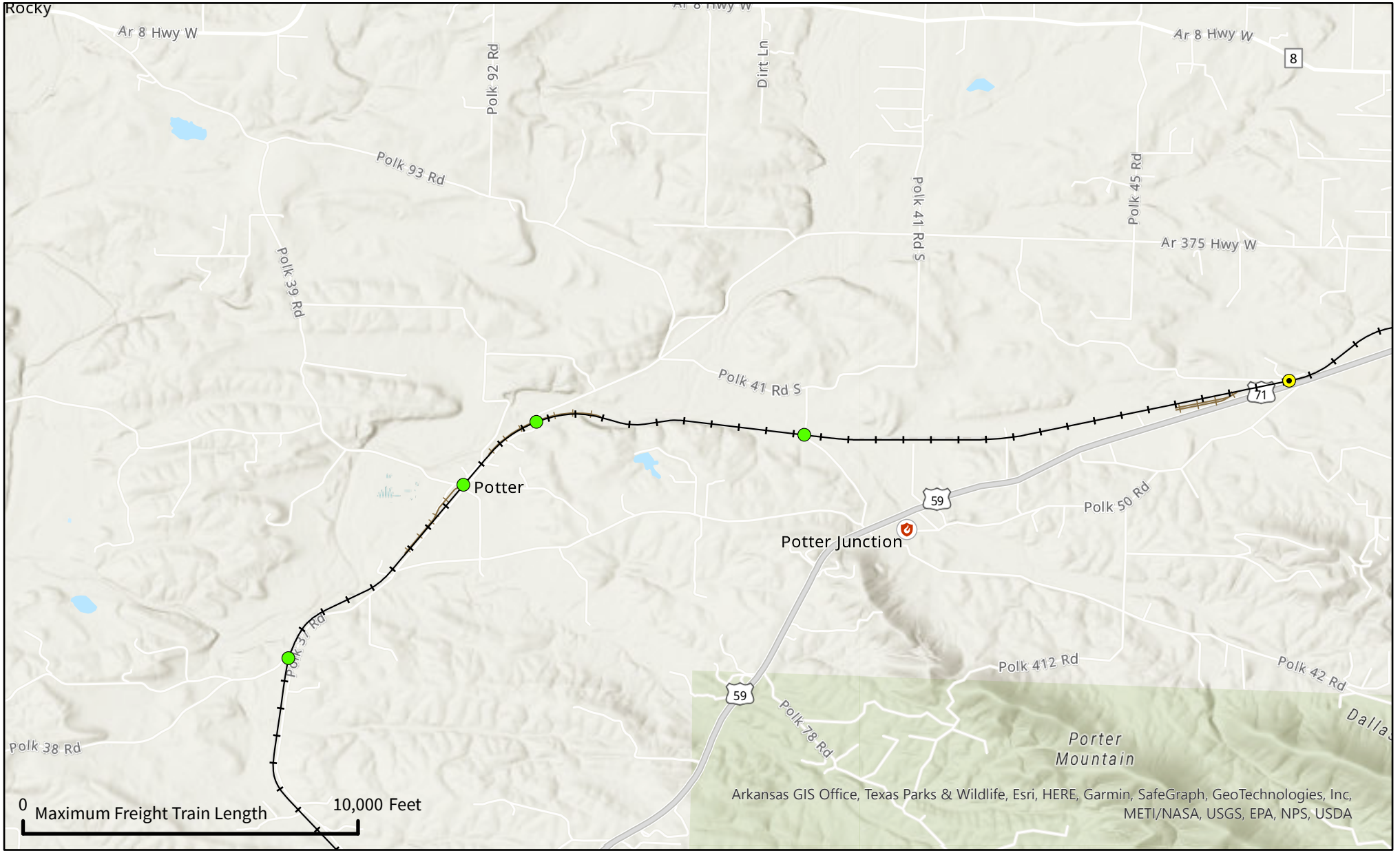
Emergency Services Routing Analysis

Mena, AR

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Hospital
- Police



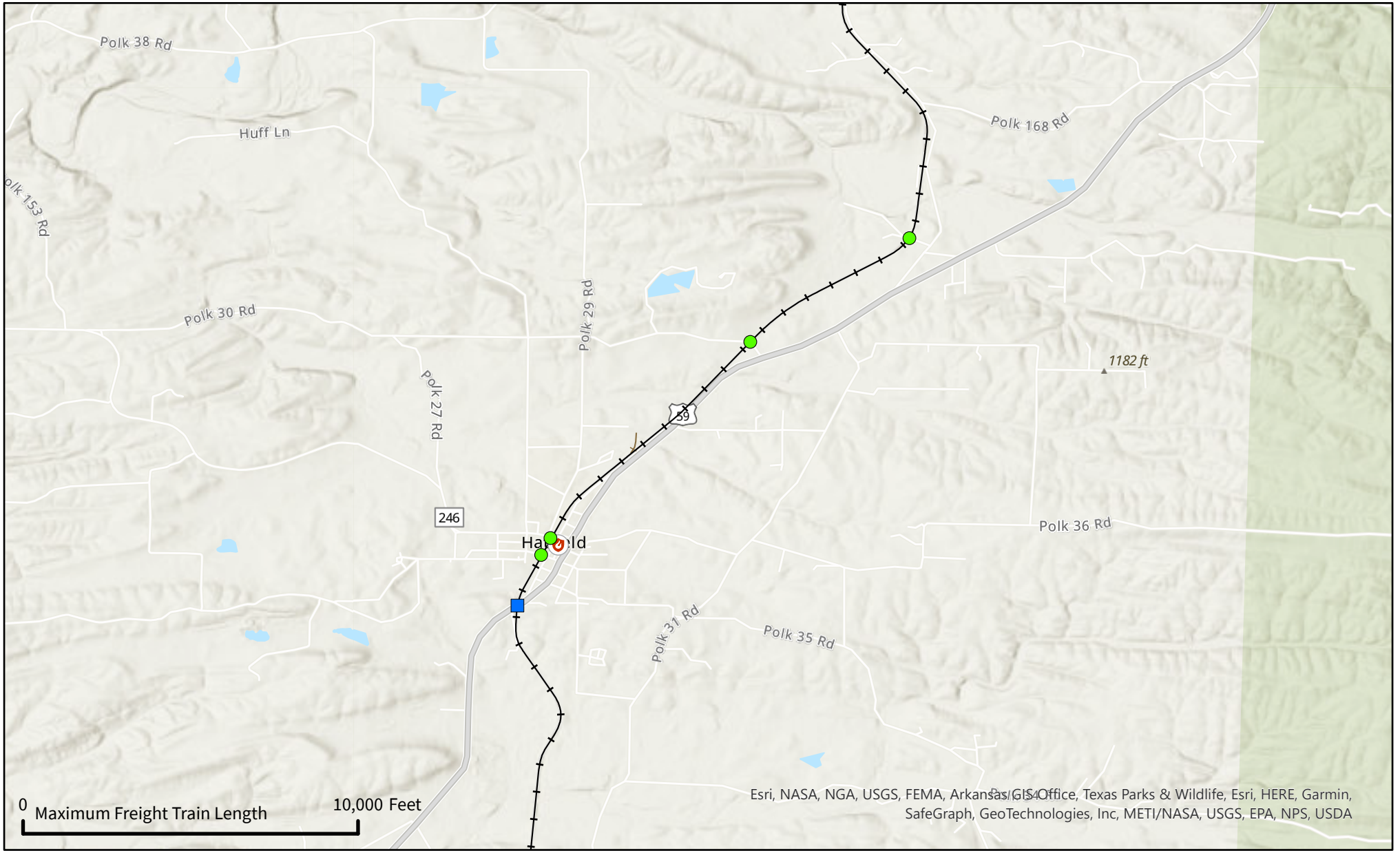
Emergency Services Routing Analysis

Potter Junction, AR

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- EMS Dispatch
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- Police



Emergency Services Routing Analysis
Hatfield, AR

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

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- Hospital
- Police

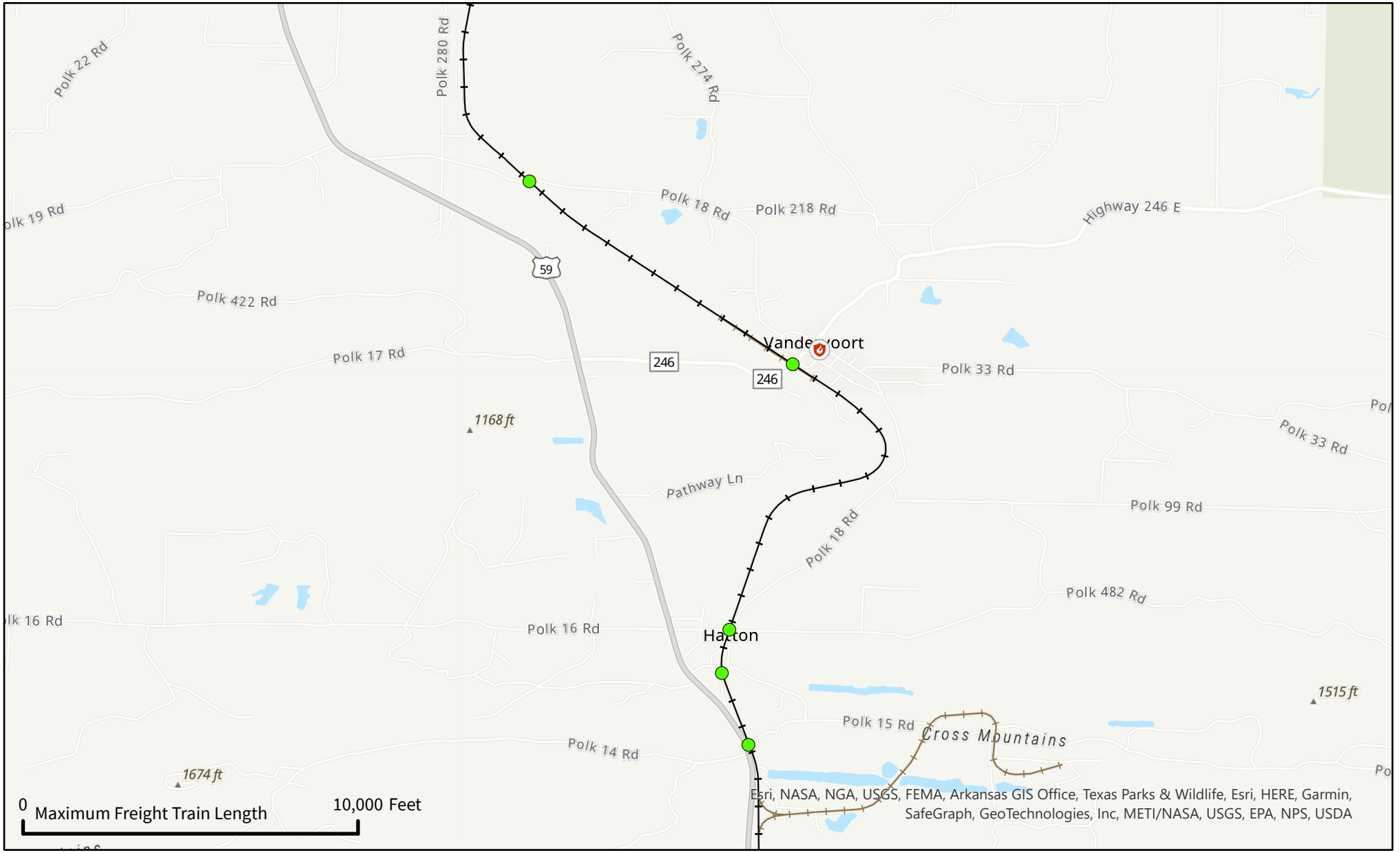


Emergency Services Routing Analysis
Cove, AR

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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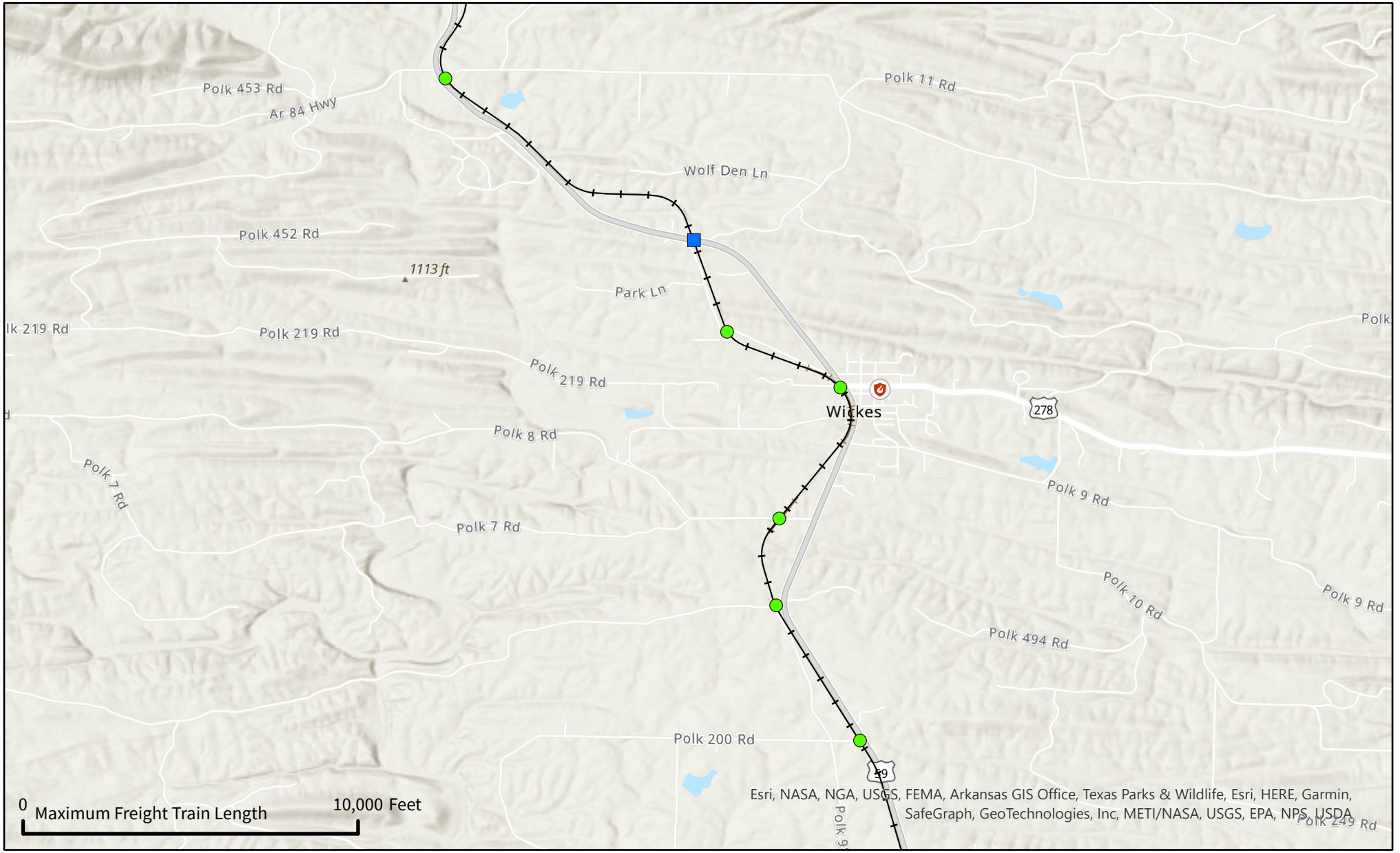


Emergency Services Routing Analysis
Vandervoort, AR

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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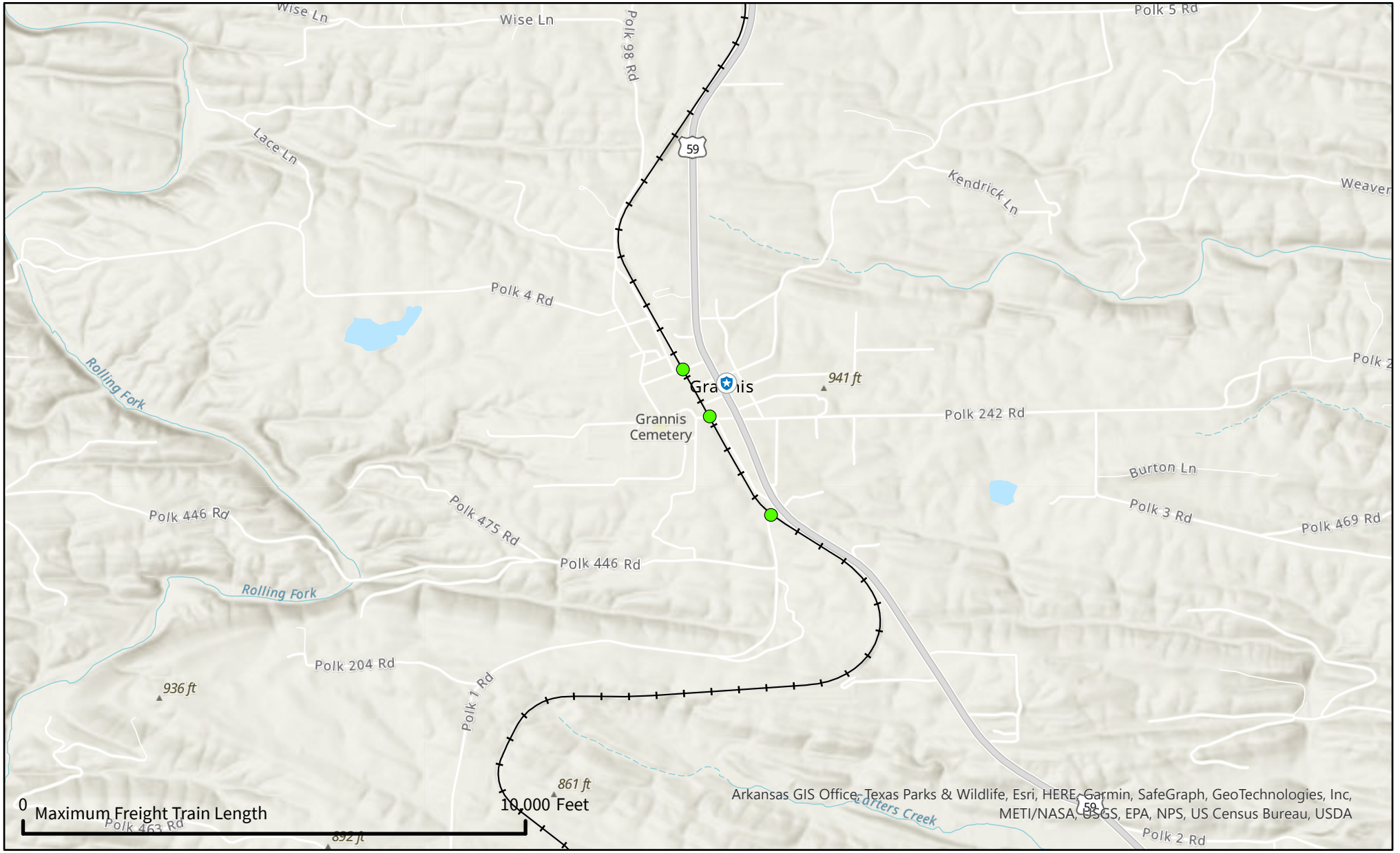


Emergency Services Routing Analysis
Wickes, AR

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

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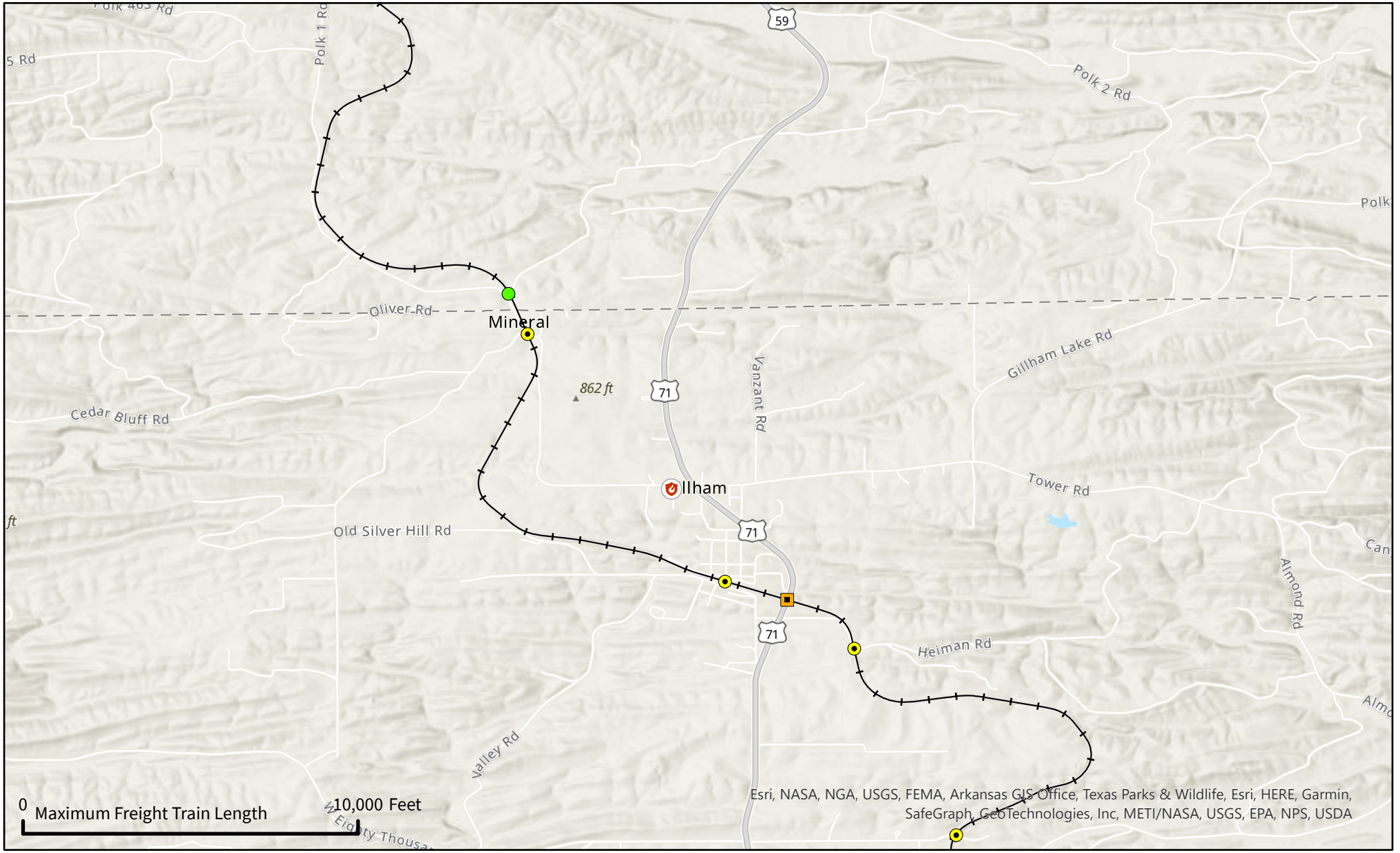
Emergency Services Routing Analysis

Grannis, AR

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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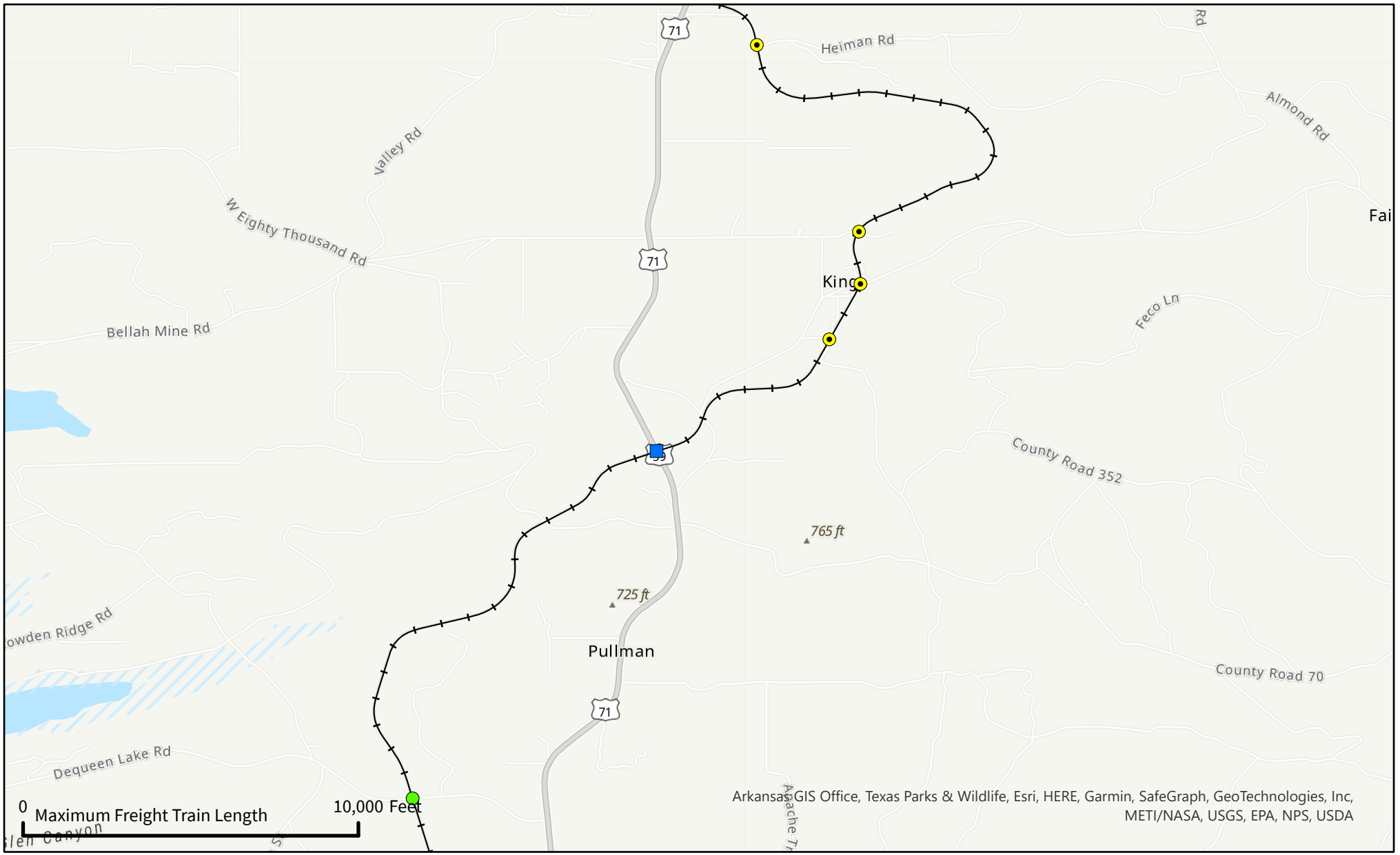


Emergency Services Routing Analysis
Gillham, AR

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

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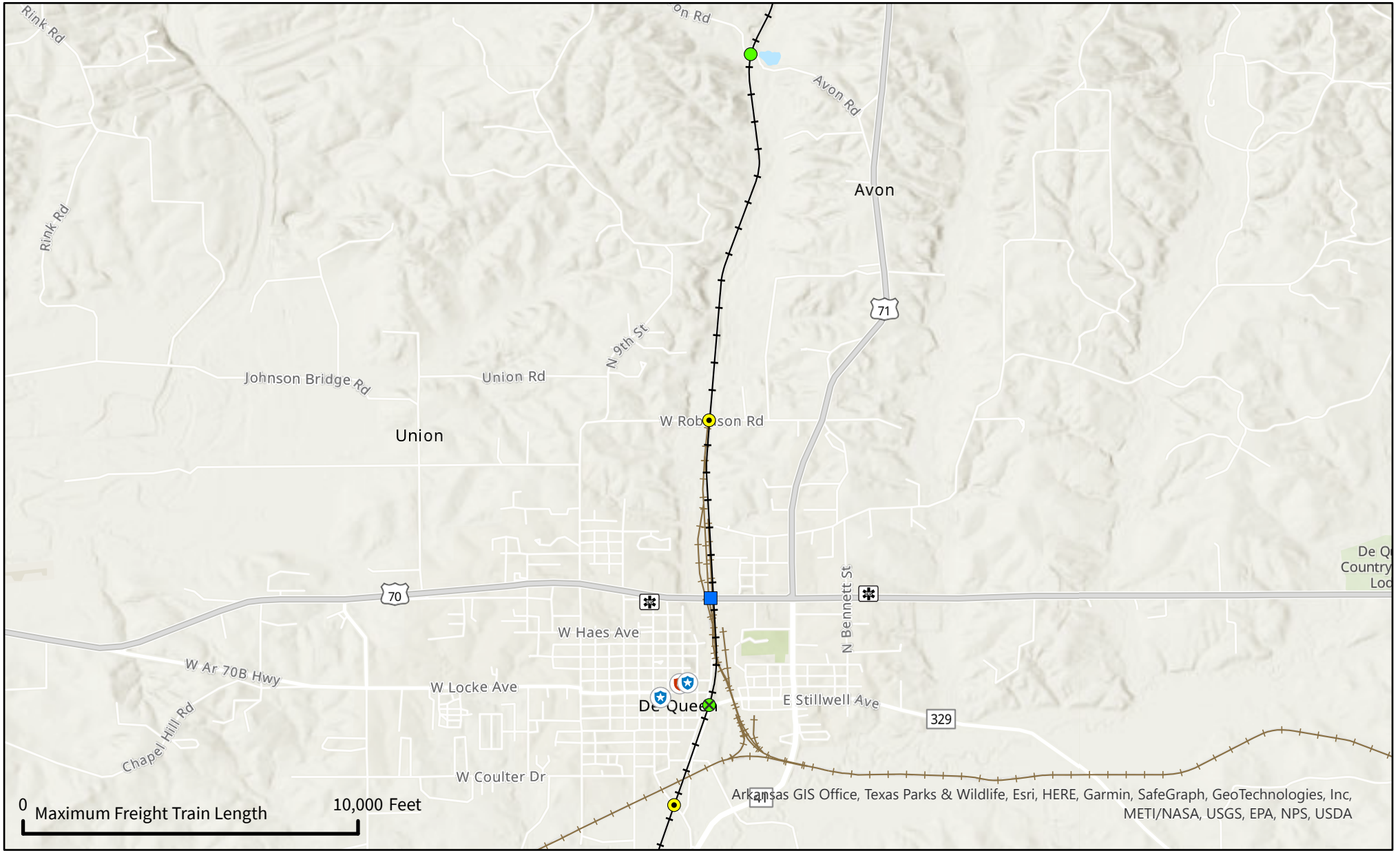


Emergency Services Routing Analysis
S of Gillham, AR

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

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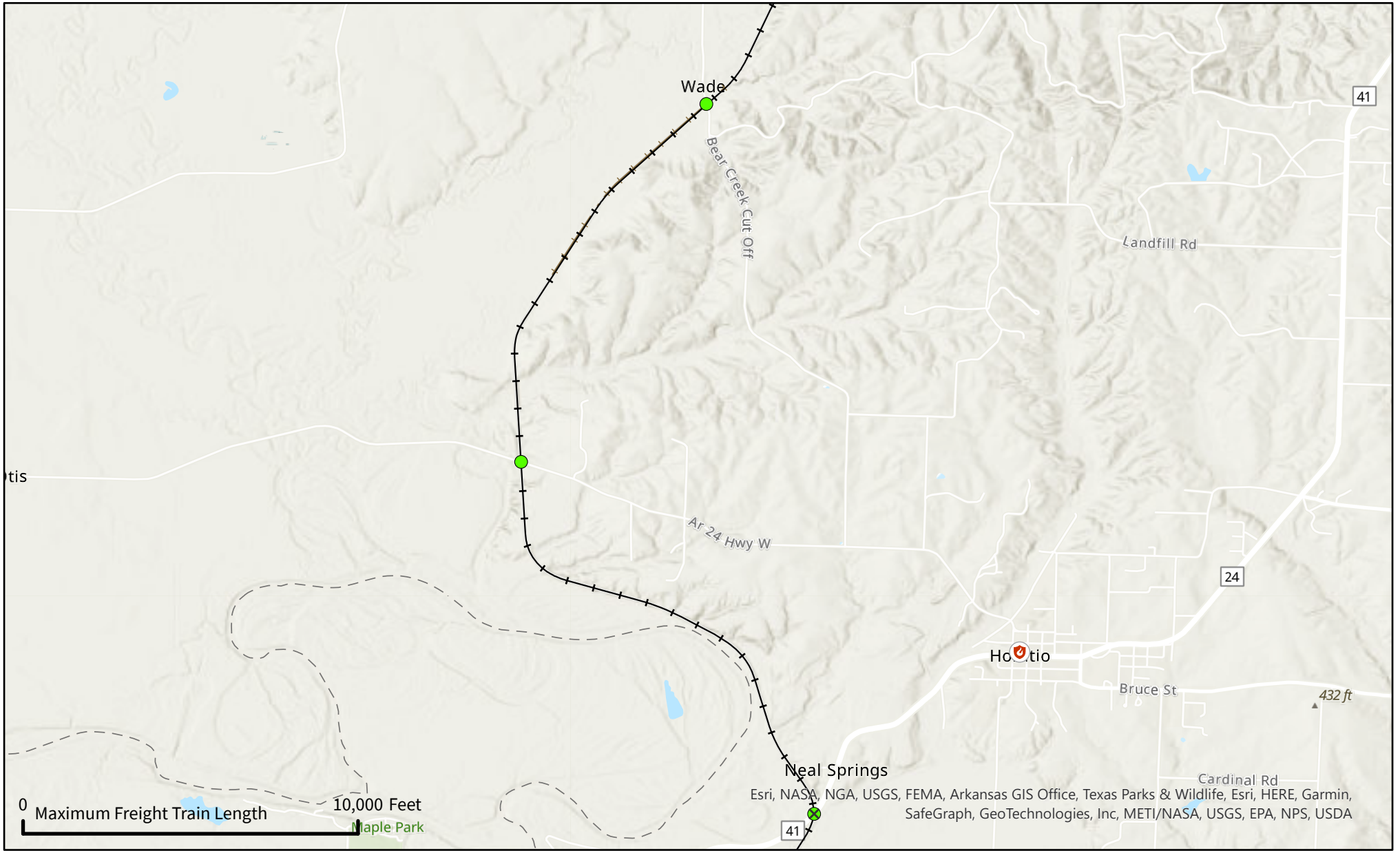
Emergency Services Routing Analysis

De Queen, AR

N

Scale:
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Miles
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Legend

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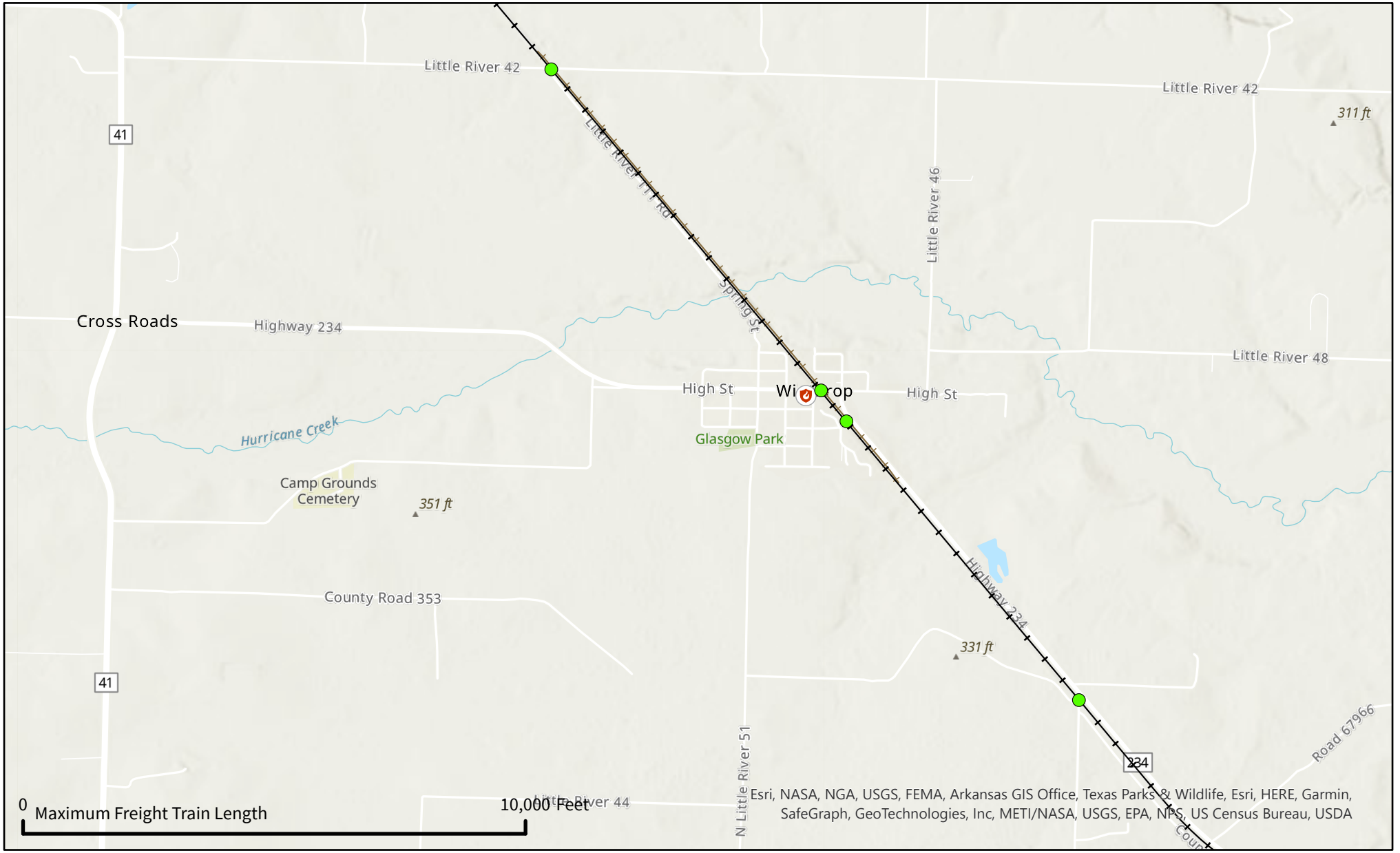


Emergency Services Routing Analysis
Near Horatio, AR

N

Scale:
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Miles
0 0.25 0.5



Legend

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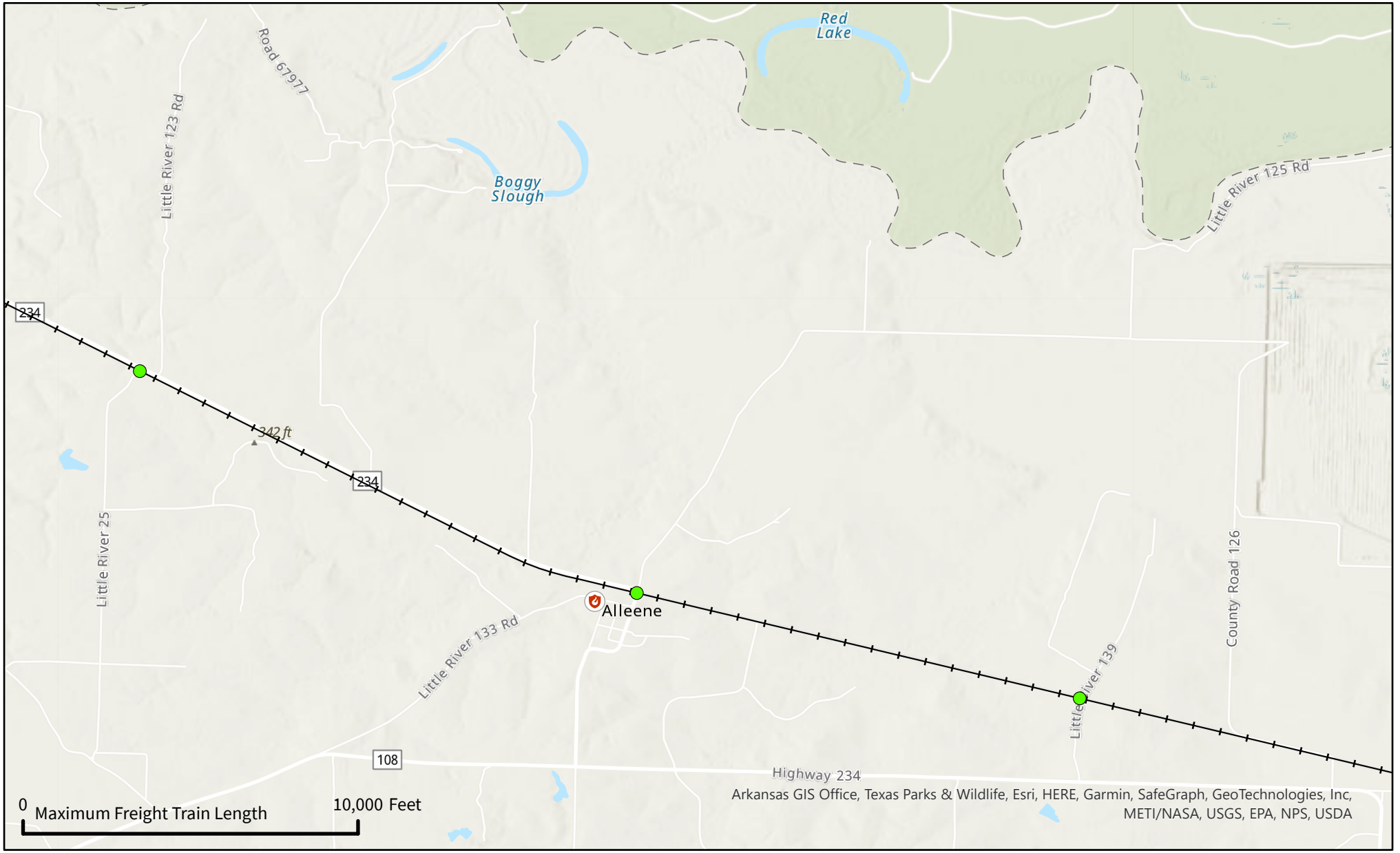


Emergency Services Routing Analysis
Winthrop, AR

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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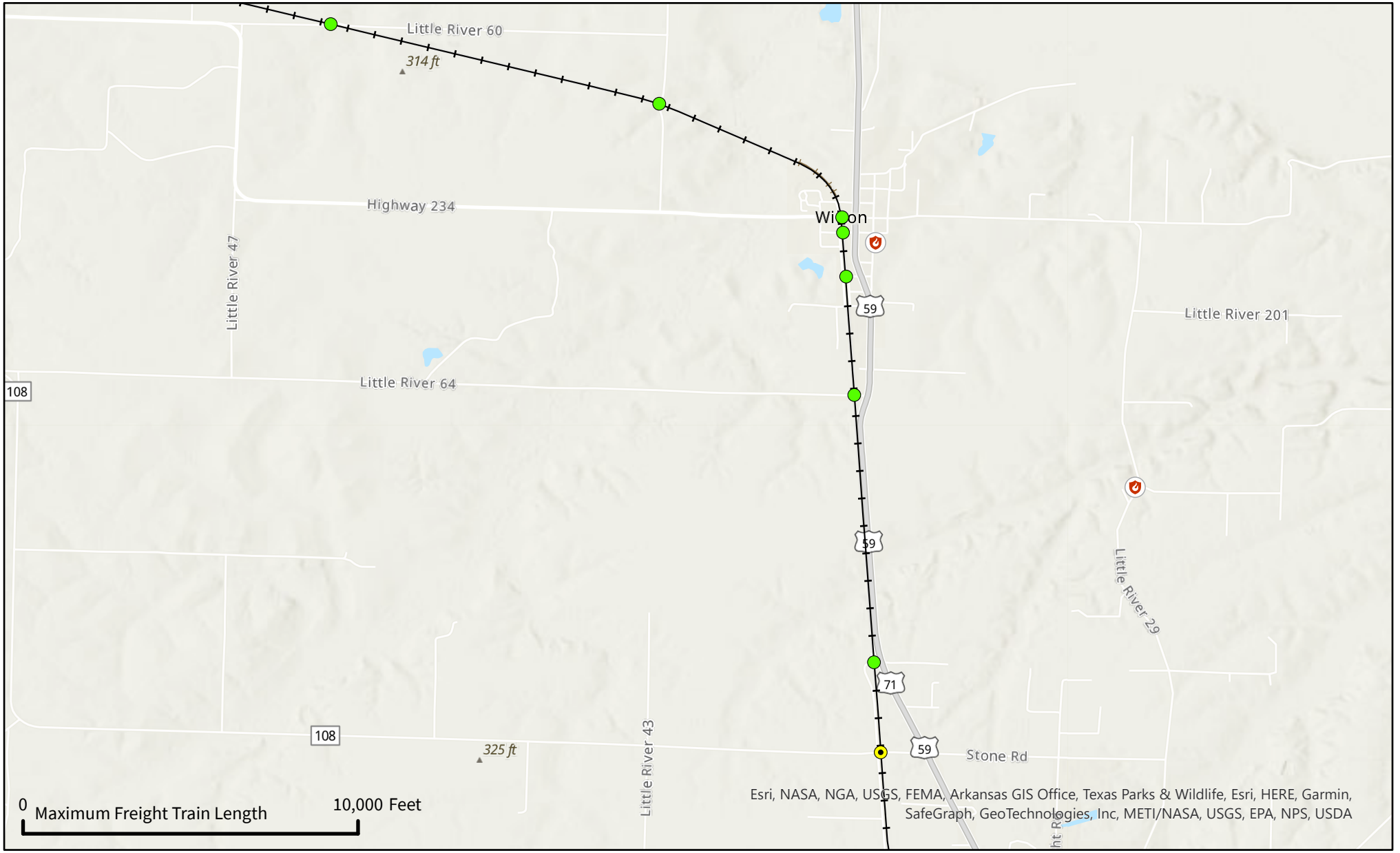


Emergency Services Routing Analysis
Alleene, AR

N

Scale:
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Miles
0 0.25 0.5



Legend

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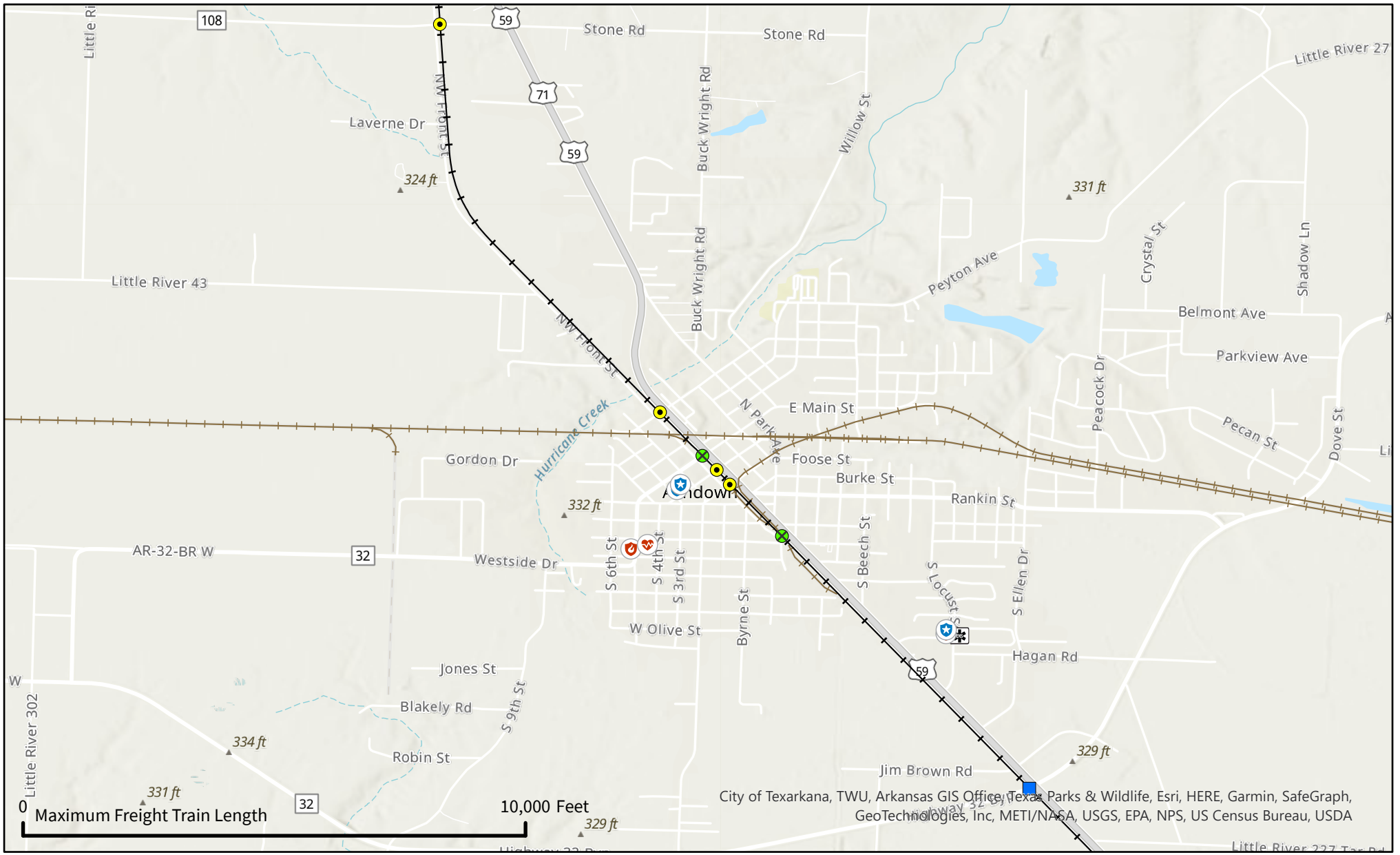


Emergency Services Routing Analysis
Wilton, AR

N

Scale:
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Miles
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Legend

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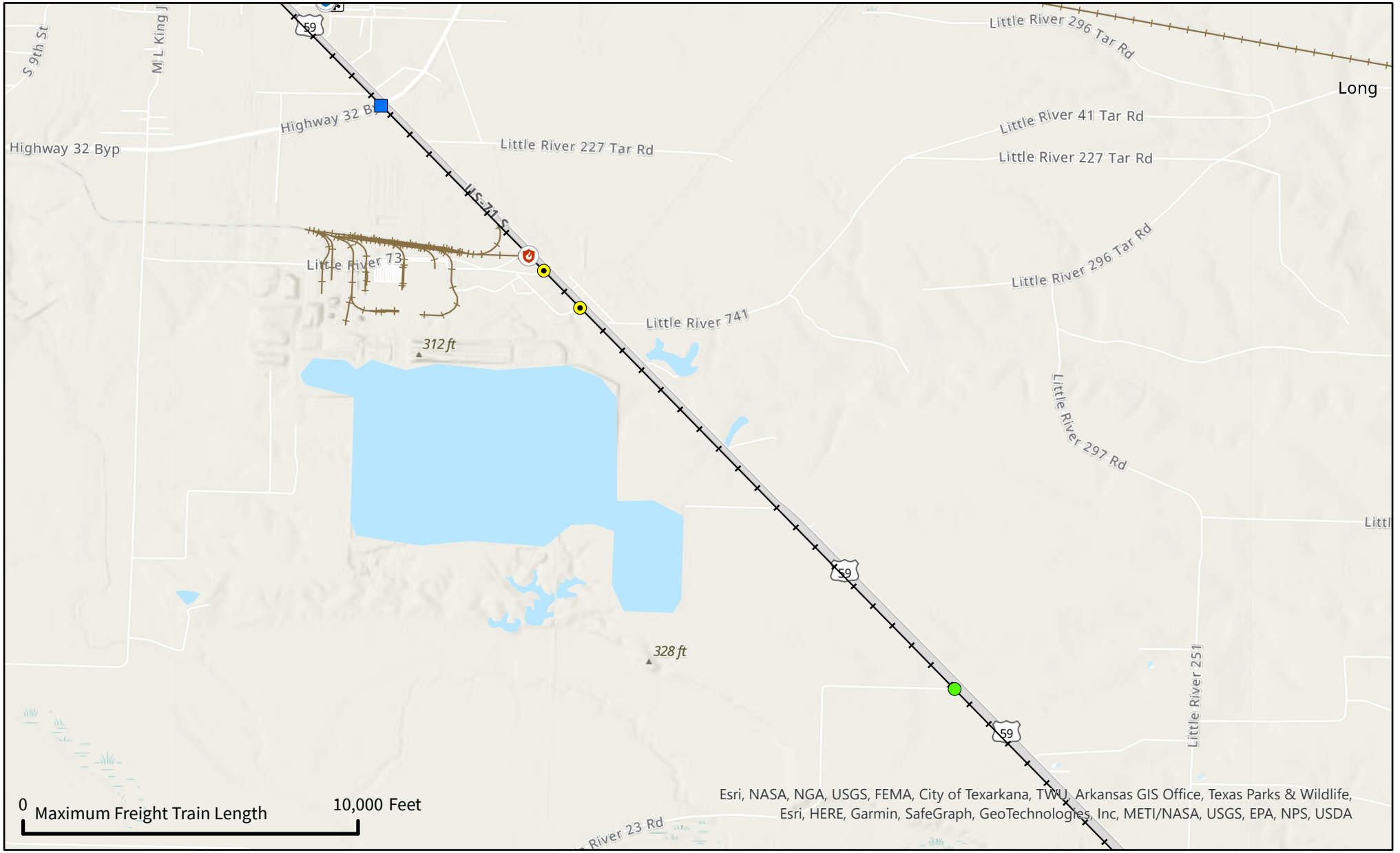


Emergency Services Routing Analysis
Ashdown, AR

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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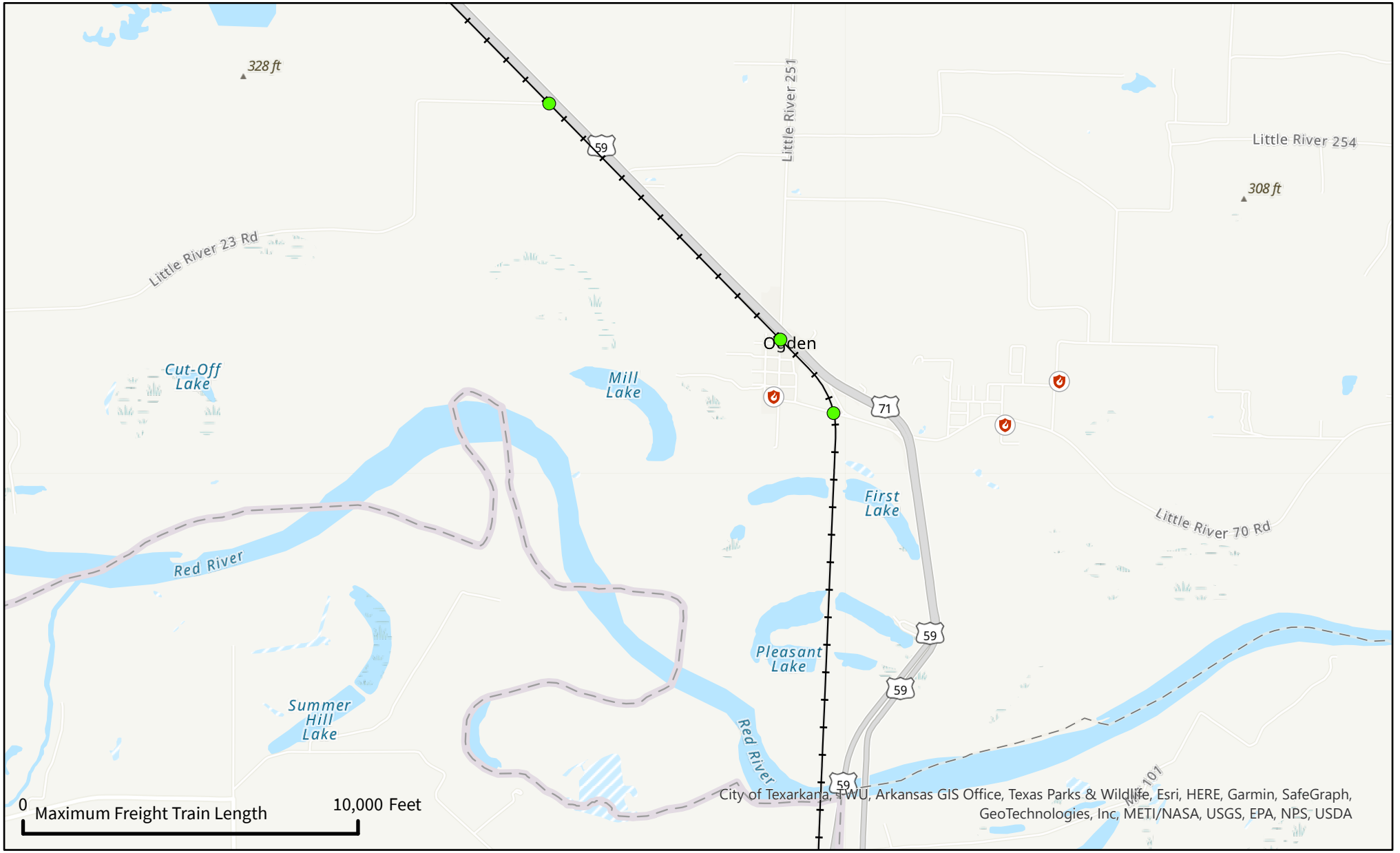


Emergency Services Routing Analysis
S of Ashdown, AR

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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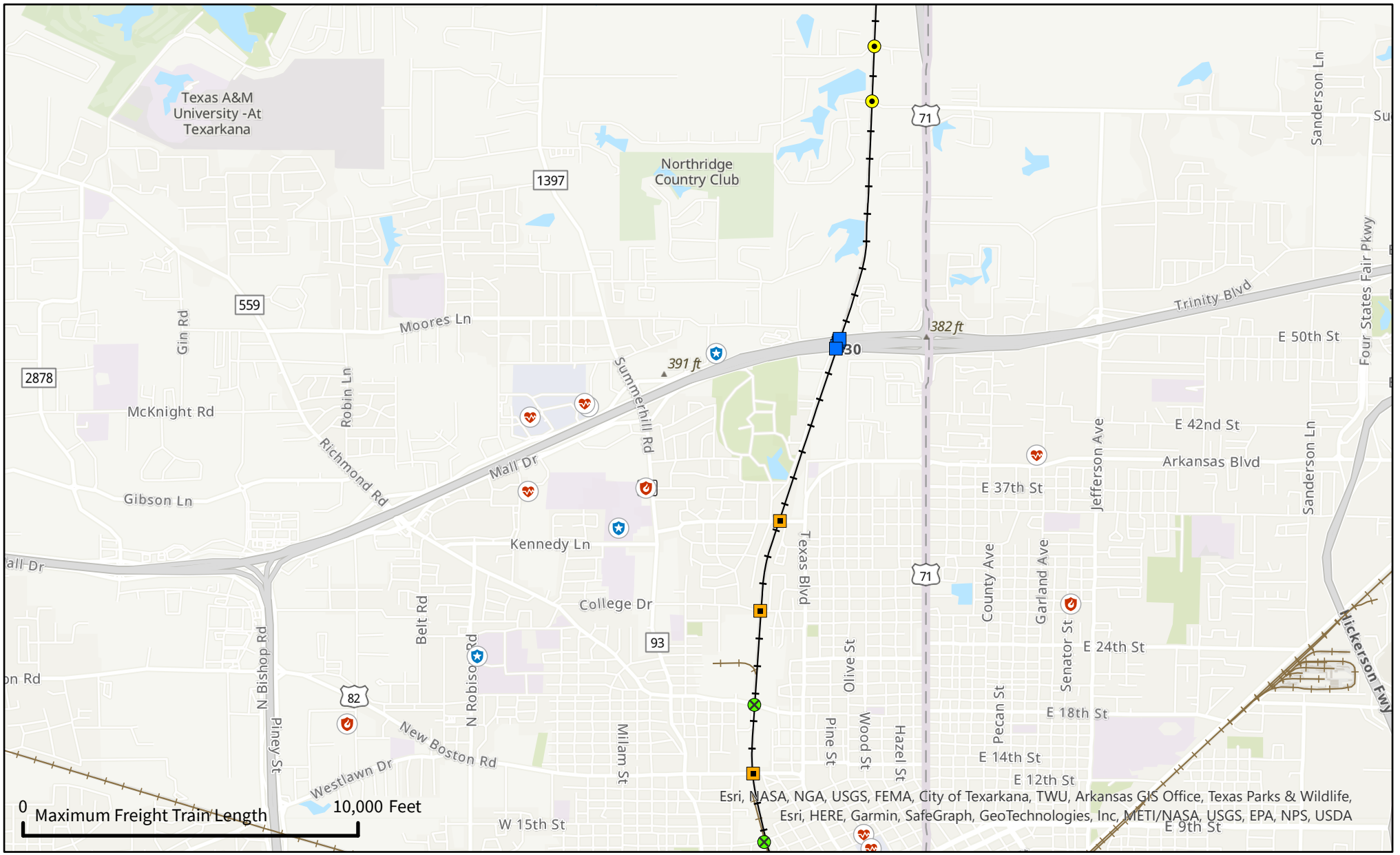
Emergency Services Routing Analysis

Ogden, AR

N

Scale:
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Miles
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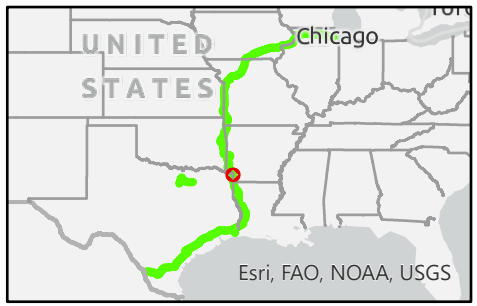
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- Other Tracks
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- EMS Dispatch
- Hospital
- Police

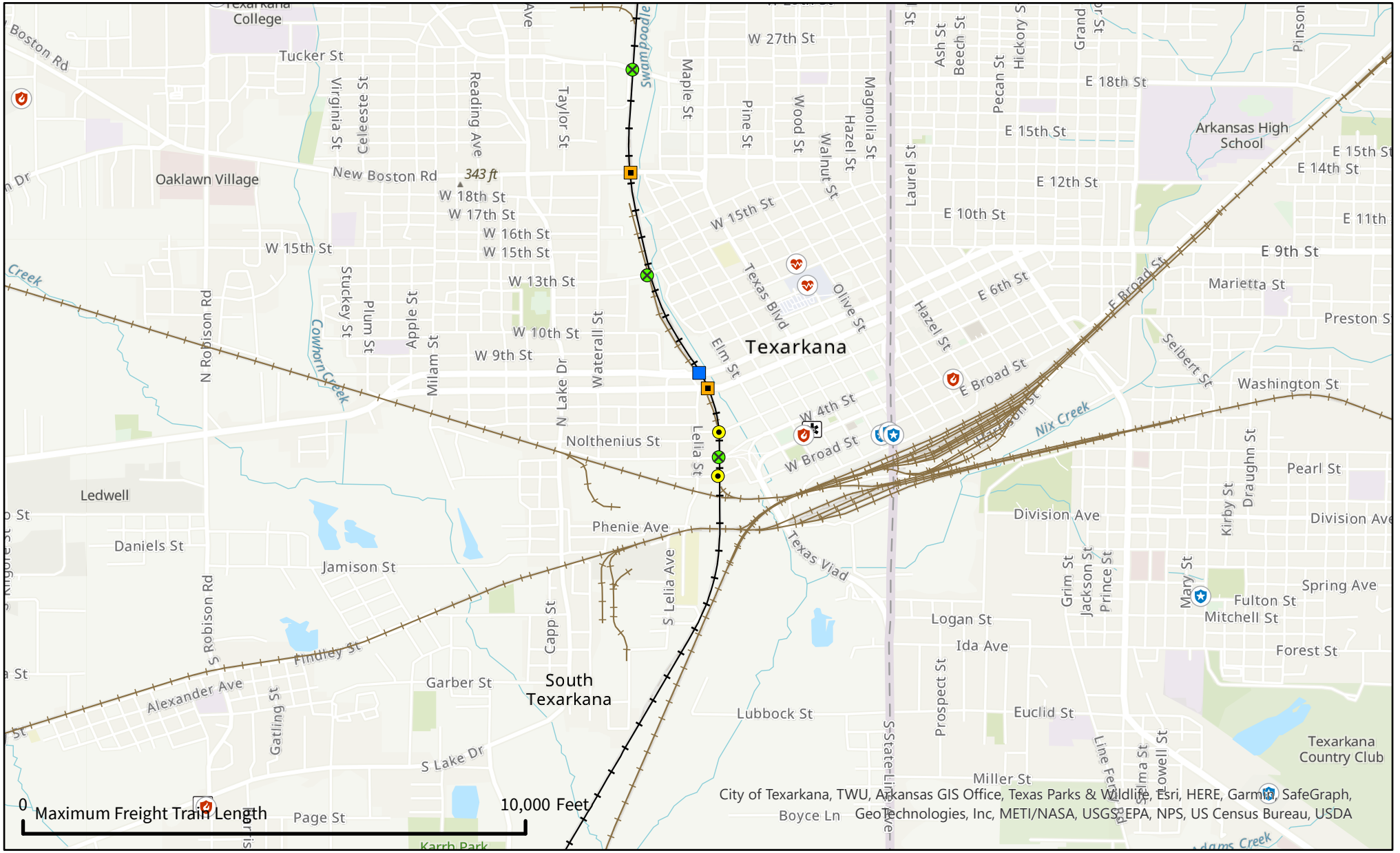


Emergency Services Routing Analysis
Texarkana, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



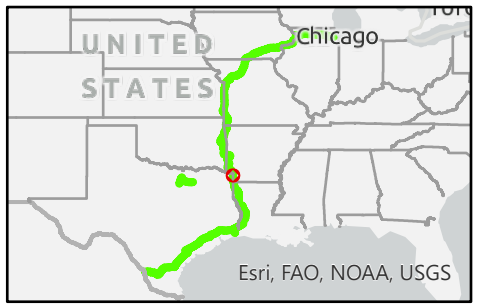
Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
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- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
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- Hospital
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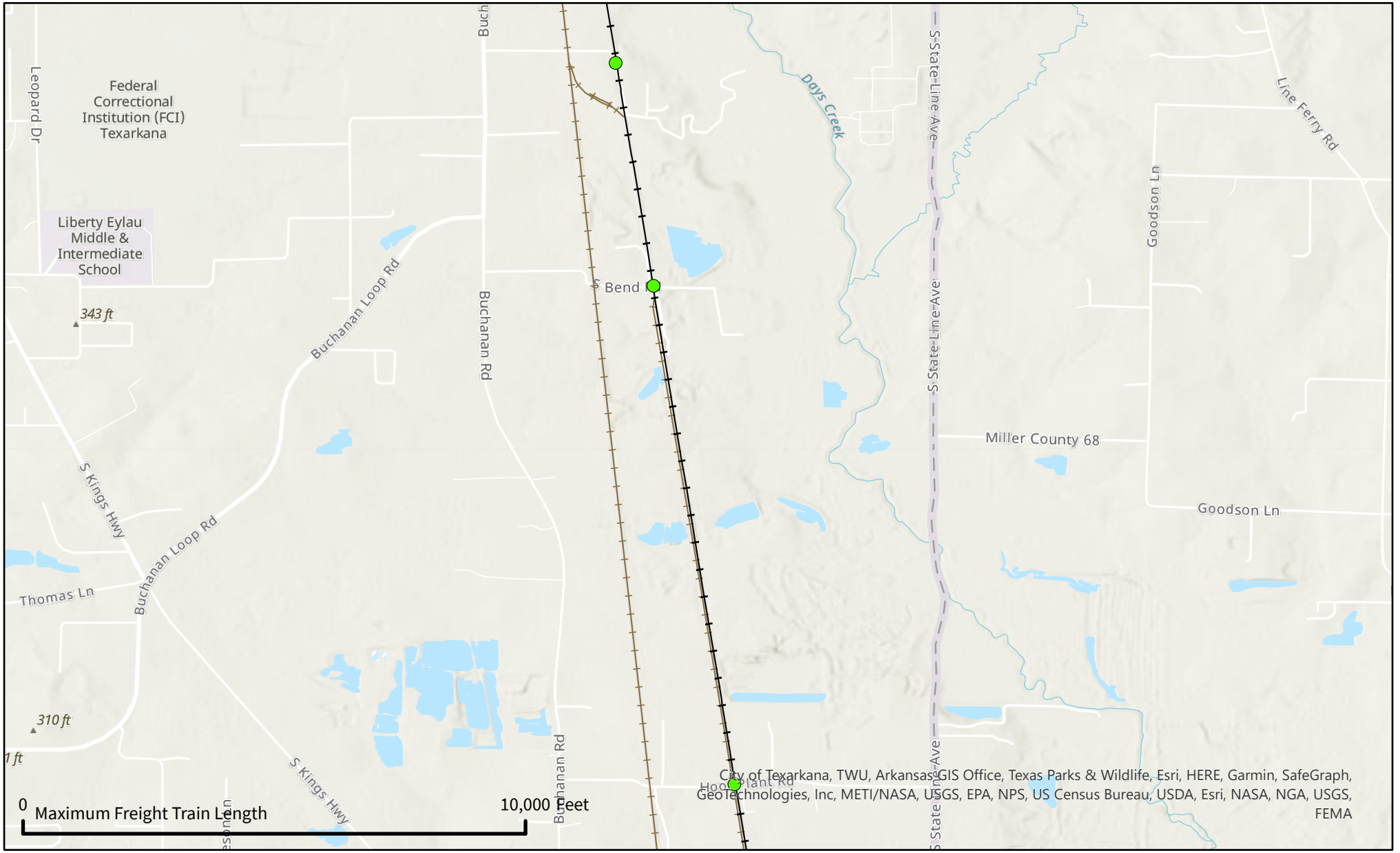


Emergency Services Routing Analysis
Texarkana, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



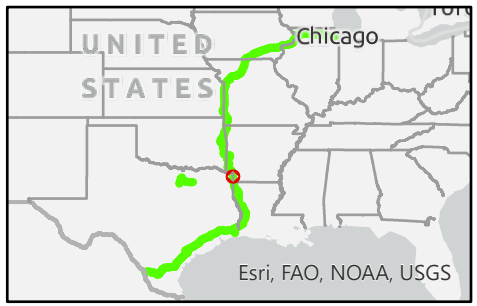
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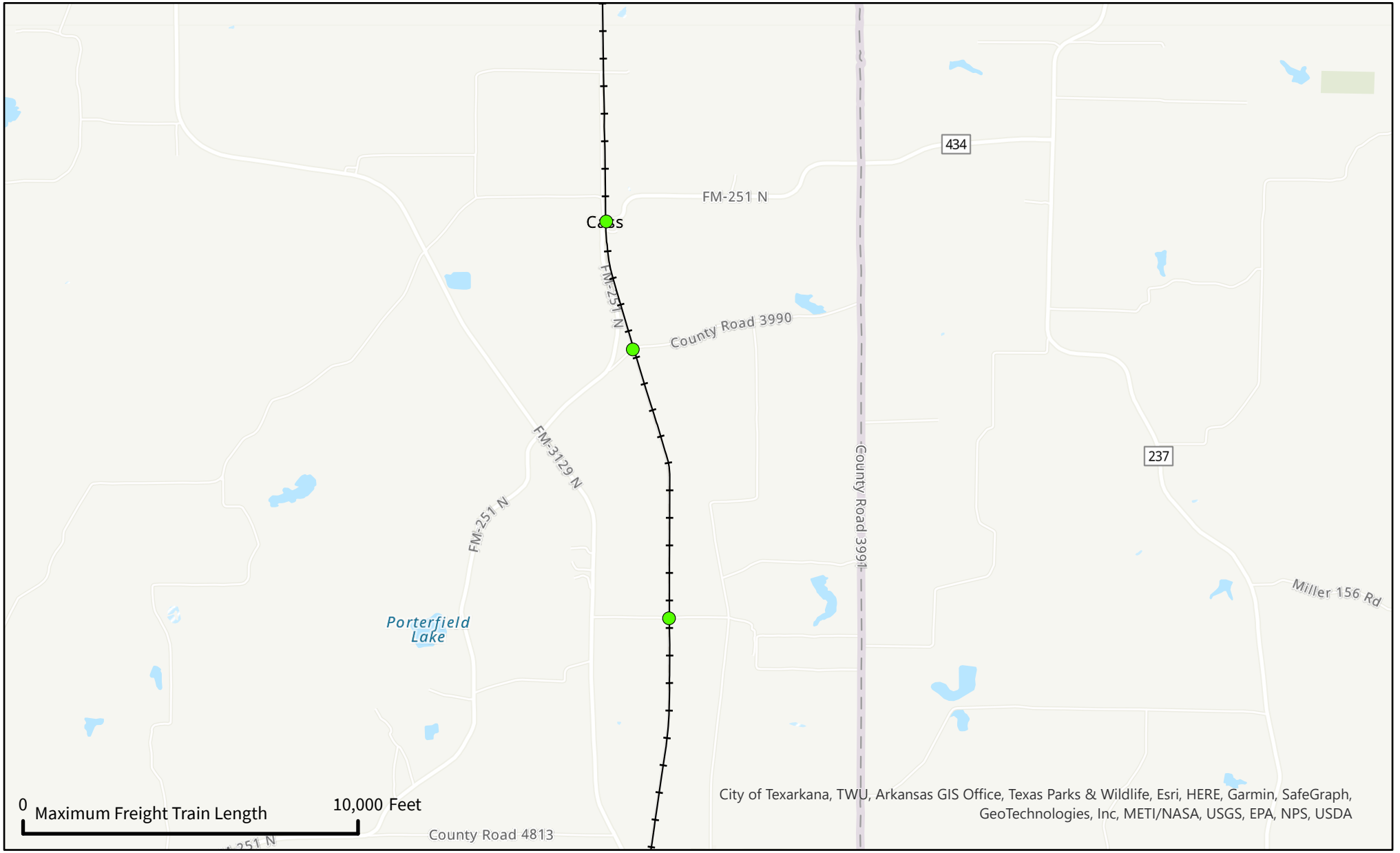


Emergency Services Routing Analysis
S of Texarkana, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



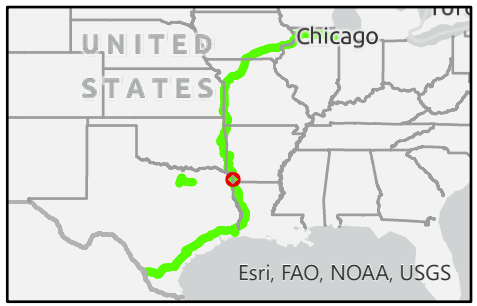
Legend

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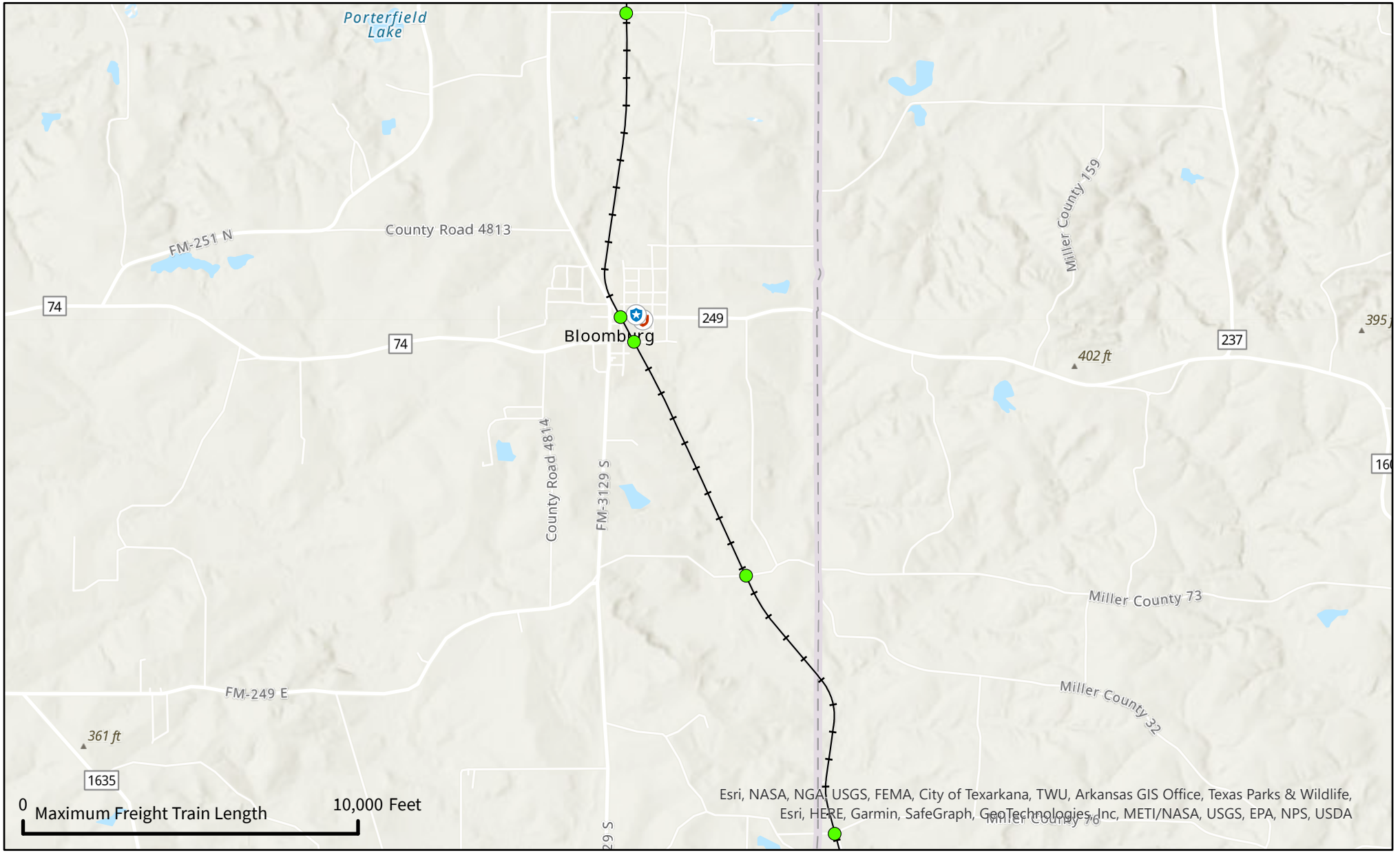
Emergency Services Routing Analysis

Cass, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



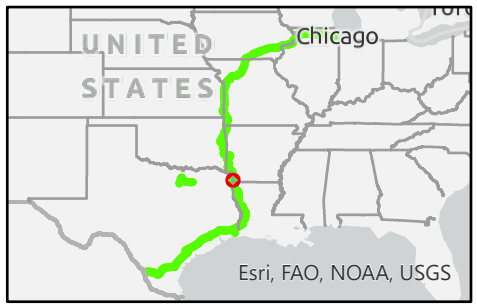
Legend

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- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

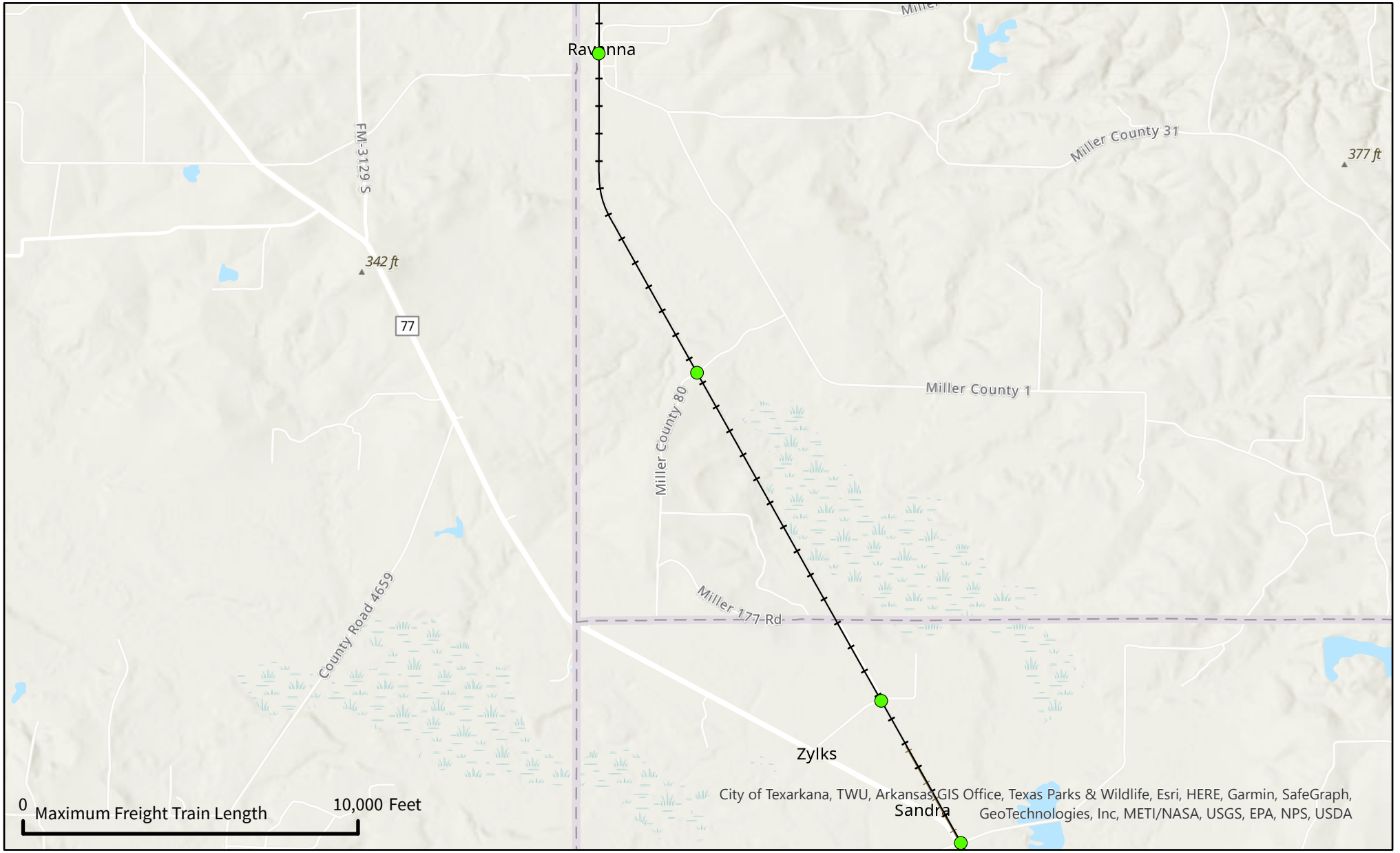


Emergency Services Routing Analysis
Bloomburg, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



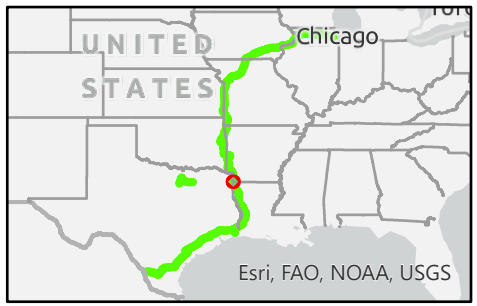
Legend

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- Hospital
- Police

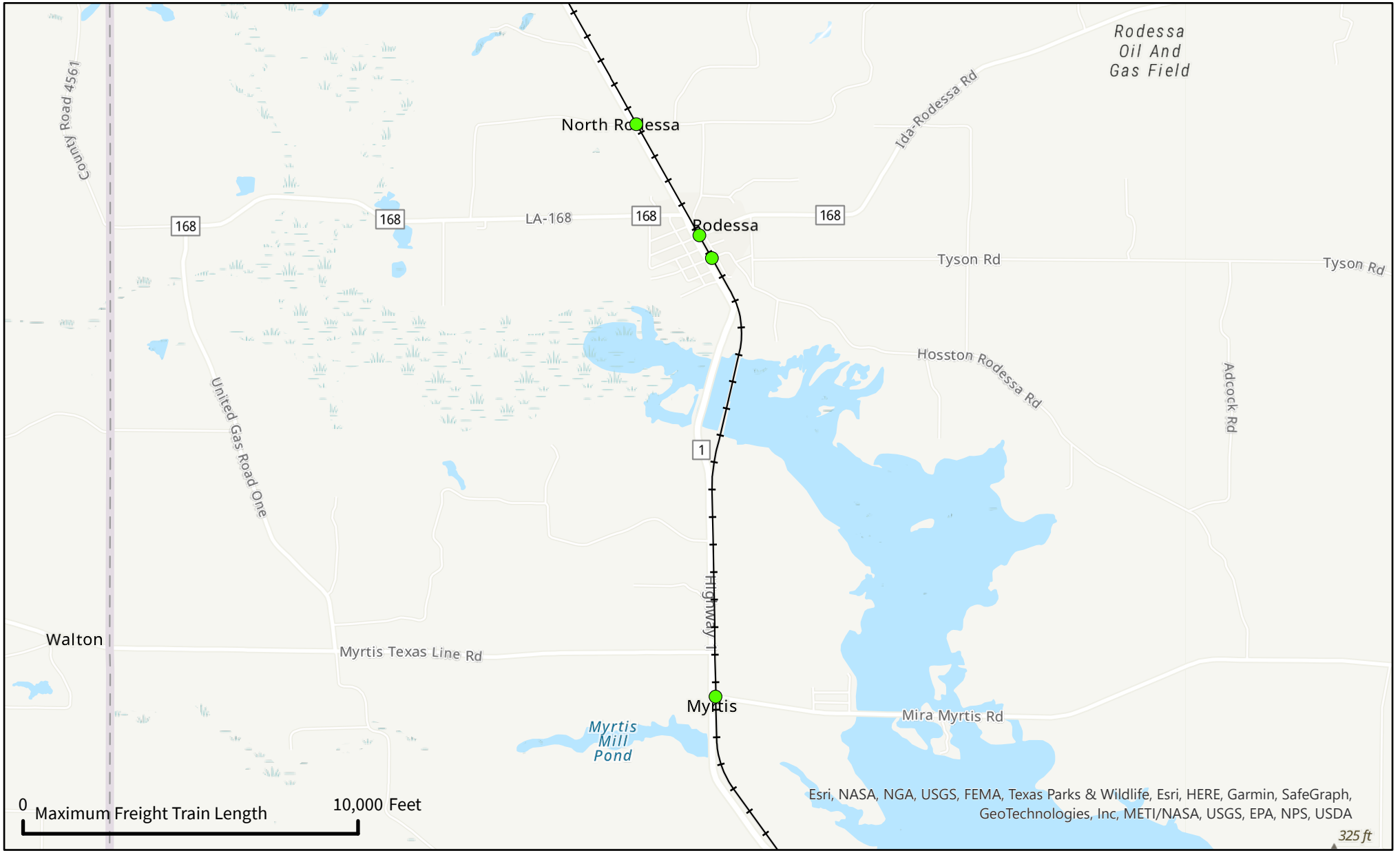


Emergency Services Routing Analysis
Ravanna, AR

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



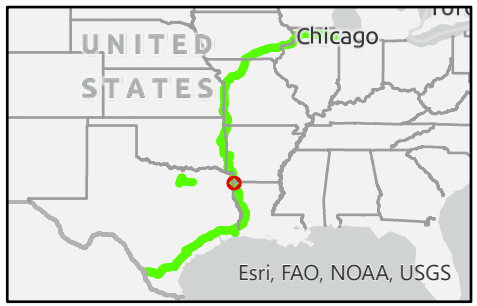
Legend

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- Hospital
- Police



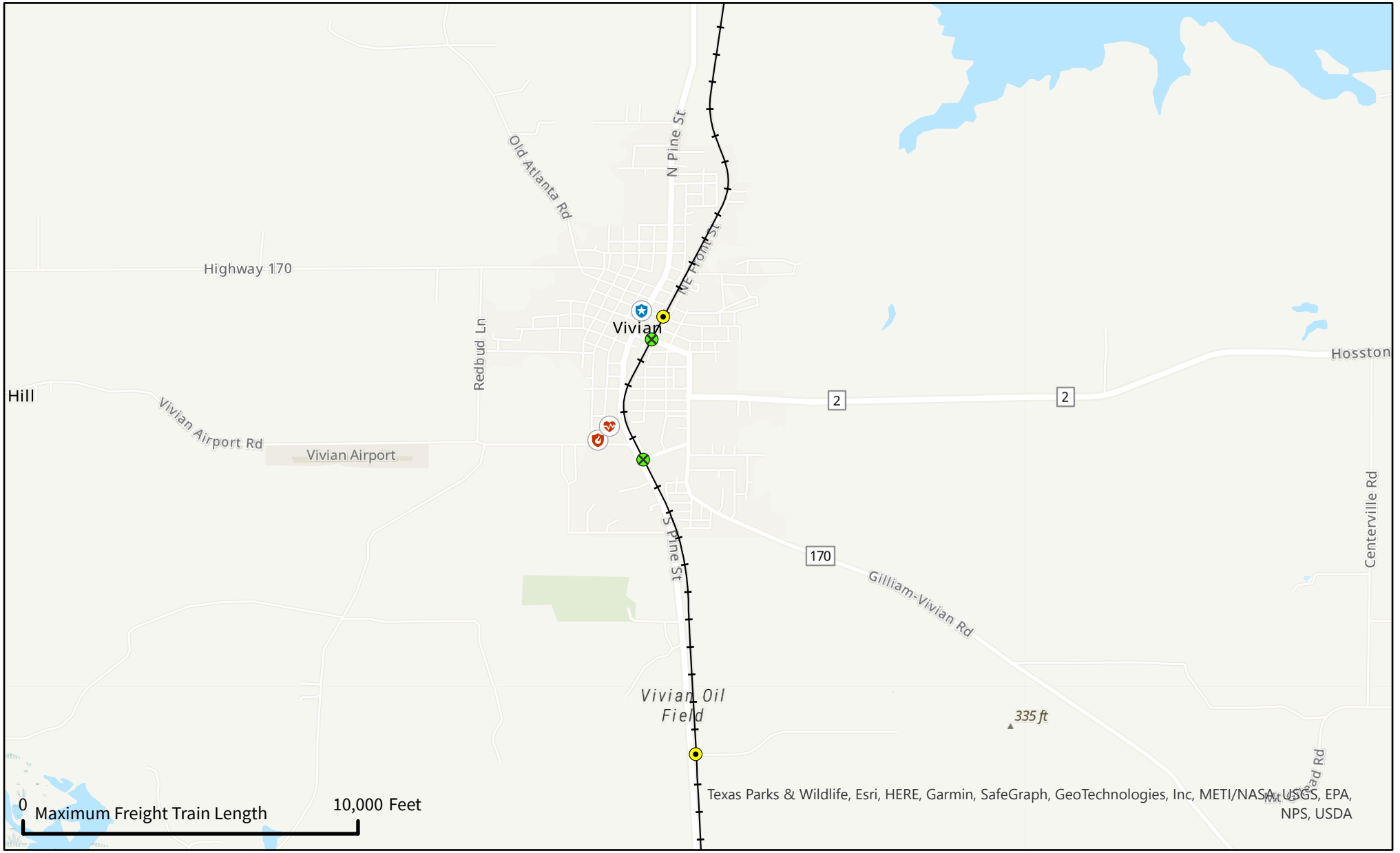
Emergency Services Routing Analysis

Rodessa, LA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



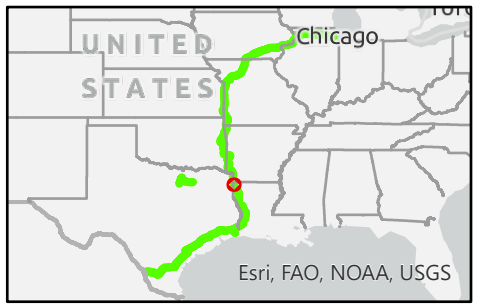
Legend

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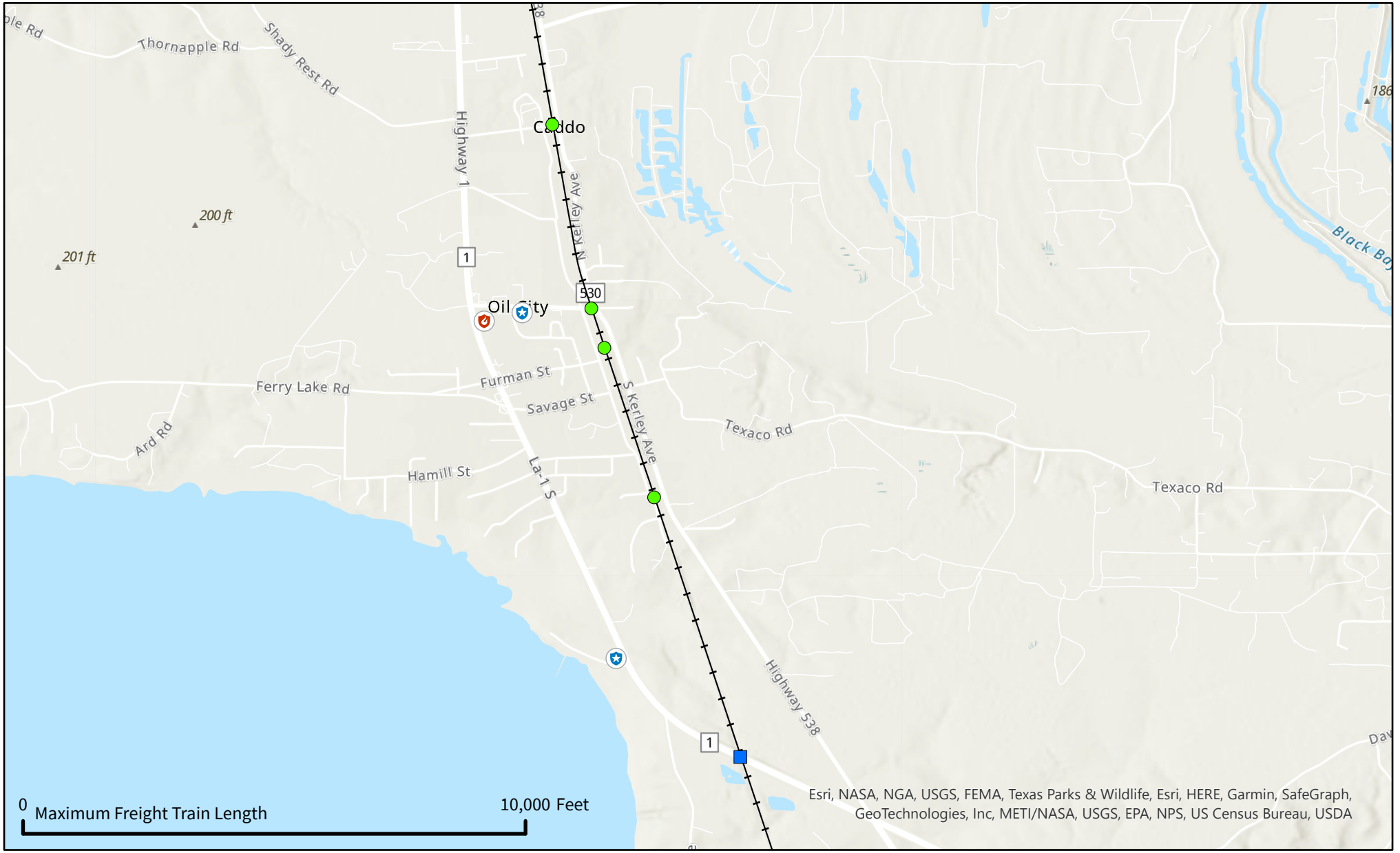


Emergency Services Routing Analysis
Vivian, LA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



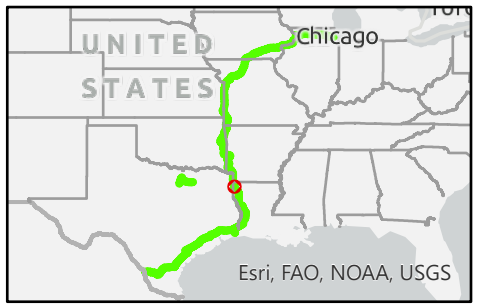
Legend

Crossing Position

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- Key Map: Analyzed Tracks
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- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis

Caddo, LA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



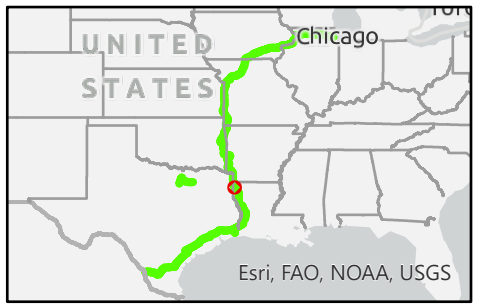
Legend

Crossing Position

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- Other Tracks
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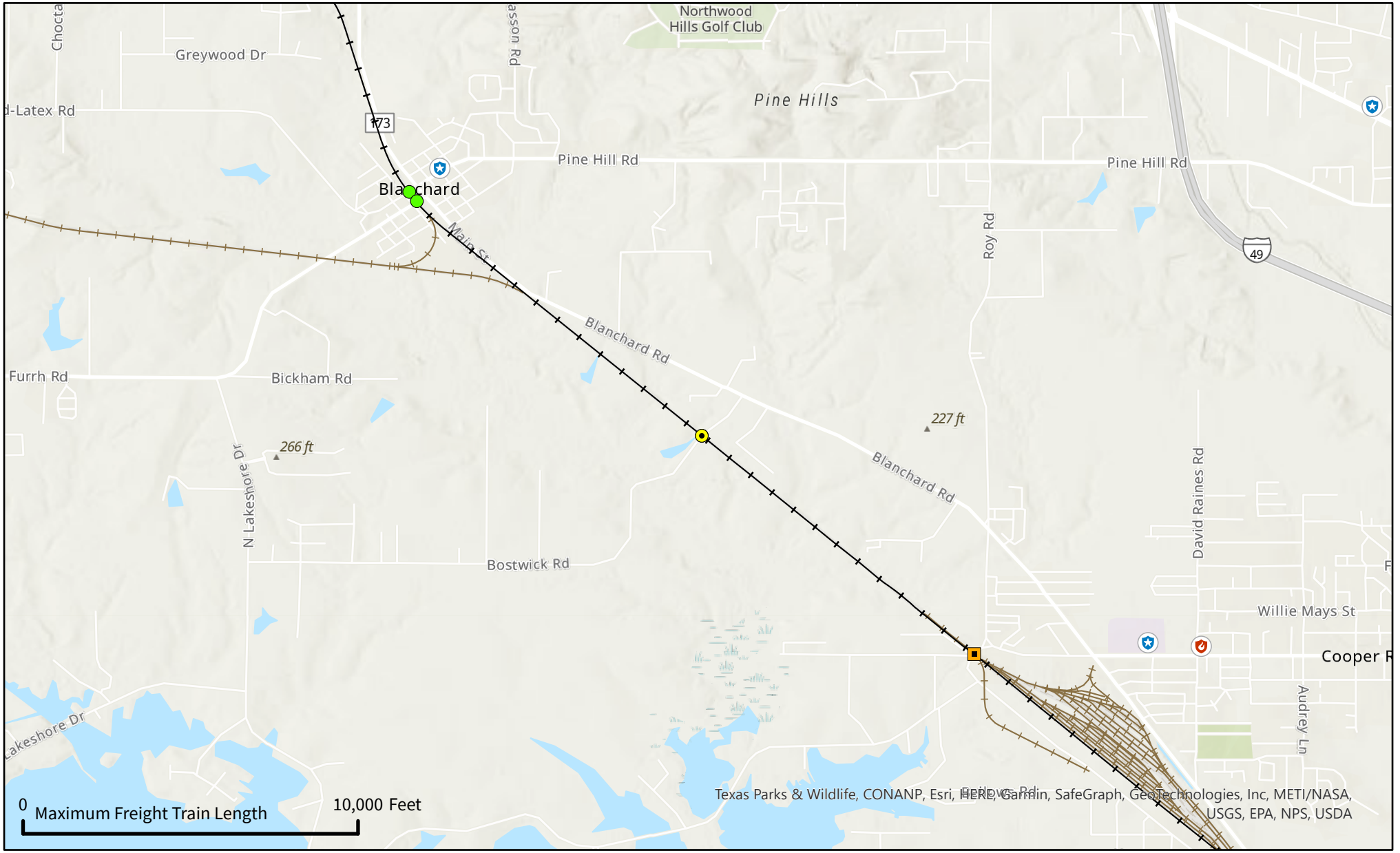


Emergency Services Routing Analysis
Mooringsport, LA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



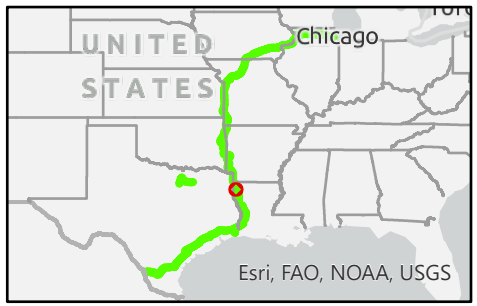
Legend

Crossing Position

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- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

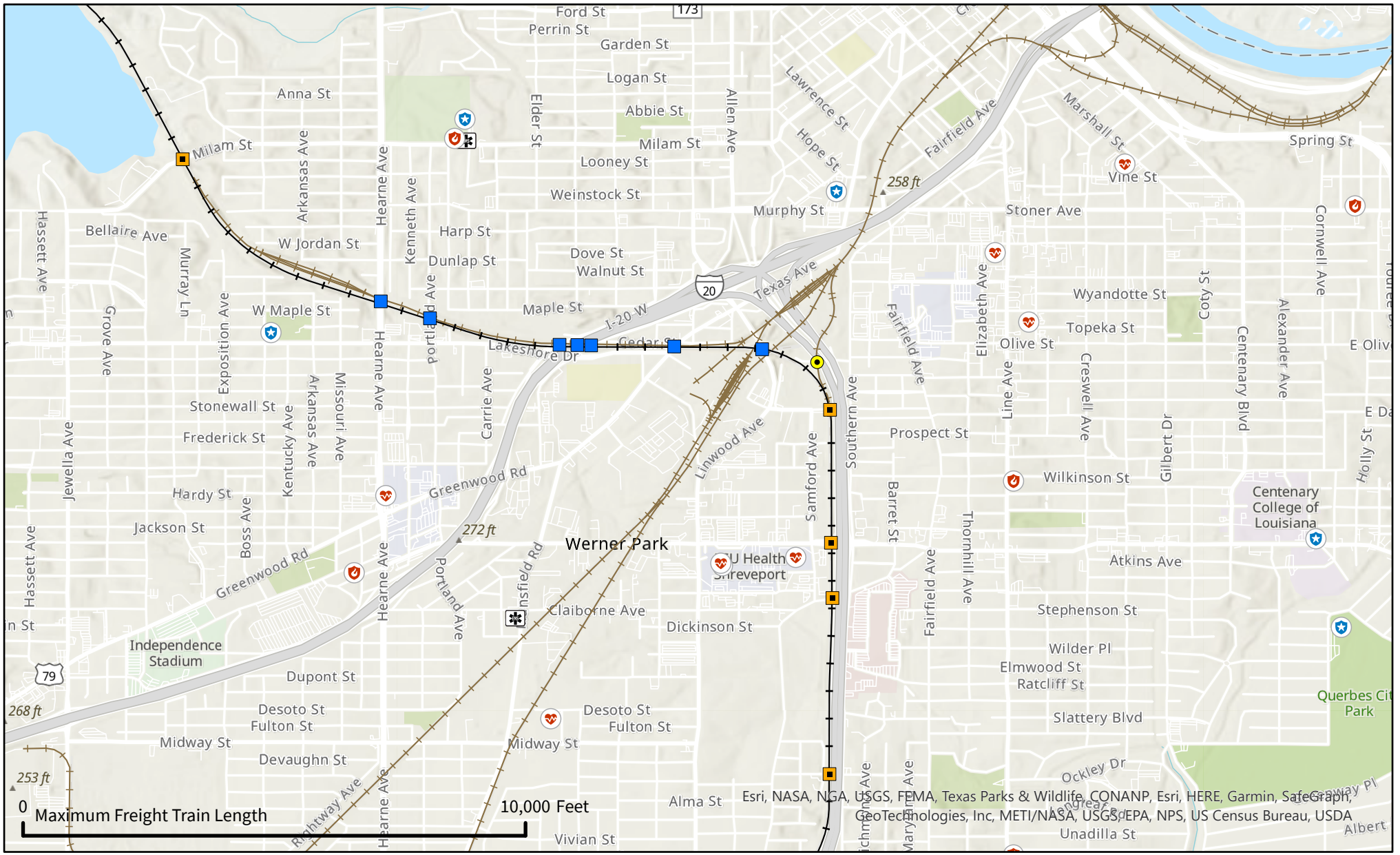


Emergency Services Routing Analysis
Blanchard, LA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



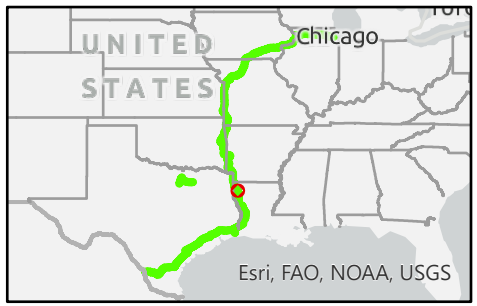
Legend

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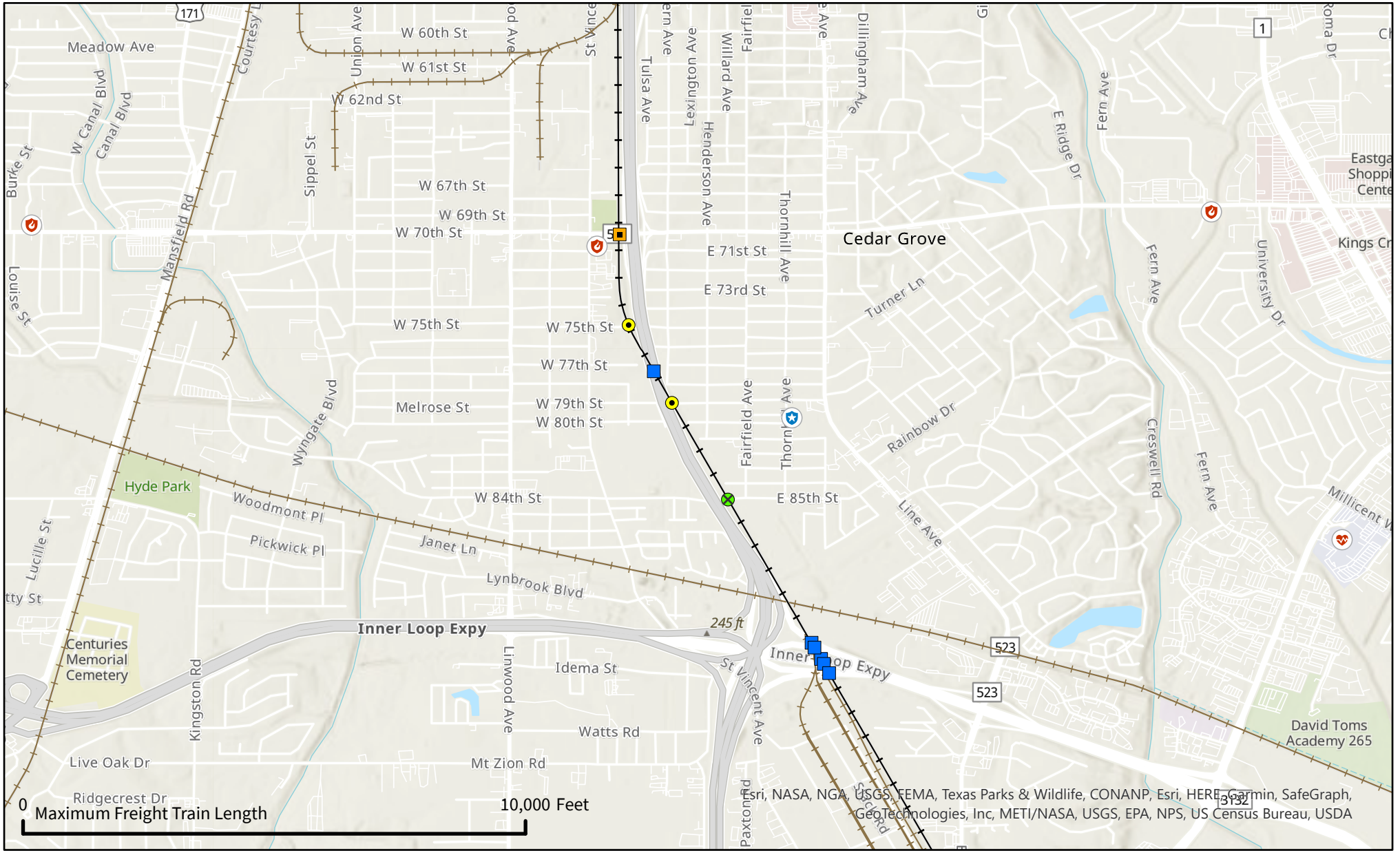


Emergency Services Routing Analysis
Shreveport, LA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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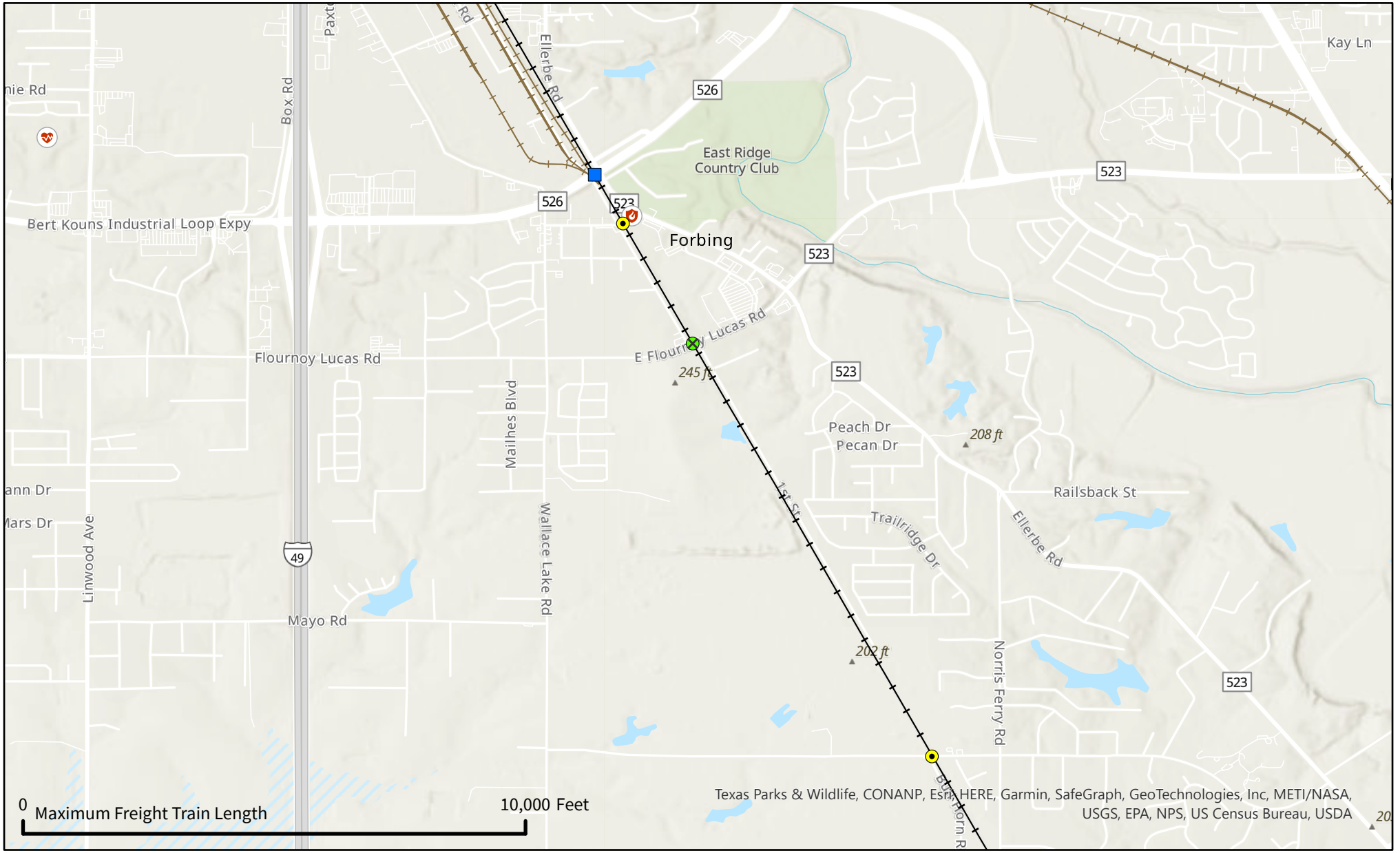


Emergency Services Routing Analysis
Shreveport, LA

N

Scale:
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Miles
0 0.25 0.5



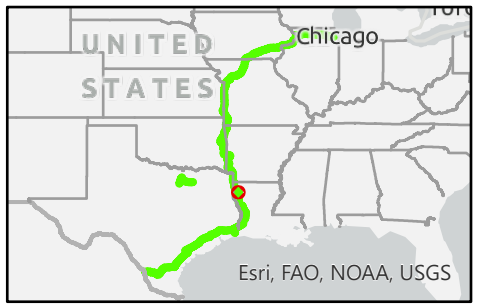
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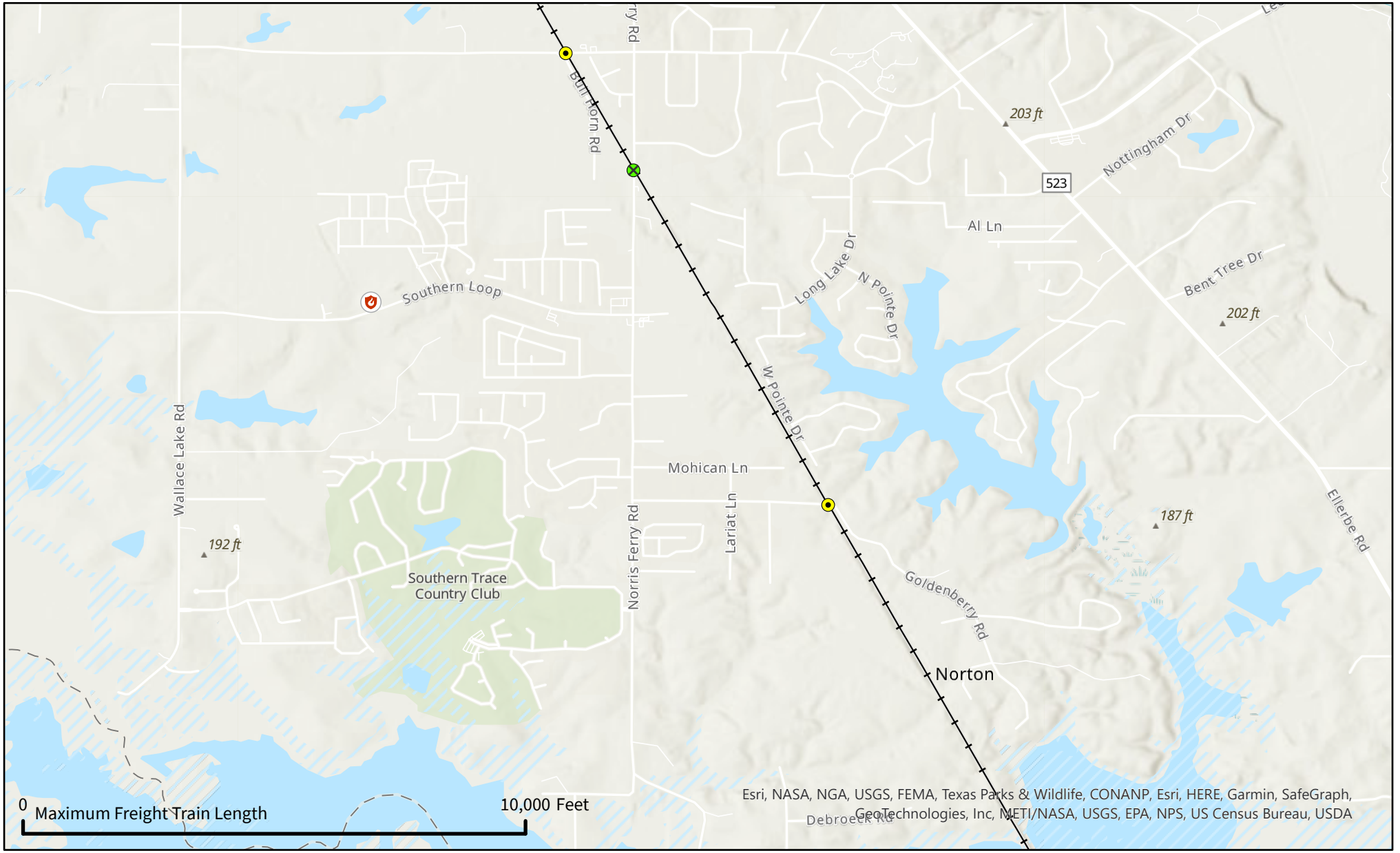


Emergency Services Routing Analysis
S of Shreveport, LA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



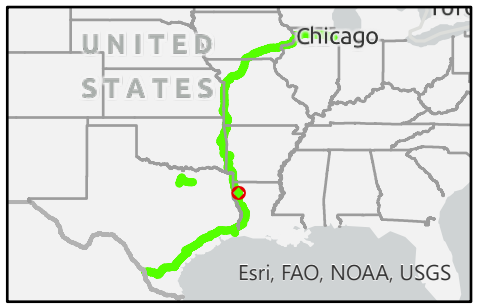
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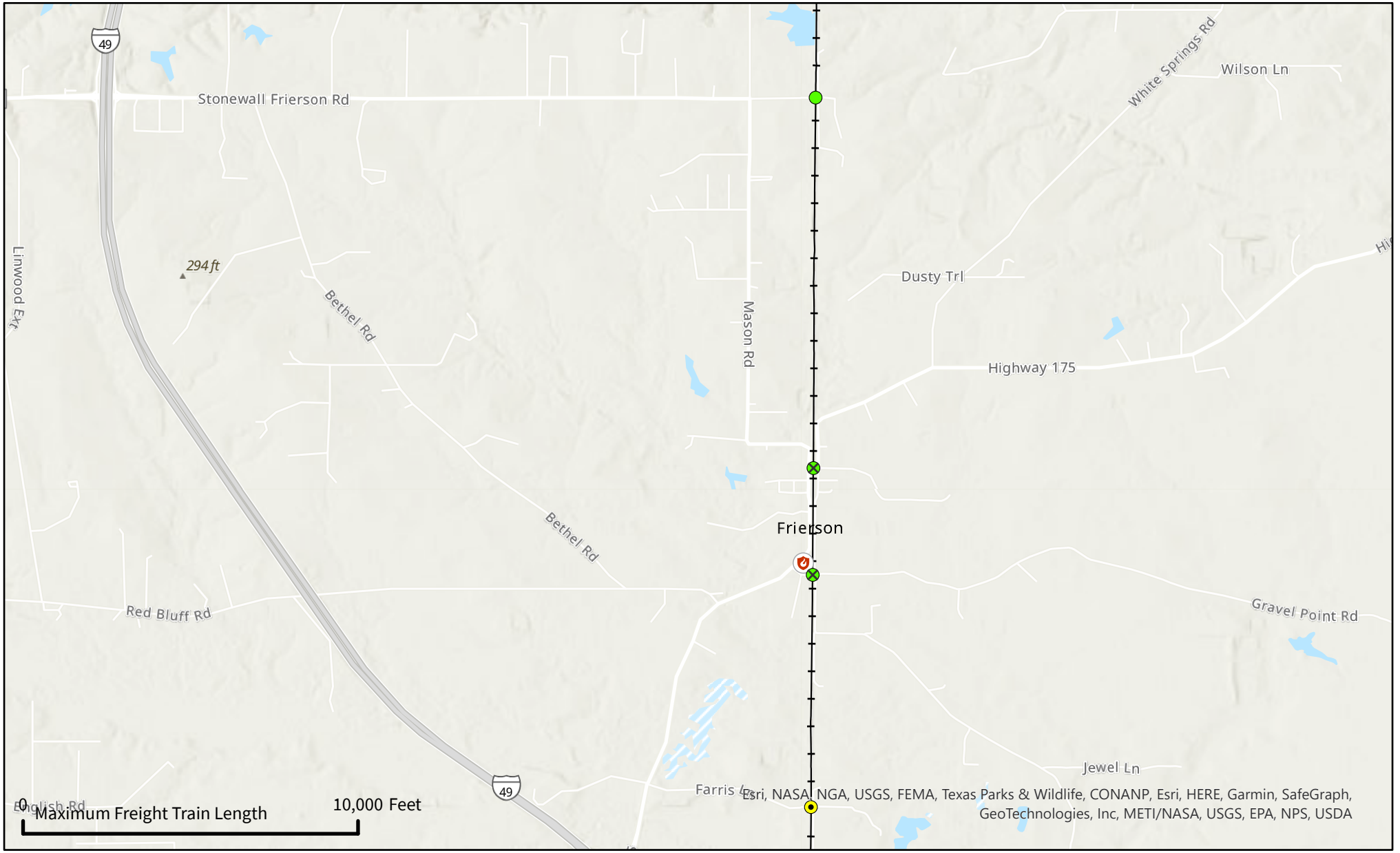


Emergency Services Routing Analysis
S of Shreveport, LA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



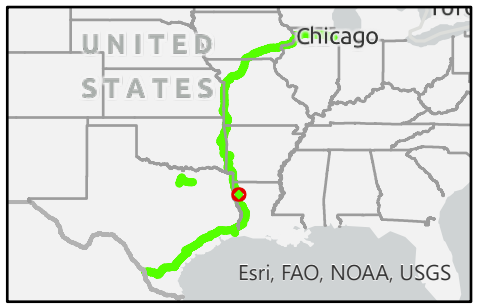
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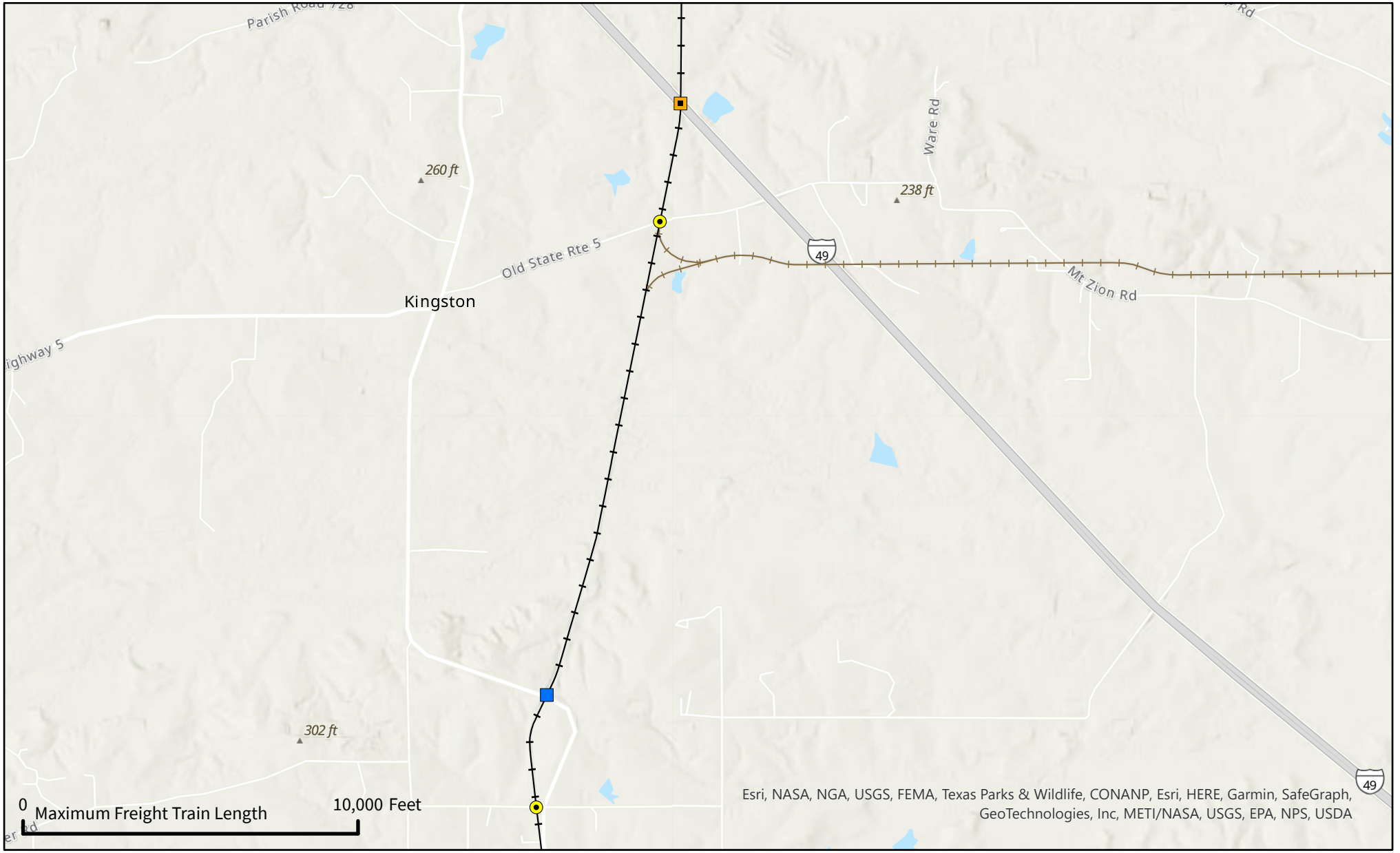


Emergency Services Routing Analysis
Frierson, LA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



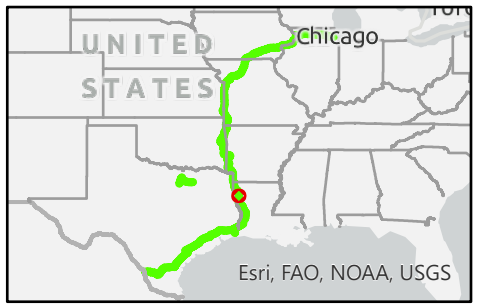
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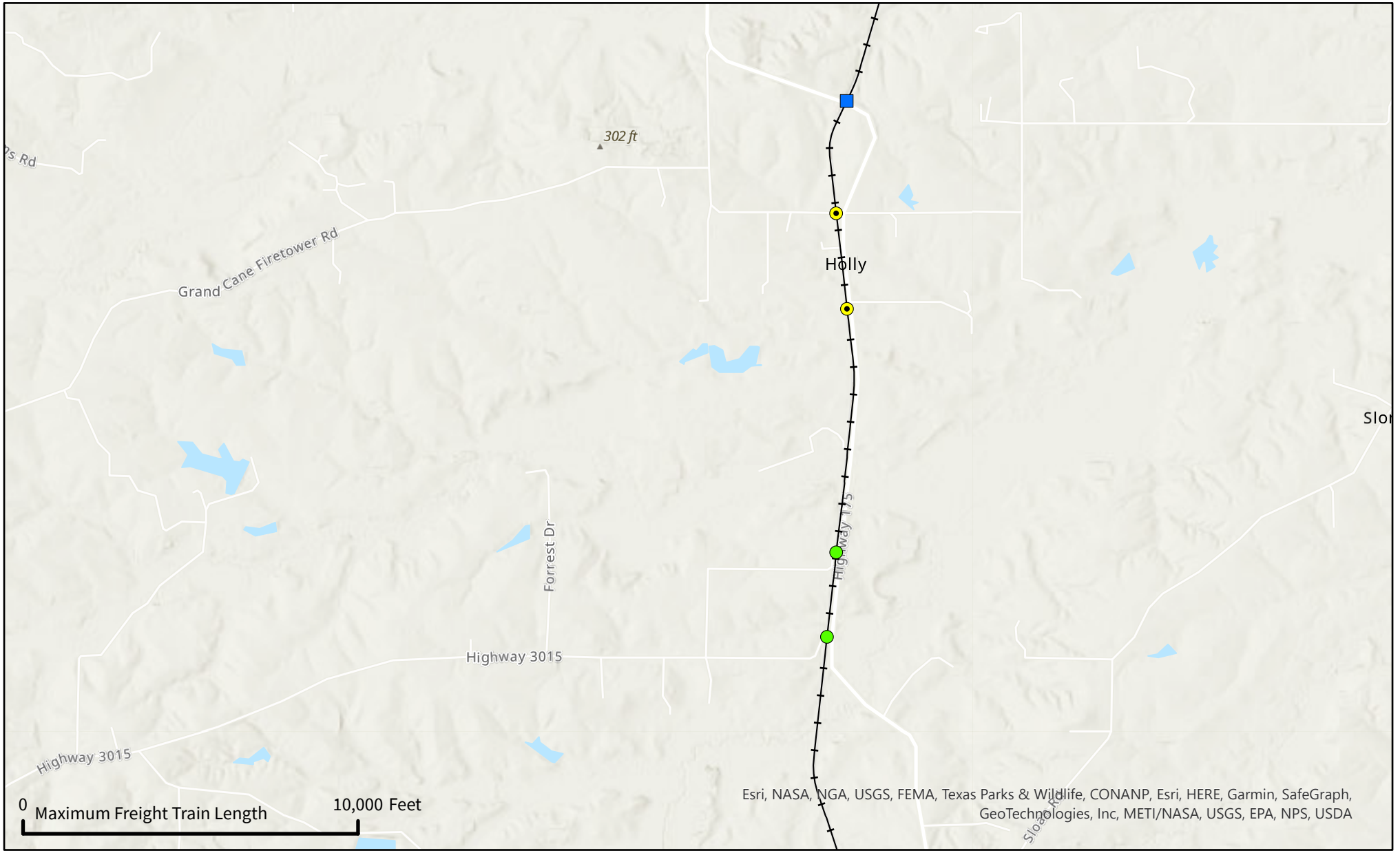


Emergency Services Routing Analysis
Kingston, LA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



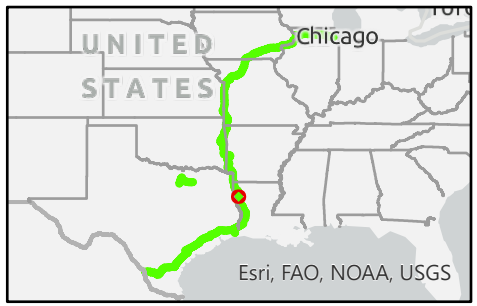
Legend

Crossing Position

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- Other Tracks
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- EMS Dispatch
- Hospital
- Police



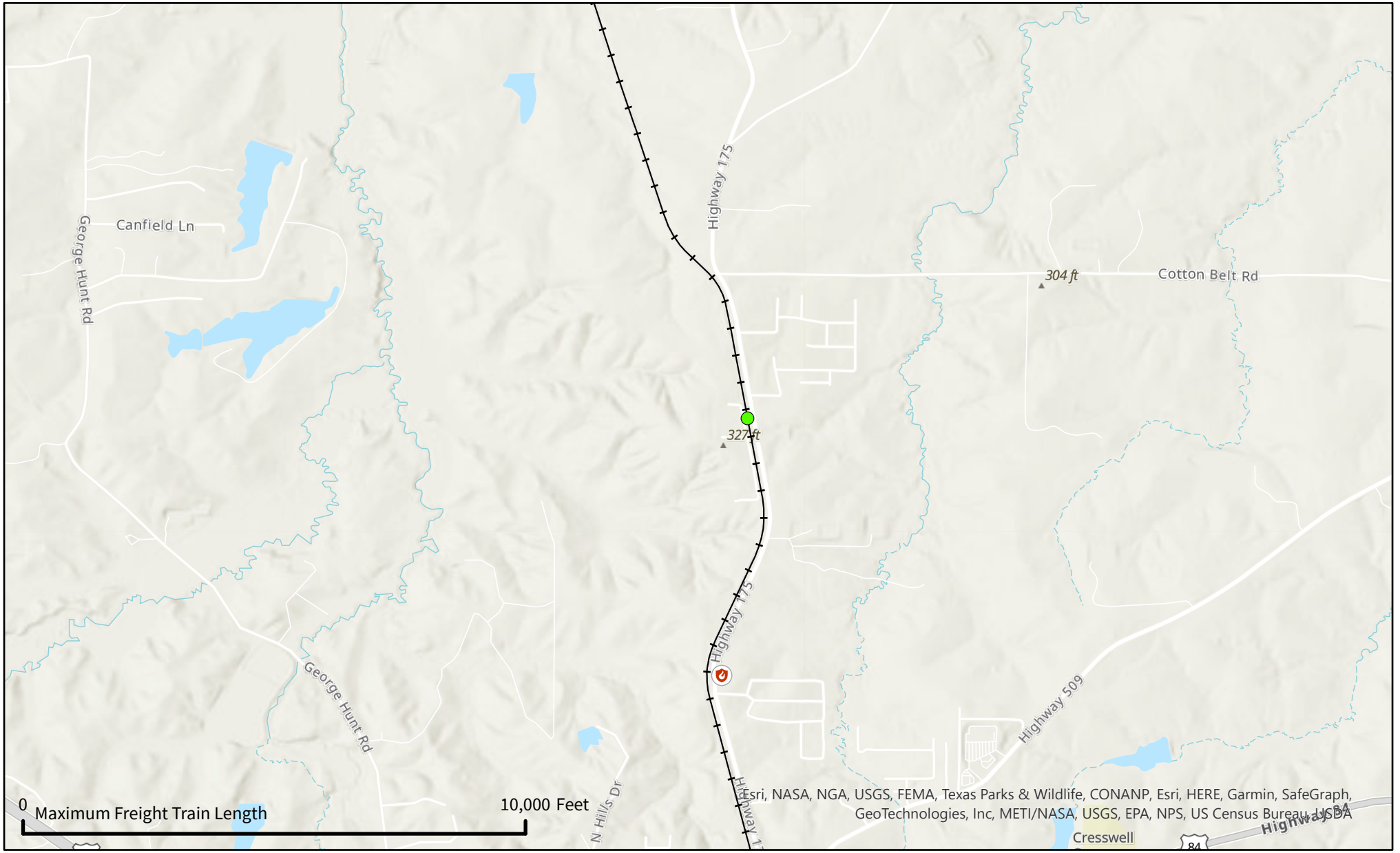
Emergency Services Routing Analysis

Holly, LA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



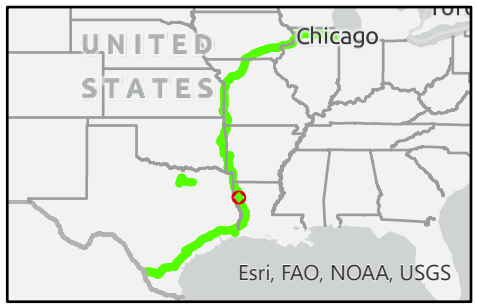
Legend

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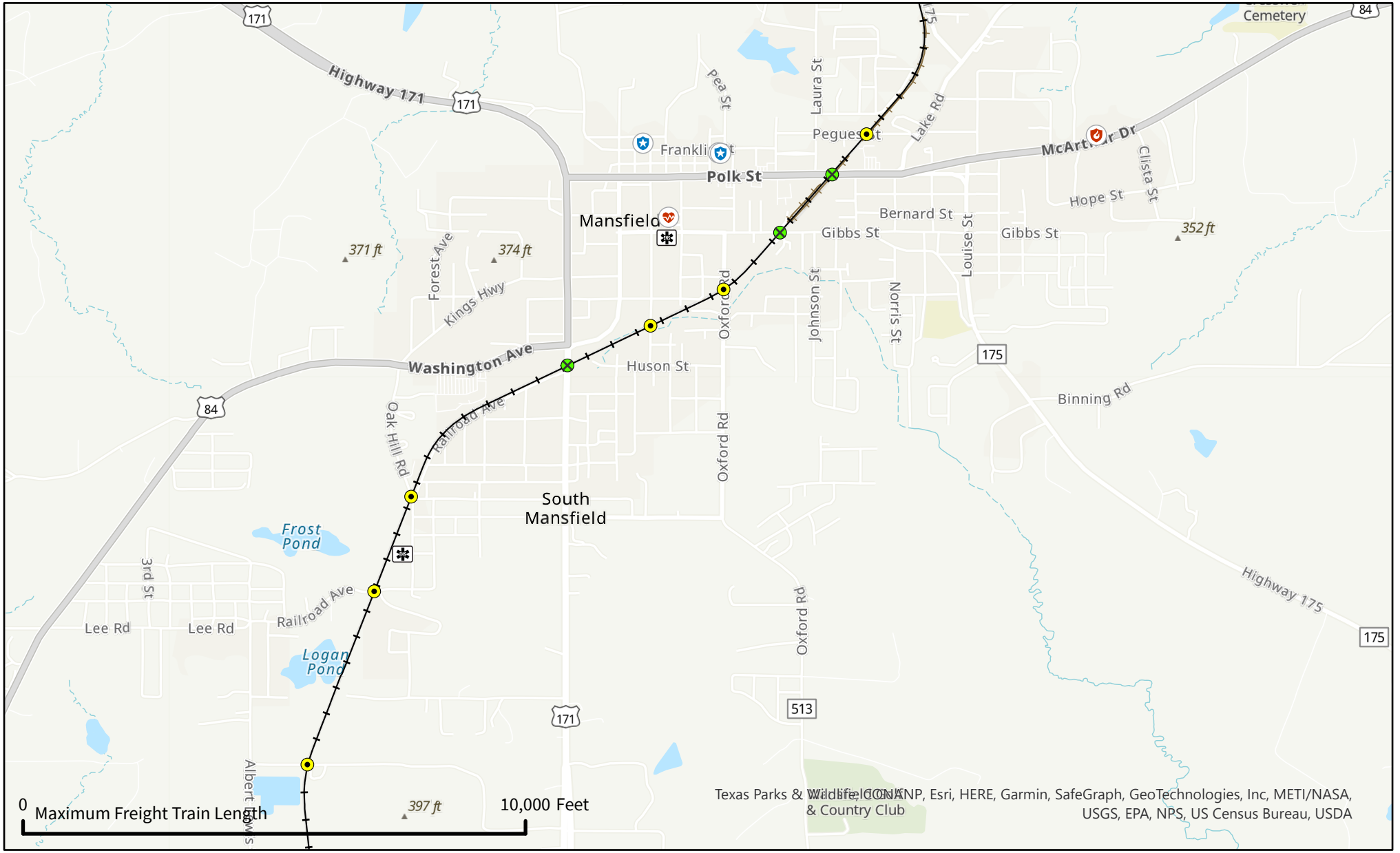


Emergency Services Routing Analysis
N of Mansfield, LA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



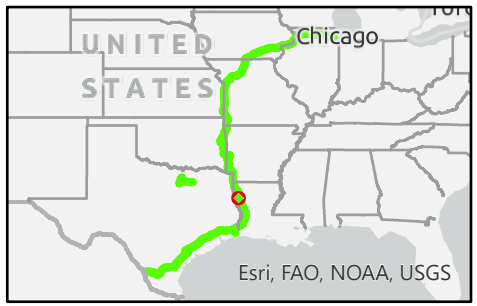
Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

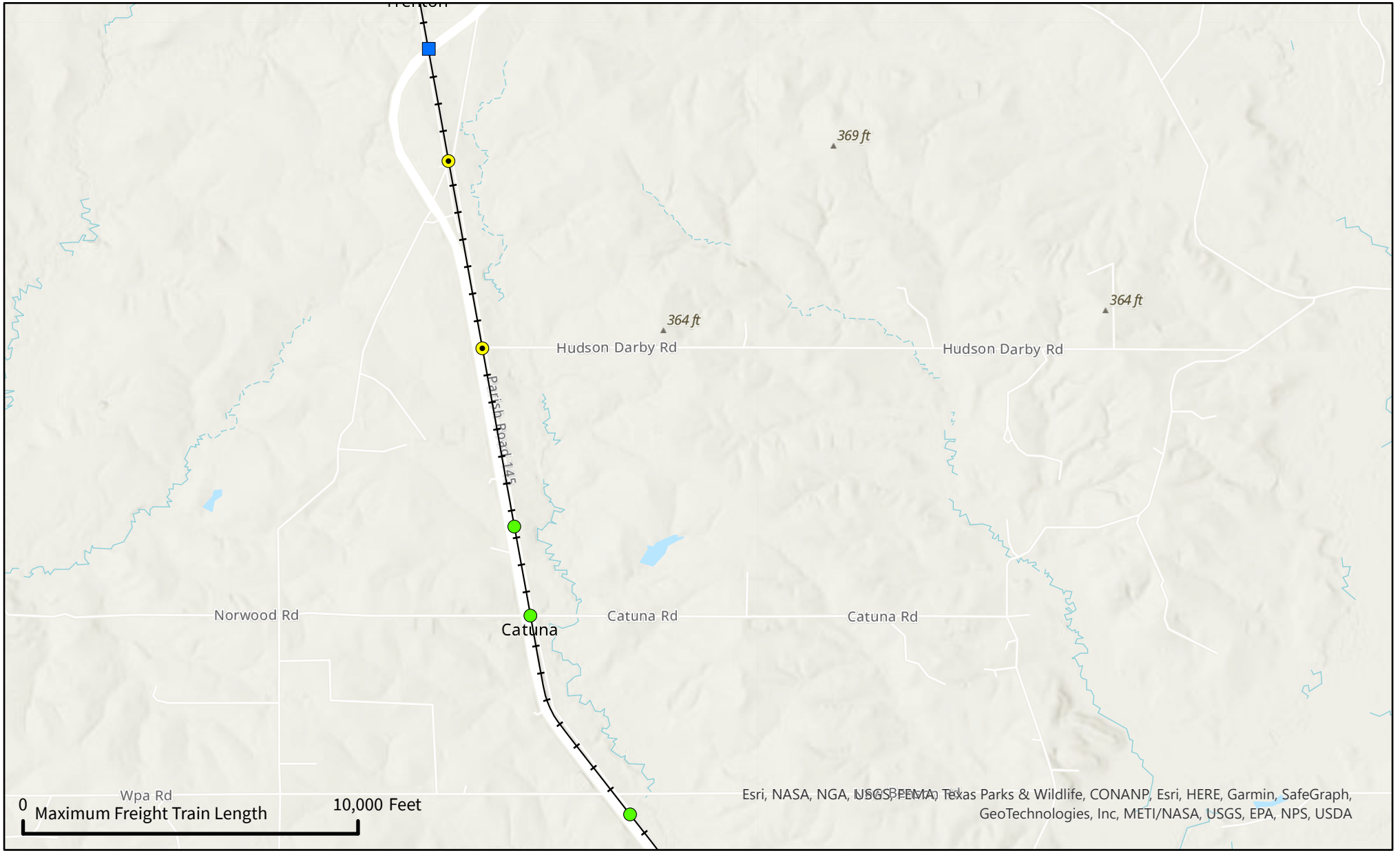


Emergency Services Routing Analysis
Mansfield, LA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Hospital
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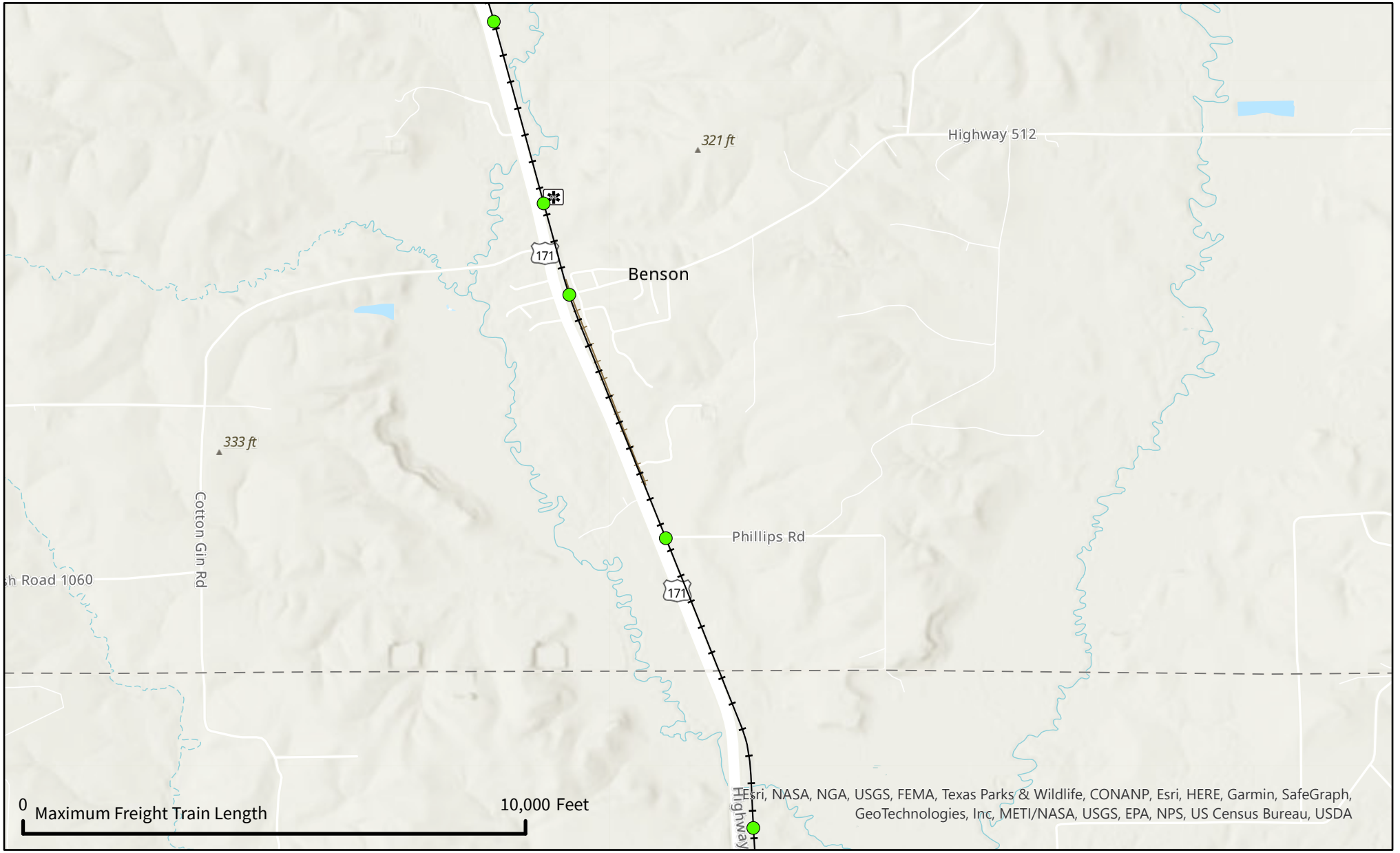
Emergency Services Routing Analysis

Catuna, LA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



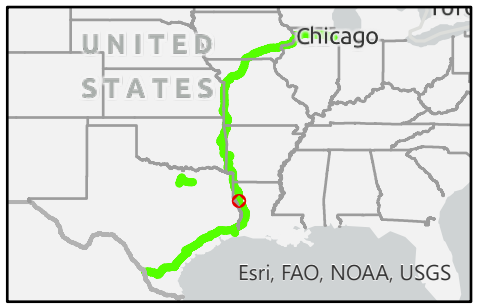
Legend

Crossing Position

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- Key Map: Analyzed Tracks
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- Hospital
- Police



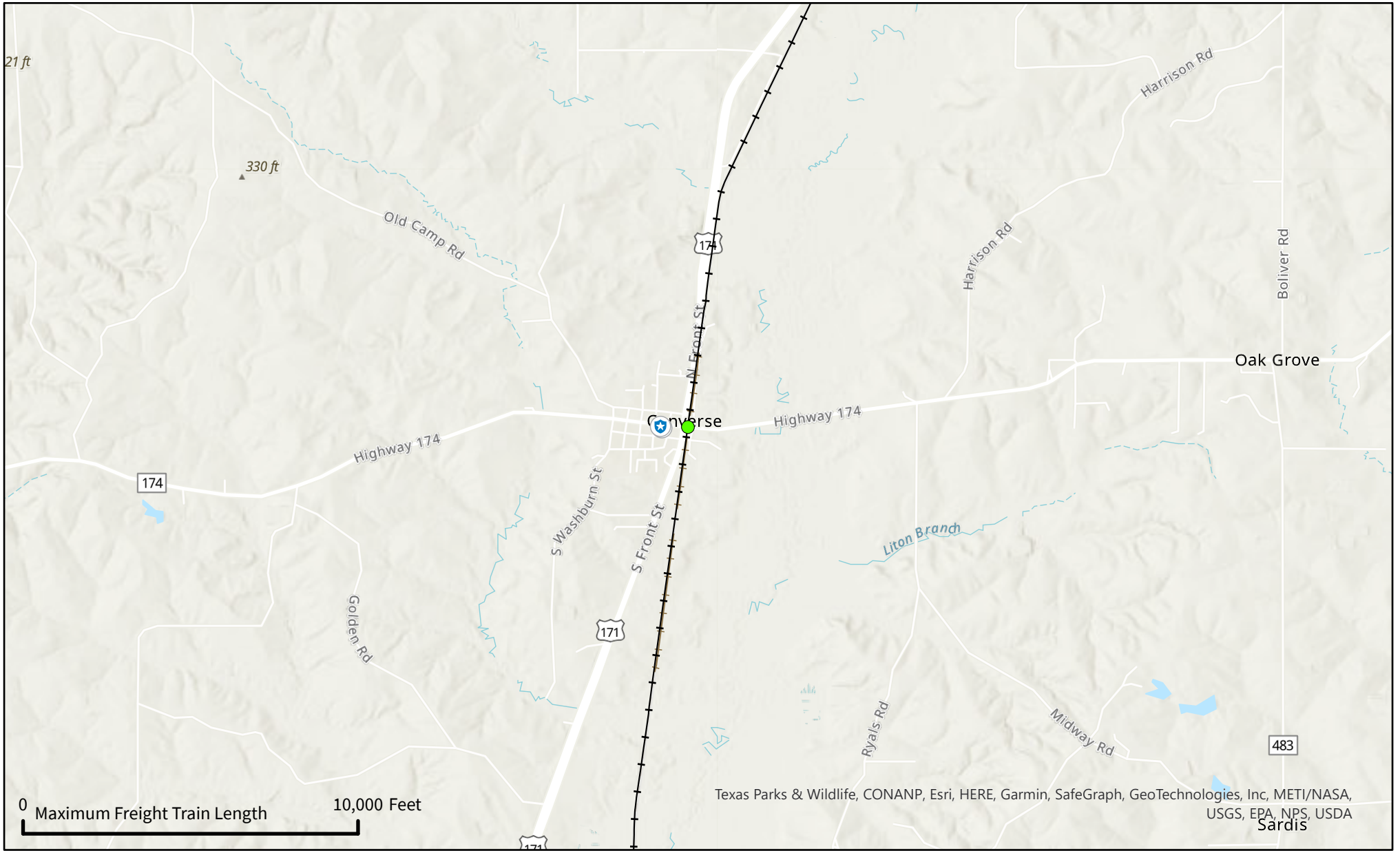
Emergency Services Routing Analysis

Benson, LA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- EMS Dispatch
- Hospital
- Police

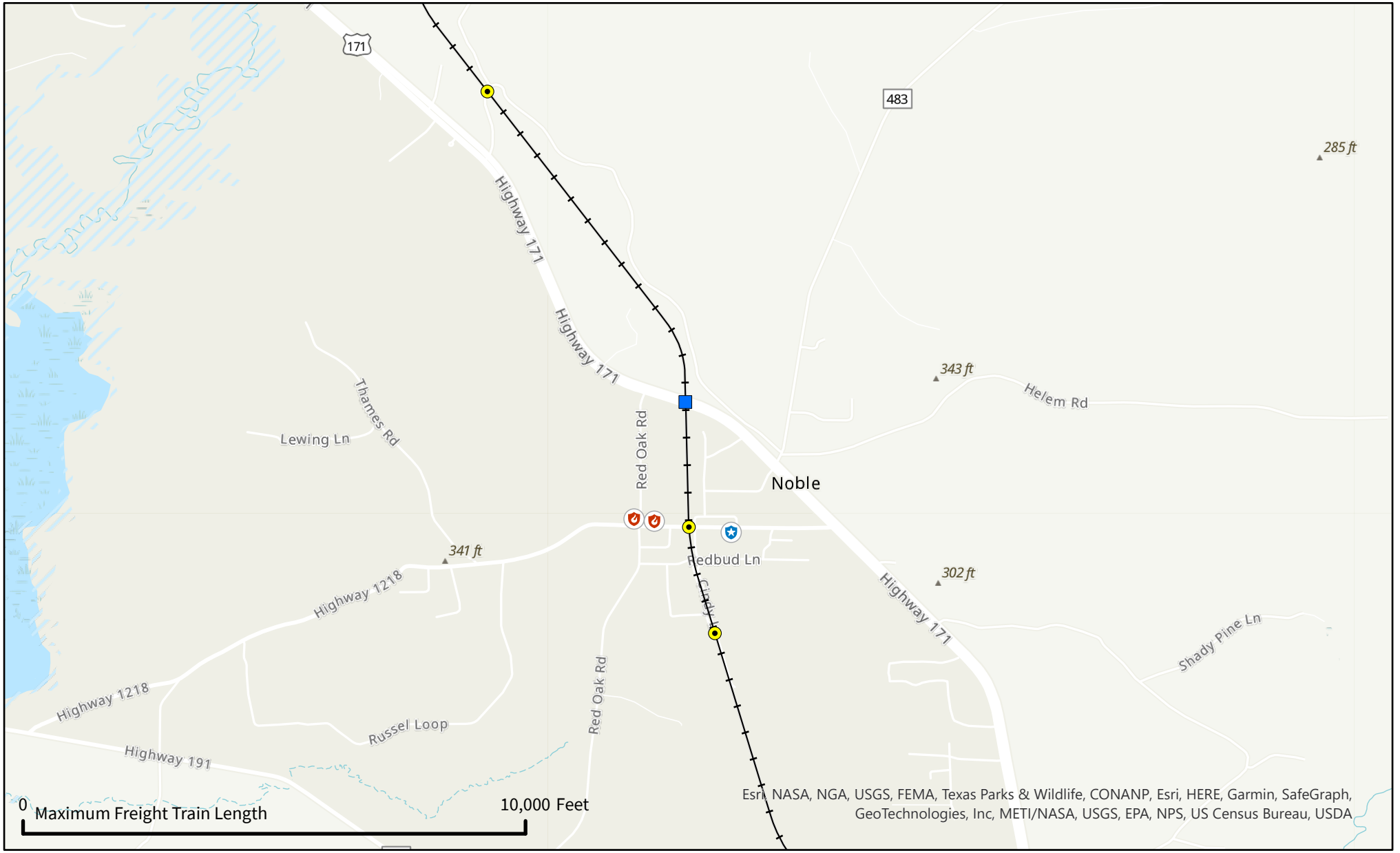


Emergency Services Routing Analysis
Converse, LA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



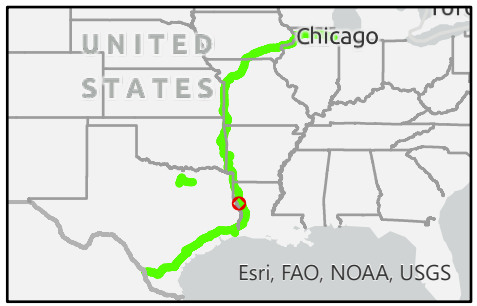
Legend

Crossing Position

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- Key Map: Analyzed Tracks
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- EMS Dispatch
- Hospital
- Police



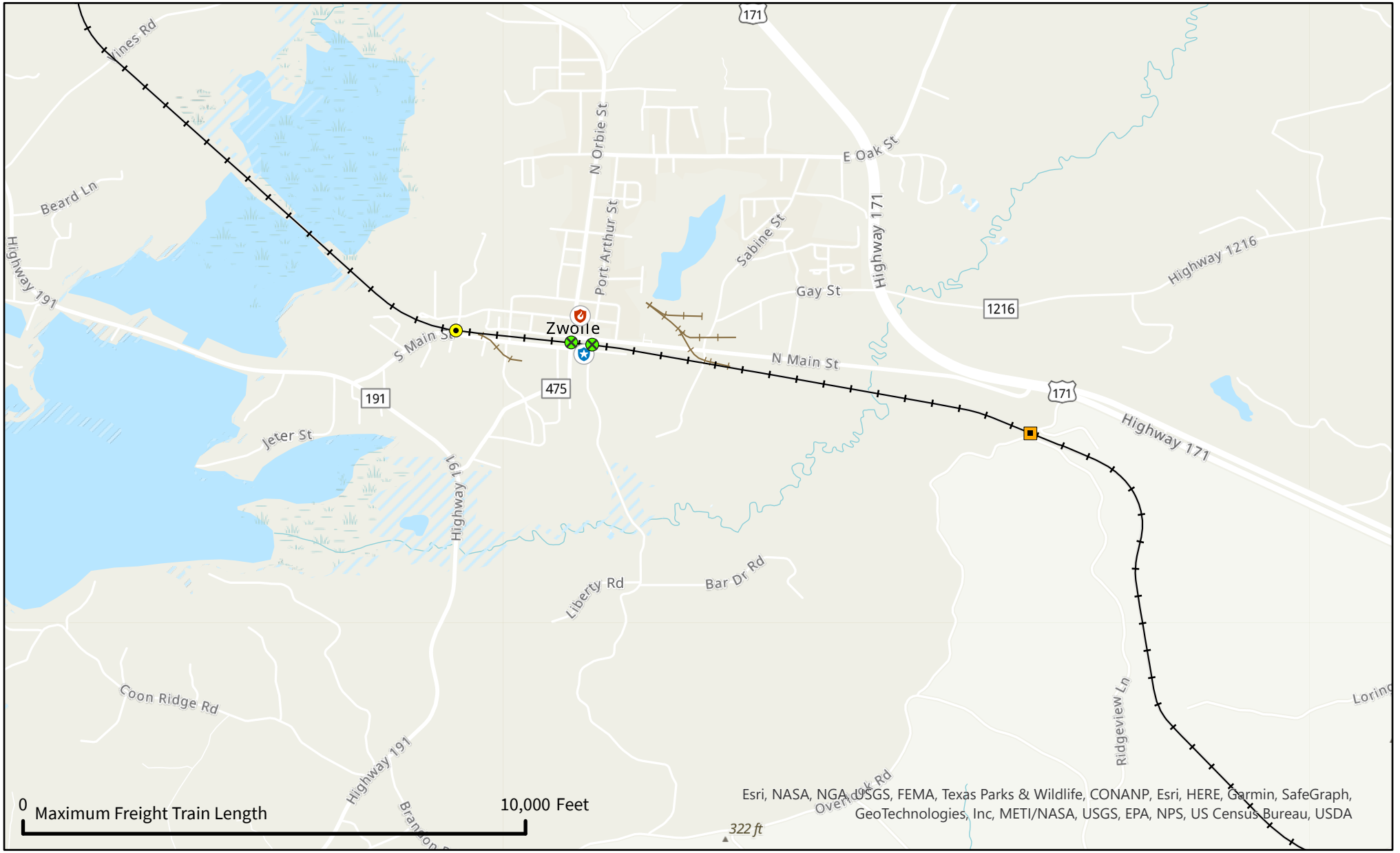
Emergency Services Routing Analysis

Noble, LA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Hospital
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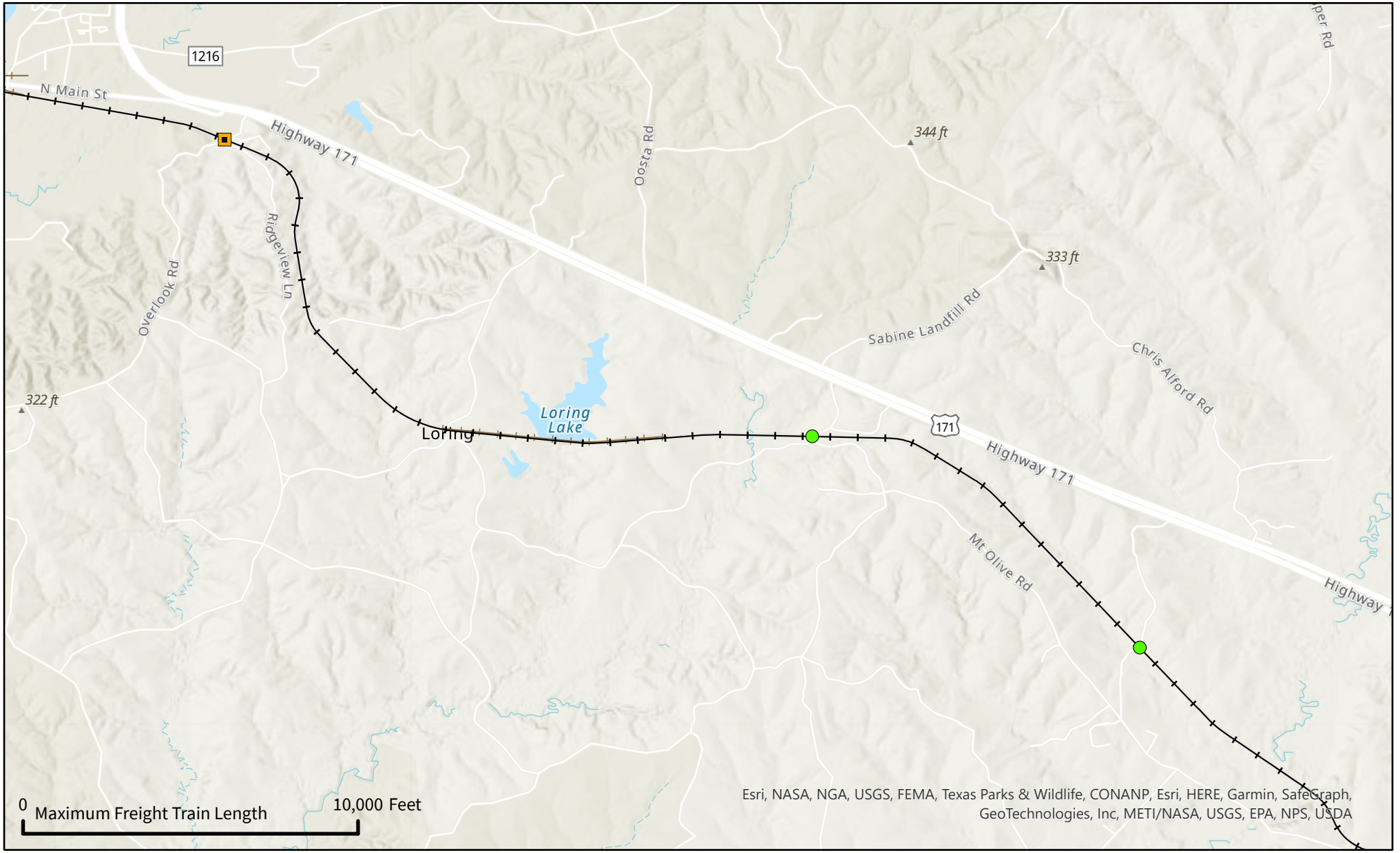


Emergency Services Routing Analysis
Zwolle, LA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Hospital
- Police



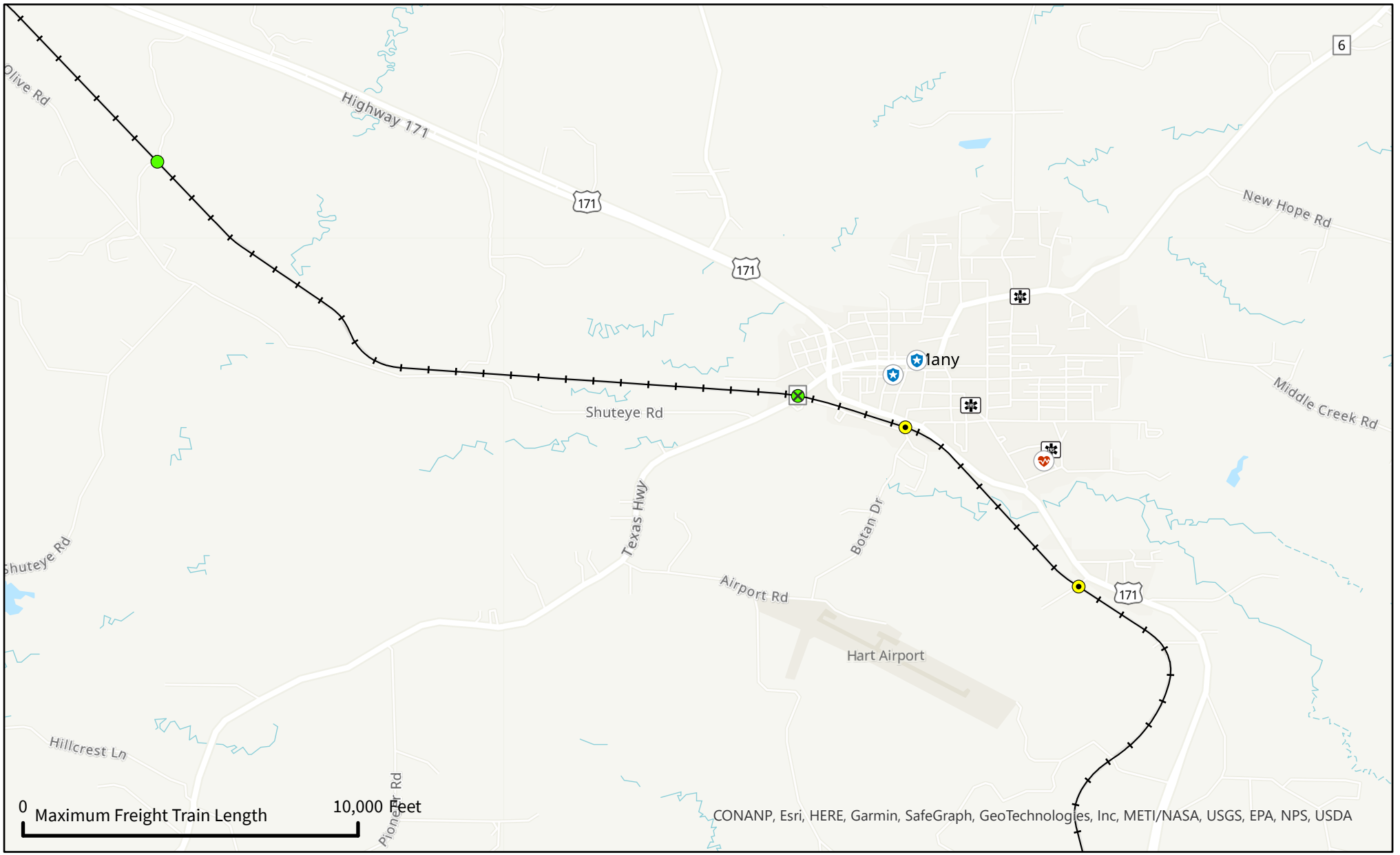
Emergency Services Routing Analysis

NW of Many, LA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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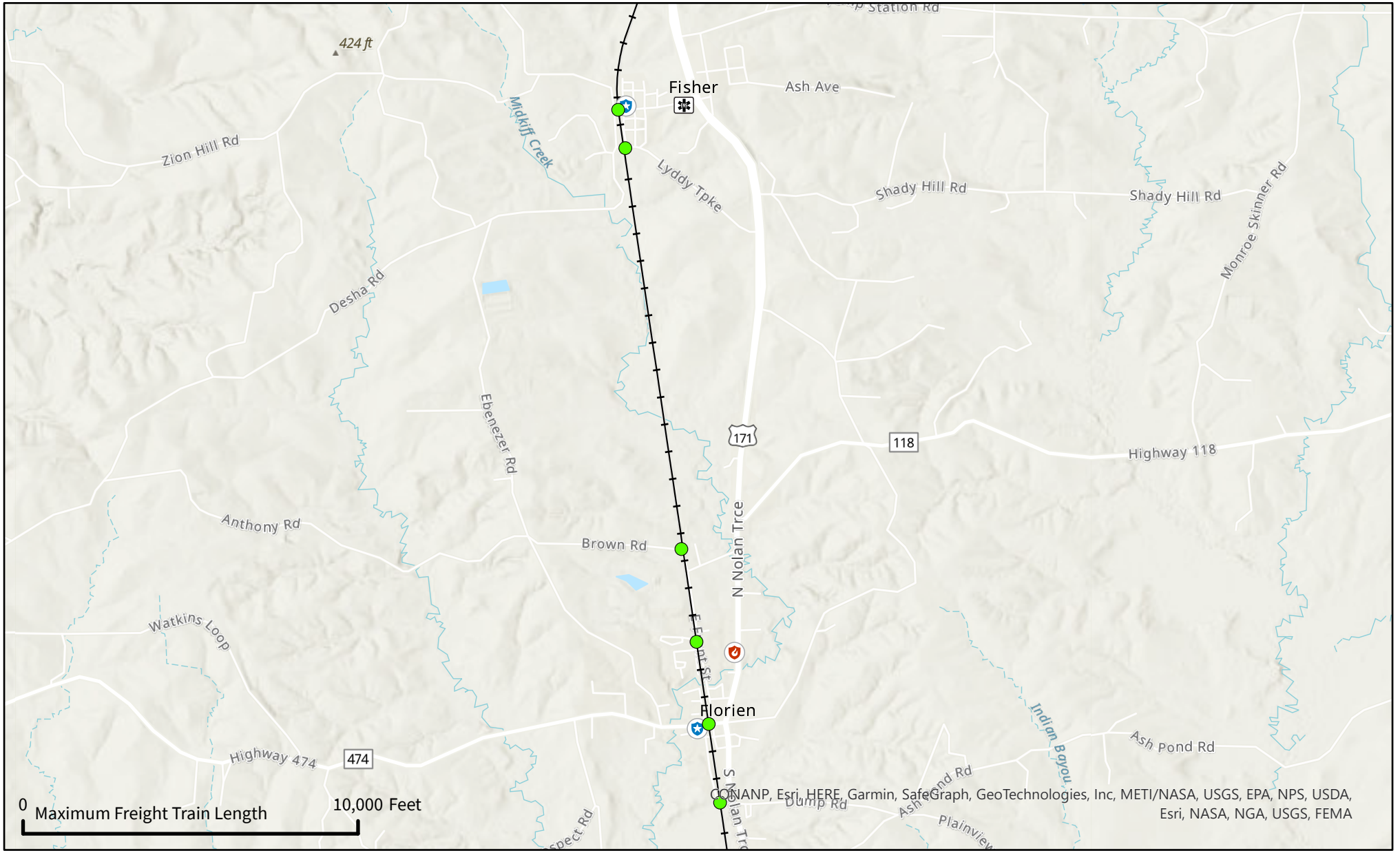
Emergency Services Routing Analysis

Many, LA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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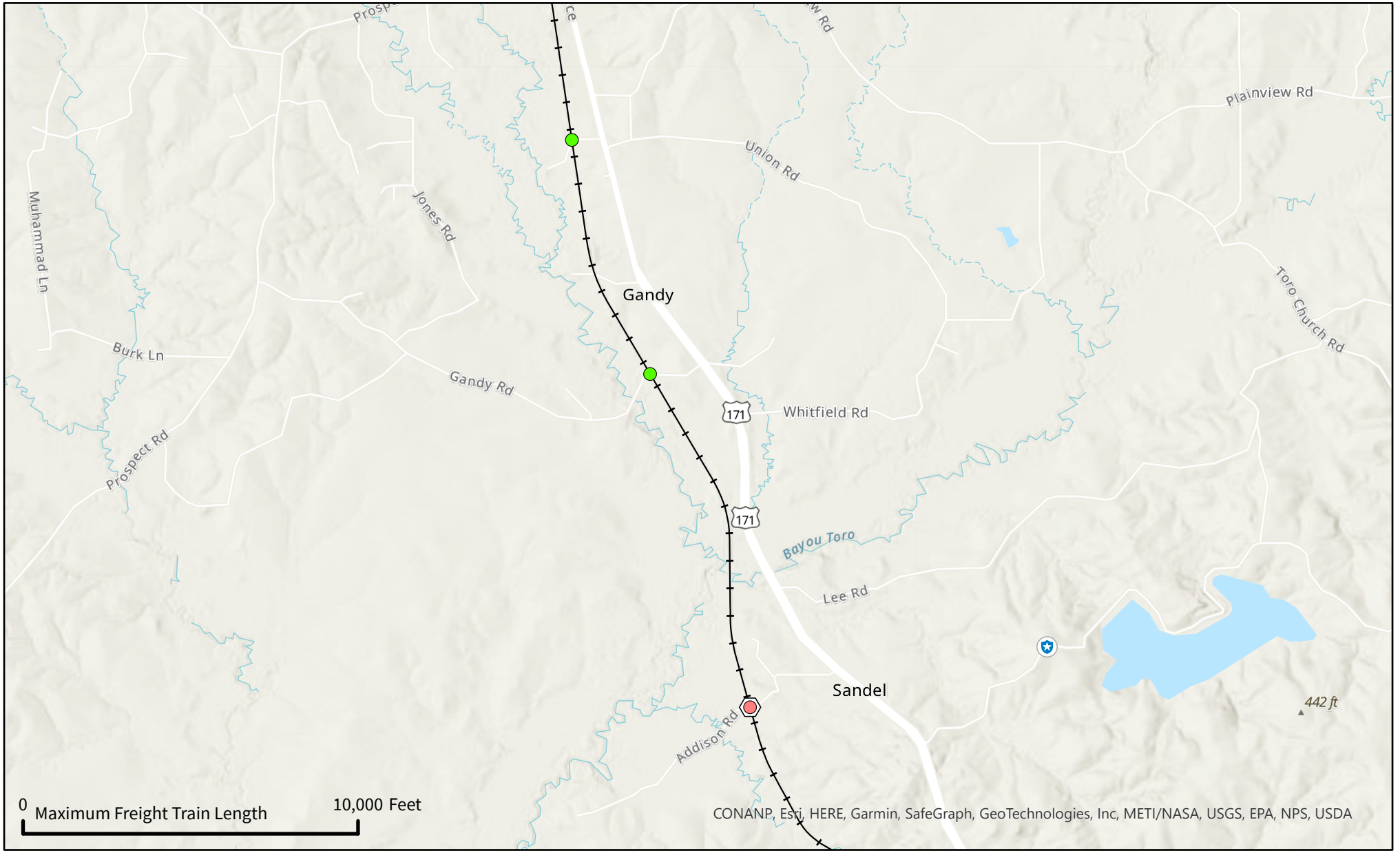


Emergency Services Routing Analysis
Fisher and Florien, LA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Hospital
- Police

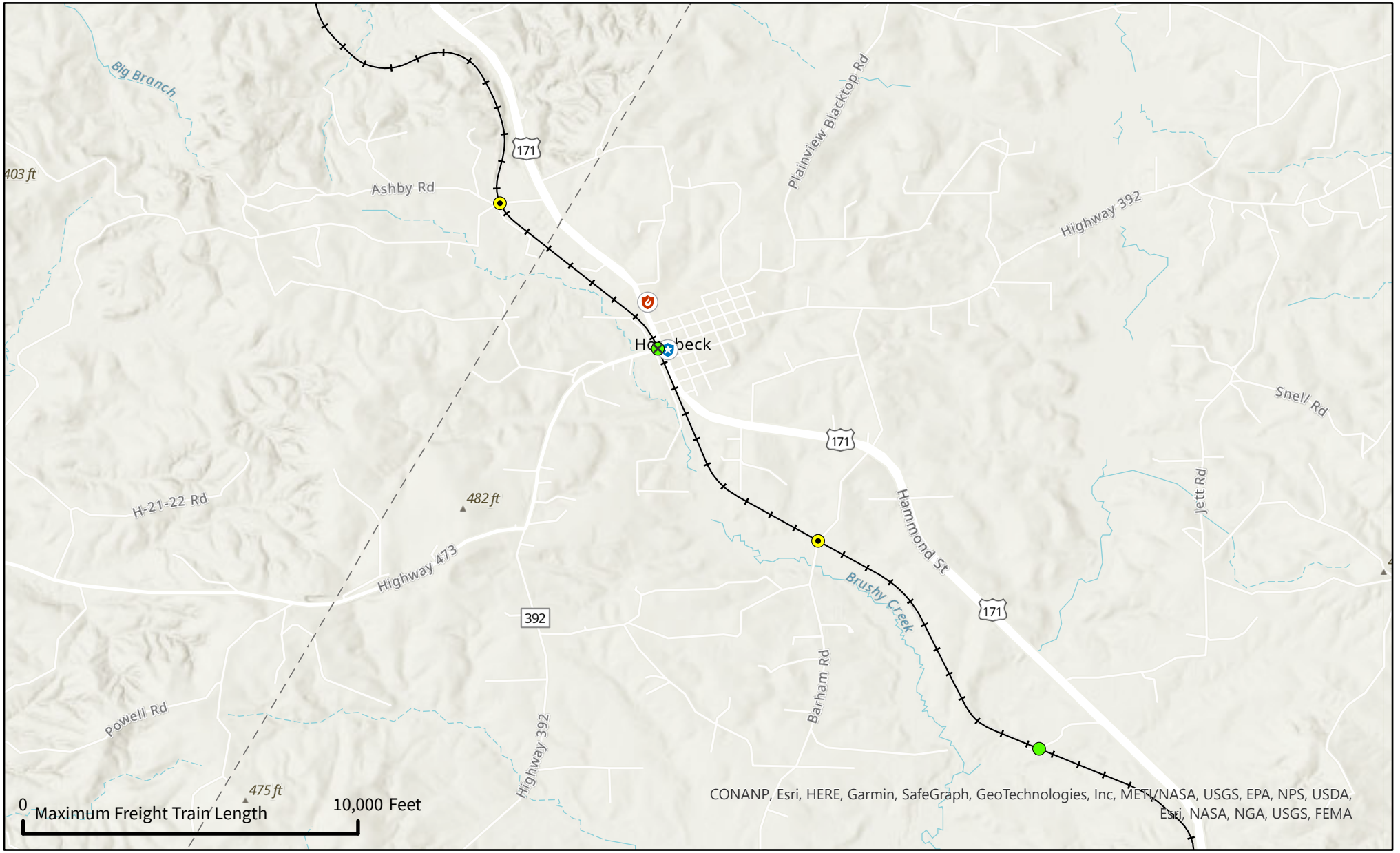


Emergency Services Routing Analysis
Gandy and Sandel, LA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- Hospital
- Police



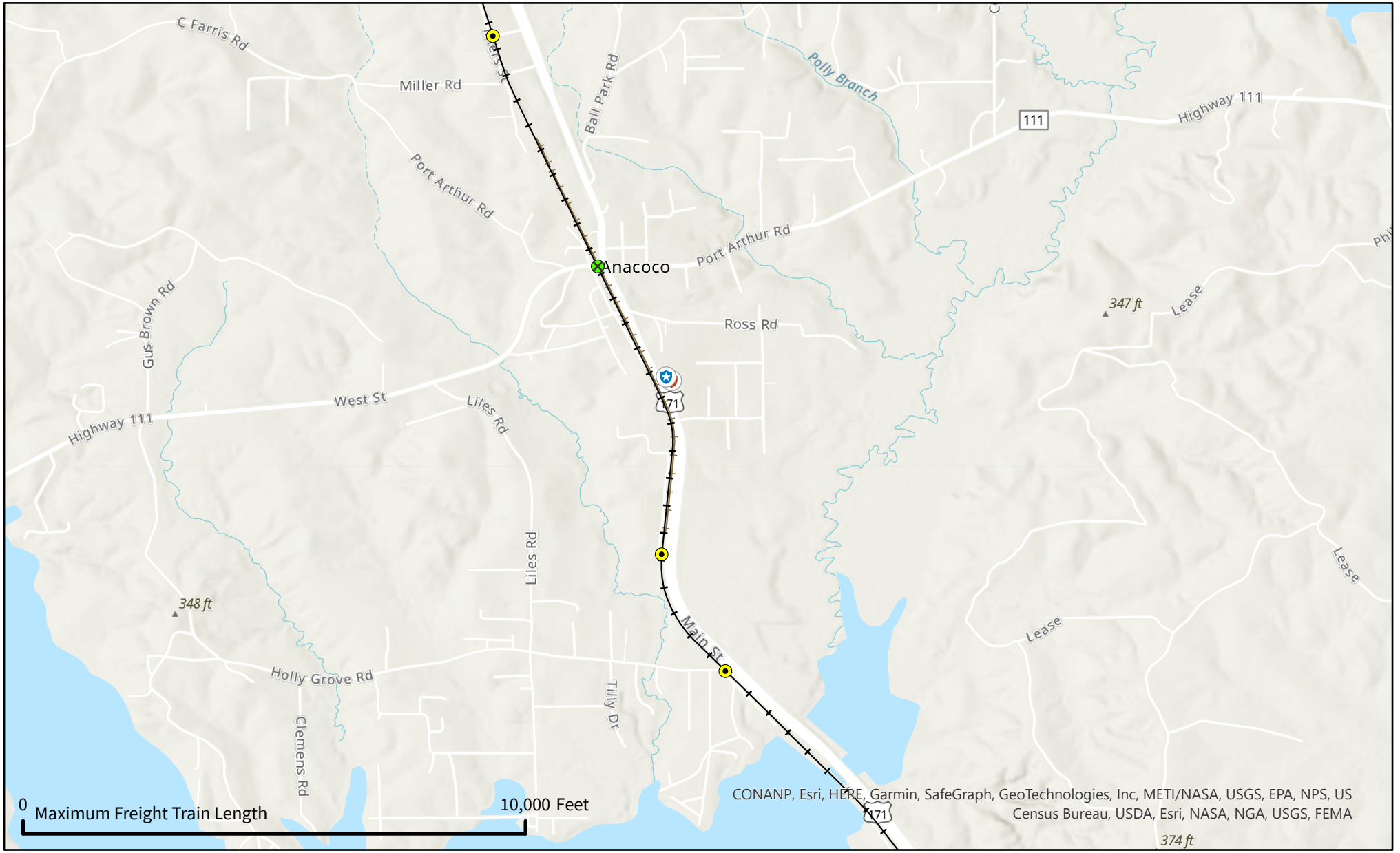
Emergency Services Routing Analysis

Hornbeck, LA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Hospital
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Emergency Services Routing Analysis

Anacoco, LA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- EMS Dispatch
- Hospital
- Police

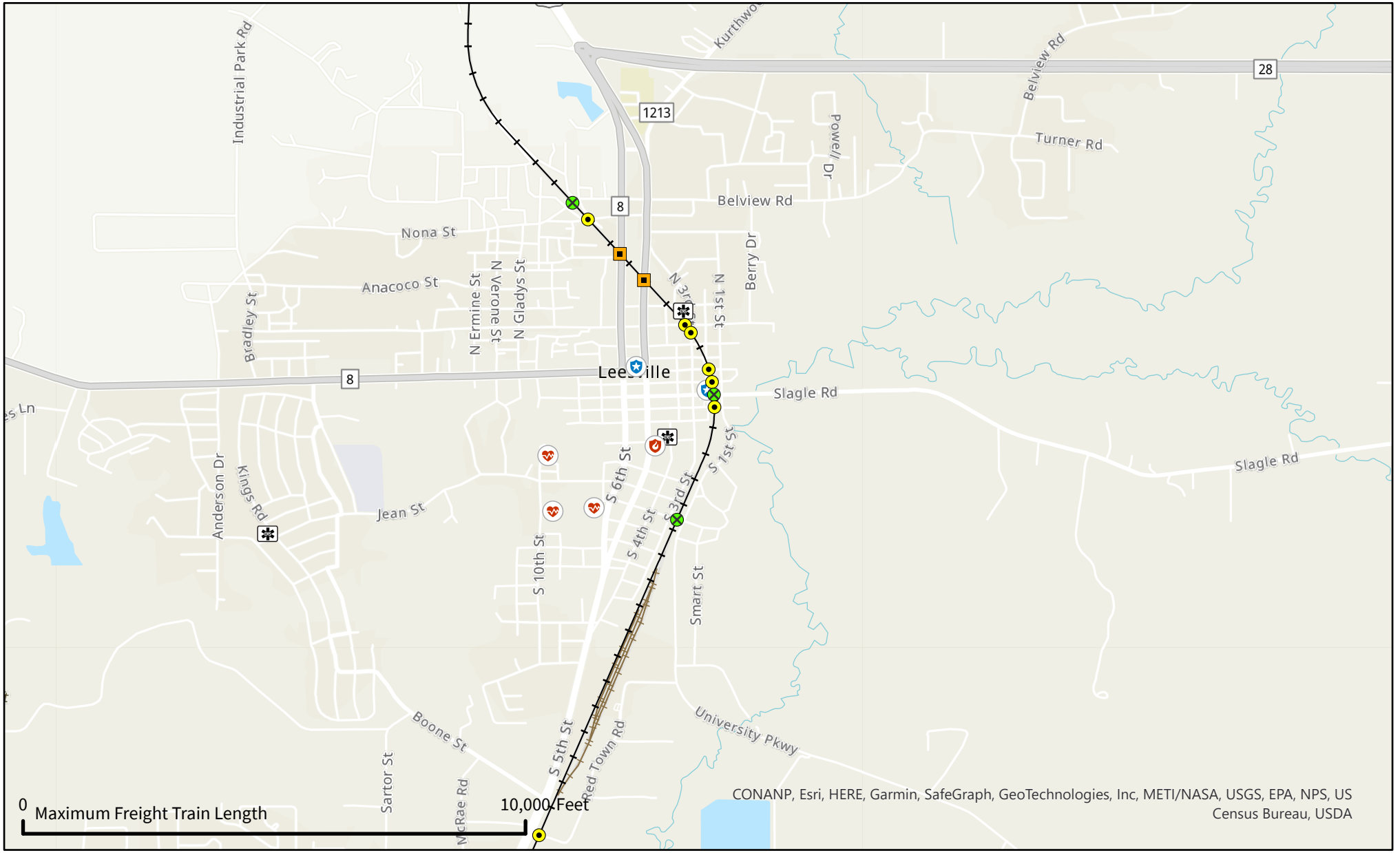


Emergency Services Routing Analysis
Hawthorne, LA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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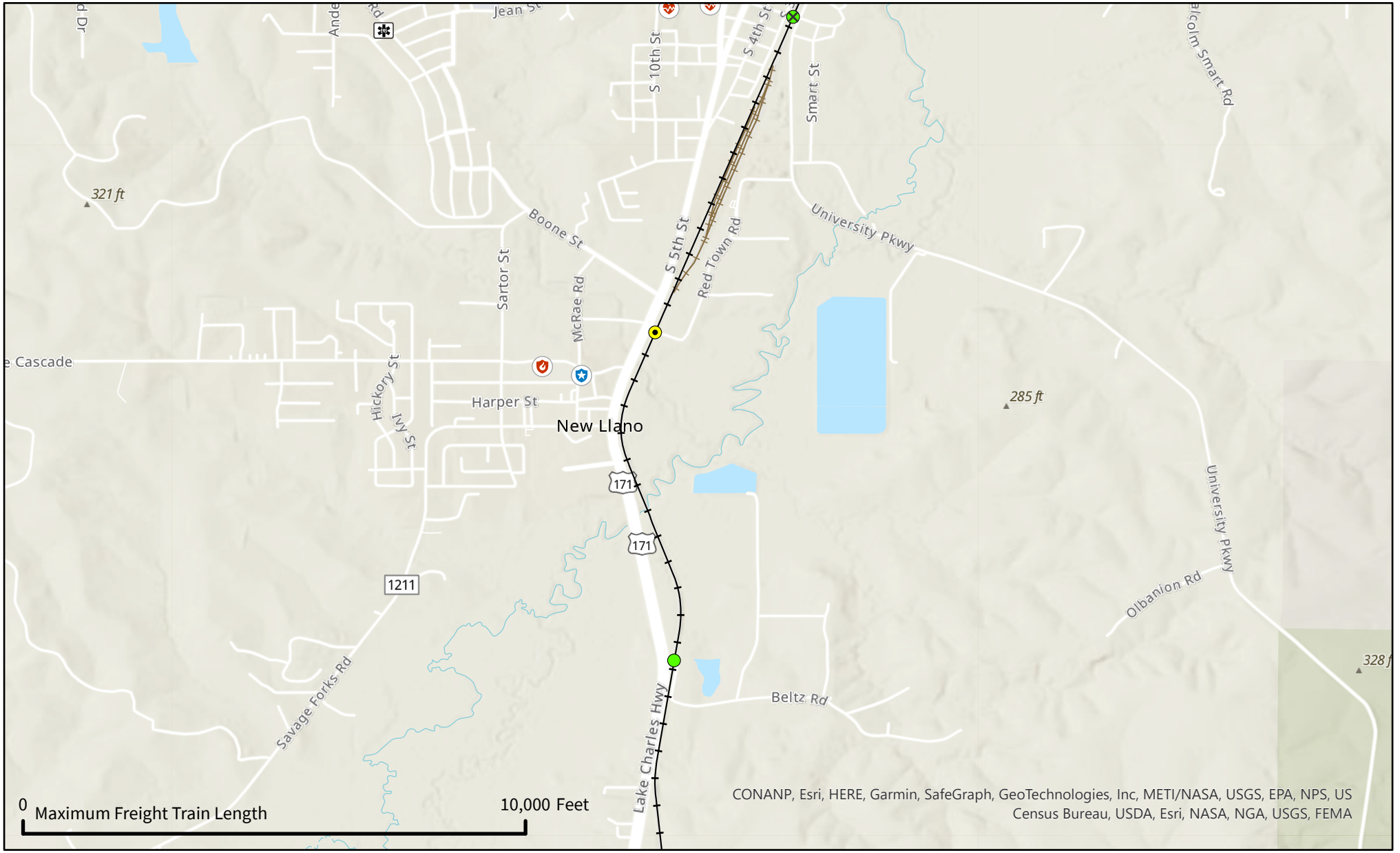


Emergency Services Routing Analysis
Leesville, LA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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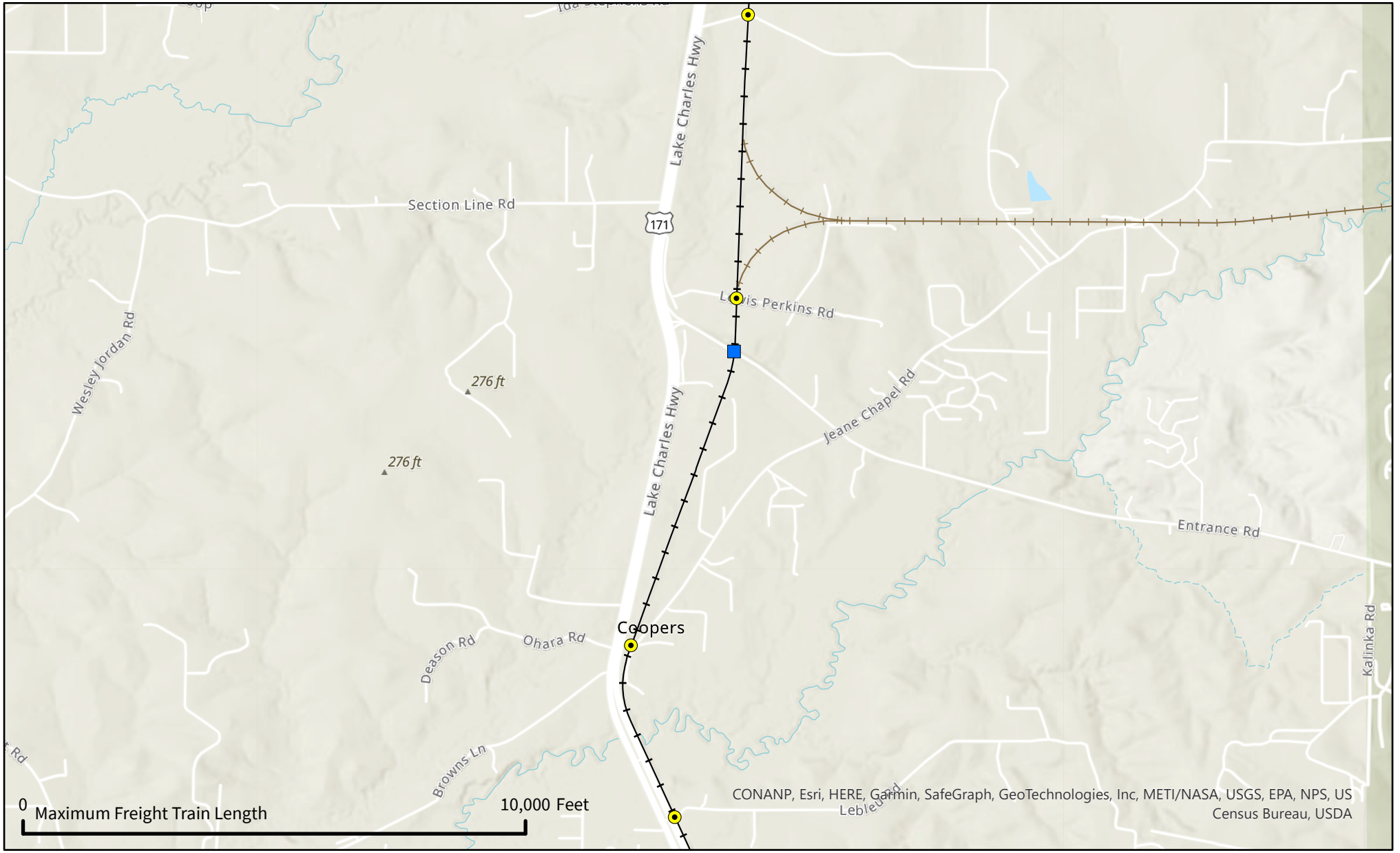


Emergency Services Routing Analysis
New Llano, LA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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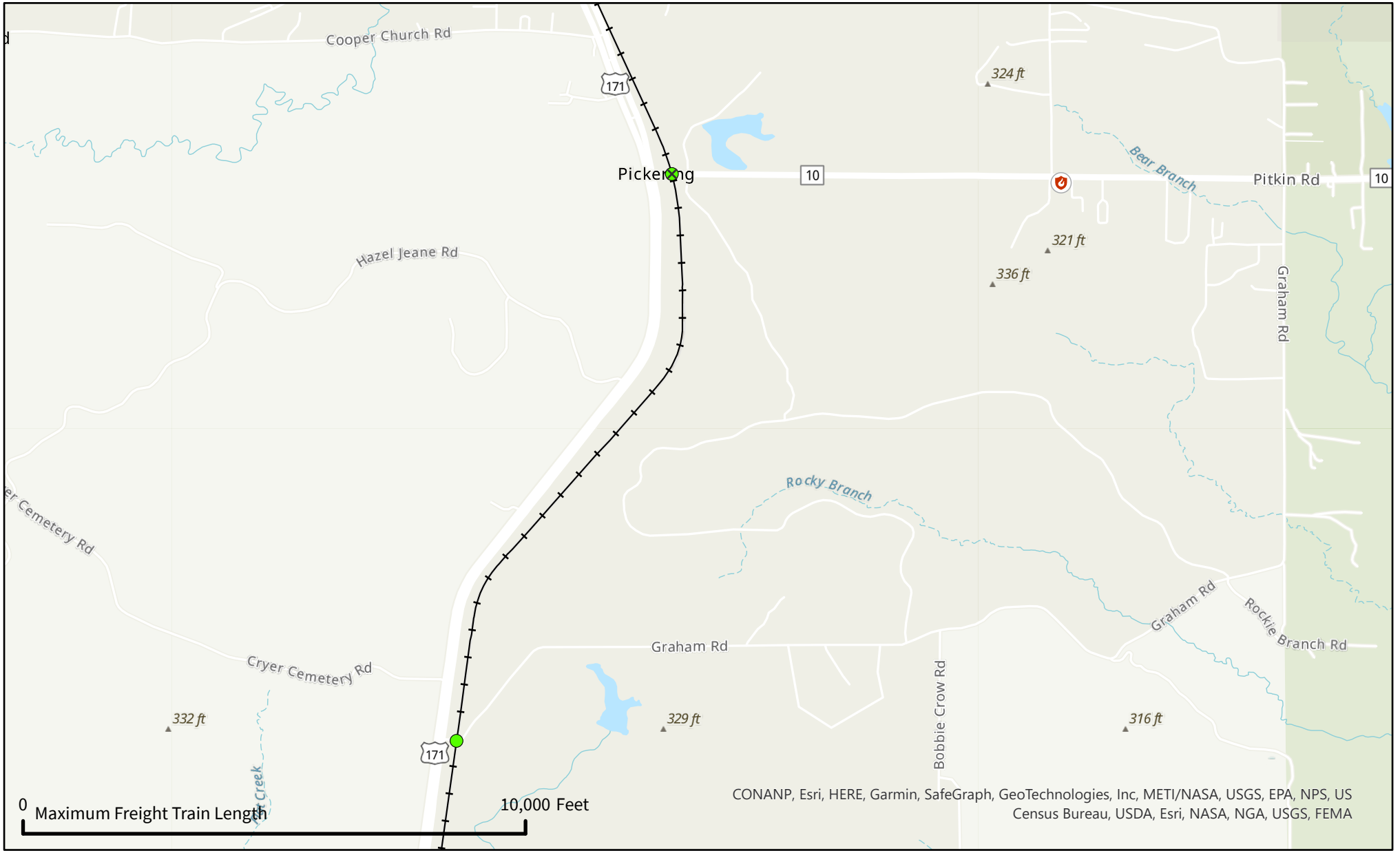


Emergency Services Routing Analysis
Coopers, LA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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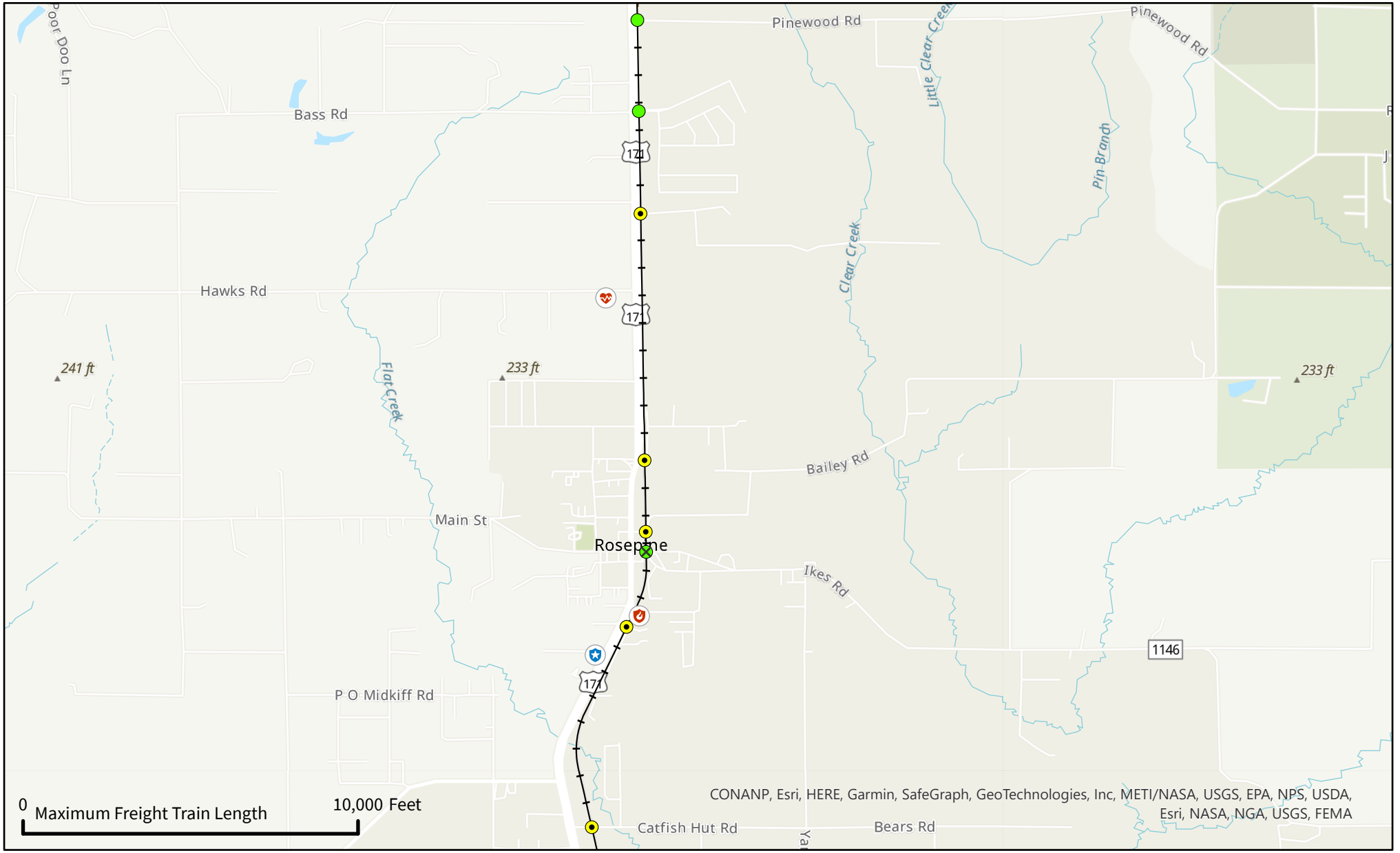


Emergency Services Routing Analysis
Pickering, LA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

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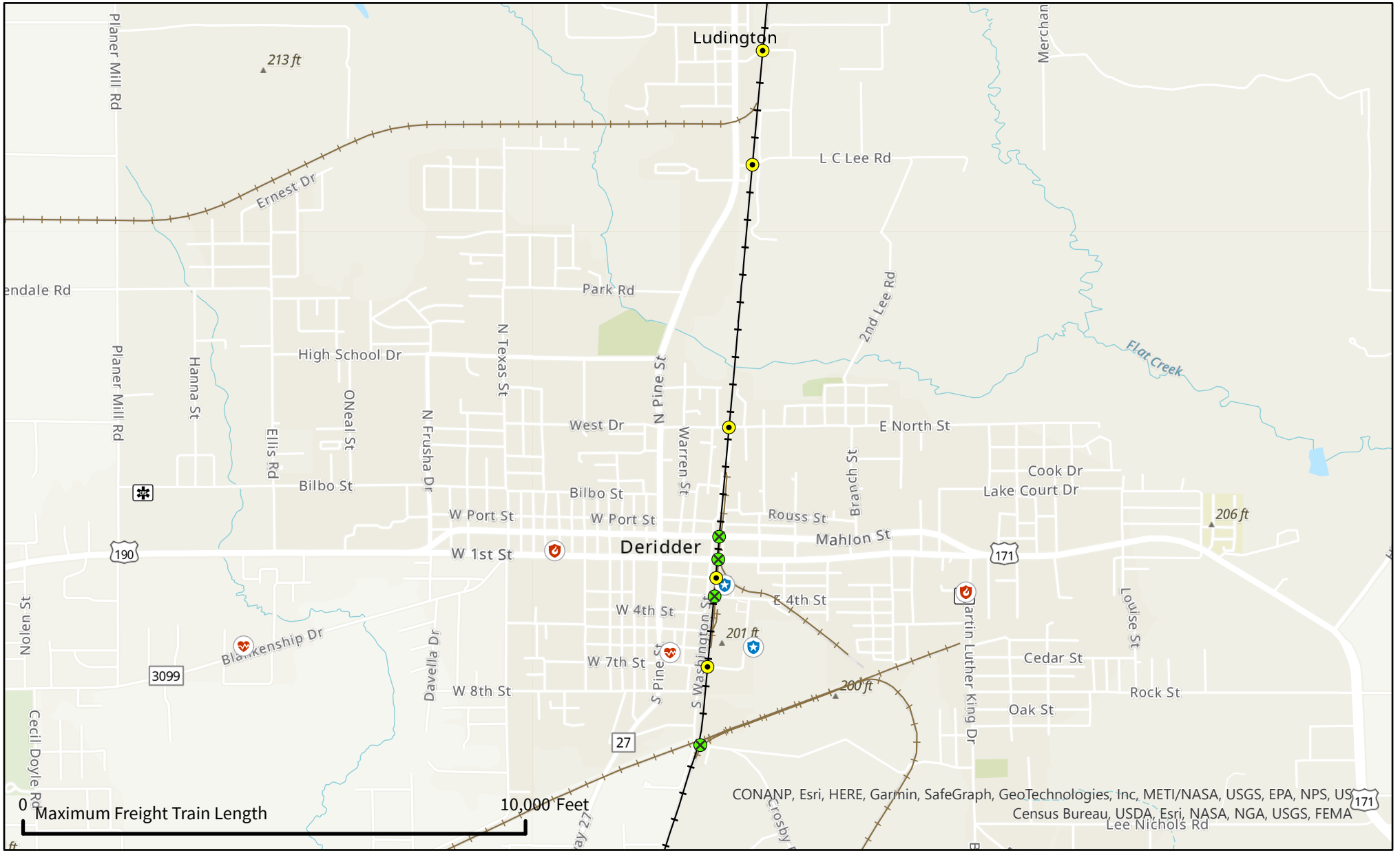


Emergency Services Routing Analysis
Rosepine, LA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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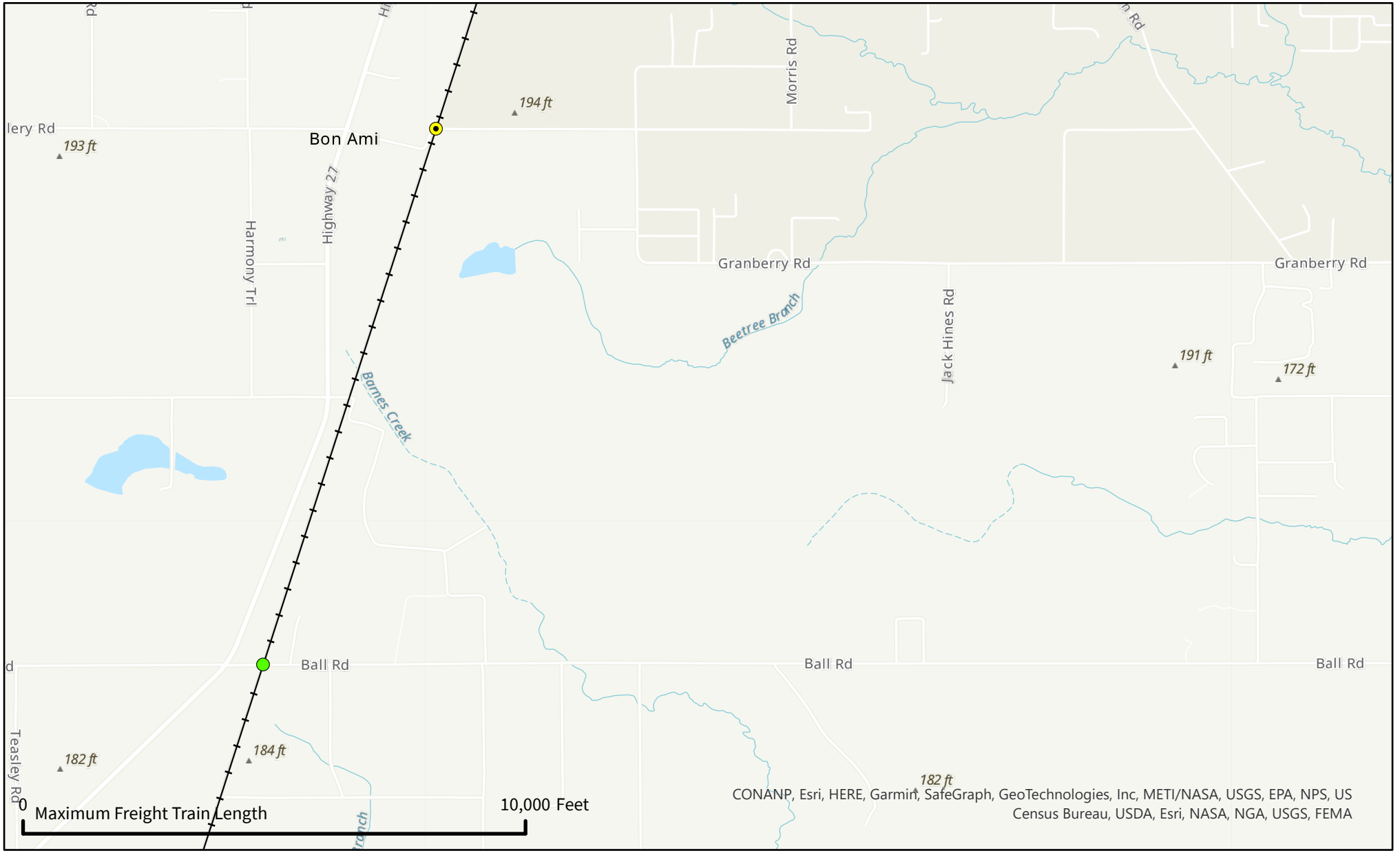


Emergency Services Routing Analysis
DeRidder, LA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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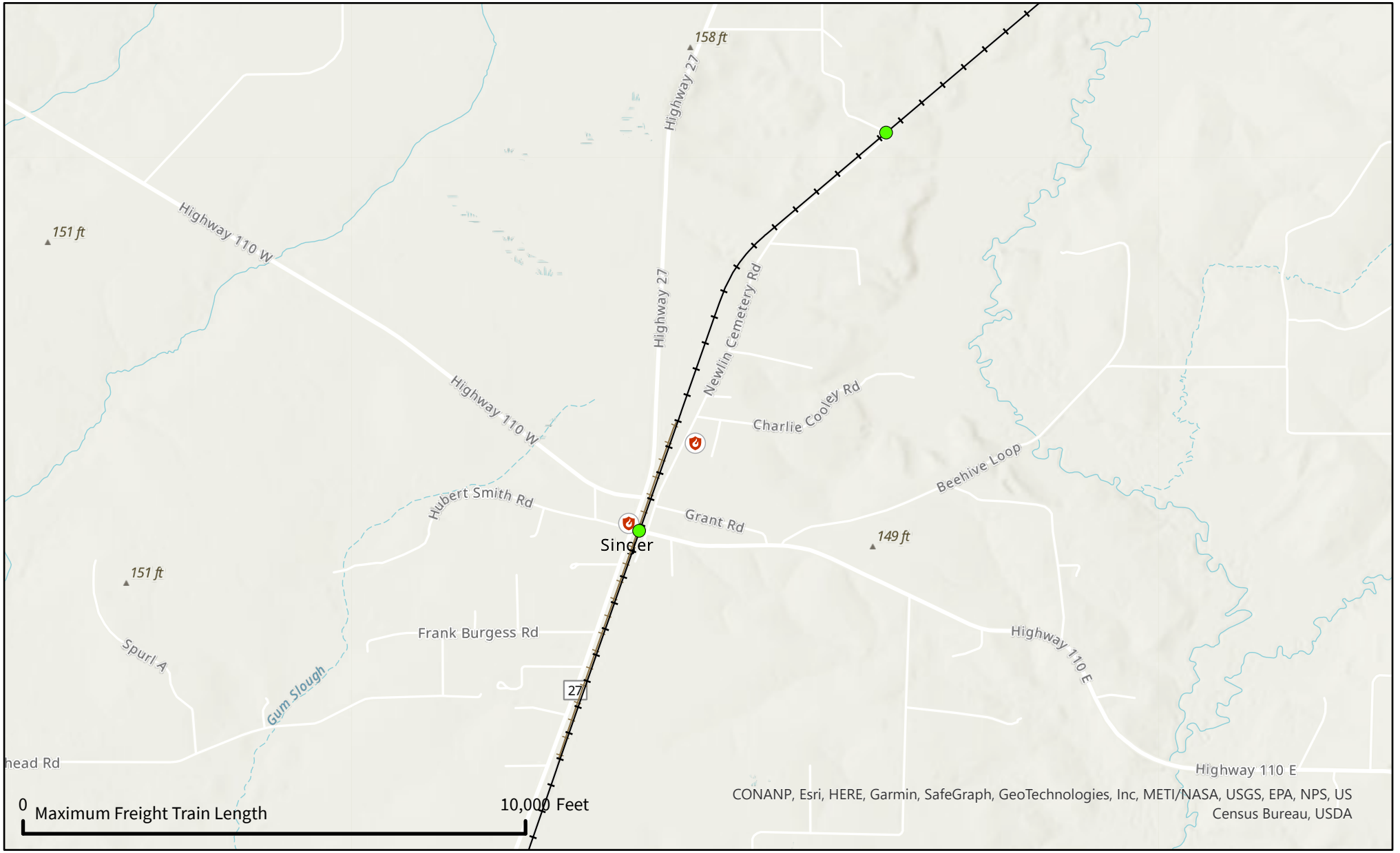


Emergency Services Routing Analysis
S of DeRidder, LA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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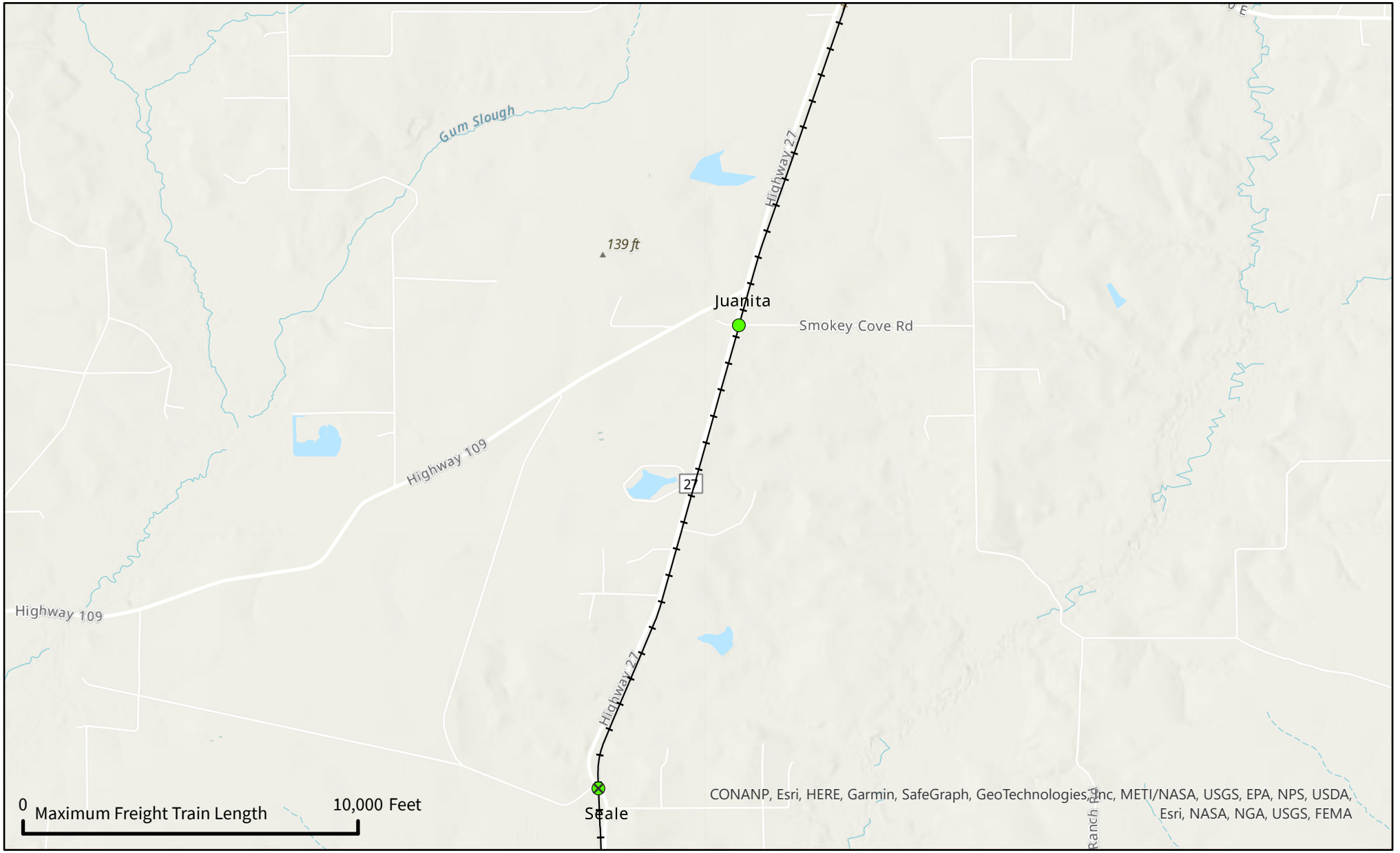


Emergency Services Routing Analysis
Singer, LA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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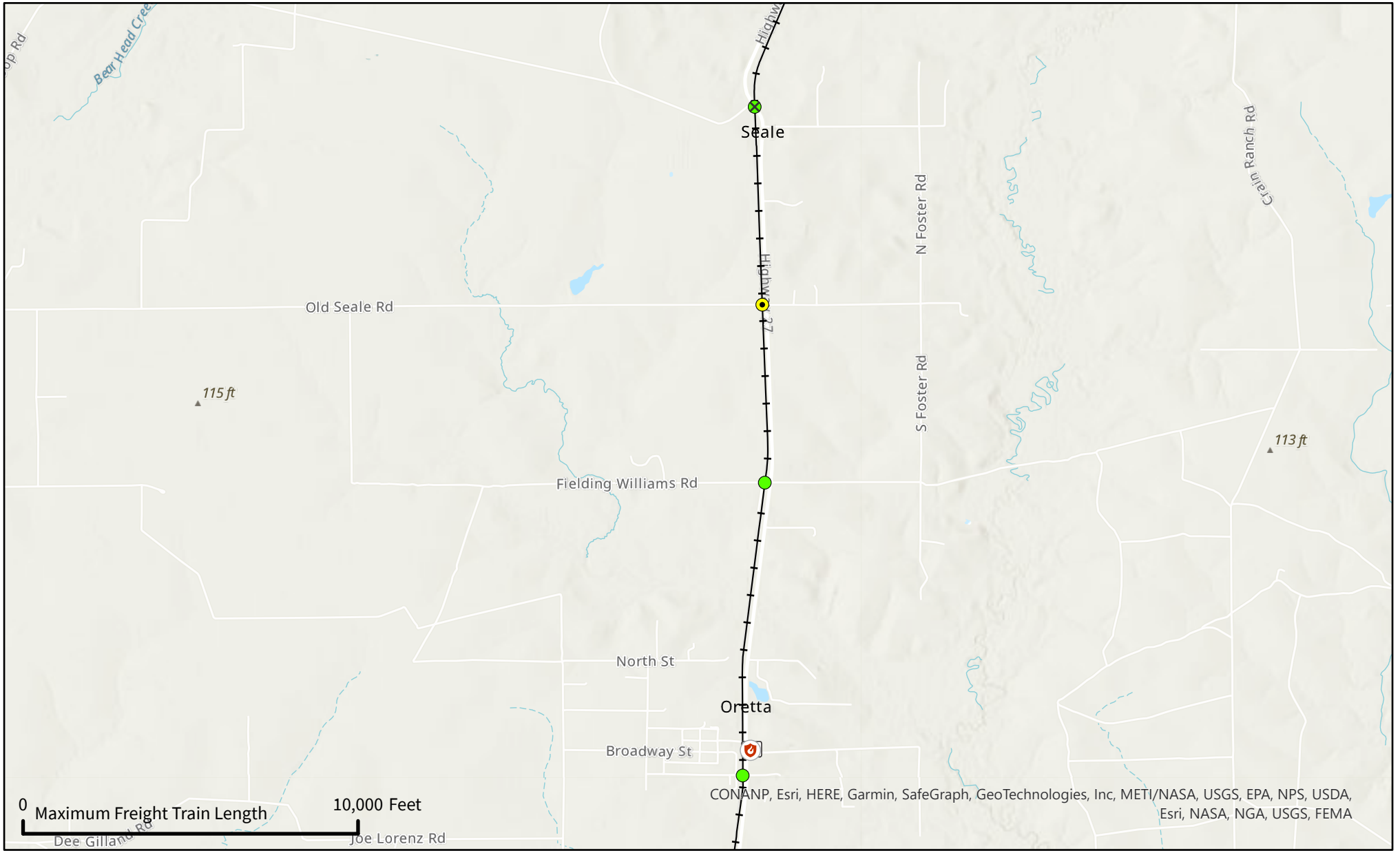


Emergency Services Routing Analysis
Juanita, LA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Hospital
- Police

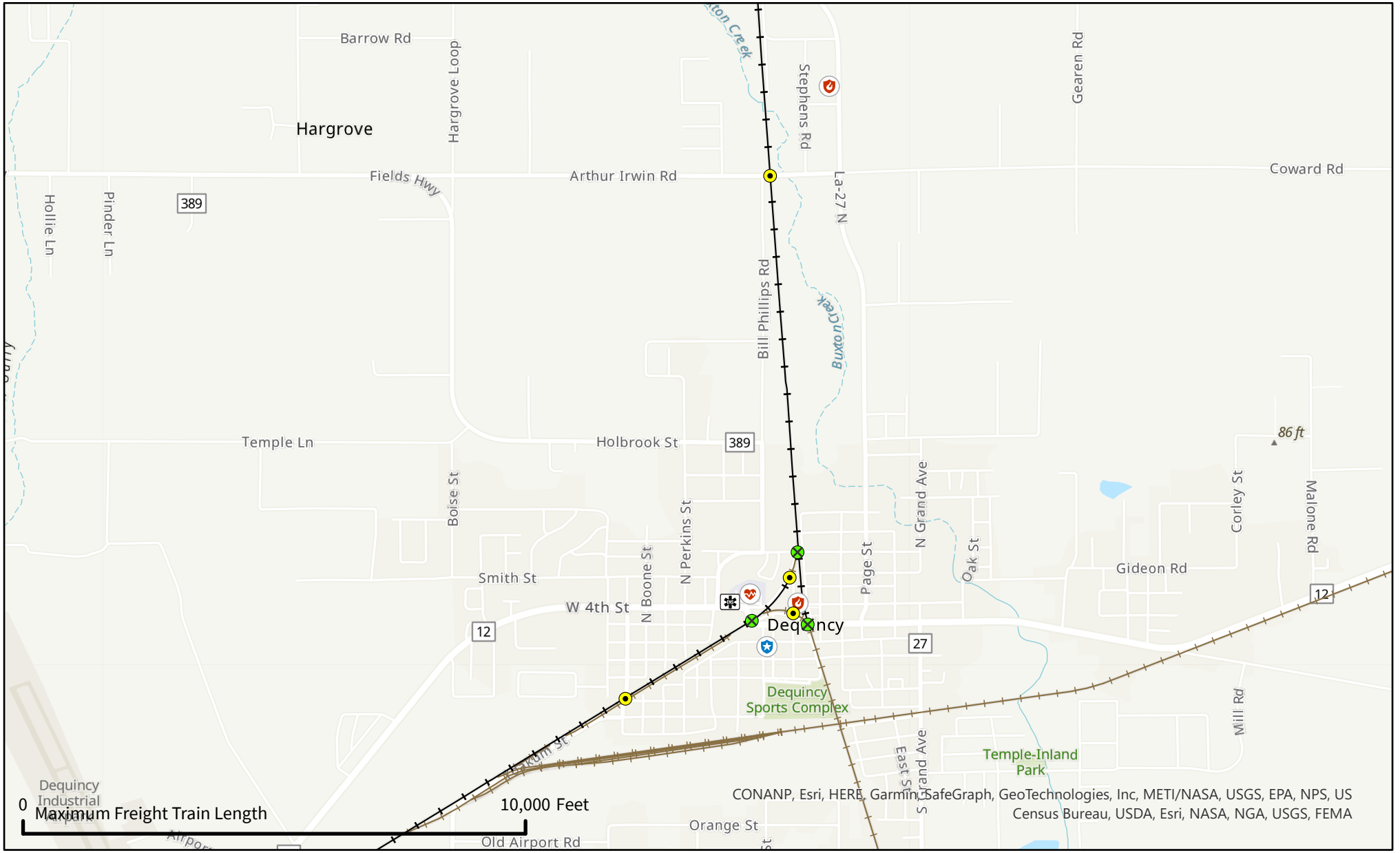


Emergency Services Routing Analysis
Oretta, LA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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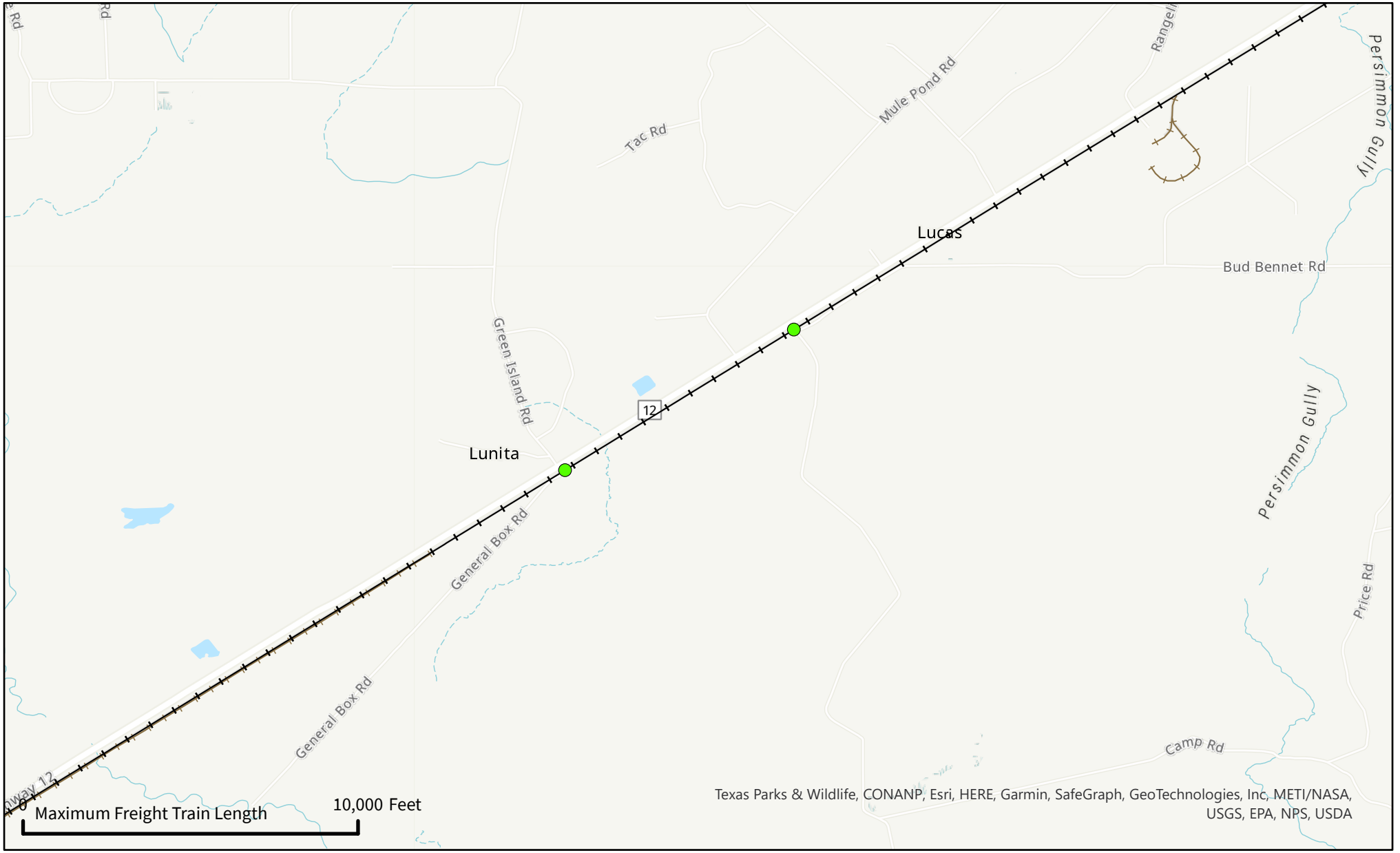


Emergency Services Routing Analysis
DeQuincy, LA

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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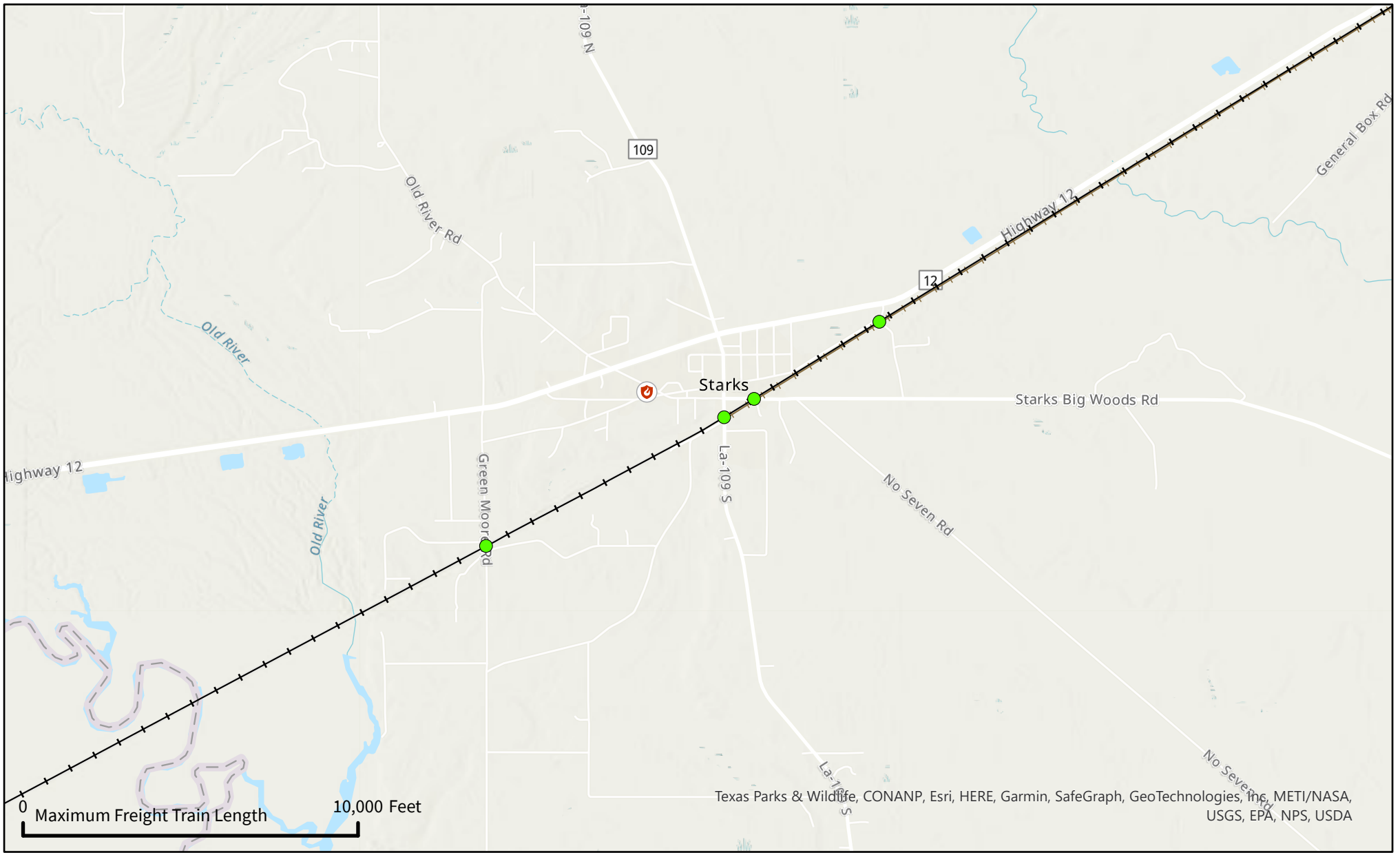


Emergency Services Routing Analysis
Lunita, LA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

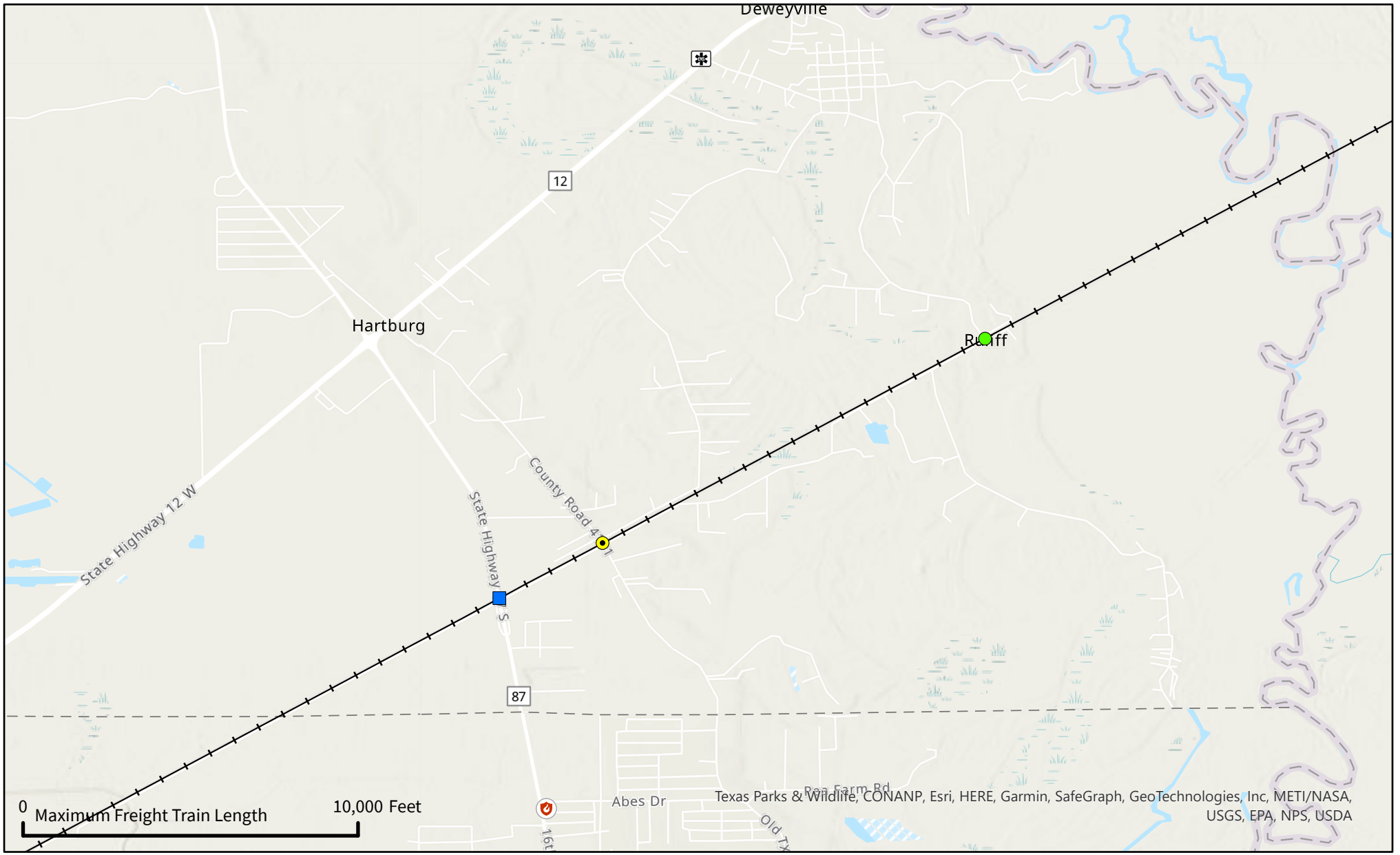


Emergency Services Routing Analysis
Starks, LA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

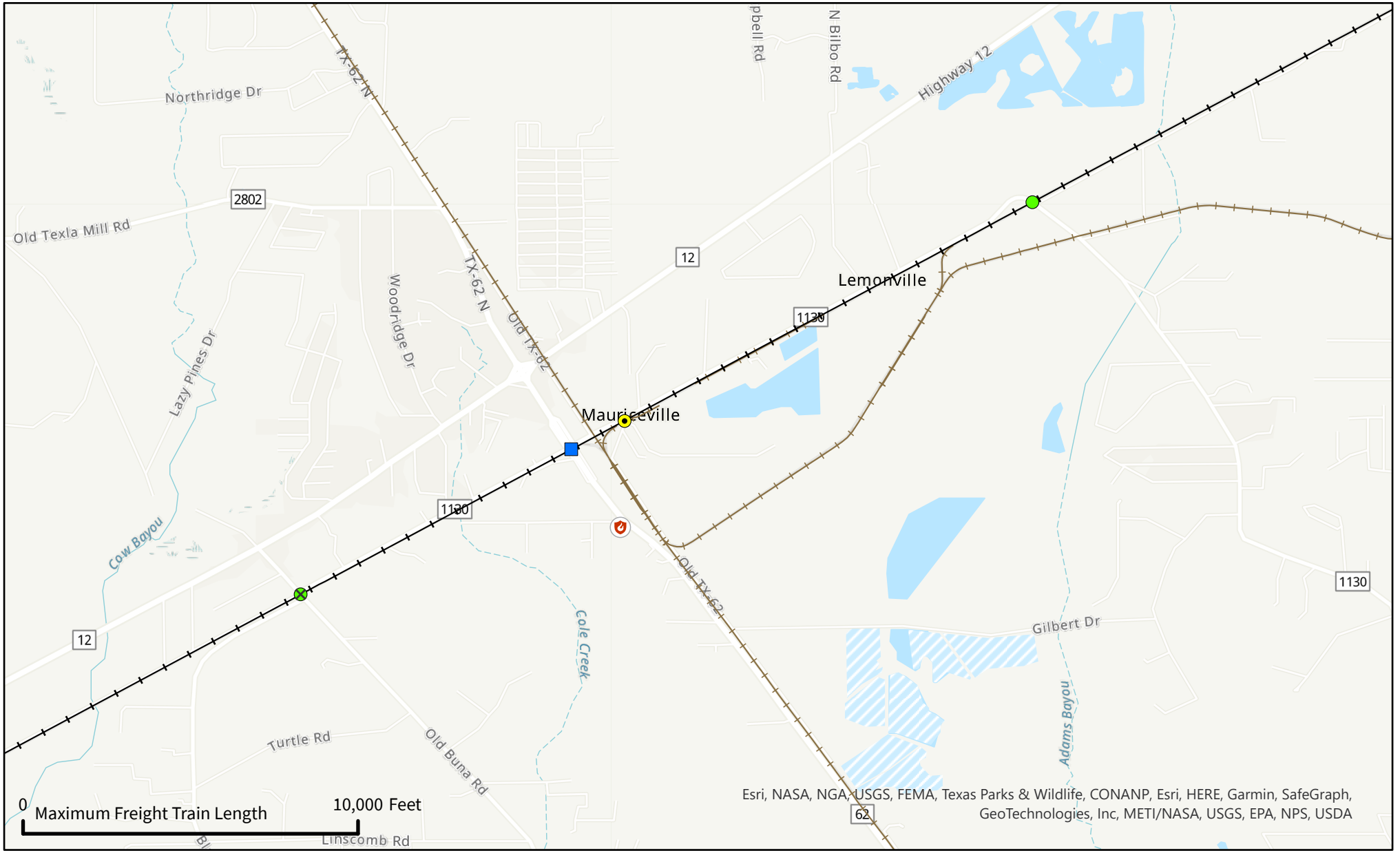


Emergency Services Routing Analysis
Near Hartburg, LA

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

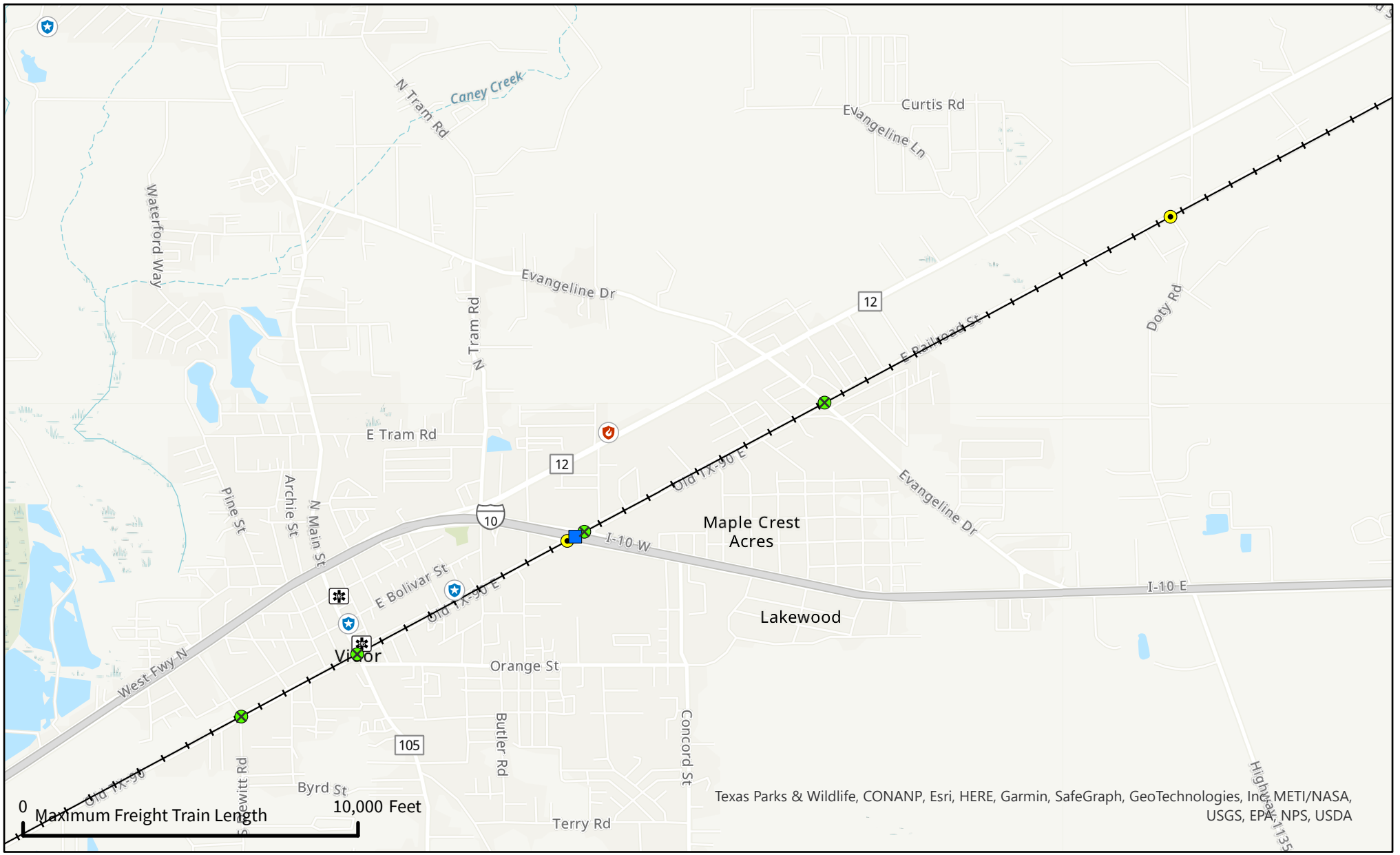


Emergency Services Routing Analysis
Mauriceville, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

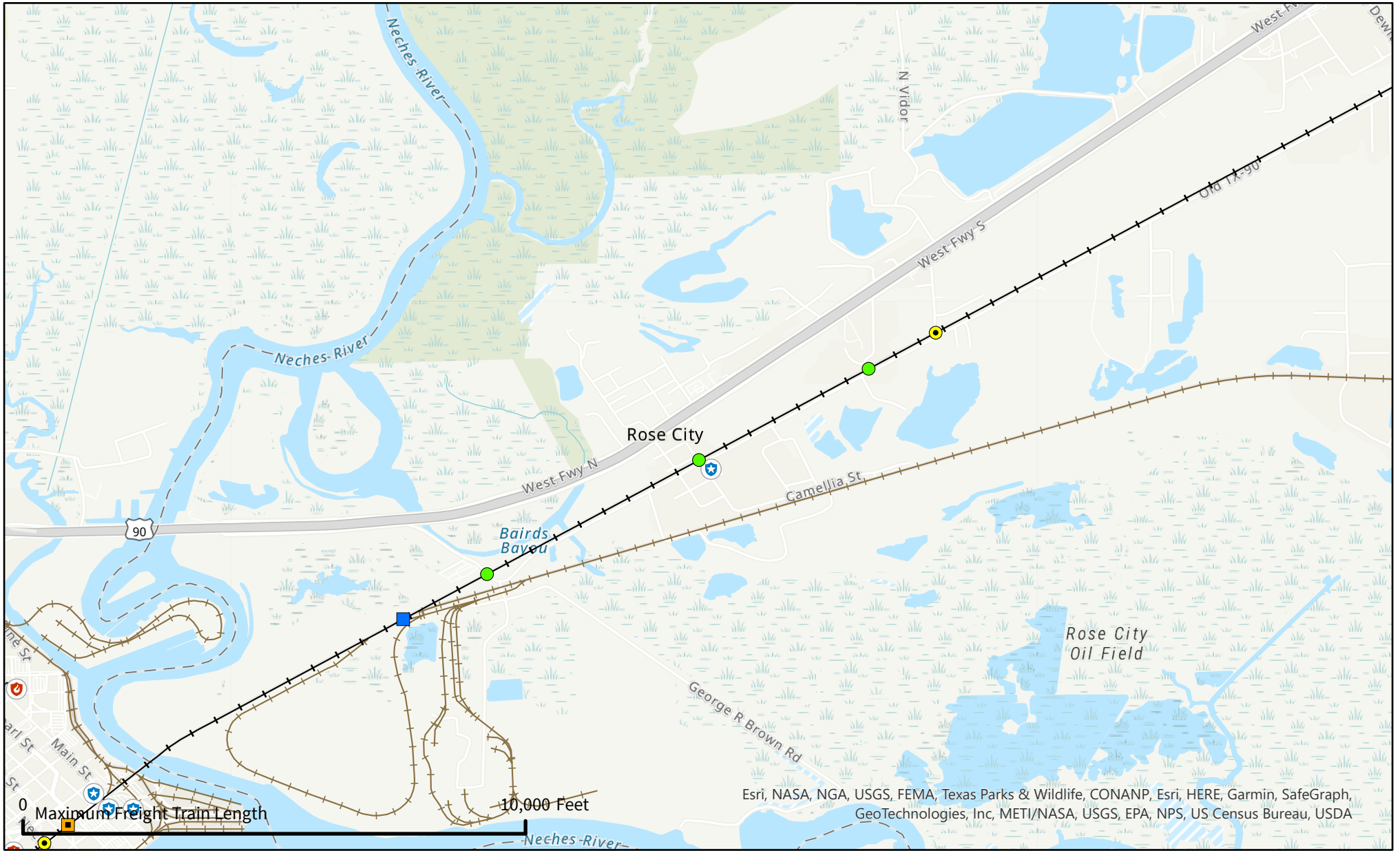


Emergency Services Routing Analysis
Vidor, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



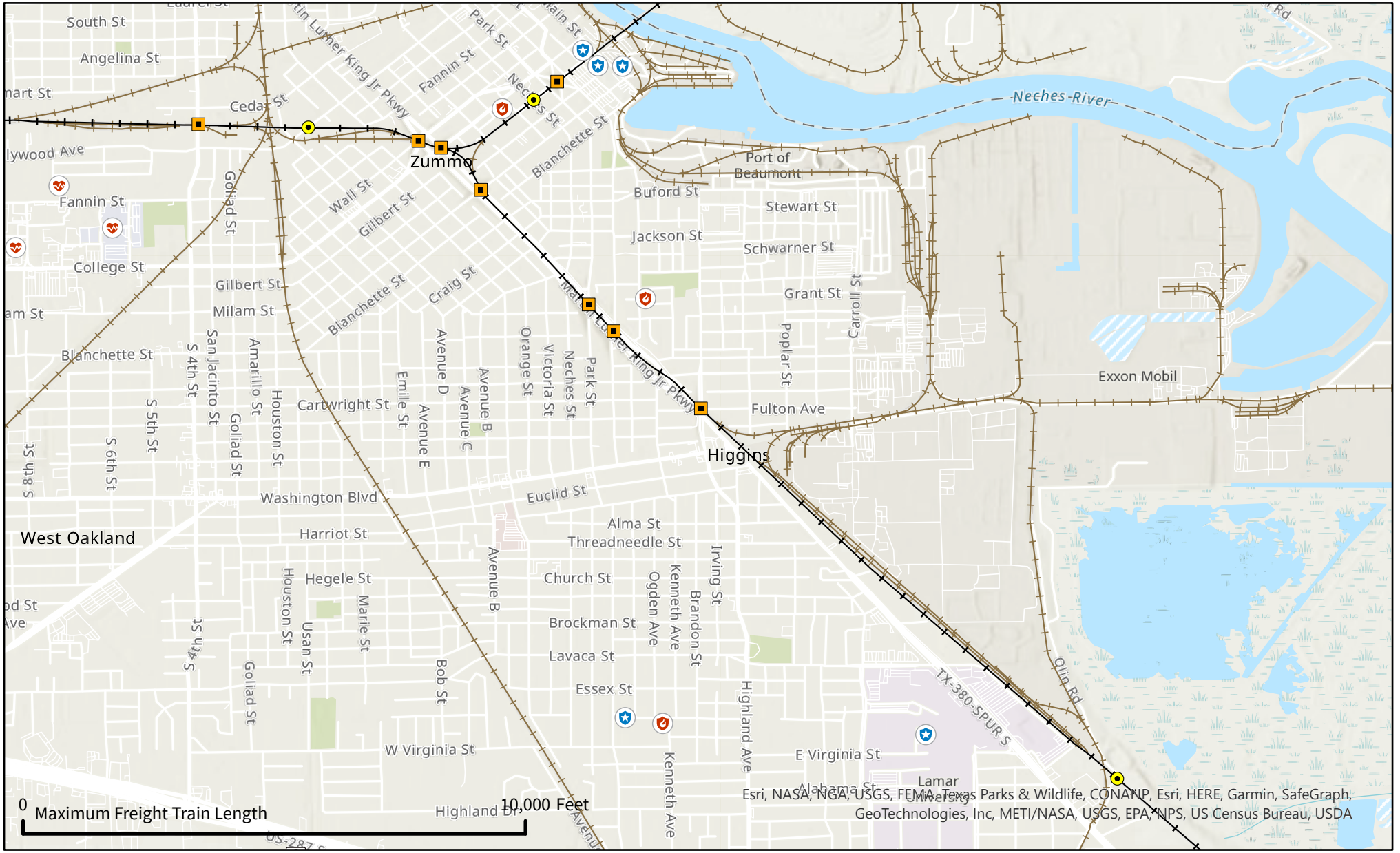
Emergency Services Routing Analysis

Rose City, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

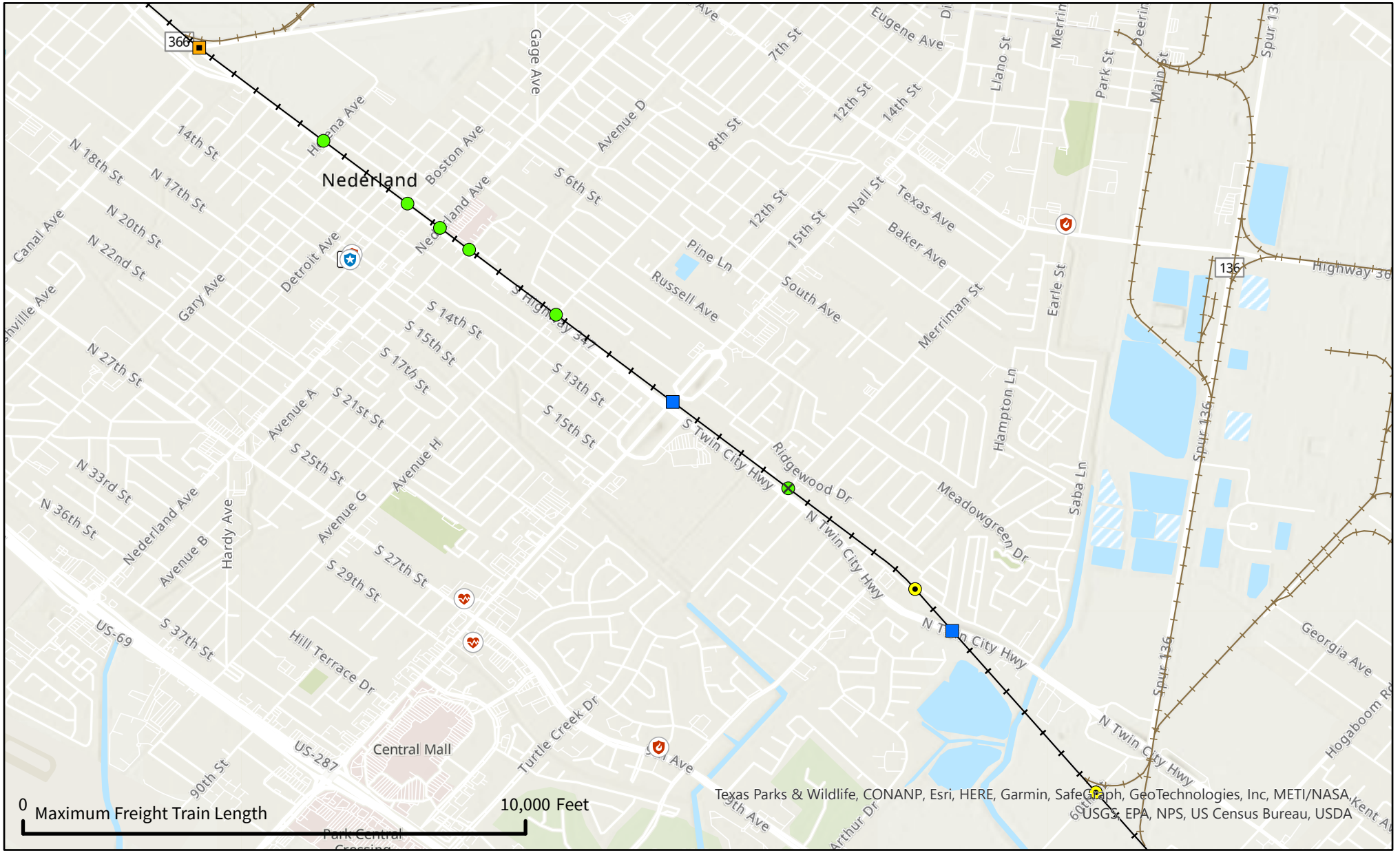


Emergency Services Routing Analysis
Beaumont, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Nederland, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



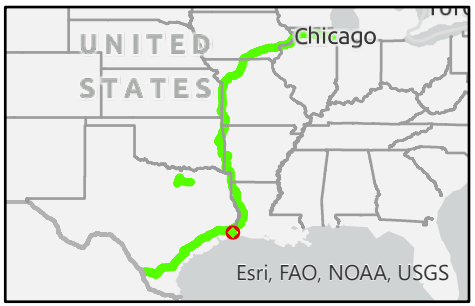
Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



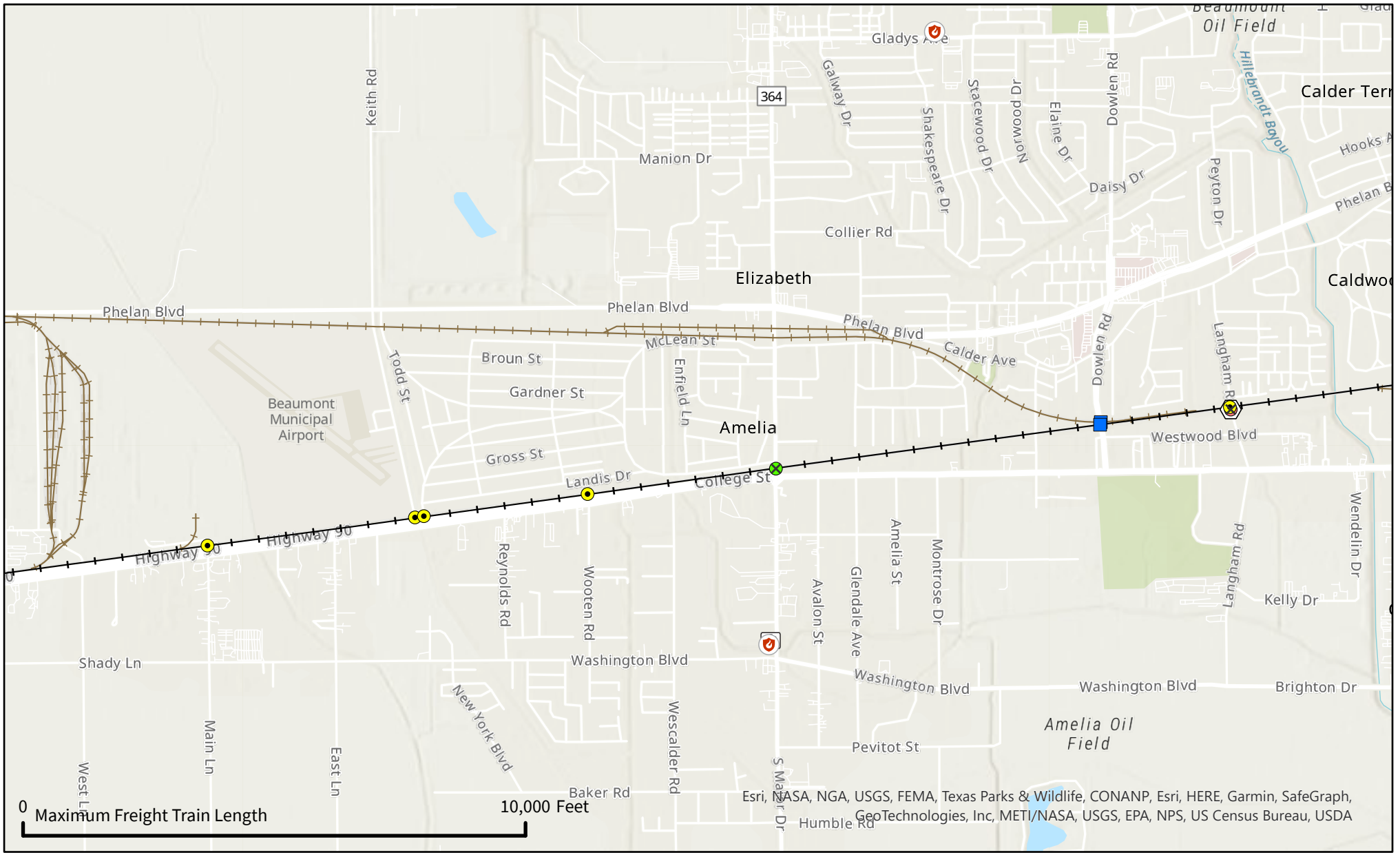
Emergency Services Routing Analysis

Port Arthur, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Beaumont, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

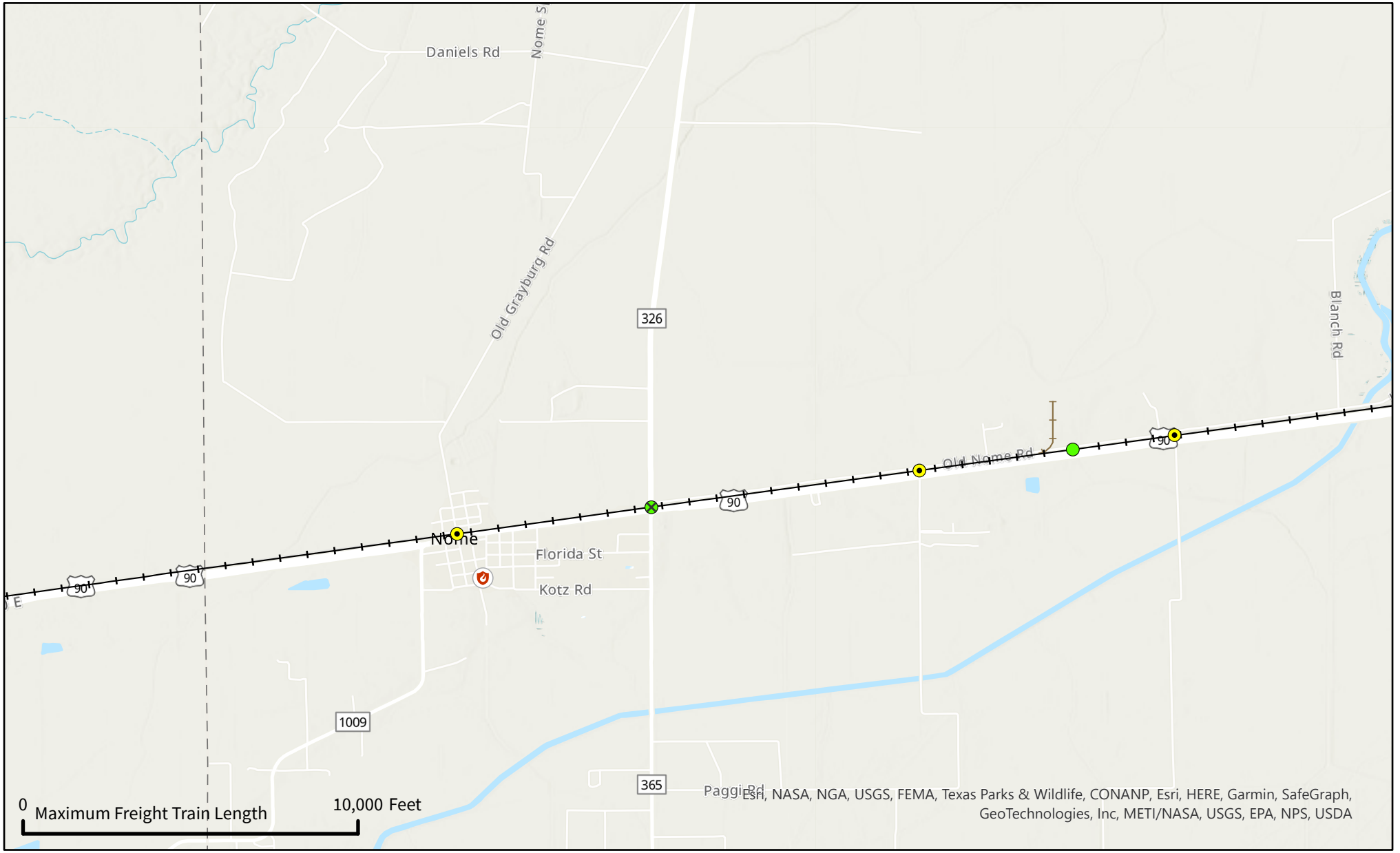


Emergency Services Routing Analysis
China, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



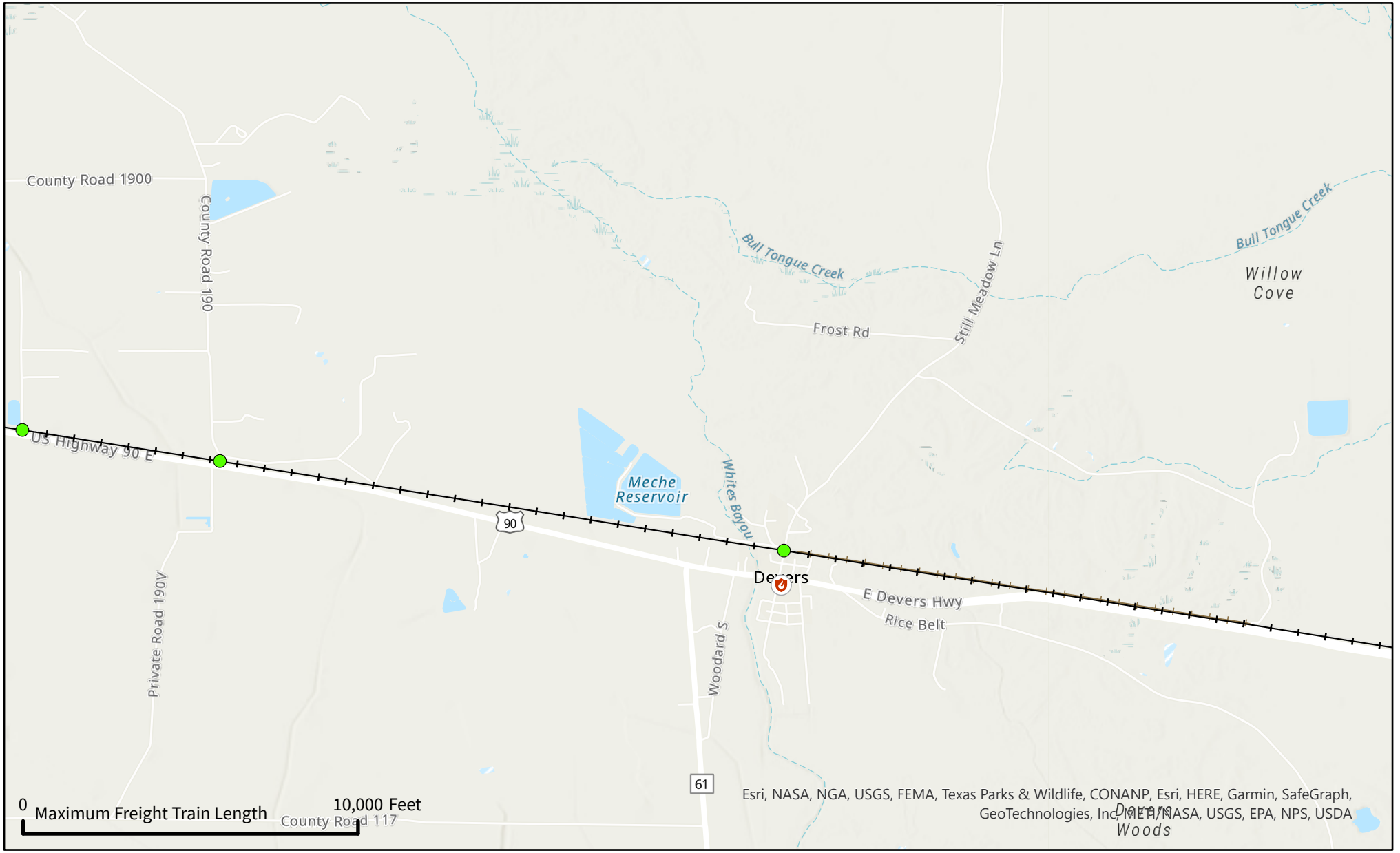
Emergency Services Routing Analysis

Nome, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



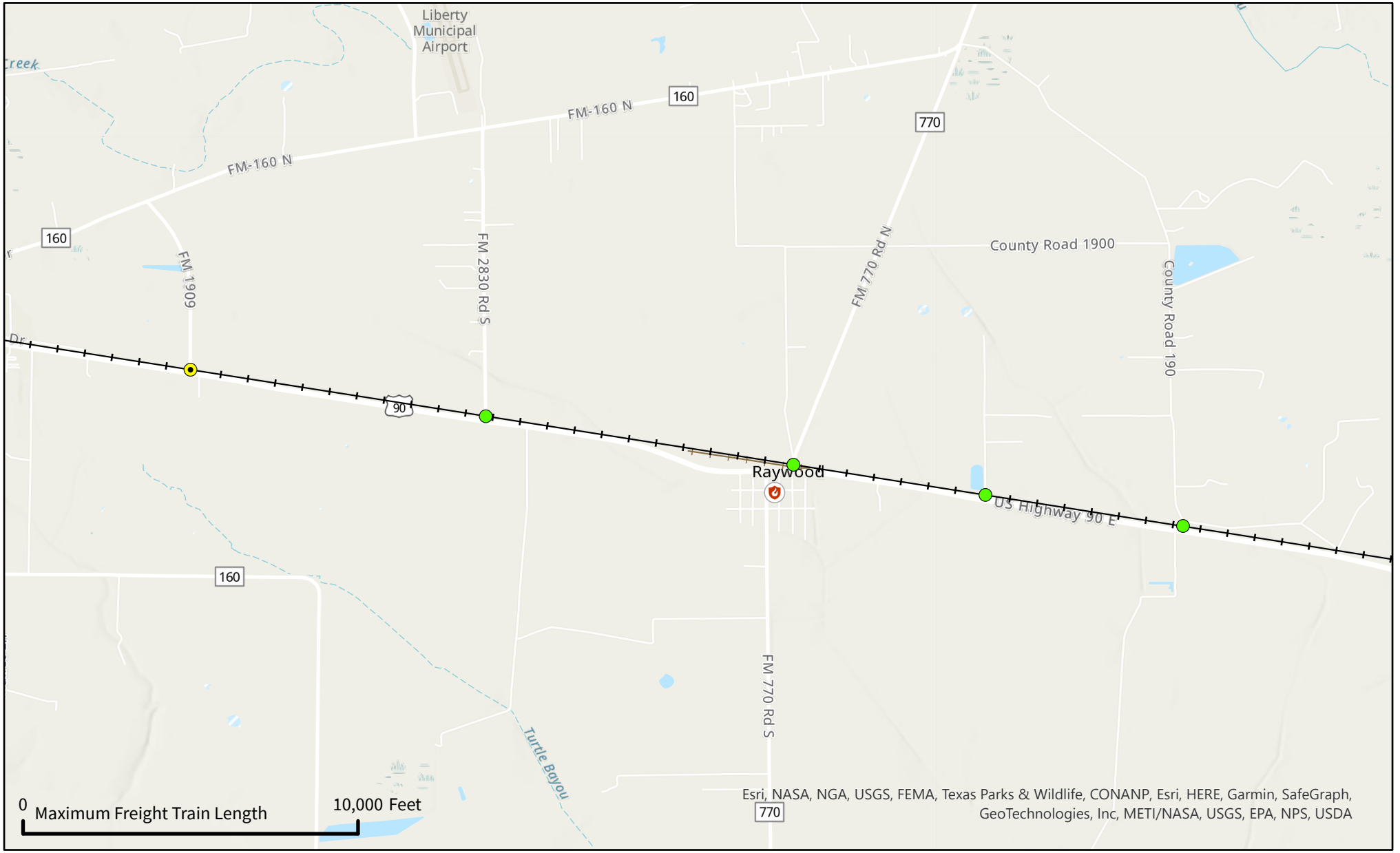
Emergency Services Routing Analysis

Devers, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



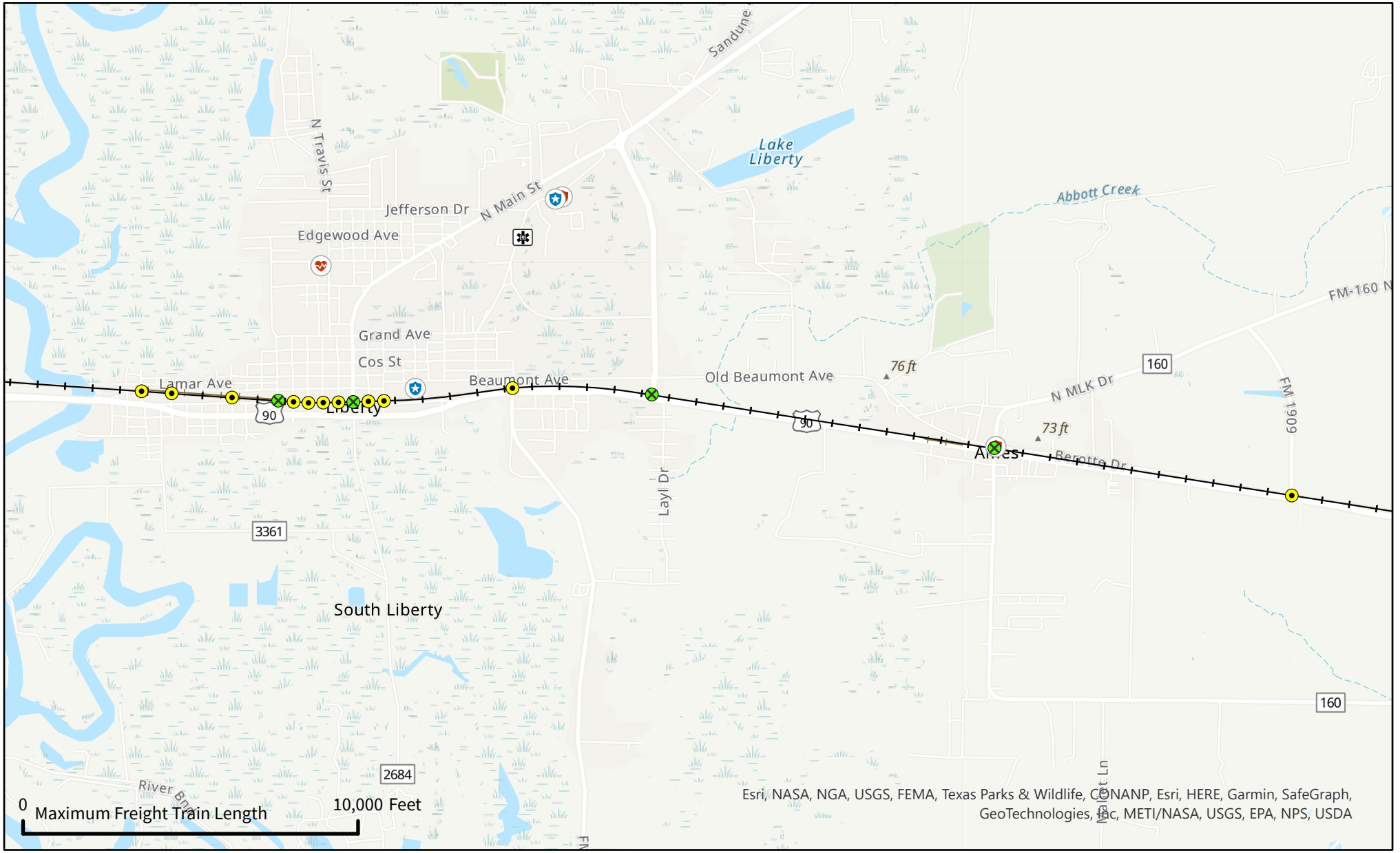
Emergency Services Routing Analysis

Raywood, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

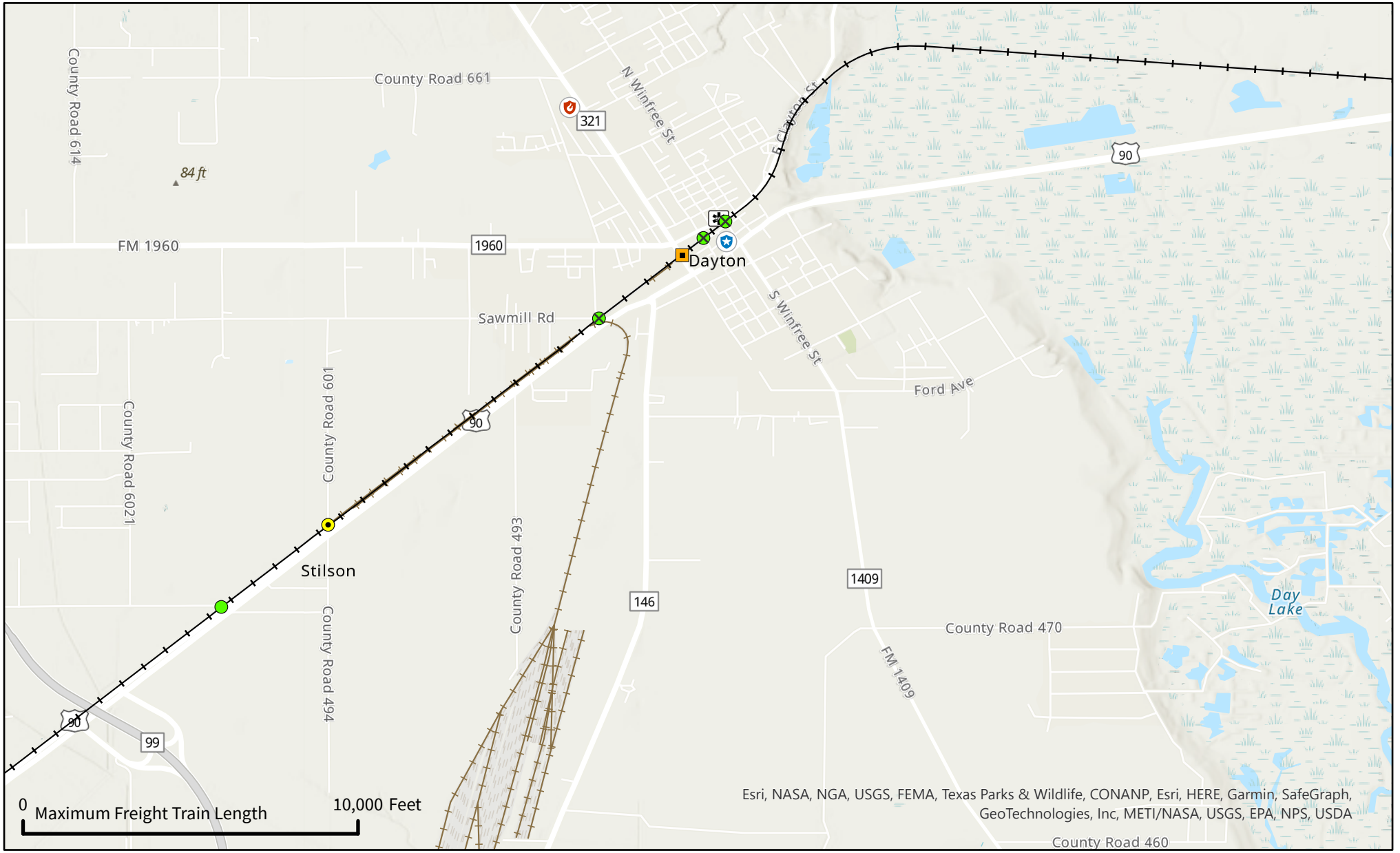


Emergency Services Routing Analysis
Liberty, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Dayton, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
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- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
SW of Stilson, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
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- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

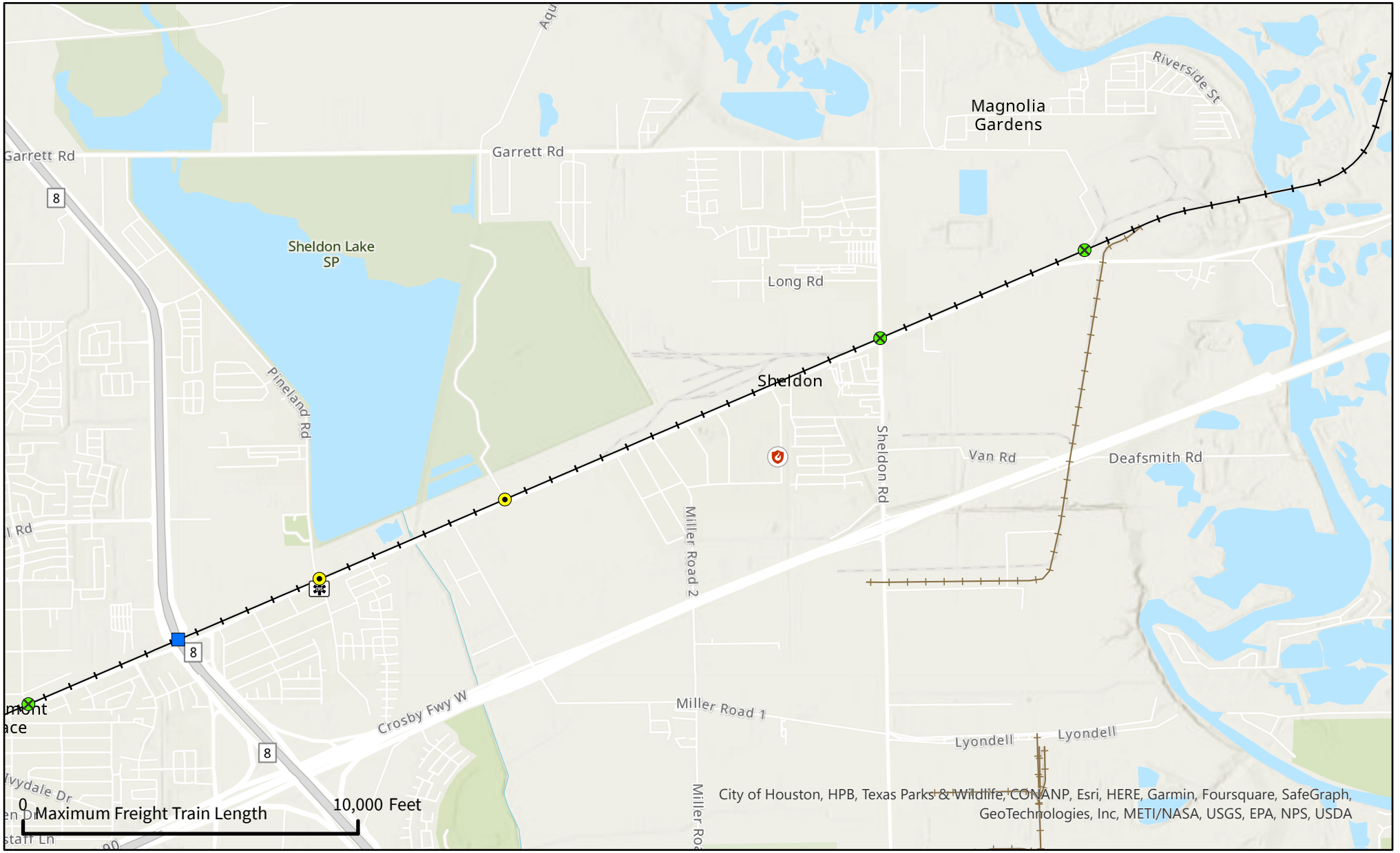


Emergency Services Routing Analysis
Crosby, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

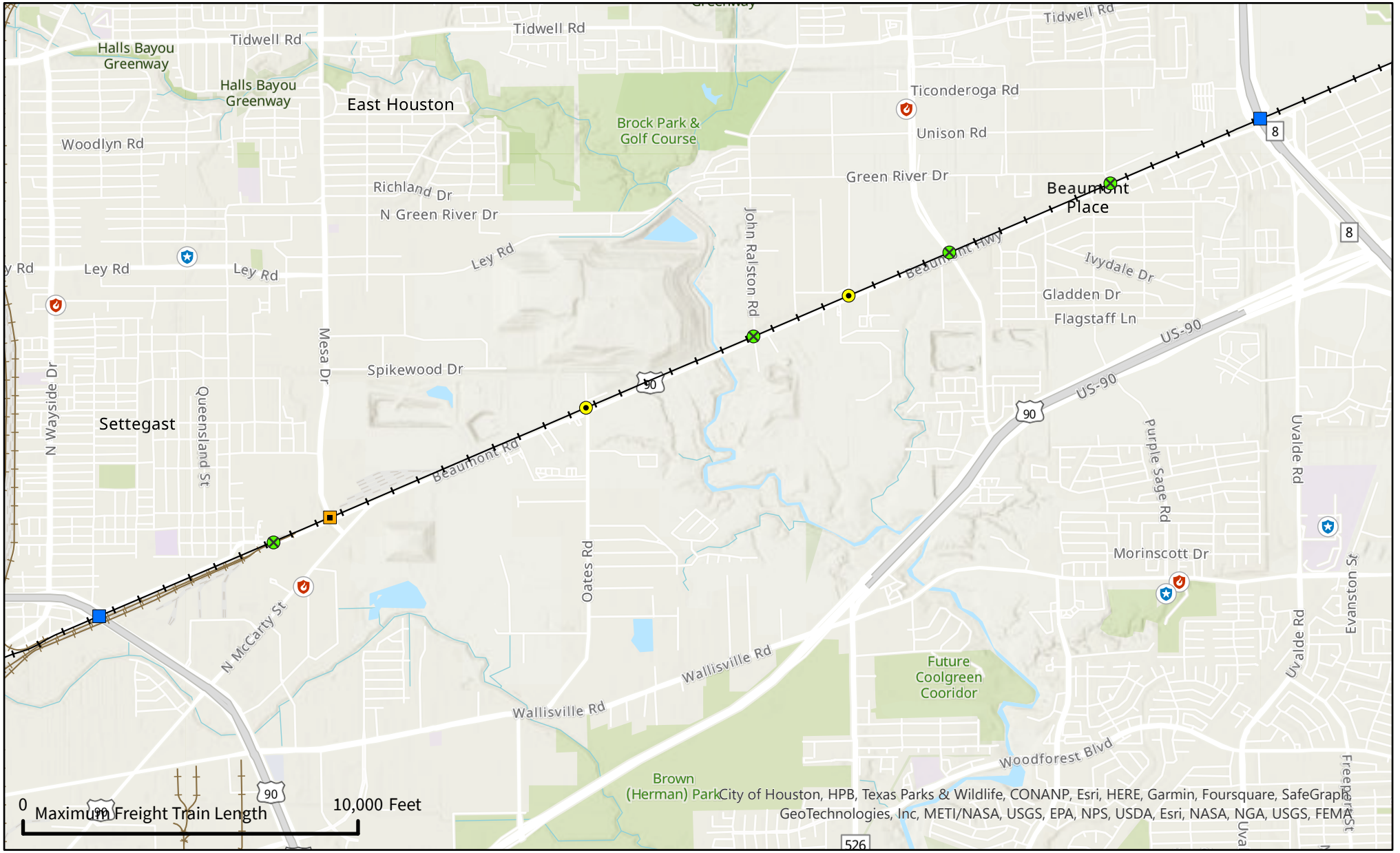


Emergency Services Routing Analysis
Sheldon, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
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- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

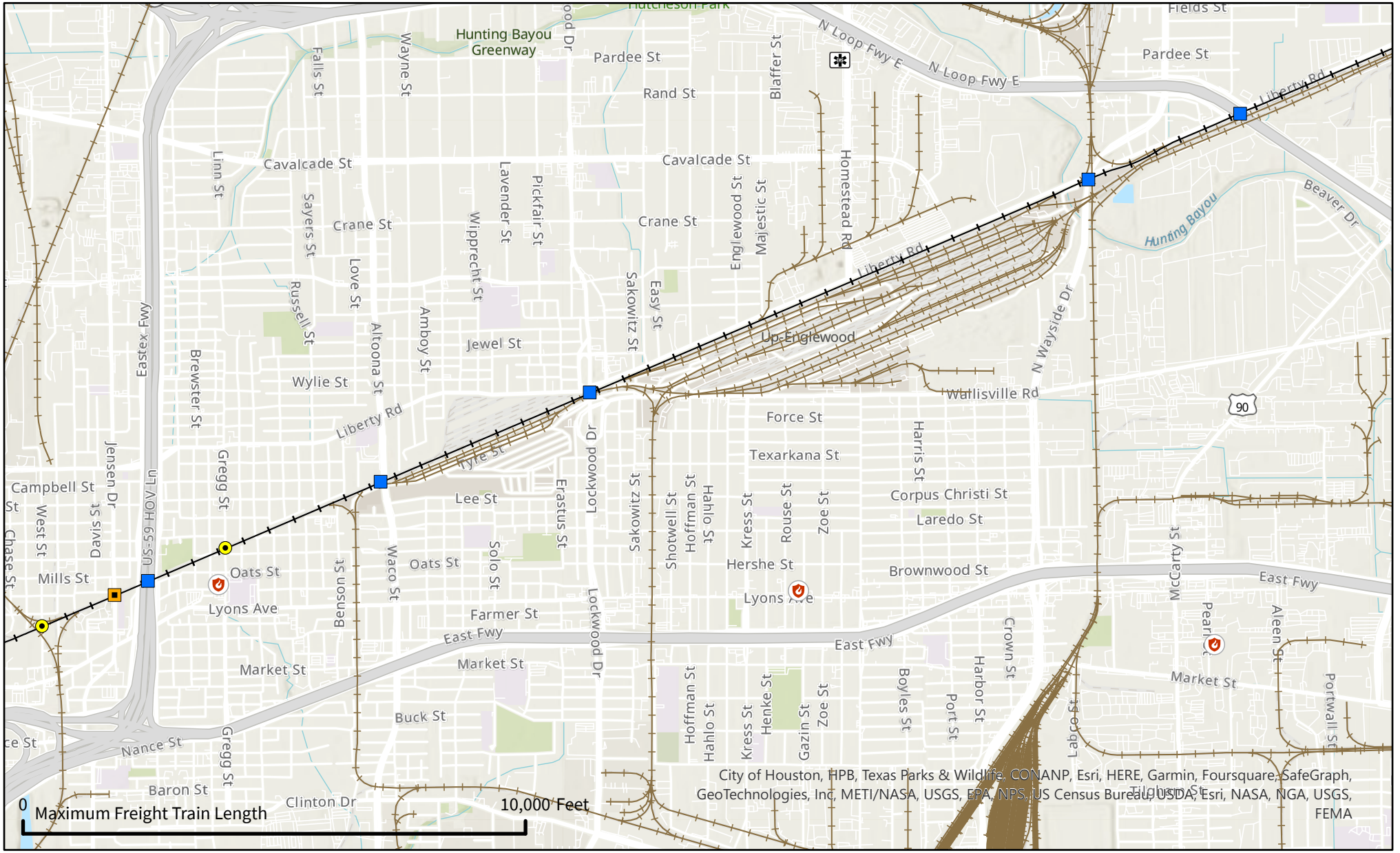


Emergency Services Routing Analysis
East Houston, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

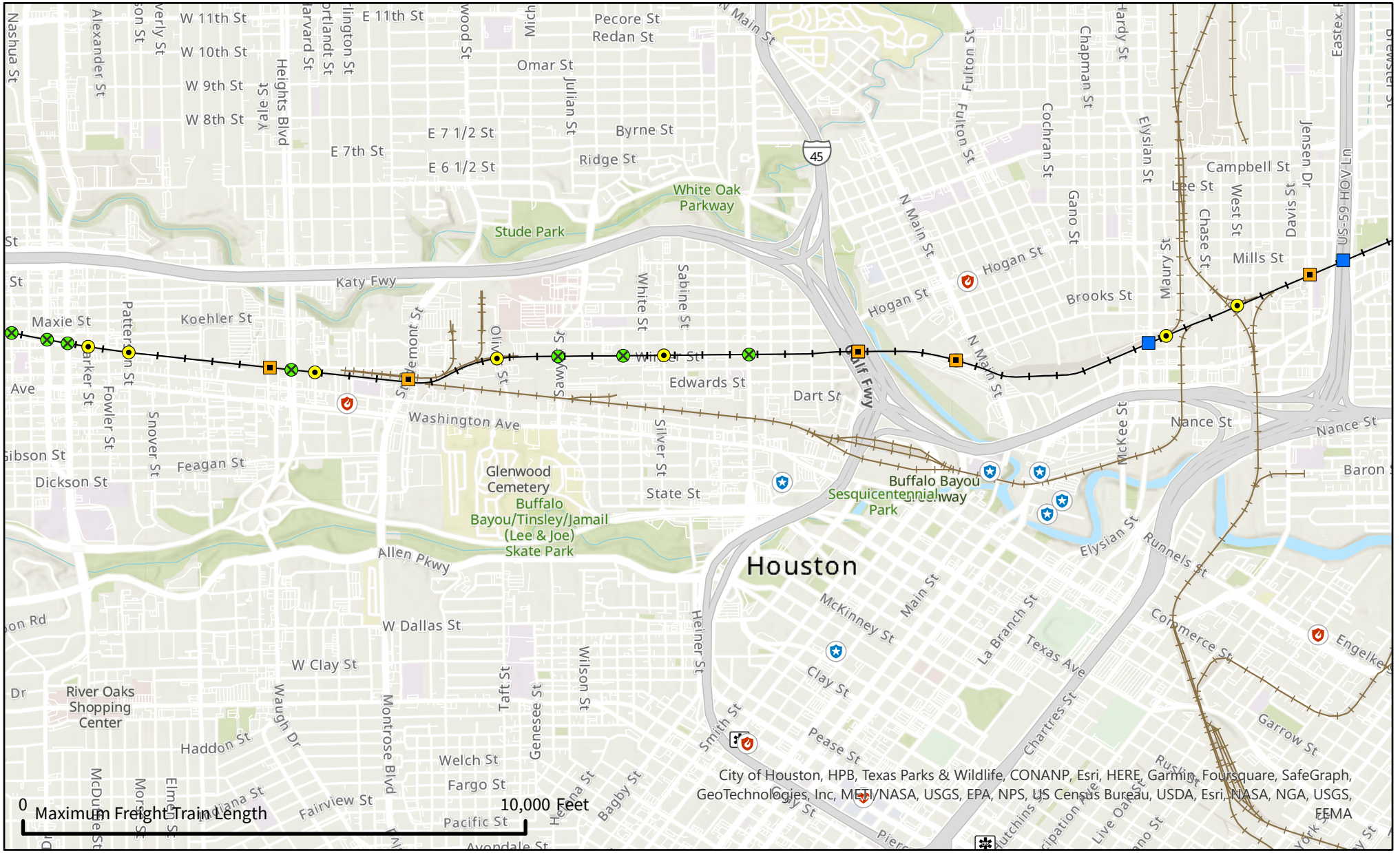


Emergency Services Routing Analysis
Houston, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
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Other

- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

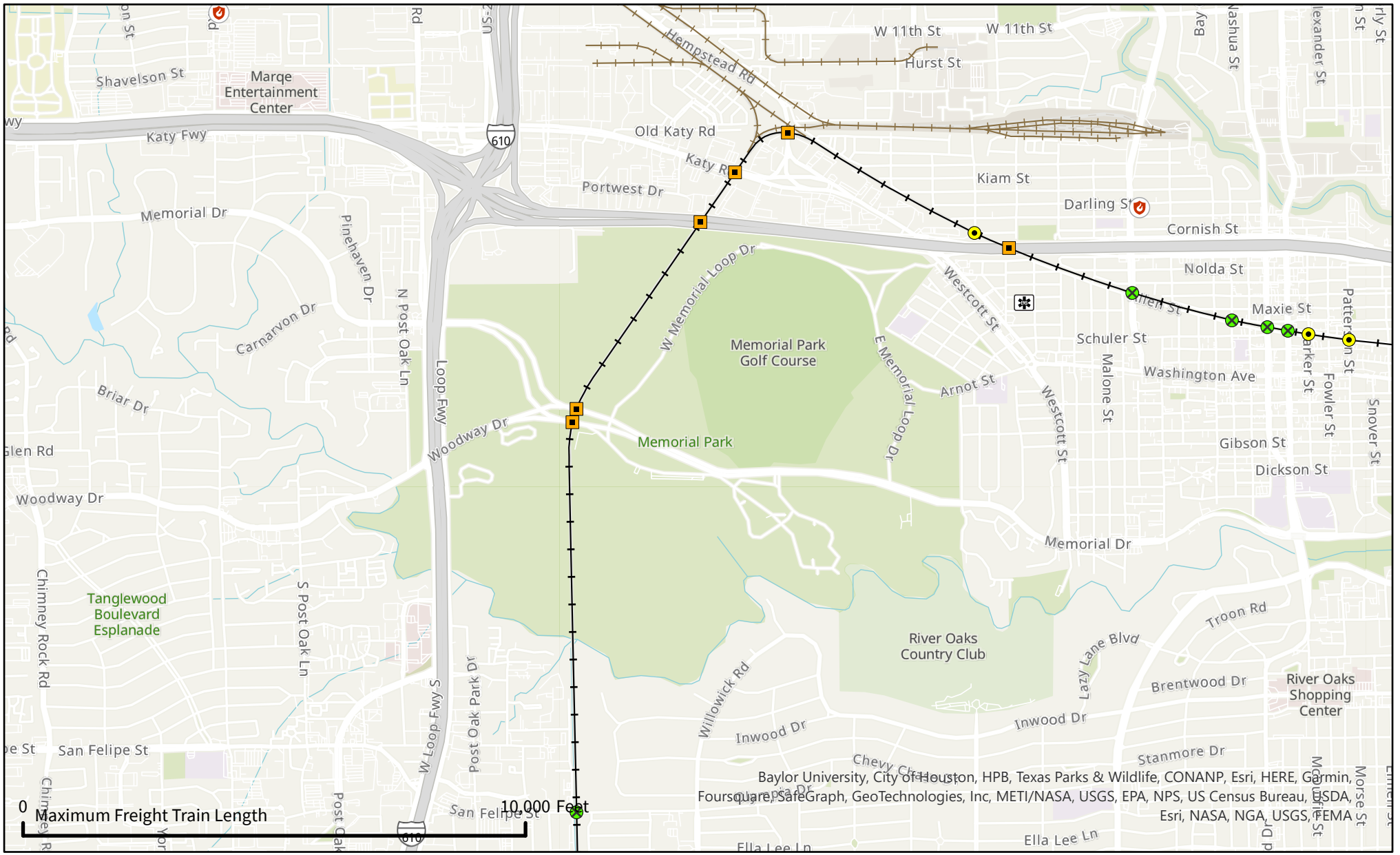


Emergency Services Routing Analysis
Houston, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



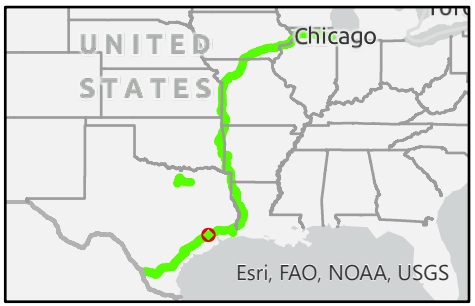
Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

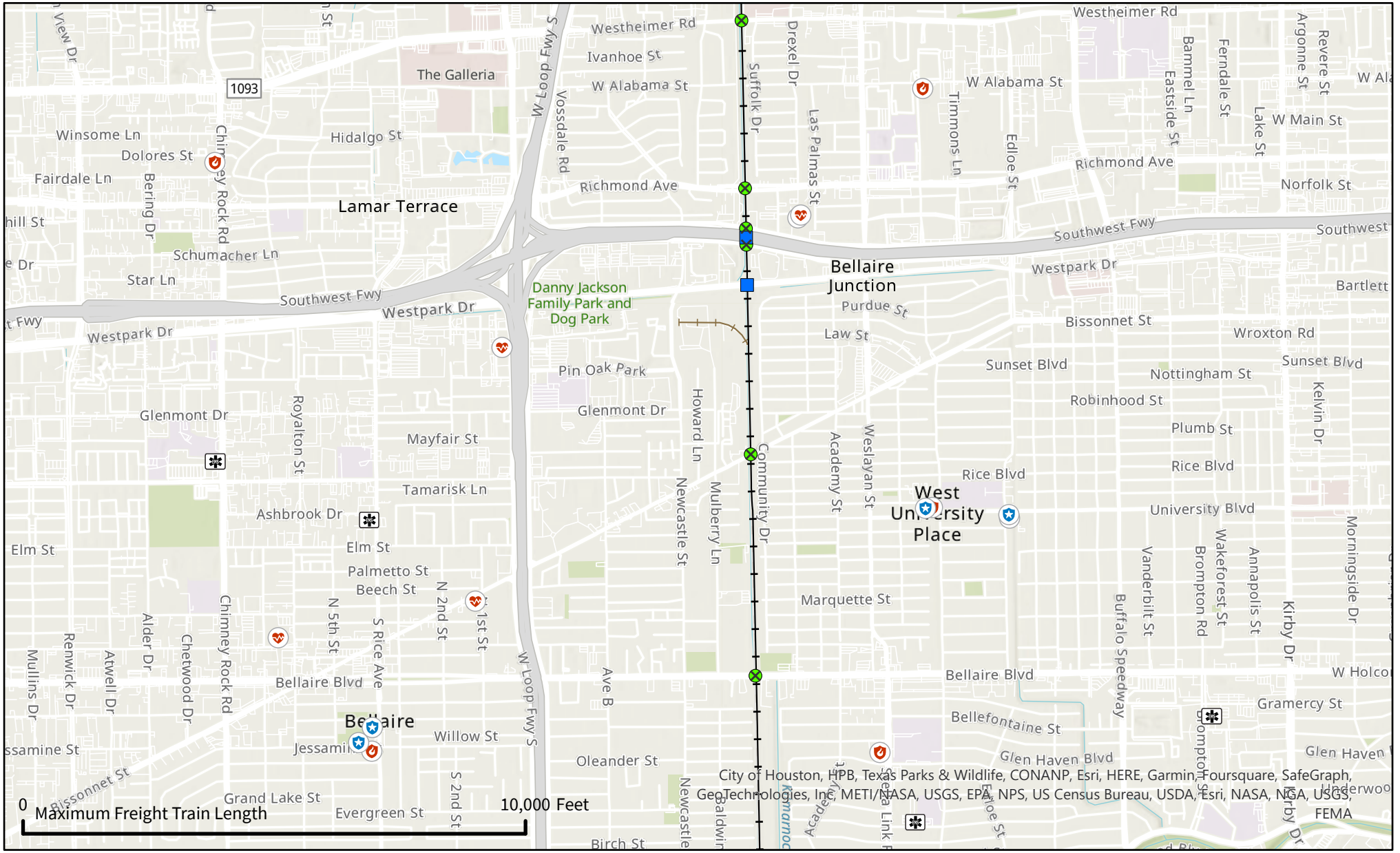


Emergency Services Routing Analysis
West Houston, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
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- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

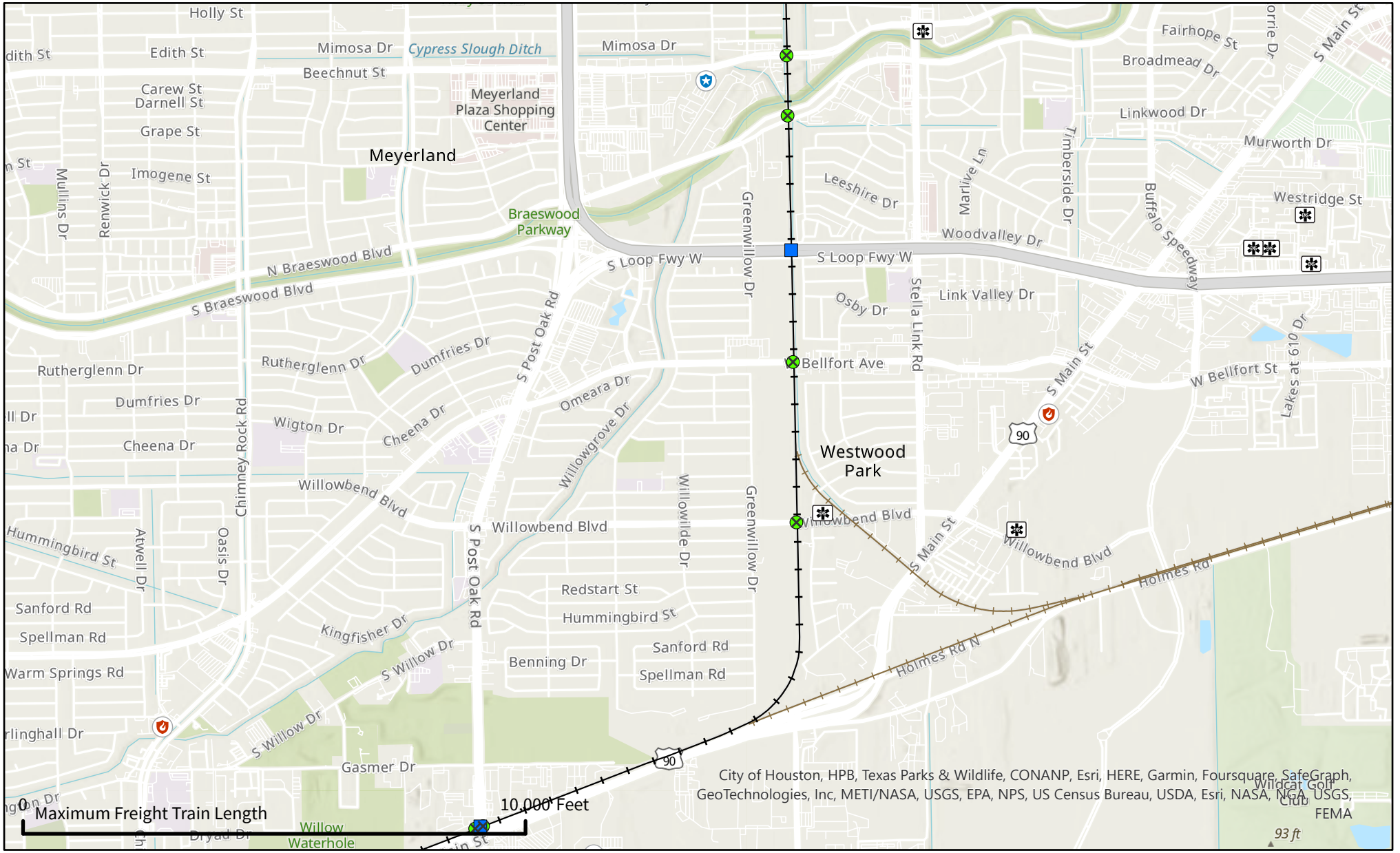


Emergency Services Routing Analysis
Bellaire, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

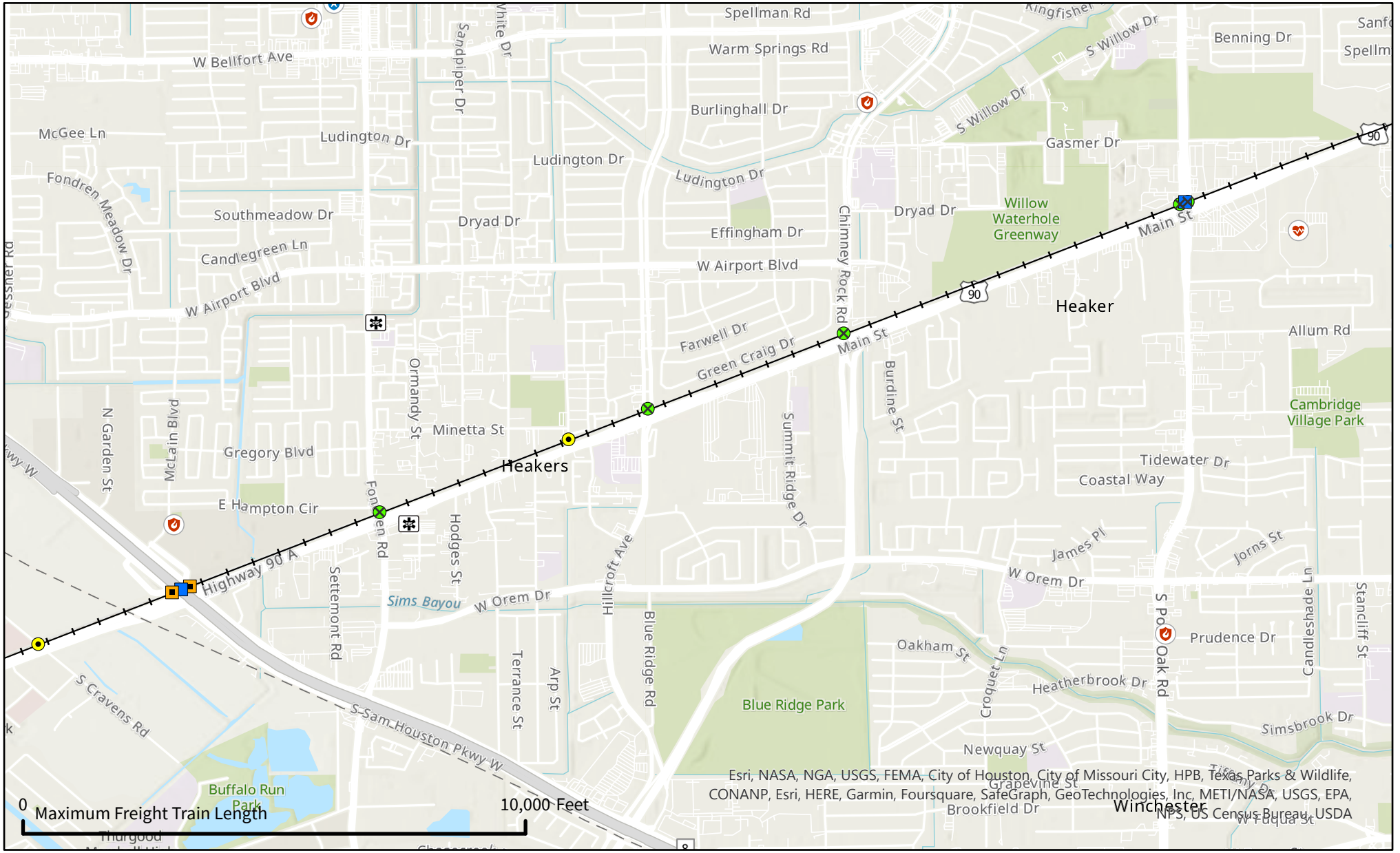


Emergency Services Routing Analysis
Westwood Park, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
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- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



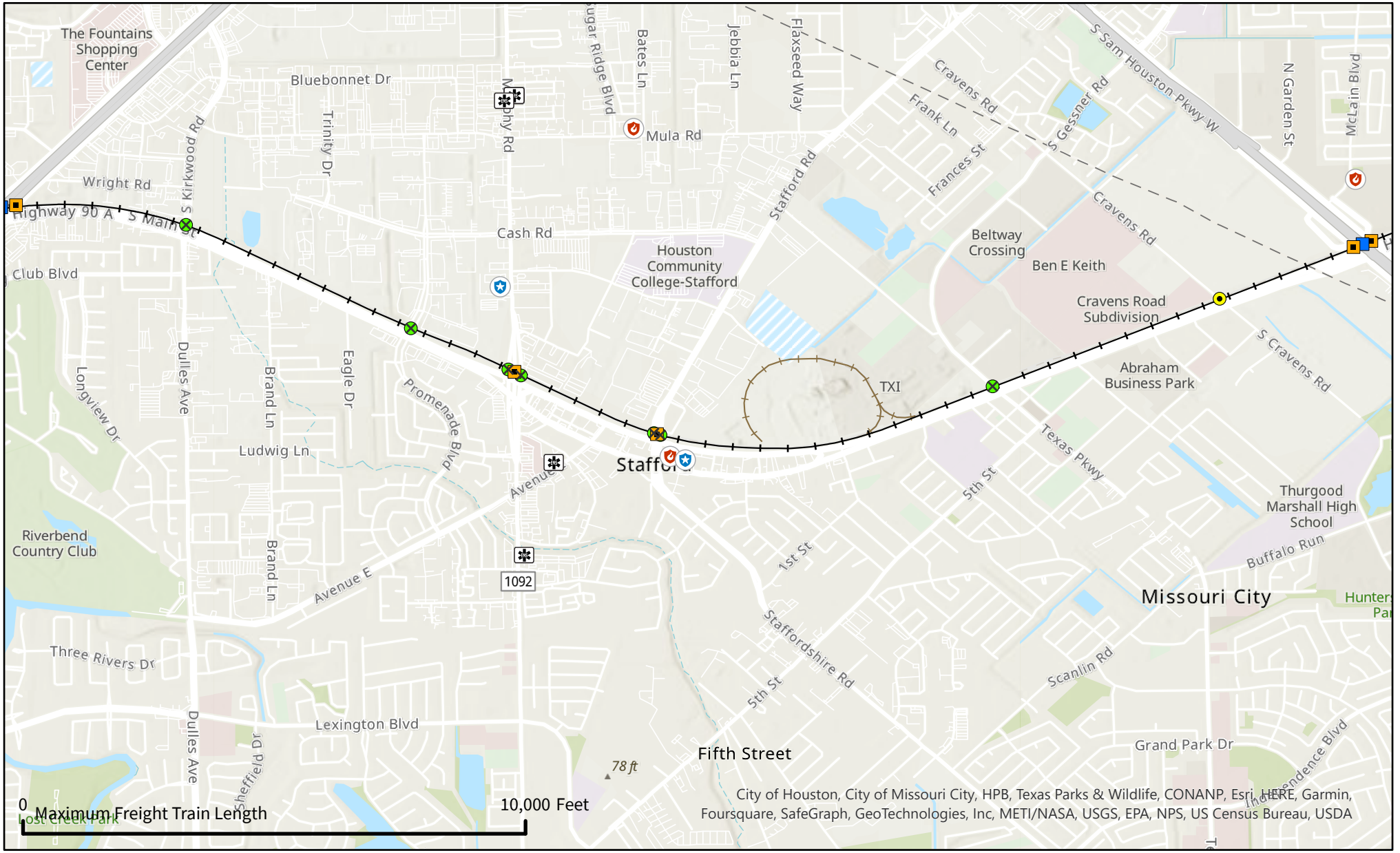
Emergency Services Routing Analysis

Heakers, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
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Other

- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

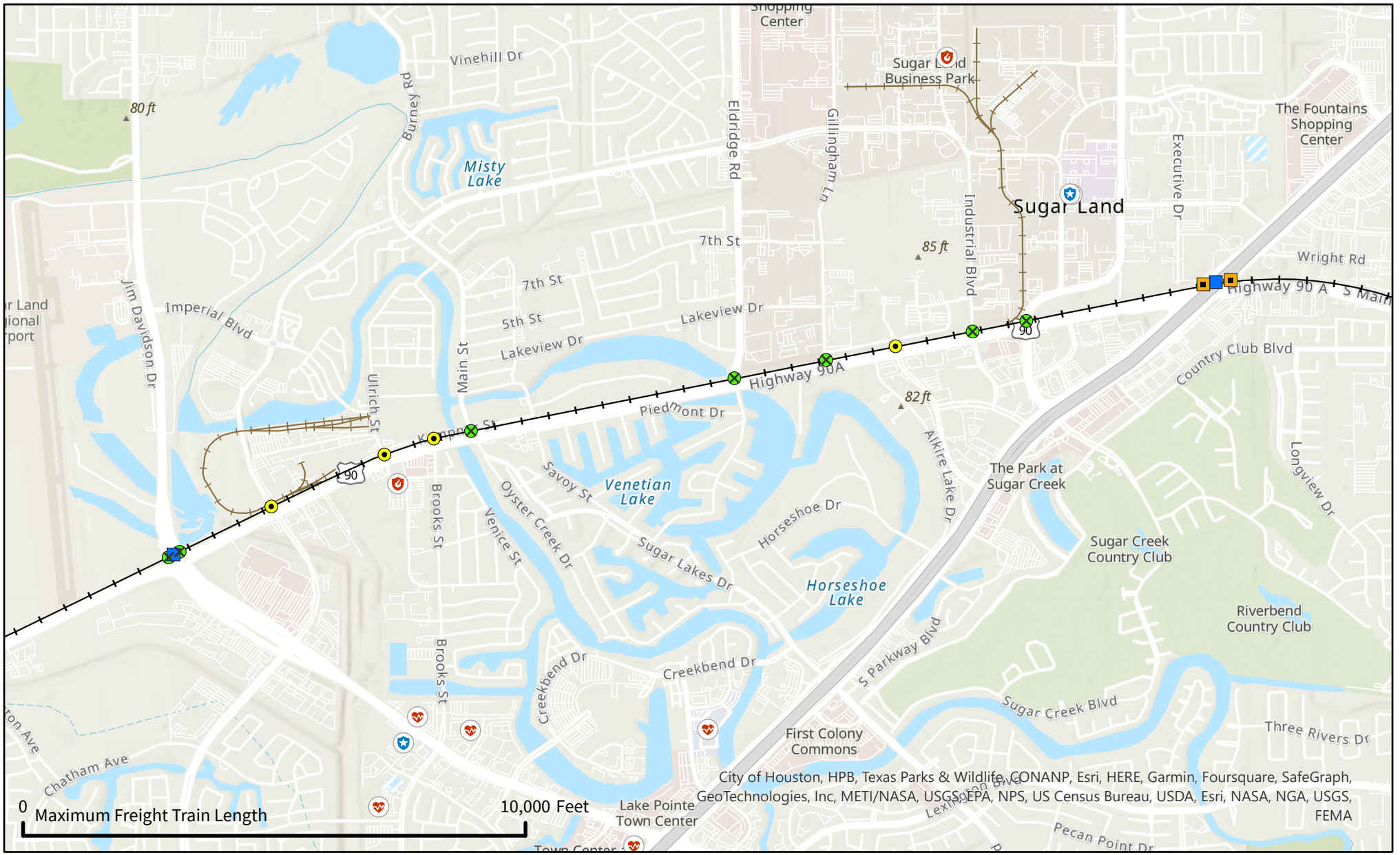


Emergency Services Routing Analysis
Stafford, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
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- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



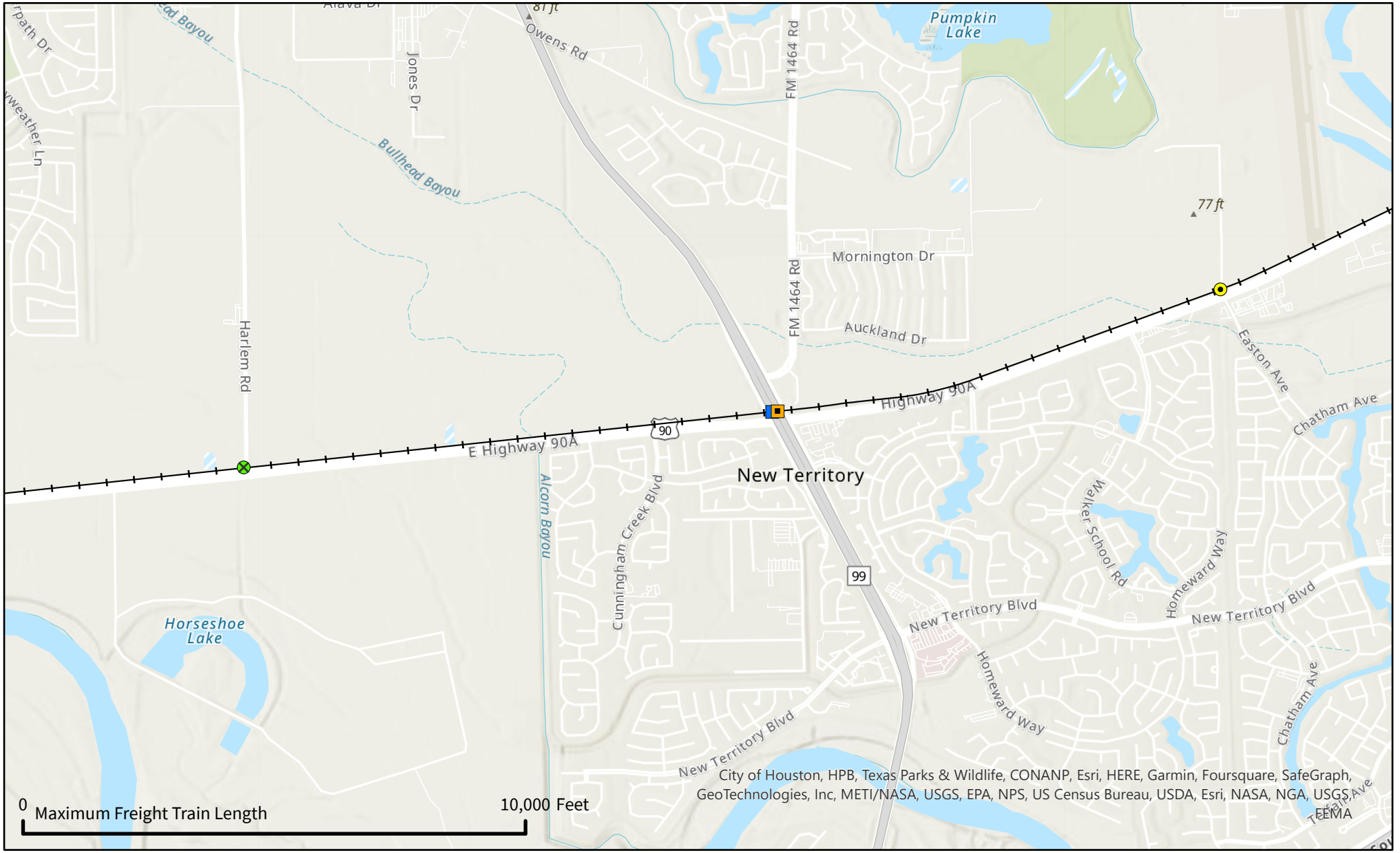
Emergency Services Routing Analysis

Sugar Land, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

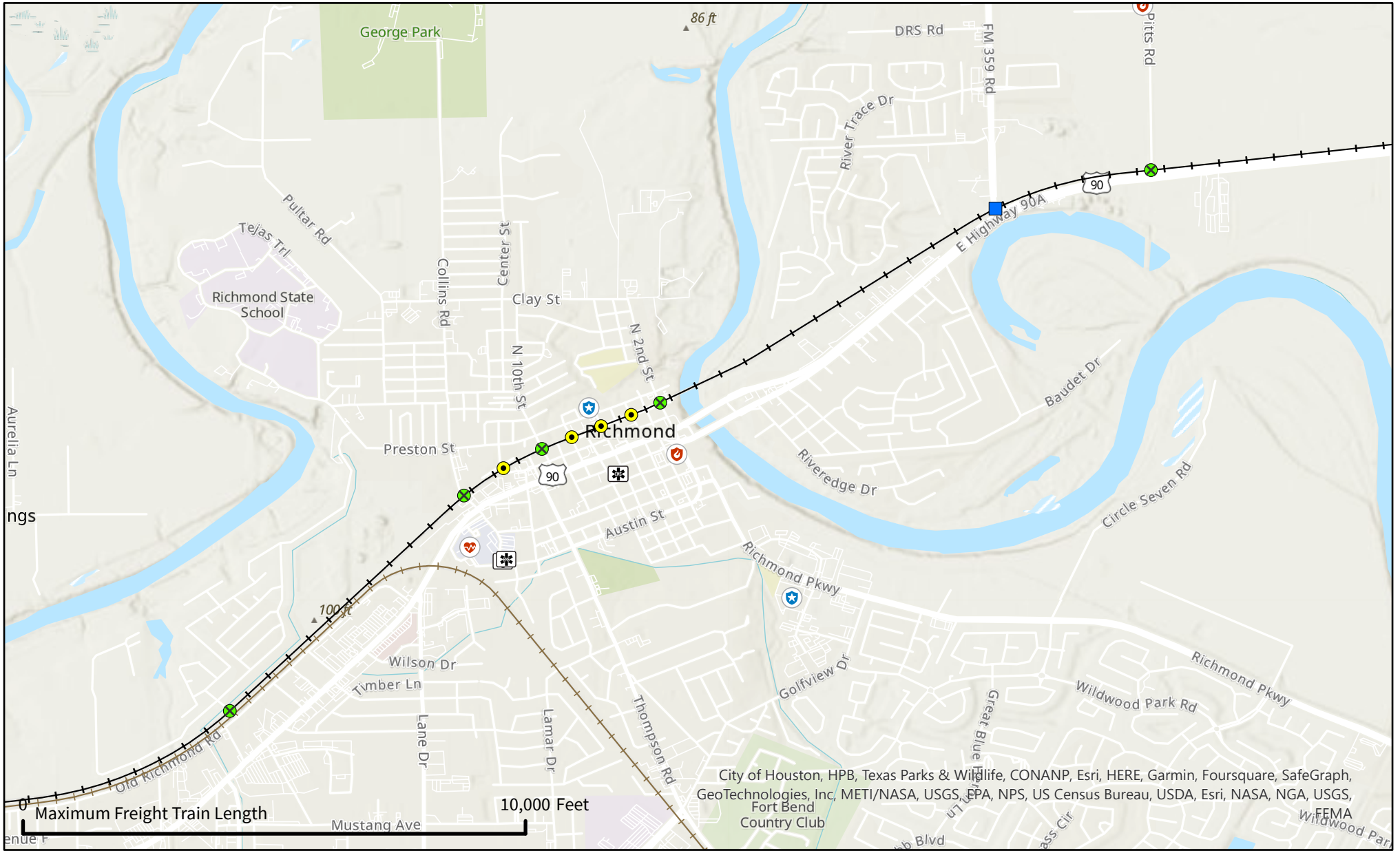


Emergency Services Routing Analysis
SW of Sugar Land, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



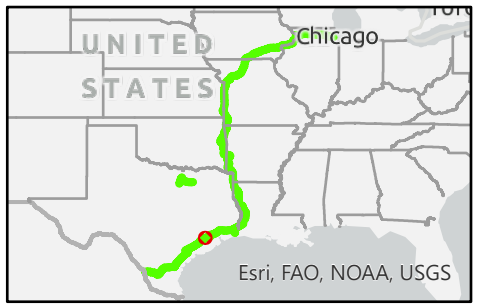
Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

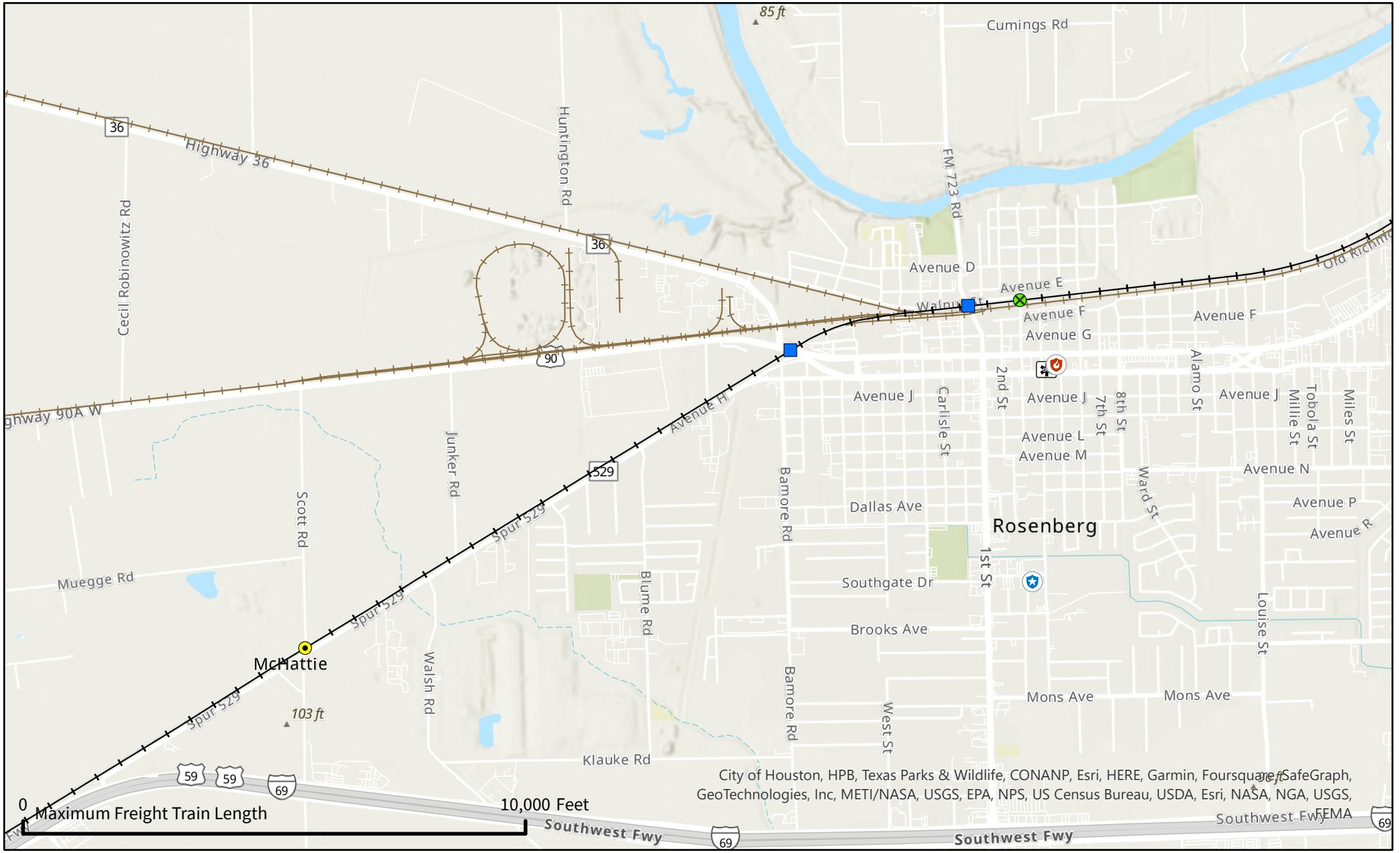


Emergency Services Routing Analysis
Richmond, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



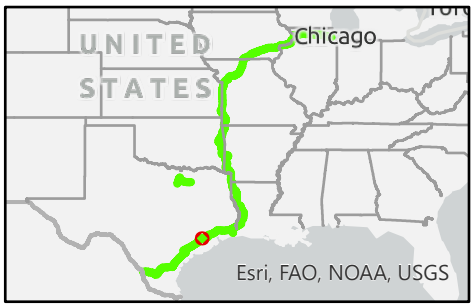
Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Or At-Grade Crossing
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- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

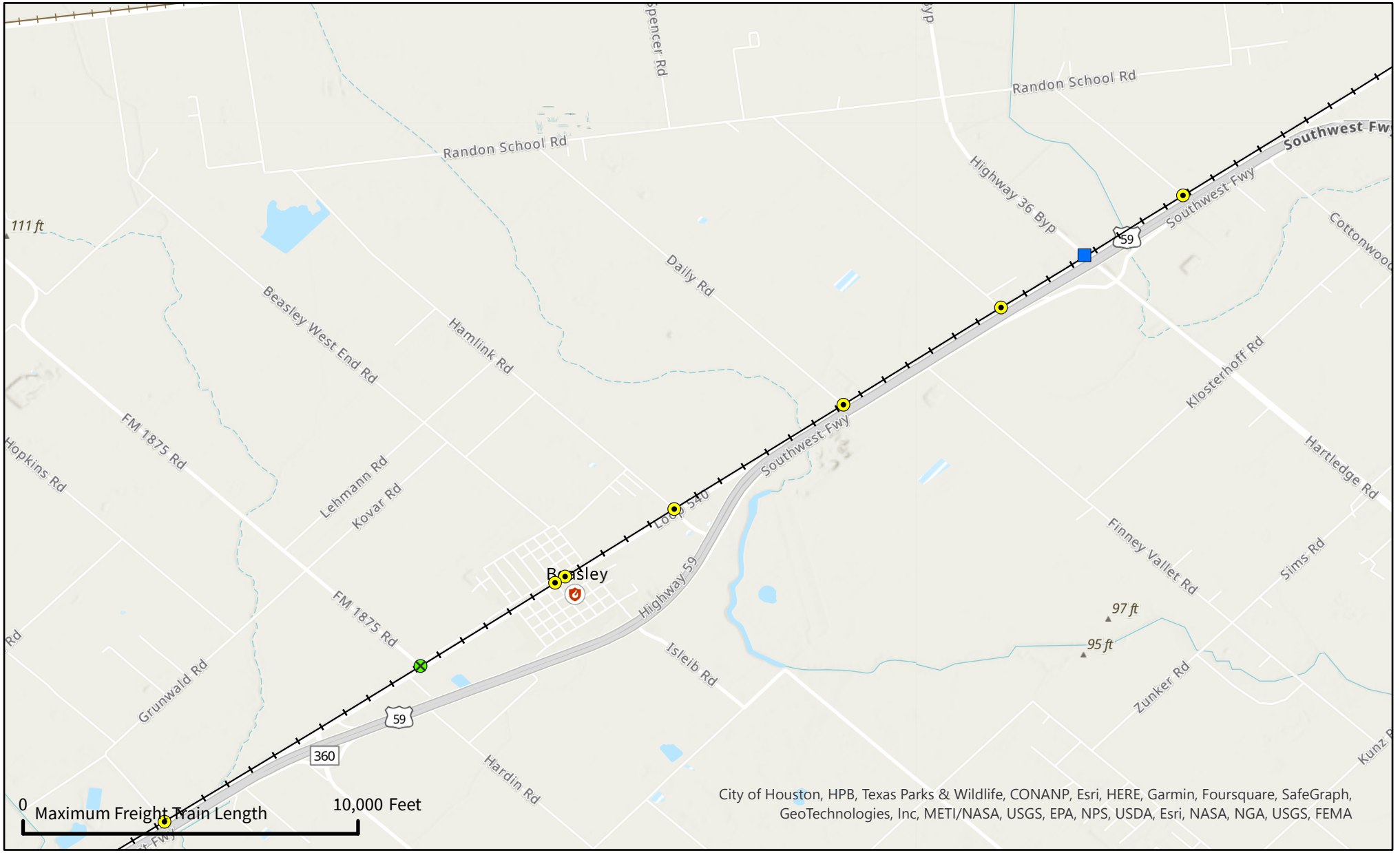


Emergency Services Routing Analysis
Rosenberg, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



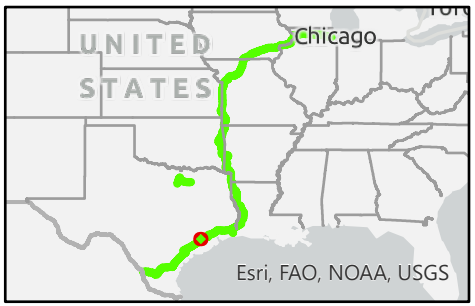
Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



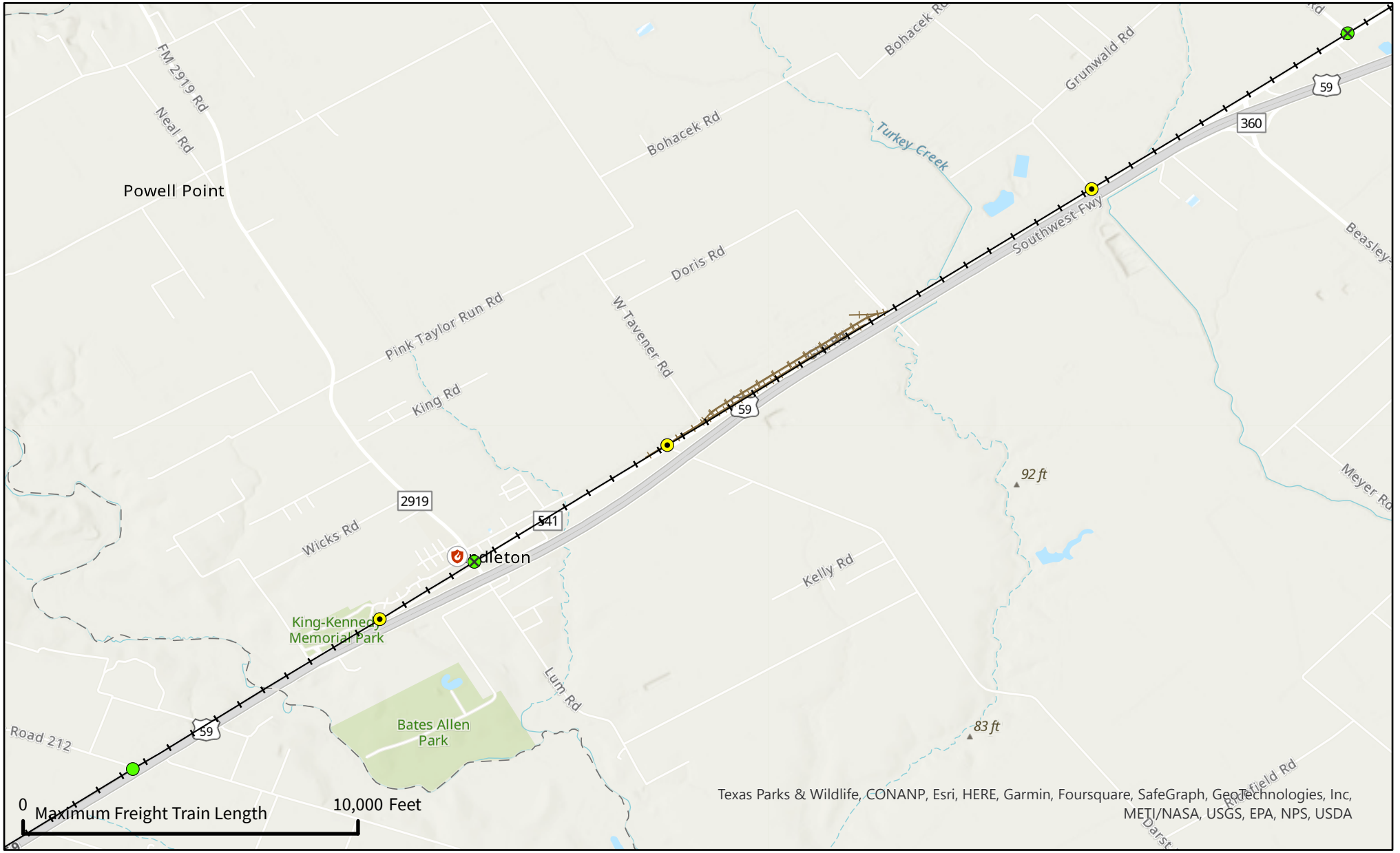
Emergency Services Routing Analysis

Beasley, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
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- At-Grade Crossing (Excluded from EMS Analysis)
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- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

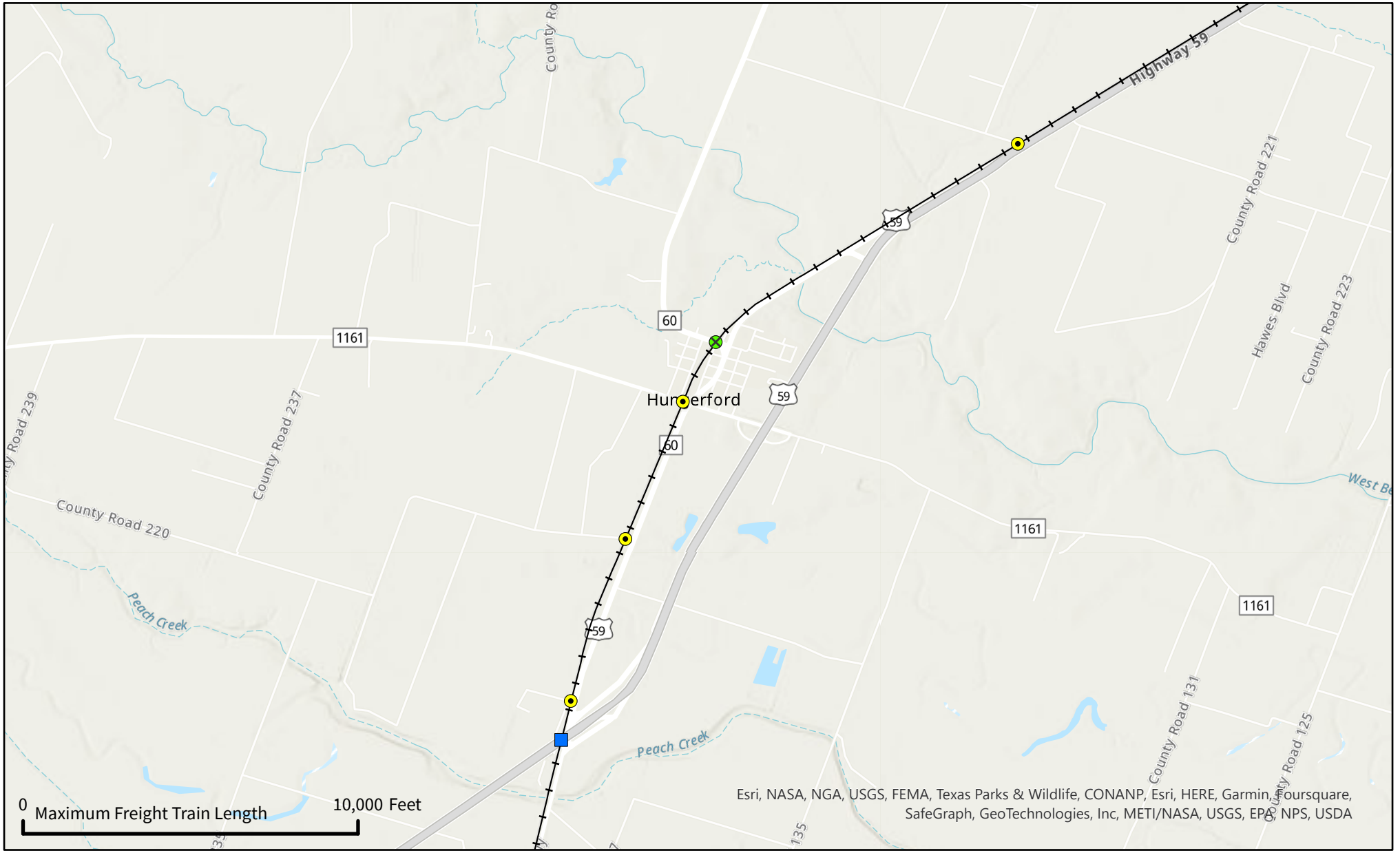


Emergency Services Routing Analysis
Kendleton, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

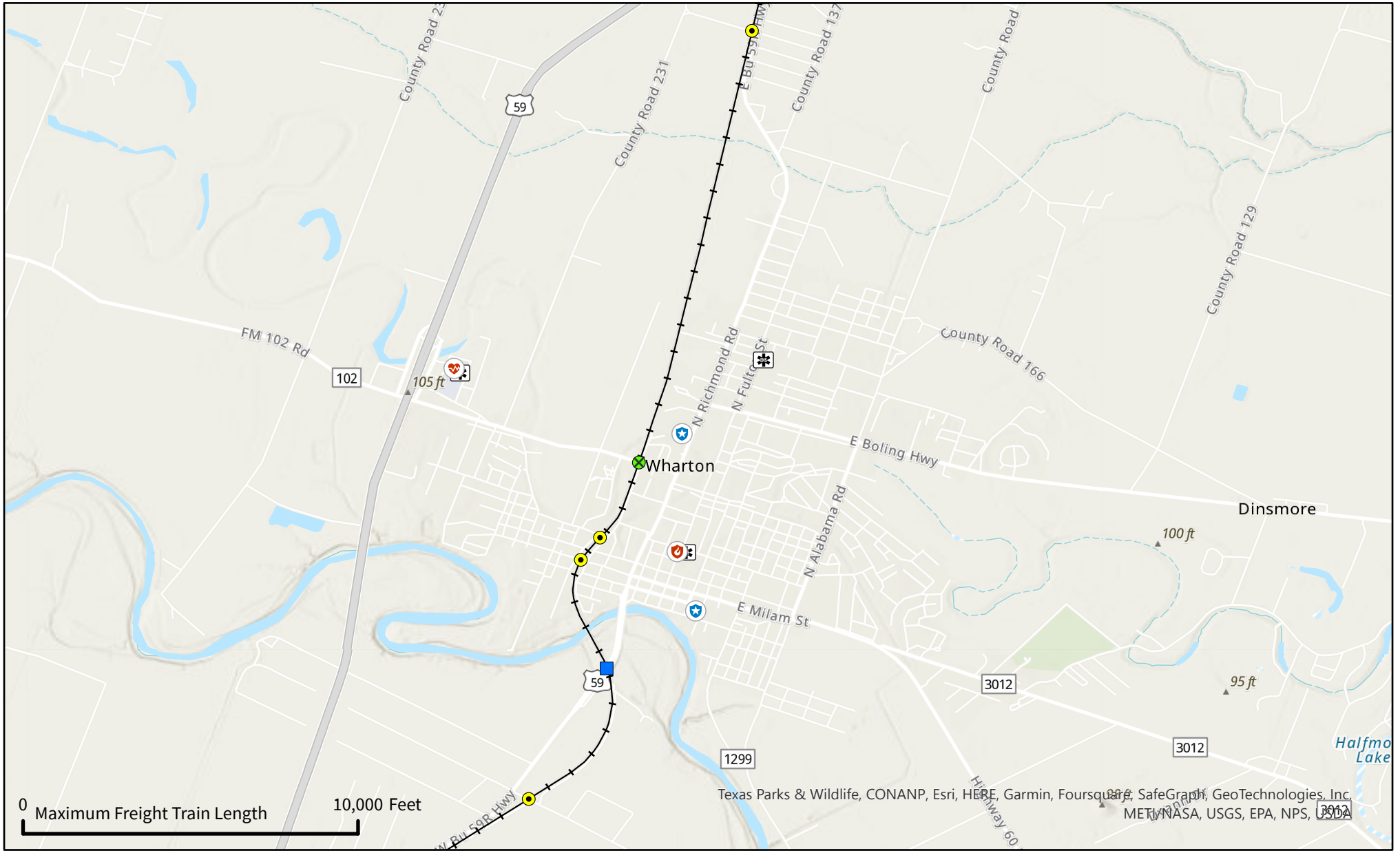


Emergency Services Routing Analysis
Hungerford, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

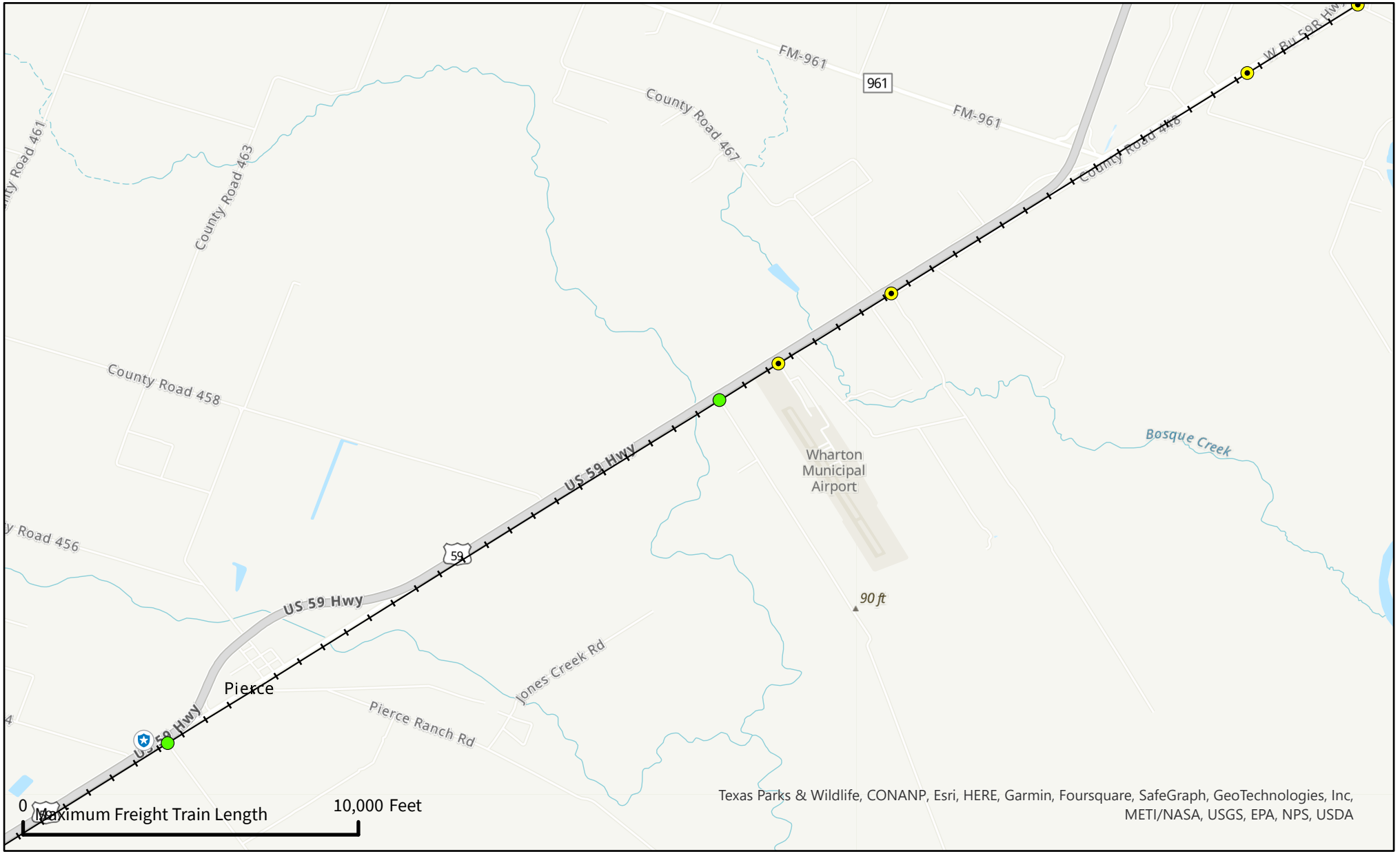


Emergency Services Routing Analysis
Wharton, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



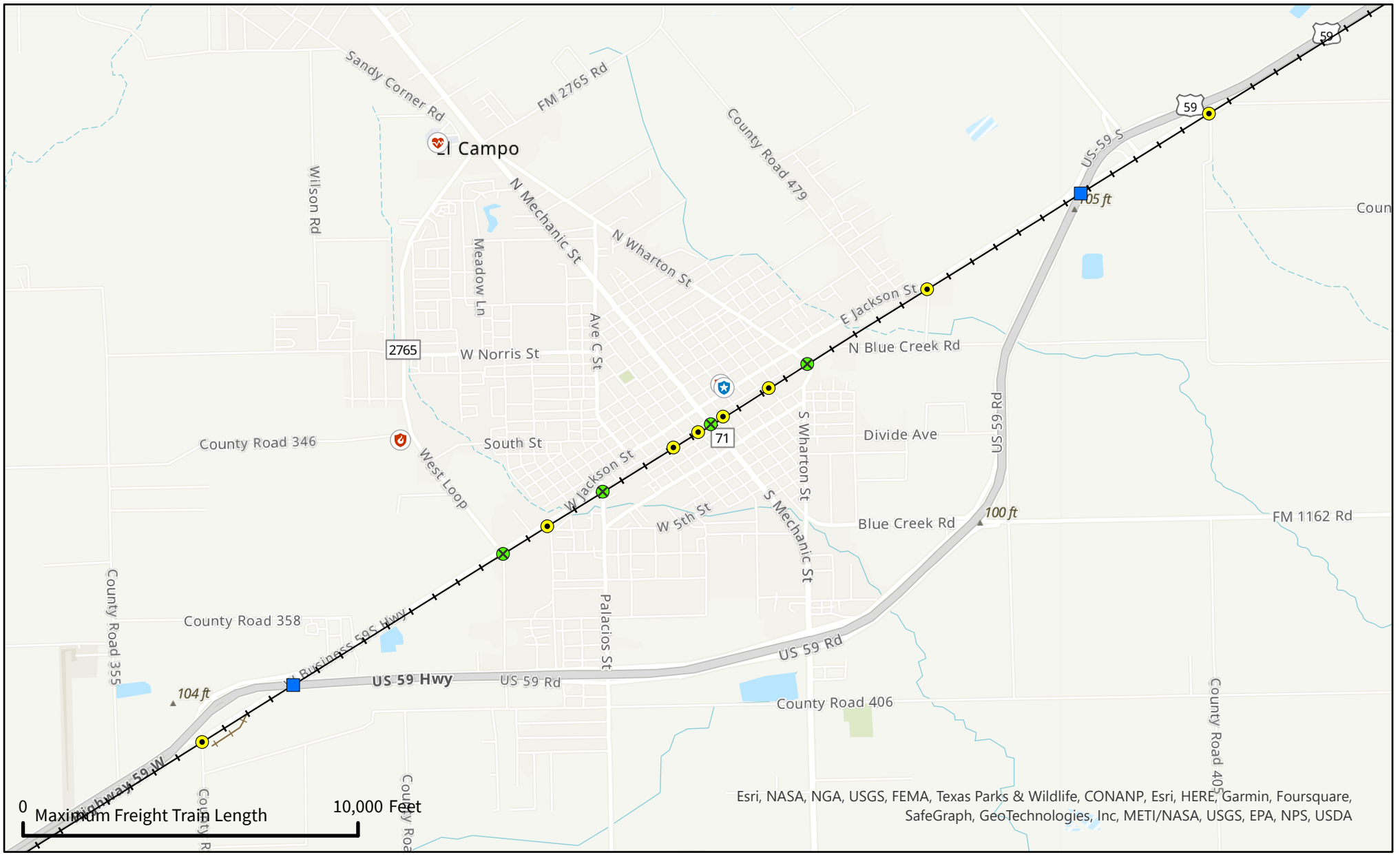
Emergency Services Routing Analysis

Pierce, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



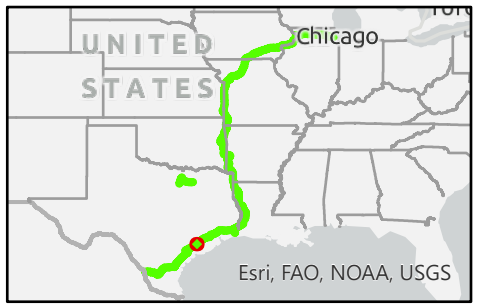
Legend

Crossing Position

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- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
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- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



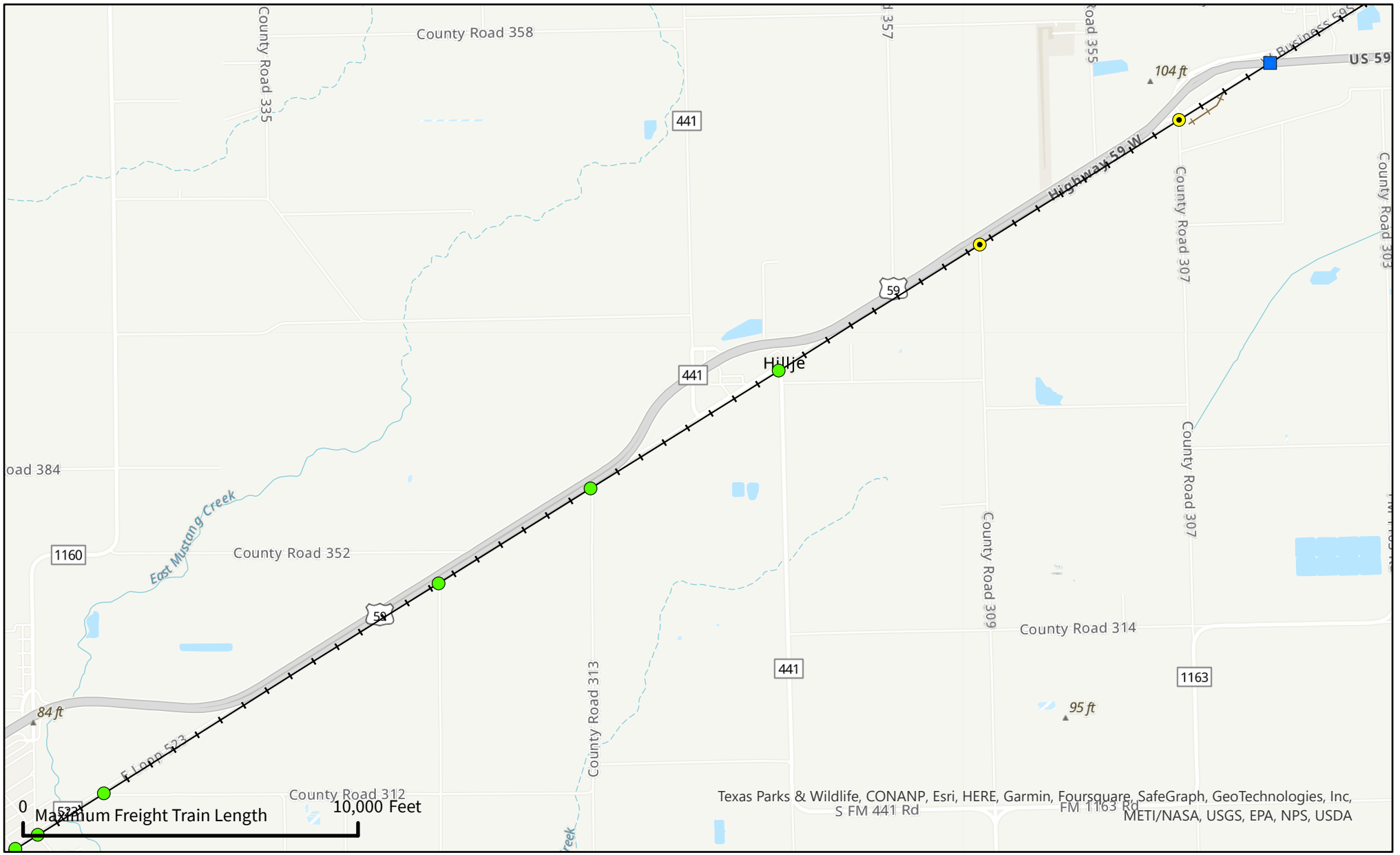
Emergency Services Routing Analysis

El Campo, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



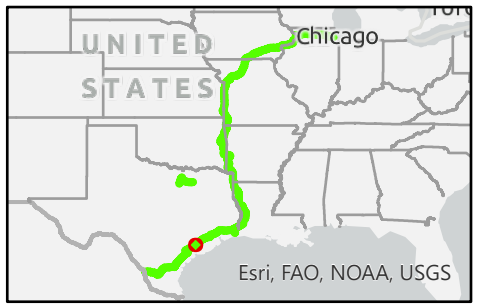
Legend

Crossing Position

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- Grade Separated Crossing (RR Under)
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- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

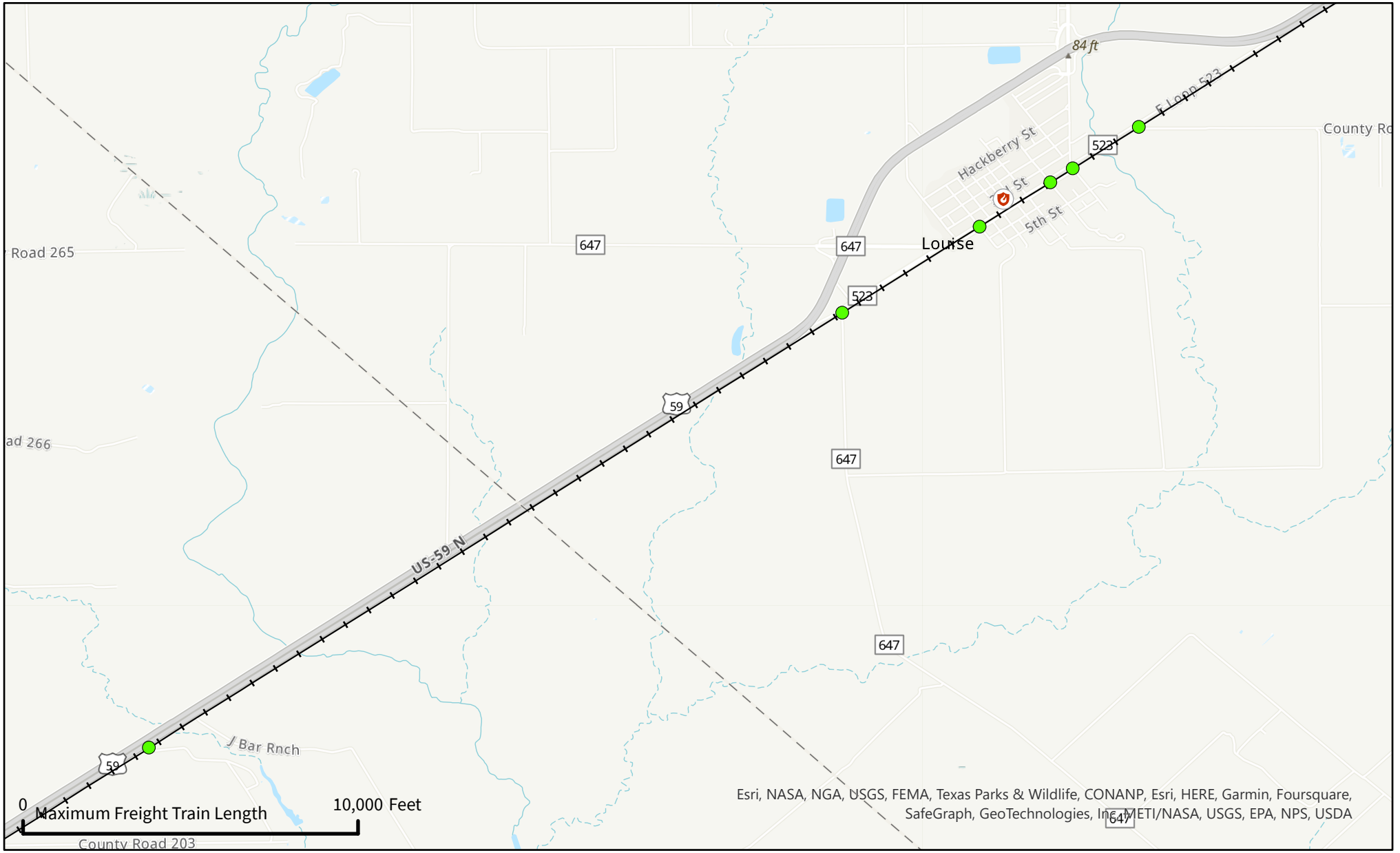


Emergency Services Routing Analysis
Hillje, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



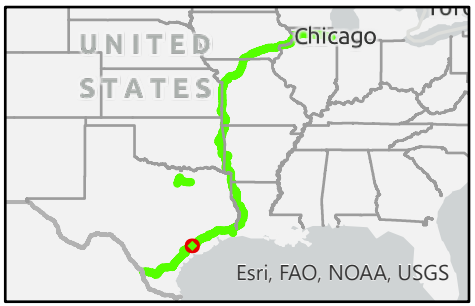
Legend

Crossing Position

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- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
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- EMS Dispatch
- Hospital
- Police

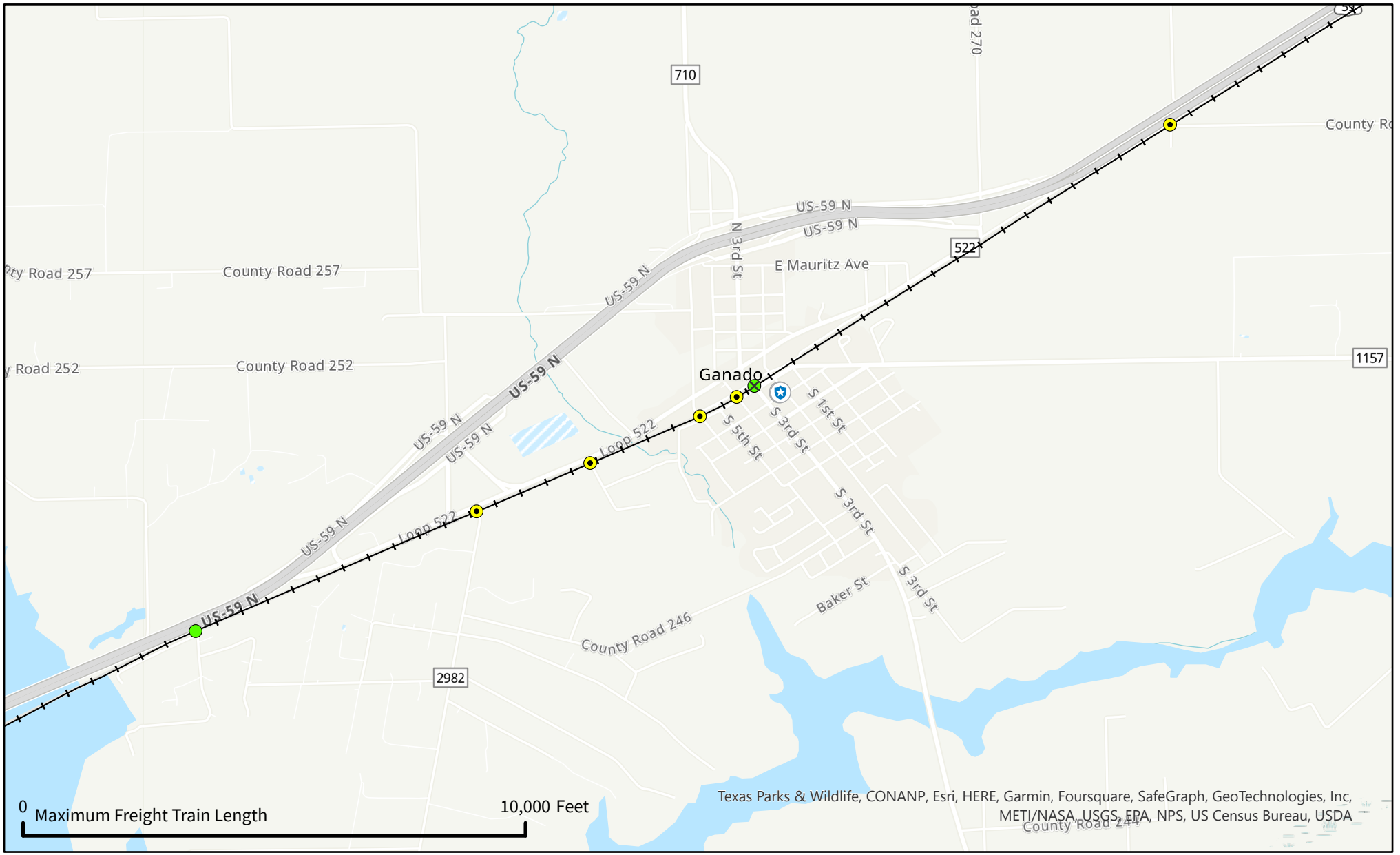


Emergency Services Routing Analysis
Louise, TX

N

Scale:
1 inch = 0.75 mile

Miles
0 0.25 0.5



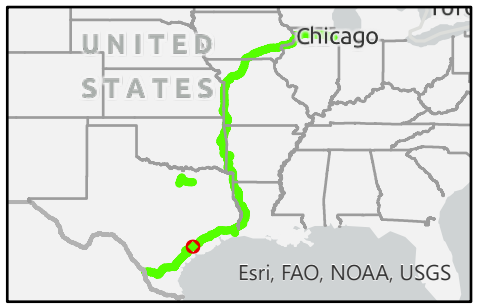
Legend

Crossing Position

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- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Ganado, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



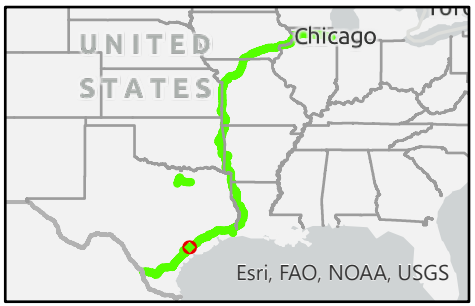
Legend

Crossing Position

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- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



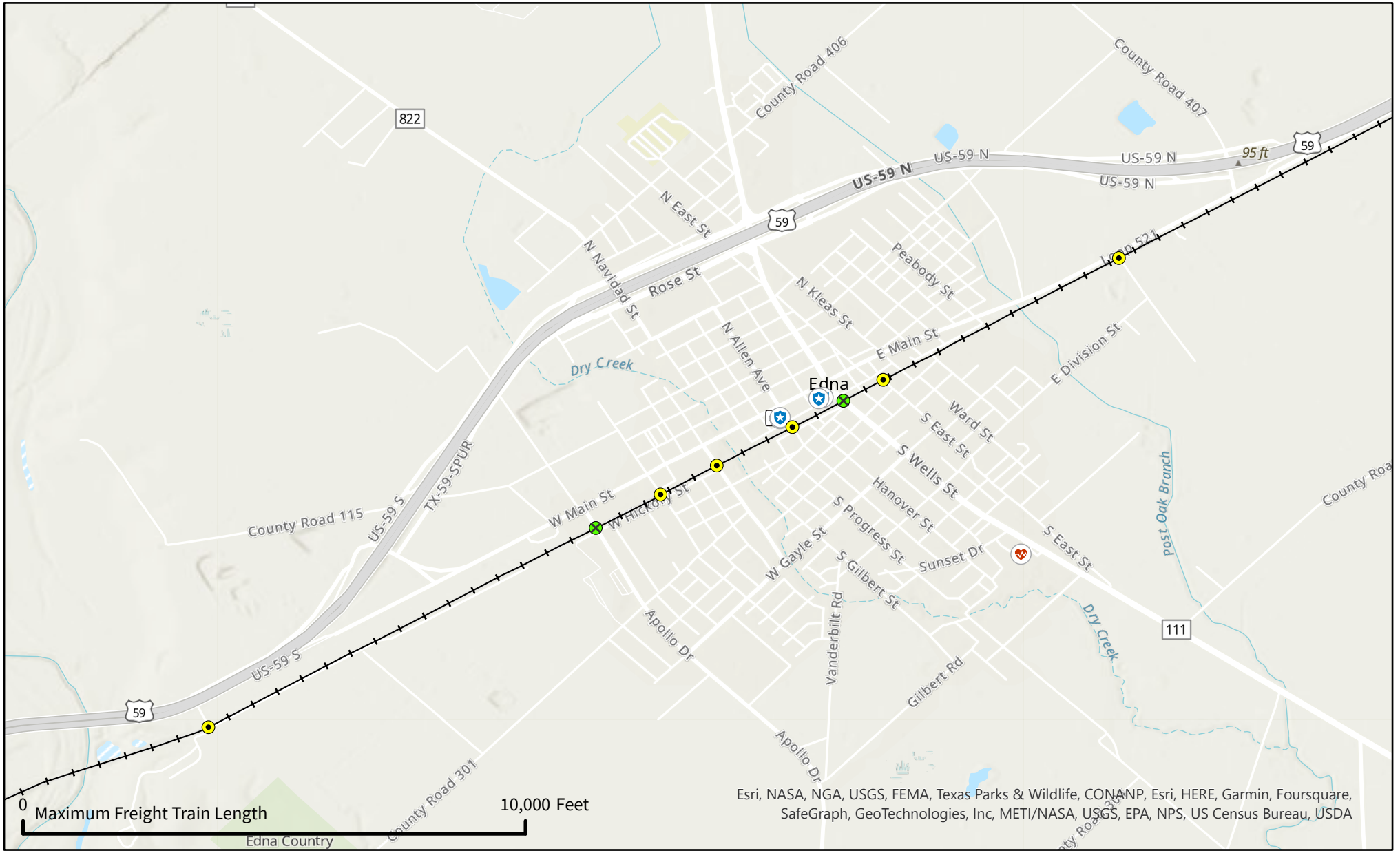
Emergency Services Routing Analysis

NE of Edna, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



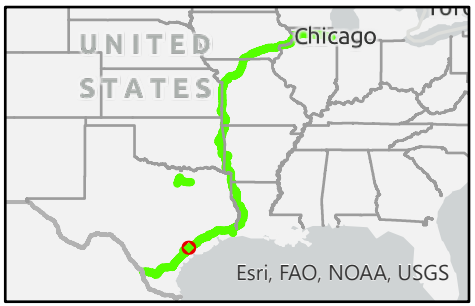
Legend

Crossing Position

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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis

Edna, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
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- Key Map: Analyzed Tracks
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- Hospital
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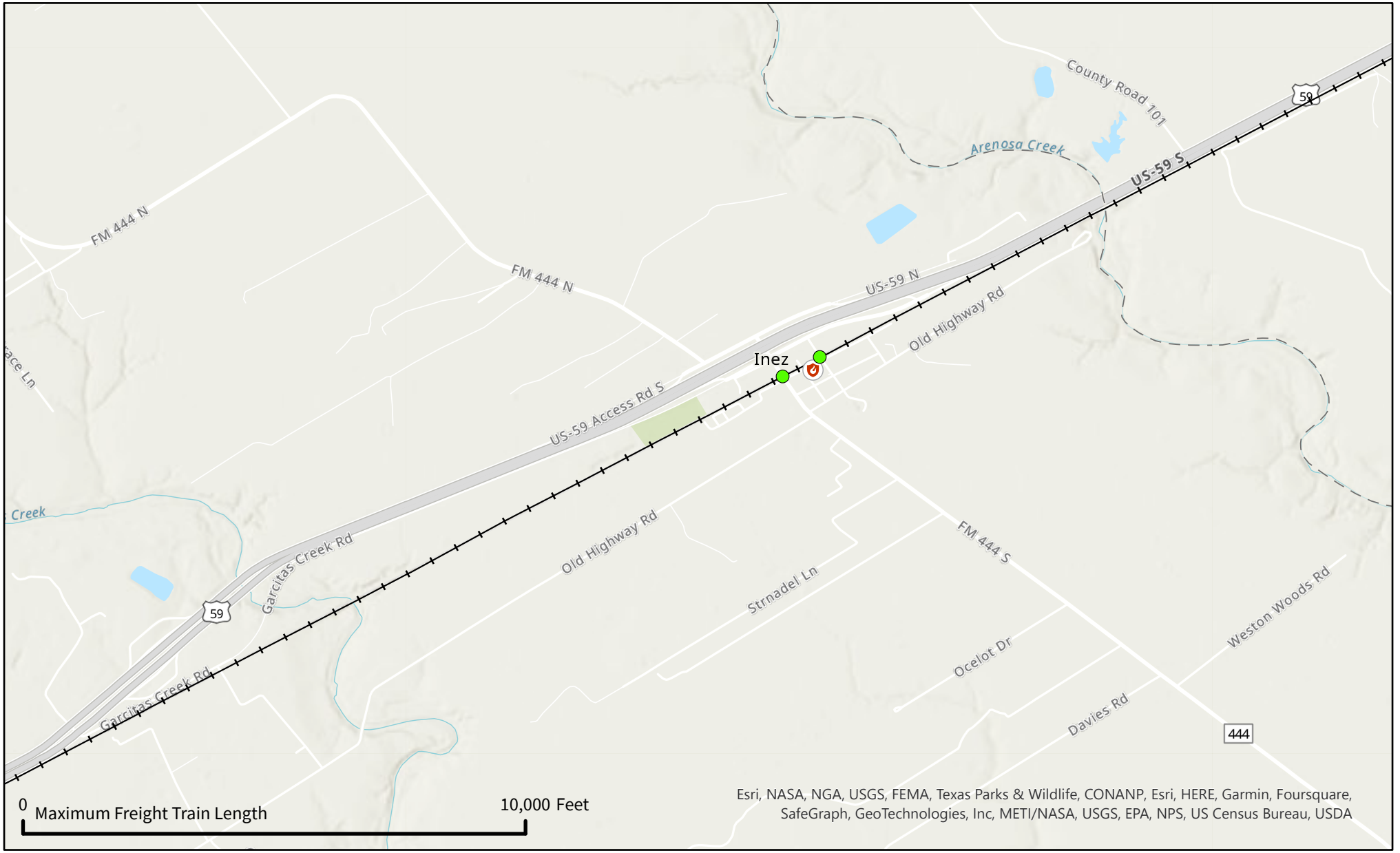
Emergency Services Routing Analysis

El Toro, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



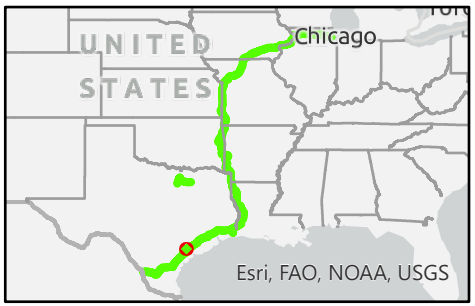
Legend

Crossing Position

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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Inez, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Telferner, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

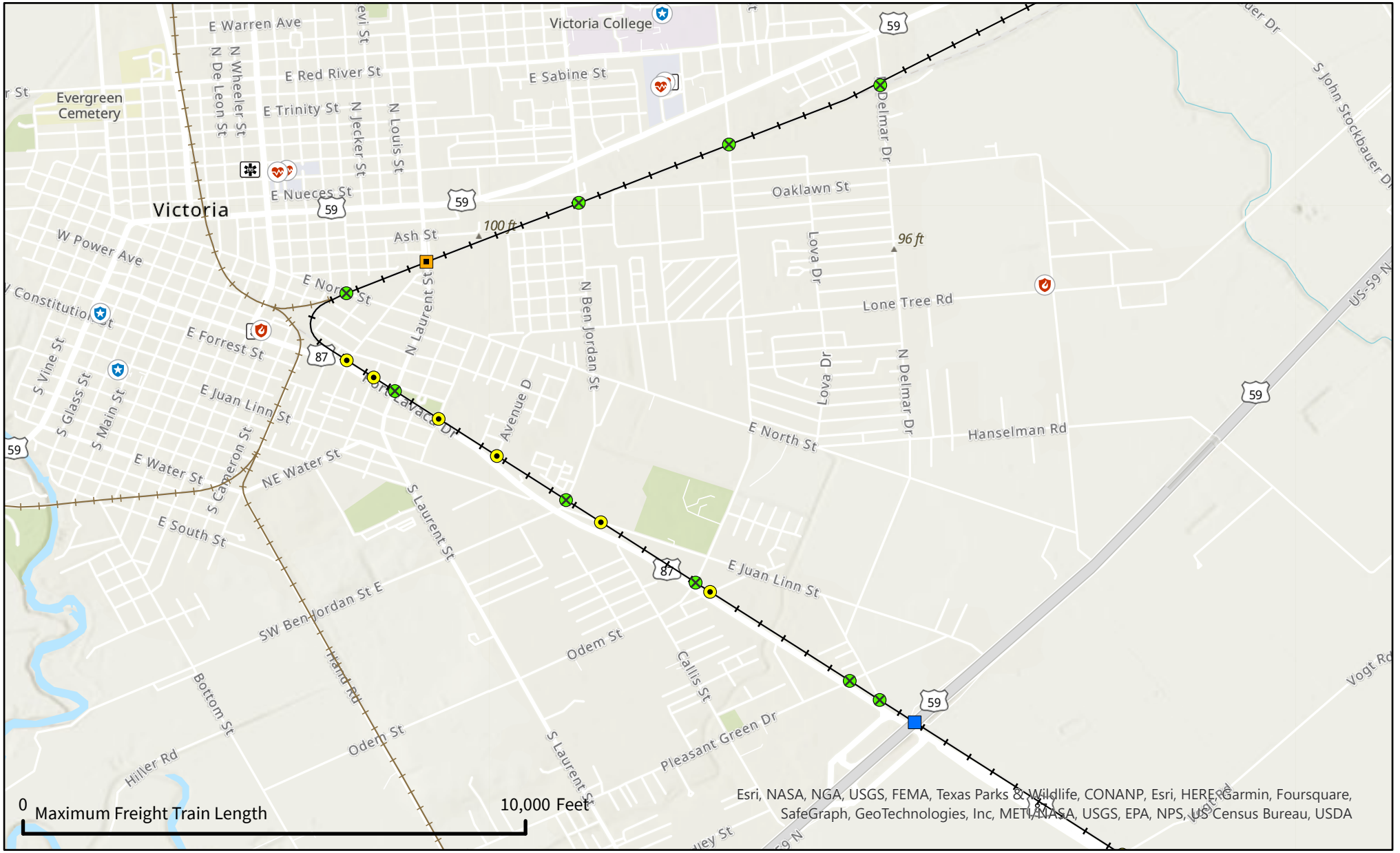


Emergency Services Routing Analysis
NE of Victoria, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



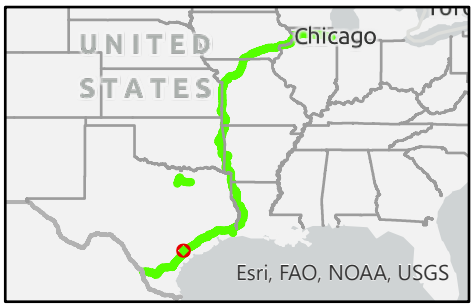
Legend

Crossing Position

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- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

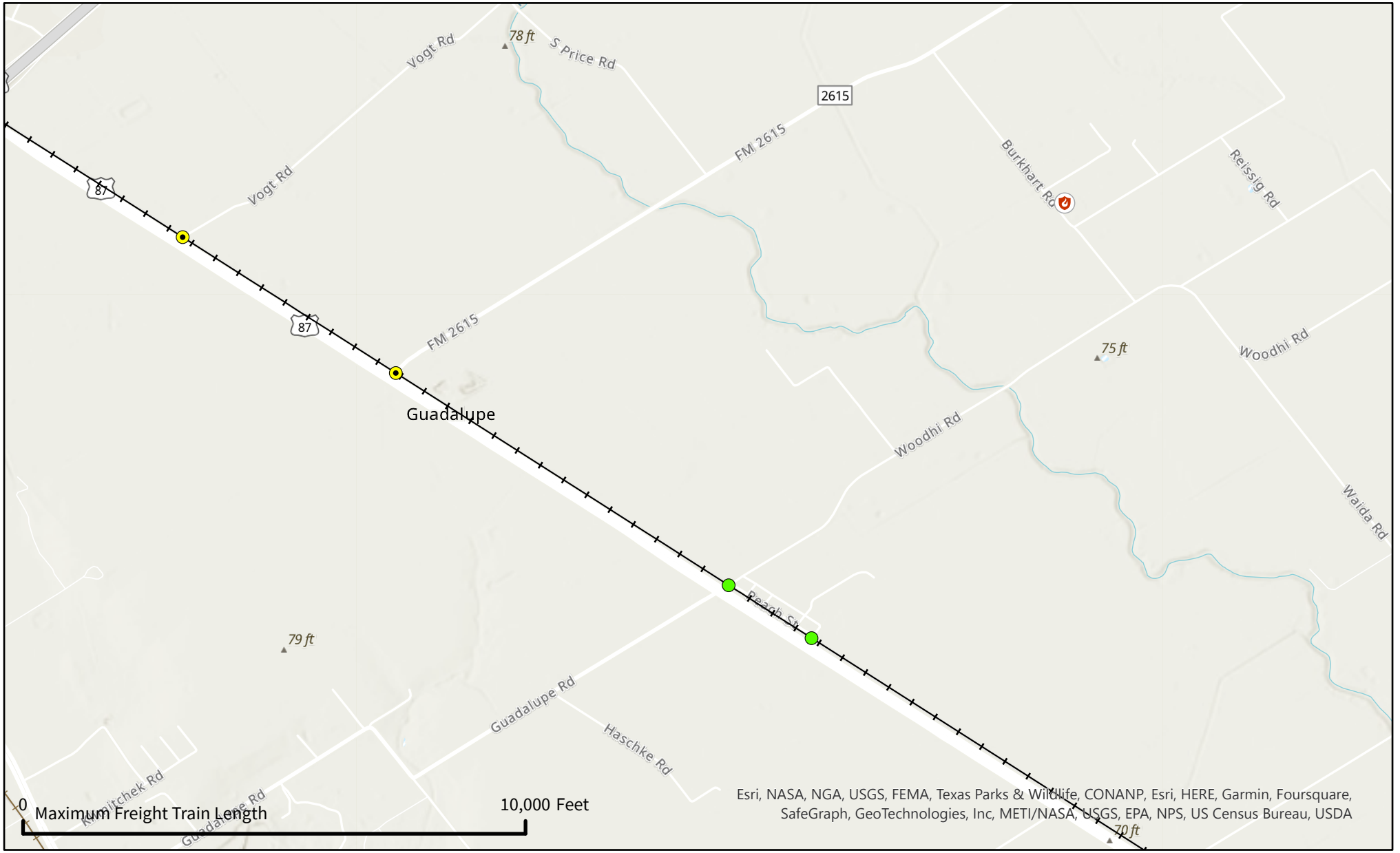


Emergency Services Routing Analysis
Victoria, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



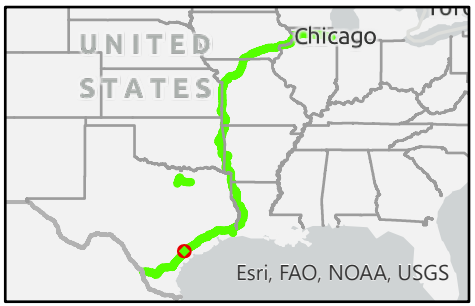
Legend

Crossing Position

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- Grade Separated Crossing (RR Under)
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Guadalupe, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



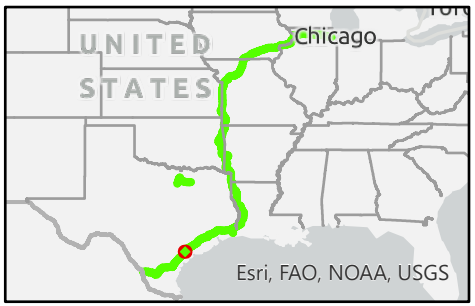
Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis

Dacosta, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Placedo, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



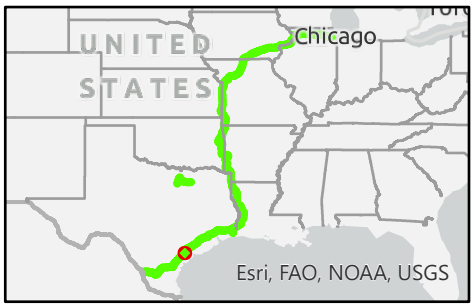
Legend

Crossing Position

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- Grade Separated Crossing (RR Under)
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- At-Grade Crossing (Excluded from EMS Analysis)
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- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

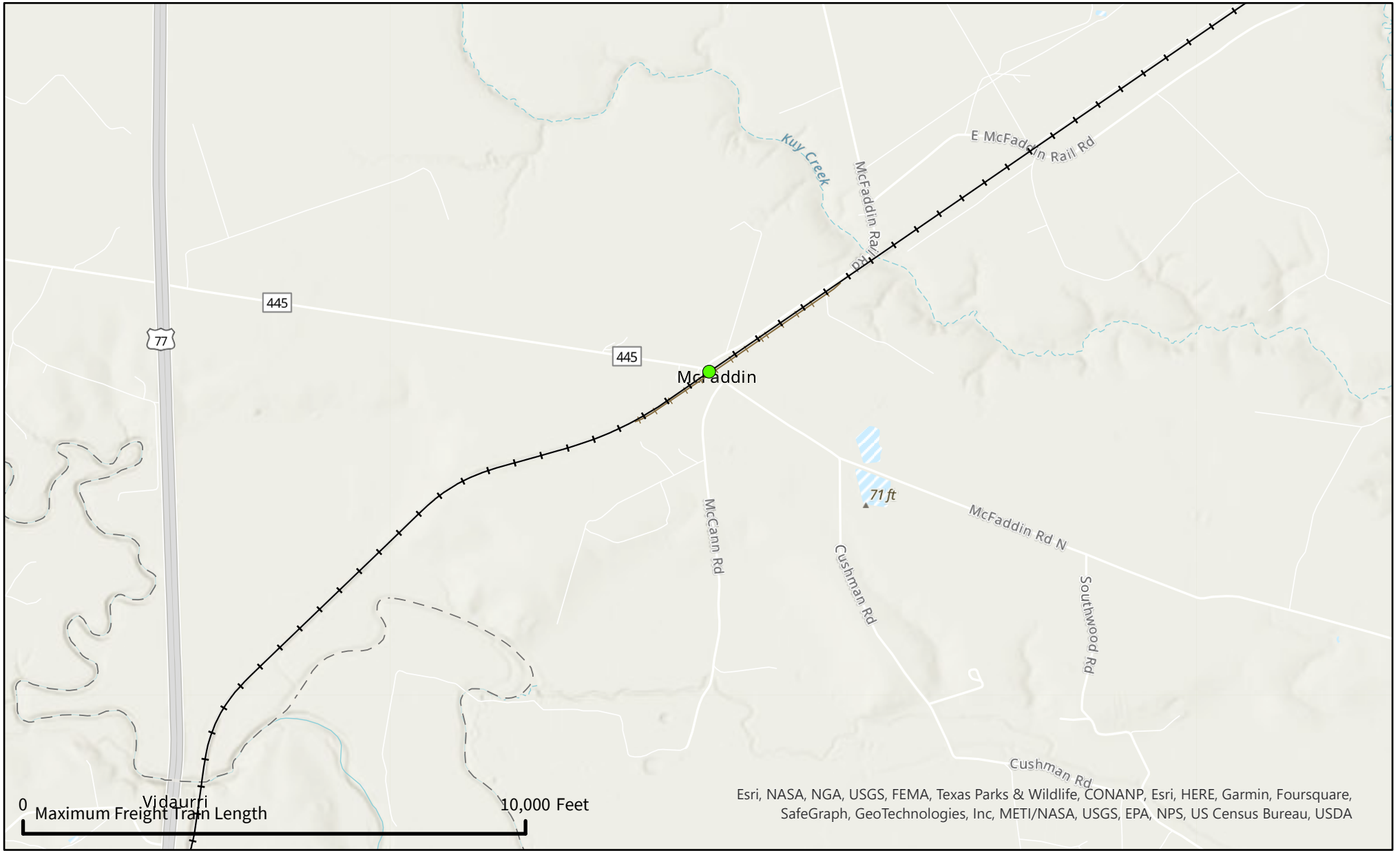


Emergency Services Routing Analysis
Bloomington, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



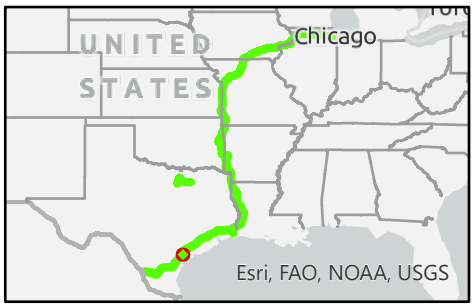
Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

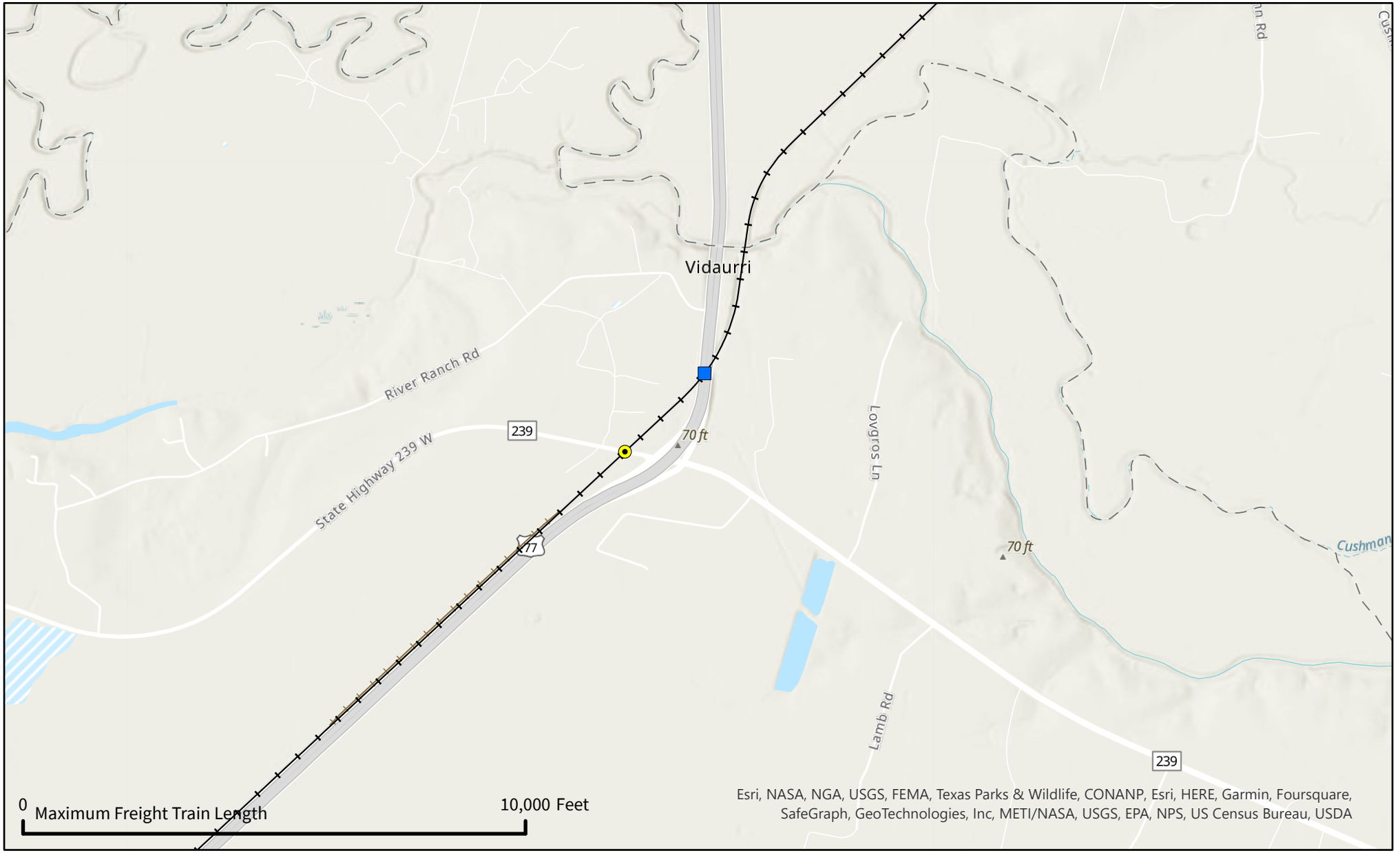


Emergency Services Routing Analysis
McFaddin, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



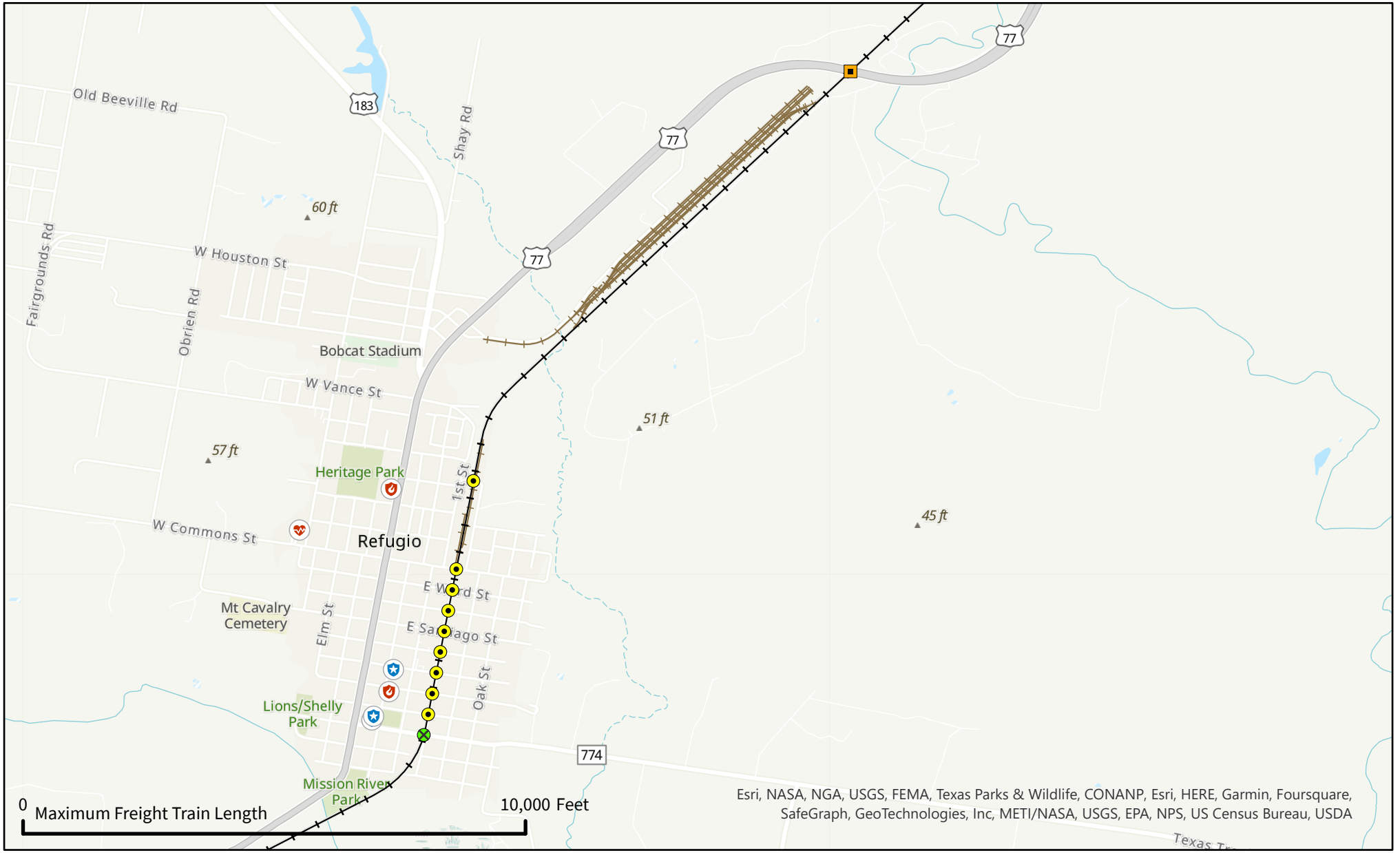
Emergency Services Routing Analysis

Tivoli, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



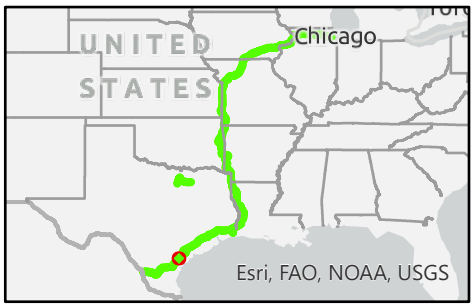
Legend

Crossing Position

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- EMS Dispatch
- Hospital
- Police

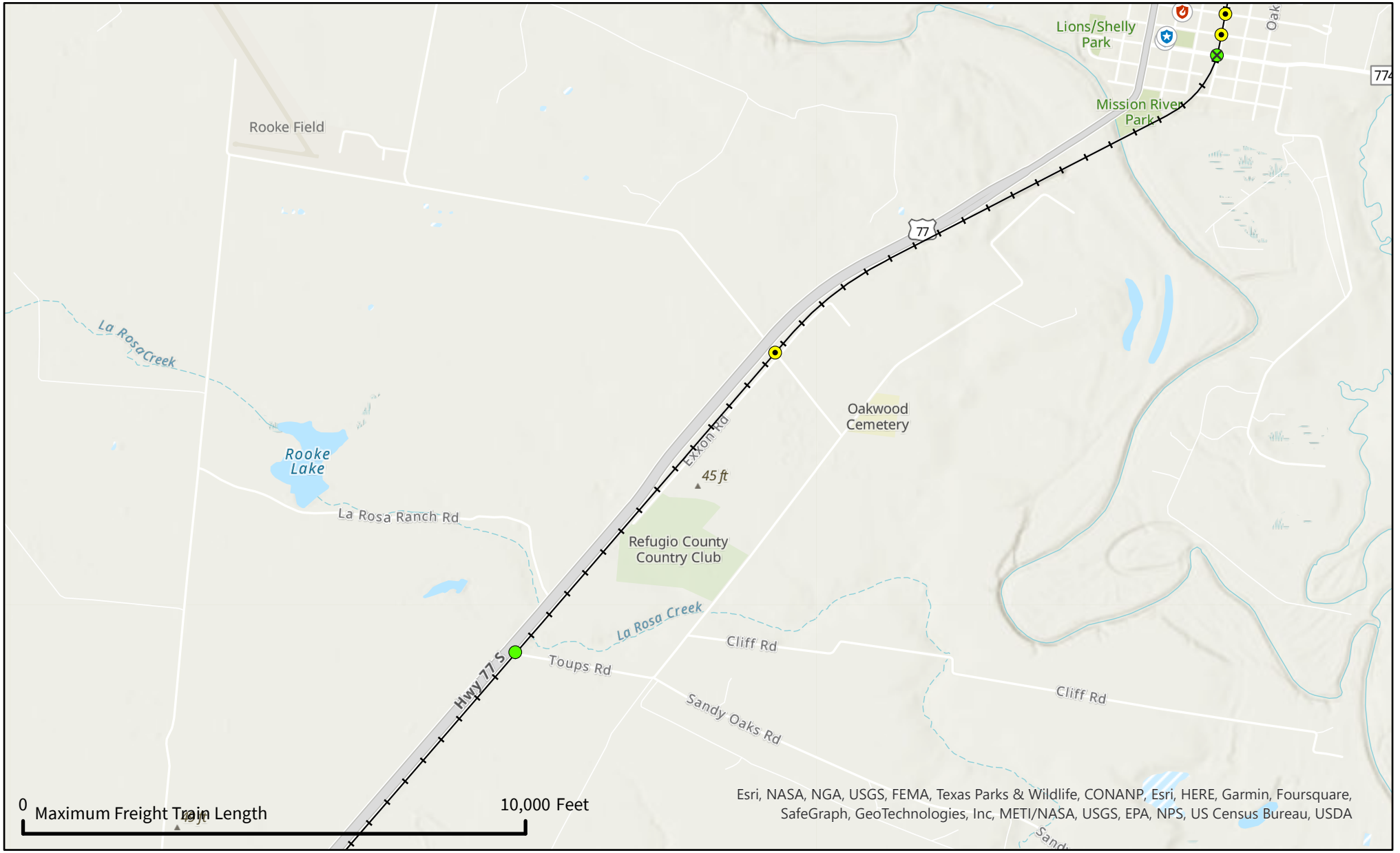


Emergency Services Routing Analysis
Refugio, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



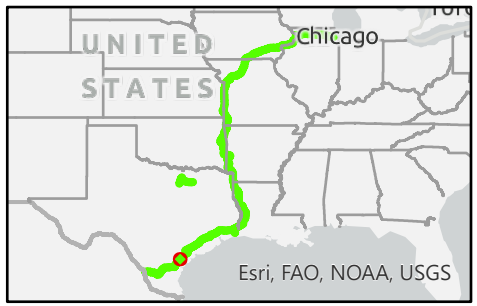
Legend

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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

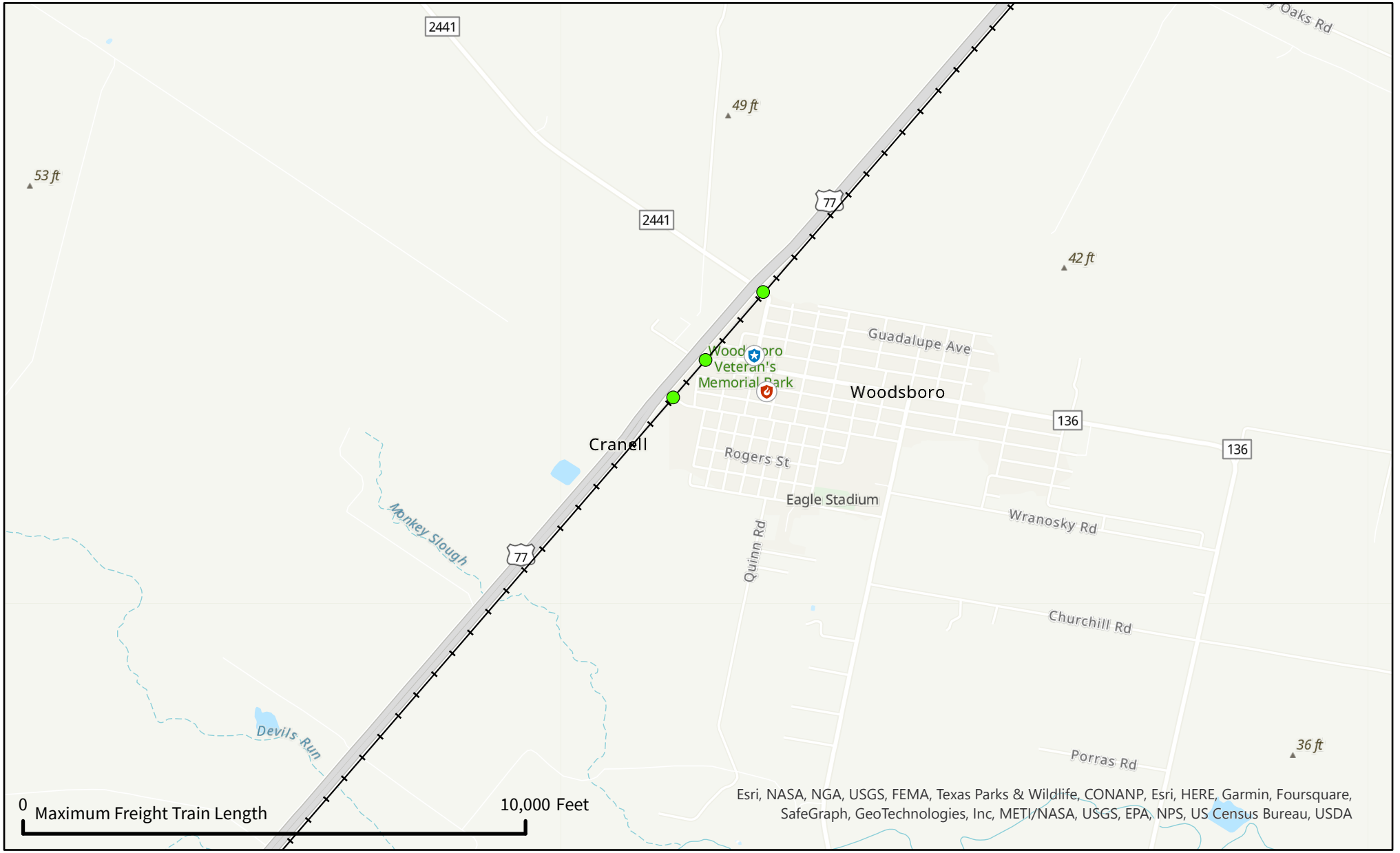


Emergency Services Routing Analysis
SW of Refugio, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



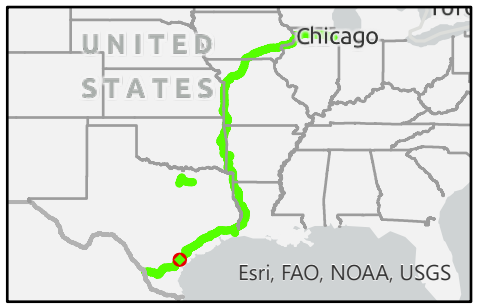
Legend

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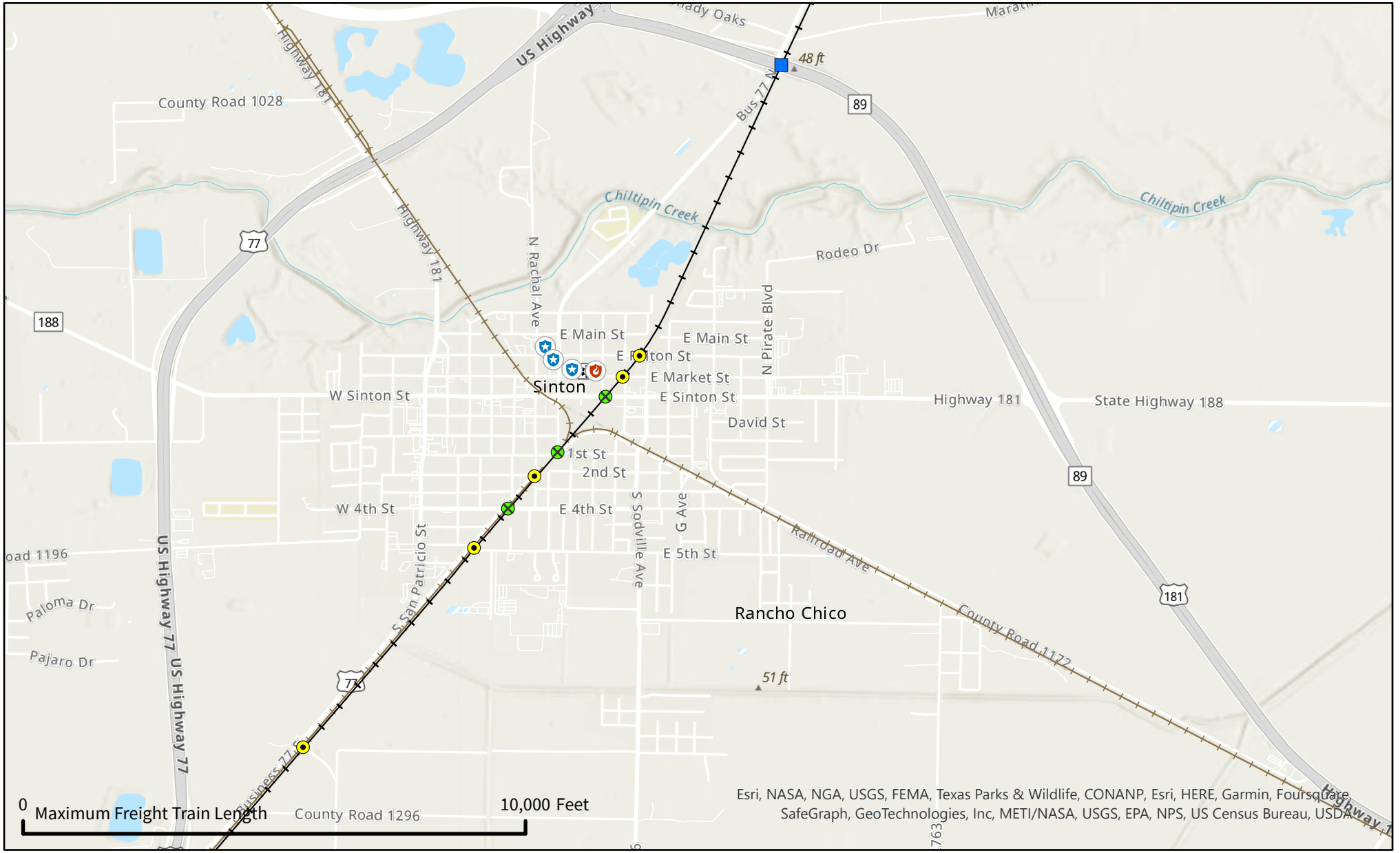


Emergency Services Routing Analysis
Woodsboro, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



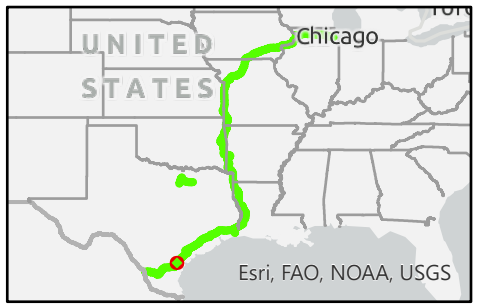
Legend

Crossing Position

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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

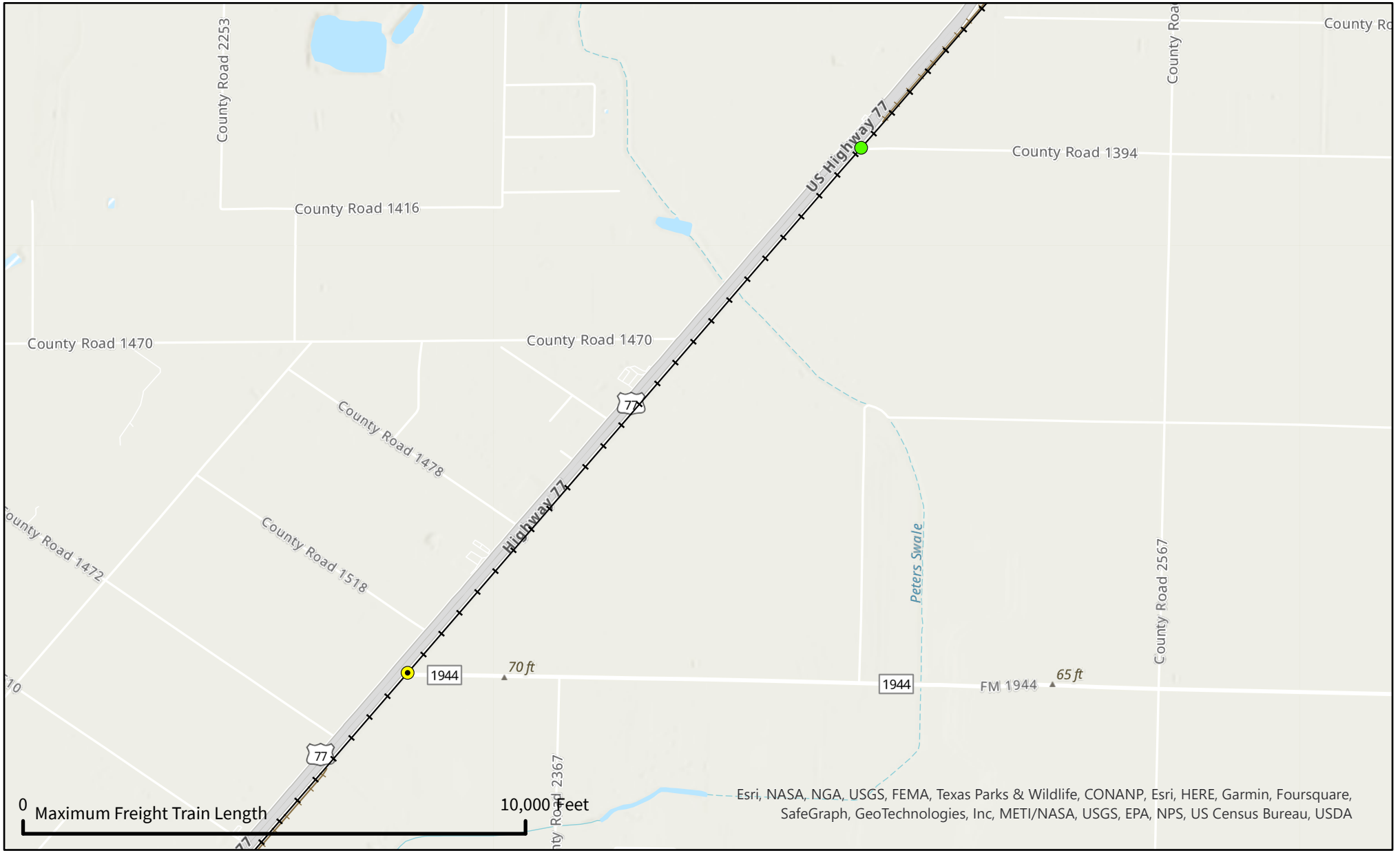


Emergency Services Routing Analysis
Sinton, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



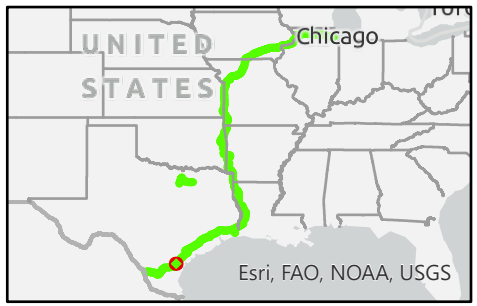
Legend

Crossing Position

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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

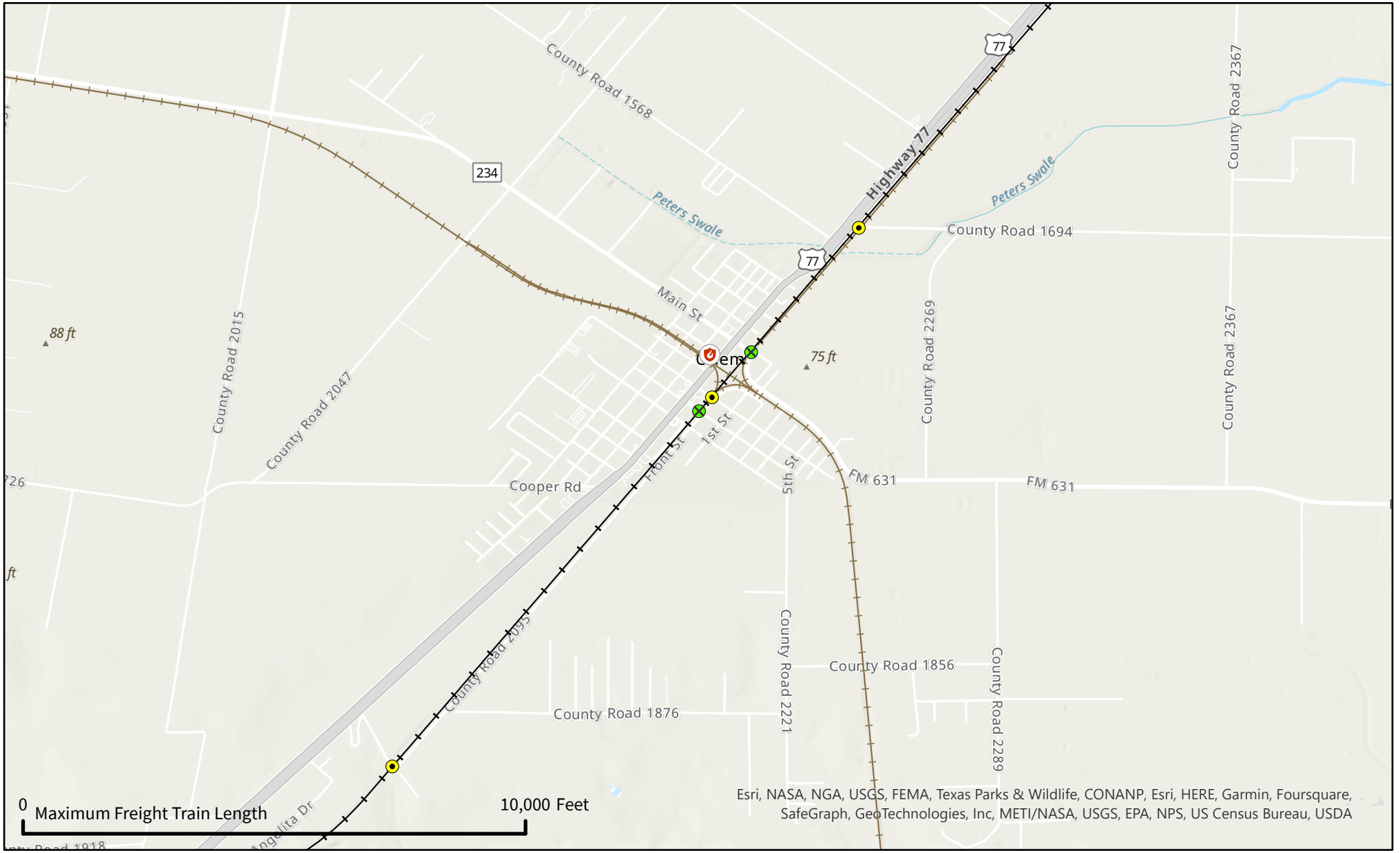


Emergency Services Routing Analysis
SW of Sinton, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
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Other

- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Odem, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
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- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

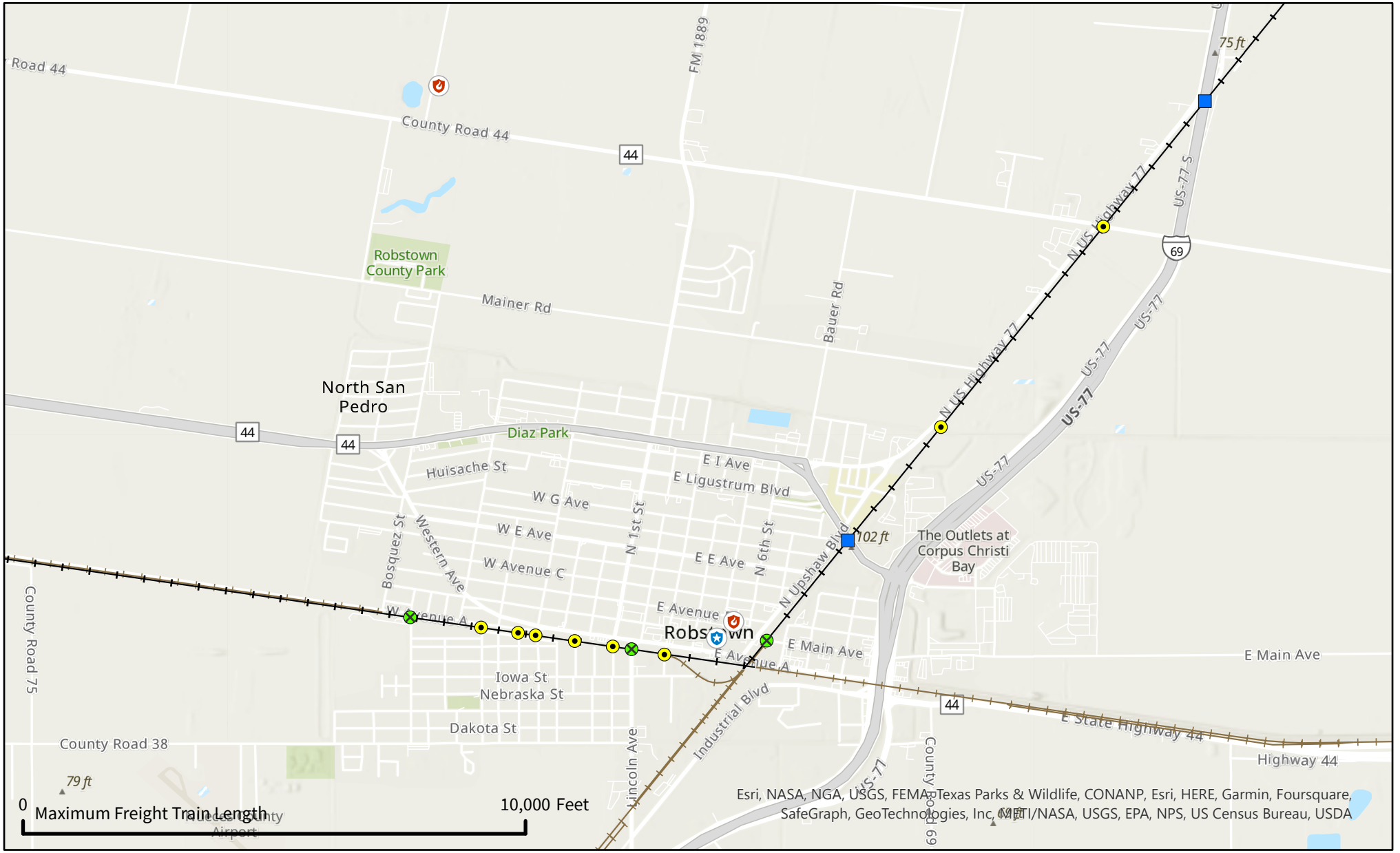


Emergency Services Routing Analysis
Near Annaville, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis

Robstown, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

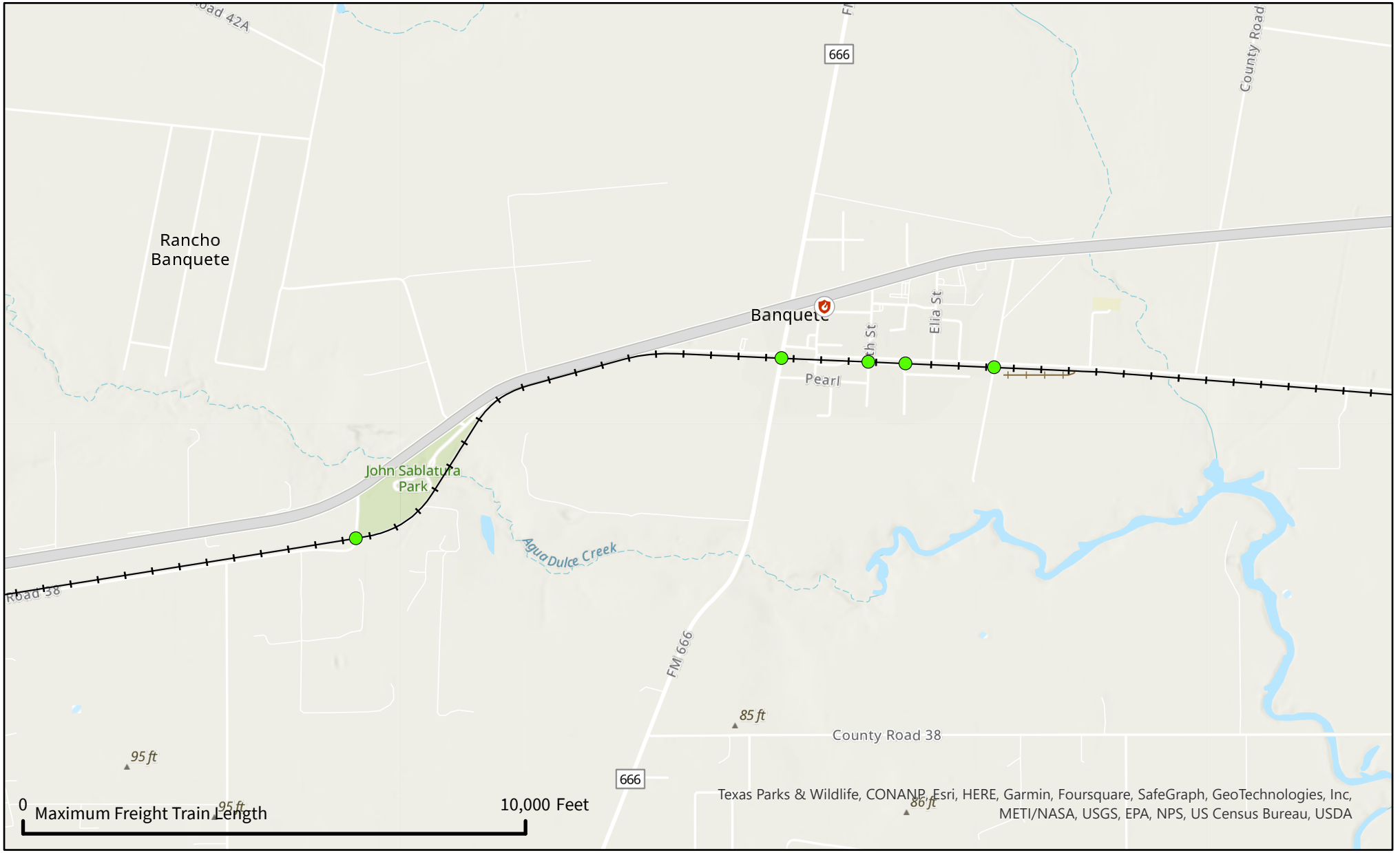


Emergency Services Routing Analysis
W of Robstown, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
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- Key Map: Analyzed Tracks
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- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Banquete, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



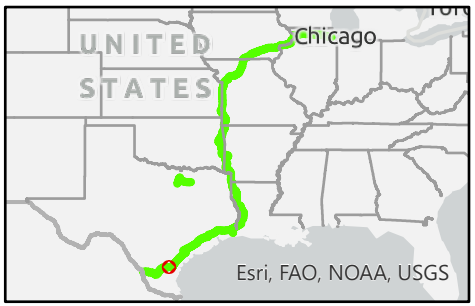
Legend

Crossing Position

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Other

- Key Map: Analyzed Tracks
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- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis

E of Agua Dulce, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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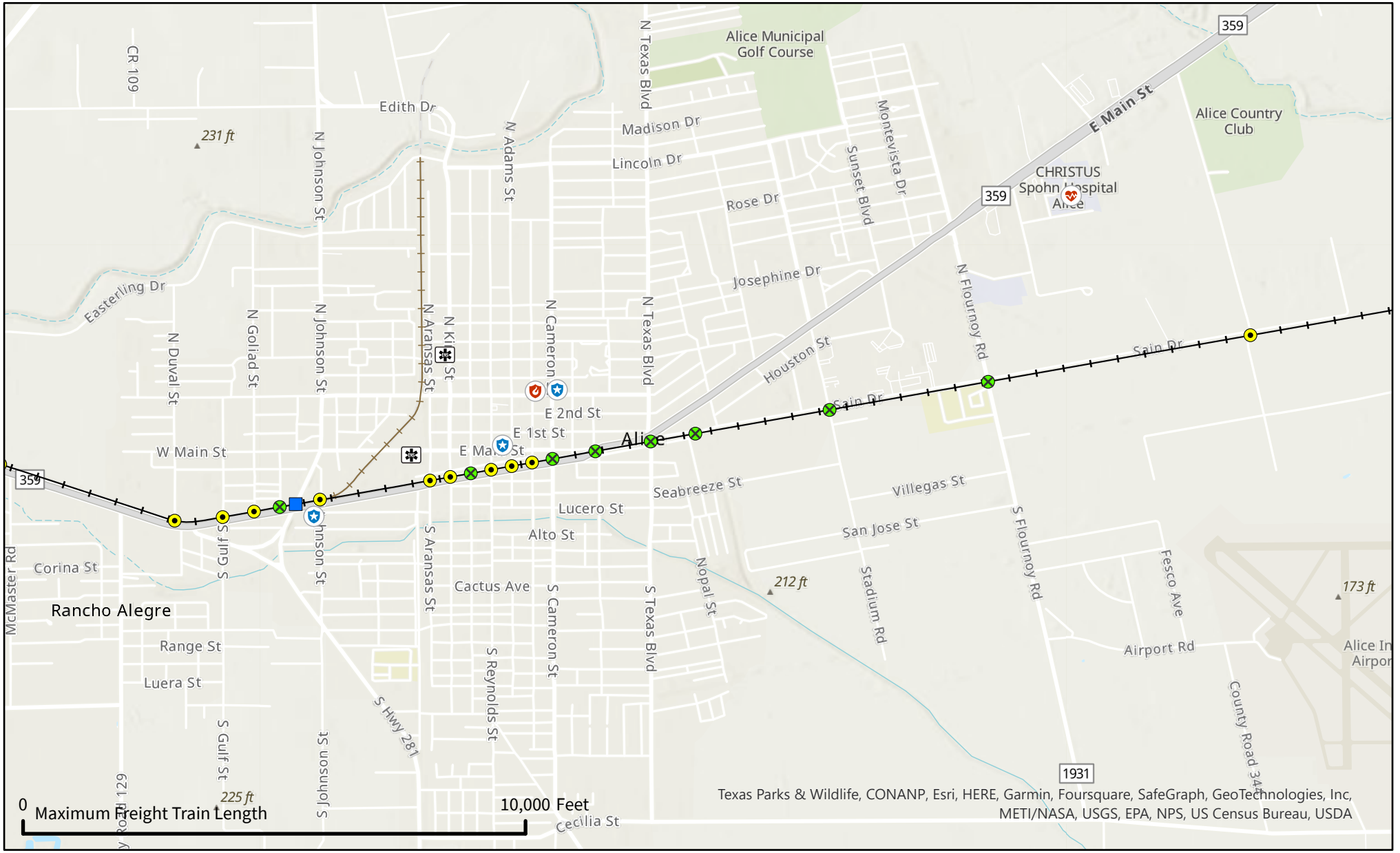
Emergency Services Routing Analysis

Agua Dulce, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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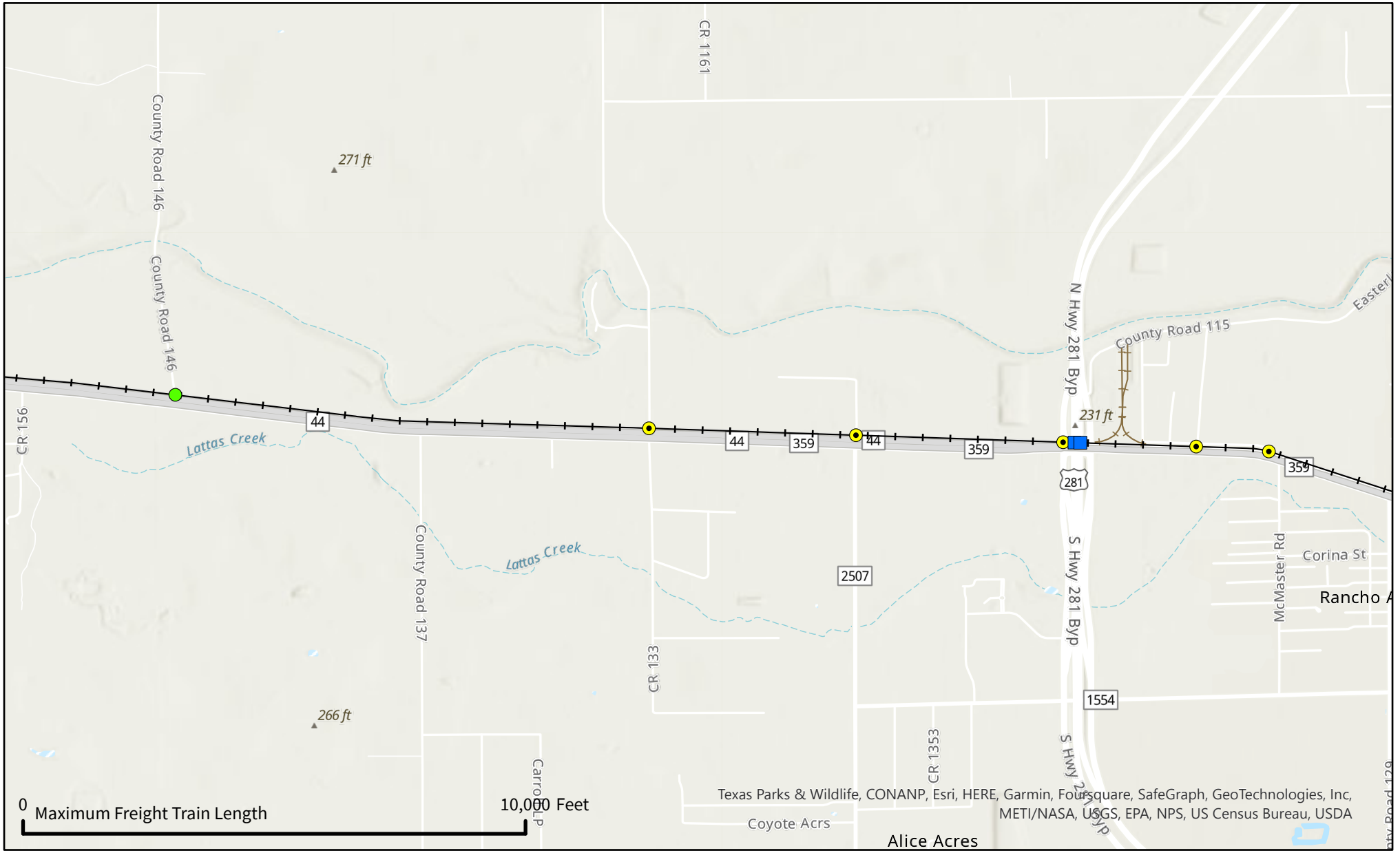


Emergency Services Routing Analysis
Rancho Alegre, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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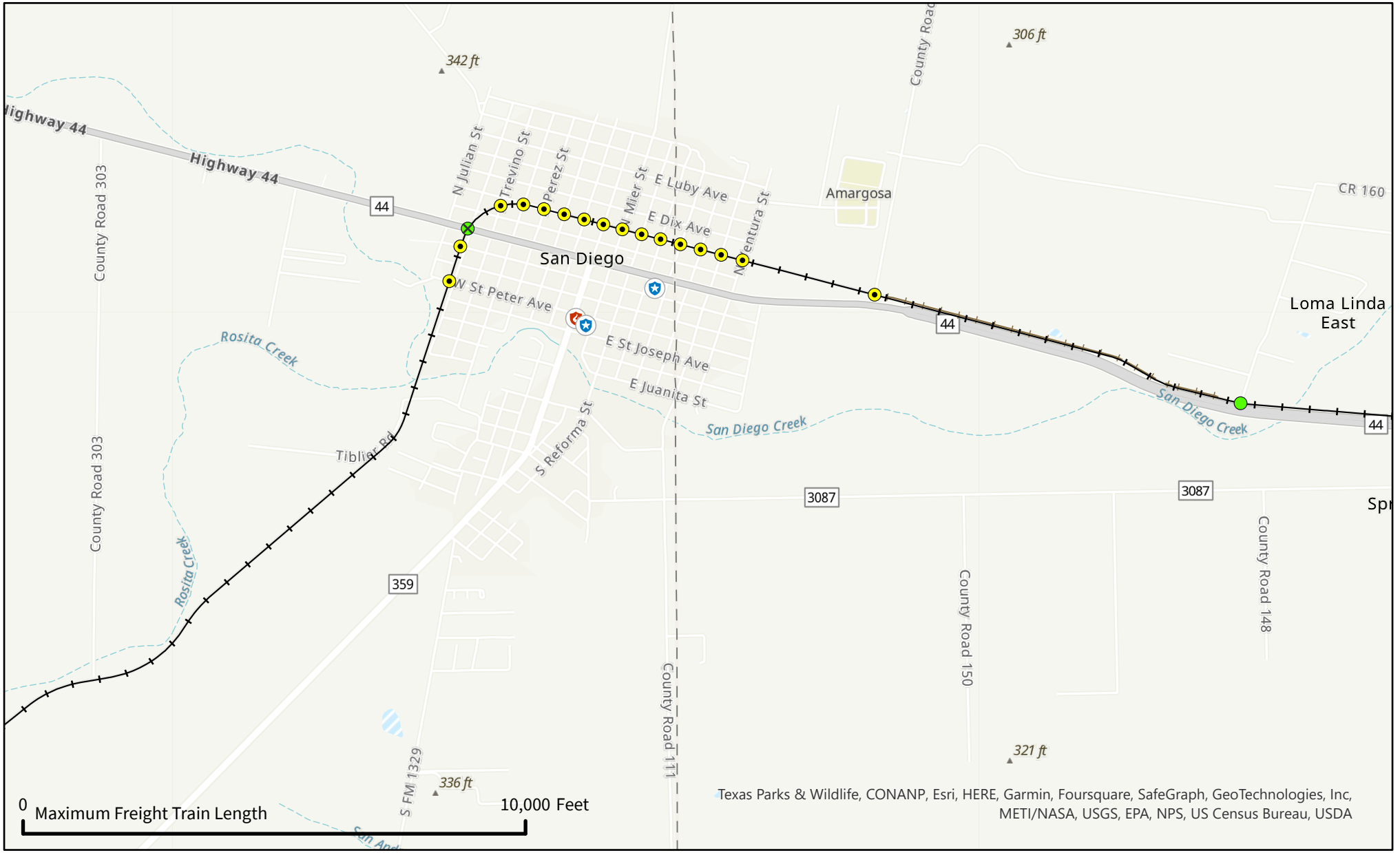


Emergency Services Routing Analysis
W of Rancho Alegre, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



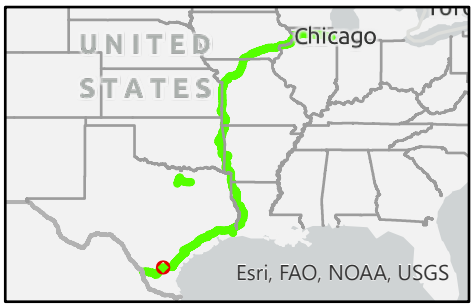
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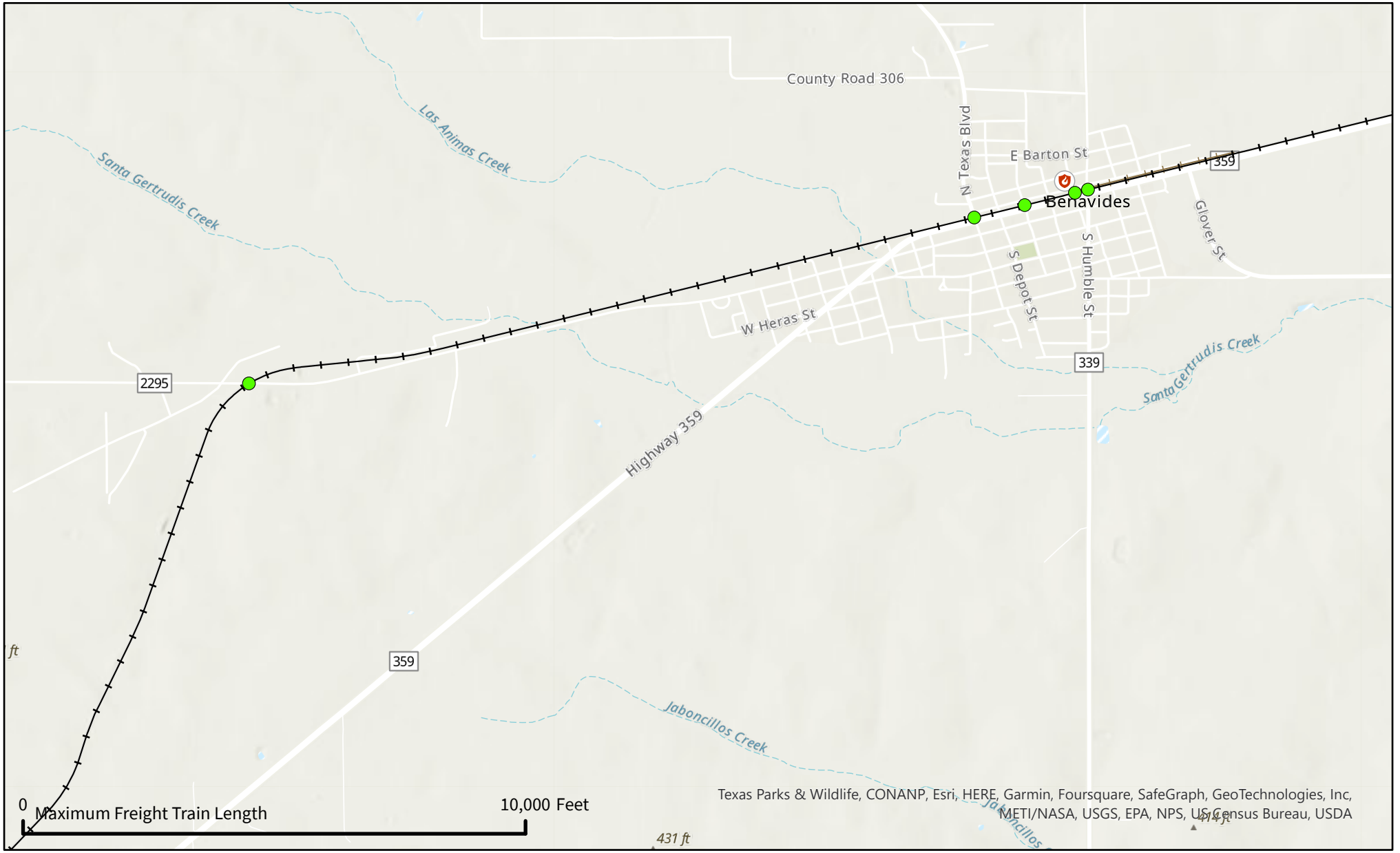


Emergency Services Routing Analysis
San Diego, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



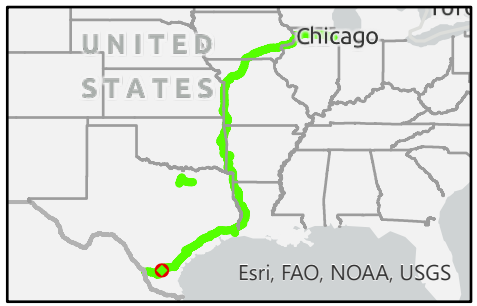
Legend

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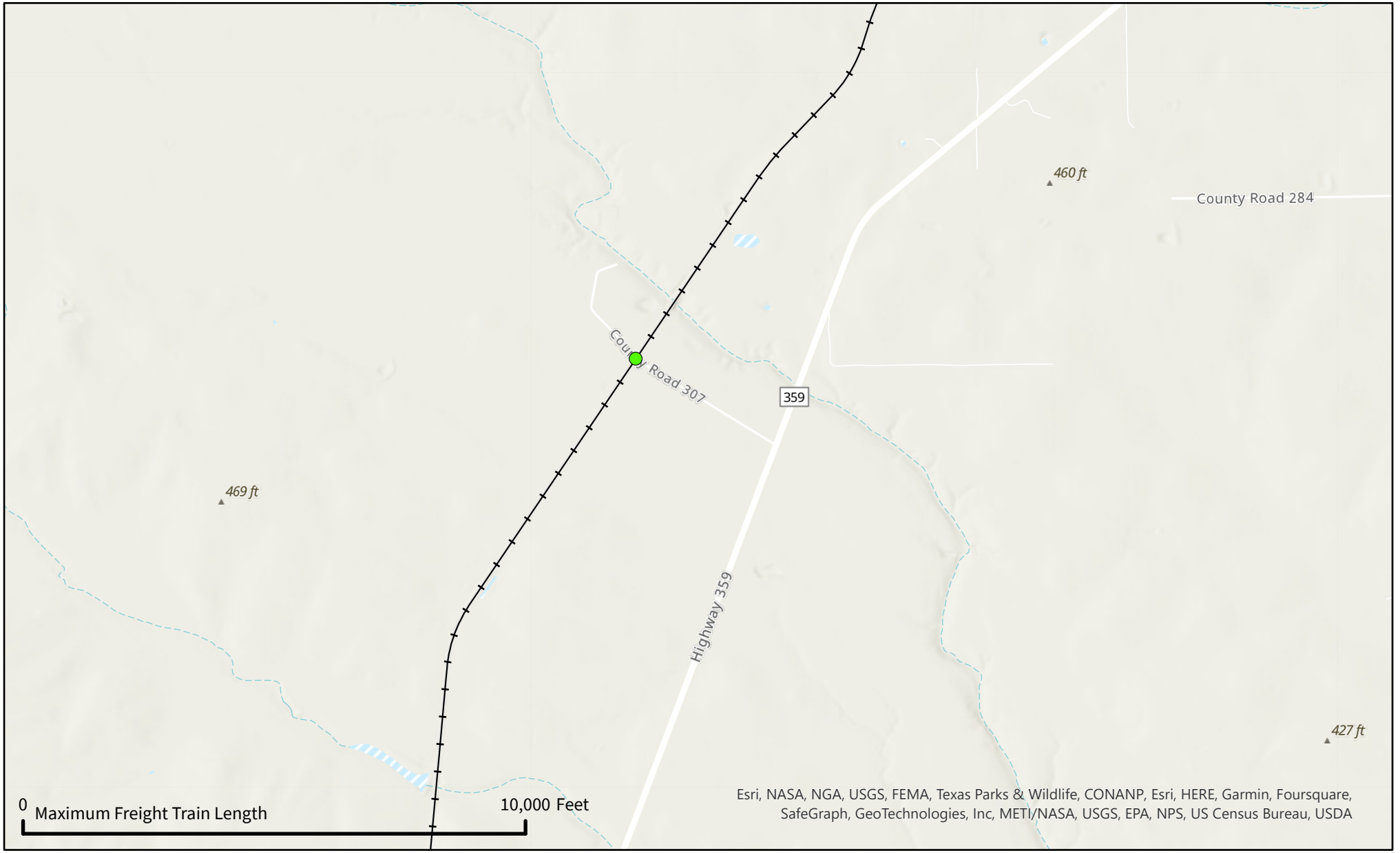


Emergency Services Routing Analysis
Benavides, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



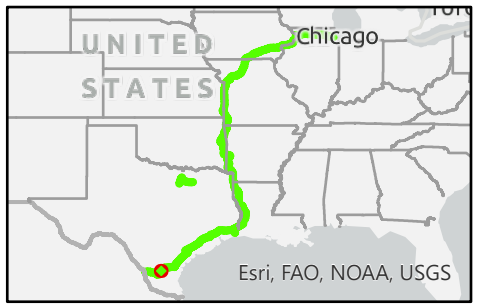
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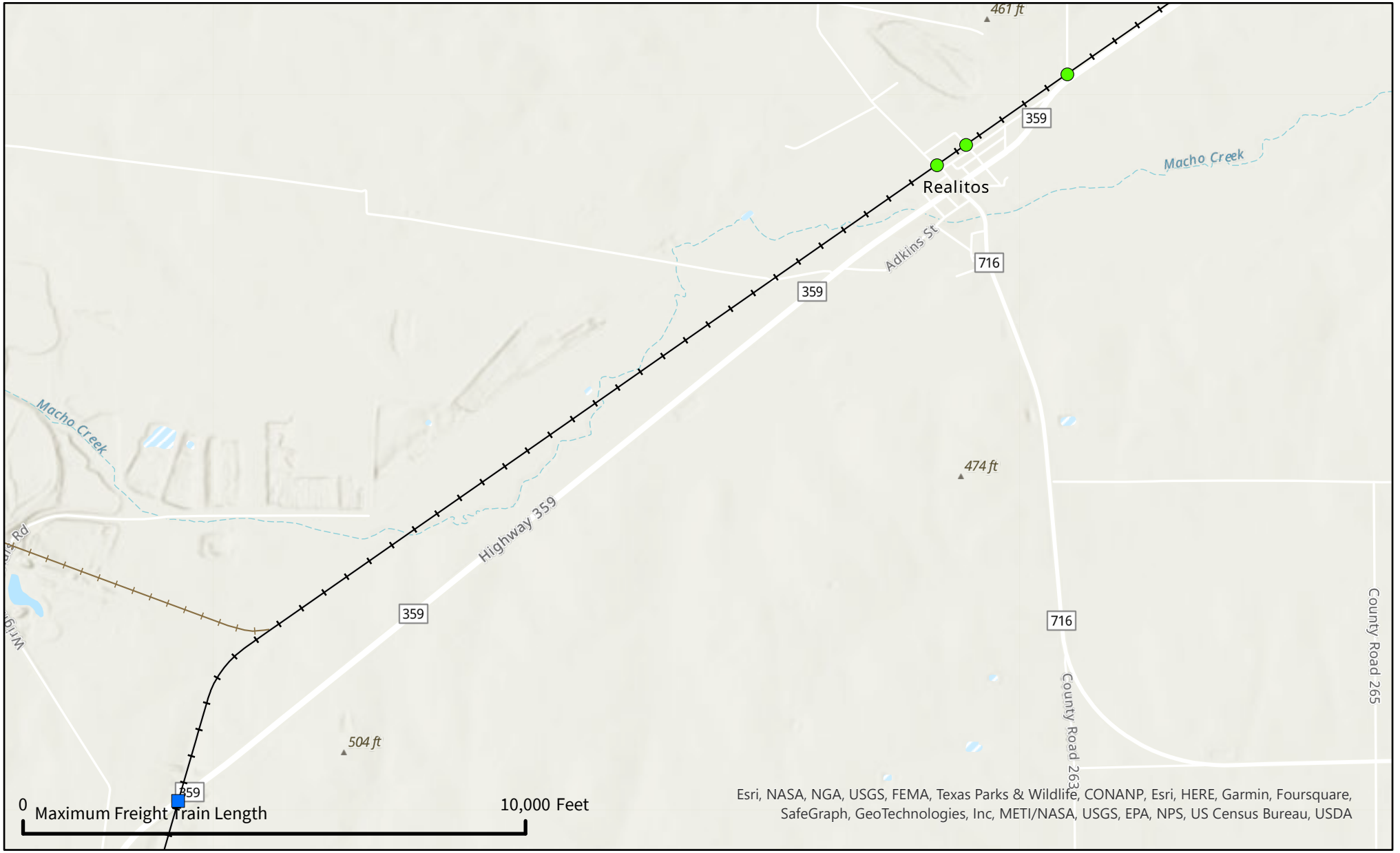
Emergency Services Routing Analysis

S of Benavides, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



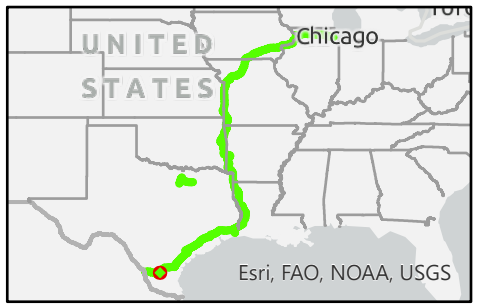
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- Hospital
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Emergency Services Routing Analysis
Realitos, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



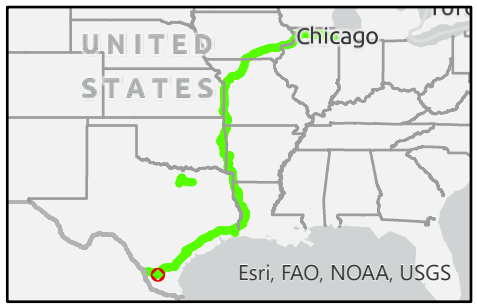
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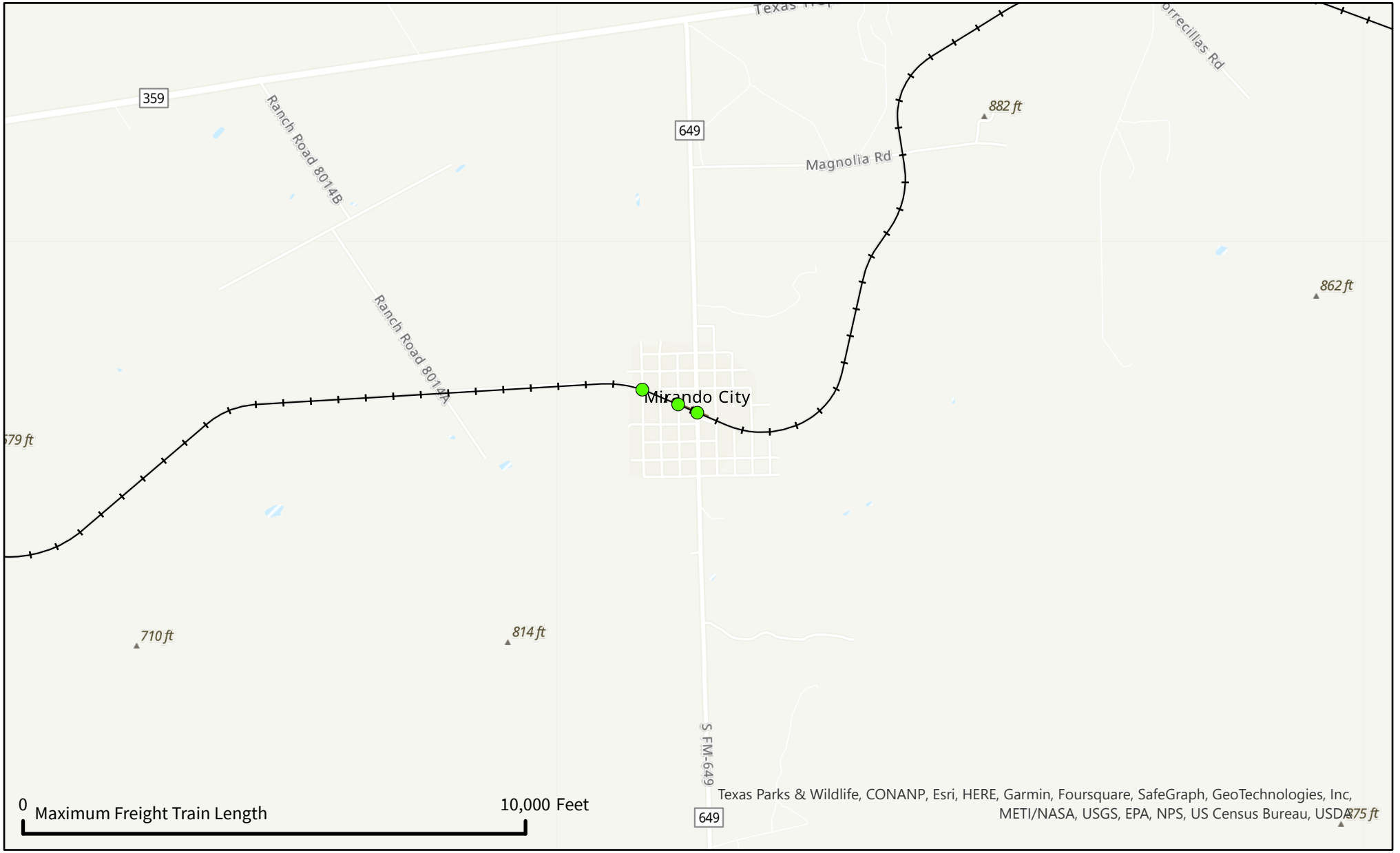


Emergency Services Routing Analysis
Hebronville, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



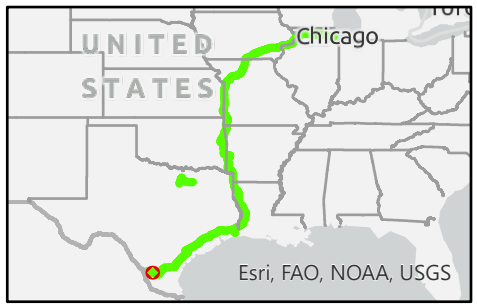
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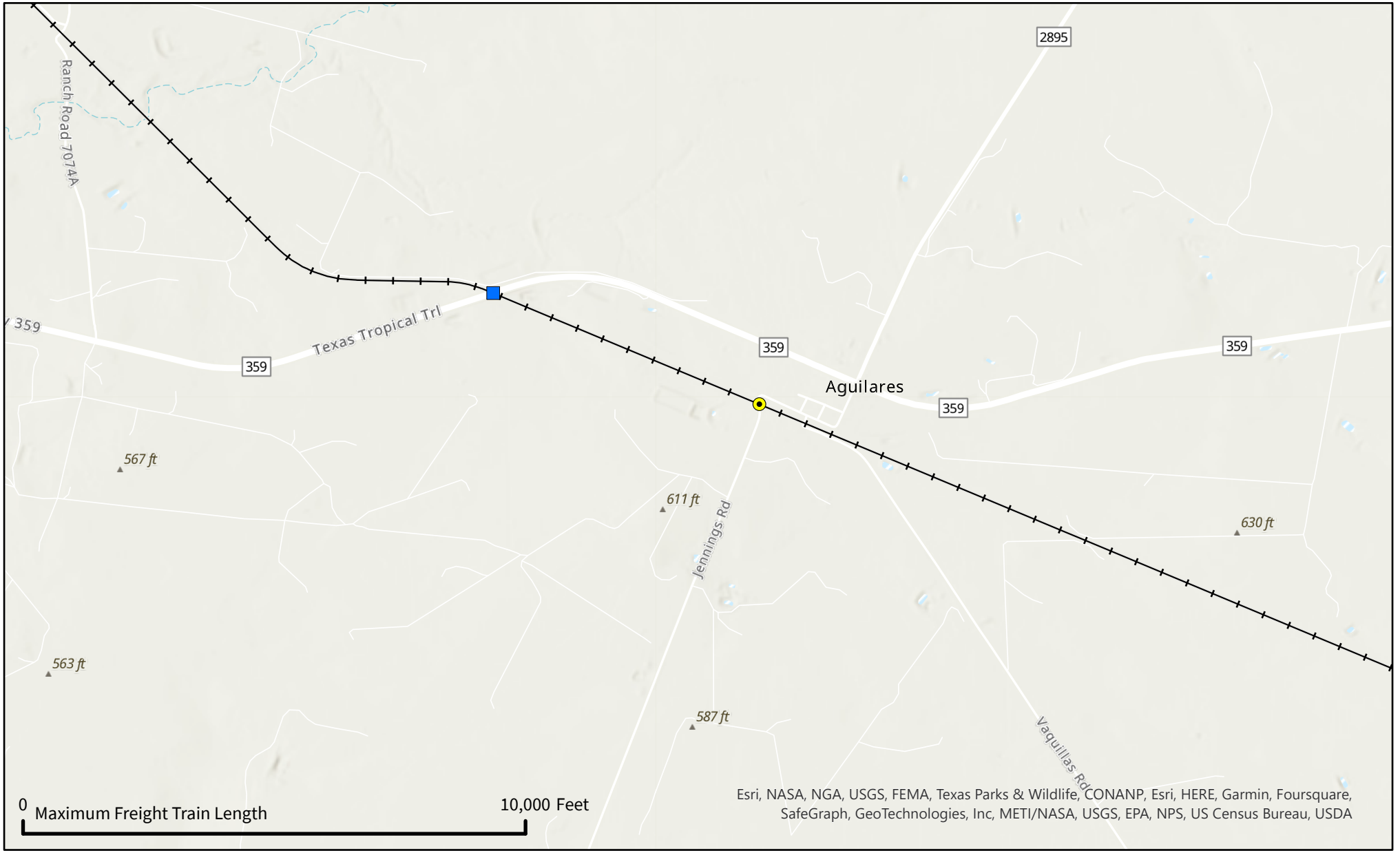


Emergency Services Routing Analysis
Mirando City, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



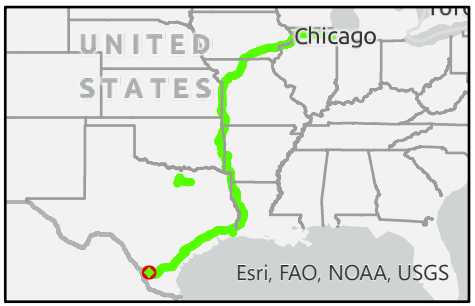
Legend

Crossing Position

- Grade Separated Crossing (RR Over)
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Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

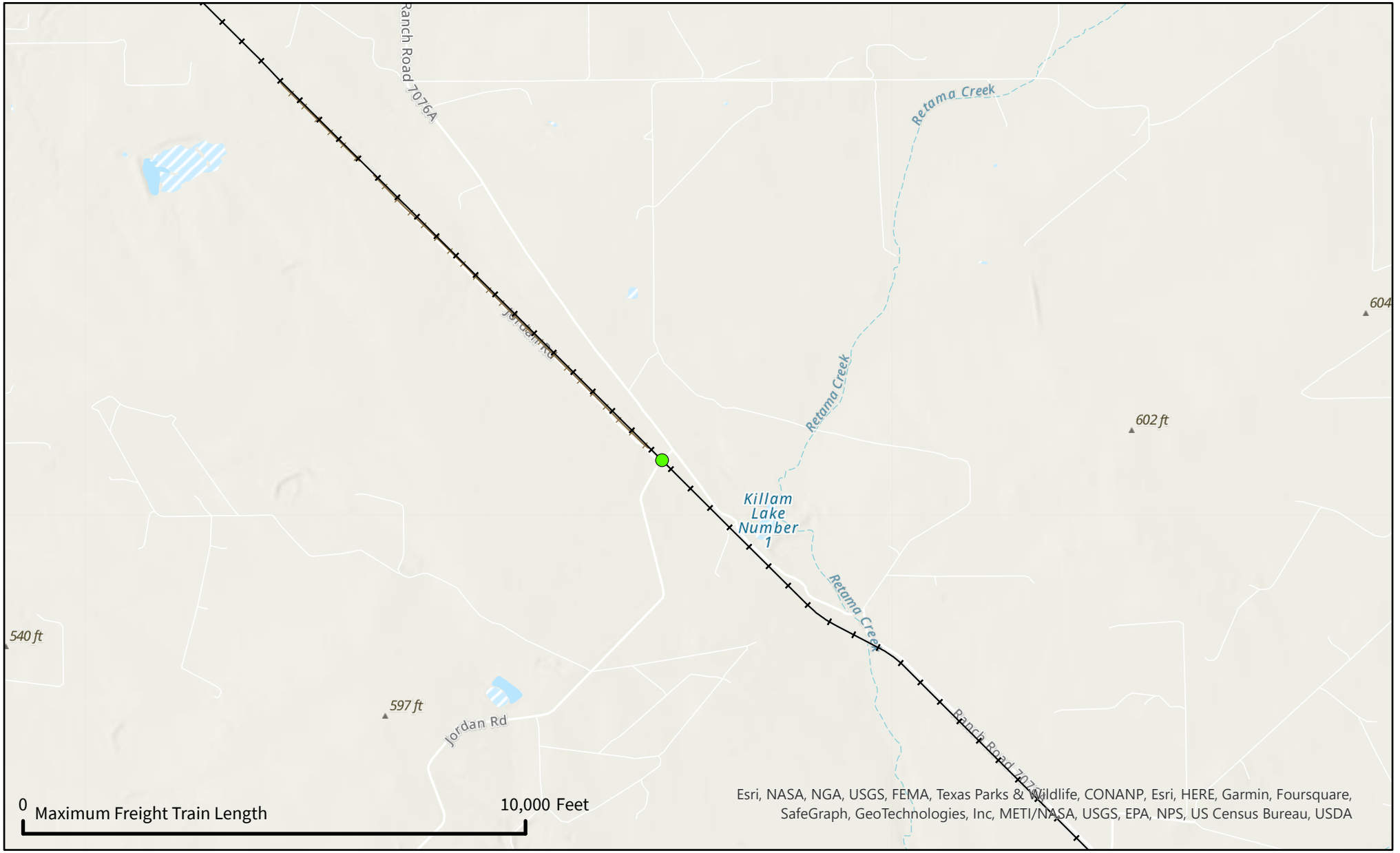


Emergency Services Routing Analysis
Aguilares, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



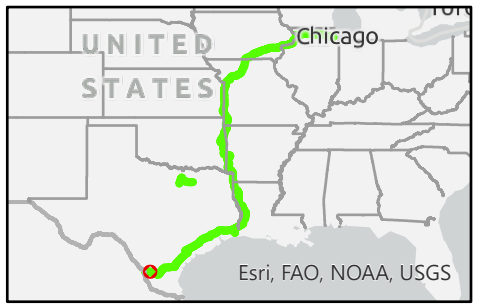
Legend

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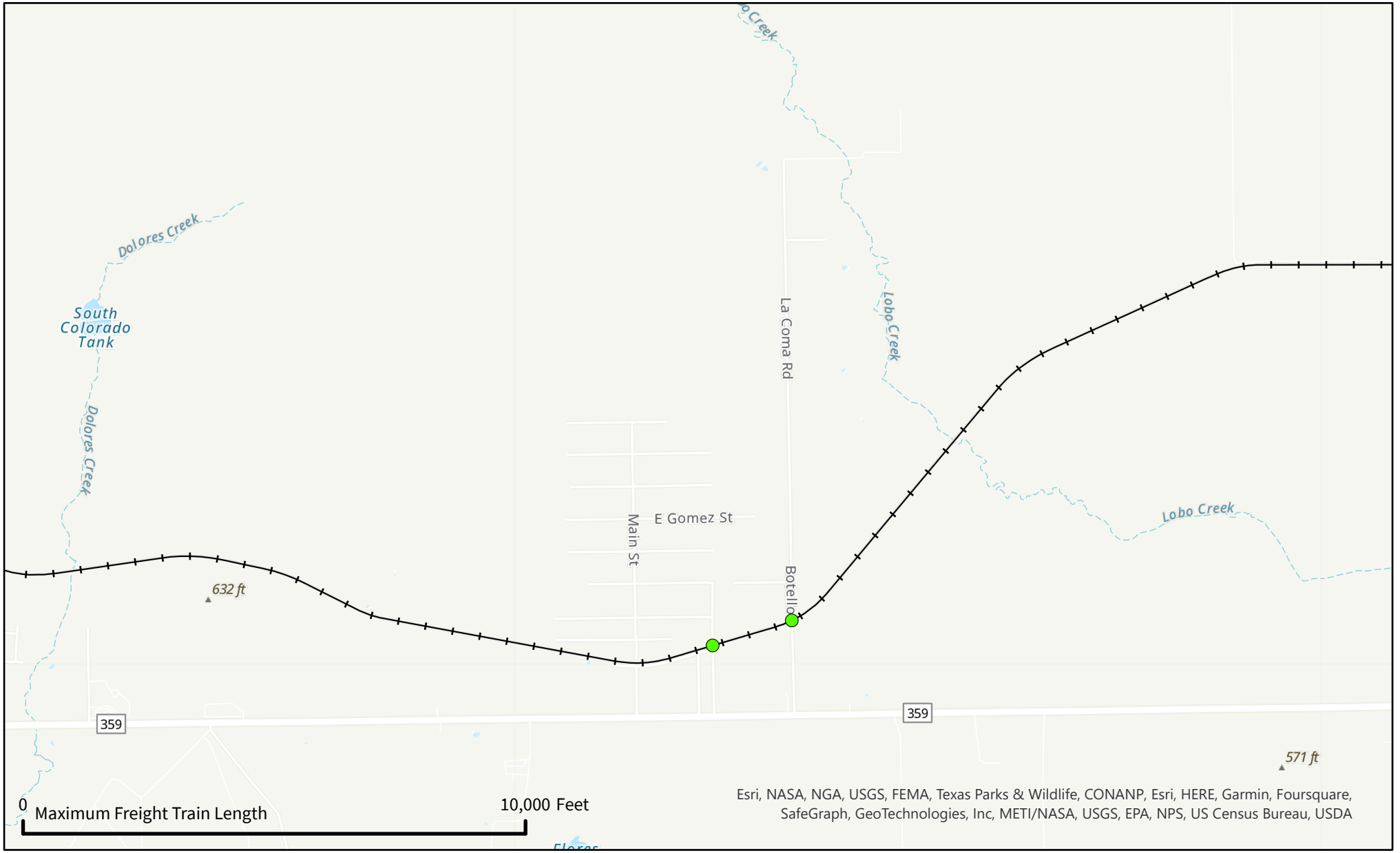
Emergency Services Routing Analysis

E of Laredo, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



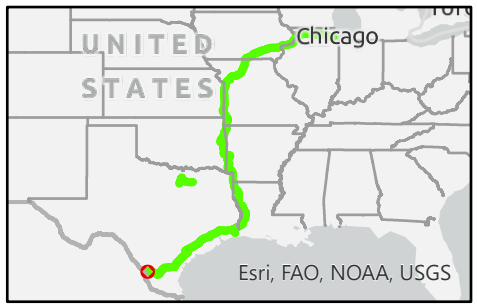
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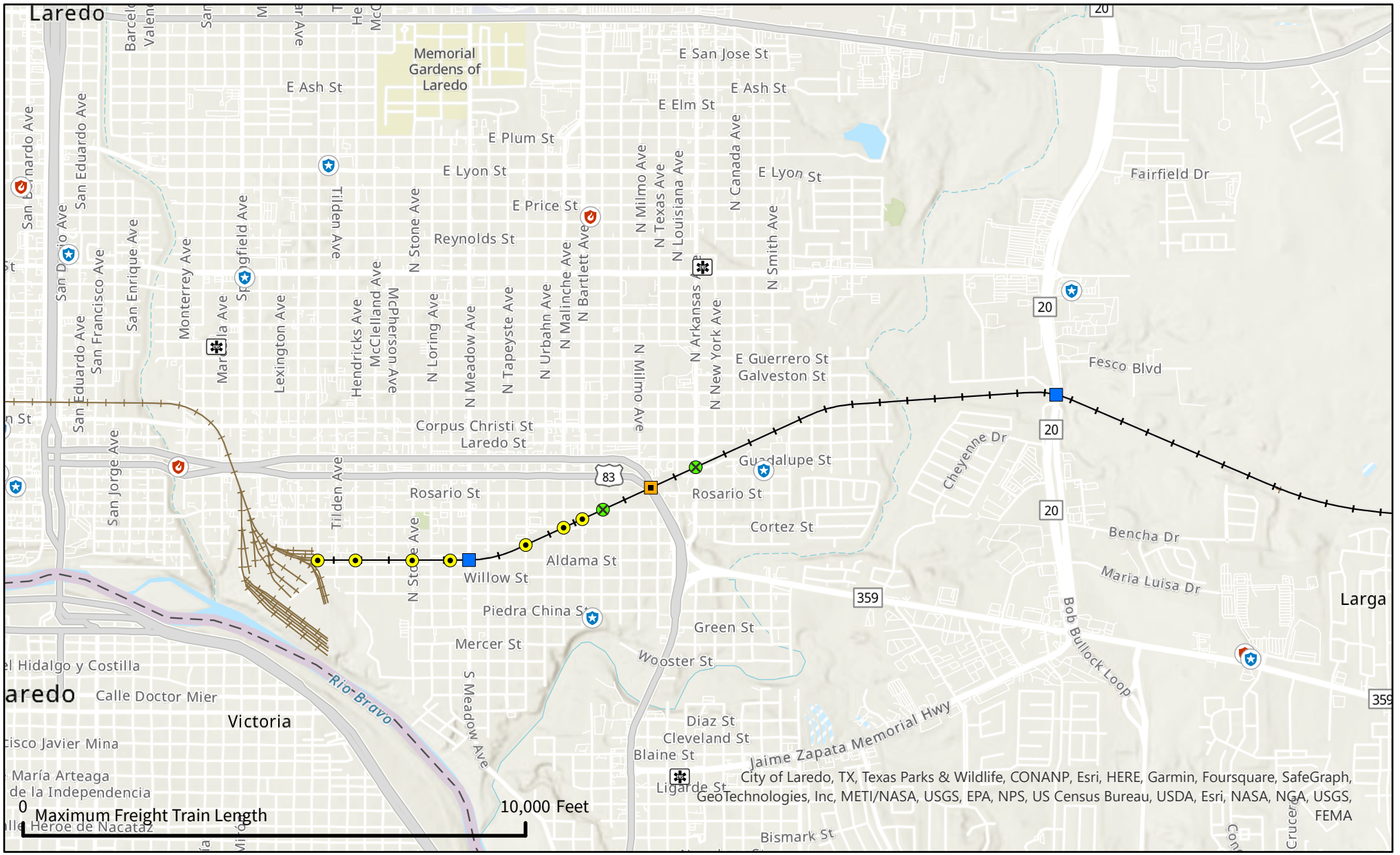
Emergency Services Routing Analysis

E of Laredo, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



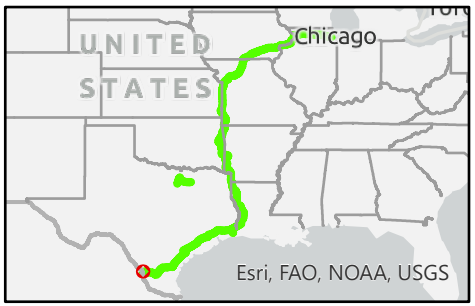
Legend

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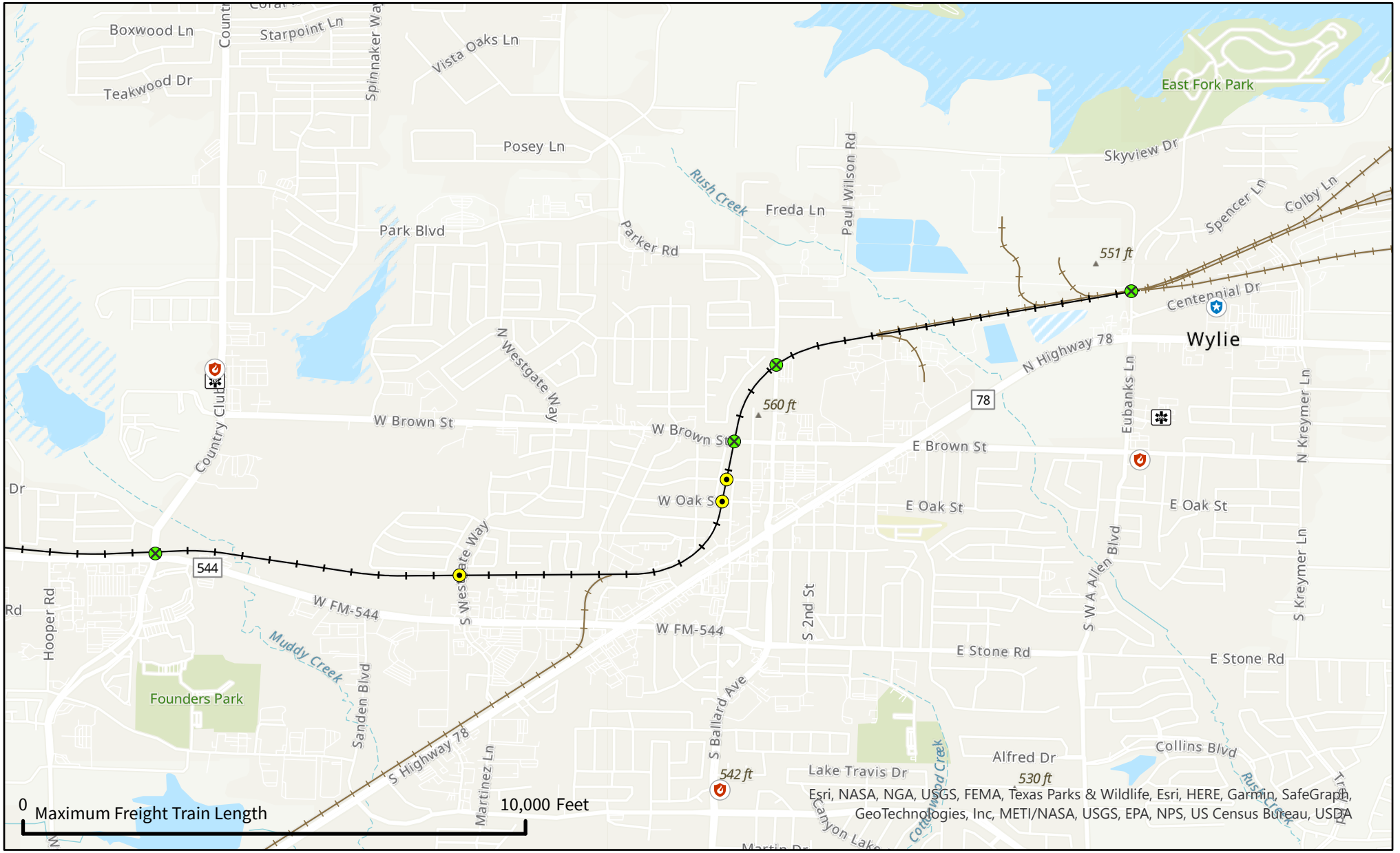


Emergency Services Routing Analysis
Laredo, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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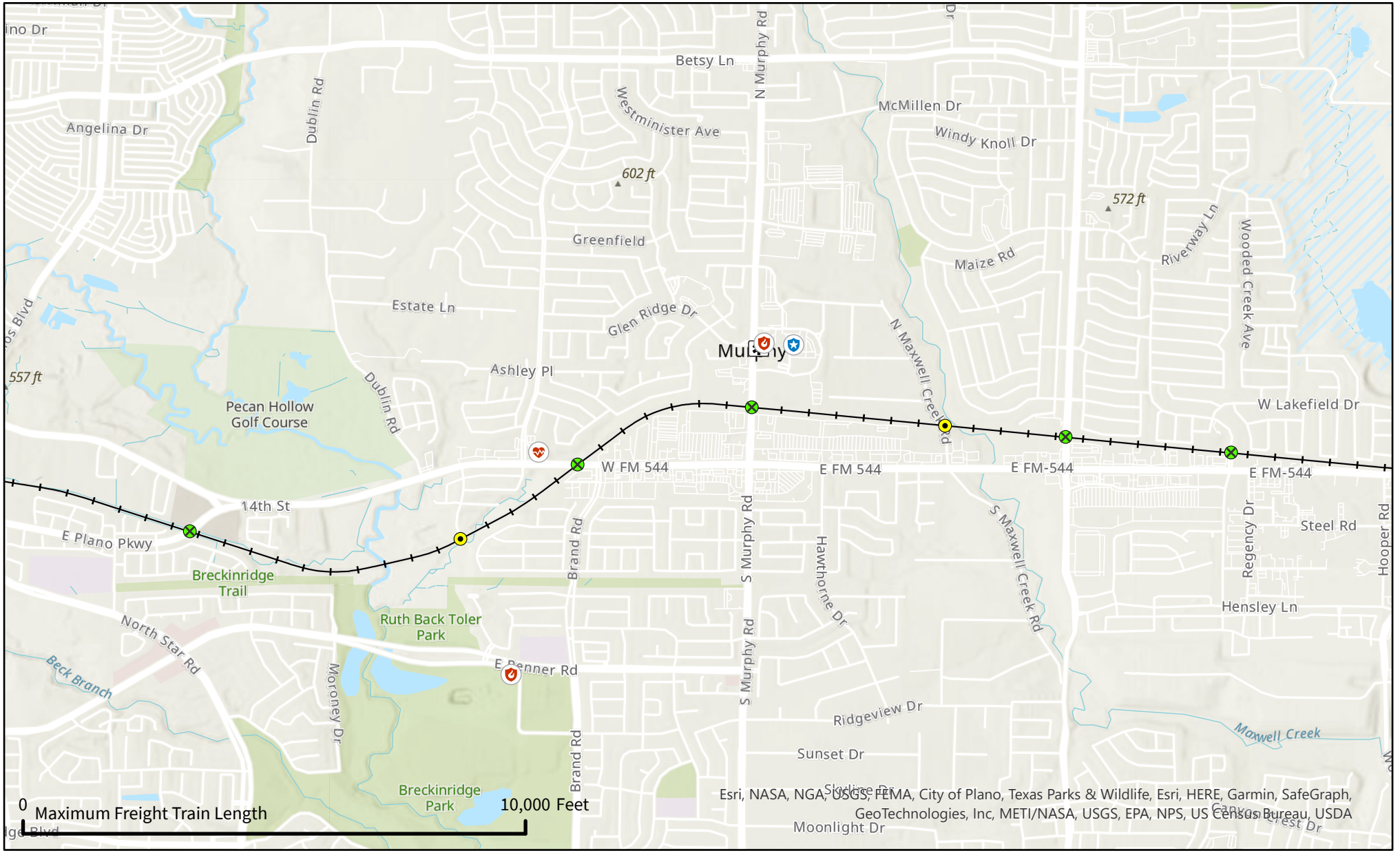


Emergency Services Routing Analysis
Wylie, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

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- Key Map: Analyzed Tracks
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- Hospital
- Police



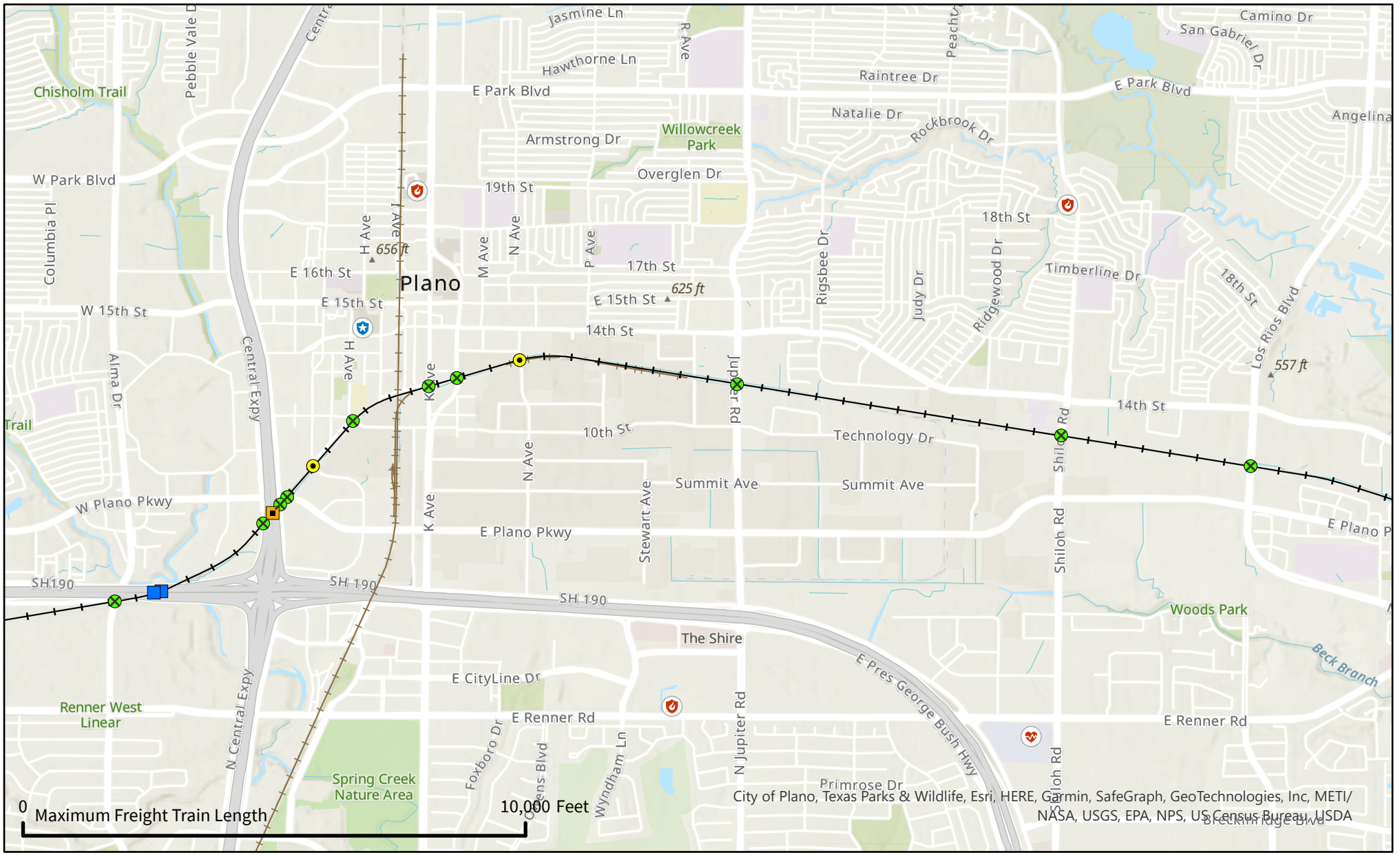
Emergency Services Routing Analysis

Murphy, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- EMS Dispatch
- Hospital
- Police

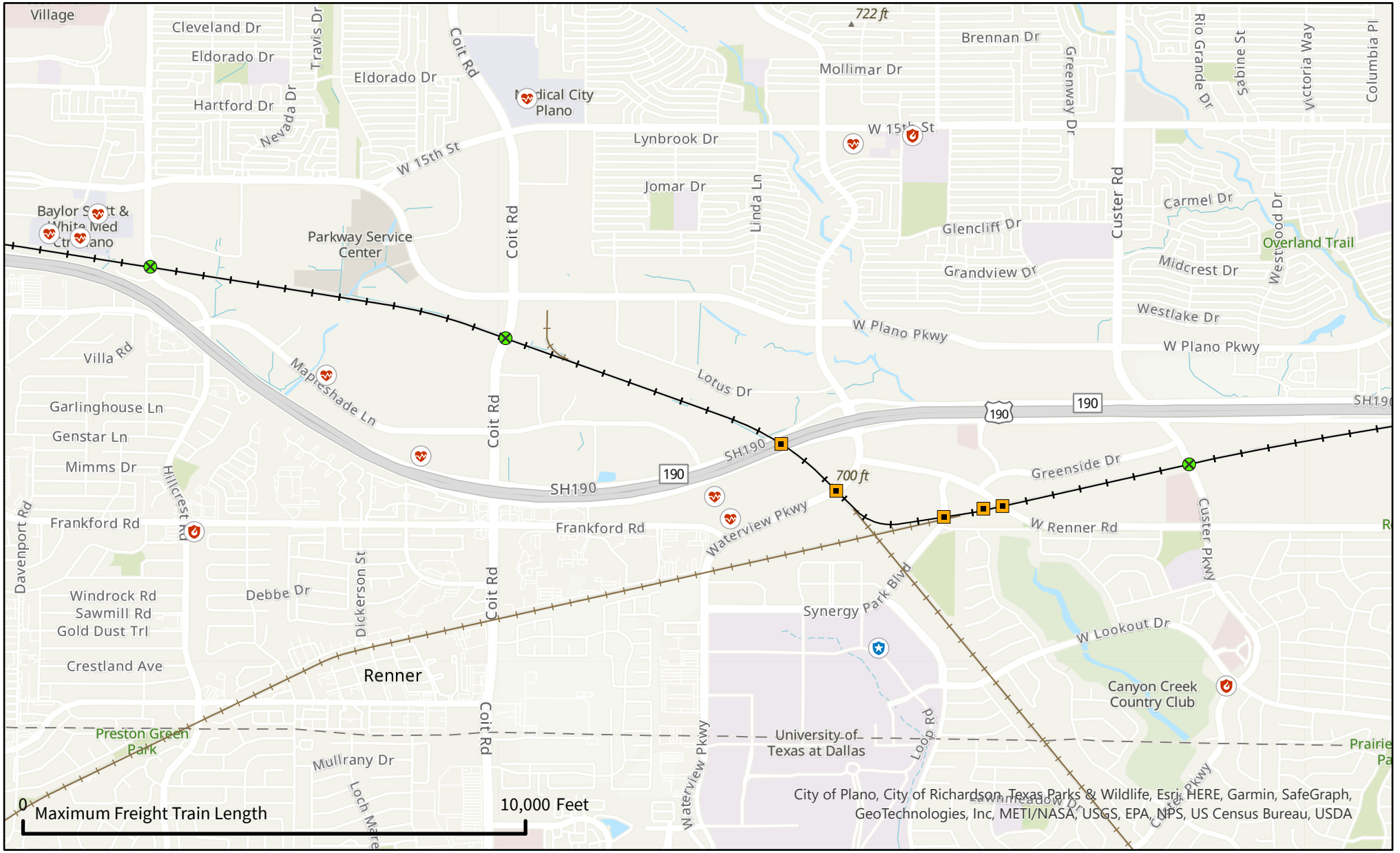


Emergency Services Routing Analysis
Plano, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

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- Hospital
- Police



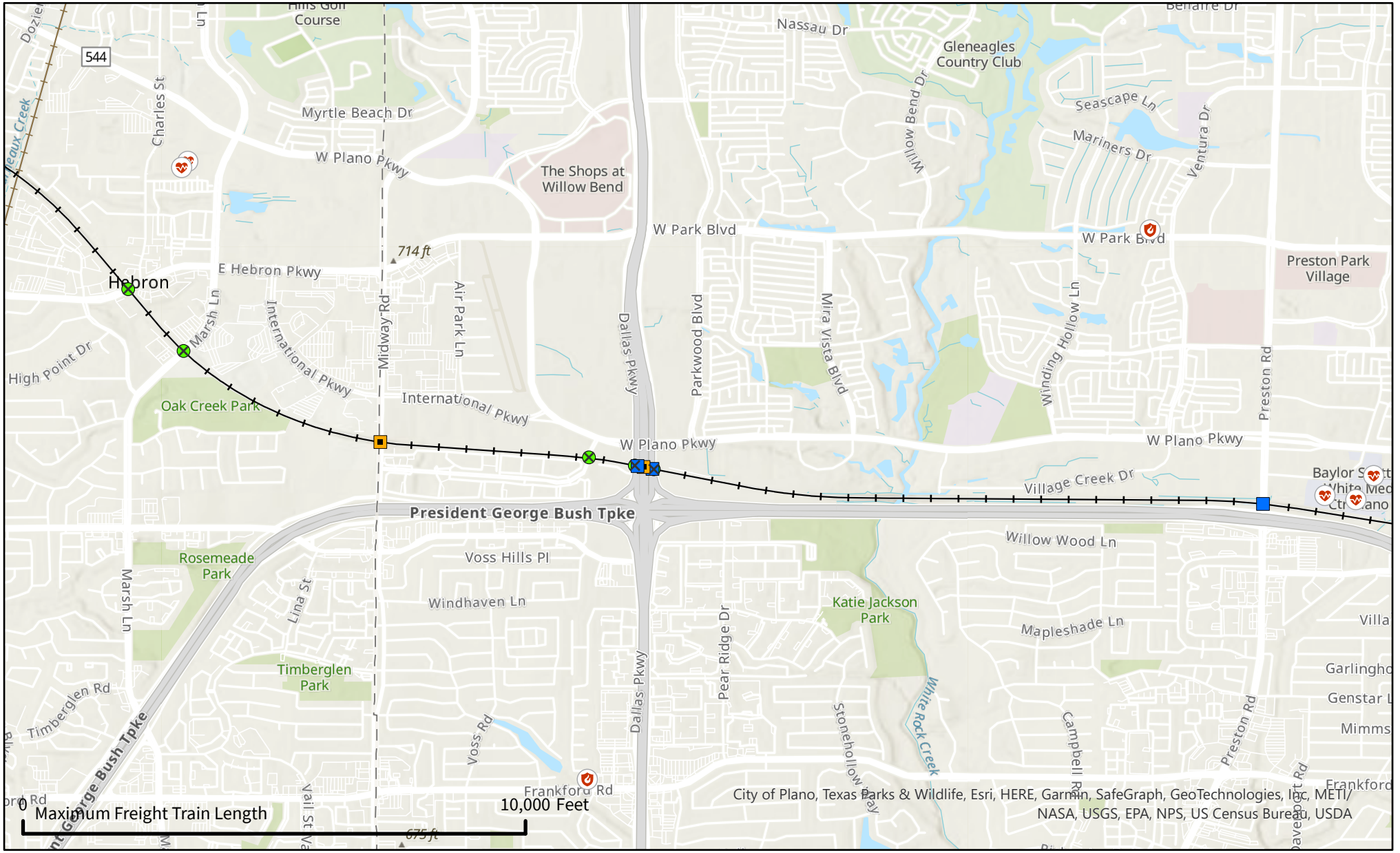
Emergency Services Routing Analysis

Renner, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



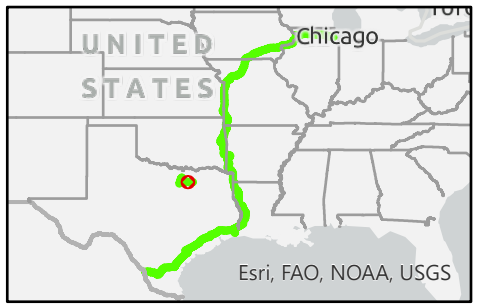
Legend

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- Key Map: Analyzed Tracks
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- Police



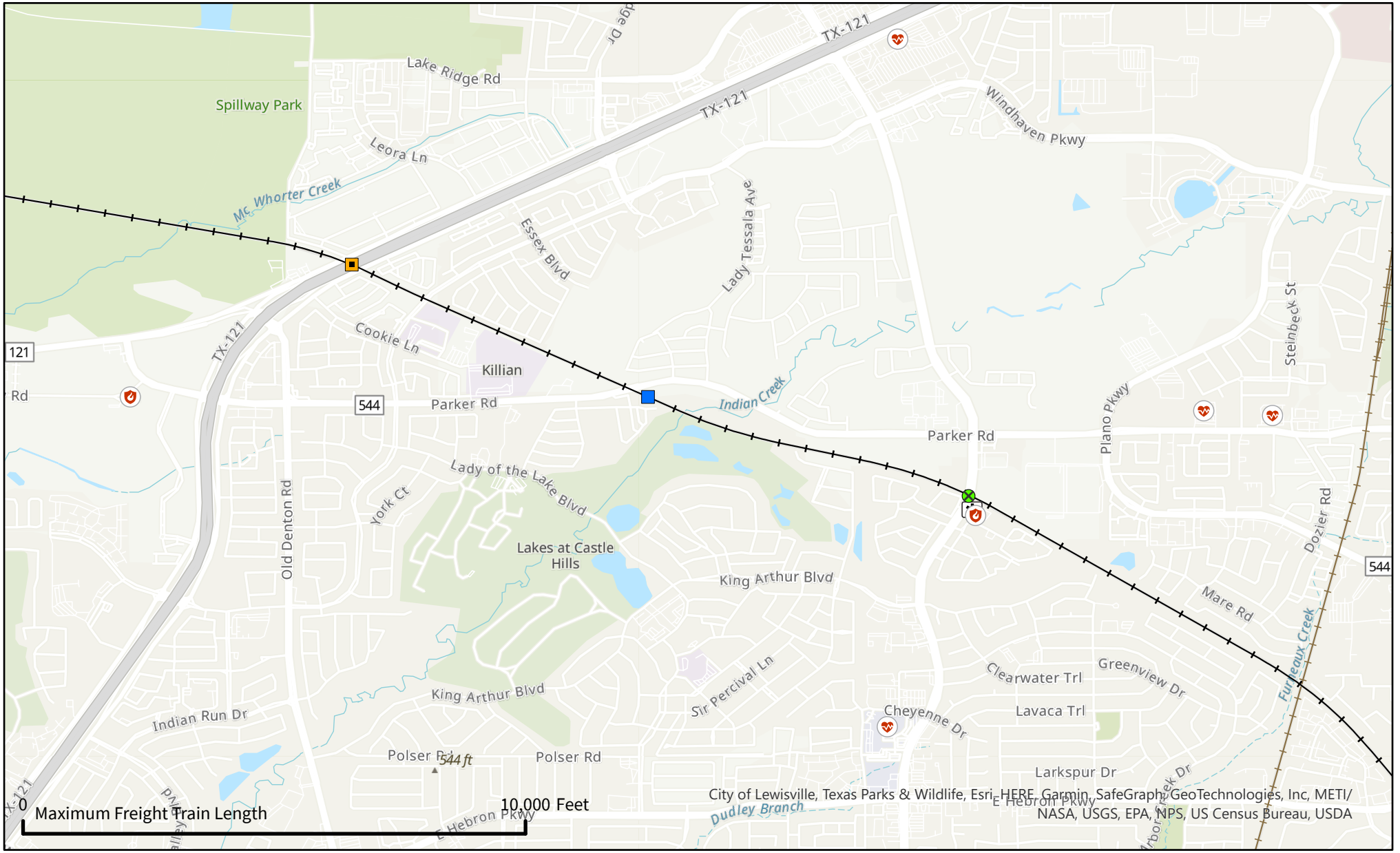
Emergency Services Routing Analysis

N of Carrollton, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



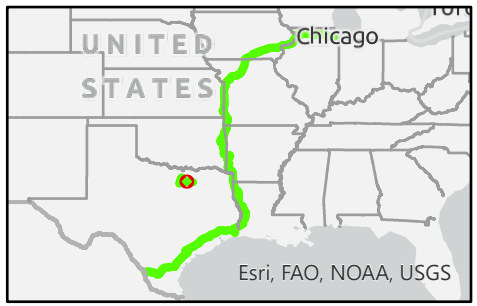
Legend

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- Hospital
- Police

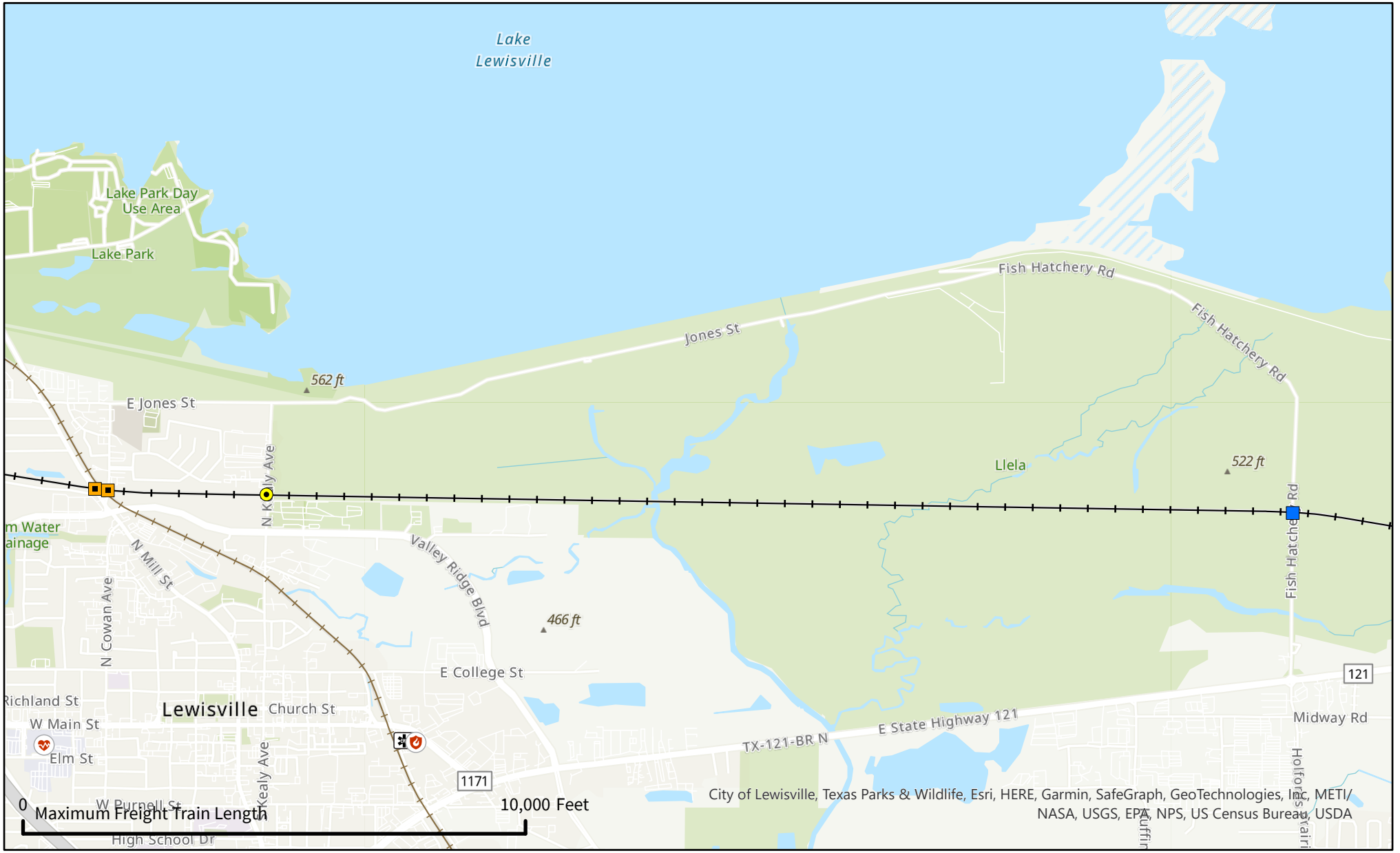


Emergency Services Routing Analysis
N of Carrollton, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



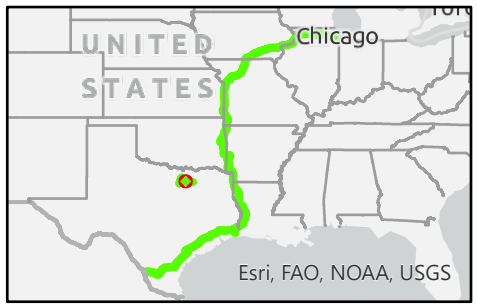
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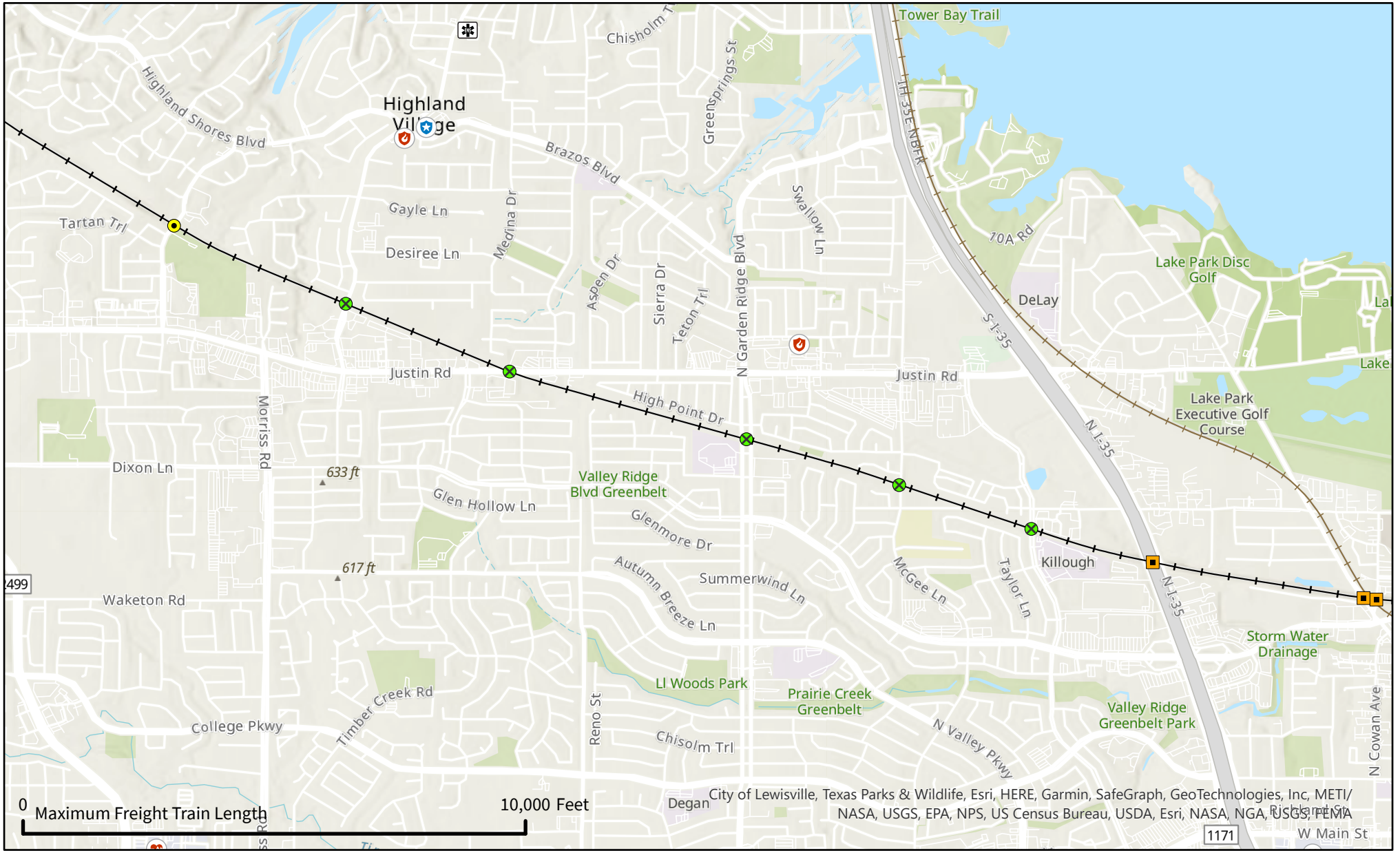


Emergency Services Routing Analysis
Lewisville, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



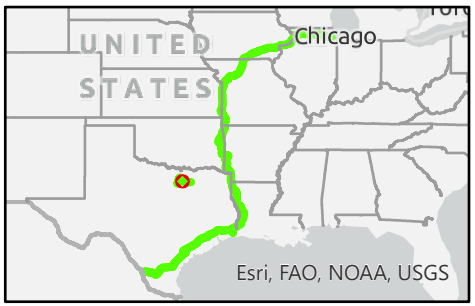
Legend

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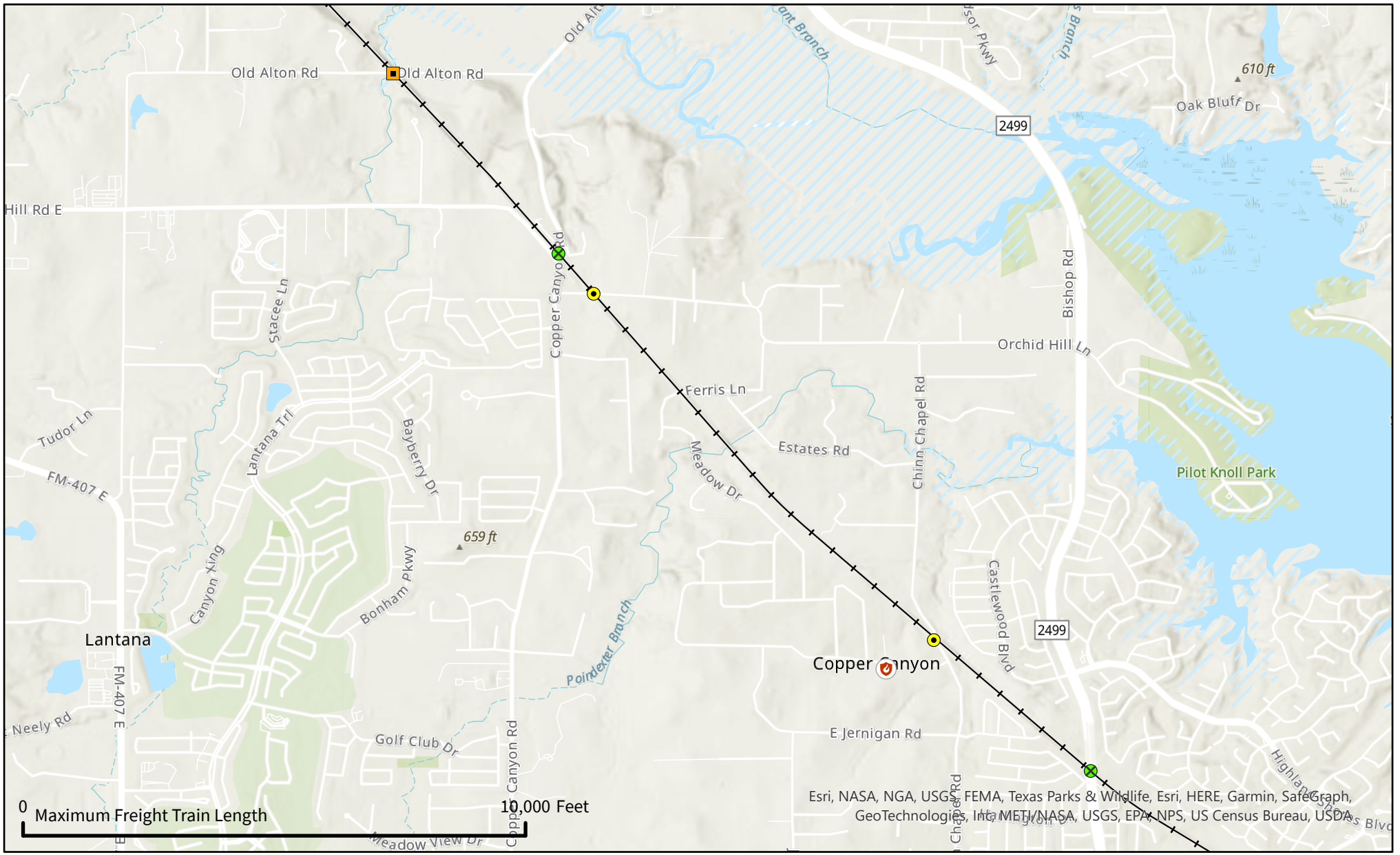


Emergency Services Routing Analysis
Highland Village, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



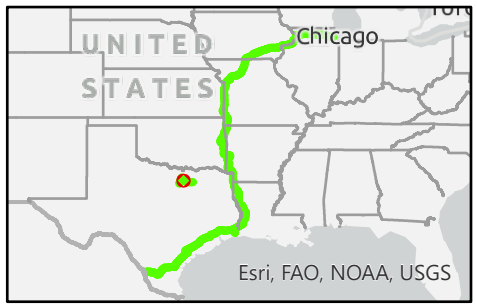
Legend

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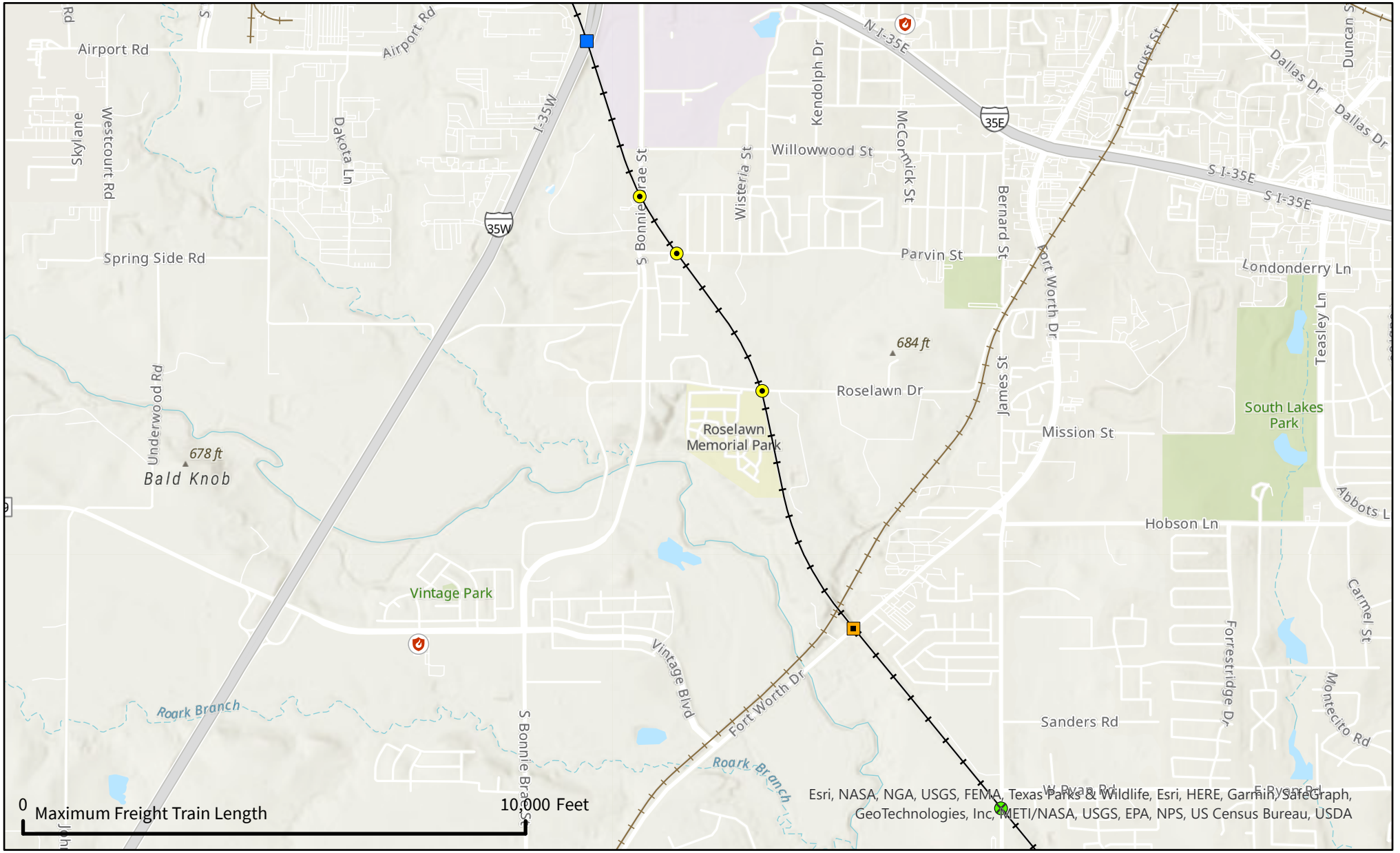
Emergency Services Routing Analysis

Copper Canyon, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



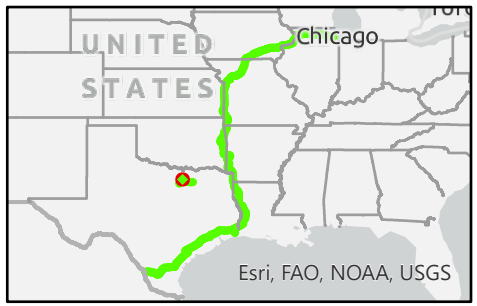
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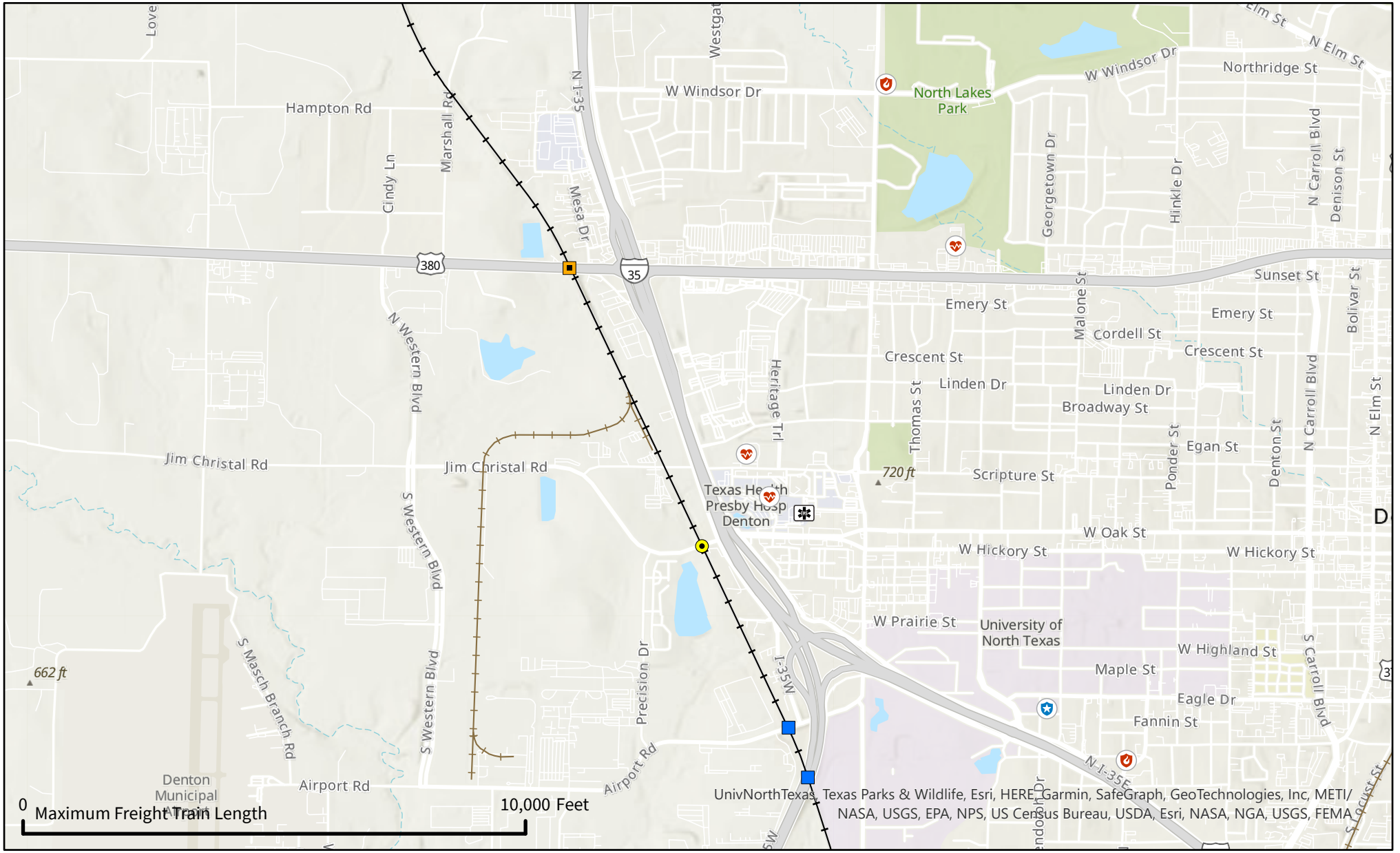


Emergency Services Routing Analysis
S of Denton, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



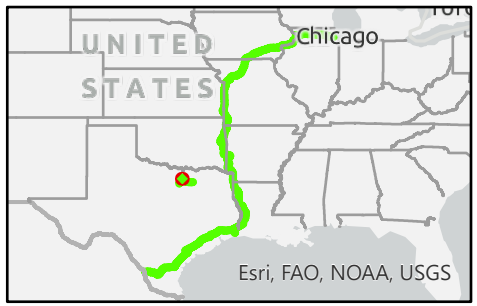
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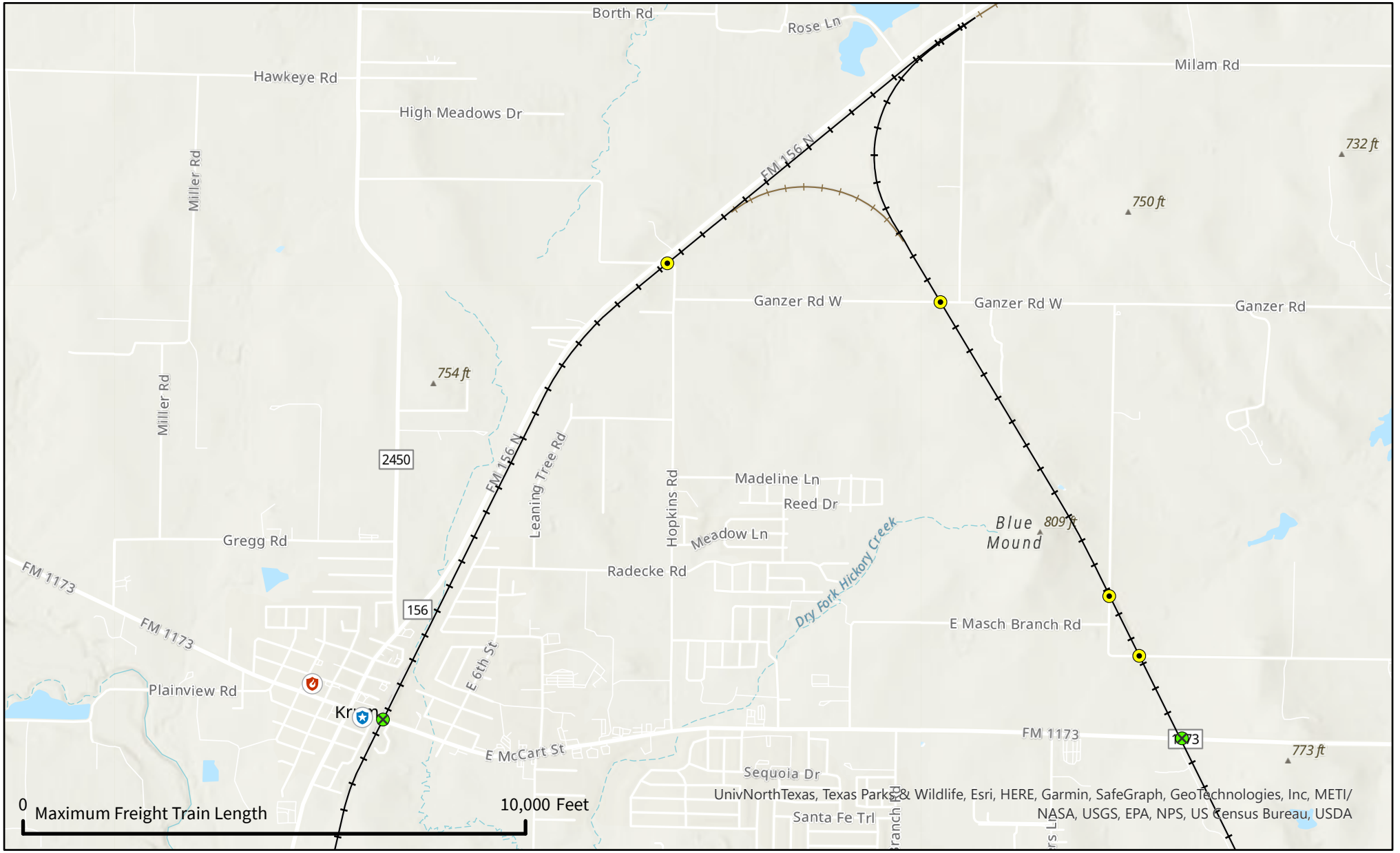


Emergency Services Routing Analysis
Denton, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



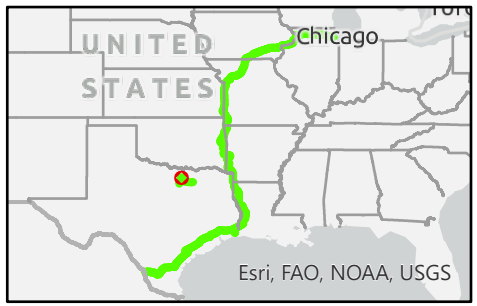
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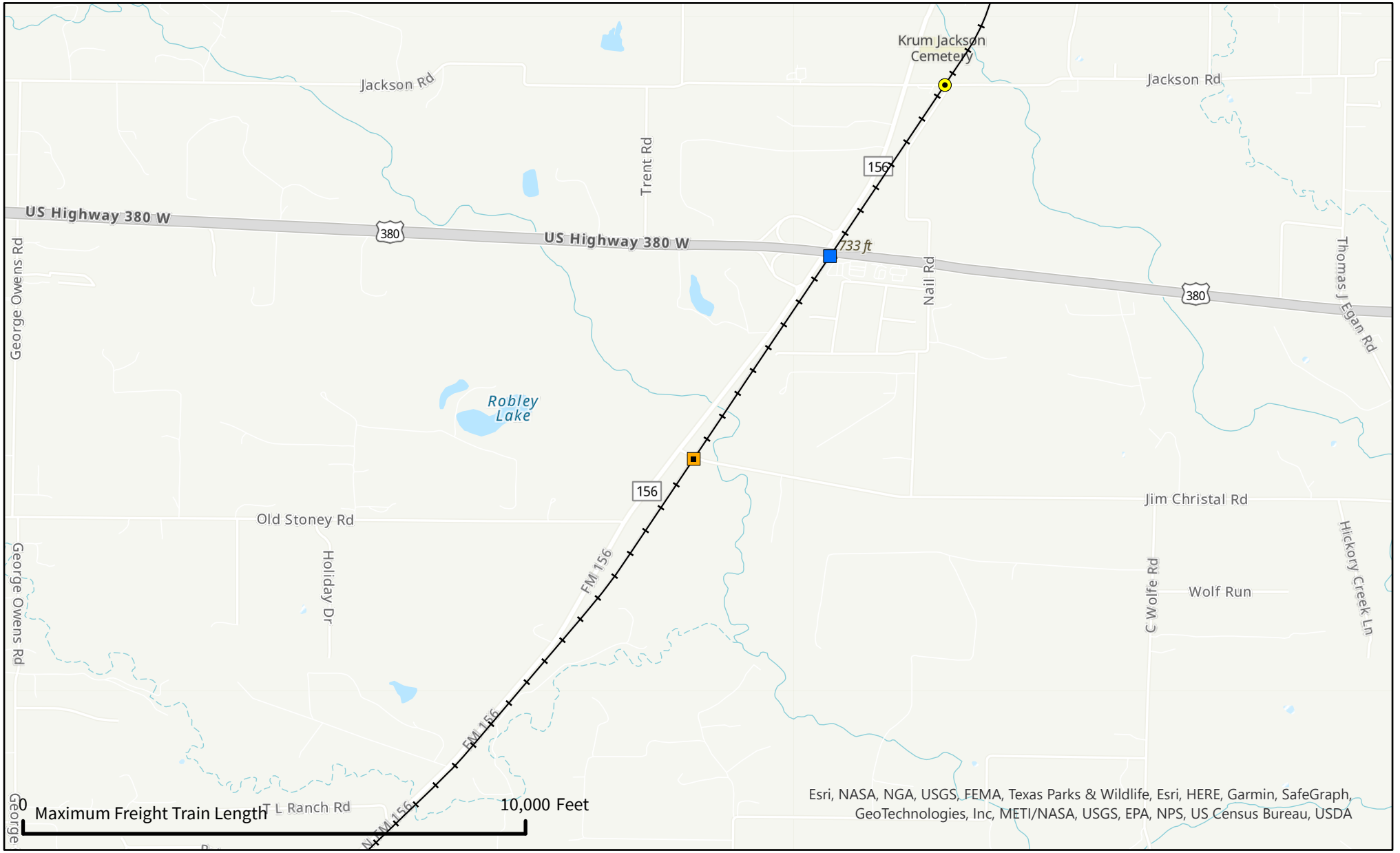
Emergency Services Routing Analysis

Krum, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



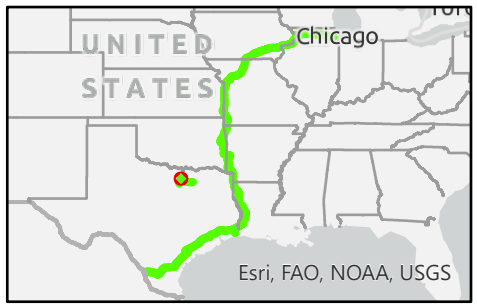
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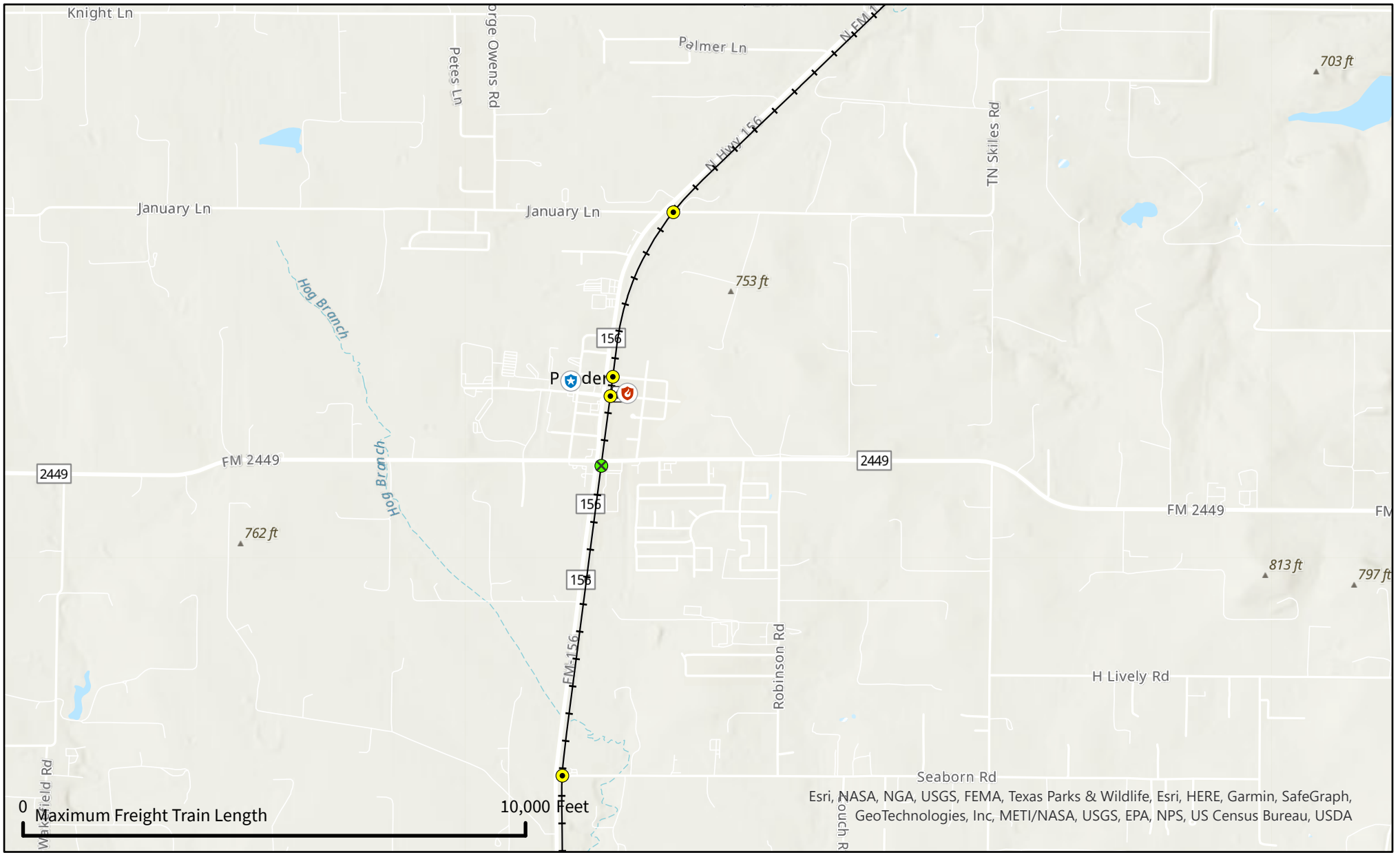
Emergency Services Routing Analysis

S of Krum, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



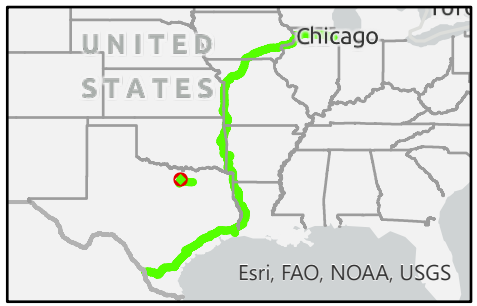
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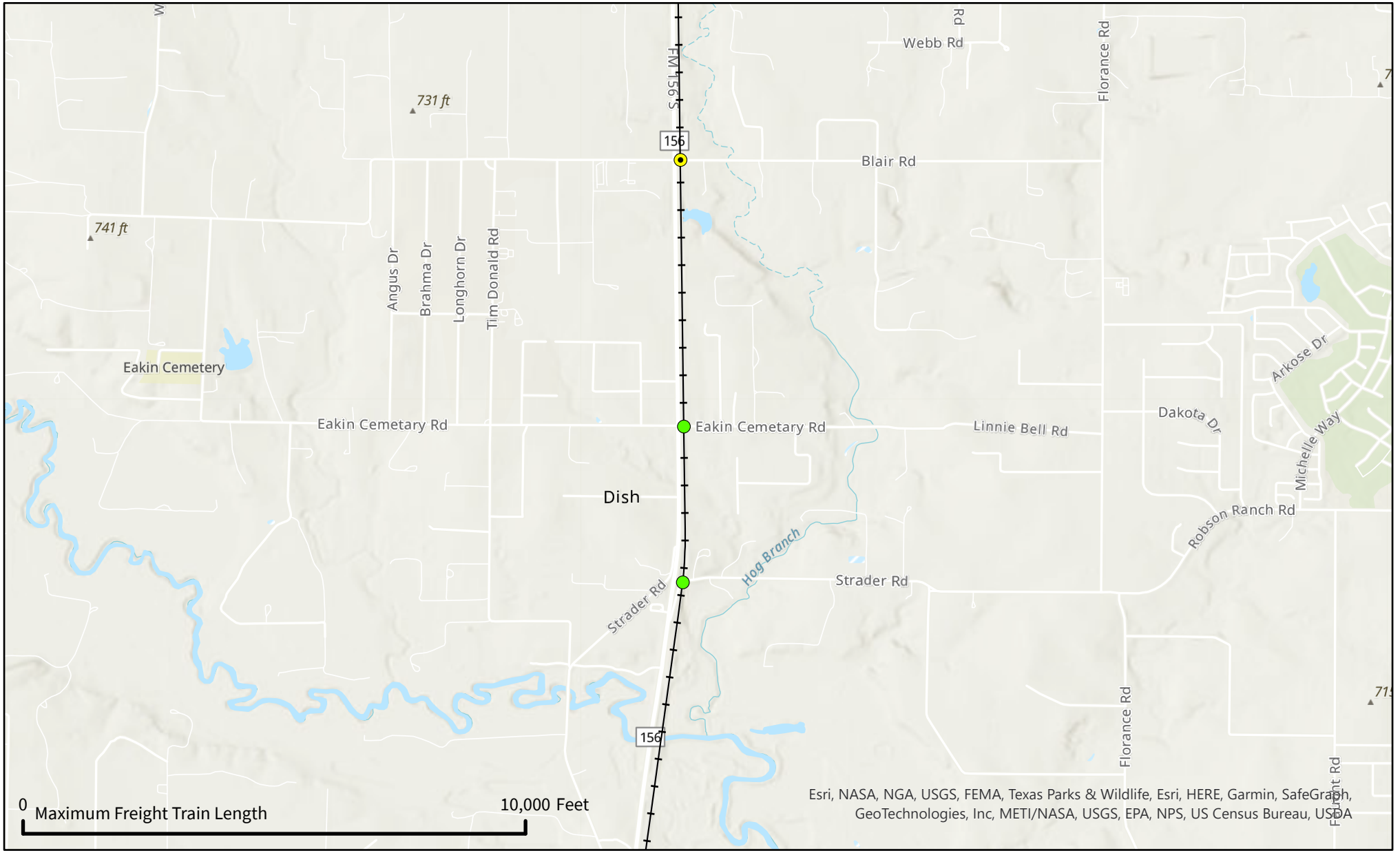


Emergency Services Routing Analysis
Ponder, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



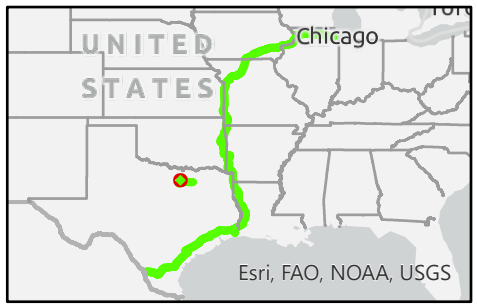
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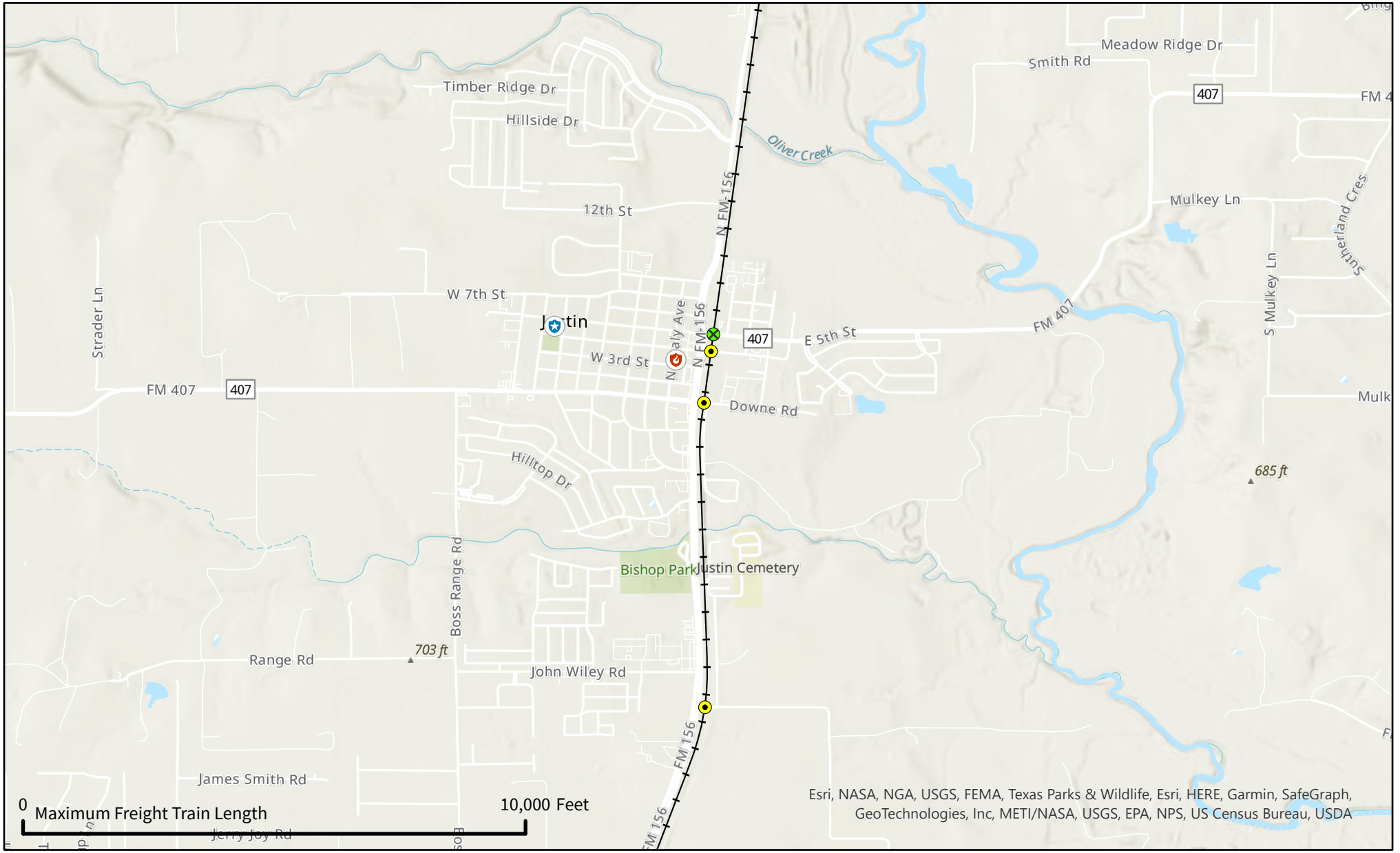
Emergency Services Routing Analysis

Dish, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



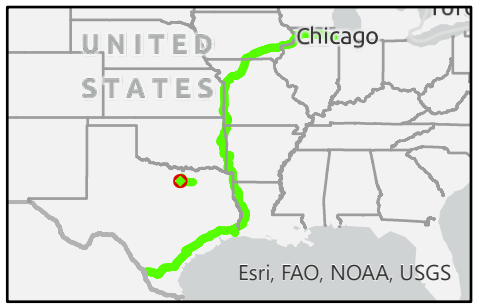
Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

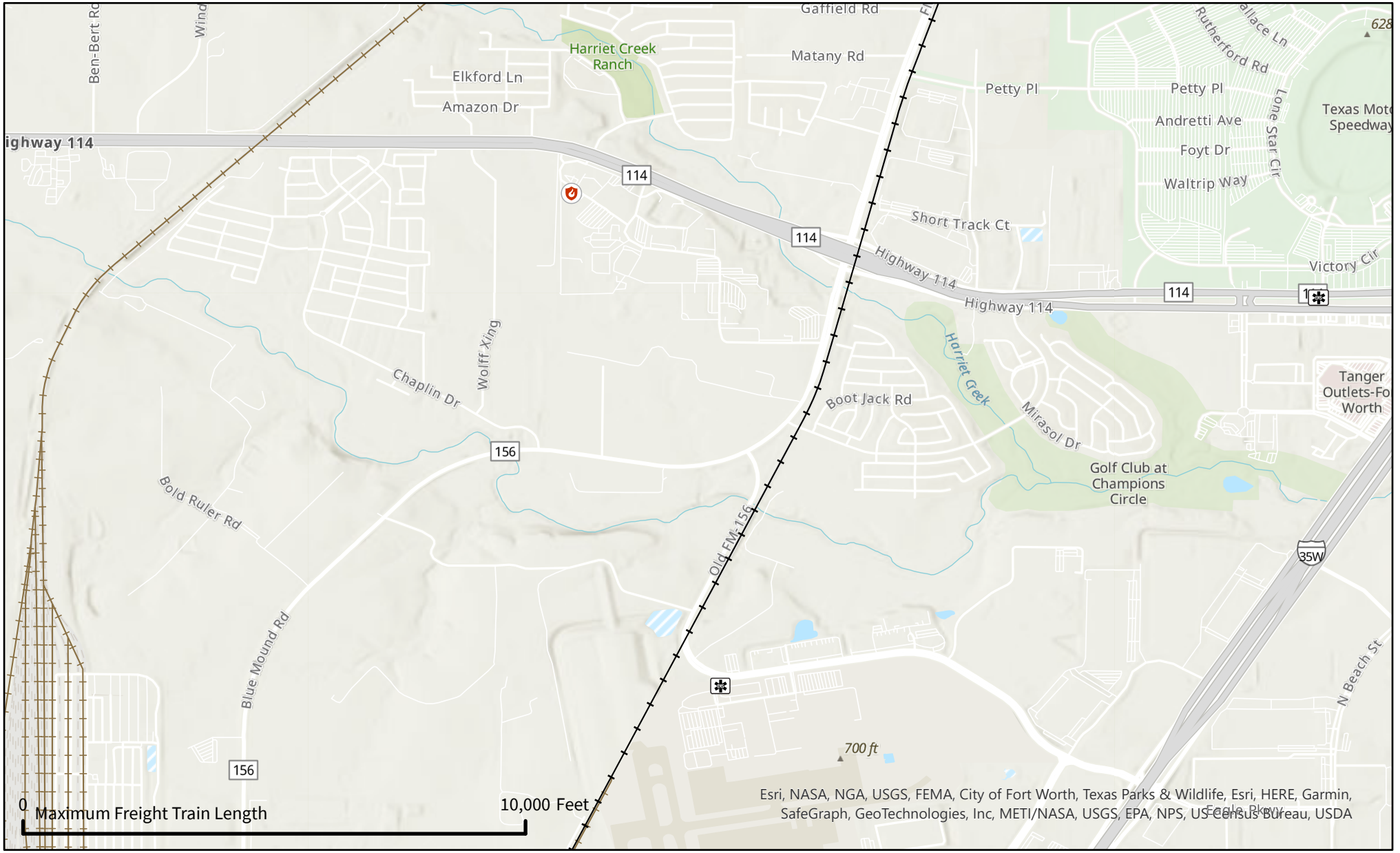


Emergency Services Routing Analysis
Justin, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



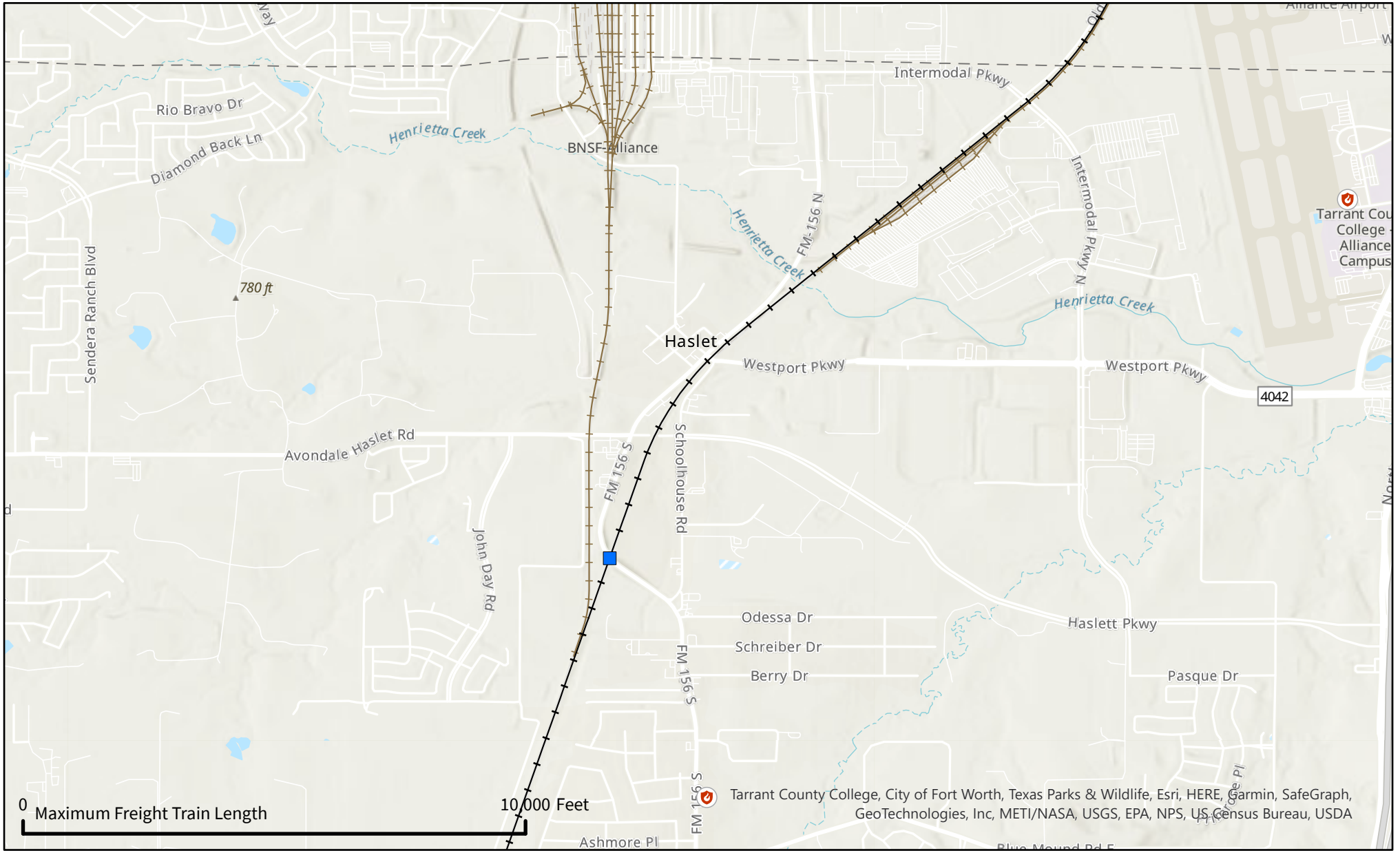
Emergency Services Routing Analysis

Fort Worth, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police

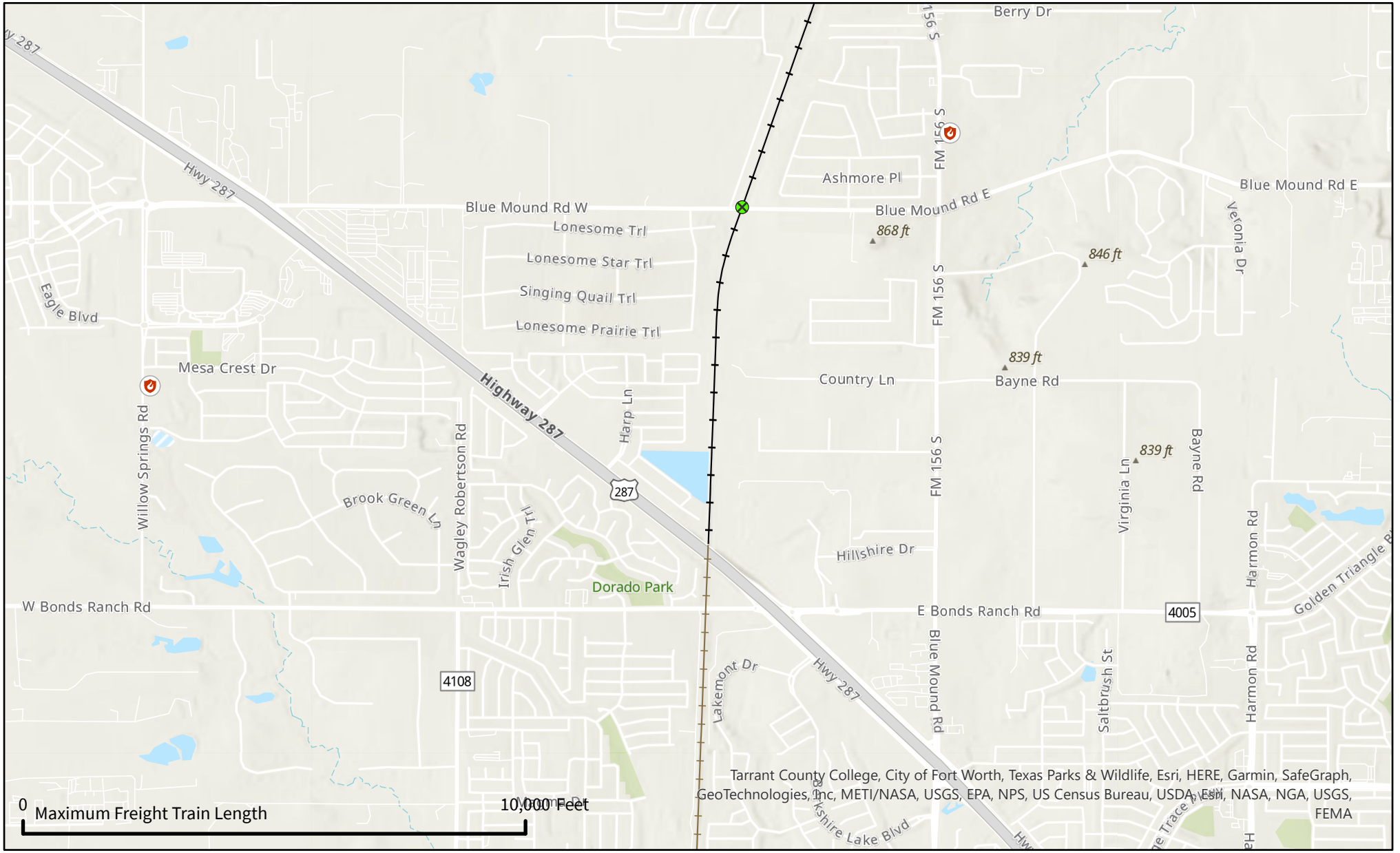


Emergency Services Routing Analysis
Haslet, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5



Legend

Crossing Position

- Grade Separated Crossing (RR Over)
- Grade Separated Crossing (RR Under)
- Or At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- Or At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (277 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis

Haslet, TX

N

Scale:
1 inch = 0.5 mile

Miles
0 0.25 0.5

Appendix I

Truck-to-Rail Diversion and Intermodal Facility Traffic

This appendix includes detailed information on the approach that OEA used to analyze the impact of the Proposed Acquisition on truck-to-rail diversion and intermodal facility traffic, as summarized in *Section 3.4, Truck-to-Rail Diversion* and *Section 3.5, Intermodal Facility Traffic*. In addition, detailed tables showing the results of the analysis are included. **Table I.0-1** lists the data sources used for the analysis.

Table I.0-1. Data Sources

Source Name	Description
Illinois Annual Average Daily Traffic (AADT) Maps	Statewide, Chicago Area, and East St. Louis AADT Traffic Maps
Minnesota Department of Transportation (DOT)	AADT for Minnesota
Michigan DOT	Michigan Traffic Volumes Map
Michigan DOT	Michigan Traffic Volumes Sources
Kansas DOT	AADT for Kansas
HPMS Generalized Service Volume Tables	Freeway, multilane, signalized, unsignalized generalized service volume table
Federal Highway Administration (FHWA)/Oak Ridge National Laboratory, Freight Analysis Framework	Freight movement among states and major metropolitan areas
FHWA, Highway Performance Monitoring System (HPMS)	National level highway information system database
USDOT TRB, Highway Capacity Manual, 6th Edition	Volume and capacity calculation procedure and standards
FHWA/Cambridge Systematics, Inc., Simplified Highway Capacity Calculation Method for the HPMS	Simplified Highway Capacity Calculation Method for the HPMS
HPMS Field Manual Appendix N	Estimating highway capacity

I.1 Roadway Capacity Formula

I.1.1 Freeway Capacity

Based on *Highway Capacity Manual (6th Edition)* (HCM) (Transportation Research Board 2016), the capacity of a basic freeway segment varies with the Free Flow Speed (FFS), which is determined based on roadway design speed under ideal conditions with reductions applied due to lane width, right side clearance, and interchange ramp density when these parameters are under less-than-ideal conditions.

$$FFS = BFFS - f_{LW} - f_{RLC} - 3.22 \times TRD^{0.84}$$

$$c\ (\text{basic freeway segment}) = 2{,}200 + 10 \times (FFS_{adj} - 50)$$

Where:

FFS	=	free-flow speed (miles per hour)
BFFS	=	base free-flow speed (miles per hour)
f_{LW}	=	adjustment for lane width (miles per hour)
f_{RLC}	=	adjustment for right side lateral clearance (miles per hour)
TRD	=	total ramp density (ramps per mile)
c	=	capacity (passenger cars per mile per lane)
FFS_{adj}	=	adjusted free flow speed (miles per hour)

I.1.2 Multilane Highway Capacity

The capacity of a multilane highway is similarly related to the FFS, while speed and capacity reductions are factored with lane width, total clearance, type of median, and access density.

$$FFS = BFFS - f_{LW} - f_{TLC} - f_M - f_A$$

$$c\ (\text{multilane highway segment}) = 1{,}900 + 20 \times (FFS_{adj} - 45)$$

Where:

FFS	=	free-flow speed (miles per hour)
BFFS	=	base free-flow speed (miles per hour)
f_{LW}	=	adjustment for lane width (miles per hour)

f_{TLC} = adjustment for total lateral clearance (miles per hour)

f_M = adjustment for median type (miles per hour)

f_A = adjustment for access point density (miles per hour)

c = capacity (passenger cars per mile per lane)

FFS_{adj} = adjusted free flow speed (miles per hour)

I.1.3 Two-Lane Highway Capacity

The capacity calculation of a two-lane highway is more complicated in the HCM. In addition to the FFS with reduction factors due to lane width, right side clearance, type of median, and access density, the average travel speed is also affected by other factors such as traffic mix, terrain, and passing opportunities. For the planning level analysis, a fixed value of 1,490 passenger cars per hour is recommended (FHWA 2017) which is used in this analysis for two-lane highways.

I.1.4 Signalized Highways

The capacity of signalized highways is determined not only by roadway geometrics, but also traffic signal types, timings, and lane use regulations such as parking, bike lane, and transit stops. For simplicity purposes (FHWA 2017), the product of 1,900 passenger cars per lane and the ratio of green time for through movement over cycle length is used in this analysis.

$$\text{Capacity} = \frac{g}{c} \times lanes \times 1{,}900$$

Where:

g / c = proportion of dwell time during effective green time

Lastly, it should be noted that in traffic flow theory, highway capacity is defined by the maximum number of passenger cars that can be processed by a highway facility without causing unacceptable levels of traffic congestion. To calculate actual capacity of a specific roadway facility, a heavy vehicle factor needs be applied to account for capacity impacts due to terrain and vehicle mix. Based on the HCM, heavy vehicle factors are determined based on vehicle mix (proportion of heavy vehicles) and terrain passenger car equivalent are different for level, rolling and mountainous terrain (Transportation Research Board 2016):

$$f_{HV} = \frac{1}{(1 + PT \times (ET - 1))}$$

Where: f

HV = heavy vehicle adjustment factor (decimal)

PT = proportion of heavy vehicles in traffic stream (decimal)

ET = passenger car equivalent of one heavy vehicle in traffic stream

Capacity calculations are conducted for each roadway segment, and the performance measures such as Vehicle Miles Traveled (VMT), truck miles diverted, and Volume Over Capacity (V/C) ratios are aggregated using a roadway length weighted average. A summary table of roadway V/C, as well as some key variables and default value assumptions, are included in **Table I.1-1** through **Table I.1-4** below.

I.1.5 Truck to Rail Diversion – Table I.1-1 to Table I.1-4

Traffic data in the Applicants' application included approximately 115 origin destination pairs covering approximately seven Canadian Metropolitan Areas (CMA) in Canada, seven Business Economic Areas (BEA) in the U.S., and eight states in Mexico. OEA conducted traffic assignment between these origins and destinations (O/D) pairs on the Freight Analysis Framework (FAF) roadway network, and the results are mostly consistent with the truck-to-rail diversion network map provided in the application.

Table I.1-1. Freight Analysis Framework Origin and Destination Pairs

O\D	Vancouver, BC	Calgary, AB	Edmonton, AB	Regina, SK	Winnipeg, MB	Toronto, ON	Montreal, PQ	Minneapolis, MN	Chicago, IL	Detroit, MI	Columbus, OH	Kansas City, MO	Dallas, TX	San Antonio, TX	Michoacán	Nuevo Leon	Queretaro	Federal District	Guanajuato	San Luis Potosi	State of Mexico	Coahuila De Zaragoza	Total
Vancouver, BC	0	0	0	0	0	0	0	0	0	0	0	6	127	19	0	0	0	0	0	0	0	0	152
Calgary, AB	0	0	0	0	0	0	0	0	0	0	0	0	11	3	0	0	0	0	0	0	0	0	14
Edmonton, AB	0	0	0	0	0	0	0	0	0	0	0	46	520	94	0	0	0	0	0	0	0	0	660
Winnipeg, MB	0	0	0	0	0	0	0	0	0	0	0	86	97	21	0	0	0	0	0	0	0	0	204
Toronto, ON	0	0	0	0	0	0	0	0	0	0	0	402	2,368	583	0	0	0	0	0	0	0	0	3,353
Montreal, PQ	0	0	0	0	0	0	0	0	0	0	0	132	301	80	0	0	0	0	0	0	0	0	513
Minneapolis, MN	0	0	0	0	0	0	0	0	0	0	0	0	6,586	2,105	63	2,158	425	277	213	481	522	135	12,965
Chicago, IL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	4,401	719	1,419	0	0	0	0	6,560
Detroit, MI	0	0	0	0	0	0	0	0	0	0	0	0	3,833	0	52	102	1,113	417	722	0	334	0	6,573
Columbus, OH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1,568	245	205	299	74	951	190	3,535
Kansas City, MO	22	0	24	1	118	660	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	838
Dallas, TX	86	23	472	6	125	1,339	46	6,586	0	2,348	0	0	0	0	0	0	0	0	0	0	0	0	11,031
San Antonio, TX	72	4	114	2	101	856	31	856	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,036
Michoacán	0	0	0	0	0	0	0	48	29	41	13	0	0	0	0	0	0	0	0	0	0	0	131
Nuevo Leon	0	0	0	0	0	0	0	1,646	0	1,307	579	0	0	0	0	0	0	0	0	0	0	0	3,532
Queretaro	0	0	0	0	0	0	0	276	652	1,003	268	0	0	0	0	0	0	0	0	0	0	0	2,199

Table I.1-1. Freight Analysis Framework Origin and Destination Pairs

O\D	Vancouver, BC	Calgary, AB	Edmonton, AB	Regina, SK	Winnipeg, MB	Toronto, ON	Montreal, PQ	Minneapolis, MN	Chicago, IL	Detroit, MI	Columbus, OH	Kansas City, MO	Dallas, TX	San Antonio, TX	Michoacán	Nuevo Leon	Queretaro	Federal District	Guanajuato	San Luis Potosi	State of Mexico	Coahuila De Zaragoza	Total
Federal District	0	0	0	0	0	0	0	341	1,353	598	244	0	0	0	0	0	0	0	0	0	0	0	2,536
Guanajuato	0	0	0	0	0	0	0	109	0	870	296	0	0	0	0	0	0	0	0	0	0	0	1,275
San Luis Potosi	0	0	0	0	0	0	0	159	0	0	179	0	0	0	0	0	0	0	0	0	0	0	338
State of Mexico	0	0	0	0	0	0	0	478	117	1,462	728	0	0	0	0	0	0	0	0	0	0	0	2,785
Coahuila De Zaragoza	0	0	0	0	0	0	0	81	1,405	1,054	248	0	0	0	0	0	0	0	0	0	0	0	2,788
Total	180	27	610	9	344	2,855	90	10,580	3,556	8,683	2,555	672	13,843	2,905	139	8,229	2,502	2,318	1,234	555	1,807	325	64,018

Table I.1-2. Truck-to-Rail Diversion Projections by State

	Impacted Transportation Network (Facilities in Miles)				Sorted by Truck Percentages (Facilities in Miles)					Sorted by Truck-to-Rail Diversion Annual Projections Proposed Acquisition (Facilities in Miles)				
	Freeway	Multilane Highway	Two Lane Highway	Signalized Corridor	<5%	5-15%	15-25%	25-40%	40+%	<1,500	1,500-4,000	4,000-8,000	8,000-20,000	20,000+
U.S.	8,058.72	1,003.57	647.58	55.51	79.56	1,439.1	2,617.7	3,691.2	1,937.6	2,630.43	2,278.88	1,704.75	1,595.12	1,556.19
TX	1,280.22	345.23	357.65	20.04	31.83	320.74	293.18	633.58	723.79	623.18	574.50	0.00	356.37	449.08
OK	718.09	122.52	0.00	16.81	0.00	52.37	151.04	551.94	102.06	62.88	299.54	0.00	362.89	132.11
MO	636.06	0.00	0.00	0.00	0.00	53.38	74.97	358.65	149.06	0.00	0.00	88.19	141.28	406.59
KS	295.68	21.33	38.68	0.00	4.40	35.13	144.58	164.81	6.78	0.00	125.54	0.00	230.15	0.01
IA	375.50	71.60	0.00	0.00	0.00	45.74	185.93	215.15	0.29	0.00	228.62	0.00	0.00	218.49
NE	0.00	7.02	41.22	0.00	0.00	0.00	23.06	25.18	0.00	0.00	48.24	0.00	0.00	0.00
MN	108.43	0.00	8.25	0.00	12.39	41.76	45.59	16.94	0.00	0.00	8.25	0.00	20.19	88.24
IL	834.04	0.00	0.00	0.00	0.95	19.47	108.89	334.35	370.38	208.95	0.15	298.95	64.31	261.68
IN	261.45	11.54	0.00	0.00	0.43	45.87	34.10	151.41	41.18	0.00	0.00	227.29	45.70	0.00
MI	421.61	0.00	0.00	0.00	1.57	74.22	155.78	163.76	26.29	0.00	0.00	313.40	108.21	0.00
OH	157.75	35.05	0.00	0.12	0.00	24.08	77.73	79.21	11.90	0.00	0.00	192.92	0.00	0.00
KY	385.54	0.00	0.00	0.00	0.00	44.08	99.46	224.50	17.50	0.00	0.00	385.54	0.00	0.00
TN	38.69	83.25	1.48	2.70	0.00	61.24	31.25	32.64	0.99	0.00	0.00	126.12	0.00	0.00
AR	338.36	0.00	0.00	0.00	0.00	0.43	111.30	39.42	187.21	0.00	0.00	72.34	266.02	0.00
NM	164.32	284.01	7.58	9.65	0.00	304.21	145.81	0.10	15.43	0.00	465.56	0.00	0.00	0.00
AZ	370.81	0.00	0.00	0.00	0.00	22.84	81.32	228.31	38.34	0.00	370.81	0.00	0.00	0.00
CA	157.68	0.00	0.00	0.00	9.36	84.05	43.59	16.64	4.03	0.00	157.68	0.00	0.00	0.00
CO	171.55	0.14	0.00	0.00	0.00	95.46	23.59	52.64	0.00	171.69	0.00	0.00	0.00	0.00
WY	359.17	0.00	0.00	0.00	0.00	34.92	203.94	50.27	70.04	359.17	0.00	0.00	0.00	0.00
MT	222.90	21.88	192.72	6.19	12.62	30.18	289.35	97.89	13.64	443.69	0.00	0.00	0.00	0.00
UT	41.73	0.00	0.00	0.00	0.00	0.00	0.00	0.98	40.75	41.73	0.00	0.00	0.00	0.00
ID	275.60	0.00	0.00	0.00	0.37	27.66	74.43	119.00	54.14	275.60	0.00	0.00	0.00	0.00
OR	209.33	0.00	0.00	0.00	0.00	0.00	12.17	133.32	63.84	209.33	0.00	0.00	0.00	0.00
WA	233.64	0.00	0.00	0.00	5.63	21.30	206.70	0.00	0.00	233.64	0.00	0.00	0.00	0.00

Table I.1-3. Projected Future Year V/C Percent Summary by State

	Sorted by Future Year V/C% No-Action (Facilities in Miles)[1]					**Future Year V/C% With Proposed Acquisition (Facilities in Miles)**				
	<0.25	**0.25-0.5**	**0.5-0.8**	**0.8-1**	**1+**	**<0.25**	**0.25-0.5**	**0.5-0.8**	**0.8-1**	**1+**
U.S.	3,565.39	3,637.28	1,529.52	377.49	655.70	3,565.65	3,638.05	1,528.48	377.66	655.53
TX	768.43	540.48	290.81	121.94	281.47	768.43	540.48	290.81	122.11	281.31
OK	77.75	559.07	136.93	41.57	42.10	77.75	559.07	136.93	41.57	42.10
MO	126.94	208.51	243.44	26.00	31.18	126.94	209.55	242.40	26.00	31.18
KS	133.51	192.85	12.33	3.22	13.79	133.51	192.85	12.33	3.22	13.79
IA	215.05	180.64	40.03	6.26	5.13	215.32	180.37	40.03	6.26	5.13
NE	6.88	27.93	13.43	0.00	0.00	6.88	27.93	13.43	0.00	0.00
MN	8.25	67.72	17.89	15.86	6.96	8.25	67.72	17.89	15.86	6.96
IL	144.18	542.88	88.00	30.14	28.85	144.18	542.88	88.00	30.14	28.85
IN	0.09	108.66	97.55	18.56	48.13	0.09	108.66	97.55	18.56	48.13
MI	30.79	197.67	164.26	27.92	0.98	30.79	197.67	164.26	27.92	0.98
OH	0.02	75.92	75.21	17.44	24.33	0.02	75.92	75.21	17.44	24.33
KY	218.32	27.93	79.67	8.56	51.05	218.32	27.93	79.67	8.56	51.05
TN	59.76	44.66	14.10	3.56	4.05	59.76	44.66	14.10	3.56	4.05
AR	0.00	159.95	141.71	15.82	20.88	0.00	159.95	141.71	15.82	20.88
NM	354.45	109.44	1.67	0.00	0.00	354.45	109.44	1.67	0.00	0.00
AZ	215.49	102.31	36.46	10.34	6.22	215.49	102.31	36.46	10.34	6.22
CA	103.93	33.54	3.98	8.20	8.02	103.93	33.54	3.98	8.20	8.02
CO	45.11	53.46	9.37	6.50	57.26	45.11	53.46	9.37	6.50	57.26
WY	344.91	14.26	0.00	0.00	0.00	344.91	14.26	0.00	0.00	0.00
MT	418.43	14.87	7.90	1.02	1.47	418.43	14.87	7.90	1.02	1.47
UT	41.73	0.00	0.00	0.00	0.00	41.73	0.00	0.00	0.00	0.00
ID	66.48	174.90	9.99	7.69	16.54	66.48	174.90	9.99	7.69	16.54
OR	179.56	29.77	0.00	0.00	0.00	179.56	29.77	0.00	0.00	0.00
WA	4.77	169.89	44.79	6.89	7.30	4.77	169.89	44.79	6.89	7.30

V/C Range Conditions: <0.25=Ideal Conditions; 0.25-0.5=Acceptable Conditions; 0.5-0.8=Allowable Conditions; 0.8-1.0=Nearing Capacity; 1.0+=Over Capacity

Table I.1-4. Truck Diversion Summary by State

	Impacted Roadway Length	Annual VMT	Truck-Mile Diversion	Truck-to-Rail Diversion %
U.S.	9,765	113,019,175,71	80,371,708	0.071%
TX	2,003	28,000,035,464	20,096,753	0.072%
OK	857	10,000,494,303	11,391,351	0.114%
MO	636	8,122,131,353	12,228,607	0.151%
KS	356	2,981,369,159	3,204,537	0.107%
IA	447	3,735,126,704	5,243,207	0.140%
NE	48	136,549,884	130,578	0.096%
MN	117	1,874,641,899	2,099,572	0.112%
IL	834	9,344,978,370	8,637,622	0.092%
IN	273	6,171,413,685	2,393,629	0.039%
MI	422	7,141,276,983	3,818,716	0.053%
OH	193	3,880,947,039	1,315,116	0.034%
KY	386	5,067,674,899	2,347,935	0.046%
TN	126	921,304,689	768,071	0.083%
AR	338	5,068,282,509	3,094,745	0.061%
NM	466	1,915,174,780	1,206,426	0.063%
AZ	371	4,044,459,634	606,268	0.015%
CA	158	1,577,569,164	257,799	0.016%
CO	172	3,838,197,416	225,090	0.006%
WY	359	1,048,828,302	470,876	0.045%
MT	444	814,789,059	581,672	0.071%
UT	42	174,904,509	13,853	0.008%
ID	276	3,042,156,837	91,499	0.003%
OR	209	1,097,967,985	69,499	0.006%
WA	234	3,017,969,765	77,567	0.003%

I.1.6 Truck-to-Rail Diversion – Figure I.1-1 to Figure I.1-3

The FAF is a transportation modeling tool produced through a partnership between the Bureau of Transportation Statistics and the Federal Highway Administration (FHWA) that integrates data from a variety of sources to create a comprehensive picture of freight movement among states and major metropolitan areas by all modes of transportation. For truck-to-rail diversion analysis, Annual Average Daily Traffic (AADT) data are available from HPMS files as well as AADT for single unit trucks and composite trucks. OEA applied a growth rate of 1.5 percent to project the collected AADT to the base year of 2022. HPMS also has D-Factor[1] and K-Factor[2] for most highways.

OEA conducted additional evaluation by merging the FAF framework with roadway geometrics and traffic data included in the HPMS. The HPMS is a national level highway information system that includes data on the extent, condition, performance, use and operating characteristics of the nation's highways. The HPMS contains administrative and extent of system information on all public roads, while information on other characteristics is represented in HPMS as a mix of universe and sample data for arterial and collector functional systems. HPMS data were available in ArcGIS format, and OEA used the spatial merging function to fetch relevant information based on geolocation data.

Note that, based on the data and illustrations provided by the Applicants, some routes are discontinuous. OEA understands that this is because the traffic assignment algorithms for some O/D pairs resulted in predicted truck traffic volumes that would fall below the thresholds for environmental analysis. These discontinuous routes are retained as such in this analysis to be consistent with the methodology in the Applicants' application, while excluding highway segments below thresholds is not expected to impact the conclusions of this analysis.

[1] Directional Distribution (D)-Factor - The proportion of traffic traveling in the peak direction during a selected hour

[2] K-Factor - The proportion of the AADT occurring in the peak hour

Figure I.1-1. Freight Analysis Framework Network and Commodity Flow Survey Areas

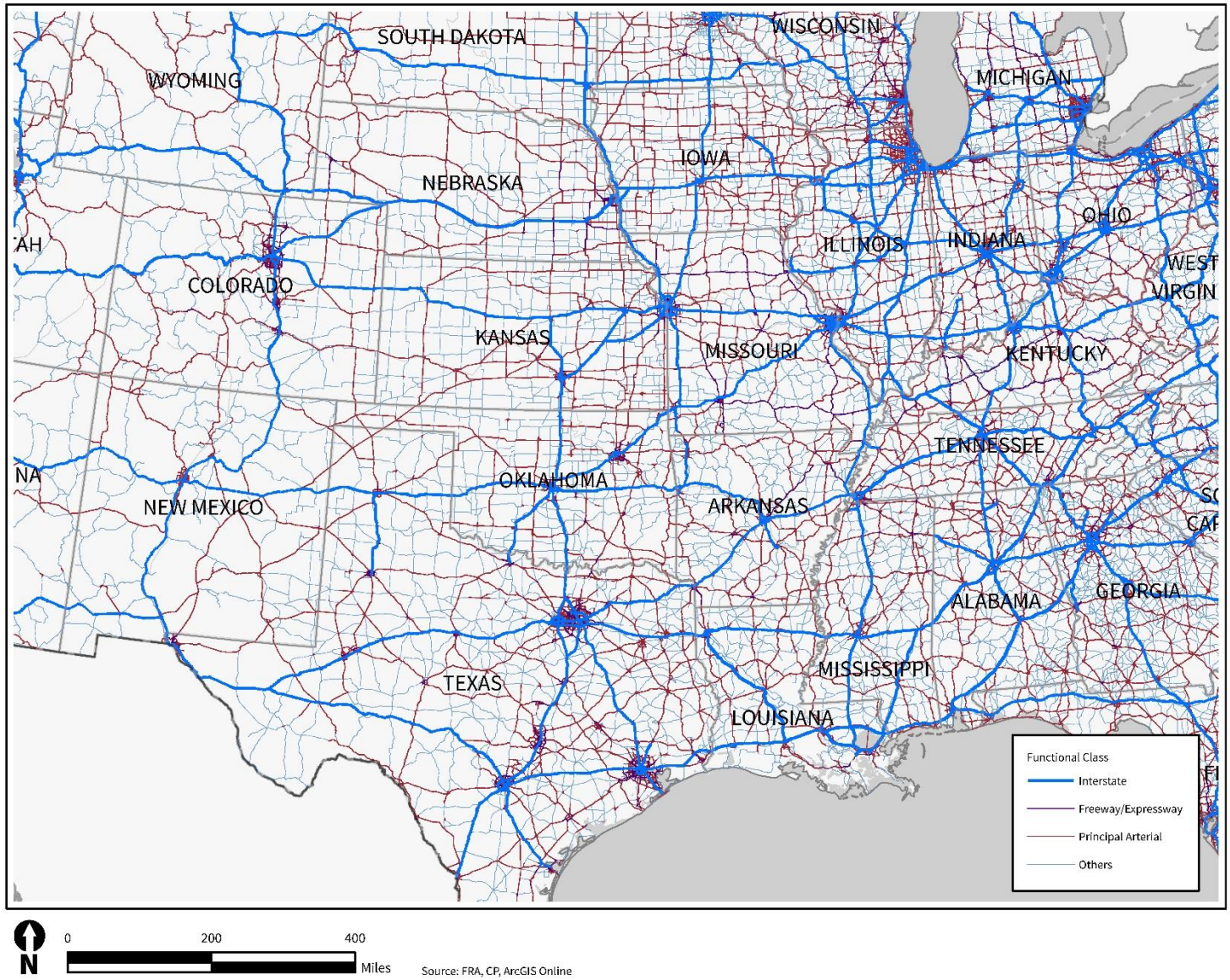


Figure I.1-2. Highway Performance Monitoring System Selected Roadways

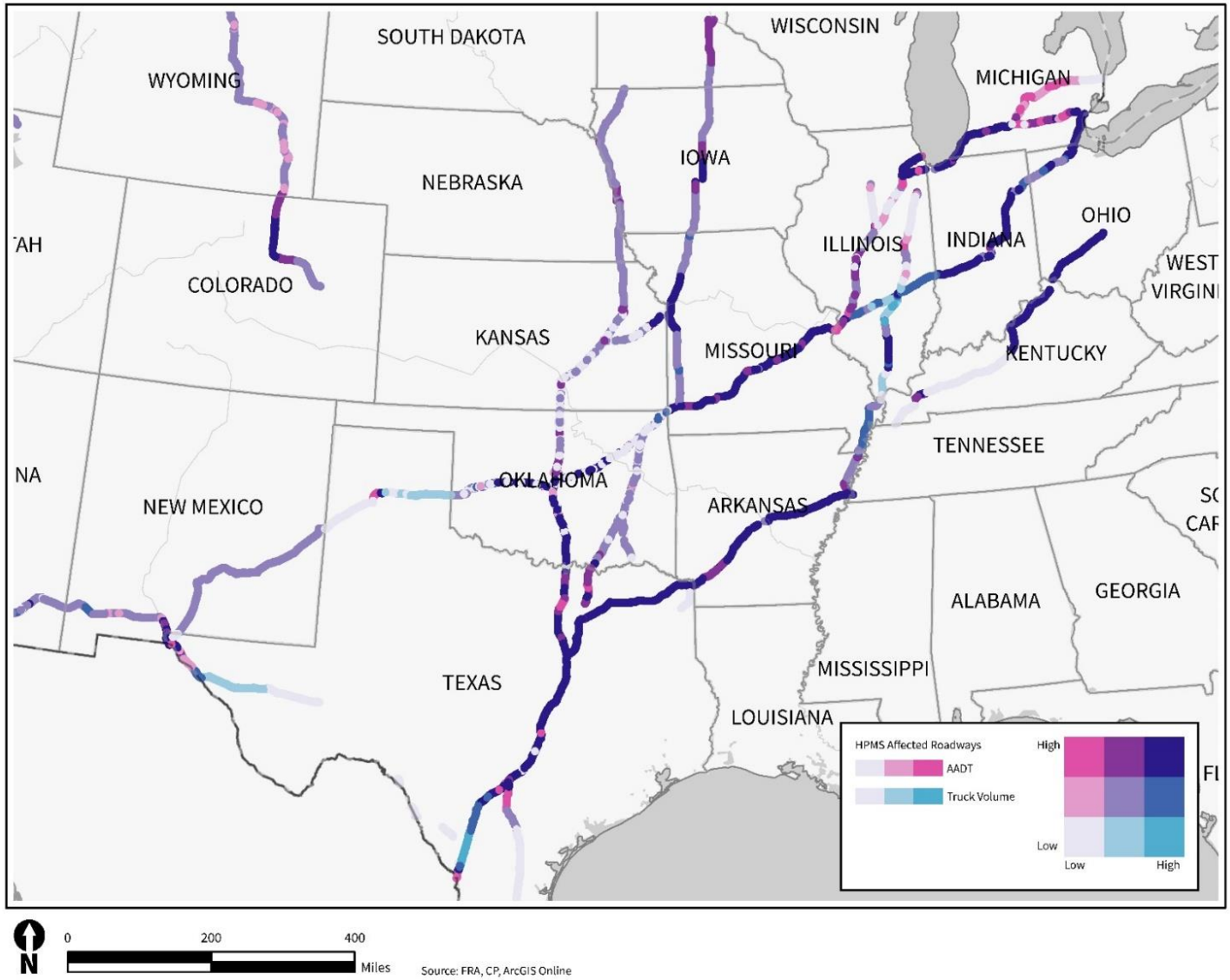
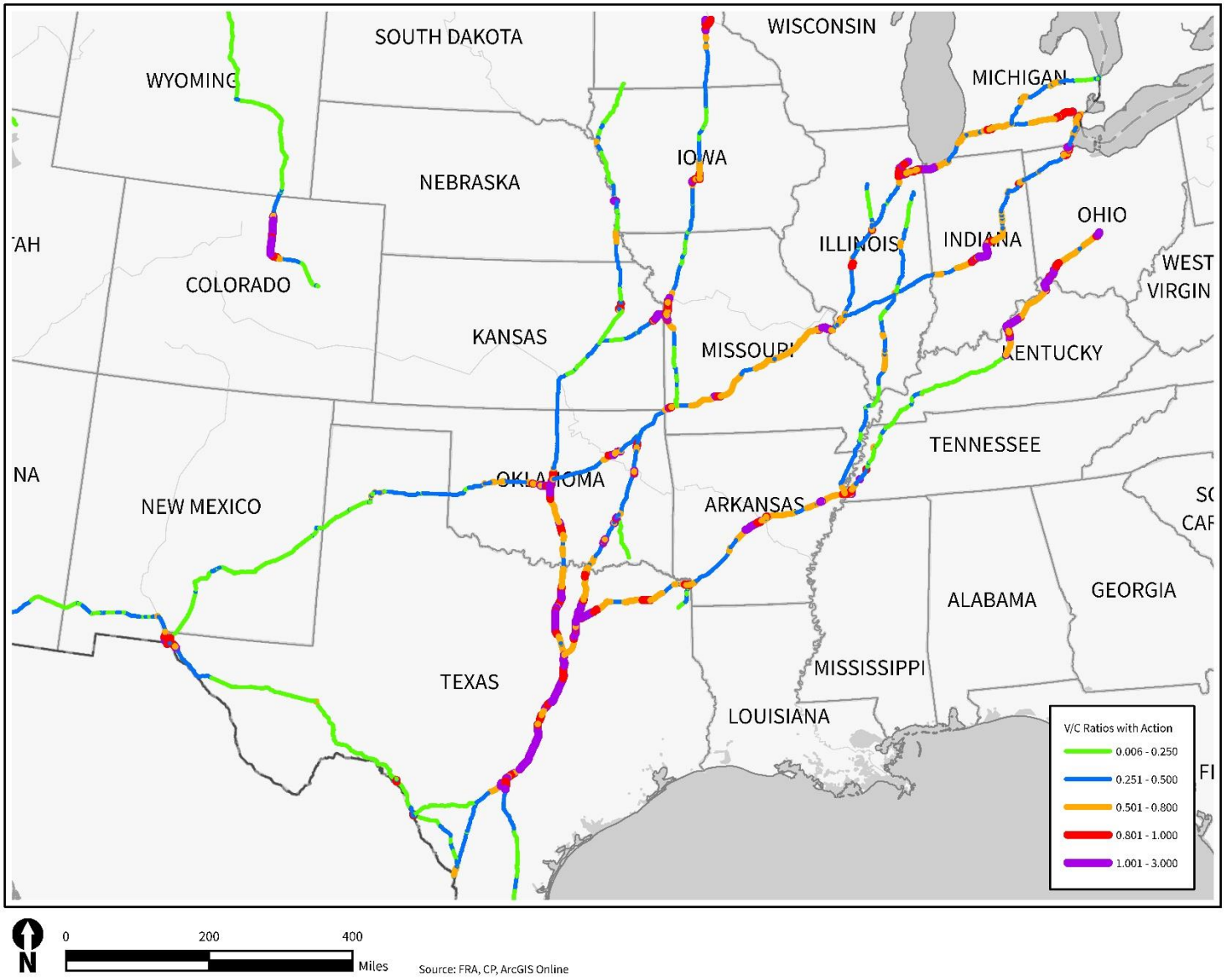


Figure I.1-3. Network V/C Ratio



I.2 Intermodal Facility Traffic

I.2.1 Local Roadway Effects – Table I.2-1 to Table I.2-9

OEA used available state and local resources to identify the AADT on roadways in the study area. Along roadways where truck data was not available, OEA used the HCM to determine the default truck percentages for identified segments. OEA obtained the service volumes used in the capacity evaluations by using the FHWA's Simplified Highway Capacity Calculation Method for the HPMS. The additional truck trips as a result of the Proposed Acquisition were distributed along the identified routes based on a combination of AADT distribution, proximity to freeways and major regional routes, and engineering judgement. The AADT distribution was used to identify a historical baseline distribution of trips along the existing network. The route proximity to freeways and major regional routes as well as any additional collected information, (e.g., the designation of truck routes) was used in conjunction with engineering judgement to determine appropriate deviations from the historical data.

Along roadways where truck data, D-Factor, and K-Factor are not available, OEA used the HCM to determine the default truck percentages for the identified segments. OEA used the state specific default values from Exhibits 26-1 and 26-2 for Illinois, Kansas, Michigan, Minnesota, Missouri, and Texas. OEA utilized the approach outlined in Chapter 3 of the HCM to characterize the roadway type for each segment.

The service volumes used in the capacity evaluations were obtained using the Simplified Highway Capacity Calculation Method for the Highway Performance Monitoring System. The values are published by FHWA's Office of Highway Policy Information. The service volumes used in the analysis are associated with the vehicle capacity Level of Service E for the roadway types.

Table I.2-1. Intermodal Facility Truck ~~Traffic~~ Unit Projections

Terminal	State	2019 Truck Traffic	2027 Truck Traffic Under the No-Action	2027 Truck Traffic Under the Proposed Acquisition	Truck Per Day Increase	Percent Increase
Bensenville Intermodal management system (IMS)	IL	303	383	698	315	82%
Detroit Container Terminal	MI	111	141	228	87	62%
Minneapolis IMS	MN	221	279	332	53	19%
Schiller East IMS	IL	150	190	324	134	70%
International Freight Gateway	MO	41	51	104	53	103%
Jackson	MS	5	6	6	0	0%

Table I.2-1. Intermodal Facility Truck ~~Traffic~~ Unit Projections

Terminal	State	2019 Truck Traffic	2027 Truck Traffic Under the No-Action	2027 Truck Traffic Under the Proposed Acquisition	Truck Per Day Increase	Percent Increase
Kendleton	TX	9	12	12	0	0%
Laredo	TX	25	31	31	0	0%
Wylie	TX	258	326	474	148	45%

Note: Applicant's traffic projections indicate that truck traffic at six intermodal facilities would increase by 50 trucks per day, 10 percent of the average number of trucks per day, or both.

Table I.2-2. Intermodal Facility V/C Summary Table

Terminal	Description	2022 Base Year	2027 No-Action	2027 Proposed Acquisition
Bensenville IMS	Total Approach Segments	16	16	16
	Number of Segments V/C ≥ 1.0	0	0	0
	Average V/C per Mile	0.435	0.469	0.473
Detroit Container Terminal	Total Approach Segments	15	15	15
	Number of Segments V/C ≥ 1.0	0	0	0
	Average V/C per Mile	0.184	0.198	0.199
Minneapolis IMS	Total Approach Segments	14	14	14
	Number of Segments V/C ≥ 1.0	1	1	1
	Average V/C per Mile	0.497	0.604 ~~0.536~~	0.605 ~~0.536~~
Schiller East IMS	Total Approach Segments	9	9	9
	Number of Segments V/C ≥ 1.0	0	0	0
	Average V/C per Mile	0.700	0.754	0.756
International Freight Gateway	Total Approach Segments	28	28	28
	Number of Segments V/C ≥ 1.0	1	2	2
	Average V/C per Mile	0.491	0.529	0.529
Wylie	Total Approach Segments	25	25	25
	Number of Segments V/C ≥ 1.0	2	4	4
	Average V/C per Mile	0.390	0.421	0.422

Table I.2-3. Intermodal Facility Truck Trip Increase Summary

Terminal	Minimum Truck Trip % per Segment Increase	Maximum Truck Trip % per Segment Increase	Average Truck Trip Increase per Mile
Bensenville IMS	0.030%	5.63%	1.01%
Detroit Container Terminal	0.024%	4.91%	1.40%
Minneapolis IMS	0.000%	0.56%	0.15%
Schiller East IMS	0.045%	0.53%	0.22%
International Freight Gateway	0.003%	0.43%	0.06%
Wylie	0.053%	1.15%	0.48%

Table I.2-4. Wylie Intermodal

Roadway Name	From West/North	To East/South	Length (mi)	Area Type	Road Type	Speed Limit (mph)	No.of Lanes	Truck %	Terrain	% Green	2022 AADT	2027 AADT	Capacity (Vehicles per day)	2022 V/C Ratio	2027 V/C Ratio	New Truck Trips (per day)	% of Total Segment Trips	With Merger AADT	With Merger V/C Ratio	Change in V/C Ratio w/Merger
State Hwy 78	1,000 ft N of US 380	1,000 ft S of US 380	0.39	Rural	Multi-lane	50	4	12	Rolling	0	9,694	10,444	75,420	0.13	0.14	16	0.15%	10,460	0.14	0.000
State Hwy 78	1,000 ft S of US 380	3,500 ft S of Hwy 78 Bus	5.50	Rural	Two-Lane	65	2	13	Rolling	0	6,705	7,223	34,500	0.19	0.21	83	1.15%	7,306	0.21	0.002
State Hwy 78	3,500 ft S of Hwy 78 Bus	Lake Rd/Farm to Market 6	3.18	Rural	Two-Lane	60	2	13	Rolling	0	9,667	10,414	29,300	0.33	0.36	83	0.80%	10,497	0.36	0.003
State Hwy 78	Lake Rd/Farm to Market 6	200 ft S of Moore Ln	1.34	Rural	Multi-lane	60	6	12	Rolling	0	17,446	18,794	113,160	0.15	0.17	83	0.44%	18,877	0.17	0.001
State Hwy 78	200 ft S of Moore Ln	100 ft W of Atlantis Blvd	1.40	Rural	Multi-lane	50	6	12	Rolling	0	23,886	25,732	113,160	0.21	0.23	83	0.32%	25,815	0.23	0.001
State Hwy 78	100 ft W of Atlantis Blvd	N Kreymer Ln	3.05	Rural	Multi-lane	55	6	12	Rolling	0	26,509	28,557	113,160	0.23	0.25	157	0.55%	28,714	0.25	0.001
State Hwy 78	N Kreymer Ln	Oak St	1.69	Urban	Signal	50	6	9	Rolling	50	29,784	32,086	64,400	0.46	0.50	157	0.49%	32,243	0.50	0.002
State Hwy 78	Oak St	1,000 ft S of Kirby St	1.02	Urban	Signal	40	6	9	Rolling	50	33,946	36,569	67,800	0.50	0.54	157	0.43%	36,726	0.54	0.002
State Hwy 78	1,200 ft S of Kirby St	800 ft S of Alanis Dr	1.01	Urban	Signal	50	6	9	Rolling	50	27,399	29,516	64,400	0.43	0.46	157	0.53%	29,673	0.46	0.002
State Hwy 78	800 ft S of Alanis Dr	1,200 ft S of Bunker Hill Rd	3.41	Urban	Signal	45	6	9	Rolling	50	37,178	40,051	66,800	0.56	0.60	157	0.39%	40,208	0.60	0.002
State Hwy 78	1,200 ft S of Bunker Hill Rd	1,100 ft N of Firewheel Pkwy	0.41	Urban	Signal	55	6	9	Rolling	50	42,219	45,481	65,000	0.65	0.70	157	0.35%	45,638	0.70	0.002

Table I.2-4. Wylie Intermodal

Roadway Name	From West/North	To East/South	Length (mi)	Area Type	Road Type	Speed Limit (mph)	No.of Lanes	Truck %	Terrain	% Green	2022 AADT	2027 AADT	Capacity (Vehicles per day)	2022 V/C Ratio	2027 V/C Ratio	New Truck Trips (per day)	% of Total Segment Trips	With Merger AADT	With Merger V/C Ratio	Change in V/C Ratio w/Merger
State Hwy 78	1,100 ft N of Firewheel Pkwy	Town Center Blvd	0.51	Urban	Signal	50	6	9	Rolling	50	42,219	45,481	64,400	0.66	0.71	157	0.35%	45,638	0.71	0.002
State Hwy 78	Town Center Blvd	650 ft S of President George Bush Tpke	0.44	Urban	Signal	50	4	9	Rolling	50	42,219	45,481	42,800	0.99	1.06	24	0.05%	45,505	1.06	0.001
President George Bush Tpke	E Brand Road	2,100 ft E of Firewheel Pkwy	1.86	Urban	Freeway	70	6	8	Rolling	0	47,096	50,735	119,800	0.39	0.42	133	0.26%	50,868	0.42	0.001
Audie Murphy Pkwy	2,000 ft W of State Highway 78	300 ft W of S Hamilton St	0.82	Rural	Multi-lane	50	4	12	Rolling	0	18,567	20,002	75,420	0.25	0.27	67	0.33%	20,069	0.27	0.001
State Hwy 205	State Highway 78	100 ft N of Lavon Circle	0.42	Rural	Two-Lane	45	2	13	Rolling	0	16,127	17,374	13,900	1.16	1.25	56	0.32%	17,430	1.25	0.004
State Hwy 205	100 ft N of Lavon Circle	1,000 ft S of N John King Blvd	2.85	Rural	Two-Lane	60	2	13	Rolling	0	16,127	17,374	29,300	0.55	0.59	56	0.32%	17,430	0.59	0.002
State Hwy 205	1,000 ft S of N John King Blvd	E Fork Road	2.53	Urban	Signal	50	2	9	Rolling	50	13,500	14,543	21,100	0.64	0.69	30	0.21%	14,573	0.69	0.001
State Hwy 205	E Fork Road	250 ft S of W Heath St	0.34	Urban	Signal	45	2	9	Rolling	50	22,389	24,119	22,000	1.02	1.10	30	0.12%	24,149	1.10	0.001
State Hwy 205	250 ft S of W Heath St	350 ft N of Olive St	0.13	Urban	Signal	35	2	9	Rolling	50	22,389	24,119	23,600	0.95	1.02	30	0.12%	24,149	1.02	0.001
State Hwy 205	350 ft N of Olive St	W Interurban St	0.09	Urban	Signal	35	4	9	Rolling	50	22,389	24,119	47,600	0.47	0.51	30	0.12%	24,149	0.51	0.001

Table I.2-4. Wylie Intermodal

Roadway Name	From West/North	To East/South	Length (mi)	Area Type	Road Type	Speed Limit (mph)	No.of Lanes	Truck %	Terrain	% Green	2022 AADT	2027 AADT	Capacity (Vehicles per day)	2022 V/C Ratio	2027 V/C Ratio	New Truck Trips (per day)	% of Total Segment Trips	With Merger AADT	With Merger V/C Ratio	Change in V/C Ratio w/Merger
State Hwy 205	W Interurban St	300 ft N of Lake Meadows Dr	0.33	Urban	Signal	35	4	9	Rolling	50	22,389	24,119	47,600	0.47	0.51	30	0.12%	24,149	0.51	0.001
State Hwy 205	300 ft N of Lake Meadows Dr	100 ft N of Boydstun Ave	0.24	Urban	Signal	35	6	9	Rolling	50	39,571	42,629	71,500	0.55	0.60	30	0.07%	42,659	0.60	0.000
State Hwy 205	100 ft N of Boydstun Ave	Interstate 30	1.24	Urban	Signal	40	6	9	Rolling	50	29,521	31,803	67,800	0.44	0.47	30	0.09%	31,833	0.47	0.000
N John King Blvd	State Highway 205	Interstate 30	5.25	Urban	Signal	45	4	12	Rolling	50	11,950	12,873	44,400	0.27	0.29	26	0.20%	12,899	0.29	0.001

Table I.2-5. IFG Intermodal

Roadway Name	From West/North	To East/ South	Length (mi)	Area Type	Road Type	Speed Limit (mph)	No.of Lanes	Truck %	Terrain	% Green	2022 AADT	2027 AADT	Capacity (Vehicles per day)	2022 V/C Ratio	2027 V/C Ratio	New Truck Trips (per day)	% of Total Segment Trips	With Merger AADT	With Merger V/C Ratio	Change in V/C Ratio w/Merger
MO 150	1,500 ft W of Rte 7	Rte 7	0.29	Rural	Two-Lane	45	2	9	Rolling	0	4,766	5,134	13,900	0.34	0.37	2	0.04%	5,136	0.37	0.000
MO 150	Court Dr	1,500 ft W of Rte 7	3.48	Rural	Two-Lane	55	2	9	Rolling	0	4,766	5,134	24,200	0.20	0.21	2	0.04%	5,136	0.21	0.000
MO 150	Doc Henry Rd	Court Dr	1.60	Rural	Two-Lane	35	2	9	Rolling	0	4,766	5,134	13,900	0.34	0.37	2	0.04%	5,136	0.37	0.000
MO 150	1,500 ft E of Rte 291	Doc Henry Rd	0.51	Rural	Signal	45	2	9	Rolling	50	15,863	17,089	22,000	0.72	0.78	2	0.01%	17,091	0.78	0.000
MO 150	SW Raintree Dr	1,500 ft E of Rte 291	0.50	Rural	Signal	45	4	9	Rolling	50	17,877	19,258	44,400	0.40	0.43	2	0.01%	19,260	0.43	0.000
MO 150	600 ft W of SW Ward Rd	SW Raintree Dr	1.13	Rural	Signal	35	4	9	Rolling	50	17,877	19,258	47,600	0.38	0.40	7	0.04%	19,265	0.40	0.000
MO 150	900 ft E of White Ave	600 ft W of SW Ward Rd	6.50	Rural	Signal	45	4	9	Rolling	50	22,080	23,786	44,400	0.50	0.54	7	0.03%	23,793	0.54	0.000
MO 150	500 ft E of Andrews Rd	900 ft E of White Ave	0.68	Rural	Signal	35	6	9	Rolling	50	18,415	19,838	71,500	0.26	0.28	85	0.43%	19,923	0.28	0.001
MO 150	1,000 ft W of Andrews Rd	500 ft E of Andrews Rd	0.28	Rural	Multi-lane	45	6	12	Rolling	0	27,392	29,509	113,160	0.24	0.26	85	0.29%	29,594	0.26	0.001

Table I.2-5. IFG Intermodal

Roadway Name	From West/North	To East/ South	Length (mi)	Area Type	Road Type	Speed Limit (mph)	No.of Lanes	Truck %	Terrain	% Green	2022 AADT	2027 AADT	Capacity (Vehicles per day)	2022 V/C Ratio	2027 V/C Ratio	New Truck Trips (per day)	% of Total Segment Trips	With Merger AADT	With Merger V/C Ratio	Change in V/C Ratio w/Merger
MO 150	1,200 E of Botts Rd	1,000 ft W of Andrews Rd	0.20	Rural	Multi-lane	60	6	12	Rolling	0	27,392	29,509	113,160	0.24	0.26	85	0.29%	29,594	0.26	0.001
MO 150	3,500 ft W of Holmes Rd	1,200 E of Botts Rd	3.00	Rural	Multi-lane	60	4	12	Rolling	0	27,392	29,509	75,420	0.36	0.39	85	0.29%	29,594	0.39	0.001
MO 150	500 ft S of Wyandotte St	3,500 ft W of Holmes Rd	0.63	Rural	Multi-lane	55	4	12	Rolling	0	21,166	22,801	75,420	0.28	0.30	11	0.05%	22,812	0.30	0.000
MO 150	State Line Rd	500 ft S of Wyandotte St	0.98	Urban	Signal	45	4	12	Rolling	50	21,166	22,801	44,400	0.48	0.51	11	0.05%	22,812	0.51	0.000
W 135th St	Roe Ave	State Line Rd	1.71	Urban	Signal	45	4	8	Rolling	50	18,364	19,783	44,400	0.41	0.45	11	0.06%	19,794	0.45	0.000
W 135th St	Switzer Rd	Roe Ave	3.27	Urban	Signal	45	6	8	Rolling	50	36,873	39,722	66,800	0.55	0.59	11	0.03%	39,733	0.59	0.000
W 135th St	S Mur-Len Rd	Switzer Rd	4.26	Urban	Signal	45	4	8	Rolling	50	22,570	24,314	44,400	0.51	0.55	6	0.02%	24,320	0.55	0.000
W 135th St	150 ft E of N Cooper St	S Mur-Len Rd	1.57	Urban	Signal	35	4	8	Rolling	50	36,612	39,442	47,600	0.77	0.83	6	0.02%	39,448	0.83	0.000
W 135th St	N State St	150 ft E of N Cooper St	0.14	Urban	Signal	35	4	8	Rolling	50	36,612	39,442	47,600	0.77	0.83	1	0.00%	39,443	0.83	0.000

Table I.2-5. IFG Intermodal

Roadway Name	From West/North	To East/ South	Length (mi)	Area Type	Road Type	Speed Limit (mph)	No.of Lanes	Truck %	Terrain	% Green	2022 AADT	2027 AADT	Capacity (Vehicles per day)	2022 V/C Ratio	2027 V/C Ratio	New Truck Trips (per day)	% of Total Segment Trips	With Merger AADT	With Merger V/C Ratio	Change in V/C Ratio w/Merger
W 135th St	N Woodland St	N State St	0.26	Urban	Signal	35	4	8	Rolling	50	19,831	21,363	47,600	0.42	0.45	1	0.00%	21,364	0.45	0.000
W 135th St	300 ft E of N Walnut	N Woodland St	0.32	Urban	Signal	25	4	8	Rolling	50	19,831	21,363	47,600	0.42	0.45	1	0.00%	21,364	0.45	0.000
W 135th St	N Parker Street	300 ft E of N Walnut St	0.68	Urban	Signal	35	4	8	Rolling	50	17,643	19,006	47,600	0.37	0.40	1	0.01%	19,007	0.40	0.000
MO 7	1,500 ft N of Rte 150	1,500 ft S of Rte 150	0.56	Rural	Two-Lane	45	2	9	Rolling	0	13,956	15,034	13,900	1.00	1.08	1	0.01%	15,035	1.08	0.000
Rte 291	3,500 ft N of Rte 150	3,900 ft S of Rte 150	1.40	Rural	Multi-lane	60	4	12	Rolling	0	33,459	36,045	75,420	0.44	0.48	4	0.01%	36,049	0.48	0.000
I-49	1,600 ft S of E 140th St	1,300 ft N of Arnold Ave	1.31	Urban	Freeway	65	6	29	Rolling	0	90,301	97,280	108,790	0.83	0.89	68	0.07%	97,348	0.89	0.001
US 69	1,000 ft N of W 132nd St	2,200 ft S of W 143rd St	2.10	Urban	Freeway	65	4	8	Rolling	0	79,325	85,456	79,880	0.99	1.07	3	0.00%	85,459	1.07	0.000
I-35	2,700 ft N of W 127th St	3,200 ft S of E Santa Fe St	2.19	Urban	Freeway	65	6	8	Rolling	0	71,055	76,546	119,800	0.59	0.64	2	0.00%	76,548	0.64	0.000

Table I.2-5. IFG Intermodal

Roadway Name	From West/North	To East/ South	Length (mi)	Area Type	Road Type	Speed Limit (mph)	No.of Lanes	Truck %	Terrain	% Green	2022 AADT	2027 AADT	Capacity (Vehicles per day)	2022 V/C Ratio	2027 V/C Ratio	New Truck Trips (per day)	% of Total Segment Trips	With Merger AADT	With Merger V/C Ratio	Change in V/C Ratio w/Merger
Parker St	200 ft N of W Spruce St	400 ft S of W Loula St	0.58	Urban	Multi-lane	40	4	8	Rolling	0	18,754	20,204	68,880	0.27	0.29	1	0.00%	20,205	0.29	0.000
Holmes Rd	MO 150	0.5 mile S of MO 150	0.56	Rural	Two-Lane	55	2	9	Rolling	0	4,331	4,666	24,200	0.18	0.19	10	0.21%	4,676	0.19	0.000

Table I.2-6. Minneapolis Intermodal

Roadway Name	From West/North	To East/South	Length (mi)	Area Type	Road Type	Speed Limit (mph)	No.of Lanes	Truck %	Terrain	% Green	2022 AADT	2027 AADT	Capacity (Vehicles per day)	2022 V/C Ratio	2027 V/C Ratio	New Truck Trips (per day)	% of Total Segment Trips	With Merger AADT	With Merger V/C Ratio	Change in V/C Ratio w/Merger
University Ave NE	NE 27th Avenue	Broadway St NE	1.26	Urban	Signal	30	4	6	Rolling	50	13,466	14,507	47,600	0.28	0.30	0	0.00%	14,507	0.30	0.000
University Ave NE	1,000 ft S of 32nd Ave NE	NE 27th Avenue	0.44	Urban	Signal	45	4	6	Rolling	50	13,358	14,391	44,400	0.30	0.32	5	0.03%	14,396	0.32	0.000
University Ave NE	600 ft N of 37th Ave NE	1,000 ft S of 32nd Ave NE	0.97	Urban	Signal	45	4	6	Rolling	50	14,759	15,899	44,400	0.33	0.36	16	0.10%	15,915	0.36	0.000
University Ave NE	1,500 ft N of Mississippi St NE	600 ft N of 37th Ave NE	3.68	Urban	Signal	50	4	6	Rolling	50	24,155	26,022	42,800	0.56	0.61	1	0.00%	26,023	0.61	0.000
I-694	East River Road	NE Central Ave	1.00	Urban	Freeway	60	6	4	Rolling	0	124,657	134,291	122,200	1.02	1.10	50	0.04%	134,341	1.10	0.000
Johnson St NE	NE Lowry Ave	NE 18th Ave	0.50	Urban	Signal	30	2	6	Rolling	50	19,283	20,774	23,600	0.82	0.88	36	0.17%	20,810	0.88	0.002
Broadway St NE	150 ft W of Polk St NE	Buchanan St NE	0.28	Urban	Signal	30	2	6	Rolling	50	19,391	20,890	23,600	0.82	0.89	1	0.00%	20,891	0.89	0.000
Broadway St NE	NE Jackson St	150 ft W of Polk St NE	0.22	Urban	Signal	30	4	6	Rolling	50	17,775	19,149	47,600	0.37	0.40	2	0.01%	19,151	0.40	0.000
Broadway St NE	4th Street NE	NE Jackson St	0.56	Urban	Signal	30	2	6	Rolling	50	16,590	17,872	23,600	0.70	0.76	0	0.00%	17,872	0.76	0.000
Broadway St NE	I-94	4th Street NE	1.14	Urban	Signal	30	4	6	Rolling	50	22,408	24,139	47,600	0.47	0.51	1	0.00%	24,140	0.51	0.000

Table I.2-6. Minneapolis Intermodal

Roadway Name	From West/North	To East/South	Length (mi)	Area Type	Road Type	Speed Limit (mph)	No.of Lanes	Truck %	Terrain	% Green	2022 AADT	2027 AADT	Capacity (Vehicles per day)	2022 V/C Ratio	2027 V/C Ratio	New Truck Trips (per day)	% of Total Segment Trips	With Merger AADT	With Merger V/C Ratio	Change in V/C Ratio w/Merger
NE Central Ave	Medtronic Pkwy NE	45th Avenue NE	1.47	Urban	Signal	40	4	6	Rolling	50	30,703	33,075	45,100	0.68	0.73	6	0.02%	33,081	0.73	0.000
NE Central Ave[1]	45th Avenue NE	Broadway St NE	3.54	Urban	Signal	30	2 ~~4~~	6	Rolling	50	14,867	16,015	23,600 ~~47,600~~	0.31	0.68 ~~0.34~~	90	0.56%	16,105	0.68 ~~0.34~~	0.004 ~~0.002~~
NE Lowry Ave	I-94	NE Central Ave	1.72	Urban	Signal	30	4	6	Rolling	50	16,159	17,408	47,600	0.34	0.37	11	0.06%	17,419	0.37	0.000
NE Lowry Ave	NE Central Ave	175 ft E of NE McKinley St	0.97	Urban	Signal	30	2	6	Rolling	50	14,005	15,087	23,600	0.59	0.64	38	0.25%	15,125	0.64	0.002

[1] Analyses of future conditions reflect potential lane reduction associated with the Metro Transit F-Line bus rapid transit project.

Table I.2-7. Bensenville Intermodal

Roadway Name	From West/ North	To East/ South	Length (mi)	Area Type	Road Type	Speed Limit (mph)	No.of Lanes	Truck %	Terrain	% Green	2022 AADT	2027 AADT	Capacity (Vehicles per day)	2022 V/C Ratio	2027 V/C Ratio	New Truck Trips (per day)	% of Total Segment Trips	With Merger AADT	With Merger V/C Ratio	Change in V/C Ratio w/Merger
Green St	S York Road	County Line Road	1.06	Urban	Signal	30	4	9	Level	50	10,611	11,431	47,600	0.22	0.24	202	1.77%	11,633	0.24	0.004
Franklin Ave	County Line Road	450 ft E of RR Crossing	1.66	Urban	Signal	35	2	9	Level	50	13,692	14,750	23,600	0.58	0.63	336	2.28%	15,086	0.64	0.014
Franklin Ave	450 ft E of RR Crossing	Cenco Parkway	0.21	Urban	Signal	35	2	9	Level	50	12,729	13,713	23,600	0.54	0.58	294	2.14%	14,007	0.59	0.012
Franklin Ave	Cenco Parkway	Ernst Street	0.21	Urban	Signal	30	4	9	Level	50	12,729	13,713	47,600	0.27	0.29	30	0.22%	13,743	0.29	0.001
Cenco Pkwy	Franklin Ave	Belmont Ave	0.26	Urban	Signal	25	4	9	Level	50	4,352	4,688	47,600	0.09	0.10	264	5.63%	4,952	0.10	0.006
Belmont Ave	Cenco Parkway	Mannheim Road	0.08	Urban	Signal	25	2	9	Level	50	4,352	4,688	23,600	0.18	0.20	264	5.63%	4,952	0.21	0.011
York Rd	S Thorndale Ave	W Irving Park Rd	1.05	Urban	Signal	40	4	9	Level	50	31,216	33,628	45,100	0.69	0.75	91	0.27%	33,719	0.75	0.002
York Rd	W Irving Park Rd	Grand Ave	2.03	Urban	Signal	30	4	9	Level	50	16,587	17,869	47,600	0.35	0.38	202	1.13%	18,071	0.38	0.004
York Rd	Grand Avenue	W Lake Street	1.31	Urban	Signal	35	4	9	Level	50	16,175	17,425	47,600	0.34	0.37	52	0.30%	17,477	0.37	0.001
Mannheim Rd	Belmont Ave	W North Ave	2.00	Urban	Signal	35	6	9	Level	50	43,888	47,279	71,500	0.61	0.66	121	0.26%	47,400	0.66	0.002

Table I.2-7. Bensenville Intermodal

Roadway Name	From West/ North	To East/ South	Length (mi)	Area Type	Road Type	Speed Limit (mph)	No.of Lanes	Truck %	Terrain	% Green	2022 AADT	2027 AADT	Capacity (Vehicles per day)	2022 V/C Ratio	2027 V/C Ratio	New Truck Trips (per day)	% of Total Segment Trips	With Merger AADT	With Merger V/C Ratio	Change in V/C Ratio w/Merger
Mannheim Rd	675 ft S of Waveland Ave	Belmont Ave	0.57	Urban	Signal	40	6	9	Level	50	55,323	59,599	67,800	0.82	0.88	143	0.24%	59,742	0.88	0.002
Irving Park Rd	N York Road	S Access Road	0.39	Urban	Signal	35	4	9	Level	50	31,216	33,628	47,600	0.66	0.71	10	0.03%	33,638	0.71	0.000
Thorndale Ave	Supreme Dr	N York Road	0.77	Urban	Signal	35	4	9	Level	50	5,666	6,104	47,600	0.12	0.13	19	0.31%	6,123	0.13	0.000
Grand Ave	Church Road	S York Road	0.72	Urban	Signal	35	4	9	Level	50	15,453	16,648	47,600	0.32	0.35	49	0.29%	16,697	0.35	0.001
Grand Ave	W Lake Street	Church Road	0.79	Urban	Signal	45	4	9	Level	50	15,453	16,648	44,400	0.35	0.37	49	0.29%	16,697	0.38	0.001
County Line Rd	Franklin Ave	Grand Ave	1.25	Urban	Signal	45	2	9	Level	50	7,217	7,775	22,000	0.33	0.35	134	1.72%	7,909	0.36	0.006

Table I.2-8. Schiller Intermodal

Roadway Name	From West/ North	To East/ South	Length (mi)	Area Type	Road Type	Speed Limit (mph)	No.of Lanes	Truck %	Terrain	% Green	2022 AADT	2027 AADT	Capacity (Vehicles per day)	2022 V/C Ratio	2027 V/C Ratio	New Truck Trips (per day)	% of Total Segment Trips	With Merger AADT	With Merger V/C Ratio	Change in V/C Ratio w/Merger
Lawrence Ave	Mannheim Rd	N River Rd	0.83	Urban	Signal	35	4	9	Level	50	24,517	26,412	47,600	0.52	0.55	140	0.53%	26,552	0.56	0.003
Mannheim Rd	Delta Parkway	450 ft S of Seymour Ave	0.38	Urban	Signal	40	6	9	Level	50	50,088	53,959	67,800	0.74	0.80	26	0.05%	53,985	0.80	0.000
Mannheim Rd	975 ft N of W Irving Park Rd	Delta Parkway	0.37	Urban	Signal	40	6	9	Level	50	53,852	58,014	67,800	0.79	0.86	26	0.04%	58,040	0.86	0.000
Mannheim Rd	1,200 ft N of Coffey Road	975 ft N of W Irving Park Rd	2.39	Urban	Signal	50	6	9	Level	50	58,244	62,746	64,400	0.90	0.97	67	0.11%	62,813	0.98	0.001
N River Rd	175 ft S of Technology Blvd	Lawrence Ave	0.60	Urban	Signal	40	4	9	Level	50	30,780	33,158	45,100	0.68	0.74	140	0.42%	33,298	0.74	0.003
N River Rd	Balmoral Ave	175 ft S of Technology Blvd	0.16	Urban	Signal	35	4	9	Level	50	30,780	33,158	47,600	0.65	0.70	140	0.42%	33,298	0.70	0.003
N River Rd	150 ft N of W Bryn Mawr Ave	Balmoral Ave	0.28	Urban	Signal	35	6	9	Level	50	30,780	33,158	71,500	0.43	0.46	120	0.36%	33,278	0.47	0.002
N River Rd	Evenhouse Ave	150 ft N of W Bryn Mawr Ave	0.48	Urban	Signal	35	6	9	Level	50	38,740	41,734	71,500	0.54	0.58	25	0.06%	41,759	0.58	0.000
Balmoral Ave	I-294	N River Rd	0.36	Urban	Signal	25	4	9	Level	50	4,988	5,374	47,600	0.10	0.11	20	0.37%	5,394	0.11	0.000

Table I.2-9. Detroit Intermodal

Roadway Name	From West/North	To East/South	Length (mi)	Area Type	Road Type	Speed Limit (mph)	No.of Lanes	Truck %	Terrain	% Green	2022 AADT	2027 AADT	Capacity (Vehicles per day)	2022 V/C Ratio	2027 V/C Ratio	New Truck Trips (per day)	% of Total Segment Trips	With Merger AADT	With Merger V/C Ratio	Change in V/C Ratio w/Merger
Glendale St	Auburn St	Artesian St	0.37	Urban	Stop	25	2	8	Level	0	696	750	7,400	0.09	0.10	26	3.47%	776	0.10	0.004
Auburn St	Schoolcraft	Auburn St	0.32	Urban	Stop	25	2	8	Level	0	1,393	1,500	7,400	0.19	0.20	26	1.73%	1,526	0.21	0.004
Schoolcraft	400 ft W of Outer Drive NW	900 ft E of Outer Drive NW	0.24	Urban	Signal	30	2	8	Level	50	3,403	3,666	23,600	0.14	0.16	2	0.05%	3,668	0.16	0.000
Schoolcraft	900 ft E of Outer Dr NW	Patton St	0.52	Urban	Signal	30	2	8	Level	50	2,943	3,171	23,600	0.12	0.13	2	0.06%	3,173	0.13	0.000
Schoolcraft	1,000 ft E of Outer Dr NW	Patton St	0.48	Urban	Signal	30	2	8	Level	50	3,842	4,139	23,600	0.16	0.18	1	0.02%	4,140	0.18	0.000
Schoolcraft	250 ft W of Outer Dr NW	1,000 ft E of Outer Dr NW	0.24	Urban	Signal	30	2	8	Level	50	3,842	4,139	23,600	0.16	0.18	1	0.02%	4,140	0.18	0.000
Schoolcraft	Patton St	Vaughan St	0.27	Urban	Signal	30	2	8	Level	50	6,785	7,309	23,600	0.29	0.31	3	0.04%	7,312	0.31	0.000
Schoolcraft	Vaughan St	150 ft E of Plainview Ave	0.14	Urban	Signal	30	4	8	Level	50	7,939	8,552	47,600	0.17	0.18	3	0.04%	8,555	0.18	0.000
Schoolcraft	150 ft E of Plainview Ave	300 ft E of Southfield Rd	0.97	Urban	Signal	30	2	8	Level	50	7,939	8,552	23,600	0.34	0.36	7	0.08%	8,559	0.36	0.000
Evergreen Rd	Schoolcraft	400 ft S of Capitol St	0.77	Urban	Signal	30	6	8	Level	50	17,817	19,194	71,500	0.25	0.27	16	0.08%	19,210	0.27	0.000
Fullerton Ave	Southfield Fwy	Greenfield Rd	0.93	Urban	Signal	30	2	8	Level	50	1,889	2,035	23,600	0.08	0.09	60	2.95%	2,095	0.09	0.003

Table I.2-9. Detroit Intermodal

Roadway Name	From West/North	To East/South	Length (mi)	Area Type	Road Type	Speed Limit (mph)	No.of Lanes	Truck %	Terrain	% Green	2022 AADT	2027 AADT	Capacity (Vehicles per day)	2022 V/C Ratio	2027 V/C Ratio	New Truck Trips (per day)	% of Total Segment Trips	With Merger AADT	With Merger V/C Ratio	Change in V/C Ratio w/Merger
Greenfield Rd	Glendale St	475 ft N of Capitol St	0.28	Urban	Signal	35	2	8	Level	50	16,374	17,640	23,600	0.69	0.75	60	0.34%	17,700	0.75	0.003
Southfield Rd - SB	Kendall St	Fullerton Ave	0.61	Urban	Signal	30	2	8	Level	50	1,135	1,223	23,600	0.05	0.05	44	3.60%	1,267	0.05	0.002
Southfield Rd - NB	Kendall St	Fullerton Ave	0.61	Urban	Signal	25	2	8	Level	50	1,388	1,495	23,600	0.06	0.06	44	2.94%	1,539	0.07	0.002
Greenfield Service	Glendale St	Fullerton Ave	0.17	Urban	Signal	30	2	8	Level	50	1,135	1,223	23,600	0.05	0.05	60	4.91%	1,283	0.05	0.003

References

Bureau of Transportation Statistics and U.S. Department of Transportation Federal Highway Administration (FHWA). 2021. *Freight Analysis Framework*.

FHWA. 2016. *Traffic Monitoring Guide*. Updated October 2016.

FHWA. 2017. Simplified Highway Capacity Calculation Method for the Highway Performance Monitoring System.

Transportation Research Board. 2016. Highway Capacity Manual, Sixth Edition: A Guide for Multimodal Mobility Analysis.

Appendix J

Cultural Resources

J.1 Regulatory Setting

This section describes OEA's analysis of potential impacts on cultural resources that could result from the Proposed Acquisition. The Board's decision whether to grant authority for CP to acquire KCS is a federal action under NEPA and is also a federal undertaking under Section 106 of the National Historic Preservation Act (NHPA) (54 U.S.C. § 306108). The Section 106 regulations at 36 C.F.R. Part 800 require federal agencies to consider the effects of their undertakings on historic properties that are listed in or are eligible for listing in the National Register of Historic Places (National Register). Historic properties can include buildings, prehistoric and historic archaeological sites, districts, objects, and structures, as well as traditional cultural properties and landscapes. The term "historic property" includes properties of religious or cultural significance to tribes. In this case, OEA is coordinating the environmental review process under NEPA with the Section 106 process. The NEPA term "cultural resources" as used in this section is interchangeable with the Section 106 term "historic properties."

Pursuant to 36 C.F.R. § 800.3(a), OEA has determined that sales, leases, or transfers of operational rail lines for the purpose of continued rail operation are generally not a type of activity that has the potential to cause effects to historic properties. This determination is reflected in the Board's environmental regulations at 49 C.F.R. § 1105.8(b)(1), which exempt such sales, leases, and transfers from historic review requirements. However, if the acquisition of one railroad by another would result in constructing new rail lines, abandoning existing rail lines or causing physical changes within the existing rail right-of-way (ROW), then the acquisition may have the potential to affect historic properties. In this case, if the Board authorizes the Proposed Acquisition, the Applicants intend to build 25 capital improvements within the rail ROW. Those capital improvements would include adding 10 new passing sidings, extending 13 existing sidings, adding a section of facility working track, and adding a section of double track. These 25 planned capital improvements have the potential to alter historic properties, including previously unidentified archaeological sites. Accordingly, OEA's historic review, as summarized in this section, addresses the potential effects of the 25 planned capital improvements.

J.1.1 Consultation

In a letter dated November 17, 2021, OEA initiated consultation with State Historic Preservation Officers (SHPOs), Tribal Historic Preservation Officers (THPOs), and tribal governments with an interest in the planned capital improvements. OEA also conducted consultation meetings with SHPOs, the Advisory Council on Historic Preservation (ACHP),

and THPOs/tribal governments with an interest in the areas where the Applicants intend to add the planned capital improvements. OEA conducted further consultation with parties based upon their level of interest in cultural resources; these consultations are described below in greater detail.

J.1.2 SHPOs

In addition to the notification letter, OEA conducted initial consultation meetings with SHPOs in order to introduce them to the project and to gather initial feedback about the approach to Section 106. **Table J.1-1** provides the results of these initial consultation meetings.

Table J.1-1. SHPO Consultation Meetings

Meeting	Date	Result
Texas SHPO	12/1/21	Stated there was no Area of Potential Effect (APE) in state; provided a letter (12/9/21) with a finding of no effect
Illinois SHPO	12/3/21	Requested survey of above-ground resources
Iowa SHPO	12/6/21	Requested survey of above-ground and below-ground resources
Oklahoma SHPO	12/7/21	Requested survey of above-ground and below-ground resources; recommended further consultation with tribes for reservation lands (Cherokee Nation, Choctaw Nation)
Missouri SHPO	12/7/21	Requested survey of above-ground and below-ground resources
Louisiana SHPO	12/9/21	Requested survey of above-ground resources
Arkansas SHPO	12/13/21	Provided a letter (12/14/21) with a finding of no effect
Kansas SHPO	12/16/21	Stated there was no APE in state; provided a letter (12/16/21) with a finding of no effect

Additional consultation has occurred as the environmental analysis has developed, including requests for information and project updates. OEA provided Section 106 consultation materials to all SHPOs prior to the Final EIS. **Table J.1-2** summarizes the outcomes of 106 consultation with each state.

Table J.1-2. SHPO Concurrence

SHPO	Concurrence Date	Finding
Arkansas	8/16/22	No Adverse Effect
Illinois	9/7/22	No Adverse Effect
Iowa	11/18/22	No Adverse Effect
Louisiana	9/13/22	No Adverse Effect
Missouri	11/10/22	No Adverse Effect
Oklahoma	9/28/22 (OK Arch Survey), 10/18/22 (OK SHPO), 11/23/22 (OK SHPO)	No Adverse Effect; response letter included a commitment from Applicants to avoid impacts to the Oil Branch Drainage Channel (OK-HE-027)

THPOs

In addition to the initial notification letter, OEA has undertaken extensive efforts to contact tribes that could have a cultural interest in the planned capital improvements. Additional consultation was undertaken following instruction from the Department of the Interior in a letter dated September 13, 2022. **Table J.1-3~~Table J.1-2~~** summarized these consultation efforts.

~~Table J.1-2.~~Table J.1-3. Tribal Outreach

Tribe	Outreach Efforts	Results
Absentee Shawnee Tribe of Indians of Oklahoma	Letter dated 10/18/22 and 11/4/22; Phone call but unable to leave message 10/17/22	No response
Alabama-Coushatta Tribe of Texas	Letter dated 11/12/21; Phone call in December 2021; emailed letter again on 1/6/22; Follow-up emails on 1/25/22 and 2/16/22	Verbal interest in December 2021, but no response to repeated follow-up efforts
Alabama-Quassarte Tribal Town	Letter dated 11/12/21; Phone call and left message in December 2021; Additional phone call and left message on 2/1/22; Emailed letter again on 2/9/22	No response
Apache Tribe of Oklahoma	Letter dated 11/12/21; Phone call and left message in December 2021; Emailed letter on 1/10/22; Follow-up emails on 1/25/22 and 2/15/22	No response
Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message on 2/2/22; Emailed letter on 2/8/22	No response
Bois Forte Band (Nett Lake)of the Minnesota Chippewa Tribe	Letter dated 11/12/21; Phone call and left message in December 2021; Emailed letter on 1/6/22; Follow-up emails on 1/25/22 and 2/16/22	No response
Caddo Nation of Oklahoma	Letter dated 11/12/21; Phone call and left message in December 2021; Emailed letter over on 1/12/22; Follow-up phone call and left message on 2/2/22	No response

~~*Table J.1-2.*~~*Table J.1-3.* ***Tribal Outreach***

Tribe	Outreach Efforts	Results
Cherokee Nation	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message on 1/11/22 and 1/12/22; Emailed letter on 1/13/22; Follow-up email on 1/24/22 and phone call and left message on 1/31/22; Additional information provided on 2/12/22; Follow-up email requesting consultation meeting on 2/22/22	Email received 2/1/22 requesting additional information; no response to provided additional information or meeting request
Cheyenne and Arapaho Tribes, Oklahoma	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/3/22	No response
Chitimacha Tribe of Louisiana	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/3/22	Letter received 12/2/21 indicating no interest in the project
Choctaw Nation of Oklahoma	Letter dated 11/12/21; Phone call and left message in December 2021; Emails on 1/4/22 and 1/20/22	Email received 1/3/22 requesting cultural resource surveys in the area of ground-disturbing activity; meeting held 2/24/22 where Choctaw Nation inquired if pedestrian survey or Phase I survey would occur for below-ground resources within their areas of cultural concerns. OEA responded that it would conduct a Phase I survey.
Citizen Potawatomi Nation, Oklahoma	Letter dated 11/12/21; Phone call and left message in December 2021; Emailed letter over on 1/12/22; Phone call and left message 2/4/22	No response
Comanche Nation, Oklahoma	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/4/22	Letter received 1/12/22 indicating that the Comanche Nation has no properties of concern in the project area
Coushatta Tribe of Louisiana	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/4/22	No response
Delaware Nation, Oklahoma	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/4/22	No response
Delaware Tribe of Indians	Letter dated 10/18/22 and 11/4/22; Phone call and left message 10/17/22	No response

~~Table J.1-2.~~Table J.1-3. Tribal Outreach

Tribe	Outreach Efforts	Results
Eastern Shawnee Tribe of Oklahoma	Letter dated 10/18/22 and 11/4/22; Phone call but unable to leave message 10/17/22	No Response
Flandreau Santee Sioux Tribe of South Dakota	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/4/22	No response
Fond du Lac Band of the Minnesota Chippewa Tribe	Letter dated 11/12/21; Phone call in December 2021; Phone call 2/7/22	No response
Forest County Potawatomi Community of Wisconsin	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/4/22	No response
Fort Belknap Indian Community of the Fort Belknap Reservation of Montana	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/4/22	No response
Grand Portage Band of the Minnesota Chippewa Tribe	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/4/22	No response
Hannahville Indian Community, Michigan	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/2/22	No response
Ho-Chunk Nation of Wisconsin	Letter dated 11/12/21; Phone call and left message in December 2021; Emailed letter over on 1/6/22; Follow-up emails on 1/25/22 and 2/16/22	No response
Iowa Tribe of Kansas and Nebraska	Letter dated 11/12/21; Phone call and left message in December 2021	Letter received 12/3/21 requesting to be a consulting party on the project
Iowa Tribe of Oklahoma	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/4/22	No response
Jena Band of Choctaw Indians	Letter dated 11/12/21; Phone call and left message in December 2021; Emailed the letter over on 1/12/22; Phone call and left message 2/4/22	No response
Kaw Nation, Oklahoma	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/4/22	No response
Keweenaw Bay Indian Community, Michigan	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/7/22	No response
Kialegee Tribal Town	Letter dated 10/18/22 and 11/4/22/ Phone call and left message 10/17/22	No response

~~*Table J.1-2.*~~*Table J.1-3. Tribal Outreach*

Tribe	Outreach Efforts	Results
Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/7/22	No response
Kickapoo Tribe of Oklahoma	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/7/22	No response
Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin	Letter dated 11/12/21; Phone call and left message in December 2021; Emailed the letter over on 1/12/22; Phone call and left message 2/7/22	No response
Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan	Letter dated 11/12/21; Phone call and left message in December 2021; Emailed letter on 1/12/22; Phone call and left message 2/7/22	Letter received 12/15/21 indicating no interest in the project; confirmed in email dated 2/8/22
Leech Lake Band of the Minnesota Chippewa Tribe	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/7/22	No response
Little Traverse Bay Bands of Odawa Indians, Michigan	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/7/22	No response
Lower Sioux Indian Community in the State of Minnesota	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/7/22	No response
Menominee Indian Tribe of Wisconsin	Letter dated 11/12/21; Phone call and left message in December 2021; Emailed letter 1/10/22; Follow-up phone call and left message 1/25/22 and 2/15/22	No response
Mescalero Apache Tribe of the Mescalero Reservation, New Mexico	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/4/22	No response
Miami Tribe of Oklahoma	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message on 1/11/22; Emailed letter 1/13/22; Phone call and left message 2/7/22	Letter received 1/20/22 requesting to be a consulting party
Mille Lacs Band of Ojibwe (The Mille Lacs Band of the Minnesota Chippewa Tribe Mille Lacs Band of Ojibwe)	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call 2/4/22	No response
Minnesota Chippewa Tribe	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/4/22	No response

~~*Table J.1-2.*~~*Table J.1-3.* ***Tribal Outreach***

Tribe	Outreach Efforts	Results
Mississippi Band of Choctaw Indians	Letter dated 11/12/21; Phone call and left message in December 2021; Emailed letter on 1/12/22; Phone call and left message 2/4/22	No response
Muscogee (Creek) Nation	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/4/22	No response
Omaha Tribe of Nebraska	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/4/22	No response
Osage Nation	Letter dated 11/12/21; Phone call and left message in December 2021; Email on 1/10/22	Letter received 12/28/21 requesting consulting party status; meeting held 2/11/22 where Osage Nation requested survey for below-ground resources within their areas of cultural concerns
Otoe-Missouria Tribe of Indians, Oklahoma	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/4/22	No response
Peoria Tribe of Indians of Oklahoma	Letter dated 11/12/21; Phone call and left message in December 2021; Emailed letter on 1/12/22; Phone call and left message 2/4/22	No response
Pokagon Band of Potawatomi Indians, Michigan and Indiana	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/4/22	No response
Prairie Band Potawatomi Nation	Letter dated 11/12/21; Phone call and left message in December 2021; Emailed letter on 1/12/22; Phone call and left message 2/4/22	No response
Prairie Island Indian Community in the State of Minnesota	Letter dated 11/12/21; Phone call in December 2021; Emailed letter on 1/20/22; Follow-up email on 2/1/22	No response
Quapaw Tribe of Indians	Letter dated 11/12/21; Phone call and left message in December 2021; Follow up phone call and emailed letter on 2/1/22	Email received 3/3/22 requesting additional information, follow-up anticipated
Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/4/22	No response
Red Lake Band of Chippewa Indians, Minnesota	Letter dated 11/12/21; Phone call and left message in December 2021; Emailed over letter on 1/12/22; Phone call and left message 2/4/22	No response

~~*Table J.1-2.*~~*Table J.1-3.* ***Tribal Outreach***

Tribe	Outreach Efforts	Results
Sac & Fox Nation of Missouri in Kansas and Nebraska	Letter dated 11/12/21; Phone call and left message in December 2021; Emails on 1/6/22, 1/25/22, and 2/16/22	No response
Sac & Fox Nation, Oklahoma	Letter dated 11/12/21; Phone call and left message in December 2021; Emails on 1/6/22, 1/25/22, and 2/15/22	No response
Sac & Fox Tribe of the Mississippi in Iowa	Letter dated 11/12/21; Phone call and left message in December 2021; Emails on 1/20/22, 1/31/22, and 2/15/22	No response
Santee Sioux Nation, Nebraska	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/4/22	Phone conversation on 2/9/22 requesting EIS information as it becomes available
Seminole Nation of Oklahoma	Letter dated 10/18/22 and 11/4/22; Phone call but unable to leave message 10/17/22	Phone call response 10/22/22; Seminole defer to Cherokee
Seminole Tribe of Florida	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call 2/4/22	No response
Seneca-Cayuga Nation	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call 2/3/22	No response
Shakopee Mdewakanton Sioux Community of Minnesota	Letter dated 11/12/21; Phone call and left message in December 2021; Email on 1/20/22	Email received 1/20/22 requesting EIS information as it becomes available
Sisseton-Wahpeton Oyate of the Lake Traverse Reservation, South Dakota	Letter dated 11/12/21; Phone call and left message in December 2021; Emailed letter on 1/6/22; Emails on 1/25/22; Phone call on 1/31/22	Verbal request for consulting party status on 1/31/22
Sokaogon Chippewa Community, Wisconsin	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call 2/3/22	No response
Spirit Lake Tribe, North Dakota	Letter dated 11/12/21; Phone call and left message in December 2021; Emails on 1/20/22 and 2/1/22	No response
Thlopthlocco Tribal Town	Letters dated 10/18/22 and 11/4/22; Phone call 10/17/22	No response
Tonkawa Tribe of Indians of Oklahoma	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/3/22	No response

~~Table J.1-2.~~Table J.1-3. Tribal Outreach

Tribe	Outreach Efforts	Results
Tunica-Biloxi Indian Tribe	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/3/22	No response
Turtle Mountain Band of Chippewa Indians of North Dakota	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call and left message 2/3/22 and 2/9/22	No response
United Keetoowah Band of Cherokee Indians in Oklahoma	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call 2/3/22	No response
Upper Sioux Community, Minnesota	Letter dated 11/12/21; Phone call and left message in December 2021; Emails on 1/20/22 and 1/31/22	No response
White Earth Band of the Minnesota Chippewa Tribe	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call 2/3/22; email response to request for consultation on 9/8/22 (appeared to be a request for Government-to-Government consultation); Phone call and left message on 9/15/22	Request for consultation during comment period on Draft EIS; No response upon follow-up outreach
Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie), Oklahoma	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call 2/3/22	No response
Winnebago Tribe of Nebraska	Letter dated 11/12/21; Phone call and left message in December 2021; Phone call 2/1/22	No response

Digital copies of relevant Section 106 reports and the Draft EIS were provided to those tribes that expressed an interest in consultation. **Table J.1-4** summarizes the results of tribal consultation.

Table J.1-4. Tribal Response

Tribe	Date	Response
Cherokee Nation	9/14/22	No objection; requested notice about inadvertent discoveries or project changes
Choctaw Nation of Oklahoma	9/23/22	No adverse effect; requested notice about inadvertent discoveries
Iowa Tribe of Kansas and Nebraska	11/9/22	No objection; requested notice about inadvertent discoveries

Table J.1-4. Tribal Response

Tribe	Date	Response
Miami Tribe of Oklahoma	8/16/22	No objection; requested notice about inadvertent discoveries
Osage Nation	8/31/22; 12/1/22	No Adverse Effect; requested construction monitoring for relevant Capital Improvement locations in Oklahoma; requested information on training for construction staff, construction monitoring plan, and daily monitoring reports

J.1.3 State and Local Governments

Within the scope of the Draft EIS, OEA notified state and local government representatives of the project in letters that OEA sent on November 12, 2021. OEA invited these officials to attend public meetings held on the following dates:

- November 30, 2021
- December 1, 2021
- December 2, 2021
- December 7, 2021
- December 8, 2021
- December 9, 2021

Table J.1-5 summarizes the comments received from state and local governments**.**

~~Table J.1-3.~~Table J.1-5. State and Local Government Comments

Local Government	State	Comment
City of Dubuque	Iowa	Concern about impacts to Dubuque Freight House and the Metz Manufacturing Company
Village of Pingree Grove	Illinois	Concern about impacts to Heritage District

J.1.4 Other Interested Parties

Other parties with an interest in cultural resources have commented on effects of the Proposed Acquisition on cultural resources. During the public meetings, OEA received a comment from the Dubuque, Iowa Chamber of Commerce expressing concerns about impacts to Dubuque Freight House and the Metz Manufacturing Company. The U.S. Environmental Protection Agency (EPA) Office of Communities, Tribes and Environmental

Assessment noted that the Draft EIS would need to address cultural and historic resources, including tribal sacred sites, and provide information about consultation under Section 106. In addition, OEA held a meeting with the ACHP on January 28, 2022 to provide the agency with an overview of the Proposed Acquisition and the Section 106 approach.

J.2 Area of Potential Effects

As a result of these consultation efforts, OEA developed an APE. The APE as defined in 36 C.F.R. § 800.16(d), is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties if any such properties exist. Based on the nature and scope of the undertaking, as well as consultation, the above-ground APE consists of noncontiguous areas within the existing rail ROW in the area of the planned capital improvements as well as a buffer on each side of the ROW to account for potential setting, visual, noise, or other impacts from construction activities. For below-ground resources, the APE includes all areas where ground disturbing activities could potentially occur and extends from the railroad centerline to the limits of the existing ROW for the entire length of each planned capital improvement.

J.3 Identification and Evaluation

Prior to field investigation, OEA conducted background research using available sources, including state surveys, state archaeological site records, National Register files, state context documents, historic mapping and aerial photography, tribal documentation, and other information, as available. OEA is providing detailed information on the results of these background research efforts to consulting parties as part of the Section 106 documentation.

J.3.1 Methodology

OEA developed the methodologies for above-ground and below-ground surveys in accordance with 36 C.F.R. § 800, as well as state and tribal guidelines for the identification of historic properties.

J.3.1.1 Above-Ground

Arkansas

OEA conducted a Historic and Architectural Resource Survey at the planned capital improvements in Benton and Polk Counties, Arkansas, for the purposes of identifying any resources over 50 years old within the APE and evaluate those resources for listing on the National Register through the application of criteria set forth in 36 C.F.R. Section 60.4. This survey was designed to comply with Section 106 of NHPA and implementing regulations of the NHPA as outlined in 36 C.F.R. Part 800. The surveys were conducted in accordance with the Secretary of the Interior's Standards and Guidelines for Identification and Evaluation. This survey was completed using standard field and reporting

methodologies and was subject to the requirements of the Arkansas Historic Heritage Program's (Arkansas SHPO) current Guidelines for Historic and Architectural Surveys in Arkansas. The Arkansas SHPO provided Resource ID numbers for identified properties.

Illinois

OEA reviewed works of local history, historic aerial photography, historic mapping, and records from the office of the Ogle County Tax Assessor, in addition to conducting a field survey of the historic resources within the APE. Research was conducted in the Illinois Railway Museum collection of the Strahorn Library in Marengo, Illinois, the HARGIS database, and with staff of the Illinois SHPO. The data obtained from survey was evaluated based on the National Register criteria for eligibility.

Iowa

Prior to and after the field survey, OEA conducted background research to develop historic contexts pertinent to the types of resources surveyed and their geographical area. OEA followed the guidelines for intensive-level survey put forth by the National Park Service (NPS) in their National Register Bulletin Guidelines for Local Surveys: A Basis for Preservation Planning (#24, dated 1977, Revised 1985). OEA also followed the Iowa SHPO Guidelines for Historic Architectural Survey in Iowa, including Intensive Level survey guidelines and General Fieldwork Guidance portions of the document.

Louisiana

OEA reviewed the Division of Historic Preservation's (Louisiana SHPO) Cultural Resources Map and consulted with Louisiana SHPO staff and the Louisiana State Library staff to confirm that no previously identified above-ground resources exist within the APE. Historic aerial photographs were analyzed and compared to current aerial photographs, as were historic USGS topographic maps of the APE and vicinity. Pedestrian and vehicular surveys were undertaken to locate historic resources 50 years old or older within the APE for each planned capital improvement location. The surveys were conducted in accordance with the *Secretary of the Interior's Standards and Guidelines for Identification and Evaluation*. Each identified resource was photographed, mapped (using the ArcGIS Field Maps mobile application), and described in field notes to assist in documenting material, style, and construction details. The survey was conducted from the public ROW, and the surveyors did not enter the railroad ROW or any private property.

Missouri

Pedestrian and vehicular surveys were undertaken to locate resources 50 years old or older within the APE for each planned capital improvement location. The survey was conducted in accordance with the Secretary of the Interior's Standards and Guidelines for Identification and Evaluation. Each identified resource was photographed, mapped (using the ArcGIS Field Maps mobile application), and described in field notes to assist in documenting material, style, and construction details. The survey was conducted from the public ROW, and the surveyors did not enter the railroad ROW or any private property.

Oklahoma

Prior to conducting the above-ground survey, OEA undertook a desktop review to identify the potential resources 45 years old or older within the APE for each planned capital improvement. OEA reviewed information available from the Oklahoma SHPO, consulted staff at the SHPO, and accessed the Oklahoma State Library to confirm that no previously identified above-ground resources exist within the APEs. Historic aerial photographs were analyzed and compared to current aerial photographs, as were historic USGS topographic maps of the APE and vicinity. Pedestrian and vehicular surveys were undertaken to locate historic resources 50 years old or older within the APE for each capital improvement location. The surveys were conducted in accordance with the Secretary of the Interior's Standards and Guidelines for Identification and Evaluation. Each identified resource was photographed, mapped (using the ArcGIS Field Maps mobile application), and described in field notes to assist in documenting material, style, and construction details. The survey was conducted from the public ROW, and the surveyors did not enter the railroad ROW or any private property.

J.3.1.2 Below-Ground

Arkansas

Phase I archaeological field survey methods are defined in *Guidelines for Archaeological Fieldwork and Report Writing in Arkansas* (2010), and consist primarily of two methods, visual inspection (pedestrian survey) and systematic shovel testing. Where visibility is 25 percent or greater within the APE, pedestrian survey should be conducted along transects spaced apart by 20 meters. In areas of poor visibility, pedestrian survey should be augmented through subsurface investigation by means of Shovel Test Pit (STP) excavation. OEA excavated STPs within the APE along linear transects at 20-m intervals. STPs measured at least 25 centimeters in diameter and were excavated at least 10 cm into culturally sterile substrates. OEA collected standardized data at each test, including soil descriptions, depths, and observation or collection of cultural material. All excavated soils were screened through ¼-inch hardware cloth for uniform artifact recovery and backfilled into each test.

Standardized data for each STP were collected on forms and in notebooks; information recorded consisted of the depth for each stratum encountered, Munsell soil color for each stratum, and the number and type of each artifact encountered, if applicable. Once excavated, the walls of each STP were inspected for artifacts, features, and other indications of an archaeological site. All excavated STPs were excavated with round-nosed shovels and backfilled upon completion.

STPs that were positive for the presence of historic cultural material, or any above ground historic feature encountered, were further investigated through additional delineation STPs excavated at close interval (such as, at 5 m) in cardinal directions where possible within the APE. These delineation STPs were excavated until two negative STPs were encountered in any one direction. Artifacts recovered were bagged and labeled according to their provenance and then processed. Sketch maps were made of selected areas and shovel test transects, as needed. Representative photographs were taken to document the general

topography, vegetation, and environmental condition in the APE. Systematic auguring was completed at 100 m intervals to determine rail berm depth of fill. In instances where water or stream crossings were present, augur tests were placed on both sides of the crossing to evaluate depths of soil deposition.

OEA surveyed two planned capital improvement locations for cultural resources in Arkansas. The Applicants plan to construct sidings or siding extensions at these locations (**Table J.3-1).**

Table J.3-1. Field Effort by Planned Capital Improvement Location (Arkansas)

Capital Improvement Location	County	Type of Investigation	No. of Completed Shovel Tests
Gentry	Benton	Subsurface	160
Mena/MP 377	Polk	Subsurface	151

Illinois

OEA conducted phase I archaeological survey fieldwork using two primary methods: visual inspection (pedestrian survey) of the study area and systematic shovel testing along transects situated parallel to the railway corridor. The field survey methods followed guidelines in the Illinois SHPO's *Guidelines for Archaeological Reconnaissance Surveys and Reports* (n.d.).

Where visibility was 25 percent or greater within the APE, OEA conducted pedestrian surveys along transects spaced at 5 m apart. In areas of poor visibility, OEA augmented pedestrian surveys through subsurface investigation by means of STP excavation. Excavation of STPs occurred along linear transects, at 15-m intervals. STPs measured at least 40 cm in diameter and were excavated to at least 10 cm into cultural sterile substrates. OEA did not excavate STPs in areas that were inundated, paved, or developed (for example, railroad tracks or buildings). All excavated soils were screened using ¼-inch hardware mesh for uniform artifact recovery.

OEA collected standardized data for each STP on forms and in notebooks; information recorded consisted of the depth for each stratum encountered, Munsell soil color for each stratum, and the number and type of each artifact encountered, if applicable. Once the STPs were excavated, OEA inspected the walls of each test for artifacts, features, and other indications of an archaeological site. OEA backfilled all excavated STPs upon completion and took representative photographs to document the general topography, vegetation, and environmental conditions in the APE.

OEA surveyed one planned capital improvement location for cultural resources in Illinois. In total, OEA completed 196 STPs to complete the archeological field survey (**Table J.3-2**).

Table J.3-2. Field Effort by Planned Capital Improvement Location (Illinois)

Capital Improvement Location	County	Type of Investigation	No. of Completed Shovel Tests
Chicago MP 75	Ogle	Subsurface	196

Iowa

The Phase I archaeological field methodology for the state of Iowa is presented by the Association of Iowa Archaeologists in *Guidelines for Archaeological Investigations in Iowa* (2021). Field methods for the Iowa portions of the APE only included visual inspection (pedestrian survey). Agricultural fields are generally sites for pedestrian surveys and transect intervals are based on ground surface visibility (GSV) and current surface conditions within the APE (**Table J.3-3**).

Table J.3-3. Survey Intervals Based on Ground Visibility (Iowa)

GSV	Condition	Survey Interval
80-100%	Rain washed/weathered	15 meters
80-100%	Freshly turned	10 meters
40-80%	Any condition	10 meters
25-40%	Rain washed/weathered	5 meters
25-40%	Freshly turned	3 meters
Less than 25%	Systematic subsurface sampling	

Source: Association of Iowa Archaeologists 2021

~~Field surveys have recently been completed in Iowa. More detailed information on the results of those surveys will be included in the Section 106 documentation that will be provided to consulting parties.~~

Louisiana

The state of Louisiana provides guidelines for archaeological field survey through the Louisiana SHPO's *Fieldwork Guidelines for Cultural Resource Investigations* (2021). OEA completed a Phase I survey using the following methods in the spring of 2022.

OEA conducted Phase I surveys using a combination of methods including systematic pedestrian surveys and subsurface investigation. OEA conducted shovel testing along linear transects spaced at intervals based on probability; as the planned capital improvements are positioned within 100 feet of a historic railroad, the survey area is considered high probability and was therefore tested at 30-meter intervals. Additionally, OEA completed supplemental auguring at 90-meter intervals and at both sides of water or stream crossings to further evaluate depths of soil deposition within the APE.

Following the guidelines provided by the Louisiana SHPO, OEA collected standardized data from each shovel test, including depth and Munsell soil color for each stratum, and the number and type of each artifact, if applicable. The soil was screened through ¼-inch

hardware cloth or mesh and backfilled into the test location. The following table provides information on the planned capital improvement locations and numbers of shovel tests that OEA conducted in the Spring of 2022 (**Table J.3-4**).

Table J.3-4. Field Effort by Planned Capital Improvement Location (Louisiana)

Capital Improvement Location	County	Type of Investigation	No. of Completed Shovel Tests
Mansfield	De Soto	Subsurface	77
Loring	Sabine	Subsurface	74
Singer	Beauregard	Subsurface	114

Missouri

The Missouri SHPO provides baseline procedures for the conduct of Phase I cultural resource surveys via its *Guidelines for Phase I Archaeological Surveys and Reports* (n.d.). OEA completed a Phase I survey using two primary methods: visual inspection (pedestrian survey) of the APE and systematic shovel testing along transects placed parallel to the railway corridor.

According to the guidelines, where ground surface visibility (GSV) is 25 percent or greater within the APE, such as in areas subjected to agricultural furrowing and/or plowing, pedestrian survey should be conducted along 5-meter interval transects within the APE. In areas of poor visibility (such as less than 25 percent GSV), pedestrian survey should be augmented through subsurface investigation. Shovel testing, or STP excavation, should be conducted systematically within the APE along two linear transects running parallel along either side of the existing railroad track. STPs should measure at least 25 cm in diameter and be excavated into culturally sterile substrates (B horizon). If the B horizon is not encountered within 1 meter of the surface, deep testing should be conducted in every third test using a hand auger to verify the depths of the A horizon soils.

OEA further refined these baseline methods, as defined by the Missouri SHPO, for the purposes of this study. OEA generated probability models using available environmental data (i.e., soil maps, National Wetlands Inventory wetland designation areas, historic maps) to define portions of the APE as having high, moderate, or low potential for above-ground archaeological features and subsurface cultural deposits. Transect intervals were determined based on the probability of cultural deposits at each planned capital improvement location (**Table J.3-5**).

Table J.3-5. Survey Intervals Based on Probability (Missouri)

Probability	Intervals	Transects
Low	50 m	1
Intermediate	30 m	1
High	15 m	1

OEA screened shovel test soils through ¼-inch hardware mesh for uniform artifact recovery, and collected standardized data from each test, including soil descriptions, depths, and cultural material encountered/recovered (if applicable). All tests were then backfilled upon completion.

During the survey of the APE in Missouri, OEA investigated seven (7) planned capital improvement locations for cultural resources (**Table J.3-6**).

Table J.3-6. Field Effort by Planned Capital Improvement Location (Missouri)

Planned Capital Improvement Location	County	Probability	Type of Investigation	No. of Completed Shovel Tests
Asbury	Jasper	Low	Subsurface	76
Blue Valley	Jackson	Moderate	Subsurface	71
Grandview	Cass/Jackson	Low	Subsurface	86
Laredo	Grundy	Moderate	Subsurface	38
MP 186	McDonald	Moderate	Subsurface	115
MP 341	Livingston	Low/Moderate	Subsurface	101
Newton	Sullivan	Moderate	Subsurface	30

Oklahoma

OEA employed field survey methods that meet the requirements of the guidelines stipulated in the U.S. Army Corps of Engineers' *Guidelines for Cultural Resource Investigations in Oklahoma* (2019) and the Osage Nation Historic Preservation Office's *Archaeological Survey Standards* (2018). Field personnel completed Phase I archaeological survey fieldwork using two methods based on these standards: pedestrian survey of the APE and systematic shovel testing complemented by probing and augering along transects placed parallel to the railway corridor within the APE.

OEA completed pedestrian survey along the shovel test transects as well as in 10-meter transects in areas of slope 20 degrees or greater, where shovel testing could not be completed. Field personnel excavated STPs at 30-meter intervals along linear transects also at 30-meter intervals. STPs measured at least 30 cm in diameter and were excavated to a depth of at least 20 centimeters into culturally sterile substrates. OEA did not excavate shovel tests in areas that were inundated, paved, developed (for example, railroad tracks, paved crossings, buildings), or on hillsides with slopes greater than 20 degrees. Field personnel excavated by natural soil horizon and screened all excavated soil through ¼-inch hardware mesh for uniform artifact recovery.

OEA collected standardized data for each STP on forms and in notebooks; information recorded consisted of the depth for each stratum encountered, Munsell soil color for each stratum, and the number and type of each artifact encountered, if applicable. Once the STPs were excavated, OEA inspected the walls of each test for artifacts, features, and other indications of an archaeological site. OEA backfilled all excavated STPs upon completion and took representative photographs to document the general topography, vegetation, and environmental conditions within the APE.

During the survey of the APE in Oklahoma, OEA investigated four locations for cultural resources where the Applicants plan to construct or extend sidings (**Table J.3-7**).

Table J.3-7. Field Efforts by Planned Capital Improvement Location (Oklahoma)

Planned Capital Improvement Location	County	Type of Investigation	No. of Completed Shovel Tests
MP 247	Adair	Subsurface	326
Cave Springs	Adair	Subsurface	80
Spiro	Le Flore	Subsurface	44
Heavener	Le Flore	Subsurface	140

J.4 Preliminary Results and Evaluations

In compliance with NEPA and Section 106 of the NHPA, OEA has surveyed the APE for above-ground and below-ground historic properties. The purpose of the surveys was to locate, identify, and evaluate the significance of any historic resources within the APE and to determine if these resources were listed, or were eligible for listing, in the National Register. OEA conducted surveys within the APE for above-ground and below-ground resources between January and June of 2022. **Table J.4-1** summarizes the results of the surveys; **Attachment 8~~G~~** depicts the locations of the resources. **Attachments 1-8~~A-F~~** describe the detailed information on these identified properties in a series of state-specific attachments.

Table J.4-1. Survey results conducted within the APE for above-ground and below-ground resources

State	Associated Capital Improvement Location	Resource Number	Property Type	National Register Eligibility	Potential Effects
Above-Ground Resources					
Arkansas, Kansas, Missouri~~, Oklahoma~~	Asbury, MP 186, Gentry	K-HEAV-01	Railroad	Eligible	Physical
Arkansas~~, Oklahoma~~	~~Heavener,~~ Mena/MP 377	K-SHRE-01	Railroad	Eligible	Physical
Illinois	Chicago MP 75	C-CHIC-03	Railroad	Not Eligible	Physical
Iowa	Deer Creek	C-DAVE-01	Railroad	Not Eligible	Physical
Iowa	Camanche	C-DAVE-02	Railroad	Not Eligible	Physical

Table J.4-1. Survey results conducted within the APE for above-ground and below-ground resources

State	Associated Capital Improvement Location	Resource Number	Property Type	National Register Eligibility	Potential Effects
Iowa	Bellevue/MP 24, Turkey River/MP 71	C-MARQ-03	Railroad	Eligible	Physical
Iowa	Letts, Washington/MP 255	C-OTTU-02	Railroad	Eligible	Physical
Iowa	Ottumwa, Moravia	C-LARE-01	Railroad	Eligible	Physical
Iowa, Missouri	Laredo, Newtown	C-LARE-02	Railroad	Not Eligible	Physical
Kansas, Missouri	Blue Valley, Grandview/IFG	K-PITT-01	Railroad	Eligible	Physical
Louisiana	Mansfield, Loring	K-BEAU-01	Railroad	Eligible	Physical
Louisiana	Singer	K-BEAU-02	Railroad	Eligible	Physical
Missouri	Laredo	C-KACI-01	Railroad	Not Eligible	Direct/ Physical
Oklahoma	Baron/MP 247, Spiro, Cave Springs	K-HEAV-02	Railroad	Not Eligible	Physical
Oklahoma	Heavener	K-SHRE-01	Railroad	Not Eligible	Physical
Arkansas	Gentry ~~Heavener~~	BE1974	Farm	Not Eligible	Visual
Arkansas	Gentry ~~Heavener~~	BE1975	Plain-style Frame House	Not Eligible	Visual
Arkansas	Gentry ~~Heavener~~	BE2303	Bungalow	Not Eligible	Visual
Arkansas	Gentry ~~Heavener~~	BE2339	Bungalow	Not Eligible	Visual
Arkansas	Mena	PL0128	Industrial Complex	Not Eligible	Visual
Arkansas	Mena	PL0130	Plain-style Frame House	Not Eligible	Visual
Illinois	Monroe/MP 75	IL-MC-001	Farmstead	Not Eligible	Visual
Iowa	Bellevue	IA-BV-001	Gable Ell House	Not Eligible	Visual
Iowa	Bellevue	IA-BV-002	Residential Building	Not Eligible	Visual

Table J.4-1. Survey results conducted within the APE for above-ground and below-ground resources

State	Associated Capital Improvement Location	Resource Number	Property Type	National Register Eligibility	Potential Effects
Iowa	Bellevue	IA-BV-003	Bungalow	Not Eligible	Visual
Iowa	Bellevue	IA-BV-004	Ranch House	Not Eligible	Visual
Iowa	Bellevue	IA-BV-005	District	Not Eligible	Visual
Iowa	Bellevue	IA-BV-006	Park	Not Eligible	Visual
Iowa	Bellevue	IA-BV-007	Mobile Home	Not Eligible	Visual
Iowa	Bellevue	IA-BV-008	Commercial	Not Eligible	Visual
Iowa	Bellevue	IA-BV-010	Mobile Home	Not Eligible	Visual
Iowa	Bellevue	IA-BV-011	Mobile Home	Not Eligible	Visual
Iowa	Camanche	IA-CA-001	Water Treatment Plant	Eligible	Visual
Iowa	Camanche	IA-CA-002	Substation	Not Eligible	Visual
Iowa	Camanche	IA-CA-003	Warren pony truss bridge	Not Eligible	Visual
Iowa	Deer Creek	IA-DC-001	Residential Building	Not Eligible	Visual
Iowa	Deer Creek	IA-DC-002	Residential Building	Not Eligible	Visual
Iowa	Deer Creek	IA-DC-003	Craftsman Side Gabled Bungalow	Not Eligible	Visual
Iowa	Deer Creek	IA-DC-004	Residential Building	Not Eligible	Visual
Iowa	Deer Creek	IA-DC-005	Residential Building	Not Eligible	Visual
Iowa	Ottumwa	IA-OT-001	Commercial Complex	Not Eligible	Visual
Iowa	Ottumwa	IA-OT-002	Gabled Ell Cottage	Not Eligible	Visual
Iowa	Ottumwa	IA-OT-003	Mobile Home Park	Not Eligible	Visual

Table J.4-1. Survey results conducted within the APE for above-ground and below-ground resources

State	Associated Capital Improvement Location	Resource Number	Property Type	National Register Eligibility	Potential Effects
Iowa	Turkey River	IA-TR-001	Residential Building	Not Eligible	Visual
Louisiana	Mansfield	LA-MA-001	Ranch House/ Colonial Revival	Not Eligible	Visual
Louisiana	Mansfield	LA-MA-002	Ranch House	Not Eligible	Visual
Louisiana	Mansfield	LA-MA-003	Ranch House	Not Eligible	Visual
Louisiana	Mansfield	LA-MA-004	Ranch House	Eligible	Visual
Louisiana	Mansfield	LA-MA-005	Ranch House	Not Eligible	Visual
Louisiana	Mansfield	LA-MA-006	Shed	Not Eligible	Visual
Louisiana	Mansfield	LA-MA-007	Utility Building	Not Eligible	Visual
Louisiana	Mansfield	LA-MA-008	Ranch House	Not Eligible	Visual
Louisiana	Mansfield	LA-MA-009	Ranch House	Eligible	Visual
Louisiana	Mansfield	LA-MA-010	Ranch House	Not Eligible	Visual
Louisiana	Singer	LA-SI-001	Residential Building	Not Eligible	Visual
Louisiana	Singer	LA-SI-002	Commercial Building	Not Eligible	Visual
Louisiana	Singer	LA-SI-003	Residential Building	Not Eligible	Visual
Louisiana	Singer	LA-SI-004	Ranch House	Not Eligible	Visual
Louisiana	Singer	LA-SI-005	Ranch House	Not Eligible	Visual
Louisiana	Singer	LA-SI-006	Residential Building	Not Eligible	Visual
Missouri	Asbury	MO-AS-001	Farm	Not Eligible	Visual
Missouri	Blue Valley	MO-BV-001	Industrial Warehouse	Not Eligible	Visual
Missouri	Blue Valley	MO-BV-002	Industrial Warehouse	Not Eligible	Visual

Table J.4-1. Survey results conducted within the APE for above-ground and below-ground resources

State	Associated Capital Improvement Location	Resource Number	Property Type	National Register Eligibility	Potential Effects
Missouri	Blue Valley	MO-BV-003	Industrial Warehouse	Not Eligible	Visual
Missouri	Blue Valley	MO-BV-004	Industrial Shed	Not Eligible	Visual
Missouri	Blue Valley	MO-BV-005	Industrial Shed	Not Eligible	Visual
Missouri	Blue Valley	MO-BV-006	Industrial Complex	Not Eligible	Visual
Missouri	Blue Valley	MO-BV-007	Industrial Building	Not Eligible	Visual
Missouri	Blue Valley	MO-BV-008	Industrial Complex	Not Eligible	Visual
Missouri	Blue Valley	MO-BV-009	Industrial Building	Not Eligible	Visual
Missouri	Blue Valley	MO-BV-010	Industrial Complex	Not Eligible	Visual
Missouri	Blue Valley	MO-BV-011	Industrial Complex	Not Eligible	Visual
Missouri	Blue Valley	MO-BV-012	Industrial Building	Not Eligible	Visual
Missouri	Blue Valley	MO-BV-013	Industrial Building	Not Eligible	Visual
Missouri	Blue Valley	MO-BV-014	Industrial Complex	Not Eligible	Visual
Missouri	Goodman (MP 186)	MO-GO-001	Residential Building	Not Eligible	Visual
Missouri	Goodman (MP 186)	MO-GO-002	Side Gabled Bungalow	Not Eligible	Visual
Missouri	Goodman (MP 186)	MO-GO-003	Residential Building	Not Eligible	Visual
Missouri	Goodman (MP 186)	MO-GO-004	Cemetery	Eligible	Visual
Missouri	Grandview	MO-GV-001	Industrial Complex	Not Eligible	Visual
Oklahoma	Baron	OK-BA-001	Vernacular House	Not Eligible	Visual
Oklahoma	Baron	OK-BA-002	Ranch House	Not Eligible	Visual

Table J.4-1. Survey results conducted within the APE for above-ground and below-ground resources

State	Associated Capital Improvement Location	Resource Number	Property Type	National Register Eligibility	Potential Effects
Oklahoma	Heavener	OK-HE-001	Front Gable Church/ Ranch House	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-002	Residential Building	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-003	Culvert System	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-004	Culvert	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-005	Culvert	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-006	Cemetery	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-007	Commercial Building	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-008	Commercial Building	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-009	Front Gabled Bungalow	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-010	Culvert	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-011	Culvert	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-012	Wastewater Treatment Plant	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-013	Culvert	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-014	I-House	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-015	Ranch House	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-016	Transverse Crib Barn	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-017	Front Gabled Bungalow	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-018	Ranch House	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-019	Front Gable Church	Not Eligible	Visual

Table J.4-1. Survey results conducted within the APE for above-ground and below-ground resources

State	Associated Capital Improvement Location	Resource Number	Property Type	National Register Eligibility	Potential Effects
Oklahoma	Heavener	OK-HE-020	Side Gabled Bungalow	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-021	Ranch House	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-022	Front Gabled Bungalow	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-023	Ranch House	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-024	Ranch House	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-025	Front Gabled Bungalow	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-026	Residential Buildings	Not Eligible	Visual
Oklahoma	Heavener	OK-HE-027	Drainage Structure	Eligible	Visual
Below-Ground Resources					
Arkansas	Mena	3PL1649	Unknown Prehistoric Artifact Scatter	Not Eligible	Physical
Iowa	MP 71	13CT498	Unknown Prehistoric/Late 19th-Early 20th C. Historic Artifact Scatter	Not Eligible	Physical
Iowa	MP 71	13CT499	Unknown Prehistoric/Late 19th-Early 20th C. Historic Artifact Scatter	Not Eligible	Physical
Iowa	Letts	13LA685	Historic Cemetery	Unknown	Physical
Missouri	Grandview	23CS102	Historic Cistern	Not Eligible	Physical
Oklahoma	Baron/MP 247	34AD282	Unassigned Prehistoric Lithic Scatter	Not Eligible	Physical
Oklahoma	Baron/MP 247	34AD283	Late Archaic/ Eastern Woodland Lithic Scatter	Eligible	Physical

Table J.4-1. Survey results conducted within the APE for above-ground and below-ground resources

State	Associated Capital Improvement Location	Resource Number	Property Type	National Register Eligibility	Potential Effects
Oklahoma	Baron/MP 247	34AD284	Unassigned Prehistoric Lithic Scatter	Not Eligible	Physical
Oklahoma	Baron/MP 247	34AD293	Unassigned Prehistoric Lithic Scatter	Not Eligible	Physical
Oklahoma	Baron/MP 247	34AD294	Unassigned Prehistoric Lithic Scatter	Not Eligible	Physical
Oklahoma	Baron/ MP 247	34AD285	Unassigned Prehistoric Lithic Scatter	Not Eligible	Physical
Oklahoma	Baron/MP 247	34AD286	Archaic Lithic Scatter	Eligible	Physical
Oklahoma	Baron/MP 247	34AD287	Unassigned Prehistoric Lithic Scatter	Not Eligible	Physical
Oklahoma	Baron/MP 247	34AD288	Unassigned Prehistoric Lithic Scatter	Not Eligible	Physical
Oklahoma	Baron/MP 247	34AD289	Unassigned Prehistoric Lithic Scatter	Not Eligible	Physical
Oklahoma	Cave Springs	34AD292	Unassigned Prehistoric Lithic Scatter	Not Eligible	Physical
Oklahoma	Cave Springs	34AD290	Unassigned Prehistoric Lithic Scatter	Not Eligible	Physical
Oklahoma	Cave Springs	34AD291	Unassigned Prehistoric Lithic Scatter	Not Eligible	Physical

J.5 Preliminary Effects Analysis

OEA evaluated the effects to historic properties using conceptual designs provided by the Applicants. The following is a description of eligible cultural resources and preliminary effects analysis for each.

J.5.1 Above-Ground Resources

J.5.1.1 K-HEAV-01

Table J.5-1. K-HEAV-01: Historic Railway Segment

Location	Arkansas, Kansas, Missouri~~, Oklahoma~~
Associated Capital Improvement Location	Asbury and Goodman/MP 186, Missouri; Gentry, Arkansas
National Register Criteria	A, B
Significance	Regional
Area(s) of Significance	Commerce, Transportation

This property is a 107.8-mile segment of the KCS rail line that travels south from Pittsburg, Kansas, to Watts, Oklahoma. The railroad passes through the communities of Pittsburg, Kansas; Asbury, Joplin, and Kelly Springs, Missouri; Gentry, Arkansas; and Watts, Oklahoma. Portions of this line were built by the Kansas City, Pittsburg, and Gulf Railroad (KCP&G) during the 1890s while other portions consist of existing railroads purchased by Arthur Stilwell, president of the KCP&G, and incorporated into the line. The portion of this railroad segment from Joplin, Missouri, to Sulphur Springs, Arkansas, was built by the Kansas City, Fort Smith, and Southern Railroad. The remainder of the subject railroad segment was built by the KCP&G. As the line progressed south, the KCP&G passed through established towns, providing these communities with an outlet for their goods, shipping them to the Gulf Coast or Kansas City. The KCP&G, reorganized as the KCS after 1900, became the primary driver of trade and economic activity in this rural segment of Missouri, Arkansas, and Oklahoma. Built as the second major stretch of the KCP&G, this segment connected Kansas City to multiple small agrarian communities in Missouri, Arkansas, and Oklahoma, including Joplin, Missouri, which was a major center of zinc and lead mining. Though Joplin possessed several rail connections by the arrival of the first KCS train in 1893, none of these existing connections had the same impact as the KCS which allowed the lead and zinc extracted from Joplin to travel the length of the country and overseas. Joplin's population grew during the final decades of the nineteenth century; however, the most marked growth happened between 1890 and 1900, when the population rose from 9,000 to 26,000.

The KCP&G was, for many small towns in Arkansas and Oklahoma, the first railroad to pass through, and in some cases, the location of the railroad directly determined where communities first developed. This was particularly true for Benton County in northwestern Arkansas. Between 1880 and 1900 the county's population grew from 20,000 to 31,000; new towns like Gentry were established and existing towns such as Siloam Spring expanded significantly. The railroad's passage through Benton County led to the establishment of significant fruit orchards, stock farms, and the expansion of existing wheat farms. The railroad also directly motivated settlements such as Asbury, Missouri, and Watts, Oklahoma, which both developed after the KCS made the town a division headquarters in 1912. The construction of rail yards and other infrastructure at Watts led to speculative real estate development within the town and encouraged the development of stock farms in the

surrounding countryside. Based on the introduction and expansion of Transportation and Commerce, this rail segment is recommended eligible for listing in the National Register under Criterion A.

Additionally, this rail segment is recommended eligible under Criterion B due to its association with Arthur Stilwell, founder and driving force behind the expansion of KCP&G. Arriving in Kansas City in 1888, Arthur Stilwell began to operate his first railroad, the Kansas City Suburban Belt Railway, in 1889. Extending the line south to Pittsburg, Kansas, Stilwell renamed the line the KCP&G Railroad. Through the 1890s Stilwell pushed his railroad further south, consolidating his tracks with other lines and laying new railbeds as he strove to reach the Gulf of Mexico. Stilwell secured financial backing for the railroad by selling railroad stock to Dutch investors, a necessity after the United States was rocked by the Panic of 1893. To thank his Dutch investors, Stilwell named several towns in Arkansas, Texas, and Louisiana after them and their wives. In 1897, Stilwell's railroad reached the Gulf of Mexico where he built the City of Port Arthur, named after himself. In total, Stilwell's enterprise laid over 1,200 miles of track through the center of the country and created an alternative shipping corridor that allowed farmers and industrialists in middle America to efficiently export their products and circumvent more distant eastern seaports.

OEA anticipates that the planned capital improvements would have No Adverse Effect on K-HEAV-01. The Applicants would construct new sidings adjacent to the existing rail line and within the existing rail ROW. The capital improvement designs are only at a conceptual stage; however, direct, physical impacts may include the replacement or extension of structures spanning waterways and drainage systems. Although this construction would occur within the eligible National Register boundary of the resource, the overall impacts to the railroad would be minimal and would not constitute an adverse effect. Planned alterations to the railroad features would be within the existing ROW and would not result in a substantial visual change to the corridor. Existing sidings are already integral to the operation of the railroad. Therefore, the construction of new or extended sidings would be compatible with the historic use and character of this resource. The planned capital improvements would only physically impact less than a total of six miles of this 100-mile railroad segment, in three separate discontiguous locations. Some individual historic features of the rail line segment may be impacted, for example, stone culverts or small timber trestles. However, the overarching character of the property would be unaffected due to the large number of similar contributing features throughout the railroad segment. The capital improvements would not alter the physical features of the railroad that makes it eligible for the National Register in the area of transportation. OEA expects that such changes would have no adverse effect on the historic rail line segment because they would support the continued use of the corridor for rail transportation and would therefore not diminish the characteristics of the property that makes it eligible for inclusion in the National Register under Criterion A.

J.5.1.2 K-SHRE-01

Table J.5-2. Table J.5-2 K-SHRE-01: Historic Railway Segment	
Location	Oklahoma, Arkansas
Associated Capital Improvement Location	Mena/MP 377, Arkansas
National Register Criteria	A, B
Significance	Regional
Area(s) of Significance	Commerce, Transportation, Exploration/Settlement

This 94.6-mile segment of KCS travels south from Heavener, Oklahoma to De Queen, Arkansas. Originally built between 1893 and 1897, this railroad segment was created as part of the KCP&G as the line traveled south to the Gulf of Mexico, passing through Mena, Arkansas; Hatfield, Arkansas; and Cove, Arkansas. In Oklahoma, the KCP&G was responsible for the development of multiple towns, including Heavener which grew around the railroad station and expanded significantly when the KCS made the town a division headquarters. For other towns in Oklahoma and Arkansas the railroad facilitated the movement of crops and livestock. In both states, farmers brought cotton, cattle, fruit, and grain to the nearest railroad town and used the KCS to ship their products to the Gulf coast or Kansas City. The railroad also provided opportunities for capital investment in previously unexplored mining and timber extraction ventures. This process tied these farmers into a national economy and helped to sustain communities like Heavener and De Queen.

The railroad segment is ~~regionally~~ significant within Arkansas under Criterion A in the areas of Transportation, Exploration and Settlement, and Commerce. Built by the KCP&G, this segment of the railroad connected the major hub of Kansas City to multiple small agrarian communities in Oklahoma and Arkansas on its way to the Gulf of Mexico. The railroad, the first major line to pass through this portion of Oklahoma, opened a major regional shipping corridor from the Gulf coast to Kansas City in central Missouri that did not previously exist, becoming the primary factor for the capital investment in mining, logging, and agricultural enterprises in this area. Additionally, because the United States began its takeover of land in eastern Oklahoma long after many of the surrounding states, the railroad played a critical role in determining the location of many towns. This segment of railroad is also eligible within Arkansas under Criterion B due to its association with Arthur Stilwell, the founder and driving force behind the expansion of KCP&G. Stilwell's importance and contributions supporting the eligibility under Criterion B are elaborated above under K-HEAV-01 and apply to this segment as well.

OEA anticipates that the planned capital improvements would have No Adverse Effect on K-SHRE-01. The Applicants would construct new siding adjacent to the existing rail line and within the existing rail ROW. Additional elements of the planned capital improvement may include the extension of contributing features spanning waterways and drainage

systems. Although this construction would occur within the eligible National Register boundary of the resource, the effect would not be adverse. Existing sidings are already integral to the operation of the railroad and the construction of new or extended sidings would be compatible with historic use and character of this resource. The planned capital improvement would only physically impact less than a total of six miles of this 95-mile railroad segment, in two separate locations. Some individual historic features of the rail line segment may be impacts, for example, stone culverts or small timber trestles. However, the overarching character of the property would be unaffected due to the large number of similar contributing features throughout the railroad segments. The capital improvements would not alter the physical features of the property that make it eligible for the National Register in the areas of transportation. OEA expects that such changes would have no adverse effect on the historic rail line segment because they would support the continued use of the corridor for rail transportation and would therefore not diminish the characteristics of the property that make it eligible for inclusion in the National Register under Criterion A.

J.5.1.3 C-MARQ-03

Table J.5-3. C-MARQ-03: Historic Railway Segment

Location	Iowa
Associated Capital Improvement Location	Bellevue/MP 24 and Turkey River/MP 71, Iowa
National Register Criteria	A
Significance	Regional
Area(s) of Significance	Commerce, Transportation

This 98-mile segment of CP travels between Sabula and Marquette, Iowa, running parallel to the Mississippi River. The portion of this rail segment north of Dubuque was constructed by Chicago, Dubuque, and Minnesota Railroad in approximately 1870, while the portion between Dubuque and Sabula was constructed by the Clinton and Dubuque Railroad around the same time. In 1878, these companies combined to form the Chicago, Clinton, Dubuque and Minnesota Railroad, which the Chicago, Milwaukee & St. Paul Railroad purchased in 1880. Under the ownership of the latter, this line was a secondary trackage connecting riverport towns like Sabula, Bellevue, and Guttenberg to the greater Chicago, Milwaukee, and St. Paul Railroad (CM&StP) network. Sanborn maps from Bellevue, Guttenberg, and Sabula each show that soon after the CM&StP's arrival industrial buildings were built in each town to take advantage of the railroad. The 1893 Sanborns show a major slaughterhouse in Sabula while Sanborns from 1886 show Guttenberg with major lumber yards and grain elevators all with access to the railroad. By 1914 Bellevue possessed similar agricultural infrastructure as well as lumber mills, machine shops, and a piano factory.

The railroad segment is regionally significant under Criterion A in the areas of Transportation and Commerce. This segment of railroad travels through towns that were well established prior to the widespread construction of railroads in Iowa; however, these towns shift orientation following the arrival of the railroad. Maps show Guttenberg, Sabula, and Bellevue as highly developed communities with industrial buildings oriented towards the Mississippi River, at that time the area's most important transportation corridor. After

the arrival of the railroad, river commerce remained an important part of the region's economy; however, by the late 19th century industrial development in Guttenberg and Bellevue had migrated closer to the CM&StP's tracks, highlighting the shift of industry from river-based transportation to rail-based transit. For residents of rural Clayton and Jackson Counties the CM&StP Railroad was equally important. Driving their animals and crops to the railroad stops in Sabula, Guttenberg, and Bellevue allowed these farmers to sell their goods to a national audience, creating regional commercial-level agriculture.

OEA anticipates that the planned capital improvements would have No Adverse Effect on C-MARQ-03. The Applicants would construct new sidings adjacent to the existing rail line and within the existing rail ROW. Although this construction would occur within the eligible National Register boundary of the resource, the overall impacts to the railroad would be minimal and would not constitute an adverse effect. Planned alterations to the railroad features would be within the existing ROW and would not result in a substantial visual change to the corridor. Existing sidings are already integral to the operation of the railroad. Therefore, the construction of new or extended sidings would be compatible with the historic use and character of this resource. The planned capital improvements would only physically impact less than a total of six miles of this 98-mile railroad segment, in two separate locations. Some individual historic features of the rail line segment may be impacted, for example, stone culverts or small timber trestles. However, the overarching character of the property would be unaffected due to the large number of similar contributing features throughout the railroad segments. The capital improvements would not alter the physical features of the property that make it eligible for the National Register in the areas of transportation. OEA expects that such changes would have no adverse effect on the historic rail line segment because they would support the continued use of the corridor for rail transportation and would therefore not diminish the characteristics of the property that makes it eligible for inclusion in the National Register under Criterion A.

J.5.1.4 C-OTTU-02

Table J.5-3. C-OTTU-02: Historic Railway Segment

Location	Iowa
Associated Capital Improvement Location	Letts and Washington/MP 255, Iowa
National Register Criteria	A
Significance	Regional
Area(s) of Significance	Commerce, Transportation

This property is an 82.5-mile segment of the CP rail line that stretches from Washington, Iowa to Muscatine, Iowa. Traveling in a generally easterly direction the railroad segment passes through the towns of Washington, Ainsworth, Cotter, Columbus Junction, Fredonia, Letts, and Muscatine. This rail line segment appears to have been constructed as part of the Mississippi and Missouri Railroad (M&M Railroad), which was established by the Chicago, Rock Island, and Pacific Railroad (Rock Island Line) and was later incorporated into it. Between 1856 and 1860 the first railroads were developed between Washington and Muscatine. Washington, located on the fertile prairie, immediately became a major collection point for grain and animals raised in the surrounding county. Washington possessed some of the earliest railroad connections in Iowa and by 1875 four railroad lines came together in Washington. Farmers brought wagonloads of corn or drove their herds to the city and after conducting their business left with finished goods that had been purchased from one of the city's merchants.

The railroad segment is regionally significant under Criterion A in the areas of Transportation and Commerce. This segment of railroad played a critical role in transporting agricultural products from regional hubs like Washington to major distribution centers like Chicago. The early establishment of the railroad in Washington enabled the city to grow into a regionally important settlement. Nearby Letts, Iowa, was similarly sustained by the passage of the railroad, which permitted foodstuffs from within the township to be gathered and efficiently transported east. Sanborn maps from 1897 show major agricultural buildings such as stock yards and grain elevators along the railroad tracks. Established in the 1850s, the relationship between farmers in Washington County and the railroad was formative to the development of agriculture in the region.

OEA anticipates that the planned capital improvements would have No Adverse Effect on C-OTTU-03. The Applicants would construct new sidings adjacent to the existing rail line and within the existing rail ROW. Although this construction would occur within the eligible National Register boundary of the resource, the overall impacts to the railroad would be minimal and would not constitute an adverse effect. Planned alterations to the railroad features would be within the existing ROW and would not result in a substantial visual change to the corridor. Existing sidings are already integral to the operation of the railroad. Therefore, the construction of new or extended sidings would be compatible with the historic use and character of this resource. The planned capital improvements construction would only physically impact less than a total of ten miles of this more than 82--mile railroad segment, in two separate discontiguous locations. Some individual historic features of the rail line segment may be impacted, for example, stone culverts or small timber trestles. However, the overarching character of the property would be unaffected due to the large number of similar contributing features throughout the railroad segments. The capital improvements would not alter the physical features of the property that make it eligible for the National Register in the areas of transportation. OEA expects that such changes would have no adverse effect on the historic rail line segment because they would support the continued use of the corridor for rail transportation and would therefore not diminish the characteristics of the property that makes it eligible for inclusion in the National Register under Criterion A.

J.5.1.5 C-LARE-01

Table J.5-4. C-LARE-01: Historic Railway Segment

Location	Iowa
Associated Capital Improvement Location	Ottumwa and Moravia, Iowa
National Register Criteria	A
Significance	Regional
Area(s) of Significance	Commerce, Transportation

This 61.2-mile segment of the CP rail line stretches from Ottumwa, Iowa to the Iowa/Missouri border. Traveling in a general southwesterly direction this railroad segment passes through the towns of Ottumwa, Blakesburg, Moravia, Rathburn, Mystic, Seymour, and Sewal. This segment was constructed about 1887 as part of the Chicago, Milwaukee & St Paul Railroad (CM&StP). At the time, the CM&StP was constructing lines through this area of Iowa to compete with the Rock Island Line. This segment of the railroad was strategically positioned to take advantage of the significant coalfields in Wapello County. Iowa coal was a critical resource to powering many of the railroads crisscrossing the state and Wapello County was, by the late 19th century, among the ten most productive coal producers in the state. Sitting at the heart of the Wapello County coalfields, Ottumwa developed into a major regional rail magnet.

The railroad segment is regionally significant under Criterion A in the areas of Transportation and Commerce. As it expanded in the 1880s the CM&StP built tracks, passenger depots, and freight stations along this 61.2-mile stretch of track. For the residents of these towns the presence or absence of the railroad often determined a community's future. With the establishment of a railroad, a small village or town could become a critical hub of commercial activity. For example, communities like Ottumwa grew rapidly, enabling the growth of local industry and providing employment opportunities. This railroad segment is important for the role it played in connecting the CM&StP to significant coal fields. As a resource, Iowa coal was a crucial power source to the railroads. Companies like the CM&StP built lines specifically to capture strategic coalfields. Passing through Ottumwa and traveling to the Missouri border this rail segment likely took advantage of the city's coal, stopping to refuel trains prior to journeying southwest towards Kansas City. Additionally, local farmers brought their crops and animals to the nearest railroad town to be shipped out by freight car to major collection points such as Chicago. To assist in this collection process, the CM&StP built grain elevators and warehouses along the company's tracks. As a result, millions of dollars' worth of livestock, grain, coal, iron, and other goods were funneled from the agrarian areas of southwest Iowa to the more industrialized East.

OEA anticipates that the planned capital improvements would have No Adverse Effect on C-LARE-01. The Applicants would construct new sidings adjacent to the existing rail line and within the existing rail ROW. Additional elements of the planned capital improvements may include the extension of contributing features spanning waterways and drainage systems. Although this construction would occur within the eligible National Register boundary of the resource, the effect would not be adverse. Existing sidings are already

integral to the operation of the railroad and the construction of new or extended sidings would be compatible with the historic use and character of this resource. The planned capital improvements would only physically impact less than nine miles of this 61.2-mile railroad segment, in two separate locations. Some individual historic features of the rail line segment may be impacted, for example, stone culverts or small timber trestles. However, the overarching character of the property would be unaffected due to the large number of similar contributing features throughout the railroad segments. The capital improvements would not alter the physical features of the property that make it eligible for the National Register in the areas of transportation. OEA expects that such changes would have no adverse effect on the historic rail line segment because they would support the continued use of the corridor for rail transportation and would therefore not diminish the characteristics of the property that makes it eligible for inclusion in the National Register under Criterion A.

J.5.1.6 K-PITT-01

Table J.5-5. K-PITT-01: Historic Railway Segment

Location	Kansas, Missouri
Associated Capital Improvement Location	Blue Valley and Grandview/IFG, Missouri
National Register Criteria	A
Significance	Regional
Area(s) of Significance	Commerce, Transportation

This is a 124.5-mile segment of the KCS rail line that travels south from Kansas City, Missouri, to Pittsburg, Kansas. The railroad segment passes through the communities of Kansas City, Grandview, Cleveland, Amoret, Hume, Richards, and Pittsburg. For much of its length the railroad segment travels through a rural agrarian landscape along the border between Kansas and Missouri. Built as the first segment of the KCP&G, this rail segment was the first link of what would develop into one of the most important north/south transportation routes in the United States. Extending to Pittsburg, Kansas, the railroad was connected to significant coalfields in Hume, Missouri, and Pittsburg. Additionally, as it expanded the KCP&G built tracks, depots, and other rail related infrastructure across the south, enabling the flow of agricultural products, oil, metals, chemicals, and people through the center of the country and southward.

The railroad segment is regionally significant under Criterion A in the areas of Transportation and Commerce. Built by railroad magnate Arthur Stilwell and his financial backers, this stretch of railroad was the first portion of what would become KCS, the first major land transportation corridor to link the Midwest and a port at the Gulf of Mexico. This particular railway segment connected Kansas City to major coal fields in Hume, Missouri, and Pittsburg, Kansas, providing the raw materials to run the new rolling stock, as well as providing the multiple small agrarian communities along the Kansas, Missouri border with their first opportunity to develop commercial agricultural instead of subsistence farming.

OEA anticipates that the planned capital improvements would have No Adverse Effect on K-PITT-01. The Applicants would construct new sidings adjacent to the existing rail line

and within the existing rail ROW. The capital improvement designs are only at a conceptual stage; however, direct, physical impacts may include the replacement or extension of structures spanning waterways and drainage systems. Although this construction would occur within the eligible National Register boundary of the resource, the overall impacts to the railroad would be minimal and would not constitute an adverse effect. Planned alterations to the railroad features would be within the existing ROW and would not result in a substantial visual change to the corridor. Existing sidings are already integral to the operation of the railroad. Therefore, the construction of new or extended sidings would be compatible with the historic use and character of this resource. Less than 10 miles of the nearly 125-mile segment would be physically impacted by the planned capital improvements. Some individual historic features of the rail line segment may be impacted, for example, stone culverts or small timber trestles. However, the overarching character of the property would be unaffected due to the large number of similar contributing features throughout the railroad segments. The capital improvements would not alter the physical features of the property that make it eligible for the National Register in the areas of transportation. OEA expects that such changes would have no adverse effect on the historic rail line segment because they would support the continued use of the corridor for rail transportation and would therefore not diminish the characteristics of the property that makes it eligible for inclusion in the National Register under Criterion A.

J.5.1.7 K-BEAU-01

Table J.5-6. K-BEAU-01: Historic Railway Segment

Location	Louisiana
Associated Capital Improvement Location	Mansfield and Loring, Louisiana
National Register Criteria	A
Significance	Regional
Area(s) of Significance	Commerce, Transportation

This property is a 91.4-mile segment of the KCS rail line that extends south from Frierson, Louisiana, to Leesville, Louisiana. The railroad segment travels through the towns of Frierson, Mansfield, Converse, Noble, Zwolle, Loring, Many, Hornbeck, and Leesville. Originally built in 1897 this portion of the railroad was originally part of the KCP&G. The railroad reached Shreveport, Louisiana, in March 1897 and by September of that same year the line had reached the Gulf coast. After the Civil War companies like KCP&G began to build trackage in Louisiana, and rural towns throughout the state relocated to take advantage of the developing railroad infrastructure. Louisiana railroads typically handled passengers, foodstuffs, and lumber, much of which was directed to major Gulf coast ports like New Orleans and Port Arthur, Texas.

The railroad segment is regionally significant under Criterion A in the areas of Transportation and Commerce. Built as one of the final portions of KCP&G this segment of the railroad played a major role in the ultimate fulfillment of the vision of a link between the Midwest and the Gulf of Mexico. The railroad, the first major line to pass through this section of Louisiana, enabled capitalists and investors to develop large scale farms and

timber operations in rural Louisiana. These operations took advantage of the railroad as a primary shipping corridor and would not have developed at this time without the opportunity provided by KCP&G.

OEA anticipates that the planned capital improvements would have No Adverse Effect on K-BEAU-01. The Applicants would construct new sidings adjacent to the existing rail line and within the existing rail ROW. Although this construction would occur within the eligible National Register boundary of the resource, the effect would not be adverse. Existing sidings are already integral to the operation of the railroad and the construction of new or extended sidings would be compatible with the historic use and character of this resource. Physical impacts resulting from the planned capital improvements would only occur along less than six miles of this nearly 92-mile segment, divided among two separate locations. Some individual historic features of the rail line segment may be impacted, for example, stone culverts or small timber trestles. However, the overarching character of the property would be unaffected due to the large number of similar contributing features throughout the railroad segments. The capital improvements would not alter the physical features of the property that make it eligible for the National Register in the areas of transportation. OEA expects that such changes would have no adverse effect on the historic rail line segment because they would support the continued use of the corridor for rail transportation and would therefore not diminish the characteristics of the property that makes it eligible for inclusion in the National Register under Criterion A.

J.5.1.8 K-BEAU-02

Table J.5-7. K-BEAU-02: Historic Railway Segment

Location	Louisiana
Associated Capital Improvement Location	Singer, Louisiana
National Register Criteria	A
Significance	Regional
Area(s) of Significance	Commerce, Transportation

This property is a 50.6-mile segment of the KCS rail line that travels south from Leesville, Louisiana, to De Quincy, Louisiana. The railroad segment travels through the towns of Leesville, Rosepine, Deridder, Singer, and De Quincy. Originally built in 1897, this portion of the railroad was originally part of the Kanas City, Pittsburg, and Gulf Railroad. The railroad reached Shreveport, Louisiana, in March 1897 and by September of that same year the line had reached the Gulf coast. After the Civil War, companies like the Kanas City, Pittsburg, and Gulf Railroad began to build trackage in Louisiana and rural towns throughout the state relocated to take advantage of the developing railroad infrastructure. Louisiana railroads typically handled passengers, foodstuffs, and lumber, much of which was directed to major Gulf coast ports like New Orleans and Port Arthur, Texas.

The railroad segment is regionally significant under Criterion A in the areas of Transportation and Commerce. Built as one of the final portions of the KCP&G, this segment of the railroad helped to facilitate the movement of people and goods throughout this rural segment of Louisiana. The towns built along KCP&G's tracks benefitted from the

railroad which provided jobs and encouraged merchants to open shops in the communities. The railroad, the first major line to pass through this section of Louisiana, also enabled capitalists and investors to develop large scale farms and timber operations. These operations took advantage of the railroad as a primary shipping corridor.

OEA anticipates that the planned capital improvement would have No Adverse Effect on K-BEAU-02. The Applicants would construct new sidings adjacent to the existing rail line and within the existing rail ROW. Although this construction would occur within the eligible National Register boundary of the resource, the effect would not be adverse. Existing sidings are already integral to the operation of the railroad and the construction of new or extended sidings would be compatible with the historic use and character of this resource. Physical impacts resulting from the planned capital improvement would be limited to less than three miles of the nearly 51 miles comprising this segment. Some individual historic features of the rail line segment may be impacted, for example, stone culverts or small timber trestles. However, the overarching character of the property would be unaffected due to the large number of similar contributing features throughout the railroad segments. The capital improvement would not alter the physical features of the property that make it eligible for the National Register in the areas of transportation. OEA expects that such changes would have no adverse effect on the historic rail line segment because they would support the continued use of the corridor for rail transportation and would therefore not diminish the characteristics of the property that makes it eligible for inclusion in the National Register under Criterion A.

J.5.1.9 IA-CA-001

Table J.5-8. IA-CA-001: Water Treatment Plant

Location	1901 Beaver Channel Parkway, Clinton, Iowa
Property Type	Utility Building
Temporal Association	1958
Associated Railroad	Chicago, Rock Island, & Pacific
Associated Capital Improvement Location	Camanche
National Register Criteria	A and C
Significance	Local
Area(s) of Significance	Industry, Community Planning, Architecture

The former City of Clinton Water Pollution Control Plant was constructed in 1958 and expanded into the late twentieth century. It was largely displaced in 2013 when a new regional facility opened, but a pump station on the property is still in use during periods of high-water flows. The property is considered eligible for the National Register under Criterion A for its development as a critical public utility to serve the post-WWII residential, industrial, and commercial growth in the region. The property is also considered eligible under Criterion C as a good example of a mid-twentieth century industrial complex. The Central Administration Building has very distinctive elements of the International Style on its northeast wing, which features a bank of floor-to-ceiling aluminum casement windows with spandrels across its entire front elevation, while other elevations exhibit brick veneer.

The use of these materials and the mid-century aesthetic carry over into other, secondary buildings in the complex developed through the end of the century, including an additional building as well as circular and rectangular holding tanks, a salt storage shed, and gabled equipment sheds. The complex retains integrity of location and setting in this industrial area, supplemented by integrity of association with regional industry and infrastructure. The two main buildings are well-preserved with intact materials, resulting in integrity of materials, design, workmanship, and feeling.

The Proposed Acquisition would result in No Adverse Effect to this property. The complex is approximately 290 feet south of the rail ROW, and no direct, physical impacts are anticipated. The planned capital improvement would be consistent with the existing size and scale of the existing rail infrastructure, and no visual impacts are anticipated in this already highly industrial setting.

J.5.1.10 LA-MA-004

Table J.5-9. LA-MA-004

Location	270 Holley Hill Drive, Mansfield, Louisiana
Property Type	Ranch House
Temporal Association	ca.1965
Associated Railroad	KCS
Associated Capital Improvement Location	Mansfield
National Register Criteria	C
Significance	Local
Area(s) of Significance	Architecture

This residential property consists of a Ranch house constructed during the 1960s. It is set back from Holley Hill Road within a wooded setting of conifer trees; the rail ROW is approximately 175 feet east, on the other side of Holley Hill Road. The property is considered eligible for the National Register under Criterion C. It is a well-preserved example of a mid-to-late twentieth century Ranch house, retaining its one-story form with a sense of horizontality emphasized by the wide, overhanging eaves. Original features and materials include characteristic brick veneer, cast iron porch supports, aluminum sash windows, and an integrated carport. In addition to integrity of design, materials, and workmanship, the house retains integrity of location, feeling, and setting as a residential property set along a rural route but sheltered by several trees.

The Proposed Acquisition would result in No Adverse Effect to this historic property. Construction would result in no direct, physical impacts to the property. As its historic significance is associated with Criterion C, the key characteristics that convey that significance are associated with its form, plan, and materials. However, the property is also removed at a distance from the rail ROW and visibility of the ROW is limited due to the wooded setting. The planned capital improvement would be consistent with the existing rail infrastructure and would not introduce an incongruous visual element.

J.5.1.11 LA-MA-009

Table J.5-10. LA-MA-009

Location	12669 LA Highway 175, Mansfield, Louisiana
Property Type	Ranch House
Temporal Association	ca. 1965
Associated Railroad	KCS
Associated Capital Improvement Location	Mansfield
National Register Criteria	C
Significance	Local
Area(s) of Significance	Architecture

This property consists of a Ranch house dating from the 1960s, with an appreciable setback from the road. The rail ROW is located approximately 250 feet away, running along the opposite side of the roadway. It is eligible under Criterion C as a good representative example of this residential building type, with a form and extant materials specifically associated with the time period of construction. Distinctive features include an asymmetrical plan, integrated carport, and a long, horizontal massing; despite a cross-gabled roofline, the shallow roof slope and deep overhanging eaves emphasize the horizontal axis and keep it low to the ground. Characteristic extant materials include a combination of exterior cladding, consisting of board and batten siding and brick veneer. As a result, the property retains a high degree of integrity of materials, design, and workmanship, as well as integrity of location, feeling, and setting associated with the siting of the house within a wooded lot set back from the road.

The planned capital improvement would result in No Adverse Effect to this property, as no impacts are anticipated that would alter the qualities that make the property eligible for the National Register. The Proposed Acquisition would not result in direct physical impacts to the property. The Ranch house's historic significance is primarily derived from its high degree of intact original features and materials, as well as the immediately surrounding wooded landscape. A rather dense concentration of trees on the property and large setback limits visibility of the rail ROW, which is further impeded by the intervening LA Highway 175. Therefore, the Proposed Acquisition would not introduce a visual element that is incompatible with the setting of the property.

J.5.1.12 MO-GO-004

Table J.5-11. MO-GO-004: Mitchell Cemetery

Location	Blackstock Lane, Goodman, Missouri
Property Type	Cemetery
Temporal Association	Mid-19th Century
Associated Railroad	KCS
Associated Capital Improvement Location	Goodman (MP186)

National Register Criteria	A
Significance	Local
Area(s) of Significance	Exploration/Settlement

This approximately 0.85-acre cemetery is located 195 feet west of the rail ROW, with a gently rolling landscape and a partial border of black walnut and oak trees. The cemetery is eligible under Criterion A for its association with the nineteenth century settlement and community development in the region. Grave markers exhibit various forms and materials, including tablets and flush markers of marble, granite, and bronze. They are mostly arranged in a linear fashion with occasional family plots set off by curbing. Engravings indicate dates between 1864 and the late 1980s; approximately 97% of the burials are over 50 years old. With respect to Criteria Consideration D, burials in the cemetery are associated with some of the earliest European settlers of the area and their families, granting historic significance as part of early settlement of Goodman. The cemetery has integrity of location, setting, and association due to its continued use through the late twentieth century. Headstones of various materials exhibit designs incorporating burial and organizational symbols and appear to be in their original configuration, with a high degree of integrity of design, materials, and workmanship.

The Proposed Acquisition would result in No Adverse Effect to this historic property. The rail ROW is located 195 feet east of the cemetery and there would be no direct physical impacts. Its significance under Criterion A is associated with the early European settlement families represented by the burials and the surrounding setting is not one of the key characteristics that make the cemetery eligible for the National Register. That said, the planned new capital improvement would be in keeping with the existing rail ROW infrastructure and would not result in visual impacts to the property.

J.5.1.13 OK-HE-027

Table J.5-12. OK-HE-027, Oil Branch Channel through Downtown Heavener, Oklahoma

Location	Heavener, Oklahoma
Property Type	WPA Structure, OK Landmarks inventory 96399
Associated Railroad	KCS
Associated Capital Improvement Location	Heavener
National Register Criteria	A and C
Significance	Local
Area(s) of Significance	Social History, Engineering

The Oil Branch flows within a 0.9-mile stone-lined drainage channel through downtown Heavener. At the south end of downtown, the channel runs adjacent to the rail ROW at the bottom of a slope on the east side, ending approximately 260 feet south of Avenue I. The structure is eligible for the National Register under Criteria A and C. Constructed in 1939, the Oil Branch channel was a Works Progress Administration (WPA) project and is individually significant within the context of New Deal-era WPA infrastructure

improvement projects completed in the region. Under Criterion C, the channel is a particularly good example of its type, period, method of construction, and use of local materials. Its walls are constructed of wet laid native Oklahoma sandstone cut into long, rough-hewn blocks. The walls range from four to eight feet in height. At the base of the walls, the last courses step down to the bottom of the channel, which is also lined with native Oklahoma sandstone pavers. The channel retains its original form and function.

The Proposed Acquisition would result in No Adverse Effect to this historic property. Approximately 0.1 miles of the channel is located in the APE, and nearly the entire length of this section occurs outside the construction area, making visual impacts the only potential effect for much of its extent. The planned capital improvement would be located within the existing rail ROW on the berm upslope of the channel, adjacent to the main line track. The project would be designed and constructed so as to avoid any physical impact to the Oil Branch Drainage Channel. The south portion of the Oil Branch channel was purpose-built proximate to the rail ROW, and previous siding construction in the area has avoided physical effects to the resource~~likely to concentrate infrastructure for minimum impact~~. The planned capital improvement would not introduce any elements that would alter the setting or the historic property's~~its~~ significance as a WPA improvement project, resulting in no visual impact.

J.5.2 Below-Ground Resources

J.5.2.1 34AD283

Table J.5-13. 34AD283

Location	Oklahoma
Property Type	Late Archaic/Eastern Woodland Lithic Scatter
Associated Railroad	KCS
Associated Capital Improvement Location	Baron/MP 247
National Register Criteria	D

Site 34AD283 is a horizontally expansive scatter of lithic tools and debitage identified through the subsurface recovery of approximately 80 non-diagnostic Keokuk, John's Valley Gravel, Boone, and Reed Springs chert artifacts of mostly debitage, and 3 PP/K fragments (distal and proximal halves) from 14 positive shovel tests. Site 34AD283 is located on a well-defined, elevated terrace to the west of a river. The landform on which the site is located rises approximately 1.5 to 2 meters above the existing railroad bed which is located to the east down a 20-degree slope. Current conditions suggest that excavation for, and subsequent construction of the railroad during the late nineteenth century cut directly through the landform. The site measures approximately 162 meters in length northeast to southwest and is approximately 9 meters wide northwest to southeast. Elevations across the site are a flat 307 meters above mean sea level (amsl). Vegetation encountered within the site consisted of grass and shrub. Ground surface visibility was moderate to poor. The western edge of the ROW in this area was bounded by an existing fence line.

Shovel testing within the site boundaries generally encountered deep soils. A typical shovel test excavated within the boundaries of 34AD283 was characterized by dark brown (10YR3/3) silty clay loam from 0 to 40 cmbs (Stratum I), underlain by a layer of strong brown (7.5YR 5/6) silty clay loam from 40 to 80 cmbs (Stratum II), followed by a layer of strong brown (7.5YR 5/8) clay from 80 to 85 cmbs (Stratum III). Impenetrable gravel and compacted cobble prevented further examination of the underlying strata at depths below 85 cmbs.

The site was initially identified through the surface recovery of the partial distal end of a PP/K. Altogether, Phase I survey at 34AD283 recovered an artifact assemblage consisting of 83 artifacts (Table 7). The site and resulting assemblage can be characterized as a large horizontal scatter of lithic material with a primary deposit (n=65) located between 0 and ~40-50 cmbs, within the identified A horizon soil layer (i.e., Stratum I). All of the recovered artifacts from this stratum consisted of primary, secondary, and tertiary lithic flakes, all of which are waste resulting from lithic tool manufacturing and refining activities. A few of these flakes show evidence of thermal alteration. A secondary, or underlying, deposit at 34AD283 is located within Stratum II and Stratum III between 40 and 85 cmbs. Like the lithics recovered from Stratum I, lithics recovered from Stratum II also showed evidence of being thermally altered.

Three diagnostic artifacts were recovered from 34AD283. Two of the three PP/Ks are most similar in form to the contracting stemmed Standlee tradition which dates from the Late Archaic to Early Woodland transitional period (ca. 200 B.C. – 400 AD). One of the two Standlee PP/K fragments was collected from the surface, while the other was recovered between 50 and 80 cmbs. This most likely implies the surface find was displaced from its original context, perhaps resulting from the historic development of the railroad corridor adjacent to the site area. The other fragmentary PP/K (partial distal end fragment) is corner notched and most probably a Kings or Patterson Springs PP/K, which dates from the Late Archaic period (ca.2000 – 1000 B.C.). The Kings/Patterson Springs PP/K was the deepest artifact recovered from survey and was recovered within the matrix of Stratum III (i.e., 80 to 85 cmbs).

The identified depositional strata at 34AD283 were observed to be relatively uniform in soil consistency with little to moderate cobble inclusions. Fragments of FCR were noted in the site's fill matrix but were not collected. It does not appear that atop the preserved landform, west of the railroad berm and ballast, that the deposit at 34AD283 has been disturbed by prior land use activities, whether by prior railroad construction or agricultural activity. There is suggested evidence that a portion of the site has been disturbed nearby and deposited material at the surface. No modern or historic material was recovered during subsurface examination at the site which indicates that the landform to the northwest of the railroad berm and ballast is intact.

The site was delineated within the APE and remains undefined outside of the APE. Artifact frequency averaged approximately 6 lithic artifacts per shovel test with an overall average artifact density (non-volumetric) per of .05 artifacts/m2. Although no subsurface features were identified, the presence of thermally altered chert in the assemblage and the observed presence of FCR within the strata suggest that heat treating activities took place at 34AD283, and that features are likely to be identified through additional testing. The

absolute representation of lithic debitage and fragmentary lithic tools in the assemblage points to this site dating to a time before ceramics were in widespread use. The deficiency in ceramics indicates that a preceramic phase of the Archaic. Diagnostic artifact recovery suggests an occupation dating from the Late Archaic to Early Woodland transitional period. The soil matrices and differences in lithic assemblage may be indicative of a stratified occupation, where different traditions or peoples inhabited the same landform non-sequentially. In the case of 34AD283, this may be indicated by the presence of a probable Late Archaic form at the lowest and earliest level, followed by a transitional Late Archaic to Early Woodland occupation. Further understanding the interface between these strata at the Phase II level would provide clarification on whether the deposit is stratified. Furthermore, additional testing may provide additional context on how precontact peoples occupying 34AD283 may have exploited their environment for tools.

The overlying lithic debitage component, identified between approximately 0 to 40 centimeters below surface (cmbs), lacks intact temporal diagnostics which could definitively date the overlying habitation. Although a PP/K was recovered from the surface, the lack of depositional information associated with this artifact makes it find context unknown and unreliable. The underlying strata from 40 to 85 cmbs is undisturbed, contains diagnostic artifacts, evidence of feature activity, and concentrations most likely show discrete activity/functional use areas within the identified portion of the site. The identified deposit at 34AD283 appears to retain good integrity of location, materials, design, and association. The site could potentially yield valuable data regarding our understanding of lithic tool manufacturing, resource procurement activities, subsistence, and potentially seasonal exploitation of landforms adjacent to riverine features. The expansive size of the site also suggests that the habitation(s) may not have been ephemeral and may have been the result of longer-term occupations. Long-term precontact habitations have the ability to better inform our understanding of Archaic period lifeways and 34AD283 may be a good example of this type of site. Therefore, within the APE, 34AD283 retains good integrity and has significant data potential under Criterion D and is recommended eligible for the National Register. The Oklahoma SHPO has concluded that more information is required to confirm the overall site's eligibility but agrees that the site should be avoided during implementation of planned capital improvements. The Applicants have clarified that they intend to design the planned capital improvements so as to maintain the existing rail footprint (such as, that does not expand the existing rail footprint between the current toe of slope of the railroad ballast or embankment on each side of the existing tracks) in locations immediately adjacent to National Register-eligible sites, such as 34AD283, and that they would not conduct any construction activities within the boundaries of such sites. Therefore, the Proposed Acquisition would have No Adverse Effect on the significant and eligible deposits associated with 34AD283.

J.5.2.2 34AD286

Table J.5-14. 34AD286

Location	Oklahoma
Property Type	Archaic Lithic Scatter
Associated Railroad	KCS

Associated Capital Improvement Location	Baron/MP 247
National Register Criteria	D

Site 34AD286 is a moderately dense lithic artifact scatter that measures roughly 52 meters in length (northeast/southwest) and 14 meters in width. Existing conditions encountered onsite consist of a sparse hardwood overstory of elm and oak with undergrowth of grass and brush. Observed surface visibility was poor (<25 percent). The site was identified atop a flat terrace. Elevations across the known site area are a flat 299 meters amsl.

Delineation shovel testing of the site occurred in 5- and 10-meter intervals in areas of the APE that demonstrated natural ground surface. The railroad berm was covered in dense gravel ballast and prohibited subsurface examination. Artifacts recovered during the Phase I survey were identified from just below the ground surface to depths over 1 meter. Positive shovel tests were augured to sterile subsoils, which were reached around 110 cmbs. Artifacts were recovered from depths as deep as 110 cmbs and were recovered just above Pleistocene sediments. A typical shovel test was characterized by dark brown (10YR3/3) silty clay loam from 0 to 35 cmbs (Stratum I), underlain by a brown (10YR 5/3) silty clay loam from 35 to 60 cmbs (Stratum II), underlain by brown clay (10YR 4/3) from 60 to 90 cmbs (Stratum III). Below this layer was a strong brown (7.5YR5/8) compacted and gravelly clay from 90 to 160 cmbs (Stratum IV). Culturally sterile soils were encountered below 110 cmbs.

The site was identified through the excavation of eight positive shovel tests containing 108 lithic artifacts. The artifacts recovered consist of primary, secondary, and tertiary flake fragments, and a chert core; some of which show evidence of thermal alteration. Chert types recovered include Keokuk, John's Valley Gravels, Boone, and Reed's Springs varieties. No diagnostic artifacts were recovered during survey. Among the sites identified during the current survey of the MP 247 capital improvement location, 34AD286 demonstrated the highest average of artifacts per positive at 13.5 lithics per shovel test. Spatially, there is little horizontal diffusion across the site with an average artifact density of 0.16 artifacts/m2.

The depths at which artifacts were recovered indicate the strong potential for 34AD286 to date to either the Paleoindian or Early Archaic periods. As these periods coincide with the onset of the Holocene, 34AD286 may be indicative of very early human activity in the region. As a whole, Adair County has not seen very much archaeological survey, and as a result, precontact sites are not well known or frequently recorded. Judging by the number of sites identified during the current survey of the MP 247 capital improvement location, it is more appropriate to state that the lack of overall survey in the region has led to an underrepresentation of archaeological components and sites in the County. The deeply buried nature of the deposit implies that potentially dynamic geomorphological processes may have been involved during site formation. In these types of instances and settings, site formation (post occupation) could have occurred quickly. The result of these fast sedimentation actions can bury cultural deposits in discrete lens of soil, which provide archaeological data snapshots of specific time periods. In this regard, 34AD286 retains good integrity of location. The overall density and frequency of the artifact deposit indicates that substantial lithic refinement took place in a horizontally discrete area, and it is possible (with a higher probability than elsewhere along MP 247) that features related to heat treating

may exist in-situ. These factors imply that the site retains good integrity of design. These data sets may in turn be associated with answering questions related to human occupation, movement, and subsistence strategies during the Paleoindian or Archaic periods, which imply the data sets retain good integrity of association. The identified portion of 34AD286 within the APE demonstrates good integrity and has significant data potential related to our understanding of how people interacted with their environment during the Paleoindian and Early Archaic periods (ca. 12000 B.C. – 3050 B.C.). Therefore, 34AD286 is recommended eligible for the National Register under Criterion D. The Oklahoma SHPO has concluded that more information is required to confirm the overall site's eligibility but agrees that the site should be avoided during implementation of planned capital improvements. The Applicants have clarified that they intend to design the planned capital improvement so as to maintains the existing rail footprint (i.e., that does not expand the existing rail footprint between the current toe of slope of the railroad ballast or embankment on each side of the existing tracks) in locations immediately adjacent to National Register-eligible sites, such as 34AD286, and that they would not conduct any construction activities within the boundaries of such sites. Therefore, the Proposed Acquisition would have No Adverse Effect on the significant and eligible deposits associated with 34AD286.

J.6 Conclusion

The Proposed Acquisition would not adversely affect the 13~~6~~ above-ground National Register-eligible historic properties that OEA identified because it would not result in any physical impacts to the properties; change the character of the properties' use or of physical features within the properties' setting that contribute to their historic significance; or introduce visual, atmospheric or audible elements that would diminish the integrity of the properties' significant historic features. The Applicants have committed to avoiding physical effects to the Oil Branch Drainage Channel, a portion of which is located within the railroad ROW. Although two National Register-eligible archaeological sites are located within the APE at the planned capital improvement at MP 247 near Baron, the Applicants have clarified that the planned capital improvement would be located within the current limits of the rail line footprint in the areas adjacent to National Register-eligible archaeological sites and that no construction activities would take place within the limits of the sites. Therefore, the planned capital improvement would not physically affect any eligible below ground resources. In addition, OEA is recommending that the Board impose mitigation requiring the Applicants to develop and implement an unanticipated discoveries plan and archaeological monitoring plan for the planned capital improvements, in consultation with consulting parties.

Attachments

Attachment 1~~A~~- Historic Railroad Segments

Attachment 2~~B~~- Arkansas

Attachment 3~~C~~- Illinois

Attachment 4~~D~~- Iowa

Attachment 5~~E~~- Louisiana

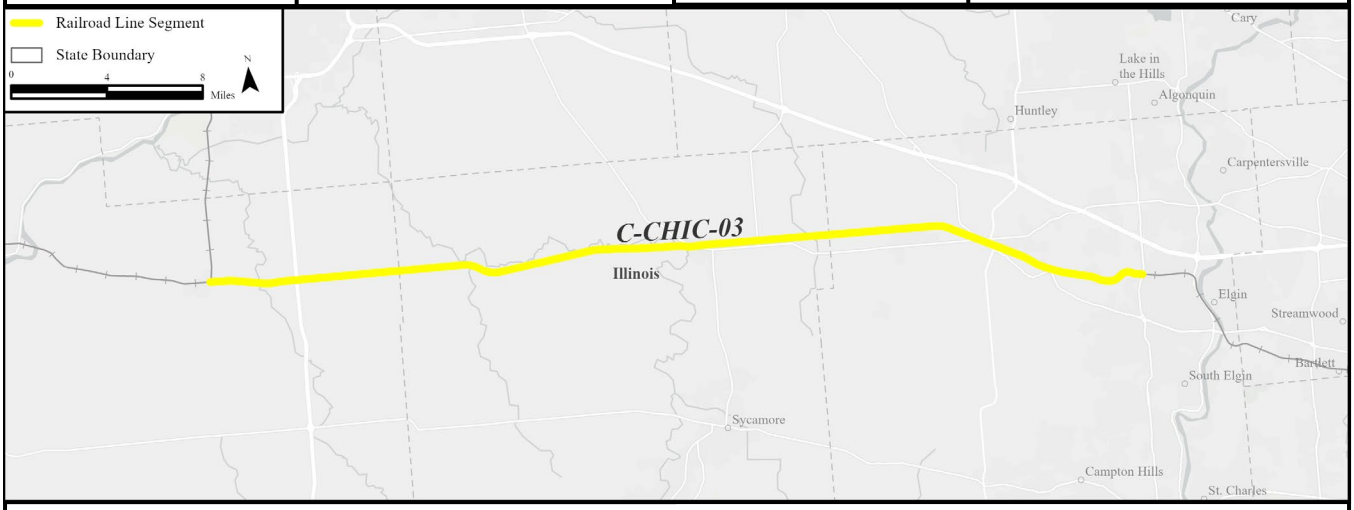
Attachment 6~~F~~- Missouri

Attachment 7~~G~~- Oklahoma

Attachment 8~~H~~ - Maps

Appendix J – Attachment 1: Historic Railroad Segments

Resource ID:	C-CHIC-03	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Randall Road to Davis Junction, IL



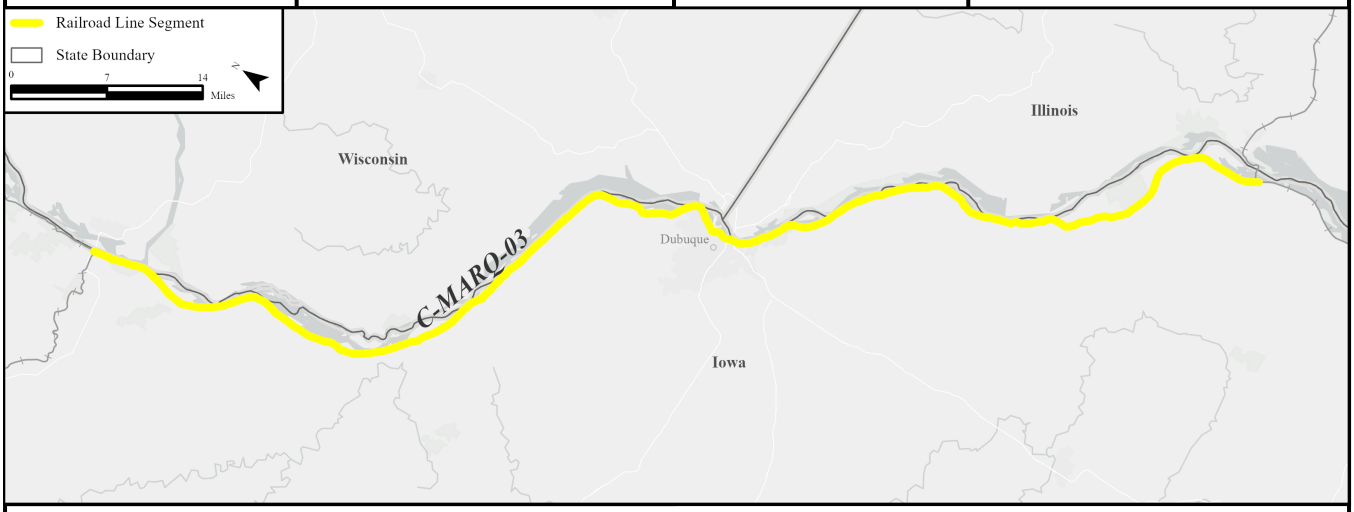
Description: The property is a 38.7-mile segment of the Canadian Pacific Railway that stretches from Randall Road, Illinois to Davis Junction, Illinois. The railroad segment travels in a general westerly direction and passes through small communities such as Genoa, Kingston, Kirkland, Fairdale, Monroe Center, and Davis Junction. Surrounding these settlements is an agrarian landscape of farmland and fields. Capital improvements are planned around Monroe Center. The railroad segment remains in active use and has typical features such as steel rail, wooden ties, grade crossings, culverts, bridges, and signaling equipment.

National Register Evaluation: This rail segment is recommended **not eligible** for listing in the National Register. Originally constructed between 1873 and 1876 as part of the Chicago Milwaukee & St. Paul Railroad (CM&StP), the tracks through Ogle County connected small communities like Monroe Center to regional commercial hubs like Chicago. Maps of Monroe Center show that by 1912 the community had a train depot, creamery, and other buildings to store agricultural products that would be later shipped to Chicago. This line was not the first railroad to pass through Ogle County. Lines such as the Illinois Central Railroad, and the Chicago and Northwestern Railroad were established during the 1850s. These were the first lines to provide freight and passenger service to residents of Ogle County. The CM&StP Railroad segment passing through Ogle County was a secondary line that connected small rural communities, supplementing already extant rail services. The railroad segment was evaluated for significance under **Criterion A** in Transportation and Commerce. This railroad segment travels through a lightly populated rural landscape and provided duplicate services to the already existing railroads of Ogle County. None of the communities the railroad segment passed through grew into significant settlements due to the railroad's presence, though historic maps show agricultural buildings such as creameries and grain elevators near the railroad's depots. Based on its impact in rural Ogle County this segment of Railroad does not possess significance under Criterion A. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** Detailed survey was undertaken within the APE in the vicinity of Monroe Center along a 2.53-mile section of this 37.7-mile-long segment of railroad. Within the APE, the railroad retains its engineered grade, alignment, track, culverts, access roads, and grade crossings. The original second track was removed in the late 20th century. Since the APE contains only a small portion of the overall 37.7-mile long rail line segment, the overall segment has not been surveyed in detail and no determination about the overall segment under Criterion C can be made at this time, and the National Register eligibility of this resource under Criterion C is unknown. **Criterion D**: This railroad segment does not appear to have the potential to yield further important information or data.

Resource ID:	C-CHIC-03	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Randall Road to Davis Junction, IL

Integrity: The CM&StP corridor segment between Randall Road, Illinois and Davis Junction, Illinois, retains integrity of location, design, materials, workmanship, feeling, and association. Though trackage loss has occurred, the railroad segment remains in operation within its historic footprint. The railroad corridor retains its association and feeling with railroad transit and freight transportation. Though maintenance and upgrades along the line have resulted in the loss or alteration of several individual features such as bridges, tracks, culverts, stations, and depot buildings, when features were replaced, they were often similar in size, scale, and materials to the original features. The workmanship and design of this railroad segment has also been largely maintained. The segment's setting is also generally intact with the railroad passing through a rural landscape in northern Illinois.

Resource ID:	C-MARQ-03	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Sabula to Marquette, IA



Description: This property is a 98-mile railroad segment which travels in a northerly direction and stretches between Sabula and Marquette, Iowa. The railroad segment parallels the Mississippi River and passes through the communities of Sabula, Bellevue, Dubuque, Guttenberg, and Marquette. The landscape outside of these communities is largely rural and consists of protected Mississippi River shoreline and farmland. Capital improvements are planned in the vicinity of Bellevue and Guttenberg. The railroad segment remains in active use by the Canadian Pacific Railway and has typical features such as steel rail, wooden ties, grade crossings, culverts, bridges, and signaling equipment.

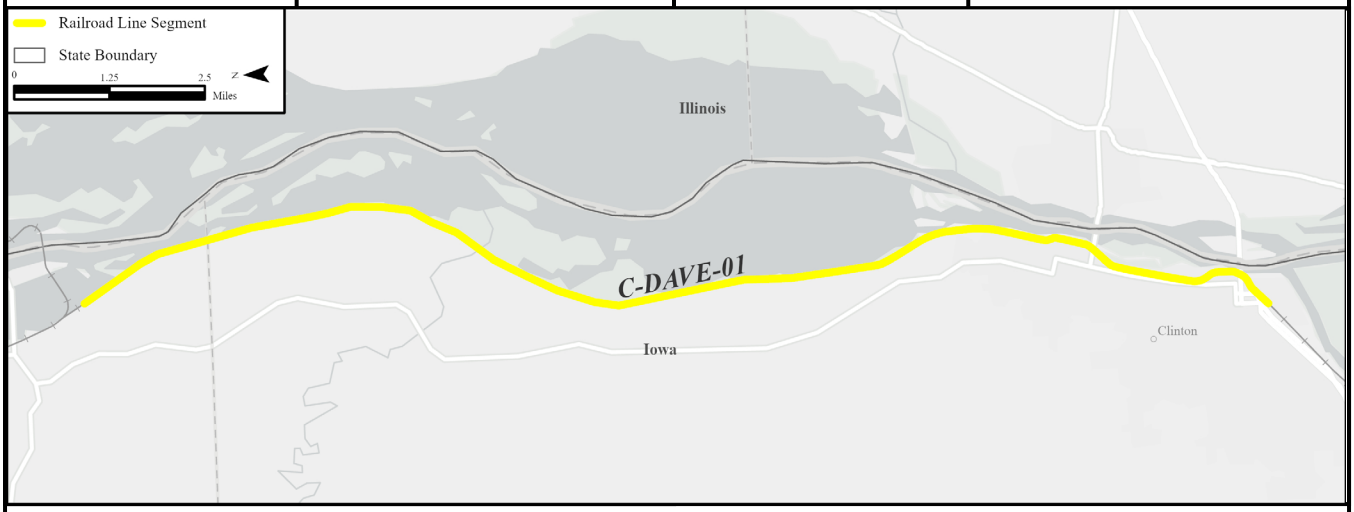
National Register Evaluation: This rail segment is recommended **eligible** for listing in the National Register. This segment of railroad was originally constructed circa 1872 as part of the Chicago, Dubuque and Minnesota Railroad (north of Dubuque) and the Clinton and Dubuque Railroad (from Dubuque to Sabula). In 1878, these companies combined to form the Chicago, Clinton, Dubuque and Minnesota Railroad, which the Chicago, Milwaukee & St. Paul Railroad purchased in 1880. Under the ownership of the latter, this line was a secondary trackage connecting riverport towns like Sabula, Bellevue, and Guttenberg to the greater Chicago, Milwaukee, and St. Paul Railroad (CM&StP) network. Sanborn maps from Bellevue, Guttenberg, and Sabula each show that soon after the CM&StP's arrival industrial buildings were built in each town to take advantage of the railroad. The 1893 Sanborns show a major slaughterhouse in Sabula while Sanborns from 1886 show Guttenberg with major lumber yards and grain elevators all with access to the railroad. By 1914 Bellevue possessed similar agricultural infrastructure as well as lumber mills, machine shops, and a piano factory. The railroad segment is regionally significant under **Criterion A:** in Transportation and Commerce. Although this segment of railroad travels through towns that were well established prior to the widespread construction of railroads in Iowa, maps from the mid-19th century show Guttenberg, Sabula, and Bellevue as highly developed communities with industrial buildings oriented towards the Mississippi River, at that time an important transportation corridor and an important log shipping way. After the arrival of the railroad, river commerce remained an important part of the region's economy; however, by the late 19th century industrial development in Guttenberg, Bellevue, and Sabula had migrated closer to the CM&StP's tracks, highlighting the shift of industry from river-based transportation to rail-based transit. In Guttenberg, stacked lumber lined the CM&StP's tracks and while major sawmills such as Zimmerman and Ives maintained their riverfront mills, they used the railroad to ship their products.

Resource ID:	C-MARQ-03	Resource Type:	Above-Ground
Inventory Number:	TBD	Potential Effect:	Direct/ Physical
Previous Documentation:	N/A	Location:	Sabula to Marquette, IA

National Register Evaluation (con't): In Bellevue, Sanborn maps show a near identical arrangement of trackside lumber ready for shipment, having been produced at water powered sawmills along the Mississippi and nearby Mill Creek. Bellevue also had a large stockyard, which would have been important for residents of rural Jackson County. For farmers, driving their animals and crops to the railroad stops in Sabula, Guttenberg, Bellevue, and Dubuque was critical to their livelihoods. Without a rail connection it was impossible for farmers to raise crops or animals on a large scale. To make the change from subsistence farming and local trade to commercial farming, farmers needed a national market; access to that market in Jackson, Dubuque, and Clayton Counties was supplied by the CM&StP. Dubuque drew additional benefits from the CM&StP when in 1880 the railroad opened a large repair shop in the city. The CM&StP's shops employed over 800 men by 1900, many of them German immigrants and the company's shops covered fifty acres of land within Dubuque. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** Detailed survey was undertaken within the APE along a 2.70-mile section of this 98-mile-long segment of railroad near Guttenberg. A similar 2.07-mile segment was examined near Bellevue. Within the APE, the railroad retains its engineered grade, alignment, tracks, bridges, culverts, and grade crossings. Since the APE contains only a small portion of the overall 98-mile long rail segment, the overall segment has not been surveyed in detail and no determination about the overall segment under Criterion C can be made at this time. **Criterion D**: This railroad segment does not appear to have the potential to yield further important information or data.

Integrity: The CM&StP corridor segment between Sabula and Marquette, Iowa retains integrity of location, design, materials, workmanship, feeling, and association. The railroad segment remains in operation within its historic footprint, and the corridor retains its association and feeling with railroad transit and freight transportation. Though maintenance and upgrades along the line have resulted in the loss or alteration of several individual features such as bridges, tracks, culverts, stations, and depot buildings, when structures were replaced, they were often similar in size, scale, and materials to the original features. The workmanship and design of this railroad corridor segment has also been largely maintained. The segment's setting is also generally intact with the railroad passing through a rural landscape interspersed with river towns situated along the Mississippi River .

Resource ID:	C-DAVE-01	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Sabula to Clinton, IA

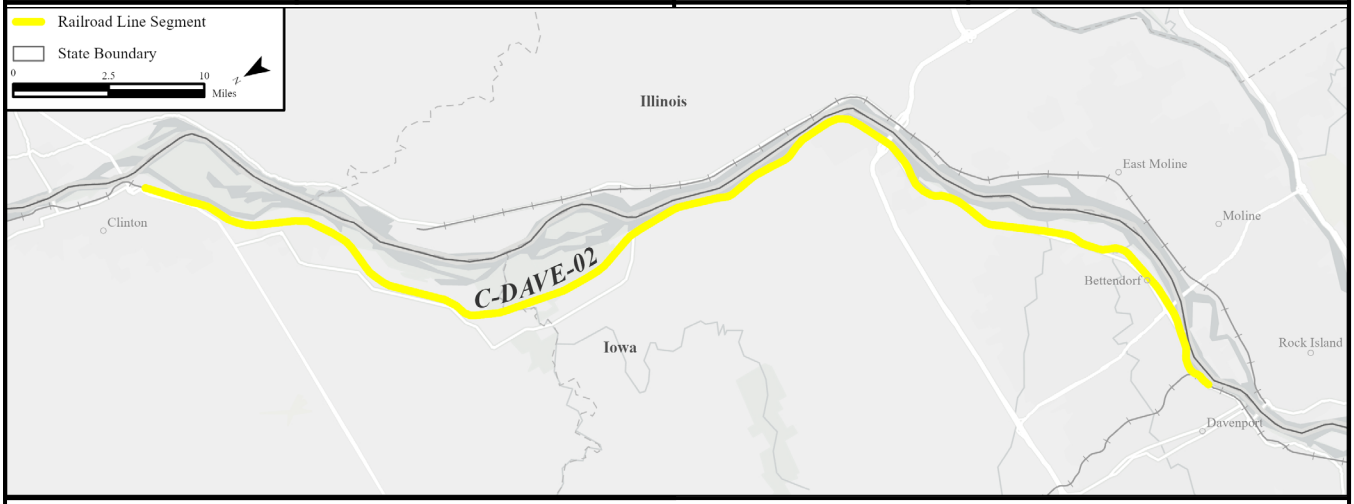


Description: The property is a 17.5-mile segment of the Canadian Pacific Railway that stretches from the northern outskirts of Clinton, Iowa to Sabula, Iowa. The rail segment travels generally north and traverses a rural landscape between these two cities along the western bank of the Mississippi River. Capital improvements are planned on a partial segment between the two cities. The railroad segment remains in active use and has typical features such as steel rail, wooden ties, grade crossings, culverts, bridges, and signaling equipment.

National Register Evaluation: This rail segment is recommended **not eligible** for listing in the National Register. Developed after the initial flurry of railroad construction which followed the construction of the Clinton Railroad Bridge, this railroad segment was a secondary line, connecting riverport towns like Sabula and Bellevue to the greater Chicago, Milwaukee, and St. Paul Railroad (CM&StP) network. The railroad segment was evaluated for significance under **Criterion A** in Transportation and Commerce. This segment of railroad travels through a rural landscape; no settlements were developed to take advantage of the railroad's passage between Clinton and Sabula, and the rail segment did not itself generate commercial activity within this specific region. Though the segment was part of the CM&StP, it was a secondary line built during the late 1860s and 1870s. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** Detailed survey only occurred for 1.18-miles of this 17.5-mile-long segment of railroad. Within the APE, the railroad retains its engineered grade, alignment, tracks, culverts, and bridges. Since the APE contains only a small portion of the overall 17.5-mile long rail line segment, the overall segment has not been surveyed in detail and no determination about the overall segment under Criterion C can be made at this time. **Criterion D**: This railroad segment does not appear to have the potential to yield further important information or data.

Integrity: The CM&StP corridor segment between Clinton and Sabula, Iowa retains integrity of location, design, materials, workmanship, feeling, and association. The railroad segment remains in operation within its historic footprint, and the corridor retains its association and feeling with railroad transit and freight transportation. Though maintenance and upgrades along the line have resulted in the loss or alteration of several individual features such as bridges, tracks, culverts, stations, and depot buildings, when structures were replaced, they were often similar in size, scale, and materials to the original features. The workmanship and design of this railroad segment has also been largely maintained. The segment's setting is also generally intact with the railroad passing through a rural landscape along the Mississippi River.

Resource ID:	C-DAVE-02	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Clinton to Water Works, IA



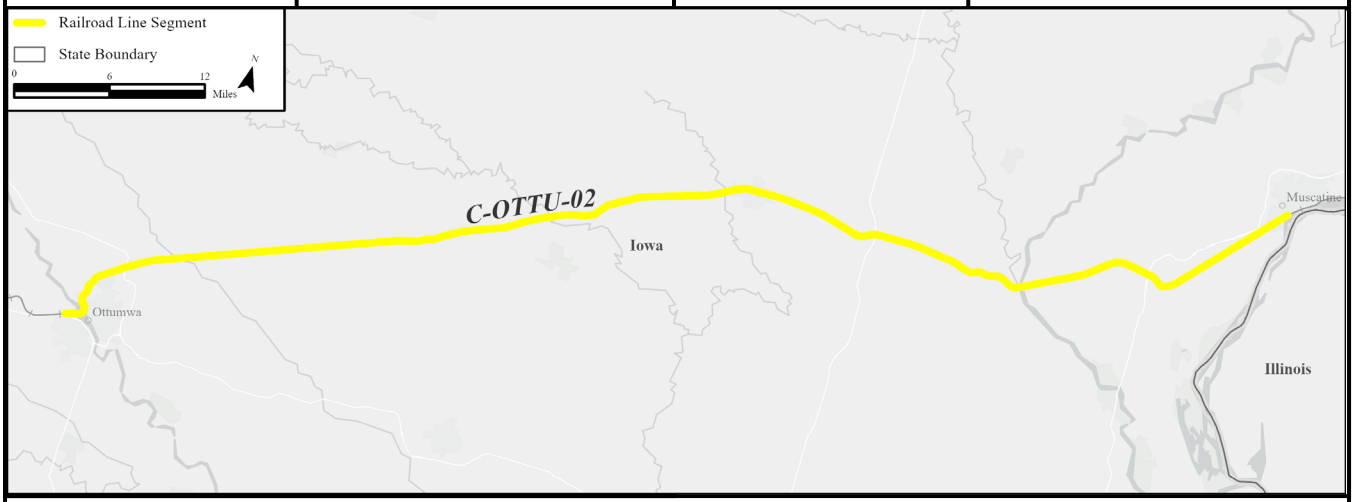
Description: This property is a 33.2-mile railroad segment that travels in a northeasterly direction and stretches between Camanche and Clinton, Iowa. This railroad segment is located on the banks of the Mississippi River while the surrounding landscape consists of a mix of residential properties, commercial buildings, and heavy industry. Capital improvements are planned in the vicinity of Camanche and Clinton. The railroad segment remains in active use by the Canadian Pacific Railway and has typical features such as steel rail, wooden ties, grade crossings, culverts, bridges, and signaling equipment.

National Register Evaluation: This rail segment is recommended **not eligible** for listing in the National Register. Constructed in the late 19th century this segment of railroad was built much later than most of the area's railroad infrastructure and trackage. Railroads have played a vital role in the development of Clinton, Iowa since 1855 when the Chicago and Northwestern Railroad Company made known its intentions to cross the Mississippi River at Little Rock Island which sat opposite Clinton. This crossing made Clinton one of Iowa's most important railroad communities and infrastructure and tracks from multiple significant railroad lines were built in the community to take advantage of the railroad bridge. Following the bridge's completion in 1865 Clinton's population boomed and the city became a major railroad nexus. The railroad segment was evaluated for significance under **Criterion A** in Transportation and Commerce. Railroads played a significant role in the development of Clinton, Iowa owing to the presence of the Clinton Railroad Bridge. This railroad segment however was developed after the city's boom period by which time much of the city's trackage and railroad infrastructure had already been established. The railroad segment provided freight and passenger services and encouraged the development of industry along the Mississippi River in the early 20th century; however, this development occurred after the most significant period of development for Clinton's rail corridors. Though it made some level of impact on the local economy, the railroad segment provided duplicate services which had been established since the late 1850s. In Camanche, the railroad segment did not lead to significant population growth or an expansion of industry; the community even lost population between 1890 and 1900. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** Detailed survey was undertaken within the APE along a 0.66-mile section of this 33.2-mile-long segment of railroad as it passes between Clinton and Camanche. Within the APE, the railroad retains its engineered grade, alignment, tracks, grade crossings, a flood wall, a culvert, a bridge, and turnouts. Since the APE contains only a small portion of the overall 33.2-mile long rail line segment, the overall segment has not been surveyed in detail and no determination about the overall segment under Criterion C can be made at this time. **Criterion D**: This railroad segment does not appear to have the potential to yield further important information or data.

Resource ID:	C-DAVE-02	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Clinton to Water Works, IA

Integrity: The CM&StP corridor segment between Camanche and Clinton Iowa retains integrity of location, design, materials, workmanship, feeling, and association. The railroad segment remains in operation within its historic footprint, and the corridor retains its association and feeling with railroad transit and freight transportation. Though maintenance and upgrades along the line have resulted in the loss or alteration of several individual features such as bridges, tracks, culverts, stations, and depot buildings, when structures were replaced, they were often similar in size, scale, and materials to the original features. The workmanship and design of this railroad corridor segment has also been largely maintained. The segment's setting is also generally intact with the railroad passing through a heavily industrialized area along the Mississippi River.

Resource ID:	C-OTTU-02	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Muscatine to Ottumwa, IA



Description: The property is an 82.5-mile segment of the Canadian Pacific Railway that stretches from Washington, Iowa to Muscatine, Iowa. Traveling in a generally easterly direction the railroad segment passes through the towns of Washington, Ainsworth, Cotter, Columbus Junction, Fredonia, Letts, and Muscatine. For much of its length the railroad segment passes through rural farmland. Capital improvements are planned in the vicinity of Washington and Letts. The railroad segment remains in active use and has typical features such as steel rail, wooden ties, grade crossings, culverts, bridges, and signaling equipment.

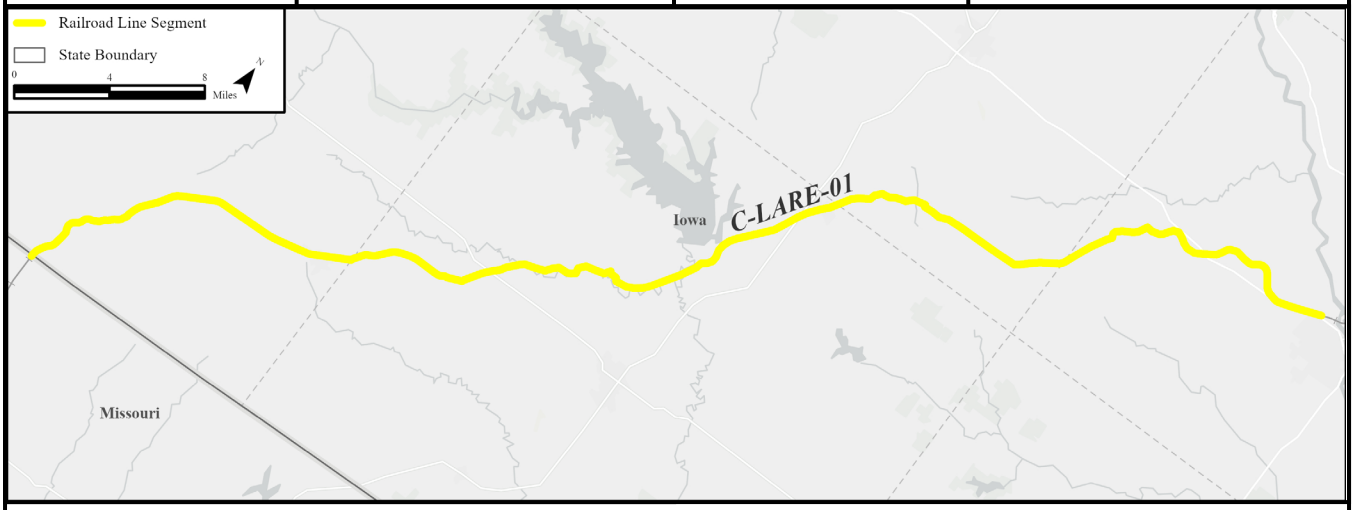
National Register Evaluation: This rail segment is recommended **eligible** for listing in the National Register. This segment of the Canadian Pacific Railway between Washington and Muscatine appears to have been constructed as part of the Mississippi and Missouri Railroad (M&M Railroad), which was established by the Chicago, Rock Island, and Pacific Railroad (Rock Island Line) and was later incorporated into it. Between 1856 and 1860 the first railroads were developed between Washington and Muscatine. Washington, located on the fertile prairie, immediately became a major collection point for grain and animals raised in the surrounding county. Washington possessed some of the earliest railroad connections in Iowa and by 1875 four railroad lines came together in Washington. Farmers brought wagonloads of corn or drove their herds to the city and after conducting their business left with finished goods that had been purchased from one of the city's merchants. The railroad segment is regionally significant under **Criterion A** in the areas of Transportation and Commerce. This segment of railroad played a critical role in transporting agricultural products from regional hubs like Washington to major distribution centers like Chicago. The number and scale of agricultural buildings developed in the towns during the late 19th century are indicative of the commercial and economic opportunities that were a direct result of railroad access. For example, the early establishment of the railroad in Washington enabled the city to grow into a regionally important settlement, where Sanborn maps from 1897 show major agricultural buildings such as stock yards, corn cribs, coal and grain elevators along the railroad tracks. Nearby Letts, Iowa was similarly sustained by the passage of the railroad, which permitted foodstuffs from within the township to be gathered and efficiently transported. Established in the 1850s, the relationship between farmers in Washington County and the railroad was formative to the development of agriculture in the region. To the northeast, the City of Muscatine developed into a major settlement in part due to the Rock Island Line which had run trains through the city since 1855. Sanborn maps from the 1880s show Muscatine with planing mills, furniture factories, boiler makers, pottery factories, cold storage facilities and stock yards.

Resource ID:	C-OTTU-02	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Muscatine to Ottumwa, IA

National Register Evaluation (con't.): The presence of all this industrial activity, activity aided directly by the railroad's passage, led to Muscatine's population growing by roughly 25% in each census from 1870 to 1900. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** Detailed survey was undertaken within the APE for 2.16 miles of this 82.5-mile-long segment of railroad near Washington Iowa and a separate 0.34-mile segment near Letts. Within the APE, the railroad retains its engineered grade, alignment, tracks, culverts, grade crossings, access roads, and bridges. Since the APE contains only a small portion of the overall 82.5-mile long rail line segment, the overall segment has not been surveyed in detail and no determination about the overall segment under Criterion C can be made at this time. **Criterion D**: This railroad segment does not appear to have the potential to yield further important information or data.

Integrity: The Rock Island Line corridor segment between Washington and Muscatine retains integrity of location, design, materials, workmanship, feeling, and association. Though trackage loss has occurred, especially the Pacific extension, the portions of the railroad corridor that remain in operation are in their historic footprint. The railroad corridor, still in active use, retains its association and feeling with railroad transit and freight transportation. Though maintenance and upgrades along the line have surely resulted in the loss or alteration of several individual features such as bridges, tracks, culverts, stations, and depot buildings, when structures were replaced, they were often similar in size, scale, and materials to the original features. The workmanship and design of this railroad segment has also been largely maintained. The segment's setting is also generally intact with the railroads generally passing through the outskirts of small towns and long stretches of rural farmland.

Resource ID:	C-LARE-01	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Ottumwa, Iowa to Missouri/Iowa Border



Description: The property is a 61.2-mile segment of the Canadian Pacific Railway that stretches from Ottumwa, Iowa to the Iowa/Missouri border. Traveling in a general southwesterly direction this railroad segment passes through the towns of Ottumwa, Blakesburg, Moravia, Rathburn, Mystic, Seymour, and Sewal; for much of its length however the railroad segment passes through rural farmland. Capital improvements are planned in the vicinity of Ottumwa and Moravia. The railroad segment remains in active use and has typical features such as steel rail, wooden ties, grade crossings, culverts, bridges, and signaling equipment.

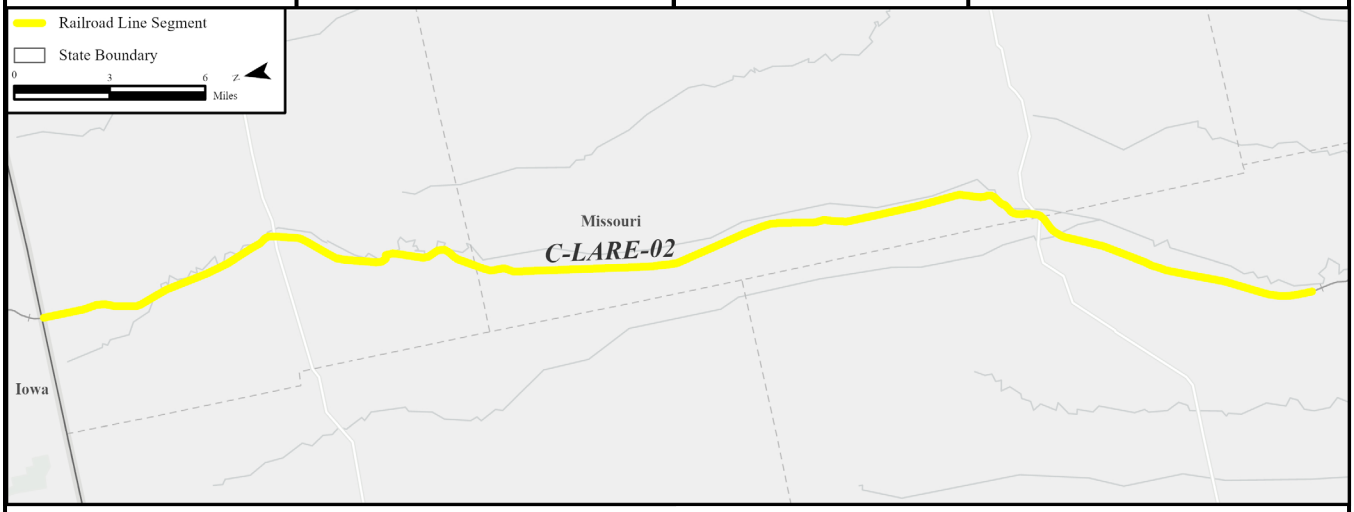
National Register Evaluation: This rail segment is recommended **eligible** for listing in the National Register. This segment was constructed about 1887 as part of the Chicago, Milwaukee & St Paul Railroad (CM&StP). At the time, the CM&StP was constructing lines through this area of Iowa to compete with the Rock Island Line. This segment of the railroad was strategically positioned to take advantage of the significant coalfields in Wapello County. Iowa coal was a critical resource to powering many of the railroads crisscrossing the state and Wapello County was, by the late 19th century, among the ten most productive coal producers in the state. Sitting at the heart of the Wapello County coalfields, Ottumwa developed into a major regional rail magnet. The railroad segment is regionally significant under **Criterion A** in the areas of Transportation and Commerce. As it expanded in the 1880s the CM&StP built tracks, passenger depots, and freight stations along this 61.2-mile stretch of track. For the residents of these towns the presence or absence of the railroad often determined a community's future. With the establishment of a railroad, a small village or town could become a critical hub of local commercial activity. For this rail segment, coal mining became particularly important. Along the Des Moines River there were significant deposits of bituminous and anthracite coal and by 1889 there were fifteen active mine shafts in Ottumwa, Wapello County's largest community. Similarly, the town of Mystic in Appanoose County had a number of active coal mines by the 1880s. The coal dug around Ottumwa and Mystic was vital to the CM&StP's operation. In general, Iowa coal was a crucial power source to the railroads. Companies like the CM&StP built lines specifically to capture strategic coalfields. Passing through Ottumwa and Mystic on its way to the Missouri border this rail segment took advantage of the local coal supply, stopping to refuel trains prior to journeying southwest towards Kansas City. For Ottumwa in particular the demands of the CM&StP and other regional and nationally important railroads for coal encouraged significant population growth. They also encouraged industrial growth in the city, which developed significant ironworks, machine shops, and foundries. As a result of the mining, and manufacturing, aided by the railroad, Ottumwa's population grew from 5,200 in 1870 to 14,000 in 1890.

Resource ID:	C-LARE-01	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Ottumwa, Iowa to Missouri/Iowa Border

National Register Evaluation (con't.): Additionally, grain and animals were brought to stock yards and grain elevators along the railroad's more rural stops such as Moravia. From these gathering points freight cars sent the animals and grain on to major collection points such as Chicago. As a result, millions of dollars' worth of livestock, grain, coal, iron, and other goods were funneled from the agrarian areas of southwest Iowa to the more industrialized East. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** Detailed survey was undertaken within the APE along a 0.56-mile segment of this 61.2-mile-long segment of railroad near Ottumwa as well as a 2.15-mile segment near Moravia. Within the APE, the railroad retains its engineered grade, alignment, tracks, culverts, a retaining wall, grade crossings, and access roads. Since the APE contains only a small portion of the overall 61.2-mile long rail line segment, the overall segment has not been surveyed in detail and no determination about the overall segment under Criterion C can be made at this time. **Criterion D**: This railroad segment does not appear to have the potential to yield further important information or data.

Integrity: The CM&StP corridor segment between Ottumwa and the Missouri border retains integrity of location, design, materials, workmanship, feeling, and association. The railroad segment remains in operation within its historic footprint, and the corridor retains its association and feeling with railroad transit and freight transportation. Though maintenance and upgrades along the line have surely resulted in the loss or alteration of several individual features such as bridges, tracks, culverts, stations, and depot buildings, when structures were replaced, they were often similar in size, scale, and materials to the original features. The workmanship and design of this railroad corridor segment has also been largely maintained. The segment's setting is also generally intact with the railroads generally passing through the outskirts of small towns and long stretches of rural farmland.

Resource ID:	C-LARE-02	Resource Type:	Above-Ground
Inventory Number:	TBD	Potential Effect:	Physical
Previous Documentation:	N/A	Location:	Missouri/Iowa border to Laredo, MO



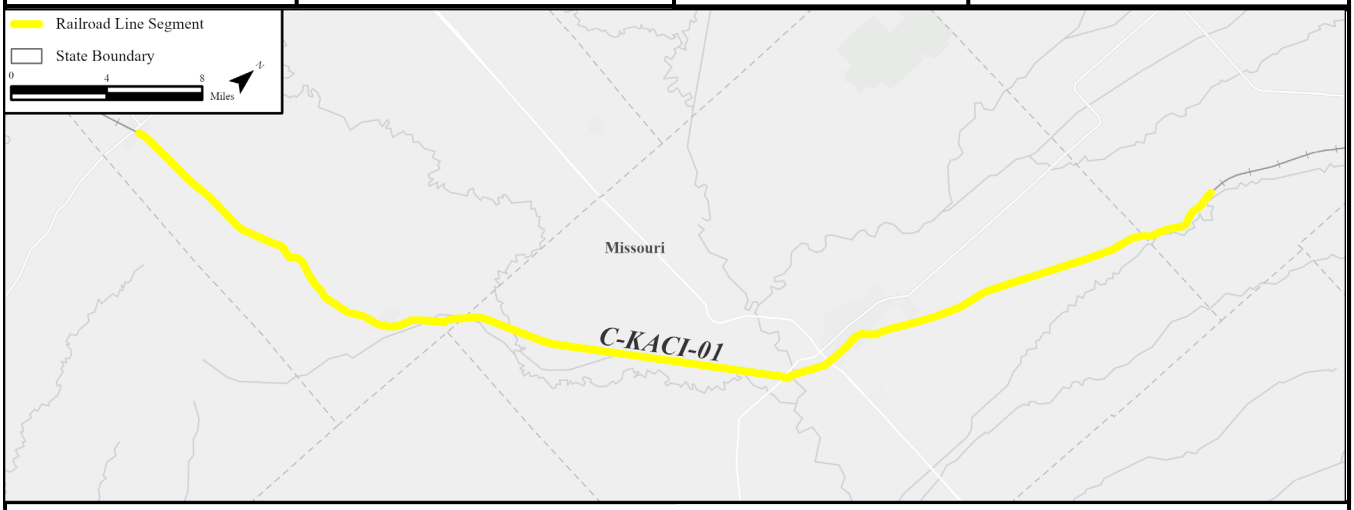
Description: The property is a 41.1-mile segment of the Canadian Pacific Railway that stretches from the border of Missouri and Iowa to Laredo, Missouri. Traveling in a general southwesterly direction the railroad segment passes through a rural agrarian landscape as well as the small towns of Powersville, Lucerne, Newtown, Harris, Osgood, and Laredo. Capital improvements are planned in the vicinity of Newtown. The railroad segment remains in active use and has typical features such as steel rail, wooden ties, grade crossings, culverts, bridges, and signaling equipment.

National Register Evaluation: This rail segment is recommended **not eligible** for listing in the National Register. Built between 1885 and 1887 to connect the Chicago, Milwaukee & St. Paul Railroad (CM&StP) to Kansas City, this segment of railroad passed through rural Putnam and Grundy Counties which had a combined low population of about 32,000 people in 1890. This was the second major line to pass through northwest Missouri as the Chicago, Rock Island, and Pacific Railroad had established a line through the area in 1870. Both Grundy and Putnam Counties were lightly populated agrarian regions at this time and the coming of the CM&StP Railroad enabled farmers to travel to communities like Newtown and Laredo to ship their goods along the CM&StP's tracks to major markets like Kansas City or Chicago. This practice and the presence of the railroad tied these small towns into a national market and in the case of Laredo aided the town's development. Laredo became a division headquarters of the CM&StP in 1904 with repair shops built in the town, significantly boosting its population. The railroad segment was evaluated under **Criterion A** in the areas of Transportation and Commerce. This segment of railroad was the second major rail line to pass through this section of rural Missouri. Though the railroad played a role in transporting agricultural products from this segment of the Missouri countryside to major population centers like Kansas City and Chicago, it was providing services similar to the Chicago, Rock Island, and Pacific Railroad. Moreover, the communities serviced by the CM&StP were small agrarian centers which, with the exception of Laredo, did not grow markedly following the railroad's arrival. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** Detailed survey was undertaken within the APE along a 0.55-mile section of this 41.1-mile-long segment of railroad near Newtown. Within the APE, the railroad retains its engineered grade, alignment, tracks, a bridge, and a grade crossing. Since the APE contains only a small portion of the overall 41.1-mile long rail segment, the overall segment has not been surveyed in detail and no determination about the overall segment under Criterion C can be made at this time.
Criterion D: This railroad segment does not appear to have the potential to yield further important information or data.

Resource ID:	C-LARE-02	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Missouri/Iowa border to Laredo, MO

Integrity: The CM&StP corridor segment between the Missouri/Iowa border and Laredo, Missouri retains integrity of location, design, materials, workmanship, feeling, and association. Though trackage loss has occurred, the portions of the railroad corridor that remain in operation are in their historic footprint. The railroad corridor, still in active use, retains its association and feeling with railroad transit and freight transportation. Though maintenance and upgrades along the line have surely resulted in the loss or alteration of several individual features such as bridges, tracks, culverts, stations, and depot buildings, when structures were replaced, they were often similar in size, scale, and materials to the original features. The workmanship and design of this railroad corridor segment has also been largely maintained. The segment's setting is also generally intact with the railroads generally passing through the outskirts of small towns and long stretches of rural farmland.

Resource ID:	C-KACI-01	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Direct/ Physical
Previous Documentation:	N/A	**Location:**	Laredo to Polo, MO (includes planned capital improvements at Dawn/MP 431 and Laredo)



Description: The property is a 51.6-mile segment of the Canadian Pacific Railway that stretches from Laredo, Missouri to Polo, Missouri. Traveling in a generally southwesterly direction the railroad segment passes through the towns of Laredo, Chula, Chillicothe, Ludlow, Braymer, Cowgill, and Polo. However, for much of its length the railroad segment passes through rural farmland. Capital improvements are planned in the vicinity of Laredo and Dawn/MP 431. The railroad segment remains in active use and has typical features such as steel rail, wooden ties, grade crossings, culverts, bridges, and signaling equipment.

National Register Evaluation: This rail segment is recommended **not eligible** for listing in the National Register. This segment of the CP between Laredo and Polo was built between 1885 and 1887 to connect the Chicago, Milwaukee & St. Paul Railroad (CM&StP) to Kansas City. The CM&StP Railroad was not the first major line to pass through this area, as the Chillicothe and Brunswick Railroad had been completed in about 1870, the coming of the CM&StP Railroad aided regional commerce and agriculture as it provided locals with another outlet for their goods and agricultural products. The railroad enabled farmers to travel to communities like Polo and Laredo to ship their goods along the CM&StP's tracks to major markets like Kansas City or Chicago. The railroad segment was evaluated under **Criterion A:** in Transportation and Commerce. This segment of railroad was the second major rail line to pass through this section of rural Missouri. Though the railroad played a role in transporting agricultural products from this segment of the Missouri countryside to major population centers like Kansas City and Chicago it was providing duplicate services those of already established railroads. Moreover, the communities serviced by the CM&StP were small agrarian centers which did not grow markedly following the railroad's arrival. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** Detailed survey was undertaken along a 0.68-mile of this 51.6-mile-long segment of railroad near Laredo and along a 2.15-mile segment near Dawn/MP431. Within the APE, the railroad retains its engineered grade, alignment, tracks, a bridge, and a grade crossing. Since the APE contains only a small portion of the overall 51.6-mile long rail line segment, the overall segment has not been surveyed in detail and no determination about the overall segment under Criterion C can be made at this time.
Criterion D: This railroad segment does not appear to have the potential to yield further important information or data.

Resource ID:	C-KACI-01	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Direct/ Physical
Previous Documentation:	N/A	**Location:**	Laredo to Polo, MO (includes Dawn/MP 431 and Laredo sidings)

Integrity: The CM&StP corridor segment between the Laredo and Polo Missouri retains integrity of location, design, materials, workmanship, feeling, and association. Though trackage loss has occurred, the portions of the railroad corridor that remain in operation are in their historic footprint. The railroad corridor, still in active use, retains its association and feeling with railroad transit and freight transportation. Though maintenance and upgrades along the line have surely resulted in the loss or alteration of several individual features such as bridges, tracks, culverts, stations, and depot buildings, when structures were replaced, they were often similar in size, scale, and materials to the original features. The workmanship and design of this railroad corridor segment has also been largely maintained. The segment's setting is also generally intact with the railroads generally passing through the outskirts of small towns and long stretches of rural farmland.

Resource ID:	K-PITT-01	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Pittsburg, KS to Kansas City, MO



Description: This property is a 124.5-mile segment of the Kansas City Southern Railway that travels south from Kansas City, Missouri to Pittsburg, Kansas. The railroad segment passes through the communities of Kansas City, Grandview, Cleveland, Amoret, Hume, Richards, and Pittsburg. For much of its length the railroad segment travels through a rural agrarian landscape along the border between Kansas and Missouri. Capital improvements are planned in the vicinity of Kansas City and Grandview. The railroad segment remains in active use and has typical features such as steel rail, wooden ties, grade crossings, culverts, bridges, and signaling equipment.

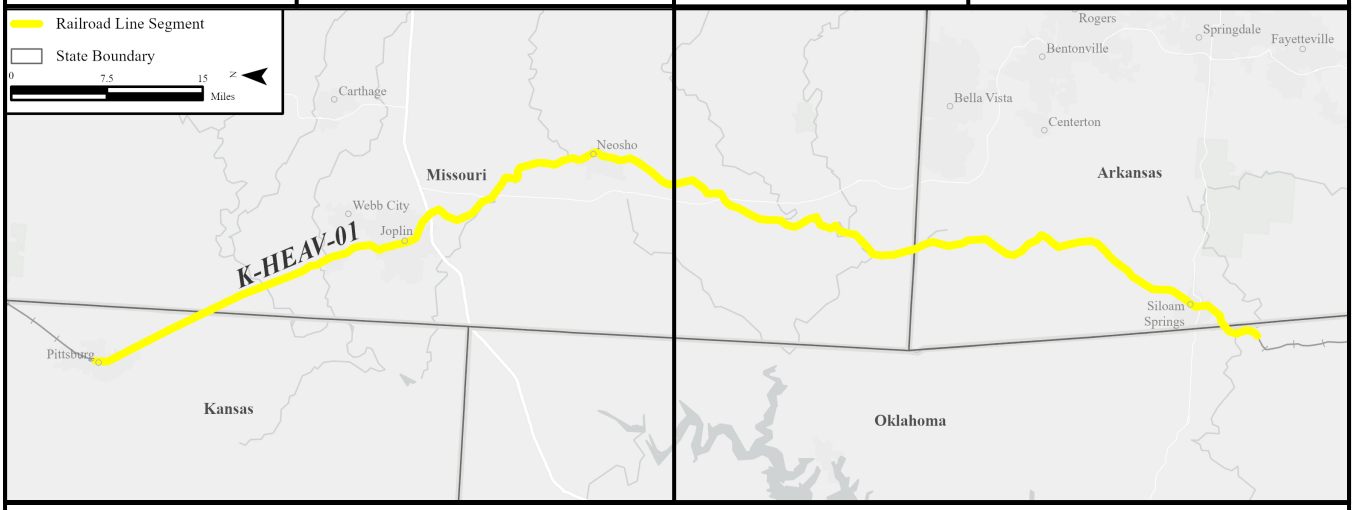
National Register Evaluation: This rail segment is recommended **eligible** for listing in the National Register. Built as the first segment of the KCS, this rail segment was the first link of what would develop into one of the most important north/south transportation routes in the United States. Traveling to Pittsburg, Kansas, the railroad was connected to significant coalfields in Hume, Missouri and Pittsburg. Additionally, as it expanded the KCS built tracks, depots, and other rail related infrastructure across the south, enabling the flow of agricultural products, oil, metals, chemicals, and people through the center of the country. The railroad segment is regionally significant under **Criterion A** in the areas of Transportation and Commerce. Built by railroad magnate Arthur Stilwell and his financial backers, this stretch of railroad was the first portion of what would become the KCS, the first major land transportation corridor to link the Midwest and a port at the Gulf of Mexico. This particular railway segment connected Kansas City to major coal fields in Hume, Missouri and Pittsburg, Kansas, providing the raw materials to run the new rolling stock, as well as providing the multiple small agrarian communities along the Kansas, Missouri border with their first opportunity to develop commercial agricultural instead of subsistence farming. Immediately after the KCS's arrival the towns of Amoret, Richards, and Cleveland were platted, creating new town centers on the Missouri prairie. Though small, these towns acted as collection points for grain which was shipped in KCS freight cars. The KCS's passage also led to a major population spike in several communities, most notably Pittsburg, Kansas which grew from 624 residents in 1880 to over 6,600 residents in 1890, and over 10,000 residents by 1900. Already an important local site for zinc mining and smelting by the time of the KCS's arrival, Pittsburg, Kansas benefitted greatly from a direct connection first to Kansas City, and after 1897, to the harbor of Port Arthur. Though its population growth cannot be exclusively tied to the KCS, it is worth noting that between 1880 and 1900 Kansas City's population grew from 55,000 to 163,000 as the city became a major rail nexus.

Resource ID:	K-PITT-01	Resource Type:	Above-Ground
Inventory Number:	TBD	Potential Effect:	Physical
Previous Documentation:	N/A	Location:	Pittsburg, KS to Kansas City, MO

National Register Evaluation (con't.): Criterion B: This railroad segment was built between 1887 and 1892 for the Kansas City, Pittsburg and Gulf Railroad (KCP&G), a precursor to the Kansas City Southern. This segment of railroad is significant for its association with Arthur Stilwell, the founder and driving force behind the expansion of the KCP&G. Arriving in Kansas City in 1888, Arthur Stilwell began to operate his first railroad, the Kansas City Suburban Belt Railway, in 1889. Extending the line south to Pittsburg, Kansas, Stilwell renamed the line the KCP&G. Through the 1890s Stilwell pushed his railroad further south, consolidating his tracks with other lines and laying new railbeds as he strove to reach the Gulf of Mexico. Stilwell secured financial backing for the railroad by selling railroad stock to Dutch investors, a necessity after the United States was rocked by the Panic of 1893. To thank his Dutch investors Stilwell named several towns in Arkansas, Texas, and Louisiana after them and their wives. In 1897 Stilwell's railroad reached the Gulf of Mexico where he built the City of Port Arthur, named after himself. In total Stilwell's enterprise laid over 1,200 miles of track through the center of the country and created an alternative shipping corridor that allowed farmers and industrialists in middle America to efficiently export their products and circumvent more distant eastern seaports. **Criterion C:** Detailed survey was undertaken within the APE along a 2.25-mile segment of this 124.5-mile segment of railroad near Kansas City. Another 2.36-mile segment near Grandview was also surveyed. Within the APE, the railroad retains its engineered grade, alignment, tracks, culverts, grade crossings, bridges, and retaining walls. Since the APE contains only a small portion of the overall 124.5-mile long rail line segment, the overall segment has not been surveyed in detail and no determination about the overall segment under Criterion C can be made at this time. **Criterion D**: This railroad segment does not appear to have the potential to yield further important information or data.

Integrity: The Kansas City Southern corridor segment between Kansas City, Missouri and Pittsburg, Kansas retains integrity of location, design, materials, workmanship, feeling, and association. Though trackage loss has occurred, the portions of the railroad corridor that remain in operation are in their historic footprint. The railroad corridor, still in active use, retains its association and feeling with railroad transit and freight transportation. Though maintenance and upgrades along the line have surely resulted in the loss or alteration of several individual features such as bridges, tracks, culverts, stations, and depot buildings, when structures were replaced, they were often similar in size, scale, and materials to the original features. The workmanship and design of this railroad corridor segment has also been largely maintained. The segment's setting is also generally intact with the railroads generally passing through the outskirts of small towns and long stretches of rural farmland.

Resource ID:	K-HEAV-01	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Watts, OK to Pittsburg, KS



Description: This property is a 107.8-mile segment of the Kansas City Southern Railway (KCS) that travels south from Pittsburg, Kansas to Watts, Oklahoma. The railroad passes through the communities of Pittsburg, Kansas; Asbury, Joplin, and Kelly Springs, Missouri; Gentry, Arkansas; and Watts, Oklahoma. For much of its length the railroad segment travels through a rural agrarian landscape. Capital improvements are planned in the vicinity of Asbury, Missouri, Kelly Springs, Missouri, and Gentry, Arkansas. The railroad segment remains in active use and has typical features such as steel rail, wooden ties, grade crossings, culverts, bridges, and signaling equipment.

National Register Evaluation: This rail segment is recommended **eligible** for listing in the National Register. Portions of this line were built by the Kansas City, Pittsburg, and Gulf Railroad (KCP&G) during the 1890s while other portions consist of existing railroads purchased by Arthur Stilwell, president of the KCP&G, and incorporated into the line. The portion of this railroad segment from Joplin, Missouri to Sulphur Springs, Arkansas was built by the Kansas City, Forth Smith, and Southern Railroad. The remainder of the subject railroad segment was built by the KCP&G as the line traveled south towards the Gulf of Mexico. As it traveled south, the KCP&G passed through established towns, providing these communities with an outlet for their goods which could be shipped to the Gulf coast or Kansas City. The KCP&G, reorganized as the Kansas City Southern after 1900, was the primary driver of trade and economic activity in this rural segment of Missouri, Arkansas, and Oklahoma. The railroad segment is regionally significant under **Criterion A** in the areas Transportation and Commerce. Built as the second major stretch of the KCP&G, this segment of the railroad connected Kansas City to multiple small agrarian communities in Missouri, Arkansas, and Oklahoma as well as Joplin, Missouri, which was a major center of zinc and lead mining. Though Joplin possessed several rail connections by the arrival of the first KCS train in 1893, none of these existing connections had same impact as the KCS which allowed the lead and zinc extracted from Joplin to travel the length of the country and overseas. While the city's population increased between 1880 and 1890, it was between 1890 and 1900 that the most marked population growth happened as the city went from 9,000 residents to 26,000. Though not solely attributed directly to the KCS, it can be assumed this major population increase was aided by the new opportunities afforded by the railroad.

The KCP&G was, for many small towns in Arkansas and Oklahoma, the first railroad to pass through or directly determined where communities first developed. This was particularly true for Benton County in northwestern Arkansas.

Resource ID:	K-HEAV-01	Resource Type:	Above-Ground
Inventory Number:	TBD	Potential Effect:	Physical
Previous Documentation:	N/A	Location:	Watts, OK to Pittsburg, KS

National Register Evaluation (con't.): Between 1880 and 1900 the county's population grew from 20,000 to 31,000; new towns like Gentry were established and towns such as Siloam Spring expanded significantly. The railroad's passage through Benton County led to the establishment of significant fruit orchards, stock farms, and the expansion of existing wheat farms. The railroad also directly motivated settlement such Asbury, Missouri and Watts, Oklahoma which developed after the KCS made the town a division headquarters in 1912. The construction of rail yards and other infrastructure at Watts led to speculative real estate development within the town and encouraged the development of stock farms in the surrounding countryside. **Criterion B:** This railroad segment was built between 1887 and 1892 for the Kansas City, Pittsburg and Gulf Railroad, a precursor to the Kansas City Southern. This segment of railroad is significant for its association with Arthur Stilwell as the founder and driving force behind the expansion of the KCP&G. Arriving in Kansas City in 1888, Arthur Stilwell began to operate his first railroad, the Kansas City Suburban Belt Railway, in 1889. Extending the line south to Pittsburg, Kansas, Stilwell renamed the line the KCP&G. Through the 1890s Stilwell pushed his railroad further south, consolidating his tracks with other lines and laying new railbeds as he strove to reach the Gulf of Mexico. Stilwell secured financial backing for the railroad by selling railroad stock to Dutch investors, a necessity after the United States was rocked by the Panic of 1893. To thank his Dutch investors Stilwell named several towns in Arkansas, Texas, and Louisiana after them and their wives. In 1897 Stilwell's railroad reached the Gulf of Mexico where he built the City of Port Arthur, named after himself. In total Stilwell's enterprise laid over 1,200 miles of track through the center of the country and created an alternative shipping corridor that allowed farmers and industrialists in middle America to efficiently export their products and circumvent more distant eastern seaports. **Criterion C:** Detailed survey was undertaken within the APE along a 2.03-mile stretch of track near Kelly Springs, Missouri, a 1.10-mile segment near Asbury, Missouri, and a 2.02-mile segment near Gentry, Arkansas. Within the APE, the railroad retains its engineered grade, alignment, tracks, culverts, bridges, and grade crossings. Since the APE contains only a small portion of the overall 98-mile long rail line segment, the overall segment has not been surveyed in detail and no determinations about the overall segment under Criterion C can be made at this time. **Criterion D**: This railroad segment does not appear to have the potential to yield further important information or data.

Integrity: The Kansas City Southern corridor segment between Pittsburg, Kansas and Watts, Oklahoma retains integrity of location, design, materials, workmanship, feeling, and association. Though trackage loss has occurred, the portions of the railroad corridor that remain in operation are in their historic footprint. The railroad corridor, still in active use, retains its association and feeling with railroad transit and freight transportation. Though maintenance and upgrades along the line have surely resulted in the loss or alteration of several individual features such as bridges, tracks, culverts, stations, and depot buildings, when structures were replaced, they were often similar in size, scale, and materials to the original features. The workmanship and design of this railroad corridor segment has also been largely maintained. The railroad's setting is also generally intact with the railroads generally passing through the outskirts of small towns and long stretches of rural farmland.

Resource ID:	K-HEAV-02	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Poteau to Watts, OK



Description: This property is a 90.4-mile segment of the Kansas City Southern Railway that travels south from Watts, Oklahoma to Poteau, Oklahoma. The railroad passes through the towns of Watts, Westville, Stilwell, Sallisaw, Spiro, Panama, and Poteau. Outside of these towns and cities, the railroad passes through a rural agrarian landscape. Capital improvements are planned around the unincorporated communities of Cave Springs and Baron, and near Spiro. The railroad segment remains in active use and has typical features such as steel rail, wooden ties, grade crossings, culverts, bridges, and signaling equipment.

National Register Evaluation: This rail segment is recommended **ineligible** for listing in the National Register. Originally built between 1893 and 1897, this railroad segment was built as part of the KCP&G as the line traveled south to the Gulf of Mexico. In Oklahoma, the KCP&G was responsible for the development of multiple towns, including Spiro which grew around the railroad station. In the late 19th century, many small Oklahoma towns were agrarian communities where grain, fruit, and cotton were grown. For these communities the KCP&G, later the Kansas City Southern, was critical to facilitating trade and economic activity. Foodstuffs grown in these communities were shipped along the railroad to major distribution centers like Kansas City. The railroad segment was evaluated under **Criterion A:** in the areas of Transportation, Exploration and Settlement, and Commerce. Built by the KCP&G, this segment of the railroad connected Kansas City to multiple small agrarian communities in Oklahoma as well as regions rich in coal, fruit trees, and other metals. In 1912 the KCS's Immigration Department documented some of the resources and opportunities that had developed in Oklahoma along its trackage in a booklet entitled *Eastern Oklahoma Along the Kansas City Southern Railway*. Similar books were produced to promote the Ozark Mountain region, and coastal Louisiana. The KCS highlighted how its Oklahoma trackage acted as magnets for farm products such as wheat and cotton, timber, coal, and metals. At Poteau, gas and oil wells were developed, while at Sallisaw, Spiro, and Panama, anthracite coal seams were developed. The local climate also permitted the growth of hay, making stock farms another viable undertaking. The extraction and development of these resources was made viable by the passage of the KCS which created a cost-effective shipping corridor to major markets in Kansas City or international markets which could be accessed from the harbor at Port Arthur. The KCP&G was, for many of these towns, the first railroad to pass through the area and the railroad was the critical factor in determining the location of many new towns. Despite this, none of the towns which developed along this segment of the railroad emerged as major population centers and the landscape remains largely agrarian and thinly settled.

Resource ID:	K-HEAV-02	Resource Type:	Above-Ground
Inventory Number:	TBD	Potential Effect:	Physical
Previous Documentation:	N/A	Location:	Poteau to Watts, OK

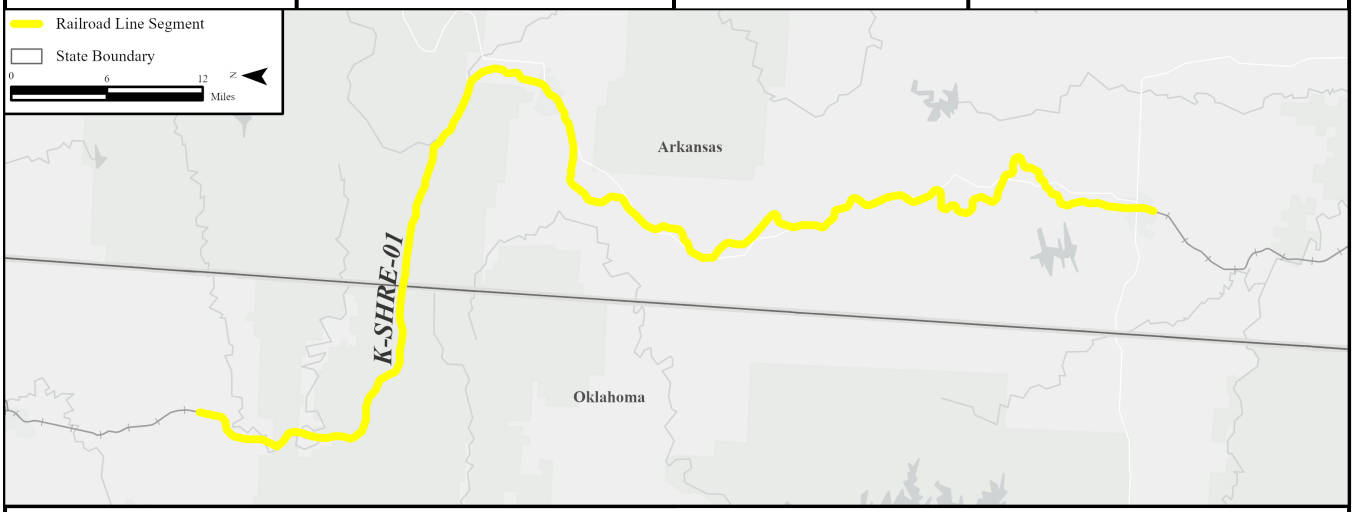
National Register Evaluation (con't): Criterion B: The passage of the KCS can be directly tied to the establishment and initial growth of multiple settlements including Westville, Stilwell, Spiro, and Panama all of which were established in the 1890s on formerly Indigenous territory throughout eastern Oklahoma. This railroad segment was built between 1887 and 1892 for the Kansas City, Pittsburg and Gulf Railroad, a precursor to the Kansas City Southern. This segment of railroad is significant for its association with Arthur Stilwell as the founder and driving force behind the expansion of the KCP&G. Arriving in Kansas City in 1888, Arthur Stilwell began to operate his first railroad, the Kansas City Suburban Belt Railway, in 1889. Extending the line south to Pittsburg, Kansas, Stilwell renamed the line the KCP&G. Through the 1890s Stilwell pushed his railroad further south, consolidating his tracks with other lines and laying new railbeds as he strove to reach the Gulf of Mexico. Stilwell secured financial backing for the railroad by selling railroad stock to Dutch investors, a necessity after the United States was rocked by the Panic of 1893. To thank his Dutch investors Stilwell named several towns in Arkansas, Texas, and Louisiana after them and their wives. In 1897 Stilwell's railroad reached the Gulf of Mexico where he built the City of Port Arthur, named after himself. In total Stilwell's enterprise laid 1,200 miles of track through the center of the country and created an alternative shipping corridor that allowed farmers and industrialists in middle America to efficiently export their products and circumvent more distant eastern seaports. **Criterion C:** Detailed survey was undertaken within the APE along a 2.22 mile segment of the line near Baron, a 1.10-mile segment near Cave Springs, and a 0.82-mile segment near Spiro. Within the APE, the railroad retains its engineered grade, alignment, tracks, culverts, grade crossings, and bridges. Since the APE contains only a small portion of the overall 90.4-mile long rail line segment, the overall segment has not been surveyed in detail and no determination about the overall segment under Criterion C can be made at this time. **Criterion D**: This railroad segment does not appear to have the potential to yield further important information or data.

Integrity: The Kansas City Southern corridor segment between Watts, Oklahoma and Poteau, Oklahoma retains integrity of location, design, materials, workmanship, feeling, and association. Though trackage loss has occurred, the portions of the railroad corridor that remain in operation are in their historic footprint. The railroad corridor, still in active use, retains its association and feeling with railroad transit and freight transportation. Though maintenance and upgrades along the line have surely resulted in the loss or alteration of several individual features such as bridges, tracks, culverts, stations, and depot buildings, when structures were replaced, they were often similar in size, scale, and materials to the original features. The workmanship and design of this railroad corridor segment has also been largely maintained. The segment's setting is also generally intact with the railroads generally passing through the outskirts of small towns and long stretches of rural farmland.

Bibliography:

Eastern Oklahoma Along the Kansas City Southern Railway. Kansas City: Kansas City Southern Immigration Department, 1912.

Resource ID:	K-SHRE-01	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	De Queen to Heavener, OK



Description: This property is a 94.6-mile segment of the Kansas City Southern Railway that travels south from Heavener, Oklahoma to De Queen Arkansas. The railroad passes through the communities of Heavener, Oklahoma, Mena, Arkansas, Hatfield, Arkansas, Cove, Arkansas, and De Queen, Arkansas. Capital improvements are planned near Heavener, Oklahoma and Mena, Arkansas. For much of its length the railroad segment travels through a rural agrarian landscape. The railroad segment remains in active use and has typical features such as steel rail, wooden ties, grade crossings, culverts, bridges, and signaling equipment.

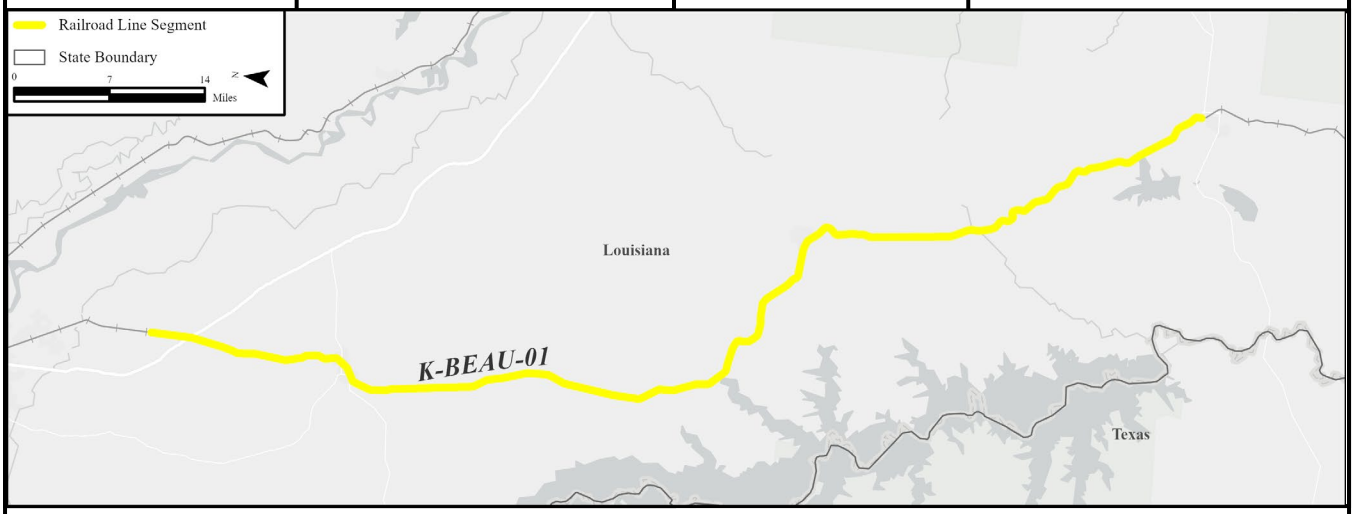
National Register Evaluation: This rail segment is recommended **ineligible** for listing on the National Register within Oklahoma and **eligible** for listing in the National Register within Arkansas. Originally built between 1893 and 1897, this railroad segment was built as part of the KCP&G as the line traveled south to the Gulf of Mexico. In Oklahoma, the KCP&G was responsible for the development of multiple towns, including Heavener which grew around the railroad station and expanded significantly when the Kansas City Southern Railway made the town a division headquarters. For other towns in Oklahoma and Arkansas the railroad facilitated the movement of crops and livestock. In both states farmers brought cotton, cattle, fruit, and grain to the nearest railroad town and used the Kansas City Southern to ship their products to the Gulf coast or Kansas City. The railroad also provided opportunities for capital investment in previously unexplored mining and timber extraction ventures. This process tied these farmers into a national economy and helped to sustain communities like Heavener and De Queen. The railroad segment is regionally significant under **Criterion A** in the areas of Transportation, Exploration and Settlement, and Commerce. Built by the KCP&G, this segment of the railroad connected the major hub of Kansas City to multiple small agrarian communities in Oklahoma and Arkansas on its way to Port Arthur on the Gulf of Mexico. The railroad, the first major line to pass through this portion of Oklahoma, opened a major regional shipping corridor from the Gulf coast to Kansas City in central Missouri that didn't previously exist. The railroad also directly generated commerce, such as in Heavener, Oklahoma, Mena, Arkansas, and De Queen, Arkansas each of which were made a division headquarters with track yards and repair shops. These three communities and other stops along this railroad segment becoming important local centers for mining, logging, and agricultural trade. Corn, fruit trees, berries, and cotton were grown while cattle and hogs were raised in stock farms. In Mena, large planing mills were built along the railroad tracks as were cold storage buildings.

Resource ID:	K-SHRE-01	Resource Type:	Above-Ground
Inventory Number:	TBD	Potential Effect:	Physical
Previous Documentation:	N/A	Location:	De Queen to Heavener, OK

National Register Evaluation (con't): Planing mills of a similar size were also built in De Queen. The extraction and development of these resources was made viable by the passage of the KCS which created a cost-effective shipping corridor to major markets in Kansas City or international markets which could be accessed from the harbor at Port Arthur. Additionally, because the United States began its acquisition of land in eastern Oklahoma long after many of the surrounding states, the railroad played a critical role in determining the location of many towns. **Criterion B:** This railroad segment was built between 1887 and 1892 for the Kansas City, Pittsburg and Gulf Railroad, a precursor to the Kansas City Southern. This segment of railroad is significant for its association with Arthur Stilwell, the founder and driving force behind the expansion of the KCP&G. Arriving in Kansas City in 1888, Arthur Stilwell began to operate his first railroad, the Kansas City Suburban Belt Railway, in 1889. Extending the line south to Pittsburg, Kansas, Stilwell renamed the line the KCP&G. Through the 1890s Stilwell pushed his railroad further south, consolidating his tracks with other lines and laying new railbeds as he strove to reach the Gulf of Mexico. Stilwell secured financial backing for the railroad by selling railroad stock to Dutch investors, a necessity after the United States was rocked by the Panic of 1893. To thank his Dutch investors Stilwell named several towns in Arkansas, Texas, and Louisiana after them and their wives, including Mena, Arkansas. In 1897 Stilwell's railroad reached the Gulf of Mexico where he built the City of Port Arthur, named after himself. In total Stilwell's enterprise laid over 1,200 miles of track through the center of the country and created an alternative shipping corridor that allowed farmers and industrialists in middle America to efficiently export their products and circumvent more distant eastern seaports. **Criterion C:** Detailed survey was undertaken within the APE along a 2.49-mile segment of this 94.6-mile-long segment of railroad near Heavener. An additional 2.04-mile segment was surveyed in Mena, Arkansas. Within the APE, the railroad retains its engineered grade, alignment, tracks, culverts, and a bridge. Since the APE contains only a small portion of the overal 94.6-mile long rail line segment, the overall segment has not been surveyed in detail and no determination about the overall segment under Criterion C can be made at this time. **Criterion D**: This railroad segment does not appear to have the potential to yield further important information or data.

Integrity: The Kansas City Southern corridor segment between Heavener, Oklahoma and De Queen, Arkansas retains integrity of location, design, materials, workmanship, feeling, and association. Though trackage loss has occurred, the portions of the railroad corridor that remain in operation are in their historic footprint. The railroad corridor, still in active use, retains its association and feeling with railroad transit and freight transportation. Though maintenance and upgrades along the line have surely resulted in the loss or alteration of several individual features such as bridges, tracks, culverts, stations, and depot buildings, when structures were replaced, they were often similar in size, scale, and materials to the original features. The workmanship and design of this railroad corridor segment has also been largely maintained. The segment's setting is also generally intact with the railroads generally passing through the outskirts of small towns and long stretches of rural farmland.

Resource ID:	K-BEAU-01	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Frierson to Leesville, LA



Description: This property is a 91.4-mile segment of the Kansas City Southern Railway that travels south from Frierson, Louisiana to Leesville, Louisiana. The railroad segment travels through the towns of Frierson, Mansfield, Converse, Noble, Zwolle, Loring, Many, Hornbeck, and Leesville. For much of its length the railroad segment travels through a rural agrarian landscape. Capital improvements are planned in the vicinity of Mansfield and Loring. The railroad segment remains in active use and has typical features such as steel rail, wooden ties, grade crossings, culverts, bridges, and signaling equipment.

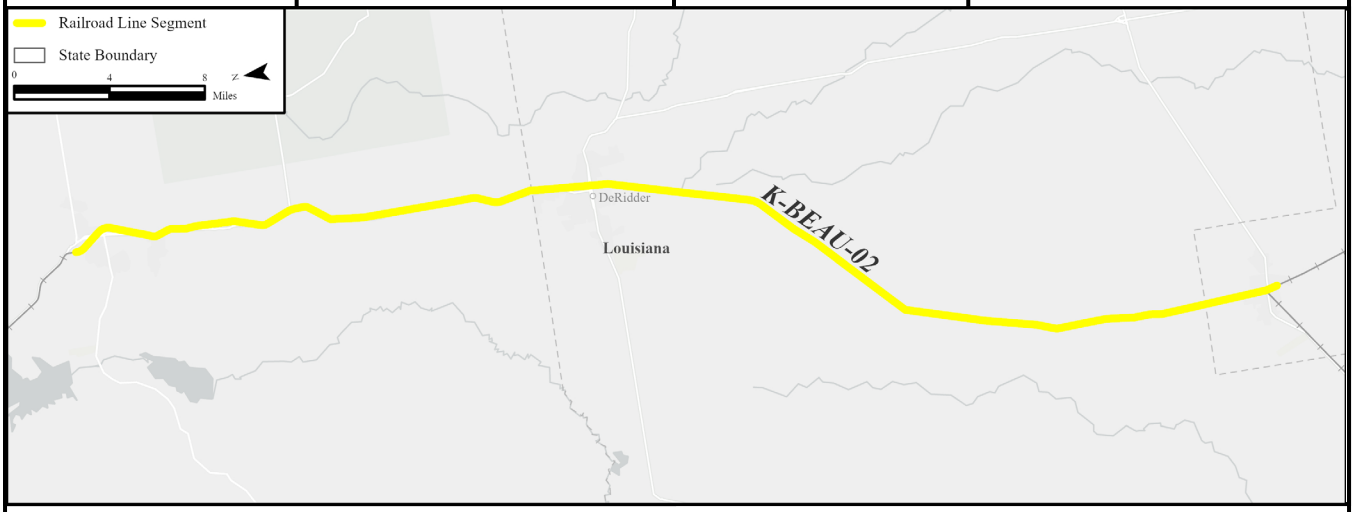
National Register Evaluation: This rail segment is recommended **eligible** for listing in the National Register. Originally built in 1897 this portion of the railroad was originally part of the KCP&G. The railroad reached Shreveport, Louisiana in March 1897 and by September of that same year the line had reached the Gulf coast. After the Civil War companies like the KCP&G began to build trackage in Louisiana and rural towns throughout the state relocated to take advantage of the developing railroad infrastructure. Louisiana railroads typically handled passengers, foodstuffs, and lumber, much of which was directed to major Gulf coast ports like New Orleans and Port Arthur, Texas. The railroad segment is regionally significant in **Criterion A** in the areas of Transportation and Commerce. Built as one of the final portions of the KCP&G, this segment of the railroad played a major role in the ultimate fulfillment of the vision of a link between the Midwest and the Gulf of Mexico. The railroad, the first major line to pass through this section of Louisiana, enabled capitalists and investors to develop large scale farms and timber operations in rural Louisiana. In Sabine, Vernon, and Calcasieu Parishes, short and long leaf pine were harvested for the first time on an industrial scale. Prior to the KCS's arrival, the nearest railroad to these parishes had been 100 miles away. The development of Louisiana's timber industry coincided with the decline of the stands of timber in Michigan, Minnesota, and Wisconsin, all of which had been timbered for decades. Louisiana, with its extremely warm climate, also produced sugar and tropical fruits such as oranges, resources which the KCS could quickly ship to domestic and international markets. The railroad also led to direct commercial investment in Hornbeck, where the KCS built repair shops.
Criterion B: This railroad segment was built between 1887 and 1892 for the Kansas City, Pittsburg and Gulf Railroad, a precursor to the Kansas City Southern. This segment of railroad is significant for its association with Arthur Stilwell, the founder and driving force behind the expansion of the KCP&G. Arriving in Kansas City in 1888, Arthur Stilwell began to operate his first railroad, the Kansas City Suburban Belt Railway, in 1889.

Resource ID:	K-BEAU-01	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Direct/ Physical
Previous Documentation:	N/A	**Location:**	Frierson to Leesville, LA

National Register Evaluation (con't): Extending the line south to Pittsburg, Kansas, Stilwell renamed the line the KCP&G. Through the 1890s Stilwell pushed his railroad further south, consolidating his tracks with other lines and laying new railbeds as he strove to reach the Gulf of Mexico. Stilwell secured financial backing for the railroad by selling railroad stock to Dutch investors, a necessity after the United States was rocked by the Panic of 1893. To thank his Dutch investors Stilwell named several towns in Arkansas, Texas, and Louisiana after them and their wives, including Zwolle. In 1897 Stilwell's railroad reached the Gulf of Mexico where he built the City of Port Arthur, named after himself. In total Stilwell's enterprise laid over 1,200 miles of track through the center of the country and created an alternative shipping corridor that allowed farmers and industrialists in middle America to efficiently export their products and circumvent more distant eastern seaports. **Criterion C:** Detailed survey was undertaken within the APE along a 1.67-mile segment of the road near Mansfield and a 1.18-mile segment of the road near Loring. Within the APE, the railroad retains its engineered grade, alignment, tracks, a culvert, and a grade crossing. Since the APE contains only a small portion of the overall 91.4-mile long rail line segment, the overall segment has not been surveyed in detail and no determination about the overall segment under Criterion C can be made at this time. **Criterion D**: This railroad segment does not appear to have the potential to yield further important information or data.

Integrity: The Kansas City Southern corridor segment between Frierson, Louisiana and Leesville, Louisiana retains integrity of location, design, materials, workmanship, feeling, and association. Though trackage loss has occurred, the portions of the railroad corridor that remain in operation are in their historic footprint. The railroad corridor, still in active use, retains its association and feeling with railroad transit and freight transportation. Though maintenance and upgrades along the line have surely resulted in the loss or alteration of several individual features such as bridges, tracks, culverts, stations, and depot buildings, when structures were replaced, they were often similar in size, scale, and materials to the original features. The workmanship and design of this railroad corridor segment has also been largely maintained. The segment's setting is also generally intact with the railroads generally passing through the outskirts of small towns and long stretches of rural farmland.

Resource ID:	K-BEAU-02	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Leesville to De Quincy, LA



Description: This property is a 50.6-mile segment of the Kansas City Southern Railway that travels south from Leesville, Louisiana to De Quincy, Louisiana. The railroad segment travels through the towns of Leesville, Rosepine, Deridder, Singer, and De Quincy. For much of its length the railroad segment travels through a rural agrarian landscape. Capital improvements are planned in the vicinity of Singer. The railroad segment remains in active use and has typical features such as steel rail, wooden ties, grade crossings, culverts, bridges, and signaling equipment.

National Register Evaluation: This rail segment is recommended **eligible** for listing in the National Register. Originally built in 1897, this portion of the railroad was originally part of the KCP&G. The railroad reached Shreveport, Louisiana in March 1897 and by September of that same year the line had reached the Gulf coast. After the Civil War, companies like the KCP&G began to build trackage in Louisiana and rural towns throughout the state relocated to take advantage of the developing railroad infrastructure. Louisiana railroads typically handled passengers, foodstuffs, and lumber, much of which was directed to major Gulf coast ports like New Orleans and Port Arthur, Texas. The railroad segment is regionally significant under **Criterion A** in the areas of Transportation and Commerce. Built as one of the final portions of the KCP&G, this segment of the railroad played a major role in the ultimate fulfillment of the vision of a link between the Midwest and the Gulf of Mexico. The railroad, the first major line to pass through this section of Louisiana, enabled capitalists and investors to develop large scale farms and timber operations in rural Louisiana. In Sabine, Vernon, and Calcasieu Parishes short and long leaf pine were harvested for the first time on an industrial scale. Prior to the KCS's arrival, the nearest railroad to these parishes had been 100 miles away. The development of Louisiana's timber industry coincided with the decline of the stands of timber in Michigan, Minnesota, and Wisconsin, all of which had been timbered for decades. Rosepine and DeRidder, Louisiana are representative examples of the economic transformation brought about by the arrival of the KCS. In 1897 the railroad came though both towns soon after there were four lumber companies in Rosepine which was incorporated in 1902; in nearby DeRidder two lumber companies were organized after the railroad's arrival while the town was formally incorporated in 1903. Louisiana, with its extremely warm climate, also produced sugar and tropical fruits such as oranges, resources which the KCS could quickly ship to domestic and international markets.

Resource ID:	K-BEAU-02	Resource Type:	Above-Ground
Inventory Number:	TBD	Potential Effect:	Physical
Previous Documentation:	N/A	Location:	Leesville to De Quincy, LA

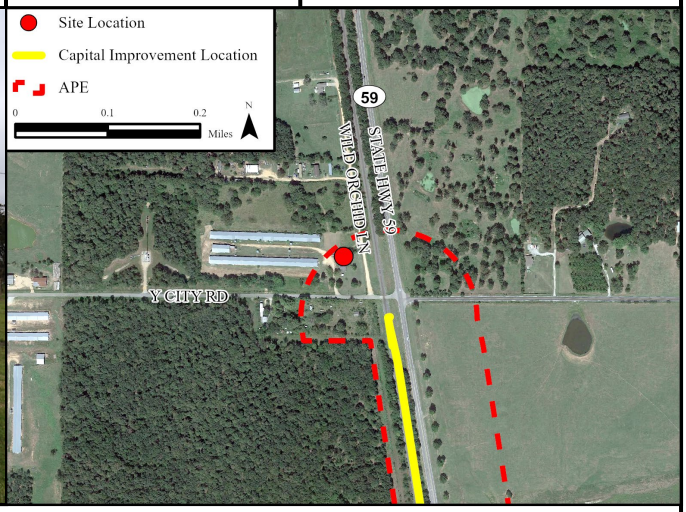
National Register Evaluation (con't.): The railroad also led to direct commercial investment in Hornbeck, where the KCS built repair shops, as well as the creation of DeRidder and DeQuincy Louisiana. **Criterion B:** This railroad segment was built between 1887 and 1892 for the Kansas City, Pittsburg and Gulf Railroad, a precursor to the Kansas City Southern. This segment of railroad is significant for its association with Arthur Stilwell, the founder and driving force behind the expansion of the KCP&G. Arriving in Kansas City in 1888, Arthur Stilwell began to operate his first railroad, the Kansas City Suburban Belt Railway, in 1889. Extending the line south to Pittsburg, Kansas, Stilwell renamed the line the KCP&G. Through the 1890s Stilwell pushed his railroad further south, consolidating his tracks with other lines and laying new railbeds as he strove to reach the Gulf of Mexico. Stilwell secured financial backing for the railroad by selling railroad stock to Dutch investors, a necessity after the United States was rocked by the Panic of 1893. To thank his Dutch investors Stilwell named several towns in Arkansas, Texas, and Louisiana after them and their wives, including DeRidder and DeQuincy. In 1897 Stilwell's railroad reached the Gulf of Mexico where he built the City of Port Arthur, named after himself. In total Stilwell's enterprise laid over 1,200 miles of track through the center of the country and created an alternative shipping corridor that allowed farmers and industrialists in middle America to efficiently export their products and circumvent more distant eastern seaports. **Criterion C:** Detailed survey was undertaken within the APE along a 1.84 mile stretch of this 50.6- mile-long segment of railroad. Within the APE, the railroad retains its engineered grade, alignment, tracks, and grade crossings. Since the APE contains only a small portion of the overall 50.6-mile long rail line segment, the overall segment has not been surveyed in detail and no determination about the overall segment under Criterion C can be made at this time. **Criterion D**: This railroad segment does not appear to have the potential to yield further important information or data.

Integrity: The Kansas City Southern corridor segment between Leesville, Louisiana and De Quincy retains integrity of location, design, materials, workmanship, feeling, and association. Though trackage loss has occurred, the portions of the railroad corridor that remain in operation are in their historic footprint. The railroad corridor, still in active use, retains its association and feeling with railroad transit and freight transportation. Though maintenance and upgrades along the line have surely resulted in the loss or alteration of several individual features such as bridges, tracks, culverts, stations, and depot buildings, when structures were replaced, they were often similar in size, scale, and materials to the original features. The workmanship and design of this railroad corridor segment has also been largely maintained. The segment's setting is also generally intact with the railroads generally passing through the outskirts of small towns and long stretches of rural farmland.

Appendix J – Attachment 2: Arkansas Segment

Resource ID:	BE1974	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	9587 Wild Orchid Lane, Gentry, Arkansas





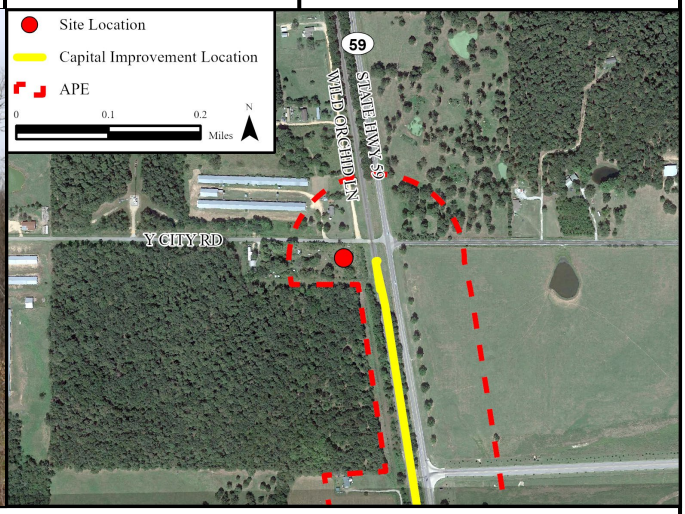
Description: The property is located along the west side of Wild Orchid Lane, within 200 feet west of the existing KCS Railway. The property is a rural 21.3-acre lot in proximity to mid-to-late 20th century agricultural and residential properties. The primary building on the property is a linear Manufactured House type with No Academic Style. The building appears to have been constructed in 2004 based on tax assessor records. Historic aerial photography shows several ancillary agricultural structures onsite in the early 1960s and 1970s. Only one small historic storage shed remains extant. Additional ancillary structures currently on the property include two small non-historic storage sheds, two large non-historic chicken houses, and a non-historic animal pen. Based on a field survey, the property was likely originally used as a poultry farm and appears to function as such in 2022. The house is clad in vinyl siding and features a cross-gabled roof with overhanging eaves and asphalt shingles. A front-gabled portico is situated on the west façade. Fenestration consists of 1/1 metal double-hung windows. The three small storage sheds are clad in replacement metal siding and feature either a metal front-gabled roof or metal shed roof. The two chicken houses are clad in replacement metal siding and feature front-gabled roofs with overhanging eaves and replacement metal. Fenestration consists primarily of 1/1 vinyl double-hung windows. The animal pen is an open-bay front-gabled structure.

National Register Evaluation: The property is recommended not eligible for listing on the National Register. **Criterion A**: While the property is associated with mid-20th century residential and agricultural development in the region, it is not considered individually significant within the historic context of community development or agriculture. **Criterion B**: Research conducted has not identified any connection between the property and historically significant individuals. **Criterion C**: The property is largely characterized by late 20th century and early 21st century infill. The historic shed exhibits non-historic replacement materials and no longer conveys its period or method of construction. **Criterion D**: There are no indications that the property is likely to yield significant information in history or prehistory.

Integrity: The property retains integrity of location as it remains on its original site of construction. The property lacks integrity of setting, design, materials, workmanship, feeling, and association. The setting has been altered with the introduction of non-historic elements including a Manufactured House and ancillary structures. Integrity of design and materials has also been compromised by the addition of non-historic infill and the addition of non-historic materials to the remaining historic shed on the property. These changes disrupt the property's ability to convey its historic workmanship, as well as the feeling of a mid-to-late 20th century agricultural property. The property does not possess the features to convey a significant association with agriculture or architecture.

Resource ID:	BE1975	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	18917 Y City Road, Gentry, Arkansas





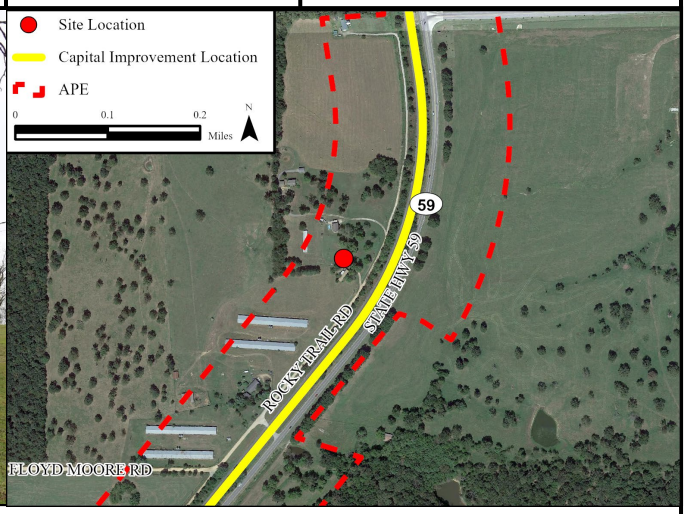
Description: The property is located along the south side of Y City Road, within 150 feet west of the existing KCS Railway. The property is a linear Plain-style frame house that appears to have been constructed in 1910 based on tax assessor records. The property is situated on a slightly overgrown 3.4-acre lot with mature vegetation and shade trees. Several mid-to-late 20th century agricultural and residential properties are in proximity to the north. The one-story, single-family residence features a front-gabled roof with overhanging eaves, asphalt shingles, and exposed rafter tails. The building is clad in horizontal wood siding. The house is accessed by a replacement six-panel wooden door on the east façade. Fenestration consists primarily of pairs of original 1/1 wooden double-hung windows; however, most appear damaged or have been boarded over with plywood.

National Register Evaluation: The property is recommended not eligible for listing on the National Register. **Criterion A**: While the property is associated with early 20th century residential development in the region, it is not individually significant within the historic context of community development. **Criterion B**: Research conducted has not identified any connection between the property and historically significant individuals. **Criterion C**: The property does not possess distinctive characteristics or character-defining features of a period or method of construction. Further, the house exhibits the loss of some original wood siding and fenestration due to dilapidation. As a result, the property is not a good or representative example of an early 20th century residential structure. **Criterion D**: There are no indications that the property is likely to yield significant information in history or prehistory.

Integrity: The property retains integrity of location as it remains on its original site of construction. The property lacks integrity of setting, design, materials, workmanship, feeling, and association. Integrity of setting has been compromised by the addition of several mid-to-late 20th century agricultural and residential properties to the north. Integrity of design and materials has been compromised by the loss of original wood siding and fenestration. These changes disrupt the property's ability to convey its historic workmanship, as well as the feeling and aesthetic of an early 20th century residential property. Due to these alterations, the property no longer possesses the features to convey a significant association with early 20th century architecture.

Resource ID:	BE2303	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	19100 Rocky Trail Road, Gentry, Arkansas





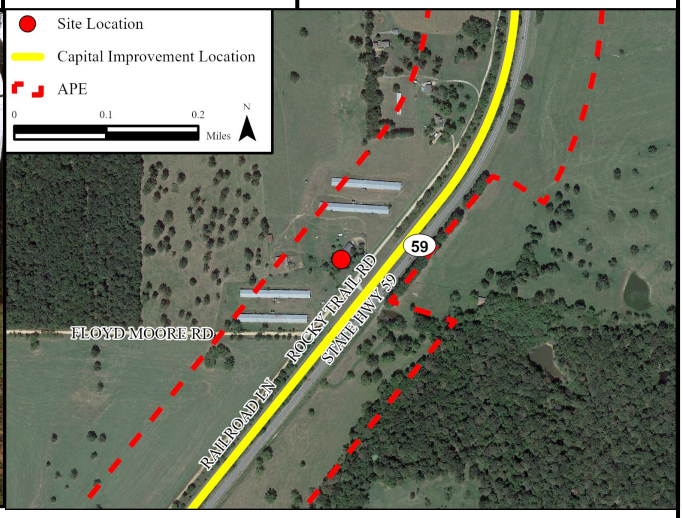
Description: The property is located along the west side of Rocky Trail Road, within 250 feet east of the existing KCS Railway. The property is a rural 2-acre lot in proximity to several mid-to-late 20th century agricultural and residential properties to the north and south. The property includes a one-and-one-half-story Bungalow that appears to have been constructed in the early 1960s based on aerial photography and correspondence with the current property owner. The house is clad in replacement vinyl siding and features a side-gabled roof with overhanging eaves and asphalt shingles. Two interior brick chimney stacks are present towards the center of the roof. A small side-gabled addition is present on the north elevation and a prominent front-gabled portico is centrally placed on the east façade. The portico roof is supported by two stone masonry posts situated on a raised concrete porch floor. The porch floor is accessed by a set of concrete steps and is bounded by a low stone masonry wall. A pair of French doors are present beneath the portico roof and provide access to the house. Fenestration consists primarily of 6/1 vinyl double-hung windows and 8/1 vinyl double-hung windows. A small, historic storage shed stands to the north of the residence. The shed is constructed of stone and features a front-gabled roof with overhanging eaves and asphalt shingles. A small, shed roof awning addition extends from the east elevation.

National Register Evaluation: The property is recommended not eligible for listing on the National Register. **Criterion A**: While the property is associated with mid 20th century residential development in the region, it is not individually significant within the historic context of community development. **Criterion B**: Research conducted has not identified any connection between the property and historically significant individuals. **Criterion C**: The property does not possess distinctive characteristics or character-defining features of a period or method of construction. Further, the house exhibits the loss of it historic form with the side-gabled addition and loss of materials with replacement vinyl siding and windows. As a result, the property is not a good or representative example of a mid 20th century residential building. **Criterion D**: There are no indications that the property is likely to yield significant information in history or prehistory.

Integrity: The property retains integrity of location and setting as it remains on its original site of construction in an area characterized by mid-to-late 20th century agricultural and residential development. The property lacks integrity of design, materials, workmanship, feeling, and association. Integrity of design and materials has been compromised by the Bungalow's altered form and replacement materials including non-historic vinyl siding and windows. These changes disrupt the property's ability to convey its historic workmanship, as well as the feeling and aesthetic of a mid 20th century residential property. Due to these alterations, the property no longer possesses the features to convey a significant association with mid 20th century architecture.

Resource ID:	BE2339	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	19084 Rocky Trail Road, Gentry, Arkansas





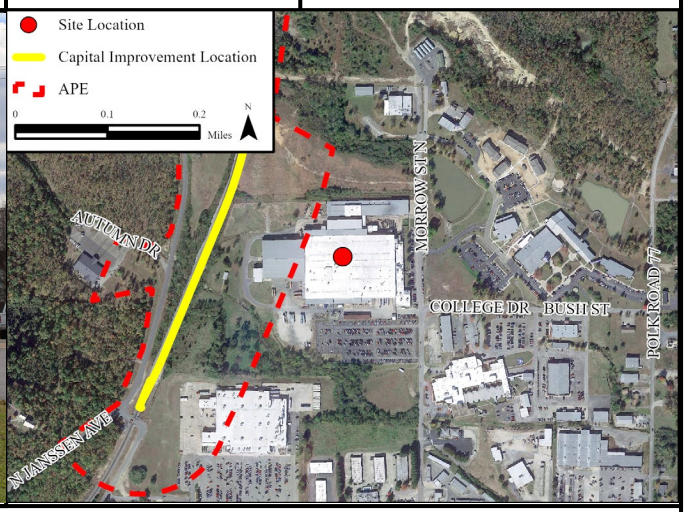
Description: The property is located along the northwest side of Rocky Trail Road, within 200 feet northwest of the existing KCS Railway. The property is a rural 6.4-acre lot in proximity to mid-to-late 20th century agricultural and residential properties to the north and south. The oldest building onsite is a Bungalow that likely dates to the 1930s or 1940s based on its typology and historic materials. However, based on aerial photography, this building is not original to the property and was likely moved onsite ca. 1980. The property also includes four ancillary structures: a large historic open-bay barn, one small historic storage shed, one small non-historic storage shed, and a non-historic linear Manufactured House. The historic Bungalow features a front-gabled roof with overhanging eaves, asphalt shingles, and exposed rafter tails. It is largely clad in replacement asphalt roll siding and stands on a non-historic raised concrete block foundation. A front-gabled, partially-enclosed portico is centrally placed on the southeast façade. Fenestration consists primarily of 1/1 metal double-hung windows of varying sizes. The historic side-gabled barn is clad in replacement metal siding. The historic shed features a shallow gambrel roof and replacement metal siding. A front-gabled non-historic shed is also clad in replacement metal siding. The cross-gabled Manufactured House stands on a concrete block foundation. A central front-gabled portico roof and raised wooden deck are present on the southeast façade. Fenestration consists primarily of 1/1 vinyl double-hung windows with decorative vinyl shutters.

National Register Evaluation: The property is recommended not eligible for listing on the National Register. **Criterion A**: While the property is associated with mid-to-late 20th century residential and agricultural development in the region, it is not individually significant within the historic context of community development. **Criterion B**: Research conducted has not identified any connection between the property and historically significant individuals. **Criterion C**: The property is largely characterized by late 20th and early 21st century infill. The historic Bungalow and shed exhibit non-historic replacement materials and no longer convey their period or method of construction. **Criterion D**: There are no indications that the property is likely to yield significant information in history or prehistory.

Integrity: The property lacks integrity of location, setting, design, materials, workmanship, feeling, and association. The historic Bungalow appears to have been moved to this property and is surrounded primarily by late 20th and early 21st century ancillary infill. Integrity of design and materials has been compromised by the addition of non-historic infill and the addition of non-historic materials to the Bungalow and historic shed. These changes disrupt the property's ability to convey its historic workmanship, as well as the feeling and aesthetic of a mid-to-late 20th century agricultural property. The property does not possess the features to convey a significant association with agriculture or architecture.

Resource ID:	PL0128	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	500 Morrow Street N, Mena, Arkansas





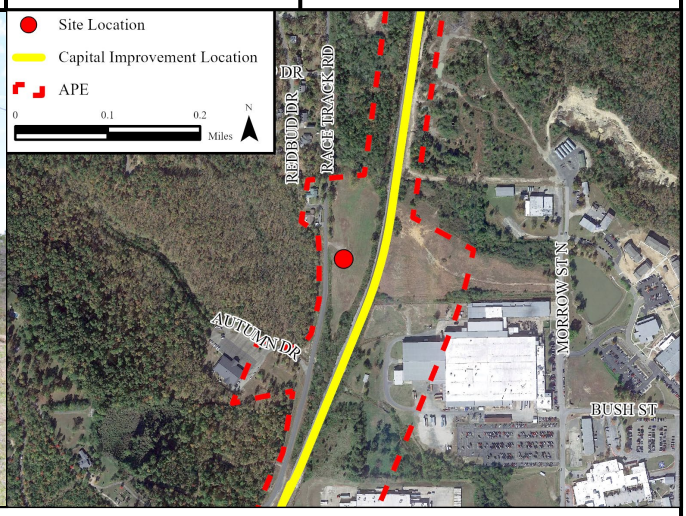
Description: The property is located along the west side of Morrow Street N, within 500 feet east of the existing KCS Railway. The property features a large industrial complex that was first constructed in 1966. Based on aerial photography, the complex was expanded in phases during the late 20th and early 21st centuries. The property historically served as a US Motors Manufacturing facility. It continues to function as an operational manufacturing facility under the ownership of NIDEC. The historic core of the complex is a large 2-story, flat-roofed building with a square footprint. The building is clad in non-historic metal siding and is fronted by a historic 1-story office section along the east façade. The office section is constructed of brick and features several symmetrically placed multi-light and vertical metal industrial windows delineated by wide brick buttresses. A central entryway provides access to the building and is comprised of a large multi-light picture window situated beneath a prominent storefront fascia. The fascia is clad in non-historic metal and bears signage advertising the NIDEC and US MOTORS name. Several large flat-roofed additions are present to the north and west. The property is situated on a paved lot in proximity of several other mid-to-late 20th century commercial and industrial facilities.

National Register Evaluation: The property is recommended not eligible for listing on the National Register. **Criterion A**: While the property is associated with the history of US Motors, the property is not considered individually significant as a representation of regional industrial growth. **Criterion B**: Research conducted has not identified any connection between the property and historically significant individuals. **Criterion C**: The property has been extensively altered with non-historic materials and additions. As a result, the property no longer possesses the features to be considered a significant example of mid 20th century industrial architecture. **Criterion D**: There are no indications that the property is likely to yield significant information in history or prehistory.

Integrity: The property retains integrity of location and setting as it remains on its original site of construction surrounded by mid-to-late 20th century commercial and industrial facilities. The property lacks integrity of design, materials, workmanship, feeling, and association. Integrity of design has been compromised by several late 20th and early 21st century additions altering the historic footprint of the building. Non-historic replacement materials including non-historic metal siding have resulted in the lack of integrity of design and materials as well. These changes disrupt the property's ability to convey its historic workmanship, as well as the feeling and aesthetic of a mid 20th century industrial property. The property does not possess the features to convey a significant association with industry or architecture.

Resource ID:	PL0130	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	203 Polk County Road 117, Mena, Arkansas





Description: The property is located along the east side of Polk County Road, within 250 feet west of the existing KCS Railway. Based on aerial photography, tax assessor's records, and a field survey, the single-pen Plain-style frame house appears to have been constructed in 1971. The building stands on a 2-acre lot in proximity of other mid-to-late 20th century residential architecture. The one-story building has a pier foundation and is clad in horizontal wood siding. It features a side-gabled roof with overhanging eaves and asphalt shingles. A recessed shed porch roof is present along the length of the north façade. The porch roof is supported by four wooden posts situated on a slightly raised wooden deck. Two non-historic 6/6 metal double-hung windows and a single wooden entrance door are present beneath the porch roof. Additional fenestration consists of one non-historic 4/4 metal double-hung window on the west elevation and a single six-panel wooden entrance door on the rear elevation.

National Register Evaluation: The property is recommended not eligible for listing on the National Register. **Criterion A**: While the property is associated with late 20th century residential development in the region, it is not individually significant within the historic context of community development. **Criterion B**: Research conducted has not identified any connection between the property and historically significant individuals. **Criterion C**: The property does not possess distinctive characteristics or character-defining features of a period or method of construction. Further, the house exhibits non-historic alterations including metal windows. As a result, the property is not a good or representative example of a late 20th century residential structure. **Criterion D**: There are no indications that the property is likely to yield significant information in history or prehistory.

Integrity: The property retains integrity of location and setting as it remains on its original site of construction in proximity to other mid-to-late 20th century residential structures. The property lacks integrity of design, materials, workmanship, feeling, and association. Integrity of design and materials has been compromised by the introduction of non-historic materials including metal windows. These changes disrupt the property's ability to convey its historic workmanship, as well as the feeling and aesthetic of a mid-to-late 20th century residential property. Due to these alterations, the property no longer possesses the features to convey a significant association with mid-to-late 20th century architecture.

Resource ID:	3PL1649	**Resource Type:**	Below-Ground
Inventory Number:	N/A	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Mena



Description: Site 3PL1649 is a precontact low density lithic scatter. The site was recorded as a single positive shovel test containing three non-diagnostic lithic flakes. The site is bound to the north and south but is unknown from the west and east of the positive shovel test. As a result, the known site boundary is rectangular in shape, measuring 20 m east to west and 10 m north to south. Shovel test MN.A64 exhibited two stratum and bedrock. The upper strata consisted of 45 cm of 10YR 4/3 sandy clay intermixed with pebbles and gravel underlain by yellowish brown (10YR 5/6) sandy clay loam from 45 to 55 cmbs. At 55 cmbs, shale bedrock was reached. Soils appeared to be redeposited and were mounded up along the rail ballast. The artifacts were recovered from a depth of 0 to 30 cmbs and are likely comprised of Pierson chert. The surrounding vegetation was dense pine saplings interwoven with greenbrier and dewberry. A stream is located north and downhill from the location of the positive shovel test. Five delineations at 5m intervals were completed, two north, two south, and one east. A fence line runs north to south along the eastern edge of the railroad ROW. These tests contained some mixed mottled soils including modern railroad materials and increasing amounts of degraded shale bedrock. There is a possibility the soils in this location are fill from construction and clearing of the railroad ROW. In particular, the presence of railroad spikes and clips in the first strata would suggest that the location is disturbed.

National Register Evaluation: The property was evaluated for the National Register under Criterion D. The integrity of the site has been compromised by railway construction. As lithic scatters are common in this region and the recovered cultural materials are not indicative of a specific technological, material, or cultural tradition, the site apparently lacks significant data potential. As the site was not fully delineated due to the constraints of the survey area, the eligibility status of site 3PL1649, as a whole, has not been determined. The portion of the site identified within the APE lacks integrity and significant data potential under Criterion D of the National Register and is recommended not eligible.

Integrity: Site 3PL1649 lacks integrity of location, design, setting, materials, workmanship, feeling, or association. The location, design, and setting of the site have been compromised by the disturbance caused by the construction of the railroad. The site lacks integrity of workmanship and feeling, due to the sparse and undiagnostic nature of the artifacts recorded. Site 3PL1649 also lacks integrity of association, as the site cannot be directly linked to any important historical event or persons.

Appendix J – Attachment 3: Illinois Segment

Resource ID:	IL-MC-001	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	5122 N Bennett Rd, Monroe Center, Illinois





Description: The property is a farmstead comprised of a historic I-House farmhouse, historic Transverse Crib barn, historic detached garage, historic shed, and non-historic dovecote. The property is located approximately 470 feet to the south of the railroad. The historic farmhouse and outbuildings are first visible on a 1953 historic aerial photograph. Based on the building types and materials present, the I-House appears to date to the early-to-mid-nineteenth century. As per the historic aerial photographs, the outbuildings most likely date to the 1940s.

The historic farmhouse is an east facing two-story wood framed building with a large one-story historic addition to the rear façade. The house is set on a poured concrete foundation and is covered by a non-historic standing seam side-gabled roof. The house is clad in non-historic vinyl siding and is fenestrated with non-historic 1/1 vinyl windows and historic wood 2/2 windows. The house also features a brick chimney to the left of the front façade and a front-gabled portico supported by squared replacement wooden porch supports. The historic one car garage is located to the south of the I-House. The garage has been heavily altered; it features a non-historic garage door and is contained under a non-historic metal hipped roof. The garage is sided with non-historic wooden siding and features a non-historic 1/1 vinyl window. The historic Transverse Crib barn, historic shed, and non-historic dovecote are located across North Bennett Road from the I-House. Both the barn and the shed are covered with non-historic metal siding and are contained under non-historic standing seam metal roofs. The dovecote is shaped like a silo and is contained under a conical metal roof with hog-wire type siding.

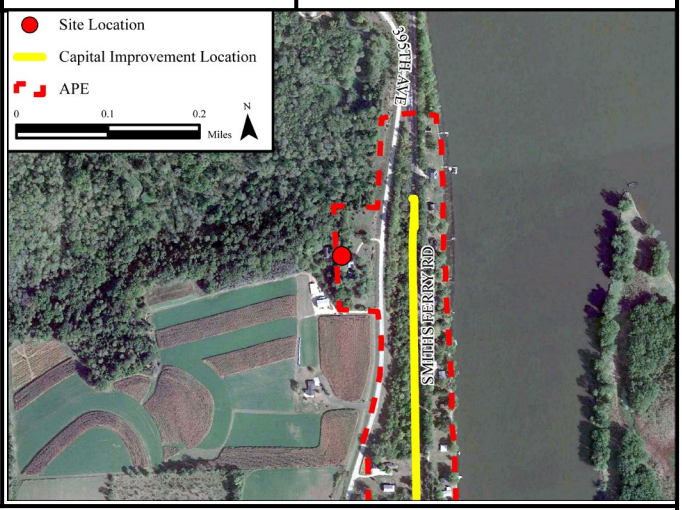
National Register Evaluation: This property is recommended not eligible for the National Register. **Criterion A:** While the property is associated with early-to-mid-nineteenth century residential and agricultural development in the region, it is not individually significant within the historic context of community development or agriculture. **Criterion B:** Research conducted has not identified any connection between the property and any historically significant individuals. **Criterion C:** The property has distinctive characteristics of an I-House; however, it does not serve as a good and representative example due to a lack of integrity. **Criterion D:** The property does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic location and remains in a rural residential setting. The farmhouse remains in use as a residence, and the outbuildings retain their historic association with rural residential and agricultural development in the area. The integrity of design, materials, and workmanship have been compromised due to the replacement of the historic siding and windows on most of the buildings on the property. These substantial alterations have diminished the integrity of feeling and the property no longer conveys the feeling and aesthetic of its period of construction.

Appendix J – Attachment 4: Iowa Segment

Resource ID:	IA-BV-001	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	I-Sites: 49-00607, 49-00608, 49-00609	**Location:**	33420 395th Ave Bellevue, Iowa





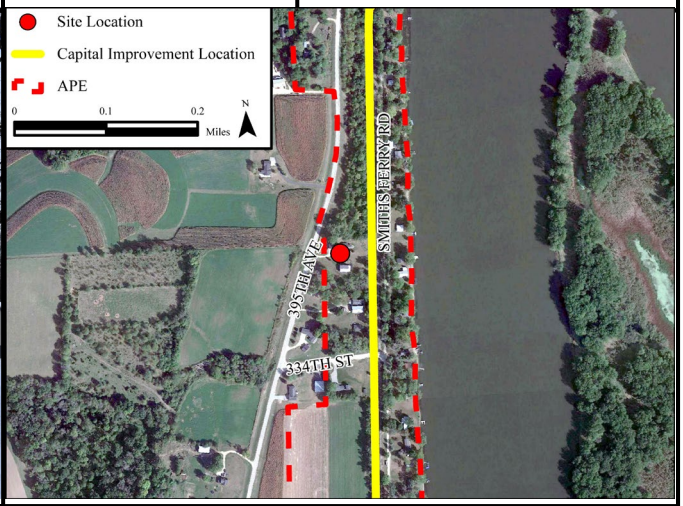
Description: The property is a vernacular gable ell house that was once part of a farmstead and has been significantly altered. The building appears to have been constructed in the late nineteenth or early twentieth century based on tax assessor records and architectural analysis. The property is approximately 350 feet west of the railroad. The building faces east towards the Mississippi River and is in a rural agrarian setting. The house consists of a 2-bay, 2-story, gable front main block and a 2-bay south ell. It is clad in aluminum siding and topped by an asphalt shingle roof; a brick chimney splits the gable. The building's primary entry is in the east elevation of the ell, sheltered beneath a non-historic replacement wood porch which spans the ell and the west half of the façade. The porch has four stone pedestals supporting chamfered wood posts and a flat roof of unfinished lumber; there is no decking. Fenestration throughout consists of 1/1 vinyl replacement windows. On the building's side (south) elevation there is a bay window and a non-historic, deteriorated screened in porch with a shed roof. There is a 1 ½ story garage behind the house. The garage, constructed in the 2000s, is 3 bays and has a gable front standing seam metal roof, vertical metal siding, two rollup garage doors, and vinyl 6/6 windows. A metal cupola splits the gable's ridgeline. There is a gabled barn northwest of the garage; the barn was not clearly visible from the public right of way but appears to be clad in vertical board siding and is in a deteriorated state. A three-sided, 2 bay shed stands to the east of the barn, north of the garage.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. **Criterion A:** While the construction of the property is associated with early twentieth century residential development in the region, it is not individually significant to the historic context of the community development. The property was also examined within the context of agriculture due to its history as a farm. Because the historic design of the farmstead is heavily altered with the large garage built in its center in the 2000s, it no longer effectively conveys its historic association with agriculture. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** The property has distinctive characteristics of a gabled ell house; however. it does not serve as a good representative example of its type due to lack of integrity. **Criterion D:** This property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and setting. It remains at its historic construction site and retains its rural residential and agricultural setting. While it remains in use as a residence, it has lost its historic association with farming due to alterations to the farmhouse and the construction of the garage. The integrity of design, materials, and workmanship have been compromised due to the replacement of historic materials, deterioration of the barn, and construction of the large garage. These substantial alterations have diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	IA-BV-002	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	33139-33141 395th Ave, Clinton, Iowa





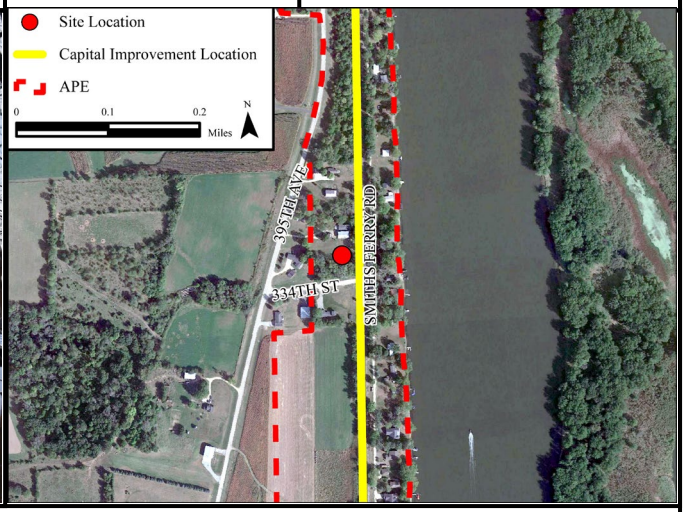
Description: The property consists of one vernacular residential building and two garages. The house and the southerly garage appear to have been constructed in the 1950s based on aerial photographs and tax assessor records. The second garage, located just west of the residence was built around 1995. The property is approximately 100 feet west of the railroad. The property sits in a rural landscape with surrounding buildings consisting of mid-century or later residences. The house is the northeast building of the complex. It is a side gabled, 1-story, 3-bay building with the façade facing south and an easterly extension that was not clearly visible from the public right of way. It is clad in non-historic vinyl siding and has an asphalt shingle roof with an interior brick chimney on the ridgeline. The house is fenestrated with single light vinyl casement windows in single or triple groupings. The historic southerly garage is a simple building with a shallow gable roof, oriented east to west. It is clad in standing seam metal siding and has a standing seam metal roof. It has a tall, metal, rollup garage door on its north and west elevations. The non-historic garage west of the house is a 1 ½ stories, 2 bays wide, gable front building clad in vinyl siding with an asphalt shingle roof. The south elevation has two rollup garage doors and a shed roof porch runs along the east elevation of the building. Fenestration consists of paired single-light, vinyl casement windows; one such window is in the gable above the garage doors, sheltered by a slight projection of the gable peak.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. **Criterion A:** While the construction of the property is associated with mid-twentieth century residential development in the region, it is not individually significant within the historic context of the community development. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** The property does not embody a distinctive characteristic of a type, period, or method of construction and has diminished integrity (see below). **Criterion D:** This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and remains in a rural area developed with mid twentieth century seasonal residences. Additionally, the property remains in use as a residence and therefore retains its historic association with rural development in the area. Its integrity of design, materials, workmanship, and feeling are greatly diminished. Almost all of the materials on the two 1950s buildings – the northeast house and the southerly garage – are replacement materials. The substantial loss of historic design, materials, and workmanship has diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	IA-BV-003	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	32981 395th Avenue, Bellevue, Iowa





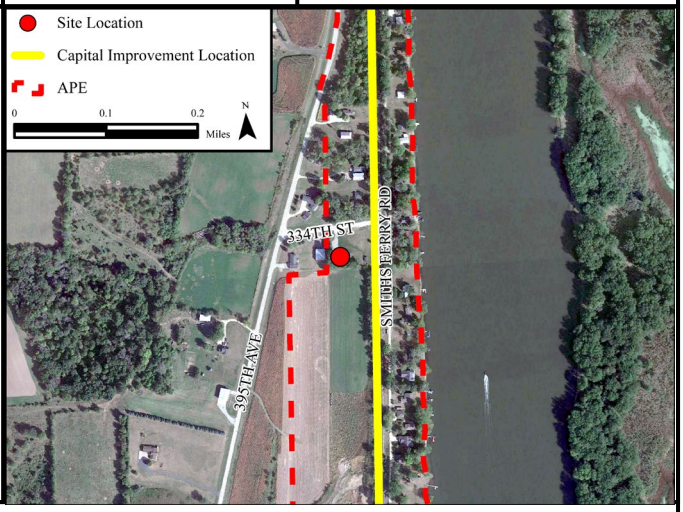
Description: The property is a residence with detached garage which appears to have been constructed in the mid-1940s, based on aerial photographs and tax assessor records. The building is a hipped roof bungalow that sits in a largely rural setting with surrounding properties consisting of mid-twentieth century seasonal camps and late-twentieth century residences. The building is approximately 50 feet west of the railroad. The building's west elevation is not visible from the public right-of-way because of its distance from the road and intervening vegetation. The building is 3 bays wide and 1 story in height, clad in non-historic vinyl siding, and capped by a shallow, asphalt shingle-clad, pyramidal roof with widely overhanging eaves. There is a broad, exterior brick chimney on the west elevation. The east elevation is spanned by an enclosed porch with a central metal storm door and continuous bands of 1/1 aluminum windows that partially wrap around the side elevations. There are two outbuildings situated to the south of the house. One is a small, gabled shed which appears to have been constructed between 1957 and 1966 based on aerial photographs. The other is a larger, gabled garage to the southwest of the house built in the mid-1950s based on aerial photographs. Neither outbuilding is clearly visible from the public right-of-way due to intervening vegetation, but both appear to be clad in vinyl siding and have asphalt shingle roofs.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. **Criterion A:** While the construction of the property is associated with early to mid-twentieth century residential development in the region that was driven by the recreational opportunities of the nearby Mississippi River, it is not individually significant within the historic context of the community development. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** The property has distinctive characteristics of a hipped roof bungalow; however, it does not serve as a good and representative example due to a lack of integrity (see below). **Criterion D:** This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and remains in a rural residential setting near an enclave of seasonal camps along the Mississippi River. The building remains in use as a residence and thus retains its historic association with rural development in the area. However, the building's integrity of materials, workmanship, and design have been compromised through the replacement of original siding materials with vinyl and the enclosure of the easterly porch with bands of aluminum windows. The enclosure of the porch has erased the deep, open porch, a key design feature of bungalow houses. This substantial alteration has diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	IA-BV-004	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	39609 334th St, Bellevue, Iowa





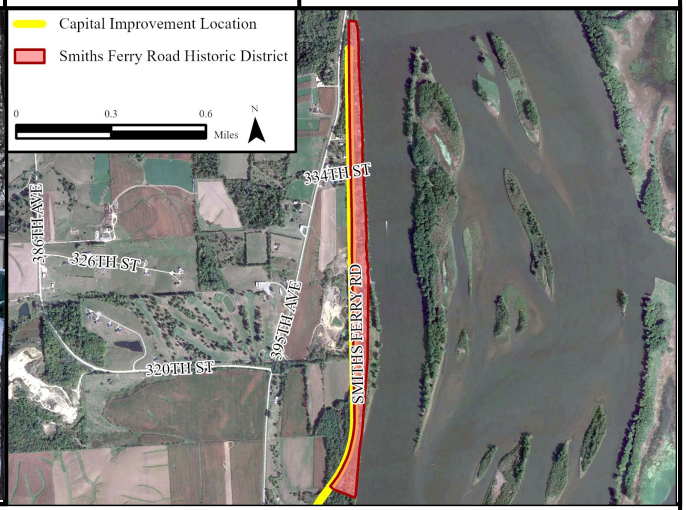
Description: The property is a heavily altered ranch house built in 1974 based on tax assessor records. It is situated in an area consisting of seasonal cottages on the bank of the Mississippi River. The property is approximately 125 feet west of the railroad. The 1-story, side gabled, main block of the ranch house is flanked by a large, gable-front, 2-story addition on the east side and 1-story attached gable-front garage on the west side. The building rises off a concrete foundation, is clad in non-historic vinyl siding, and has asphalt single-clad roofs. The main block contains a centralized primary entrance with a single light door accessed by a set of wooden steps. There is a band of four tall, narrow, replacement vinyl casement windows set beneath a shallow gable east of the entrance. A paired, replacement vinyl casement window and a similar single casement window are to the west of the entrance. The 2-story addition's north elevation has a paired, replacement vinyl casement window on each story while its east elevation has matching paired vinyl casement windows on each story. The garage addition has a broad, shallow, gable and a 2-car, rollup garage door with panels and faux hinges. A small, detached, gable-front garage clad in novelty siding sits to the east of the house. It has one bay enclosed with horizontal wood boards on the north elevation. Based on historic aerial photographs, it was likely built at the same time as the house in 1974.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. **Criterion A:** While the construction of the property is associated with mid-twentieth century residential development in the region, it is not individually significant within the historic context of the community development. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** The property does not embody a distinctive characteristic of a type, period, or method of construction and the building has been significantly altered through additions and replacement materials. **Criterion D:** This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location ,setting, and association. The property remains at its historic construction site and remains in a rural residential setting nearby an enclave of seasonal camps along the Mississippi River. The building remains in use as a residence and therefore retains its historic association with rural development in this area. The integrity of design, materials, and workmanship have been compromised due to the replacement of windows and siding, as well as the presence of the two-story addition which obscures the house's original one-story, side gabled, ranch house form. These substantial alterations have diminished the integrity of feeling and the building no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	IA-BV-005	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	Smiths Ferry Road, Bellevue, Iowa



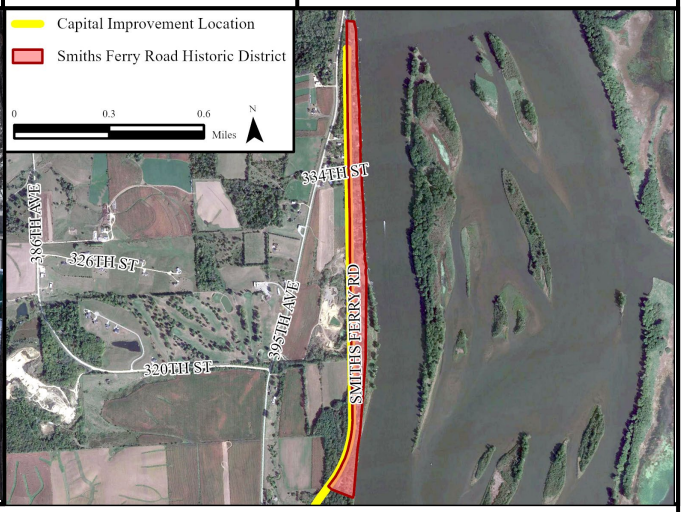


Description: This resource is the Smiths Ferry Road Neighborhood. Smiths Ferry Road is a linear, north-south road bound to the west by the railroad tracks. The neighborhood contains 46 residences that front the Mississippi River; 41 of them are on the east side of Smiths Ferry Road and 5 are at the northerly terminus of 396th Ave. Most of the properties are seasonal camps; only several are year-round residences. They are situated on level lawns interspersed with mature trees. Of the 46 houses, 29 were constructed between 1951 and 1960 based on aerial photographs and parcel records, while 5 were built in the 1940s. The properties are owned by the U.S. Army Corps of Engineers and leased to the public as "cottage sites" through the Cottage Site Program. Buildings constructed within the neighborhood's historic period of development (around 1940 – 1960) are vernacular camps and share common historic features: wood or concrete block frames; shed, shallow gable, or hipped roofs with asphalt shingles; concrete slab or pier foundations; and aluminum or vinyl siding (just a handful have wood siding). Historic fenestration patterns are somewhat intact although most of the homes have replacement windows that include either sliding casement windows, awning windows, or 1/1 sash windows. Decks or enclosed porches are typically found on the east (river) side of the buildings; most appear to be replacement decks and most of the original porches have been enclosed. Most properties have detached garages and/or small sheds, as well as docks and boat launches. Some of these camps retain historic elements of mid-20th century modern design that include banks of windows facing the river, projecting shed roofs, and/or hipped roofs.

National Register Evaluation: Criterion A: The construction of the property is associated with the Army Corps' mid-20th century land management initiatives as a strong example of a planned community developed by the Army Corps between 1951 and 1960 as part of the Cottage Site Program. More research is needed under the contexts of Community Planning & Development and Recreation to develop an eligibility recommendation under Criterion A. Criterion B: Research has not identified any connection between the property and historically significant individuals. Criterion C: Buildings in the neighborhood are examples of mid-20th century modern vernacular architecture. Most have been altered so significantly that they no longer retain integrity as mid-20th century houses resulting in the neighborhood lacking overall integrity. Criterion D: This recreational property type does not appear to have the potential to yield further important information or data.

Resource ID:	IA-BV-005 Continued	Resource Type:	Above-Ground
Inventory Number:	TBD	Potential Effect:	Visual
Previous Documentation:	None	Location:	Smiths Ferry Road, Bellevue, Iowa

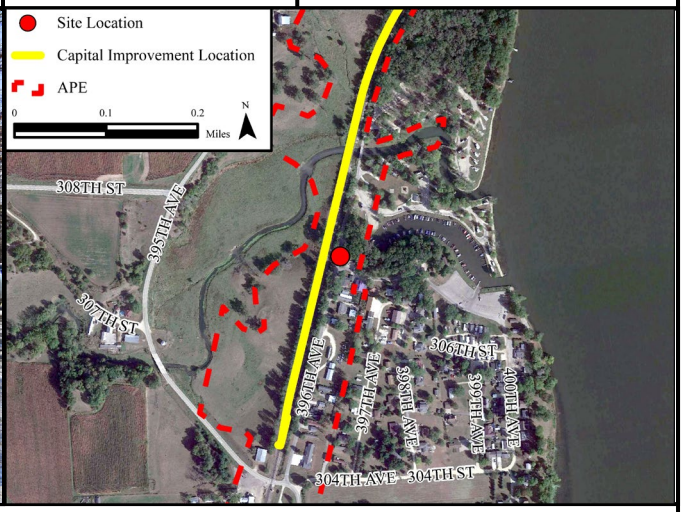




Integrity: The neighborhood retains integrity of location and setting. Its location and limits of improvement endure from the historic development that culminated in 1960. The neighborhood's setting on the Mississippi River and the uniform setbacks and parklike character of the building lots are also intact. However, only 13 of the 33 pre-1960 properties retain enough integrity to be contributing resources. The historic design and materials of many camp buildings are no longer intact. The overall historic form, materials, and workmanship of most of the buildings are diminished to the extent that most are unable to convey a sense of their mid-20th century period of construction. Alterations to the neighborhood have negatively impacted its feeling and aesthetic as a mid-20th century camp community.

Resource ID:	IA-BV-006	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	30711 396th Ave, Bellevue, Iowa





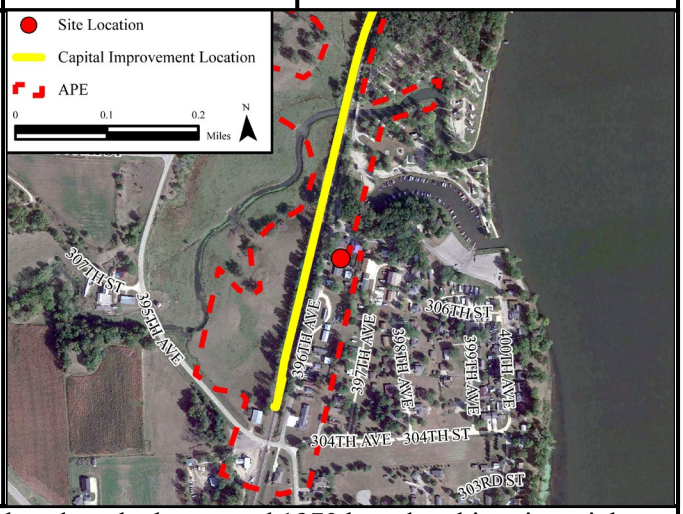
Description: The property, known as Spruce Creek Park, is a 43-acre seasonal park, campground, and marina located adjacent to the east of the railroad. The park was developed in the 1950s or early 1960s based on aerial photographs, which show a similar network of roads as exists today and a small boat marina. However, the park has been altered many times since its development. The park is situated around a small inlet with a marina known as Spruce Creek Harbor. The entrance to the park is at the terminus of 396th Ave. The entrance contains a metal gate and two maintenance buildings. Based on aerials photographs, it appears that the south building was constructed between 1966 and 1972 and the north building was constructed between 1972 and 1982. The buildings are clad in standing seam metal siding with shallow gable metal roofs. The south building has a single light metal door and a metal rollup garage door on the south elevation. A small addition on the east side contains another single light metal door on its south elevation. Two window openings on the west elevation are covered by metal grates. The north building faces the park road and has sliding metal doors on the west side and a metal slab door on the south elevation. The park was not accessible during the field inspection. Some landscaping features observed include roadways, lawns interspersed with trees, and a boat launch area. Wood and stone pavilions and a concrete block building likely containing restrooms and showers were also observed. The park landscape and structures have been altered numerous times since then due to flooding, upgrades, and landscaping efforts to provide more parking.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. **Criterion A:** While the construction of the property is associated with mid-20th century recreational development along the Mississippi River in this region, it is not individually significant within the historic context of riverfront recreation. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** While the property embodies some distinctive characteristics of a campground, many of these features do not date from the park's historic period of development or have been replaced and thus the property lacks integrity. **Criterion D:** This property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association, the property remains in its historic development site and its residential and wooded setting on the Mississippi River remains intact. The property conveys its continued use as a campground and therefore it retains its historic association with recreation in this area. The overall historic design of the park's roadways, campsite locations, and central marina remain intact; however, many of these individual components were altered in the 1980s, and buildings and structures have been replaced throughout the years. These substantial alterations have diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	IA-BV-007	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	30665 396th Ave, Bellevue, Iowa





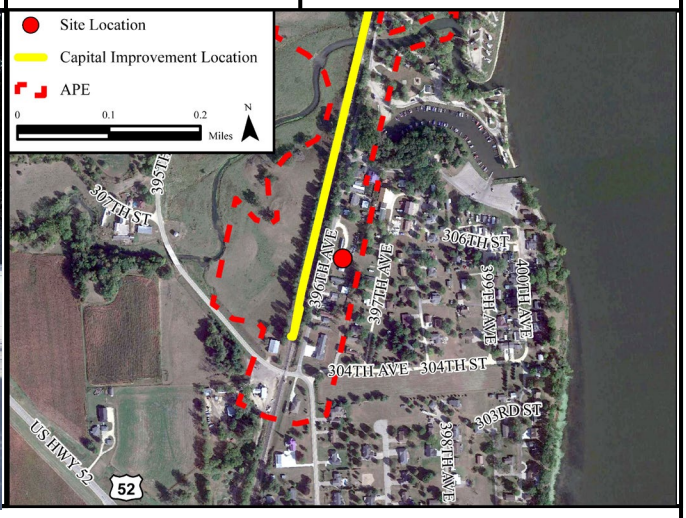
Description: The property is a mobile home that was placed on the lot around 1970 based on historic aerial photographs and a two-car garage built around 1990. Although aerial photographs indicate that other mobile homes were placed in the surrounding area during the 1960s and 1970s, many of these structures were replaced with newer mobile homes and other residences were added to the neighborhood in the 1980s and 1990s. The property is approximately 100 feet east of the railroad. The building is one story, 6 bays in length with a shed roof addition on the north side. It is clad in vinyl siding and topped by a shallow side gable asphalt shingle roof. The addition has a standing seam metal shed roof. The building's façade faces south and is simply fenestrated. The primary entry is located in the third bay from the west and consists of a single light wood door accessed by a low wood stoop. The remaining fenestration consists of replacement 1/1 vinyl double hung windows, a three light vinyl casement window, and a small canted bay window with a shed roof. The west elevation of the addition contains a second entrance sheltered beneath a shallow porch supported by decorative aluminum columns. The porch also shelters two 1/1 double hung vinyl replacement windows. There is a freestanding, non-historic garage directly north of the addition. The garage is 3 bays wide, covered by a gable front asphalt shingle roof, and clad in vinyl siding. Its façade faces west and features a two car roll up garage door and a solid wood pedestrian door.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. **Criterion A:** While the construction of the property is associated with mid to late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** The property has distinctive characteristics of a mobile home; however, it does not serve as a good and representative example due to a lack of integrity (see below). **Criterion D:** This residential property type does not appear to have the potential to yield further important information or data

Integrity: The property retains integrity of location and association. The property remains at its historic construction site. The mobile home remains in use as a residence and therefore retains its historic association with development in the area. However, the integrity of setting is diminished. Originally placed on a lot within a small complex of mobile homes, newer homes erected after 1982 have resulted in the neighborhood no longer retaining the characteristics of a mobile home park. The integrity of design, materials, and workmanship have been compromised due to altered and replacement fenestration, replacement siding, and the construction of the north addition sometime in the late-1970s. These substantial alterations have diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	IA-BV-008	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	30571 396th Ave, Bellevue, Iowa





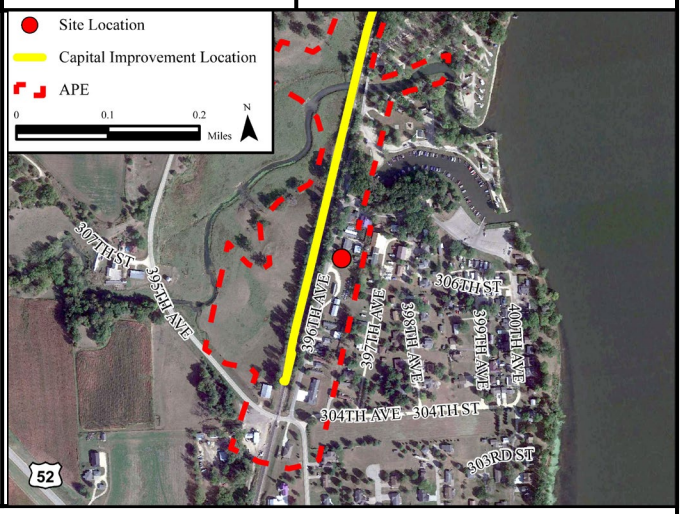
Description: The property is a small commercial complex composed of two garages and a large gas storage tank. Based on aerial photography, the south garage and a gas tank in the same location were erected between 1966 and 1972. The second smaller garage to the north was built between 1972 and 1982 based on aerial photography. The property is approximately 130 feet east of the railroad. The property sits within a dense, residential development that was developed with several mobile homes in the 1960s and 1970s; the neighborhood was expanded in the 1980s and became more densely developed with residential buildings. The historic south building is a 1-story, 5-bay garage that sits on a concrete foundation, is covered with original metal siding, and has a side gabled, standing seam metal roof. The building's façade faces west and each of the façade's 5 bays contains a metal roll up garage door; these doors appear to be replacements. The second building, located just north of the first building, is a taller, 1-story, 3-bay garage. It sits on a concrete foundation, is covered with original metal siding, and has a side gabled, standing seam metal roof. This building's façade also faces west, and it has two tall, roll up metal garage doors as well as a solid metal entry door. Based on their appearance and condition, the doors are likely the original doors. The final component of the property, the gas storage tank, is approximately 35 feet long and sits on two concrete cradles. The gas tank is a newer tank, although it appears to sit on the original concrete cradles.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. **Criterion A:** While the construction of the property is associated with mid-to-late twentieth century commercial development in the region, it is not individually significant within the historic context of the community development. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** The property does not embody a distinctive characteristic of a type, period, or method of construction due to a lack of integrity. **Criterion D:** This property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and association. The property remains at its historic construction site, although its integrity of setting is diminished. When the south garage was erected, its setting was composed of only several mobile homes; this changed in the 1970s and 1980s as the surrounding neighborhood became larger and more densely developed. The integrity of design, materials, and workmanship have been compromised due to the replacement of the garage doors on the south building, a key element of a commercial garage building. The property's overall historic design is also diminished by the later addition of the north building. These alterations have diminished the integrity of feeling and the property no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	IA-BV-010	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	30629 396th Ave, Bellevue, Iowa





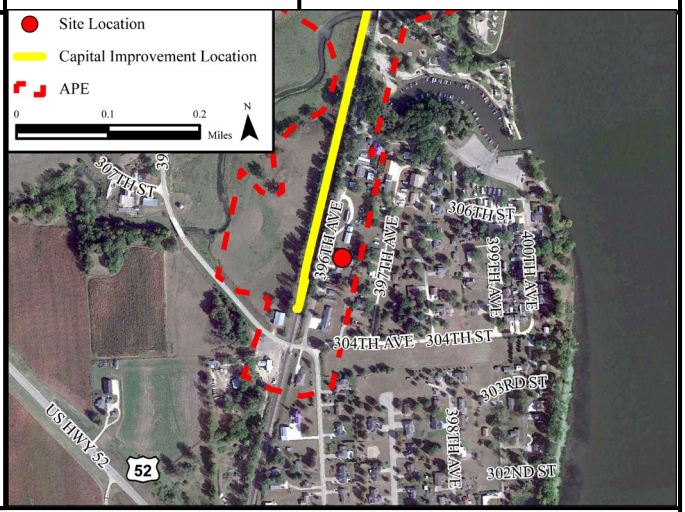
Description: The property is a mobile home that was placed on this lot around 1970 based on aerial photographs. On its north elevation, the building has a carport that was added in the 1990s. It was one of several mobile homes built in this neighborhood during the late 1960s and early 1970s; today, the neighborhood can be characterized as a subdivision containing a mix of mobile homes and non mobile homes, most of which date from the 1980s and 1990s. The building is 1-story, 5-bays, with a shed roof carport on the north side. It is clad primarily in original vertical corrugated metal siding and topped by a shallow side gabled, corrugated metal roof. The building's façade faces south and has two entrances. The entrance in the westernmost bay has a 2 light metal door accessed by wood steps. The easternmost entrance has a single light metal door also accessed by wood steps and sheltered by a metal awning with narrow brackets. There are three windows between the entrances which are a mix of original 1/1 aluminum and replacement 1/1 aluminum sash in different sizes and shapes. The north and south walls of the mobile home project slightly out past the west side elevation wall; these projections support the overhanging west gable. Two replacement 1/1 aluminum sash windows are on this elevation, set within a portion of siding that appears to be non-historic T-111. All windows have vinyl shutters. The carport is constructed of bracketed wood posts with a corrugated metal kneewall and fiberboard enclosing the north side.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. **Criterion A:** While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** The property has distinctive characteristics of a mobile home; however, it does not serve as a good and representative example due to a lack of integrity (see below). **Criterion D:** This residential property type does not appear to have the potential to yield further important information or data

Integrity: The property retains integrity of location and association. The property remains at its historic construction site. The mobile home remains in use as a residence and therefore retains its historic association with development in the area. However, the integrity of setting is diminished. Originally placed on a lot within a small complex of mobile homes, newer homes erected after 1982 have resulted in the neighborhood no longer retaining the characteristics of a mobile home park. The integrity of design, materials, and workmanship have been compromised due to some replacement fenestration and siding, and the construction of the carport in the 1990s. This substantial alteration has diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	IA-BV-011	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	30541 396th Ave, Bellevue, Iowa





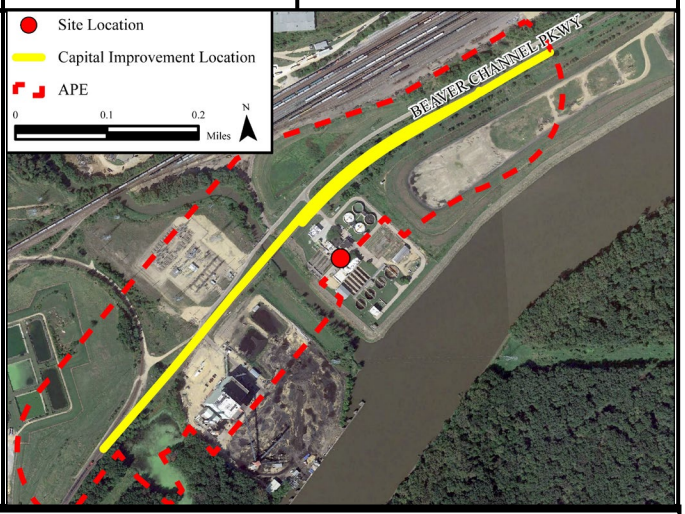
Description: The property consists of a mobile home that was placed on the lot during the late 1960s or early 1970s based on aerial photographs. Although aerial photographs indicate that other mobile homes were placed in the surrounding area during the 1960s and 1970s, many of these structures were replaced with newer mobile homes and other residences were added to the neighborhood in the 1980s and 1990s. The property is approximately 100 feet east of the railroad. The building is 1-story, 6 bays wide, with a combination open and enclosed shed roof porch across the entire south façade. The building is clad in non-historic vinyl siding and topped by a shallow side gabled asphalt shingle roof. The west half of porch, built in the 1990s, is an open porch with square wood posts and a wood balustrade. The primary entrance is sheltered by the porch and consists of a metal door with a storm door. There is a 1/1 window with a metal storm window left of the entrance, and a similar but shorter window is to the east of the entrance. Both windows are flanked by vinyl shutters. While the enclosed porch may date from the building's original construction, its materials have been altered. The enclosed porch has a full width band of 1/1 aluminum storm windows on its south side which partly wrap its west side. A secondary entrance on the west side of the porch contains a metal door with a storm door. The west elevation has a paired window with storm windows and a metal awning set in a gabled projection tucked beneath the overhanging eaves. A tall, 3 bay, gable front garage sits to the southeast of the mobile, built in the 1990s. It has corrugated metal siding and metal rollup garage doors.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. **Criterion A:** While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** The property has distinctive characteristics of a mobile home; however, it does not serve as a good and representative example due to a lack of integrity (see below). **Criterion D:** This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and association. The property remains at its historic construction site. The mobile home remains in use as a residence and therefore retains its historic association with development in the area. However, the integrity of setting is diminished. Originally placed on a lot within a small complex of mobile homes, newer homes erected after 1982 have resulted in the neighborhood no longer retaining the characteristics of a mobile home park. The integrity of design, materials, and workmanship have been compromised due to altered and replacement fenestration, replacement siding, and the addition of the west side of the porch in the 1990s. These substantial alterations have diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	IA-CA-001	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	1901 Beaver Channel Parkway, Clinton, Iowa





Description: The property is the former City of Clinton Water Pollution Control Plant which was constructed c. 1965 and expanded over the course of 60 years. It is approximately 290 feet south of the railroad. The plant was retired in 2013 when a new regional facility was constructed nearby, although a concrete pump station building built in 2011 remains in service to accommodate high water flows. The property sits in an industrial area adjacent to Mill Brook and Beaver Channel. It contains an Administration Building, Administration/Garage, Gallery Building, two Equipment Buildings, four Tanks/Basins, three late 20th century sheds, and a pumping station. The central Administration Building is 1-2 stories tall with multiple wings, a buff brick façade, and a flat roof. Its 1 story northeast wing has International Style elements such as banks of aluminum windows. Remaining windows on this building are single-pane, aluminum casement windows with brick sills. A second building south of the main building has the same brick veneer, as well as a tripartite entrance composed of recessed, aluminum and glass doors and windows with transoms. Additional smaller, mid-twentieth century buildings housing equipment are scattered throughout the complex and have the same materials as the main building. There are four circular tanks at complex's south corner and two rectangular holding tanks to the west. There are also two late 20th century gabled equipment sheds at the east and southwest portions of the property, and a large, gabled, metal and concrete salt storage shed was built in the late-2010s, replacing four concrete tanks.

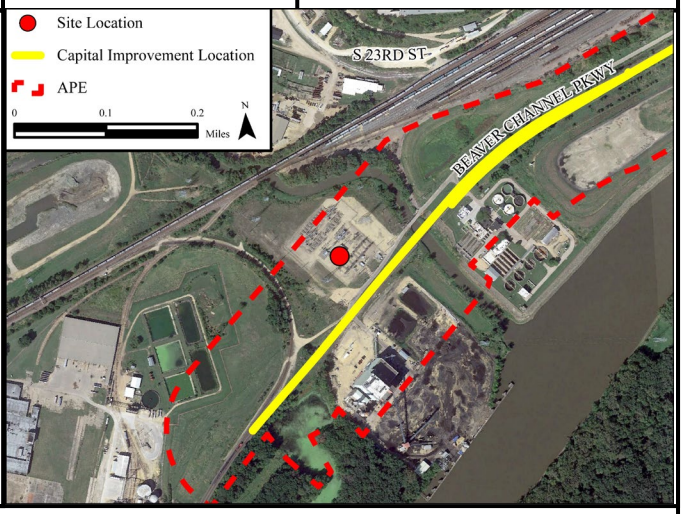
National Register Evaluation: The property is recommended **eligible** for listing in the National Register. **Criterion A:** The property is significant for its association with post-WWII residential, industrial, and commercial growth in the Clinton region, providing a critical public utility to enable this development. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** The property is a good example of a mid 20th century industrial complex. The Central Administration Building has very distinctive elements of the International Style on its northeast wing, which features a bank of floor-to-ceiling aluminum casement windows with spandrels across its entire front elevation, while other elevations exhibit brick veneer. The use of these materials and the mid-century aesthetic carry over into other, secondary buildings in the complex developed through the end of the century, including an additional building as well as circular and rectangular holding tanks, a salt storage shed, and gabled equipment sheds. **Criterion D:** This industrial property type does not appear to have the potential to yield further important information or data.

Resource ID:	IA-CA-001	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	1901 Beaver Channel Parkway, Clinton, Iowa

Integrity: The property retains integrity of location, design, setting, materials, workmanship, feeling, and association. The property remains at its historic construction site and its industrial setting remains intact. The design and materials of the two principal buildings are highly intact, including the buff brick facades and aluminum windows and doors also found on secondary buildings in the complex. These intact features convey a sense of historic workmanship. Due to the collection of intact buildings and the retention of much of the mid 20th century sewage treatment infrastructure, the property retains the feeling and aesthetic of its period of construction. As much of the infrastructure is still in place and the complex occasionally supports the regional water pollution control facility, it retains its historic association with industry and infrastructure.

Resource ID:	IA-CA-002	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	2004 Beaver Channel Parkway, Clinton, Iowa





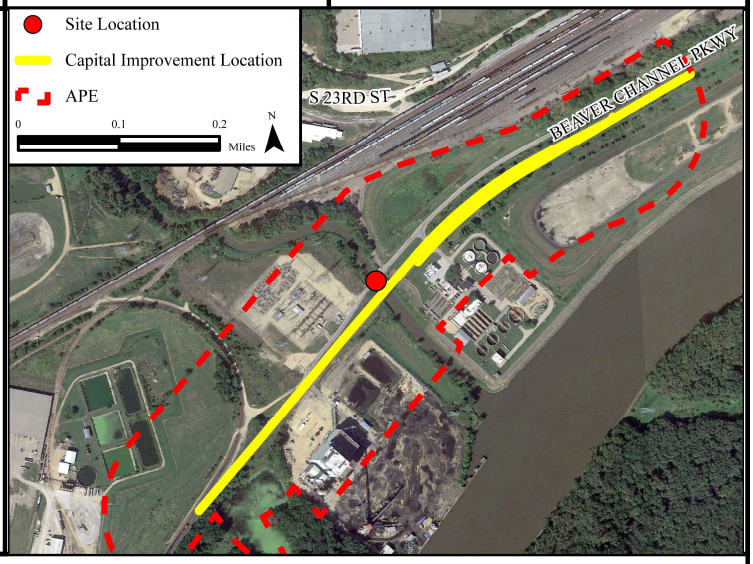
Description: The property is a step-down electrical substation built c. 1960 based on aerial photographs, currently owned and operated by the Interstate Power and Light Company. It is used to decrease transmission line voltages down to subtransmission line levels (69kV) and it supplies power to nearby industrial development. The property is approximately 280 feet north of the railroad. The substation occupies approximately 7 acres of level land in an industrial area adjacent to Mill Creek, the Union Pacific Railroad, and the Camanche Industrial Park. The substation contains components typically found in electrical substations such as steel lattice towers located in the southeast portion of the substation with pointed tops that support transmission lines, lightning protection cables, busbars, and surge arrestors; these lattice towers appear to be historic. There are also ground-mounted transformers clustered in the northwest portion of the substation, ground-mounted circuit breakers and switchgear in the central portion, and a network of transmission/ distribution line towers encircling the substation. These line towers carry electrical power to and from the station. In addition, there is one primary building in the center of the substation that likely houses switchgear. This building is not visible from the public right of way, but it appears to have a gable roof based on aerial photographs. There are several additional buildings clustered in the east portion of the substation that appear to be clad in metal with flat roofs; these building likely house equipment and/or offices.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. **Criterion A:** While the construction of the property is associated with mid 20th century growth and industrial development in the region, it is not individually significant within the historic context of the community development and its associated power station to the south has been demolished. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** The property has some distinctive characteristic of a step-down electrical substation; however, it does not serve as a good and representative example of this type due to a lack of integrity (see below). **Criterion D:** This industrial property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, design, and feeling. The property remains at its historic construction site. The integrity of setting is diminished by the demolition of the large power plant once located adjacent to the south. The overall design appears intact based on historic aerial photographs and field observations; the substation retains its historic layout, and the lattice towers are likely original features. The intact features allow it to retain the feeling and aesthetic of its period of construction. The integrity of materials and workmanship has been compromised as most of the equipment has likely been replaced. While the building remains in use as a substation, its association with industry is diminished due to the demolition of the former coal-generating power plant that generated its electrical power.

Resource ID:	IA-CA-003	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	Iowa DOT Inventory 1994 – Bridge FHWA No. 002080	**Location:**	Beaver Channel Parkway over Mill Creek





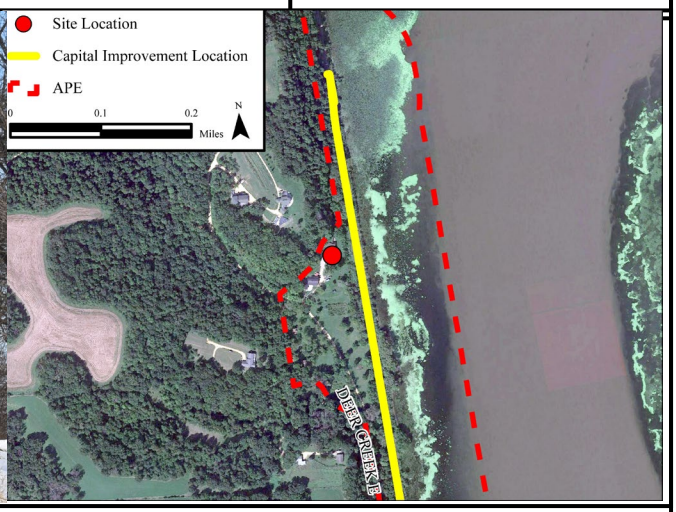
Description: This property is a steel Warren pony truss bridge built in 1920 and rehabilitated in 1960. Records detailing the rehabilitation are unavailable; however, it is possible that work included abutment rehabilitation, deck rehabilitation, and bridge painting. The bridge appears to retain its original trusses and railings. The bridge carries Beaver Channel Parkway over Mill Creek which is less than 10 feet below. The bridge is located approximately 85 feet northwest of the railroad. Mill Creek is a narrow waterway that drains into the nearby Mississippi River. The Beaver Channel Parkway leads to a large industrial area along the Mississippi River's waterfront. The bridge spans 86 feet. The roadway width is 18 feet. The trusses consist of built-up riveted members and steel vertical members; these vertical members strengthen the trusses, supporting the top chord and bridge deck. The deck is supported by transverse steel beams attached by gusset plates to the bottom chords. On each truss, the railing is composed of two parallel steel box rails spanning the length of the truss. The concrete bridge deck is paved with asphalt, with concrete curbs on both sides. The bridge sits on concrete bridge seats and concrete abutments with concrete wingwalls.

National Register Evaluation: In the 1993 Iowa Historic Bridge Survey by Fraser Design for Iowa DOT Survey, The Beaver Channel Parkway Bridge (FHWA # 002080) was included and was found to be not eligible for the National Register of Historic Places. **Criterion A:** Although the property has impacted the surrounding local industrial land use as part of the transportation network, the property has been determined to lack significance in the area of transportation. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** Although the property is an intact example of a Warren pony truss, the property has been determined to not rise to the level of individual significance under Criterion C. **Criterion D:** This property does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, design, setting, materials, workmanship, feeling, and association. The property remains at its historic construction site. The design and materials of the bridge are intact including the riveted steel trusses, the bridge width, and the original bridge railings. The property retains integrity of setting; originally built in a rural environment the land around Beaver Channel Parkway became increasingly industrialized starting after World War II. The intact features convey a sense of historic workmanship, and the property retains the feeling and aesthetic of its period of construction. The bridge remains in use as a bridge over Mill Creek and retains its historic association.

Resource ID:	IA-DC-001	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	N/A	**Location:**	1800 Deer Creek East, Clinton, Iowa





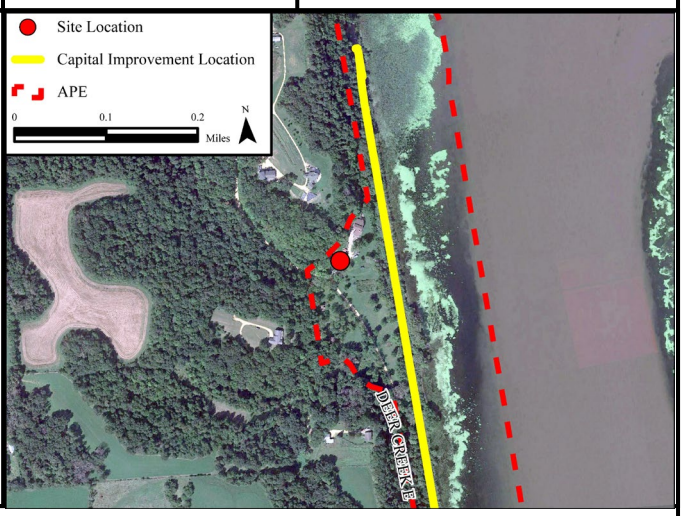
Description: The building is a residence that appears to have been constructed c.1951 and significantly expanded c. 1960 and again c. 1990 based on aerial photography. The building is set back on a small hill approximately 100 feet west of the railroad in a largely rural and heavily wooded setting, with a retaining wall built into the hill west of the building. The building faces southeast and is comprised of a 2 ½ story, gable front center mass with two shed roof wings which mirror each other; the north wing was added between 1983 and 1994. The southerly wing is punctured by a faux stone chimney. The building is roughly 11 bays wide, clad in clapboard siding, and roofed with asphalt shingles. On its first story, the building's façade features a nine-bay screened in porch. There is an entry left of this porch; right of the porch are two banks of three single light windows. The building's second story is wrapped by a full width deck which extends around to the south elevation; fenestration is a mix of full height single light windows and 1/1 vinyl windows in groups of three. The central, upper half story of the building contains a three-bay wood balcony and paired single light windows that flank a sliding glass door. A fanlight tops the door. A 1-story, 1-bay garage extends from the west elevation of the central mass. In front of the building there is a non-historic 2-bay wood frame shed with vertical wood siding and a gable front standing seam metal roof with a metal cupola. The shed has banks of four and six light fixed casement windows.

National Register Evaluation: The property is recommended not eligible for listing in the National Register of Historic Places. **Criterion A:** While the construction of the property is associated with mid-twentieth century residential development in the region, it is not individually significant within the historic context of the community development. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** The property does not embody a distinctive characteristic of a type, period, or method of construction and has been significantly altered and expanded in recent years. **Criterion D:** This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and remains in its rural residential setting adjacent to the Mississippi River. The building remains in use as a residence and thus retains its historic association with rural development in this area. The integrity of design, materials, and workmanship have been compromised due to vinyl replacement windows and the significant expansion of the house sometime between 1983 and 1994 with the addition of a northerly wing that has disrupted the building's historic design. These substantial alterations have diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	IA-DC-002	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	1804 Deer Creek East, Clinton, Iowa





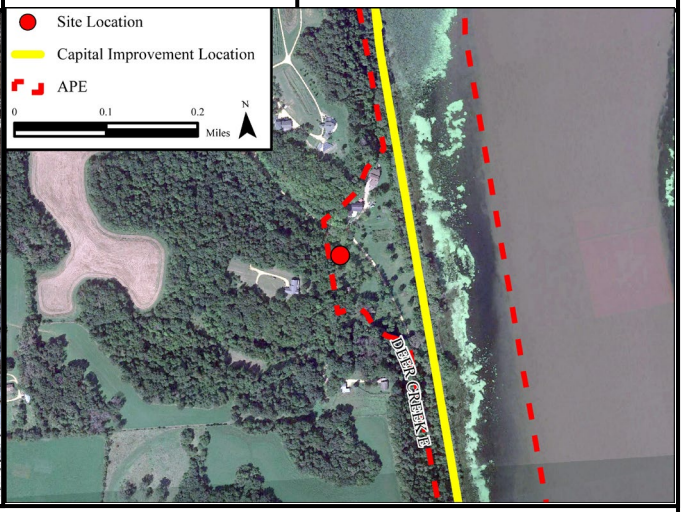
Description: The property is a private residence constructed in the early 1970s as a south facing garage. In 2010, a 5-bay wing was constructed off the building's eastern elevation giving the property its current L-shaped plan. The building is set back on a small hill in a largely rural and heavily wooded setting. The building is 1 ½ stories tall and clad in non-historic corrugated metal siding. The building's 2-bay south facing facade has a front gable roof with widely overhanging eaves while the east facing wing has a gambrel roof; both are covered by standing seam metal. The building is approximately 320 feet from the ROW. The gabled south elevation features a large, two bay garage door flanked to the west by a metal door. On the upper half story there is a single light window and a 1/1 double hung vinyl window. An exterior wooden staircase leads to a second story deck and entry on the east side elevation of this wing. The building's non-historic east wing faces east and features two single bay roll up garage doors. At the center of the gambrel roof there is a wooden hayloft door sheltered beneath a projecting hood. Along the southern elevation of this wing there are regularly spaced, single light, rectangular vinyl windows set just below the roofline.

National Register Evaluation: The property is recommended not eligible for listing in the National Register of Historic Places. **Criterion A:** While the construction of the property is associated with mid twentieth century residential development in the region, it is not individually significant within the historic context of the community development. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** The property does not embody a distinctive characteristic of a type, period, or method of construction as its materials and overall design have been heavily altered. **Criterion D:** This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and remains in a rural residential setting near the Mississippi River. The building remains in use as a residence and retains its historic association with rural development in this area. The integrity of material and workmanship have been compromised due to the replacement of materials such as siding and windows. The integrity of design is diminished by the construction of the gambrel-roof east wing in 2010, which is larger than the original house. These substantial alterations of materials and design have diminished the integrity of feeling and the building no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	IA-DC-003	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	1808 Deer Creek East, Clinton, Iowa





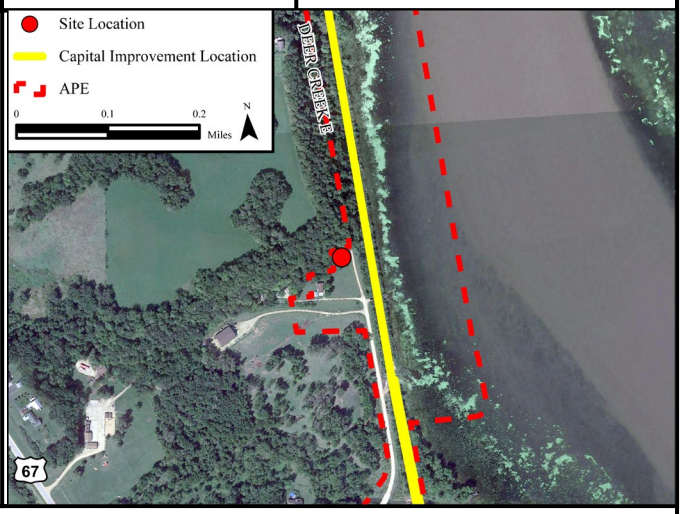
Description: The property comprises a vernacular side gable bungalow and a barn located on a wooded hillside above the Mississippi River. Based on its architecture and bungalow form, the building appears to have been constructed in the early 1900s. Aerial photographs show the property surrounded by agricultural fields suggesting that it was part of a farm, although this farming context is no longer apparent due to reforestation along Deer Creek East. The building is 3 bays wide, 1 ½ stories tall, clad in wide asbestos shingle siding, and topped by a side gable roof with asphalt shingles. The roof's ridgeline is split by an off-center brick chimney. The building's façade faces east towards the Mississippi River and is approximately 400 feet east of the railroad. The entry is sheltered by a full width enclosed porch with continuous banks of 1/1 aluminum storm windows, a non-historic alteration. The north side elevation has three 4/1 double hung windows. There is a shed roof porch with a secondary entry on the south side elevation. The building's upper half story has a gabled dormer above the facade with paired 1/1 double hung aluminum windows. A heavily deteriorated and structurally unsound barn sits south of the house. The barn is 3 bays wide, wood frame, covered by a gable-front asphalt shingle roof, and clad in vertical wood siding. The barn's gable has a projecting hood over its hay track. Two window openings are present within in the barn's north facing gable.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. **Criterion A:** While the construction of the property is associated with early twentieth century residential development in the region, it is not individually significant within the historic context of the community development. The property was also evaluated within the context of agriculture due to its history as a farm. Because the property's associated farmland are no longer intact and the barn has substantially deteriorated, it cannot convey its historic association with agriculture. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** The property has distinctive characteristics of a side gable bungalow; however, it does not serve as a good and representative example due to a lack of integrity. **Criterion D:** This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location as it remains at its historic construction site. The property's integrity of setting is diminished with the reforestation of cleared agricultural land that once surrounded the buildings. The buildings are vacant, and the farm is no longer operational; therefore, the property is no longer associated with residential development or agriculture in the area. The integrity of design, materials, and workmanship have been compromised due to the replacement of the siding and the enclosure of the front porch, which removed a key design feature of a bungalow house: a large, open front porch. This alteration has diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	IA-DC-004	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	1844 Deer Creek East, Clinton, Iowa





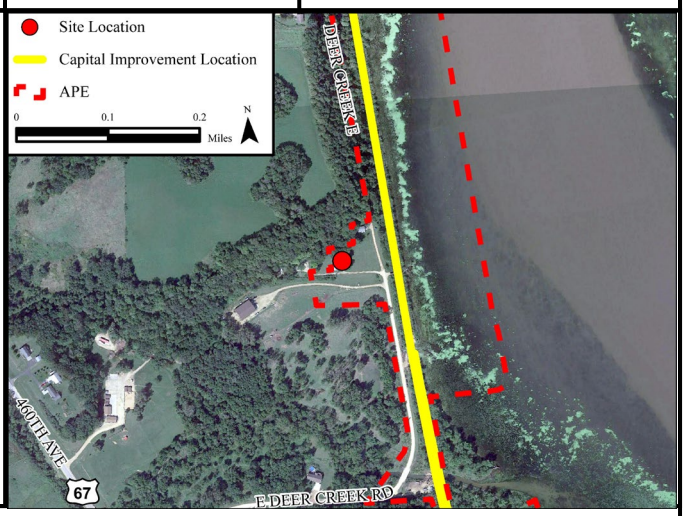
Description: The property is a private residence built in the 1960s based on aerial photographs and tax assessor records. The vernacular house is situated in a largely rural setting and is built into a wooded hillside with a retaining wall. The building is approximately 125 feet east of the railroad. The house is 5 bays wide and 2 stories tall, with a shallow gable roof with slight return eaves; the gable faces eastward while the primary, eaves-front façade faces south. The building is clad in wide vertical wood siding and covered by an asphalt shingle roof. There is a concrete block chimney on the rear elevation, and an interior brick chimney is present on the northern elevation. The primary entry on the south façade consists of a single door with an aluminum screen sheltered beneath a non-historic, second story deck supported by square wooden posts. There is a vertical, three-part hopper window to the right of the door. The deck, which has a wooden balustrade, is accessed by a glass and aluminum door on the second story. Fenestration on the first and second stories of this façade consists primarily of two-light, vinyl casement windows. The east elevation has two non-historic, rollup garage doors on the first story and a continuous bank of 1/1 aluminum windows on the second story that wraps around the north and south elevations.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. **Criterion A**: While the construction of the property is associated with mid-twentieth century residential development in the region, it is not individually significant within the historic context of the community development. **Criterion B**: Research has not identified any connection between the property and historically significant individuals. **Criterion C:** The property does not embody a distinctive characteristic of a type, period, or method of construction. **Criterion D**: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and remains in a rural residential setting near the Mississippi River. The building remains in use as a residence and the building retains its historic association with rural development in this area. The integrity of design, materials, and workmanship have been compromised due to the replacement of many of the windows, the replacement of the garage doors, and the addition of the wooden deck on the second story. These alterations compromise the building's integrity of design, workmanship, and materials and compromise the building's ability to convey the feeling of its period of construction.

Resource ID:	IA-DC-005	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	1846 Deer Creek East, Clinton, Iowa





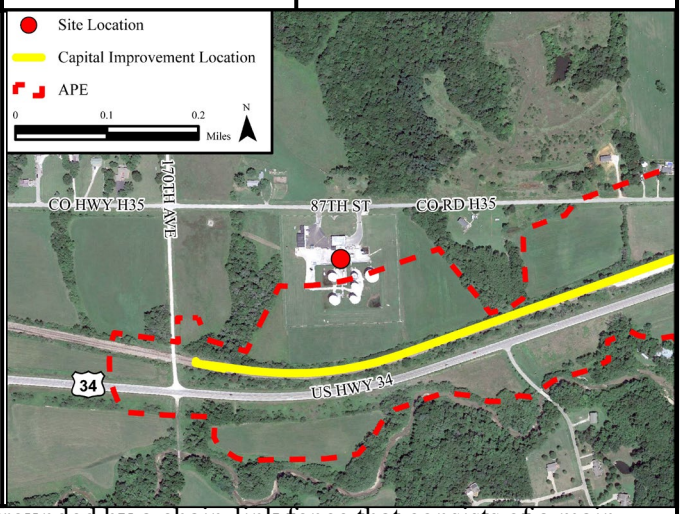
Description: The property is a private residence located in a largely rural setting, built into a slight hill with a concrete retaining wall on the north side of the building. The building faces east and is approximately 320 feet from the ROW. Constructed in the 1960s based on aerial photographs and tax assessor records, the house is 5 bays wide, 2 stories tall, and covered by a side gable, asphalt shingle roof. On the north elevation, an off-center exterior brick chimney rises through the gable, and an off-center exterior concrete block chimney is present on the south elevation. The building is primarily clad in vinyl siding; however, the east façade is covered by non-historic T-111 siding on the first story. The primary entry is located in the center bay and consists of a 9-light door with a metal screen. An octagonal window sits immediately left of the entry, and on either side of the façade there are matching, non-historic 3-light casement windows. Fenestration on the second story of the facade consists of non-historic 2- and 3-light casement windows. The second story also has a large, non-historic wooden deck accessed by a sliding glass door and steps on its north side. There is a garage door opening with an automatic garage door on the building's south elevation. A 1-story, single bay garage sits behind the house and faces south. This garage is clad in vinyl siding and covered by a gable front, standing seam metal roof. The garage door is topped by a shallow triangular pediment, and a solid modern door on the east elevation is topped by a similar pediment.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. **Criterion A**: While the construction of the property is associated with mid-twentieth century residential development in the region, it is not individually significant within the historic context of the community development. **Criterion B**: Research has not identified any connection between the property and historically significant individuals. **Criterion C**: The property does not embody a distinctive characteristic of a type, period, or method of construction. **Criterion D**: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and remains in a rural residential setting near the Mississippi River. The building remains in use as a residence and the building retains its historic association with rural development in this area. The integrity of design, materials, and workmanship have been compromised due to the replacement of some siding and all of the windows, and by the addition of the elevated wooden deck. These substantial alterations have diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	IA-OT-001	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	16848 87th Street Ottumwa, Iowa





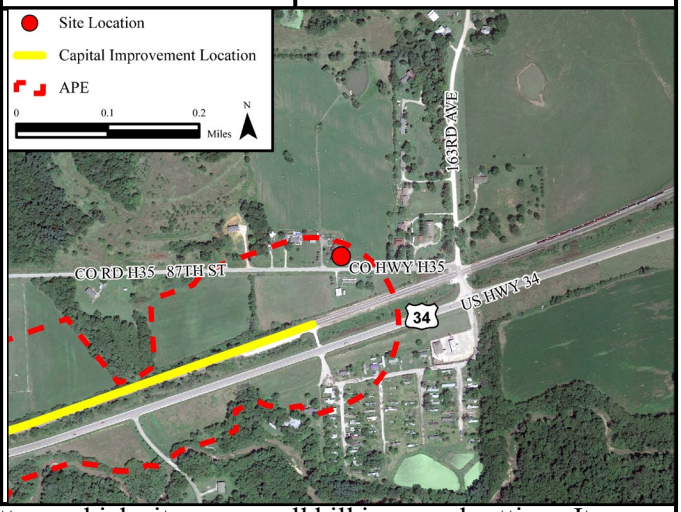
Description: The property is a commercial complex surrounded by a chain-link fence that consists of a main warehouse/ administration building (Building 1), several small outbuildings (Buildings 2-4), a covered filling station (Structure 1), six large, steel bulk petroleum storage tanks (Structures 2-7), and several smaller storage tanks (Structures 8-11). approximately 330 feet north of the railroad. The complex was developed between 1951 and 1956 based on aerial photographs; two of the storage tanks, an outbuilding, and the main building were built at this time. The remaining petroleum tanks are visible in a 1983 aerial photograph while the filling station was built between 1994 and 2002. The complex is located in an open expanse of relatively flat land in a rural setting. The main building is 1 story and approximately 9 bays wide with a 5-bay wing. The building sits on a low concrete foundation and is topped by a flat roof. The main block has concrete block walls while the walls of the wing appear to be clad in non-historic vinyl. The building's façade faces east and features two roll up loading dock doors and a single glass and metal door, all accessed via a raised concrete walkway. Near the roofline there are regular banks of paired, single light casement windows and a similar window to the right of the glass and metal door. The addition's façade contains two glass and metal doors as well as paired, single light, fixed pane windows, four of which wrap the addition's corner. A non-historic covered filling station comprised of a blank wall on the north side and a canopy sheltering oil pumps sits east of the main building. The small outbuildings are each 1 story, 2-bay, gabled or shed-roof buildings covered by standing seam metal roofs. The six steel bulk tanks are large cylindrical structures approximately 40' in height.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. **Criterion A:** While the property is associated with mid-twentieth century commercial development in Ottumwa, it is not individually significant within the historic contexts of commerce or industry. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** The property does not embody a distinctive characteristic of a type, period, or method of construction due to alterations and the construction of several non-historic wings. **Criterion D:** This property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and the setting is largely unchanged. The historic design and most of the historic materials and workmanship of the main building appear intact, although the wing's materials and workmanship have been altered. Additionally, the addition of the non-historic covered filling station and outbuildings diminishes the property's integrity of design and feeling. The complex remains in use as a bulk petroleum storage facility.

Resource ID:	IA-OT-002	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	16445 87th Street Ottumwa, Iowa





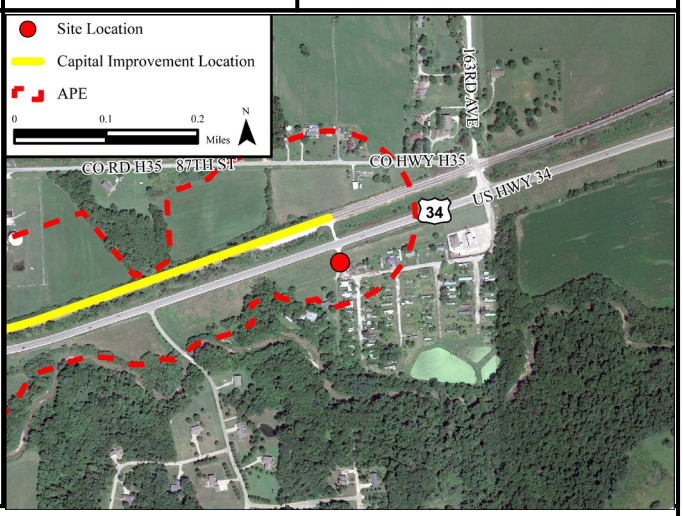
Description: The property is a vernacular gabled ell cottage which sits on a small hill in a rural setting. Its façade faces south toward the railroad, which is approximately 330 feet away. The building appears to have been constructed in the early 1900s, based on tax assessor records. The 1 ½-story, 2-bay, gable-front building has a 1 ½-story easterly ell and a large, ell-shaped addition off its rear elevation. The building is clad in non-historic vinyl siding and its roof is covered in standing seam metal. The building's primary entry is sheltered within a non-historic enclosed porch on the south façade of the ell. The porch has a continuous bank of 1/1 vinyl windows with aluminum storm windows which wrap two sides of the porch. A single light glass door provides access to the porch. There is a wall dormer with a 1/1 double hung vinyl window above the porch. The gable front main block has two 1/1 double hung vinyl windows on the first story and a similar 1/1 window in the gable peak. Two kneewall windows of similar materials are visible under the western eave. The fenestration on the remaining elevations matches that of the façade. The rear addition protrudes slightly west from the main block and is only partially visible from the public right-of-way. Its west side has a cross gable roof, with a 1/1 double hung vinyl window on the south elevation and a two-light casement window on the west elevation. There are several non-historic outbuildings on the property that are not clearly visible from the public right-of-way; most appear to be small, prefabricated, gabled sheds. There is also a non-historic side-gable, metal-clad garage west of the house with a metal rollup garage door on the east elevation.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. **Criterion A**: While the construction of the property is associated with early twentieth century residential development in the region, it is not individually significant within the historic context of the community development. **Criterion B**: Research has not identified any connection between the property and historically significant individuals. **Criterion C**: The property embodies the basic form of a gabled ell cottage, a common building type. However, it does not embody distinctive characteristic of this building type because most of its original materials have been replaced and a significant rear addition was built. **Criterion D**: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and retains its rural residential setting. The building remains in use as a residence and thus retains its historic association with rural development in this area. The integrity of design, materials, and workmanship have been compromised due to the replacement of materials such as windows and siding, the enclosure of the ell's porch, and the construction of the large addition. These substantial alterations have diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	IA-OT-003	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	16440-16442 U.S. Highway 34, Ottumwa, Iowa





Description: The property is a mobile home park, constructed in the 1960s based upon aerial photography and topographic maps. The park is located on the south side of U.S. Highway 34; its main (western) entrance is approximately 175 feet southeast of the railroad. A gas station/convenience store constructed in 2007 sits northeast of the mobile home park, at the western entrance to the park. This mobile home park would be classified as a vernacular residential park. It is located outside of town, it has no specific landscape features that are part of its simple, utilitarian design, and it lacks any identifiable amenities.

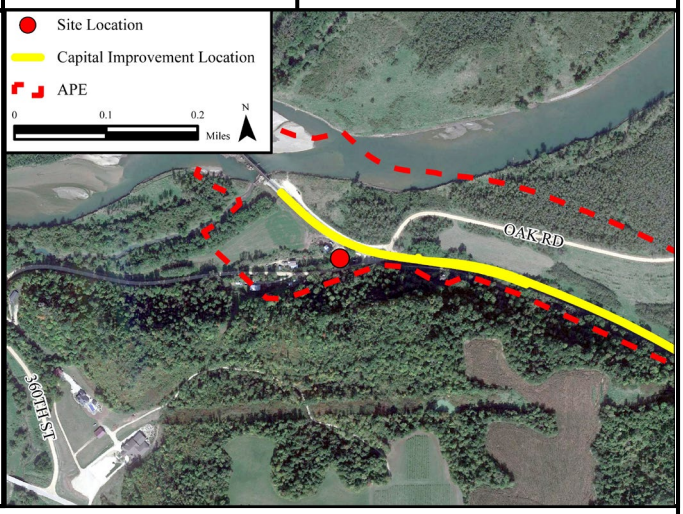
The mobile home park is accessed by two entrances from U.S. Highway 34; a main road runs almost parallel to the highway with four smaller roads extending south from this road. Most of the extant mobile homes are oriented perpendicular to one of these four roads, with the one or two-bay wide narrow elevations facing the roads and entrances on the long elevations. The park itself is heavily deteriorated; many mobile homes have been removed and others are abandoned and/or deteriorating, resulting in the loss of materials. The extant mobile homes are generally clad in sheet metal siding, rest on concrete footings, and have either flat roofs or very shallow gable roofs. Windows on these mobile homes are generally 1/1 aluminum sash in single and paired configurations. Some of the visible mobile homes have a small wooden porch that shelters the entrance or plywood additions. Many mobile homes are vacant due to their severe deterioration.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. **Criterion A**: While the construction of the property is associated with mid-twentieth century mobile home park development, it is not individually significant within the context of the community development. **Criterion B**: Research conducted has not identified any connection between the property and historically significant individuals. **Criterion C**: The property does not embody distinctive characteristics of a mobile home park, and original materials and design have been compromised due to the removal and deterioration of mobile homes. **Criterion D**: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: While the property remains at its historic construction site, overall, it lacks integrity. The integrity of setting is diminished by the large gas station constructed adjacent to the park in 2007. The individual mobile homes lack integrity of materials, design, and workmanship due to alterations (addition of porches and plywood additions), and the loss of materials due to deterioration, abandonment, or neglect. The removal of mobile homes causes a loss of integrity of design and feeling. Collectively, these alterations have diminished the historic integrity and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	IA-TR-001	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	39599 360th St, Guttenberg, Iowa





Description: The property is a vernacular private residence that was constructed in the mid-1970s based on aerial photographs. The property's setting is rural, and it is situated at the bottom of a bluff at the intersection of the Canadian Pacific Railway tracks, 360th Street, and the Turkey River, approximately 50 feet southwest of the railroad. The house is a 1-story, 4-bay vernacular house with a shallow gable roof and a cross gable north addition. The house is clad in vinyl siding, has an asphalt shingle roof, and rests on a concrete slab. A raised wooden deck on the east elevation accesses a single light glass and metal door. There is a 1/1, vinyl sash window with vinyl shutters south of the door. The south elevation has a paired 1/1 vinyl sash window, a triple vinyl casement window, a paired vinyl casement window, and a single vinyl casement window. Only the east elevation of the north addition was visible from the public right of way. It contains a band of three 1/1 vinyl or aluminum sash windows. A shed roof projects approximately 2 feet out from the north elevation of the addition. A 1 ½ story gambrel roof barn sits northwest of the house; the barn appears to have been built in 2010 based on aerial photographs. The barn has standing seam metal siding, a standing seam metal roof with a gabled dormer on its northeast slope and sliding metal barn doors on the southeast elevation. A triple 1/1 sash window is above the doors. A second non-historic outbuilding built in the 1970s sits to the west of the house. Clad in corrugated metal siding with a corrugated metal roof, it has a shallow gable and a shed roof extension on its south side. There is a rollup garage door and a large, open bay on the west side.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. **Criterion A:** While the construction of the property is associated with mid-twentieth century residential development in the region, it is not individually significant within the historic context of the community development. **Criterion B:** Research has not identified any connection between the property and historically significant individuals. **Criterion C:** The property does not embody a distinctive characteristic of a type, period, or method of construction, and the building has been significantly altered through additions and replacement materials. **Criterion D:** This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains a low degree of integrity. The property remains in its historic location, retains its association as a residential property, and the setting is largely unchanged since the building's construction. However, the building's design, workmanship, materials, and feeling have been diminished by replacement siding, replacement windows, the addition of the gambrel-roof barn in about 2010, and the addition of a non-historic wooden deck on the east side. The replacement materials have also compromised the property's ability to convey its association with 1970s-era building styles and materials.

Resource ID:	13CT498	**Resource Type:**	Below-Ground
Inventory Number:	N/A	**Potential Effect:**	Physical
Previous Documentation:	Wilkins, Hoekstra, and Grubb 2021	**Location:**	Turkey River/MP 71



Description: Site 13CT498 was previously recorded in 2021 and is plotted parallel to the Mississippi River at the base of a valley wall, east of the extant railroad tracks. Previous site records indicate that the site consisted of both historic and prehistoric components and no further investigation was recommended. Current site investigations conducted in 2022 recovered both historic and prehistoric artifacts. The results of the survey redefined the site boundaries but did not yield data sufficient to require further investigation.

Site 13CT498 encompasses a heavily disturbed scatter of historic-aged artifacts generally dating to the late nineteenth and first half of the twentieth centuries. Previous site investigation also reported the collection of a very small amount of flaking debris mix with historic materials. Some, or perhaps most, of the historic materials are associated with the small townsite of Turkey River, originally established in the latter part of the nineteenth century and mostly located south of the railroad along 360th Street with a few buildings on the north side. Removal of buildings (including the apparent final one visible near Oak Road at the western end of the site, which was present in 1986 but nonextant by the early 21st century) has significantly disturbed environs bordering the north side of the tracks, including much of the 13CT498 area (Figures 2.15, 2.24–2.25).
No evidence for historic features or intact historic middens was found during fieldwork.

National Register Evaluation: Site 13CT 498 was evaluated for the National Register under Criterion D. Subsurface testing during the current investigation and the earlier fieldwork originally identifying 13CT498 collectively found no evidence for intact Historic period features or cultural deposits within the site area. Site 13CT498 does not meet eligibility requirements under Criterion D for nomination to the National Register, and no further investigation is recommended.

Integrity: Historic properties are evaluated for integrity of location, setting, association, design, materials, and workmanship. This site retains no integrity as it has no intact cultural deposits or features.

Resource ID:	13CT499	**Resource Type:**	Below-Ground
Inventory Number:	N/A	**Potential Effect:**	Physical
Previous Documentation:	Wilkins, Hoekstra, and Grubb 2021	**Location:**	Turkey River/MP 71



Description: Site 13CT499 was previously recorded in 2021 and is plotted parallel to the Mississippi River at the base of a valley wall, east of the extant railroad tracks. Previous site records indicate that the site consisted of both historic and prehistoric components and no further investigation was recommended. Current site investigations conducted in 2022 recovered both historic and prehistoric artifacts. The results of the survey redefined the site boundaries but did not yield data sufficient to require further investigation.

Site 13CT499 encompasses a light scatter of historic artifacts heavily mixed within the upper 80 cm of alluvial fan/colluvial apron deposits near the western valley wall of the Mississippi River. Previous research (2021) also reported the collection of a biface midsection. As recorded by WSP Inc. in 2021, the original, smaller site area was recommended for no further investigation. The new footprint has expanded northwest-southeast but does not extend outside the present survey corridor. Both investigations found no evidence for intact historic deposits or foundations. The 1886 and 1902 plat maps indicate a possible building north of the site. The 1936 aerial photograph also suggests a building or other structure is present just outside the 13CT499 site boundary at least 10–15 m north of the current survey area. No evidence for historic structures or intact historic cultural deposits or features was found in the 13CT499 footprint..

National Register Evaluation: Subsurface testing during the current investigation and the previous WSP Inc. work identifying 13CT499 found no evidence for intact Historic period features or cultural deposits within the site area. Site 13CT499 does not meet eligibility requirements under Criterion D for nomination to the National Register and no further investigation is recommended.

Integrity: Historic properties are evaluated for integrity of location, setting, association, design, materials, and workmanship. This site retains no integrity as it has no intact cultural deposits or features.

Resource ID:	13LA685	**Resource Type:**	Below-Ground
Site Name:	Brockway Cemetery	**Potential Effect:**	Physical
Previous Documentation:	Butler 2010	**Location:**	Letts



Description: Site 13LA685 (the Brockway Cemetery) was recorded by the Louis Berger Group, Inc. (2010) during their survey work for the U.S. Highway 61 expansion. The possible cemetery location was reported to the Iowa DOT by a local informant and then president of the Louisa County Pioneer Cemetery Association, Mr. Royce Bonnichsen. Interviewed by Butler during the 2010 Phase I investigation, Mr. Bonnichsen stated that the possible cemetery location was based on local lore, and he was unaware of the names or number of individuals potentially buried there. A cemetery is not indicated at this location on historic township plat maps and atlases, an abrupt westward jog in the roadway (as depicted on the maps near the railroad crossing) may indicate the avoidance of something potentially at this location. A search of recorded cemeteries in Louisa County conducted as part of the investigation found no evidence of a cemetery within the parcel in question. During the archeological field investigations of the area, no subsurface testing was conducted in the immediate area of the reported cemetery. Given the lack of information to substantiate burials at 13LA685, the site was not evaluated for inclusion with the National Register.

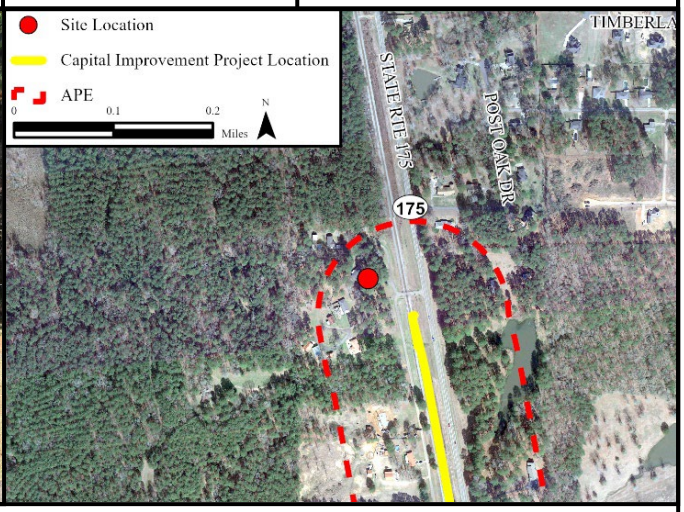
National Register Evaluation: The Brockway Cemetery (13LA685), a possible late 19th small family plot or single interment, was recorded based on local lore and the historical record contains no information to support burials at its reported location. No evidence of burials was found during the original investigation of 13LA685 nor as a result of the present Phase I survey. Because only a portion of the plotted site location abuts the current project area, 13LA685 remains unevaluated.

Integrity: Historic properties are evaluated for integrity of location, setting, association, design, materials, and workmanship. The integrity of the site cannot be assessed as it has not been located.

Appendix J – Attachment 5: Louisiana Segment

Resource ID:	LA-MA-001	Resource Type:	Above-Ground
Inventory Number:	TBD	Potential Effect:	Visual
Previous Documentation:	none	Location:	130 Holley Hill Drive, Mansfield, Louisiana





Description: The property is residential and consists of a Ranch house in the Colonial Revival style. The house appears to have been constructed during the 1960s based on aerial photographs dated 1955 and 1971. The house faces southeast toward Holley Hill Drive and is set back from the road approximately 160 feet; it is roughly 225 feet from the railroad. The immediate surrounding is forested with numerous large conifer trees on the lawn between the house and the street. A metal chain link fence encloses the rear yard. The property sits adjacent to other residential properties of similar size, scale, and age.

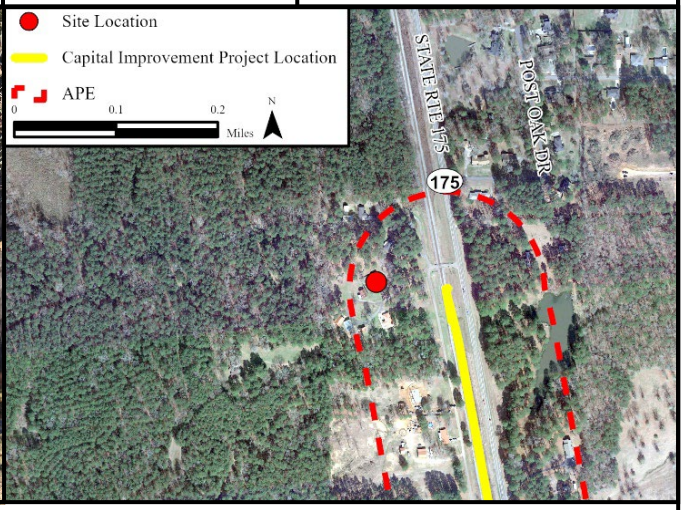
The house is a 1-story, 4-bay Ranch house on a concrete foundation with a hipped roof covered in asphalt shingles. A front-gable projection creates a covered porch on the façade with Tuscan-style columns. No chimneys are present, but several metal vents pierce the roof. The exterior is clad in brick veneer. The primary entrance is centered on the façade under the covered porch and consists of a 4-panel door with fanlight flanked by 3-light, paneled sidelights. Windows consist of 8/8 double-hung, non-historic vinyl windows with brick sills. One window on the façade is smaller than the original opening; the bottom of the opening is infilled with plywood. A 1-car garage is integrated into the façade with a replacement segmented, roll-up garage door.

National Register Evaluation: The property is recommended not eligible for listing on the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property has distinctive characteristics of a Ranch house with Colonial Revival detailing; however, it does not serve as a good and representative example of this type and style due to a lack of integrity (see below). Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and remains in a rural residential setting with dense woods. The building remains in use as a residence and the building retains its historic association with rural development in this area. The integrity of design, materials, and workmanship have been compromised due to the replacement of the original windows with vinyl, including one window that is smaller than the original opening, as well as the replacement garage door. These alterations have diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	LA-MA-002	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	138 Holley Hill Drive, Mansfield, Louisiana





Description: The property is residential and consists of a Ranch house and several outbuildings. The house appears to have been constructed during the 1960s based on aerial photographs dated 1955 and 1971. The house faces east toward Holley Hill Drive and is set back from the road approximately 250 feet; it is roughly 315 feet from the railroad. The immediate surrounding is forested with numerous large conifer trees on the lawn between the house and the street. A metal chain link fence encloses the rear yard. The property sits adjacent to other residential properties of similar size, scale, and age.

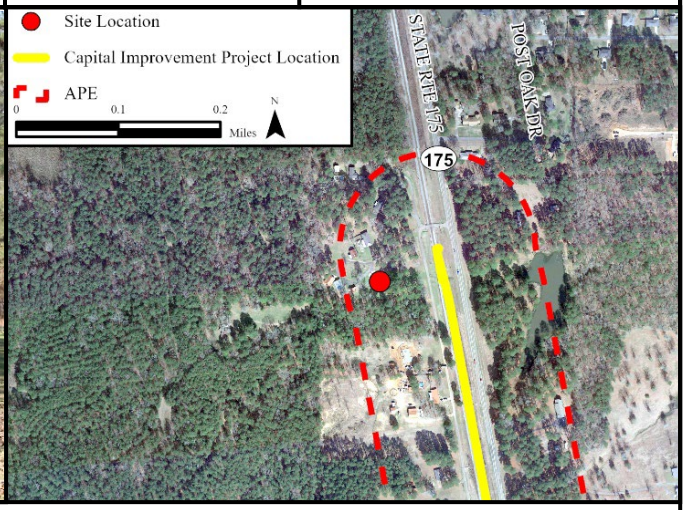
The house is a 1-story, 4-bay Ranch house on a concrete foundation topped with a hipped roof. The roof is covered in non-historic standing seam metal which replaced an asphalt shingle roof after 2013, based on Google Street View images. The exterior is clad in brick veneer with T1-11 siding covering a portion of the facade. One bay is recessed into the façade, creating a covered porch that obscures the primary entrance. Windows consist of 2/2 double-hung aluminum with brick sills and louvered shutters; they are set high on the elevations and may be original. An integrated carport is located on the south elevation. A large, 1-story outbuilding is located behind the house; the building includes a front-gable, metal roof, and the exterior is clad in corrugated metal. Additional smaller outbuildings consist of non-historic metal sheds.

National Register Evaluation: The property is recommended not eligible for listing on the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property has distinctive characteristics of a Ranch house; however, it does not serve as a good and representative example due to a lack of integrity. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and remains in a rural residential setting with dense woods. The building remains in use as a residence and the building retains its historic association with rural development in this area. The integrity of design, materials, and workmanship have been compromised due to the replacement of the original asphalt shingle roof with one of standing seam metal in a conspicuous green color. The design of the standing-seam metal compromises the horizontal emphasis that is a key design feature of mid-century Ranch houses. This substantial alteration has diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	LA-MA-003	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	Holley Hill Drive, Mansfield, Louisiana





Description: The property is residential and consists of a Ranch house and several outbuildings. The house appears to have been constructed during the 1960s based on aerial photographs dated 1955 and 1971. The house faces east toward Holley Hill Drive and is set back from the road approximately 250 feet; it is roughly 300 feet from the railroad. The immediate surrounding is forested with several large conifer trees on the lawn between the house and the street. The property sits adjacent to other residential properties of similar size, scale, and age.

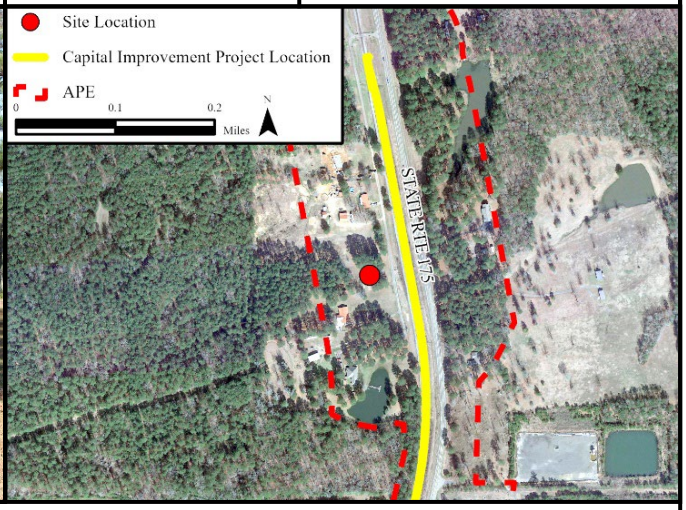
The house is a 1-story, 6-bay Ranch house on a concrete foundation topped with a hipped roof. The roof is covered in non-historic standing seam metal with front gable projection supported by narrow, square wood posts. The exterior of the house is clad in brick veneer. The primary entrance is sheltered under the front projection and consists of a paneled wood door. Windows consist of 2/2, double-hung aluminum with brick sills and louvered shutters; they are set high on the elevations under the eaves and may be original. An integrated carport is located on the north elevation of the house. Three large outbuildings are located behind the house to the west; two are located outside of the project area. The outbuilding near the house is a 1-story, 2-bay, non-historic shed with a gambrel roof. An entrance door is located on the east elevation under a metal awning.

National Register Evaluation: The property is recommended not eligible for listing on the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property has distinctive characteristics of a Ranch house; however, it does not serve as a good and representative example due to a lack of integrity. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and remains in a rural residential setting with dense woods. The building remains in use as a residence and the building retains its historic association with rural development in this area. The integrity of design, materials, and workmanship have been compromised due to the replacement of the roof with one of standing seam metal in a conspicuous red color. The design of the standing-seam metal compromises the horizontal emphasis that is a key design feature of mid-century Ranch houses. This substantial alteration has diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	LA-MA-004	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	270 Holley Hill Drive, Mansfield, Louisiana





Description: The property is residential and consists of a Ranch house. The house appears to have been constructed during the 1960s based on aerial photographs dated 1955 and 1971. The house faces east toward Holley Hill Drive and is set back from the road approximately 100 feet; it is roughly 175 feet from the railroad. The immediate surrounding is forested with several large conifer trees adjacent to the house. The property sits adjacent to other residential properties of similar size, scale, and age.

The house is a 1-story, 5-bay Ranch house on a concrete foundation topped with a low hipped roof with overhanging eaves; the roof is covered in asphalt shingles. The exterior of the house is clad in brick veneer. The primary entrance is sheltered under a covered porch with hipped roof supported by cast iron supports with scroll motif and a concrete floor. The entrance consists of a 9-light, paneled door set flush with the elevation. Windows consist of 2/2 double-hung aluminum with brick sills and louvered shutters; they are set high on the elevations and may be original. An integrated carport is located on the southeast corner of the house featuring cast iron roof supports and railing with scroll motif. Two secondary entrances are located under the carport on perpendicular walls. One door is wood slab, and the other is a 9-light, paneled wood door.

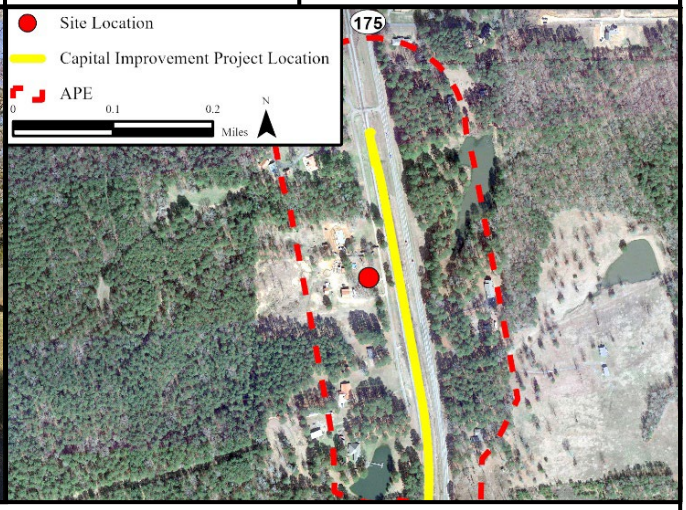
National Register Evaluation: The property is recommended eligible for listing on the National Register under Criterion C. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property is considered eligible for the National Register under Criterion C. It is a well-preserved example of a mid-to-late twentieth century Ranch house, retaining its one-story form with a sense of horizontality emphasized by the wide, overhanging eaves. Original features and materials include characteristic brick veneer, cast iron porch supports, aluminum sash windows, and an integrated carport. D: This residential property type does not appear to have the potential to yield further important information or data.

Resource ID:	LA-MA-004	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	270 Holley Hill Drive, Mansfield, Louisiana

Integrity: The property retains integrity of location and feeling as it remains in its original location and setting along a rural road abutting a forest with woody vegetation immediately surrounding the house. The design and materials of the building are intact, including the overall form, brick veneer, lacy cast iron detailing, and wood windows. The intact features convey a sense of historic workmanship, and the property retains the feeling and aesthetic of its period of construction. The building remains in use as a single-family residence.

Resource ID:	LA-MA-005	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	226 Holley Hill Drive, Mansfield, Louisiana





Description: The property is residential and consists of a Ranch house with several outbuildings. The house appears to have been constructed during the 1960s based on aerial photographs dated 1955 and 1971. The house faces east toward Holley Hill Drive and is set back from the road approximately 50 feet; it is roughly 125 feet from the railroad. The setting is a large lot surrounded by forest with several large conifer trees in the side and rear yard; grassy lawn covers the front yard. The property sits adjacent to other residential properties of similar size, scale, and age.

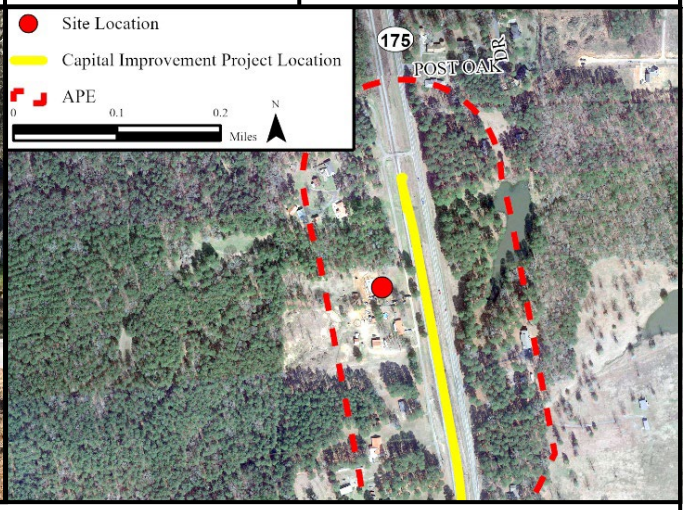
The house is a 1-story, 6-bay Ranch house on a concrete foundation topped with a side-gable roof. The roof is covered in non-historic standing seam metal which replaced an asphalt shingle roof after 2013, based on Google Street View images. The exterior of the house is clad in brick veneer and non-historic vinyl siding. The primary entrance is sheltered under a covered front porch supported by turned wood posts. The entrance consists of a non-historic replacement door with decorative oval light. Windows consist of 6/6, double-hung aluminum with paneled shutters; a large picture window is located under the covered porch. An integrated garage is located on the east elevation of the house with segmented roll-up garage door. Four outbuildings are located behind the house to the west and include two large non-historic, metal, front-gable garages, a front-gable shed that may be historic, and a non-historic metal carport.

National Register Evaluation: The property is recommended not eligible for listing on the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property has distinctive characteristics of a Ranch house; however, it does not serve as a good and representative example due to a lack of integrity. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and remains in a rural residential setting with dense woods. The building remains in use as a residence and the building retains its historic association with rural development in this area. The integrity of design, materials, and workmanship have been compromised due to the replacement of the roof with standing seam metal as well as the addition of non-historic vinyl siding. The design of the standing-seam metal compromises the horizontal emphasis that is a key design feature of mid-century Ranch houses. These substantial alterations have diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	LA-MA-006	Resource Type:	Above-Ground
Inventory Number:	TBD	Potential Effect:	Visual
Previous Documentation:	None	Location:	210 Holley Hill Drive, Mansfield, Louisiana





Description: The property is residential and consists of a large corrugated metal shed and a non-historic house. The house was constructed in 2021 as per aerial photographs from 2021, and the outbuilding appears to have been constructed in the 1960s based on aerial photographs dated 1955 and 1971. The buildings are roughly 300 feet from the railroad. The immediate surrounding is forested with several large trees on the lot. The property sits adjacent to other residential properties of similar size, scale, and age.

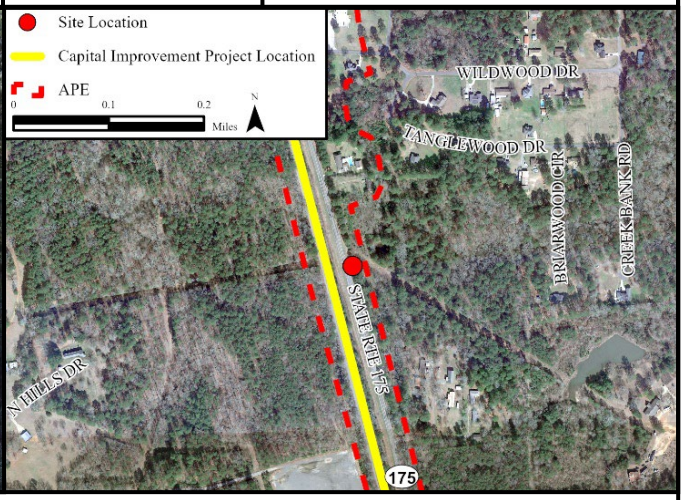
The outbuilding is a 1-story, 1-by-4-bay large shed clad in corrugated metal that faces south, perpendicular to the road. It has a front-gable corrugated metal roof with overhanging eaves. Sections of the roof have been replaced based on the change in color of the metal. A 1/2-glazed wood door provides access on the south elevation (façade). Window openings appear on the side elevation, set high under the eaves, and are infilled with corrugated metal. The shed is similar in appearance to those of other properties along Holley Hill Drive that were constructed during the 1960s. The non-historic house sits in front of the outbuilding, facing east. It is a 1-story, 6-bay house on a concrete foundation topped with a steep hip roof covered in asphalt shingles; the roof has a steep pitch that reminds one of the French Creole architectural style of the region. The house is clad in stucco and brick veneer and has 4/4 double hung sash vinyl windows. A 2-car attached garage is located on the south end of the house.

National Register Evaluation: The property is recommended not eligible for listing on the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, design, and materials. The building remains at its historic construction site in a rural residential area with dense woods. The shed maintains its overall form and exterior metal siding and roof, which convey its historic design and materials. The building remains in use as a shed, but the replacement of the original house resulted in a loss of integrity of setting and association with rural development in this area during the mid-to-late twentieth century. The infilled windows and replaced roof sections on the shed have altered the appearance and diminished the integrity of feeling and workmanship. The shed no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	LA-MA-007	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	East side of LA Highway 175 approx. 1,000 feet north of Charles Road., Mansfield, LA





Description: The property is vacant and consists of a small utility building situated adjacent to overhead utility lines. The structure appears to have been constructed during the 1960s based on aerial photographs dated 1955 and 1971. The building faces west toward LA Highway 175 and is set back from the road approximately 50 feet; it is roughly 175 feet from the railroad. The setting is forested with dense understory adjacent to an open linear corridor through which the overhead utility lines run. A wide, metal gate restricted access to what appeared to be an overgrown unimproved access road or driveway.

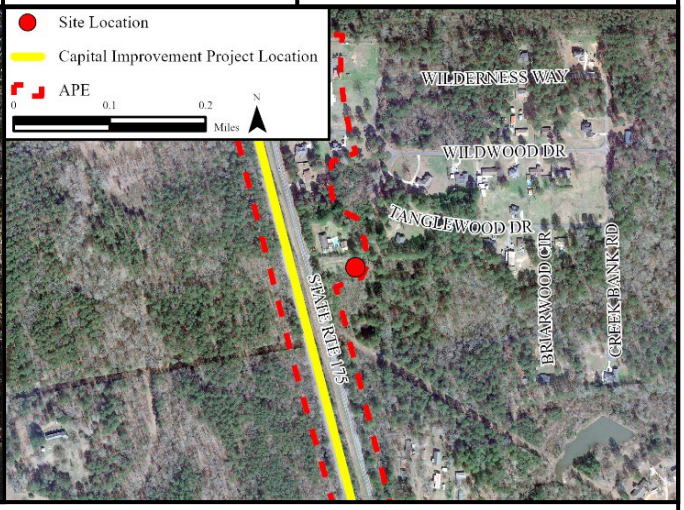
The structure is a small, 1-story, 1-bay structure clad in corrugated metal and topped with a low-pitched gable roof covered in corrugated metal. The foundation was obscured by heavy understory vegetation. The only visible fenestration was a 6/6 double hung wood window that was missing several panes of glass and was partially dislocated from the window frame. The entrance into the structure was not visible from the road. No other buildings or structures appeared to be in association with this structure.

National Register Evaluation: The property is recommended not eligible for listing on the National Register. Criterion A: While the construction of the property may be associated with mid-to-late twentieth century rural development in the region as part of the utility services, it is not individually significant within any particular historic context. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction. Criterion D: This property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and setting. The property remains at its historic construction site and remains in a rural setting with dense woods adjacent to the utility lines. The integrity of design is retained because the historic form is evident. The integrity of materials and workmanship has been lost because although the historic materials are evident, they are in very poor condition, including windows that are partially dislocated. The building does not appear to be in use and therefore does not retain its historic association. The disuse and deteriorated condition of the structure has resulted in an inability to convey its historic use and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	LA-MA-008	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	13129 LA Highway 175, Mansfield, Louisiana





Description: The property is residential and consists of a Ranch house and a small outbuilding. The house appears to have been constructed during the 1960s based on aerial photographs dated 1955 and 1971. The house faces west toward LA Highway 175 and is set back from the road approximately 225 feet; it is roughly 325 feet from the railroad. The immediate surrounding is forested with dense vegetation visually obstructing the house from the roadway; lawn covers the front yard. The property sits adjacent to other residential properties that were constructed in the 1990s.

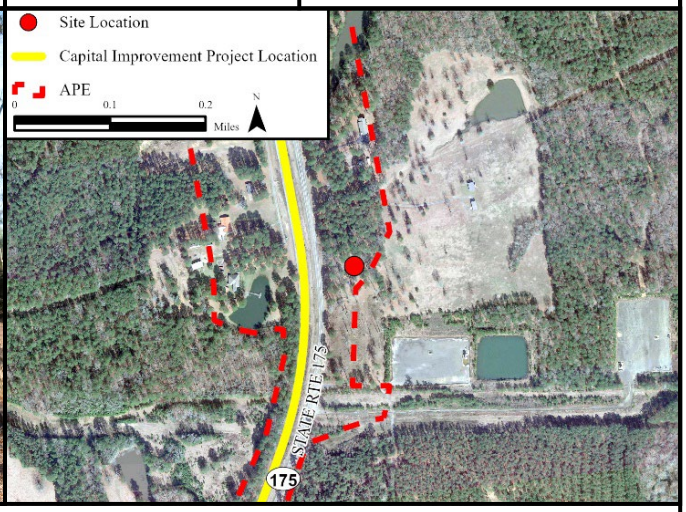
The house is a 1-story, 6-bay Ranch house on a concrete foundation topped with a side gable roof. The roof is covered in asphalt shingles, and a large exterior brick chimney is located on the facade. The exterior of the house is clad in non-historic vinyl siding. A carport is integrated into the façade on the north end of the house and features lacy cast iron supports. The primary entrance is located on the façade but was obscured by vegetation. Windows consist of 8/8, double-hung sash windows with paneled shutters. The windows are partially obscured by vegetation but appear to be replacements. A small shed with gable roof is located behind the house to the east as shown on aerial photographs but is not visible from the road.

National Register Evaluation: The property is recommended not eligible for listing on the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property has distinctive characteristics of a Ranch house; however, it does not serve as a good and representative example due to a lack of integrity. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and remains in a rural residential setting with dense woods. The building remains in use as a residence and the building retains its historic association with rural development in this area. The integrity of design, materials, and workmanship have been compromised due to the replacement of the siding and the windows. This substantial alteration has diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	LA-MA-009	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	12669 LA Highway 175, Mansfield, Louisiana





Description: The property is residential and consists of a Ranch house. The house appears to have been constructed during the 1960s, based on aerial photographs dated 1955 and 1971. The house faces west toward LA Highway 175 and is set back from the road approximately 150 feet; it is roughly 250 feet from the railroad. The immediate surrounding is forested with large conifer trees between the house and the street. The property sits adjacent to other residential properties of similar size and scale.

The house is a 1-story Ranch house on a concrete foundation topped with a cross-gable roof covered in asphalt shingles. An exterior brick chimney with arch rises from the rear roof slope. The exterior of the house is clad in brick veneer and board and batten siding. The primary entrance is centralized under the façade recessed between two projecting gables. The entrance consists of a pair of double doors with decorative glazing and panels. Windows consist of 12/12 double hung sash in either wood or aluminum that may be original. Louvered shutters flank the windows on the façade. An integrated carport is located prominently on the front of the house with its opening perpendicular to the façade; it is clad with T1-11 siding on the interior. An entrance into the house is sheltered under the carport consisting of a 1/2 glazed wood door.

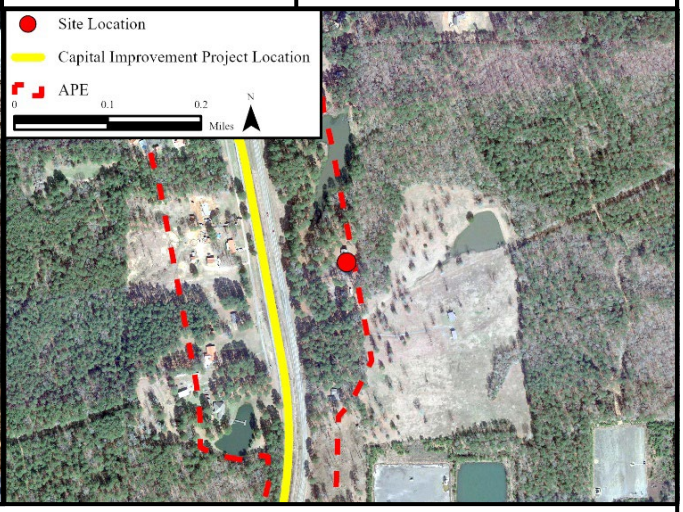
National Register Evaluation: The property is recommended eligible for listing on the National Register under Criterion C. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: This property is eligible under Criterion C as a good representative example of this residential building type, with a form and extant materials specifically associated with the time period of construction. Distinctive features include an asymmetrical plan, integrated carport, and a long, horizontal massing; despite a cross-gabled roofline, the shallow roof slope and deep overhanging eaves emphasize the horizontal axis and keep it low to the ground. Characteristic extant materials include a combination of exterior cladding, consisting of board and batten siding and brick veneer. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Resource ID:	LA-MA-009	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	12669 LA Highway 175, Mansfield, Louisiana

Integrity: The property retains integrity of location and feeling as it remains in its original location and setting along a rural road surrounded by forest with similar rural residential properties in the vicinity. The design and materials of the building are intact, including the overall form, brick veneer, integrated carport, and windows. The intact features are able to convey a sense of historic workmanship, and the property retains the feeling and aesthetic of its period of construction. The building remains in use as a single-family residence.

Resource ID:	LA-MA-010	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	12605 LA Highway 175, Mansfield, Louisiana





Description: The property is residential and consists of a Ranch house with several outbuildings. The house appears to have been constructed during the 1960s, based on aerial photographs dated 1955 and 1971. The house faces west toward LA Highway 175 and is set back from the road approximately 325 feet; it is roughly 450 feet from the railroad. The immediate surrounding is forested with many large conifer trees between the house and the street; a small retention pond is located to the north of the house. The property sits near to other residential properties of similar size and scale.

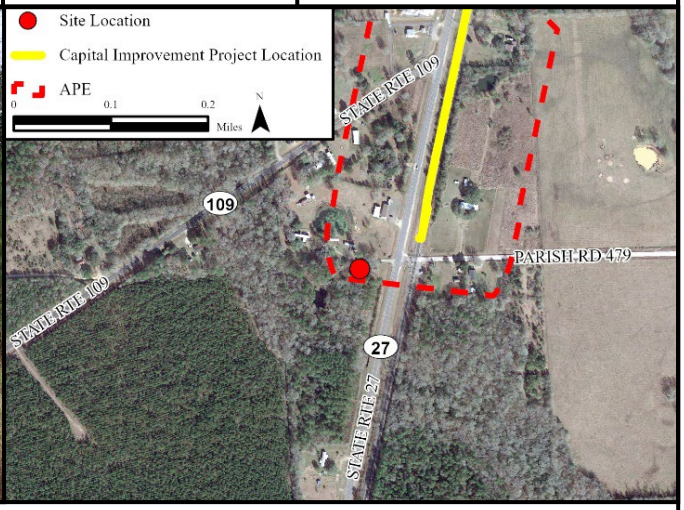
The house is a 1-story, 5-bay Ranch house on a concrete foundation topped with a cross gable roof covered in asphalt shingles. The exterior of the house is clad in T1-11 siding, brick veneer, and non-historic vinyl siding. Deep overhanging eaves on the façade create a covered porch supported by square posts. The primary entrance is sheltered under the covered porch and consists of a paneled door flanked by 5-light sidelights. A large, non-historic 16-light replacement window is located under the covered porch. Other windows consist of non-historic 12/12 and 6/6, double-hung vinyl or aluminum with wood shutters. An integrated carport is located on the south elevation of the house and opens onto a paved driveway. Two outbuildings are located south of the house. One is a square, open-air shelter of concrete block construction with standing-seam metal hipped roof. The other is a corrugated metal shed with gambrel roof. Based on aerial photographs, neither appears to be historic.

National Register Evaluation: The property is recommended not eligible for listing on the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property has distinctive characteristics of a Ranch house; however, it does not serve as a good and representative example due to a lack of integrity. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and remains in a rural residential setting with dense woods. The building remains in use as a residence and the building retains its historic association with rural development in this area. The integrity of design, materials, and workmanship have been compromised due to the replacement of the windows and the addition of non-historic vinyl siding. The substantial alterations have diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	LA-SI-001	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	131 Gene Hope Road, Singer, Louisiana





Description: The property is residential and consists of a vernacular house. The house appears to have been constructed during the late 1950s, based on historic aerial photographs dated 1956 and 1982 as well as a USGS quadrangle map dated 1961. The house faces east, perpendicular to Gene Hope Road and is set back from the road approximately 35 feet; it is roughly 275 feet from the railroad. The immediate surrounding is forested with numerous large trees and overgrown vegetation in the yard. The property sits adjacent to other residential properties of similar size and scale.

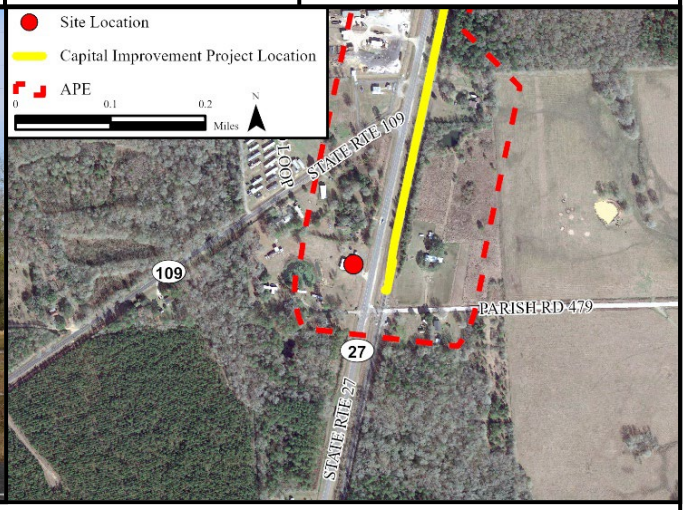
The house is a 1-story, 4-bay vernacular house on a concrete pier foundation topped with a cross gable roof covered in non-historic standing seam metal. A metal chimney pipe rises from the ridgeline near the northern end of the house. The exterior is clad wood clapboards. The primary entrance is on one end of the front, east facing façade, consisting of a non-historic 6-panel door behind a non-historic fully-glazed metal storm door. The door is accessed up a set of concrete steps. A tripartite window is set adjacent to the entrance, consisting of a large wood picture window flanked by smaller 2/2 double hung wood windows. Other windows consist of 2/2, double-hung windows with narrow wood shutters. The windows appear to be historic. An attached 1-car garage is located on the north elevation of the house with non-historic roll-up garage door.

National Register Evaluation: The property is recommended not eligible for listing on the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction and original materials have been lost. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and remains in a rural residential setting with dense woods. The building remains in use as a residence and the building retains its historic association with rural development in this area. The integrity of design, materials, and workmanship have been compromised due to the replacement of the roof with non-historic standing seam metal as well as the replacement front door. These substantial alterations have diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	LA-SI-002	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	10526 LA Highway 27, Singer, Louisiana





Description: The property is commercial and consists of a 1-story commercial buildings with a smaller, non-historic commercial building behind. The building appears to have been constructed during the 1960s, based on aerial photographs dated 1956 and 1982. The building faces east toward LA Highway 27 and is set back from the road approximately 90 feet; it is roughly 190 feet from the railroad. The immediate surrounding is an open lot with woody vegetation partially screening the adjacent properties which are residential lots of varying sizes.

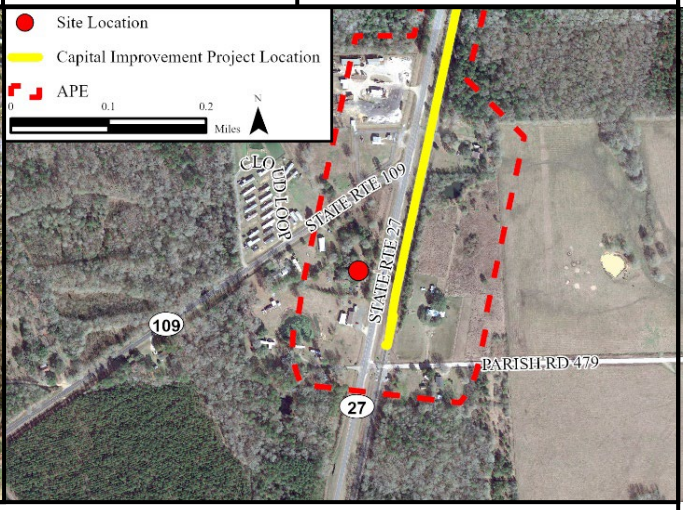
The building is a 1-story, 7-bay commercial building on a concrete foundation topped with a side-gable roof covered in standing seam metal. The exterior is of concrete block construction and the gable ends are clad in wood clapboards. There are two entrances on the façade, one on each end. One entrance consists of a single, 6-panel, non-historic metal door and the other consists of a pair of non-historic wood doors with decorative oval lights. Windows consist of tall, narrow picture windows with aluminum frames that may be original. No windows or doors were located on either the north or south elevations. Historic aerial photographs from 1982 and 1983 show earlier wings on both the north and south elevation; neither wing is extant today. Located immediately behind the house to the west is a non-historic 1-story commercial building with a front-gable, standing-seam metal roof and corrugated metal exterior. A front gable projection with square wood supports creates a covered porch under which two 1/2-glazed doors are located. This building was constructed after 2010, based on recent historic aerial photographs.

National Register Evaluation: The property is recommended not eligible for listing on the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century rural commercial development in the region, it is not individually significant within the historic context of commerce. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction and original massing has been removed. Criterion D: This commercial property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and remains in a rural setting along a rural highway. The building is not currently used, but its location and overall form convey its historic association as a commercial building. The integrity of design, materials, and workmanship have been compromised due to the loss of the two side wings and the replacement doors. These substantial alterations have diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	LA-SI-003	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	10506 LA Highway 27, Singer, Louisiana





Description: The property is residential and consists of a vacant house and a non-historic trailer. The house appears to have been constructed during the early twentieth century, based on aerial photographs from 1954; the trailer was added after 1998. The house faces east toward LA Highway 27 and is set back from the road approximately 130 feet; it is roughly 230 feet from the railroad. The immediate surrounding is heavily vegetated with trees and dense understory surrounding the house. Only a portion of the façade was visible. The property sits adjacent to commercial and residential properties of varying sizes.

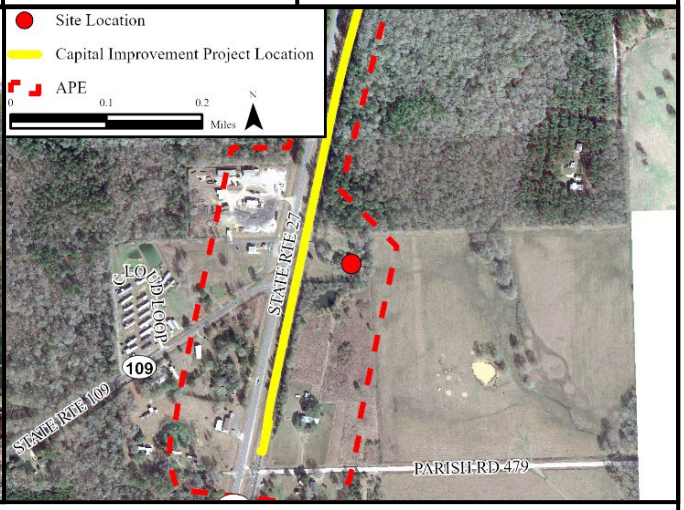
The house is a 1.5-story, 4-bay structure topped with a front-gable roof covered in metal; the foundation was not visible. Large holes are visible in the facade. The exterior is clad in faux brick rolled asphalt siding with large pieces missing. Two entrances are located on the façade; one was missing its door. The remaining door is paneled wood that appears to be original. Windows consist of historic 2/2 double hung wood windows with missing panes of glass. A square opening in the upper half story indicates the location of a former window. The other elevations were visually obscured due to heavily overgrown vegetation. Located adjacent to the vacant house to the southwest is a non-historic, single-wide trailer home with side-gable roof covered in standing seam metal; the exterior is clad in corrugated metal siding.

National Register Evaluation: The property is recommended not eligible for listing on the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction and original materials have been lost. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and remains in a rural residential setting along a rural highway. The original house is unused, but the trailer allows the property to remain use as a residence and retains its historic association with rural development in this area. The integrity of design, materials, and workmanship have been compromised due to the loss of doors, windows, and other material to deterioration. The disuse and deteriorated condition of the house has resulted in an inability to convey the feeling and aesthetic of its period of construction.

Resource ID:	LA-SI-004	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	10427 LA Highway 27, Singer, Louisiana





Description: The property is residential and consists of a Ranch house with a detached carport. The house appears to have been constructed during the 1960s, based on aerial photographs dated 1956 and 1982. The house faces west toward LA Highway 27 and is set back from the road approximately 315 feet; it is roughly 230 feet from the railroad and is accessed via a private at-grade crossing. The immediate surrounding includes open lawn with several large trees. A dense forest is adjacent to the property to the north and agricultural fields are to the south and east. The property sits near other residential and commercial properties of varying sizes.

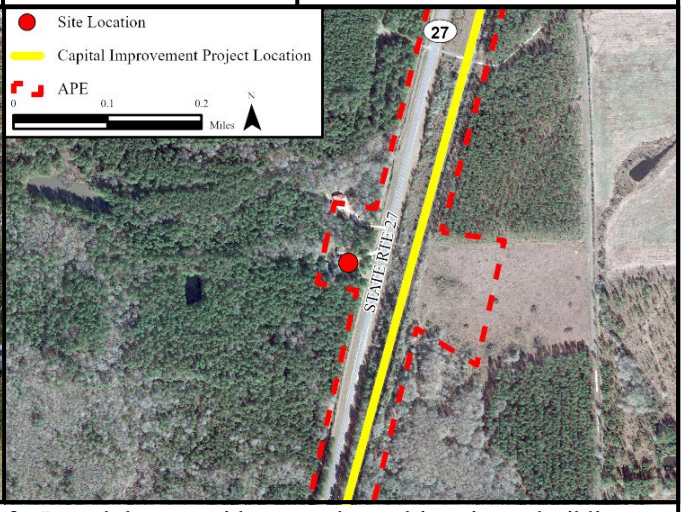
The house is a heavily-modified 1-story, 4-bay Ranch house on a concrete foundation topped with a side gable roof covered in non-historic standing seam metal. A large renovation was undertaken in 2016, as evident on recent historic aerial photographs and Google Street View imagery. During this renovation, a large side wing was added to the north elevation and a full-width front porch with shed roof was added to the façade. The overall roof form was altered from a hipped roof to a side-gable roof and the exterior was clad in vinyl siding. The windows are all non-historic divided light in vinyl or aluminum. The concrete foundation is clad in faux stone veneer. A non-historic detached wood carport with a front-gable standing seam metal roof sits in front of the house to the west.

National Register Evaluation: The property is recommended not eligible for listing on the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property has distinctive characteristics of a Ranch house; however, it does not serve as a good and representative example of this type and style due to a lack of integrity. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and remains in a rural setting with woods and agricultural fields. The building remains in use as a residence and the building retains its historic association with rural development in this area. The integrity of design, materials, and workmanship have been compromised due to the addition of the side wing, front porch, and vinyl siding. These substantial alterations have diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	LA-SI-005	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	10156 LA Highway 27, Singer, Louisiana





Description: The property is residential and consists of a Ranch house with several non-historic outbuildings. The house appears to have been constructed during the early 1950s, based on aerial photographs from 1954 and its architectural type. The house faces west toward LA Highway 27 and is set back from the road approximately 260 feet; it is roughly 440 feet from the railroad. The immediate surrounding is forested with numerous large trees within the parcel. The property sits adjacent to another residential property of similar size.

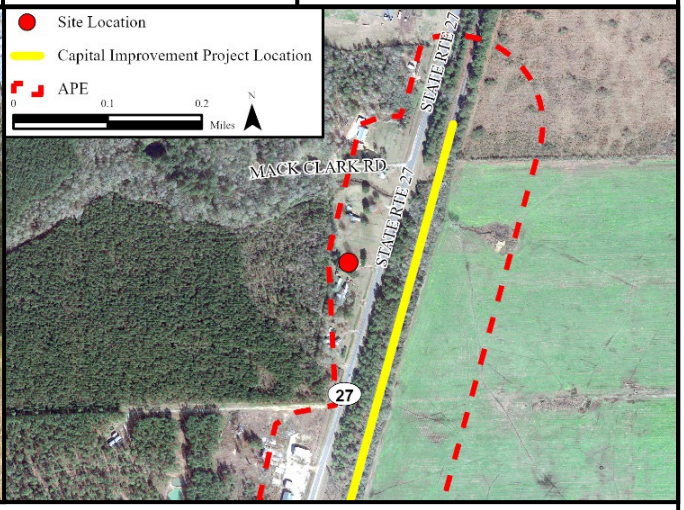
The house is a 1-story, 6-bay Ranch house on a concrete foundation topped with a side gable roof covered in non-historic standing seam metal. A front-gable projection extends from the façade to create a covered porch supported by wide square wood posts. An attached carport is located on the south end of the house; based on historic aerial photographs, the carport was added prior to 1983 and is likely an historic addition. The exterior is clad in painted brick veneer. The primary entrance is located under the covered porch and consists of a non-historic 3/4 glazed wood door with decorative fleur-de-lis motif. Windows appear to be non-historic aluminum and include 4/4 and 6/6 double hung sash as well as a 2-light sliding window. Three outbuildings are located on the property, all of which were added after 1982 as per historic aerial photographs. They consist of a large corrugated metal garage, a smaller corrugated metal shed, and a small shed with vertical wood siding.

National Register Evaluation: The property is recommended not eligible for listing on the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property has distinctive characteristics of a Ranch house; however, it does not serve as a good and representative example of this type and style due to a lack of integrity. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and remains in a rural residential setting with dense woods. The building remains in use as a residence and the building retains its historic association with rural development in this area. The integrity of design, materials, and workmanship have been compromised due to the addition of a standing seam metal roof as well as replacement windows and door. The design of the standing-seam metal compromises the horizontal emphasis that is a key design feature of mid-century Ranch houses. These substantial alterations have diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	LA-SI-006	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	9622 LA Highway 27, Singer, Louisiana





Description: The property is residential and consists of a vernacular house with several non-historic structures on the property. The house was constructed during the 1920s, based on aerial photographs and a discussion with the landowner during survey. The house faces south, perpendicular to LA Highway 27 and is set back from the road approximately 160 feet; it is roughly 360 feet from the railroad. The immediate surrounding is forested with numerous large trees within the lot.

The house is a 1-story vernacular house on a concrete foundation topped with a front-gable roof covered in standing seam metal. The rear portion of the roof appears to have been replaced recently due to a change in color and condition. The exterior is clad in vertical wood siding. A full-width covered front porch projects from the façade. It has a shed roof supported by square wood posts with wood railing that appears to be non-historic based on condition. The windows and entrance under this porch were obscured from view. A shed roof wing extends from the west elevation and appears to be historic. Windows on the north (rear elevation) are non-historic 1/1 aluminum sash. The east side elevation features two shed roof projections with no foundations or fenestration. The shed roofs are covered in asphalt shingles; these are likely non-historic based on the change in materials. Also on the property are several non-historic trailers and a non-historic house with a collapsed roof. Based on historic aerials, these buildings were constructed in the 1980s.

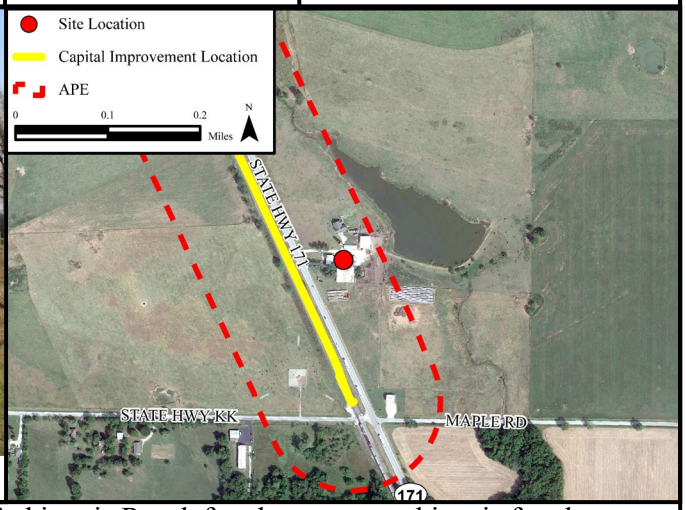
National Register Evaluation: The property is recommended not eligible for listing on the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction and original materials have been lost Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and remains in a rural residential setting with dense woods along a rural highway. The building remains in use as a residence and the building retains its historic association with rural development in this area. The integrity of design, materials, and workmanship have been compromised due to the replacement roof and windows, as well as the potentially non-historic side projections. These alterations have diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Appendix J – Attachment 6: Missouri Segment

Resource ID:	MO-AS-001	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	13196 MO-171, Asbury, Missouri





Description: The property is a farmstead comprised of a historic Ranch farmhouse, a non-historic farmhouse, a historic silo, three non-historic silos, and seven outbuildings. The historic outbuildings include four sheds, a Quonset hut shed, and a pole barn. The property is located approximately 240 feet from the railroad and is separated from the railroad by MO Highway 171. The historic farmhouse and outbuildings are first visible on an 1958 historic aerial photograph and based on type and materials present, they date to the 1950s. The non-historic farmhouse was built in 2010.

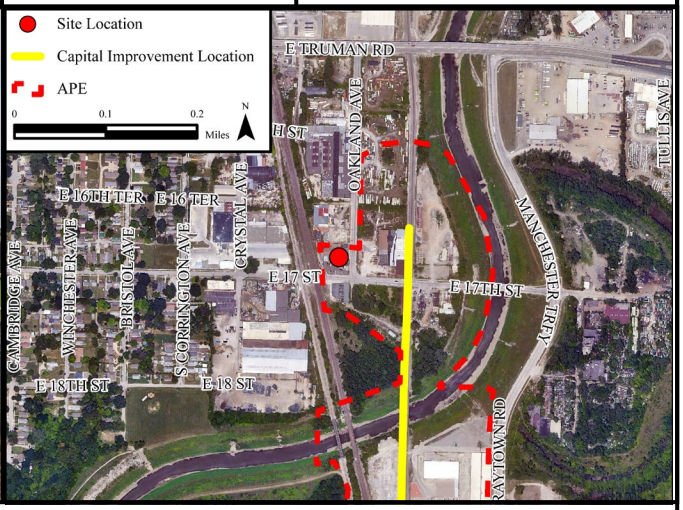
The historic farmhouse and two of the historic sheds are constructed from Ozark stone masonry. The historic farmhouse is a Ranch house with an addition to the right of the front, west facing façade. The addition is covered in non-historic vinyl siding. The house is set on a poured concrete foundation and is covered by a non-historic standing seam side-gabled roof. The house is fenestrated with wood and aluminum 1/1 windows. It also features a front wooden stoop. Two of the historic shed outbuildings are both covered with non-historic standing seam metal roofs and have no windows. The historic Quonset hut appears to have the original exterior replaced with non-historic metal. The historic pole barn also appears to have the historic siding and roofing replaced with non-historic metal sheets.

National Register Evaluation: This property is recommended not eligible for the National Register. Criterion A: While the property is associated with mid-twentieth century residential and agricultural development in the region, it is not individually significant within the historic context of the community development or agriculture. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property has distinctive characteristics of a Ranch house; however, it does not serve as a good and representative example due to a lack of integrity. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic location and remains in a rural residential setting. The farmhouse remains in use as a residence, and the buildings retain their historic association with rural residential and agricultural development in this area. The integrity of design, materials, and workmanship, have been compromised due to the replacement of the historic siding and windows on most of the buildings on the property. These substantial alterations have diminished the integrity of feeling and the property no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	MO-BV-001	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	1648 Oakland Avenue, Kansas City, Missouri





Description: The property is industrial and consists of a warehouse with no style. The building appears to have been constructed in the early 1900s, based on historic aerial photographs and Sanborn maps. The warehouse faces south and is located approximately 420 feet from the existing Kansas City Southern line to the east. The immediate surrounding consists of a paved lot with chain link fence bordering the front of the property. The property sits adjacent to other industrial properties built throughout the early to mid 20th century.

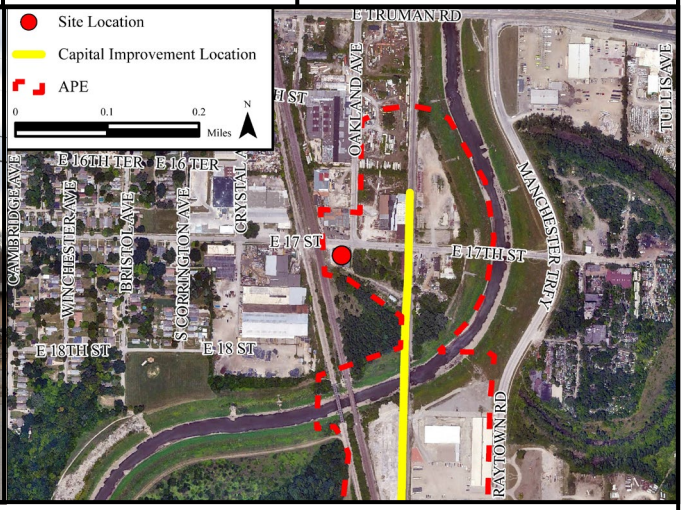
The building is a 1-story, 2-bay warehouse on a slab concrete foundation topped with a flat roof. The roof has 13 sawtooth skylights present, which have been covered with roofing fabric, along with the flat portions of the roof. The building has rectangular massing and is largely clad with galvanized metal siding on the front (south) and side elevations and does not possess any windows. The façade faces south and has some parapeted portions that rise above the flat roofline. The facade is fenestrated with two garage bays that possess rolling metal garage doors. A segment of historic brick foundation and a historic brick chimney are present on the front (south) elevation. The rear elevation of the building is clad with historic brick, and there is evidence of the historic openings having been infilled. Large portions of the historic footprint were removed from the front and rear elevations during the early 2000s, as evidenced in aerial photography and supported with field survey findings.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with early-to-mid twentieth century industrial growth, it is not individually significant within the historic context of commercial development in the region. Criterion B: Background research has not identified any connection between the property and historically significant individuals. Criterion C: The property does not serve as a good and representative example of a type, period, or method of construction due to a lack of integrity. Criterion D: There are no indications that the property is likely to yield significant information in history or pre-history.

Integrity: The property retains integrity of location, setting, and association as it remains on its original site of construction in an industrial area and continues to be in use as an industrial facility. The property lacks integrity of design, materials, workmanship, and feeling. Integrity of design and materials has been compromised by the removal of portions that alter the property's historic footprint and the addition of non-historic infill. These changes also disrupt the property's ability to convey its historic workmanship, as well as the feeling and aesthetic of its period of construction.

Resource ID:	MO-BV-002	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	7435 E 17th Street, Kansas City, Missouri





Description: The property consists of two attached industrial warehouses with no style. The buildings appear to have been constructed concurrently between 1940 and 1950 based on historic aerial photography and Sanborn Maps. The warehouses face north and are located approximately 400 feet east of the existing Kansas City Southern line. The immediate surrounding consists of a gravel and dirt lot with a gravel drive that has become inaccessible due vegetation. The property sits adjacent to other industrial properties built throughout the early to mid 20th century and is bordered to the east by the Kansas City Southern rail line and to the west by the St. Louis and San Francisco, and the Missouri Pacific rail lines.

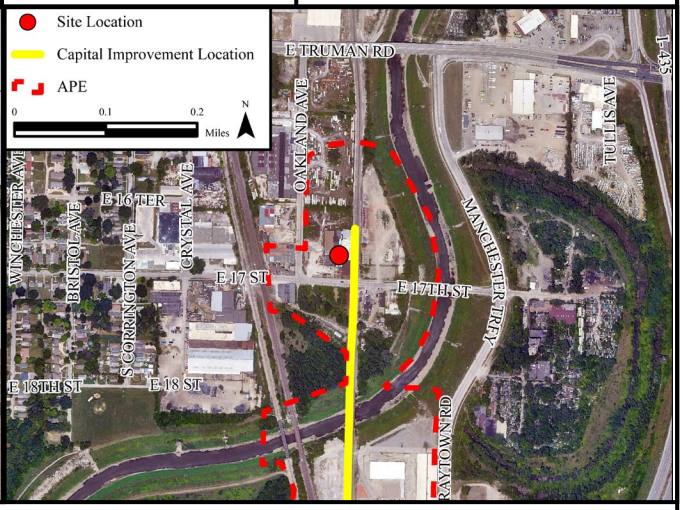
The concrete block buildings are each 1-story, single-bay warehouses with barrel-vaulted roofs and sit atop a concrete slab foundation. The overall massing of the two warehouses is rectangular, and the two buildings appear to share a center wall. The façades feature a plain-style parapet that extends above the barrel-vaulted roof. The warehouse on the eastern side has been clad in galvanized metal siding. The building to the east is fenestrated with a single, 1/1 wood window, a single metal rolling garage door, and a single-light steel entry door on the front (north) elevation. The building to the west is fenestrated with a steel entry door and a single metal rolling garage door on the front (north) elevation.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with early-to-mid twentieth century industrial growth, it is not individually significant within the historic context of commercial development in the region. Criterion B: Background research has not identified any connection between the property and historically significant individuals. Criterion C: While the has seen little change, the property does not serve as a good and representative example of a type, period, or method of construction. Criterion D: There are no indications that the property is likely to yield significant information in history or pre-history.

Integrity: The property retains integrity of location, setting, feeling, and association. The property remains at its historic construction site. The design of the buildings is intact, including the overall form and masonry. The property does not retain integrity of materials as a result of the application of metal siding. The intact features are able to convey a sense of historic workmanship, and the property retains the feeling and aesthetic of its period of construction.

Resource ID:	MO-BV-003	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	7510-7700 E 17th Street, Kansas City, Missouri





Description: The property is an industrial warehouse building with no style. The building appears to have been constructed during the 1940s-1950s, based on historic aerial photographs and Sanborn maps, and has had numerous additions to the footprint. The warehouse faces south and is located on a 2.37-acre lot roughly 70 feet from the existing Kansas City Southern line to the east. The immediate surrounding consists of a paved lot with chain link fence bordering the front and side of the property. The property sits adjacent to other industrial properties built throughout the early to mid-20th century.

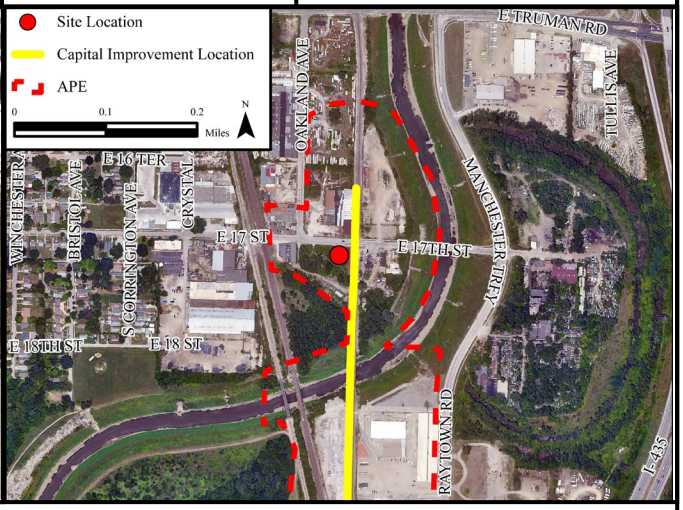
The front office portion of the building consists of a 2-story, 4-bay light industrial building with a flat roof. The office is clad in brick and fenestrated 7 pairs of 8-light metal casement windows. Non-historic vinyl shutters have been applied to the windows on the second story. The portions of the building directly to the rear (north) and side (east) are large non-historic single-story warehouse areas with flat roofs that are clad with galvanized and corrugated metal siding. Rolling metal garage doors are located on the front, side, and rear elevations. A large barrier fence made of steel I-bars has been erected on the property line between the building and the Kansas City Southern directly adjacent. The property includes a single-story shed located on the adjacent lot. The shed consists of 8 bays with a gabled roof clad in galvanized metal siding.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with early-to-mid twentieth century industrial growth, it is not individually significant within the historic context of commercial development in the region. Criterion B: Background research has not identified any connection between the property and historically significant individuals. Criterion C: The property does not serve as a good and representative example of a type, period, or method of construction due to a lack of integrity. Criterion D: There are no indications that the property is likely to yield significant information in history or pre-history.

Integrity: The property retains integrity of location, setting, and association as it remains on its original site of construction in an industrial area and continues to be in use as an industrial facility. However, the property lacks integrity of design, materials, workmanship, and feeling. Integrity of design and materials has been compromised by the non-historic additions that alter the property's historic footprint and non-historic infill of windows. These changes also disrupt the property's ability to convey its historic workmanship, as well as the feeling of its period of construction.

Resource ID:	MO-BV-004	**Resource Type:**	Above-Ground
Resource Name:	n/a	**Potential Effect:**	Visual
Previous Documentation:	NA	**Location:**	7535 E 17th Street, Kansas City, Missouri





Description: The property consists of two light industrial open storage buildings with no style. The buildings appear to have been constructed during the 1950s-1960s, based on historical aerial photographs and Sanborn Maps, with the building to the east having been constructed first. The buildings are located on a 1.4-acre lot directly adjacent to the Kansas City Southern line approximately 50 feet to the east. The immediate surrounding consists of a dirt lot overgrown with vegetation and bordered by a chain link fence. The property sits adjacent to other industrial properties built through the early to mid-20th century. The lot was not accessible at the time of field survey due to the encroachment of vegetation and fencing.

The building to the west is a rectangular single-story gable-roofed shed clad with corrugated metal siding and is completely open on both sides. The building to the east is a rectangular single-story shed-roofed open storage shed clad with corrugated metal siding.

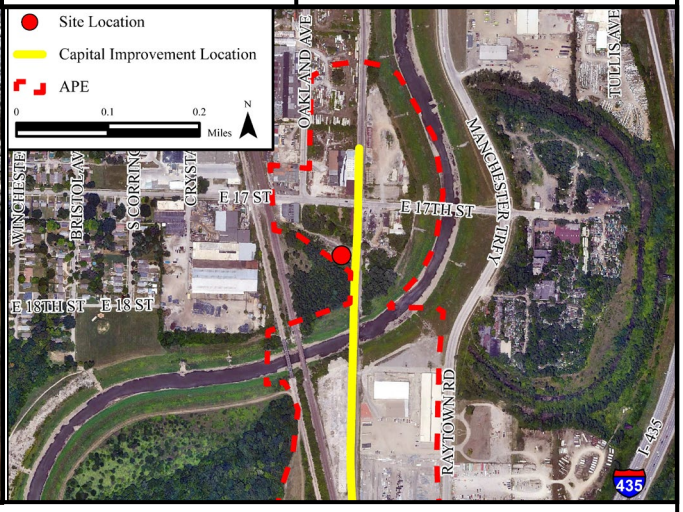
Research of the property indicated that it was at one time used by an asphalt manufacturing company. Historic aerial photographs indicate that some structures on the property were demolished between the 1970s to 1980s. The building does not appear to be currently in use.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with early-to-mid twentieth century industrial growth, it is not individually significant within the historic context of commercial development in the region. Criterion B: Background research has not identified any connection between the property and historically significant individuals. Criterion C: The property does not serve as a good and representative example of a type, period, or method of construction due to a lack of integrity. Criterion D: There are no indications that the property is likely to yield significant information in history or pre-history.

Integrity: The property retains integrity of location and setting as it remains on its original site of construction in an industrial area. The property retains integrity of design, materials, and workmanship as the overall form and materials are intact. Integrity of feeling and association has been lost with the demolition of other structures on the parcel which has removed the association with its historic use. Additionally, the buildings appear to no longer be in use and have been encroached upon by vegetation growth. These changes also disrupt the property's ability to convey its historic workmanship, as well as the feeling of its period of construction.

Resource ID:	MO-BV-005	**Resource Type:**	Above-Ground
Resource Name:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	7501 E 17th Street, Kansas City, Missouri





Description: The property is an industrial open storage building with no style. The building appears to have been constructed during the early 1970s, based on historical aerial photographs and Sanborn Maps. The building is located on a 0.13-acre lot directly adjacent to the Kansas City Southern line roughly 50 feet to the east. The immediate surrounding was not accessible at the time of survey due to vegetative growth but appears to consist of a dirt lot overgrown with vegetation. The property sits adjacent to other industrial properties built through the early to mid-20th century.

The building is a rectangular single-story gable-roofed storage shed that is clad in galvanized metal siding. No fenestration was visible at the time of survey.

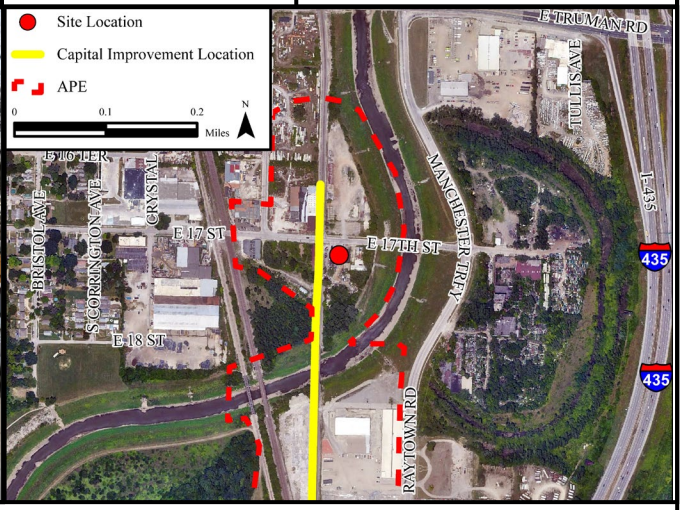
Background research on the property points to it once being in use as part of the Mississippi Lime company. It is unclear if this was the use at the time of construction and the building no longer appears to be in use.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with mid-twentieth century industrial growth, it is not individually significant within the historic context of commercial development in the region. Criterion B: Background research has not identified any connection between the property and historically significant individuals. Criterion C: While the building remains intact and has seen little change, the property does not serve as a good and representative example of a type, period, or method of construction.. Criterion D: There are no indications that the property is likely to yield significant information in history or pre-history.

Integrity: The property retains integrity of location, setting, and association as it remains on its original site of construction in an industrial area. The property also retains integrity of design, materials, and workmanship as the overall form and materials are intact. However, integrity of feeling has been lost as the property no longer appears to serve its historic purpose.

Resource ID:	MO-BV-006	**Resource Type:**	Above-Ground
Resource Name:	n/a	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	7605 E 17th Street, Kansas City, Missouri





Description: The property consists of two industrial buildings with no style. The property faces north and is located roughly 100 feet to east of the existing Kansas City Southern railway. The buildings are located on a partially-paved 0.16-acre lot on slab concrete foundations. Background research of the property indicated it was once owned and operated by Grahn Manufacturing Company. The building on the western side of the property appears to have been constructed during the 1950s based on historic aerial photography and Sanborn maps. The building has a rectangular massing and is of concrete block construction with a flat roof. Many of the historic window openings have been infilled or replaced with non-historic vinyl windows. Three historic 4/1 sash windows remain on the side (west) elevation. Historic decorative terracotta coping can be seen along the roofline on the rear side elevation of the building. A large historic steel storage tank is also present on the side elevation. Aerial photography indicates that multiple storage tanks were removed from the front and side of the property. The rear and side (east) elevations feature garage bays with rolling metal garage doors.

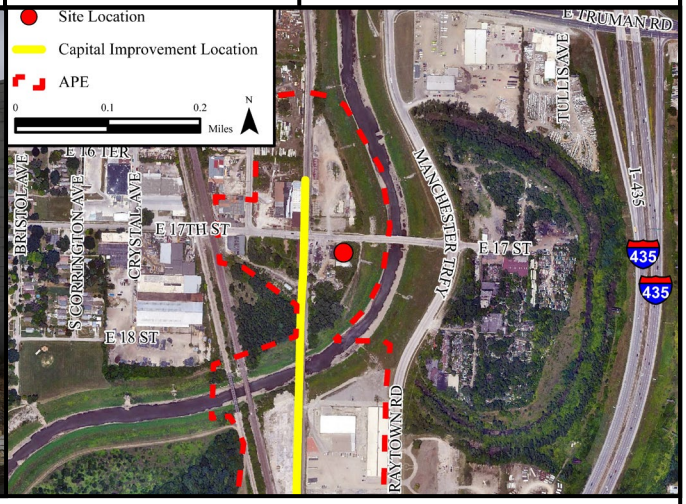
The building on the eastern side of the property appears to have been constructed between 1955 and 1963, based on aerial photographs and Sanborn maps. The building has a rectangular massing and is of concrete block construction with a flat roof. The façade is fenestrated with two aluminum sliding windows while the side elevation is fenestrated with a non-historic plate glass window and aluminum frame door. Two loading docks with wood garage doors are also present on the side elevation.

National Register Evaluation: The property is recommended not eligible for listing in the National Register listing. Criterion A: While the property is associated with mid-twentieth century industrial growth in the area, it is not individually significant within this regional historical context. Criterion B: Background research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not serve as a good and representative example of a type, period, or method of construction due to a lack of integrity. Criterion D: There are no indications that the property is likely to yield significant information in history or pre-history.

Integrity: The property retains integrity of location and setting as it remains at its historic site of construction withing an industrial area. The property retains integrity of association as it is recognizable as an industrial facility. The property lacks integrity of design, materials, and workmanship due to the non-historic changes to the buildings and removal of historic materials such as the steel storage tanks. However, the property lacks integrity of feeling as the buildings no longer appear to be in their historic use.

Resource ID:	MO-BV-007	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	7615 E 17th Street, Kansas City, Missouri





Description: The property is located along the south side of E 17th Street, roughly 160 feet east of the existing KCS Railway. The property is a paved 0.4-acre lot in a semi-industrial area and is in proximity of several operational businesses and industrial facilities along E. 17th Street. A single large industrial building of no type or style is present on the property. The building faces north and is first visible onsite in a 1955 aerial photograph; however, based on the field survey and Sanborn Map research, the building was likely constructed in the 1940s. The property was in derelict condition and appeared abandoned during the site visit.

The main section of the building is a square flat-roof structure constructed of concrete block. Original wood siding can be seen beneath the roof eaves of the side elevation, and a portion of the north façade is clad in non-historic weatherboard siding. Fenestration consists primarily of original 8-pane metal industrial windows; however, most are deteriorated and boarded over with plywood. A metal Quonset hut structure extends from the rear of the main section and connects with a side-gabled masonry structure in the rear yard.

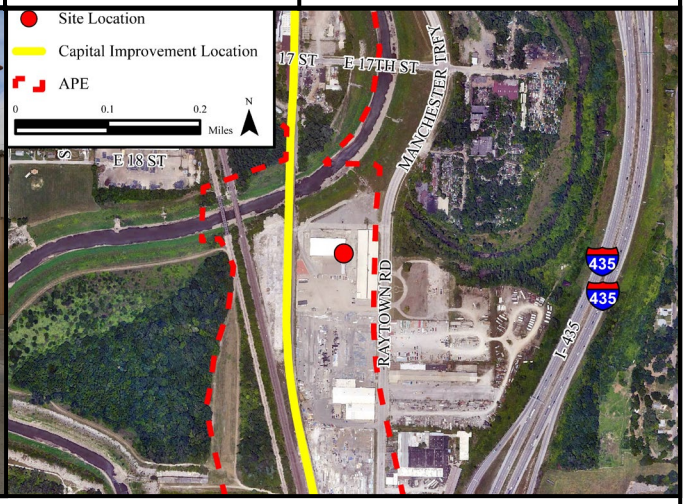
The property's original use could not be determined. Research of the property indicated that it was last occupied and operated by the local plating company, Quality Finishing Industries Inc. in the early 2000s.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the property is associated with mid twentieth century commercial practices in the area, it is not individually significant within this regional historical context. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction. Further, the property is currently abandoned and in derelict condition. Criterion D: There are no indications that the property is likely to yield significant information in history or prehistory.

Integrity: The property retains integrity of location and setting as it remains on its original site of construction in an industrial area. The property retains integrity of association as a discernable commercial facility; however, the facility lacks integrity of feeling as it is no longer in use. The property lacks integrity of design, materials, and workmanship. The property's dilapidated condition compromises its original footprint, building materials, and historic components. This state of disrepair also affects the property's ability to convey its historic workmanship and the aesthetic of its period of construction.

Resource ID:	MO-BV-008	**Resource Type:**	Above-Ground
		Potential Effect:	Visual
Inventory Number:	TBD	**Location:**	1900 Manchester Trafficway, Kansas City, Missouri
Previous Documentation:	None		





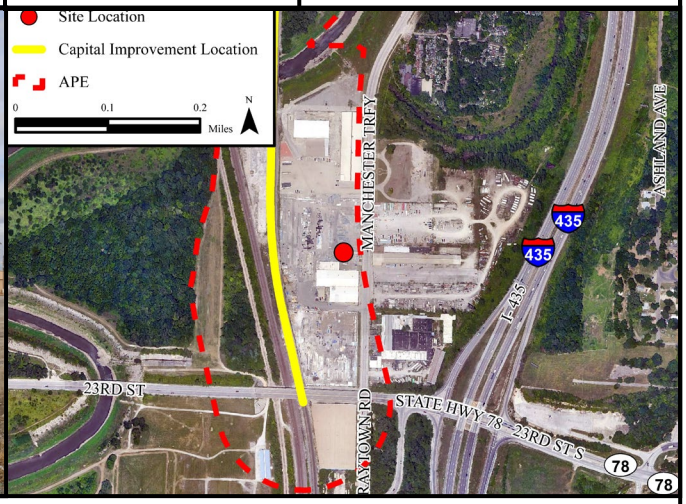
Description: The property is located along the west side of Manchester Trafficway, directly east of the existing KCS Railway. The property is a paved 8.2-acre lot and features three buildings of no type or style: a large rectangular industrial building and two smaller warehouse structures. Based on historic aerial photography and field investigation, the structures onsite were constructed at different times and were once part of a larger industrial complex. Most original structures onsite were demolished in 2019 though remnants of some building foundations as well as some railway track footprints were identified during the site visit. The property's original use is unclear however; Sanborn map research indicated that the property was operated by the Union Wire Rope Corporation in the 1940s. The two extant warehouses onsite were constructed in the 1950s and are closely identical in design. Both buildings face east and feature front-gabled metal roofs, non-historic metal siding, and several non-historic garage bay doors. The larger industrial building faces west and was constructed in 1970. The building is clad in non-historic metal siding and features an asymmetrical front-gabled metal roof and a front-gabled tower on the south façade. Several loading bays and metal louvered vents are present on the façade and side elevations. The property is situated in a semi-industrial area in proximity of several industrial facilities along Manchester Trafficway. The property is bordered by a non-historic chain link fence and is currently used for equipment storage by multiple construction companies.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the property is associated with mid twentieth century industrial practices and development in the area, it is not individually significant within this regional historical context. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction. Further, many historic structures onsite were lost due to demolition in 2019. Criterion D: There are no indications that the property is likely to yield significant information in history or prehistory.

Integrity: The property retains integrity of location and setting as it remains on its original site of construction in a semi-industrial area. The property lacks integrity of design, materials, workmanship, association, and feeling. Demolition of multiple structures onsite in 2019 compromise the property's original footprint and design. The extant structures onsite exhibit replacement building materials, and non-historic alterations that affect the property's ability to convey its historic workmanship. The property's original use is unclear, and the loss of several historic elements onsite affect the property's ability to convey its historic use and aesthetic.

Resource ID:	MO-BV-009	**Resource Type:**	Above-Ground
		Potential Effect:	Visual
Inventory Number:	TBD	**Location:**	2100 Manchester Trafficway, Kansas City, Missouri
Previous Documentation:	None		





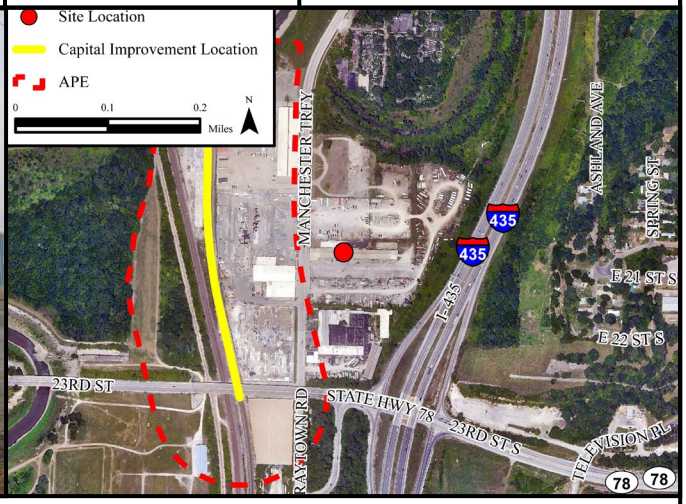
Description: The property is located along the west side of Manchester Trafficway in a semi-industrial area, directly east of the existing KCS Railway. The property is a paved 10.4-acre lot in proximity of several operational manufacturing businesses and industrial facilities along Manchester Trafficway. A single large mid twentieth century industrial building of no style is present on the property. The building faces east and is first visible onsite in a 1955 aerial photograph; however, based on the field survey and Sanborn Map research, the building was likely constructed in the 1940s. The building is constructed of brick and is situated on a brick foundation. Portions of the side elevation and rear elevation have also been covered in a non-historic concrete block veneer. The building is comprised of two side-by-side front-gabled sections fronted by a stepped brick parapet wall with terracotta copping. Loading bays delineated by decorative brick buttresses span the length of the east façade and side elevation. All bays feature a non-historic bay door and several bays on the façade have been reduced in size or enclosed with non-historic metal sheeting. Additional loading bays are present on the rear elevation; however, most have been enclosed with concrete block and are no longer in use. Fenestration is comprised primarily of metal louvered vents and enclosed industrial windows. The rear property line abuts the KCS Railway and is bordered by a non-historic chain link fence. Several powerlines are also present throughout the property. Research indicated that the building onsite was historically used by Kansas City Mills. Currently, the property is owned and operated by the fence supply company, Stephens Pipe & Steel.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the property is associated with mid twentieth century industrial practices in the area, it is not individually significant within this regional historical context. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: While the property is discernable as a mid twentieth century industrial building, it exhibits several non-historic elements, building materials, and alterations that greatly diminish its overall historical integrity. Criterion D: There are no indications that the property is likely to yield significant information in history or prehistory.

Integrity: The property retains integrity of location and setting as it remains on its original site of construction in a semi-industrial area. The property retains integrity of association as a discernable mid twentieth century industrial facility; however, the facility lacks integrity of feeling as it is no longer used for its original purpose. The property lacks integrity of design as several of the original loading bays have been reduced in size or enclosed. The property lacks integrity of materials and workmanship as it exhibits replacement building materials that affects the property's ability to convey the aesthetic of its period of construction.

Resource ID:	MO-BV-010	**Resource Type:**	Above-Ground
		Potential Effect:	Visual
Inventory Number:	TBD	**Location:**	2193 Manchester Trafficway, Kansas City, Missouri
Previous Documentation:	None		





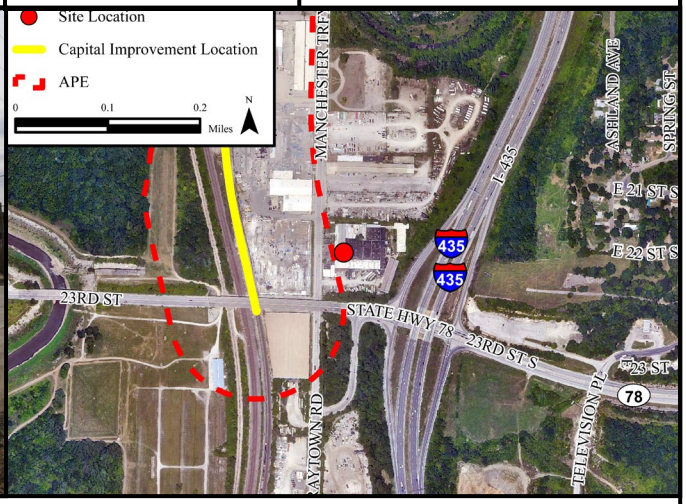
Description: The property is located along the east side of Manchester Trafficway within 500 feet east of the existing KCS Railway. The property is a paved 13.2-acre lot in a semi-industrial area and is in proximity of several operational manufacturing businesses and industrial facilities along Manchester Trafficway. Two large rectangular industrial buildings of no type or style are present onsite. The buildings, both facing west, are situated directly alongside one another and represent two periods of development. The northern building is first visible in a 1955 aerial photograph and was likely built in the 1950s. The building is constructed of brick and features a step-back flat-roof. Several loading bays and non-historic 6-pane industrial metal windows are present on the side elevation. Two additional loading bays are present on the façade; however, both bays have been enclosed with non-historic vertically-paned metal storefront windows. The southern building is a large non-historic two-story structure first visible onsite in a 1983 aerial photograph and was likely constructed in the 1980s. The building is clad in non-historic metal siding and features a front-gabled metal roof, two side shed roof projections, and six loading bays. Based on field investigation, both buildings are currently owned and operated by the steel company, Chicago Metal Rolled Products. Additional buildings onsite include two small non-historic front-gabled manufactured structures clad in metal siding. The property is bounded by a non-historic chain link fence and accessed by several small driveways along Manchester Trafficway.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century industrial growth in the area, it is not individually significant within the historic context of regional commercial development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction and is currently comprised largely of non-historic elements. **Criterion D:** There are no indications that the property is likely to yield significant information in history or prehistory.

Integrity: The property retains integrity of location, setting, and association as it remains on its original site of construction in a semi-commercial area and continues to be in use as an industrial facility. The property lacks integrity of design, materials, workmanship, and feeling. Integrity of design and materials has been compromised by replacement building materials and non-historic infill that alter the property's original footprint and historic components. These changes also disrupt the property's ability to convey its historic workmanship, as well as the feeling and aesthetic of its period of construction.

Resource ID:	MO-BV-011	**Resource Type:**	Above-Ground
		Potential Effect:	Visual
Inventory Number:	TBD	**Location:**	2223 Manchester Trafficway, Kansas City, Missouri
Previous Documentation:	None		





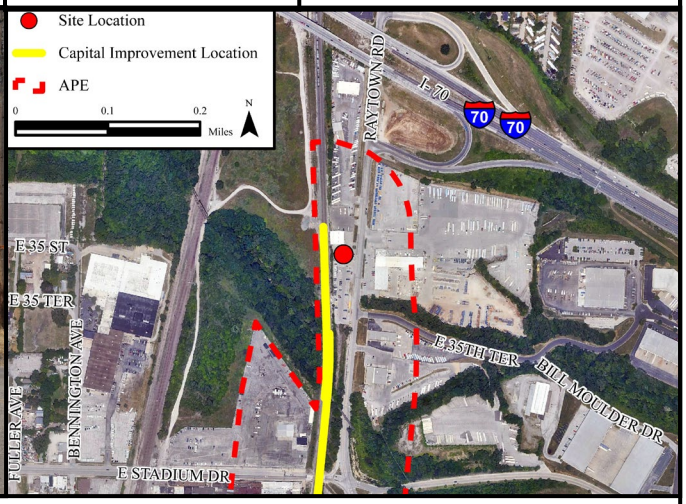
Description: The property is located along the east side of Manchester Trafficway within 500 feet east of the existing KCS Railway. The property is a paved 4.7-acre lot in a semi-industrial area and is in proximity of several operational manufacturing facilities. A complex of industrial buildings of no type or style are present onsite. A small multi-pitched flat roof garage constructed in the 1950s fronts the property along Manchester Trafficway and is the earliest building onsite. The garage faces west and is constructed of concrete block. Several original windows and garage bays have been enclosed. An abandoned rectangular flat-roof office building constructed of brick is situated directly north of the garage and was constructed in the 1960s. The building also faces west and features no fenestration. The largest structure onsite faces north and is located towards the center of the property. Based on historic aerial photography, the building was constructed in stages between 1955 and 1970. The core structure is constructed of concrete block and features both flat roof and front-gabled sections; portions of the structure are also clad in non-historic metal siding. Fenestration consists of multiple original 12-pane industrial windows and several garage bay doors. Three additional non-historic structures are also present onsite. These structures were constructed in the 1980s and include two large flat-roof structures in the rear yard and a small flat-roof office building, all of masonry construction. Research indicated that the property was historically operated by the Libby Welding Co. Based on field investigation, the property is currently used for tire storage by Beck Tire International in 2022.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century industrial growth in the area, it is not individually significant within the historic context of regional industrial development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction and currently exhibits non-historic elements and infill. Criterion D: There are no indications that the property is likely to yield significant information in history or prehistory.

Integrity: The property retains integrity of location, setting, and association as it remains on its original site of construction in a semi-industrial area and continues to be in use as a commercial facility. The property lacks integrity of design, materials, workmanship, and feeling. Integrity of design and materials has been compromised by replacement building materials and non-historic outbuilding infill that alter the property's original layout and historic components. These changes also disrupt the property's ability to convey its historic workmanship, as well as the feeling and aesthetic of its period of construction.

Resource ID:	MO-BV-012	**Resource Type:**	Above-Ground
		Potential Effect:	Visual
Inventory Number:	TBD	**Location:**	3500 Manchester Trafficway, Kansas City, Missouri
Previous Documentation:	None		





Description: The property is located along the west side of Manchester Trafficway, directly east of the existing KCS Railway. The property is a paved 0.6-acre lot in a semi-commercial area and is in proximity of several operational commercial businesses along Manchester Trafficway. The property is comprised of a single rectangular flat-roof industrial building with design elements in the Modernist style. The structure faces east and based on aerial photography, was likely constructed in the 1960s. The building is constructed of both concrete block and brick and is situated on a concrete foundation. A prominent Modernist style concrete belt course spans the length of the east façade and portions of the side elevation. A non-historic wraparound front porch is also present on the façade and is comprised of a metal hip roof supported by seven wood posts with V-shaped brackets. Three garage bay doors are present on the side elevation. Fenestration consists of a single historic 9-pane industrial window, three original 1/1 sash windows, and three original 6-pane industrial windows in a tripartite arrangement beneath a non-historic metal awning.

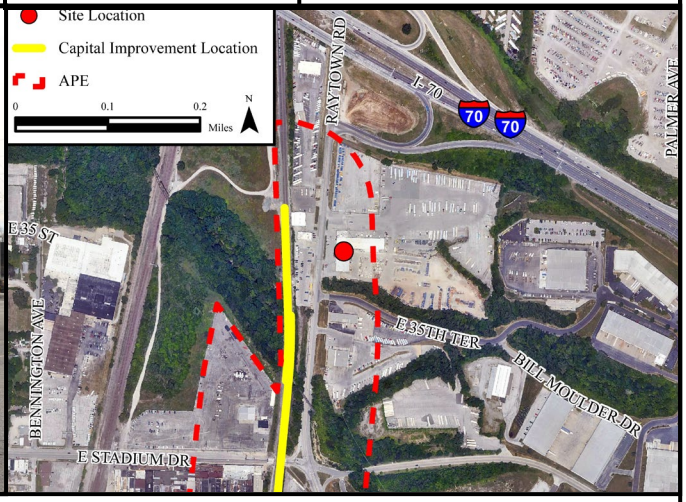
The property is accessed by several small driveways and curb cuts along Manchester Trafficway. A non-historic metal fence encloses the side parking lot, and a non-historic chain link fence runs along the rear property line. The property is currently operated by Premium Truck Sales and used as a car dealership.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century industrial growth in the area, it is not individually significant within the historic context of regional industrial development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: Although the building remains largely intact and continues to exhibit its historic materials and Modernist style design elements, it is not an outstanding or distinctive example of its type. Criterion D: There are no indications that the property is likely to yield significant information in history or prehistory.

Integrity: The property retains integrity of location as it remains on its original site. The property retains integrity of setting and association as a commercial business in a semi-commercial area; however, there is a loss of integrity of feeling as the property no longer appears to serve its original purpose. The building's facade has been embellished with a non-historic front porch that compromises its original footprint and integrity of design. The building continues to retain most of its original building materials and ability to convey its historic workmanship as a mid-to-late twentieth century commercial structure.

Resource ID:	MO-BV-013	**Resource Type:**	Above-Ground
		Potential Effect:	Visual
Inventory Number:	TBD	**Location:**	3505 Manchester Trafficway, Kansas City, Missouri
Previous Documentation:	None		





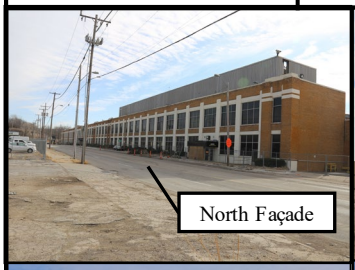
Description: The property is located along the east side of Manchester Trafficway, roughly 250 feet east of the existing KCS Railway. The property is a paved 8.6-acre lot in a semi-commercial area and is in proximity of several operational commercial businesses along Manchester Trafficway. A single large industrial building of no type or style is present onsite. The building is first visible in a 1963 aerial photograph and was likely constructed in the early 1960s. A non-historic addition is present to the north and, based on aerial photography, was likely constructed in the late 1970s to early 1980s. The property is currently owned and operated by the safety equipment supplier, United Rentals-Trench Safety. The main structure is a multi-pitched T-shaped building on a concrete foundation. The building faces west and is comprised of a central front-gabled section constructed of concrete block. This front-gabled section is situated between an asymmetrical front-gabled section to the south and a small non-historic flat-roof addition to the north. The structure is clad in non-historic metal siding and features several garage doors and loading bays on the rear elevation. Fenestration consists of non-historic single-pane metal windows in various pairings, non-historic horizontally-paned 2/1 metal windows, and several original 9-pane industrial windows.

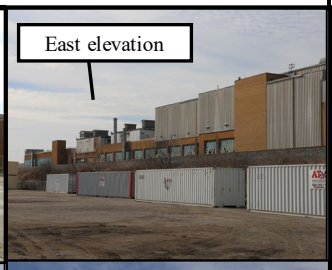
The property is accessed by several small driveways along Manchester Trafficway. A non-historic chain link fence encloses the rear yard, and a wooded area is present along the southern boundary of the property.

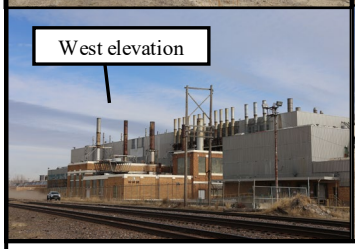
National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with late twentieth century industrial growth in the area, it is not individually significant within the context of regional commercial development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. **Criterion C:** The property does not embody a distinctive characteristic of a type, period, or method of construction and exhibits non-historic alterations and replacement materials. Criterion D: There are no indications that the property is likely to yield significant information in history or prehistory.

Integrity: The property retains integrity of location, setting, and association as it remains on its original site of construction in a semi-commercial area and continues to be in use as an industrial facility. The property lacks integrity of design, materials, workmanship, and feeling. Integrity of design and materials has been compromised by a large non-historic addition and replacement building materials that alter the property's historic footprint and historic components. These changes also disrupt the property's ability to convey its historic workmanship, as well as the feeling and aesthetic of its period of construction.

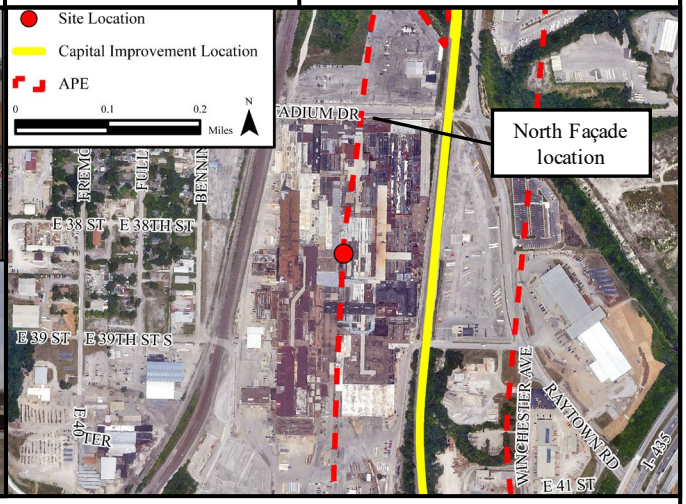
Resource ID:	MO-BV-014	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	Along E 39th Street, Kansas City, Missouri











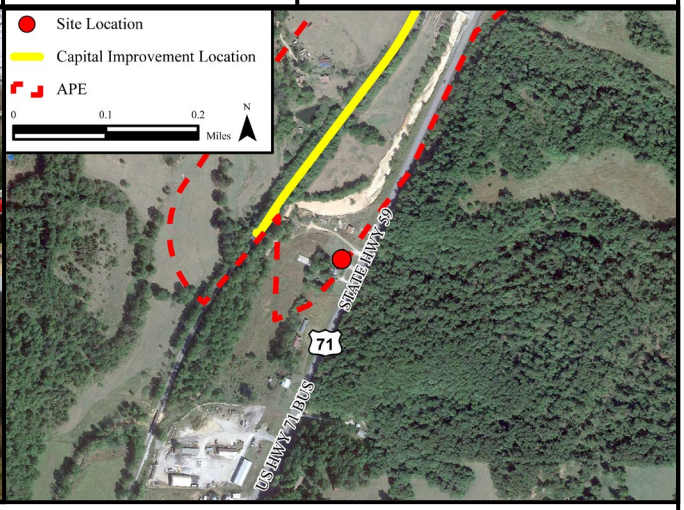
Description: The property is located directly west of the existing KCS Railway. The property is a paved 48-acre lot and features a large industrial complex comprised of several interconnected early-to-mid twentieth century manufacturing structures. The complex was first constructed in 1929 and, based on aerial photography and Sanborn Map research, was expanded in stages from 1930-1970. Research also indicated that the complex was historically used as a General Motors automobile assembling facility from 1929-1988. The facility was largely inaccessible for field survey as several sections were undergoing demolition during field investigation due a recent fire in 2021. The core building onsite is constructed primarily of brick and features several multi-floor flat roof sections with exterior metal exhaust pipes. Portions of the structure are also clad in non-historic metal siding. The north façade is located along Stadium Drive and features several Art Deco style elements including brick dentil detailing, decorative concrete and brick buttresses, and several large vertically-paned non-historic metal windows. Several of these Art Deco style design elements can also be seen on the side elevations of the core structure. Additional fenestration includes historic glass block walls, original horizontally-paned casement windows, original large multi-paned industrial windows, and multiple loading bays. The property is bordered by a non-historic chain link fence and abuts the KCS Railway to the east. The property no longer operates as an active industrial facility and is currently used for some warehouse storage.

National Register Evaluation: The property is recommended eligible for listing on the National Register under Criterion A and C: The property is associated with the history of General Motors which played a notable role in the industrial development of the area in early-to-mid twentieth century. Further, while portions of the property are currently being demolished due to fire damage, the core structure and primary building onsite remains discernable as an early-to-mid twentieth century industrial building with intact Art Deco style design elements. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion D: There are no indications that the property is likely to yield significant information in history or prehistory.

Integrity: The property retains integrity of location and setting as it remains on its original site of construction in an industrial area. The property retains integrity of workmanship and feeling. The facility is discernable as an early-to-mid twentieth century industrial facility and continues to convey its historic workmanship and the aesthetic of its period of construction. The property's integrity of design, materials, and association has been compromised. The property exhibits multiple non-historic components and portions of the building are currently undergoing demolition. These changes greatly alter the property's historic footprint and original building materials. The facility lacks integrity of association as it is no longer used for its original purpose.

Resource ID:	MO-GO-001	Resource Type:	Above-Ground
Inventory Number:	TBD	Potential Effect:	Visual
Previous Documentation:	None	Location:	5267 MO Highway 59, Goodman, Missouri





Description: The property is residential and includes two historic houses and two non-historic outbuildings. The houses were constructed between 1955 and 1959 based on historic aerial photographs. The property is surrounded by residential and agricultural development. The property is an approximately 0.8-acre parcel located approximately 450 feet from the KCS ROW and is separated from the railroad by a swath of trees. The houses face southeast towards MO Highway 59.

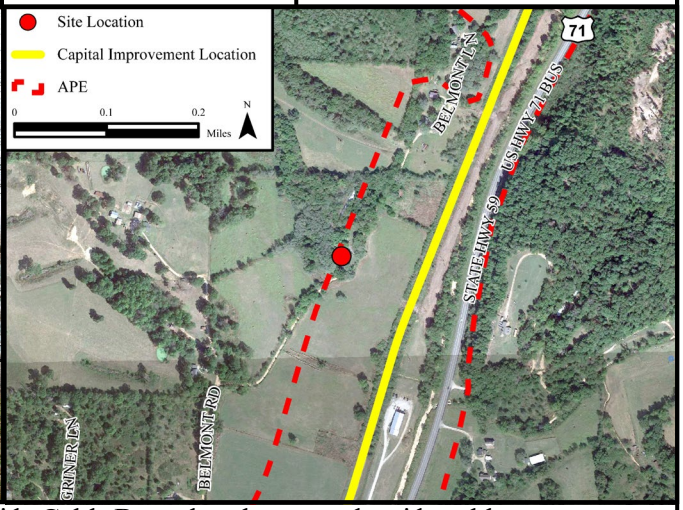
The southern house includes a large non-historic addition on the rear elevation resulting in an L-shaped footprint. The side-gable roof is covered by a non-historic standing seam metal, and the exterior features non-historic vinyl siding. Although the entrance has been replaced with a non-historic wood door, the house retains its fixed and 1/1 double-hung wood windows. The front façade features a portico with a shed roof that is supported by wooden porch supports. The house located on the north side of the parcel has a long, rectangular footprint and is covered by a sheet metal shed roof. The house is clad in non-historic vinyl siding and is fenestrated with non-historic 1/1 vinyl windows. The front façade features a front portico that is contained under a standing seam metal shed roof with wooden porch supports with a non-historic cross-and-bible wood door. The outbuildings are non-historic storage sheds.

National Register Evaluation: This property is recommended not eligible for the National Register. Criterion A: While the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and setting. The property remains at its historic location and remains in a rural residential setting. The buildings remain in use as residences and retain their historic association with rural residential development in this area. The integrity of design, materials, and workmanship have been compromised due to the replacement of the historic siding, windows, and the additions to the houses on the property. These substantial alterations have diminished the integrity of feeling, and the property no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	MO-GO-002	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	373 Belmont Lane, Goodman, Missouri





Description: The property is residential consists of a Side Gable Bungalow house and a side gable garage outbuilding. The house and garage were constructed in the 1920s based on historic aerial photographs and type. The property is set in a residential and agricultural setting. It is surrounded by patches of woods, historic and non-historic residential development, and agricultural fields. The property is located approximately 490 feet from the KCS ROW on a 55-acre parcel and faces east towards Belmont Lane.

The house is a 1½ story Side Gable Bungalow with two large non-historic side additions. The house is covered by an asphalt shingle roof and features a prominent shed-roof dormer on the front façade and a brick chimney. The front verandah is supported by non-historic replacement squared wooden porch supports under a shed roof. The house is clad in non-historic vinyl siding and features replacement 6/6 and 2/2 vinyl windows. The front façade of the house features a large non-historic wooden deck addition. The deck attaches the house to an aboveground pool and is accessed by a sliding glass door.

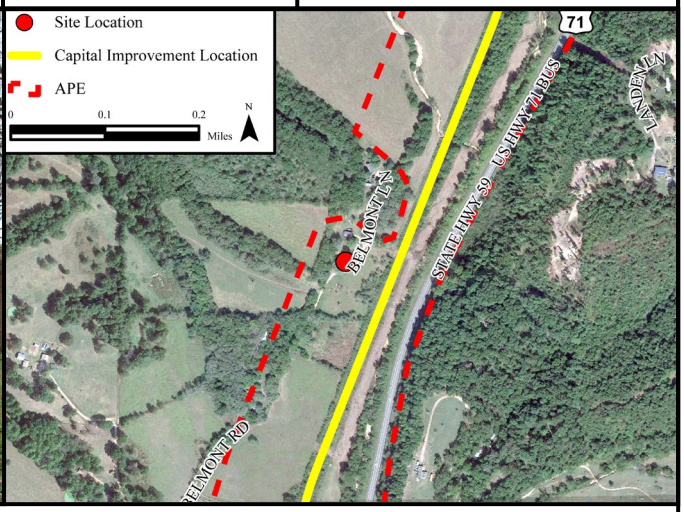
The garage outbuilding is wood framed. It features one garage door and a non-historic cross and bible wooden door. The exterior of the garage is clad in wooden siding and set on a poured concrete foundation.

National Register Evaluation: This property is recommended not eligible for the National Register. Criterion A: While the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property has distinctive characteristics of a Side Gable Bungalow; however, it does not serve as a good and representative example due to a lack of integrity. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The integrity of design, materials, and workmanship, have been compromised due to the replacement of historic materials and the many additions to the house. These include the replacement of the historic siding, windows, and porch supports. The additions to the house including the large side additions as well as the deck further compromise the integrity of design, materials, and workmanship. These substantial alterations have diminished the integrity of feeling, and the house no longer conveys the feeling and aesthetic of its period of construction. The property retains integrity of location, setting, and association. The property remains at its historic construction site and remains in a rural residential setting. The building remains in use as a residence and the building retains its historic association with rural residential development in this area.

Resource ID:	MO-GO-003	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	533 Belmont Lane, Goodman, Missouri





Description: The property is residential and consists of a house, a shed outbuilding, and a cellar. The house was built between 1950 and 1955, according to historic aerial photography. The property also includes a cellar that is built into the hill to the rear of the house and a concrete block shed. Due to vegetation obscuring the outbuildings on the historic aerial photographs, the construction date of the outbuildings are unknown; however, based on the materials present, they appear to be historic. The property is located approximately 310 feet from the KCS ROW on an approximately 2.3-acre parcel and is surrounded by historic and non historic residential development as well as patches of woods and agricultural fields.

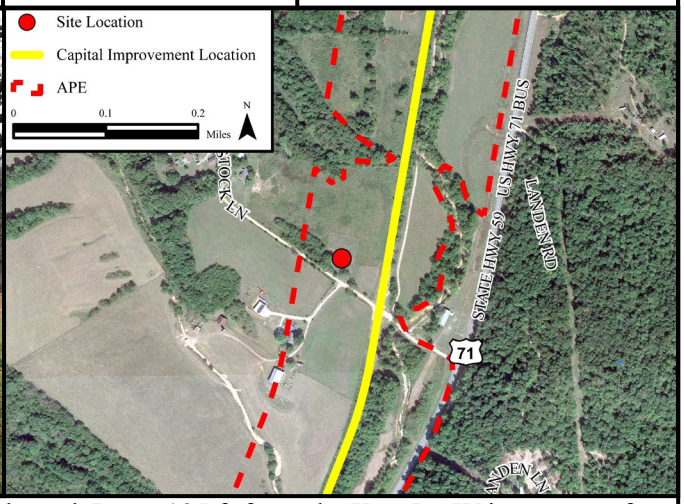
The historic house is located on a poured concrete foundation, is clad in non-historic vinyl siding, has 6/6 vinyl type double hung sash windows, a southeast facing front façade with a prominent brick chimney, and a front gable porch supported by metal porch supports. Many material changes are present. These include the replacement of the historic siding with non-historic vinyl siding, the replacement of the historic windows with non-historic vinyl type windows, and the addition of the non-historic front porch. The cellar appears to be historic and is constructed from poured concrete and has a sheet metal roof. It appears to no longer be in use. The second concrete block outbuilding topped with a front gable roof made of sheet metal and is located close to the house.

National Register Evaluation: This property is recommended not eligible for the National Register. Criterion A: While the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location, setting, and association. The property remains at its historic construction site and remains in a rural residential setting. The building remains in use as a residence. The building retains its historic association with rural development in this area. The integrity of design, materials, and workmanship have been compromised due to the replacement of the front porch, replacement of the exterior siding with non-historic vinyl, and the replacement of the historic windows and front door. These substantial alterations have diminished the integrity of feeling, and no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	MO-GO-004	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	East of 159 Blackstock Lane, Goodman, Missouri





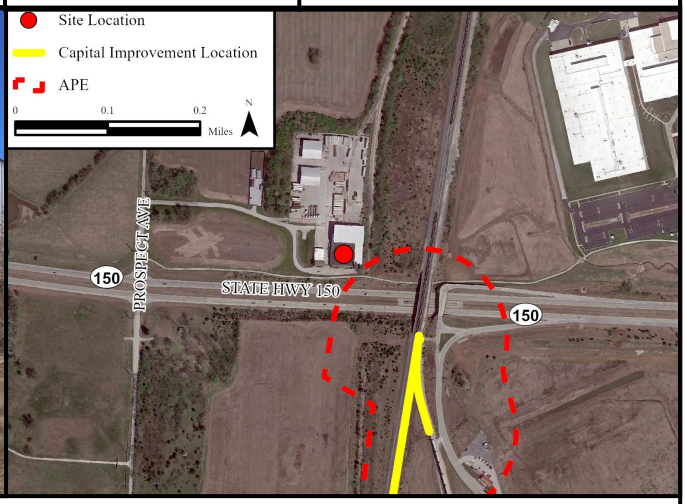
Description: The Mitchell Cemetery is located off Blackstock Lane, 195 ft from the KCS ROW in an area of rural residential development and agricultural fields. The property is approximately 0.85 acres of sloping, open lawn, with a partial border of black walnut and oak trees. The graves are arranged in a linear pattern running relatively north-south with some family plots bounded by cement blocks and bricks. The earliest markers date to 1864 and as late as the 1980s. The markers are primarily constructed of historic marble and granite in tablet, in-ground markers, and bronze in-ground markers. Many markers are carved with decorative flora, geometric designs, emblems of clubs and fraternal organizations, military involvement, and symbols of religious devotion. Some unique markers are in the forms of double hearts. Approximately 99 burials are recorded, of which approximately 97% occurred over 50 years ago. Prominent family names include Mitchell, Friend, and Shearwood. Research has found that the Friend family were some of the earliest settlers in the region and helped to settle the town of Goodman. Gaps between markers could indicate unmarked burials where the headstones have been removed; there is a section of the cemetery that contains the headstones that have either fallen over or have been removed from their associated burial. The cemetery is well maintained, despite some damage to headstones.

National Register Evaluation: The property is recommended eligible for listing in the National Register under Criterion A. Criterion A: The construction of the property is associated with mid-to-late nineteenth century settlement and exploration in the region, it is individually significant within the historic context of community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The cemetery retains its original arrangement and is typical of funerary design for rural cemeteries of the time period; however, it does not serve as a particularly good or representative example of its type and period. Criterion D: This property type does not appear to have the potential to yield further important information or data that is not already available in the extant documentary evidence. Criteria Consideration A: The property's association with the historic event of the settling of Goodman allows for the cemetery to be considered eligible for the National Register.

Integrity: The property retains integrity of location and setting as it is in its original, historic location. It also retains integrity of association because it remains a cemetery with both historic and non-historic burials. The cemetery retains integrity of design and materials as the headstones are in their original designed location and retain their historic materials. The intact features convey a sense of historic workmanship, and the property retains the feeling and aesthetic of its period of construction.

Resource ID:	MO-GV-001	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	2900 E 47th Street, Kansas City, Missouri





Description: The property is located north of E 47th Street, roughly 400 feet west of the existing Kansas City Southern Railway. The property is an 8.3-acre paved lot in a semi-commercial area and is surrounded by rural fields and some large manufacturing facilities. Two large industrial buildings with Colonial Revival style elements are present onsite. Both buildings face south and were constructed in 1970. The property is currently owned and operated by the regional recycling business, Midwest Shredding Service. The main structure is a multi-pitched flat-roof industrial building on a concrete foundation. The structure is clad in non-historic metal siding and features three garage bay doors on the side elevation. Several non-historic additions were constructed in 2014 and consist of a large open-bay section to the rear of the building and a faux Colonial Revival style façade to the south. The façade is clad in non-historic weatherboard siding and features a two-story front-gabled portico and faux windows. An office building clad in non-historic weatherboard siding is located to the west; the building is comprised of a one-story flat roof section and a two-story side-gabled section. A non-historic two-story flat-roof portico supported by four brick columns and topped by a wooden balustrade is present on the two-story section. Fenestration on both sections consists of non-historic single-pane windows in various pairings and non-historic 6/6 sash windows. Additional structures onsite include two non-historic open-bay storage sheds comprised of front-gabled metal roofs supported by metal posts. These structures are first visible in a 2007 aerial photograph and likely constructed at this time.

National Register Evaluation: The property is recommended not eligible for listing on the National Register. Criterion A: While the construction of the property is associated with late twentieth century industrial growth in the area, it is not individually significant within the history of regional industrial development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction and exhibits non-historic alterations and replacement materials. Criterion D: There are no indications that the property is likely to yield significant information in history or prehistory.

Integrity: The property retains integrity of location, setting, and association as it remains on its original site of construction in a semi-commercial area and continues to be in use as an industrial facility. The property lacks integrity of design, materials, workmanship, and feeling. Integrity of design and materials has been compromised by several non-historic additions and replacement building materials that alter the property's historic footprint and historic components. These changes also disrupt the property's ability to convey its historic workmanship, as well as the feeling and aesthetic of its period of construction.

Resource ID:	23CS102	**Resource Type:**	Archaeology Site
Inventory Number:	N/A	**Potential Effect:**	Physical
Previous Documentation:	Schmits 1983	**Location:**	Grandview



Description: This archaeological resource is a previously recorded historic well/cistern. The site was initially recorded in 1982 by Environmental Systems Analysis for the US Air Force (USAF) (Schmits 1983). A site revisit in 2022 did not relocate any features and the portion of the site within the railroad right-of-way has been destroyed by construction of roadways and the placement of ballast.

Historically, this area was developed as a USAF airfield and was subsequently redeveloped as the International Freight Gateway for Kansas City Southern. The historic site likely predates the airfield based on a structure visible at the location on historical maps (USGS Belton, MO 1934 [HTMC, 1934 ed.] and Belton, MO 1980 [HTMC, 1981 ed.] 1:24,000).

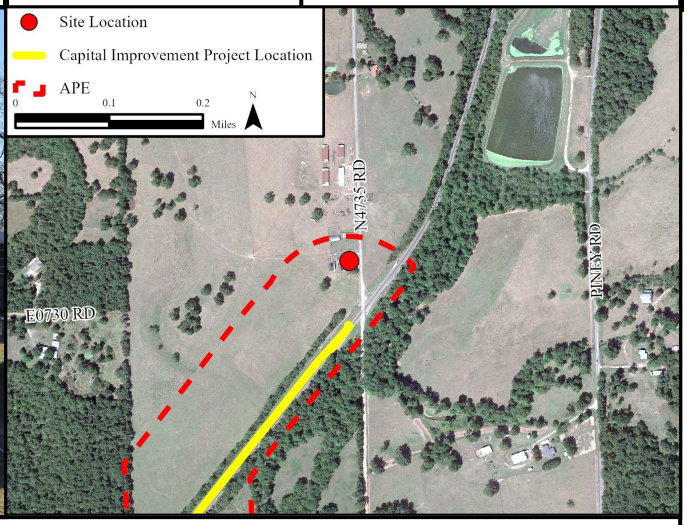
National Register Evaluation: This site is recommended as not eligible for listing on the National Register. The property was evaluated for the National Register under Criterion D; however, no features or artifacts were observed upon this site revisit, as the site has been destroyed. The property does not have the potential to yield further important information or data.

Integrity: Historic properties are evaluated for integrity of location, setting, association, design, materials, and workmanship. This site retains no integrity as no artifacts or features remain.

Appendix J – Attachment 7: Oklahoma Segment

Resource ID:	OK-BA-001	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	72966 S 4745 Road Westville, Oklahoma





Description: The property comprises a house, detached garage, and large shed in the project area on approximately 20 acres of farmland immediately adjacent to the KCS ROW. The property is currently used for cattle ranching. The Ranch house and detached garage appear to have been constructed during the 1960s, as it first appears on a 1971 historic aerial photograph. The large shed at the rear of the property was constructed in the 1970s but is obstructed from public view by the house and garage.

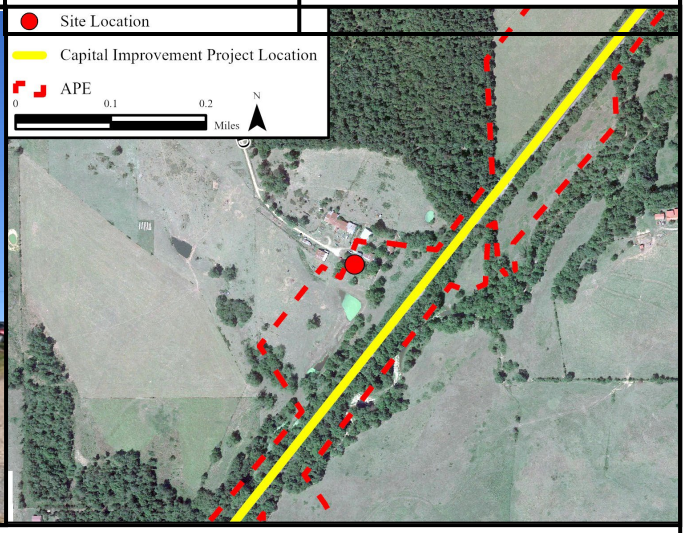
The house is a one-story, wood-frame Ranch house with no distinct style. It is clad in non-historic vinyl and board-and batten siding with stone accents and capped by an asphalt shingle-clad side-gable roof. Windows consist of non-historic single and paired 1/1 double hung sash aluminum replacement windows. The house has several large additions including an attached garage on the north side elevation and large, partially enclosed gable-front porch on the front elevation constructed in the 1980s or early 1990s as per aerial photographs. A front-gabled porch features a partial-width porch supported by vinyl-wrapped Doric columns. The main entrance appears to be inside the partially enclosed porch and is not visible from the public ROW. A secondary entrance with a pair of fully-glazed vinyl door is in the attached garage addition. The detached garage, which sits to the northeast of the house is a corrugated metal-clad, front-gable, wood-frame structure with non-historic vertical wood panel siding.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century agricultural growth in the region, it is not individually significant within the historic context of the agricultural development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction with extensive use of replacement materials and alterations. Criterion D: This residential property does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and setting along a local, rural highway surrounded by a natural landscape, abutting forest, and open agricultural land. The property also retains integrity of association due to its continued agricultural use. The integrity of feeling, design, materials, and workmanship are compromised due to the use of inappropriate replacement materials, alterations, and unsympathetic additions.

Resource ID:	OK-BA-002	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	73399 S 4740 Road Westville, Oklahoma





Description: The 93.7-acre property comprises a house and three outbuildings in the project spanning the east and west sides of S. 4745 Road. The property is immediately adjacent to the KCS ROW, but the main cluster of buildings in the project area sits approximately 358 feet west of ROW. There is minimal visibility from the public ROW and access was denied to the surveyors by the resident. The property is currently used for cattle ranching and includes agricultural fields, at least seven small ponds, scattered clusters of trees, and is bounded by swaths of woods and vegetation. The house appears to have been constructed during the 1960s and is first visible on a 1971 historic aerial photograph. The outbuildings, consisting of a transverse crib barn and two pre-fabricated metal-frame sheds, date to the 1980s and 1990s.

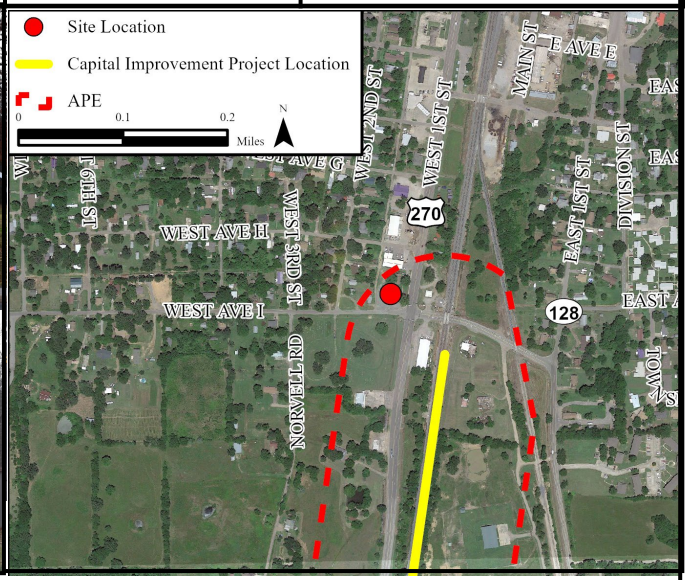
The house is a one-story, wood-frame building with no distinctive style clad in non-historic replacement materials including vinyl siding, 1/1 aluminum-framed replacement windows, and metal-clad front-gable roof. A non-historic side addition has composite clapboard siding, and 1/1 aluminum windows was constructed in 2015. The transverse crib barn is a wood-frame structure clad in metal siding topped by a front-gable metal roof with a side lean-to. The prefabricated sheds are both one-bay, wood-frame structures clad in corrugated metal siding. One shed has a metal-clad gambrel roof and the other has an asphalt shingle-clad front-gable roof.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century agricultural growth in the region, it is not individually significant within the historic context of the agricultural development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction with extensive use of replacement materials and alterations. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and setting along a local, rural highway surrounded by a natural landscape, abutting forest, and open agricultural land. The property also retains integrity of association due to its continued agricultural use. The integrity of feeling, design, materials, and workmanship are compromised due to the use of inappropriate replacement materials, alterations, and unsympathetic additions.

Resource ID:	OK-HE-001	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	1000-1002 W. 1st Street Heavener, Oklahoma





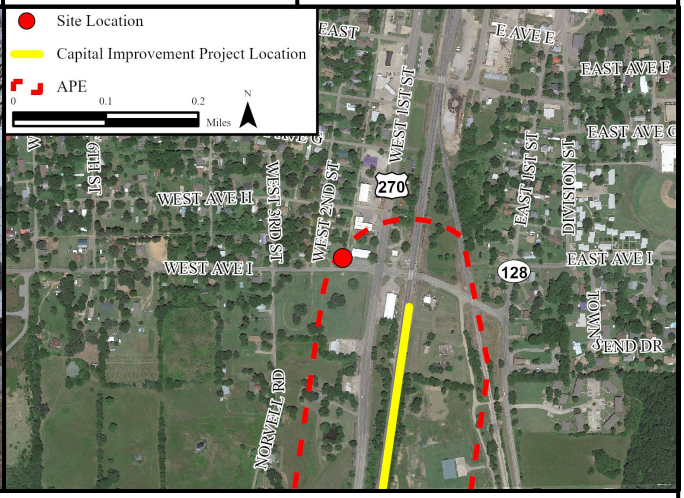
Description: The property consists of a front-gable church, a Ranch house, and a shed that are on a 0.6-acre parcel approximately 225 feet west of the KCS railway. The property is surrounded by both historic and modern residential and commercial structures. The church and the house appear to have been constructed during the 1960s based on materials such as historic aerial photographs; both are visible on a 1976 aerial. The church was expanded to the rear in 2005 as per aerial photography. The house appears to be unoccupied and is most likely used by the neighboring church. The church is clad with vinyl siding and running bond brick veneer, and it is contained under a front-gable standing seam metal roof. The front features a covered, front stoop entrance with concrete stairs, a metal railing, and porch supports that lead to glass and aluminum doors. The church also has two additional side entrances with stoops on the left side elevation and 1/1 aluminum double-hung windows. The house has a concrete block foundation, clad in shiplap wood siding, and an asphalt shingle-clad side-gable roof. A one-story ell that may have formerly been a garage is attached to the right side elevation. Windows consist of original wood, 2/2 double-hung and fixed sash. There are two entrances on the front elevation. The center entrance is located beneath a gable roof porch and consists of a solid door covered by a non-historic aluminum storm door. The second entrance is on the side ell, and it contains a composite panel non-historic door with filled sidelights. The small, non-historic metal shed is located directly to the north of the non-historic ell.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century mixed-use development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property has distinctive characteristics of a mid-century gable-front church; however, the church nor the residence serve as a good and representative example of their type and style due to a lack of integrity (see below). Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and feeling, as it remains in its original location and setting along a local, rural highway surrounded by mixed-use development. The property also retains integrity of association, since it is still a religious/mixed-use property. The integrity of design, materials, and workmanship are compromised due to the use of inappropriate replacement materials and alterations of both buildings.

Resource ID:	OK-HE-002	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	102 W. Avenue I Heavener, Oklahoma





Description: The property comprises a house in the project area on an approximately 0.5-acre parcel. The was constructed during the 1960s, based on aerial photographs from 1955 and 1976, and sits approximately 335 feet west of the KCS ROW. The house is sited relatively close to the north side of the street and is surrounded by open lawn with a semi-circular dirt driveway to the south.

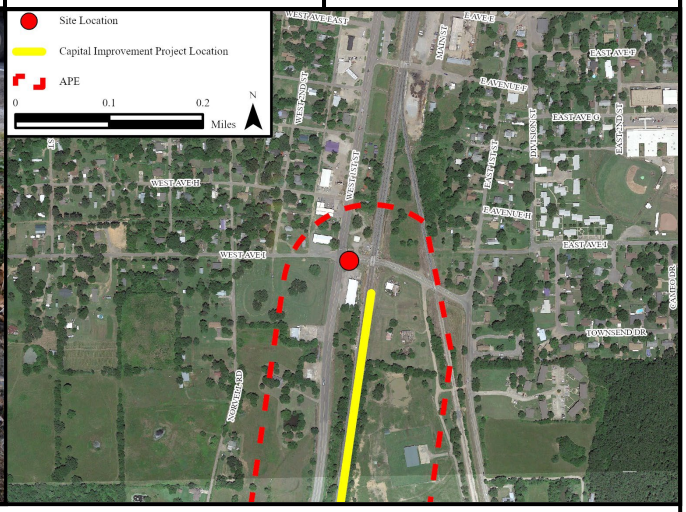
The house is a one-story, wood-frame building with no distinctive style. It is clad in wide synthetic pressboard siding contained under a replacement aluminum roof situated on a poured cement foundation. A porch on the front elevation features a cement block foundation with a shed asphalt shingle-clad roof and wood porch supports. The house features original 2/2 wood double-hung sash and aluminum replacement sash windows. The main entrance in the center of the front elevation consists of a partially glazed panel replacement door. A small shed-roof historic addition is on the rear elevation of the house.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction, and most of the original materials have been replaced. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains its integrity of location, setting, feeling, and use as it remains a residential property in its original location and setting along a local, rural highway surrounded by mixed-use development. The integrity of design, materials, and workmanship are compromised due to the use of inappropriate replacement materials and alterations.

Resource ID:	OK-HE-003	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	West of W. Avenue I and W. 1st Street, Heavener, Oklahoma





Description: This system of culverts carried W. 1st Street and a private driveway over a drainage ditch on the north side of OK Highway 128 immediately adjacent to the KCS ROW, in a commercial and light-industrial area south of downtown Heavener. The system comprises two culverts running west-east. The first (west) culvert passes under W. 1st Street, north of the intersection with W. Avenue I. This culvert has one exposed headwall at the northeast corner of the intersection. The second (east) culvert in the system runs beneath the private driveway on the north side of W. Ave I. between W. 1st Street and the KCS ROW.

Both culverts in this system are twin-cell box culverts made up of a concrete top plates, abutments, hammerhead-shaped center walls, and flared wingwalls. They were likely constructed in 1964, based on the known construction date of other similar culverts in the area. Both culverts measure approximately 2-3 feet in height. The east culvert is approximately 30 feet wide with headwalls on the east and west outlets. West 1st Street is approximately 55 feet wide at the west culvert with concrete curbing. The private driveway consists of packed gravel with a narrow grass shoulder.

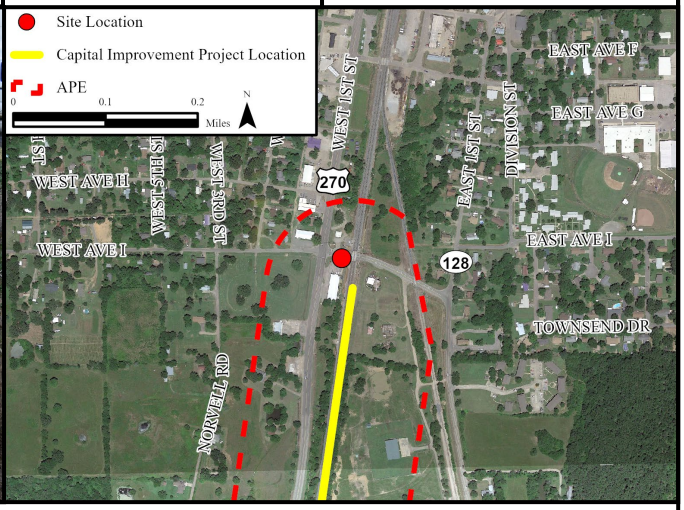
The culverts appear to be in good condition. There is little visible deterioration of the concrete structures.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century development in the region, it is not individually significant within the historic context of transportation within the region. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The culvert retains its original form and is typical of infrastructure projects of the time period; however, it does not serve as a particularly good or representative example of its type, period, or method of construction. Criterion D: This property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of feeling, location and setting along a local, rural highway in a mixed-use neighborhood. It also retains integrity of association because it remains in use as a part of transportation infrastructure. The design and materials of the culvert system are intact, and they are able to convey a sense of historic workmanship. The culvert retains the feeling and aesthetic of its period of construction.

Resource ID:	OK-HE-004	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	N/A	**Location:**	W. Avenue I, east of W. 1st Street, Heavener, Oklahoma





Description: This culvert carries W. Avenue I over an unnamed stream approximately 100 feet east of the junction with W. 1st Street immediately adjacent to the KCS ROW in a commercial and light-industrial area south of downtown Heavener. The twin-cell box culvert has a concrete structure made up of a concrete top plate and headwall, abutments, hammerhead-shaped center walls, and flared wingwalls. It has a total width of approximately 42 feet. The paved roadway is approximately 40 feet wide with a slightly sloping grassy shoulder. The culvert was constructed in 1964, based on the construction date of similar structures in the area.

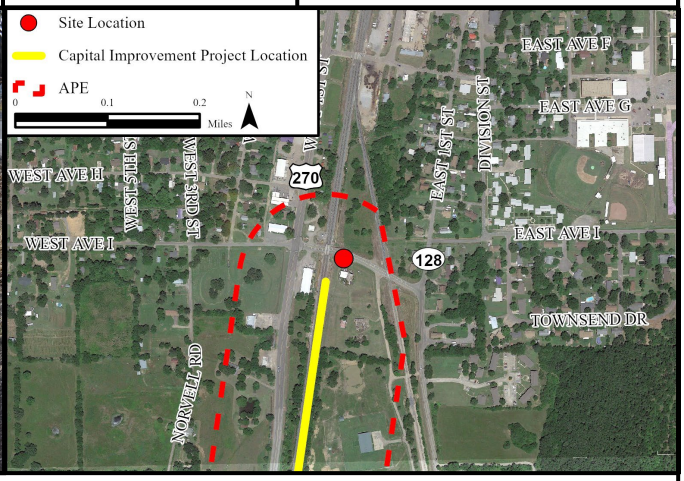
The culvert appears to be in good condition. There is little visible deterioration of the structure.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century development in the region, it is not individually significant within the historic context of the transportation development in the region. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The culvert retains its original form and is typical of infrastructure projects of the time period; however, it does not serve as a particularly good or representative example of its type, period, or method of construction. Criterion D: This property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of feeling, location and setting along a local, rural highway in a mixed-use neighborhood. It also retains integrity of association because it remains in use as a part of transportation infrastructure. The design and materials of the culvert are intact and able to convey a sense of historic workmanship, and the culvert retains the feeling and aesthetic of its period of construction.

Resource ID:	OK-HE-005	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	NBI No. 15928/Structure # 4046 0004 X (ODOT Inventory)	**Location:**	OK Highway 128 over Oil Branch, east of US 59, Heavener, Oklahoma





Description: This culvert carries OK Highway 128 over the Oil Branch approximately 270 feet east of the intersection with US 59, and immediately east of an at-grade crossing of the KCS in an area of commercial and light-industrial development south of downtown Heavener. The triple-cell box culvert has a prestressed concrete structure made up of a concrete top plate and headwall, abutments, hammerhead-shaped center walls, and flared wingwalls. It was constructed in 1964 as per Oklahoma Department of Transportation (ODOT) records. The culvert measures approximately 34 feet in length and 42 feet in width, of which approximately 40 feet is the roadway. The road is paved with a narrow grassy shoulder beneath the guardrails. The guardrails consist of a reinforced concrete pier-and-rail system.

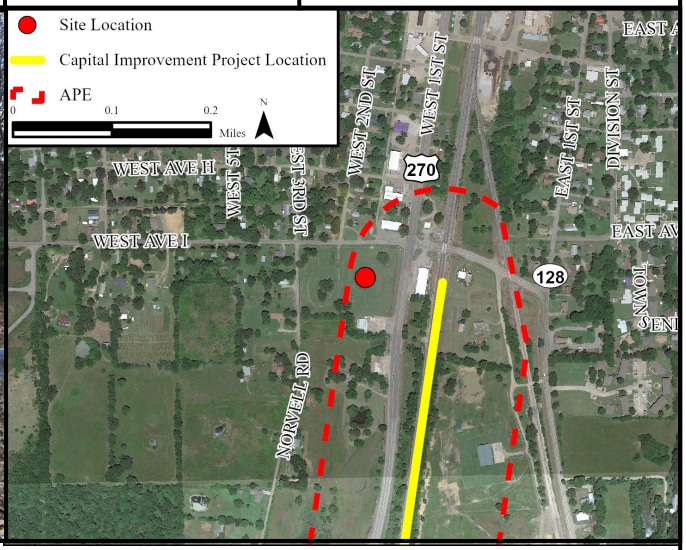
The culvert appears to be in good condition. There is little visible deterioration of the concrete structure. An additional ribbed steel wingwall was installed immediately behind the northwest concrete wingwall at an unknown date to provide additional support against the railroad ROW. The reinforced concrete guardrail has cracked and spalled in some locations, particularly at the junction of the rail and pier. Several rails have also dislodged from the piers.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century development in the region, it is not individually significant within the historic context of transportation. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The culvert retains its original form and is typical of infrastructure projects of the time period; however, it does not serve as a particularly good or representative example of its type, period, or method of construction. Criterion D: This property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of feeling, location and setting along a local, rural highway in a mixed-use neighborhood. It also retains integrity of association because it remains in use as a part of transportation infrastructure. The design and materials of the culvert is intact and able to convey a sense of historic workmanship, and the culvert retains the feeling and aesthetic of its period of construction.

Resource ID:	OK-HE-006	**Resource Type:**	Above-Ground
		Potential Effect:	Visual
Inventory Number:	TBD	**Location:**	SW corner W. 1st Street and W. Avenue I, Heavener, Oklahoma
Previous Documentation:	n/a		





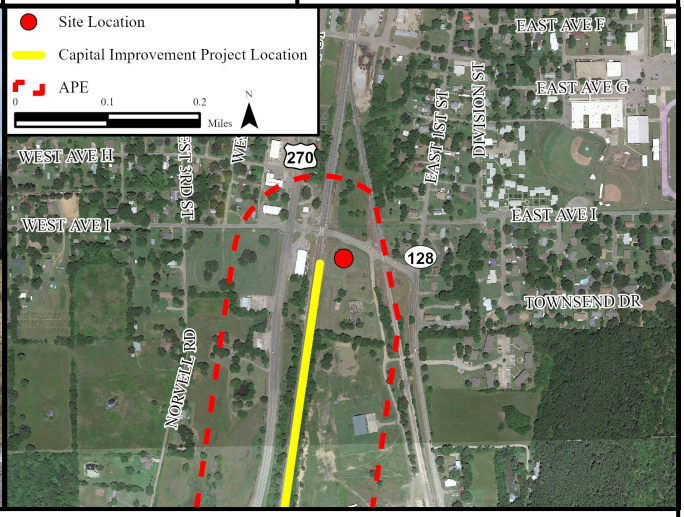
Description: Oakdale Cemetery, also known as Lower Cemetery, is located at the southwest corner of the intersection of W. 1st Street and W. Avenue I, approximately 190 ft from the KCS ROW in an area of mixed-use development south of downtown Heavener. The property is roughly 3.95 acres of relatively level, open lawn with scattered deciduous trees. There is an informal figure-eight shaped grass/dirt roadway near the center of the site, with driveway access off the south side of W. Avenue I. The markers are dated as early as the late nineteenth century and continue through the present day. They are primarily 19th and early 20th century granite, marble, and limestone in tablet and obelisk forms with mid-to-late 20th century polished granite tablet and flush markers. Many of the markers are carved with decorative flora, geometric designs, emblems of clubs and fraternal organizations, and symbols of religious devotion. Some unique markers are in the forms of crucifixes, tree stumps, broken columns, and draped columns and urns. The makers are arranged in informal rows that run north-south and are interrupted by scattered family plots delineated by low granite curbing. Approximately 495 known burials are recorded, of which approximately 90% occurred over 45 years ago. Gaps between markers could indicate unmarked burials; however, several burials are recorded without the presence of a marker. The site appears to be well-maintained and mowed regularly. The markers are in a poor to good condition, with some markers displaced or broken and/or toppled.

National Register Evaluation: This property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with late-nineteenth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The cemetery retains it original arrangement and is typical of funerary design for rural cemeteries of the time period; however, it does not serve as a particularly good or representative example of its type and period, Criterion D: This property type does not appear to have the potential to yield further important information or data that is not already available in the extant documentary evidence.

Integrity: The property retains integrity of feeling, location and setting along a local, rural highway surrounded by mixed-use development. It also retains integrity of association because it remains a cemetery with active burials. The design and materials of the landscape are relatively informal but intact, including the overall arrangement of markers in rows with intermittent family plots. The intact features convey a sense of historic workmanship, and the property retains the feeling and aesthetic of its period of construction.

Resource ID:	OK-HE-007	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	n/a	**Location:**	OK Highway 128, northwest of E. 1st Street, Heavener, Oklahoma





Description: The approximately 2.7-acre property contains a commercial building, which appears to be a former auto/maintenance garage now used for storage, with two detached outbuildings. It is on the south side of OK Highway 128, directly between the KCS ROW to the west and a railroad spur to the east. The buildings are surrounded by grassy fields, and they are set south of the main downtown of Heavener. The commercial building and one of the outbuildings were constructed during the 1960s and are first visible on a 1976 historic aerial photograph. The second outbuilding is a non-historic mobile home.

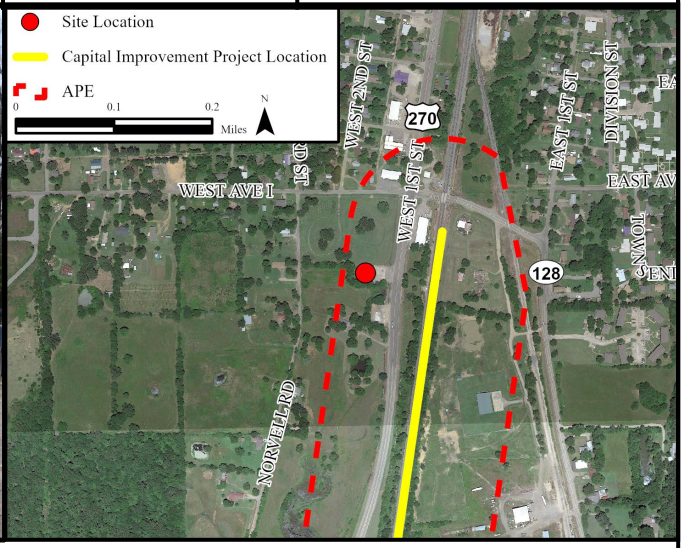
The commercial building is comprised of two attached structures, one to the east and one to the west. The east structure is a one-story, wood-frame structure with corrugated metal siding and a front-gable, metal-clad roof and appears to be older than the west structure based on materials and condition. It has a large corrugated metal sliding door and lacks any windows that are visible from the public ROW. The west structure consists of a one-story concrete block frame with a metal-clad shed roof. The west structure features two wood garage doors and a modern composite door at a pedestrian entrance. The only windows visible from the public ROW are the glass panes in the garage doors of the west structure. The outbuildings are at the back (south) of the property and are not visible from the public ROW.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century commercial development in the region, it is not individually significant within the historic context of the commercial development of the town. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction due to the incompatible side addition and because the original materials have been replaced or have deteriorated. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and setting along a local, rural highway surrounded by mixed-use development. The integrity of feeling, design, materials, and workmanship are compromised due to the use of inappropriate replacement materials, alterations, and deteriorated condition. It is no longer associated with its original use as a commercial property as it is now being used for storage.

Resource ID:	OK-HE-008	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	100 US 59 Heavener, Oklahoma





Description: The 0.4-acre property contains a single commercial structure that currently functions as a photography studio. The lot consists of an open, paved parking lot surrounded by dense vegetation along three sides. The building is first visible on a 1976 historic aerial and was most likely constructed during the 1960s. The property is south of downtown Heavener, approximately 180 ft west of the KCS ROW, and it is surrounded by residential and industrial/commercial properties.

The building is one-story tall and one room deep, with a long rectangular footprint. It has a non-historic asymmetrical, standing-seam metal-clad, side-gable roof, non-historic board-and-batten siding, and a poured concrete foundation. A concrete front stoop runs the length of the front elevation. The building features two non-historic 2-light composite doors and replacement 6/6 vinyl double-hung sash windows.

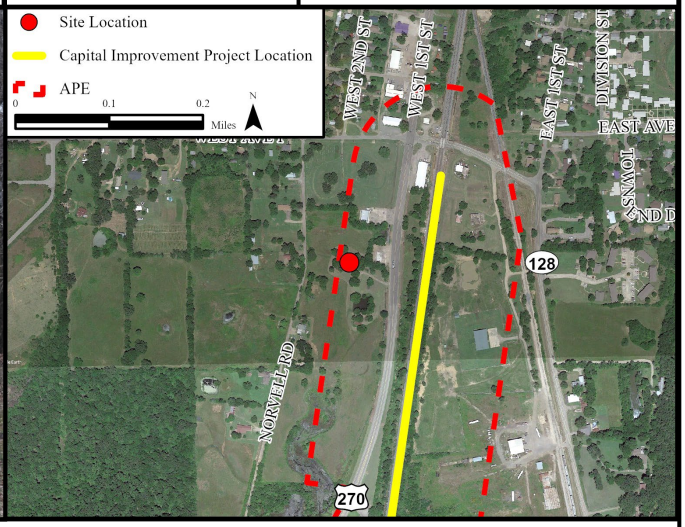
The building footprint has not changed since 1976. However, material changes such as the installation of new roof cladding and non-historic vinyl windows are present.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century commerce/industry in the region, it is not individually significant within the historic context of the commercial development of the town. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction, and most of the original materials have been replaced. Criterion D: This commercial property does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and setting along a local, rural highway surrounded by a natural landscape. It also retains integrity of association, as it is still used for commercial purposes. The integrity of feeling, design, materials, and workmanship are compromised due to the use of extensive replacement materials and alterations.

Resource ID:	OK-HE-009	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	n/a	**Location:**	US Highway 59, south of W. Avenue I, Heavener, OK





Description: The property consists of a house and a detached outbuilding that are only partially visible from the public right-of-way. The property is approximately 180 ft west of the KCS ROW south of downtown Heavener. The buildings sit on a 12.5-acre parcel containing fields and clusters of dense deciduous trees. The house is accessed via a dirt driveway edged by deciduous trees. The house first appears with the outbuilding in a 1955 historic aerial photograph. Its historic form appears to be a front-gable bungalow constructed during the 1940s with a front addition constructed in the 1980s. The outbuilding appears to be contemporaneous with the original construction of the house in the 1940s.

The house is a one-story, wood-frame structure with an L-shaped footprint. It appears to have clapboard siding and an asphalt shingle roof; however, the 1980s addition is the most visible portion of the building. A corrugated metal-clad, shed-roof porch supported by square wood posts extends across at least a portion of the front elevation. Due to the presence of vegetation and the deep setback of the house, further details are not discernable.

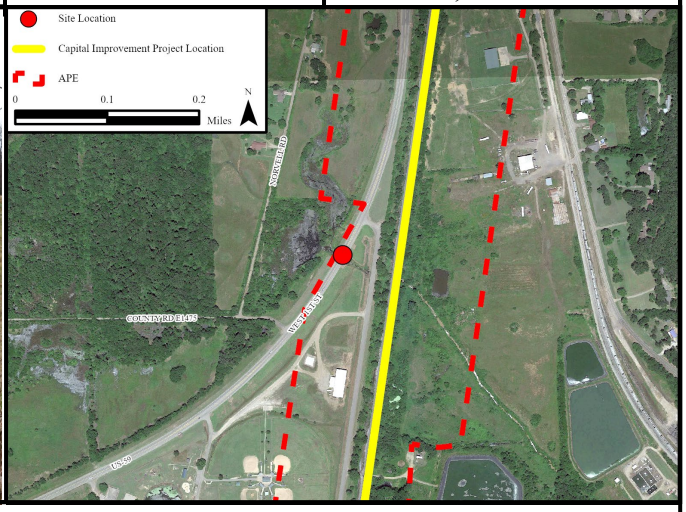
The outbuilding is sited southeast of the house adjacent to a pond. It is also partially obstructed by dense vegetation, but it has a corrugated metal, front-gable roof and corrugated metal panel siding. A large metal barn-type door is under the gable. No fenestration is visible from the public ROW.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with early-to-mid-twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction due to the construction of a large front addition. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and setting along a local, rural highway surrounded by a natural landscape and abutting forest. It also retains integrity of association because it is still used as a single-family residence. The integrity of feeling, design, materials, and workmanship are compromised due to extensive alterations and unsympathetic additions.

Resource ID:	OK-HE-010	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	N/A	**Location:**	US 59 over Oil Branch, south of Old US 59, Heavener, Oklahoma





Description: This culvert carries US 59 over a distributary of the Oil Branch approximately 243 feet south of the intersection with Old US 59 about 260 feet west of the KCS ROW along a sparsely developed segment of the rural highway. Based on the construction date of other nearby culverts, the single cell box culvert was likely constructed in 1964. The culvert features a concrete top plate and headwall, abutments, and flared wingwalls; it measures approximately 80 feet wide beneath an approximately 45-foot roadway. The paved roadway is higher than the culvert, with a sloped grass shoulder.

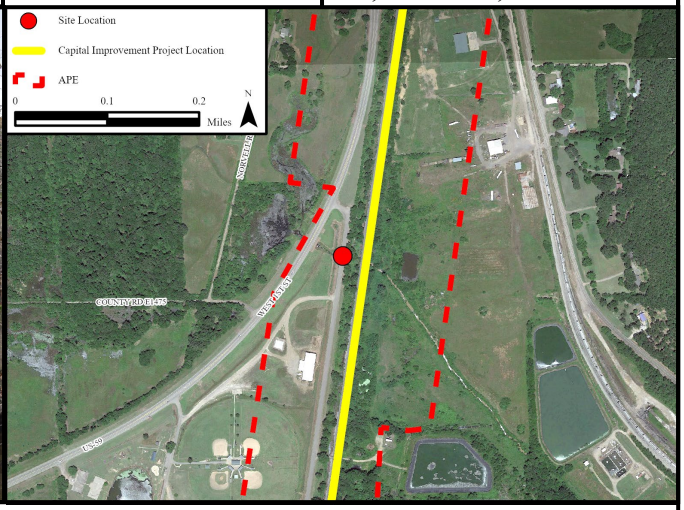
The culvert appears to be in good condition. There is little visible deterioration of the concrete structure.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the structure is associated with mid-to-late twentieth century development in the region, it is not individually significant within the historic context of the transportation development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The culvert retains its original form and is typical of infrastructure projects of the time period; however, it does not serve as a particularly good or representative example of its type, period, or method of construction. Criterion D: This property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and setting along a local, rural highway with sparse residential development. It also retains integrity of association because it is still in use as part of transportation infrastructure. The design and materials of the culvert are intact and able to convey a sense of historic workmanship, and the culvert retains the feeling and aesthetic of its period of construction.

Resource ID:	OK-HE-011	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	N/A	**Location:**	Old US 59 over Oil Branch, southeast of US 59, Heavener, Oklahoma





Description: This culvert carries Old US 59 over distributary of the Oil Branch approximately 355 feet south of the intersection with US 59. The culvert is positioned about 130 feet west of the KCS ROW along the sparsely developed rural highway. It was likely constructed in 1964, based on the documented construction date of other culverts in the area. The single cell box culvert is made up of a concrete top plate and headwall, abutments, a bottom plate, and flared wingwalls. It measures approximately 40 feet wide beneath an approximately 20-foot roadway. The headwall of the culvert creates a low curb along the grass shoulder of the roadway.

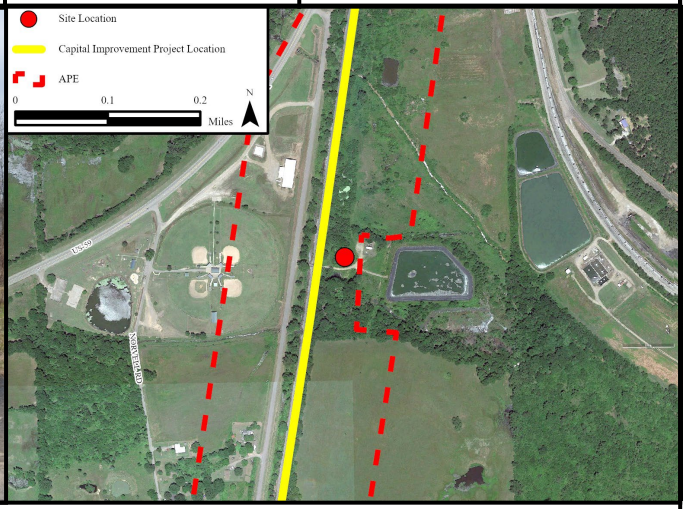
The culvert appears to be in good condition. There is little visible deterioration of the concrete structure.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century development in the region, it is not individually significant within the historic context of transportation. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The culvert retains its original form and is typical of infrastructure projects of the time period; however, it does not serve as a particularly good or representative example of its type, period, or method of construction. Criterion D: This property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of feeling, location and setting along a local, rural highway with sparse residential development. It also retains integrity of association because it remains in use as a part of transportation infrastructure. The design and materials of the culvert are intact and able to convey a sense of historic workmanship, and the culvert retains the feeling and aesthetic of its period of construction.

Resource ID:	OK-HE-012	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	n/a	**Location:**	East side of Old US 59, south of W. 1st Street, Heavener, Oklahoma





Description: The property is a former wastewater treatment facility on the east side of Old US Highway 59, across from the Heavener Blues Baseball Park and immediately adjacent to the KCS ROW. The approximately 4.6-acre parcel is in a rural setting, and it is only partially visible from the public ROW because it is heavily obscured by vegetation. The property is now abandoned. It contains a one-story historic operations building and two historic clarifying tanks near the west boundary. Two additional concrete structures are partially visible on aerial photographs. In general, the structures on the property are first visible on a 1955 historic aerial photograph and are estimated to date to the 1950s. Between 1980 and 1995 an additional building was constructed, which is visible on aerial photographs, but it cannot be seen from the public ROW.

The one-story operations building is constructed from concrete blocks and topped with a flat roof. It has nine-light steel sash windows that are now missing glass and a partially glazed wood door that is off its hinges.

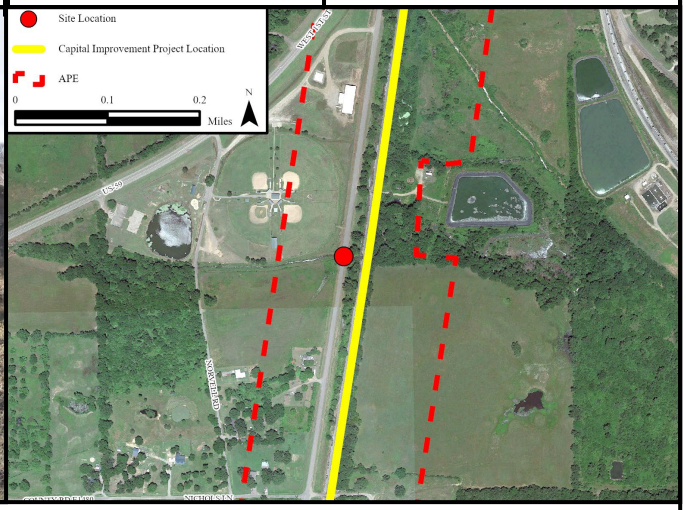
The two clarifying tanks are poured concrete structures with exhaust and intake vents, a hatch, and a catwalk across the top of the tanks.

National Register Evaluation: The property is recommended not eligible for National Register listing. Criterion A: While the construction of the property is associated with mid-to-late twentieth century development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction and most the original materials have deteriorated. Criterion D: This property does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and setting along a local, rural highway surrounded by a natural landscape and abutting forest. The integrity of feeling, design, materials, and workmanship are compromised due to extensive deterioration. The property is vacant and no longer in use, so it does not retain integrity of association.

Resource ID:	OK-HE-013	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	NBI No. 6330/Structure # 40N4735E1470008 (Oklahoma DOT Inventory)	**Location:**	Old US 59, north of Nichols Lane, Heavener, Oklahoma





Description: This culvert carries Old US 59 over a distributary of Oil Branch approximately 0.25 miles north of the junction with Nichols Lane. The culvert is sited approximately 125 feet west of the KCS ROW along the sparsely developed rural highway south of downtown Heavener. The triple cell culvert has a prestressed concrete structure made up of a concrete top plate and headwall, abutments, hammerhead-shaped center walls, and flared wingwalls. It was constructed in 1964 and measures approximately 41 feet in length and about 40 feet in width. The paved roadway is slightly narrower than the top plate with a grass shoulder running beneath the guardrails. The guardrails consist of a reinforced concrete pier-and-rail system.

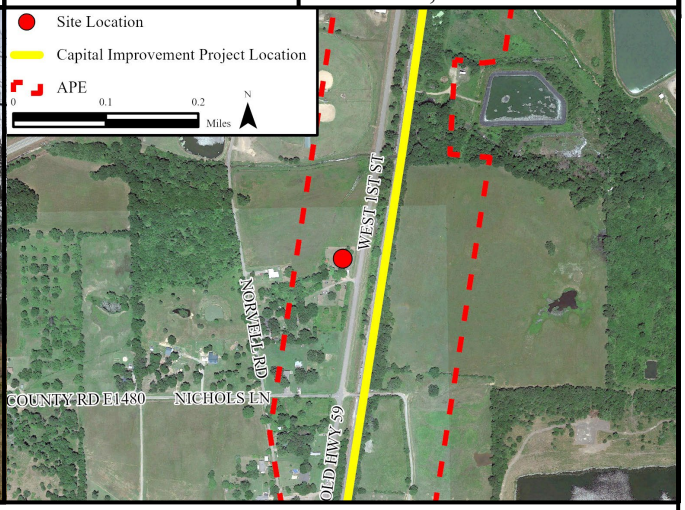
The culvert appears to be in good condition. There is little visible deterioration of the structure. The reinforced concrete guardrail has some chips and what appear to be superficial cracks in some locations.

National Register Evaluation: The property is recommended not eligible for National Register listing. Criterion A: While the construction of the property is associated with mid-to-late twentieth century development in the region, it is not individually significant with the historic context of the transportation within the area. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The culvert retains its original form and is typical of infrastructure projects of the time period; however, it does not serve as a particularly good or representative example of its type, period, or method of construction. Criterion D: This property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of feeling, location and setting along a local, rural highway with sparse residential development. It also retains integrity of association, as it is still in use as a part of transportation infrastructure. The design and materials of the culvert are intact and able to convey a sense of historic workmanship, and the culvert retains the feeling and aesthetic of its period of construction.

Resource ID:	OK-HE-014	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	OK Landmarks Inventory ID 75314	**Location:**	West side of Old US 59, north of Nichols Lane, Heavener, Oklahoma





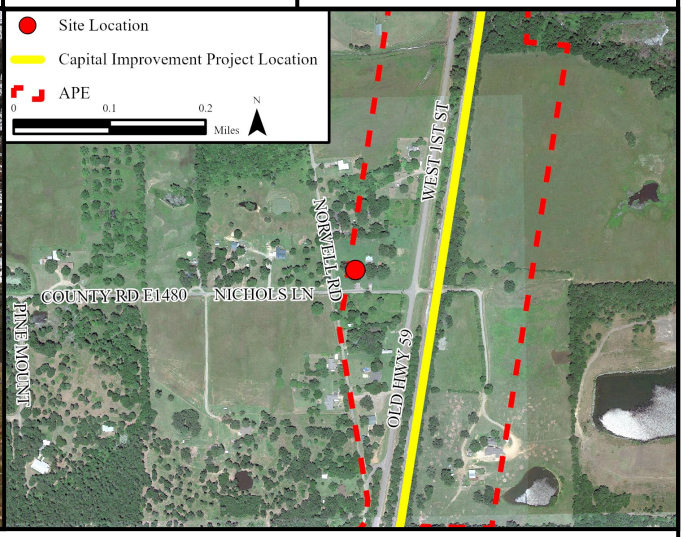
Description: The approximately 0.5-acre property is on the west side of Old US 59, approximately 140 feet west of the KCS ROW. It contains a house and three outbuildings, two sheds, and a carport/open storage. The lot is relatively level with clusters of deciduous trees and a grassy lawn. An unnamed local resident related that the house, or a portion of the house, was moved from central Heavener to its current location. If this is the case, the move must have occurred before 1976, as the house is visible at its present location in a 1976 aerial photograph. The house appears to have originally had an I-house form, popular in the early twentieth century in the region, and it is estimated to date to the 1920s. The existing outbuildings appear to date to the late twentieth century based on form and materials. The house is two-story, wood-frame structure with no distinctive style. Based on the interview with a local resident, it has been heavily modified with half of the original building removed. It has an asphalt shingle-clad, side-gable roof, wide synthetic pressboard siding, and a one-and-one-half story addition on the rear elevation. A one-story, flat-roof porch spans the full width of the front elevation, and the main entrance consists of a solid wood, non-historic door. Windows are 2/2 double hung wood and aluminum non-historic sash. The outbuilding closest to Old US 59 is a non-historic, side-gabled carport/open storage structure with an asphalt-shingle clad roof and wood supports. The two outbuildings southwest of the house are partially obscured by vegetation, but they appear to be one-story, gable-roofed structures with corrugated metal panel siding.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: Although this property may have original been representative of the I-House form, due to extensive alterations and use of replacement materials the property does not embody a distinctive characteristic of a type, period, or method of construction. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of setting along a local, rural highway surrounded by a natural landscape and abutting forest. It also retains integrity of association because it remains in use as a single-family residence. However, the house was moved to its existing location, and the integrity of feeling, design, materials, and workmanship are compromised due to the use of extensive inappropriate replacement materials, alterations, and unsympathetic additions.

Resource ID:	OK-HE-015	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	102 Nichols Lane, Heavener, Oklahoma





Description: The property contains a house and four outbuildings on an approximately 3-acre parcel about 400 feet west of the KCS ROW. The buildings are surrounded by open lawn and clusters of deciduous trees on a corner lot. The house is first visible on a historic aerial photograph from 1976 and was most likely constructed during the 1960s as it is not visible on a 1955 historic aerial photograph.

The house is a one-story Ranch house with no distinctive style. The house is clad in original brick veneer and wood vertical board siding set on a poured concrete foundation and covered with a non-historic asphalt shingle cross-gable roof. The house features three entrances with non-historic composite panel doors. Windows consist of paired and single 6/6 non-historic replacement vinyl double hung sash. The front elevation of the house features a pedimented porch with non-historic turned posts resting on a poured concrete foundation with attached brick lined planting beds.

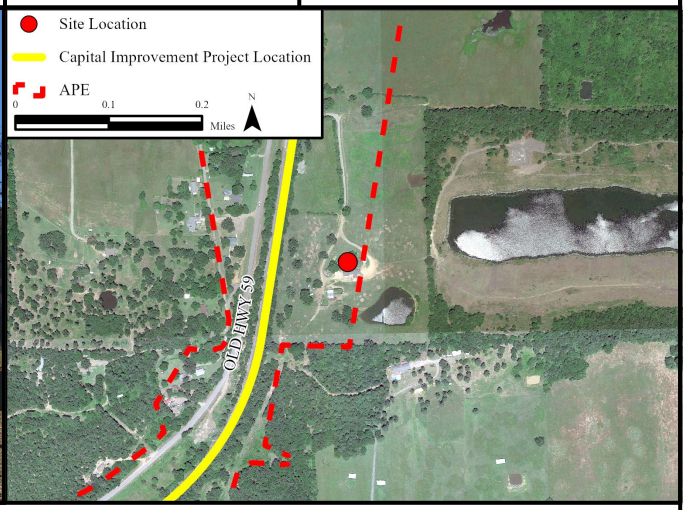
The non-historic outbuildings are located to the rear of the house and consist of two prefabricated wood-frame sheds, a front-gable corrugated-metal shed, and a lean to with partial open wood walls and a shed roof.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property has distinctive characteristics of a mid-century Ranch house; however, the house does not serve as a good and representative example of their type and style due to a lack of integrity (see below). Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and setting along a local, rural highway surrounded by a natural landscape and abutting forest. It also retains integrity of association, as it is still used as a single-family residence. The integrity of feeling, design, materials, and workmanship are compromised due to the use of replacement materials including all the doors and windows.

Resource ID:	OK-HE-016	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	n/a	**Location:**	East side of KCS ROW, east of Old US 59 at Nichols Lane, Heavener, Oklahoma





Description: The property is a farm complex located on an approximately 24-acre parcel immediately adjacent to the KCS ROW to the south of downtown Heavener. The structures of an extant farmhouse, stone shed outbuilding, and barn are visible on a 1955 historic aerial photograph. Based on visual observation, historical aerial photography, and the materials present, the buildings appear to date to the 1940s. Smaller outbuildings are visible on aerial photographs from 1985 located behind the stone shed; however, they were obstructed from view during survey and were unable to be fully assessed. A large, non-historic house and detached garage was built on the property between 2016 and 2019 and block the view of the extant historic farmhouse.

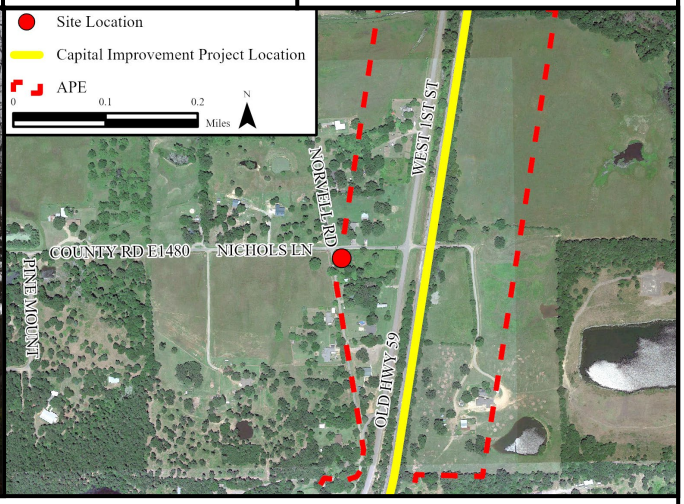
The transverse crib barn outbuilding is wood framed and is currently clad in corrugated sheet metal on the exterior walls and roof. The barn has a two-story front gable main body with one-story shed roofed wings to either side and no visible windows. A sheet metal door provides access to the crib located to the left of the front elevation while an aluminum livestock gate provides access to the main body of the barn. The other historic outbuilding on the property is a side-gable shed constructed from field stone in a simple rectangular footprint. The interior of the shed is accessed through a replacement sheet metal door located off-center to the right of the front elevation. The shed has no windows, is contained under an asphalt roof, and appears to function as a storage facility for farm equipment.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While construction of the property is associated with mid-to-late twentieth century agriculture, it is not individually significant within the historic context of the agricultural development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction, and the majority of the original materials have been replaced. Criterion D: This property does not appear to have the potential to yield further important information or data.

Integrity: The property retains a low to moderate degree of all seven aspects of integrity. The property retains integrity of location and feeling as it remains in its original location and setting along a local, rural highway surrounded by a natural landscape, abutting forest, and open agricultural land. The integrity of design, materials, and workmanship are compromised due to the use of inappropriate replacement materials, alterations, and unsympathetic additions. The property retains its agricultural use.

Resource ID:	OK-HE-017	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	SE corner of Norvell Road and Nichols Lane, Heavener, Oklahoma





Description: The 1.6-acre property includes a house and large outbuilding at the southeast corner of Norvell Road and Nichols Lane approximately 445 feet west of the KCS ROW. The lot is relatively open and level with a lawn, clusters of deciduous trees, and a line of dense trees along the south boundary. Based on historic aerial photography and materials present, the buildings were constructed during the 1940s.

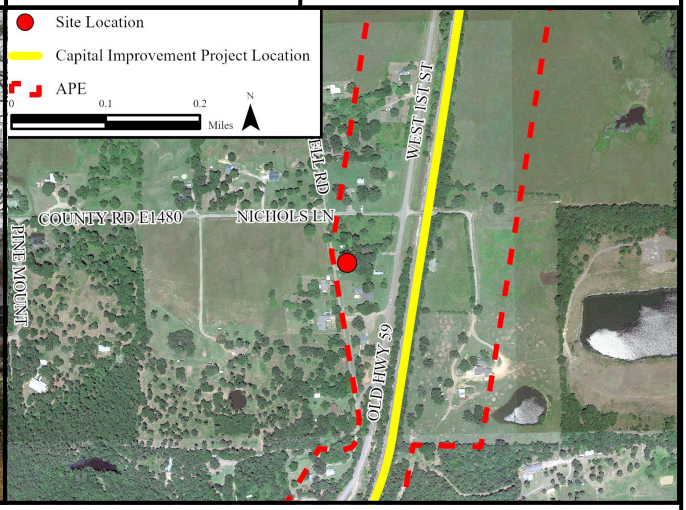
The house is a one-story, wood-frame, front gable bungalow with no distinctive style. The house has an asphalt shingle-clad, front-gable roof and is clad in a combination of non-historic plywood and wood panel board and original shiplap wood siding. A one-story, gable-roof closed porch is on the front elevation and contains the entrance featuring a non-historic composite panel door. A secondary entrance on the side elevation also contains a non-historic panel composite door. The windows include original 1/1 wood double-hung and non-historic vinyl replacement sash. The historic outbuilding appears to be used as a storage facility. It is one-story shed features an exposed wood frame.

National Register Evaluation: The property is recommended not eligible for listing in the National Register Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property has distinctive characteristics of a front-gable bungalow of the period; however, the house does not serve as a good and representative example of their type and style due to a lack of integrity (see below). Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and setting along a local, rural highway surrounded by a natural landscape and scatter residential development. It also retains integrity of association, as it is still a single-family residence. The integrity of feeling, design, materials, and workmanship are compromised due to the use of extensive use of replacement materials and alterations.

Resource ID:	OK-HE-018	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	None	**Location:**	East side of Norvell Road, south of Nichols Lane, Heavener, Oklahoma





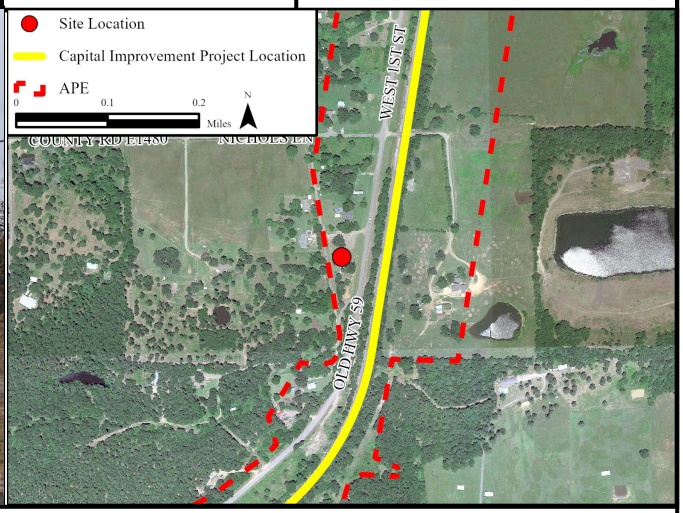
Description: The property consists of a single-family house on a wooded, 1.56-acre parcel located on the east side of Norvell Road, a rural road located south of central Heavener and approximately 375 feet west of the KCS ROW. The house is set on a slight rise, at a modest setback from the road, surrounded by mature trees. Visibility of the house is impeded from the public ROW from several angles due to trees, vegetation, and parked vehicles. No outbuildings associated with the house were observed in the field or on current satellite images. The house was constructed during the 1960s, based on the form, materials, and a 1976 historic aerial photograph of the area. The house is a one-story, wood-frame Ranch house with no distinctive style. It has a non-historic metal, side-gable roof that extends out to cover a partial-width porch addition on the front elevation. The south portion of the front elevation is slightly recessed with a lower roofline and may have originally been an attached garage. The porch is partially enclosed with walls clad in rustic log columns and supports. The house has a combination of historic asbestos siding along with patches of non-historic D-log and synthetic pressboard siding. Although the main entrance of the house is mostly obscured, it appears to consist of non-historic sliding glazed doors opening onto the porch. Most of the visible window openings have been covered with plywood or support portable air conditioning units, but there are some non-historic vinyl and aluminum double-hung replacement windows visible. The condition of the house is poor, with detached roofing and mismatched patches of exterior materials exhibiting open gaps between them.

National Register Evaluation: The property is recommended not eligible for listing in National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property is not a significant example of a Ranch house as there has been extensive material changes and alterations that has removed the house from association with its type. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and setting along a local, rural highway surrounded by a natural landscape and scattered residential development. It also retains integrity of association, as it is still used as a singe-family residence. The integrity of feeling, design, materials, and workmanship are compromised due to the use of extensive replacement materials, alterations, and unsympathetic additions.

Resource ID:	OK-HE-019	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	n/a	**Location:**	Norvell Road, north Old US 59, Heavener, Oklahoma





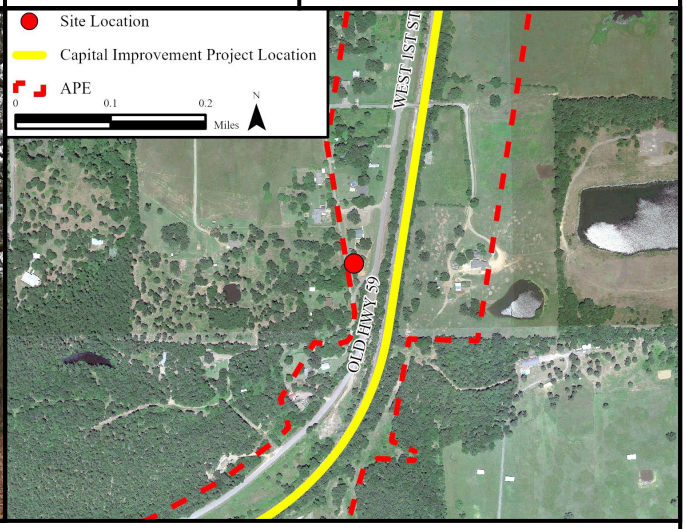
Description: The property consists of a front-gable church and two storage sheds located south of central Heavener on a triangular, 1.1-acre parcel. The property is bounded by Old US 59 on the east and Norvell Road on the west approximately 190 feet west of the KCS ROW. The parcel is flat and generally open, with mature trees scattered throughout the lot, primarily along the residential Norvell Road. The buildings are oriented east toward Old US 59 and exhibit no distinctive style. The church appears to have been constructed during the 1960s based on materials and form and is visible on a 1976 historic aerial photograph. Both storage sheds post-date a 1976 aerial photograph and likely date from the 1980s or 1990s. Outside recreational equipment and fixtures are present on the south portion of the parcel. The one-story front-gable church building has a wide, rectangular footprint set on a concrete pad foundation and capped by a front-gable, aluminum roof. Cladding consists of original brick veneer and non-historic bare concrete block, aluminum panels with a shiplap pattern, and vinyl siding. The off-center main entrance on the front elevation contains paired, non-historic paneled composite doors. The entrance is fronted by a porch with a gabled roof supported by metal trellis porch supports with non-historic siding under the gable. One 6/6 wood double-hung sash window covered by a storm is present on the front elevation and appears to be original. Two pedestrian entrances are located on the south side elevation. A long, narrow storage shed set on a concrete block foundation with corrugated metal cladding and a side gable, standing seam metal roof is southwest of the church. The paneled doors and vinyl double-hung 4/4 windows are non-historic replacements. A pre-fabricated metal shed with a gambrel roof is perched on individual concrete blocks south of the larger shed.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century mixed-use development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property has distinctive characteristics of a mid-century gable-front church; however, the church does not serve as a good and representative example of their type and style due to a lack of integrity (see below). Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and setting along a local, rural highway surrounded by a residential development. The integrity of design, materials, and workmanship are compromised due to the use of inappropriate replacement materials and alterations. These alterations have diminished the integrity of feeling and it no longer conveys the feeling and aesthetic of its period of construction.

Resource ID:	OK-HE-020	Resource Type:	Above-Ground
Inventory Number:	TBD	Potential Effect:	Visual
Previous Documentation:	n/a	Location:	412 Norvell Road, Heavener, Oklahoma





Description: The property comprises a house on an approximately 1.6-acre lot on the west side of the road south of downtown Heavener and approximately 215 feet west of the KCS ROW. The lot is level and primarily covered by dense deciduous trees with some clearing immediately surrounding the house. The house appears to have been constructed during the 1940s based on the form and intact original materials. There are no visible outbuildings.

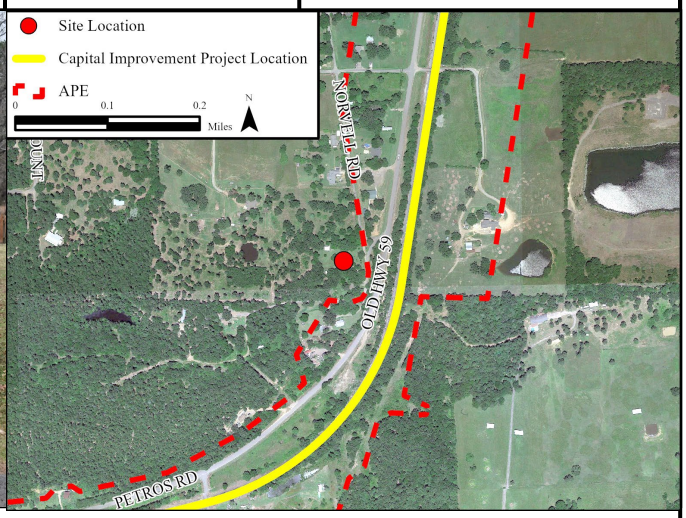
The house is a one-story, wood-frame bungalow with no distinct style. It has an asphalt shingle-clad, side-gable roof with original exposed rafter tails, original shiplap wood siding, and a continuous concrete block foundation. One-story, enclosed porches extend across a portion of the front and side elevations and appear to be original. Aluminum replacement sash windows have been installed within the porches. The entrances are obstructed from view by the porches. The windows are original wood, one-over-one, double-hung sash with wood trim. The house is in good condition and retains a high degree of original materials.

National Register Evaluation: The property is recommended ineligible for listing in the National Register under Criterion C. Criterion A: While the construction of the property is associated with early twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property is considered ineligible under Criterion C as it lacks sufficient significance and integrity to merit individual listing. The house retains a high degree of original materials and exhibits key characteristics associated with the early twentieth century construction of the bungalow building form and plan. The side-gable roof has exposed rafter tails, the original wood shiplap siding is extant, and the fenestration includes original wood-sash windows with wood trim. Enclosed porches extend across most of the façade and south side elevation, also presumed to be original. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The retention of the original materials and form indicates a high degree of integrity of design, materials, feeling, and workmanship. As the building is still in use as a single-family residence located along a local rural highway in a wooded setting, the property also retains integrity of location, feeling, and setting.

Resource ID:	OK-HE-021	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	N/A	**Location:**	410 Norvell Road South Heavener, Oklahoma





Description: The property comprises a house with an attached garage, detached two-car garage, and a detached carport. The property is an approximately 1.5-acre lot on the east side of the road south of downtown Heavener approximately 290 feet west of the KCS ROW. The lot gradually slopes up from east to west with the house and carport sited closer to the road and the detached garage to the northwest of the house. The house is surrounded by a grassy lawn with foundation plantings and deciduous trees. The house appears to have been constructed during the 1970s, based on the form and aerial photographs taken in 1955 and 1976, with the detached garage and carport constructed during the 2010s.

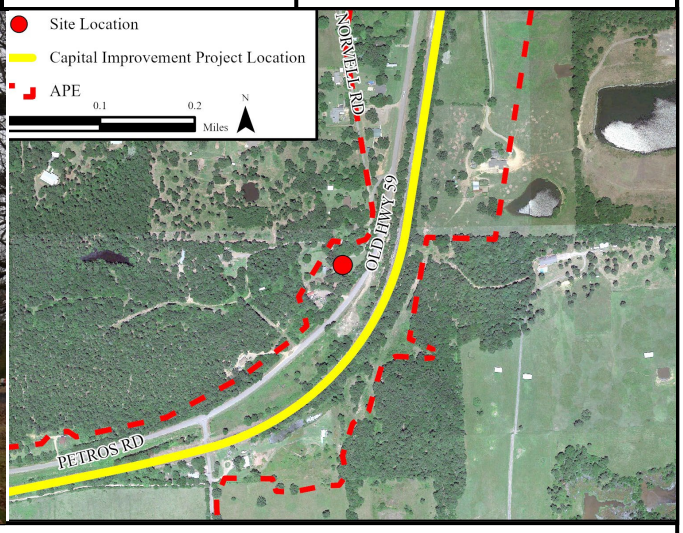
The house is a one-story, wood-frame Ranch house with no distinctive style. It has an asphalt shingle-clad, side-gable roof, and a combination of polychromatic brick veneer and board-and-batten wood siding, which appears to be original. A recessed porch on the front elevation has turned wood posts on a raised concrete pad covered with brick veneer. There are two entrances on the front elevation comprising of non-historic composite panel replacement doors covered by fully glazed, aluminum replacement storm doors. The windows appear to be original wood-frame, 6/6 double-hung and casement sash with one non-historic replacement fixed sash. The attached garage has a non-historic, aluminum overhead rolling door. Original board-and-batten siding is within the gable and the three narrow, recessed openings on the south end of the front elevation. The non-historic detached garage is a one-story, front-gable structure with metal panel cladding and roof and two large aluminum overhead rolling doors. The non-historic carport is a tall structure comprised of round metal posts capped by a front-gable roof.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property has distinctive characteristics of a Ranch house; however, it does not serve as a good and representative example of this type. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and setting along a local, rural highway surrounded by a naturally landscaped lawn and abutting forest. It also retains integrity of association, as it is still used as a single-family residence. The design and materials of the building are relatively intact, are able to convey a sense of historic workmanship, and the retains the feeling and aesthetic of its period of construction.

Resource ID:	OK-HE-022	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	n/a	**Location:**	415 Norvell Road, Heavener, Oklahoma





Description: The property comprises a house, two detached sheds, and an office/workshop on an approximately 5-acre lot that spans both the west and east sides of Old US 59, which runs north-south to the east of the house. The KCS ROW is approximately 240 feet east of the house. Although the property spans Old US 59, the main access is from Norvell Road. The house and shed sit at the level crest of the property, which slopes down to the roads on the north and east. The house was constructed during the 1940s, based on the building form. The detached shed immediately west of the house appears to be a non-historic structure. The second shed and prefabricated office/workshop are access by a second driveway off Old US 59 and appear to date to the late 20th and early 21st centuries.

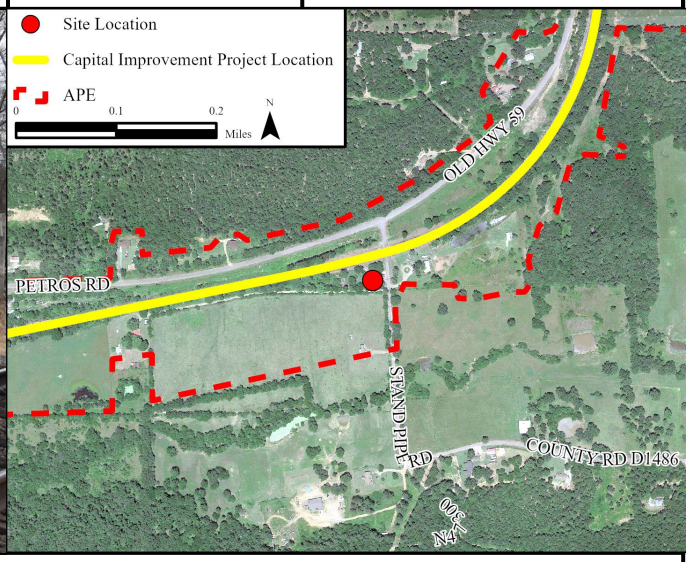
The house is a one-story, wood-frame bungalow with no distinct style. It has an asphalt shingle-clad, front-gable roof with exposed rafter tails, original shiplap wood siding, and a concrete block foundation. The main entrance on the façade is beneath a pedimented entry porch, which is a later addition. The entrance consist of a panel door covered by a non-historic storm door. Two enclosed porches are attached to the rear and side elevations and appear to be additions. Windows are a combination of non-historic aluminum and vinyl double-hung replacement sash throughout the house. The two sheds are both wood-frame structures covered by a combination of salvaged wood, metal siding, roof panels, and recycled windows and doors.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with early twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property has distinctive characteristics of a Bungalow; however, it does not serve as a good and representative example of this type and style due to a lack of integrity (see below). Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and setting along a local, rural highway surrounded by a natural landscape and abutting forest. It also retains integrity of association, as it is still used as a single-family residence. The integrity of feeling, design, materials, and workmanship are compromised due to the use of replacement materials, alterations, and additions.

Resource ID:	OK-HE-023	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	n/a	**Location:**	19949 Stand Pipe Road, Heavener, Oklahoma





Description: The property comprises a house and a detached shed on an approximately 1.3-acre lot on the west side of the road and immediately south of the KCS ROW. The lot is relatively level with the house and shed sited near the east side of the property near the road and railroad right-of-way. The buildings are surrounded by clusters of deciduous trees throughout and around the perimeter of the property. The house appears to have been constructed during the 1970s, based on the form and aerial photographs taken in 1955 and 1976, with the detached shed constructed in the 1990s.

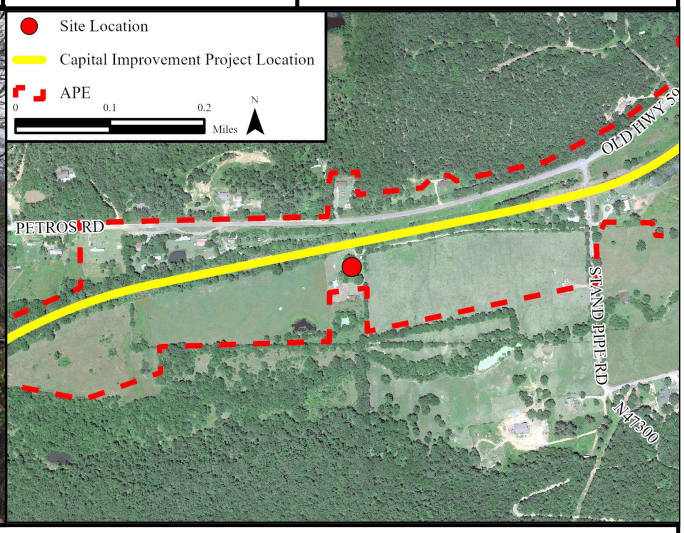
The house is a one-story, wood-frame Ranch with no distinctive style. It has a non-historic standing seam steel-clad, side-gable roof, and the exterior is covered in non-historic shiplap wood siding. A small cross-gable addition is attached to the northwest end of the front elevation. A corrugated metal-clad shed roof porch extends across the façade and wraps around the east (side) elevation. A portion of the porch was enclosed with wood shiplap in 2020. The entrance appears to be in the enclosed porch addition and is not visible from the public ROW. Only the windows in the two additions are visible and consist of non-historic aluminum, double-hung sash. The non-historic detached shed is a one-story, wood-frame structure with an asphalt shingle-clad gable roof, plywood siding, and a lean-to attached to the west elevation.

National Register Evaluation: The property is recommended not eligible for listing in National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction as the majority of the original materials have been replaced and the construction of multiple additions to the front elevation. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and setting along a local, rural highway surrounded by a natural landscape and abutting forest. It also retains integrity of association, as it is still used as a single-family residence. The integrity of feeling, design, materials, and workmanship are compromised due to the use of extensive use of replacement materials, alterations, and unsympathetic additions.

Resource ID:	OK-HE-024	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	n/a	**Location:**	19943 Stand Pipe Road, Heavener, Oklahoma





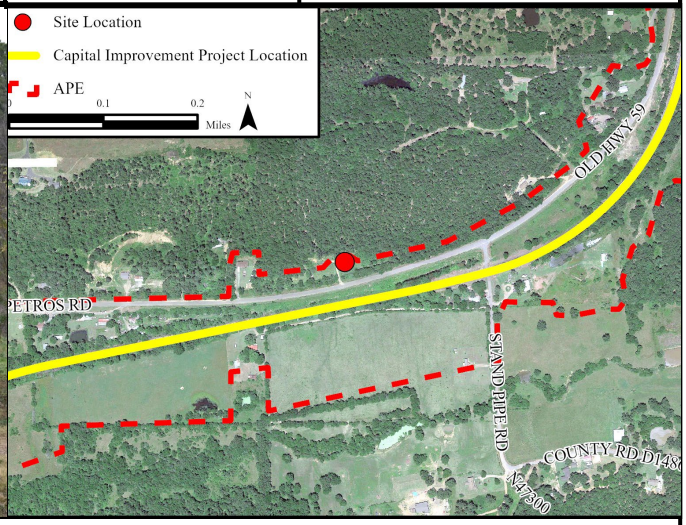
Description: The property comprises a house, two visible detached sheds, and a detached carport on an approximately 2.5-acre lot on the west side of Stand Pipe Road and immediately south of the KCS ROW. There is an additional outbuilding southwest of the house that is only visible in aerial images. The lot is relatively flat with the house and detached carport closer the north end of the property and the two visible sheds to the south and west of the house. The lot is primarily open lawn and field with the area immediately surrounding the house as the most maintained. Deciduous trees line the perimeter of the parcel with a dense cluster of trees around the house. The house and one of the detached sheds were constructed during the 1960s based on the form, style and aerial photography. The other two outbuildings date to the late 20th century based on form and materials. The house is a one-story Ranch house with no distinctive style. It has a non-historic replacement standing-seam aluminum, cross-gable roof, and the exterior of the building is covered with a combination of original wood clapboard and brick veneer siding with brick soldier-course detailing. The primary entrance on the front elevation is recessed beneath the integrated porch. A secondary entrance on the side elevation features a non-historic screen door which obscures the details of the inner door. Windows appear to be original 2/2 aluminum double-hung sash arranged singularly and in pairs. The detached carport is a non-historic prefabricated aluminum structure. The historic south shed is a one-story, wood-frame structure with a metal front-gable roof and an asphalt paper-clad exterior. The non-historic west shed is a one-story, wood-frame structure with an asphalt shingle-clad gambrel roof and clapboard siding.

National Register Evaluation: The property is recommended ineligible for listing in the National Register Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The house lacks sufficient significance and integrity to merit individual listing. The house is a mid-twentieth century Ranch house as it retains its original form, plan, windows and cladding material and exhibits characteristics representative of the period. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of feeling, location, and setting along a local, rural highway surrounded by a naturally landscaped lawn and abutting forest. It also retains integrity of association, as it is still used as a single-family residence. The design and materials of the building are intact, including the overall form and brick veneer, and aluminum windows. The intact features convey a sense of historic workmanship, and the property retains the feeling and aesthetic of its period of construction.

Resource ID:	OK-HE-025	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	n/a	**Location:**	20160 Old US 59, Heavener, Oklahoma





Description: The property comprises a house and detached shed on an approximately 15-acre property, of which approximately 14.9 acres are dense forest. The house is approximately 200 feet north of the KCS ROW on the north side of Old US 59. The lot gradually slopes up from south to north with an unpaved driveway leading to the house and detached garage to the northwest of the house that is not visible from the public way. The house and shed are surrounded by an open, unmaintained lawn. The house is encompassed by a chain link fence. The house appears to have been constructed during the 1940s based on the style; the detached shed was constructed between 1955 and 1976 as per aerial photographs.

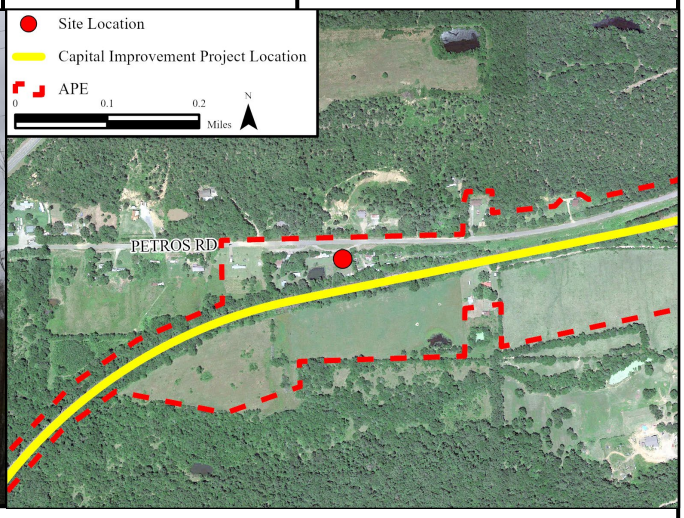
The house is a one-story, wood-frame bungalow with no distinctive style. It has a corrugated steel-clad, front-gable roof with exposed rafter tails, original shiplap wood siding, and a concrete block foundation. A pedimented front porch extends across the south (façade) elevation with round and replacement square posts and a wood railing. The main entrance is in the center of the front elevation and consists of a non-historic composite panel replacement door. Windows are non-historic aluminum, double-hung replacement sash arranged singularly and in pairs. The detached shed has a corrugated metal-clad gable roof with an attached lean-to. The property is vacant. The house is in poor condition due to general deterioration of the cladding and vandalism to the doors and windows.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with early twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property has distinctive form of an early twentieth-century bungalow; however, the house does not serve as a good and representative example of its type and style due to a lack of integrity (see below). Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and setting along a local, rural highway surrounded by a natural landscape and abutting forest. The integrity of feeling, design, materials, and workmanship are compromised due to the use of extensive replacement materials, the alterations, and the poor condition of the remaining original materials. The property is vacant and no longer in use, so it does not retain integrity of association.

Resource ID:	OK-HE-026	**Resource Type:**	Above-Ground
Inventory Number:	TBD	**Potential Effect:**	Visual
Previous Documentation:	n/a	**Location:**	20399 Old US 59, Heavener, Oklahoma





Description: The property comprises at least eight structures visible from aerial imagery sited on an approximately 3-acre parcel on the south side of Old US 59 and immediately north of the KCS ROW. Of these eight buildings, five are clearly visible from the public ROW and three are only partially visible. In addition to the eight identifiable buildings, there are numerous small structures that could be ancillary sheds, storage buildings or trailers visible on aerial photography but are not visible from the public ROW. The property is relatively level surrounded by dense deciduous trees. The center of the property is open lawn with a pond to the east side of the lot.

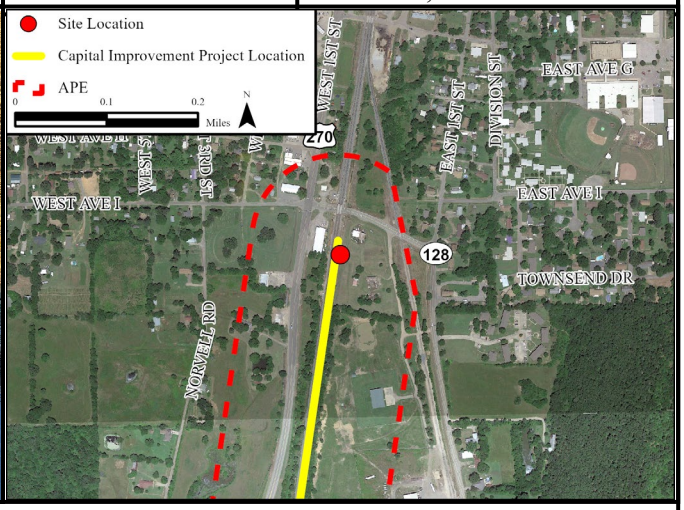
All five fully visible buildings are one-story, wood-frame structures with either side-gable or shed roofs clad in corrugated steel panels. There are two residences constructed during the late 1950s or 1960s; a single family with board-and-batten siding and a concrete foundation at the south end of the site and a duplex in the center of the site with wood panel siding and a concrete slab foundation. Both residential buildings have a mixture of non-historic materials including composite siding, aluminum windows, and corrugated metal roofing. There are two outbuildings near the street constructed during the late 1950s or 1960s; a long open storage structure consisting of wood posts supporting a corrugated metal shed roof and a concrete block garage with a corrugated metal clad side gable roof. There is also one small non-historic shed. Two partially visible shed/garage structures are located at the north end of the site. Both structures have corrugated metal-clad gable roofs with a combination of corrugated metal and wood panel siding.

National Register Evaluation: The property is recommended not eligible for listing in the National Register. Criterion A: While the construction of the property is associated with mid-to-late twentieth century residential development in the region, it is not individually significant within the historic context of the community development. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C: The property does not embody a distinctive characteristic of a type, period, or method of construction nor possesses a high degree of original intact materials. Criterion D: This residential property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of location and setting along a local, rural highway surrounded by a natural landscape and abutting forest. It also retains integrity of association, as it is still used as a residential property with multiple single-family buildings. The integrity of feeling, design, materials, and workmanship are compromised due to the use of extensive replacement materials, alterations, and unsympathetic additions.

Resource ID:	OK-HE-027	Resource Type:	Above-Ground
Inventory Number:	TBD	Potential Effect:	Visual
Previous Documentation:	OK Landmarks Inventory ID 96399	Location:	Oil Branch through Downtown Heavener, Heavener, Oklahoma





Description: The Oil Branch flows within a stone-lined drainage channel through downtown Heavener. The total length of the channel is approximately 0.9 miles; however only 0.1 miles of it is within the project area. The north end of the channel begins immediately south of the KCS railyard at E. Avenue A and follows a sinuous path through the east side of downtown until it reaches Avenue F. After it crosses beneath the KCS east spur, it turns south to run parallel to the east side KCS ROW running beneath Avenue I and terminates approximately 260 feet south of the Avenue I crossing. The Oil Branch channel was constructed in 1939 and is one of at least six Works Progress Administration (WPA) projects completed in Heavener between 1936 and 1939. The channel varies in width from approximately 6 feet to 8 feet, with it being narrower at the north end through downtown Heavener. The walls appear to range in height from 4 to 8 feet along most of its length and taper down to only 2 feet at its southern terminus. The channel walls are constructed of wet laid native Oklahoma sandstone cut in long, narrow rough-hewn blocks. The courses at the base of the walls are stepped toward the bottom of the channel, which is lined with the native Oklahoma sandstone pavers. Concrete sidewalk bridges with metal pipe railings cross the channel at each road crossing and at other intermittent locations providing access between parking areas and buildings. Each road crossing is carried over the channel by concrete, single-cell culverts with concrete top plates, sidewalls and flared wingwalls. The sidewalks and culverts and appear to be constructed contemporaneously to the channel. There appears to be only one short segment of material loss immediately north and south of the culvert that carries Avenue I over the channel, which most likely occurred during the construction of the culvert in 1964.

National Register Evaluation: The property is recommended **eligible** for listing in the National Register. Criterion A: The property is directly associated with early twentieth century development in the region as a result of New Deal programs completed by the WPA and is individually significant within the historic context of WPA infrastructure improvement projects within the region. Criterion B: Research conducted has not identified any connection between the property and historically significant individuals. Criterion C:the channel is a particularly good example of its type, period, method of construction, and use of local materials. Its walls are constructed of wet laid native Oklahoma sandstone cut into long, rough-hewn blocks. Criterion D: This property type does not appear to have the potential to yield further important information or data.

Integrity: The property retains integrity of feeling, location and setting along a local, rural highway in a mixed-use neighborhood in downtown Heavener. It also retains integrity of association because it remains in use as a part of infrastructure of Heavener. The design and materials of the culvert are intact and able to convey a sense of historic workmanship, and the culvert retains the feeling and aesthetic of its period of construction.

Resource ID:	34AD282	Resource Type:	Below-Ground
Inventory Number:	N/A	Potential Effect:	Physical
Previous Documentation:	N/A	Location:	Baron



Description: Site 34AD282 is precontact low density lithic scatter. The site is located atop a relatively flat, low-lying terrace northwest of a creek tributary. The known site area measures 21 m in length and 8 m in width and is bounded by the limits of the APE and the existing railroad berm. A typical shovel test excavated within the identified limits of the site was characterized by an initial A horizon of very dark grayish brown (10YR 3/2) silty loam from 0 to 30 centimeters below the surface (cmbs) (Stratum I), underlain by a B horizon of dark yellowish brown (10YR 4/6) silty clay from 30 to 40 cmbs (Stratum II). The identified B horizon was a culturally sterile clay substratum. The site was identified through the excavation of three positive shovel tests resulting in the recovery of lithic artifacts (n = 5). Artifacts consisted of chert flakes of the Keokuk, Boone, and John's Valley Gravel varieties. The recovered flakes are most likely the result of late-stage lithic retouching and were recorded in Stratum I between 10 and 30 cmbs. The site was not fully excavated to the northwest and southeast due to the limitations of the APE and the existing railroad line.

National Register Evaluation: The property was evaluated for the National Register under Criterion D. The integrity of the site has been compromised by railway construction. As lithic scatters are common in this region and the recovered cultural materials are not indicative of a specific technological, material, or cultural tradition, the site lacks significant data potential. As the site was not fully delineated, the eligibility status of site 34AD282, as a whole, has not been determined. The portion of the site identified within the APE lacks integrity and significant data potential under Criterion D of the National Register and is recommended not eligible.

Integrity: Site 34AD282 lacks integrity of location, design, setting, materials, workmanship, feeling, or association. The location, design, and setting of the site have been compromised by the disturbance caused by the construction of the railroad. The site lacks integrity of workmanship and feeling, due to the sparse and undiagnostic nature of the artifacts recorded. Site 34AD282 also lacks integrity of association, as the site cannot be directly linked to any important historical event or persons.

Resource ID:	34AD283	**Resource Type:**	Below-Ground
Inventory Number:	N/A	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Baron



Description: Site 34AD283 is precontact scatter of lithic tools and debitage located on a well-defined, elevated terrace to the west of a river. The site was identified through the subsurface recovery of approximately 80 non-diagnostic artifacts consisting of Keokuk, John's Valley Gravel, Boone, and Reed Springs chert debitage, as well as 3 PP/K fragments, recorded within 14 positive shovel tests. Shovel testing within the site boundaries generally encountered deep soils. A typical shovel test excavated within the boundaries of 34AD283 was characterized by dark brown (10YR 3/3) silty clay loam from 0 to 40 cmbs (Stratum I), underlain by a layer of strong brown (7.5YR 5/6) silty clay loam from 40 to 80 cmbs (Stratum II), followed by a layer of strong brown (7.5YR 5/8) clay from 80 to 85 cmbs (Stratum III). Impenetrable gravel and compacted cobble prevented further examination of the underlying strata at depths below 85 cmbs. Three diagnostic artifacts were recorded from 34AD283, two of which are identified as Standlee PP/Ks, while the other was identified as a Kings/Patterson Springs PP/K. Based on the presence of these diagnostics, the site is tentatively associated with the Late Archaic/Early Woodland.

The identified depositional strata were observed to be relatively uniform in soil consistency with little to moderate cobble inclusions. It does not appear that atop the preserved landform the deposit present at 34AD283 has been disturbed by prior land use activities. No modern or historic material was recorded during subsurface examination at the site which indicates that the landform to the northwest of the railroad berm is intact. Delineation of the site was bounded by the project APE to the west and by the railroad cut to the east, and therefore the site was not fully delineated.

National Register Evaluation: The property was evaluated for the National Register under Criterion D. The integrity of the site has not been compromised by railroad construction. The presence of undisturbed cultural deposits and diagnostic artifacts could potentially yield valuable data regarding our understanding of lithic tool manufacturing, resource procurement activities, and subsistence during the Late Archaic to the Early Woodland transitional period. As the site was not able to be fully delineated, the eligibility status of site 34AD283, as a whole, has not been determined. The portion of the site identified within the APE retains integrity under Criterion D of the National Register and is recommended as eligible.

Integrity: Site 34AD283 retains integrity of location, design, materials, and association. The site retains integrity of location and design through the potential for deep, undisturbed soils and artifact deposits. The site retains integrity of materials and association through the abundant debitage recorded as well as the presence of diagnostic artifacts which allow the site to be associated with Late Archaic and Early Woodland cultural periods. Site 34AD283 lacks integrity of setting, workmanship, and feeling. The setting and feeling of the site have been compromised by the disturbance caused by the construction of the railroad, while there were no features identified which could give a sense of workmanship to the site.

Resource ID:	34AD284	**Resource Type:**	Below-Ground
Inventory Number:	N/A	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Baron



Description: Site 34AD284 is precontact lithic scatter situated atop a gentle slope approximately 25 m west of a river. The known site area measures 30 m northeast to southwest and roughly 8 meters west to east. The known site area is bounded to the west by the limits of the APE and to the east by the existing railroad berm. A typical shovel test excavated within the site was characterized by an initial A horizon of very dark grayish brown (10YR 3/2) clayey loam from 0 to 20 cmbs (Stratum I), underlain by a B horizon of strong brown (7.5YR 5/8) clay with heavy cobble from 20 to 30 cmbs (Stratum II). The identified B horizon was a culturally sterile clay substratum. The site was identified through the excavation of three positive shovel tests resulting in the recovery of four (n=4) lithic flakes and a utilized flake/scraper (n=1) of Keokuk chert. The recovered artifacts were unremarkable in regard to surface treatment and were all relatively consistent in form and color. The recovered flakes are most likely the result of a single late-stage lithic retouching or maintenance event and were recovered between 0 and 20 cmbs. The recovered scraper was noted to have edge wear consistent with utilization as a tool. It does not conform to any known tradition or shape and should be considered undiagnostic in form. No features were identified during the survey of 34AD284.

National Register Evaluation: The property was evaluated for the National Register under Criterion D. The integrity of the site has been compromised by railway construction. As lithic scatters are common in this region and the recovered cultural materials are not indicative of a specific technological, material, or cultural tradition then the site lacks significant data potential. As the site was not fully delineated, the eligibility status of site 34AD284, as a whole, has not been determined. The portion of the site identified within the APE lacks integrity and significant data potential under Criterion D of the National Register and is recommended not eligible.

Integrity: Site 34AD284 lacks integrity of design, setting, materials, workmanship, feeling, or association. The setting, design, and feeling of the site has been compromised by the disturbance caused by the construction of the railroad. The site lacks integrity of workmanship due to the sparse and undiagnostic nature of the artifacts recorded. Site 34AD284 also lacks integrity of association, as the site cannot be directly linked to any important historical event or persons.

Resource ID:	34AD285	Resource Type:	Below-Ground
Inventory Number:	N/A	Potential Effect:	Physical
Previous Documentation:	N/A	Location:	Baron



Description: Site 34AD285 is a low-density, horizontally diffuse lithic artifact scatter located approximately northwest of a river within a gently rolling plain. Shovel test profiles recorded within the site area can be generally described as shallow with an initial layer of dark brown (10YR 3/3) soil with roots from 0 to 35 cmbs (Stratum I), underlain by a layer of dark gray (10YR 4/1) clayey loam from 35 to 45 cmbs (Stratum II). This layer was followed by densely compacted gravel and cobble fill from 45 to 55 cmbs (Stratum III). The site was identified through the excavation of eight shovel tests containing a total of 21 lithic artifacts of Keokuk, John's Valley Gravels, and Boone chert. The assemblage contains 19 flakes of chert debitage, and two scrapers. None of the recovered artifacts showed evidence of thermal alteration. None of the recovered artifacts were diagnostic. The artifacts were recovered from depths between 0 and 30 cmbs (n=20) with one artifact (n=1) recovered between 35 and 45 cmbs. The majority of the deposit identified at 34AD285 is located within Stratum I. Delineation shovel tests to the southeast at 5 m intervals were possible for most of the positive shovel tests identified at 34AD285. This resulted in a very well-defined southeastern boundary for the site within the plain. To the northwest however, delineations were not possible due to both the limits of the APE and by an existing fence line. The overall site remains undefined outside of the APE.

National Register Evaluation: The property was evaluated for the National Register under Criterion D. As lithic scatters are common in this region and the recovered cultural materials are not indicative of a specific technological, material, or cultural tradition then the site lacks significant data potential. As the site was not fully delineated, the eligibility status of site 34AD285, as a whole, has not been determined. The portion of the site identified within the APE lacks significant data potential under Criterion D of the National Register and is recommended not eligible.

Integrity: Site 34AD285 lacks integrity of design, setting, materials, workmanship, feeling, or association. The setting, design, and feeling of the site has been compromised by the disturbance caused by the construction of the railroad. The site lacks integrity of workmanship due to the sparse and undiagnostic nature of the artifacts recorded. Site 34AD285 also lacks integrity of association, as the site cannot be directly linked to any important historical event or persons.

Resource ID:	34AD286	**Resource Type:**	Below-Ground
Inventory Number:	N/A	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Baron



Description: Site 34AD286 is a moderately dense lithic artifact scatter located atop a flat terrace west of a river. Artifacts recovered during the Phase I survey were identified from just below the ground surface to depths over 1 meter. Positive shovel tests were augured to sterile subsoils, which were reached around 110 cmbs. Artifacts were recovered from depths as deep at 110 cmbs and were recovered just above Pleistocene sediments. A typical shovel test was characterized by dark brown (10YR 3/3) silty clay loam from 0 to 35 cmbs (Stratum I), underlain by a brown (10YR 5/3) silty clay loam from 35 to 60 cmbs (Stratum II), underlain by brown clay (10YR 4/3) from 60 to 90 cmbs (Stratum III). Below this layer was a strong brown (7.5YR5/8) compacted and gravelly clay from 90 to 160 cmbs (Stratum IV). Culturally sterile soils were encountered below 110 cmbs. The site was identified through the excavation of 8 positive shovel tests containing 108 lithic artifacts. The artifacts recovered consist of primary, secondary, and tertiary flake fragments, and a chert core; some of which show evidence of thermal alteration. Chert types recovered include Keokuk, John's Valley Gravels, Boone, and Reed's Springs varieties. No diagnostic artifacts were recovered during survey.

National Register Evaluation: The property was evaluated for the National Register under Criteria D. The depths at which artifacts were recovered indicate a strong potential for 34AD286 to date to either the Paleoindian or Early Archaic periods. The overall density and frequency of the artifact deposit indicates that substantial lithic refinement took place in a horizontally discrete area, and it is possible that features may exist in-situ. As the site was not fully delineated, the eligibility status of site 34AD286, as a whole, has not been determined. However, the portion of the site identified within the APE retains integrity and significant data potential under Criterion D of the National Register and is recommended eligible.

Integrity: Site 34AD286 retains good integrity of location, design, materials, and association. Integrity of location is based on the deeply buried nature of the deposits, which have the potential to inform the geomorphological processes which lead to site formation. Integrity of design is based on the overall density and frequency of the artifact deposit across a horizontally discrete area, which raises the possibility that features may exist in-situ. Integrity of materials and association is based upon the assumption that the deep deposits retain the data potential to increase understanding of how people interacted with their environment during the Paleoindian and Early Archaic periods.

Resource ID:	34AD287	**Resource Type:**	Below-Ground
Inventory Number:	N/A	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Baron



Description: Site 34AD287 is a moderate density, horizontally diffuse lithic artifact scatter located atop a flat terrace northwest of a river. The boundaries of the site are irregularly shaped and measure roughly 70 m in length northeast to southwest and 12 m in width northwest to southeast. Shovel test profiles recorded within the site area can be generally described as shallow with an initial layer of dark gray (7.5YR 4/1) soil with roots from 0 to 35 cmbs (Stratum I), underlain by brown (7.5YR 5/4) clay from 35 to 55 cmbs (Stratum II). The onset of clay substrata was relatively shallow. Augered shovel tests through the identified clay layer identified a horizon of dense cobble at approximately 60 cmbs. The site was identified through the excavation of 13 positive shovel tests containing a total of 40 lithic artifacts of Keokuk (n=26), John's Valley Gravels (n=11), and Boone (=3) chert, including 39 chert debitage flakes and one biface. None of the recovered artifacts showed evidence of thermal alteration or reworked, or retouched surface treatments. None of the recovered artifacts were diagnostic. The majority of artifacts were recovered from depths between 0 and 30 cmbs (n=28). A smaller number of artifacts were recorded at depths between 30 and 40 cmbs (n=10), with some artifacts recovered as deep as 50 cmbs (n=2). Full delineation of the site was not possible due to the limits of the APE to the northwest and the existing railroad bermand ballast to the southeast.

National Register Evaluation: The property was evaluated for the National Register under Criteria D. The integrity of the site has been compromised by railway construction. As lithic scatters are common in this region and the recovered cultural materials are not indicative of a specific technological, material, or cultural tradition then the site lacks significant data potential. As the site was not able to be fully delineated, the eligibility status of site 34AD287, as a whole, has not been determined. The portion of the site identified within the APE lacks integrity and significant data potential under Criterion D of the National Register and is recommended not eligible.

Integrity: Site 34AD287 lacks integrity of location, design, setting, materials, workmanship, feeling, or association. The location, design, and setting of the site have been compromised by the disturbance caused by the construction of the railroad. The site lacks integrity of workmanship and feeling, due to the sparse and undiagnostic nature of the artifacts recorded. Site 34AD287 also lacks integrity of association, as the site cannot be directly linked to any important historical event or persons.

Resource ID:	34AD288	**Resource Type:**	Below-Ground
Inventory Number:	N/A	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Baron



Description: Site 34AD288 is a low-density lithic artifact scatter located within a flat terrace northwest of a river. The known site area is irregularly shaped and measures 30 m in length northeast to southwest and varies between 8 and 18 m in width northwest to southeast. Shovel test profiles recorded within the site area can be generally characterized by an initial stratum of dark brown (10YR 3/3) silty clay loam from 0 to 20 cmbs (Stratum I), followed by a layer of yellowish brown (10YR 5/4) silty clay loam from 20 to 45 cmbs (Stratum II), underlain by brownish yellow (10YR 6/8) clay with dense cobble inclusions from 45 to 55 cmbs (Stratum III). Stratum III was culturally sterile. The site was identified through the excavation of six positive shovel tests containing a total of 12 lithic artifacts, all of which were non-diagnostic debitage from late state reduction activities. Two recovered flakes show evidence of thermal alteration. The deposit was identified between 10 and 30 cmbs, squarely within the Stratum I and Stratum II transition. None of the artifacts recovered during survey at 34AD288 were located below 30 cmbs. Full delineation of the site was not possible to the southeast due to the presence of the existing railroad berm and ballast and to the northwest due to the existing fenceline that demarcates the APE.

National Register Evaluation: The property was evaluated for the National Register under Criterion D. The integrity of the site has been compromised by railway construction. As lithic scatters are common in this region and the recovered cultural materials are not indicative of a specific technological, material, or cultural tradition then the site lacks significant data potential. As the site was not able to be fully delineated, the eligibility status of site 34AD288, as a whole, has not been determined. The portion of the site identified within the APE lacks integrity and significant data potential under Criterion D of the National Register and is recommended not eligible.

Integrity: Site 34AD288 lacks integrity of location, design, setting, materials, workmanship, feeling, or association. The location, design, and setting of the site have been compromised by the disturbance caused by the construction of the railroad. The site lacks integrity of workmanship and feeling, due to the sparse and undiagnostic nature of the artifacts recorded. Site 34AD288 also lacks integrity of association, as the site cannot be directly linked to any important historical event or persons.

Resource ID:	34AD289	**Resource Type:**	Below-Ground
Inventory Number:	N/A	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Baron



Description: Site 34AD289 is a discrete lithic scatter of chert debitage and tools located atop a flat terrace northwest of a river. The known site area measures 25 m in length northeast to southwest and 9 m in width northwest to southeast. The known site area is bounded to the southeast by the existing railroad berm and ballast. A typical shovel test excavated within the identified limits of the site was characterized by dark brown (10YR 3/3) silty clay loam from 0 to 40 cmbs (Stratum I), underlain by strong brown (7.5YR 4/6) silty clay from 40 to 75 cmbs (Stratum II). A culturally sterile, strong brown (7.5YR 5/8) clay substrate was identified from 75 to 85 cmbs (Stratum III). Soil color and consistency was observed as uniform and typical for each of the identified strata. The site was identified through the excavation of three positive shovel tests resulting in the recovery of 27 total artifacts including 25 flakes, 1 utilized flake/scraper, and the partial distal end of a PP/K (Table 15). Although the PP/K is partial, the form is most similar to the expanding/bifurcate stemmed Cossatot River tradition, which dates to the Middle Archaic Period (ca. 2500 B.C. – 200 B.C.) in Eastern Oklahoma. The recovered scraper showed evidence of a utilized edge but was otherwise unremarkable in form. The recovered flakes were largely consistent in regard to form and color though 7 examples showed surface treatment evidence of thermal alteration. The deposit was vertically diffused through the strata with no definitive or discrete occupation zone identified. The majority of artifacts (n=20) were recovered within the initial stratum, Stratum I (0-40 cmbs). The remaining artifacts (n=7) were recovered between 40 and 70 cmbs with the diagnostic recovered between 50 and 70 cmbs.

National Register Evaluation: The property was evaluated for the National Register under Criterion D. As lithic scatters are common in this region and the recovered cultural materials are not indicative of a specific technological, material, or cultural tradition, the site lacks significant data potential. As the site was not able to be fully delineated, the eligibility status of site 34AD289, as a whole, has not been determined. The portion of the site identified within the APE lacks integrity and significant data potential under Criterion D of the National Register and is recommended not eligible.

Integrity: Site 34AD289 lacks integrity of location, design, setting, materials, workmanship, feeling, or association. The location, design, and setting of the site have been compromised by the disturbance caused by the construction of the railroad. The site lacks integrity of workmanship and feeling, due to the sparse and undiagnostic nature of the artifacts recorded. Site 34AD289 also lacks integrity of association, as the site cannot be directly linked to any important historical event or persons.

Resource ID:	34AD290	**Resource Type:**	Below-Ground
Inventory Number:	N/A	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Cave Spring



Description: Site 34AD290 is a low-density scatter of non-diagnostic lithic debitage located on a flat floodplain west of a creek. The site measures approximately 25 m in length northeast to southwest and 10 m in width northwest to southeast. Shovel testing revealed a uniform soil profile that consists of two strata. Stratum I, a dark grayish brown (10YR 4/2) silty clay loam, extends between the surface and 30 cmbs; recovered cultural materials were limited to this stratum. Stratum II is a hydric and culturally sterile dark brown (10YR 3/3) silty clay that also includes gravel inclusions extending to 60 cmbs. The site was identified through the excavation of three positive shovel tests. Cultural materials recovered at Site 34AD290 consist entirely of non-diagnostic lithic flakes, with six (n=6) being of Keokuk chert and one (n=1) made from a non-specific Novaculite. All of the Keokuk chert flakes were recovered from 0 to 15 cmbs, with the single Novaculite flake recovered from 15 to 20 cmbs. None of the recovered lithic artifacts evidenced thermal alteration, nor were they diagnostic. The site was not fully delineated to the east due to existing railroad berms and ballast and to the west due to the boundary of the APE.

National Register Evaluation: The property was evaluated for the National Register under Criterion D. The integrity of the site has been compromised by railway construction. As lithic scatters are common in this region and the recovered cultural materials are not indicative of a specific technological, material, or cultural tradition, the site lacks significant data potential. As the site was not fully delineated, the eligibility status of site 34AD290, as a whole, has not been determined. The portion of the site identified within the APE lacks integrity and significant data potential under Criterion D of the National Register and is recommended not eligible.

Integrity: Site 34AD290 lacks integrity of location, design, setting, materials, workmanship, feeling, or association. The location, design, and setting of the site have been compromised by the disturbance caused by the construction of the railroad. The site lacks integrity of workmanship and feeling, due to the sparse and undiagnostic nature of the artifacts recorded. Site 34AD290 also lacks integrity of association, as the site cannot be directly linked to any important historical event or persons.

Resource ID:	34AD291	**Resource Type:**	Below-Ground
Inventory Number:	N/A	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Cave Spring



Description: Site 34AD291 is a scatter of horizontally expansive non-diagnostic lithic materials located on a relatively flat floodplain west of a creek. The site boundaries measure approximately 80 m in length northeast to southwest and 10 m in width northwest to southeast. Shovel testing revealed consistent shovel test profiles at the site with two strata present. Stratum I, a dark brown (10YR 3/3) silty clay loam, extends from the surface to 30 cmbs. A culturally sterile Stratum II of dark gray (10YR 4/1) silty clay is present between 20 and 60 cmbs. The water table inundated soils after 60 cmbs. The site was identified through the excavation of three positive shovel tests which yielded lithic debitage. Cultural materials consisted of nine (n=3) non-diagnostic Keokuk chert lithic debitage flakes and a single (n=1) fragment of Keokuk chert angular debris/shatter. The assemblage density was relatively uniform throughout the site with no apparent concentrations of cultural materials, and the site may continue to the southwest. None of the recovered cultural materials are diagnostic, nor do they display evidence of thermal alteration. The site was not fully delineated to the northwest and southwest due to the boundary of the APE.

National Register Evaluation: The property was evaluated for the National Register under Criterion D. The integrity of the site has been compromised by railway construction. As lithic scatters are common in this region and the recovered cultural materials are not indicative of a specific technological, material, or cultural tradition, the site lacks significant data potential. As the site was not fully delineated, the eligibility status of site 34AD291, as a whole, has not been determined. The portion of the site identified within the APE lacks integrity and significant data potential under Criterion D of the National Register and is recommended not eligible.

Integrity: Site 34AD291 lacks integrity of location, design, setting, materials, workmanship, feeling, or association. The location, design, and setting of the site have been compromised by the disturbance caused by the construction of the railroad. The site lacks integrity of workmanship and feeling, due to the sparse and undiagnostic nature of the artifacts recorded. Site 34AD291 also lacks integrity of association, as the site cannot be directly linked to any important historical event or persons.

Resource ID:	34AD292	**Resource Type:**	Below-Ground
Inventory Number:	N/A	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Cave Spring



Description: Site 34AD292 is a scatter of non-diagnostic lithic materials located on a relatively flat floodplain at the base of a hillslope north of a creek. The site measures approximately 12 m in length northeast to southwest and 10 m in width northwest to southeast. Shovel testing revealed consistent shovel test profiles at the site with four strata present. Stratum I, a dark brown (10YR 3/3) silty clay loam, extends from the surface to 20 cmbs. Stratum II of yellowish brown (10YR 5/4) silty clay is present between 20 and 28 cmbs in some tests and appears to be redeposited rather than natural soils. Stratum III consists of mottled dark brown (10YR 3/3) and yellowish brown (10YR 5/4) silty clay loam between 28 and 50 cmbs; this stratum appears to be undisturbed. Stratum IV is a culturally sterile yellowish brown (10YR 5/4) and strong brown (7.5YR 5/6) saturated silty clay. Site 34AD292 was identified during transect shovel testing through the excavation of three positive shovel tests resulting in the recovery of Keokuk chert lithic artifacts (n = 3). Two (n = 2) of these specimens were recovered from Stratum I with a singular flake (n = 1) recovered from Stratum III. The site was not fully excavated to the northeast due to the APE boundary and to the northwest and southeast due to existing ballast.

National Register Evaluation: The property was evaluated for the National Register under Criterion D. The integrity of the site has been compromised by railway construction. As lithic scatters are common in this region and the recovered cultural materials are not indicative of a specific technological, material, or cultural tradition, the site lacks significant data potential. As the site was not fully delineated, the eligibility status of site 34AD292, as a whole, has not been determined. The portion of the site identified within the APE lacks integrity and significant data potential under Criterion D of the National Register and is recommended not eligible.

Integrity: Site 34AD292 lacks integrity of location, design, setting, materials, workmanship, feeling, or association. The location, design, and setting of the site have been compromised by the disturbance caused by the construction of the railroad. The site lacks integrity of workmanship and feeling, due to the sparse and undiagnostic nature of the artifacts recorded. Site 34AD292 also lacks integrity of association, as the site cannot be directly linked to any important historical event or persons.

Resource ID:	34AD293	Resource Type:	Below-Ground
Inventory Number:	N/A	Potential Effect:	Physical
Previous Documentation:	N/A	Location:	Baron



Description: Site 34AD293 is a low-density lithic artifact scatter located northwest of a river, at the southwestern edge of a flat, slightly elevated terrace. The site measures 45 m in length northeast to southwest and 14 m in width northwest to southeast. Shovel testing within the identified site boundaries was characterized by an initial A horizon of dark gray (10YR 4/1) silty clay loam from 0 to 25 cmbs (Stratum I), underlain by a B horizon of strong brown (7.5YR 5/8) clay with heavy cobble from 20 to 30 cmbs (Stratum II). The identified B horizon was a culturally sterile clay substratum. Soil color and consistency was observed as uniform and typical for each of the identified strata. The site was identified through the excavation of two positive shovel tests containing five (n=5) lithic flakes of Keokuk (n=3), Boone (n=1), and John's Valley Gravels (n=1) chert. Most of the recovered artifacts were unremarkable in regard to surface treatment; however, one Keokuk chert flake demonstrated evidence of thermal alteration. The recovered flakes are most likely the result of a single late-stage lithic retouching or maintenance event and were recovered between 0 and 25 cmbs. No artifact recovered from the site was diagnostic. No features were identified during subsurface investigations at 34AD293. Due to the low overall number of artifacts, and spatially discrete area within the APE, the site is unlikely to contain features within the identified site area.

National Register Evaluation: The property was evaluated for the National Register under Criterion D. As lithic scatters are common in this region and the recovered cultural materials are not indicative of a specific technological, material, or cultural tradition then the site lacks significant data potential. As the site was not fully delineated, the eligibility status of site 34AD293, as a whole, has not been determined. The portion of the site identified within the APE lacks significant data potential under Criterion D of the National Register and is recommended not eligible.

Integrity: Site 34AD293 lacks integrity of design, setting, materials, workmanship, feeling, or association. The setting, design, and feeling of the site has been compromised by the disturbance caused by the construction of the railroad. The site lacks integrity of workmanship due to the sparse and undiagnostic nature of the artifacts recorded. Site 34AD293 also lacks integrity of association, as the site cannot be directly linked to any important historical event or persons.

Resource ID:	34AD294	**Resource Type:**	Below-Ground
Inventory Number:	N/A	**Potential Effect:**	Physical
Previous Documentation:	N/A	**Location:**	Baron



Description: Site 34AD294 is a low-density, undifferentiated lithic scatter located west of a river at the base of a steep hillslope atop a flat terrace. The known site area is oval in shape and measures approximately 44 m in length northeast to southwest and 21 m in width northwest to southeast. Shovel testing within the site boundaries was characterized by an initial A horizon of grayish brown (10YR 3/2) loam from 0 to 20 cmbs (Stratum I), underlain by a B horizon of brown (10RYR 4/3) clayey loam from 20 to 50 cmbs (Stratum II), followed by a stratum of strong brown (7.5YR 5/8) clay with heavy (~60%) cobble inclusions from 50 to 60 cmbs (Stratum III). The identified Stratum III was a culturally sterile clay substratum. Soil color and consistency was observed as uniform and typical for each of the identified strata. The site was identified through the excavation of two positive shovel tests containing four (n=4) Keokuk chert flake fragments, including one flake with a utilized edge. Shovel Test A60 contained three artifacts recovered between 20 and 40 cmbs and Shovel Test A61 contained 1 lithic flake recovered between 10 and 20 cmbs. None of the recovered artifacts showed signs of being thermally altered. None of the recovered artifacts were diagnostic. No features were identified during subsurface investigations at 34AD294. Delineations to the northwest were not possible dur to the presence of a steep hillslope, while delineations to the southeast were also restricted dur to the presence of the railroad berm and ballast. Due to the low overall number of artifacts, and small site area, further investigations would be unlikely to identify archaeological features.

National Register Evaluation: The property was evaluated for the National Register under Criterion D. As lithic scatters are common in this region and the recovered cultural materials are not indicative of a specific technological, material, or cultural tradition then the site lacks significant data potential. As the site was not fully delineated, the eligibility status of site 34AD294, as a whole, has not been determined. The portion of the site identified within the APE lacks significant data potential under Criterion D of the National Register and is recommended not eligible.

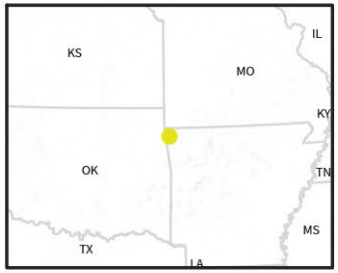
Integrity: Site 34AD294 lacks integrity of design, setting, materials, workmanship, feeling, or association. The setting, design, and feeling of the site has been compromised by the disturbance caused by the construction of the railroad. The site lacks integrity of workmanship due to the sparse and undiagnostic nature of the artifacts recorded. Site 34AD294 also lacks integrity of association, as the site cannot be directly linked to any important historical event or persons.

Appendix J – Attachment 8: Cultural Resources Maps



Capital Improvement Location

Kansas City Southern Railroad



N

0 2,000 4,000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Gentry
Benton, Arkansas



Capital Improvement Location

Kansas City Southern Railroad



N

0 2,000 4,000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement MP 377 (Mena)
Polk, Arkansas



Capital Improvement Location

Chicago, Milwaukee, St. Paul & Pacific Railroad

National Register Recommendation

Not Eligible



N

0 2,000 4,000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement MP 75 (Monroe)
Ogle, Illinois



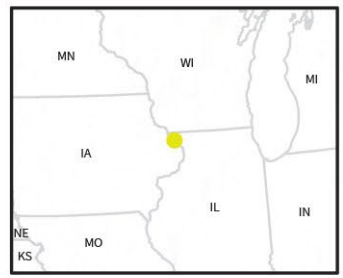
Capital Improvement Location

Chicago, Milwaukee, St. Paul & Pacific Railroad

National Register Recommendation

Eligible

Not Eligible



N

0 2,500 5,000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement MP 24 (Bellevue)
Jackson, Iowa



Capital Improvement Location

Chicago, Rock Island, & Pacific Railroad

National Register Recommendation

Eligible

Not Eligible



N

0 500 1,000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Camanche
Clinton, Iowa

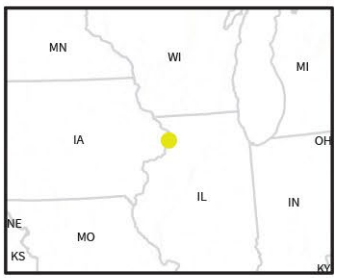


Capital Improvement Location

Chicago, Milwaukee, St. Paul & Pacific Railroad

National Register Recommendation

Not Eligible

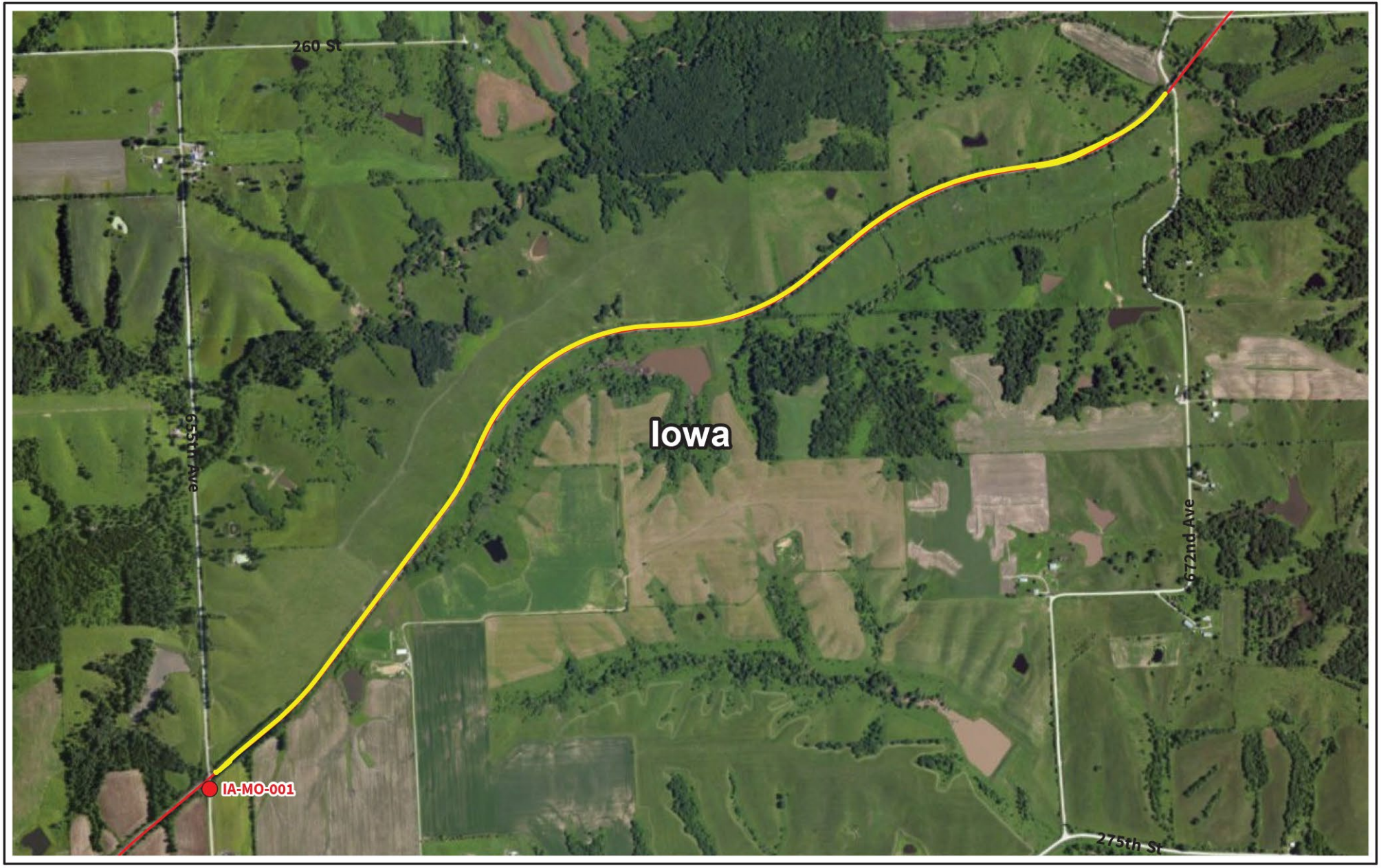


N

0 1,500 3,000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Deer Creek
Clinton, Iowa



Capital Improvement Location

Chicago, Milwaukee, St. Paul & Pacific Railroad

National Register Recommendation

Not Eligible

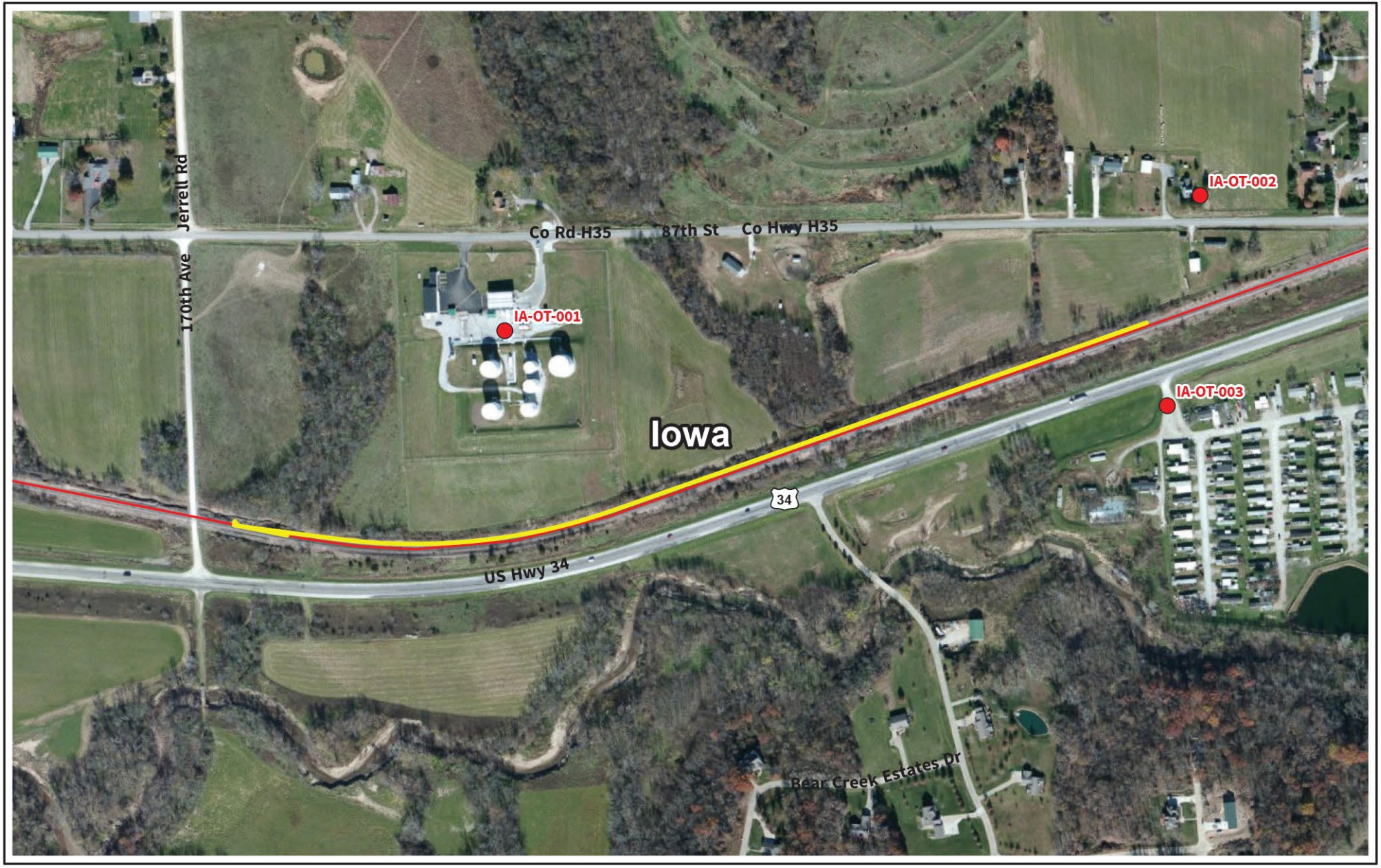


N

0 1,500 3,000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Moravia
Monroe, Iowa



Capital Improvement Location

Chicago, Milwaukee, St. Paul & Pacific Railroad

National Register Recommendation

Not Eligible

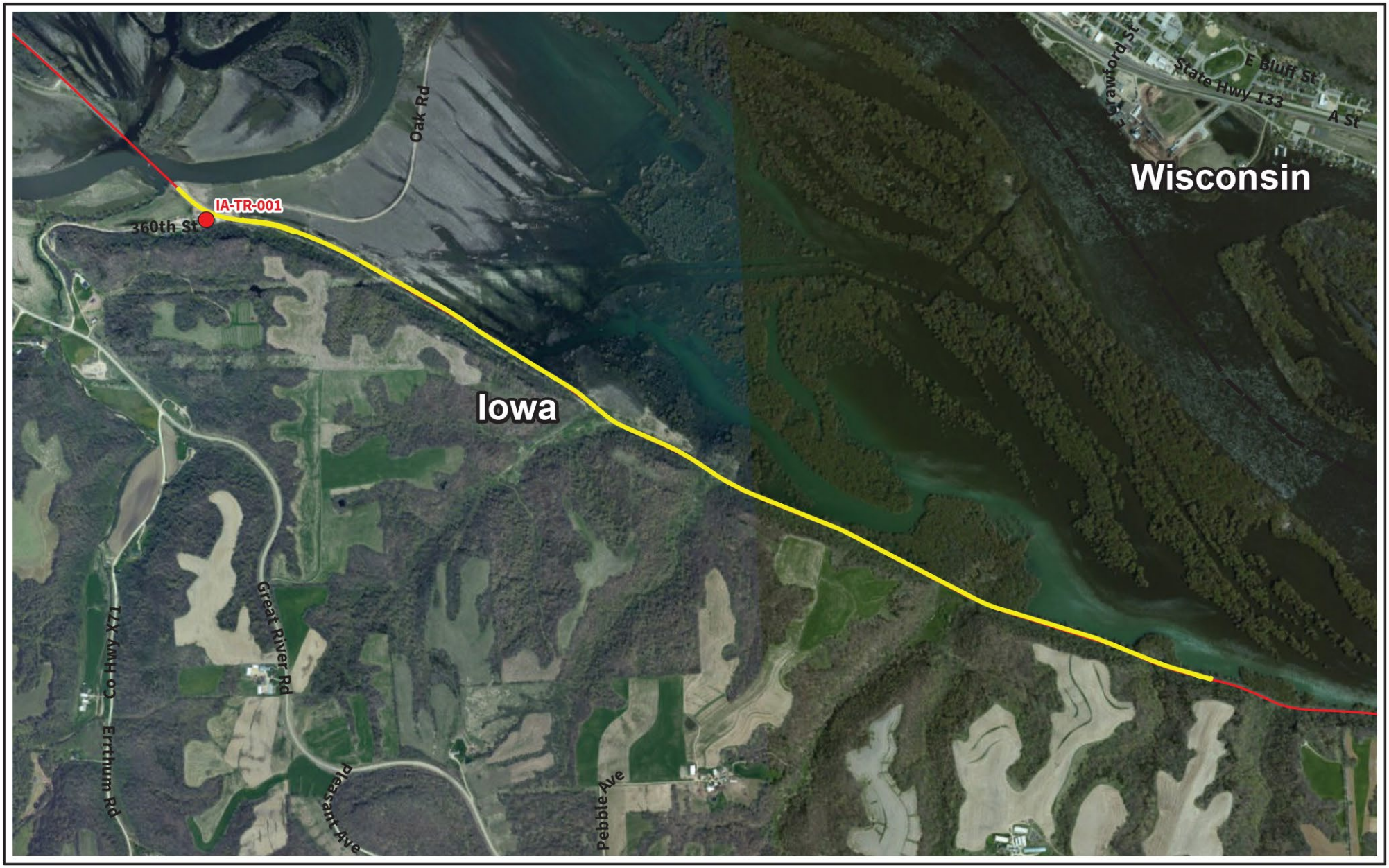


N

0 500 1,000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Ottumwa
Wapello, Iowa

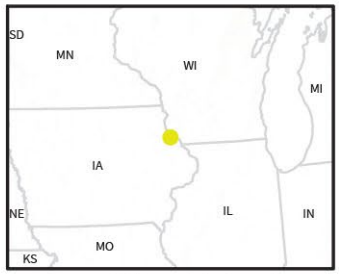


Capital Improvement Location

Chicago, Milwaukee, St. Paul & Pacific Railroad

National Register Recommendation

Not Eligible

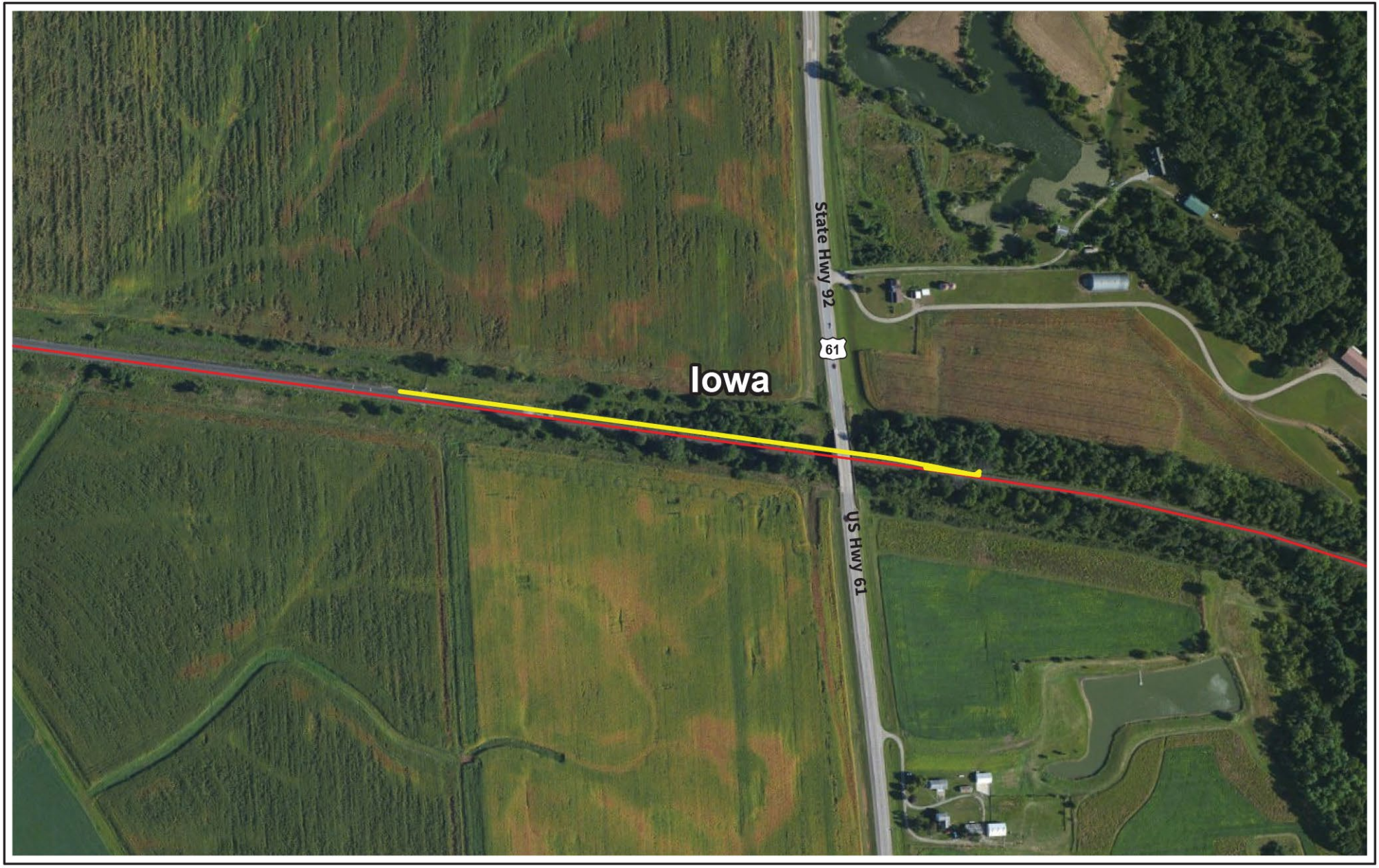


N

0 2,000 4,000 Feet

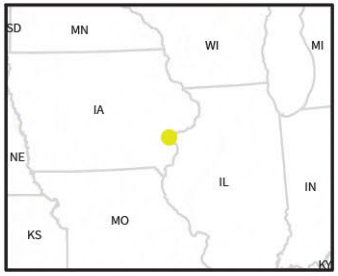
Source: FRA, CP, ArcGIS Online

Capital Improvement MP 71 (Turkey River)
Clayton, Iowa



Capital Improvement Location

Chicago, Rock Island, & Railroad

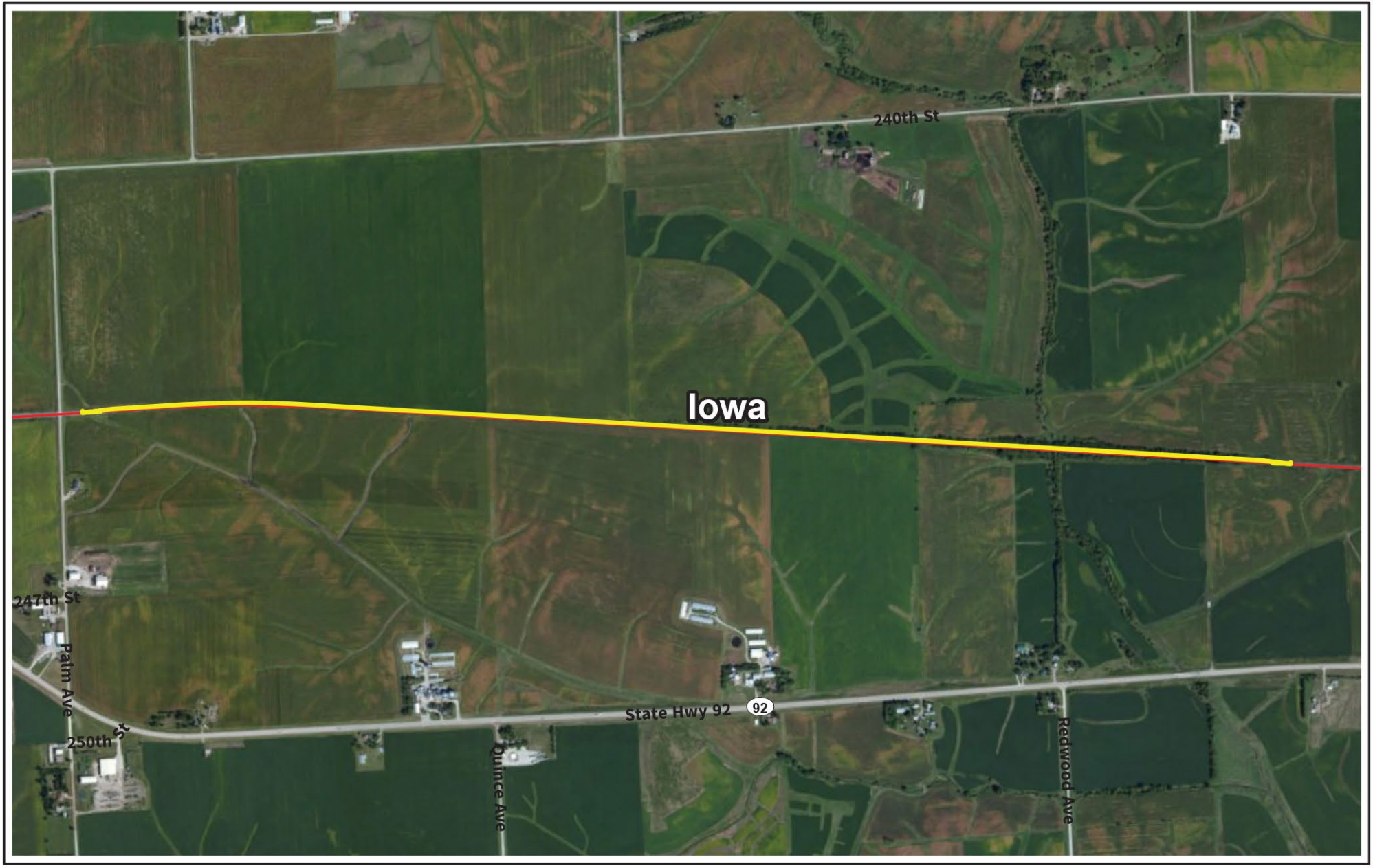


N

0 500 1,000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Letts
Louisa, Iowa



Capital Improvement Location

Chicago, Rock Island, & Pacific Railroad

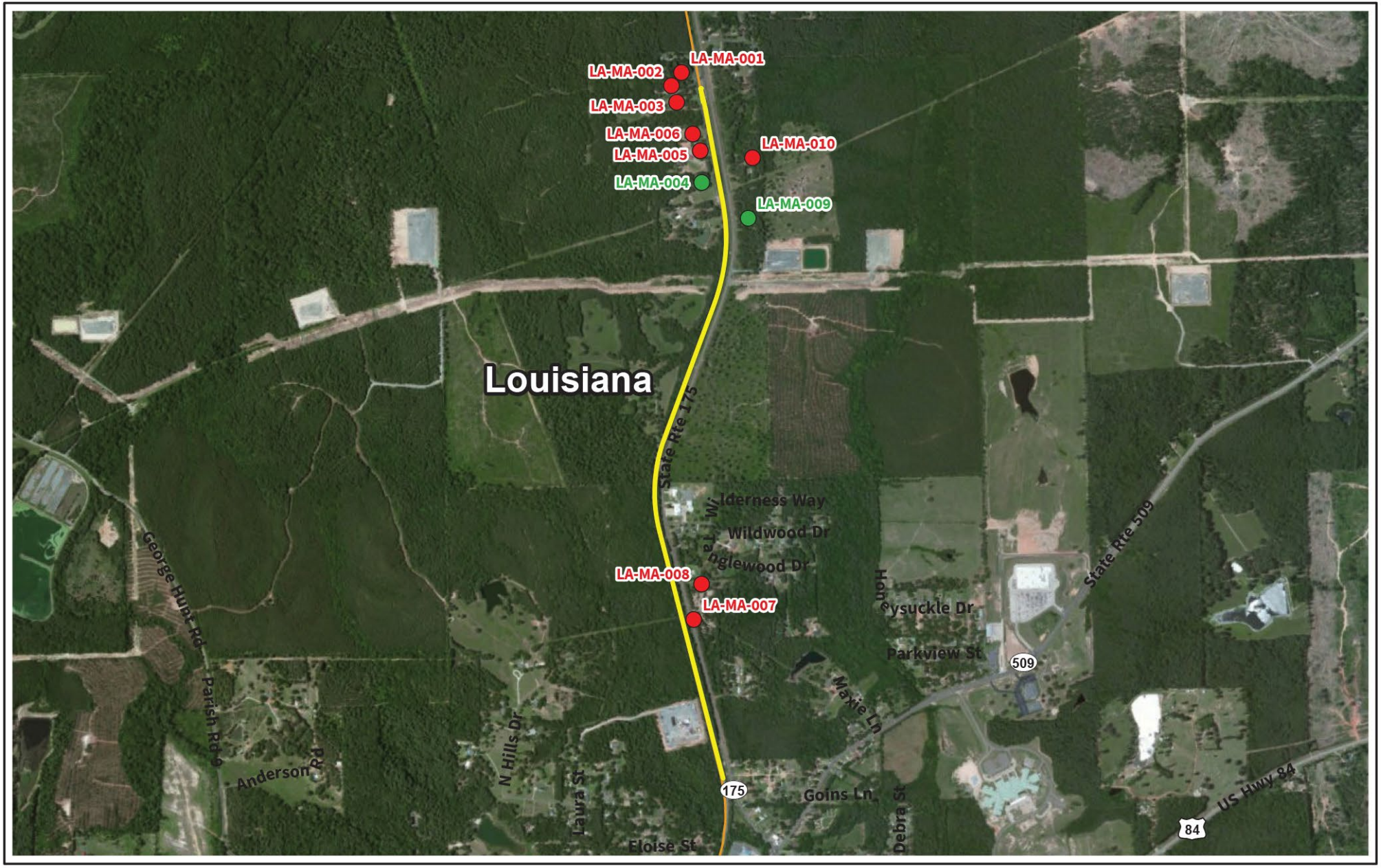


N

0 1,500 3,000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement MP 255 (Washington)
Washington, Iowa



Capital Improvement Location

Kansas City Southern Railroad

National Register Recommendation

Eligible

Not Eligible

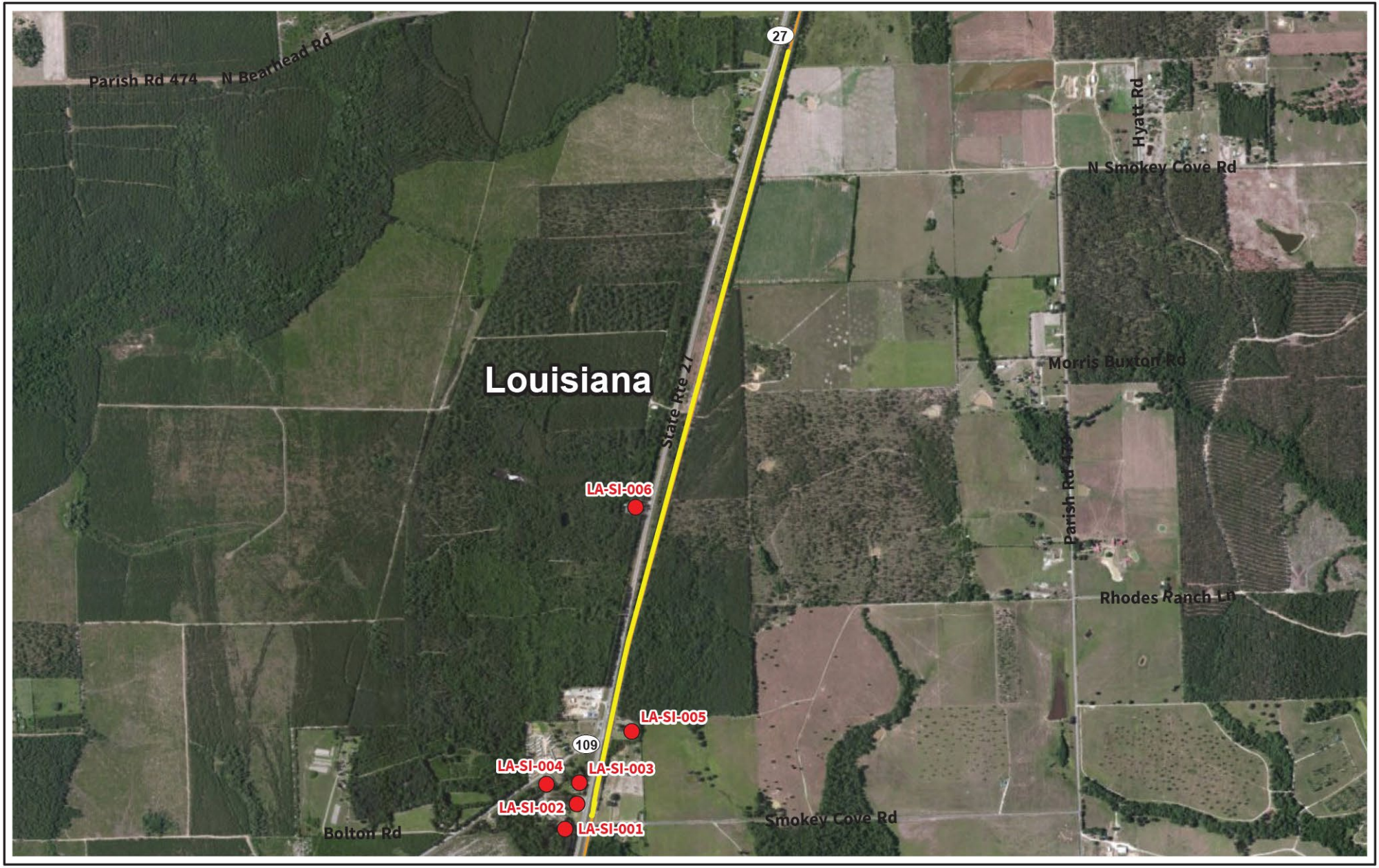


N

0 2,000 4,000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Mansfield
De Soto, Louisiana

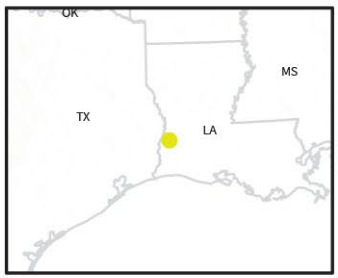


Capital Improvement Location

Kansas City Southern Railroad

National Register Recommendation

Not Eligible

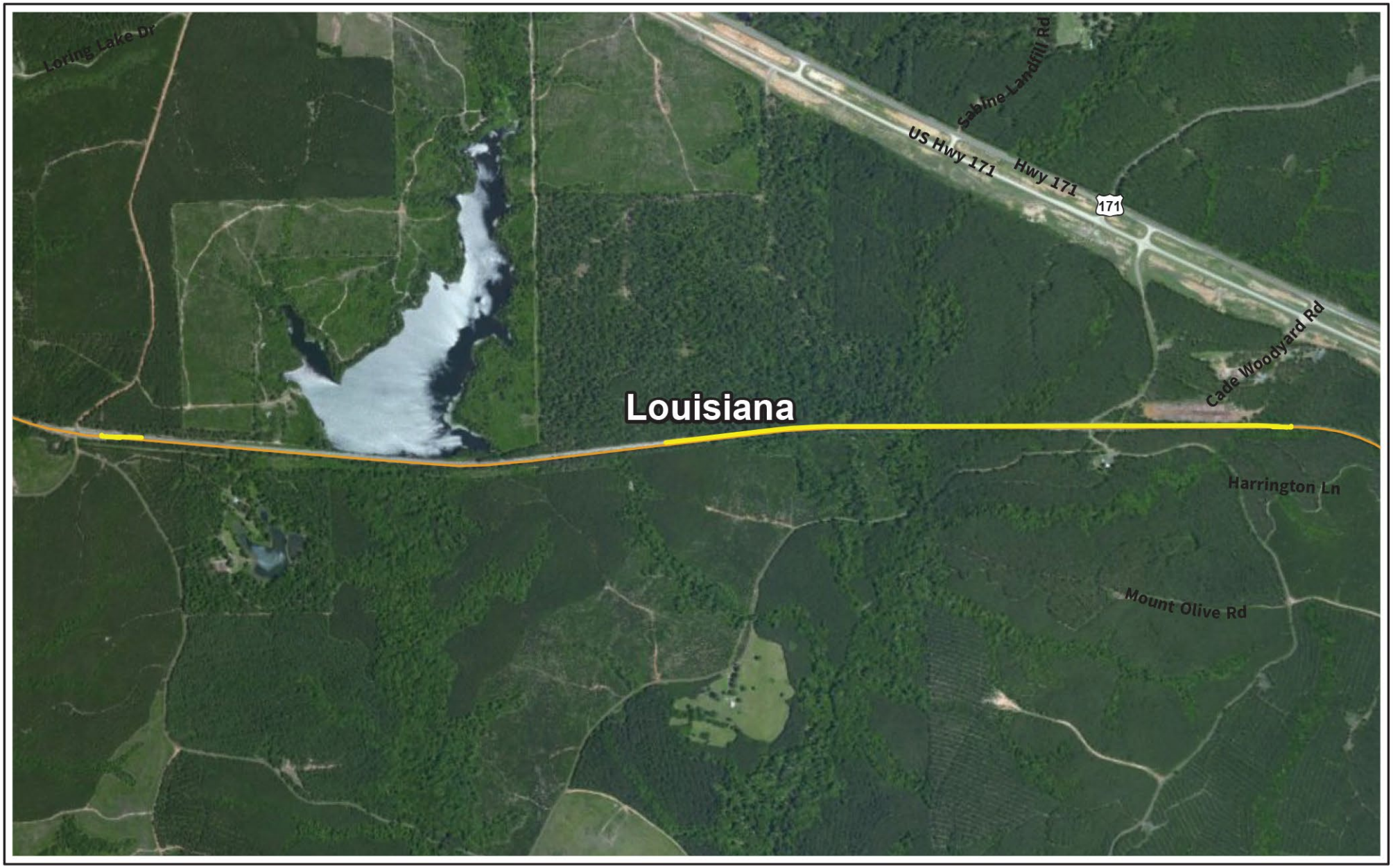


N

0 2,000 4,000 Feet

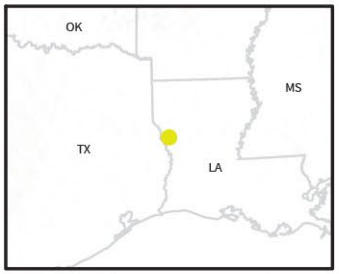
Source: FRA, CP, ArcGIS Online

Capital Improvement Singer
Beauregard, Louisiana



Capital Improvement Location

Kansas City Southern Railroad



N

0 1,500 3,000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Loring
Sabine, Louisiana

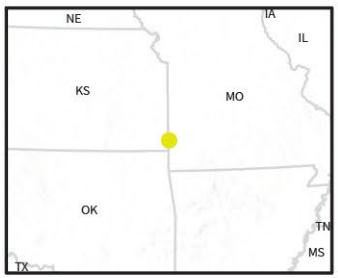


Capital Improvement Location

Kansas City Southern Railroad

National Register Recommendation

Not Eligible

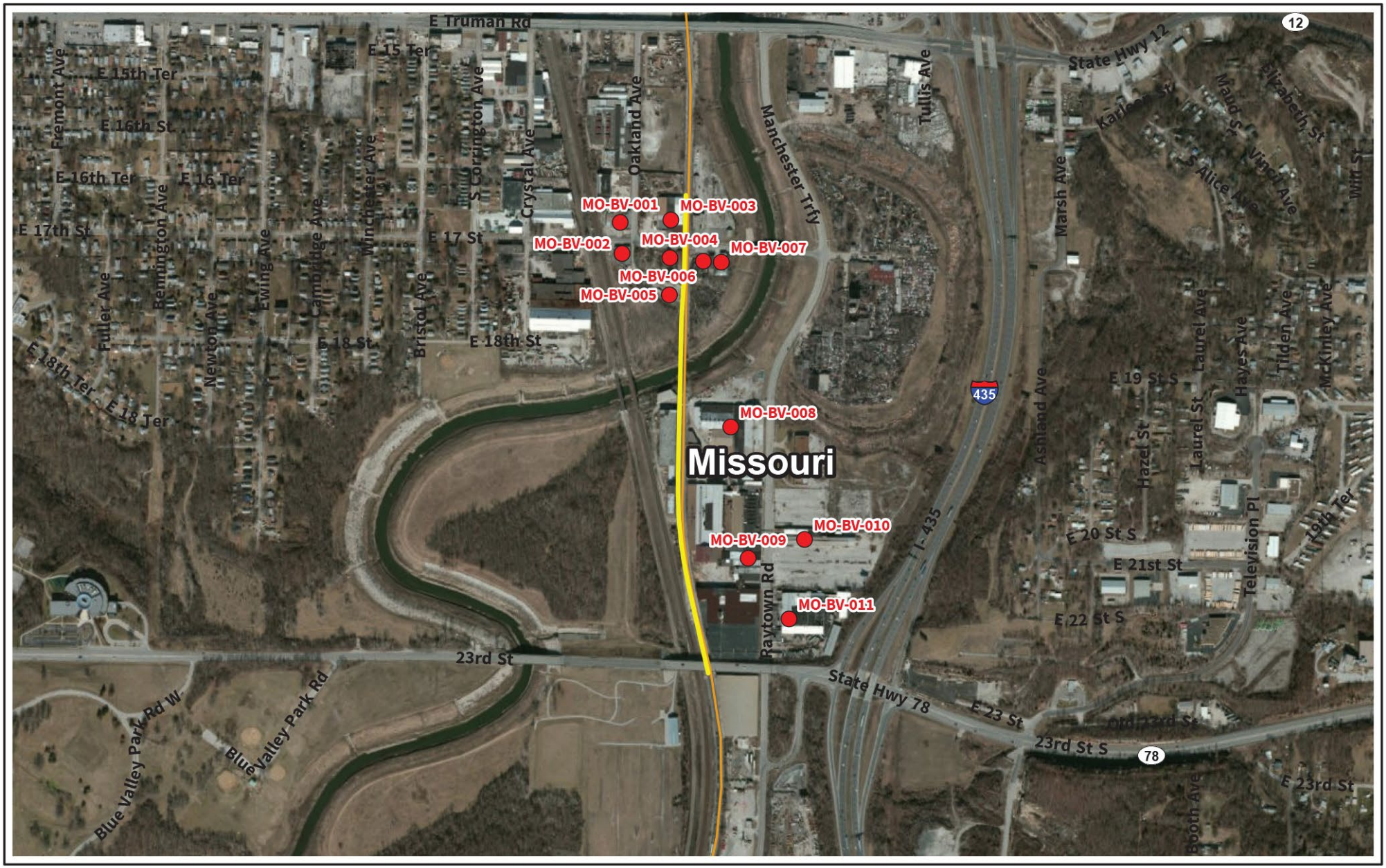


N

0 1,200 2,400 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Asbury
Jasper, Missouri



Capital Improvement Location

Kansas City Southern Railroad

National Register Recommendation

Not Eligible



N

0 1,000 2,000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Blue Valley (North)
Jackson, Missouri



Source: FRA, CP, ArcGIS Online

Capital Improvement Blue Valley (South)
Jackson, Missouri



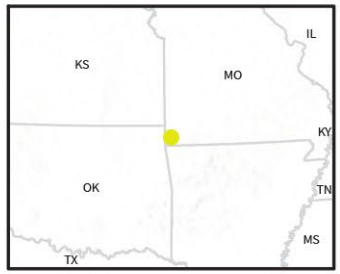
Capital Improvement Location

Kansas City Southern Railroad

National Register Recommendation

Eligible

Not Eligible



N

0 2,000 4,000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement MP 186
McDonald, Missouri

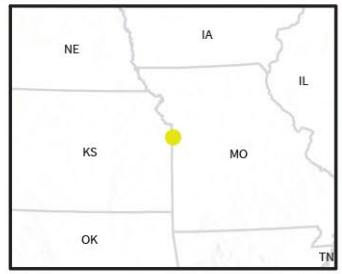


Capital Improvement Location

Kansas City Southern Railroad

National Register Recommendation

Not Eligible



N

0 3,200 6,400 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Grandview/IFG
Jackson/Cass, Missouri



Capital Improvement Location

Chicago, Milwaukee, St. Paul & Pacific Railroad

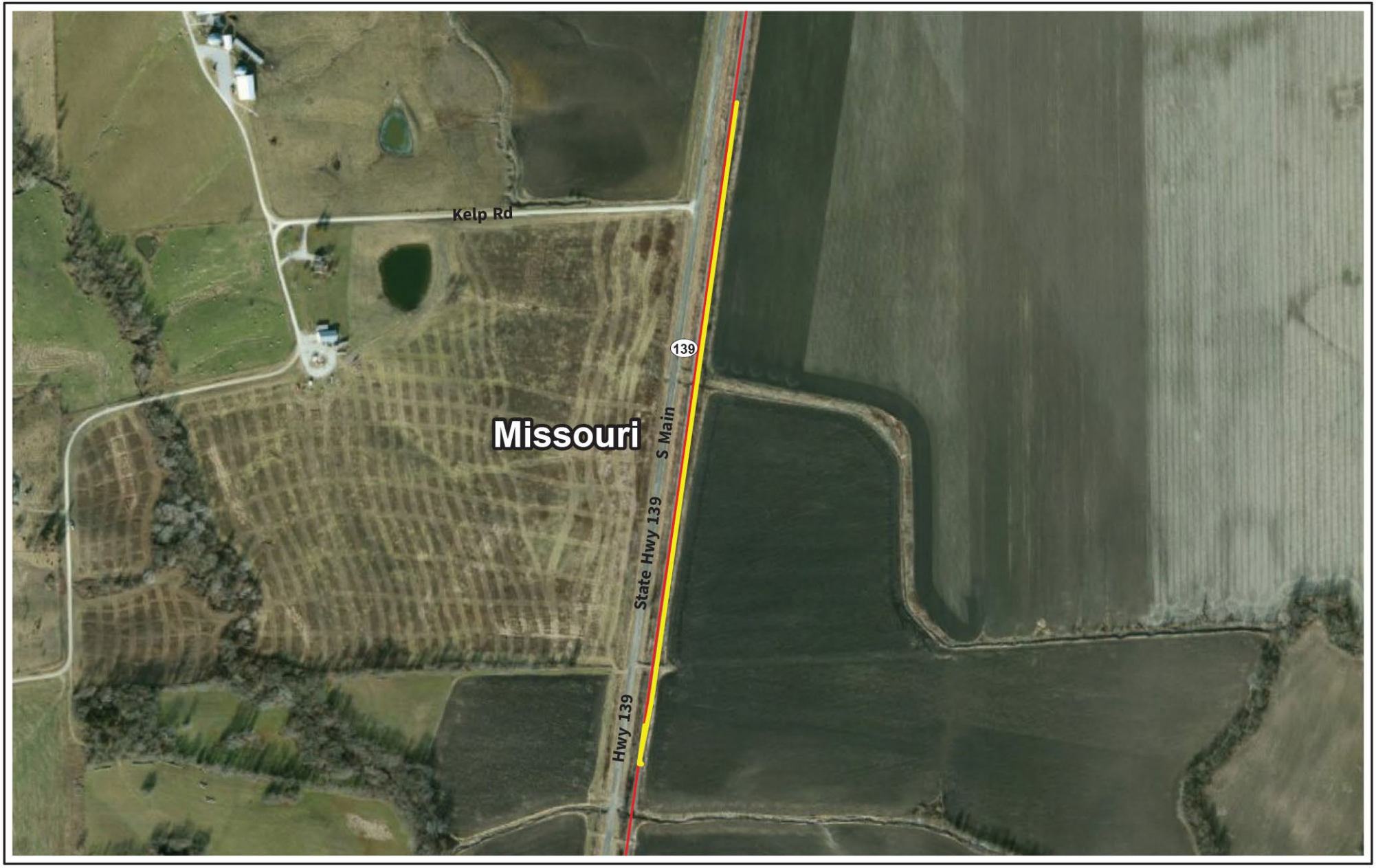
N

0 800 1,600 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Laredo
Grundy, Missouri



Capital Improvement Location

Chicago, Milwaukee, St. Paul & Pacific Railroad



N

0 700 1,400 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Newtown
Sullivan, Missouri



Capital Improvement Location

Chicago, Milwaukee, St. Paul & Pacific Railroad



N

0 1,800 3,600 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement MP 431 (Dawn)
Livingston, Missouri

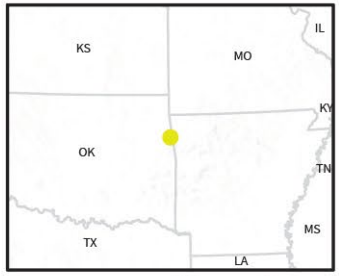


Capital Improvement Location

Kansas City Southern Railroad

National Register Recommendation

Not Eligible

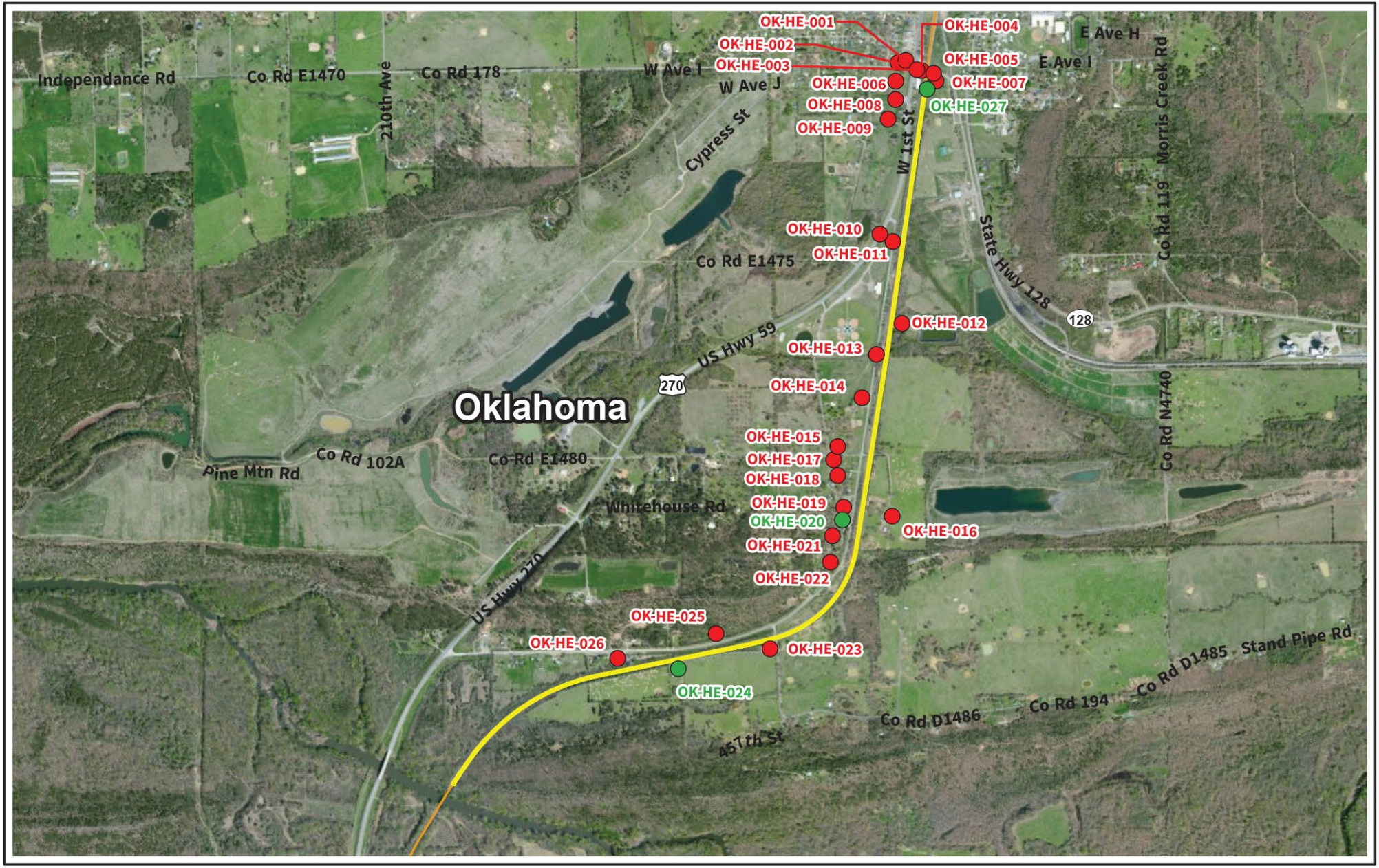


N

0 2,000 4,000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement MP 247 (Baron)
Adair, Oklahoma



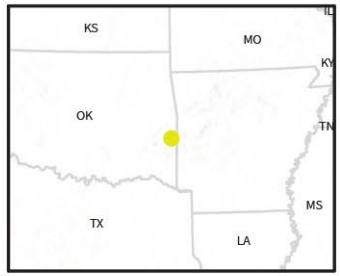
Capital Improvement Location

Kansas City Southern Railroad

National Register Recommendation

Eligible

Not Eligible



N

0 2,200 4,400 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Heavener
Le Flore, Oklahoma



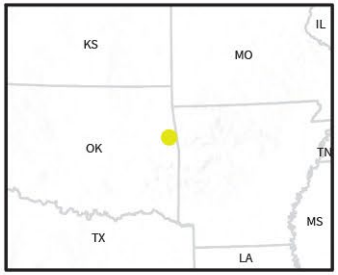
Capital Improvement Location

Kansas City Southern Railroad

N

0 1,000 2,000 Feet

Source: FRA, CP, ArcGIS Online

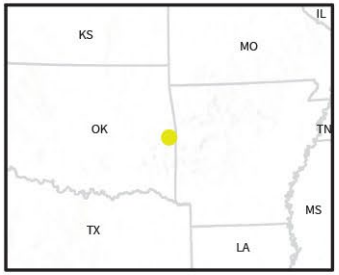


Capital Improvement Cave Springs
Adair, Oklahoma



Capital Improvement Location

Kansas City Southern Railroad



N

0 700 1,400 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Spiro
Le Flore, Oklahoma

Appendix K

Air Quality and Climate Change

This appendix provides technical information on the approach and results used in the analysis of air quality and climate change (*Chapter 3, Section 3.7*).

K.1 Introduction

CP and KCS, the Applicants, operate freight rail services from Canada to Mexico. OEA evaluated how the Proposed Acquisition-related increases in rail activity would affect air quality and greenhouse gases (GHGs). OEA has considered both long-term operational impacts and short-term impacts associated with the planned capital improvements.

K.2 Approach

OEA measured the air quality and greenhouse gas impacts of the Proposed Acquisition by assessing the air quality changes that meet or exceed the Board's thresholds and require an air quality assessment. The assessment includes the operational impacts and the impacts of the planned capital improvements.

For the operational impacts of the Proposed Acquisition, the air quality and greenhouse gases were assessed at the county level for each of the following:

- Rail line segments
- Grade crossings
- Rail yards including railcar switching
- Intermodal facilities including on-the-road trucks, lift equipment, yard trucks

The operational air quality and greenhouse gas impacts also included an assessment of the system-wide truck-to-rail diversions related to the Proposed Acquisition. OEA conducted a study area wide inventory that comprised of all the elements in the operational impacts assessments. The planned capital improvements assessment included a quantification of the air quality impacts of the construction equipment as well as fugitive dust associated with the general construction site work and earthwork.

K.3 Regulatory Context

The Clean Air Act (CAA) amendments, which are implemented by the U.S. Environmental Protection Agency (EPA), set forth guidelines for agencies to follow to achieve attainment of the National Ambient Air Quality Standards (NAAQS). The goal of the regulation is to

improve air quality across the United States to protect public health and welfare. The following sections describe CAA components, including the NAAQS, General Conformity, and Class I Areas.

K.3.1 National Ambient Air Quality Standards

The CAA requires the EPA to set NAAQS (40 C.F.R. Part 50) for six air pollutants known as the criteria pollutants: CO, lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and SO_2. NAAQS standards are based on human health criteria for the protection of public health (primary standards) and on environmental criteria to prevent environmental and property damage and for the protection of public welfare (secondary standards). **Table K.3-1** presents the current NAAQS.

Table K.3-1. National Ambient Air Quality Standards

Pollutant	Primary or Secondary	Averaging Time	Level	Form
Carbon Monoxide	Primary	8 hours	9 ppm	Not to be exceeded more than once per year
		1 hour	35 ppm	
Lead	Primary and Secondary	Rolling 3-month Average	0.15 µg/m^3	Not to be exceeded
Nitrogen Dioxide	Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations; averaged over 3 years
	Primary and Secondary	1 year	53 ppb	Annual Mean
Ozone	Primary and Secondary	8 hours	0.070 ppm	Annual 4th highest daily maximum 8-hour concentration; averaged over 3 years
Particulate Matter 2.5	Primary	1 year	12.0 µg/m^3	Annual mean, averaged over 3 years
	Secondary	1 year	15.0 µg/m^3	Annual mean, averaged over 3 years
	Primary and Secondary	24 hours	35 µg/m^3	98th percentile; averaged over 3 years
Particulate Matter 10	Primary and Secondary	24 hours	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide	Primary	1 hour	75 ppb	99th percentile of 1-hour daily maximum concentrations; averaged over 3 years
	Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

Source: EPA 2021d
Note: ppm = parts per million; ppb = parts per billion; µg/m3 = micrograms per cubic meter

In consultation with EPA, OEA has determined that certain emissions from Board actions, such as emissions from construction activities related to the jurisdictional construction of a new line of railroad, are subject to the General Conformity regulations because those meet the definition of direct or indirect emissions set forth at 40 C.F.R. § 93.152. However, emissions related to projected increases in rail operations on rail lines or projected increases in activities at rail yards and intermodal facilities resulting from Board decisions are not subject to General Conformity because the Board does not exercise continuing program responsibility over and cannot practically control rail operations on rail lines or activities at

rail yards and intermodal facilities (STB 2021). Accordingly, emissions from projected increases in rail traffic and increased activities at rail yards and intermodal facilities resulting from the Proposed Acquisition are not subject to General Conformity.

The EPA has established *de minimis* emission levels under 40 C.F.R. Part 93, Subpart B. The EPA uses the term *de minimis* across a variety of contexts to describe impacts that are too small or trivial for consideration by regulatory authorities. OEA has compared Proposed Acquisition-related emissions to the *de minimis* thresholds to contextualize the potential air quality impacts of the Proposed Acquisition (presented in **Table K.3-2**).

Table K.3-2. De Minimis Levels

Pollutant	Tons per Year	Area Type
Ozone (VOC or NO_x)	50	Serious Nonattainment
	25	Severe Nonattainment
	10	Extreme Nonattainment
	100	Other Areas Outside an Ozone Transport Region[1]
Ozone (NO_x)	100	Marginal and Moderate Nonattainment Inside an Ozone Transport Region[1]
	100	Maintenance
Ozone (VOC)	50	Marginal and Moderate Nonattainment Inside an Ozone Transport Region[1]
	50	Maintenance Within an Ozone Transport Region[1]
	100	Maintenance Outside an Ozone Transport Region[1]
Carbon Monoxide (CO), Sulfur Dioxide (SO_2) and Nitrogen Dioxide (NO_2)	100	All Nonattainment and Maintenance
Particulate Matter 10 (PM_{10})	70	Serious Nonattainment
	100	Moderate Nonattainment and Maintenance
Particulate Matter 2.5 ($PM_{2.5}$)[2]	100	All Nonattainment and Maintenance
Lead (Pb)	25	All Nonattainment and Maintenance

Source: EPA 2021e

[1] The Ozone Transport Region is composed of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and the District of Columbia.

[2] Direct emissions, SO_2, NO_x, (unless determined not to be a significant precursor), VOC or ammonia (if determined to be a significant precursor)

K.3.1.2 Class I Areas and Air Quality Related Values

Air quality related values (AQRVs) are environmental resources that may be affected by changes in air quality. These AQRVs can include aspects of visibility, water quality, and the health and vitality of plants, animals, and other life forms that reside in and around federal parks and protected lands. The CAA and federal land management agencies have regulations set forth to particularly address impacts on acid deposition and visibility in Class I areas (Sullivan 2016). As presented in **Table K.3-1**, the secondary NAAQS standards set limits to protect public welfare, including protection against decreased visibility, damage to

animals, crops, vegetation, and buildings where the Class I areas are an environmental resource.

K.3.1.3 Acid Deposition

Acid deposition occurs when sulfur oxides (SO_x) and nitrogen oxides (NO_x) release from various sources and combine in the atmosphere to form acidic substances. These sulfuric and nitric acids damage soil, vegetation, and water quality and particularly, the acid-neutralizing capacity of lakes. EPA provides data on acid deposition levels in units of kilogram per hectare (kg/ha) from the Clean Air Status and Trends Network (CASTNET) (EPA 2021f).

K.3.1.4 Visibility

Visibility impairment occurs when pollutant emissions absorb and scatter light in the atmosphere, and thus result in a haze that reduces clarity of view. This haze is primarily a result of fine particulate emissions, which include $PM_{2.5}$, sulfates, and nitrates. Sulfates and nitrates, which are formed from SO_x and NO_x emissions, are precursors of $PM_{2.5}$. These emissions are induced from natural or anthropogenic sources. The visibility of an area is measured through haze index in "deciviews" or standard visual range (SVR) in miles or kilometers. A low haze index and a high SVR is indicative of improved visibility. The Federal Land Manager Environmental Database provides access to such data from Interagency Monitoring of Protected Visual Environments (IMPROVE) monitors (Colorado State University, nd). IMPROVE monitors provide visibility data for Class I areas throughout the nation.

K.3.2 Pollutant Descriptions and Effects

OEA identified pollutants in the affected environment and their effects on human health and the environment from publicly available regulations and databases provided by EPA. The following sections describe the various pollutants that OEA analyzed in this study and their potential effects on health or the environment.

K.3.2.1 Criteria Pollutants

Air pollution is of concern because of its demonstrated effects on human health. Of particular concern are the respiratory effects of the criteria pollutants for which the NAAQS are set, as described in **Table K.3-3**.

Table K.3-3. Criteria Pollutant Summary

Pollutant	Description
Ozone (O_3)	O_3 is a highly reactive compound of oxygen. At very high concentrations O_3 appears blue in color, is a highly unstable gas and is pungent in odor. At ambient concentrations, O_3 is colorless and odorless. O_3 is not emitted directly into the atmosphere by pollutant sources, but instead is produced by an atmospheric reaction of NO_X and VOCs. Generally, this reaction is most favorable during the warmer summer months when sunlight is stronger. Exposure to O_3 may impair lung function and cause respiratory difficulties to sensitive populations (for example a person with asthma, emphysema or reduced lung capacity).

Table K.3-3. Criteria Pollutant Summary

Pollutant	Description
Sulfur Dioxide (SO_2)	SO_2 emissions are the main components of the "oxides of sulfur," a group of highly reactive gases from fossil fuel combustion at power plants, other industrial facilities, industrial processes, and burning of high sulfur containing fuels by large ships and non-road equipment. High concentrations of SO_2 will lead to formation of other sulfur oxides. By reducing the SO_2 emissions, other forms of sulfur oxides are also expected to decrease. When oxides of sulfur react with other compounds in the atmosphere, small particles that can affect the lungs can be formed. This can lead to respiratory disease and aggravate existing heart disease.
Particulate Matter (PM_{10} and $PM_{2.5}$)	Particulate matter is comprised of small solid particles and liquid droplets. PM_{10} refers to particulate matter with a nominal aerodynamic diameter of 10 micrometers or less, and $PM_{2.5}$ refers to particulate matter with an aerodynamic diameter of 2.5 micrometers or less. Particulates can enter the body through the respiratory system. Particulates over 10 micrometers in size are generally captured in the nose and throat and are readily expelled from the body. Particles smaller than 10 micrometers, and especially particles smaller than 2.5 micrometers, can reach the air ducts (bronchi) and the air sacs (alveoli) in the lungs. Particulates are associated with increased incidence of respiratory diseases, cardiopulmonary disease, and cancer.
Carbon Monoxide (CO)	CO is a colorless and odorless gas that is a product of incomplete combustion. CO is absorbed by the lungs and reacts with hemoglobin to reduce the oxygen carrying capacity of the blood. At low concentrations, CO has been shown to aggravate the symptoms of cardiovascular disease. It can cause headaches, nausea, and at sustained high concentration levels, can lead to coma and death.
Nitrogen Dioxide (NO_2)	When combustion temperatures are extremely high, such as in engines, atmospheric nitrogen gas may combine with oxygen gas to form various oxides of nitrogen. Of these, nitric oxide (NO) and NO_2 are the most significant air pollutants. This group of pollutants is generally referred to as NO_X. Nitric oxide is relatively harmless to humans but quickly converts to NO_2. NO_2 has been found to be a lung irritant and can lead to respiratory illnesses. Nitrogen oxides, along with VOCs, are also precursors to ozone formation.
Lead (Pb)	Pb is a heavy metal that can affect the nervous system, kidneys, immune system, reproductive system, and cardiovascular system when exposed to substantial doses. Pb is emitted through some heavy industrial manufacturing processes, especially those associated with metal processing. The addition of Pb to fuel increases engine performance and reduces valve wear; however, general use of Pb as a fuel additive has been phased out for on-road vehicles in the United States. Since this phase out, Pb concentrations in ambient air are often low. States with no significant lead emitting sources typically do not measure Pb at their ambient air monitoring stations.

Hazardous Air Pollutants

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that EPA regulate 188 air toxics, also known as hazardous air pollutants (HAPs). EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (*Federal Register*, Vol. 72, No. 37), and identified a group of 93 compounds emitted from mobile sources, listed in their Integrated Risk Information System (EPA 2021h). In addition, EPA identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 2011 National Air Toxics Assessment (EPA 2021i). The nine compounds are called mobile source air toxics

and are typically associated with transportation sources including motor vehicles, construction equipment, and locomotives. These are 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter. OEA considered these nine compounds in the emissions assessment.

Greenhouse Gases

In nature, carbon dioxide (CO_2) is exchanged continually between the atmosphere, plants, and animals through processes of photosynthesis, respiration, and decomposition, and between the atmosphere and ocean through gas exchange. Oceans and living biomass (i.e., sinks) absorb billions of tons of carbon in the form of CO_2 and emit it to the atmosphere annually through natural and man-made processes (i.e., sources). CO_2, however, constitutes less than $1/10^{th}$ of a percent of the total atmosphere gases. Similar to the glass in a greenhouse, certain gases, primarily CO_2, nitrous oxide (N_2O), and methane (CH_4) absorb heat that the surface of the Earth radiates. Increases in the atmospheric concentrations of these gases can cause the Earth to warm by trapping more heat. The common term for this phenomenon is the "greenhouse effect," and these gases are typically referred to as "greenhouse gases." GHG emissions have effects at the regional and global scale and are thus reviewed at a regional scale. In 2007, the Supreme Court determined that GHGs are anticipated to endanger public health and therefore are part of the EPA's responsibility to regulate under the CAA. In 2009, the EPA signed an endangerment finding in the CAA that stated the current and projected concentrations of the six key GHGs in the atmosphere could threaten the public health and welfare of current and future generations.

EPA has not established ambient air standards for GHGs like the criteria pollutants have under the NAAQS. However, the Council on Environmental Quality (CEQ) has created guidelines for conducting GHG and climate change analyses in NEPA Documents (CEQ 2016). A draft GHG guidance document was released by CEQ in 2019; however, Presidential Executive Order 13990, signed in 2021, rescinded the 2019 draft guidance, making the previously implemented 2016 guidance document the current guidance for use in NEPA documents. The 2016 guidance states that where feasible, federal agencies should include a quantitative analysis of potential GHG emissions from a proposed action. When tools, methodologies, or data inputs are not reasonably available, a qualitative evaluation should be provided. This analysis should consider direct, indirect, and cumulative emissions. It should evaluate both short- and long-term effects of the proposed action and alternatives. When appropriate, mitigation should be considered to avoid, minimize, and compensate for increased GHG emissions.

CP and KCS have both committed to setting science-based targets to reduce GHG emissions in line with the Paris Agreement and the merged entity would continue that work in support of a more sustainable North American supply chain. KCS plans to reduce GHG emissions intensity by 42 percent per million gross ton-miles by 2034 from a 2019 base year (KCS 2021). CP has committed to reduce locomotive emissions by 38 percent by 2030 and non-locomotive emissions by 27.5 percent by 2030 (CP 2021).

K.4 Affected Environment

The affected environment for air quality is determined by the attainment status of the counties in the study area and by identifying proximate Class I Areas. The majority of affected counties with operational impacts and the impacts of the planned capital improvements that exceed the Board's thresholds for environmental analyses are in attainment of all NAAQS. **Table K.4-1** presents the affected counties that are nonattainment or maintenance areas.

Table K.4-1. Attainment Statuses of Affected Counties

State	County	Criteria Pollutants						
		O_3	SO_2	$PM_{2.5}$	PM_{10}	CO	NO_2	Pb
Arkansas	Benton	-	-	-	-	-	-	-
Arkansas	Little River	-	-	-	-	-	-	-
Arkansas	Miller	-	-	-	-	-	-	-
Arkansas	Polk	-	-	-	-	-	-	-
Arkansas	Sevier	-	-	-	-	-	-	-
Illinois	Carroll	-	-	-	-	-	-	-
Illinois	Cook	NA-Serious[1]	-	-[2]	-	-	-	-
Illinois	DeKalb	-	-	-	-	-	-	-
Illinois	DuPage	NA-Serious[1]	-	-[2]	-	-	-	-
Illinois	Kane	NA-Serious[1]	-	-[2]	-	-	-	-
Illinois	Ogle	-	-	-	-	-	-	-
Iowa	Appanoose	-	-	-	-	-	-	-
Iowa	Clayton	-	-	-	-	-	-	-
Iowa	Clinton	-	-	-	-	-	-	-
Iowa	Jackson	-	-	-	-	-	-	-
Iowa	Jefferson	-	-	-	-	-	-	-
Iowa	Keokuk	-	-	-	-	-	-	-
Iowa	Louisa	-	-	-	-	-	-	-
Iowa	Monroe	-	-	-	-	-	-	-
Iowa	Muscatine	-	NA	-	-	-	-	-
Iowa	Scott	-	-	-	-	-	-	-
Iowa	Wapello	-	-	-	-	-	-	-
Iowa	Washington	-	-	-	-	-	-	-
Iowa	Wayne	-	-	-	-	-	-	-
Kansas	Cherokee	-	-	-	-	-	-	-
Kansas	Crawford	-	-	-	-	-	-	-
Louisiana	Beauregard	-[3]	-	-	-	-	-	-
Louisiana	Caddo	-	-	-	-	-	-	-
Louisiana	Calcasieu	-[3]	-	-	-	-	-	-
Louisiana	De Soto	-	-	-	-	-	-	-

Table K.4-1. Attainment Statuses of Affected Counties

State	County	Criteria Pollutants						
		O_3	**SO_2**	**$PM_{2.5}$**	**PM_{10}**	**CO**	**NO_2**	**Pb**
Louisiana	Sabine	-	-	-	-	-	-	-
Louisiana	Vernon	-	-	-	-	-	-	-
Michigan	Wayne	NA-Marginal[1]	-	M	-	-[4]	-	-
Minnesota	Hennepin	-	-[4]	-	-	-[4]	-	-
Missouri	Barton	-	-	-	-	-	-	-
Missouri	Bates	-	-	-	-	-	-	-
Missouri	Caldwell	-	-	-	-	-	-	-
Missouri	Cass	-	-	-	-	-	-	-
Missouri	Clay	-[3]	-	-	-	-	-	-
Missouri	Grundy	-	-	-	-	-	-	-
Missouri	Jackson	-[3]	NA	-	-	-	-	-
Missouri	Jasper	-	-	-	-	-	-	-
Missouri	Livingston	-	-	-	-	-	-	-
Missouri	McDonald	-	-	-	-	-	-	-
Missouri	Newton	-	-	-	-	-	-	-
Missouri	Putnam	-	-	-	-	-	-	-
Missouri	Ray	-	-	-	-	-	-	-
Missouri	Sullivan	-	-	-	-	-	-	-
Missouri	Vernon	-	-	-	-	-	-	-
Oklahoma	Adair	-	-	-	-	-	-	-
Oklahoma	Le Flore	-	-	-	-	-	-	-
Oklahoma	Sequoyah	-	-	-	-	-	-	-
Texas	Bowie	-	-	-	-	-	-	-
Texas	Cass	-	-	-	-	-	-	-
Texas	Collin	NA-~~Serious~~Severe[1]	-	-	-	-	-	-
Texas	Denton	NA-Severe~~Serious~~[1]	-	-	-	-	-	-
Texas	Duval	-	-	-	-	-	-	-
Texas	Fort Bend	NA-Severe~~Serious~~[1]	-	-	-	-	-	-
Texas	Harris	NA-Severe~~Serious~~[1]	-	-	-	-	-	-
Texas	Jackson	-	-	-	-	-	-	-
Texas	Jefferson	M[5]	-	-	-	-	-	-
Texas	Jim Hogg	-	-	-	-	-	-	-
Texas	Jim Wells	-	-	-	-	-	-	-
Texas	Liberty	NA-Severe~~Serious~~[1]	-	-	-	-	-	-

Table K.4-1. Attainment Statuses of Affected Counties

State	County	Criteria Pollutants						
		O_3	**SO_2**	**$PM_{2.5}$**	**PM_{10}**	**CO**	**NO_2**	**Pb**
Texas	Newton	-	-	-	-	-	-	-
Texas	Nueces	-	-	-	-	-	-	-
Texas	Orange	M[5]	-	-	-	-	-	-
Texas	Refugio	-	-	-	-	-	-	-
Texas	San Patricio	-	-	-	-	-	-	-
Texas	Tarrant	NA-Severe~~rious~~[1]	-	-	-	-	-	-
Texas	Victoria	-[3]	-	-	-	-	-	-
Texas	Webb	-	-	-	-	-	-	-
Texas	Wharton	-	-	-	-	-	-	-

Source: EPA 2021b

Note: - = Attainment; M = Maintenance; NA = Nonattainment; O_3 = Ozone; NO_2 = Nitrogen Dioxide; PM_{10} = Particulate Matter 10 microns or less in diameter; $PM_{2.5}$ = Particulate Matter 2.5 microns or less in diameter; SO_2 = Sulfur Dioxide; CO = Carbon Monoxide; Pb = Lead.

[1] Ozone nonattainment designations are ranked by the severity of their exceedance of the NAAQS. The affected counties have "severe," "serious" and "marginal" designations which effect the *de minimis* thresholds used to assess the project's emissions. The classifications in the Final EIS reflect EPA's ozone reclassifications that became effective November 7, 2022.

[2] This county is a former maintenance area for the revoked 1997 Annual $PM_{2.5}$ standard. Areas that have been redesignated to attainment are not required to make transportation or general conformity determinations.

[3] This county is a former maintenance area for the revoked 1979 1-hour Ozone standard. Areas that have been redesignated to attainment are not required to make transportation or general conformity determinations.

[4] This county is a former maintenance area for the respective pollutant. The 20-year maintenance plan has expired, as such transportation and general conformity are no longer applicable.

[5] This county is a former maintenance area for revoked 1997 8-hour Ozone standard. As a result of the *South Coast Air Quality Management District v. EPA* court case, these areas are considered "orphan areas" and are still subject to conformity requirements under their maintenance plans.

K.5 Study Area-Wide Emissions

OEA created a study area-wide emissions inventory by summing all the emissions in the county-level analysis. The study area-wide analysis includes the anticipated reduction in emissions associated with truck-to-rail diversions. **Table K.5-1** presents the study area-wide summary.

Table K.5-1. Study Area Wide Emissions Analysis Summary

	Acquisition-Related Criteria Emissions (tons/year)							Acquisition-Related HAP Emissions (tons/year)							
Source	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
Rail Segment	5,702.5	239.7	152.3	147.7	3.8	1,083.2	416,787	18.769	3.835	5.393	0.446	0.920	53.455	0.654	0.670
Rail Yard	7.8	0.5	0.2	0.2	0.0	1.1	420	0.040	0.008	0.011	0.001	0.002	0.113	0.001	0.001
Intermodal Facility	14.4	0.7	0.3	0.3	0.0	3.9	5,752	0.031	0.005	0.007	0.001	0.004	0.059	0.002	0.000
Grade Crossing	0.1	0.0	0.0	0.0	0.0	0.6	123	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002
Emissions Subtotal	***5,724.9***	***240.9***	***152.8***	***148.2***	***3.8***	***1,088.8***	***423,083***	***18.840***	***3.848***	***5.412***	***0.448***	***0.927***	***53.627***	***0.658***	***0.673***

Note: See individual analyses tables for further information on emissions analyses and assumptions.

K.6 County-Level Emissions

OEA analyzed a county-level emissions inventory for all operational impacts and the impacts of the planned capital improvements that exceeded the Board's thresholds for analysis. OEA conducted county-level emissions analyses for rail line segments, grade crossings, rail yards, and intermodal facilities. OEA estimated emissions for Nitrogen Oxides (NO_X), Volatile Organic Compounds (VOC), Particulate Matter (PM): PM_{10}, and $PM_{2.5}$, Sulfur Dioxide (SO_2), Carbon Monoxide (CO), Carbon ~~Monoxide~~ Dioxide equivalents (CO_2e), Methane (CH_4), Nitrogen Dioxide (N_2O), and HAPs. OEA calculated CO_2e by deriving CO_2, CH_4, and N_2O emissions and applying global warming potentials (EPA 2021a). **Table K.6-1** presents criteria pollutant emissions and **Table K.6-2** presents HAPs.

Table K.6-1. County-Level Emissions Analysis Summary-Criteria Pollutants and GHG

					Acquisition-Related Criteria Emissions (tons/year)							*De Minimis Emissions (tons/year)*						
State	**County**	**Attainment**	**Pollutant**	**Source**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	***NOX***	***VOC***	***PM10***	***PM2.5***	***SO2***	***CO***	***CO2e***
Arkansas	Benton	Attainment	-	Rail Segment	121.8	5.1	3.3	3.2	0.1	23.1	8,904							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	3							
				County Total	**121.8**	**5.1**	**3.3**	**3.2**	**0.1**	**23.2**	**8,907**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Arkansas	Little River	Attainment	-	Rail Segment	142.6	6.0	3.8	3.7	0.1	27.1	10,423							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	0							
				County Total	**142.6**	**6.0**	**3.8**	**3.7**	**0.1**	**27.1**	**10,424**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Arkansas	Miller	Attainment	-	Rail Segment	33.1	1.4	0.9	0.9	0.0	6.3	2,419							
				County Total	**33.1**	**1.4**	**0.9**	**0.9**	**0.0**	**6.3**	**2,419**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Arkansas	Polk	Attainment	-	Rail Segment	234.8	9.9	6.3	6.1	0.2	44.6	17,162							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	1							
				County Total	**234.8**	**9.9**	**6.3**	**6.1**	**0.2**	**44.6**	**17,163**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Arkansas	Sevier	Attainment	-	Rail Segment	106.8	4.5	2.9	2.8	0.1	20.3	7,806							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	1							
				County Total	**106.8**	**4.5**	**2.9**	**2.8**	**0.1**	**20.3**	**7,806**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Illinois	Carroll	Attainment	-	Rail Segment	69.3	2.9	1.9	1.8	0.0	13.2	5,063							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	0							
				County Total	**69.3**	**2.9**	**1.9**	**1.8**	**0.0**	**13.2**	**5,063**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Illinois	Cook	Nonattainment	Ozone-Serious	Rail Segment	23.5	1.0	0.6	0.6	0.0	4.5	1,719							
				Rail Yard	6.5	0.4	0.2	0.2	0.0	0.9	349							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	2							
				Intermodal Facility	7.9	0.4	0.2	0.2	0.0	2.2	3,057							
				County Total	**38.0**	**1.8**	**1.0**	**0.9**	**0.0**	**7.6**	**5,127**	***50***	***50***	**-**	**-**	**-**	**-**	**-**
Illinois	DeKalb	Attainment	-	Rail Segment	45.1	1.9	1.2	1.2	0.0	8.6	3,294							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	0							
				County Total	**45.1**	**1.9**	**1.2**	**1.2**	**0.0**	**8.6**	**3,294**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Illinois	DuPage	Nonattainment	Ozone-Serious	Rail Segment	29.3	1.2	0.8	0.8	0.0	5.6	2,144							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	5							
				County Total	**29.3**	**1.2**	**0.8**	**0.8**	**0.0**	**5.6**	**2,144**	***50***	***50***	**-**	**-**	**-**	**-**	**-**
Illinois	Kane	Nonattainment	Ozone-Serious	Rail Segment	45.5	1.9	1.2	1.2	0.0	8.6	3,324							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	4							
				County Total	**45.5**	**1.9**	**1.2**	**1.2**	**0.0**	**8.7**	**3,327**	***50***	***50***	**-**	**-**	**-**	**-**	**-**
Illinois	Ogle	Attainment	-	Rail Segment	96.8	4.1	2.6	2.5	0.1	18.4	7,078							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	0							
				County Total	**96.8**	**4.1**	**2.6**	**2.5**	**0.1**	**18.4**	**7,079**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Iowa	Appanoose	Attainment	-	Rail Segment	86.0	3.6	2.3	2.2	0.1	16.3	6,285							
				County Total	**86.0**	**3.6**	**2.3**	**2.2**	**0.1**	**16.3**	**6,285**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Iowa	Clinton	Attainment	-	Rail Segment	75.3	3.2	2.0	2.0	0.1	14.3	5,504							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	2							
				County Total	**75.3**	**3.2**	**2.0**	**2.0**	**0.1**	**14.3**	**5,506**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Iowa	Jackson	Attainment	-	Rail Segment	7.9	0.3	0.2	0.2	0.0	1.5	580							
				County Total	**7.9**	**0.3**	**0.2**	**0.2**	**0.0**	**1.5**	**580**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Iowa	Jefferson	Attainment	-	Rail Segment	16.4	0.7	0.4	0.4	0.0	3.1	1,195							
				County Total	**16.4**	**0.7**	**0.4**	**0.4**	**0.0**	**3.1**	**1,195**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Iowa	Keokuk	Attainment	-	Rail Segment	29.2	1.2	0.8	0.8	0.0	5.5	2,134							
				County Total	**29.2**	**1.2**	**0.8**	**0.8**	**0.0**	**5.5**	**2,134**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table K.6-1. County-Level Emissions Analysis Summary-Criteria Pollutants and GHG

					Acquisition-Related Criteria Emissions (tons/year)							*De Minimis Emissions (tons/year)*						
State	**County**	**Attainment**	**Pollutant**	**Source**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	***NOX***	***VOC***	***PM10***	***PM2.5***	***SO2***	***CO***	***CO2e***
Iowa	Louisa	Attainment	-	Rail Segment	67.0	2.8	1.8	1.7	0.0	12.7	4,900							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	0							
				County Total	**67.0**	**2.8**	**1.8**	**1.7**	**0.0**	**12.7**	**4,900**	-	-	-	-	-	-	-
Iowa	Monroe	Attainment	-	Rail Segment	38.9	1.6	1.0	1.0	0.0	7.4	2,840							
				County Total	**38.9**	**1.6**	**1.0**	**1.0**	**0.0**	**7.4**	**2,840**	-	-	-	-	-	-	-
Iowa	Muscatine	Nonattainment	SO2	Rail Segment	43.6	1.8	1.2	1.1	0.0	8.3	3,189							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	1							
				County Total	**43.6**	**1.8**	**1.2**	**1.1**	**0.0**	**8.3**	**3,190**	-	-	-	-	***100***	-	-
Iowa	Muscatine	Attainment	-	Rail Segment	19.8	0.8	0.5	0.5	0.0	3.8	1,449							
				County Total	**19.8**	**0.8**	**0.5**	**0.5**	**0.0**	**3.8**	**1,449**	-	-	-	-	-	-	-
Iowa	Scott	Attainment	-	Rail Segment	97.2	4.1	2.6	2.5	0.1	18.5	7,101							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	7							
				County Total	**97.2**	**4.1**	**2.6**	**2.5**	**0.1**	**18.5**	**7,108**	-	-	-	-	-	-	-
Iowa	Wapello	Attainment	-	Rail Segment	104.7	4.4	2.8	2.7	0.1	19.9	7,649							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	4							
				County Total	**104.7**	**4.4**	**2.8**	**2.7**	**0.1**	**19.9**	**7,653**	-	-	-	-	-	-	-
Iowa	Washington	Attainment	-	Rail Segment	79.5	3.3	2.1	2.1	0.1	15.1	5,811							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	0							
				County Total	**79.5**	**3.3**	**2.1**	**2.1**	**0.1**	**15.1**	**5,811**	-	-	-	-	-	-	-
Iowa	Wayne	Attainment	-	Rail Segment	60.1	2.5	1.6	1.6	0.0	11.4	4,394							
				County Total	**60.1**	**2.5**	**1.6**	**1.6**	**0.0**	**11.4**	**4,394**	-	-	-	-	-	-	-
Kansas	Cherokee	Attainment	-	Rail Segment	13.9	0.6	0.4	0.4	0.0	2.6	1,013							
				County Total	**13.9**	**0.6**	**0.4**	**0.4**	**0.0**	**2.6**	**1,013**	-	-	-	-	-	-	-
Kansas	Crawford	Attainment	-	Rail Segment	61.5	2.6	1.6	1.6	0.0	11.7	4,496							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	1							
				County Total	**61.5**	**2.6**	**1.6**	**1.6**	**0.0**	**11.7**	**4,497**	-	-	-	-	-	-	-
Louisiana	Beauregard	Attainment	-	Rail Segment	148.8	6.3	4.0	3.9	0.1	28.3	10,873							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	5							
				County Total	**148.8**	**6.3**	**4.0**	**3.9**	**0.1**	**28.3**	**10,878**	-	-	-	-	-	-	-
Louisiana	Caddo	Attainment	-	Rail Segment	303.8	12.8	8.1	7.9	0.2	57.7	22,202							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	5							
				County Total	**303.8**	**12.8**	**8.1**	**7.9**	**0.2**	**57.7**	**22,207**	-	-	-	-	-	-	-
Louisiana	Calcasieu	Attainment	-	Rail Segment	91.5	3.8	2.4	2.4	0.1	17.4	6,688							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	2							
				County Total	**91.5**	**3.8**	**2.4**	**2.4**	**0.1**	**17.4**	**6,691**	-	-	-	-	-	-	-
Louisiana	De Soto	Attainment	-	Rail Segment	141.6	6.0	3.8	3.7	0.1	26.9	10,351							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	3							
				County Total	**141.6**	**6.0**	**3.8**	**3.7**	**0.1**	**26.9**	**10,354**	-	-	-	-	-	-	-
Louisiana	Sabine	Attainment	-	Rail Segment	181.8	7.6	4.9	4.7	0.1	34.5	13,288							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	1							
				County Total	**181.8**	**7.6**	**4.9**	**4.7**	**0.1**	**34.5**	**13,289**	-	-	-	-	-	-	-
Louisiana	Vernon	Attainment	-	Rail Segment	158.1	6.6	4.2	4.1	0.1	30.0	11,553							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	2							
				County Total	**158.1**	**6.6**	**4.2**	**4.1**	**0.1**	**30.0**	**11,555**	-	-	-	-	-	-	-
Michigan	Wayne	Nonattainment	O3-Marginal; PM2.5 Maint	Rail Yard	-0.2	0.0	0.0	0.0	0.0	0.0	(11)							

Table K.6-1. County-Level Emissions Analysis Summary-Criteria Pollutants and GHG

					Acquisition-Related Criteria Emissions (tons/year)							*De Minimis Emissions (tons/year)*						
State	**County**	**Attainment**	**Pollutant**	**Source**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	***NOX***	***VOC***	***PM10***	***PM2.5***	***SO2***	***CO***	***CO2e***
				Intermodal Facility	1.6	0.1	0.0	0.0	0.0	0.4	552							
				County Total	**1.4**	**0.1**	**0.0**	**0.0**	**0.0**	**0.4**	**541**	***100***	***100***	**-**	***100***	**-**	**-**	**-**
Minnesota	Hennepin	Attainment	-	Intermodal Facility	1.0	0.0	0.0	0.0	0.0	0.3	413							
				County Total	**1.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.3**	**413**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Missouri	Barton	Attainment	-	Rail Segment	45.2	1.9	1.2	1.2	0.0	8.6	3,306							
				County Total	**45.2**	**1.9**	**1.2**	**1.2**	**0.0**	**8.6**	**3,306**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Missouri	Bates	Attainment	-	Rail Segment	119.2	5.0	3.2	3.1	0.1	22.6	8,715							
				County Total	**119.2**	**5.0**	**3.2**	**3.1**	**0.1**	**22.6**	**8,715**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Missouri	Caldwell	Attainment	-	Rail Segment	102.0	4.3	2.7	2.6	0.1	19.4	7,452							
				County Total	**102.0**	**4.3**	**2.7**	**2.6**	**0.1**	**19.4**	**7,452**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Missouri	Cass	Attainment	-	Rail Segment	124.9	5.2	3.3	3.2	0.1	23.7	9,125							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	0							
				County Total	**124.9**	**5.2**	**3.3**	**3.2**	**0.1**	**23.7**	**9,126**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Missouri	Clay	Attainment	-	Rail Segment	123.0	5.2	3.3	3.2	0.1	23.4	8,988							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	1							
				County Total	**123.0**	**5.2**	**3.3**	**3.2**	**0.1**	**23.4**	**8,988**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Missouri	Grundy	Attainment	-	Rail Segment	58.7	2.5	1.6	1.5	0.0	11.2	4,291							
				County Total	**58.7**	**2.5**	**1.6**	**1.5**	**0.0**	**11.2**	**4,291**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Missouri	Jackson	Nonattainment	SO2	Rail Segment	21.3	0.9	0.6	0.6	0.0	4.0	1,557							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	0							
				County Total	**21.3**	**0.9**	**0.6**	**0.6**	**0.0**	**4.0**	**1,557**	**-**	**-**	**-**	**-**	***100***	**-**	**-**
Missouri	Jackson	Attainment	-	Rail Segment	79.3	3.3	2.1	2.1	0.1	15.1	5,796							
				Intermodal Facility	1.3	0.1	0.0	0.0	0.0	0.3	585							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	0							
				County Total	**80.6**	**3.4**	**2.1**	**2.1**	**0.1**	**15.4**	**6,382**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Missouri	Jasper	Attainment	-	Rail Segment	86.8	3.7	2.3	2.2	0.1	16.5	6,346							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	4							
				County Total	**86.8**	**3.7**	**2.3**	**2.2**	**0.1**	**16.5**	**6,350**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Missouri	Livingston	Attainment	-	Rail Segment	138.4	5.8	3.7	3.6	0.1	26.3	10,118							
				County Total	**138.4**	**5.8**	**3.7**	**3.6**	**0.1**	**26.3**	**10,118**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Missouri	McDonald	Attainment	-	Rail Segment	87.2	3.7	2.3	2.3	0.1	16.6	6,375							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	1							
				County Total	**87.2**	**3.7**	**2.3**	**2.3**	**0.1**	**16.6**	**6,376**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Missouri	Newton	Attainment	-	Rail Segment	109.2	4.6	2.9	2.8	0.1	20.7	7,984							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	4							
				County Total	**109.2**	**4.6**	**2.9**	**2.8**	**0.1**	**20.8**	**7,987**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Missouri	Putnam	Attainment	-	Rail Segment	83.1	3.5	2.2	2.2	0.1	15.8	6,073							
				County Total	**83.1**	**3.5**	**2.2**	**2.2**	**0.1**	**15.8**	**6,073**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Missouri	Ray	Attainment	-	Rail Segment	53.0	2.2	1.4	1.4	0.0	10.1	3,870							
				County Total	**53.0**	**2.2**	**1.4**	**1.4**	**0.0**	**10.1**	**3,870**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Missouri	Sullivan	Attainment	-	Rail Segment	94.3	4.0	2.5	2.4	0.1	17.9	6,896							
				County Total	**94.3**	**4.0**	**2.5**	**2.4**	**0.1**	**17.9**	**6,896**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Missouri	Vernon	Attainment	-	Rail Segment	114.0	4.8	3.0	3.0	0.1	21.7	8,335							
				County Total	**114.0**	**4.8**	**3.0**	**3.0**	**0.1**	**21.7**	**8,335**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Oklahoma	Adair	Attainment	-	Rail Segment	167.8	7.1	4.5	4.3	0.1	31.9	12,266							

Table K.6-1. County-Level Emissions Analysis Summary-Criteria Pollutants and GHG

					Acquisition-Related Criteria Emissions (tons/year)							*De Minimis Emissions (tons/year)*						
State	**County**	**Attainment**	**Pollutant**	**Source**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	***NOX***	***VOC***	***PM10***	***PM2.5***	***SO2***	***CO***	***CO2e***
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	0							
				County Total	**167.8**	**7.1**	**4.5**	**4.3**	**0.1**	**31.9**	**12,267**	-	-	-	-	-	-	-
Oklahoma	Le Flore	Attainment	-	Rail Segment	212.9	8.9	5.7	5.5	0.1	40.4	15,557							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	6							
				County Total	**212.9**	**8.9**	**5.7**	**5.5**	**0.1**	**40.5**	**15,563**	-	-	-	-	-	-	-
Oklahoma	Sequoyah	Attainment	-	Rail Segment	128.4	5.4	3.4	3.3	0.1	24.4	9,384							
				County Total	**128.4**	**5.4**	**3.4**	**3.3**	**0.1**	**24.4**	**9,384**	-	-	-	-	-	-	-
Texas	Bowie	Attainment	-	Rail Segment	112.7	4.7	3.0	2.9	0.1	21.4	8,237							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	1							
				County Total	**112.7**	**4.7**	**3.0**	**2.9**	**0.1**	**21.4**	**8,238**	-	-	-	-	-	-	-
Texas	Cass	Attainment	-	Rail Segment	60.7	2.6	1.6	1.6	0.0	11.5	4,435							
				County Total	**60.7**	**2.6**	**1.6**	**1.6**	**0.0**	**11.5**	**4,435**	-	-	-	-	-	-	-
Texas	Collin	Nonattainment	Ozone-Severe	Rail Segment	6.3	0.3	0.2	0.2	0.0	1.2	461							
				Rail Yard	1.5	0.1	0.0	0.0	0.0	0.2	82							
				Intermodal Facility	2.6	0.1	0.1	0.1	0.0	0.8	1,144							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	0							
				County Total	**10.4**	**0.5**	**0.3**	**0.3**	**0.0**	**2.2**	**1,688**	***25***	***25***	-	-	-	-	-
Texas	Denton	Nonattainment	Ozone-Severe	Rail Segment	17.0	0.7	0.5	0.4	0.0	3.2	1,242							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	0							
				County Total	**17.0**	**0.7**	**0.5**	**0.4**	**0.0**	**3.2**	**1,242**	***25***	***25***	-	-	-	-	-
Texas	Duval	Attainment	-	Rail Segment	63.8	2.7	1.7	1.7	0.0	12.1	4,662							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	0							
				County Total	**63.8**	**2.7**	**1.7**	**1.7**	**0.0**	**12.1**	**4,663**	-	-	-	-	-	-	-
Texas	Fort Bend	Nonattainment	Ozone-Severe	Rail Segment	37.6	1.6	1.0	1.0	0.0	7.1	2,750							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	5							
				County Total	**37.6**	**1.6**	**1.0**	**1.0**	**0.0**	**7.2**	**2,755**	***25***	***25***	-	-	-	-	-
Texas	Harris	Nonattainment	Ozone-Severe	Rail Segment	31.5	1.3	0.8	0.8	0.0	6.0	2,301							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.1	18							
				County Total	**31.5**	**1.3**	**0.8**	**0.8**	**0.0**	**6.1**	**2,319**	***25***	***25***	-	-	-	-	-
Texas	Jackson	Attainment	-	Rail Segment	34.3	1.4	0.9	0.9	0.0	6.5	2,510							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	0							
				County Total	**34.3**	**1.4**	**0.9**	**0.9**	**0.0**	**6.5**	**2,511**	-	-	-	-	-	-	-
Texas	Jefferson	Attainment	Ozone-Maintenance	Rail Segment	111.1	4.7	3.0	2.9	0.1	21.1	8,122							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	1							
				County Total	**111.1**	**4.7**	**3.0**	**2.9**	**0.1**	**21.1**	**8,124**	***100***	***100***	-	-	-	-	-
Texas	Jim Hogg	Attainment	-	Rail Segment	17.0	0.7	0.5	0.4	0.0	3.2	1,244							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	0							
				County Total	**17.0**	**0.7**	**0.5**	**0.4**	**0.0**	**3.2**	**1,245**	-	-	-	-	-	-	-
Texas	Jim Wells	Attainment	-	Rail Segment	28.0	1.2	0.7	0.7	0.0	5.3	2,046							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	8							
				County Total	**28.0**	**1.2**	**0.7**	**0.7**	**0.0**	**5.4**	**2,054**	-	-	-	-	-	-	-
Texas	Liberty	Nonattainment	Ozone-Severe	Rail Segment	24.1	1.0	0.6	0.6	0.0	4.6	1,765							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	1							
				County Total	**24.1**	**1.0**	**0.6**	**0.6**	**0.0**	**4.6**	**1,766**	***25***	***25***	-	-	-	-	-
Texas	Newton	Attainment	-	Rail Segment	21.9	0.9	0.6	0.6	0.0	4.2	1,598							

Table K.6-1. County-Level Emissions Analysis Summary-Criteria Pollutants and GHG

					Acquisition-Related Criteria Emissions (tons/year)							*De Minimis Emissions (tons/year)*						
State	**County**	**Attainment**	**Pollutant**	**Source**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	***NOX***	***VOC***	***PM10***	***PM2.5***	***SO2***	***CO***	***CO2e***
				County Total	**21.9**	**0.9**	**0.6**	**0.6**	**0.0**	**4.2**	**1,598**	-	-	-	-	-	-	-
Texas	Nueces	Attainment	-	Rail Segment	37.5	1.6	1.0	1.0	0.0	7.1	2,742							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	1							
				County Total	**37.5**	**1.6**	**1.0**	**1.0**	**0.0**	**7.1**	**2,744**	-	-	-	-	-	-	-
Texas	Orange	Attainment	Ozone-Maintenance	Rail Segment	76.5	3.2	2.0	2.0	0.1	14.5	5,591							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	1							
				County Total	**76.5**	**3.2**	**2.0**	**2.0**	**0.1**	**14.5**	**5,592**	***100***	***100***	-	-	-	-	-
Texas	Refugio	Attainment	-	Rail Segment	61.3	2.6	1.6	1.6	0.0	11.6	4,479							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	0							
				County Total	**61.3**	**2.6**	**1.6**	**1.6**	**0.0**	**11.6**	**4,479**	-	-	-	-	-	-	-
Texas	San Patricio	Attainment	-	Rail Segment	34.0	1.4	0.9	0.9	0.0	6.5	2,486							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	0							
				County Total	**34.0**	**1.4**	**0.9**	**0.9**	**0.0**	**6.5**	**2,486**	-	-	-	-	-	-	-
Texas	Tarrant	Nonattainment	Ozone-Severe	Rail Segment	1.4	0.1	0.0	0.0	0.0	0.3	102							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	0							
				County Total	**1.4**	**0.1**	**0.0**	**0.0**	**0.0**	**0.3**	**102**	***25***	***25***	-	-	-	-	-
Texas	Victoria	Attainment	-	Rail Segment	73.0	3.1	1.9	1.9	0.0	13.9	5,334							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.1	13							
				County Total	**73.0**	**3.1**	**1.9**	**1.9**	**0.0**	**13.9**	**5,347**	-	-	-	-	-	-	-
Texas	Webb	Attainment	-	Rail Segment	73.0	3.1	1.9	1.9	0.0	13.9	5,333							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	5							
				County Total	**73.0**	**3.1**	**1.9**	**1.9**	**0.0**	**13.9**	**5,338**	-	-	-	-	-	-	-
Texas	Wharton	Attainment	-	Rail Segment	55.8	2.3	1.5	1.4	0.0	10.6	4,078							
				Grade Crossing	0.0	0.0	0.0	0.0	0.0	0.0	3							
				County Total	**55.8**	**2.3**	**1.5**	**1.4**	**0.0**	**10.6**	**4,081**	-	-	-	-	-	-	-

Note: See individual analyses tables for further information on emissions analyses and assumptions.

Table K.6-2. County-Level Emissions Analysis Summary-HAPs

			Acquisition-Related HAP Emissions (tons/year)							
State	**County**	**Source**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
Arkansas	Benton	Rail Segment	4.0E-01	8.2E-02	1.2E-01	9.5E-03	2.0E-02	1.1E+00	1.4E-02	1.4E-02
		Grade Crossing	2.1E-08	7.6E-06	7.3E-07	8.6E-06	3.4E-07	1.1E-05	1.1E-05	4.3E-05
		County Total	**4.0E-01**	**8.2E-02**	**1.2E-01**	**9.5E-03**	**2.0E-02**	**1.1E+00**	**1.4E-02**	**1.4E-02**
Arkansas	Little River	Rail Segment	4.7E-01	9.6E-02	1.3E-01	1.1E-02	2.3E-02	1.3E+00	1.6E-02	1.7E-02
		Grade Crossing	3.4E-09	1.3E-06	1.2E-07	1.4E-06	5.5E-08	1.8E-06	1.8E-06	7.2E-06
		County Total	**4.7E-01**	**9.6E-02**	**1.3E-01**	**1.1E-02**	**2.3E-02**	**1.3E+00**	**1.6E-02**	**1.7E-02**
Arkansas	Miller	Rail Segment	1.1E-01	2.2E-02	3.1E-02	2.6E-03	5.3E-03	3.1E-01	3.8E-03	3.9E-03
		County Total	**1.1E-01**	**2.2E-02**	**3.1E-02**	**2.6E-03**	**5.3E-03**	**3.1E-01**	**3.8E-03**	**3.9E-03**
Arkansas	Polk	Rail Segment	7.7E-01	1.6E-01	2.2E-01	1.8E-02	3.8E-02	2.2E+00	2.7E-02	2.8E-02
		Grade Crossing	7.9E-09	3.0E-06	2.9E-07	3.4E-06	1.3E-07	4.4E-06	4.4E-06	1.7E-05
		County Total	**7.7E-01**	**1.6E-01**	**2.2E-01**	**1.8E-02**	**3.8E-02**	**2.2E+00**	**2.7E-02**	**2.8E-02**
Arkansas	Sevier	Rail Segment	3.5E-01	7.2E-02	1.0E-01	8.4E-03	1.7E-02	1.0E+00	1.2E-02	1.3E-02
		Grade Crossing	4.1E-09	1.5E-06	1.5E-07	1.7E-06	6.7E-08	2.2E-06	2.2E-06	8.7E-06
		County Total	**3.5E-01**	**7.2E-02**	**1.0E-01**	**8.4E-03**	**1.7E-02**	**1.0E+00**	**1.2E-02**	**1.3E-02**
Illinois	Carroll	Rail Segment	2.3E-01	4.7E-02	6.6E-02	5.4E-03	1.1E-02	6.5E-01	8.0E-03	8.1E-03
		Grade Crossing	1.0E-09	3.8E-07	3.6E-08	4.3E-07	1.7E-08	5.5E-07	5.5E-07	2.2E-06
		County Total	**2.3E-01**	**4.7E-02**	**6.6E-02**	**5.4E-03**	**1.1E-02**	**6.5E-01**	**8.0E-03**	**8.1E-03**
Illinois	Cook	Rail Segment	7.7E-02	1.6E-02	2.2E-02	1.8E-03	3.8E-03	2.2E-01	2.7E-03	2.8E-03
		Rail Yard	3.3E-02	6.7E-03	9.5E-03	7.8E-04	1.6E-03	9.4E-02	1.1E-03	1.1E-03
		Grade Crossing	3.8E-08	4.7E-06	4.5E-07	5.3E-06	2.1E-07	6.8E-06	6.8E-06	2.7E-05
		Intermodal Facility	1.7E-02	2.5E-03	3.4E-03	6.1E-04	2.3E-03	3.1E-02	1.1E-03	3.5E-05
		County Total	**1.3E-01**	**2.5E-02**	**3.5E-02**	**3.2E-03**	**7.8E-03**	**3.5E-01**	**4.9E-03**	**4.0E-03**
Illinois	DeKalb	Rail Segment	1.5E-01	3.0E-02	4.3E-02	3.5E-03	7.3E-03	4.2E-01	5.2E-03	5.3E-03
		Grade Crossing	6.9E-10	3.8E-07	3.6E-08	4.3E-07	1.7E-08	5.5E-07	5.5E-07	2.2E-06
		County Total	**1.5E-01**	**3.0E-02**	**4.3E-02**	**3.5E-03**	**7.3E-03**	**4.2E-01**	**5.2E-03**	**5.3E-03**
Illinois	DuPage	Rail Segment	9.7E-02	2.0E-02	2.8E-02	2.3E-03	4.7E-03	2.7E-01	3.4E-03	3.4E-03
		Grade Crossing	3.9E-08	1.3E-05	1.2E-06	1.4E-05	5.6E-07	1.8E-05	1.8E-05	7.2E-05
		County Total	**9.7E-02**	**2.0E-02**	**2.8E-02**	**2.3E-03**	**4.7E-03**	**2.7E-01**	**3.4E-03**	**3.4E-03**
Illinois	Kane	Rail Segment	1.5E-01	3.1E-02	4.3E-02	3.6E-03	7.3E-03	4.3E-01	5.2E-03	5.3E-03
		Grade Crossing	3.1E-08	1.0E-05	9.6E-07	1.1E-05	4.5E-07	1.5E-05	1.5E-05	5.8E-05
		County Total	**1.5E-01**	**3.1E-02**	**4.3E-02**	**3.6E-03**	**7.3E-03**	**4.3E-01**	**5.2E-03**	**5.4E-03**
Illinois	Ogle	Rail Segment	3.2E-01	6.5E-02	9.2E-02	7.6E-03	1.6E-02	9.1E-01	1.1E-02	1.1E-02
		Grade Crossing	2.2E-09	8.3E-07	7.9E-08	9.4E-07	3.7E-08	1.2E-06	1.2E-06	4.7E-06
		County Total	**3.2E-01**	**6.5E-02**	**9.2E-02**	**7.6E-03**	**1.6E-02**	**9.1E-01**	**1.1E-02**	**1.1E-02**
Iowa	Appanoose	Rail Segment	2.8E-01	5.8E-02	8.1E-02	6.7E-03	1.4E-02	8.1E-01	9.9E-03	1.0E-02
		County Total	**2.8E-01**	**5.8E-02**	**8.1E-02**	**6.7E-03**	**1.4E-02**	**8.1E-01**	**9.9E-03**	**1.0E-02**
Iowa	Clinton	Rail Segment	2.5E-01	5.1E-02	7.1E-02	5.9E-03	1.2E-02	7.1E-01	8.6E-03	8.8E-03
		Grade Crossing	1.2E-08	5.5E-06	5.2E-07	6.2E-06	2.4E-07	8.0E-06	8.0E-06	3.1E-05
		County Total	**2.5E-01**	**5.1E-02**	**7.1E-02**	**5.9E-03**	**1.2E-02**	**7.1E-01**	**8.6E-03**	**8.9E-03**
Iowa	Jackson	Rail Segment	2.6E-02	5.3E-03	7.5E-03	6.2E-04	1.3E-03	7.4E-02	9.1E-04	9.3E-04
		County Total	**2.6E-02**	**5.3E-03**	**7.5E-03**	**6.2E-04**	**1.3E-03**	**7.4E-02**	**9.1E-04**	**9.3E-04**
Iowa	Jefferson	Rail Segment	5.4E-02	1.1E-02	1.5E-02	1.3E-03	2.6E-03	1.5E-01	1.9E-03	1.9E-03
		County Total	**5.4E-02**	**1.1E-02**	**1.5E-02**	**1.3E-03**	**2.6E-03**	**1.5E-01**	**1.9E-03**	**1.9E-03**
Iowa	Keokuk	Rail Segment	9.6E-02	2.0E-02	2.8E-02	2.3E-03	4.7E-03	2.7E-01	3.4E-03	3.4E-03
		County Total	**9.6E-02**	**2.0E-02**	**2.8E-02**	**2.3E-03**	**4.7E-03**	**2.7E-01**	**3.4E-03**	**3.4E-03**

Table K.6-2. County-Level Emissions Analysis Summary-HAPs

			Acquisition-Related HAP Emissions (tons/year)							
State	**County**	**Source**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
Iowa	Louisa	Rail Segment	2.2E-01	4.5E-02	6.3E-02	5.2E-03	1.1E-02	6.3E-01	7.7E-03	7.9E-03
		Grade Crossing	6.9E-10	4.0E-07	3.8E-08	4.5E-07	1.8E-08	5.8E-07	5.8E-07	2.3E-06
		County Total	**2.2E-01**	**4.5E-02**	**6.3E-02**	**5.2E-03**	**1.1E-02**	**6.3E-01**	**7.7E-03**	**7.9E-03**
Iowa	Monroe	Rail Segment	1.3E-01	2.6E-02	3.7E-02	3.0E-03	6.3E-03	3.6E-01	4.5E-03	4.6E-03
		County Total	**1.3E-01**	**2.6E-02**	**3.7E-02**	**3.0E-03**	**6.3E-03**	**3.6E-01**	**4.5E-03**	**4.6E-03**
Iowa	Muscatine	Rail Segment	1.4E-01	2.9E-02	4.1E-02	3.4E-03	7.0E-03	4.1E-01	5.0E-03	5.1E-03
		Grade Crossing	3.4E-09	1.9E-06	1.8E-07	2.2E-06	8.5E-08	2.8E-06	2.8E-06	1.1E-05
		County Total	**1.4E-01**	**2.9E-02**	**4.1E-02**	**3.4E-03**	**7.0E-03**	**4.1E-01**	**5.0E-03**	**5.1E-03**
Iowa	Muscatine	Rail Segment	6.5E-02	1.3E-02	1.9E-02	1.6E-03	3.2E-03	1.9E-01	2.3E-03	2.3E-03
		County Total	**6.5E-02**	**1.3E-02**	**1.9E-02**	**1.6E-03**	**3.2E-03**	**1.9E-01**	**2.3E-03**	**2.3E-03**
Iowa	Scott	Rail Segment	3.2E-01	6.5E-02	9.2E-02	7.6E-03	1.6E-02	9.1E-01	1.1E-02	1.1E-02
		Grade Crossing	3.7E-08	1.9E-05	1.8E-06	2.2E-05	8.5E-07	2.8E-05	2.8E-05	1.1E-04
		County Total	**3.2E-01**	**6.5E-02**	**9.2E-02**	**7.6E-03**	**1.6E-02**	**9.1E-01**	**1.1E-02**	**1.2E-02**
Iowa	Wapello	Rail Segment	3.4E-01	7.0E-02	9.9E-02	8.2E-03	1.7E-02	9.8E-01	1.2E-02	1.2E-02
		Grade Crossing	1.9E-08	1.1E-05	1.0E-06	1.2E-05	4.7E-07	1.5E-05	1.5E-05	6.0E-05
		County Total	**3.4E-01**	**7.0E-02**	**9.9E-02**	**8.2E-03**	**1.7E-02**	**9.8E-01**	**1.2E-02**	**1.2E-02**
Iowa	Washington	Rail Segment	2.6E-01	5.3E-02	7.5E-02	6.2E-03	1.3E-02	7.5E-01	9.1E-03	9.3E-03
		Grade Crossing	1.6E-09	9.1E-07	8.6E-08	1.0E-06	4.0E-08	1.3E-06	1.3E-06	5.2E-06
		County Total	**2.6E-01**	**5.3E-02**	**7.5E-02**	**6.2E-03**	**1.3E-02**	**7.5E-01**	**9.1E-03**	**9.3E-03**
Iowa	Wayne	Rail Segment	2.0E-01	4.0E-02	5.7E-02	4.7E-03	9.7E-03	5.6E-01	6.9E-03	7.1E-03
		County Total	**2.0E-01**	**4.0E-02**	**5.7E-02**	**4.7E-03**	**9.7E-03**	**5.6E-01**	**6.9E-03**	**7.1E-03**
Kansas	Cherokee	Rail Segment	4.6E-02	9.3E-03	1.3E-02	1.1E-03	2.2E-03	1.3E-01	1.6E-03	1.6E-03
		County Total	**4.6E-02**	**9.3E-03**	**1.3E-02**	**1.1E-03**	**2.2E-03**	**1.3E-01**	**1.6E-03**	**1.6E-03**
Kansas	Crawford	Rail Segment	2.0E-01	4.1E-02	5.8E-02	4.8E-03	9.9E-03	5.8E-01	7.1E-03	7.2E-03
		Grade Crossing	5.0E-09	1.9E-06	1.8E-07	2.1E-06	8.2E-08	2.7E-06	2.7E-06	1.1E-05
		County Total	**2.0E-01**	**4.1E-02**	**5.8E-02**	**4.8E-03**	**9.9E-03**	**5.8E-01**	**7.1E-03**	**7.2E-03**
Louisiana	Beauregard	Rail Segment	4.9E-01	1.0E-01	1.4E-01	1.2E-02	2.4E-02	1.4E+00	1.7E-02	1.7E-02
		Grade Crossing	3.1E-08	1.3E-05	1.3E-06	1.5E-05	5.9E-07	2.0E-05	2.0E-05	7.7E-05
		County Total	**4.9E-01**	**1.0E-01**	**1.4E-01**	**1.2E-02**	**2.4E-02**	**1.4E+00**	**1.7E-02**	**1.8E-02**
Louisiana	Caddo	Rail Segment	1.0E+00	2.0E-01	2.9E-01	2.4E-02	4.9E-02	2.8E+00	3.5E-02	3.6E-02
		Grade Crossing	4.5E-08	1.3E-05	1.2E-06	1.5E-05	5.7E-07	1.9E-05	1.9E-05	7.4E-05
		County Total	**1.0E+00**	**2.0E-01**	**2.9E-01**	**2.4E-02**	**4.9E-02**	**2.8E+00**	**3.5E-02**	**3.6E-02**
Louisiana	Calcasieu	Rail Segment	3.0E-01	6.2E-02	8.7E-02	7.2E-03	1.5E-02	8.6E-01	1.1E-02	1.1E-02
		Grade Crossing	1.3E-08	5.9E-06	5.6E-07	6.7E-06	2.6E-07	8.5E-06	8.6E-06	3.3E-05
		County Total	**3.0E-01**	**6.2E-02**	**8.7E-02**	**7.2E-03**	**1.5E-02**	**8.6E-01**	**1.1E-02**	**1.1E-02**
Louisiana	De Soto	Rail Segment	4.7E-01	9.5E-02	1.3E-01	1.1E-02	2.3E-02	1.3E+00	1.6E-02	1.7E-02
		Grade Crossing	2.3E-08	8.6E-06	8.2E-07	9.7E-06	3.8E-07	1.2E-05	1.2E-05	4.9E-05
		County Total	**4.7E-01**	**9.5E-02**	**1.3E-01**	**1.1E-02**	**2.3E-02**	**1.3E+00**	**1.6E-02**	**1.7E-02**
Louisiana	Sabine	Rail Segment	6.0E-01	1.2E-01	1.7E-01	1.4E-02	2.9E-02	1.7E+00	2.1E-02	2.1E-02
		Grade Crossing	5.0E-09	2.3E-06	2.2E-07	2.6E-06	1.0E-07	3.3E-06	3.3E-06	1.3E-05
		County Total	**6.0E-01**	**1.2E-01**	**1.7E-01**	**1.4E-02**	**2.9E-02**	**1.7E+00**	**2.1E-02**	**2.1E-02**
Louisiana	Vernon	Rail Segment	5.2E-01	1.1E-01	1.5E-01	1.2E-02	2.6E-02	1.5E+00	1.8E-02	1.9E-02
		Grade Crossing	1.1E-08	4.7E-06	4.4E-07	5.3E-06	2.1E-07	6.8E-06	6.8E-06	2.7E-05
		County Total	**5.2E-01**	**1.1E-01**	**1.5E-01**	**1.2E-02**	**2.6E-02**	**1.5E+00**	**1.8E-02**	**1.9E-02**
Michigan	Wayne	Rail Yard	-1.0E-03	-2.1E-04	-2.9E-04	-2.4E-05	-5.0E-05	-2.9E-03	-3.5E-05	-3.5E-05

Table K.6-2. County-Level Emissions Analysis Summary-HAPs

			Acquisition-Related HAP Emissions (tons/year)							
State	**County**	**Source**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
		Intermodal Facility	3.3E-03	5.0E-04	7.1E-04	1.2E-04	4.5E-04	6.2E-03	2.1E-04	6.8E-06
		County Total	**2.3E-03**	**2.9E-04**	**4.2E-04**	**9.5E-05**	**4.0E-04**	**3.3E-03**	**1.7E-04**	**-2.8E-05**
Minnesota	Hennepin	Intermodal Facility	2.1E-03	3.2E-04	4.7E-04	7.4E-05	2.9E-04	4.0E-03	1.3E-04	4.3E-06
		County Total	**2.1E-03**	**3.2E-04**	**4.7E-04**	**7.4E-05**	**2.9E-04**	**4.0E-03**	**1.3E-04**	**4.3E-06**
Missouri	Barton	Rail Segment	1.5E-01	3.0E-02	4.3E-02	3.5E-03	7.3E-03	4.2E-01	5.2E-03	5.3E-03
		County Total	**1.5E-01**	**3.0E-02**	**4.3E-02**	**3.5E-03**	**7.3E-03**	**4.2E-01**	**5.2E-03**	**5.3E-03**
Missouri	Bates	Rail Segment	3.9E-01	8.0E-02	1.1E-01	9.3E-03	1.9E-02	1.1E+00	1.4E-02	1.4E-02
		County Total	**3.9E-01**	**8.0E-02**	**1.1E-01**	**9.3E-03**	**1.9E-02**	**1.1E+00**	**1.4E-02**	**1.4E-02**
Missouri	Caldwell	Rail Segment	3.4E-01	6.9E-02	9.6E-02	8.0E-03	1.6E-02	9.6E-01	1.2E-02	1.2E-02
		County Total	**3.4E-01**	**6.9E-02**	**9.6E-02**	**8.0E-03**	**1.6E-02**	**9.6E-01**	**1.2E-02**	**1.2E-02**
Missouri	Cass	Rail Segment	4.1E-01	8.4E-02	1.2E-01	9.8E-03	2.0E-02	1.2E+00	1.4E-02	1.5E-02
		Grade Crossing	1.2E-09	4.5E-07	4.3E-08	5.1E-07	2.0E-08	6.5E-07	6.5E-07	2.5E-06
		County Total	**4.1E-01**	**8.4E-02**	**1.2E-01**	**9.8E-03**	**2.0E-02**	**1.2E+00**	**1.4E-02**	**1.5E-02**
Missouri	Clay	Rail Segment	4.0E-01	8.3E-02	1.2E-01	9.6E-03	2.0E-02	1.2E+00	1.4E-02	1.4E-02
		Grade Crossing	2.6E-09	1.4E-06	1.3E-07	1.6E-06	6.1E-08	2.0E-06	2.0E-06	7.9E-06
		County Total	**4.0E-01**	**8.3E-02**	**1.2E-01**	**9.6E-03**	**2.0E-02**	**1.2E+00**	**1.4E-02**	**1.4E-02**
Missouri	Grundy	Rail Segment	1.9E-01	3.9E-02	5.6E-02	4.6E-03	9.5E-03	5.5E-01	6.7E-03	6.9E-03
		County Total	**1.9E-01**	**3.9E-02**	**5.6E-02**	**4.6E-03**	**9.5E-03**	**5.5E-01**	**6.7E-03**	**6.9E-03**
Missouri	Jackson	Rail Segment	7.0E-02	1.4E-02	2.0E-02	1.7E-03	3.4E-03	2.0E-01	2.4E-03	2.5E-03
		Grade Crossing	2.6E-09	9.5E-07	9.1E-08	1.1E-06	4.2E-08	1.4E-06	1.4E-06	5.4E-06
		County Total	**7.0E-02**	**1.4E-02**	**2.0E-02**	**1.7E-03**	**3.4E-03**	**2.0E-01**	**2.4E-03**	**2.5E-03**
Missouri	Jackson	Rail Segment	2.6E-01	5.3E-02	7.5E-02	6.2E-03	1.3E-02	7.4E-01	9.1E-03	9.3E-03
		Intermodal Facility	2.6E-03	4.1E-04	7.1E-04	8.2E-05	3.1E-04	5.4E-03	1.4E-04	5.0E-06
		Grade Crossing	2.4E-09	9.2E-07	8.7E-08	1.0E-06	4.0E-08	1.3E-06	1.3E-06	5.2E-06
		County Total	**2.6E-01**	**5.4E-02**	**7.6E-02**	**6.3E-03**	**1.3E-02**	**7.5E-01**	**9.2E-03**	**9.3E-03**
Missouri	Jasper	Rail Segment	2.9E-01	5.8E-02	8.2E-02	6.8E-03	1.4E-02	8.1E-01	1.0E-02	1.0E-02
		Grade Crossing	3.0E-08	1.1E-05	1.0E-06	1.2E-05	4.8E-07	1.6E-05	1.6E-05	6.2E-05
		County Total	**2.9E-01**	**5.8E-02**	**8.2E-02**	**6.8E-03**	**1.4E-02**	**8.1E-01**	**1.0E-02**	**1.0E-02**
Missouri	Livingston	Rail Segment	4.6E-01	9.3E-02	1.3E-01	1.1E-02	2.2E-02	1.3E+00	1.6E-02	1.6E-02
		County Total	**4.6E-01**	**9.3E-02**	**1.3E-01**	**1.1E-02**	**2.2E-02**	**1.3E+00**	**1.6E-02**	**1.6E-02**
Missouri	McDonald	Rail Segment	2.9E-01	5.9E-02	8.2E-02	6.8E-03	1.4E-02	8.2E-01	1.0E-02	1.0E-02
		Grade Crossing	4.8E-09	1.7E-06	1.6E-07	1.9E-06	7.5E-08	2.5E-06	2.5E-06	9.7E-06
		County Total	**2.9E-01**	**5.9E-02**	**8.2E-02**	**6.8E-03**	**1.4E-02**	**8.2E-01**	**1.0E-02**	**1.0E-02**
Missouri	Newton	Rail Segment	3.6E-01	7.3E-02	1.0E-01	8.5E-03	1.8E-02	1.0E+00	1.3E-02	1.3E-02
		Grade Crossing	2.7E-08	9.6E-06	9.1E-07	1.1E-05	4.2E-07	1.4E-05	1.4E-05	5.5E-05
		County Total	**3.6E-01**	**7.3E-02**	**1.0E-01**	**8.6E-03**	**1.8E-02**	**1.0E+00**	**1.3E-02**	**1.3E-02**
Missouri	Putnam	Rail Segment	2.7E-01	5.6E-02	7.9E-02	6.5E-03	1.3E-02	7.8E-01	9.5E-03	9.8E-03
		County Total	**2.7E-01**	**5.6E-02**	**7.9E-02**	**6.5E-03**	**1.3E-02**	**7.8E-01**	**9.5E-03**	**9.8E-03**
Missouri	Ray	Rail Segment	1.7E-01	3.6E-02	5.0E-02	4.1E-03	8.5E-03	5.0E-01	6.1E-03	6.2E-03
		County Total	**1.7E-01**	**3.6E-02**	**5.0E-02**	**4.1E-03**	**8.5E-03**	**5.0E-01**	**6.1E-03**	**6.2E-03**
Missouri	Sullivan	Rail Segment	3.1E-01	6.3E-02	8.9E-02	7.4E-03	1.5E-02	8.8E-01	1.1E-02	1.1E-02
		County Total	**3.1E-01**	**6.3E-02**	**8.9E-02**	**7.4E-03**	**1.5E-02**	**8.8E-01**	**1.1E-02**	**1.1E-02**
Missouri	Vernon	Rail Segment	3.8E-01	7.7E-02	1.1E-01	8.9E-03	1.8E-02	1.1E+00	1.3E-02	1.3E-02
		County Total	**3.8E-01**	**7.7E-02**	**1.1E-01**	**8.9E-03**	**1.8E-02**	**1.1E+00**	**1.3E-02**	**1.3E-02**
Oklahoma	Adair	Rail Segment	5.5E-01	1.1E-01	1.6E-01	1.3E-02	2.7E-02	1.6E+00	1.9E-02	2.0E-02

Table K.6-2. County-Level Emissions Analysis Summary-HAPs

			Acquisition-Related HAP Emissions (tons/year)							
State	**County**	**Source**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
		Grade Crossing	3.2E-09	1.3E-06	1.2E-07	1.4E-06	5.6E-08	1.8E-06	1.8E-06	7.2E-06
		County Total	**5.5E-01**	**1.1E-01**	**1.6E-01**	**1.3E-02**	**2.7E-02**	**1.6E+00**	**1.9E-02**	**2.0E-02**
Oklahoma	Le Flore	Rail Segment	7.0E-01	1.4E-01	2.0E-01	1.7E-02	3.4E-02	2.0E+00	2.4E-02	2.5E-02
		Grade Crossing	4.2E-08	1.6E-05	1.5E-06	1.8E-05	7.1E-07	2.3E-05	2.3E-05	9.1E-05
		County Total	**7.0E-01**	**1.4E-01**	**2.0E-01**	**1.7E-02**	**3.4E-02**	**2.0E+00**	**2.4E-02**	**2.5E-02**
Oklahoma	Sequoyah	Rail Segment	4.2E-01	8.6E-02	1.2E-01	1.0E-02	2.1E-02	1.2E+00	1.5E-02	1.5E-02
		County Total	**4.2E-01**	**8.6E-02**	**1.2E-01**	**1.0E-02**	**2.1E-02**	**1.2E+00**	**1.5E-02**	**1.5E-02**
Texas	Bowie	Rail Segment	3.7E-01	7.6E-02	1.1E-01	8.8E-03	1.8E-02	1.1E+00	1.3E-02	1.3E-02
		Grade Crossing	5.7E-09	2.2E-06	2.1E-07	2.5E-06	9.8E-08	3.2E-06	3.2E-06	1.3E-05
		County Total	**3.7E-01**	**7.6E-02**	**1.1E-01**	**8.8E-03**	**1.8E-02**	**1.1E+00**	**1.3E-02**	**1.3E-02**
Texas	Cass	Rail Segment	2.0E-01	4.1E-02	5.7E-02	4.7E-03	9.8E-03	5.7E-01	7.0E-03	7.1E-03
		County Total	**2.0E-01**	**4.1E-02**	**5.7E-02**	**4.7E-03**	**9.8E-03**	**5.7E-01**	**7.0E-03**	**7.1E-03**
Texas	Collin	Rail Segment	2.1E-02	4.2E-03	6.0E-03	4.9E-04	1.0E-03	5.9E-02	7.2E-04	7.4E-04
		Rail Yard	7.8E-03	1.6E-03	2.2E-03	1.8E-04	3.8E-04	2.2E-02	2.7E-04	2.7E-04
		Intermodal Facility	6.3E-03	1.0E-03	1.4E-03	2.1E-04	8.3E-04	1.2E-02	3.6E-04	1.3E-05
		Grade Crossing	6.6E-10	5.6E-08	5.4E-09	6.4E-08	2.5E-09	8.2E-08	8.2E-08	3.2E-07
		County Total	**3.5E-02**	**6.8E-03**	**9.6E-03**	**8.9E-04**	**2.2E-03**	**9.3E-02**	**1.4E-03**	**1.0E-03**
Texas	Denton	Rail Segment	5.6E-02	1.1E-02	1.6E-02	1.3E-03	2.7E-03	1.6E-01	2.0E-03	2.0E-03
		Grade Crossing	1.7E-09	1.1E-07	1.1E-08	1.3E-07	4.9E-09	1.6E-07	1.6E-07	6.3E-07
		County Total	**5.6E-02**	**1.1E-02**	**1.6E-02**	**1.3E-03**	**2.7E-03**	**1.6E-01**	**2.0E-03**	**2.0E-03**
Texas	Duval	Rail Segment	2.1E-01	4.3E-02	6.0E-02	5.0E-03	1.0E-02	6.0E-01	7.3E-03	7.5E-03
		Grade Crossing	1.1E-08	1.2E-06	1.2E-07	1.4E-06	5.5E-08	1.8E-06	1.8E-06	7.0E-06
		County Total	**2.1E-01**	**4.3E-02**	**6.0E-02**	**5.0E-03**	**1.0E-02**	**6.0E-01**	**7.3E-03**	**7.5E-03**
Texas	Fort Bend	Rail Segment	1.2E-01	2.5E-02	3.6E-02	2.9E-03	6.1E-03	3.5E-01	4.3E-03	4.4E-03
		Grade Crossing	1.6E-07	1.4E-05	1.3E-06	1.6E-05	6.1E-07	2.0E-05	2.0E-05	7.8E-05
		County Total	**1.2E-01**	**2.5E-02**	**3.6E-02**	**3.0E-03**	**6.1E-03**	**3.5E-01**	**4.3E-03**	**4.5E-03**
Texas	Harris	Rail Segment	1.0E-01	2.1E-02	3.0E-02	2.5E-03	5.1E-03	3.0E-01	3.6E-03	3.7E-03
		Grade Crossing	4.4E-07	4.9E-05	4.7E-06	5.5E-05	2.2E-06	7.1E-05	7.1E-05	2.8E-04
		County Total	**1.0E-01**	**2.1E-02**	**3.0E-02**	**2.5E-03**	**5.1E-03**	**3.0E-01**	**3.7E-03**	**4.0E-03**
Texas	Jackson	Rail Segment	1.1E-01	2.3E-02	3.2E-02	2.7E-03	5.5E-03	3.2E-01	3.9E-03	4.0E-03
		Grade Crossing	2.7E-09	8.8E-07	8.4E-08	1.0E-06	3.9E-08	1.3E-06	1.3E-06	5.0E-06
		County Total	**1.1E-01**	**2.3E-02**	**3.2E-02**	**2.7E-03**	**5.5E-03**	**3.2E-01**	**3.9E-03**	**4.0E-03**
Texas	Jefferson	Rail Segment	3.7E-01	7.5E-02	1.1E-01	8.7E-03	1.8E-02	1.0E+00	1.3E-02	1.3E-02
		Grade Crossing	1.3E-08	3.3E-06	3.1E-07	3.7E-06	1.5E-07	4.8E-06	4.8E-06	1.9E-05
		County Total	**3.7E-01**	**7.5E-02**	**1.1E-01**	**8.7E-03**	**1.8E-02**	**1.0E+00**	**1.3E-02**	**1.3E-02**
Texas	Jim Hogg	Rail Segment	5.6E-02	1.1E-02	1.6E-02	1.3E-03	2.7E-03	1.6E-01	2.0E-03	2.0E-03
		Grade Crossing	3.6E-09	4.9E-07	4.7E-08	5.6E-07	2.2E-08	7.1E-07	7.2E-07	2.8E-06
		County Total	**5.6E-02**	**1.1E-02**	**1.6E-02**	**1.3E-03**	**2.7E-03**	**1.6E-01**	**2.0E-03**	**2.0E-03**
Texas	Jim Wells	Rail Segment	9.2E-02	1.9E-02	2.6E-02	2.2E-03	4.5E-03	2.6E-01	3.2E-03	3.3E-03
		Grade Crossing	2.2E-07	2.2E-05	2.1E-06	2.5E-05	9.9E-07	3.2E-05	3.2E-05	1.3E-04
		County Total	**9.2E-02**	**1.9E-02**	**2.6E-02**	**2.2E-03**	**4.5E-03**	**2.6E-01**	**3.2E-03**	**3.4E-03**
Texas	Liberty	Rail Segment	7.9E-02	1.6E-02	2.3E-02	1.9E-03	3.9E-03	2.3E-01	2.8E-03	2.8E-03
		Grade Crossing	1.3E-08	3.1E-06	2.9E-07	3.5E-06	1.4E-07	4.5E-06	4.5E-06	1.8E-05
		County Total	**7.9E-02**	**1.6E-02**	**2.3E-02**	**1.9E-03**	**3.9E-03**	**2.3E-01**	**2.8E-03**	**2.9E-03**
Texas	Newton	Rail Segment	7.2E-02	1.5E-02	2.1E-02	1.7E-03	3.5E-03	2.1E-01	2.5E-03	2.6E-03

Table K.6-2. County-Level Emissions Analysis Summary-HAPs

			Acquisition-Related HAP Emissions (tons/year)							
State	**County**	**Source**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
		County Total	**7.2E-02**	**1.5E-02**	**2.1E-02**	**1.7E-03**	**3.5E-03**	**2.1E-01**	**2.5E-03**	**2.6E-03**
Texas	Nueces	Rail Segment	1.2E-01	2.5E-02	3.5E-02	2.9E-03	6.1E-03	3.5E-01	4.3E-03	4.4E-03
		Grade Crossing	3.2E-08	3.3E-06	3.2E-07	3.8E-06	1.5E-07	4.8E-06	4.9E-06	1.9E-05
		County Total	**1.2E-01**	**2.5E-02**	**3.5E-02**	**2.9E-03**	**6.1E-03**	**3.5E-01**	**4.3E-03**	**4.4E-03**
Texas	Orange	Rail Segment	2.5E-01	5.1E-02	7.2E-02	6.0E-03	1.2E-02	7.2E-01	8.8E-03	9.0E-03
		Grade Crossing	5.3E-09	2.6E-06	2.4E-07	2.9E-06	1.1E-07	3.7E-06	3.7E-06	1.5E-05
		County Total	**2.5E-01**	**5.1E-02**	**7.2E-02**	**6.0E-03**	**1.2E-02**	**7.2E-01**	**8.8E-03**	**9.0E-03**
Texas	Refugio	Rail Segment	2.0E-01	4.1E-02	5.8E-02	4.8E-03	9.9E-03	5.7E-01	7.0E-03	7.2E-03
		Grade Crossing	3.7E-09	2.6E-07	2.5E-08	3.0E-07	1.2E-08	3.8E-07	3.8E-07	1.5E-06
		County Total	**2.0E-01**	**4.1E-02**	**5.8E-02**	**4.8E-03**	**9.9E-03**	**5.7E-01**	**7.0E-03**	**7.2E-03**
Texas	San Patricio	Rail Segment	1.1E-01	2.3E-02	3.2E-02	2.7E-03	5.5E-03	3.2E-01	3.9E-03	4.0E-03
		Grade Crossing	8.1E-09	7.0E-07	6.7E-08	7.9E-07	3.1E-08	1.0E-06	1.0E-06	4.0E-06
		County Total	**1.1E-01**	**2.3E-02**	**3.2E-02**	**2.7E-03**	**5.5E-03**	**3.2E-01**	**3.9E-03**	**4.0E-03**
Texas	Tarrant	Rail Segment	4.6E-03	9.4E-04	1.3E-03	1.1E-04	2.3E-04	1.3E-02	1.6E-04	1.6E-04
		Grade Crossing	4.9E-10	3.1E-08	3.0E-09	3.5E-08	1.4E-09	4.5E-08	4.5E-08	1.8E-07
		County Total	**4.6E-03**	**9.4E-04**	**1.3E-03**	**1.1E-04**	**2.3E-04**	**1.3E-02**	**1.6E-04**	**1.6E-04**
Texas	Victoria	Rail Segment	2.4E-01	4.9E-02	6.9E-02	5.7E-03	1.2E-02	6.8E-01	8.4E-03	8.6E-03
		Grade Crossing	5.1E-07	3.5E-05	3.4E-06	4.0E-05	1.6E-06	5.1E-05	5.1E-05	2.0E-04
		County Total	**2.4E-01**	**4.9E-02**	**6.9E-02**	**5.7E-03**	**1.2E-02**	**6.8E-01**	**8.4E-03**	**8.8E-03**
Texas	Webb	Rail Segment	2.4E-01	4.9E-02	6.9E-02	5.7E-03	1.2E-02	6.8E-01	8.4E-03	8.6E-03
		Grade Crossing	1.4E-07	1.3E-05	1.2E-06	1.5E-05	5.7E-07	1.9E-05	1.9E-05	7.4E-05
		County Total	**2.4E-01**	**4.9E-02**	**6.9E-02**	**5.7E-03**	**1.2E-02**	**6.8E-01**	**8.4E-03**	**8.6E-03**
Texas	Wharton	Rail Segment	1.8E-01	3.8E-02	5.3E-02	4.4E-03	9.0E-03	5.2E-01	6.4E-03	6.6E-03
		Grade Crossing	2.5E-08	7.5E-06	7.2E-07	8.5E-06	3.3E-07	1.1E-05	1.1E-05	4.3E-05
		County Total	**1.8E-01**	**3.8E-02**	**5.3E-02**	**4.4E-03**	**9.0E-03**	**5.2E-01**	**6.4E-03**	**6.6E-03**

Note: See individual analyses tables for further information on emissions analyses and assumptions.

K.7 Rail Segment Analysis

OEA conducted an analysis of the emissions changes from locomotives on rail line segments that would meet or exceed the Board's thresholds for environmental analysis. The Applicants provided rail segments that exceeded the Board's analysis thresholds. OEA sub-divided these segments into "sub-segments" at county lines and within counties for partial nonattainment areas that do not compose an entire county for the purpose of air quality analysis. OEA obtained nonattainment area boundaries from EPA (EPA 2021b). OEA encountered ozone and Sulfur Dioxide nonattainment areas in some counties along the analyzed rail segments. The Applicants provided No-Action Alternative and Proposed Acquisition annual gross tons per mile for each segment. OEA obtained the lengths of the sub-segments using geographic information system processing and used them to proportion the total segment gross tons per mile to annual ton-miles for each sub-segment.

OEA converted the ton-mileage for each sub-segment to fuel usage using the fleet-wide fuel efficiency factors. OEA derived these efficiency factors for the No-Action Alternative and Proposed Acquisition based on the fuel efficiency data presented in the Application (contained in the Verified Statement of Michael R. Baranowski). It is anticipated the Proposed Acquisition fuel efficiency would be better than the No-Action Alternative fuel efficiency due to efficiencies gained by the Proposed Acquisition. OEA obtained emission factors for calculating locomotive emissions using EPA methodology (EPA 2009). OEA obtained the mix of emissions tier standards for the combined locomotive fleet from the Applicants. OEA used this mix to create composite fleet wide emission factors by pollutant for the rail segment analysis. OEA converted emission factors into a grams per gallon format using the EPA-provided conversion factor from brake horsepower-hours to gallons (EPA 2009). OEA estimated HAPs emission rates by applying speciation profiles to the VOC or PM emission rates (EPA 2021c). OEA combined the above No-Action Alternative and Proposed Acquisition fuel usages with the emission factors to calculate the emissions inventory for each sub-segment. OEA conservatively estimated emissions using current locomotive fleet information. It is expected that the fleet would become cleaner over the coming years as the acquisition would result in an excess of locomotives that would allow the Applicants to optimize locomotive assignments to the fleet's newest, most fuel-efficient members. The locomotive surplus would also allow the Applicants to continue remanufacturing older locomotives into more fuel-efficient units. Emerging technologies such as hydrogen and battery-electric locomotives may also contribute to cleaner fleet with reduced emissions.

OEA grouped sub-segments by county to create a county-level emissions inventory. OEA calculated the difference between the Proposed Acquisition and No-Action Alternative inventories to determine the Acquisition-related emissions.

Table K.7-1 and **Table K.7-2** summarize the rail segment analysis. **Table K.7-3** through **Table K.7-8** show analysis by sub-segment. **Table K.7-9** shows the locomotive emissions factors.

Table K.7-1. Rail Segment Analysis- Criteria Pollutant Summary

					Acquisition-Related Criteria Emissions (tons/year)							*De Minimis* Emissions (tons/year)						
State	**County**	**Attainment**	**NA Pollutant**	**Sub Segment ID**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**
Arkansas	Benton	Attainment		K-HEAV-01-06	121.8	5.1	3.3	3.2	0.1	23.1	8,904							
				Total	**121.8**	**5.1**	**3.3**	**3.2**	**0.1**	**23.1**	**8,904**	-	-	-	-	-	-	-
Arkansas	Little River	Attainment		K-SHRE-02-02	91.3	3.8	2.4	2.4	0.1	17.3	6,672							
				K-SHRE-03-01	51.3	2.2	1.4	1.3	0.0	9.7	3,751							
				Total	**142.6**	**6.0**	**3.8**	**3.7**	**0.1**	**27.1**	**10,423**	-	-	-	-	-	-	-
Arkansas	Miller	Attainment		K-SHRE-03-04	33.1	1.4	0.9	0.9	0.0	6.3	2,419							
				Total	**33.1**	**1.4**	**0.9**	**0.9**	**0.0**	**6.3**	**2,419**	-	-	-	-	-	-	-
Arkansas	Polk	Attainment		K-SHRE-01-02	234.8	9.9	6.3	6.1	0.2	44.6	17,162							
				Total	**234.8**	**9.9**	**6.3**	**6.1**	**0.2**	**44.6**	**17,162**	-	-	-	-	-	-	-
Arkansas	Sevier	Attainment		K-SHRE-01-03	63.5	2.7	1.7	1.6	0.0	12.1	4,639							
				K-SHRE-02-01	43.3	1.8	1.2	1.1	0.0	8.2	3,167							
				Total	**106.8**	**4.5**	**2.9**	**2.8**	**0.1**	**20.3**	**7,806**	-	-	-	-	-	-	-
Illinois	Carroll	Attainment		C-CHIC-01-02	0.4	0.0	0.0	0.0	0.0	0.1	27							
				C-CHIC-02-01	68.9	2.9	1.8	1.8	0.0	13.1	5,036							
				Total	**69.3**	**2.9**	**1.9**	**1.8**	**0.0**	**13.2**	**5,063**	-	-	-	-	-	-	-
Illinois	Cook	Nonattainment	Ozone-Serious	C-ELGI-01-02	16.4	0.7	0.4	0.4	0.0	3.1	1,199							
				C-ELGI-02-02	7.1	0.3	0.2	0.2	0.0	1.4	520							
				Total	**23.5**	**1.0**	**0.6**	**0.6**	**0.0**	**4.5**	**1,719**	***50***	***50***	-	-	-	-	-
Illinois	DeKalb	Attainment		C-CHIC-03-02	45.1	1.9	1.2	1.2	0.0	8.6	3,294							
				Total	**45.1**	**1.9**	**1.2**	**1.2**	**0.0**	**8.6**	**3,294**	-	-	-	-	-	-	-
Illinois	DuPage	Nonattainment	Ozone-Serious	C-ELGI-01-03	27.7	1.2	0.7	0.7	0.0	5.3	2,027							
				C-ELGI-02-01	1.6	0.1	0.0	0.0	0.0	0.3	117							
				Total	**29.3**	**1.2**	**0.8**	**0.8**	**0.0**	**5.6**	**2,144**	***50***	***50***	-	-	-	-	-
Illinois	Kane	Nonattainment	Ozone-Serious	C-CHIC-03-03	0.2	0.0	0.0	0.0	0.0	0.0	12							
				C-CHIC-03-04	30.6	1.3	0.8	0.8	0.0	5.8	2,235							
				C-ELGI-01-01	14.7	0.6	0.4	0.4	0.0	2.8	1,076							
				Total	**45.5**	**1.9**	**1.2**	**1.2**	**0.0**	**8.6**	**3,324**	***50***	***50***	-	-	-	-	-
Illinois	Ogle	Attainment		C-CHIC-02-02	79.0	3.3	2.1	2.0	0.1	15.0	5,775							
				C-CHIC-03-01	17.8	0.7	0.5	0.5	0.0	3.4	1,304							
				Total	**96.8**	**4.1**	**2.6**	**2.5**	**0.1**	**18.4**	**7,078**	-	-	-	-	-	-	-
Iowa	Appanoose	Attainment		C-LARE-01-03	86.0	3.6	2.3	2.2	0.1	16.3	6,285							
				Total	**86.0**	**3.6**	**2.3**	**2.2**	**0.1**	**16.3**	**6,285**	-	-	-	-	-	-	-
Iowa	Clinton	Attainment		C-DAVE-01-02	47.8	2.0	1.3	1.2	0.0	9.1	3,496							
				C-DAVE-02-01	27.5	1.2	0.7	0.7	0.0	5.2	2,008							
				Total	**75.3**	**3.2**	**2.0**	**2.0**	**0.1**	**14.3**	**5,504**	-	-	-	-	-	-	-
Iowa	Jackson	Attainment		C-CHIC-01-01	2.0	0.1	0.1	0.1	0.0	0.4	147							
				C-DAVE-01-01	5.9	0.2	0.2	0.2	0.0	1.1	433							
				Total	**7.9**	**0.3**	**0.2**	**0.2**	**0.0**	**1.5**	**580**	-	-	-	-	-	-	-
Iowa	Jefferson	Attainment		C-OTTU-02-05	16.4	0.7	0.4	0.4	0.0	3.1	1,195							
				Total	**16.4**	**0.7**	**0.4**	**0.4**	**0.0**	**3.1**	**1,195**	-	-	-	-	-	-	-

Table K.7-1. Rail Segment Analysis- Criteria Pollutant Summary

					Acquisition-Related Criteria Emissions (tons/year)							*De Minimis* Emissions (tons/year)						
State	**County**	**Attainment**	**NA Pollutant**	**Sub Segment ID**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**
Iowa	Keokuk	Attainment		C-OTTU-02-04	29.2	1.2	0.8	0.8	0.0	5.5	2,134							
				Total	**29.2**	**1.2**	**0.8**	**0.8**	**0.0**	**5.5**	**2,134**	-	-	-	-	-	-	-
Iowa	Louisa	Attainment		C-OTTU-02-02	67.0	2.8	1.8	1.7	0.0	12.7	4,900							
				Total	**67.0**	**2.8**	**1.8**	**1.7**	**0.0**	**12.7**	**4,900**	-	-	-	-	-	-	-
Iowa	Monroe	Attainment		C-LARE-01-02	38.9	1.6	1.0	1.0	0.0	7.4	2,840							
				Total	**38.9**	**1.6**	**1.0**	**1.0**	**0.0**	**7.4**	**2,840**	-	-	-	-	-	-	-
Iowa	Muscatine	Nonattainment	SO2	C-OTTU-01-03	21.1	0.9	0.6	0.5	0.0	4.0	1,546							
				C-OTTU-02-01	22.5	0.9	0.6	0.6	0.0	4.3	1,644							
				Total	**43.6**	**1.8**	**1.2**	**1.1**	**0.0**	**8.3**	**3,189**	-	-	-	-	***100***	-	-
Iowa	Muscatine	Attainment		C-OTTU-01-02	19.8	0.8	0.5	0.5	0.0	3.8	1,449							
				Total	**19.8**	**0.8**	**0.5**	**0.5**	**0.0**	**3.8**	**1,449**	-	-	-	-	-	-	-
Iowa	Scott	Attainment		C-DAVE-02-02	58.5	2.5	1.6	1.5	0.0	11.1	4,279							
				C-DAVE-03-01	14.7	0.6	0.4	0.4	0.0	2.8	1,078							
				C-OTTU-01-01	23.9	1.0	0.6	0.6	0.0	4.5	1,744							
				Total	**97.2**	**4.1**	**2.6**	**2.5**	**0.1**	**18.5**	**7,101**	-	-	-	-	-	-	-
Iowa	Wapello	Attainment		C-LARE-01-01	49.4	2.1	1.3	1.3	0.0	9.4	3,613							
				C-OTTU-02-06	55.2	2.3	1.5	1.4	0.0	10.5	4,036							
				Total	**104.7**	**4.4**	**2.8**	**2.7**	**0.1**	**19.9**	**7,649**	-	-	-	-	-	-	-
Iowa	Washington	Attainment		C-OTTU-02-03	79.5	3.3	2.1	2.1	0.1	15.1	5,811							
				Total	**79.5**	**3.3**	**2.1**	**2.1**	**0.1**	**15.1**	**5,811**	-	-	-	-	-	-	-
Iowa	Wayne	Attainment		C-LARE-01-04	60.1	2.5	1.6	1.6	0.0	11.4	4,394							
				Total	**60.1**	**2.5**	**1.6**	**1.6**	**0.0**	**11.4**	**4,394**	-	-	-	-	-	-	-
Kansas	Cherokee	Attainment		K-HEAV-01-02	13.9	0.6	0.4	0.4	0.0	2.6	1,013							
				Total	**13.9**	**0.6**	**0.4**	**0.4**	**0.0**	**2.6**	**1,013**	-	-	-	-	-	-	-
Kansas	Crawford	Attainment		K-HEAV-01-01	25.9	1.1	0.7	0.7	0.0	4.9	1,892							
				K-PITT-01-07	35.6	1.5	1.0	0.9	0.0	6.8	2,604							
				Total	**61.5**	**2.6**	**1.6**	**1.6**	**0.0**	**11.7**	**4,496**	-	-	-	-	-	-	-
Louisiana	Beauregard	Attainment		K-BEAU-02-02	136.5	5.7	3.6	3.5	0.1	25.9	9,977							
				K-BEAU-03-02	12.3	0.5	0.3	0.3	0.0	2.3	896							
				Total	**148.8**	**6.3**	**4.0**	**3.9**	**0.1**	**28.3**	**10,873**	-	-	-	-	-	-	-
Louisiana	Caddo	Attainment		K-SHRE-03-05	213.1	9.0	5.7	5.5	0.1	40.5	15,573							
				K-SHRE-04-01	90.7	3.8	2.4	2.3	0.1	17.2	6,629							
				Total	**303.8**	**12.8**	**8.1**	**7.9**	**0.2**	**57.7**	**22,202**	-	-	-	-	-	-	-
Louisiana	Calcasieu	Attainment		K-BEAU-02-03	12.0	0.5	0.3	0.3	0.0	2.3	874							
				K-BEAU-03-01	79.5	3.3	2.1	2.1	0.1	15.1	5,814							
				Total	**91.5**	**3.8**	**2.4**	**2.4**	**0.1**	**17.4**	**6,688**	-	-	-	-	-	-	-
Louisiana	De Soto	Attainment		K-BEAU-01-01	116.0	4.9	3.1	3.0	0.1	22.0	8,479							
				K-SHRE-04-02	25.6	1.1	0.7	0.7	0.0	4.9	1,872							
				Total	**141.6**	**6.0**	**3.8**	**3.7**	**0.1**	**26.9**	**10,351**	-	-	-	-	-	-	-
Louisiana	Sabine	Attainment		K-BEAU-01-02	181.8	7.6	4.9	4.7	0.1	34.5	13,288							

Table K.7-1. Rail Segment Analysis- Criteria Pollutant Summary

					Acquisition-Related Criteria Emissions (tons/year)							*De Minimis* Emissions (tons/year)						
State	**County**	**Attainment**	**NA Pollutant**	**Sub Segment ID**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**
				Total	**181.8**	**7.6**	**4.9**	**4.7**	**0.1**	**34.5**	**13,288**	-	-	-	-	-	-	-
Louisiana	Vernon	Attainment		K-BEAU-01-03	62.6	2.6	1.7	1.6	0.0	11.9	4,578							
				K-BEAU-02-01	95.4	4.0	2.5	2.5	0.1	18.1	6,975							
				Total	**158.1**	**6.6**	**4.2**	**4.1**	**0.1**	**30.0**	**11,553**	-	-	-	-	-	-	-
Missouri	Barton	Attainment		K-PITT-01-06	45.2	1.9	1.2	1.2	0.0	8.6	3,306							
				Total	**45.2**	**1.9**	**1.2**	**1.2**	**0.0**	**8.6**	**3,306**	-	-	-	-	-	-	-
Missouri	Bates	Attainment		K-PITT-01-04	119.2	5.0	3.2	3.1	0.1	22.6	8,715							
				Total	**119.2**	**5.0**	**3.2**	**3.1**	**0.1**	**22.6**	**8,715**	-	-	-	-	-	-	-
Missouri	Caldwell	Attainment		C-KACI-01-03	77.1	3.2	2.1	2.0	0.1	14.6	5,637							
				C-KACI-02-01	24.8	1.0	0.7	0.6	0.0	4.7	1,815							
				Total	**102.0**	**4.3**	**2.7**	**2.6**	**0.1**	**19.4**	**7,452**	-	-	-	-	-	-	-
Missouri	Cass	Attainment		K-PITT-01-03	124.9	5.2	3.3	3.2	0.1	23.7	9,125							
				Total	**124.9**	**5.2**	**3.3**	**3.2**	**0.1**	**23.7**	**9,125**	-	-	-	-	-	-	-
Missouri	Clay	Attainment		C-KACI-02-03	123.0	5.2	3.3	3.2	0.1	23.4	8,988							
				Total	**123.0**	**5.2**	**3.3**	**3.2**	**0.1**	**23.4**	**8,988**	-	-	-	-	-	-	-
Missouri	Grundy	Attainment		C-KACI-01-01	20.9	0.9	0.6	0.5	0.0	4.0	1,525							
				C-LARE-02-03	37.8	1.6	1.0	1.0	0.0	7.2	2,766							
				Total	**58.7**	**2.5**	**1.6**	**1.5**	**0.0**	**11.2**	**4,291**	-	-	-	-	-	-	-
Missouri	Jackson	Nonattainment	SO2	C-KACI-02-05	1.4	0.1	0.0	0.0	0.0	0.3	102							
				K-PITT-01-01	19.9	0.8	0.5	0.5	0.0	3.8	1,455							
				Total	**21.3**	**0.9**	**0.6**	**0.6**	**0.0**	**4.0**	**1,557**	-	-	-	-	***100***	-	-
Missouri	Jackson	Attainment		C-KACI-02-04	7.7	0.3	0.2	0.2	0.0	1.5	562							
				K-PITT-01-02	71.6	3.0	1.9	1.9	0.0	13.6	5,235							
				Total	**79.3**	**3.3**	**2.1**	**2.1**	**0.1**	**15.1**	**5,796**	-	-	-	-	-	-	-
Missouri	Jasper	Attainment		K-HEAV-01-03	86.8	3.7	2.3	2.2	0.1	16.5	6,346							
				Total	**86.8**	**3.7**	**2.3**	**2.2**	**0.1**	**16.5**	**6,346**	-	-	-	-	-	-	-
Missouri	Livingston	Attainment		C-KACI-01-02	138.4	5.8	3.7	3.6	0.1	26.3	10,118							
				Total	**138.4**	**5.8**	**3.7**	**3.6**	**0.1**	**26.3**	**10,118**	-	-	-	-	-	-	-
Missouri	McDonald	Attainment		K-HEAV-01-05	87.2	3.7	2.3	2.3	0.1	16.6	6,375							
				Total	**87.2**	**3.7**	**2.3**	**2.3**	**0.1**	**16.6**	**6,375**	-	-	-	-	-	-	-
Missouri	Newton	Attainment		K-HEAV-01-04	109.2	4.6	2.9	2.8	0.1	20.7	7,984							
				Total	**109.2**	**4.6**	**2.9**	**2.8**	**0.1**	**20.7**	**7,984**	-	-	-	-	-	-	-
Missouri	Putnam	Attainment		C-LARE-02-01	83.1	3.5	2.2	2.2	0.1	15.8	6,073							
				Total	**83.1**	**3.5**	**2.2**	**2.2**	**0.1**	**15.8**	**6,073**	-	-	-	-	-	-	-
Missouri	Ray	Attainment		C-KACI-02-02	53.0	2.2	1.4	1.4	0.0	10.1	3,870							
				Total	**53.0**	**2.2**	**1.4**	**1.4**	**0.0**	**10.1**	**3,870**	-	-	-	-	-	-	-
Missouri	Sullivan	Attainment		C-LARE-02-02	94.3	4.0	2.5	2.4	0.1	17.9	6,896							
				Total	**94.3**	**4.0**	**2.5**	**2.4**	**0.1**	**17.9**	**6,896**	-	-	-	-	-	-	-
Missouri	Vernon	Attainment		K-PITT-01-05	114.0	4.8	3.0	3.0	0.1	21.7	8,335							
				Total	**114.0**	**4.8**	**3.0**	**3.0**	**0.1**	**21.7**	**8,335**	-	-	-	-	-	-	-

Table K.7-1. Rail Segment Analysis- Criteria Pollutant Summary

					Acquisition-Related Criteria Emissions (tons/year)							*De Minimis* Emissions (tons/year)						
State	**County**	**Attainment**	**NA Pollutant**	**Sub Segment ID**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**
Oklahoma	Adair	Attainment		K-HEAV-01-07	12.6	0.5	0.3	0.3	0.0	2.4	920							
				K-HEAV-02-01	155.2	6.5	4.1	4.0	0.1	29.5	11,347							
				Total	**167.8**	**7.1**	**4.5**	**4.3**	**0.1**	**31.9**	**12,266**	-	-	-	-	-	-	-
Oklahoma	Le Flore	Attainment		K-HEAV-02-03	73.5	3.1	2.0	1.9	0.0	14.0	5,370							
				K-HEAV-03-01	52.6	2.2	1.4	1.4	0.0	10.0	3,848							
				K-SHRE-01-01	86.7	3.6	2.3	2.2	0.1	16.5	6,339							
				Total	**212.9**	**8.9**	**5.7**	**5.5**	**0.1**	**40.4**	**15,557**	-	-	-	-	-	-	-
Oklahoma	Sequoyah	Attainment		K-HEAV-02-02	128.4	5.4	3.4	3.3	0.1	24.4	9,384							
				Total	**128.4**	**5.4**	**3.4**	**3.3**	**0.1**	**24.4**	**9,384**	-	-	-	-	-	-	-
Texas	Bowie	Attainment		K-SHRE-03-02	112.7	4.7	3.0	2.9	0.1	21.4	8,237							
				Total	**112.7**	**4.7**	**3.0**	**2.9**	**0.1**	**21.4**	**8,237**	-	-	-	-	-	-	-
Texas	Cass	Attainment		K-SHRE-03-03	60.7	2.6	1.6	1.6	0.0	11.5	4,435							
				Total	**60.7**	**2.6**	**1.6**	**1.6**	**0.0**	**11.5**	**4,435**	-	-	-	-	-	-	-
Texas	Collin	Nonattainment	Ozone-Severe	K-ALLI-02-02	2.9	0.1	0.1	0.1	0.0	0.5	209							
				K-ALLI-03-01	3.5	0.1	0.1	0.1	0.0	0.7	252							
				Total	**6.3**	**0.3**	**0.2**	**0.2**	**0.0**	**1.2**	**461**	***25***	***25***	-	-	-	-	-
Texas	Denton	Nonattainment	Ozone-Severe	K-ALLI-01-02	6.8	0.3	0.2	0.2	0.0	1.3	498							
				K-ALLI-02-01	10.2	0.4	0.3	0.3	0.0	1.9	745							
				Total	**17.0**	**0.7**	**0.5**	**0.4**	**0.0**	**3.2**	**1,242**	***25***	***25***	-	-	-	-	-
Texas	Duval	Attainment		K-LARE-02-02	63.8	2.7	1.7	1.7	0.0	12.1	4,662							
				Total	**63.8**	**2.7**	**1.7**	**1.7**	**0.0**	**12.1**	**4,662**	-	-	-	-	-	-	-
Texas	Fort Bend	Nonattainment	Ozone-Severe	K-ROSE-01-01	23.0	1.0	0.6	0.6	0.0	4.4	1,682							
				K-ROSE-02-01	1.9	0.1	0.1	0.0	0.0	0.4	140							
				U-BEAU-01-04	12.7	0.5	0.3	0.3	0.0	2.4	928							
				Total	**37.6**	**1.6**	**1.0**	**1.0**	**0.0**	**7.1**	**2,750**	***25***	***25***	-	-	-	-	-
Texas	Harris	Nonattainment	Ozone-Severe	U-BEAU-01-03	31.5	1.3	0.8	0.8	0.0	6.0	2,301							
				Total	**31.5**	**1.3**	**0.8**	**0.8**	**0.0**	**6.0**	**2,301**	***25***	***25***	-	-	-	-	-
Texas	Jackson	Attainment		K-ROSE-02-03	34.3	1.4	0.9	0.9	0.0	6.5	2,510							
				Total	**34.3**	**1.4**	**0.9**	**0.9**	**0.0**	**6.5**	**2,510**	-	-	-	-	-	-	-
Texas	Jefferson	Attainment	Ozone '97 '79 Revoked	K-BEAU-03-05	3.0	0.1	0.1	0.1	0.0	0.6	217							
				K-BEAU-04-01	93.9	3.9	2.5	2.4	0.1	17.8	6,862							
				U-BEAU-01-01	14.3	0.6	0.4	0.4	0.0	2.7	1,043							
				Total	**111.1**	**4.7**	**3.0**	**2.9**	**0.1**	**21.1**	**8,122**	***100***	***100***	-	-	-	-	-
Texas	Jim Hogg	Attainment		K-LARE-02-03	17.0	0.7	0.5	0.4	0.0	3.2	1,244							
				Total	**17.0**	**0.7**	**0.5**	**0.4**	**0.0**	**3.2**	**1,244**	-	-	-	-	-	-	-
Texas	Jim Wells	Attainment		K-LARE-02-04	28.0	1.2	0.7	0.7	0.0	5.3	2,046							
				Total	**28.0**	**1.2**	**0.7**	**0.7**	**0.0**	**5.3**	**2,046**	-	-	-	-	-	-	-
Texas	Liberty	Nonattainment	Ozone-Severe	U-BEAU-01-02	24.1	1.0	0.6	0.6	0.0	4.6	1,765							
				Total	**24.1**	**1.0**	**0.6**	**0.6**	**0.0**	**4.6**	**1,765**	***25***	***25***	-	-	-	-	-
Texas	Newton	Attainment		K-BEAU-03-03	21.9	0.9	0.6	0.6	0.0	4.2	1,598							

Table K.7-1. Rail Segment Analysis- Criteria Pollutant Summary

					Acquisition-Related Criteria Emissions (tons/year)							*De Minimis* Emissions (tons/year)						
State	**County**	**Attainment**	**NA Pollutant**	**Sub Segment ID**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**
				Total	**21.9**	**0.9**	**0.6**	**0.6**	**0.0**	**4.2**	**1,598**	-	-	-	-	-	-	-
Texas	Nueces	Attainment		K-LARE-02-05	23.9	1.0	0.6	0.6	0.0	4.5	1,744							
				U-VICT-02-01	13.7	0.6	0.4	0.4	0.0	2.6	999							
				Total	**37.5**	**1.6**	**1.0**	**1.0**	**0.0**	**7.1**	**2,742**	-	-	-	-	-	-	-
Texas	Orange	Attainment	Ozone '97 '79 Revoked	K-BEAU-03-04	76.5	3.2	2.0	2.0	0.1	14.5	5,591							
				Total	**76.5**	**3.2**	**2.0**	**2.0**	**0.1**	**14.5**	**5,591**	***100***	***100***	-	-	-	-	-
Texas	Refugio	Attainment		U-VICT-02-03	61.3	2.6	1.6	1.6	0.0	11.6	4,479							
				Total	**61.3**	**2.6**	**1.6**	**1.6**	**0.0**	**11.6**	**4,479**	-	-	-	-	-	-	-
Texas	San Patricio	Attainment		U-VICT-02-02	34.0	1.4	0.9	0.9	0.0	6.5	2,486							
				Total	**34.0**	**1.4**	**0.9**	**0.9**	**0.0**	**6.5**	**2,486**	-	-	-	-	-	-	-
Texas	Tarrant	Nonattainment	Ozone-Severe	K-ALLI-01-01	1.4	0.1	0.0	0.0	0.0	0.3	102							
				Total	**1.4**	**0.1**	**0.0**	**0.0**	**0.0**	**0.3**	**102**	***25***	***25***	-	-	-	-	-
Texas	Victoria	Attainment		K-ROSE-02-04	22.7	1.0	0.6	0.6	0.0	4.3	1,660							
				U-VICT-01-01	20.4	0.9	0.5	0.5	0.0	3.9	1,490							
				U-VICT-02-04	29.9	1.3	0.8	0.8	0.0	5.7	2,184							
				Total	**73.0**	**3.1**	**1.9**	**1.9**	**0.0**	**13.9**	**5,334**	-	-	-	-	-	-	-
Texas	Webb	Attainment		K-LARE-02-01	73.0	3.1	1.9	1.9	0.0	13.9	5,333							
				Total	**73.0**	**3.1**	**1.9**	**1.9**	**0.0**	**13.9**	**5,333**	-	-	-	-	-	-	-
Texas	Wharton	Attainment		K-ROSE-02-02	55.8	2.3	1.5	1.4	0.0	10.6	4,078							
				Total	**55.8**	**2.3**	**1.5**	**1.4**	**0.0**	**10.6**	**4,078**	-	-	-	-	-	-	-

Table K.7-2. Rail Segment Analysis- HAPs Summary

			Acquisition-Related HAP Emissions (tons/year)							
State	**County**	**Sub Segment ID**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
Arkansas	Benton	K-HEAV-01-06	4.0E-01	8.2E-02	1.2E-01	9.5E-03	2.0E-02	1.1E+00	1.4E-02	1.4E-02
		Total	**4.0E-01**	**8.2E-02**	**1.2E-01**	**9.5E-03**	**2.0E-02**	**1.1E+00**	**1.4E-02**	**1.4E-02**
Arkansas	Little River	K-SHRE-02-02	3.0E-01	6.1E-02	8.6E-02	7.1E-03	1.5E-02	8.6E-01	1.0E-02	1.1E-02
		K-SHRE-03-01	1.7E-01	3.5E-02	4.9E-02	4.0E-03	8.3E-03	4.8E-01	5.9E-03	6.0E-03
		Total	**4.7E-01**	**9.6E-02**	**1.3E-01**	**1.1E-02**	**2.3E-02**	**1.3E+00**	**1.6E-02**	**1.7E-02**
Arkansas	Miller	K-SHRE-03-04	1.1E-01	2.2E-02	3.1E-02	2.6E-03	5.3E-03	3.1E-01	3.8E-03	3.9E-03
		Total	**1.1E-01**	**2.2E-02**	**3.1E-02**	**2.6E-03**	**5.3E-03**	**3.1E-01**	**3.8E-03**	**3.9E-03**
Arkansas	Polk	K-SHRE-01-02	7.7E-01	1.6E-01	2.2E-01	1.8E-02	3.8E-02	2.2E+00	2.7E-02	2.8E-02
		Total	**7.7E-01**	**1.6E-01**	**2.2E-01**	**1.8E-02**	**3.8E-02**	**2.2E+00**	**2.7E-02**	**2.8E-02**
Arkansas	Sevier	K-SHRE-01-03	2.1E-01	4.3E-02	6.0E-02	5.0E-03	1.0E-02	5.9E-01	7.3E-03	7.5E-03
		K-SHRE-02-01	1.4E-01	2.9E-02	4.1E-02	3.4E-03	7.0E-03	4.1E-01	5.0E-03	5.1E-03
		Total	**3.5E-01**	**7.2E-02**	**1.0E-01**	**8.4E-03**	**1.7E-02**	**1.0E+00**	**1.2E-02**	**1.3E-02**
Illinois	Carroll	C-CHIC-01-02	1.2E-03	2.5E-04	3.5E-04	2.9E-05	6.0E-05	3.5E-03	4.3E-05	4.4E-05
		C-CHIC-02-01	2.3E-01	4.6E-02	6.5E-02	5.4E-03	1.1E-02	6.5E-01	7.9E-03	8.1E-03
		Total	**2.3E-01**	**4.7E-02**	**6.6E-02**	**5.4E-03**	**1.1E-02**	**6.5E-01**	**8.0E-03**	**8.1E-03**
Illinois	Cook	C-ELGI-01-02	5.4E-02	1.1E-02	1.6E-02	1.3E-03	2.6E-03	1.5E-01	1.9E-03	1.9E-03
		C-ELGI-02-02	2.3E-02	4.8E-03	6.7E-03	5.6E-04	1.1E-03	6.7E-02	8.2E-04	8.4E-04
		Total	**7.7E-02**	**1.6E-02**	**2.2E-02**	**1.8E-03**	**3.8E-03**	**2.2E-01**	**2.7E-03**	**2.8E-03**
Illinois	DeKalb	C-CHIC-03-02	1.5E-01	3.0E-02	4.3E-02	3.5E-03	7.3E-03	4.2E-01	5.2E-03	5.3E-03
		Total	**1.5E-01**	**3.0E-02**	**4.3E-02**	**3.5E-03**	**7.3E-03**	**4.2E-01**	**5.2E-03**	**5.3E-03**
Illinois	DuPage	C-ELGI-01-03	9.1E-02	1.9E-02	2.6E-02	2.2E-03	4.5E-03	2.6E-01	3.2E-03	3.3E-03
		C-ELGI-02-01	5.2E-03	1.1E-03	1.5E-03	1.2E-04	2.6E-04	1.5E-02	1.8E-04	1.9E-04
		Total	**9.7E-02**	**2.0E-02**	**2.8E-02**	**2.3E-03**	**4.7E-03**	**2.7E-01**	**3.4E-03**	**3.4E-03**
Illinois	Kane	C-CHIC-03-03	5.2E-04	1.1E-04	1.5E-04	1.2E-05	2.6E-05	1.5E-03	1.8E-05	1.9E-05
		C-CHIC-03-04	1.0E-01	2.1E-02	2.9E-02	2.4E-03	4.9E-03	2.9E-01	3.5E-03	3.6E-03
		C-ELGI-01-01	4.8E-02	9.9E-03	1.4E-02	1.2E-03	2.4E-03	1.4E-01	1.7E-03	1.7E-03
		Total	**1.5E-01**	**3.1E-02**	**4.3E-02**	**3.6E-03**	**7.3E-03**	**4.3E-01**	**5.2E-03**	**5.3E-03**
Illinois	Ogle	C-CHIC-02-02	2.6E-01	5.3E-02	7.5E-02	6.2E-03	1.3E-02	7.4E-01	9.1E-03	9.3E-03
		C-CHIC-03-01	5.9E-02	1.2E-02	1.7E-02	1.4E-03	2.9E-03	1.7E-01	2.0E-03	2.1E-03
		Total	**3.2E-01**	**6.5E-02**	**9.2E-02**	**7.6E-03**	**1.6E-02**	**9.1E-01**	**1.1E-02**	**1.1E-02**
Iowa	Appanoose	C-LARE-01-03	2.8E-01	5.8E-02	8.1E-02	6.7E-03	1.4E-02	8.1E-01	9.9E-03	1.0E-02
		Total	**2.8E-01**	**5.8E-02**	**8.1E-02**	**6.7E-03**	**1.4E-02**	**8.1E-01**	**9.9E-03**	**1.0E-02**
Iowa	Clinton	C-DAVE-01-02	1.6E-01	3.2E-02	4.5E-02	3.7E-03	7.7E-03	4.5E-01	5.5E-03	5.6E-03
		C-DAVE-02-01	9.0E-02	1.8E-02	2.6E-02	2.1E-03	4.4E-03	2.6E-01	3.2E-03	3.2E-03
		Total	**2.5E-01**	**5.1E-02**	**7.1E-02**	**5.9E-03**	**1.2E-02**	**7.1E-01**	**8.6E-03**	**8.8E-03**
Iowa	Jackson	C-CHIC-01-01	6.6E-03	1.4E-03	1.9E-03	1.6E-04	3.3E-04	1.9E-02	2.3E-04	2.4E-04
		C-DAVE-01-01	1.9E-02	4.0E-03	5.6E-03	4.6E-04	9.6E-04	5.6E-02	6.8E-04	7.0E-04
		Total	**2.6E-02**	**5.3E-03**	**7.5E-03**	**6.2E-04**	**1.3E-03**	**7.4E-02**	**9.1E-04**	**9.3E-04**
Iowa	Jefferson	C-OTTU-02-05	5.4E-02	1.1E-02	1.5E-02	1.3E-03	2.6E-03	1.5E-01	1.9E-03	1.9E-03
		Total	**5.4E-02**	**1.1E-02**	**1.5E-02**	**1.3E-03**	**2.6E-03**	**1.5E-01**	**1.9E-03**	**1.9E-03**

Table K.7-2. Rail Segment Analysis- HAPs Summary

			Acquisition-Related HAP Emissions (tons/year)							
State	**County**	**Sub Segment ID**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
Iowa	Keokuk	C-OTTU-02-04	9.6E-02	2.0E-02	2.8E-02	2.3E-03	4.7E-03	2.7E-01	3.4E-03	3.4E-03
		Total	**9.6E-02**	**2.0E-02**	**2.8E-02**	**2.3E-03**	**4.7E-03**	**2.7E-01**	**3.4E-03**	**3.4E-03**
Iowa	Louisa	C-OTTU-02-02	2.2E-01	4.5E-02	6.3E-02	5.2E-03	1.1E-02	6.3E-01	7.7E-03	7.9E-03
		Total	**2.2E-01**	**4.5E-02**	**6.3E-02**	**5.2E-03**	**1.1E-02**	**6.3E-01**	**7.7E-03**	**7.9E-03**
Iowa	Monroe	C-LARE-01-02	1.3E-01	2.6E-02	3.7E-02	3.0E-03	6.3E-03	3.6E-01	4.5E-03	4.6E-03
		Total	**1.3E-01**	**2.6E-02**	**3.7E-02**	**3.0E-03**	**6.3E-03**	**3.6E-01**	**4.5E-03**	**4.6E-03**
Iowa	Muscatine	C-OTTU-01-03	7.0E-02	1.4E-02	2.0E-02	1.7E-03	3.4E-03	2.0E-01	2.4E-03	2.5E-03
		C-OTTU-02-01	7.4E-02	1.5E-02	2.1E-02	1.8E-03	3.6E-03	2.1E-01	2.6E-03	2.6E-03
		Total	**1.4E-01**	**2.9E-02**	**4.1E-02**	**3.4E-03**	**7.0E-03**	**4.1E-01**	**5.0E-03**	**5.1E-03**
Iowa	Muscatine	C-OTTU-01-02	6.5E-02	1.3E-02	1.9E-02	1.6E-03	3.2E-03	1.9E-01	2.3E-03	2.3E-03
		Total	**6.5E-02**	**1.3E-02**	**1.9E-02**	**1.6E-03**	**3.2E-03**	**1.9E-01**	**2.3E-03**	**2.3E-03**
Iowa	Scott	C-DAVE-02-02	1.9E-01	3.9E-02	5.5E-02	4.6E-03	9.4E-03	5.5E-01	6.7E-03	6.9E-03
		C-DAVE-03-01	4.9E-02	9.9E-03	1.4E-02	1.2E-03	2.4E-03	1.4E-01	1.7E-03	1.7E-03
		C-OTTU-01-01	7.9E-02	1.6E-02	2.3E-02	1.9E-03	3.9E-03	2.2E-01	2.7E-03	2.8E-03
		Total	**3.2E-01**	**6.5E-02**	**9.2E-02**	**7.6E-03**	**1.6E-02**	**9.1E-01**	**1.1E-02**	**1.1E-02**
Iowa	Wapello	C-LARE-01-01	1.6E-01	3.3E-02	4.7E-02	3.9E-03	8.0E-03	4.6E-01	5.7E-03	5.8E-03
		C-OTTU-02-06	1.8E-01	3.7E-02	5.2E-02	4.3E-03	8.9E-03	5.2E-01	6.3E-03	6.5E-03
		Total	**3.4E-01**	**7.0E-02**	**9.9E-02**	**8.2E-03**	**1.7E-02**	**9.8E-01**	**1.2E-02**	**1.2E-02**
Iowa	Washington	C-OTTU-02-03	2.6E-01	5.3E-02	7.5E-02	6.2E-03	1.3E-02	7.5E-01	9.1E-03	9.3E-03
		Total	**2.6E-01**	**5.3E-02**	**7.5E-02**	**6.2E-03**	**1.3E-02**	**7.5E-01**	**9.1E-03**	**9.3E-03**
Iowa	Wayne	C-LARE-01-04	2.0E-01	4.0E-02	5.7E-02	4.7E-03	9.7E-03	5.6E-01	6.9E-03	7.1E-03
		Total	**2.0E-01**	**4.0E-02**	**5.7E-02**	**4.7E-03**	**9.7E-03**	**5.6E-01**	**6.9E-03**	**7.1E-03**
Kansas	Cherokee	K-HEAV-01-02	4.6E-02	9.3E-03	1.3E-02	1.1E-03	2.2E-03	1.3E-01	1.6E-03	1.6E-03
		Total	**4.6E-02**	**9.3E-03**	**1.3E-02**	**1.1E-03**	**2.2E-03**	**1.3E-01**	**1.6E-03**	**1.6E-03**
Kansas	Crawford	K-HEAV-01-01	8.5E-02	1.7E-02	2.4E-02	2.0E-03	4.2E-03	2.4E-01	3.0E-03	3.0E-03
		K-PITT-01-07	1.2E-01	2.4E-02	3.4E-02	2.8E-03	5.8E-03	3.3E-01	4.1E-03	4.2E-03
		Total	**2.0E-01**	**4.1E-02**	**5.8E-02**	**4.8E-03**	**9.9E-03**	**5.8E-01**	**7.1E-03**	**7.2E-03**
Louisiana	Beauregard	K-BEAU-02-02	4.5E-01	9.2E-02	1.3E-01	1.1E-02	2.2E-02	1.3E+00	1.6E-02	1.6E-02
		K-BEAU-03-02	4.0E-02	8.2E-03	1.2E-02	9.6E-04	2.0E-03	1.1E-01	1.4E-03	1.4E-03
		Total	**4.9E-01**	**1.0E-01**	**1.4E-01**	**1.2E-02**	**2.4E-02**	**1.4E+00**	**1.7E-02**	**1.7E-02**
Louisiana	Caddo	K-SHRE-03-05	7.0E-01	1.4E-01	2.0E-01	1.7E-02	3.4E-02	2.0E+00	2.4E-02	2.5E-02
		K-SHRE-04-01	3.0E-01	6.1E-02	8.6E-02	7.1E-03	1.5E-02	8.5E-01	1.0E-02	1.1E-02
		Total	**1.0E+00**	**2.0E-01**	**2.9E-01**	**2.4E-02**	**4.9E-02**	**2.8E+00**	**3.5E-02**	**3.6E-02**
Louisiana	Calcasieu	K-BEAU-02-03	3.9E-02	8.0E-03	1.1E-02	9.4E-04	1.9E-03	1.1E-01	1.4E-03	1.4E-03
		K-BEAU-03-01	2.6E-01	5.4E-02	7.5E-02	6.2E-03	1.3E-02	7.5E-01	9.1E-03	9.3E-03
		Total	**3.0E-01**	**6.2E-02**	**8.7E-02**	**7.2E-03**	**1.5E-02**	**8.6E-01**	**1.1E-02**	**1.1E-02**
Louisiana	De Soto	K-BEAU-01-01	3.8E-01	7.8E-02	1.1E-01	9.1E-03	1.9E-02	1.1E+00	1.3E-02	1.4E-02
		K-SHRE-04-02	8.4E-02	1.7E-02	2.4E-02	2.0E-03	4.1E-03	2.4E-01	2.9E-03	3.0E-03
		Total	**4.7E-01**	**9.5E-02**	**1.3E-01**	**1.1E-02**	**2.3E-02**	**1.3E+00**	**1.6E-02**	**1.7E-02**
Louisiana	Sabine	K-BEAU-01-02	6.0E-01	1.2E-01	1.7E-01	1.4E-02	2.9E-02	1.7E+00	2.1E-02	2.1E-02

Table K.7-2. Rail Segment Analysis- HAPs Summary

			Acquisition-Related HAP Emissions (tons/year)							
State	**County**	**Sub Segment ID**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
		Total	**6.0E-01**	**1.2E-01**	**1.7E-01**	**1.4E-02**	**2.9E-02**	**1.7E+00**	**2.1E-02**	**2.1E-02**
Louisiana	Vernon	K-BEAU-01-03	2.1E-01	4.2E-02	5.9E-02	4.9E-03	1.0E-02	5.9E-01	7.2E-03	7.4E-03
		K-BEAU-02-01	3.1E-01	6.4E-02	9.0E-02	7.5E-03	1.5E-02	8.9E-01	1.1E-02	1.1E-02
		Total	**5.2E-01**	**1.1E-01**	**1.5E-01**	**1.2E-02**	**2.6E-02**	**1.5E+00**	**1.8E-02**	**1.9E-02**
Missouri	Barton	K-PITT-01-06	1.5E-01	3.0E-02	4.3E-02	3.5E-03	7.3E-03	4.2E-01	5.2E-03	5.3E-03
		Total	**1.5E-01**	**3.0E-02**	**4.3E-02**	**3.5E-03**	**7.3E-03**	**4.2E-01**	**5.2E-03**	**5.3E-03**
Missouri	Bates	K-PITT-01-04	3.9E-01	8.0E-02	1.1E-01	9.3E-03	1.9E-02	1.1E+00	1.4E-02	1.4E-02
		Total	**3.9E-01**	**8.0E-02**	**1.1E-01**	**9.3E-03**	**1.9E-02**	**1.1E+00**	**1.4E-02**	**1.4E-02**
Missouri	Caldwell	C-KACI-01-03	2.5E-01	5.2E-02	7.3E-02	6.0E-03	1.2E-02	7.2E-01	8.9E-03	9.1E-03
		C-KACI-02-01	8.2E-02	1.7E-02	2.3E-02	1.9E-03	4.0E-03	2.3E-01	2.8E-03	2.9E-03
		Total	**3.4E-01**	**6.9E-02**	**9.6E-02**	**8.0E-03**	**1.6E-02**	**9.6E-01**	**1.2E-02**	**1.2E-02**
Missouri	Cass	K-PITT-01-03	4.1E-01	8.4E-02	1.2E-01	9.8E-03	2.0E-02	1.2E+00	1.4E-02	1.5E-02
		Total	**4.1E-01**	**8.4E-02**	**1.2E-01**	**9.8E-03**	**2.0E-02**	**1.2E+00**	**1.4E-02**	**1.5E-02**
Missouri	Clay	C-KACI-02-03	4.0E-01	8.3E-02	1.2E-01	9.6E-03	2.0E-02	1.2E+00	1.4E-02	1.4E-02
		Total	**4.0E-01**	**8.3E-02**	**1.2E-01**	**9.6E-03**	**2.0E-02**	**1.2E+00**	**1.4E-02**	**1.4E-02**
Missouri	Grundy	C-KACI-01-01	6.9E-02	1.4E-02	2.0E-02	1.6E-03	3.4E-03	2.0E-01	2.4E-03	2.5E-03
		C-LARE-02-03	1.2E-01	2.5E-02	3.6E-02	3.0E-03	6.1E-03	3.5E-01	4.3E-03	4.4E-03
		Total	**1.9E-01**	**3.9E-02**	**5.6E-02**	**4.6E-03**	**9.5E-03**	**5.5E-01**	**6.7E-03**	**6.9E-03**
Missouri	Jackson	C-KACI-02-05	4.6E-03	9.4E-04	1.3E-03	1.1E-04	2.3E-04	1.3E-02	1.6E-04	1.6E-04
		K-PITT-01-01	6.6E-02	1.3E-02	1.9E-02	1.6E-03	3.2E-03	1.9E-01	2.3E-03	2.3E-03
		Total	**7.0E-02**	**1.4E-02**	**2.0E-02**	**1.7E-03**	**3.4E-03**	**2.0E-01**	**2.4E-03**	**2.5E-03**
Missouri	Jackson	C-KACI-02-04	2.5E-02	5.2E-03	7.3E-03	6.0E-04	1.2E-03	7.2E-02	8.8E-04	9.0E-04
		K-PITT-01-02	2.4E-01	4.8E-02	6.8E-02	5.6E-03	1.2E-02	6.7E-01	8.2E-03	8.4E-03
		Total	**2.6E-01**	**5.3E-02**	**7.5E-02**	**6.2E-03**	**1.3E-02**	**7.4E-01**	**9.1E-03**	**9.3E-03**
Missouri	Jasper	K-HEAV-01-03	2.9E-01	5.8E-02	8.2E-02	6.8E-03	1.4E-02	8.1E-01	1.0E-02	1.0E-02
		Total	**2.9E-01**	**5.8E-02**	**8.2E-02**	**6.8E-03**	**1.4E-02**	**8.1E-01**	**1.0E-02**	**1.0E-02**
Missouri	Livingston	C-KACI-01-02	4.6E-01	9.3E-02	1.3E-01	1.1E-02	2.2E-02	1.3E+00	1.6E-02	1.6E-02
		Total	**4.6E-01**	**9.3E-02**	**1.3E-01**	**1.1E-02**	**2.2E-02**	**1.3E+00**	**1.6E-02**	**1.6E-02**
Missouri	McDonald	K-HEAV-01-05	2.9E-01	5.9E-02	8.2E-02	6.8E-03	1.4E-02	8.2E-01	1.0E-02	1.0E-02
		Total	**2.9E-01**	**5.9E-02**	**8.2E-02**	**6.8E-03**	**1.4E-02**	**8.2E-01**	**1.0E-02**	**1.0E-02**
Missouri	Newton	K-HEAV-01-04	3.6E-01	7.3E-02	1.0E-01	8.5E-03	1.8E-02	1.0E+00	1.3E-02	1.3E-02
		Total	**3.6E-01**	**7.3E-02**	**1.0E-01**	**8.5E-03**	**1.8E-02**	**1.0E+00**	**1.3E-02**	**1.3E-02**
Missouri	Putnam	C-LARE-02-01	2.7E-01	5.6E-02	7.9E-02	6.5E-03	1.3E-02	7.8E-01	9.5E-03	9.8E-03
		Total	**2.7E-01**	**5.6E-02**	**7.9E-02**	**6.5E-03**	**1.3E-02**	**7.8E-01**	**9.5E-03**	**9.8E-03**
Missouri	Ray	C-KACI-02-02	1.7E-01	3.6E-02	5.0E-02	4.1E-03	8.5E-03	5.0E-01	6.1E-03	6.2E-03
		Total	**1.7E-01**	**3.6E-02**	**5.0E-02**	**4.1E-03**	**8.5E-03**	**5.0E-01**	**6.1E-03**	**6.2E-03**
Missouri	Sullivan	C-LARE-02-02	3.1E-01	6.3E-02	8.9E-02	7.4E-03	1.5E-02	8.8E-01	1.1E-02	1.1E-02
		Total	**3.1E-01**	**6.3E-02**	**8.9E-02**	**7.4E-03**	**1.5E-02**	**8.8E-01**	**1.1E-02**	**1.1E-02**
Missouri	Vernon	K-PITT-01-05	3.8E-01	7.7E-02	1.1E-01	8.9E-03	1.8E-02	1.1E+00	1.3E-02	1.3E-02
		Total	**3.8E-01**	**7.7E-02**	**1.1E-01**	**8.9E-03**	**1.8E-02**	**1.1E+00**	**1.3E-02**	**1.3E-02**

Table K.7-2. Rail Segment Analysis- HAPs Summary

			Acquisition-Related HAP Emissions (tons/year)							
State	**County**	**Sub Segment ID**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
Oklahoma	Adair	K-HEAV-01-07	4.1E-02	8.5E-03	1.2E-02	9.8E-04	2.0E-03	1.2E-01	1.4E-03	1.5E-03
		K-HEAV-02-01	5.1E-01	1.0E-01	1.5E-01	1.2E-02	2.5E-02	1.5E+00	1.8E-02	1.8E-02
		Total	**5.5E-01**	**1.1E-01**	**1.6E-01**	**1.3E-02**	**2.7E-02**	**1.6E+00**	**1.9E-02**	**2.0E-02**
Oklahoma	Le Flore	K-HEAV-02-03	2.4E-01	4.9E-02	6.9E-02	5.7E-03	1.2E-02	6.9E-01	8.4E-03	8.6E-03
		K-HEAV-03-01	1.7E-01	3.5E-02	5.0E-02	4.1E-03	8.5E-03	4.9E-01	6.0E-03	6.2E-03
		K-SHRE-01-01	2.9E-01	5.8E-02	8.2E-02	6.8E-03	1.4E-02	8.1E-01	1.0E-02	1.0E-02
		Total	**7.0E-01**	**1.4E-01**	**2.0E-01**	**1.7E-02**	**3.4E-02**	**2.0E+00**	**2.4E-02**	**2.5E-02**
Oklahoma	Sequoyah	K-HEAV-02-02	4.2E-01	8.6E-02	1.2E-01	1.0E-02	2.1E-02	1.2E+00	1.5E-02	1.5E-02
		Total	**4.2E-01**	**8.6E-02**	**1.2E-01**	**1.0E-02**	**2.1E-02**	**1.2E+00**	**1.5E-02**	**1.5E-02**
Texas	Bowie	K-SHRE-03-02	3.7E-01	7.6E-02	1.1E-01	8.8E-03	1.8E-02	1.1E+00	1.3E-02	1.3E-02
		Total	**3.7E-01**	**7.6E-02**	**1.1E-01**	**8.8E-03**	**1.8E-02**	**1.1E+00**	**1.3E-02**	**1.3E-02**
Texas	Cass	K-SHRE-03-03	2.0E-01	4.1E-02	5.7E-02	4.7E-03	9.8E-03	5.7E-01	7.0E-03	7.1E-03
		Total	**2.0E-01**	**4.1E-02**	**5.7E-02**	**4.7E-03**	**9.8E-03**	**5.7E-01**	**7.0E-03**	**7.1E-03**
Texas	Collin	K-ALLI-02-02	9.4E-03	1.9E-03	2.7E-03	2.2E-04	4.6E-04	2.7E-02	3.3E-04	3.4E-04
		K-ALLI-03-01	1.1E-02	2.3E-03	3.3E-03	2.7E-04	5.6E-04	3.2E-02	4.0E-04	4.1E-04
		Total	**2.1E-02**	**4.2E-03**	**6.0E-03**	**4.9E-04**	**1.0E-03**	**5.9E-02**	**7.2E-04**	**7.4E-04**
Texas	Denton	K-ALLI-01-02	2.2E-02	4.6E-03	6.4E-03	5.3E-04	1.1E-03	6.4E-02	7.8E-04	8.0E-04
		K-ALLI-02-01	3.4E-02	6.9E-03	9.6E-03	8.0E-04	1.6E-03	9.5E-02	1.2E-03	1.2E-03
		Total	**5.6E-02**	**1.1E-02**	**1.6E-02**	**1.3E-03**	**2.7E-03**	**1.6E-01**	**2.0E-03**	**2.0E-03**
Texas	Duval	K-LARE-02-02	2.1E-01	4.3E-02	6.0E-02	5.0E-03	1.0E-02	6.0E-01	7.3E-03	7.5E-03
		Total	**2.1E-01**	**4.3E-02**	**6.0E-02**	**5.0E-03**	**1.0E-02**	**6.0E-01**	**7.3E-03**	**7.5E-03**
Texas	Fort Bend	K-ROSE-01-01	7.6E-02	1.5E-02	2.2E-02	1.8E-03	3.7E-03	2.2E-01	2.6E-03	2.7E-03
		K-ROSE-02-01	6.3E-03	1.3E-03	1.8E-03	1.5E-04	3.1E-04	1.8E-02	2.2E-04	2.3E-04
		U-BEAU-01-04	4.2E-02	8.5E-03	1.2E-02	9.9E-04	2.0E-03	1.2E-01	1.5E-03	1.5E-03
		Total	**1.2E-01**	**2.5E-02**	**3.6E-02**	**2.9E-03**	**6.1E-03**	**3.5E-01**	**4.3E-03**	**4.4E-03**
Texas	Harris	U-BEAU-01-03	1.0E-01	2.1E-02	3.0E-02	2.5E-03	5.1E-03	3.0E-01	3.6E-03	3.7E-03
		Total	**1.0E-01**	**2.1E-02**	**3.0E-02**	**2.5E-03**	**5.1E-03**	**3.0E-01**	**3.6E-03**	**3.7E-03**
Texas	Jackson	K-ROSE-02-03	1.1E-01	2.3E-02	3.2E-02	2.7E-03	5.5E-03	3.2E-01	3.9E-03	4.0E-03
		Total	**1.1E-01**	**2.3E-02**	**3.2E-02**	**2.7E-03**	**5.5E-03**	**3.2E-01**	**3.9E-03**	**4.0E-03**
Texas	Jefferson	K-BEAU-03-05	9.8E-03	2.0E-03	2.8E-03	2.3E-04	4.8E-04	2.8E-02	3.4E-04	3.5E-04
		K-BEAU-04-01	3.1E-01	6.3E-02	8.9E-02	7.3E-03	1.5E-02	8.8E-01	1.1E-02	1.1E-02
		U-BEAU-01-01	4.7E-02	9.6E-03	1.4E-02	1.1E-03	2.3E-03	1.3E-01	1.6E-03	1.7E-03
		Total	**3.7E-01**	**7.5E-02**	**1.1E-01**	**8.7E-03**	**1.8E-02**	**1.0E+00**	**1.3E-02**	**1.3E-02**
Texas	Jim Hogg	K-LARE-02-03	5.6E-02	1.1E-02	1.6E-02	1.3E-03	2.7E-03	1.6E-01	2.0E-03	2.0E-03
		Total	**5.6E-02**	**1.1E-02**	**1.6E-02**	**1.3E-03**	**2.7E-03**	**1.6E-01**	**2.0E-03**	**2.0E-03**
Texas	Jim Wells	K-LARE-02-04	9.2E-02	1.9E-02	2.6E-02	2.2E-03	4.5E-03	2.6E-01	3.2E-03	3.3E-03
		Total	**9.2E-02**	**1.9E-02**	**2.6E-02**	**2.2E-03**	**4.5E-03**	**2.6E-01**	**3.2E-03**	**3.3E-03**
Texas	Liberty	U-BEAU-01-02	7.9E-02	1.6E-02	2.3E-02	1.9E-03	3.9E-03	2.3E-01	2.8E-03	2.8E-03
		Total	**7.9E-02**	**1.6E-02**	**2.3E-02**	**1.9E-03**	**3.9E-03**	**2.3E-01**	**2.8E-03**	**2.8E-03**
Texas	Newton	K-BEAU-03-03	7.2E-02	1.5E-02	2.1E-02	1.7E-03	3.5E-03	2.1E-01	2.5E-03	2.6E-03

Table K.7-2. Rail Segment Analysis- HAPs Summary

			Acquisition-Related HAP Emissions (tons/year)							
State	**County**	**Sub Segment ID**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
		Total	**7.2E-02**	**1.5E-02**	**2.1E-02**	**1.7E-03**	**3.5E-03**	**2.1E-01**	**2.5E-03**	**2.6E-03**
Texas	Nueces	K-LARE-02-05	7.9E-02	1.6E-02	2.3E-02	1.9E-03	3.9E-03	2.2E-01	2.7E-03	2.8E-03
		U-VICT-02-01	4.5E-02	9.2E-03	1.3E-02	1.1E-03	2.2E-03	1.3E-01	1.6E-03	1.6E-03
		Total	**1.2E-01**	**2.5E-02**	**3.5E-02**	**2.9E-03**	**6.1E-03**	**3.5E-01**	**4.3E-03**	**4.4E-03**
Texas	Orange	K-BEAU-03-04	2.5E-01	5.1E-02	7.2E-02	6.0E-03	1.2E-02	7.2E-01	8.8E-03	9.0E-03
		Total	**2.5E-01**	**5.1E-02**	**7.2E-02**	**6.0E-03**	**1.2E-02**	**7.2E-01**	**8.8E-03**	**9.0E-03**
Texas	Refugio	U-VICT-02-03	2.0E-01	4.1E-02	5.8E-02	4.8E-03	9.9E-03	5.7E-01	7.0E-03	7.2E-03
		Total	**2.0E-01**	**4.1E-02**	**5.8E-02**	**4.8E-03**	**9.9E-03**	**5.7E-01**	**7.0E-03**	**7.2E-03**
Texas	San Patricio	U-VICT-02-02	1.1E-01	2.3E-02	3.2E-02	2.7E-03	5.5E-03	3.2E-01	3.9E-03	4.0E-03
		Total	**1.1E-01**	**2.3E-02**	**3.2E-02**	**2.7E-03**	**5.5E-03**	**3.2E-01**	**3.9E-03**	**4.0E-03**
Texas	Tarrant	K-ALLI-01-01	4.6E-03	9.4E-04	1.3E-03	1.1E-04	2.3E-04	1.3E-02	1.6E-04	1.6E-04
		Total	**4.6E-03**	**9.4E-04**	**1.3E-03**	**1.1E-04**	**2.3E-04**	**1.3E-02**	**1.6E-04**	**1.6E-04**
Texas	Victoria	K-ROSE-02-04	7.5E-02	1.5E-02	2.1E-02	1.8E-03	3.7E-03	2.1E-01	2.6E-03	2.7E-03
		U-VICT-01-01	6.7E-02	1.4E-02	1.9E-02	1.6E-03	3.3E-03	1.9E-01	2.3E-03	2.4E-03
		U-VICT-02-04	9.8E-02	2.0E-02	2.8E-02	2.3E-03	4.8E-03	2.8E-01	3.4E-03	3.5E-03
		Total	**2.4E-01**	**4.9E-02**	**6.9E-02**	**5.7E-03**	**1.2E-02**	**6.8E-01**	**8.4E-03**	**8.6E-03**
Texas	Webb	K-LARE-02-01	2.4E-01	4.9E-02	6.9E-02	5.7E-03	1.2E-02	6.8E-01	8.4E-03	8.6E-03
		Total	**2.4E-01**	**4.9E-02**	**6.9E-02**	**5.7E-03**	**1.2E-02**	**6.8E-01**	**8.4E-03**	**8.6E-03**
Texas	Wharton	K-ROSE-02-02	1.8E-01	3.8E-02	5.3E-02	4.4E-03	9.0E-03	5.2E-01	6.4E-03	6.6E-03
		Total	**1.8E-01**	**3.8E-02**	**5.3E-02**	**4.4E-03**	**9.0E-03**	**5.2E-01**	**6.4E-03**	**6.6E-03**

Table K.7-3. Rail Segment Analysis- No Action Criteria Pollutant Emissions by Subsegment

							Segment Tons per Mile		Sub-Segment Ton Miles		Sub-Segment Fuel Use		No Action Emissions (tons/year)									
SubCode	Code	County	State	Attainment	NA Pollutant	SubSeg Length	NA GT	WA GT	NA GTM	WA GTM	NA Gallons	WA Gallons	NOX	VOC	PM10	PM2.5	SO2	CO	CO2e	CO2	CH4	N2O
C-CHIC-01-01	C-CHIC-01	Jackson	Iowa	Attainment	N/A	1.0	22,351,505	36,532,967	23,016,395	37,619,714	23,704	36,738	3.7	0.2	0.1	0.1	0.0	0.7	268	267	0.011	0.002
C-CHIC-01-02	C-CHIC-01	Carroll	Illinois	Attainment	N/A	0.2	22,351,505	36,532,967	4,241,869	6,933,227	4,369	6,771	0.7	0.0	0.0	0.0	0.0	0.1	49	49	0.002	0.000
C-CHIC-02-01	C-CHIC-02	Carroll	Illinois	Attainment	N/A	28.5	19,862,895	36,960,318	566,485,268	1,054,099,904	583,404	1,029,394	90.1	3.8	2.4	2.3	0.1	17.1	6,588	6,566	0.264	0.051
C-CHIC-02-02	C-CHIC-02	Ogle	Illinois	Attainment	N/A	32.7	19,862,895	36,960,318	649,553,662	1,208,671,241	668,953	1,180,343	103.4	4.3	2.8	2.7	0.1	19.6	7,554	7,529	0.302	0.059
C-CHIC-03-01	C-CHIC-03	Ogle	Illinois	Attainment	N/A	7.9	12,595,641	28,187,866	99,899,982	223,566,816	102,884	218,327	15.9	0.7	0.4	0.4	0.0	3.0	1,162	1,158	0.046	0.009
C-CHIC-03-02	C-CHIC-03	DeKalb	Illinois	Attainment	N/A	20.0	12,595,641	28,187,866	252,457,237	564,975,682	259,997	551,734	40.2	1.7	1.1	1.0	0.0	7.6	2,936	2,926	0.118	0.023
C-CHIC-03-03	C-CHIC-03	Kane	Illinois	NonAttainment	OZone	0.1	12,595,641	28,187,866	889,529	1,990,683	916	1,944	0.1	0.0	0.0	0.0	0.0	0.0	10	10	0.000	0.000
C-CHIC-03-04	C-CHIC-03	Kane	Illinois	NonAttainment	OZone	13.6	12,595,641	28,187,866	171,312,681	383,381,755	176,429	374,396	27.3	1.1	0.7	0.7	0.0	5.2	1,992	1,986	0.080	0.016
C-DAVE-01-01	C-DAVE-01	Jackson	Iowa	Attainment	N/A	1.8	30,098,703	53,233,226	54,973,986	97,228,199	56,616	94,949	8.7	0.4	0.2	0.2	0.0	1.7	639	637	0.026	0.005
C-DAVE-01-02	C-DAVE-01	Clinton	Iowa	Attainment	N/A	14.8	30,098,703	53,233,226	443,966,519	785,208,933	457,226	766,806	70.6	3.0	1.9	1.8	0.0	13.4	5,163	5,146	0.207	0.040
C-DAVE-02-01	C-DAVE-02	Clinton	Iowa	Attainment	N/A	10.5	21,011,102	39,485,998	220,776,655	414,903,824	227,370	405,180	35.1	1.5	0.9	0.9	0.0	6.7	2,568	2,559	0.103	0.020
C-DAVE-02-02	C-DAVE-02	Scott	Iowa	Attainment	N/A	22.4	21,011,102	39,485,998	470,454,816	884,122,019	484,505	863,400	74.9	3.1	2.0	1.9	0.1	14.2	5,471	5,453	0.219	0.043
C-DAVE-03-01	C-DAVE-03	Scott	Iowa	Attainment	N/A	5.6	21,011,102	39,485,998	118,515,411	222,725,076	122,055	217,505	18.9	0.8	0.5	0.5	0.0	3.6	1,378	1,374	0.055	0.011
C-ELGI-01-01	C-ELGI-01	Kane	Illinois	NonAttainment	OZone	5.8	13,624,379	31,061,141	79,673,364	181,640,985	82,053	177,384	12.7	0.5	0.3	0.3	0.0	2.4	927	923	0.037	0.007
C-ELGI-01-02	C-ELGI-01	Cook	Illinois	NonAttainment	OZone	6.5	13,624,379	31,061,141	88,771,588	202,383,304	91,423	197,640	14.1	0.6	0.4	0.4	0.0	2.7	1,032	1,029	0.041	0.008
C-ELGI-01-03	C-ELGI-01	DuPage	Illinois	NonAttainment	OZone	11.0	13,624,379	31,061,141	150,037,394	342,058,358	154,518	334,041	23.9	1.0	0.6	0.6	0.0	4.5	1,745	1,739	0.070	0.014
C-ELGI-02-01	C-ELGI-02	DuPage	Illinois	NonAttainment	OZone	0.8	122,827,328	142,940,767	96,828,836	112,684,923	99,721	110,044	15.4	0.6	0.4	0.4	0.0	2.9	1,126	1,122	0.045	0.009
C-ELGI-02-02	C-ELGI-02	Cook	Illinois	NonAttainment	OZone	3.5	122,827,328	142,940,767	431,703,052	502,396,056	444,596	490,621	68.7	2.9	1.8	1.8	0.0	13.0	5,020	5,004	0.201	0.039
C-KACI-01-01	C-KACI-01	Grundy	Missouri	Attainment	N/A	4.5	17,940,076	49,359,154	81,498,106	224,228,568	83,932	218,973	13.0	0.5	0.3	0.3	0.0	2.5	948	945	0.038	0.007
C-KACI-01-02	C-KACI-01	Livingston	Missouri	Attainment	N/A	30.1	17,940,076	49,359,154	540,760,017	1,487,811,809	556,910	1,452,941	86.0	3.6	2.3	2.2	0.1	16.3	6,289	6,268	0.252	0.049
C-KACI-01-03	C-KACI-01	Caldwell	Missouri	Attainment	N/A	16.8	17,940,076	49,359,154	301,249,417	828,837,979	310,247	809,412	47.9	2.0	1.3	1.2	0.0	9.1	3,503	3,492	0.140	0.027
C-KACI-02-01	C-KACI-02	Caldwell	Missouri	Attainment	N/A	5.0	15,679,566	49,510,671	78,254,486	247,100,729	80,592	241,309	12.5	0.5	0.3	0.3	0.0	2.4	910	907	0.036	0.007
C-KACI-02-02	C-KACI-02	Ray	Missouri	Attainment	N/A	10.6	15,679,566	49,510,671	166,882,995	526,959,055	171,867	514,608	26.6	1.1	0.7	0.7	0.0	5.0	1,941	1,934	0.078	0.015
C-KACI-02-03	C-KACI-02	Clay	Missouri	Attainment	N/A	24.7	15,679,566	49,510,671	387,538,889	1,223,714,413	399,113	1,195,034	61.7	2.6	1.6	1.6	0.0	11.7	4,507	4,492	0.180	0.035
C-KACI-02-04	C-KACI-02	Jackson	Missouri	Attainment	N/A	1.5	15,679,566	49,510,671	24,221,370	76,482,748	24,945	74,690	3.9	0.2	0.1	0.1	0.0	0.7	282	281	0.011	0.002
C-KACI-02-05	C-KACI-02	Jackson	Missouri	NonAttainment	SO2	0.3	15,679,566	49,510,671	4,417,247	13,948,146	4,549	13,621	0.7	0.0	0.0	0.0	0.0	0.1	51	51	0.002	0.000
C-LARE-01-01	C-LARE-01	Wapello	Iowa	Attainment	N/A	13.3	14,992,756	40,410,822	199,657,987	538,149,459	205,621	525,537	31.8	1.3	0.8	0.8	0.0	6.0	2,322	2,314	0.093	0.018
C-LARE-01-02	C-LARE-01	Monroe	Iowa	Attainment	N/A	10.5	14,992,756	40,410,822	156,958,319	423,058,630	161,646	413,143	25.0	1.0	0.7	0.6	0.0	4.7	1,825	1,819	0.073	0.014
C-LARE-01-03	C-LARE-01	Appanoose	Iowa	Attainment	N/A	23.2	14,992,756	40,410,822	347,355,415	936,246,688	357,730	914,303	55.3	2.3	1.5	1.4	0.0	10.5	4,040	4,026	0.162	0.032
C-LARE-01-04	C-LARE-01	Wayne	Iowa	Attainment	N/A	16.2	14,992,756	40,410,822	242,856,344	654,584,432	250,110	639,243	38.6	1.6	1.0	1.0	0.0	7.3	2,824	2,815	0.113	0.022
C-LARE-02-01	C-LARE-02	Putnam	Missouri	Attainment	N/A	17.9	15,380,423	47,044,888	274,798,803	840,541,184	283,006	820,841	43.7	1.8	1.2	1.1	0.0	8.3	3,196	3,185	0.128	0.025
C-LARE-02-02	C-LARE-02	Sullivan	Missouri	Attainment	N/A	20.3	15,380,423	47,044,888	312,005,600	954,347,520	321,324	931,980	49.6	2.1	1.3	1.3	0.0	9.4	3,628	3,616	0.145	0.028
C-LARE-02-03	C-LARE-02	Grundy	Missouri	Attainment	N/A	8.1	15,380,423	47,044,888	125,152,963	382,811,782	128,891	373,840	19.9	0.8	0.5	0.5	0.0	3.8	1,455	1,451	0.058	0.011
C-OTTU-01-01	C-OTTU-01	Scott	Iowa	Attainment	N/A	9.0	18,375,215	36,915,185	165,756,054	332,998,296	170,707	325,194	26.4	1.1	0.7	0.7	0.0	5.0	1,928	1,921	0.077	0.015
C-OTTU-01-02	C-OTTU-01	Muscatine	Iowa	Attainment	N/A	7.5	18,375,215	36,915,185	137,721,374	276,677,574	141,835	270,193	21.9	0.9	0.6	0.6	0.0	4.2	1,602	1,596	0.064	0.013
C-OTTU-01-03	C-OTTU-01	Muscatine	Iowa	NonAttainment	SO2	8.0	18,375,215	36,915,185	146,859,589	295,035,938	151,246	288,121	23.4	1.0	0.6	0.6	0.0	4.4	1,708	1,702	0.068	0.013
C-OTTU-02-01	C-OTTU-02	Muscatine	Iowa	NonAttainment	SO2	7.3	20,503,888	42,180,809	148,665,185	305,835,542	153,105	298,668	23.7	1.0	0.6	0.6	0.0	4.5	1,729	1,723	0.069	0.014
C-OTTU-02-02	C-OTTU-02	Louisa	Iowa	Attainment	N/A	21.6	20,503,888	42,180,809	443,173,133	911,700,312	456,409	890,332	70.5	3.0	1.9	1.8	0.0	13.4	5,154	5,137	0.206	0.040
C-OTTU-02-03	C-OTTU-02	Washington	Iowa	Attainment	N/A	25.6	20,503,888	42,180,809	525,584,125	1,081,237,048	541,281	1,055,896	83.6	3.5	2.2	2.2	0.1	15.9	6,112	6,092	0.245	0.048
C-OTTU-02-04	C-OTTU-02	Keokuk	Iowa	Attainment	N/A	9.4	20,503,888	42,180,809	192,986,144	397,013,073	198,750	387,708	30.7	1.3	0.8	0.8	0.0	5.8	2,244	2,237	0.090	0.018
C-OTTU-02-05	C-OTTU-02	Jefferson	Iowa	Attainment	N/A	5.3	20,503,888	42,180,809	108,092,029	222,368,031	111,320	217,156	17.2	0.7	0.5	0.4	0.0	3.3	1,257	1,253	0.050	0.010
C-OTTU-02-06	C-OTTU-02	Wapello	Iowa	Attainment	N/A	17.8	20,503,888	42,180,809	365,074,725	751,035,466	375,978	733,433	58.1	2.4	1.6	1.5	0.0	11.0	4,246	4,231	0.170	0.033
K-ALLI-01-01	K-ALLI-01	Tarrant	Texas	NonAttainment	OZone	4.8	1,768,703	3,803,266	8,464,569	18,201,482	8,717	17,775	1.3	0.1	0.0	0.0	0.0	0.3	98	98	0.004	0.001
K-ALLI-01-02	K-ALLI-01	Denton	Texas	NonAttainment	OZone	23.3	1,768,703	3,803,266	41,208,352	88,610,898	42,439	86,534	6.6	0.3	0.2	0.2	0.0	1.2	479	478	0.019	0.004
K-ALLI-02-01	K-ALLI-02	Denton	Texas	NonAttainment	OZone	31.8	2,386,796	4,640,308	75,895,969	147,553,738	78,163	144,095	12.1	0.5	0.3	0.3	0.0	2.3	883	880	0.035	0.007
K-ALLI-02-02	K-ALLI-02	Collin	Texas	NonAttainment	OZone	8.9	2,386,796	4,640,308	21,306,611	41,423,413	21,943	40,453	3.4	0.1	0.1	0.1	0.0	0.6	248	247	0.010	0.002
K-ALLI-03-01	K-ALLI-03	Collin	Texas	NonAttainment	OZone	11.5	2,631,311	4,767,106	30,220,026	54,749,159	31,123	53,466	4.8	0.2	0.1	0.1	0.0	0.9	351	350	0.014	0.003
K-BEAU-01-01	K-BEAU-01	De Soto	Louisiana	Attainment	N/A	31.1	28,743,524	55,054,741	893,200,153	1,710,816,774	919,877	1,670,720	142.1	6.0	3.8	3.7	0.1	27.0	10,387	10,353	0.416	0.081
K-BEAU-01-02	K-BEAU-01	Sabine	Louisiana	Attainment	N/A	48.7	28,743,524	55,054,741	1,399,845,178	2,681,233,992	1,441,653	2,618,393	222.7	9.4	5.9	5.8	0.1	42.3	16,279	16,225	0.652	0.127
K-BEAU-01-03	K-BEAU-01	Vernon	Louisiana	Attainment	N/A	16.8	28,743,524	55,054,741	482,244,044	923,680,092	496,647	902,031	76.7	3.2	2.0	2.0	0.1	14.6	5,608	5,590	0.224	0.044
K-BEAU-02-01	K-BEAU-02	Vernon	Louisiana	Attainment	N/A	21.8	29,619,283	60,226,792	646,241,368	1,314,044,109	665,542	1,283,246	102.8	4.3	2.7	2.7	0.1	19.5	7,515	7,490	0.301	0.059
K-BEAU-02-02	K-BEAU-02	Beauregard	Louisiana	Attainment	N/A	31.2	29,619,283	60,226,792	924,390,132	1,879,621,868	951,998	1,835,568	147.1	6.2	3.9	3.8	0.1	27.9	10,750	10,714	0.430	0.084
K-BEAU-02-03	K-BEAU-02	Calcasieu	Louisiana	Attainment	N/A	2.7	29,619,283	60,226,792	81,004,859	164,712,387	83,424	160,852	12.9	0.5	0.3	0.3	0.0	2.4	942	939	0.038	0.007
K-BEAU-03-01	K-BEAU-03	Calcasieu	Louisiana	Attainment	N/A	22.0	25,028,352	50,361,019	550,599,109	1,107,892,856	567,043	1,081,927	87.6	3.7	2.3	2.3	0.1	16.6	6,403	6,382	0.256	0.050
K-BEAU-03-02	K-BEAU-03	Beauregard	Louisiana	Attainment	N/A	3.4	25,028,352	50,361,019	84,857,350	170,746,465	87,392	166,745	13.5	0.6	0.4	0.3	0.0	2.6	987	984	0.039	0.008
K-BEAU-03-03	K-BEAU-03	Newton	Texas	Attainment	N/A	6.0	25,028,352	50,361,019	151,366,265	304,572,966	155,887	297,435	24.1	1.0	0.6	0.6	0.0	4.6	1,760	1,754	0.070	0.014
K-BEAU-03-04	K-BEAU-03	Orange	Texas	Attainment	N/A	21.2	25,028,352	50,361,019	529,484,341	1,065,406,588	545,298	1,040,436	84.2	3.5	2.2	2.2	0.1	16.0	6,158	6,137	0.246	0.048
K-BEAU-03-05	K-BEAU-03	Jefferson	Texas	Attainment	N/A	0.8	25,028,352	50,361,019	20,531,458	41,312,554	21,145	40,344	3.3	0.1	0.1	0.1	0.0	0.6	239	238	0.010	0.002
K-BEAU-04-01	K-BEAU-04	Jefferson	Texas	Attainment	N/A	17.5	13,827,170	50,181,674	241,703,375	877,191,768	248,922	856,633	38.5	1.6	1.0	1.0	0.0	7.3	2,811	2,802	0.112	0.022
K-HEAV-01-01	K-HEAV-01	Crawford	Kansas	Attainment	N/A	6.2	49,145,519	79,415,592	305,698,693	493,986,903	314,829	482,409	48.6	2.0	1.3	1.3	0.0	9.2	3,555	3,543	0.142	0.028
K-HEAV-01-02	K-HEAV-01	Cherokee	Kansas	Attainment	N/A	3.3	49,145,519	79,415,592	163,592,655	264,353,859	168,479	258,158	26.0	1.1	0.7	0.7	0.0	4.9	1,902	1,896	0.076	0.015

Table K.7-3. Rail Segment Analysis- No Action Criteria Pollutant Emissions by Subsegment

							Segment Tons per Mile		Sub-Segment Ton Miles		Sub-Segment Fuel Use		No Action Emissions (tons/year)									
SubCode	Code	County	State	Attainment	NA Pollutant	SubSeg Length	NA GT	WA GT	NA GTM	WA GTM	NA Gallons	WA Gallons	NOX	VOC	PM10	PM2.5	SO2	CO	CO2e	CO2	CH4	N2O
K-HEAV-01-03	K-HEAV-01	Jasper	Missouri	Attainment	N/A	20.9	49,145,519	79,415,592	1,025,222,513	1,656,685,176	1,055,842	1,617,857	163.1	6.9	4.4	4.2	0.1	31.0	11,923	11,883	0.477	0.093
K-HEAV-01-04	K-HEAV-01	Newton	Missouri	Attainment	N/A	26.2	49,145,519	79,415,592	1,289,719,323	2,084,092,826	1,328,238	2,035,247	205.2	8.6	5.5	5.3	0.1	39.0	14,999	14,949	0.600	0.117
K-HEAV-01-05	K-HEAV-01	McDonald	Missouri	Attainment	N/A	21.0	49,145,519	79,415,592	1,029,867,060	1,664,190,426	1,060,625	1,625,186	163.9	6.9	4.4	4.2	0.1	31.1	11,977	11,937	0.479	0.094
K-HEAV-01-06	K-HEAV-01	Benton	Arkansas	Attainment	N/A	29.3	49,145,519	79,415,592	1,438,451,602	2,324,433,394	1,481,413	2,269,954	228.9	9.6	6.1	5.9	0.2	43.5	16,728	16,673	0.670	0.131
K-HEAV-01-07	K-HEAV-01	Adair	Oklahoma	Attainment	N/A	3.0	49,145,519	79,415,592	148,555,011	240,054,117	152,992	234,428	23.6	1.0	0.6	0.6	0.0	4.5	1,728	1,722	0.069	0.013
K-HEAV-02-01	K-HEAV-02	Adair	Oklahoma	Attainment	N/A	39.7	42,209,673	70,404,209	1,677,472,096	2,797,962,803	1,727,572	2,732,386	266.9	11.2	7.1	6.9	0.2	50.7	19,508	19,443	0.781	0.152
K-HEAV-02-02	K-HEAV-02	Sequoyah	Oklahoma	Attainment	N/A	32.9	42,209,673	70,404,209	1,387,355,600	2,314,058,977	1,428,791	2,259,823	220.7	9.3	5.9	5.7	0.1	41.9	16,134	16,080	0.646	0.126
K-HEAV-02-03	K-HEAV-02	Le Flore	Oklahoma	Attainment	N/A	18.8	42,209,673	70,404,209	793,892,534	1,324,184,041	817,603	1,293,148	126.3	5.3	3.4	3.3	0.1	24.0	9,233	9,202	0.370	0.072
K-HEAV-03-01	K-HEAV-03	Le Flore	Oklahoma	Attainment	N/A	12.7	43,794,885	73,723,644	554,935,979	934,170,794	571,510	912,276	88.3	3.7	2.4	2.3	0.1	16.8	6,454	6,432	0.258	0.050
K-LARE-02-01	K-LARE-02	Webb	Texas	Attainment	N/A	52.4	44,470,774	56,134,573	2,328,548,447	2,939,280,392	2,398,093	2,870,391	370.5	15.6	9.9	9.6	0.2	70.4	27,080	26,990	1.084	0.211
K-LARE-02-02	K-LARE-02	Duval	Texas	Attainment	N/A	45.8	44,470,774	56,134,573	2,035,640,496	2,569,548,512	2,096,437	2,509,325	323.9	13.6	8.6	8.4	0.2	61.5	23,673	23,595	0.947	0.185
K-LARE-02-03	K-LARE-02	Jim Hogg	Texas	Attainment	N/A	12.2	44,470,774	56,134,573	543,281,652	685,773,624	559,507	669,701	86.4	3.6	2.3	2.2	0.1	16.4	6,318	6,297	0.253	0.049
K-LARE-02-04	K-LARE-02	Jim Wells	Texas	Attainment	N/A	20.1	44,470,774	56,134,573	893,124,866	1,127,373,755	919,799	1,100,951	142.1	6.0	3.8	3.7	0.1	27.0	10,387	10,352	0.416	0.081
K-LARE-02-05	K-LARE-02	Nueces	Texas	Attainment	N/A	17.1	44,470,774	56,134,573	761,373,840	961,067,056	784,113	938,542	121.1	5.1	3.2	3.1	0.1	23.0	8,854	8,825	0.354	0.069
K-PITT-01-01	K-PITT-01	Jackson	Missouri	NonAttainment	SO2	4.9	43,477,295	72,614,839	214,265,198	357,861,101	220,664	349,474	34.1	1.4	0.9	0.9	0.0	6.5	2,492	2,483	0.100	0.019
K-PITT-01-02	K-PITT-01	Jackson	Missouri	Attainment	N/A	17.7	43,477,295	72,614,839	771,101,526	1,287,877,097	794,131	1,257,692	122.7	5.2	3.3	3.2	0.1	23.3	8,967	8,938	0.359	0.070
K-PITT-01-03	K-PITT-01	Cass	Missouri	Attainment	N/A	30.9	43,477,295	72,614,839	1,344,259,579	2,245,153,285	1,384,407	2,192,533	213.9	9.0	5.7	5.5	0.1	40.6	15,633	15,581	0.626	0.122
K-PITT-01-04	K-PITT-01	Bates	Missouri	Attainment	N/A	29.5	43,477,295	72,614,839	1,283,748,531	2,144,089,042	1,322,089	2,093,837	204.3	8.6	5.5	5.3	0.1	38.8	14,929	14,880	0.598	0.117
K-PITT-01-05	K-PITT-01	Vernon	Missouri	Attainment	N/A	28.2	43,477,295	72,614,839	1,227,824,208	2,050,685,447	1,264,495	2,002,623	195.4	8.2	5.2	5.1	0.1	37.1	14,279	14,231	0.571	0.112
K-PITT-01-06	K-PITT-01	Barton	Missouri	Attainment	N/A	11.2	43,477,295	72,614,839	487,001,879	813,380,010	501,547	794,316	77.5	3.3	2.1	2.0	0.1	14.7	5,664	5,645	0.227	0.044
K-PITT-01-07	K-PITT-01	Crawford	Kansas	Attainment	N/A	8.8	43,477,295	72,614,839	383,529,091	640,561,995	394,984	625,549	61.0	2.6	1.6	1.6	0.0	11.6	4,460	4,445	0.179	0.035
K-ROSE-01-01	K-ROSE-01	Fort Bend	Texas	NonAttainment	OZone	14.8	30,237,953	42,181,585	448,005,000	624,961,653	461,385	610,314	71.3	3.0	1.9	1.8	0.0	13.5	5,210	5,193	0.209	0.041
K-ROSE-02-01	K-ROSE-02	Fort Bend	Texas	NonAttainment	OZone	1.3	31,451,824	43,085,888	40,332,277	55,251,232	41,537	53,956	6.4	0.3	0.2	0.2	0.0	1.2	469	467	0.019	0.004
K-ROSE-02-02	K-ROSE-02	Wharton	Texas	Attainment	N/A	37.3	31,451,824	43,085,888	1,172,817,995	1,606,644,690	1,207,846	1,568,989	186.6	7.8	5.0	4.8	0.1	35.4	13,639	13,594	0.546	0.107
K-ROSE-02-03	K-ROSE-02	Jackson	Texas	Attainment	N/A	23.0	31,451,824	43,085,888	721,973,591	989,032,434	743,536	965,852	114.9	4.8	3.1	3.0	0.1	21.8	8,396	8,368	0.336	0.066
K-ROSE-02-04	K-ROSE-02	Victoria	Texas	Attainment	N/A	15.2	31,451,824	43,085,888	477,541,624	654,184,807	491,804	638,852	76.0	3.2	2.0	2.0	0.1	14.4	5,554	5,535	0.222	0.043
K-SHRE-01-01	K-SHRE-01	Le Flore	Oklahoma	Attainment	N/A	22.0	40,323,772	68,602,277	888,901,777	1,512,276,338	915,450	1,476,832	141.4	5.9	3.8	3.7	0.1	26.9	10,337	10,303	0.414	0.081
K-SHRE-01-02	K-SHRE-01	Polk	Arkansas	Attainment	N/A	59.7	40,323,772	68,602,277	2,406,472,928	4,094,099,214	2,478,345	3,998,144	382.9	16.1	10.2	9.9	0.3	72.7	27,986	27,893	1.120	0.219
K-SHRE-01-03	K-SHRE-01	Sevier	Arkansas	Attainment	N/A	16.1	40,323,772	68,602,277	650,462,235	1,106,622,432	669,889	1,080,686	103.5	4.4	2.8	2.7	0.1	19.7	7,565	7,539	0.303	0.059
K-SHRE-02-01	K-SHRE-02	Sevier	Arkansas	Attainment	N/A	12.9	48,683,585	73,591,309	628,375,733	949,868,267	647,143	927,606	100.0	4.2	2.7	2.6	0.1	19.0	7,308	7,283	0.292	0.057
K-SHRE-02-02	K-SHRE-02	Little River	Arkansas	Attainment	N/A	27.2	48,683,585	73,591,309	1,323,889,829	2,001,224,543	1,363,429	1,954,321	210.7	8.9	5.6	5.5	0.1	40.0	15,396	15,345	0.616	0.120
K-SHRE-03-01	K-SHRE-03	Little River	Arkansas	Attainment	N/A	10.1	40,237,565	76,237,675	404,884,426	767,130,095	416,977	749,150	64.4	2.7	1.7	1.7	0.0	12.2	4,709	4,693	0.188	0.037
K-SHRE-03-02	K-SHRE-03	Bowie	Texas	Attainment	N/A	22.1	40,237,565	76,237,675	889,079,911	1,684,529,984	915,633	1,645,049	141.5	5.9	3.8	3.7	0.1	26.9	10,339	10,305	0.414	0.081
K-SHRE-03-03	K-SHRE-03	Cass	Texas	Attainment	N/A	11.9	40,237,565	76,237,675	478,681,248	906,952,126	492,978	885,695	76.2	3.2	2.0	2.0	0.1	14.5	5,567	5,548	0.223	0.043
K-SHRE-03-04	K-SHRE-03	Miller	Arkansas	Attainment	N/A	6.5	40,237,565	76,237,675	261,144,254	494,787,163	268,944	483,191	41.6	1.7	1.1	1.1	0.0	7.9	3,037	3,027	0.122	0.024
K-SHRE-03-05	K-SHRE-03	Caddo	Louisiana	Attainment	N/A	41.8	40,237,565	76,237,675	1,680,978,938	3,184,932,412	1,731,183	3,110,286	267.5	11.2	7.1	6.9	0.2	50.8	19,549	19,484	0.782	0.153
K-SHRE-04-01	K-SHRE-04	Caddo	Louisiana	Attainment	N/A	18.3	84,322,776	121,839,210	1,540,090,315	2,225,298,993	1,586,087	2,173,144	245.1	10.3	6.5	6.3	0.2	46.5	17,910	17,851	0.717	0.140
K-SHRE-04-02	K-SHRE-04	De Soto	Louisiana	Attainment	N/A	5.2	84,322,776	121,839,210	434,915,121	628,415,212	447,904	613,687	69.2	2.9	1.8	1.8	0.0	13.1	5,058	5,041	0.202	0.039
U-BEAU-01-01	U-BEAU-01	Jefferson	Texas	Attainment	N/A	20.8	3,123,169	7,850,048	64,850,438	163,000,791	66,787	159,180	10.3	0.4	0.3	0.3	0.0	2.0	754	752	0.030	0.006
U-BEAU-01-02	U-BEAU-01	Liberty	Texas	NonAttainment	OZone	35.1	3,123,169	7,850,048	109,696,016	275,719,609	112,972	269,257	17.5	0.7	0.5	0.5	0.0	3.3	1,276	1,271	0.051	0.010
U-BEAU-01-03	U-BEAU-01	Harris	Texas	NonAttainment	OZone	45.8	3,123,169	7,850,048	143,027,910	359,498,921	147,300	351,073	22.8	1.0	0.6	0.6	0.0	4.3	1,663	1,658	0.067	0.013
U-BEAU-01-04	U-BEAU-01	Fort Bend	Texas	NonAttainment	OZone	18.5	3,123,169	7,850,048	57,660,656	144,929,361	59,383	141,533	9.2	0.4	0.2	0.2	0.0	1.7	671	668	0.027	0.005
U-VICT-01-01	U-VICT-01	Victoria	Texas	Attainment	N/A	12.3	19,356,795	31,422,586	237,511,586	385,561,162	244,605	376,525	37.8	1.6	1.0	1.0	0.0	7.2	2,762	2,753	0.111	0.022
U-VICT-02-01	U-VICT-02	Nueces	Texas	Attainment	N/A	8.2	19,356,795	31,422,586	159,209,190	258,450,046	163,964	252,393	25.3	1.1	0.7	0.7	0.0	4.8	1,852	1,845	0.074	0.014
U-VICT-02-02	U-VICT-02	San Patricio	Texas	Attainment	N/A	20.5	19,356,795	31,422,586	396,292,507	643,315,984	408,128	628,238	63.1	2.7	1.7	1.6	0.0	12.0	4,609	4,593	0.184	0.036
U-VICT-02-03	U-VICT-02	Refugio	Texas	Attainment	N/A	36.9	19,356,795	31,422,586	714,095,360	1,159,216,870	735,423	1,132,048	113.6	4.8	3.0	2.9	0.1	21.6	8,305	8,277	0.332	0.065
U-VICT-02-04	U-VICT-02	Victoria	Texas	Attainment	N/A	18.0	19,356,795	31,422,586	348,182,723	565,217,629	358,582	551,970	55.4	2.3	1.5	1.4	0.0	10.5	4,049	4,036	0.162	0.032

Notes:
Segment Ton-Mileage provided by Applicants; Sub Segment ton-mileage proportioned from whole segment based on the Length Proportion
No Action and With Action Fuel Efficiency estimated based on data provided in the "Verified Statement of Michael R. Baranowski" (No Action- 971 ton-miles/gal; With Action- 1024 ton-miles/gal)

Table K.7-4. Rail Segment Analysis- Proposed Acquisition Criteria Pollutant Emissions by Subsegment

							Segment Tons per Mile		Sub-Segment Ton Miles		Sub-Segment Fuel Use		Proposed Acquisition Emissions (tons/year)									
SubCode	Code	County	State	Attainment	NA Pollutant	SubSeg Length	NA GT	WA GT	NA GTM	WA GTM	NA Gallons	WA Gallons	NOX	VOC	PM10	PM2.5	SO2	CO	CO2e	CO2	CH4	N2O
C-CHIC-01-01	C-CHIC-01	Jackson	Iowa	Attainment	N/A	1.0	22,351,505	36,532,967	23,016,395	37,619,714	23,704	36,738	5.7	0.2	0.2	0.1	0.0	1.1	415	413	0.017	0.003
C-CHIC-01-02	C-CHIC-01	Carroll	Illinois	Attainment	N/A	0.2	22,351,505	36,532,967	4,241,869	6,933,227	4,369	6,771	1.0	0.0	0.0	0.0	0.0	0.2	76	76	0.003	0.001
C-CHIC-02-01	C-CHIC-02	Carroll	Illinois	Attainment	N/A	28.5	19,862,895	36,960,318	566,485,268	1,054,099,904	583,404	1,029,394	159.0	6.7	4.2	4.1	0.1	30.2	11,624	11,585	0.465	0.091
C-CHIC-02-02	C-CHIC-02	Ogle	Illinois	Attainment	N/A	32.7	19,862,895	36,960,318	649,553,662	1,208,671,241	668,953	1,180,343	182.4	7.7	4.9	4.7	0.1	34.6	13,329	13,284	0.533	0.104
C-CHIC-03-01	C-CHIC-03	Ogle	Illinois	Attainment	N/A	7.9	12,595,641	28,187,866	99,899,982	223,566,816	102,884	218,327	33.7	1.4	0.9	0.9	0.0	6.4	2,465	2,457	0.099	0.019
C-CHIC-03-02	C-CHIC-03	DeKalb	Illinois	Attainment	N/A	20.0	12,595,641	28,187,866	252,457,237	564,975,682	259,997	551,734	85.2	3.6	2.3	2.2	0.1	16.2	6,230	6,210	0.249	0.049
C-CHIC-03-03	C-CHIC-03	Kane	Illinois	NonAttainment	OZone	0.1	12,595,641	28,187,866	889,529	1,990,683	916	1,944	0.3	0.0	0.0	0.0	0.0	0.1	22	22	0.001	0.000
C-CHIC-03-04	C-CHIC-03	Kane	Illinois	NonAttainment	OZone	13.6	12,595,641	28,187,866	171,312,681	383,381,755	176,429	374,396	57.8	2.4	1.5	1.5	0.0	11.0	4,228	4,214	0.169	0.033
C-DAVE-01-01	C-DAVE-01	Jackson	Iowa	Attainment	N/A	1.8	30,098,703	53,233,226	54,973,986	97,228,199	56,616	94,949	14.7	0.6	0.4	0.4	0.0	2.8	1,072	1,069	0.043	0.008
C-DAVE-01-02	C-DAVE-01	Clinton	Iowa	Attainment	N/A	14.8	30,098,703	53,233,226	443,966,519	785,208,933	457,226	766,806	118.5	5.0	3.2	3.1	0.1	22.5	8,659	8,630	0.347	0.068
C-DAVE-02-01	C-DAVE-02	Clinton	Iowa	Attainment	N/A	10.5	21,011,102	39,485,998	220,776,655	414,903,824	227,370	405,180	62.6	2.6	1.7	1.6	0.0	11.9	4,575	4,560	0.183	0.036
C-DAVE-02-02	C-DAVE-02	Scott	Iowa	Attainment	N/A	22.4	21,011,102	39,485,998	470,454,816	884,122,019	484,505	863,400	133.4	5.6	3.6	3.5	0.1	25.3	9,750	9,717	0.390	0.076
C-DAVE-03-01	C-DAVE-03	Scott	Iowa	Attainment	N/A	5.6	21,011,102	39,485,998	118,515,411	222,725,076	122,055	217,505	33.6	1.4	0.9	0.9	0.0	6.4	2,456	2,448	0.098	0.019
C-ELGI-01-01	C-ELGI-01	Kane	Illinois	NonAttainment	OZone	5.8	13,624,379	31,061,141	79,673,364	181,640,985	82,053	177,384	27.4	1.2	0.7	0.7	0.0	5.2	2,003	1,996	0.080	0.016
C-ELGI-01-02	C-ELGI-01	Cook	Illinois	NonAttainment	OZone	6.5	13,624,379	31,061,141	88,771,588	202,383,304	91,423	197,640	30.5	1.3	0.8	0.8	0.0	5.8	2,232	2,224	0.089	0.017
C-ELGI-01-03	C-ELGI-01	DuPage	Illinois	NonAttainment	OZone	11.0	13,624,379	31,061,141	150,037,394	342,058,358	154,518	334,041	51.6	2.2	1.4	1.3	0.0	9.8	3,772	3,760	0.151	0.029
C-ELGI-02-01	C-ELGI-02	DuPage	Illinois	NonAttainment	OZone	0.8	122,827,328	142,940,767	96,828,836	112,684,923	99,721	110,044	17.0	0.7	0.5	0.4	0.0	3.2	1,243	1,238	0.050	0.010
C-ELGI-02-02	C-ELGI-02	Cook	Illinois	NonAttainment	OZone	3.5	122,827,328	142,940,767	431,703,052	502,396,056	444,596	490,621	75.8	3.2	2.0	2.0	0.1	14.4	5,540	5,522	0.222	0.043
C-KACI-01-01	C-KACI-01	Grundy	Missouri	Attainment	N/A	4.5	17,940,076	49,359,154	81,498,106	224,228,568	83,932	218,973	33.8	1.4	0.9	0.9	0.0	6.4	2,473	2,464	0.099	0.019
C-KACI-01-02	C-KACI-01	Livingston	Missouri	Attainment	N/A	30.1	17,940,076	49,359,154	540,760,017	1,487,811,809	556,910	1,452,941	224.5	9.4	6.0	5.8	0.2	42.6	16,407	16,352	0.657	0.128
C-KACI-01-03	C-KACI-01	Caldwell	Missouri	Attainment	N/A	16.8	17,940,076	49,359,154	301,249,417	828,837,979	310,247	809,412	125.1	5.3	3.3	3.2	0.1	23.8	9,140	9,110	0.366	0.071
C-KACI-02-01	C-KACI-02	Caldwell	Missouri	Attainment	N/A	5.0	15,679,566	49,510,671	78,254,486	247,100,729	80,592	241,309	37.3	1.6	1.0	1.0	0.0	7.1	2,725	2,716	0.109	0.021
C-KACI-02-02	C-KACI-02	Ray	Missouri	Attainment	N/A	10.6	15,679,566	49,510,671	166,882,995	526,959,055	171,867	514,608	79.5	3.3	2.1	2.1	0.1	15.1	5,811	5,792	0.233	0.045
C-KACI-02-03	C-KACI-02	Clay	Missouri	Attainment	N/A	24.7	15,679,566	49,510,671	387,538,889	1,223,714,413	399,113	1,195,034	184.6	7.8	4.9	4.8	0.1	35.1	13,495	13,450	0.540	0.105
C-KACI-02-04	C-KACI-02	Jackson	Missouri	Attainment	N/A	1.5	15,679,566	49,510,671	24,221,370	76,482,748	24,945	74,690	11.5	0.5	0.3	0.3	0.0	2.2	843	841	0.034	0.007
C-KACI-02-05	C-KACI-02	Jackson	Missouri	NonAttainment	SO2	0.3	15,679,566	49,510,671	4,417,247	13,948,146	4,549	13,621	2.1	0.1	0.1	0.1	0.0	0.4	154	153	0.006	0.001
C-LARE-01-01	C-LARE-01	Wapello	Iowa	Attainment	N/A	13.3	14,992,756	40,410,822	199,657,987	538,149,459	205,621	525,537	81.2	3.4	2.2	2.1	0.1	15.4	5,934	5,915	0.238	0.046
C-LARE-01-02	C-LARE-01	Monroe	Iowa	Attainment	N/A	10.5	14,992,756	40,410,822	156,958,319	423,058,630	161,646	413,143	63.8	2.7	1.7	1.7	0.0	12.1	4,665	4,650	0.187	0.036
C-LARE-01-03	C-LARE-01	Appanoose	Iowa	Attainment	N/A	23.2	14,992,756	40,410,822	347,355,415	936,246,688	357,730	914,303	141.3	5.9	3.8	3.7	0.1	26.8	10,324	10,290	0.413	0.081
C-LARE-01-04	C-LARE-01	Wayne	Iowa	Attainment	N/A	16.2	14,992,756	40,410,822	242,856,344	654,584,432	250,110	639,243	98.8	4.2	2.6	2.6	0.1	18.8	7,218	7,194	0.289	0.056
C-LARE-02-01	C-LARE-02	Putnam	Missouri	Attainment	N/A	17.9	15,380,423	47,044,888	274,798,803	840,541,184	283,006	820,841	126.8	5.3	3.4	3.3	0.1	24.1	9,269	9,238	0.371	0.072
C-LARE-02-02	C-LARE-02	Sullivan	Missouri	Attainment	N/A	20.3	15,380,423	47,044,888	312,005,600	954,347,520	321,324	931,980	144.0	6.1	3.8	3.7	0.1	27.4	10,524	10,489	0.421	0.082
C-LARE-02-03	C-LARE-02	Grundy	Missouri	Attainment	N/A	8.1	15,380,423	47,044,888	125,152,963	382,811,782	128,891	373,840	57.8	2.4	1.5	1.5	0.0	11.0	4,221	4,207	0.169	0.033
C-OTTU-01-01	C-OTTU-01	Scott	Iowa	Attainment	N/A	9.0	18,375,215	36,915,185	165,756,054	332,998,296	170,707	325,194	50.2	2.1	1.3	1.3	0.0	9.5	3,672	3,660	0.147	0.029
C-OTTU-01-02	C-OTTU-01	Muscatine	Iowa	Attainment	N/A	7.5	18,375,215	36,915,185	137,721,374	276,677,574	141,835	270,193	41.7	1.8	1.1	1.1	0.0	7.9	3,051	3,041	0.122	0.024
C-OTTU-01-03	C-OTTU-01	Muscatine	Iowa	NonAttainment	SO2	8.0	18,375,215	36,915,185	146,859,589	295,035,938	151,246	288,121	44.5	1.9	1.2	1.2	0.0	8.5	3,254	3,243	0.130	0.025
C-OTTU-02-01	C-OTTU-02	Muscatine	Iowa	NonAttainment	SO2	7.3	20,503,888	42,180,809	148,665,185	305,835,542	153,105	298,668	46.1	1.9	1.2	1.2	0.0	8.8	3,373	3,361	0.135	0.026
C-OTTU-02-02	C-OTTU-02	Louisa	Iowa	Attainment	N/A	21.6	20,503,888	42,180,809	443,173,133	911,700,312	456,409	890,332	137.6	5.8	3.7	3.6	0.1	26.1	10,054	10,020	0.402	0.079
C-OTTU-02-03	C-OTTU-02	Washington	Iowa	Attainment	N/A	25.6	20,503,888	42,180,809	525,584,125	1,081,237,048	541,281	1,055,896	163.1	6.9	4.4	4.2	0.1	31.0	11,923	11,884	0.477	0.093
C-OTTU-02-04	C-OTTU-02	Keokuk	Iowa	Attainment	N/A	9.4	20,503,888	42,180,809	192,986,144	397,013,073	198,750	387,708	59.9	2.5	1.6	1.6	0.0	11.4	4,378	4,363	0.175	0.034
C-OTTU-02-05	C-OTTU-02	Jefferson	Iowa	Attainment	N/A	5.3	20,503,888	42,180,809	108,092,029	222,368,031	111,320	217,156	33.6	1.4	0.9	0.9	0.0	6.4	2,452	2,444	0.098	0.019
C-OTTU-02-06	C-OTTU-02	Wapello	Iowa	Attainment	N/A	17.8	20,503,888	42,180,809	365,074,725	751,035,466	375,978	733,433	113.3	4.8	3.0	2.9	0.1	21.5	8,282	8,254	0.331	0.065
K-ALLI-01-01	K-ALLI-01	Tarrant	Texas	NonAttainment	OZone	4.8	1,768,703	3,803,266	8,464,569	18,201,482	8,717	17,775	2.7	0.1	0.1	0.1	0.0	0.5	201	200	0.008	0.002
K-ALLI-01-02	K-ALLI-01	Denton	Texas	NonAttainment	OZone	23.3	1,768,703	3,803,266	41,208,352	88,610,898	42,439	86,534	13.4	0.6	0.4	0.3	0.0	2.5	977	974	0.039	0.008
K-ALLI-02-01	K-ALLI-02	Denton	Texas	NonAttainment	OZone	31.8	2,386,796	4,640,308	75,895,969	147,553,738	78,163	144,095	22.3	0.9	0.6	0.6	0.0	4.2	1,627	1,622	0.065	0.013
K-ALLI-02-02	K-ALLI-02	Collin	Texas	NonAttainment	OZone	8.9	2,386,796	4,640,308	21,306,611	41,423,413	21,943	40,453	6.2	0.3	0.2	0.2	0.0	1.2	457	455	0.018	0.004
K-ALLI-03-01	K-ALLI-03	Collin	Texas	NonAttainment	OZone	11.5	2,631,311	4,767,106	30,220,026	54,749,159	31,123	53,466	8.3	0.3	0.2	0.2	0.0	1.6	604	602	0.024	0.005
K-BEAU-01-01	K-BEAU-01	De Soto	Louisiana	Attainment	N/A	31.1	28,743,524	55,054,741	893,200,153	1,710,816,774	919,877	1,670,720	258.1	10.9	6.9	6.7	0.2	49.0	18,866	18,803	0.755	0.147
K-BEAU-01-02	K-BEAU-01	Sabine	Louisiana	Attainment	N/A	48.7	28,743,524	55,054,741	1,399,845,178	2,681,233,992	1,441,653	2,618,393	404.5	17.0	10.8	10.5	0.3	76.8	29,567	29,469	1.183	0.231
K-BEAU-01-03	K-BEAU-01	Vernon	Louisiana	Attainment	N/A	16.8	28,743,524	55,054,741	482,244,044	923,680,092	496,647	902,031	139.4	5.9	3.7	3.6	0.1	26.5	10,186	10,152	0.408	0.080
K-BEAU-02-01	K-BEAU-02	Vernon	Louisiana	Attainment	N/A	21.8	29,619,283	60,226,792	646,241,368	1,314,044,109	665,542	1,283,246	198.3	8.3	5.3	5.1	0.1	37.7	14,491	14,442	0.580	0.113
K-BEAU-02-02	K-BEAU-02	Beauregard	Louisiana	Attainment	N/A	31.2	29,619,283	60,226,792	924,390,132	1,879,621,868	951,998	1,835,568	283.6	11.9	7.6	7.3	0.2	53.9	20,728	20,659	0.830	0.162
K-BEAU-02-03	K-BEAU-02	Calcasieu	Louisiana	Attainment	N/A	2.7	29,619,283	60,226,792	81,004,859	164,712,387	83,424	160,852	24.9	1.0	0.7	0.6	0.0	4.7	1,816	1,810	0.073	0.014
K-BEAU-03-01	K-BEAU-03	Calcasieu	Louisiana	Attainment	N/A	22.0	25,028,352	50,361,019	550,599,109	1,107,892,856	567,043	1,081,927	167.2	7.0	4.5	4.3	0.1	31.8	12,217	12,177	0.489	0.095
K-BEAU-03-02	K-BEAU-03	Beauregard	Louisiana	Attainment	N/A	3.4	25,028,352	50,361,019	84,857,350	170,746,465	87,392	166,745	25.8	1.1	0.7	0.7	0.0	4.9	1,883	1,877	0.075	0.015
K-BEAU-03-03	K-BEAU-03	Newton	Texas	Attainment	N/A	6.0	25,028,352	50,361,019	151,366,265	304,572,966	155,887	297,435	46.0	1.9	1.2	1.2	0.0	8.7	3,359	3,348	0.134	0.026
K-BEAU-03-04	K-BEAU-03	Orange	Texas	Attainment	N/A	21.2	25,028,352	50,361,019	529,484,341	1,065,406,588	545,298	1,040,436	160.7	6.8	4.3	4.2	0.1	30.5	11,749	11,710	0.470	0.092
K-BEAU-03-05	K-BEAU-03	Jefferson	Texas	Attainment	N/A	0.8	25,028,352	50,361,019	20,531,458	41,312,554	21,145	40,344	6.2	0.3	0.2	0.2	0.0	1.2	456	454	0.018	0.004
K-BEAU-04-01	K-BEAU-04	Jefferson	Texas	Attainment	N/A	17.5	13,827,170	50,181,674	241,703,375	877,191,768	248,922	856,633	132.4	5.6	3.5	3.4	0.1	25.1	9,673	9,641	0.387	0.076
K-HEAV-01-01	K-HEAV-01	Crawford	Kansas	Attainment	N/A	6.2	49,145,519	79,415,592	305,698,693	493,986,903	314,829	482,409	74.5	3.1	2.0	1.9	0.0	14.2	5,447	5,429	0.218	0.043
K-HEAV-01-02	K-HEAV-01	Cherokee	Kansas	Attainment	N/A	3.3	49,145,519	79,415,592	163,592,655	264,353,859	168,479	258,158	39.9	1.7	1.1	1.0	0.0	7.6	2,915	2,905	0.117	0.023

Table K.7-4. Rail Segment Analysis- Proposed Acquisition Criteria Pollutant Emissions by Subsegment

							Segment Tons per Mile		Sub-Segment Ton Miles		Sub-Segment Fuel Use		Proposed Acquisition Emissions (tons/year)									
SubCode	Code	County	State	Attainment	NA Pollutant	SubSeg Length	NA GT	WA GT	NA GTM	WA GTM	NA Gallons	WA Gallons	NOX	VOC	PM10	PM2.5	SO2	CO	CO2e	CO2	CH4	N2O
K-HEAV-01-03	K-HEAV-01	Jasper	Missouri	Attainment	N/A	20.9	49,145,519	79,415,592	1,025,222,513	1,656,685,176	1,055,842	1,617,857	250.0	10.5	6.7	6.5	0.2	47.5	18,269	18,208	0.731	0.143
K-HEAV-01-04	K-HEAV-01	Newton	Missouri	Attainment	N/A	26.2	49,145,519	79,415,592	1,289,719,323	2,084,092,826	1,328,238	2,035,247	314.4	13.2	8.4	8.1	0.2	59.7	22,982	22,906	0.920	0.179
K-HEAV-01-05	K-HEAV-01	McDonald	Missouri	Attainment	N/A	21.0	49,145,519	79,415,592	1,029,867,060	1,664,190,426	1,060,625	1,625,186	251.1	10.6	6.7	6.5	0.2	47.7	18,352	18,291	0.734	0.143
K-HEAV-01-06	K-HEAV-01	Benton	Arkansas	Attainment	N/A	29.3	49,145,519	79,415,592	1,438,451,602	2,324,433,394	1,481,413	2,269,954	350.7	14.7	9.4	9.1	0.2	66.6	25,633	25,547	1.026	0.200
K-HEAV-01-07	K-HEAV-01	Adair	Oklahoma	Attainment	N/A	3.0	49,145,519	79,415,592	148,555,011	240,054,117	152,992	234,428	36.2	1.5	1.0	0.9	0.0	6.9	2,647	2,638	0.106	0.021
K-HEAV-02-01	K-HEAV-02	Adair	Oklahoma	Attainment	N/A	39.7	42,209,673	70,404,209	1,677,472,096	2,797,962,803	1,727,572	2,732,386	422.2	17.7	11.3	10.9	0.3	80.2	30,855	30,752	1.235	0.241
K-HEAV-02-02	K-HEAV-02	Sequoyah	Oklahoma	Attainment	N/A	32.9	42,209,673	70,404,209	1,387,355,600	2,314,058,977	1,428,791	2,259,823	349.1	14.7	9.3	9.0	0.2	66.3	25,518	25,433	1.021	0.199
K-HEAV-02-03	K-HEAV-02	Le Flore	Oklahoma	Attainment	N/A	18.8	42,209,673	70,404,209	793,892,534	1,324,184,041	817,603	1,293,148	199.8	8.4	5.3	5.2	0.1	38.0	14,602	14,554	0.584	0.114
K-HEAV-03-01	K-HEAV-03	Le Flore	Oklahoma	Attainment	N/A	12.7	43,794,885	73,723,644	554,935,979	934,170,794	571,510	912,276	140.9	5.9	3.8	3.7	0.1	26.8	10,302	10,267	0.412	0.080
K-LARE-02-01	K-LARE-02	Webb	Texas	Attainment	N/A	52.4	44,470,774	56,134,573	2,328,548,447	2,939,280,392	2,398,093	2,870,391	443.5	18.6	11.8	11.5	0.3	84.2	32,413	32,305	1.297	0.253
K-LARE-02-02	K-LARE-02	Duval	Texas	Attainment	N/A	45.8	44,470,774	56,134,573	2,035,640,496	2,569,548,512	2,096,437	2,509,325	387.7	16.3	10.4	10.0	0.3	73.6	28,336	28,241	1.134	0.221
K-LARE-02-03	K-LARE-02	Jim Hogg	Texas	Attainment	N/A	12.2	44,470,774	56,134,573	543,281,652	685,773,624	559,507	669,701	103.5	4.3	2.8	2.7	0.1	19.7	7,562	7,537	0.303	0.059
K-LARE-02-04	K-LARE-02	Jim Wells	Texas	Attainment	N/A	20.1	44,470,774	56,134,573	893,124,866	1,127,373,755	919,799	1,100,951	170.1	7.2	4.5	4.4	0.1	32.3	12,432	12,391	0.498	0.097
K-LARE-02-05	K-LARE-02	Nueces	Texas	Attainment	N/A	17.1	44,470,774	56,134,573	761,373,840	961,067,056	784,113	938,542	145.0	6.1	3.9	3.8	0.1	27.5	10,598	10,563	0.424	0.083
K-PITT-01-01	K-PITT-01	Jackson	Missouri	NonAttainment	SO2	4.9	43,477,295	72,614,839	214,265,198	357,861,101	220,664	349,474	54.0	2.3	1.4	1.4	0.0	10.3	3,946	3,933	0.158	0.031
K-PITT-01-02	K-PITT-01	Jackson	Missouri	Attainment	N/A	17.7	43,477,295	72,614,839	771,101,526	1,287,877,097	794,131	1,257,692	194.3	8.2	5.2	5.0	0.1	36.9	14,202	14,155	0.568	0.111
K-PITT-01-03	K-PITT-01	Cass	Missouri	Attainment	N/A	30.9	43,477,295	72,614,839	1,344,259,579	2,245,153,285	1,384,407	2,192,533	338.7	14.2	9.0	8.8	0.2	64.3	24,758	24,676	0.991	0.193
K-PITT-01-04	K-PITT-01	Bates	Missouri	Attainment	N/A	29.5	43,477,295	72,614,839	1,283,748,531	2,144,089,042	1,322,089	2,093,837	323.5	13.6	8.6	8.4	0.2	61.4	23,644	23,565	0.946	0.185
K-PITT-01-05	K-PITT-01	Vernon	Missouri	Attainment	N/A	28.2	43,477,295	72,614,839	1,227,824,208	2,050,685,447	1,264,495	2,002,623	309.4	13.0	8.3	8.0	0.2	58.8	22,614	22,539	0.905	0.177
K-PITT-01-06	K-PITT-01	Barton	Missouri	Attainment	N/A	11.2	43,477,295	72,614,839	487,001,879	813,380,010	501,547	794,316	122.7	5.2	3.3	3.2	0.1	23.3	8,970	8,940	0.359	0.070
K-PITT-01-07	K-PITT-01	Crawford	Kansas	Attainment	N/A	8.8	43,477,295	72,614,839	383,529,091	640,561,995	394,984	625,549	96.6	4.1	2.6	2.5	0.1	18.4	7,064	7,040	0.283	0.055
K-ROSE-01-01	K-ROSE-01	Fort Bend	Texas	NonAttainment	OZone	14.8	30,237,953	42,181,585	448,005,000	624,961,653	461,385	610,314	94.3	4.0	2.5	2.4	0.1	17.9	6,892	6,869	0.276	0.054
K-ROSE-02-01	K-ROSE-02	Fort Bend	Texas	NonAttainment	OZone	1.3	31,451,824	43,085,888	40,332,277	55,251,232	41,537	53,956	8.3	0.4	0.2	0.2	0.0	1.6	609	607	0.024	0.005
K-ROSE-02-02	K-ROSE-02	Wharton	Texas	Attainment	N/A	37.3	31,451,824	43,085,888	1,172,817,995	1,606,644,690	1,207,846	1,568,989	242.4	10.2	6.5	6.3	0.2	46.0	17,717	17,658	0.709	0.138
K-ROSE-02-03	K-ROSE-02	Jackson	Texas	Attainment	N/A	23.0	31,451,824	43,085,888	721,973,591	989,032,434	743,536	965,852	149.2	6.3	4.0	3.9	0.1	28.3	10,907	10,870	0.437	0.085
K-ROSE-02-04	K-ROSE-02	Victoria	Texas	Attainment	N/A	15.2	31,451,824	43,085,888	477,541,624	654,184,807	491,804	638,852	98.7	4.1	2.6	2.6	0.1	18.7	7,214	7,190	0.289	0.056
K-SHRE-01-01	K-SHRE-01	Le Flore	Oklahoma	Attainment	N/A	22.0	40,323,772	68,602,277	888,901,777	1,512,276,338	915,450	1,476,832	228.2	9.6	6.1	5.9	0.2	43.3	16,677	16,621	0.667	0.130
K-SHRE-01-02	K-SHRE-01	Polk	Arkansas	Attainment	N/A	59.7	40,323,772	68,602,277	2,406,472,928	4,094,099,214	2,478,345	3,998,144	617.7	26.0	16.5	16.0	0.4	117.3	45,148	44,998	1.807	0.353
K-SHRE-01-03	K-SHRE-01	Sevier	Arkansas	Attainment	N/A	16.1	40,323,772	68,602,277	650,462,235	1,106,622,432	669,889	1,080,686	167.0	7.0	4.5	4.3	0.1	31.7	12,203	12,163	0.488	0.095
K-SHRE-02-01	K-SHRE-02	Sevier	Arkansas	Attainment	N/A	12.9	48,683,585	73,591,309	628,375,733	949,868,267	647,143	927,606	143.3	6.0	3.8	3.7	0.1	27.2	10,475	10,440	0.419	0.082
K-SHRE-02-02	K-SHRE-02	Little River	Arkansas	Attainment	N/A	27.2	48,683,585	73,591,309	1,323,889,829	2,001,224,543	1,363,429	1,954,321	301.9	12.7	8.1	7.8	0.2	57.4	22,069	21,995	0.883	0.172
K-SHRE-03-01	K-SHRE-03	Little River	Arkansas	Attainment	N/A	10.1	40,237,565	76,237,675	404,884,426	767,130,095	416,977	749,150	115.7	4.9	3.1	3.0	0.1	22.0	8,460	8,431	0.339	0.066
K-SHRE-03-02	K-SHRE-03	Bowie	Texas	Attainment	N/A	22.1	40,237,565	76,237,675	889,079,911	1,684,529,984	915,633	1,645,049	254.2	10.7	6.8	6.6	0.2	48.3	18,576	18,514	0.743	0.145
K-SHRE-03-03	K-SHRE-03	Cass	Texas	Attainment	N/A	11.9	40,237,565	76,237,675	478,681,248	906,952,126	492,978	885,695	136.8	5.8	3.7	3.5	0.1	26.0	10,001	9,968	0.400	0.078
K-SHRE-03-04	K-SHRE-03	Miller	Arkansas	Attainment	N/A	6.5	40,237,565	76,237,675	261,144,254	494,787,163	268,944	483,191	74.7	3.1	2.0	1.9	0.1	14.2	5,456	5,438	0.218	0.043
K-SHRE-03-05	K-SHRE-03	Caddo	Louisiana	Attainment	N/A	41.8	40,237,565	76,237,675	1,680,978,938	3,184,932,412	1,731,183	3,110,286	480.5	20.2	12.8	12.4	0.3	91.3	35,122	35,005	1.406	0.274
K-SHRE-04-01	K-SHRE-04	Caddo	Louisiana	Attainment	N/A	18.3	84,322,776	121,839,210	1,540,090,315	2,225,298,993	1,586,087	2,173,144	335.8	14.1	9.0	8.7	0.2	63.8	24,540	24,458	0.982	0.192
K-SHRE-04-02	K-SHRE-04	De Soto	Louisiana	Attainment	N/A	5.2	84,322,776	121,839,210	434,915,121	628,415,212	447,904	613,687	94.8	4.0	2.5	2.5	0.1	18.0	6,930	6,907	0.277	0.054
U-BEAU-01-01	U-BEAU-01	Jefferson	Texas	Attainment	N/A	20.8	3,123,169	7,850,048	64,850,438	163,000,791	66,787	159,180	24.6	1.0	0.7	0.6	0.0	4.7	1,797	1,792	0.072	0.014
U-BEAU-01-02	U-BEAU-01	Liberty	Texas	NonAttainment	OZone	35.1	3,123,169	7,850,048	109,696,016	275,719,609	112,972	269,257	41.6	1.7	1.1	1.1	0.0	7.9	3,041	3,030	0.122	0.024
U-BEAU-01-03	U-BEAU-01	Harris	Texas	NonAttainment	OZone	45.8	3,123,169	7,850,048	143,027,910	359,498,921	147,300	351,073	54.2	2.3	1.4	1.4	0.0	10.3	3,964	3,951	0.159	0.031
U-BEAU-01-04	U-BEAU-01	Fort Bend	Texas	NonAttainment	OZone	18.5	3,123,169	7,850,048	57,660,656	144,929,361	59,383	141,533	21.9	0.9	0.6	0.6	0.0	4.2	1,598	1,593	0.064	0.012
U-VICT-01-01	U-VICT-01	Victoria	Texas	Attainment	N/A	12.3	19,356,795	31,422,586	237,511,586	385,561,162	244,605	376,525	58.2	2.4	1.6	1.5	0.0	11.1	4,252	4,238	0.170	0.033
U-VICT-02-01	U-VICT-02	Nueces	Texas	Attainment	N/A	8.2	19,356,795	31,422,586	159,209,190	258,450,046	163,964	252,393	39.0	1.6	1.0	1.0	0.0	7.4	2,850	2,841	0.114	0.022
U-VICT-02-02	U-VICT-02	San Patricio	Texas	Attainment	N/A	20.5	19,356,795	31,422,586	396,292,507	643,315,984	408,128	628,238	97.1	4.1	2.6	2.5	0.1	18.4	7,094	7,071	0.284	0.055
U-VICT-02-03	U-VICT-02	Refugio	Texas	Attainment	N/A	36.9	19,356,795	31,422,586	714,095,360	1,159,216,870	735,423	1,132,048	174.9	7.4	4.7	4.5	0.1	33.2	12,783	12,741	0.512	0.100
U-VICT-02-04	U-VICT-02	Victoria	Texas	Attainment	N/A	18.0	19,356,795	31,422,586	348,182,723	565,217,629	358,582	551,970	85.3	3.6	2.3	2.2	0.1	16.2	6,233	6,212	0.249	0.049

Notes:

Segment Ton-Mileage provided by Applicants; Sub Segment ton-mileage proportioned from whole segment based on the Length Proportion

No Action and With Action Fuel Efficiency estimated based on data provided in the "Verified Statement of Michael R. Baranowski" (No Action- 971 ton-miles/gal; With Action- 1024 ton-miles/gal)

Table K.7-5. Rail Segment Analysis- Acquisition-Related Criteria Pollutant Emissions by Subsegment

							Segment Tons per Mile		Sub-Segment Ton Miles		Sub-Segment Fuel Use		Acquisition-Related Emissions (tons/year)						
SubCode	Code	County	State	Attainment	NA Pollutant	SubSeg Length	NA GT	WA GT	NA GTM	WA GTM	NA Gallons	WA Gallons	NOX	VOC	PM10	PM2.5	SO2	CO	CO2e
C-CHIC-01-01	C-CHIC-01	Jackson	Iowa	Attainment	N/A	1.0	22,351,505	36,532,967	23,016,395	37,619,714	23,704	36,738	2.0	0.1	0.1	0.1	0.0	0.4	147
C-CHIC-01-02	C-CHIC-01	Carroll	Illinois	Attainment	N/A	0.2	22,351,505	36,532,967	4,241,869	6,933,227	4,369	6,771	0.4	0.0	0.0	0.0	0.0	0.1	27
C-CHIC-02-01	C-CHIC-02	Carroll	Illinois	Attainment	N/A	28.5	19,862,895	36,960,318	566,485,268	1,054,099,904	583,404	1,029,394	68.9	2.9	1.8	1.8	0.0	13.1	5,036
C-CHIC-02-02	C-CHIC-02	Ogle	Illinois	Attainment	N/A	32.7	19,862,895	36,960,318	649,553,662	1,208,671,241	668,953	1,180,343	79.0	3.3	2.1	2.0	0.1	15.0	5,775
C-CHIC-03-01	C-CHIC-03	Ogle	Illinois	Attainment	N/A	7.9	12,595,641	28,187,866	99,899,982	223,566,816	102,884	218,327	17.8	0.7	0.5	0.5	0.0	3.4	1,304
C-CHIC-03-02	C-CHIC-03	DeKalb	Illinois	Attainment	N/A	20.0	12,595,641	28,187,866	252,457,237	564,975,682	259,997	551,734	45.1	1.9	1.2	1.2	0.0	8.6	3,294
C-CHIC-03-03	C-CHIC-03	Kane	Illinois	NonAttainment	OZone	0.1	12,595,641	28,187,866	889,529	1,990,683	916	1,944	0.2	0.0	0.0	0.0	0.0	0.0	12
C-CHIC-03-04	C-CHIC-03	Kane	Illinois	NonAttainment	OZone	13.6	12,595,641	28,187,866	171,312,681	383,381,755	176,429	374,396	30.6	1.3	0.8	0.8	0.0	5.8	2,235
C-DAVE-01-01	C-DAVE-01	Jackson	Iowa	Attainment	N/A	1.8	30,098,703	53,233,226	54,973,986	97,228,199	56,616	94,949	5.9	0.2	0.2	0.2	0.0	1.1	433
C-DAVE-01-02	C-DAVE-01	Clinton	Iowa	Attainment	N/A	14.8	30,098,703	53,233,226	443,966,519	785,208,933	457,226	766,806	47.8	2.0	1.3	1.2	0.0	9.1	3,496
C-DAVE-02-01	C-DAVE-02	Clinton	Iowa	Attainment	N/A	10.5	21,011,102	39,485,998	220,776,655	414,903,824	227,370	405,180	27.5	1.2	0.7	0.7	0.0	5.2	2,008
C-DAVE-02-02	C-DAVE-02	Scott	Iowa	Attainment	N/A	22.4	21,011,102	39,485,998	470,454,816	884,122,019	484,505	863,400	58.5	2.5	1.6	1.5	0.0	11.1	4,279
C-DAVE-03-01	C-DAVE-03	Scott	Iowa	Attainment	N/A	5.6	21,011,102	39,485,998	118,515,411	222,725,076	122,055	217,505	14.7	0.6	0.4	0.4	0.0	2.8	1,078
C-ELGI-01-01	C-ELGI-01	Kane	Illinois	NonAttainment	OZone	5.8	13,624,379	31,061,141	79,673,364	181,640,985	82,053	177,384	14.7	0.6	0.4	0.4	0.0	2.8	1,076
C-ELGI-01-02	C-ELGI-01	Cook	Illinois	NonAttainment	OZone	6.5	13,624,379	31,061,141	88,771,588	202,383,304	91,423	197,640	16.4	0.7	0.4	0.4	0.0	3.1	1,199
C-ELGI-01-03	C-ELGI-01	DuPage	Illinois	NonAttainment	OZone	11.0	13,624,379	31,061,141	150,037,394	342,058,358	154,518	334,041	27.7	1.2	0.7	0.7	0.0	5.3	2,027
C-ELGI-02-01	C-ELGI-02	DuPage	Illinois	NonAttainment	OZone	0.8	122,827,328	142,940,767	96,828,836	112,684,923	99,721	110,044	1.6	0.1	0.0	0.0	0.0	0.3	117
C-ELGI-02-02	C-ELGI-02	Cook	Illinois	NonAttainment	OZone	3.5	122,827,328	142,940,767	431,703,052	502,396,056	444,596	490,621	7.1	0.3	0.2	0.2	0.0	1.4	520
C-KACI-01-01	C-KACI-01	Grundy	Missouri	Attainment	N/A	4.5	17,940,076	49,359,154	81,498,106	224,228,568	83,932	218,973	20.9	0.9	0.6	0.5	0.0	4.0	1,525
C-KACI-01-02	C-KACI-01	Livingston	Missouri	Attainment	N/A	30.1	17,940,076	49,359,154	540,760,017	1,487,811,809	556,910	1,452,941	138.4	5.8	3.7	3.6	0.1	26.3	10,118
C-KACI-01-03	C-KACI-01	Caldwell	Missouri	Attainment	N/A	16.8	17,940,076	49,359,154	301,249,417	828,837,979	310,247	809,412	77.1	3.2	2.1	2.0	0.1	14.6	5,637
C-KACI-02-01	C-KACI-02	Caldwell	Missouri	Attainment	N/A	5.0	15,679,566	49,510,671	78,254,486	247,100,729	80,592	241,309	24.8	1.0	0.7	0.6	0.0	4.7	1,815
C-KACI-02-02	C-KACI-02	Ray	Missouri	Attainment	N/A	10.6	15,679,566	49,510,671	166,882,995	526,959,055	171,867	514,608	53.0	2.2	1.4	1.4	0.0	10.1	3,870
C-KACI-02-03	C-KACI-02	Clay	Missouri	Attainment	N/A	24.7	15,679,566	49,510,671	387,538,889	1,223,714,413	399,113	1,195,034	123.0	5.2	3.3	3.2	0.1	23.4	8,988
C-KACI-02-04	C-KACI-02	Jackson	Missouri	Attainment	N/A	1.5	15,679,566	49,510,671	24,221,370	76,482,748	24,945	74,690	7.7	0.3	0.2	0.2	0.0	1.5	562
C-KACI-02-05	C-KACI-02	Jackson	Missouri	NonAttainment	SO2	0.3	15,679,566	49,510,671	4,417,247	13,948,146	4,549	13,621	1.4	0.1	0.0	0.0	0.0	0.3	102
C-LARE-01-01	C-LARE-01	Wapello	Iowa	Attainment	N/A	13.3	14,992,756	40,410,822	199,657,987	538,149,459	205,621	525,537	49.4	2.1	1.3	1.3	0.0	9.4	3,613
C-LARE-01-02	C-LARE-01	Monroe	Iowa	Attainment	N/A	10.5	14,992,756	40,410,822	156,958,319	423,058,630	161,646	413,143	38.9	1.6	1.0	1.0	0.0	7.4	2,840
C-LARE-01-03	C-LARE-01	Appanoose	Iowa	Attainment	N/A	23.2	14,992,756	40,410,822	347,355,415	936,246,688	357,730	914,303	86.0	3.6	2.3	2.2	0.1	16.3	6,285
C-LARE-01-04	C-LARE-01	Wayne	Iowa	Attainment	N/A	16.2	14,992,756	40,410,822	242,856,344	654,584,432	250,110	639,243	60.1	2.5	1.6	1.6	0.0	11.4	4,394
C-LARE-02-01	C-LARE-02	Putnam	Missouri	Attainment	N/A	17.9	15,380,423	47,044,888	274,798,803	840,541,184	283,006	820,841	83.1	3.5	2.2	2.2	0.1	15.8	6,073
C-LARE-02-02	C-LARE-02	Sullivan	Missouri	Attainment	N/A	20.3	15,380,423	47,044,888	312,005,600	954,347,520	321,324	931,980	94.3	4.0	2.5	2.4	0.1	17.9	6,896
C-LARE-02-03	C-LARE-02	Grundy	Missouri	Attainment	N/A	8.1	15,380,423	47,044,888	125,152,963	382,811,782	128,891	373,840	37.8	1.6	1.0	1.0	0.0	7.2	2,766
C-OTTU-01-01	C-OTTU-01	Scott	Iowa	Attainment	N/A	9.0	18,375,215	36,915,185	165,756,054	332,998,296	170,707	325,194	23.9	1.0	0.6	0.6	0.0	4.5	1,744
C-OTTU-01-02	C-OTTU-01	Muscatine	Iowa	Attainment	N/A	7.5	18,375,215	36,915,185	137,721,374	276,677,574	141,835	270,193	19.8	0.8	0.5	0.5	0.0	3.8	1,449
C-OTTU-01-03	C-OTTU-01	Muscatine	Iowa	NonAttainment	SO2	8.0	18,375,215	36,915,185	146,859,589	295,035,938	151,246	288,121	21.1	0.9	0.6	0.5	0.0	4.0	1,546
C-OTTU-02-01	C-OTTU-02	Muscatine	Iowa	NonAttainment	SO2	7.3	20,503,888	42,180,809	148,665,185	305,835,542	153,105	298,668	22.5	0.9	0.6	0.6	0.0	4.3	1,644
C-OTTU-02-02	C-OTTU-02	Louisa	Iowa	Attainment	N/A	21.6	20,503,888	42,180,809	443,173,133	911,700,312	456,409	890,332	67.0	2.8	1.8	1.7	0.0	12.7	4,900
C-OTTU-02-03	C-OTTU-02	Washington	Iowa	Attainment	N/A	25.6	20,503,888	42,180,809	525,584,125	1,081,237,048	541,281	1,055,896	79.5	3.3	2.1	2.1	0.1	15.1	5,811
C-OTTU-02-04	C-OTTU-02	Keokuk	Iowa	Attainment	N/A	9.4	20,503,888	42,180,809	192,986,144	397,013,073	198,750	387,708	29.2	1.2	0.8	0.8	0.0	5.5	2,134
C-OTTU-02-05	C-OTTU-02	Jefferson	Iowa	Attainment	N/A	5.3	20,503,888	42,180,809	108,092,029	222,368,031	111,320	217,156	16.4	0.7	0.4	0.4	0.0	3.1	1,195
C-OTTU-02-06	C-OTTU-02	Wapello	Iowa	Attainment	N/A	17.8	20,503,888	42,180,809	365,074,725	751,035,466	375,978	733,433	55.2	2.3	1.5	1.4	0.0	10.5	4,036
K-ALLI-01-01	K-ALLI-01	Tarrant	Texas	NonAttainment	OZone	4.8	1,768,703	3,803,266	8,464,569	18,201,482	8,717	17,775	1.4	0.1	0.0	0.0	0.0	0.3	102
K-ALLI-01-02	K-ALLI-01	Denton	Texas	NonAttainment	OZone	23.3	1,768,703	3,803,266	41,208,352	88,610,898	42,439	86,534	6.8	0.3	0.2	0.2	0.0	1.3	498
K-ALLI-02-01	K-ALLI-02	Denton	Texas	NonAttainment	OZone	31.8	2,386,796	4,640,308	75,895,969	147,553,738	78,163	144,095	10.2	0.4	0.3	0.3	0.0	1.9	745
K-ALLI-02-02	K-ALLI-02	Collin	Texas	NonAttainment	OZone	8.9	2,386,796	4,640,308	21,306,611	41,423,413	21,943	40,453	2.9	0.1	0.1	0.1	0.0	0.5	209
K-ALLI-03-01	K-ALLI-03	Collin	Texas	NonAttainment	OZone	11.5	2,631,311	4,767,106	30,220,026	54,749,159	31,123	53,466	3.5	0.1	0.1	0.1	0.0	0.7	252
K-BEAU-01-01	K-BEAU-01	De Soto	Louisiana	Attainment	N/A	31.1	28,743,524	55,054,741	893,200,153	1,710,816,774	919,877	1,670,720	116.0	4.9	3.1	3.0	0.1	22.0	8,479
K-BEAU-01-02	K-BEAU-01	Sabine	Louisiana	Attainment	N/A	48.7	28,743,524	55,054,741	1,399,845,178	2,681,233,992	1,441,653	2,618,393	181.8	7.6	4.9	4.7	0.1	34.5	13,288
K-BEAU-01-03	K-BEAU-01	Vernon	Louisiana	Attainment	N/A	16.8	28,743,524	55,054,741	482,244,044	923,680,092	496,647	902,031	62.6	2.6	1.7	1.6	0.0	11.9	4,578
K-BEAU-02-01	K-BEAU-02	Vernon	Louisiana	Attainment	N/A	21.8	29,619,283	60,226,792	646,241,368	1,314,044,109	665,542	1,283,246	95.4	4.0	2.5	2.5	0.1	18.1	6,975
K-BEAU-02-02	K-BEAU-02	Beauregard	Louisiana	Attainment	N/A	31.2	29,619,283	60,226,792	924,390,132	1,879,621,868	951,998	1,835,568	136.5	5.7	3.6	3.5	0.1	25.9	9,977
K-BEAU-02-03	K-BEAU-02	Calcasieu	Louisiana	Attainment	N/A	2.7	29,619,283	60,226,792	81,004,859	164,712,387	83,424	160,852	12.0	0.5	0.3	0.3	0.0	2.3	874
K-BEAU-03-01	K-BEAU-03	Calcasieu	Louisiana	Attainment	N/A	22.0	25,028,352	50,361,019	550,599,109	1,107,892,856	567,043	1,081,927	79.5	3.3	2.1	2.1	0.1	15.1	5,814
K-BEAU-03-02	K-BEAU-03	Beauregard	Louisiana	Attainment	N/A	3.4	25,028,352	50,361,019	84,857,350	170,746,465	87,392	166,745	12.3	0.5	0.3	0.3	0.0	2.3	896
K-BEAU-03-03	K-BEAU-03	Newton	Texas	Attainment	N/A	6.0	25,028,352	50,361,019	151,366,265	304,572,966	155,887	297,435	21.9	0.9	0.6	0.6	0.0	4.2	1,598
K-BEAU-03-04	K-BEAU-03	Orange	Texas	Attainment	N/A	21.2	25,028,352	50,361,019	529,484,341	1,065,406,588	545,298	1,040,436	76.5	3.2	2.0	2.0	0.1	14.5	5,591
K-BEAU-03-05	K-BEAU-03	Jefferson	Texas	Attainment	N/A	0.8	25,028,352	50,361,019	20,531,458	41,312,554	21,145	40,344	3.0	0.1	0.1	0.1	0.0	0.6	217
K-BEAU-04-01	K-BEAU-04	Jefferson	Texas	Attainment	N/A	17.5	13,827,170	50,181,674	241,703,375	877,191,768	248,922	856,633	93.9	3.9	2.5	2.4	0.1	17.8	6,862
K-HEAV-01-01	K-HEAV-01	Crawford	Kansas	Attainment	N/A	6.2	49,145,519	79,415,592	305,698,693	493,986,903	314,829	482,409	25.9	1.1	0.7	0.7	0.0	4.9	1,892
K-HEAV-01-02	K-HEAV-01	Cherokee	Kansas	Attainment	N/A	3.3	49,145,519	79,415,592	163,592,655	264,353,859	168,479	258,158	13.9	0.6	0.4	0.4	0.0	2.6	1,013

Table K.7-5. Rail Segment Analysis- Acquisition-Related Criteria Pollutant Emissions by Subsegment

							Segment Tons per Mile		Sub-Segment Ton Miles		Sub-Segment Fuel Use		Acquisition-Related Emissions (tons/year)						
SubCode	Code	County	State	Attainment	NA Pollutant	SubSeg Length	NA GT	WA GT	NA GTM	WA GTM	NA Gallons	WA Gallons	NOX	VOC	PM10	PM2.5	SO2	CO	CO2e
K-HEAV-01-03	K-HEAV-01	Jasper	Missouri	Attainment	N/A	20.9	49,145,519	79,415,592	1,025,222,513	1,656,685,176	1,055,842	1,617,857	86.8	3.7	2.3	2.2	0.1	16.5	6,346
K-HEAV-01-04	K-HEAV-01	Newton	Missouri	Attainment	N/A	26.2	49,145,519	79,415,592	1,289,719,323	2,084,092,826	1,328,238	2,035,247	109.2	4.6	2.9	2.8	0.1	20.7	7,984
K-HEAV-01-05	K-HEAV-01	McDonald	Missouri	Attainment	N/A	21.0	49,145,519	79,415,592	1,029,867,060	1,664,190,426	1,060,625	1,625,186	87.2	3.7	2.3	2.3	0.1	16.6	6,375
K-HEAV-01-06	K-HEAV-01	Benton	Arkansas	Attainment	N/A	29.3	49,145,519	79,415,592	1,438,451,602	2,324,433,394	1,481,413	2,269,954	121.8	5.1	3.3	3.2	0.1	23.1	8,904
K-HEAV-01-07	K-HEAV-01	Adair	Oklahoma	Attainment	N/A	3.0	49,145,519	79,415,592	148,555,011	240,054,117	152,992	234,428	12.6	0.5	0.3	0.3	0.0	2.4	920
K-HEAV-02-01	K-HEAV-02	Adair	Oklahoma	Attainment	N/A	39.7	42,209,673	70,404,209	1,677,472,096	2,797,962,803	1,727,572	2,732,386	155.2	6.5	4.1	4.0	0.1	29.5	11,347
K-HEAV-02-02	K-HEAV-02	Sequoyah	Oklahoma	Attainment	N/A	32.9	42,209,673	70,404,209	1,387,355,600	2,314,058,977	1,428,791	2,259,823	128.4	5.4	3.4	3.3	0.1	24.4	9,384
K-HEAV-02-03	K-HEAV-02	Le Flore	Oklahoma	Attainment	N/A	18.8	42,209,673	70,404,209	793,892,534	1,324,184,041	817,603	1,293,148	73.5	3.1	2.0	1.9	0.0	14.0	5,370
K-HEAV-03-01	K-HEAV-03	Le Flore	Oklahoma	Attainment	N/A	12.7	43,794,885	73,723,644	554,935,979	934,170,794	571,510	912,276	52.6	2.2	1.4	1.4	0.0	10.0	3,848
K-LARE-02-01	K-LARE-02	Webb	Texas	Attainment	N/A	52.4	44,470,774	56,134,573	2,328,548,447	2,939,280,392	2,398,093	2,870,391	73.0	3.1	1.9	1.9	0.0	13.9	5,333
K-LARE-02-02	K-LARE-02	Duval	Texas	Attainment	N/A	45.8	44,470,774	56,134,573	2,035,640,496	2,569,548,512	2,096,437	2,509,325	63.8	2.7	1.7	1.7	0.0	12.1	4,662
K-LARE-02-03	K-LARE-02	Jim Hogg	Texas	Attainment	N/A	12.2	44,470,774	56,134,573	543,281,652	685,773,624	559,507	669,701	17.0	0.7	0.5	0.4	0.0	3.2	1,244
K-LARE-02-04	K-LARE-02	Jim Wells	Texas	Attainment	N/A	20.1	44,470,774	56,134,573	893,124,866	1,127,373,755	919,799	1,100,951	28.0	1.2	0.7	0.7	0.0	5.3	2,046
K-LARE-02-05	K-LARE-02	Nueces	Texas	Attainment	N/A	17.1	44,470,774	56,134,573	761,373,840	961,067,056	784,113	938,542	23.9	1.0	0.6	0.6	0.0	4.5	1,744
K-PITT-01-01	K-PITT-01	Jackson	Missouri	NonAttainment	SO2	4.9	43,477,295	72,614,839	214,265,198	357,861,101	220,664	349,474	19.9	0.8	0.5	0.5	0.0	3.8	1,455
K-PITT-01-02	K-PITT-01	Jackson	Missouri	Attainment	N/A	17.7	43,477,295	72,614,839	771,101,526	1,287,877,097	794,131	1,257,692	71.6	3.0	1.9	1.9	0.0	13.6	5,235
K-PITT-01-03	K-PITT-01	Cass	Missouri	Attainment	N/A	30.9	43,477,295	72,614,839	1,344,259,579	2,245,153,285	1,384,407	2,192,533	124.9	5.2	3.3	3.2	0.1	23.7	9,125
K-PITT-01-04	K-PITT-01	Bates	Missouri	Attainment	N/A	29.5	43,477,295	72,614,839	1,283,748,531	2,144,089,042	1,322,089	2,093,837	119.2	5.0	3.2	3.1	0.1	22.6	8,715
K-PITT-01-05	K-PITT-01	Vernon	Missouri	Attainment	N/A	28.2	43,477,295	72,614,839	1,227,824,208	2,050,685,447	1,264,495	2,002,623	114.0	4.8	3.0	3.0	0.1	21.7	8,335
K-PITT-01-06	K-PITT-01	Barton	Missouri	Attainment	N/A	11.2	43,477,295	72,614,839	487,001,879	813,380,010	501,547	794,316	45.2	1.9	1.2	1.2	0.0	8.6	3,306
K-PITT-01-07	K-PITT-01	Crawford	Kansas	Attainment	N/A	8.8	43,477,295	72,614,839	383,529,091	640,561,995	394,984	625,549	35.6	1.5	1.0	0.9	0.0	6.8	2,604
K-ROSE-01-01	K-ROSE-01	Fort Bend	Texas	NonAttainment	OZone	14.8	30,237,953	42,181,585	448,005,000	624,961,653	461,385	610,314	23.0	1.0	0.6	0.6	0.0	4.4	1,682
K-ROSE-02-01	K-ROSE-02	Fort Bend	Texas	NonAttainment	OZone	1.3	31,451,824	43,085,888	40,332,277	55,251,232	41,537	53,956	1.9	0.1	0.1	0.0	0.0	0.4	140
K-ROSE-02-02	K-ROSE-02	Wharton	Texas	Attainment	N/A	37.3	31,451,824	43,085,888	1,172,817,995	1,606,644,690	1,207,846	1,568,989	55.8	2.3	1.5	1.4	0.0	10.6	4,078
K-ROSE-02-03	K-ROSE-02	Jackson	Texas	Attainment	N/A	23.0	31,451,824	43,085,888	721,973,591	989,032,434	743,536	965,852	34.3	1.4	0.9	0.9	0.0	6.5	2,510
K-ROSE-02-04	K-ROSE-02	Victoria	Texas	Attainment	N/A	15.2	31,451,824	43,085,888	477,541,624	654,184,807	491,804	638,852	22.7	1.0	0.6	0.6	0.0	4.3	1,660
K-SHRE-01-01	K-SHRE-01	Le Flore	Oklahoma	Attainment	N/A	22.0	40,323,772	68,602,277	888,901,777	1,512,276,338	915,450	1,476,832	86.7	3.6	2.3	2.2	0.1	16.5	6,339
K-SHRE-01-02	K-SHRE-01	Polk	Arkansas	Attainment	N/A	59.7	40,323,772	68,602,277	2,406,472,928	4,094,099,214	2,478,345	3,998,144	234.8	9.9	6.3	6.1	0.2	44.6	17,162
K-SHRE-01-03	K-SHRE-01	Sevier	Arkansas	Attainment	N/A	16.1	40,323,772	68,602,277	650,462,235	1,106,622,432	669,889	1,080,686	63.5	2.7	1.7	1.6	0.0	12.1	4,639
K-SHRE-02-01	K-SHRE-02	Sevier	Arkansas	Attainment	N/A	12.9	48,683,585	73,591,309	628,375,733	949,868,267	647,143	927,606	43.3	1.8	1.2	1.1	0.0	8.2	3,167
K-SHRE-02-02	K-SHRE-02	Little River	Arkansas	Attainment	N/A	27.2	48,683,585	73,591,309	1,323,889,829	2,001,224,543	1,363,429	1,954,321	91.3	3.8	2.4	2.4	0.1	17.3	6,672
K-SHRE-03-01	K-SHRE-03	Little River	Arkansas	Attainment	N/A	10.1	40,237,565	76,237,675	404,884,426	767,130,095	416,977	749,150	51.3	2.2	1.4	1.3	0.0	9.7	3,751
K-SHRE-03-02	K-SHRE-03	Bowie	Texas	Attainment	N/A	22.1	40,237,565	76,237,675	889,079,911	1,684,529,984	915,633	1,645,049	112.7	4.7	3.0	2.9	0.1	21.4	8,237
K-SHRE-03-03	K-SHRE-03	Cass	Texas	Attainment	N/A	11.9	40,237,565	76,237,675	478,681,248	906,952,126	492,978	885,695	60.7	2.6	1.6	1.6	0.0	11.5	4,435
K-SHRE-03-04	K-SHRE-03	Miller	Arkansas	Attainment	N/A	6.5	40,237,565	76,237,675	261,144,254	494,787,163	268,944	483,191	33.1	1.4	0.9	0.9	0.0	6.3	2,419
K-SHRE-03-05	K-SHRE-03	Caddo	Louisiana	Attainment	N/A	41.8	40,237,565	76,237,675	1,680,978,938	3,184,932,412	1,731,183	3,110,286	213.1	9.0	5.7	5.5	0.1	40.5	15,573
K-SHRE-04-01	K-SHRE-04	Caddo	Louisiana	Attainment	N/A	18.3	84,322,776	121,839,210	1,540,090,315	2,225,298,993	1,586,087	2,173,144	90.7	3.8	2.4	2.3	0.1	17.2	6,629
K-SHRE-04-02	K-SHRE-04	De Soto	Louisiana	Attainment	N/A	5.2	84,322,776	121,839,210	434,915,121	628,415,212	447,904	613,687	25.6	1.1	0.7	0.7	0.0	4.9	1,872
U-BEAU-01-01	U-BEAU-01	Jefferson	Texas	Attainment	N/A	20.8	3,123,169	7,850,048	64,850,438	163,000,791	66,787	159,180	14.3	0.6	0.4	0.4	0.0	2.7	1,043
U-BEAU-01-02	U-BEAU-01	Liberty	Texas	NonAttainment	OZone	35.1	3,123,169	7,850,048	109,696,016	275,719,609	112,972	269,257	24.1	1.0	0.6	0.6	0.0	4.6	1,765
U-BEAU-01-03	U-BEAU-01	Harris	Texas	NonAttainment	OZone	45.8	3,123,169	7,850,048	143,027,910	359,498,921	147,300	351,073	31.5	1.3	0.8	0.8	0.0	6.0	2,301
U-BEAU-01-04	U-BEAU-01	Fort Bend	Texas	NonAttainment	OZone	18.5	3,123,169	7,850,048	57,660,656	144,929,361	59,383	141,533	12.7	0.5	0.3	0.3	0.0	2.4	928
U-VICT-01-01	U-VICT-01	Victoria	Texas	Attainment	N/A	12.3	19,356,795	31,422,586	237,511,586	385,561,162	244,605	376,525	20.4	0.9	0.5	0.5	0.0	3.9	1,490
U-VICT-02-01	U-VICT-02	Nueces	Texas	Attainment	N/A	8.2	19,356,795	31,422,586	159,209,190	258,450,046	163,964	252,393	13.7	0.6	0.4	0.4	0.0	2.6	999
U-VICT-02-02	U-VICT-02	San Patricio	Texas	Attainment	N/A	20.5	19,356,795	31,422,586	396,292,507	643,315,984	408,128	628,238	34.0	1.4	0.9	0.9	0.0	6.5	2,486
U-VICT-02-03	U-VICT-02	Refugio	Texas	Attainment	N/A	36.9	19,356,795	31,422,586	714,095,360	1,159,216,870	735,423	1,132,048	61.3	2.6	1.6	1.6	0.0	11.6	4,479
U-VICT-02-04	U-VICT-02	Victoria	Texas	Attainment	N/A	18.0	19,356,795	31,422,586	348,182,723	565,217,629	358,582	551,970	29.9	1.3	0.8	0.8	0.0	5.7	2,184

Notes:

Segment Ton-Mileage provided by Applicants; Sub Segment ton-mileage proportioned from whole segment based on the Length Proportion

No Action and With Action Fuel Efficiency estimated based on data provided in the "Verified Statement of Michael R. Baranowski" (No Action- 971 ton-miles/gal; With Action- 1024 ton-miles/gal)

Table K.7-6. Rail Segment Analysis- No Action HAPs Emissions by Subsegment

					Segment Tons per Mile		Sub-Segment Ton Miles		Sub-Segment Fuel Use		No Action Emissions (tons/year)							
SubCode	Code	County	State	SubSeg Length	NA GT	WA GT	NA GTM	WA GTM	NA Gallons	WA Gallons	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
C-CHIC-01-01	C-CHIC-01	Jackson	Iowa	1.0	22,351,505	36,532,967	23,016,395	37,619,714	23,704	36,738	1.2E-02	2.5E-03	3.5E-03	2.9E-04	5.9E-04	3.4E-02	4.2E-04	4.3E-04
C-CHIC-01-02	C-CHIC-01	Carroll	Illinois	0.2	22,351,505	36,532,967	4,241,869	6,933,227	4,369	6,771	2.2E-03	4.5E-04	6.4E-04	5.3E-05	1.1E-04	6.3E-03	7.7E-05	7.9E-05
C-CHIC-02-01	C-CHIC-02	Carroll	Illinois	28.5	19,862,895	36,960,318	566,485,268	1,054,099,904	583,404	1,029,394	3.0E-01	6.1E-02	8.5E-02	7.0E-03	1.5E-02	8.4E-01	1.0E-02	1.1E-02
C-CHIC-02-02	C-CHIC-02	Ogle	Illinois	32.7	19,862,895	36,960,318	649,553,662	1,208,671,241	668,953	1,180,343	3.4E-01	7.0E-02	9.8E-02	8.1E-03	1.7E-02	9.7E-01	1.2E-02	1.2E-02
C-CHIC-03-01	C-CHIC-03	Ogle	Illinois	7.9	12,595,641	28,187,866	99,899,982	223,566,816	102,884	218,327	5.2E-02	1.1E-02	1.5E-02	1.2E-03	2.6E-03	1.5E-01	1.8E-03	1.9E-03
C-CHIC-03-02	C-CHIC-03	DeKalb	Illinois	20.0	12,595,641	28,187,866	252,457,237	564,975,682	259,997	551,734	1.3E-01	2.7E-02	3.8E-02	3.1E-03	6.5E-03	3.8E-01	4.6E-03	4.7E-03
C-CHIC-03-03	C-CHIC-03	Kane	Illinois	0.1	12,595,641	28,187,866	889,529	1,990,683	916	1,944	4.7E-04	9.5E-05	1.3E-04	1.1E-05	2.3E-05	1.3E-03	1.6E-05	1.7E-05
C-CHIC-03-04	C-CHIC-03	Kane	Illinois	13.6	12,595,641	28,187,866	171,312,681	383,381,755	176,429	374,396	9.0E-02	1.8E-02	2.6E-02	2.1E-03	4.4E-03	2.6E-01	3.1E-03	3.2E-03
C-DAVE-01-01	C-DAVE-01	Jackson	Iowa	1.8	30,098,703	53,233,226	54,973,986	97,228,199	56,616	94,949	2.9E-02	5.9E-03	8.3E-03	6.8E-04	1.4E-03	8.2E-02	1.0E-03	1.0E-03
C-DAVE-01-02	C-DAVE-01	Clinton	Iowa	14.8	30,098,703	53,233,226	443,966,519	785,208,933	457,226	766,806	2.3E-01	4.8E-02	6.7E-02	5.5E-03	1.1E-02	6.6E-01	8.1E-03	8.3E-03
C-DAVE-02-01	C-DAVE-02	Clinton	Iowa	10.5	21,011,102	39,485,998	220,776,655	414,903,824	227,370	405,180	1.2E-01	2.4E-02	3.3E-02	2.7E-03	5.7E-03	3.3E-01	4.0E-03	4.1E-03
C-DAVE-02-02	C-DAVE-02	Scott	Iowa	22.4	21,011,102	39,485,998	470,454,816	884,122,019	484,505	863,400	2.5E-01	5.0E-02	7.1E-02	5.9E-03	1.2E-02	7.0E-01	8.6E-03	8.8E-03
C-DAVE-03-01	C-DAVE-03	Scott	Iowa	5.6	21,011,102	39,485,998	118,515,411	222,725,076	122,055	217,505	6.2E-02	1.3E-02	1.8E-02	1.5E-03	3.0E-03	1.8E-01	2.2E-03	2.2E-03
C-ELGI-01-01	C-ELGI-01	Kane	Illinois	5.8	13,624,379	31,061,141	79,673,364	181,640,985	82,053	177,384	4.2E-02	8.5E-03	1.2E-02	9.9E-04	2.0E-03	1.2E-01	1.5E-03	1.5E-03
C-ELGI-01-02	C-ELGI-01	Cook	Illinois	6.5	13,624,379	31,061,141	88,771,588	202,383,304	91,423	197,640	4.6E-02	9.5E-03	1.3E-02	1.1E-03	2.3E-03	1.3E-01	1.6E-03	1.7E-03
C-ELGI-01-03	C-ELGI-01	DuPage	Illinois	11.0	13,624,379	31,061,141	150,037,394	342,058,358	154,518	334,041	7.9E-02	1.6E-02	2.3E-02	1.9E-03	3.9E-03	2.2E-01	2.7E-03	2.8E-03
C-ELGI-02-01	C-ELGI-02	DuPage	Illinois	0.8	122,827,328	142,940,767	96,828,836	112,684,923	99,721	110,044	5.1E-02	1.0E-02	1.5E-02	1.2E-03	2.5E-03	1.4E-01	1.8E-03	1.8E-03
C-ELGI-02-02	C-ELGI-02	Cook	Illinois	3.5	122,827,328	142,940,767	431,703,052	502,396,056	444,596	490,621	2.3E-01	4.6E-02	6.5E-02	5.4E-03	1.1E-02	6.4E-01	7.9E-03	8.1E-03
C-KACI-01-01	C-KACI-01	Grundy	Missouri	4.5	17,940,076	49,359,154	81,498,106	224,228,568	83,932	218,973	4.3E-02	8.7E-03	1.2E-02	1.0E-03	2.1E-03	1.2E-01	1.5E-03	1.5E-03
C-KACI-01-02	C-KACI-01	Livingston	Missouri	30.1	17,940,076	49,359,154	540,760,017	1,487,811,809	556,910	1,452,941	2.8E-01	5.8E-02	8.1E-02	6.7E-03	1.4E-02	8.1E-01	9.9E-03	1.0E-02
C-KACI-01-03	C-KACI-01	Caldwell	Missouri	16.8	17,940,076	49,359,154	301,249,417	828,837,979	310,247	809,412	1.6E-01	3.2E-02	4.5E-02	3.7E-03	7.7E-03	4.5E-01	5.5E-03	5.6E-03
C-KACI-02-01	C-KACI-02	Caldwell	Missouri	5.0	15,679,566	49,510,671	78,254,486	247,100,729	80,592	241,309	4.1E-02	8.4E-03	1.2E-02	9.7E-04	2.0E-03	1.2E-01	1.4E-03	1.5E-03
C-KACI-02-02	C-KACI-02	Ray	Missouri	10.6	15,679,566	49,510,671	166,882,995	526,959,055	171,867	514,608	8.7E-02	1.8E-02	2.5E-02	2.1E-03	4.3E-03	2.5E-01	3.0E-03	3.1E-03
C-KACI-02-03	C-KACI-02	Clay	Missouri	24.7	15,679,566	49,510,671	387,538,889	1,223,714,413	399,113	1,195,034	2.0E-01	4.1E-02	5.8E-02	4.8E-03	1.0E-02	5.8E-01	7.1E-03	7.2E-03
C-KACI-02-04	C-KACI-02	Jackson	Missouri	1.5	15,679,566	49,510,671	24,221,370	76,482,748	24,945	74,690	1.3E-02	2.6E-03	3.6E-03	3.0E-04	6.2E-04	3.6E-02	4.4E-04	4.5E-04
C-KACI-02-05	C-KACI-02	Jackson	Missouri	0.3	15,679,566	49,510,671	4,417,247	13,948,146	4,549	13,621	2.3E-03	4.7E-04	6.6E-04	5.5E-05	1.1E-04	6.6E-03	8.1E-05	8.3E-05
C-LARE-01-01	C-LARE-01	Wapello	Iowa	13.3	14,992,756	40,410,822	199,657,987	538,149,459	205,621	525,537	1.0E-01	2.1E-02	3.0E-02	2.5E-03	5.1E-03	3.0E-01	3.6E-03	3.7E-03
C-LARE-01-02	C-LARE-01	Monroe	Iowa	10.5	14,992,756	40,410,822	156,958,319	423,058,630	161,646	413,143	8.2E-02	1.7E-02	2.4E-02	2.0E-03	4.0E-03	2.3E-01	2.9E-03	2.9E-03
C-LARE-01-03	C-LARE-01	Appanoose	Iowa	23.2	14,992,756	40,410,822	347,355,415	936,246,688	357,730	914,303	1.8E-01	3.7E-02	5.2E-02	4.3E-03	8.9E-03	5.2E-01	6.3E-03	6.5E-03
C-LARE-01-04	C-LARE-01	Wayne	Iowa	16.2	14,992,756	40,410,822	242,856,344	654,584,432	250,110	639,243	1.3E-01	2.6E-02	3.7E-02	3.0E-03	6.2E-03	3.6E-01	4.4E-03	4.5E-03
C-LARE-02-01	C-LARE-02	Putnam	Missouri	17.9	15,380,423	47,044,888	274,798,803	840,541,184	283,006	820,841	1.4E-01	2.9E-02	4.1E-02	3.4E-03	7.1E-03	4.1E-01	5.0E-03	5.1E-03
C-LARE-02-02	C-LARE-02	Sullivan	Missouri	20.3	15,380,423	47,044,888	312,005,600	954,347,520	321,324	931,980	1.6E-01	3.3E-02	4.7E-02	3.9E-03	8.0E-03	4.7E-01	5.7E-03	5.8E-03
C-LARE-02-03	C-LARE-02	Grundy	Missouri	8.1	15,380,423	47,044,888	125,152,963	382,811,782	128,891	373,840	6.6E-02	1.3E-02	1.9E-02	1.6E-03	3.2E-03	1.9E-01	2.3E-03	2.3E-03
C-OTTU-01-01	C-OTTU-01	Scott	Iowa	9.0	18,375,215	36,915,185	165,756,054	332,998,296	170,707	325,194	8.7E-02	1.8E-02	2.5E-02	2.1E-03	4.3E-03	2.5E-01	3.0E-03	3.1E-03
C-OTTU-01-02	C-OTTU-01	Muscatine	Iowa	7.5	18,375,215	36,915,185	137,721,374	276,677,574	141,835	270,193	7.2E-02	1.5E-02	2.1E-02	1.7E-03	3.5E-03	2.1E-01	2.5E-03	2.6E-03
C-OTTU-01-03	C-OTTU-01	Muscatine	Iowa	8.0	18,375,215	36,915,185	146,859,589	295,035,938	151,246	288,121	7.7E-02	1.6E-02	2.2E-02	1.8E-03	3.8E-03	2.2E-01	2.7E-03	2.7E-03
C-OTTU-02-01	C-OTTU-02	Muscatine	Iowa	7.3	20,503,888	42,180,809	148,665,185	305,835,542	153,105	298,668	7.8E-02	1.6E-02	2.2E-02	1.8E-03	3.8E-03	2.2E-01	2.7E-03	2.8E-03
C-OTTU-02-02	C-OTTU-02	Louisa	Iowa	21.6	20,503,888	42,180,809	443,173,133	911,700,312	456,409	890,332	2.3E-01	4.7E-02	6.7E-02	5.5E-03	1.1E-02	6.6E-01	8.1E-03	8.3E-03
C-OTTU-02-03	C-OTTU-02	Washington	Iowa	25.6	20,503,888	42,180,809	525,584,125	1,081,237,048	541,281	1,055,896	2.8E-01	5.6E-02	7.9E-02	6.5E-03	1.3E-02	7.8E-01	9.6E-03	9.8E-03
C-OTTU-02-04	C-OTTU-02	Keokuk	Iowa	9.4	20,503,888	42,180,809	192,986,144	397,013,073	198,750	387,708	1.0E-01	2.1E-02	2.9E-02	2.4E-03	5.0E-03	2.9E-01	3.5E-03	3.6E-03
C-OTTU-02-05	C-OTTU-02	Jefferson	Iowa	5.3	20,503,888	42,180,809	108,092,029	222,368,031	111,320	217,156	5.7E-02	1.2E-02	1.6E-02	1.3E-03	2.8E-03	1.6E-01	2.0E-03	2.0E-03
C-OTTU-02-06	C-OTTU-02	Wapello	Iowa	17.8	20,503,888	42,180,809	365,074,725	751,035,466	375,978	733,433	1.9E-01	3.9E-02	5.5E-02	4.5E-03	9.4E-03	5.4E-01	6.7E-03	6.8E-03
K-ALLI-01-01	K-ALLI-01	Tarrant	Texas	4.8	1,768,703	3,803,266	8,464,569	18,201,482	8,717	17,775	4.4E-03	9.1E-04	1.3E-03	1.1E-04	2.2E-04	1.3E-02	1.5E-04	1.6E-04
K-ALLI-01-02	K-ALLI-01	Denton	Texas	23.3	1,768,703	3,803,266	41,208,352	88,610,898	42,439	86,534	2.2E-02	4.4E-03	6.2E-03	5.1E-04	1.1E-03	6.1E-02	7.5E-04	7.7E-04
K-ALLI-02-01	K-ALLI-02	Denton	Texas	31.8	2,386,796	4,640,308	75,895,969	147,553,738	78,163	144,095	4.0E-02	8.1E-03	1.1E-02	9.4E-04	1.9E-03	1.1E-01	1.4E-03	1.4E-03
K-ALLI-02-02	K-ALLI-02	Collin	Texas	8.9	2,386,796	4,640,308	21,306,611	41,423,413	21,943	40,453	1.1E-02	2.3E-03	3.2E-03	2.7E-04	5.5E-04	3.2E-02	3.9E-04	4.0E-04
K-ALLI-03-01	K-ALLI-03	Collin	Texas	11.5	2,631,311	4,767,106	30,220,026	54,749,159	31,123	53,466	1.6E-02	3.2E-03	4.5E-03	3.8E-04	7.8E-04	4.5E-02	5.5E-04	5.6E-04
K-BEAU-01-01	K-BEAU-01	De Soto	Louisiana	31.1	28,743,524	55,054,741	893,200,153	1,710,816,774	919,877	1,670,720	4.7E-01	9.6E-02	1.3E-01	1.1E-02	2.3E-02	1.3E+00	1.6E-02	1.7E-02
K-BEAU-01-02	K-BEAU-01	Sabine	Louisiana	48.7	28,743,524	55,054,741	1,399,845,178	2,681,233,992	1,441,653	2,618,393	7.3E-01	1.5E-01	2.1E-01	1.7E-02	3.6E-02	2.1E+00	2.6E-02	2.6E-02
K-BEAU-01-03	K-BEAU-01	Vernon	Louisiana	16.8	28,743,524	55,054,741	482,244,044	923,680,092	496,647	902,031	2.5E-01	5.2E-02	7.3E-02	6.0E-03	1.2E-02	7.2E-01	8.8E-03	9.0E-03
K-BEAU-02-01	K-BEAU-02	Vernon	Louisiana	21.8	29,619,283	60,226,792	646,241,368	1,314,044,109	665,542	1,283,246	3.4E-01	6.9E-02	9.7E-02	8.0E-03	1.7E-02	9.6E-01	1.2E-02	1.2E-02
K-BEAU-02-02	K-BEAU-02	Beauregard	Louisiana	31.2	29,619,283	60,226,792	924,390,132	1,879,621,868	951,998	1,835,568	4.8E-01	9.9E-02	1.4E-01	1.1E-02	2.4E-02	1.4E+00	1.7E-02	1.7E-02
K-BEAU-02-03	K-BEAU-02	Calcasieu	Louisiana	2.7	29,619,283	60,226,792	81,004,859	164,712,387	83,424	160,852	4.2E-02	8.7E-03	1.2E-02	1.0E-03	2.1E-03	1.2E-01	1.5E-03	1.5E-03
K-BEAU-03-01	K-BEAU-03	Calcasieu	Louisiana	22.0	25,028,352	50,361,019	550,599,109	1,107,892,856	567,043	1,081,927	2.9E-01	5.9E-02	8.3E-02	6.8E-03	1.4E-02	8.2E-01	1.0E-02	1.0E-02
K-BEAU-03-02	K-BEAU-03	Beauregard	Louisiana	3.4	25,028,352	50,361,019	84,857,350	170,746,465	87,392	166,745	4.4E-02	9.1E-03	1.3E-02	1.1E-03	2.2E-03	1.3E-01	1.5E-03	1.6E-03
K-BEAU-03-03	K-BEAU-03	Newton	Texas	6.0	25,028,352	50,361,019	151,366,265	304,572,966	155,887	297,435	7.9E-02	1.6E-02	2.3E-02	1.9E-03	3.9E-03	2.3E-01	2.8E-03	2.8E-03
K-BEAU-03-04	K-BEAU-03	Orange	Texas	21.2	25,028,352	50,361,019	529,484,341	1,065,406,588	545,298	1,040,436	2.8E-01	5.7E-02	8.0E-02	6.6E-03	1.4E-02	7.9E-01	9.7E-03	9.9E-03
K-BEAU-03-05	K-BEAU-03	Jefferson	Texas	0.8	25,028,352	50,361,019	20,531,458	41,312,554	21,145	40,344	1.1E-02	2.2E-03	3.1E-03	2.6E-04	5.3E-04	3.1E-02	3.7E-04	3.8E-04
K-BEAU-04-01	K-BEAU-04	Jefferson	Texas	17.5	13,827,170	50,181,674	241,703,375	877,191,768	248,922	856,633	1.3E-01	2.6E-02	3.6E-02	3.0E-03	6.2E-03	3.6E-01	4.4E-03	4.5E-03
K-HEAV-01-01	K-HEAV-01	Crawford	Kansas	6.2	49,145,519	79,415,592	305,698,693	493,986,903	314,829	482,409	1.6E-01	3.3E-02	4.6E-02	3.8E-03	7.9E-03	4.6E-01	5.6E-03	5.7E-03
K-HEAV-01-02	K-HEAV-01	Cherokee	Kansas	3.3	49,145,519	79,415,592	163,592,655	264,353,859	168,479	258,158	8.6E-02	1.8E-02	2.5E-02	2.0E-03	4.2E-03	2.4E-01	3.0E-03	3.1E-03

Table K.7-6. Rail Segment Analysis- No Action HAPs Emissions by Subsegment

					Segment Tons per Mile		Sub-Segment Ton Miles		Sub-Segment Fuel Use		No Action Emissions (tons/year)							
SubCode	Code	County	State	SubSeg Length	NA GT	WA GT	NA GTM	WA GTM	NA Gallons	WA Gallons	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
K-HEAV-01-03	K-HEAV-01	Jasper	Missouri	20.9	49,145,519	79,415,592	1,025,222,513	1,656,685,176	1,055,842	1,617,857	5.4E-01	1.1E-01	1.5E-01	1.3E-02	2.6E-02	1.5E+00	1.9E-02	1.9E-02
K-HEAV-01-04	K-HEAV-01	Newton	Missouri	26.2	49,145,519	79,415,592	1,289,719,323	2,084,092,826	1,328,238	2,035,247	6.8E-01	1.4E-01	1.9E-01	1.6E-02	3.3E-02	1.9E+00	2.4E-02	2.4E-02
K-HEAV-01-05	K-HEAV-01	McDonald	Missouri	21.0	49,145,519	79,415,592	1,029,867,060	1,664,190,426	1,060,625	1,625,186	5.4E-01	1.1E-01	1.5E-01	1.3E-02	2.6E-02	1.5E+00	1.9E-02	1.9E-02
K-HEAV-01-06	K-HEAV-01	Benton	Arkansas	29.3	49,145,519	79,415,592	1,438,451,602	2,324,433,394	1,481,413	2,269,954	7.5E-01	1.5E-01	2.2E-01	1.8E-02	3.7E-02	2.1E+00	2.6E-02	2.7E-02
K-HEAV-01-07	K-HEAV-01	Adair	Oklahoma	3.0	49,145,519	79,415,592	148,555,011	240,054,117	152,992	234,428	7.8E-02	1.6E-02	2.2E-02	1.8E-03	3.8E-03	2.2E-01	2.7E-03	2.8E-03
K-HEAV-02-01	K-HEAV-02	Adair	Oklahoma	39.7	42,209,673	70,404,209	1,677,472,096	2,797,962,803	1,727,572	2,732,386	8.8E-01	1.8E-01	2.5E-01	2.1E-02	4.3E-02	2.5E+00	3.1E-02	3.1E-02
K-HEAV-02-02	K-HEAV-02	Sequoyah	Oklahoma	32.9	42,209,673	70,404,209	1,387,355,600	2,314,058,977	1,428,791	2,259,823	7.3E-01	1.5E-01	2.1E-01	1.7E-02	3.6E-02	2.1E+00	2.5E-02	2.6E-02
K-HEAV-02-03	K-HEAV-02	Le Flore	Oklahoma	18.8	42,209,673	70,404,209	793,892,534	1,324,184,041	817,603	1,293,148	4.2E-01	8.5E-02	1.2E-01	9.9E-03	2.0E-02	1.2E+00	1.4E-02	1.5E-02
K-HEAV-03-01	K-HEAV-03	Le Flore	Oklahoma	12.7	43,794,885	73,723,644	554,935,979	934,170,794	571,510	912,276	2.9E-01	5.9E-02	8.4E-02	6.9E-03	1.4E-02	8.3E-01	1.0E-02	1.0E-02
K-LARE-02-01	K-LARE-02	Webb	Texas	52.4	44,470,774	56,134,573	2,328,548,447	2,939,280,392	2,398,093	2,870,391	1.2E+00	2.5E-01	3.5E-01	2.9E-02	6.0E-02	3.5E+00	4.3E-02	4.4E-02
K-LARE-02-02	K-LARE-02	Duval	Texas	45.8	44,470,774	56,134,573	2,035,640,496	2,569,548,512	2,096,437	2,509,325	1.1E+00	2.2E-01	3.1E-01	2.5E-02	5.2E-02	3.0E+00	3.7E-02	3.8E-02
K-LARE-02-03	K-LARE-02	Jim Hogg	Texas	12.2	44,470,774	56,134,573	543,281,652	685,773,624	559,507	669,701	2.8E-01	5.8E-02	8.2E-02	6.8E-03	1.4E-02	8.1E-01	9.9E-03	1.0E-02
K-LARE-02-04	K-LARE-02	Jim Wells	Texas	20.1	44,470,774	56,134,573	893,124,866	1,127,373,755	919,799	1,100,951	4.7E-01	9.6E-02	1.3E-01	1.1E-02	2.3E-02	1.3E+00	1.6E-02	1.7E-02
K-LARE-02-05	K-LARE-02	Nueces	Texas	17.1	44,470,774	56,134,573	761,373,840	961,067,056	784,113	938,542	4.0E-01	8.1E-02	1.1E-01	9.5E-03	2.0E-02	1.1E+00	1.4E-02	1.4E-02
K-PITT-01-01	K-PITT-01	Jackson	Missouri	4.9	43,477,295	72,614,839	214,265,198	357,861,101	220,664	349,474	1.1E-01	2.3E-02	3.2E-02	2.7E-03	5.5E-03	3.2E-01	3.9E-03	4.0E-03
K-PITT-01-02	K-PITT-01	Jackson	Missouri	17.7	43,477,295	72,614,839	771,101,526	1,287,877,097	794,131	1,257,692	4.0E-01	8.3E-02	1.2E-01	9.6E-03	2.0E-02	1.2E+00	1.4E-02	1.4E-02
K-PITT-01-03	K-PITT-01	Cass	Missouri	30.9	43,477,295	72,614,839	1,344,259,579	2,245,153,285	1,384,407	2,192,533	7.0E-01	1.4E-01	2.0E-01	1.7E-02	3.5E-02	2.0E+00	2.5E-02	2.5E-02
K-PITT-01-04	K-PITT-01	Bates	Missouri	29.5	43,477,295	72,614,839	1,283,748,531	2,144,089,042	1,322,089	2,093,837	6.7E-01	1.4E-01	1.9E-01	1.6E-02	3.3E-02	1.9E+00	2.3E-02	2.4E-02
K-PITT-01-05	K-PITT-01	Vernon	Missouri	28.2	43,477,295	72,614,839	1,227,824,208	2,050,685,447	1,264,495	2,002,623	6.4E-01	1.3E-01	1.8E-01	1.5E-02	3.2E-02	1.8E+00	2.2E-02	2.3E-02
K-PITT-01-06	K-PITT-01	Barton	Missouri	11.2	43,477,295	72,614,839	487,001,879	813,380,010	501,547	794,316	2.6E-01	5.2E-02	7.3E-02	6.1E-03	1.3E-02	7.3E-01	8.9E-03	9.1E-03
K-PITT-01-07	K-PITT-01	Crawford	Kansas	8.8	43,477,295	72,614,839	383,529,091	640,561,995	394,984	625,549	2.0E-01	4.1E-02	5.8E-02	4.8E-03	9.9E-03	5.7E-01	7.0E-03	7.2E-03
K-ROSE-01-01	K-ROSE-01	Fort Bend	Texas	14.8	30,237,953	42,181,585	448,005,000	624,961,653	461,385	610,314	2.3E-01	4.8E-02	6.7E-02	5.6E-03	1.2E-02	6.7E-01	8.2E-03	8.4E-03
K-ROSE-02-01	K-ROSE-02	Fort Bend	Texas	1.3	31,451,824	43,085,888	40,332,277	55,251,232	41,537	53,956	2.1E-02	4.3E-03	6.1E-03	5.0E-04	1.0E-03	6.0E-02	7.4E-04	7.5E-04
K-ROSE-02-02	K-ROSE-02	Wharton	Texas	37.3	31,451,824	43,085,888	1,172,817,995	1,606,644,690	1,207,846	1,568,989	6.1E-01	1.3E-01	1.8E-01	1.5E-02	3.0E-02	1.7E+00	2.1E-02	2.2E-02
K-ROSE-02-03	K-ROSE-02	Jackson	Texas	23.0	31,451,824	43,085,888	721,973,591	989,032,434	743,536	965,852	3.8E-01	7.7E-02	1.1E-01	9.0E-03	1.9E-02	1.1E+00	1.3E-02	1.3E-02
K-ROSE-02-04	K-ROSE-02	Victoria	Texas	15.2	31,451,824	43,085,888	477,541,624	654,184,807	491,804	638,852	2.5E-01	5.1E-02	7.2E-02	5.9E-03	1.2E-02	7.1E-01	8.7E-03	8.9E-03
K-SHRE-01-01	K-SHRE-01	Le Flore	Oklahoma	22.0	40,323,772	68,602,277	888,901,777	1,512,276,338	915,450	1,476,832	4.7E-01	9.5E-02	1.3E-01	1.1E-02	2.3E-02	1.3E+00	1.6E-02	1.7E-02
K-SHRE-01-02	K-SHRE-01	Polk	Arkansas	59.7	40,323,772	68,602,277	2,406,472,928	4,094,099,214	2,478,345	3,998,144	1.3E+00	2.6E-01	3.6E-01	3.0E-02	6.2E-02	3.6E+00	4.4E-02	4.5E-02
K-SHRE-01-03	K-SHRE-01	Sevier	Arkansas	16.1	40,323,772	68,602,277	650,462,235	1,106,622,432	669,889	1,080,686	3.4E-01	7.0E-02	9.8E-02	8.1E-03	1.7E-02	9.7E-01	1.2E-02	1.2E-02
K-SHRE-02-01	K-SHRE-02	Sevier	Arkansas	12.9	48,683,585	73,591,309	628,375,733	949,868,267	647,143	927,606	3.3E-01	6.7E-02	9.5E-02	7.8E-03	1.6E-02	9.4E-01	1.1E-02	1.2E-02
K-SHRE-02-02	K-SHRE-02	Little River	Arkansas	27.2	48,683,585	73,591,309	1,323,889,829	2,001,224,543	1,363,429	1,954,321	6.9E-01	1.4E-01	2.0E-01	1.6E-02	3.4E-02	2.0E+00	2.4E-02	2.5E-02
K-SHRE-03-01	K-SHRE-03	Little River	Arkansas	10.1	40,237,565	76,237,675	404,884,426	767,130,095	416,977	749,150	2.1E-01	4.3E-02	6.1E-02	5.0E-03	1.0E-02	6.0E-01	7.4E-03	7.6E-03
K-SHRE-03-02	K-SHRE-03	Bowie	Texas	22.1	40,237,565	76,237,675	889,079,911	1,684,529,984	915,633	1,645,049	4.7E-01	9.5E-02	1.3E-01	1.1E-02	2.3E-02	1.3E+00	1.6E-02	1.7E-02
K-SHRE-03-03	K-SHRE-03	Cass	Texas	11.9	40,237,565	76,237,675	478,681,248	906,952,126	492,978	885,695	2.5E-01	5.1E-02	7.2E-02	6.0E-03	1.2E-02	7.1E-01	8.7E-03	8.9E-03
K-SHRE-03-04	K-SHRE-03	Miller	Arkansas	6.5	40,237,565	76,237,675	261,144,254	494,787,163	268,944	483,191	1.4E-01	2.8E-02	3.9E-02	3.2E-03	6.7E-03	3.9E-01	4.8E-03	4.9E-03
K-SHRE-03-05	K-SHRE-03	Caddo	Louisiana	41.8	40,237,565	76,237,675	1,680,978,938	3,184,932,412	1,731,183	3,110,286	8.8E-01	1.8E-01	2.5E-01	2.1E-02	4.3E-02	2.5E+00	3.1E-02	3.1E-02
K-SHRE-04-01	K-SHRE-04	Caddo	Louisiana	18.3	84,322,776	121,839,210	1,540,090,315	2,225,298,993	1,586,087	2,173,144	8.1E-01	1.6E-01	2.3E-01	1.9E-02	4.0E-02	2.3E+00	2.8E-02	2.9E-02
K-SHRE-04-02	K-SHRE-04	De Soto	Louisiana	5.2	84,322,776	121,839,210	434,915,121	628,415,212	447,904	613,687	2.3E-01	4.7E-02	6.5E-02	5.4E-03	1.1E-02	6.5E-01	7.9E-03	8.1E-03
U-BEAU-01-01	U-BEAU-01	Jefferson	Texas	20.8	3,123,169	7,850,048	64,850,438	163,000,791	66,787	159,180	3.4E-02	6.9E-03	9.8E-03	8.1E-04	1.7E-03	9.7E-02	1.2E-03	1.2E-03
U-BEAU-01-02	U-BEAU-01	Liberty	Texas	35.1	3,123,169	7,850,048	109,696,016	275,719,609	112,972	269,257	5.7E-02	1.2E-02	1.7E-02	1.4E-03	2.8E-03	1.6E-01	2.0E-03	2.1E-03
U-BEAU-01-03	U-BEAU-01	Harris	Texas	45.8	3,123,169	7,850,048	143,027,910	359,498,921	147,300	351,073	7.5E-02	1.5E-02	2.2E-02	1.8E-03	3.7E-03	2.1E-01	2.6E-03	2.7E-03
U-BEAU-01-04	U-BEAU-01	Fort Bend	Texas	18.5	3,123,169	7,850,048	57,660,656	144,929,361	59,383	141,533	3.0E-02	6.2E-03	8.7E-03	7.2E-04	1.5E-03	8.6E-02	1.1E-03	1.1E-03
U-VICT-01-01	U-VICT-01	Victoria	Texas	12.3	19,356,795	31,422,586	237,511,586	385,561,162	244,605	376,525	1.2E-01	2.5E-02	3.6E-02	3.0E-03	6.1E-03	3.5E-01	4.3E-03	4.4E-03
U-VICT-02-01	U-VICT-02	Nueces	Texas	8.2	19,356,795	31,422,586	159,209,190	258,450,046	163,964	252,393	8.3E-02	1.7E-02	2.4E-02	2.0E-03	4.1E-03	2.4E-01	2.9E-03	3.0E-03
U-VICT-02-02	U-VICT-02	San Patricio	Texas	20.5	19,356,795	31,422,586	396,292,507	643,315,984	408,128	628,238	2.1E-01	4.2E-02	6.0E-02	4.9E-03	1.0E-02	5.9E-01	7.2E-03	7.4E-03
U-VICT-02-03	U-VICT-02	Refugio	Texas	36.9	19,356,795	31,422,586	714,095,360	1,159,216,870	735,423	1,132,048	3.7E-01	7.6E-02	1.1E-01	8.9E-03	1.8E-02	1.1E+00	1.3E-02	1.3E-02
U-VICT-02-04	U-VICT-02	Victoria	Texas	18.0	19,356,795	31,422,586	348,182,723	565,217,629	358,582	551,970	1.8E-01	3.7E-02	5.2E-02	4.3E-03	8.9E-03	5.2E-01	6.4E-03	6.5E-03

Notes:

Segment Ton-Mileage provided by Applicants; Sub Segment ton-mileage proportioned from whole segment based on the Length Proportion

No Action and With Action Fuel Efficiency estimated based on data provided in the "Verified Statement of Michael R. Baranowski" (No Action- 971 ton-miles/gal; With Action- 1024 ton-miles/gal)

Table K.7-7. Rail Segment Analysis- Proposed Acquisition HAPs Emissions by Subsegment

					Segment Tons per Mile		Sub-Segment Ton Miles		Sub-Segment Fuel Use		Proposed Acquisition Emissions (tons/year)							
SubCode	Code	County	State	SubSeg Length	NA GT	WA GT	NA GTM	WA GTM	NA Gallons	WA Gallons	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
C-CHIC-01-01	C-CHIC-01	Jackson	Iowa	1.0	22,351,505	36,532,967	23,016,395	37,619,714	23,704	36,738	1.9E-02	3.8E-03	5.4E-03	4.4E-04	9.2E-04	5.3E-02	6.5E-04	6.7E-04
C-CHIC-01-02	C-CHIC-01	Carroll	Illinois	0.2	22,351,505	36,532,967	4,241,869	6,933,227	4,369	6,771	3.4E-03	7.0E-04	9.9E-04	8.2E-05	1.7E-04	9.8E-03	1.2E-04	1.2E-04
C-CHIC-02-01	C-CHIC-02	Carroll	Illinois	28.5	19,862,895	36,960,318	566,485,268	1,054,099,904	583,404	1,029,394	5.2E-01	1.1E-01	1.5E-01	1.2E-02	2.6E-02	1.5E+00	1.8E-02	1.9E-02
C-CHIC-02-02	C-CHIC-02	Ogle	Illinois	32.7	19,862,895	36,960,318	649,553,662	1,208,671,241	668,953	1,180,343	6.0E-01	1.2E-01	1.7E-01	1.4E-02	2.9E-02	1.7E+00	2.1E-02	2.1E-02
C-CHIC-03-01	C-CHIC-03	Ogle	Illinois	7.9	12,595,641	28,187,866	99,899,982	223,566,816	102,884	218,327	1.1E-01	2.3E-02	3.2E-02	2.6E-03	5.4E-03	3.2E-01	3.9E-03	4.0E-03
C-CHIC-03-02	C-CHIC-03	DeKalb	Illinois	20.0	12,595,641	28,187,866	252,457,237	564,975,682	259,997	551,734	2.8E-01	5.7E-02	8.1E-02	6.7E-03	1.4E-02	8.0E-01	9.8E-03	1.0E-02
C-CHIC-03-03	C-CHIC-03	Kane	Illinois	0.1	12,595,641	28,187,866	889,529	1,990,683	916	1,944	9.9E-04	2.0E-04	2.8E-04	2.3E-05	4.8E-05	2.8E-03	3.4E-05	3.5E-05
C-CHIC-03-04	C-CHIC-03	Kane	Illinois	13.6	12,595,641	28,187,866	171,312,681	383,381,755	176,429	374,396	1.9E-01	3.9E-02	5.5E-02	4.5E-03	9.3E-03	5.4E-01	6.6E-03	6.8E-03
C-DAVE-01-01	C-DAVE-01	Jackson	Iowa	1.8	30,098,703	53,233,226	54,973,986	97,228,199	56,616	94,949	4.8E-02	9.9E-03	1.4E-02	1.1E-03	2.4E-03	1.4E-01	1.7E-03	1.7E-03
C-DAVE-01-02	C-DAVE-01	Clinton	Iowa	14.8	30,098,703	53,233,226	443,966,519	785,208,933	457,226	766,806	3.9E-01	8.0E-02	1.1E-01	9.3E-03	1.9E-02	1.1E+00	1.4E-02	1.4E-02
C-DAVE-02-01	C-DAVE-02	Clinton	Iowa	10.5	21,011,102	39,485,998	220,776,655	414,903,824	227,370	405,180	2.1E-01	4.2E-02	5.9E-02	4.9E-03	1.0E-02	5.9E-01	7.2E-03	7.4E-03
C-DAVE-02-02	C-DAVE-02	Scott	Iowa	22.4	21,011,102	39,485,998	470,454,816	884,122,019	484,505	863,400	4.4E-01	9.0E-02	1.3E-01	1.0E-02	2.2E-02	1.3E+00	1.5E-02	1.6E-02
C-DAVE-03-01	C-DAVE-03	Scott	Iowa	5.6	21,011,102	39,485,998	118,515,411	222,725,076	122,055	217,505	1.1E-01	2.3E-02	3.2E-02	2.6E-03	5.4E-03	3.2E-01	3.9E-03	3.9E-03
C-ELGI-01-01	C-ELGI-01	Kane	Illinois	5.8	13,624,379	31,061,141	79,673,364	181,640,985	82,053	177,384	9.0E-02	1.8E-02	2.6E-02	2.1E-03	4.4E-03	2.6E-01	3.1E-03	3.2E-03
C-ELGI-01-02	C-ELGI-01	Cook	Illinois	6.5	13,624,379	31,061,141	88,771,588	202,383,304	91,423	197,640	1.0E-01	2.1E-02	2.9E-02	2.4E-03	4.9E-03	2.9E-01	3.5E-03	3.6E-03
C-ELGI-01-03	C-ELGI-01	DuPage	Illinois	11.0	13,624,379	31,061,141	150,037,394	342,058,358	154,518	334,041	1.7E-01	3.5E-02	4.9E-02	4.0E-03	8.3E-03	4.8E-01	5.9E-03	6.1E-03
C-ELGI-02-01	C-ELGI-02	DuPage	Illinois	0.8	122,827,328	142,940,767	96,828,836	112,684,923	99,721	110,044	5.6E-02	1.1E-02	1.6E-02	1.3E-03	2.7E-03	1.6E-01	2.0E-03	2.0E-03
C-ELGI-02-02	C-ELGI-02	Cook	Illinois	3.5	122,827,328	142,940,767	431,703,052	502,396,056	444,596	490,621	2.5E-01	5.1E-02	7.2E-02	5.9E-03	1.2E-02	7.1E-01	8.7E-03	8.9E-03
C-KACI-01-01	C-KACI-01	Grundy	Missouri	4.5	17,940,076	49,359,154	81,498,106	224,228,568	83,932	218,973	1.1E-01	2.3E-02	3.2E-02	2.6E-03	5.5E-03	3.2E-01	3.9E-03	4.0E-03
C-KACI-01-02	C-KACI-01	Livingston	Missouri	30.1	17,940,076	49,359,154	540,760,017	1,487,811,809	556,910	1,452,941	7.4E-01	1.5E-01	2.1E-01	1.8E-02	3.6E-02	2.1E+00	2.6E-02	2.6E-02
C-KACI-01-03	C-KACI-01	Caldwell	Missouri	16.8	17,940,076	49,359,154	301,249,417	828,837,979	310,247	809,412	4.1E-01	8.4E-02	1.2E-01	9.8E-03	2.0E-02	1.2E+00	1.4E-02	1.5E-02
C-KACI-02-01	C-KACI-02	Caldwell	Missouri	5.0	15,679,566	49,510,671	78,254,486	247,100,729	80,592	241,309	1.2E-01	2.5E-02	3.5E-02	2.9E-03	6.0E-03	3.5E-01	4.3E-03	4.4E-03
C-KACI-02-02	C-KACI-02	Ray	Missouri	10.6	15,679,566	49,510,671	166,882,995	526,959,055	171,867	514,608	2.6E-01	5.3E-02	7.5E-02	6.2E-03	1.3E-02	7.5E-01	9.1E-03	9.3E-03
C-KACI-02-03	C-KACI-02	Clay	Missouri	24.7	15,679,566	49,510,671	387,538,889	1,223,714,413	399,113	1,195,034	6.1E-01	1.2E-01	1.7E-01	1.4E-02	3.0E-02	1.7E+00	2.1E-02	2.2E-02
C-KACI-02-04	C-KACI-02	Jackson	Missouri	1.5	15,679,566	49,510,671	24,221,370	76,482,748	24,945	74,690	3.8E-02	7.8E-03	1.1E-02	9.0E-04	1.9E-03	1.1E-01	1.3E-03	1.4E-03
C-KACI-02-05	C-KACI-02	Jackson	Missouri	0.3	15,679,566	49,510,671	4,417,247	13,948,146	4,549	13,621	6.9E-03	1.4E-03	2.0E-03	1.6E-04	3.4E-04	2.0E-02	2.4E-04	2.5E-04
C-LARE-01-01	C-LARE-01	Wapello	Iowa	13.3	14,992,756	40,410,822	199,657,987	538,149,459	205,621	525,537	2.7E-01	5.5E-02	7.7E-02	6.3E-03	1.3E-02	7.6E-01	9.3E-03	9.5E-03
C-LARE-01-02	C-LARE-01	Monroe	Iowa	10.5	14,992,756	40,410,822	156,958,319	423,058,630	161,646	413,143	2.1E-01	4.3E-02	6.0E-02	5.0E-03	1.0E-02	6.0E-01	7.3E-03	7.5E-03
C-LARE-01-03	C-LARE-01	Appanoose	Iowa	23.2	14,992,756	40,410,822	347,355,415	936,246,688	357,730	914,303	4.6E-01	9.5E-02	1.3E-01	1.1E-02	2.3E-02	1.3E+00	1.6E-02	1.7E-02
C-LARE-01-04	C-LARE-01	Wayne	Iowa	16.2	14,992,756	40,410,822	242,856,344	654,584,432	250,110	639,243	3.3E-01	6.6E-02	9.3E-02	7.7E-03	1.6E-02	9.3E-01	1.1E-02	1.2E-02
C-LARE-02-01	C-LARE-02	Putnam	Missouri	17.9	15,380,423	47,044,888	274,798,803	840,541,184	283,006	820,841	4.2E-01	8.5E-02	1.2E-01	9.9E-03	2.0E-02	1.2E+00	1.5E-02	1.5E-02
C-LARE-02-02	C-LARE-02	Sullivan	Missouri	20.3	15,380,423	47,044,888	312,005,600	954,347,520	321,324	931,980	4.7E-01	9.7E-02	1.4E-01	1.1E-02	2.3E-02	1.3E+00	1.7E-02	1.7E-02
C-LARE-02-03	C-LARE-02	Grundy	Missouri	8.1	15,380,423	47,044,888	125,152,963	382,811,782	128,891	373,840	1.9E-01	3.9E-02	5.5E-02	4.5E-03	9.3E-03	5.4E-01	6.6E-03	6.8E-03
C-OTTU-01-01	C-OTTU-01	Scott	Iowa	9.0	18,375,215	36,915,185	165,756,054	332,998,296	170,707	325,194	1.7E-01	3.4E-02	4.8E-02	3.9E-03	8.1E-03	4.7E-01	5.8E-03	5.9E-03
C-OTTU-01-02	C-OTTU-01	Muscatine	Iowa	7.5	18,375,215	36,915,185	137,721,374	276,677,574	141,835	270,193	1.4E-01	2.8E-02	3.9E-02	3.3E-03	6.7E-03	3.9E-01	4.8E-03	4.9E-03
C-OTTU-01-03	C-OTTU-01	Muscatine	Iowa	8.0	18,375,215	36,915,185	146,859,589	295,035,938	151,246	288,121	1.5E-01	3.0E-02	4.2E-02	3.5E-03	7.2E-03	4.2E-01	5.1E-03	5.2E-03
C-OTTU-02-01	C-OTTU-02	Muscatine	Iowa	7.3	20,503,888	42,180,809	148,665,185	305,835,542	153,105	298,668	1.5E-01	3.1E-02	4.4E-02	3.6E-03	7.4E-03	4.3E-01	5.3E-03	5.4E-03
C-OTTU-02-02	C-OTTU-02	Louisa	Iowa	21.6	20,503,888	42,180,809	443,173,133	911,700,312	456,409	890,332	4.5E-01	9.3E-02	1.3E-01	1.1E-02	2.2E-02	1.3E+00	1.6E-02	1.6E-02
C-OTTU-02-03	C-OTTU-02	Washington	Iowa	25.6	20,503,888	42,180,809	525,584,125	1,081,237,048	541,281	1,055,896	5.4E-01	1.1E-01	1.5E-01	1.3E-02	2.6E-02	1.5E+00	1.9E-02	1.9E-02
C-OTTU-02-04	C-OTTU-02	Keokuk	Iowa	9.4	20,503,888	42,180,809	192,986,144	397,013,073	198,750	387,708	2.0E-01	4.0E-02	5.7E-02	4.7E-03	9.7E-03	5.6E-01	6.9E-03	7.0E-03
C-OTTU-02-05	C-OTTU-02	Jefferson	Iowa	5.3	20,503,888	42,180,809	108,092,029	222,368,031	111,320	217,156	1.1E-01	2.3E-02	3.2E-02	2.6E-03	5.4E-03	3.1E-01	3.9E-03	3.9E-03
C-OTTU-02-06	C-OTTU-02	Wapello	Iowa	17.8	20,503,888	42,180,809	365,074,725	751,035,466	375,978	733,433	3.7E-01	7.6E-02	1.1E-01	8.9E-03	1.8E-02	1.1E+00	1.3E-02	1.3E-02
K-ALLI-01-01	K-ALLI-01	Tarrant	Texas	4.8	1,768,703	3,803,266	8,464,569	18,201,482	8,717	17,775	9.0E-03	1.8E-03	2.6E-03	2.1E-04	4.4E-04	2.6E-02	3.2E-04	3.2E-04
K-ALLI-01-02	K-ALLI-01	Denton	Texas	23.3	1,768,703	3,803,266	41,208,352	88,610,898	42,439	86,534	4.4E-02	9.0E-03	1.3E-02	1.0E-03	2.2E-03	1.3E-01	1.5E-03	1.6E-03
K-ALLI-02-01	K-ALLI-02	Denton	Texas	31.8	2,386,796	4,640,308	75,895,969	147,553,738	78,163	144,095	7.3E-02	1.5E-02	2.1E-02	1.7E-03	3.6E-03	2.1E-01	2.6E-03	2.6E-03
K-ALLI-02-02	K-ALLI-02	Collin	Texas	8.9	2,386,796	4,640,308	21,306,611	41,423,413	21,943	40,453	2.1E-02	4.2E-03	5.9E-03	4.9E-04	1.0E-03	5.9E-02	7.2E-04	7.3E-04
K-ALLI-03-01	K-ALLI-03	Collin	Texas	11.5	2,631,311	4,767,106	30,220,026	54,749,159	31,123	53,466	2.7E-02	5.6E-03	7.8E-03	6.5E-04	1.3E-03	7.7E-02	9.5E-04	9.7E-04
K-BEAU-01-01	K-BEAU-01	De Soto	Louisiana	31.1	28,743,524	55,054,741	893,200,153	1,710,816,774	919,877	1,670,720	8.5E-01	1.7E-01	2.4E-01	2.0E-02	4.2E-02	2.4E+00	3.0E-02	3.0E-02
K-BEAU-01-02	K-BEAU-01	Sabine	Louisiana	48.7	28,743,524	55,054,741	1,399,845,178	2,681,233,992	1,441,653	2,618,393	1.3E+00	2.7E-01	3.8E-01	3.2E-02	6.5E-02	3.8E+00	4.6E-02	4.8E-02
K-BEAU-01-03	K-BEAU-01	Vernon	Louisiana	16.8	28,743,524	55,054,741	482,244,044	923,680,092	496,647	902,031	4.6E-01	9.4E-02	1.3E-01	1.1E-02	2.2E-02	1.3E+00	1.6E-02	1.6E-02
K-BEAU-02-01	K-BEAU-02	Vernon	Louisiana	21.8	29,619,283	60,226,792	646,241,368	1,314,044,109	665,542	1,283,246	6.5E-01	1.3E-01	1.9E-01	1.6E-02	3.2E-02	1.9E+00	2.3E-02	2.3E-02
K-BEAU-02-02	K-BEAU-02	Beauregard	Louisiana	31.2	29,619,283	60,226,792	924,390,132	1,879,621,868	951,998	1,835,568	9.3E-01	1.9E-01	2.7E-01	2.2E-02	4.6E-02	2.7E+00	3.3E-02	3.3E-02
K-BEAU-02-03	K-BEAU-02	Calcasieu	Louisiana	2.7	29,619,283	60,226,792	81,004,859	164,712,387	83,424	160,852	8.2E-02	1.7E-02	2.4E-02	1.9E-03	4.0E-03	2.3E-01	2.9E-03	2.9E-03
K-BEAU-03-01	K-BEAU-03	Calcasieu	Louisiana	22.0	25,028,352	50,361,019	550,599,109	1,107,892,856	567,043	1,081,927	5.5E-01	1.1E-01	1.6E-01	1.3E-02	2.7E-02	1.6E+00	1.9E-02	2.0E-02
K-BEAU-03-02	K-BEAU-03	Beauregard	Louisiana	3.4	25,028,352	50,361,019	84,857,350	170,746,465	87,392	166,745	8.5E-02	1.7E-02	2.4E-02	2.0E-03	4.2E-03	2.4E-01	3.0E-03	3.0E-03
K-BEAU-03-03	K-BEAU-03	Newton	Texas	6.0	25,028,352	50,361,019	151,366,265	304,572,966	155,887	297,435	1.5E-01	3.1E-02	4.3E-02	3.6E-03	7.4E-03	4.3E-01	5.3E-03	5.4E-03
K-BEAU-03-04	K-BEAU-03	Orange	Texas	21.2	25,028,352	50,361,019	529,484,341	1,065,406,588	545,298	1,040,436	5.3E-01	1.1E-01	1.5E-01	1.3E-02	2.6E-02	1.5E+00	1.8E-02	1.9E-02
K-BEAU-03-05	K-BEAU-03	Jefferson	Texas	0.8	25,028,352	50,361,019	20,531,458	41,312,554	21,145	40,344	2.1E-02	4.2E-03	5.9E-03	4.9E-04	1.0E-03	5.8E-02	7.2E-04	7.3E-04
K-BEAU-04-01	K-BEAU-04	Jefferson	Texas	17.5	13,827,170	50,181,674	241,703,375	877,191,768	248,922	856,633	4.4E-01	8.9E-02	1.3E-01	1.0E-02	2.1E-02	1.2E+00	1.5E-02	1.6E-02
K-HEAV-01-01	K-HEAV-01	Crawford	Kansas	6.2	49,145,519	79,415,592	305,698,693	493,986,903	314,829	482,409	2.5E-01	5.0E-02	7.0E-02	5.8E-03	1.2E-02	7.0E-01	8.6E-03	8.8E-03
K-HEAV-01-02	K-HEAV-01	Cherokee	Kansas	3.3	49,145,519	79,415,592	163,592,655	264,353,859	168,479	258,158	1.3E-01	2.7E-02	3.8E-02	3.1E-03	6.4E-03	3.7E-01	4.6E-03	4.7E-03

Table K.7-7. Rail Segment Analysis- Proposed Acquisition HAPs Emissions by Subsegment

					Segment Tons per Mile		Sub-Segment Ton Miles		Sub-Segment Fuel Use		Proposed Acquisition Emissions (tons/year)							
SubCode	Code	County	State	SubSeg Length	NA GT	WA GT	NA GTM	WA GTM	NA Gallons	WA Gallons	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
K-HEAV-01-03	K-HEAV-01	Jasper	Missouri	20.9	49,145,519	79,415,592	1,025,222,513	1,656,685,176	1,055,842	1,617,857	8.2E-01	1.7E-01	2.4E-01	2.0E-02	4.0E-02	2.3E+00	2.9E-02	2.9E-02
K-HEAV-01-04	K-HEAV-01	Newton	Missouri	26.2	49,145,519	79,415,592	1,289,719,323	2,084,092,826	1,328,238	2,035,247	1.0E+00	2.1E-01	3.0E-01	2.5E-02	5.1E-02	2.9E+00	3.6E-02	3.7E-02
K-HEAV-01-05	K-HEAV-01	McDonald	Missouri	21.0	49,145,519	79,415,592	1,029,867,060	1,664,190,426	1,060,625	1,625,186	8.3E-01	1.7E-01	2.4E-01	2.0E-02	4.1E-02	2.4E+00	2.9E-02	2.9E-02
K-HEAV-01-06	K-HEAV-01	Benton	Arkansas	29.3	49,145,519	79,415,592	1,438,451,602	2,324,433,394	1,481,413	2,269,954	1.2E+00	2.4E-01	3.3E-01	2.7E-02	5.7E-02	3.3E+00	4.0E-02	4.1E-02
K-HEAV-01-07	K-HEAV-01	Adair	Oklahoma	3.0	49,145,519	79,415,592	148,555,011	240,054,117	152,992	234,428	1.2E-01	2.4E-02	3.4E-02	2.8E-03	5.8E-03	3.4E-01	4.2E-03	4.3E-03
K-HEAV-02-01	K-HEAV-02	Adair	Oklahoma	39.7	42,209,673	70,404,209	1,677,472,096	2,797,962,803	1,727,572	2,732,386	1.4E+00	2.8E-01	4.0E-01	3.3E-02	6.8E-02	4.0E+00	4.8E-02	5.0E-02
K-HEAV-02-02	K-HEAV-02	Sequoyah	Oklahoma	32.9	42,209,673	70,404,209	1,387,355,600	2,314,058,977	1,428,791	2,259,823	1.1E+00	2.3E-01	3.3E-01	2.7E-02	5.6E-02	3.3E+00	4.0E-02	4.1E-02
K-HEAV-02-03	K-HEAV-02	Le Flore	Oklahoma	18.8	42,209,673	70,404,209	793,892,534	1,324,184,041	817,603	1,293,148	6.6E-01	1.3E-01	1.9E-01	1.6E-02	3.2E-02	1.9E+00	2.3E-02	2.3E-02
K-HEAV-03-01	K-HEAV-03	Le Flore	Oklahoma	12.7	43,794,885	73,723,644	554,935,979	934,170,794	571,510	912,276	4.6E-01	9.5E-02	1.3E-01	1.1E-02	2.3E-02	1.3E+00	1.6E-02	1.7E-02
K-LARE-02-01	K-LARE-02	Webb	Texas	52.4	44,470,774	56,134,573	2,328,548,447	2,939,280,392	2,398,093	2,870,391	1.5E+00	3.0E-01	4.2E-01	3.5E-02	7.2E-02	4.2E+00	5.1E-02	5.2E-02
K-LARE-02-02	K-LARE-02	Duval	Texas	45.8	44,470,774	56,134,573	2,035,640,496	2,569,548,512	2,096,437	2,509,325	1.3E+00	2.6E-01	3.7E-01	3.0E-02	6.3E-02	3.6E+00	4.4E-02	4.6E-02
K-LARE-02-03	K-LARE-02	Jim Hogg	Texas	12.2	44,470,774	56,134,573	543,281,652	685,773,624	559,507	669,701	3.4E-01	7.0E-02	9.8E-02	8.1E-03	1.7E-02	9.7E-01	1.2E-02	1.2E-02
K-LARE-02-04	K-LARE-02	Jim Wells	Texas	20.1	44,470,774	56,134,573	893,124,866	1,127,373,755	919,799	1,100,951	5.6E-01	1.1E-01	1.6E-01	1.3E-02	2.7E-02	1.6E+00	2.0E-02	2.0E-02
K-LARE-02-05	K-LARE-02	Nueces	Texas	17.1	44,470,774	56,134,573	761,373,840	961,067,056	784,113	938,542	4.8E-01	9.8E-02	1.4E-01	1.1E-02	2.3E-02	1.4E+00	1.7E-02	1.7E-02
K-PITT-01-01	K-PITT-01	Jackson	Missouri	4.9	43,477,295	72,614,839	214,265,198	357,861,101	220,664	349,474	1.8E-01	3.6E-02	5.1E-02	4.2E-03	8.7E-03	5.1E-01	6.2E-03	6.3E-03
K-PITT-01-02	K-PITT-01	Jackson	Missouri	17.7	43,477,295	72,614,839	771,101,526	1,287,877,097	794,131	1,257,692	6.4E-01	1.3E-01	1.8E-01	1.5E-02	3.1E-02	1.8E+00	2.2E-02	2.3E-02
K-PITT-01-03	K-PITT-01	Cass	Missouri	30.9	43,477,295	72,614,839	1,344,259,579	2,245,153,285	1,384,407	2,192,533	1.1E+00	2.3E-01	3.2E-01	2.6E-02	5.5E-02	3.2E+00	3.9E-02	4.0E-02
K-PITT-01-04	K-PITT-01	Bates	Missouri	29.5	43,477,295	72,614,839	1,283,748,531	2,144,089,042	1,322,089	2,093,837	1.1E+00	2.2E-01	3.1E-01	2.5E-02	5.2E-02	3.0E+00	3.7E-02	3.8E-02
K-PITT-01-05	K-PITT-01	Vernon	Missouri	28.2	43,477,295	72,614,839	1,227,824,208	2,050,685,447	1,264,495	2,002,623	1.0E+00	2.1E-01	2.9E-01	2.4E-02	5.0E-02	2.9E+00	3.6E-02	3.6E-02
K-PITT-01-06	K-PITT-01	Barton	Missouri	11.2	43,477,295	72,614,839	487,001,879	813,380,010	501,547	794,316	4.0E-01	8.3E-02	1.2E-01	9.6E-03	2.0E-02	1.2E+00	1.4E-02	1.4E-02
K-PITT-01-07	K-PITT-01	Crawford	Kansas	8.8	43,477,295	72,614,839	383,529,091	640,561,995	394,984	625,549	3.2E-01	6.5E-02	9.1E-02	7.6E-03	1.6E-02	9.1E-01	1.1E-02	1.1E-02
K-ROSE-01-01	K-ROSE-01	Fort Bend	Texas	14.8	30,237,953	42,181,585	448,005,000	624,961,653	461,385	610,314	3.1E-01	6.3E-02	8.9E-02	7.4E-03	1.5E-02	8.8E-01	1.1E-02	1.1E-02
K-ROSE-02-01	K-ROSE-02	Fort Bend	Texas	1.3	31,451,824	43,085,888	40,332,277	55,251,232	41,537	53,956	2.7E-02	5.6E-03	7.9E-03	6.5E-04	1.3E-03	7.8E-02	9.6E-04	9.8E-04
K-ROSE-02-02	K-ROSE-02	Wharton	Texas	37.3	31,451,824	43,085,888	1,172,817,995	1,606,644,690	1,207,846	1,568,989	8.0E-01	1.6E-01	2.3E-01	1.9E-02	3.9E-02	2.3E+00	2.8E-02	2.8E-02
K-ROSE-02-03	K-ROSE-02	Jackson	Texas	23.0	31,451,824	43,085,888	721,973,591	989,032,434	743,536	965,852	4.9E-01	1.0E-01	1.4E-01	1.2E-02	2.4E-02	1.4E+00	1.7E-02	1.8E-02
K-ROSE-02-04	K-ROSE-02	Victoria	Texas	15.2	31,451,824	43,085,888	477,541,624	654,184,807	491,804	638,852	3.2E-01	6.6E-02	9.3E-02	7.7E-03	1.6E-02	9.3E-01	1.1E-02	1.2E-02
K-SHRE-01-01	K-SHRE-01	Le Flore	Oklahoma	22.0	40,323,772	68,602,277	888,901,777	1,512,276,338	915,450	1,476,832	7.5E-01	1.5E-01	2.2E-01	1.8E-02	3.7E-02	2.1E+00	2.6E-02	2.7E-02
K-SHRE-01-02	K-SHRE-01	Polk	Arkansas	59.7	40,323,772	68,602,277	2,406,472,928	4,094,099,214	2,478,345	3,998,144	2.0E+00	4.2E-01	5.8E-01	4.8E-02	1.0E-01	5.8E+00	7.1E-02	7.3E-02
K-SHRE-01-03	K-SHRE-01	Sevier	Arkansas	16.1	40,323,772	68,602,277	650,462,235	1,106,622,432	669,889	1,080,686	5.5E-01	1.1E-01	1.6E-01	1.3E-02	2.7E-02	1.6E+00	1.9E-02	2.0E-02
K-SHRE-02-01	K-SHRE-02	Sevier	Arkansas	12.9	48,683,585	73,591,309	628,375,733	949,868,267	647,143	927,606	4.7E-01	9.6E-02	1.4E-01	1.1E-02	2.3E-02	1.3E+00	1.6E-02	1.7E-02
K-SHRE-02-02	K-SHRE-02	Little River	Arkansas	27.2	48,683,585	73,591,309	1,323,889,829	2,001,224,543	1,363,429	1,954,321	9.9E-01	2.0E-01	2.9E-01	2.4E-02	4.9E-02	2.8E+00	3.5E-02	3.5E-02
K-SHRE-03-01	K-SHRE-03	Little River	Arkansas	10.1	40,237,565	76,237,675	404,884,426	767,130,095	416,977	749,150	3.8E-01	7.8E-02	1.1E-01	9.0E-03	1.9E-02	1.1E+00	1.3E-02	1.4E-02
K-SHRE-03-02	K-SHRE-03	Bowie	Texas	22.1	40,237,565	76,237,675	889,079,911	1,684,529,984	915,633	1,645,049	8.4E-01	1.7E-01	2.4E-01	2.0E-02	4.1E-02	2.4E+00	2.9E-02	3.0E-02
K-SHRE-03-03	K-SHRE-03	Cass	Texas	11.9	40,237,565	76,237,675	478,681,248	906,952,126	492,978	885,695	4.5E-01	9.2E-02	1.3E-01	1.1E-02	2.2E-02	1.3E+00	1.6E-02	1.6E-02
K-SHRE-03-04	K-SHRE-03	Miller	Arkansas	6.5	40,237,565	76,237,675	261,144,254	494,787,163	268,944	483,191	2.5E-01	5.0E-02	7.1E-02	5.8E-03	1.2E-02	7.0E-01	8.6E-03	8.8E-03
K-SHRE-03-05	K-SHRE-03	Caddo	Louisiana	41.8	40,237,565	76,237,675	1,680,978,938	3,184,932,412	1,731,183	3,110,286	1.6E+00	3.2E-01	4.5E-01	3.8E-02	7.8E-02	4.5E+00	5.5E-02	5.6E-02
K-SHRE-04-01	K-SHRE-04	Caddo	Louisiana	18.3	84,322,776	121,839,210	1,540,090,315	2,225,298,993	1,586,087	2,173,144	1.1E+00	2.3E-01	3.2E-01	2.6E-02	5.4E-02	3.1E+00	3.9E-02	3.9E-02
K-SHRE-04-02	K-SHRE-04	De Soto	Louisiana	5.2	84,322,776	121,839,210	434,915,121	628,415,212	447,904	613,687	3.1E-01	6.4E-02	9.0E-02	7.4E-03	1.5E-02	8.9E-01	1.1E-02	1.1E-02
U-BEAU-01-01	U-BEAU-01	Jefferson	Texas	20.8	3,123,169	7,850,048	64,850,438	163,000,791	66,787	159,180	8.1E-02	1.7E-02	2.3E-02	1.9E-03	4.0E-03	2.3E-01	2.8E-03	2.9E-03
U-BEAU-01-02	U-BEAU-01	Liberty	Texas	35.1	3,123,169	7,850,048	109,696,016	275,719,609	112,972	269,257	1.4E-01	2.8E-02	3.9E-02	3.3E-03	6.7E-03	3.9E-01	4.8E-03	4.9E-03
U-BEAU-01-03	U-BEAU-01	Harris	Texas	45.8	3,123,169	7,850,048	143,027,910	359,498,921	147,300	351,073	1.8E-01	3.6E-02	5.1E-02	4.2E-03	8.8E-03	5.1E-01	6.2E-03	6.4E-03
U-BEAU-01-04	U-BEAU-01	Fort Bend	Texas	18.5	3,123,169	7,850,048	57,660,656	144,929,361	59,383	141,533	7.2E-02	1.5E-02	2.1E-02	1.7E-03	3.5E-03	2.0E-01	2.5E-03	2.6E-03
U-VICT-01-01	U-VICT-01	Victoria	Texas	12.3	19,356,795	31,422,586	237,511,586	385,561,162	244,605	376,525	1.9E-01	3.9E-02	5.5E-02	4.5E-03	9.4E-03	5.5E-01	6.7E-03	6.8E-03
U-VICT-02-01	U-VICT-02	Nueces	Texas	8.2	19,356,795	31,422,586	159,209,190	258,450,046	163,964	252,393	1.3E-01	2.6E-02	3.7E-02	3.0E-03	6.3E-03	3.7E-01	4.5E-03	4.6E-03
U-VICT-02-02	U-VICT-02	San Patricio	Texas	20.5	19,356,795	31,422,586	396,292,507	643,315,984	408,128	628,238	3.2E-01	6.5E-02	9.2E-02	7.6E-03	1.6E-02	9.1E-01	1.1E-02	1.1E-02
U-VICT-02-03	U-VICT-02	Refugio	Texas	36.9	19,356,795	31,422,586	714,095,360	1,159,216,870	735,423	1,132,048	5.8E-01	1.2E-01	1.7E-01	1.4E-02	2.8E-02	1.6E+00	2.0E-02	2.1E-02
U-VICT-02-04	U-VICT-02	Victoria	Texas	18.0	19,356,795	31,422,586	348,182,723	565,217,629	358,582	551,970	2.8E-01	5.7E-02	8.1E-02	6.7E-03	1.4E-02	8.0E-01	9.8E-03	1.0E-02

Notes:

Segment Ton-Mileage provided by Applicants; Sub Segment ton-mileage proportioned from whole segment based on the Length Proportion

No Action and With Action Fuel Efficiency estimated based on data provided in the "Verified Statement of Michael R. Baranowski" (No Action- 971 ton-miles/gal; With Action- 1024 ton-miles/gal)

Table K.7-8. Rail Segment Analysis- Acquisition-Related HAPs Emissions by Subsegment

					Segment Tons per Mile		Sub-Segment Ton Miles		Sub-Segment Fuel Use		Acquisition-Related Emissions (tons/year)							
SubCode	Code	County	State	SubSeg Length	NA GT	WA GT	NA GTM	WA GTM	NA Gallons	WA Gallons	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
C-CHIC-01-01	C-CHIC-01	Jackson	Iowa	1.0	22,351,505	36,532,967	23,016,395	37,619,714	23,704	36,738	6.6E-03	1.4E-03	1.9E-03	1.6E-04	3.3E-04	1.9E-02	2.3E-04	2.4E-04
C-CHIC-01-02	C-CHIC-01	Carroll	Illinois	0.2	22,351,505	36,532,967	4,241,869	6,933,227	4,369	6,771	1.2E-03	2.5E-04	3.5E-04	2.9E-05	6.0E-05	3.5E-03	4.3E-05	4.4E-05
C-CHIC-02-01	C-CHIC-02	Carroll	Illinois	28.5	19,862,895	36,960,318	566,485,268	1,054,099,904	583,404	1,029,394	2.3E-01	4.6E-02	6.5E-02	5.4E-03	1.1E-02	6.5E-01	7.9E-03	8.1E-03
C-CHIC-02-02	C-CHIC-02	Ogle	Illinois	32.7	19,862,895	36,960,318	649,553,662	1,208,671,241	668,953	1,180,343	2.6E-01	5.3E-02	7.5E-02	6.2E-03	1.3E-02	7.4E-01	9.1E-03	9.3E-03
C-CHIC-03-01	C-CHIC-03	Ogle	Illinois	7.9	12,595,641	28,187,866	99,899,982	223,566,816	102,884	218,327	5.9E-02	1.2E-02	1.7E-02	1.4E-03	2.9E-03	1.7E-01	2.0E-03	2.1E-03
C-CHIC-03-02	C-CHIC-03	DeKalb	Illinois	20.0	12,595,641	28,187,866	252,457,237	564,975,682	259,997	551,734	1.5E-01	3.0E-02	4.3E-02	3.5E-03	7.3E-03	4.2E-01	5.2E-03	5.3E-03
C-CHIC-03-03	C-CHIC-03	Kane	Illinois	0.1	12,595,641	28,187,866	889,529	1,990,683	916	1,944	5.2E-04	1.1E-04	1.5E-04	1.2E-05	2.6E-05	1.5E-03	1.8E-05	1.9E-05
C-CHIC-03-04	C-CHIC-03	Kane	Illinois	13.6	12,595,641	28,187,866	171,312,681	383,381,755	176,429	374,396	1.0E-01	2.1E-02	2.9E-02	2.4E-03	4.9E-03	2.9E-01	3.5E-03	3.6E-03
C-DAVE-01-01	C-DAVE-01	Jackson	Iowa	1.8	30,098,703	53,233,226	54,973,986	97,228,199	56,616	94,949	1.9E-02	4.0E-03	5.6E-03	4.6E-04	9.6E-04	5.6E-02	6.8E-04	7.0E-04
C-DAVE-01-02	C-DAVE-01	Clinton	Iowa	14.8	30,098,703	53,233,226	443,966,519	785,208,933	457,226	766,806	1.6E-01	3.2E-02	4.5E-02	3.7E-03	7.7E-03	4.5E-01	5.5E-03	5.6E-03
C-DAVE-02-01	C-DAVE-02	Clinton	Iowa	10.5	21,011,102	39,485,998	220,776,655	414,903,824	227,370	405,180	9.0E-02	1.8E-02	2.6E-02	2.1E-03	4.4E-03	2.6E-01	3.2E-03	3.2E-03
C-DAVE-02-02	C-DAVE-02	Scott	Iowa	22.4	21,011,102	39,485,998	470,454,816	884,122,019	484,505	863,400	1.9E-01	3.9E-02	5.5E-02	4.6E-03	9.4E-03	5.5E-01	6.7E-03	6.9E-03
C-DAVE-03-01	C-DAVE-03	Scott	Iowa	5.6	21,011,102	39,485,998	118,515,411	222,725,076	122,055	217,505	4.9E-02	9.9E-03	1.4E-02	1.2E-03	2.4E-03	1.4E-01	1.7E-03	1.7E-03
C-ELGI-01-01	C-ELGI-01	Kane	Illinois	5.8	13,624,379	31,061,141	79,673,364	181,640,985	82,053	177,384	4.8E-02	9.9E-03	1.4E-02	1.2E-03	2.4E-03	1.4E-01	1.7E-03	1.7E-03
C-ELGI-01-02	C-ELGI-01	Cook	Illinois	6.5	13,624,379	31,061,141	88,771,588	202,383,304	91,423	197,640	5.4E-02	1.1E-02	1.6E-02	1.3E-03	2.6E-03	1.5E-01	1.9E-03	1.9E-03
C-ELGI-01-03	C-ELGI-01	DuPage	Illinois	11.0	13,624,379	31,061,141	150,037,394	342,058,358	154,518	334,041	9.1E-02	1.9E-02	2.6E-02	2.2E-03	4.5E-03	2.6E-01	3.2E-03	3.3E-03
C-ELGI-02-01	C-ELGI-02	DuPage	Illinois	0.8	122,827,328	142,940,767	96,828,836	112,684,923	99,721	110,044	5.2E-03	1.1E-03	1.5E-03	1.2E-04	2.6E-04	1.5E-02	1.8E-04	1.9E-04
C-ELGI-02-02	C-ELGI-02	Cook	Illinois	3.5	122,827,328	142,940,767	431,703,052	502,396,056	444,596	490,621	2.3E-02	4.8E-03	6.7E-03	5.6E-04	1.1E-03	6.7E-02	8.2E-04	8.4E-04
C-KACI-01-01	C-KACI-01	Grundy	Missouri	4.5	17,940,076	49,359,154	81,498,106	224,228,568	83,932	218,973	6.9E-02	1.4E-02	2.0E-02	1.6E-03	3.4E-03	2.0E-01	2.4E-03	2.5E-03
C-KACI-01-02	C-KACI-01	Livingston	Missouri	30.1	17,940,076	49,359,154	540,760,017	1,487,811,809	556,910	1,452,941	4.6E-01	9.3E-02	1.3E-01	1.1E-02	2.2E-02	1.3E+00	1.6E-02	1.6E-02
C-KACI-01-03	C-KACI-01	Caldwell	Missouri	16.8	17,940,076	49,359,154	301,249,417	828,837,979	310,247	809,412	2.5E-01	5.2E-02	7.3E-02	6.0E-03	1.2E-02	7.2E-01	8.9E-03	9.1E-03
C-KACI-02-01	C-KACI-02	Caldwell	Missouri	5.0	15,679,566	49,510,671	78,254,486	247,100,729	80,592	241,309	8.2E-02	1.7E-02	2.3E-02	1.9E-03	4.0E-03	2.3E-01	2.8E-03	2.9E-03
C-KACI-02-02	C-KACI-02	Ray	Missouri	10.6	15,679,566	49,510,671	166,882,995	526,959,055	171,867	514,608	1.7E-01	3.6E-02	5.0E-02	4.1E-03	8.5E-03	5.0E-01	6.1E-03	6.2E-03
C-KACI-02-03	C-KACI-02	Clay	Missouri	24.7	15,679,566	49,510,671	387,538,889	1,223,714,413	399,113	1,195,034	4.0E-01	8.3E-02	1.2E-01	9.6E-03	2.0E-02	1.2E+00	1.4E-02	1.4E-02
C-KACI-02-04	C-KACI-02	Jackson	Missouri	1.5	15,679,566	49,510,671	24,221,370	76,482,748	24,945	74,690	2.5E-02	5.2E-03	7.3E-03	6.0E-04	1.2E-03	7.2E-02	8.8E-04	9.0E-04
C-KACI-02-05	C-KACI-02	Jackson	Missouri	0.3	15,679,566	49,510,671	4,417,247	13,948,146	4,549	13,621	4.6E-03	9.4E-04	1.3E-03	1.1E-04	2.3E-04	1.3E-02	1.6E-04	1.6E-04
C-LARE-01-01	C-LARE-01	Wapello	Iowa	13.3	14,992,756	40,410,822	199,657,987	538,149,459	205,621	525,537	1.6E-01	3.3E-02	4.7E-02	3.9E-03	8.0E-03	4.6E-01	5.7E-03	5.8E-03
C-LARE-01-02	C-LARE-01	Monroe	Iowa	10.5	14,992,756	40,410,822	156,958,319	423,058,630	161,646	413,143	1.3E-01	2.6E-02	3.7E-02	3.0E-03	6.3E-03	3.6E-01	4.5E-03	4.6E-03
C-LARE-01-03	C-LARE-01	Appanoose	Iowa	23.2	14,992,756	40,410,822	347,355,415	936,246,688	357,730	914,303	2.8E-01	5.8E-02	8.1E-02	6.7E-03	1.4E-02	8.1E-01	9.9E-03	1.0E-02
C-LARE-01-04	C-LARE-01	Wayne	Iowa	16.2	14,992,756	40,410,822	242,856,344	654,584,432	250,110	639,243	2.0E-01	4.0E-02	5.7E-02	4.7E-03	9.7E-03	5.6E-01	6.9E-03	7.1E-03
C-LARE-02-01	C-LARE-02	Putnam	Missouri	17.9	15,380,423	47,044,888	274,798,803	840,541,184	283,006	820,841	2.7E-01	5.6E-02	7.9E-02	6.5E-03	1.3E-02	7.8E-01	9.5E-03	9.8E-03
C-LARE-02-02	C-LARE-02	Sullivan	Missouri	20.3	15,380,423	47,044,888	312,005,600	954,347,520	321,324	931,980	3.1E-01	6.3E-02	8.9E-02	7.4E-03	1.5E-02	8.8E-01	1.1E-02	1.1E-02
C-LARE-02-03	C-LARE-02	Grundy	Missouri	8.1	15,380,423	47,044,888	125,152,963	382,811,782	128,891	373,840	1.2E-01	2.5E-02	3.6E-02	3.0E-03	6.1E-03	3.5E-01	4.3E-03	4.4E-03
C-OTTU-01-01	C-OTTU-01	Scott	Iowa	9.0	18,375,215	36,915,185	165,756,054	332,998,296	170,707	325,194	7.9E-02	1.6E-02	2.3E-02	1.9E-03	3.9E-03	2.2E-01	2.7E-03	2.8E-03
C-OTTU-01-02	C-OTTU-01	Muscatine	Iowa	7.5	18,375,215	36,915,185	137,721,374	276,677,574	141,835	270,193	6.5E-02	1.3E-02	1.9E-02	1.6E-03	3.2E-03	1.9E-01	2.3E-03	2.3E-03
C-OTTU-01-03	C-OTTU-01	Muscatine	Iowa	8.0	18,375,215	36,915,185	146,859,589	295,035,938	151,246	288,121	7.0E-02	1.4E-02	2.0E-02	1.7E-03	3.4E-03	2.0E-01	2.4E-03	2.5E-03
C-OTTU-02-01	C-OTTU-02	Muscatine	Iowa	7.3	20,503,888	42,180,809	148,665,185	305,835,542	153,105	298,668	7.4E-02	1.5E-02	2.1E-02	1.8E-03	3.6E-03	2.1E-01	2.6E-03	2.6E-03
C-OTTU-02-02	C-OTTU-02	Louisa	Iowa	21.6	20,503,888	42,180,809	443,173,133	911,700,312	456,409	890,332	2.2E-01	4.5E-02	6.3E-02	5.2E-03	1.1E-02	6.3E-01	7.7E-03	7.9E-03
C-OTTU-02-03	C-OTTU-02	Washington	Iowa	25.6	20,503,888	42,180,809	525,584,125	1,081,237,048	541,281	1,055,896	2.6E-01	5.3E-02	7.5E-02	6.2E-03	1.3E-02	7.5E-01	9.1E-03	9.3E-03
C-OTTU-02-04	C-OTTU-02	Keokuk	Iowa	9.4	20,503,888	42,180,809	192,986,144	397,013,073	198,750	387,708	9.6E-02	2.0E-02	2.8E-02	2.3E-03	4.7E-03	2.7E-01	3.4E-03	3.4E-03
C-OTTU-02-05	C-OTTU-02	Jefferson	Iowa	5.3	20,503,888	42,180,809	108,092,029	222,368,031	111,320	217,156	5.4E-02	1.1E-02	1.5E-02	1.3E-03	2.6E-03	1.5E-01	1.9E-03	1.9E-03
C-OTTU-02-06	C-OTTU-02	Wapello	Iowa	17.8	20,503,888	42,180,809	365,074,725	751,035,466	375,978	733,433	1.8E-01	3.7E-02	5.2E-02	4.3E-03	8.9E-03	5.2E-01	6.3E-03	6.5E-03
K-ALLI-01-01	K-ALLI-01	Tarrant	Texas	4.8	1,768,703	3,803,266	8,464,569	18,201,482	8,717	17,775	4.6E-03	9.4E-04	1.3E-03	1.1E-04	2.3E-04	1.3E-02	1.6E-04	1.6E-04
K-ALLI-01-02	K-ALLI-01	Denton	Texas	23.3	1,768,703	3,803,266	41,208,352	88,610,898	42,439	86,534	2.2E-02	4.6E-03	6.4E-03	5.3E-04	1.1E-03	6.4E-02	7.8E-04	8.0E-04
K-ALLI-02-01	K-ALLI-02	Denton	Texas	31.8	2,386,796	4,640,308	75,895,969	147,553,738	78,163	144,095	3.4E-02	6.9E-03	9.6E-03	8.0E-04	1.6E-03	9.5E-02	1.2E-03	1.2E-03
K-ALLI-02-02	K-ALLI-02	Collin	Texas	8.9	2,386,796	4,640,308	21,306,611	41,423,413	21,943	40,453	9.4E-03	1.9E-03	2.7E-03	2.2E-04	4.6E-04	2.7E-02	3.3E-04	3.4E-04
K-ALLI-03-01	K-ALLI-03	Collin	Texas	11.5	2,631,311	4,767,106	30,220,026	54,749,159	31,123	53,466	1.1E-02	2.3E-03	3.3E-03	2.7E-04	5.6E-04	3.2E-02	4.0E-04	4.1E-04
K-BEAU-01-01	K-BEAU-01	De Soto	Louisiana	31.1	28,743,524	55,054,741	893,200,153	1,710,816,774	919,877	1,670,720	3.8E-01	7.8E-02	1.1E-01	9.1E-03	1.9E-02	1.1E+00	1.3E-02	1.4E-02
K-BEAU-01-02	K-BEAU-01	Sabine	Louisiana	48.7	28,743,524	55,054,741	1,399,845,178	2,681,233,992	1,441,653	2,618,393	6.0E-01	1.2E-01	1.7E-01	1.4E-02	2.9E-02	1.7E+00	2.1E-02	2.1E-02
K-BEAU-01-03	K-BEAU-01	Vernon	Louisiana	16.8	28,743,524	55,054,741	482,244,044	923,680,092	496,647	902,031	2.1E-01	4.2E-02	5.9E-02	4.9E-03	1.0E-02	5.9E-01	7.2E-03	7.4E-03
K-BEAU-02-01	K-BEAU-02	Vernon	Louisiana	21.8	29,619,283	60,226,792	646,241,368	1,314,044,109	665,542	1,283,246	3.1E-01	6.4E-02	9.0E-02	7.5E-03	1.5E-02	8.9E-01	1.1E-02	1.1E-02
K-BEAU-02-02	K-BEAU-02	Beauregard	Louisiana	31.2	29,619,283	60,226,792	924,390,132	1,879,621,868	951,998	1,835,568	4.5E-01	9.2E-02	1.3E-01	1.1E-02	2.2E-02	1.3E+00	1.6E-02	1.6E-02
K-BEAU-02-03	K-BEAU-02	Calcasieu	Louisiana	2.7	29,619,283	60,226,792	81,004,859	164,712,387	83,424	160,852	3.9E-02	8.0E-03	1.1E-02	9.4E-04	1.9E-03	1.1E-01	1.4E-03	1.4E-03
K-BEAU-03-01	K-BEAU-03	Calcasieu	Louisiana	22.0	25,028,352	50,361,019	550,599,109	1,107,892,856	567,043	1,081,927	2.6E-01	5.4E-02	7.5E-02	6.2E-03	1.3E-02	7.5E-01	9.1E-03	9.3E-03
K-BEAU-03-02	K-BEAU-03	Beauregard	Louisiana	3.4	25,028,352	50,361,019	84,857,350	170,746,465	87,392	166,745	4.0E-02	8.2E-03	1.2E-02	9.6E-04	2.0E-03	1.1E-01	1.4E-03	1.4E-03
K-BEAU-03-03	K-BEAU-03	Newton	Texas	6.0	25,028,352	50,361,019	151,366,265	304,572,966	155,887	297,435	7.2E-02	1.5E-02	2.1E-02	1.7E-03	3.5E-03	2.1E-01	2.5E-03	2.6E-03
K-BEAU-03-04	K-BEAU-03	Orange	Texas	21.2	25,028,352	50,361,019	529,484,341	1,065,406,588	545,298	1,040,436	2.5E-01	5.1E-02	7.2E-02	6.0E-03	1.2E-02	7.2E-01	8.8E-03	9.0E-03
K-BEAU-03-05	K-BEAU-03	Jefferson	Texas	0.8	25,028,352	50,361,019	20,531,458	41,312,554	21,145	40,344	9.8E-03	2.0E-03	2.8E-03	2.3E-04	4.8E-04	2.8E-02	3.4E-04	3.5E-04
K-BEAU-04-01	K-BEAU-04	Jefferson	Texas	17.5	13,827,170	50,181,674	241,703,375	877,191,768	248,922	856,633	3.1E-01	6.3E-02	8.9E-02	7.3E-03	1.5E-02	8.8E-01	1.1E-02	1.1E-02
K-HEAV-01-01	K-HEAV-01	Crawford	Kansas	6.2	49,145,519	79,415,592	305,698,693	493,986,903	314,829	482,409	8.5E-02	1.7E-02	2.4E-02	2.0E-03	4.2E-03	2.4E-01	3.0E-03	3.0E-03
K-HEAV-01-02	K-HEAV-01	Cherokee	Kansas	3.3	49,145,519	79,415,592	163,592,655	264,353,859	168,479	258,158	4.6E-02	9.3E-03	1.3E-02	1.1E-03	2.2E-03	1.3E-01	1.6E-03	1.6E-03

Table K.7-8. Rail Segment Analysis- Acquisition-Related HAPs Emissions by Subsegment

					Segment Tons per Mile		Sub-Segment Ton Miles		Sub-Segment Fuel Use		Acquisition-Related Emissions (tons/year)							
SubCode	Code	County	State	SubSeg Length	NA GT	WA GT	NA GTM	WA GTM	NA Gallons	WA Gallons	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
K-HEAV-01-03	K-HEAV-01	Jasper	Missouri	20.9	49,145,519	79,415,592	1,025,222,513	1,656,685,176	1,055,842	1,617,857	2.9E-01	5.8E-02	8.2E-02	6.8E-03	1.4E-02	8.1E-01	1.0E-02	1.0E-02
K-HEAV-01-04	K-HEAV-01	Newton	Missouri	26.2	49,145,519	79,415,592	1,289,719,323	2,084,092,826	1,328,238	2,035,247	3.6E-01	7.3E-02	1.0E-01	8.5E-03	1.8E-02	1.0E+00	1.3E-02	1.3E-02
K-HEAV-01-05	K-HEAV-01	McDonald	Missouri	21.0	49,145,519	79,415,592	1,029,867,060	1,664,190,426	1,060,625	1,625,186	2.9E-01	5.9E-02	8.2E-02	6.8E-03	1.4E-02	8.2E-01	1.0E-02	1.0E-02
K-HEAV-01-06	K-HEAV-01	Benton	Arkansas	29.3	49,145,519	79,415,592	1,438,451,602	2,324,433,394	1,481,413	2,269,954	4.0E-01	8.2E-02	1.2E-01	9.5E-03	2.0E-02	1.1E+00	1.4E-02	1.4E-02
K-HEAV-01-07	K-HEAV-01	Adair	Oklahoma	3.0	49,145,519	79,415,592	148,555,011	240,054,117	152,992	234,428	4.1E-02	8.5E-03	1.2E-02	9.8E-04	2.0E-03	1.2E-01	1.4E-03	1.5E-03
K-HEAV-02-01	K-HEAV-02	Adair	Oklahoma	39.7	42,209,673	70,404,209	1,677,472,096	2,797,962,803	1,727,572	2,732,386	5.1E-01	1.0E-01	1.5E-01	1.2E-02	2.5E-02	1.5E+00	1.8E-02	1.8E-02
K-HEAV-02-02	K-HEAV-02	Sequoyah	Oklahoma	32.9	42,209,673	70,404,209	1,387,355,600	2,314,058,977	1,428,791	2,259,823	4.2E-01	8.6E-02	1.2E-01	1.0E-02	2.1E-02	1.2E+00	1.5E-02	1.5E-02
K-HEAV-02-03	K-HEAV-02	Le Flore	Oklahoma	18.8	42,209,673	70,404,209	793,892,534	1,324,184,041	817,603	1,293,148	2.4E-01	4.9E-02	6.9E-02	5.7E-03	1.2E-02	6.9E-01	8.4E-03	8.6E-03
K-HEAV-03-01	K-HEAV-03	Le Flore	Oklahoma	12.7	43,794,885	73,723,644	554,935,979	934,170,794	571,510	912,276	1.7E-01	3.5E-02	5.0E-02	4.1E-03	8.5E-03	4.9E-01	6.0E-03	6.2E-03
K-LARE-02-01	K-LARE-02	Webb	Texas	52.4	44,470,774	56,134,573	2,328,548,447	2,939,280,392	2,398,093	2,870,391	2.4E-01	4.9E-02	6.9E-02	5.7E-03	1.2E-02	6.8E-01	8.4E-03	8.6E-03
K-LARE-02-02	K-LARE-02	Duval	Texas	45.8	44,470,774	56,134,573	2,035,640,496	2,569,548,512	2,096,437	2,509,325	2.1E-01	4.3E-02	6.0E-02	5.0E-03	1.0E-02	6.0E-01	7.3E-03	7.5E-03
K-LARE-02-03	K-LARE-02	Jim Hogg	Texas	12.2	44,470,774	56,134,573	543,281,652	685,773,624	559,507	669,701	5.6E-02	1.1E-02	1.6E-02	1.3E-03	2.7E-03	1.6E-01	2.0E-03	2.0E-03
K-LARE-02-04	K-LARE-02	Jim Wells	Texas	20.1	44,470,774	56,134,573	893,124,866	1,127,373,755	919,799	1,100,951	9.2E-02	1.9E-02	2.6E-02	2.2E-03	4.5E-03	2.6E-01	3.2E-03	3.3E-03
K-LARE-02-05	K-LARE-02	Nueces	Texas	17.1	44,470,774	56,134,573	761,373,840	961,067,056	784,113	938,542	7.9E-02	1.6E-02	2.3E-02	1.9E-03	3.9E-03	2.2E-01	2.7E-03	2.8E-03
K-PITT-01-01	K-PITT-01	Jackson	Missouri	4.9	43,477,295	72,614,839	214,265,198	357,861,101	220,664	349,474	6.6E-02	1.3E-02	1.9E-02	1.6E-03	3.2E-03	1.9E-01	2.3E-03	2.3E-03
K-PITT-01-02	K-PITT-01	Jackson	Missouri	17.7	43,477,295	72,614,839	771,101,526	1,287,877,097	794,131	1,257,692	2.4E-01	4.8E-02	6.8E-02	5.6E-03	1.2E-02	6.7E-01	8.2E-03	8.4E-03
K-PITT-01-03	K-PITT-01	Cass	Missouri	30.9	43,477,295	72,614,839	1,344,259,579	2,245,153,285	1,384,407	2,192,533	4.1E-01	8.4E-02	1.2E-01	9.8E-03	2.0E-02	1.2E+00	1.4E-02	1.5E-02
K-PITT-01-04	K-PITT-01	Bates	Missouri	29.5	43,477,295	72,614,839	1,283,748,531	2,144,089,042	1,322,089	2,093,837	3.9E-01	8.0E-02	1.1E-01	9.3E-03	1.9E-02	1.1E+00	1.4E-02	1.4E-02
K-PITT-01-05	K-PITT-01	Vernon	Missouri	28.2	43,477,295	72,614,839	1,227,824,208	2,050,685,447	1,264,495	2,002,623	3.8E-01	7.7E-02	1.1E-01	8.9E-03	1.8E-02	1.1E+00	1.3E-02	1.3E-02
K-PITT-01-06	K-PITT-01	Barton	Missouri	11.2	43,477,295	72,614,839	487,001,879	813,380,010	501,547	794,316	1.5E-01	3.0E-02	4.3E-02	3.5E-03	7.3E-03	4.2E-01	5.2E-03	5.3E-03
K-PITT-01-07	K-PITT-01	Crawford	Kansas	8.8	43,477,295	72,614,839	383,529,091	640,561,995	394,984	625,549	1.2E-01	2.4E-02	3.4E-02	2.8E-03	5.8E-03	3.3E-01	4.1E-03	4.2E-03
K-ROSE-01-01	K-ROSE-01	Fort Bend	Texas	14.8	30,237,953	42,181,585	448,005,000	624,961,653	461,385	610,314	7.6E-02	1.5E-02	2.2E-02	1.8E-03	3.7E-03	2.2E-01	2.6E-03	2.7E-03
K-ROSE-02-01	K-ROSE-02	Fort Bend	Texas	1.3	31,451,824	43,085,888	40,332,277	55,251,232	41,537	53,956	6.3E-03	1.3E-03	1.8E-03	1.5E-04	3.1E-04	1.8E-02	2.2E-04	2.3E-04
K-ROSE-02-02	K-ROSE-02	Wharton	Texas	37.3	31,451,824	43,085,888	1,172,817,995	1,606,644,690	1,207,846	1,568,989	1.8E-01	3.8E-02	5.3E-02	4.4E-03	9.0E-03	5.2E-01	6.4E-03	6.6E-03
K-ROSE-02-03	K-ROSE-02	Jackson	Texas	23.0	31,451,824	43,085,888	721,973,591	989,032,434	743,536	965,852	1.1E-01	2.3E-02	3.2E-02	2.7E-03	5.5E-03	3.2E-01	3.9E-03	4.0E-03
K-ROSE-02-04	K-ROSE-02	Victoria	Texas	15.2	31,451,824	43,085,888	477,541,624	654,184,807	491,804	638,852	7.5E-02	1.5E-02	2.1E-02	1.8E-03	3.7E-03	2.1E-01	2.6E-03	2.7E-03
K-SHRE-01-01	K-SHRE-01	Le Flore	Oklahoma	22.0	40,323,772	68,602,277	888,901,777	1,512,276,338	915,450	1,476,832	2.9E-01	5.8E-02	8.2E-02	6.8E-03	1.4E-02	8.1E-01	1.0E-02	1.0E-02
K-SHRE-01-02	K-SHRE-01	Polk	Arkansas	59.7	40,323,772	68,602,277	2,406,472,928	4,094,099,214	2,478,345	3,998,144	7.7E-01	1.6E-01	2.2E-01	1.8E-02	3.8E-02	2.2E+00	2.7E-02	2.8E-02
K-SHRE-01-03	K-SHRE-01	Sevier	Arkansas	16.1	40,323,772	68,602,277	650,462,235	1,106,622,432	669,889	1,080,686	2.1E-01	4.3E-02	6.0E-02	5.0E-03	1.0E-02	5.9E-01	7.3E-03	7.5E-03
K-SHRE-02-01	K-SHRE-02	Sevier	Arkansas	12.9	48,683,585	73,591,309	628,375,733	949,868,267	647,143	927,606	1.4E-01	2.9E-02	4.1E-02	3.4E-03	7.0E-03	4.1E-01	5.0E-03	5.1E-03
K-SHRE-02-02	K-SHRE-02	Little River	Arkansas	27.2	48,683,585	73,591,309	1,323,889,829	2,001,224,543	1,363,429	1,954,321	3.0E-01	6.1E-02	8.6E-02	7.1E-03	1.5E-02	8.6E-01	1.0E-02	1.1E-02
K-SHRE-03-01	K-SHRE-03	Little River	Arkansas	10.1	40,237,565	76,237,675	404,884,426	767,130,095	416,977	749,150	1.7E-01	3.5E-02	4.9E-02	4.0E-03	8.3E-03	4.8E-01	5.9E-03	6.0E-03
K-SHRE-03-02	K-SHRE-03	Bowie	Texas	22.1	40,237,565	76,237,675	889,079,911	1,684,529,984	915,633	1,645,049	3.7E-01	7.6E-02	1.1E-01	8.8E-03	1.8E-02	1.1E+00	1.3E-02	1.3E-02
K-SHRE-03-03	K-SHRE-03	Cass	Texas	11.9	40,237,565	76,237,675	478,681,248	906,952,126	492,978	885,695	2.0E-01	4.1E-02	5.7E-02	4.7E-03	9.8E-03	5.7E-01	7.0E-03	7.1E-03
K-SHRE-03-04	K-SHRE-03	Miller	Arkansas	6.5	40,237,565	76,237,675	261,144,254	494,787,163	268,944	483,191	1.1E-01	2.2E-02	3.1E-02	2.6E-03	5.3E-03	3.1E-01	3.8E-03	3.9E-03
K-SHRE-03-05	K-SHRE-03	Caddo	Louisiana	41.8	40,237,565	76,237,675	1,680,978,938	3,184,932,412	1,731,183	3,110,286	7.0E-01	1.4E-01	2.0E-01	1.7E-02	3.4E-02	2.0E+00	2.4E-02	2.5E-02
K-SHRE-04-01	K-SHRE-04	Caddo	Louisiana	18.3	84,322,776	121,839,210	1,540,090,315	2,225,298,993	1,586,087	2,173,144	3.0E-01	6.1E-02	8.6E-02	7.1E-03	1.5E-02	8.5E-01	1.0E-02	1.1E-02
K-SHRE-04-02	K-SHRE-04	De Soto	Louisiana	5.2	84,322,776	121,839,210	434,915,121	628,415,212	447,904	613,687	8.4E-02	1.7E-02	2.4E-02	2.0E-03	4.1E-03	2.4E-01	2.9E-03	3.0E-03
U-BEAU-01-01	U-BEAU-01	Jefferson	Texas	20.8	3,123,169	7,850,048	64,850,438	163,000,791	66,787	159,180	4.7E-02	9.6E-03	1.4E-02	1.1E-03	2.3E-03	1.3E-01	1.6E-03	1.7E-03
U-BEAU-01-02	U-BEAU-01	Liberty	Texas	35.1	3,123,169	7,850,048	109,696,016	275,719,609	112,972	269,257	7.9E-02	1.6E-02	2.3E-02	1.9E-03	3.9E-03	2.3E-01	2.8E-03	2.8E-03
U-BEAU-01-03	U-BEAU-01	Harris	Texas	45.8	3,123,169	7,850,048	143,027,910	359,498,921	147,300	351,073	1.0E-01	2.1E-02	3.0E-02	2.5E-03	5.1E-03	3.0E-01	3.6E-03	3.7E-03
U-BEAU-01-04	U-BEAU-01	Fort Bend	Texas	18.5	3,123,169	7,850,048	57,660,656	144,929,361	59,383	141,533	4.2E-02	8.5E-03	1.2E-02	9.9E-04	2.0E-03	1.2E-01	1.5E-03	1.5E-03
U-VICT-01-01	U-VICT-01	Victoria	Texas	12.3	19,356,795	31,422,586	237,511,586	385,561,162	244,605	376,525	6.7E-02	1.4E-02	1.9E-02	1.6E-03	3.3E-03	1.9E-01	2.3E-03	2.4E-03
U-VICT-02-01	U-VICT-02	Nueces	Texas	8.2	19,356,795	31,422,586	159,209,190	258,450,046	163,964	252,393	4.5E-02	9.2E-03	1.3E-02	1.1E-03	2.2E-03	1.3E-01	1.6E-03	1.6E-03
U-VICT-02-02	U-VICT-02	San Patricio	Texas	20.5	19,356,795	31,422,586	396,292,507	643,315,984	408,128	628,238	1.1E-01	2.3E-02	3.2E-02	2.7E-03	5.5E-03	3.2E-01	3.9E-03	4.0E-03
U-VICT-02-03	U-VICT-02	Refugio	Texas	36.9	19,356,795	31,422,586	714,095,360	1,159,216,870	735,423	1,132,048	2.0E-01	4.1E-02	5.8E-02	4.8E-03	9.9E-03	5.7E-01	7.0E-03	7.2E-03
U-VICT-02-04	U-VICT-02	Victoria	Texas	18.0	19,356,795	31,422,586	348,182,723	565,217,629	358,582	551,970	9.8E-02	2.0E-02	2.8E-02	2.3E-03	4.8E-03	2.8E-01	3.4E-03	3.5E-03

Notes:

Segment Ton-Mileage provided by Applicants; Sub Segment ton-mileage proportioned from whole segment based on the Length Proportion

No Action and With Action Fuel Efficiency estimated based on data provided in the "Verified Statement of Michael R. Baranowski" (No Action- 971 ton-miles/gal; With Action- 1024 ton-miles/gal)

Table K.7-9. Rail Segment Analysis- Locomotive Emission Factors

Factors by Tier (g/bhp-hr) (from "Emission Factors for Locomotives"- EPA 2009)

Tier	%	NOx	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	HC
Uncontrolled	8%	13	0.51	0.32	0.310	-	1.28	-	-	-	0.48
0	6%	8.6	0.51	0.32	0.310	-	1.28	-	-	-	0.48
0+	18%	7.2	0.32	0.2	0.194	-	1.28	-	-	-	0.3
1	0%	6.7	0.49	0.32	0.310	-	1.28	-	-	-	0.47
1+	32%	6.7	0.31	0.2	0.194	-	1.28	-	-	-	0.29
2	7%	4.95	0.27	0.18	0.175	-	1.28	-	-	-	0.26
2+	19%	4.95	0.14	0.08	0.078	-	1.28	-	-	-	0.13
3	9%	4.95	0.14	0.08	0.078	-	1.28	-	-	-	0.13
4	1%	1	0.04	0.015	0.015	-	1.28	-	-	-	0.04
Composite	**100%**	**6.74**	**0.28**	**0.18**	**0.17**	**-**	**1.28**	**-**	**-**	**-**	**0.27**

20.8 bhp-hr/gal (Large Line Haul)

Criteria & GHG	NOx	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	HC
Composite (g/gal)	**140.2**	**5.9**	**3.7**	**3.6**	**0.1**	**26.6**	**10210.0**	**0.41**	**0.08**	**5.6**

HAPs	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
Composite (g/gal)	**0.46**	**0.09**	**0.13**	**0.01**	**0.02**	**1.31**	**0.02**	**0.02**

Source Criteria Pollutants: "Emission Factors for Locomotives"- EPA 2009
Source GHG: "Emission Factors for Greenhouse Gas Inventories" - EPA, April 2021
Source HAPs: 2017 EPA National Emissions Inventory, "2017Rail_HAP_AugmentationProfileAssignmentFactors_20200128.xlsx".
Notes:

Tier Mix Provided by Applicants for Locomotive fleet
SO_2 factor based on 15 ppm diesel fuel, using calculation from "Emission Factors for Locomotives-EPA2009"
CO_2, CH_4 and N_2O factors from "Emission Factors for Greenhouse Gas Inventories" - EPA, April 2021 HAPs speciation for locomotives from 2017 NEI applied to VOC and $PM_{2.5}$ emission rates, as appropriate.

K.8 Rail Yard Analysis

OEA conducted an analysis of the emissions changes from rail yards that would meet or exceed the Board's thresholds for environmental analysis. The Applicants provided the four yards that exceeded the Board's analysis thresholds. The analysis considered changes in emissions associated with railcar switching. According to the Applicants, block swapping associated with the four yards are unrelated to yard activity and primarily occur outside of the yard boundaries. Block swapping activities are accounted for in the gross tonnage estimates of the Rail Line Segment analysis and block swap cars are included in the car handling counts in the Railcar Switching analysis. For this reason, OEA accounted for block swapping in these analyses rather than separating it out into its own analysis. OEA obtained nonattainment area boundaries from EPA (EPA 2021b). There were four rail yards facilities in an ozone nonattainment area and one in a particulate matter maintenance area. The Applicants provided No-Action Alternative and Proposed Acquisition rail cars processed per day for each yard. OEA grouped yards by county to create a county-level emissions inventory. OEA calculated the difference between the Proposed Acquisition and No-Action inventories to determine the Proposed Acquisition-related emissions.

K.8.1 Railcar Switching Analysis

Emissions from railcar switching are associated with switch locomotives moving railcars around the yard. OEA estimated daily switch engine operating hours by combining the No-Action Alternative and Proposed Acquisition daily railcars processed at each yard by the average switching efficiency of a switch locomotive provided by the Applicants. OEA analyzed and converted daily switch operating hours to fuel usage using a weighted average fuel consumption rate for switch locomotives provided by the Applicants. OEA obtained emission factors for calculating switch emissions using EPA methodology for NO_X, VOC, PM_{10}, $PM_{2.5}$, SO_2, CO, and CO_2 (EPA 2009). OEA estimated HAPs emission rates by applying speciation profiles to the VOC or PM emission rates (EPA 2021c). The Applicants provided the mix of emissions tier standards for the switch fleet. OEA used this mix to create composite fleet wide emission factors by pollutant for the railcar switching analysis. OEA derived emission factors into a grams per gallon format using the EPA provided conversion factor from brake horsepower-hours to gallons (EPA 2009). OEA combined the above No-Action Alternative and Proposed Acquisition fuel usages with the emission factors to calculate the emissions inventory for each yard.

Table K.8-1 and **Table K.8-2** summarize the rail yard analysis. **Table K.8-3** and **Table K.8-4** show the switching activity analysis by yard. **Table K.8-5** shows the switch locomotive emissions factors.

Table K.8-1. Rail Yard Analysis- Criteria Pollutant Summary

						Acquisition-Related Criteria Emissions (tons/year)							*De Minimis* Emissions (tons/year)						
State	**County**	**Attainment**	**NA Pollutant**	**Yard/FIPS**	**Activity**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**
Illinois	Cook	Nonattainment	O3-Serious	SCHILLER PARK YARD	Car Switching	1.6	0.1	0.0	0.0	0.0	0.2	88.1							
				BENSENVILLE YARD	Car Switching	4.9	0.3	0.1	0.1	0.0	0.7	260.7							
					County Total	**6.5**	**0.4**	**0.2**	**0.2**	**0.0**	**0.9**	**348.8**	***50***	***50***	**-**	**-**	**-**	**-**	**-**
Texas	Collin	Nonattainment	O3-Severe	WYLIE YARD	Car Switching	1.5	0.1	0.0	0.0	0.0	0.2	82.3							
					County Total	**1.5**	**0.1**	**0.0**	**0.0**	**0.0**	**0.2**	**82.3**	***25***	***25***	**-**	**-**	**-**	**-**	**-**
Michigan	Wayne	Nonattainment	O3-Marginal; PM2.5 Maint	DETROIT CONTAINER TERMINAL	Car Switching	-0.2	0.0	0.0	0.0	0.0	0.0	-10.7							
					County Total	**-0.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**-10.7**	***100***	***100***	**-**	***100***	**-**	**-**	**-**

Table K.8-2. Rail Yard Analysis- HAPs Summary

				Acquisition-Related HAP Emissions (tons/year)							
State	**County**	**Yard/FIPS**	**Activity**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
Illinois	Cook	SCHILLER PARK YARD	Car Switching	8.3E-03	1.7E-03	2.4E-03	2.0E-04	4.1E-04	2.4E-02	2.9E-04	2.9E-04
		BENSENVILLE YARD	Car Switching	2.5E-02	5.0E-03	7.1E-03	5.8E-04	1.2E-03	7.0E-02	8.6E-04	8.5E-04
			County Total	**3.3E-02**	**6.7E-03**	**9.5E-03**	**7.8E-04**	**1.6E-03**	**9.4E-02**	**1.1E-03**	**1.1E-03**
Texas	Collin	WYLIE YARD	Car Switching	7.8E-03	1.6E-03	2.2E-03	1.8E-04	3.8E-04	2.2E-02	2.7E-04	2.7E-04
			County Total	**7.8E-03**	**1.6E-03**	**2.2E-03**	**1.8E-04**	**3.8E-04**	**2.2E-02**	**2.7E-04**	**2.7E-04**
Michigan	Wayne	DETROIT CONTAINER TERMINAL	Car Switching	-1.0E-03	-2.1E-04	-2.9E-04	-2.4E-05	-5.0E-05	-2.9E-03	-3.5E-05	-3.5E-05
			County Total	**-1.0E-03**	**-2.1E-04**	**-2.9E-04**	**-2.4E-05**	**-5.0E-05**	**-2.9E-03**	**-3.5E-05**	**-3.5E-05**

Table K.8-3. Rail Yard Analysis- Railcar Switching Criteria Pollutant Emissions

			Cars Processed Per Day		Cars Switched per Hour		Annual Operating Days	Switch Engine Hours		Switch Fuel Consumption	
Yard	**County**	**State**	**NA CPD**	**WA CPD**	**NA Cars/Hr**	**WA Cars/Hr**	**Days/year**	**NA Hrs/Yr**	**WA Hrs/Yr**	**NA Gal/Yr**	**WA Gal/Yr**
SCHILLER PARK YARD	Cook	ILLINOIS	74.0	150.6	26.8	29.9	365	1,008	1,838	9,478	17,275
BENSENVILLE YARD	Cook	ILLINOIS	1,439.9	1,807.6	26.8	29.9	365	19,611	22,067	184,339	207,426
WYLIE YARD	Collin	TEXAS	329.6	466.5	35.2	39.4	313	2,931	3,706	27,547	34,838
DETROIT CONTAINER TERMINAL	Wayne	MICHIGAN	33.2	56.5	6.3	11.3	365	1,925	1,824	18,095	17,145

			No Action Emissions (tons/year)									
Yard	**County**	**State**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	**CO2**	**CH4**	**N2O**
SCHILLER PARK YARD	Cook	ILLINOIS	2.0	0.1	0.1	0.1	0.0	0.3	107.0	106.7	0.004	0.001
BENSENVILLE YARD	Cook	ILLINOIS	38.8	2.5	1.0	1.0	0.0	5.7	2081.6	2074.7	0.083	0.016
WYLIE YARD	Collin	TEXAS	5.8	0.4	0.2	0.1	0.0	0.8	311.1	310.0	0.012	0.002
DETROIT CONTAINER TERMINAL	Wayne	MICHIGAN	3.8	0.2	0.1	0.1	0.0	0.6	204.3	203.6	0.008	0.002

			Proposed Acquisition Emissions (tons/year)									
Yard	**County**	**State**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	**CO2**	**CH4**	**N2O**
SCHILLER PARK YARD	Cook	ILLINOIS	3.6	0.2	0.1	0.1	0.0	0.5	195.1	194.4	0.008	0.002
BENSENVILLE YARD	Cook	ILLINOIS	43.6	2.8	1.1	1.1	0.0	6.4	2342.3	2334.5	0.094	0.018
WYLIE YARD	Collin	TEXAS	7.3	0.5	0.2	0.2	0.0	1.1	393.4	392.1	0.016	0.003
DETROIT CONTAINER TERMINAL	Wayne	MICHIGAN	3.6	0.2	0.1	0.1	0.0	0.5	193.6	193.0	0.008	0.002

			Acquisition-Related Criteria Emissions (tons/year)						
Yard	**County**	**State**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**
SCHILLER PARK YARD	Cook	ILLINOIS	1.6	0.1	0.0	0.0	0.0	0.2	88.1
BENSENVILLE YARD	Cook	ILLINOIS	4.9	0.3	0.1	0.1	0.0	0.7	260.7
WYLIE YARD	Collin	TEXAS	1.5	0.1	0.0	0.0	0.0	0.2	82.3
DETROIT CONTAINER TERMINAL	Wayne	MICHIGAN	-0.2	0.0	0.0	0.0	0.0	0.0	-10.7

Notes:

Cars Processed Per Day and Cars Switched per Hour provided by the Applicants.

Annual Operating Days per year reflect publicly available yard operating schedules.

Average hourly switch locomotive fuel consumption provided by Applicants for the most common switch locomotive in the fleet. Switch locomotive emission factors provided in Table K.8-5

Table K.8-4. Rail Yard Analysis- Railcar Switching HAPs Emissions

			Cars Processed Per Day		Cars Switched per Hour		Annual Operating Days	Switch Engine Hours		Switch Fuel Consumption	
Yard	**County**	**State**	**NA CPD**	**WA CPD**	**NA Cars/Hr**	**WA Cars/Hr**	**Days/year**	**NA Hrs/Yr**	**WA Hrs/Yr**	**NA Gal/Yr**	**WA Gal/Yr**
SCHILLER PARK YARD	Cook	ILLINOIS	74.0	150.6	26.8	29.9	365	1,008	1,838	9,478	17,275
BENSENVILLE YARD	Cook	ILLINOIS	1,439.9	1,807.6	26.8	29.9	365	19,611	22,067	184,339	207,426
WYLIE YARD	Collin	TEXAS	329.6	466.5	35.2	39.4	313	2,931	3,706	27,547	34,838
DETROIT CONTAINER TERMINAL	Wayne	MICHIGAN	33.2	56.5	6.3	11.3	365	1,925	1,824	18,095	17,145

			No Action Emissions (tons/year)							
Yard	**County**	**State**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
SCHILLER PARK YARD	Cook	ILLINOIS	0.01	0.00	0.00	0.00	0.00	0.03	0.00	0.00
BENSENVILLE YARD	Cook	ILLINOIS	0.20	0.04	0.06	0.00	0.01	0.56	0.01	0.01
WYLIE YARD	Collin	TEXAS	0.03	0.01	0.01	0.00	0.00	0.08	0.00	0.00
DETROIT CONTAINER TERMINAL	Wayne	MICHIGAN	0.02	0.00	0.01	0.00	0.00	0.05	0.00	0.00

			Proposed Acquisition Emissions (tons/year)							
Yard	**County**	**State**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
SCHILLER PARK YARD	Cook	ILLINOIS	0.02	0.00	0.01	0.00	0.00	0.05	0.00	0.00
BENSENVILLE YARD	Cook	ILLINOIS	0.22	0.05	0.06	0.01	0.01	0.63	0.01	0.01
WYLIE YARD	Collin	TEXAS	0.04	0.01	0.01	0.00	0.00	0.11	0.00	0.00
DETROIT CONTAINER TERMINAL	Wayne	MICHIGAN	0.02	0.00	0.01	0.00	0.00	0.05	0.00	0.00

			Acquisition-Related HAPs Emissions (tons/year)							
Yard	**County**	**State**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
SCHILLER PARK YARD	Cook	ILLINOIS	0.01	0.00	0.00	0.00	0.00	0.02	0.00	0.00
BENSENVILLE YARD	Cook	ILLINOIS	0.02	0.01	0.01	0.00	0.00	0.07	0.00	0.00
WYLIE YARD	Collin	TEXAS	0.01	0.00	0.00	0.00	0.00	0.02	0.00	0.00
DETROIT CONTAINER TERMINAL	Wayne	MICHIGAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Notes:

Cars Processed Per Day and Cars Switched per Hour provided by the Applicants.

Annual Operating Days per year reflect publicly available yard operating schedules.

Average hourly switch locomotive fuel consumption provided by Applicants for the most common switch locomotive in the fleet. Switch locomotive emission factors provided in Table K.8-5

Table K.8-5. Rail Yard Analysis- Locomotive Emission Factors

Switch Factors by Tier (g/bhp-hr) (from "Emission Factors for Locomotives"- EPA 2009)

Tier	%	NOx	VOC	PM_{10}	$PM_{2.5}$	SO_2	CO	CO_2	CH_4	N_2O	HC
Uncontrolled	23%	17.4	1.06	0.44	0.427	-	1.83	-	-	-	1.01
0	23%	12.6	1.06	0.44	0.427	-	1.83	-	-	-	1.01
0+	52%	10.6	0.60	0.23	0.223	-	1.83	-	-	-	0.57
1	0%	9.9	1.06	0.43	0.417	-	1.83	-	-	-	1.01
1+	0%	9.9	0.60	0.23	0.223	-	1.83	-	-	-	0.57
2	2%	7.3	0.54	0.19	0.184	-	1.83	-	-	-	0.51
2+	0%	7.3	0.27	0.11	0.107	-	1.83	-	-	-	0.26
3	0%	4.5	0.27	0.08	0.078	-	1.83	-	-	-	0.26
4	0%	1	0.08	0.015	0.015	-	1.83	-	-	-	0.08
Composite	**100%**	**12.56**	**0.81**	**0.33**	**0.32**	**-**	**1.83**	**-**	**-**	**-**	**0.77**

15.2 bhp-hr/gal (Switch)

	NOx	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	HC
Composite (g/gal)	**190.9**	**12.3**	**5.0**	**4.8**	**0.094**	**27.8**	**10210.0**	**0.41**	**0.08**	**11.7**

	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
Composite (g/gal)	**0.97**	**0.20**	**0.28**	**0.02**	**0.05**	**2.75**	**0.03**	**0.03**

Source Criteria Pollutants: "Emission Factors for Locomotives"- EPA 2009

Source GHG: "Emission Factors for Greenhouse Gas Inventories" - EPA, April 2021

Source HAPS: 2017 EPA National Emissions Inventory, "2017Rail_HAP_AugmentationProfileAssignmentFactors_20200128.xlsx".

Notes:

Tier Mix Provided by Applicants for Locomotive fleet

SO_2 factor based on 15 ppm diesel fuel, using calculation from "Emission Factors for Locomotives-EPA2009"

CO_2, CH_4 and N_2O factors from "Emission Factors for Greenhouse Gas Inventories" - EPA, April 2021

HAPs speciation for locomotives from 2017 NEI applied to VOC and $PM_{2.5}$ emission rates, as appropriate.

K.9 Intermodal Facility Analysis

OEA conducted an analysis of the emissions changes from the intermodal facilities that would meet or exceed the Board's thresholds for environmental analysis. The Applicants identified the six intermodal facilities that exceeded the Board's analysis thresholds. The analysis considered changes in emissions associated with the three primary intermodal facility activities: on the road trucks, lift equipment, and yard trucks. Switch locomotive activity at intermodal facilities is typically minimal as freight is moved around by lift equipment. OEA obtained nonattainment area boundaries from EPA (EPA 2021b). There were four intermodal facilities in an ozone nonattainment area and one in a particulate matter maintenance area. The Applicants provided No-Action Alternative and Proposed Acquisition origin/destination lifts per day, switch lifts per day, and on the road trucks per day for each intermodal facility by the Applicants.

OEA summed on-the-road truck, lift equipment, and yard truck emissions to get total intermodal facility emissions. OEA grouped intermodal facilities by county to create a county-level emissions inventory. OEA calculated the difference between the Proposed Acquisition and No-Action inventories to determine the Proposed Acquisition-related emissions. The following further explains each analysis.

K.9.1 On-the-Road Truck Analysis

Emissions from on-the-road trucks at intermodal facilities are associated with trucks accessing the facility to drop off and/or pick up freight containers. Emissions are primarily due to engine idling while trucks wait in queues to enter or exit the facility and within the facility waiting for their freight to be loaded or unloaded. The Applicants provided the No-Action and Proposed Acquisition on-the-road trucks per day for each facility. OEA annualized these values based on the current operating schedule for each facility. OEA assumed that trucks spend on average 34 minutes idling within the facility based on previous intermodal facility studies (Lindheim 2008 and Souten 2006). OEA used this value to estimate the annual operating hours of the trucks within the facility. OEA combined annual operating hours of the trucks with truck emission factors. OEA derived emission factors for the on-the-road trucks using EPA's Motor Vehicle Emissions Simulator (MOVES3) model (EPA 2022). OEA ran the MOVES3 model for the counties where the intermodal facilities are located using model default inputs. The emission factors represent long haul combination trucks at idle in a grams per hour format. OEA combined the resulting emission factors and operating hours to create an emissions inventory for each intermodal facility related to on-the-road truck activity.

K.9.2 Lift Equipment Analysis

Emissions from lift equipment at intermodal facilities are associated with aerial lifts or forklifts moving freight on and off trains and trucks. The Applicants provided the No-Action and Proposed Acquisition origin/destination lifts per day and switch lifts per day. In addition to origin/destination lifts and switch lifts, other lifts may occur to move freight

around storage areas or between trucks and storage areas. The combination of all lifts is referred to as "total lifts." OEA assumed that for every origin/destination lift and switch lift, an average of 2.14 total lifts would occur based on previous studies of primary and secondary lifts at intermodal facilities (Stewart 2003 and STB 1998). OEA converted total lifts to annual operating hours by dividing by the average lifts per hour and multiplying by the annual operating days. OEA derived the average lifts per hour at each facility based on current handling data presented in the Applicants' application (contained in the Operating Plan). OEA based the annual operating days on the current operating schedules for each facility. OEA estimated Emission Factors for the lift equipment using the Nonroad module within the MOVES3 model (EPA 2022). OEA ran the MOVES3 model for the counties where the intermodal facilities are located using model default inputs. OEA assumed equipment size and age correspond to the model's default population data. OEA assumed all equipment operate on diesel fuel. The emission factors represent aerial lift and forklift equipment in a grams per hour format. OEA conducted a review of aerial imagery to determine if the six intermodal facilities were operating lift gantries. If a facility did not operate gantries, OEA used forklift emission factors to estimate lift equipment emissions. OEA combined the resulting emission factors with load factors and operating hours to create an emission inventory for each intermodal facility related to lift equipment activity (EPA 2010).

K.9.3 Yard Truck Analysis

Emissions from yard trucks at intermodal facilities are associated with on-site trucks moving freight around the yard. The Applicants provided the No-Action and Proposed Acquisition origin/destination lifts per day and switch lifts per day. OEA assumed that for every origin/destination lift and switch lift, on average 1.2-yard truck movements would occur based on previous intermodal facility studies (Lindheim 2008). OEA converted truck movements to annual operating hours by dividing by the number of truck movements per hour and multiplying by the annual operating days. OEA assumed the average truck movements per hour to be 4.5 on average, estimated based on yard work and rail work completed in an 8-hour shift in an emissions study for the Port of Long Beach and Los Angeles (Port of LA 2017). OEA based the annual operating days on the current operating schedule for each facility. OEA derived Emission Factors for the yard trucks using the Nonroad module within the MOVES3 model (EPA 2022). OEA ran the MOVES3 model for the counties where the intermodal facilities are located using model default inputs. OEA assumed equipment size and age correspond to the model's default population data. OEA assumed all equipment operate on diesel fuel. The emission factors represent yard trucks in a grams per hour format. OEA combined the resulting emission factors with load factors and operating hours to create an emission inventory for each intermodal facility related to yard truck activity (EPA 2010).

Table K.9-1 and **Table K.9-2** summarize the intermodal facility analysis. **Table K.9-3** and **Table K.9-4** show the emissions analysis for on-the-road trucks. **Table K.9-5** and **Table K.9-6** show the emissions analysis for lift equipment. **Table K.9-7** and **Table K.9-8** show the emissions analysis for yard trucks. **Table K.9-9** shows the on-road emissions factors. **Table K.9-10** shows the nonroad emissions factors.

Table K.9-1. Intermodal Facility Analysis- Criteria Pollutant Summary

						Acquisition-Related Criteria Emissions (tons/year)							*De Minimis* Emissions (tons/year)						
State	**County**	**Attainment**	**NA Pollutant**	**Yard**	**Activity**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**
Illinois	Cook	Nonattainment	O3-Serious	SCHILLER EAST IMS	OTR Trucks	1.89	0.10	0.04	0.04	0.00	0.60	230.2							
					Lift Equipment	0.17	0.00	0.00	0.00	0.00	0.01	93.8							
					Yard Trucks	0.29	0.01	0.01	0.01	0.00	0.04	552.7							
				BENSENVILLE IMS	OTR Trucks	4.43	0.23	0.10	0.09	0.00	1.40	541.1							
					Lift Equipment	0.43	0.01	0.01	0.00	0.00	0.03	237.8							
					Yard Trucks	0.73	0.03	0.02	0.02	0.00	0.10	1,401.6							
					County Total	**7.94**	**0.37**	**0.18**	**0.17**	**0.01**	**2.18**	**3,057.2**	***50***	***50***	**-**	**-**	**-**	**-**	**-**
Michigan	Wayne	Nonattainment	O3-Marginal; PM2.5 Maint	DET CON TERM	OTR Trucks	1.22	0.06	0.03	0.02	0.00	0.39	149.4							
					Lift Equipment	0.25	0.00	0.00	0.00	0.00	0.02	140.1							
					Yard Trucks	0.14	0.01	0.00	0.00	0.00	0.02	262.7							
					County Total	**1.62**	**0.07**	**0.03**	**0.03**	**0.00**	**0.43**	**552.2**	***100***	***100***	**-**	***100***	**-**	**-**	**-**
Minnesota	Hennepin	Attainment		MINNEAPOLIS IMS	OTR Trucks	0.75	0.04	0.02	0.02	0.00	0.24	91.0							
					Lift Equipment	0.14	0.00	0.00	0.00	0.00	0.01	76.9							
					Yard Trucks	0.13	0.00	0.00	0.00	0.00	0.02	245.6							
					County Total	**1.01**	**0.05**	**0.02**	**0.02**	**0.00**	**0.26**	**413.5**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Missouri	Jackson	Attainment		INTL FREIGHT GATEWY	OTR Trucks	0.75	0.04	0.02	0.02	0.00	0.24	91.0							
					Lift Equipment	0.37	0.01	0.00	0.00	0.00	0.03	205.8							
					Yard Trucks	0.15	0.01	0.00	0.00	0.00	0.02	288.4							
					County Total	**1.27**	**0.05**	**0.03**	**0.02**	**0.00**	**0.29**	**585.3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Texas	Collin	Nonattainment	O3-Severe	WYLIE	OTR Trucks	2.08	0.11	0.05	0.04	0.00	0.66	254.2							
					Lift Equipment	0.07	0.01	0.01	0.01	0.00	0.04	14.5							
					Yard Trucks	0.46	0.02	0.01	0.01	0.00	0.06	875.6							
					County Total	**2.60**	**0.13**	**0.06**	**0.06**	**0.00**	**0.76**	**1,144.3**	***25***	***25***	**-**	**-**	**-**	**-**	**-**

Table K.9-2. Intermodal Facility Analysis- HAPs Summary

				Acquisition-Related HAP Emissions (tons/year)							
State	**County**	**Yard**	**Activity**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
Illinois	Cook	SCHILLER EAST IMS	OTR Trucks	3.8E-03	5.4E-04	4.7E-04	1.6E-04	6.0E-04	6.1E-03	2.9E-04	8.6E-06
			Lift Equipment	3.1E-04	5.4E-05	1.5E-04	5.2E-06	1.7E-05	8.5E-04	8.0E-06	4.4E-07
			Yard Trucks	8.9E-04	1.4E-04	3.7E-04	1.3E-05	7.9E-05	2.1E-03	1.8E-05	1.1E-06
		BENSENVILLE IMS	OTR Trucks	8.9E-03	1.3E-03	1.1E-03	3.8E-04	1.4E-03	1.4E-02	6.8E-04	2.0E-05
			Lift Equipment	7.9E-04	1.4E-04	3.8E-04	1.3E-05	4.2E-05	2.1E-03	2.0E-05	1.1E-06
			Yard Trucks	2.3E-03	3.6E-04	9.4E-04	3.2E-05	2.0E-04	5.4E-03	4.7E-05	2.9E-06
			County Total	**1.7E-02**	**2.5E-03**	**3.4E-03**	**6.1E-04**	**2.3E-03**	**3.1E-02**	**1.1E-03**	**3.5E-05**
Michigan	Wayne	DET CON TERM	OTR Trucks	2.5E-03	3.5E-04	3.1E-04	1.1E-04	3.9E-04	3.9E-03	1.9E-04	5.6E-06
			Lift Equipment	4.6E-04	8.1E-05	2.2E-04	7.8E-06	2.5E-05	1.3E-03	1.2E-05	6.5E-07
			Yard Trucks	4.2E-04	6.8E-05	1.8E-04	6.1E-06	3.8E-05	1.0E-03	8.7E-06	5.4E-07
			County Total	**3.3E-03**	**5.0E-04**	**7.1E-04**	**1.2E-04**	**4.5E-04**	**6.2E-03**	**2.1E-04**	**6.8E-06**
Minnesota	Hennepin	MINNEAPOLIS IMS	OTR Trucks	1.5E-03	2.1E-04	1.9E-04	6.4E-05	2.4E-04	2.4E-03	1.1E-04	3.4E-06
			Lift Equipment	2.5E-04	4.4E-05	1.2E-04	4.3E-06	1.4E-05	6.9E-04	6.5E-06	3.6E-07
			Yard Trucks	4.0E-04	6.4E-05	1.6E-04	5.7E-06	3.5E-05	9.5E-04	8.2E-06	5.1E-07
			County Total	**2.1E-03**	**3.2E-04**	**4.7E-04**	**7.4E-05**	**2.9E-04**	**4.0E-03**	**1.3E-04**	**4.3E-06**
Missouri	Jackson	INTL FREIGHT GATEWY	OTR Trucks	1.5E-03	2.1E-04	1.9E-04	6.4E-05	2.4E-04	2.4E-03	1.1E-04	3.4E-06
			Lift Equipment	6.8E-04	1.2E-04	3.3E-04	1.1E-05	3.7E-05	1.9E-03	1.7E-05	9.6E-07
			Yard Trucks	4.6E-04	7.5E-05	1.9E-04	6.6E-06	4.1E-05	1.1E-03	9.6E-06	6.0E-07
			County Total	**2.6E-03**	**4.1E-04**	**7.1E-04**	**8.2E-05**	**3.1E-04**	**5.4E-03**	**1.4E-04**	**5.0E-06**
Texas	Collin	WYLIE	OTR Trucks	4.2E-03	5.9E-04	5.2E-04	1.8E-04	6.6E-04	6.7E-03	3.2E-04	9.5E-06
			Lift Equipment	7.4E-04	1.8E-04	3.1E-04	1.5E-05	4.9E-05	2.1E-03	1.6E-05	1.2E-06
			Yard Trucks	1.4E-03	2.3E-04	5.8E-04	2.0E-05	1.3E-04	3.4E-03	2.9E-05	1.8E-06
			County Total	**6.3E-03**	**1.0E-03**	**1.4E-03**	**2.1E-04**	**8.3E-04**	**1.2E-02**	**3.6E-04**	**1.3E-05**

Table K.9-3. Intermodal Facility Analysis- On The Road Truck Criteria Pollutant Emissions

			OTR Trucks per Day		Annual Op Days	OTR Trucks per Year		OTR Trucks Op hours	
Facility	**County**	**State**	**NA TPD**	**WA TPD**	**Days/Yr**	**NA TPY**	**WA TPY**	**NA hrs/yr**	**WA hrs/yr**
BENSENVILLE IMS	Cook	IL	383	698	365	139,795	254,770	79,217	144,370
DET CON TERM	Wayne	MI	141	228	313	51,465	83,220	29,164	47,158
MINNEAPOLIS IMS	Hennepin	MN	279	332	313	101,835	121,180	57,707	68,669
SCHILLER EAST IMS	Cook	IL	190	324	365	69,350	118,260	39,298	67,014
INTL FREIGHT GATEWY	Jackson	MO	51	104	313	18,615	37,960	10,549	21,511
WYLIE	Collin	TX	326	474	365	118,990	173,010	67,428	98,039

			No Action Emissions (tons/year)									
Facility	**County**	**State**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2**	**CH4**	**N2O**	**CO2e**
BENSENVILLE IMS	Cook	IL	5.39	0.28	0.12	0.11	0.00	1.70	655.0	0.031	0.007	657.9
DET CON TERM	Wayne	MI	1.98	0.10	0.04	0.04	0.00	0.63	241.1	0.011	0.003	242.2
MINNEAPOLIS IMS	Hennepin	MN	3.93	0.20	0.09	0.08	0.00	1.24	477.1	0.023	0.005	479.3
SCHILLER EAST IMS	Cook	IL	2.67	0.14	0.06	0.05	0.00	0.85	324.9	0.015	0.004	326.4
INTL FREIGHT GATEWY	Jackson	MO	0.72	0.04	0.02	0.01	0.00	0.23	87.2	0.004	0.001	87.6
WYLIE	Collin	TX	4.58	0.23	0.10	0.09	0.00	1.45	557.5	0.026	0.006	560.0

			Proposed Acquisition Emissions (tons/year)									
Facility	**County**	**State**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2**	**CH4**	**N2O**	**CO2e**
BENSENVILLE IMS	Cook	IL	9.82	0.50	0.22	0.20	0.00	3.11	1193.7	0.057	0.013	1199.0
DET CON TERM	Wayne	MI	3.21	0.16	0.07	0.06	0.00	1.01	389.9	0.018	0.004	391.6
MINNEAPOLIS IMS	Hennepin	MN	4.67	0.24	0.10	0.09	0.00	1.48	567.8	0.027	0.006	570.3
SCHILLER EAST IMS	Cook	IL	4.56	0.23	0.10	0.09	0.00	1.44	554.1	0.026	0.006	556.6
INTL FREIGHT GATEWY	Jackson	MO	1.46	0.07	0.03	0.03	0.00	0.46	177.9	0.008	0.002	178.6
WYLIE	Collin	TX	6.65	0.34	0.15	0.13	0.00	2.11	810.6	0.038	0.009	814.2

			Acquisition-Related Emissions (tons/year)									
Facility	**County**	**State**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2**	**CH4**	**N2O**	**CO2e**
BENSENVILLE IMS	Cook	IL	4.43	0.23	0.10	0.09	0.00	1.40	538.7	0.026	0.006	541.1
DET CON TERM	Wayne	MI	1.22	0.06	0.03	0.02	0.00	0.39	148.8	0.007	0.002	149.4
MINNEAPOLIS IMS	Hennepin	MN	0.75	0.04	0.02	0.02	0.00	0.24	90.6	0.004	0.001	91.0
SCHILLER EAST IMS	Cook	IL	1.89	0.10	0.04	0.04	0.00	0.60	229.2	0.011	0.003	230.2
INTL FREIGHT GATEWY	Jackson	MO	0.75	0.04	0.02	0.02	0.00	0.24	90.6	0.004	0.001	91.0
WYLIE	Collin	TX	2.08	0.11	0.05	0.04	0.00	0.66	253.1	0.012	0.003	254.2

Notes:

OTR Trucks per day provided by the Applicants
Annual Operating Days at each intermodal facility estimated based on the current operating schedules
Each truck assumed to dwell 34 minutes at the intermodal facility

Lindhjem, Christian. “Intermodal Yard Activity and Emissions Evaluations”.
17th Annual International Emission Inventory Conference, June 2-5, 2008.
Souten, Dave and Lindhjem, Christian. “Los Angeles- Hobart Railyard TAC Emissions Inventory”
Environ International Corporation. December 2006.

Table K.9-4. Intermodal Facility Analysis- On The Road Truck HAPs Emissions

			OTR Trucks per Day		Annual Op Days	OTR Trucks per Year		OTR Trucks Op hours	
Facility	**County**	**State**	**NA TPD**	**WA TPD**	**Days/Yr**	**NA TPY**	**WA TPY**	**NA hrs/yr**	**WA hrs/yr**
BENSENVILLE IMS	Cook	IL	383	698	365	139,795	254,770	79,217	144,370
DET CON TERM	Wayne	MI	141	228	313	51,465	83,220	29,164	47,158
MINNEAPOLIS IMS	Hennepin	MN	279	332	313	101,835	121,180	57,707	68,669
SCHILLER EAST IMS	Cook	IL	190	324	365	69,350	118,260	39,298	67,014
INTL FREIGHT GATEWY	Jackson	MO	51	104	313	18,615	37,960	10,549	21,511
WYLIE	Collin	TX	326	474	365	118,990	173,010	67,428	98,039

			No Action Emissions (tons/year)							
Facility	**County**	**State**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
BENSENVILLE IMS	Cook	IL	1.1E-02	1.5E-03	1.4E-03	4.6E-04	1.7E-03	1.7E-02	8.2E-04	2.5E-05
DET CON TERM	Wayne	MI	4.0E-03	5.6E-04	5.0E-04	1.7E-04	6.3E-04	6.4E-03	3.0E-04	9.1E-06
MINNEAPOLIS IMS	Hennepin	MN	7.9E-03	1.1E-03	9.9E-04	3.4E-04	1.2E-03	1.3E-02	6.0E-04	1.8E-05
SCHILLER EAST IMS	Cook	IL	5.4E-03	7.6E-04	6.7E-04	2.3E-04	8.5E-04	8.6E-03	4.1E-04	1.2E-05
INTL FREIGHT GATEWY	Jackson	MO	1.4E-03	2.0E-04	1.8E-04	6.2E-05	2.3E-04	2.3E-03	1.1E-04	3.3E-06
WYLIE	Collin	TX	9.2E-03	1.3E-03	1.2E-03	3.9E-04	1.5E-03	1.5E-02	7.0E-04	2.1E-05

			Proposed Acquisition Emissions (tons/year)							
Facility	**County**	**State**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
BENSENVILLE IMS	Cook	IL	2.0E-02	2.8E-03	2.5E-03	8.5E-04	3.1E-03	3.2E-02	1.5E-03	4.5E-05
DET CON TERM	Wayne	MI	6.4E-03	9.1E-04	8.1E-04	2.8E-04	1.0E-03	1.0E-02	4.9E-04	1.5E-05
MINNEAPOLIS IMS	Hennepin	MN	9.4E-03	1.3E-03	1.2E-03	4.0E-04	1.5E-03	1.5E-02	7.1E-04	2.1E-05
SCHILLER EAST IMS	Cook	IL	9.2E-03	1.3E-03	1.1E-03	3.9E-04	1.4E-03	1.5E-02	6.9E-04	2.1E-05
INTL FREIGHT GATEWY	Jackson	MO	2.9E-03	4.2E-04	3.7E-04	1.3E-04	4.6E-04	4.7E-03	2.2E-04	6.7E-06
WYLIE	Collin	TX	1.3E-02	1.9E-03	1.7E-03	5.7E-04	2.1E-03	2.1E-02	1.0E-03	3.1E-05

			Acquisition-Related Emissions (tons/year)							
Facility	**County**	**State**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
BENSENVILLE IMS	Cook	IL	8.9E-03	1.3E-03	1.1E-03	3.8E-04	1.4E-03	1.4E-02	6.8E-04	2.0E-05
DET CON TERM	Wayne	MI	2.5E-03	3.5E-04	3.1E-04	1.1E-04	3.9E-04	3.9E-03	1.9E-04	5.6E-06
MINNEAPOLIS IMS	Hennepin	MN	1.5E-03	2.1E-04	1.9E-04	6.4E-05	2.4E-04	2.4E-03	1.1E-04	3.4E-06
SCHILLER EAST IMS	Cook	IL	3.8E-03	5.4E-04	4.7E-04	1.6E-04	6.0E-04	6.1E-03	2.9E-04	8.6E-06
INTL FREIGHT GATEWY	Jackson	MO	1.5E-03	2.1E-04	1.9E-04	6.4E-05	2.4E-04	2.4E-03	1.1E-04	3.4E-06
WYLIE	Collin	TX	4.2E-03	5.9E-04	5.2E-04	1.8E-04	6.6E-04	6.7E-03	3.2E-04	9.5E-06

Notes:

OTR Trucks per day provided by the Applicants

Annual Operating Days at each intermodal facility estimated based on the current operating schedules

Each truck assumed to dwell 34 minutes at the intermodal facility

Lindhjem, Christian. “Intermodal Yard Activity and Emissions Evaluations”.
17th Annual International Emission Inventory Conference, June 2-5, 2008.

Souten, Dave and Lindhjem, Christian. “Los Angeles- Hobart Railyard TAC Emissions Inventory”
Environ International Corporation. December 2006.

Table K.9-5. Intermodal Facility Analysis- Lift Equipment Criteria Pollutant Emissions

			O/D+Switch Lifts/Day		Estimated Total Lifts/Day		Avg Hourly Lifts	Annual Op Days	Annual Lifting Hours		Lift
Facility	**County**	**State**	**NA Lifts/D**	**WA Lifts/D**	**NA Lifts/D**	**WA Lifts/D**	**Lifts/Hr**	**Days/Yr**	**NA Hours**	**WA Hours**	**Equipment**
BENSENVILLE IMS	Cook	IL	534	955	1,143	2,044	28.6	365	14,584	26,082	Forklifts/Sideloaders
DET CON TERM	Wayne	MI	156	248	334	531	9.1	313	11,483	18,254	Forklifts/Sideloaders
MINNEAPOLIS IMS	Hennepin	MN	457	543	978	1,162	15.5	313	19,749	23,465	Forklifts/Sideloaders
SCHILLER EAST IMS	Cook	IL	190	356	407	762	28.6	365	5,189	9,723	Forklifts/Sideloaders
INTL FREIGHT GATEWY	Jackson	MO	103	204	220	437	6.8	313	10,146	20,095	Forklifts/Sideloaders
WYLIE	Collin	TX	731	994	1,564	2,127	23.5	365	24,297	33,039	Aerial Lift Gantries

			No Action Emissions (tons/year)									
Facility	**County**	**State**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2**	**CH4**	**N2O**	**CO2e**
BENSENVILLE IMS	Cook	IL	0.55	0.01	0.01	0.01	0.00	0.04	301.6	0.001	0.000	301.7
DET CON TERM	Wayne	MI	0.43	0.01	0.01	0.00	0.00	0.03	237.4	0.001	0.000	237.5
MINNEAPOLIS IMS	Hennepin	MN	0.74	0.01	0.01	0.01	0.00	0.06	408.3	0.002	0.000	408.4
SCHILLER EAST IMS	Cook	IL	0.19	0.00	0.00	0.00	0.00	0.02	107.3	0.001	0.000	107.3
INTL FREIGHT GATEWY	Jackson	MO	0.38	0.01	0.00	0.00	0.00	0.03	209.8	0.001	0.000	209.9
WYLIE	Collin	TX	0.18	0.02	0.01	0.01	0.00	0.11	40.1	0.001	0.000	40.2

			Proposed Acquisition Emissions (tons/year)									
Facility	**County**	**State**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2**	**CH4**	**N2O**	**CO2e**
BENSENVILLE IMS	Cook	IL	0.98	0.02	0.01	0.01	0.00	0.08	539.3	0.003	0.001	539.5
DET CON TERM	Wayne	MI	0.68	0.01	0.01	0.01	0.00	0.05	377.4	0.002	0.000	377.6
MINNEAPOLIS IMS	Hennepin	MN	0.88	0.02	0.01	0.01	0.00	0.07	485.1	0.002	0.000	485.3
SCHILLER EAST IMS	Cook	IL	0.36	0.01	0.00	0.00	0.00	0.03	201.0	0.001	0.000	201.1
INTL FREIGHT GATEWY	Jackson	MO	0.75	0.01	0.01	0.01	0.00	0.06	415.5	0.002	0.000	415.7
WYLIE	Collin	TX	0.25	0.03	0.02	0.02	0.00	0.15	54.5	0.002	0.000	54.6

			Acquisition-Related Emissions (tons/year)									
Facility	**County**	**State**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2**	**CH4**	**N2O**	**CO2e**
BENSENVILLE IMS	Cook	IL	0.43	0.01	0.01	0.00	0.00	0.03	237.7	0.001	0.000	237.8
DET CON TERM	Wayne	MI	0.25	0.00	0.00	0.00	0.00	0.02	140.0	0.001	0.000	140.1
MINNEAPOLIS IMS	Hennepin	MN	0.14	0.00	0.00	0.00	0.00	0.01	76.8	0.000	0.000	76.9
SCHILLER EAST IMS	Cook	IL	0.17	0.00	0.00	0.00	0.00	0.01	93.7	0.000	0.000	93.8
INTL FREIGHT GATEWY	Jackson	MO	0.37	0.01	0.00	0.00	0.00	0.03	205.7	0.001	0.000	205.8
WYLIE	Collin	TX	0.07	0.01	0.01	0.01	0.00	0.04	14.4	0.000	0.000	14.5

Notes:

O/D+Switch Lifts per day provided by the Applicants
Ratio of Primary (O/D+Switch) Lifts to Total lifts estimated using an average of available data (see Lift Data Tab)
Average Hourly Lifts estimated based on 2019 handling data in Applicationa and current facility operating hours.
Annual Operating Days at each intermodal facility estimated based on the current operating schedules

Table K.9-6. Intermodal Facility Analysis- Lift Equipment HAPs Emissions

			O/D+Switch Lifts/Day		Estimated Total Lifts/Day		Avg Hourly Lifts	Annual Op Days	Annual Lifting Hours		Lift
Facility	**County**	**State**	**NA Lifts/D**	**WA Lifts/D**	**NA Lifts/D**	**WA Lifts/D**	**Lifts/Hr**	**Days/Yr**	**NA Hours**	**WA Hours**	**Equipment**
BENSENVILLE IMS	Cook	IL	534	955	1,143	2,044	28.6	365	14,584	26,082	Forklifts/Sideloaders
DET CON TERM	Wayne	MI	156	248	334	531	9.1	313	11,483	18,254	Forklifts/Sideloaders
MINNEAPOLIS IMS	Hennepin	MN	457	543	978	1,162	15.5	313	19,749	23,465	Forklifts/Sideloaders
SCHILLER EAST IMS	Cook	IL	190	356	407	762	28.6	365	5,189	9,723	Forklifts/Sideloaders
INTL FREIGHT GATEWY	Jackson	MO	103	204	220	437	6.8	313	10,146	20,095	Forklifts/Sideloaders
WYLIE	Collin	TX	731	994	1,564	2,127	23.5	365	24,297	33,039	Aerial Lift Gantries

			No Action Emissions (tons/year)							
Facility	**County**	**State**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
BENSENVILLE IMS	Cook	IL	1.0E-03	1.7E-04	4.8E-04	1.7E-05	5.4E-05	2.7E-03	2.6E-05	1.4E-06
DET CON TERM	Wayne	MI	7.8E-04	1.4E-04	3.8E-04	1.3E-05	4.2E-05	2.1E-03	2.0E-05	1.1E-06
MINNEAPOLIS IMS	Hennepin	MN	1.3E-03	2.4E-04	6.5E-04	2.3E-05	7.2E-05	3.7E-03	3.5E-05	1.9E-06
SCHILLER EAST IMS	Cook	IL	3.5E-04	6.2E-05	1.7E-04	6.0E-06	1.9E-05	9.7E-04	9.1E-06	5.0E-07
INTL FREIGHT GATEWY	Jackson	MO	6.9E-04	1.2E-04	3.4E-04	1.2E-05	3.7E-05	1.9E-03	1.8E-05	9.8E-07
WYLIE	Collin	TX	2.1E-03	5.0E-04	8.5E-04	4.2E-05	1.4E-04	5.8E-03	4.5E-05	3.4E-06

			Proposed Acquisition Emissions (tons/year)							
Facility	**County**	**State**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
BENSENVILLE IMS	Cook	IL	1.8E-03	3.1E-04	8.6E-04	3.0E-05	9.6E-05	4.9E-03	4.6E-05	2.5E-06
DET CON TERM	Wayne	MI	1.2E-03	2.2E-04	6.0E-04	2.1E-05	6.7E-05	3.4E-03	3.2E-05	1.8E-06
MINNEAPOLIS IMS	Hennepin	MN	1.6E-03	2.8E-04	7.8E-04	2.7E-05	8.6E-05	4.4E-03	4.1E-05	2.3E-06
SCHILLER EAST IMS	Cook	IL	6.6E-04	1.2E-04	3.2E-04	1.1E-05	3.6E-05	1.8E-03	1.7E-05	9.3E-07
INTL FREIGHT GATEWY	Jackson	MO	1.4E-03	2.4E-04	6.7E-04	2.3E-05	7.4E-05	3.8E-03	3.5E-05	1.9E-06
WYLIE	Collin	TX	2.8E-03	6.8E-04	1.2E-03	5.8E-05	1.9E-04	7.8E-03	6.1E-05	4.6E-06

			Acquisition-Related Emissions (tons/year)							
Facility	**County**	**State**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
BENSENVILLE IMS	Cook	IL	7.9E-04	1.4E-04	3.8E-04	1.3E-05	4.2E-05	2.1E-03	2.0E-05	1.1E-06
DET CON TERM	Wayne	MI	4.6E-04	8.1E-05	2.2E-04	7.8E-06	2.5E-05	1.3E-03	1.2E-05	6.5E-07
MINNEAPOLIS IMS	Hennepin	MN	2.5E-04	4.4E-05	1.2E-04	4.3E-06	1.4E-05	6.9E-04	6.5E-06	3.6E-07
SCHILLER EAST IMS	Cook	IL	3.1E-04	5.4E-05	1.5E-04	5.2E-06	1.7E-05	8.5E-04	8.0E-06	4.4E-07
INTL FREIGHT GATEWY	Jackson	MO	6.8E-04	1.2E-04	3.3E-04	1.1E-05	3.7E-05	1.9E-03	1.7E-05	9.6E-07
WYLIE	Collin	TX	7.4E-04	1.8E-04	3.1E-04	1.5E-05	4.9E-05	2.1E-03	1.6E-05	1.2E-06

Notes:

O/D+Switch Lifts per day provided by the Applicants
Ratio of Primary (O/D+Switch) Lifts to Total lifts estimated using an average of available data (see Lift Data Tab)
Average Hourly Lifts estimated based on 2019 handling data in Application and current facility operating hours.
Annual Operating Days at each intermodal facility estimated based on the current operating schedules

Table K.9-7. Intermodal Facility Analysis- Yard Truck Criteria Pollutant Emissions

			O/D+Switch Lifts/Day		Yard Truck Moves		Annual Op Days	Yard Truck Hours	
Facility	**County**	**State**	**NA Lifts/D**	**WA Lifts/D**	**NA Moves/D**	**WA Moves/D**	**Days/Yr**	**NA Hrs/Yr**	**WA Hrs/Yr**
BENSENVILLE IMS	Cook	IL	534	955	641	1146	365	51,976	92,953
DET CON TERM	Wayne	MI	156	248	187	298	313	13,021	20,700
MINNEAPOLIS IMS	Hennepin	MN	457	543	548	652	313	38,144	45,322
SCHILLER EAST IMS	Cook	IL	190	356	228	427	365	18,493	34,651
INTL FREIGHT GATEWY	Jackson	MO	103	204	124	245	313	8,597	17,027
WYLIE	Collin	TX	731	994	877	1193	365	71,151	96,749

			No Action Emissions (tons/year)									
Facility	**County**	**State**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2**	**CH4**	**N2O**	**CO2e**
BENSENVILLE IMS	Cook	IL	0.93	0.04	0.03	0.03	0.00	0.12	1777.6	0.003	0.001	1777.8
DET CON TERM	Wayne	MI	0.23	0.01	0.01	0.01	0.00	0.03	445.3	0.001	0.000	445.4
MINNEAPOLIS IMS	Hennepin	MN	0.68	0.03	0.02	0.02	0.00	0.09	1304.9	0.002	0.000	1305.1
SCHILLER EAST IMS	Cook	IL	0.33	0.01	0.01	0.01	0.00	0.04	632.5	0.001	0.000	632.6
INTL FREIGHT GATEWY	Jackson	MO	0.15	0.01	0.00	0.00	0.00	0.02	294.1	0.000	0.000	294.2
WYLIE	Collin	TX	1.27	0.05	0.04	0.04	0.01	0.17	2433.5	0.003	0.001	2433.8

			Proposed Acquisition Emissions (tons/year)									
Facility	**County**	**State**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2**	**CH4**	**N2O**	**CO2e**
BENSENVILLE IMS	Cook	IL	1.67	0.06	0.05	0.05	0.01	0.22	3179.1	0.005	0.001	3179.5
DET CON TERM	Wayne	MI	0.37	0.01	0.01	0.01	0.00	0.05	707.9	0.001	0.000	708.0
MINNEAPOLIS IMS	Hennepin	MN	0.81	0.03	0.03	0.02	0.00	0.11	1550.5	0.002	0.000	1550.7
SCHILLER EAST IMS	Cook	IL	0.62	0.02	0.02	0.02	0.00	0.08	1185.1	0.002	0.000	1185.2
INTL FREIGHT GATEWY	Jackson	MO	0.31	0.01	0.01	0.01	0.00	0.04	582.5	0.001	0.000	582.6
WYLIE	Collin	TX	1.73	0.07	0.05	0.05	0.01	0.23	3309.1	0.005	0.001	3309.4

			Acquisition-Related Emissions (tons/year)									
Facility	**County**	**State**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2**	**CH4**	**N2O**	**CO2e**
BENSENVILLE IMS	Cook	IL	0.73	0.03	0.02	0.02	0.00	0.10	1401.5	0.002	0.000	1401.6
DET CON TERM	Wayne	MI	0.14	0.01	0.00	0.00	0.00	0.02	262.6	0.000	0.000	262.7
MINNEAPOLIS IMS	Hennepin	MN	0.13	0.00	0.00	0.00	0.00	0.02	245.6	0.000	0.000	245.6
SCHILLER EAST IMS	Cook	IL	0.29	0.01	0.01	0.01	0.00	0.04	552.6	0.001	0.000	552.7
INTL FREIGHT GATEWY	Jackson	MO	0.15	0.01	0.00	0.00	0.00	0.02	288.4	0.000	0.000	288.4
WYLIE	Collin	TX	0.46	0.02	0.01	0.01	0.00	0.06	875.5	0.001	0.000	875.6

Other Notes:

O/D+Switch Lifts provided by the Applicants

Truck Moves per lift assumed to be 1.2, using conservative value in the range provided by the source
Lindhjem, Christian. "Intermodal Yard Activity and Emissions Evaluations".
17th Annual International Emission Inventory Conference, June 2-5, 2008.

Truck Moves per hour assumed to be 4.5, estimated pased on yard work and rail work completed in an 8 hour shift in source
"Zero/Near-Zero Emissions Yard Tractor Testing and Demonstration Guidelines"
The Port of Long Beach and The Port of Los Angeles. September 2017.

Annual Operating Days at each intermodal facility estimated based on the current operating schedules

Table K.9-8. Intermodal Facility Analysis- Yard Truck HAPs Emissions

			O/D+Switch Lifts/Day		Yard Truck Moves		Annual Op Days	Yard Truck Hours	
Facility	**County**	**State**	**NA Lifts/D**	**WA Lifts/D**	**NA Moves/D**	**WA Moves/D**	**Days/Yr**	**NA Hrs/Yr**	**WA Hrs/Yr**
BENSENVILLE IMS	Cook	IL	534	955	641	1146	365	51,976	92,953
DET CON TERM	Wayne	MI	156	248	187	298	313	13,021	20,700
MINNEAPOLIS IMS	Hennepin	MN	457	543	548	652	313	38,144	45,322
SCHILLER EAST IMS	Cook	IL	190	356	228	427	365	18,493	34,651
INTL FREIGHT GATEWY	Jackson	MO	103	204	124	245	313	8,597	17,027
WYLIE	Collin	TX	731	994	877	1193	365	71,151	96,749

			No Action Emissions (tons/year)							
Facility	**County**	**State**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
BENSENVILLE IMS	Cook	IL	2.9E-03	4.6E-04	1.2E-03	4.1E-05	2.6E-04	6.9E-03	5.9E-05	3.7E-06
DET CON TERM	Wayne	MI	7.2E-04	1.2E-04	3.0E-04	1.0E-05	6.4E-05	1.7E-03	1.5E-05	9.2E-07
MINNEAPOLIS IMS	Hennepin	MN	2.1E-03	3.4E-04	8.7E-04	3.0E-05	1.9E-04	5.0E-03	4.3E-05	2.7E-06
SCHILLER EAST IMS	Cook	IL	1.0E-03	1.6E-04	4.2E-04	1.5E-05	9.1E-05	2.4E-03	2.1E-05	1.3E-06
INTL FREIGHT GATEWY	Jackson	MO	4.7E-04	7.6E-05	2.0E-04	6.8E-06	4.2E-05	1.1E-03	9.8E-06	6.1E-07
WYLIE	Collin	TX	3.9E-03	6.3E-04	1.6E-03	5.6E-05	3.5E-04	9.3E-03	8.1E-05	5.0E-06

			Proposed Acquisition Emissions (tons/year)							
Facility	**County**	**State**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
BENSENVILLE IMS	Cook	IL	5.1E-03	8.3E-04	2.1E-03	7.3E-05	4.6E-04	1.2E-02	1.1E-04	6.6E-06
DET CON TERM	Wayne	MI	1.1E-03	1.8E-04	4.7E-04	1.6E-05	1.0E-04	2.7E-03	2.4E-05	1.5E-06
MINNEAPOLIS IMS	Hennepin	MN	2.5E-03	4.0E-04	1.0E-03	3.6E-05	2.2E-04	6.0E-03	5.2E-05	3.2E-06
SCHILLER EAST IMS	Cook	IL	1.9E-03	3.1E-04	7.9E-04	2.7E-05	1.7E-04	4.6E-03	4.0E-05	2.5E-06
INTL FREIGHT GATEWY	Jackson	MO	9.4E-04	1.5E-04	3.9E-04	1.3E-05	8.4E-05	2.2E-03	1.9E-05	1.2E-06
WYLIE	Collin	TX	5.3E-03	8.5E-04	2.2E-03	7.6E-05	4.7E-04	1.3E-02	1.1E-04	6.8E-06

			Acquisition-Related Emissions (tons/year)							
Facility	**County**	**State**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
BENSENVILLE IMS	Cook	IL	2.3E-03	3.6E-04	9.4E-04	3.2E-05	2.0E-04	5.4E-03	4.7E-05	2.9E-06
DET CON TERM	Wayne	MI	4.2E-04	6.8E-05	1.8E-04	6.1E-06	3.8E-05	1.0E-03	8.7E-06	5.4E-07
MINNEAPOLIS IMS	Hennepin	MN	4.0E-04	6.4E-05	1.6E-04	5.7E-06	3.5E-05	9.5E-04	8.2E-06	5.1E-07
SCHILLER EAST IMS	Cook	IL	8.9E-04	1.4E-04	3.7E-04	1.3E-05	7.9E-05	2.1E-03	1.8E-05	1.1E-06
INTL FREIGHT GATEWY	Jackson	MO	4.6E-04	7.5E-05	1.9E-04	6.6E-06	4.1E-05	1.1E-03	9.6E-06	6.0E-07
WYLIE	Collin	TX	1.4E-03	2.3E-04	5.8E-04	2.0E-05	1.3E-04	3.4E-03	2.9E-05	1.8E-06

Other Notes:

O/D+Switch Lifts provided by the Applicants

Truck Moves per lift assumed to be 1.2, using conservative value in the range provided by the source
Lindhjem, Christian. “Intermodal Yard Activity and Emissions Evaluations”.
17th Annual International Emission Inventory Conference, June 2-5, 2008.

Truck Moves per hour assumed to be 4.5, estimated pased on yard work and rail work completed in an 8 hour shift in source
"Zero/Near-Zero Emissions Yard Tractor Testing and Demonstration Guidelines"
The Port of Long Beach and The Port of Los Angeles. September 2017.

Annual Operating Days at each intermodal facility estimated based on the current operating schedules

Table K.9-9. Intermodal Facility Analysis- On-road Truck Emission

Factors **Truck Idling Emission Factors by County (g/hr)**

County	Vehicle	Nox	VOC	PM10	PM25	SO2	CO	CO2	CH4	N2O	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
Cook	Combo Long Haul	61.70	3.16	1.36	1.25	0.03	19.52	7,500.6	0.36	0.08	1.2E-01	1.8E-02	1.6E-02	5.3E-03	2.0E-02	2.0E-01	9.4E-03	2.8E-04
Jackson	Combo Long Haul	61.70	3.16	1.36	1.25	0.03	19.52	7,500.6	0.36	0.08	1.2E-01	1.8E-02	1.6E-02	5.3E-03	2.0E-02	2.0E-01	9.4E-03	2.8E-04
Hennepin	Combo Long Haul	61.70	3.16	1.36	1.25	0.03	19.52	7,500.6	0.36	0.08	1.2E-01	1.8E-02	1.6E-02	5.3E-03	2.0E-02	2.0E-01	9.4E-03	2.8E-04
Wayne	Combo Long Haul	61.70	3.16	1.36	1.25	0.03	19.52	7,500.6	0.36	0.08	1.2E-01	1.8E-02	1.6E-02	5.3E-03	2.0E-02	2.0E-01	9.4E-03	2.8E-04
Collin	Combo Long Haul	61.56	3.16	1.36	1.25	0.03	19.52	7,500.6	0.36	0.08	1.2E-01	1.8E-02	1.6E-02	5.3E-03	2.0E-02	2.0E-01	9.4E-03	2.8E-04

Source: Calculated using MOVES3

Emission Factor Notes:

Project Scale Runs using model default information for each county
Runs Conducted by County
Runs assume January conditions between 8-9am, resulting in conservative factors
Runs assume urban unrestricted roadway
Runs conducted for 0 mph idle conditions

Table K.9-10. Intermodal Facility Analysis- Nonroad Equipment Emission Factors

Nonroad Equipment Emission Factors by County (g/hr)

County	Vehicle	Nox	VOC	PM10	PM25	SO2	CO	CO2	CH4	N2O	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
Cook	Forklifts	57.55	1.09	0.68	0.66	0.08	4.57	31,792.4	0.15	0.03	1.1E-01	1.8E-02	5.1E-02	1.8E-03	5.6E-03	2.9E-01	2.7E-03	1.5E-04
Cook	Terminal Tractors	27.57	1.06	0.85	0.83	0.14	3.70	52,587.3	0.08	0.01	8.5E-02	1.4E-02	3.5E-02	1.2E-03	7.6E-03	2.0E-01	1.8E-03	1.1E-04
Jackson	Forklifts	57.54	1.09	0.68	0.66	0.08	4.57	31,792.9	0.15	0.03	1.1E-01	1.8E-02	5.1E-02	1.8E-03	5.6E-03	2.9E-01	2.7E-03	1.5E-04
Jackson	Terminal Tractors	27.55	1.06	0.85	0.82	0.14	3.68	52,604.9	0.08	0.01	8.5E-02	1.4E-02	3.5E-02	1.2E-03	7.5E-03	2.0E-01	1.7E-03	1.1E-04
Hennepin	Forklifts	57.55	1.09	0.68	0.66	0.08	4.57	31,786.2	0.15	0.03	1.1E-01	1.8E-02	5.1E-02	1.8E-03	5.6E-03	2.9E-01	2.7E-03	1.5E-04
Hennepin	Terminal Tractors	27.55	1.06	0.85	0.82	0.14	3.69	52,602.4	0.08	0.01	8.5E-02	1.4E-02	3.5E-02	1.2E-03	7.6E-03	2.0E-01	1.7E-03	1.1E-04
Wayne	Forklifts	57.55	1.09	0.68	0.66	0.08	4.57	31,790.0	0.15	0.03	1.1E-01	1.8E-02	5.1E-02	1.8E-03	5.6E-03	2.9E-01	2.7E-03	1.5E-04
Wayne	Terminal Tractors	27.58	1.06	0.85	0.82	0.14	3.69	52,586.1	0.08	0.01	8.5E-02	1.4E-02	3.5E-02	1.2E-03	7.5E-03	2.0E-01	1.8E-03	1.1E-04
Collin	Aerial Lifts	32.88	4.07	2.56	2.48	0.02	19.68	7,124.3	0.22	0.04	3.7E-01	8.9E-02	1.5E-01	7.5E-03	2.4E-02	1.0E+00	7.9E-03	6.0E-04
Collin	Terminal Tractors	27.50	1.05	0.84	0.82	0.14	3.65	52,589.6	0.08	0.01	8.4E-02	1.4E-02	3.5E-02	1.2E-03	7.5E-03	2.0E-01	1.7E-03	1.1E-04

Source: Calculated using Nonroad Emissions Model in MOVES3

Emission Factor Notes:

Uses model defaults for each county

Assumes January operations for conservative factors

Load Factors sourced from "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling" EPA, 2010, EPA-420-R-10-016

Default Equipment Populations used to estimate hourly factors

N_2O not provided in Nonroad, Estimated using ratio between CH_4/N_2O emission factors based on EPA's "Emission Factors for GHG Inventories" for diesel fuel

K.10 Grade Crossing Analysis

OEA conducted an analysis of the emissions changes from vehicles idling at grade crossings on rail line segments that would meet or exceed the Board's thresholds for environmental analysis. OEA estimated average vehicle delay and vehicles delayed per day in the Grade Crossing analysis in **Appendix H** for grade crossings that met the analysis thresholds. OEA combined and annualized these values to determine the total annual hours of delay at each grade crossing. OEA derived emission factors for a representative vehicle type mix using EPA's Motor Vehicle Emissions Simulator (MOVES3) model (EPA 2022). OEA ran the MOVES3 model to establish a set of representative emission factors for the counties where grade crossing delays occur using model default inputs. The emission factors represent idling vehicles on a rural unrestricted road in a grams per hour format. OEA combined the resulting emission factors and delay data to create an emissions inventory for grade crossings. OEA grouped grade crossings by county to create a county-level emissions inventory. OEA calculated the difference between the Proposed Acquisition and No-Action inventories to determine the Proposed Acquisition-related emissions.

Table K.10-1 and **Table K.10-2** summarize the grade crossing analysis. **Table K.10-3** through **Table K.10-8** show the estimated emissions by crossing. **Table K.10-9** shows the on-road emissions factors.

Table K.10-1. Grade Crossing Analysis- Criteria Pollutant Summary

					Acquisition-Related Emissions (tons/year)							*De Minimis* Emissions (tons/year)						
State	**County**	**Attainment**	**NA Pollutant/FIPS**	**FRA Crossing ID**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**
Arkansas	Benton	Attainment		330354E	0.00	0.00	0.00	0.00	0.00	0.00	0.7							
				330362W	0.00	0.00	0.00	0.00	0.00	0.00	0.4							
				330363D	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				330375X	0.00	0.00	0.00	0.00	0.00	0.00	0.4							
				330372C	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				330376E	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				330405M	0.00	0.00	0.00	0.00	0.00	0.00	0.5							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**2.81**	-	-	-	-	-	-	-
Arkansas	Little River	Attainment		330575G	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				330578C	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.46**	-	-	-	-	-	-	-
Arkansas	Polk	Attainment		330454J	0.00	0.00	0.00	0.00	0.00	0.00	0.7							
				330457E	0.00	0.00	0.00	0.00	0.00	0.00	0.4							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**1.12**	-	-	-	-	-	-	-
Arkansas	Sevier	Attainment		330524W	0.00	0.00	0.00	0.00	0.00	0.00	0.4							
				330546W	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.56**	-	-	-	-	-	-	-
Illinois	Carroll	Attainment		372409F	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				372414C	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.14**	-	-	-	-	-	-	-
Illinois	Cook	Nonattainment	Ozone-Serious	372202Y	0.00	0.00	0.00	0.00	0.00	0.00	0.63							
				372206B	0.00	0.00	0.00	0.00	0.00	0.00	0.37							
				372210R	0.00	0.00	0.00	0.00	0.00	0.00	0.84							
				372214T	0.00	0.00	0.00	0.00	0.00	0.00	0.17							
				372137V	0.00	0.00	0.00	0.00	0.00	0.00	-0.05							
				372138C	0.00	0.00	0.00	0.00	0.00	0.00	-0.22							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**1.73**	***50***	***50***	-	-	-	-	-
Illinois	DeKalb	Attainment		372289S	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				372279L	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				372299X	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.14**	-	-	-	-	-	-	-
Illinois	Du Page	Nonattainment	Ozone-Serious	371997M	0.00	0.00	0.00	0.00	0.00	0.00	0.12							
				372170V	0.00	0.00	0.00	0.00	0.00	0.00	0.63							
				372174X	0.00	0.00	0.00	0.00	0.00	0.00	0.25							
				372177T	0.00	0.00	0.00	0.00	0.00	0.01	1.50							
				372178A	0.00	0.00	0.00	0.00	0.00	0.00	0.26							
				372179G	0.00	0.00	0.00	0.00	0.00	0.00	0.30							
				372184D	0.00	0.00	0.00	0.00	0.00	0.00	0.97							
				372191N	0.00	0.00	0.00	0.00	0.00	0.00	0.22							
				372196X	0.00	0.00	0.00	0.00	0.00	0.00	0.40							
				Total	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**4.66**	***50***	***50***	-	-	-	-	-
Illinois	Kane	Nonattainment	Ozone-Serious	372217N	0.00	0.00	0.00	0.00	0.00	0.00	0.8							
				372235L	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				372239N	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				372240H	0.00	0.00	0.00	0.00	0.00	0.00	0.6							
				372241P	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				372242W	0.00	0.00	0.00	0.00	0.00	0.00	0.8							
				372246Y	0.00	0.00	0.00	0.00	0.00	0.00	0.8							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**3.74**	***50***	***50***	-	-	-	-	-
Illinois	Ogle	Attainment		372339T	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				372350T	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				372355C	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				372346D	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				372388P	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.31**	-	-	-	-	-	-	-
Iowa	Clinton	Attainment		376027Y	0.00	0.00	0.00	0.00	0.00	0.01	2.0							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**2.03**	-	-	-	-	-	-	-
Iowa	Louisa	Attainment		607245W	0.00	0.00	0.00	0.00	0.00	0.00	0.15							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.15**							
Iowa	Muscatine	Nonattainment	SO2	393258B	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				607215E	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				607211C	0.00	0.00	0.00	0.00	0.00	0.00	0.4							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.71**	-	-	-	-	***100***	-	-
Iowa	Scott	Attainment		865653R	0.01	0.00	0.00	0.00	0.00	0.02	5.3							
				865646F	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				865649B	0.00	0.00	0.00	0.00	0.00	0.01	1.5							
				Total	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.03**	**7.09**	-	-	-	-	-	-	-
Iowa	Wapello	Attainment		375779U	0.00	0.00	0.00	0.00	0.00	0.01	1.2							
				375781V	0.00	0.00	0.00	0.00	0.00	0.01	1.8							
				375784R	0.00	0.00	0.00	0.00	0.00	0.00	0.8							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**3.91**	-	-	-	-	-	-	-
Iowa	Washington	Attainment		607323B	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				607322U	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.46**	-	-	-	-	-	-	-

Table K.10-1. Grade Crossing Analysis- Criteria Pollutant Summary

					Acquisition-Related Emissions (tons/year)							*De Minimis* Emissions (tons/year)						
State	**County**	**Attainment**	**NA Pollutant/FIPS**	**FRA Crossing ID**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**
Kansas	Crawford	Attainment		330256N	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				330257V	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				330258C	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.69**	-	-	-	-	-	-	-
Louisiana	Beauregard	Attainment	Ozone '79 Revoked	329317F	0.00	0.00	0.00	0.00	0.00	0.01	2.2							
				329319U	0.00	0.00	0.00	0.00	0.00	0.01	2.2							
				329322C	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				329320N	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				329337S	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				Total	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**4.98**	-	-	-	-	-	-	-
Louisiana	Caddo	Attainment		328998G	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				329006E	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				329154Y	0.00	0.00	0.00	0.00	0.00	0.02	3.6							
				329128J	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				329157U	0.00	0.00	0.00	0.00	0.00	0.00	0.5							
				Total	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**4.81**	-	-	-	-	-	-	-
Louisiana	Calcasieu	Attainment	Ozone '79 Revoked	329346R	0.00	0.00	0.00	0.00	0.00	0.00	0.8							
				329344C	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				329356W	0.00	0.00	0.00	0.00	0.00	0.01	1.2							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**2.17**	-	-	-	-	-	-	-
Louisiana	De Soto	Attainment		329162R	0.00	0.00	0.00	0.00	0.00	0.00	0.7							
				329182C	0.00	0.00	0.00	0.00	0.00	0.00	1.0							
				329183J	0.00	0.00	0.00	0.00	0.00	0.00	0.7							
				329164E	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				329187L	0.00	0.00	0.00	0.00	0.00	0.00	0.5							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**3.17**	-	-	-	-	-	-	-
Louisiana	Sabine	Attainment		329226A	0.00	0.00	0.00	0.00	0.00	0.00	0.5							
				329227G	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				329234S	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.84**	-	-	-	-	-	-	-
Louisiana	Vernon	Attainment		329259M	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				329279Y	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				329284V	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				329298D	0.00	0.00	0.00	0.00	0.00	0.00	0.4							
				329253W	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				329308G	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				329641V	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**1.72**	-	-	-	-	-	-	-
Missouri	Cass	Attainment		329839D	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.16**	-	-	-	-	-	-	-
Missouri	Clay	Attainment	Ozone '79 Revoked	375439H	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				375407C	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				375440C	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.51**	-	-	-	-	-	-	-
Missouri	Jackson	Nonattainment	SO2	329764G	0.00	0.00	0.00	0.00	0.00	0.00	0.4							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.35**	-	-	-	-	***100***	-	-
Missouri	Jackson	Attainment		329807X	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.34**	-	-	-	-	-	-	-
Missouri	Jasper	Attainment		330035L	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				330045S	0.00	0.00	0.00	0.00	0.00	0.00	0.7							
				330053J	0.00	0.00	0.00	0.00	0.00	0.00	0.4							
				330055X	0.00	0.00	0.00	0.00	0.00	0.00	1.0							
				330061B	0.00	0.00	0.00	0.00	0.00	0.01	1.7							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**4.04**	-	-	-	-	-	-	-
Missouri	McDonald	Attainment		330178J	0.00	0.00	0.00	0.00	0.00	0.00	0.6							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.63**	-	-	-	-	-	-	-
Missouri	Newton	Attainment		330102D	0.00	0.00	0.00	0.00	0.00	0.01	1.3							
				330101W	0.00	0.00	0.00	0.00	0.00	0.00	0.6							
				330120B	0.00	0.00	0.00	0.00	0.00	0.00	0.6							
				330113R	0.00	0.00	0.00	0.00	0.00	0.00	1.1							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**3.55**	-	-	-	-	-	-	-
Oklahoma	Adair	Attainment		330612G	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				330625H	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.47**	-	-	-	-	-	-	-
Oklahoma	Le Flore	Attainment		330736A	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				330784P	0.00	0.00	0.00	0.00	0.00	0.01	3.0							
				330785W	0.00	0.00	0.00	0.00	0.00	0.01	2.8							
				Total	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.03**	**5.93**	-	-	-	-	-	-	-
Texas	Bowie	Attainment		330867D	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				330869S	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				330872A	0.00	0.00	0.00	0.00	0.00	0.00	0.5							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.82**	-	-	-	-	-	-	-
Texas	Collin	Nonattainment	Ozone-Severe	021635L	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				021749Y	0.00	0.00	0.00	0.00	0.00	0.00	0.0							

Table K.10-1. Grade Crossing Analysis- Criteria Pollutant Summary

					Acquisition-Related Emissions (tons/year)							*De Minimis* Emissions (tons/year)						
State	**County**	**Attainment**	**NA Pollutant/FIPS**	**FRA Crossing ID**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**
				021770E	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				331279Y	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				753583T	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				753757M	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				789628A	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				789629G	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				789632P	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				789635K	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				789636S	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				789638F	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				789640G	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				789644J	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				789645R	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				789648L	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				789652B	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				789653H	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				790146W	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				919239F	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				789633W	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				021638G	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				789631H	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				789654P	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				919268R	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	***25***	***25***	-	-	-	-	-
Texas	Denton	Nonattainment	Ozone-Severe	020557D	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				020563G	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				020572F	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				021646Y	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				021669F	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				021672N	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				021676R	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				021691T	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				021696C	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				021700P	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				021726S	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				021765H	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				021767W	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				021774G	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				331277K	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				919241G	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.04**	***25***	***25***	-	-	-	-	-
Texas	Duval	Attainment		793688R	0.00	0.00	0.00	0.00	0.00	0.00	0.5							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.46**	-	-	-	-	-	-	-
Texas	Fort Bend	Nonattainment	Ozone-Severe	412514U	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				440652H	0.00	0.00	0.00	0.00	0.00	0.00	0.7							
				743475U	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				743689L	0.00	0.00	0.00	0.00	0.00	0.00	0.5							
				743695P	0.00	0.00	0.00	0.00	0.00	0.00	0.6							
				743698K	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				743699S	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				743703E	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				743713K	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				743716F	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				743719B	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				743724X	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				743726L	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				743727T	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				743731H	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				745044J	0.00	0.00	0.00	0.00	0.00	0.00	0.5							
				745055W	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				922512N	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				922513V	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				924006U	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				924007B	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				743483L	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				924008H	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				924009P	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				Total	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**5.09**	***25***	***25***	-	-	-	-	-
Texas	Harris	Nonattainment	Ozone-Severe	755618Y	0.00	0.00	0.00	0.00	0.00	0.00	0.8							
				755621G	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				755622N	0.00	0.00	0.00	0.00	0.00	0.00	0.4							
				758178V	0.00	0.00	0.00	0.00	0.00	0.00	0.5							
				758180W	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				758187U	0.00	0.00	0.00	0.00	0.00	0.02	4.0							

Table K.10-1. Grade Crossing Analysis- Criteria Pollutant Summary

					Acquisition-Related Emissions (tons/year)							*De Minimis* Emissions (tons/year)						
State	County	Attainment	NA Pollutant/FIPS	FRA Crossing ID	NOX	VOC	PM10	PM2.5	SO2	CO	CO2e	NOX	VOC	PM10	PM2.5	SO2	CO	CO2e
				758293C	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				758512N	0.00	0.00	0.00	0.00	0.00	0.00	0.4							
				758513V	0.00	0.00	0.00	0.00	0.00	0.00	0.8							
				758514C	0.00	0.00	0.00	0.00	0.00	0.00	0.8							
				758517X	0.00	0.00	0.00	0.00	0.00	0.00	0.6							
				758518E	0.00	0.00	0.00	0.00	0.00	0.00	1.0							
				758531T	0.00	0.00	0.00	0.00	0.00	0.00	0.9							
				758532A	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				758533G	0.00	0.00	0.00	0.00	0.00	0.00	0.6							
				758534N	0.00	0.00	0.00	0.00	0.00	0.01	1.4							
				758540S	0.00	0.00	0.00	0.00	0.00	0.01	1.8							
				758610E	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				758611L	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				762869K	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				762872T	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				762889W	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				762892E	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				762901B	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				762904W	0.00	0.00	0.00	0.00	0.00	0.00	0.5							
				762907S	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				755624C	0.00	0.00	0.00	0.00	0.00	0.00	0.4							
				758519L	0.00	0.00	0.00	0.00	0.00	0.00	0.6							
				758521M	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				758523B	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				762865H	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				758525P	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				Total	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.08**	**18.09**	***25***	***25***	-	-	-	-	-
Texas	Jackson	Attainment		746621H	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				746639T	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				746645W	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				746643H	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.33**	-	-	-	-	-	-	-
Texas	Jefferson	Attainment	Ozone '97 '79 Revoked	329531K	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				329540J	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				329542X	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				329544L	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				329545T	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				329546A	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				762721D	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				762739N	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				446594K	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				762743D	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**1.22**	***100***	***100***	-	-	-	-	-
Texas	Jim Hogg	Attainment		793696H	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.18**	-	-	-	-	-	-	-
Texas	Jim Wells	Attainment		793649A	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				793651B	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				793810F	0.00	0.00	0.00	0.00	0.00	0.00	0.7							
				793814H	0.00	0.00	0.00	0.00	0.00	0.01	3.1							
				793818K	0.00	0.00	0.00	0.00	0.00	0.00	0.5							
				793819S	0.00	0.00	0.00	0.00	0.00	0.01	2.3							
				793821T	0.00	0.00	0.00	0.00	0.00	0.00	0.6							
				793959U	0.00	0.00	0.00	0.00	0.00	0.00	0.7							
				Total	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.04**	**8.26**	-	-	-	-	-	-	-
Texas	Liberty	Nonattainment	Ozone-Severe	762770A	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				762785P	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				762786W	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				762765D	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				763062E	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				762761B	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				762789S	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**1.14**	***25***	***25***	-	-	-	-	-
Texas	Nueces	Attainment		427586S	0.00	0.00	0.00	0.00	0.00	0.00	0.4							
				427597E	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				793743N	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				793749E	0.00	0.00	0.00	0.00	0.00	0.00	0.6							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**1.23**	-	-	-	-	-	-	-
Texas	Orange	Attainment	Ozone '97 '79 Revoked	329467N	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				329471D	0.00	0.00	0.00	0.00	0.00	0.00	0.6							
				329460R	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				329472K	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				927011B	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.95**	***100***	***100***	-	-	-	-	-
Texas	Refugio	Attainment		427570V	0.00	0.00	0.00	0.00	0.00	0.00	0.1							

Table K.10-1. Grade Crossing Analysis- Criteria Pollutant Summary

					Acquisition-Related Emissions (tons/year)							*De Minimis* Emissions (tons/year)						
State	**County**	**Attainment**	**NA Pollutant/FIPS**	**FRA Crossing ID**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.10**	-	-	-	-	-	-	-
Texas	San Patricio	Attainment		436011U	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				436012B	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				436014P	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				436017K	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				436030Y	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.26**	-	-	-	-	-	-	-
Texas	Tarrant	Nonattainment	Ozone-Severe	020545J	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	***25***	***25***	-	-	-	-	-
Texas	Victoria	Attainment	Ozone '79 Revoked	435913V	0.00	0.00	0.00	0.00	0.00	###	-4.2							
				435914C	0.00	0.00	0.00	0.00	0.00	0.00	0.0							
				746510R	0.00	0.00	0.00	0.00	0.00	0.00	0.4							
				746550N	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				746551V	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				746556E	0.00	0.00	0.00	0.00	0.00	0.00	0.6							
				746558T	0.00	0.00	0.00	0.00	0.00	0.01	1.3							
				746562H	0.00	0.00	0.00	0.00	0.00	0.00	0.4							
				746650T	0.00	0.00	0.00	0.00	0.00	0.01	1.9							
				746652G	0.00	0.00	0.00	0.00	0.00	0.00	0.8							
				746653N	0.01	0.00	0.00	0.00	0.00	0.05	11.0							
				912105H	0.00	0.00	0.00	0.00	0.00	0.00	0.3							
				Total	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**13.09**	-	-	-	-	-	-	-
Texas	Webb	Attainment		793596D	0.00	0.00	0.00	0.00	0.00	0.00	0.5							
				793598S	0.00	0.00	0.00	0.00	0.00	0.02	4.3							
				Total	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**4.79**	-	-	-	-	-	-	-
Texas	Wharton	Attainment		743352H	0.00	0.00	0.00	0.00	0.00	0.00	0.1							
				743359F	0.00	0.00	0.00	0.00	0.00	0.00	0.2							
				743432B	0.00	0.00	0.00	0.00	0.00	0.00	0.6							
				743435W	0.00	0.00	0.00	0.00	0.00	0.01	1.2							
				743438S	0.00	0.00	0.00	0.00	0.00	0.00	0.4							
				743440T	0.00	0.00	0.00	0.00	0.00	0.00	0.4							
				Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**2.78**	-	-	-	-	-	-	-

Table K.10-2. Grade Crossing Analysis- HAPs Summary

			Acquisition-Related HAP Emissions (tons/year)							
State	County	FRA Crossing ID	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
Arkansas	Benton	330354E	5.24E-09	1.88E-06	1.79E-07	2.13E-06	8.29E-08	2.72E-06	2.73E-06	1.07E-05
		330362W	3.14E-09	1.14E-06	1.09E-07	1.29E-06	5.04E-08	1.66E-06	1.66E-06	6.50E-06
		330363D	2.28E-09	8.29E-07	7.90E-08	9.38E-07	3.66E-08	1.20E-06	1.20E-06	4.72E-06
		330375X	3.06E-09	1.11E-06	1.06E-07	1.26E-06	4.91E-08	1.61E-06	1.62E-06	6.33E-06
		330372C	1.67E-09	6.07E-07	5.78E-08	6.87E-07	2.68E-08	8.79E-07	8.82E-07	3.45E-06
		330376E	1.72E-09	6.26E-07	5.97E-08	7.09E-07	2.76E-08	9.07E-07	9.10E-07	3.56E-06
		330405M	3.90E-09	1.42E-06	1.35E-07	1.61E-06	6.26E-08	2.06E-06	2.06E-06	8.08E-06
		Total	**2.10E-08**	**7.62E-06**	**7.26E-07**	**8.62E-06**	**3.36E-07**	**1.10E-05**	**1.11E-05**	**4.33E-05**
Arkansas	Little River	330575G	1.87E-09	6.42E-07	6.11E-08	7.26E-07	2.83E-08	9.29E-07	9.32E-07	3.65E-06
		330578C	1.57E-09	6.16E-07	5.87E-08	6.97E-07	2.72E-08	8.93E-07	8.95E-07	3.51E-06
		Total	**3.44E-09**	**1.26E-06**	**1.20E-07**	**1.42E-06**	**5.55E-08**	**1.82E-06**	**1.83E-06**	**7.16E-06**
Arkansas	Polk	330454J	5.15E-09	1.97E-06	1.88E-07	2.23E-06	8.69E-08	2.85E-06	2.86E-06	1.12E-05
		330457E	2.77E-09	1.06E-06	1.01E-07	1.20E-06	4.66E-08	1.53E-06	1.54E-06	6.01E-06
		Total	**7.92E-09**	**3.03E-06**	**2.88E-07**	**3.43E-06**	**1.34E-07**	**4.38E-06**	**4.40E-06**	**1.72E-05**
Arkansas	Sevier	330524W	3.05E-09	1.17E-06	1.11E-07	1.32E-06	5.14E-08	1.69E-06	1.69E-06	6.63E-06
		330546W	1.04E-09	3.60E-07	3.43E-08	4.07E-07	1.59E-08	5.21E-07	5.23E-07	2.05E-06
		Total	**4.09E-09**	**1.53E-06**	**1.45E-07**	**1.73E-06**	**6.73E-08**	**2.21E-06**	**2.22E-06**	**8.68E-06**
Illinois	Carroll	372409F	4.82E-10	1.84E-07	1.75E-08	2.08E-07	8.11E-09	2.66E-07	2.67E-07	1.05E-06
		372414C	5.18E-10	1.97E-07	1.88E-08	2.23E-07	8.71E-09	2.86E-07	2.87E-07	1.12E-06
		Total	**1.00E-09**	**3.81E-07**	**3.63E-08**	**4.31E-07**	**1.68E-08**	**5.52E-07**	**5.54E-07**	**2.17E-06**
Illinois	Cook	372202Y	5.28E-09	1.71E-06	1.63E-07	1.94E-06	7.56E-08	2.48E-06	2.49E-06	9.75E-06
		372206B	3.08E-09	9.98E-07	9.50E-08	1.13E-06	4.40E-08	1.44E-06	1.45E-06	5.67E-06
		372210R	6.99E-09	2.27E-06	2.16E-07	2.56E-06	1.00E-07	3.28E-06	3.29E-06	1.29E-05
		372214T	1.40E-09	4.53E-07	4.31E-08	5.12E-07	2.00E-08	6.56E-07	6.58E-07	2.58E-06
		372137V	4.04E-09	-1.42E-07	-1.35E-08	-1.60E-07	-6.25E-09	-2.05E-07	-2.06E-07	-8.06E-07
		372138C	1.73E-08	-6.07E-07	-5.78E-08	-6.87E-07	-2.68E-08	-8.79E-07	-8.82E-07	-3.45E-06
		Total	**3.81E-08**	**4.68E-06**	**4.46E-07**	**5.30E-06**	**2.07E-07**	**6.78E-06**	**6.80E-06**	**2.66E-05**
Illinois	DeKalb	372289S	2.45E-10	1.35E-07	1.28E-08	1.52E-07	5.94E-09	1.95E-07	1.96E-07	7.66E-07
		372279L	1.72E-10	9.48E-08	9.03E-09	1.07E-07	4.18E-09	1.37E-07	1.38E-07	5.39E-07
		372299X	2.71E-10	1.49E-07	1.42E-08	1.68E-07	6.56E-09	2.15E-07	2.16E-07	8.46E-07
		Total	**6.88E-10**	**3.78E-07**	**3.60E-08**	**4.28E-07**	**1.67E-08**	**5.48E-07**	**5.49E-07**	**2.15E-06**
Illinois	Du Page	371997M	1.04E-09	3.36E-07	3.20E-08	3.81E-07	1.48E-08	4.87E-07	4.89E-07	1.91E-06
		372170V	5.26E-09	1.71E-06	1.63E-07	1.93E-06	7.53E-08	2.47E-06	2.48E-06	9.71E-06
		372174X	2.12E-09	6.86E-07	6.54E-08	7.76E-07	3.03E-08	9.94E-07	9.97E-07	3.90E-06
		372177T	1.25E-08	4.06E-06	3.86E-07	4.59E-06	1.79E-07	5.87E-06	5.89E-06	2.31E-05
		372178A	2.18E-09	7.07E-07	6.73E-08	8.00E-07	3.12E-08	1.02E-06	1.03E-06	4.02E-06
		372179G	2.54E-09	8.25E-07	7.85E-08	9.33E-07	3.64E-08	1.19E-06	1.20E-06	4.69E-06
		372184D	8.14E-09	2.64E-06	2.51E-07	2.99E-06	1.16E-07	3.82E-06	3.83E-06	1.50E-05
		372191N	1.81E-09	5.86E-07	5.58E-08	6.63E-07	2.58E-08	8.49E-07	8.51E-07	3.33E-06
		372196X	3.35E-09	1.09E-06	1.03E-07	1.23E-06	4.79E-08	1.57E-06	1.58E-06	6.17E-06
		Total	**3.89E-08**	**1.26E-05**	**1.20E-06**	**1.43E-05**	**5.57E-07**	**1.83E-05**	**1.83E-05**	**7.18E-05**
Illinois	Kane	372217N	6.64E-09	2.15E-06	2.05E-07	2.43E-06	9.49E-08	3.12E-06	3.13E-06	1.22E-05
		372235L	1.10E-09	3.69E-07	3.51E-08	4.17E-07	1.63E-08	5.34E-07	5.36E-07	2.10E-06
		372239N	2.69E-09	8.99E-07	8.57E-08	1.02E-06	3.97E-08	1.30E-06	1.31E-06	5.12E-06
		372240H	5.41E-09	1.75E-06	1.67E-07	1.99E-06	7.74E-08	2.54E-06	2.55E-06	9.98E-06
		372241P	1.88E-09	6.10E-07	5.81E-08	6.90E-07	2.69E-08	8.83E-07	8.86E-07	3.47E-06
		372242W	6.88E-09	2.23E-06	2.12E-07	2.52E-06	9.84E-08	3.23E-06	3.24E-06	1.27E-05
		372246Y	6.53E-09	2.12E-06	2.02E-07	2.39E-06	9.34E-08	3.07E-06	3.07E-06	1.20E-05
		Total	**3.11E-08**	**1.01E-05**	**9.65E-07**	**1.15E-05**	**4.47E-07**	**1.47E-05**	**1.47E-05**	**5.76E-05**
Illinois	Ogle	372339T	3.97E-10	1.51E-07	1.44E-08	1.71E-07	6.67E-09	2.19E-07	2.20E-07	8.60E-07
		372350T	3.63E-10	1.38E-07	1.32E-08	1.56E-07	6.09E-09	2.00E-07	2.01E-07	7.85E-07
		372355C	7.07E-10	2.69E-07	2.56E-08	3.05E-07	1.19E-08	3.90E-07	3.91E-07	1.53E-06
		372346D	2.86E-10	1.09E-07	1.04E-08	1.23E-07	4.80E-09	1.58E-07	1.58E-07	6.20E-07
		372388P	4.32E-10	1.65E-07	1.57E-08	1.86E-07	7.27E-09	2.39E-07	2.39E-07	9.37E-07
		Total	**2.18E-09**	**8.32E-07**	**7.93E-08**	**9.42E-07**	**3.67E-08**	**1.21E-06**	**1.21E-06**	**4.73E-06**
Iowa	Clinton	376027Y	1.19E-08	5.50E-06	5.23E-07	6.22E-06	2.42E-07	7.96E-06	7.98E-06	3.13E-05
		Total	**1.19E-08**	**5.50E-06**	**5.23E-07**	**6.22E-06**	**2.42E-07**	**7.96E-06**	**7.98E-06**	**3.13E-05**
Iowa	Louisa	607245W	6.92E-10	3.98E-07	3.79E-08	4.51E-07	1.76E-08	5.77E-07	5.79E-07	2.27E-06
		Total	**6.92E-10**	**3.98E-07**	**3.79E-08**	**4.51E-07**	**1.76E-08**	**5.77E-07**	**5.79E-07**	**2.27E-06**
Iowa	Muscatine	393258B	9.61E-10	5.53E-07	5.27E-08	6.26E-07	2.44E-08	8.01E-07	8.03E-07	3.15E-06
		607215E	5.97E-10	3.44E-07	3.27E-08	3.89E-07	1.52E-08	4.98E-07	4.99E-07	1.95E-06
		607211C	1.81E-09	1.04E-06	9.89E-08	1.18E-06	4.58E-08	1.50E-06	1.51E-06	5.91E-06
		Total	**3.36E-09**	**1.94E-06**	**1.84E-07**	**2.19E-06**	**8.54E-08**	**2.80E-06**	**2.81E-06**	**1.10E-05**
Iowa	Scott	865653R	2.78E-08	1.44E-05	1.37E-06	1.63E-05	6.35E-07	2.08E-05	2.09E-05	8.19E-05
		865646F	1.44E-09	7.52E-07	7.16E-08	8.50E-07	3.31E-08	1.09E-06	1.09E-06	4.27E-06
		865649B	7.81E-09	4.05E-06	3.85E-07	4.58E-06	1.78E-07	5.86E-06	5.88E-06	2.30E-05
		Total	**3.71E-08**	**1.92E-05**	**1.83E-06**	**2.17E-05**	**8.47E-07**	**2.78E-05**	**2.79E-05**	**1.09E-04**
Iowa	Wapello	375779U	5.95E-09	3.38E-06	3.22E-07	3.83E-06	1.49E-07	4.90E-06	4.91E-06	1.92E-05
		375781V	8.70E-09	4.94E-06	4.71E-07	5.59E-06	2.18E-07	7.16E-06	7.18E-06	2.81E-05
		375784R	3.98E-09	2.26E-06	2.16E-07	2.56E-06	9.98E-08	3.28E-06	3.29E-06	1.29E-05
		Total	**1.86E-08**	**1.06E-05**	**1.01E-06**	**1.20E-05**	**4.67E-07**	**1.53E-05**	**1.54E-05**	**6.02E-05**
Iowa	Washington	607323B	1.58E-09	9.08E-07	8.65E-08	1.03E-06	4.01E-08	1.32E-06	1.32E-06	5.17E-06
		607322U	5.65E-10	3.25E-07	3.09E-08	3.68E-07	1.43E-08	4.71E-07	4.72E-07	1.85E-06
		Total	**2.14E-09**	**1.23E-06**	**1.17E-07**	**1.40E-06**	**5.44E-08**	**1.79E-06**	**1.79E-06**	**7.01E-06**

Table K.10-2. Grade Crossing Analysis- HAPs Summary

			Acquisition-Related HAP Emissions (tons/year)							
State	**County**	**FRA Crossing ID**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
Kansas	Crawford	330256N	8.84E-10	3.28E-07	3.12E-08	3.71E-07	1.45E-08	4.75E-07	4.77E-07	1.87E-06
		330257V	2.24E-09	8.31E-07	7.91E-08	9.40E-07	3.67E-08	1.20E-06	1.21E-06	4.73E-06
		330258C	1.91E-09	7.09E-07	6.75E-08	8.02E-07	3.13E-08	1.03E-06	1.03E-06	4.03E-06
		Total	**5.03E-09**	**1.87E-06**	**1.78E-07**	**2.11E-06**	**8.24E-08**	**2.70E-06**	**2.71E-06**	**1.06E-05**
Louisiana	Beauregard	329317F	1.36E-08	6.02E-06	5.73E-07	6.81E-06	2.66E-07	8.72E-06	8.75E-06	3.42E-05
		329319U	1.36E-08	6.02E-06	5.73E-07	6.81E-06	2.66E-07	8.72E-06	8.75E-06	3.42E-05
		329322C	1.08E-09	4.76E-07	4.53E-08	5.39E-07	2.10E-08	6.89E-07	6.92E-07	2.71E-06
		329320N	1.43E-09	6.31E-07	6.01E-08	7.13E-07	2.78E-08	9.13E-07	9.16E-07	3.59E-06
		329337S	7.50E-10	3.34E-07	3.18E-08	3.78E-07	1.47E-08	4.84E-07	4.86E-07	1.90E-06
		Total	**3.05E-08**	**1.35E-05**	**1.28E-06**	**1.53E-05**	**5.95E-07**	**1.95E-05**	**1.96E-05**	**7.67E-05**
Louisiana	Caddo	328998G	1.77E-09	7.00E-07	6.67E-08	7.92E-07	3.09E-08	1.01E-06	1.02E-06	3.98E-06
		329006E	1.40E-09	5.51E-07	5.25E-08	6.24E-07	2.43E-08	7.99E-07	8.01E-07	3.14E-06
		329154Y	3.46E-08	9.65E-06	9.19E-07	1.09E-05	4.25E-07	1.40E-05	1.40E-05	5.49E-05
		329128J	2.86E-09	7.97E-07	7.59E-08	9.01E-07	3.51E-08	1.15E-06	1.16E-06	4.53E-06
		329157U	4.80E-09	1.34E-06	1.27E-07	1.51E-06	5.90E-08	1.94E-06	1.94E-06	7.61E-06
		Total	**4.55E-08**	**1.30E-05**	**1.24E-06**	**1.47E-05**	**5.75E-07**	**1.89E-05**	**1.89E-05**	**7.41E-05**
Louisiana	Calcasieu	329346R	4.44E-09	2.13E-06	2.02E-07	2.40E-06	9.37E-08	3.08E-06	3.09E-06	1.21E-05
		329344C	1.37E-09	6.03E-07	5.74E-08	6.82E-07	2.66E-08	8.73E-07	8.76E-07	3.43E-06
		329356W	7.17E-09	3.16E-06	3.01E-07	3.57E-06	1.39E-07	4.57E-06	4.59E-06	1.80E-05
		Total	**1.30E-08**	**5.89E-06**	**5.61E-07**	**6.66E-06**	**2.60E-07**	**8.52E-06**	**8.55E-06**	**3.35E-05**
Louisiana	De Soto	329162R	6.86E-09	1.92E-06	1.83E-07	2.17E-06	8.47E-08	2.78E-06	2.79E-06	1.09E-05
		329182C	5.95E-09	2.65E-06	2.53E-07	3.00E-06	1.17E-07	3.84E-06	3.85E-06	1.51E-05
		329183J	4.36E-09	1.95E-06	1.85E-07	2.20E-06	8.59E-08	2.82E-06	2.83E-06	1.11E-05
		329164E	2.37E-09	6.63E-07	6.31E-08	7.50E-07	2.92E-08	9.60E-07	9.62E-07	3.77E-06
		329187L	3.12E-09	1.39E-06	1.32E-07	1.57E-06	6.13E-08	2.01E-06	2.02E-06	7.90E-06
		Total	**2.27E-08**	**8.57E-06**	**8.16E-07**	**9.70E-06**	**3.78E-07**	**1.24E-05**	**1.24E-05**	**4.87E-05**
Louisiana	Sabine	329226A	2.93E-09	1.31E-06	1.25E-07	1.49E-06	5.80E-08	1.90E-06	1.91E-06	7.48E-06
		329227G	6.30E-10	2.82E-07	2.69E-08	3.20E-07	1.25E-08	4.09E-07	4.10E-07	1.61E-06
		329234S	1.47E-09	6.64E-07	6.33E-08	7.51E-07	2.93E-08	9.62E-07	9.65E-07	3.78E-06
		Total	**5.03E-09**	**2.26E-06**	**2.15E-07**	**2.56E-06**	**9.97E-08**	**3.27E-06**	**3.28E-06**	**1.29E-05**
Louisiana	Vernon	329259M	1.80E-09	8.04E-07	7.66E-08	9.10E-07	3.55E-08	1.16E-06	1.17E-06	4.57E-06
		329279Y	1.89E-09	8.31E-07	7.91E-08	9.40E-07	3.67E-08	1.20E-06	1.21E-06	4.73E-06
		329284V	1.51E-09	6.67E-07	6.35E-08	7.54E-07	2.94E-08	9.66E-07	9.69E-07	3.79E-06
		329298D	2.47E-09	1.09E-06	1.04E-07	1.24E-06	4.82E-08	1.58E-06	1.59E-06	6.22E-06
		329253W	1.06E-09	4.72E-07	4.50E-08	5.34E-07	2.08E-08	6.84E-07	6.86E-07	2.69E-06
		329308G	5.12E-10	2.28E-07	2.17E-08	2.58E-07	1.01E-08	3.30E-07	3.31E-07	1.30E-06
		329641V	1.29E-09	5.70E-07	5.43E-08	6.45E-07	2.52E-08	8.26E-07	8.28E-07	3.24E-06
		Total	**1.05E-08**	**4.67E-06**	**4.44E-07**	**5.28E-06**	**2.06E-07**	**6.76E-06**	**6.78E-06**	**2.65E-05**
Missouri	Cass	329839D	1.18E-09	4.47E-07	4.25E-08	5.05E-07	1.97E-08	6.47E-07	6.49E-07	2.54E-06
		Total	**1.18E-09**	**4.47E-07**	**4.25E-08**	**5.05E-07**	**1.97E-08**	**6.47E-07**	**6.49E-07**	**2.54E-06**
Missouri	Clay	375439H	5.93E-10	3.29E-07	3.14E-08	3.73E-07	1.45E-08	4.77E-07	4.78E-07	1.87E-06
		375407C	1.70E-09	9.02E-07	8.59E-08	1.02E-06	3.98E-08	1.31E-06	1.31E-06	5.13E-06
		375440C	2.80E-10	1.56E-07	1.48E-08	1.76E-07	6.86E-09	2.25E-07	2.26E-07	8.85E-07
		Total	**2.58E-09**	**1.39E-06**	**1.32E-07**	**1.57E-06**	**6.12E-08**	**2.01E-06**	**2.01E-06**	**7.89E-06**
Missouri	Jackson	329764G	2.56E-09	9.54E-07	9.09E-08	1.08E-06	4.21E-08	1.38E-06	1.39E-06	5.43E-06
		Total	**2.56E-09**	**9.54E-07**	**9.09E-08**	**1.08E-06**	**4.21E-08**	**1.38E-06**	**1.39E-06**	**5.43E-06**
Missouri	Jackson	329807X	2.43E-09	9.18E-07	8.74E-08	1.04E-06	4.05E-08	1.33E-06	1.33E-06	5.22E-06
		Total	**2.43E-09**	**9.18E-07**	**8.74E-08**	**1.04E-06**	**4.05E-08**	**1.33E-06**	**1.33E-06**	**5.22E-06**
Missouri	Jasper	330035L	2.13E-09	7.84E-07	7.47E-08	8.87E-07	3.46E-08	1.14E-06	1.14E-06	4.46E-06
		330045S	5.36E-09	1.95E-06	1.86E-07	2.21E-06	8.60E-08	2.82E-06	2.83E-06	1.11E-05
		330053J	2.63E-09	9.57E-07	9.12E-08	1.08E-06	4.22E-08	1.39E-06	1.39E-06	5.44E-06
		330055X	7.17E-09	2.61E-06	2.49E-07	2.95E-06	1.15E-07	3.78E-06	3.79E-06	1.48E-05
		330061B	1.27E-08	4.64E-06	4.42E-07	5.24E-06	2.04E-07	6.71E-06	6.73E-06	2.64E-05
		Total	**3.00E-08**	**1.09E-05**	**1.04E-06**	**1.24E-05**	**4.82E-07**	**1.58E-05**	**1.59E-05**	**6.22E-05**
Missouri	McDonald	330178J	4.75E-09	1.70E-06	1.62E-07	1.93E-06	7.51E-08	2.47E-06	2.47E-06	9.69E-06
		Total	**4.75E-09**	**1.70E-06**	**1.62E-07**	**1.93E-06**	**7.51E-08**	**2.47E-06**	**2.47E-06**	**9.69E-06**
Missouri	Newton	330102D	9.74E-09	3.46E-06	3.29E-07	3.91E-06	1.53E-07	5.01E-06	5.03E-06	1.97E-05
		330101W	4.62E-09	1.64E-06	1.56E-07	1.86E-06	7.23E-08	2.38E-06	2.38E-06	9.33E-06
		330120B	4.62E-09	1.64E-06	1.56E-07	1.86E-06	7.25E-08	2.38E-06	2.39E-06	9.35E-06
		330113R	8.05E-09	2.86E-06	2.72E-07	3.24E-06	1.26E-07	4.14E-06	4.15E-06	1.63E-05
		Total	**2.70E-08**	**9.60E-06**	**9.15E-07**	**1.09E-05**	**4.24E-07**	**1.39E-05**	**1.39E-05**	**5.46E-05**
Oklahoma	Adair	330612G	1.74E-09	6.92E-07	6.59E-08	7.83E-07	3.05E-08	1.00E-06	1.01E-06	3.94E-06
		330625H	1.45E-09	5.76E-07	5.49E-08	6.52E-07	2.54E-08	8.35E-07	8.37E-07	3.28E-06
		Total	**3.19E-09**	**1.27E-06**	**1.21E-07**	**1.44E-06**	**5.60E-08**	**1.84E-06**	**1.84E-06**	**7.22E-06**
Oklahoma	Le Flore	330736A	9.18E-10	3.64E-07	3.47E-08	4.12E-07	1.61E-08	5.27E-07	5.29E-07	2.07E-06
		330784P	2.14E-08	8.12E-06	7.73E-07	9.19E-06	3.58E-07	1.18E-05	1.18E-05	4.62E-05
		330785W	2.00E-08	7.58E-06	7.22E-07	8.58E-06	3.34E-07	1.10E-05	1.10E-05	4.31E-05
		Total	**4.23E-08**	**1.61E-05**	**1.53E-06**	**1.82E-05**	**7.09E-07**	**2.33E-05**	**2.33E-05**	**9.14E-05**
Texas	Bowie	330867D	1.18E-09	4.68E-07	4.46E-08	5.30E-07	2.06E-08	6.78E-07	6.80E-07	2.66E-06
		330869S	1.20E-09	4.75E-07	4.52E-08	5.37E-07	2.10E-08	6.88E-07	6.90E-07	2.70E-06
		330872A	3.30E-09	1.28E-06	1.22E-07	1.45E-06	5.65E-08	1.85E-06	1.86E-06	7.28E-06
		Total	**5.69E-09**	**2.22E-06**	**2.12E-07**	**2.52E-06**	**9.81E-08**	**3.22E-06**	**3.23E-06**	**1.26E-05**
Texas	Collin	021635L	4.52E-11	3.80E-09	3.62E-10	4.30E-09	1.68E-10	5.50E-09	5.52E-09	2.16E-08
		021749Y	1.11E-11	9.32E-10	8.87E-11	1.05E-09	4.11E-11	1.35E-09	1.35E-09	5.30E-09

Table K.10-2. Grade Crossing Analysis- HAPs Summary

			Acquisition-Related HAP Emissions (tons/year)							
State	County	FRA Crossing ID	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
		021770E	5.11E-12	4.30E-10	4.09E-11	4.86E-10	1.90E-11	6.22E-10	6.24E-10	2.44E-09
		331279Y	1.52E-11	1.28E-09	1.22E-10	1.45E-09	5.65E-11	1.85E-09	1.86E-09	7.28E-09
		753583T	1.17E-11	9.83E-10	9.36E-11	1.11E-09	4.34E-11	1.42E-09	1.43E-09	5.59E-09
		753757M	1.31E-11	1.10E-09	1.04E-10	1.24E-09	4.84E-11	1.59E-09	1.59E-09	6.24E-09
		789628A	1.19E-11	1.00E-09	9.55E-11	1.14E-09	4.43E-11	1.45E-09	1.46E-09	5.71E-09
		789629G	2.31E-11	1.94E-09	1.85E-10	2.20E-09	8.56E-11	2.81E-09	2.82E-09	1.10E-08
		789632P	2.40E-11	2.02E-09	1.92E-10	2.28E-09	8.90E-11	2.92E-09	2.93E-09	1.15E-08
		789635K	1.04E-11	8.70E-10	8.29E-11	9.84E-10	3.84E-11	1.26E-09	1.26E-09	4.95E-09
		789636S	3.14E-11	2.64E-09	2.51E-10	2.98E-09	1.16E-10	3.82E-09	3.83E-09	1.50E-08
		789638F	3.80E-11	3.19E-09	3.04E-10	3.61E-09	1.41E-10	4.62E-09	4.63E-09	1.81E-08
		789640G	6.69E-12	5.62E-10	5.35E-11	6.36E-10	2.48E-11	8.14E-10	8.16E-10	3.20E-09
		789644J	4.05E-11	3.40E-09	3.24E-10	3.85E-09	1.50E-10	4.93E-09	4.95E-09	1.94E-08
		789645R	2.58E-11	2.17E-09	2.06E-10	2.45E-09	9.56E-11	3.14E-09	3.15E-09	1.23E-08
		789648L	1.41E-11	1.18E-09	1.13E-10	1.34E-09	5.21E-11	1.71E-09	1.72E-09	6.72E-09
		789652B	4.02E-12	2.92E-10	2.78E-11	3.31E-10	1.29E-11	4.23E-10	4.25E-10	1.66E-09
		789653H	7.14E-12	5.20E-10	4.95E-11	5.88E-10	2.29E-11	7.52E-10	7.55E-10	2.96E-09
		790146W	1.40E-11	1.17E-09	1.12E-10	1.33E-09	5.17E-11	1.70E-09	1.70E-09	6.67E-09
		919239F	2.22E-11	1.87E-09	1.78E-10	2.11E-09	8.23E-11	2.70E-09	2.71E-09	1.06E-08
		789633W	4.98E-12	4.48E-10	4.26E-11	5.06E-10	1.97E-11	6.48E-10	6.50E-10	2.55E-09
		021638G	2.08E-11	1.75E-09	1.66E-10	1.98E-09	7.71E-11	2.53E-09	2.54E-09	9.94E-09
		789631H	2.18E-10	1.96E-08	1.87E-09	2.22E-08	8.64E-10	2.84E-08	2.85E-08	1.11E-07
		789654P	3.32E-12	2.79E-10	2.66E-11	3.15E-10	1.23E-11	4.04E-10	4.05E-10	1.59E-09
		919268R	3.60E-11	3.03E-09	2.88E-10	3.43E-09	1.34E-10	4.38E-09	4.40E-09	1.72E-08
		Total	**6.58E-10**	**5.64E-08**	**5.37E-09**	**6.38E-08**	**2.49E-09**	**8.17E-08**	**8.20E-08**	**3.21E-07**
Texas	Denton	020557D	4.05E-10	2.53E-08	2.41E-09	2.87E-08	1.12E-09	3.67E-08	3.68E-08	1.44E-07
		020563G	2.75E-10	1.72E-08	1.64E-09	1.95E-08	7.59E-10	2.49E-08	2.50E-08	9.78E-08
		020572F	8.15E-10	5.14E-08	4.89E-09	5.81E-08	2.27E-09	7.44E-08	7.46E-08	2.92E-07
		021646Y	3.39E-11	2.85E-09	2.71E-10	3.22E-09	1.26E-10	4.12E-09	4.14E-09	1.62E-08
		021669F	4.22E-12	3.55E-10	3.38E-11	4.01E-10	1.56E-11	5.14E-10	5.15E-10	2.02E-09
		021672N	2.40E-11	2.02E-09	1.92E-10	2.28E-09	8.89E-11	2.92E-09	2.93E-09	1.15E-08
		021676R	1.45E-11	1.22E-09	1.16E-10	1.38E-09	5.37E-11	1.76E-09	1.77E-09	6.92E-09
		021691T	4.44E-12	3.73E-10	3.56E-11	4.22E-10	1.65E-11	5.41E-10	5.42E-10	2.12E-09
		021696C	4.48E-12	3.77E-10	3.59E-11	4.26E-10	1.66E-11	5.45E-10	5.47E-10	2.14E-09
		021700P	8.03E-12	6.75E-10	6.42E-11	7.63E-10	2.98E-11	9.77E-10	9.80E-10	3.84E-09
		021726S	1.11E-11	9.35E-10	8.91E-11	1.06E-09	4.13E-11	1.35E-09	1.36E-09	5.32E-09
		021765H	4.29E-11	3.60E-09	3.43E-10	4.08E-09	1.59E-10	5.22E-09	5.24E-09	2.05E-08
		021767W	1.44E-11	1.21E-09	1.15E-10	1.37E-09	5.34E-11	1.75E-09	1.76E-09	6.88E-09
		021774G	6.52E-12	5.47E-10	5.21E-11	6.19E-10	2.41E-11	7.93E-10	7.95E-10	3.11E-09
		331277K	3.81E-11	3.20E-09	3.05E-10	3.62E-09	1.41E-10	4.63E-09	4.65E-09	1.82E-08
		919241G	3.33E-12	2.79E-10	2.66E-11	3.16E-10	1.23E-11	4.05E-10	4.06E-10	1.59E-09
		Total	**1.70E-09**	**1.12E-07**	**1.06E-08**	**1.26E-07**	**4.92E-09**	**1.62E-07**	**1.62E-07**	**6.34E-07**
Texas	Duval	793688R	1.07E-08	1.24E-06	1.18E-07	1.40E-06	5.46E-08	1.79E-06	1.80E-06	7.04E-06
		Total	**1.07E-08**	**1.24E-06**	**1.18E-07**	**1.40E-06**	**5.46E-08**	**1.79E-06**	**1.80E-06**	**7.04E-06**
Texas	Fort Bend	412514U	3.89E-09	3.30E-07	3.14E-08	3.73E-07	1.45E-08	4.77E-07	4.79E-07	1.87E-06
		440652H	1.89E-08	1.86E-06	1.77E-07	2.10E-06	8.20E-08	2.69E-06	2.70E-06	1.06E-05
		743475U	3.16E-10	1.10E-07	1.05E-08	1.25E-07	4.87E-09	1.60E-07	1.60E-07	6.28E-07
		743689L	1.44E-08	1.22E-06	1.16E-07	1.38E-06	5.39E-08	1.77E-06	1.78E-06	6.96E-06
		743695P	1.85E-08	1.57E-06	1.49E-07	1.77E-06	6.91E-08	2.27E-06	2.28E-06	8.91E-06
		743698K	5.86E-09	4.97E-07	4.73E-08	5.62E-07	2.19E-08	7.19E-07	7.22E-07	2.83E-06
		743699S	8.90E-09	7.54E-07	7.18E-08	8.53E-07	3.33E-08	1.09E-06	1.10E-06	4.29E-06
		743703E	4.22E-09	3.57E-07	3.40E-08	4.04E-07	1.58E-08	5.18E-07	5.19E-07	2.03E-06
		743713K	6.73E-09	5.70E-07	5.43E-08	6.45E-07	2.52E-08	8.26E-07	8.28E-07	3.24E-06
		743716F	6.26E-09	5.31E-07	5.06E-08	6.01E-07	2.34E-08	7.69E-07	7.71E-07	3.02E-06
		743719B	4.04E-09	3.29E-07	3.14E-08	3.73E-07	1.45E-08	4.77E-07	4.78E-07	1.87E-06
		743724X	5.92E-09	5.02E-07	4.78E-08	5.68E-07	2.21E-08	7.26E-07	7.29E-07	2.85E-06
		743726L	9.96E-09	8.44E-07	8.04E-08	9.55E-07	3.72E-08	1.22E-06	1.23E-06	4.80E-06
		743727T	1.78E-09	4.15E-07	3.95E-08	4.69E-07	1.83E-08	6.01E-07	6.03E-07	2.36E-06
		743731H	2.12E-09	2.22E-07	2.12E-08	2.51E-07	9.80E-09	3.22E-07	3.23E-07	1.26E-06
		745044J	1.50E-08	1.27E-06	1.21E-07	1.44E-06	5.62E-08	1.84E-06	1.85E-06	7.24E-06
		745055W	4.74E-09	4.02E-07	3.83E-08	4.55E-07	1.77E-08	5.82E-07	5.84E-07	2.29E-06
		922512N	5.04E-09	4.27E-07	4.07E-08	4.83E-07	1.88E-08	6.18E-07	6.20E-07	2.43E-06
		922513V	6.07E-09	3.22E-07	3.06E-08	3.64E-07	1.42E-08	4.66E-07	4.67E-07	1.83E-06
		924006U	2.58E-09	2.19E-07	2.08E-08	2.47E-07	9.64E-09	3.16E-07	3.17E-07	1.24E-06
		924007B	2.84E-09	2.41E-07	2.29E-08	2.72E-07	1.06E-08	3.49E-07	3.50E-07	1.37E-06
		743483L	2.74E-10	9.10E-08	8.66E-09	1.03E-07	4.01E-09	1.32E-07	1.32E-07	5.17E-07
		924008H	4.44E-09	3.76E-07	3.58E-08	4.26E-07	1.66E-08	5.45E-07	5.46E-07	2.14E-06
		924009P	3.77E-09	3.20E-07	3.04E-08	3.62E-07	1.41E-08	4.63E-07	4.64E-07	1.82E-06
		Total	**1.57E-07**	**1.38E-05**	**1.31E-06**	**1.56E-05**	**6.08E-07**	**2.00E-05**	**2.00E-05**	**7.84E-05**
Texas	Harris	755618Y	2.07E-08	2.03E-06	1.94E-07	2.30E-06	8.97E-08	2.94E-06	2.95E-06	1.16E-05
		755621G	1.10E-08	9.31E-07	8.87E-08	1.05E-06	4.11E-08	1.35E-06	1.35E-06	5.30E-06
		755622N	1.25E-08	1.06E-06	1.01E-07	1.20E-06	4.69E-08	1.54E-06	1.54E-06	6.04E-06
		758178V	1.12E-08	1.24E-06	1.18E-07	1.40E-06	5.47E-08	1.80E-06	1.80E-06	7.06E-06
		758180W	6.24E-09	6.94E-07	6.61E-08	7.85E-07	3.06E-08	1.00E-06	1.01E-06	3.94E-06
		758187U	1.32E-07	1.08E-05	1.03E-06	1.23E-05	4.78E-07	1.57E-05	1.57E-05	6.16E-05

Table K.10-2. Grade Crossing Analysis- HAPs Summary

			Acquisition-Related HAP Emissions (tons/year)							
State	County	FRA Crossing ID	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
		758293C	4.80E-09	5.34E-07	5.08E-08	6.04E-07	2.35E-08	7.73E-07	7.76E-07	3.04E-06
		758512N	7.52E-09	1.08E-06	1.03E-07	1.22E-06	4.75E-08	1.56E-06	1.56E-06	6.12E-06
		758513V	1.47E-08	2.11E-06	2.01E-07	2.39E-06	9.31E-08	3.06E-06	3.07E-06	1.20E-05
		758514C	1.47E-08	2.11E-06	2.01E-07	2.39E-06	9.30E-08	3.05E-06	3.06E-06	1.20E-05
		758517X	1.08E-08	1.55E-06	1.47E-07	1.75E-06	6.82E-08	2.24E-06	2.25E-06	8.80E-06
		758518E	1.82E-08	2.60E-06	2.48E-07	2.94E-06	1.15E-07	3.76E-06	3.78E-06	1.48E-05
		758531T	2.11E-08	2.40E-06	2.29E-07	2.72E-06	1.06E-07	3.48E-06	3.49E-06	1.37E-05
		758532A	6.24E-09	7.11E-07	6.77E-08	8.05E-07	3.14E-08	1.03E-06	1.03E-06	4.04E-06
		758533G	1.18E-08	1.49E-06	1.42E-07	1.69E-06	6.59E-08	2.16E-06	2.17E-06	8.50E-06
		758534N	3.25E-08	3.70E-06	3.52E-07	4.19E-06	1.63E-07	5.36E-06	5.38E-06	2.10E-05
		758540S	4.30E-08	4.90E-06	4.67E-07	5.54E-06	2.16E-07	7.10E-06	7.12E-06	2.79E-05
		758610E	3.03E-09	4.33E-07	4.13E-08	4.90E-07	1.91E-08	6.28E-07	6.29E-07	2.46E-06
		758611L	3.07E-09	4.40E-07	4.19E-08	4.98E-07	1.94E-08	6.38E-07	6.40E-07	2.50E-06
		762869K	1.29E-09	1.96E-07	1.87E-08	2.22E-07	8.64E-09	2.84E-07	2.85E-07	1.11E-06
		762872T	2.91E-09	4.43E-07	4.22E-08	5.01E-07	1.95E-08	6.41E-07	6.43E-07	2.52E-06
		762889W	1.36E-09	2.81E-07	2.67E-08	3.18E-07	1.24E-08	4.07E-07	4.08E-07	1.60E-06
		762892E	2.79E-09	5.77E-07	5.49E-08	6.52E-07	2.54E-08	8.35E-07	8.38E-07	3.28E-06
		762901B	3.72E-09	5.66E-07	5.39E-08	6.40E-07	2.50E-08	8.20E-07	8.22E-07	3.22E-06
		762904W	6.40E-09	1.32E-06	1.26E-07	1.50E-06	5.83E-08	1.92E-06	1.92E-06	7.52E-06
		762907S	2.52E-09	3.84E-07	3.66E-08	4.35E-07	1.69E-08	5.56E-07	5.58E-07	2.19E-06
		755624C	1.01E-08	9.64E-07	9.18E-08	1.09E-06	4.25E-08	1.40E-06	1.40E-06	5.48E-06
		758519L	1.06E-08	1.53E-06	1.45E-07	1.73E-06	6.73E-08	2.21E-06	2.22E-06	8.67E-06
		758521M	4.75E-09	6.81E-07	6.48E-08	7.70E-07	3.00E-08	9.85E-07	9.89E-07	3.87E-06
		758523B	4.99E-09	7.14E-07	6.80E-08	8.08E-07	3.15E-08	1.03E-06	1.04E-06	4.06E-06
		762865H	9.34E-10	1.47E-07	1.40E-08	1.66E-07	6.48E-09	2.13E-07	2.14E-07	8.36E-07
		758525P	2.36E-09	3.38E-07	3.22E-08	3.82E-07	1.49E-08	4.89E-07	4.91E-07	1.92E-06
		Total	**4.40E-07**	**4.90E-05**	**4.67E-06**	**5.54E-05**	**2.16E-06**	**7.09E-05**	**7.12E-05**	**2.79E-04**
Texas	Jackson	746621H	9.01E-10	3.00E-07	2.85E-08	3.39E-07	1.32E-08	4.34E-07	4.35E-07	1.70E-06
		746639T	1.05E-09	3.47E-07	3.31E-08	3.93E-07	1.53E-08	5.03E-07	5.05E-07	1.98E-06
		746645W	2.89E-10	9.62E-08	9.16E-09	1.09E-07	4.24E-09	1.39E-07	1.40E-07	5.47E-07
		746643H	4.18E-10	1.39E-07	1.32E-08	1.57E-07	6.12E-09	2.01E-07	2.02E-07	7.89E-07
		Total	**2.65E-09**	**8.82E-07**	**8.40E-08**	**9.98E-07**	**3.89E-08**	**1.28E-06**	**1.28E-06**	**5.02E-06**
Texas	Jefferson	329531K	1.42E-09	5.10E-07	4.86E-08	5.77E-07	2.25E-08	7.39E-07	7.41E-07	2.90E-06
		329540J	7.28E-10	2.61E-07	2.48E-08	2.95E-07	1.15E-08	3.78E-07	3.79E-07	1.48E-06
		329542X	7.04E-10	2.52E-07	2.40E-08	2.85E-07	1.11E-08	3.65E-07	3.66E-07	1.43E-06
		329544L	7.81E-10	2.80E-07	2.66E-08	3.17E-07	1.23E-08	4.05E-07	4.06E-07	1.59E-06
		329545T	1.05E-09	3.78E-07	3.60E-08	4.27E-07	1.67E-08	5.47E-07	5.49E-07	2.15E-06
		329546A	7.53E-10	2.70E-07	2.57E-08	3.05E-07	1.19E-08	3.91E-07	3.92E-07	1.53E-06
		762721D	2.07E-09	5.59E-07	5.32E-08	6.32E-07	2.47E-08	8.09E-07	8.12E-07	3.18E-06
		762739N	3.87E-10	1.04E-07	9.92E-09	1.18E-07	4.59E-09	1.51E-07	1.51E-07	5.92E-07
		446594K	4.44E-09	4.93E-07	4.70E-08	5.58E-07	2.17E-08	7.14E-07	7.16E-07	2.80E-06
		762743D	6.99E-10	1.85E-07	1.76E-08	2.09E-07	8.15E-09	2.67E-07	2.68E-07	1.05E-06
		Total	**1.30E-08**	**3.29E-06**	**3.13E-07**	**3.72E-06**	**1.45E-07**	**4.77E-06**	**4.78E-06**	**1.87E-05**
Texas	Jim Hogg	793696H	3.61E-09	4.93E-07	4.69E-08	5.58E-07	2.17E-08	7.14E-07	7.16E-07	2.80E-06
		Total	**3.61E-09**	**4.93E-07**	**4.69E-08**	**5.58E-07**	**2.17E-08**	**7.14E-07**	**7.16E-07**	**2.80E-06**
Texas	Jim Wells	793649A	2.10E-09	2.59E-07	2.47E-08	2.93E-07	1.14E-08	3.75E-07	3.76E-07	1.47E-06
		793651B	5.82E-09	7.17E-07	6.82E-08	8.11E-07	3.16E-08	1.04E-06	1.04E-06	4.08E-06
		793810F	1.82E-08	1.82E-06	1.73E-07	2.06E-06	8.02E-08	2.63E-06	2.64E-06	1.03E-05
		793814H	8.52E-08	8.49E-06	8.09E-07	9.61E-06	3.75E-07	1.23E-05	1.23E-05	4.83E-05
		793818K	1.26E-08	1.26E-06	1.20E-07	1.42E-06	5.54E-08	1.82E-06	1.82E-06	7.14E-06
		793819S	6.34E-08	6.32E-06	6.02E-07	7.15E-06	2.79E-07	9.15E-06	9.18E-06	3.59E-05
		793821T	1.68E-08	1.67E-06	1.59E-07	1.89E-06	7.37E-08	2.42E-06	2.43E-06	9.50E-06
		793959U	1.84E-08	1.84E-06	1.75E-07	2.08E-06	8.11E-08	2.66E-06	2.67E-06	1.05E-05
		Total	**2.23E-07**	**2.24E-05**	**2.13E-06**	**2.53E-05**	**9.87E-07**	**3.24E-05**	**3.25E-05**	**1.27E-04**
Texas	Liberty	762770A	2.53E-09	3.64E-07	3.46E-08	4.12E-07	1.60E-08	5.27E-07	5.28E-07	2.07E-06
		762785P	2.09E-09	5.52E-07	5.26E-08	6.25E-07	2.44E-08	8.00E-07	8.02E-07	3.14E-06
		762786W	1.29E-09	3.41E-07	3.25E-08	3.86E-07	1.51E-08	4.94E-07	4.96E-07	1.94E-06
		762765D	3.60E-09	9.28E-07	8.84E-08	1.05E-06	4.09E-08	1.34E-06	1.35E-06	5.28E-06
		763062E	1.60E-09	4.31E-07	4.11E-08	4.88E-07	1.90E-08	6.25E-07	6.27E-07	2.45E-06
		762761B	2.97E-10	8.50E-08	8.09E-09	9.61E-08	3.75E-09	1.23E-07	1.23E-07	4.83E-07
		762789S	1.50E-09	3.96E-07	3.77E-08	4.48E-07	1.75E-08	5.73E-07	5.75E-07	2.25E-06
		Total	**1.29E-08**	**3.10E-06**	**2.95E-07**	**3.50E-06**	**1.37E-07**	**4.49E-06**	**4.50E-06**	**1.76E-05**
Texas	Nueces	427586S	8.72E-09	9.79E-07	9.32E-08	1.11E-06	4.32E-08	1.42E-06	1.42E-06	5.57E-06
		427597E	4.62E-10	2.18E-07	2.07E-08	2.46E-07	9.60E-09	3.15E-07	3.16E-07	1.24E-06
		793743N	3.94E-09	4.25E-07	4.05E-08	4.81E-07	1.87E-08	6.15E-07	6.17E-07	2.42E-06
		793749E	1.89E-08	1.72E-06	1.64E-07	1.94E-06	7.58E-08	2.49E-06	2.50E-06	9.77E-06
		Total	**3.20E-08**	**3.34E-06**	**3.18E-07**	**3.78E-06**	**1.47E-07**	**4.84E-06**	**4.85E-06**	**1.90E-05**
Texas	Orange	329467N	5.13E-10	2.47E-07	2.35E-08	2.79E-07	1.09E-08	3.57E-07	3.59E-07	1.40E-06
		329471D	3.55E-09	1.71E-06	1.63E-07	1.94E-06	7.55E-08	2.48E-06	2.49E-06	9.73E-06
		329460R	4.20E-10	2.02E-07	1.93E-08	2.29E-07	8.92E-09	2.93E-07	2.94E-07	1.15E-06
		329472K	4.31E-10	2.07E-07	1.97E-08	2.35E-07	9.15E-09	3.00E-07	3.01E-07	1.18E-06
		927011B	4.14E-10	1.99E-07	1.90E-08	2.25E-07	8.78E-09	2.88E-07	2.89E-07	1.13E-06
		Total	**5.33E-09**	**2.57E-06**	**2.44E-07**	**2.90E-06**	**1.13E-07**	**3.72E-06**	**3.73E-06**	**1.46E-05**
Texas	Refugio	427570V	3.68E-09	2.62E-07	2.49E-08	2.96E-07	1.15E-08	3.79E-07	3.80E-07	1.49E-06

Table K.10-2. Grade Crossing Analysis- HAPs Summary

			Acquisition-Related HAP Emissions (tons/year)							
State	**County**	**FRA Crossing ID**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
		Total	**3.68E-09**	**2.62E-07**	**2.49E-08**	**2.96E-07**	**1.15E-08**	**3.79E-07**	**3.80E-07**	**1.49E-06**
Texas	San Patricio	436011U	3.65E-09	3.17E-07	3.02E-08	3.59E-07	1.40E-08	4.59E-07	4.60E-07	1.80E-06
		436012B	1.51E-09	1.29E-07	1.22E-08	1.45E-07	5.67E-09	1.86E-07	1.87E-07	7.31E-07
		436014P	9.50E-10	8.11E-08	7.73E-09	9.18E-08	3.58E-09	1.18E-07	1.18E-07	4.62E-07
		436017K	1.06E-09	9.02E-08	8.59E-09	1.02E-07	3.98E-09	1.31E-07	1.31E-07	5.13E-07
		436030Y	9.75E-10	8.33E-08	7.94E-09	9.43E-08	3.68E-09	1.21E-07	1.21E-07	4.74E-07
		Total	**8.13E-09**	**7.00E-07**	**6.67E-08**	**7.92E-07**	**3.09E-08**	**1.01E-06**	**1.02E-06**	**3.98E-06**
Texas	Tarrant	020545J	4.91E-10	3.11E-08	2.96E-09	3.52E-08	1.37E-09	4.51E-08	4.52E-08	1.77E-07
		Total	**4.91E-10**	**3.11E-08**	**2.96E-09**	**3.52E-08**	**1.37E-09**	**4.51E-08**	**4.52E-08**	**1.77E-07**
Texas	Victoria	435913V	1.14E-07	-1.13E-05	-1.08E-06	-1.28E-05	-5.00E-07	-1.64E-05	-1.65E-05	-6.44E-05
		435914C	4.09E-09	-3.25E-08	-3.09E-09	-3.67E-08	-1.43E-09	-4.70E-08	-4.72E-08	-1.85E-07
		746510R	7.65E-09	9.65E-07	9.19E-08	1.09E-06	4.26E-08	1.40E-06	1.40E-06	5.49E-06
		746550N	2.73E-09	7.98E-07	7.60E-08	9.03E-07	3.52E-08	1.16E-06	1.16E-06	4.54E-06
		746551V	3.22E-09	9.40E-07	8.96E-08	1.06E-06	4.15E-08	1.36E-06	1.37E-06	5.35E-06
		746556E	5.41E-09	1.58E-06	1.50E-07	1.79E-06	6.97E-08	2.29E-06	2.29E-06	8.98E-06
		746558T	1.18E-08	3.45E-06	3.29E-07	3.90E-06	1.52E-07	5.00E-06	5.01E-06	1.96E-05
		746562H	3.17E-09	9.79E-07	9.32E-08	1.11E-06	4.32E-08	1.42E-06	1.42E-06	5.57E-06
		746650T	4.14E-08	5.06E-06	4.82E-07	5.72E-06	2.23E-07	7.33E-06	7.35E-06	2.88E-05
		746652G	1.75E-08	2.29E-06	2.19E-07	2.60E-06	1.01E-07	3.32E-06	3.33E-06	1.30E-05
		746653N	2.93E-07	2.98E-05	2.84E-06	3.37E-05	1.31E-06	4.32E-05	4.33E-05	1.70E-04
		912105H	7.05E-09	9.25E-07	8.81E-08	1.05E-06	4.08E-08	1.34E-06	1.34E-06	5.26E-06
		Total	**5.11E-07**	**3.54E-05**	**3.37E-06**	**4.01E-05**	**1.56E-06**	**5.13E-05**	**5.15E-05**	**2.02E-04**
Texas	Webb	793596D	1.37E-08	1.24E-06	1.18E-07	1.41E-06	5.48E-08	1.80E-06	1.80E-06	7.07E-06
		793598S	1.29E-07	1.17E-05	1.12E-06	1.33E-05	5.17E-07	1.70E-05	1.70E-05	6.67E-05
		Total	**1.43E-07**	**1.30E-05**	**1.24E-06**	**1.47E-05**	**5.72E-07**	**1.88E-05**	**1.88E-05**	**7.38E-05**
Texas	Wharton	743352H	4.88E-10	1.62E-07	1.54E-08	1.83E-07	7.15E-09	2.35E-07	2.36E-07	9.22E-07
		743359F	1.37E-09	4.56E-07	4.35E-08	5.16E-07	2.01E-08	6.61E-07	6.63E-07	2.60E-06
		743432B	5.32E-09	1.58E-06	1.50E-07	1.79E-06	6.97E-08	2.29E-06	2.29E-06	8.98E-06
		743435W	1.11E-08	3.28E-06	3.13E-07	3.71E-06	1.45E-07	4.75E-06	4.77E-06	1.87E-05
		743438S	3.37E-09	1.00E-06	9.52E-08	1.13E-06	4.41E-08	1.45E-06	1.45E-06	5.69E-06
		743440T	3.53E-09	1.05E-06	9.99E-08	1.19E-06	4.63E-08	1.52E-06	1.52E-06	5.97E-06
		Total	**2.51E-08**	**7.53E-06**	**7.17E-07**	**8.52E-06**	**3.32E-07**	**1.09E-05**	**1.09E-05**	**4.28E-05**

Table K.10-3. Grade Crossing Analysis - No Action Criteria Pollutant Emissions by Crossing

			Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		No Action Emissions (tons/year)									
FRA Crossing ID	County	State	NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	NOX	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	CO2e
330354E	Benton	Arkansas	0.0913	0.1275	189	296	105	230	6.6E-04	1.5E-04	9.4E-06	8.6E-06	3.4E-06	2.7E-03	0.58	7.5E-05	7.0E-06	0.58
330363D	Benton	Arkansas	0.0561	0.0793	131	207	45	100	2.8E-04	6.4E-05	4.0E-06	3.7E-06	1.4E-06	1.2E-03	0.25	3.2E-05	3.0E-06	0.25
330362W	Benton	Arkansas	0.0580	0.0820	175	276	62	138	3.9E-04	8.8E-05	5.6E-06	5.1E-06	2.0E-06	1.6E-03	0.34	4.4E-05	4.1E-06	0.34
330375X	Benton	Arkansas	0.0579	0.0818	171	270	60	134	3.8E-04	8.5E-05	5.4E-06	4.9E-06	1.9E-06	1.6E-03	0.33	4.3E-05	4.0E-06	0.33
330376E	Benton	Arkansas	0.0560	0.0791	99	157	34	75	2.1E-04	4.8E-05	3.0E-06	2.8E-06	1.1E-06	8.7E-04	0.19	2.4E-05	2.3E-06	0.19
330405M	Benton	Arkansas	0.0566	0.0801	222	351	77	171	4.8E-04	1.1E-04	6.9E-06	6.3E-06	2.5E-06	2.0E-03	0.42	5.5E-05	5.1E-06	0.42
330372C	Benton	Arkansas	0.0548	0.0774	98	155	33	73	2.0E-04	4.7E-05	2.9E-06	2.7E-06	1.1E-06	8.5E-04	0.18	2.4E-05	2.2E-06	0.18
330578C	Little River	Arkansas	0.0417	0.0615	109	184	28	69	1.7E-04	4.0E-05	2.5E-06	2.3E-06	9.0E-07	7.2E-04	0.15	2.0E-05	1.9E-06	0.15
330575G	Little River	Arkansas	0.0471	0.0637	137	211	39	82	2.4E-04	5.6E-05	3.5E-06	3.2E-06	1.3E-06	1.0E-03	0.22	2.8E-05	2.6E-06	0.22
330457E	Polk	Arkansas	0.0573	0.0826	146	242	51	121	3.2E-04	7.2E-05	4.6E-06	4.2E-06	1.6E-06	1.3E-03	0.28	3.7E-05	3.4E-06	0.28
330454J	Polk	Arkansas	0.0571	0.0822	274	452	95	226	5.9E-04	1.4E-04	8.5E-06	7.8E-06	3.1E-06	2.5E-03	0.52	6.8E-05	6.4E-06	0.53
330524W	Sevier	Arkansas	0.0601	0.0866	154	254	56	134	3.5E-04	8.0E-05	5.1E-06	4.6E-06	1.8E-06	1.5E-03	0.31	4.0E-05	3.8E-06	0.31
330546W	Sevier	Arkansas	0.0398	0.0542	89	138	22	46	1.3E-04	3.1E-05	1.9E-06	1.8E-06	7.0E-07	5.6E-04	0.12	1.6E-05	1.4E-06	0.12
372409F	Carroll	Illinois	0.0234	0.0319	63	109	9	21	5.6E-05	1.3E-05	8.0E-07	7.3E-07	2.9E-07	2.3E-04	0.05	6.4E-06	6.0E-07	0.05
372414C	Carroll	Illinois	0.0235	0.0320	67	117	10	23	6.0E-05	1.4E-05	8.6E-07	7.9E-07	3.1E-07	2.5E-04	0.05	6.9E-06	6.4E-07	0.05
372214T	Cook	Illinois	0.0247	0.0372	207	270	31	61	1.9E-04	4.4E-05	2.8E-06	2.6E-06	1.0E-06	8.0E-04	0.17	2.2E-05	2.1E-06	0.17
372210R	Cook	Illinois	0.0391	0.0590	654	854	156	307	9.7E-04	2.2E-04	1.4E-05	1.3E-05	5.0E-06	4.0E-03	0.86	1.1E-04	1.0E-05	0.86
372206B	Cook	Illinois	0.0251	0.0378	449	587	69	135	4.3E-04	9.7E-05	6.2E-06	5.6E-06	2.2E-06	1.8E-03	0.38	4.9E-05	4.6E-06	0.38
372138C	Cook	Illinois	0.0911	0.0859	1,443	1,452	800	759	5.0E-03	1.1E-03	7.2E-05	6.6E-05	2.6E-05	2.1E-02	4.40	5.8E-04	5.3E-05	4.44
372137V	Cook	Illinois	0.0904	0.0853	340	342	187	177	1.2E-03	2.7E-04	1.7E-05	1.5E-05	6.0E-06	4.8E-03	1.03	1.3E-04	1.2E-05	1.04
372202Y	Cook	Illinois	0.0347	0.0524	557	728	118	232	7.4E-04	1.7E-04	1.1E-05	9.7E-06	3.8E-06	3.0E-03	0.65	8.5E-05	7.9E-06	0.65
372289S	De Kalb	Illinois	0.0111	0.0242	26	73	2	11	1.1E-05	2.5E-06	1.6E-07	1.5E-07	5.7E-08	4.6E-05	0.01	1.3E-06	1.2E-07	0.01
372279L	De Kalb	Illinois	0.0109	0.0238	19	52	1	8	7.8E-06	1.8E-06	1.1E-07	1.0E-07	4.0E-08	3.2E-05	0.01	9.0E-07	8.4E-08	0.01
372299X	De Kalb	Illinois	0.0116	0.0252	28	78	2	12	1.2E-05	2.8E-06	1.8E-07	1.6E-07	6.3E-08	5.1E-05	0.01	1.4E-06	1.3E-07	0.01
371997M	Du Page	Illinois	0.0232	0.0349	164	214	23	46	1.4E-04	3.3E-05	2.1E-06	1.9E-06	7.5E-07	6.0E-04	0.13	1.7E-05	1.5E-06	0.13
372174X	Du Page	Illinois	0.0239	0.0361	324	423	47	93	2.9E-04	6.7E-05	4.2E-06	3.9E-06	1.5E-06	1.2E-03	0.26	3.4E-05	3.2E-06	0.26
372170V	Du Page	Illinois	0.0245	0.0369	786	1,028	117	231	7.3E-04	1.7E-04	1.1E-05	9.6E-06	3.8E-06	3.0E-03	0.65	8.4E-05	7.8E-06	0.65
372179G	Du Page	Illinois	0.0244	0.0368	382	499	57	112	3.5E-04	8.1E-05	5.1E-06	4.7E-06	1.8E-06	1.5E-03	0.31	4.1E-05	3.8E-06	0.31
372184D	Du Page	Illinois	0.0316	0.0477	941	1,230	181	357	1.1E-03	2.6E-04	1.6E-05	1.5E-05	5.8E-06	4.7E-03	1.00	1.3E-04	1.2E-05	1.01
372191N	Du Page	Illinois	0.0223	0.0336	297	388	40	79	2.5E-04	5.7E-05	3.6E-06	3.3E-06	1.3E-06	1.0E-03	0.22	2.9E-05	2.7E-06	0.22
372196X	Du Page	Illinois	0.0233	0.0351	527	688	75	147	4.7E-04	1.1E-04	6.7E-06	6.1E-06	2.4E-06	1.9E-03	0.41	5.4E-05	5.0E-06	0.41
372177T	Du Page	Illinois	0.0373	0.0562	1,227	1,603	279	549	1.7E-03	4.0E-04	2.5E-05	2.3E-05	9.0E-06	7.2E-03	1.53	2.0E-04	1.9E-05	1.55
372178A	Du Page	Illinois	0.0220	0.0332	362	473	49	96	3.0E-04	6.9E-05	4.4E-06	4.0E-06	1.6E-06	1.3E-03	0.27	3.5E-05	3.2E-06	0.27
372240H	Kane	Illinois	0.0281	0.0424	705	921	121	237	7.5E-04	1.7E-04	1.1E-05	9.9E-06	3.9E-06	3.1E-03	0.66	8.7E-05	8.1E-06	0.67
372241P	Kane	Illinois	0.0235	0.0355	293	382	42	82	2.6E-04	6.0E-05	3.8E-06	3.4E-06	1.4E-06	1.1E-03	0.23	3.0E-05	2.8E-06	0.23
372217N	Kane	Illinois	0.0297	0.0448	818	1,069	148	291	9.2E-04	2.1E-04	1.3E-05	1.2E-05	4.8E-06	3.8E-03	0.81	1.1E-04	9.9E-06	0.82
372242W	Kane	Illinois	0.0256	0.0385	986	1,288	153	302	9.6E-04	2.2E-04	1.4E-05	1.3E-05	4.9E-06	4.0E-03	0.84	1.1E-04	1.0E-05	0.85
372246Y	Kane	Illinois	0.0263	0.0397	907	1,185	145	286	9.1E-04	2.1E-04	1.3E-05	1.2E-05	4.7E-06	3.8E-03	0.80	1.0E-04	9.7E-06	0.81
372239N	Kane	Illinois	0.0268	0.0412	356	470	58	118	3.6E-04	8.2E-05	5.2E-06	4.8E-06	1.9E-06	1.5E-03	0.32	4.2E-05	3.9E-06	0.32
372235L	Kane	Illinois	0.0256	0.0394	152	201	24	48	1.5E-04	3.4E-05	2.1E-06	2.0E-06	7.7E-07	6.1E-04	0.13	1.7E-05	1.6E-06	0.13
372355C	Ogle	Illinois	0.0253	0.0346	85	147	13	31	8.2E-05	1.9E-05	1.2E-06	1.1E-06	4.2E-07	3.4E-04	0.07	9.4E-06	8.7E-07	0.07
372350T	Ogle	Illinois	0.0236	0.0322	47	81	7	16	4.2E-05	9.5E-06	6.0E-07	5.5E-07	2.2E-07	1.7E-04	0.04	4.8E-06	4.5E-07	0.04
372339T	Ogle	Illinois	0.0244	0.0332	50	86	7	17	4.6E-05	1.0E-05	6.6E-07	6.0E-07	2.4E-07	1.9E-04	0.04	5.3E-06	4.9E-07	0.04
372388P	Ogle	Illinois	0.0227	0.0310	58	101	8	19	5.0E-05	1.1E-05	7.2E-07	6.6E-07	2.6E-07	2.1E-04	0.04	5.8E-06	5.4E-07	0.04
372346D	Ogle	Illinois	0.0232	0.0317	37	65	5	13	3.3E-05	7.5E-06	4.8E-07	4.3E-07	1.7E-07	1.4E-04	0.03	3.8E-06	3.5E-07	0.03
376027Y	Clinton	Iowa	0.1693	0.2863	150	299	155	521	9.7E-04	2.2E-04	1.4E-05	1.3E-05	5.0E-06	4.0E-03	0.85	1.1E-04	1.0E-05	0.86
607245W	Louisa	Iowa	0.0193	0.0483	33	103	4	30	2.4E-05	5.5E-06	3.5E-07	3.2E-07	1.2E-07	9.9E-05	0.02	2.8E-06	2.6E-07	0.02
393258B	Muscatine	Iowa	0.0192	0.0479	46	145	5	42	3.3E-05	7.6E-06	4.8E-07	4.4E-07	1.7E-07	1.4E-04	0.03	3.8E-06	3.6E-07	0.03
607211C	Muscatine	Iowa	0.0202	0.0505	81	258	10	79	6.3E-05	1.4E-05	9.0E-07	8.2E-07	3.2E-07	2.6E-04	0.06	7.2E-06	6.7E-07	0.06
607215E	Muscatine	Iowa	0.0195	0.0486	28	89	3	26	2.1E-05	4.7E-06	3.0E-07	2.7E-07	1.1E-07	8.6E-05	0.02	2.4E-06	2.2E-07	0.02
865646F	Scott	Iowa	0.0385	0.0786	56	132	13	63	8.2E-05	1.9E-05	1.2E-06	1.1E-06	4.2E-07	3.4E-04	0.07	9.4E-06	8.7E-07	0.07
865649B	Scott	Iowa	0.0911	0.1819	132	310	73	343	4.6E-04	1.0E-04	6.6E-06	6.0E-06	2.4E-06	1.9E-03	0.40	5.3E-05	4.9E-06	0.41
865653R	Scott	Iowa	0.1214	0.2425	353	827	261	1,220	1.6E-03	3.7E-04	2.3E-05	2.1E-05	8.4E-06	6.7E-03	1.44	1.9E-04	1.7E-05	1.45
375784R	Wapello	Iowa	0.0652	0.1545	60	186	24	175	1.5E-04	3.4E-05	2.2E-06	2.0E-06	7.7E-07	6.2E-04	0.13	1.7E-05	1.6E-06	0.13
375779U	Wapello	Iowa	0.0662	0.1568	89	274	36	261	2.2E-04	5.1E-05	3.2E-06	2.9E-06	1.2E-06	9.2E-04	0.20	2.6E-05	2.4E-06	0.20
375781V	Wapello	Iowa	0.0658	0.1558	131	402	52	381	3.3E-04	7.4E-05	4.7E-06	4.3E-06	1.7E-06	1.4E-03	0.29	3.8E-05	3.5E-06	0.29
607323B	Washington	Iowa	0.0199	0.0498	72	228	9	69	5.5E-05	1.2E-05	7.9E-07	7.2E-07	2.8E-07	2.3E-04	0.05	6.3E-06	5.9E-07	0.05
607322U	Washington	Iowa	0.0187	0.0467	28	87	3	25	2.0E-05	4.5E-06	2.8E-07	2.6E-07	1.0E-07	8.1E-05	0.02	2.3E-06	2.1E-07	0.02
330258C	Crawford	Kansas	0.0380	0.0545	158	252	37	84	2.3E-04	5.2E-05	3.3E-06	3.0E-06	1.2E-06	9.5E-04	0.20	2.6E-05	2.4E-06	0.20
330256N	Crawford	Kansas	0.0328	0.0471	85	135	17	39	1.1E-04	2.4E-05	1.5E-06	1.4E-06	5.5E-07	4.4E-04	0.09	1.2E-05	1.1E-06	0.09
330257V	Crawford	Kansas	0.0332	0.0477	212	338	43	98	2.7E-04	6.1E-05	3.9E-06	3.5E-06	1.4E-06	1.1E-03	0.24	3.1E-05	2.9E-06	0.24
329322C	Beauregard	Louisiana	0.0413	0.0686	63	114	16	47	9.8E-05	2.2E-05	1.4E-06	1.3E-06	5.1E-07	4.1E-04	0.09	1.1E-05	1.1E-06	0.09
329320N	Beauregard	Louisiana	0.0367	0.0612	92	168	21	63	1.3E-04	2.9E-05	1.9E-06	1.7E-06	6.6E-07	5.3E-04	0.11	1.5E-05	1.4E-06	0.11
329319U	Beauregard	Louisiana	0.0539	0.0899	600	1,092	197	598	1.2E-03	2.8E-04	1.8E-05	1.6E-05	6.3E-06	5.1E-03	1.08	1.4E-04	1.3E-05	1.09
329317F	Beauregard	Louisiana	0.0539	0.0899	600	1,092	197	598	1.2E-03	2.8E-04	1.8E-05	1.6E-05	6.3E-06	5.1E-03	1.08	1.4E-04	1.3E-05	1.09
329337S	Beauregard	Louisiana	0.0234	0.0395	75	137	11	33	6.7E-05	1.5E-05	9.6E-07	8.8E-07	3.4E-07	2.8E-04	0.06	7.7E-06	7.1E-07	0.06
329128J	Caddo	Louisiana	0.0804	0.1028	148	201	72	125	4.5E-04	1.0E-04	6.5E-06	6.0E-06	2.3E-06	1.9E-03	0.40	5.2E-05	4.8E-06	0.40
329154Y	Caddo	Louisiana	0.1394	0.1782	1,034	1,401	877	1,519	5.5E-03	1.2E-03	7.9E-05	7.2E-05	2.8E-05	2.3E-02	4.83	6.3E-04	5.9E-05	4.86
329157U	Caddo	Louisiana	0.0793	0.1014	252	342	122	211	7.6E-04	1.7E-04	1.1E-05	1.0E-05	3.9E-06	3.1E-03	0.67	8.8E-05	8.1E-06	0.67
329006E	Caddo	Louisiana	0.0354	0.0524	114	192	24	61	1.5E-04	3.5E-05	2.2E-06	2.0E-06	7.9E-07	6.3E-04	0.13	1.8E-05	1.6E-06	0.14
328998G	Caddo	Louisiana	0.0378	0.0560	135	228	31	78	1.9E-04	4.4E-05	2.8E-06	2.6E-06	1.0E-06	8.0E-04	0.17	2.2E-05	2.1E-06	0.17
329356W	Calcasieu	Louisiana	0.0493	0.0819	347	631	104	314	6.5E-04	1.5E-04	9.4E-06	8.6E-06	3.4E-06	2.7E-03	0.57	7.5E-05	7.0E-06	0.58
329344C	Calcasieu	Louisiana	0.0419	0.0697	78	142	20	60	1.2E-04	2.8E-05	1.8E-06	1.6E-06	6.4E-07	5.1E-04	0.11	1.4E-05	1.3E-06	0.11
329346R	Calcasieu	Louisiana	0.0379	0.0705	231	454	53	195	3.3E-04	7.6E-05	4.8E-06	4.4E-06	1.7E-06	1.4E-03	0.29	3.8E-05	3.6E-06	0.30
329164E	De Soto	Louisiana	0.0694	0.0889	141	192	60	104	3.7E-04	8.5E-05	5.4E-06	4.9E-06	1.9E-06	1.5E-03	0.33	4.3E-05	4.0E-06	0.33
329162R	De Soto	Louisiana	0.0772	0.0990	368	500	173	301	1.1E-03	2.5E-04	1.6E-05	1.4E-05	5.6E-06	4.5E-03	0.95	1.2E-04	1.2E-05	0.96
329183J	De Soto	Louisiana	0.0443	0.0745	230	423	62	191	3.9E-04	8.8E-05	5.6E-06	5.1E-06	2.0E-06	1.6E-03	0.34	4.5E-05	4.1E-06	0.34
329187L	De Soto	Louisiana	0.0401	0.0676	181	333	44	137	2.8E-04	6.3E-05	4.0E-06	3.6E-06	1.4E-06	1.1E-03	0.24	3.2E-05	3.0E-06	0.24
329182C	De Soto	Louisiana	0.0422	0.0710	328	604	84	261	5.3E-04	1.2E-04	7.6E-06	6.9E-06	2.7E-06	2.2E-03	0.46	6.1E-05	5.6E-06	0.47
329234S	Sabine	Louisiana	0.0235	0.0402	143	265	20	65	1.3E-04	2.9E-05	1.8E-06	1.7E-06	6.6E-07	5.3E-04	0.11	1.5E-05	1.4E-06	0.11
329226A	Sabine	Louisiana	0.0366	0.0622	184	340	41	129	2.6E-04	5.8E-05	3.7E-06	3.4E-06	1.3E-06	1.1E-03	0.23	3.0E-05	2.7E-06	0.23
329227G	Sabine	Louisiana	0.0287	0.0487	50	93	9	28	5.5E-05	1.3E-05	7.9E-07	7.2E-07	2.8E-07	2.3E-04	0.05	6.3E-06	5.9E-07	0.05
329259M	Vernon	Louisiana	0.0420	0.0706	100	184	26	79	1.6E-04	3.6E-05	2.3E-06	2.1E-06	8.2E-07	6.6E-04	0.14	1.8E-05	1.7E-06	0.14
329253W	Vernon	Louisiana	0.0403	0.0678	61	113	15	46	9.4E-05	2.1E-05	1.4E-06	1.2E-06	4.8E-07	3.9E-04	0.08	1.1E-05	1.0E-06	0.08
329279Y	Vernon	Louisiana	0.0416	0.0691	108	197	27	83	1.7E-04	3.9E-05	2.5E-06	2.3E-06	8.8E-07	7.1E-04	0.15	2.0E-05	1.8E-06	0.15
329284V	Vernon	Louisiana	0.0423	0.0702	86	155	22	66	1.4E-04	3.1E-05	2.0E-06	1.8E-06	7.1E-07	5.7E-04	0.12	1.6E-05	1.5E-06	0.12
329641V	Vernon	Louisiana	0.0418	0.0694	74	134	19	57	1.2E-04	2.7E-05	1.7E-06	1.5E-06	6.1E-07	4.9E-04	0.10	1.4E-05	1.3E-06	0.10
329298D	Vernon	Louisiana	0.0338	0.0567	172	314	35	108	2.2E-04	5.0E-05	3.2E-06	2.9E-06	1.1E-06	9.1E-04	0.20	2.5E-05	2.4E-06	0.20
329308G	Vernon	Louisiana	0.0227	0.0383	53	96	7	22	4.5E-05	1.0E-05	6.5E-07	6.0E-07	2.3E-07	1.9E-04	0.04	5.2E-06	4.9E-07	0.04
329839D	Cass	Missouri	0.0391	0.0575	93	148	22	52	1.4E-04	3.1E-05	2.0E-06	1.8E-06	7.1E-07	5.7E-04	0.12	1.6E-05	1.5E-06	0.12
375407C	Clay	Missouri	0.0564	0.0991	43	124	15	75	9.2E-05	2.1E-05	1.3E-06	1.2E-06	4.7E-07	3.8E-04	0.08	1.1E-05	9.8E-07	0.08
375439H	Clay	Missouri	0.0142	0.0289	48	148	4	26	2.6E-05	5.8E-06	3.7E-07	3.4E-07	1.3E-07	1.1E-04	0.02	3.0E-06	2.7E-07	0.02
375440C	Clay	Missouri	0.0128	0.0261	25	77	2	12	1.2E-05	2.8E-06	1.7E-07	1.6E-07	6.2E-08	5.0E-05	0.01	1.4E-06	1.3E-07	0.01
329807X	Jackson	Missouri	0.0412	0.0606	181	289	45	107	2.8E-04	6.5E-05	4.1E-06	3.7E-06	1.5E-06	1.2E-03	0.25	3.3E-05	3.0E-06	0.25
329764G	Jackson	Missouri	0.0659	0.0957	122	193	49	112	3.0E-04	6.9E-05	4.4E-06	4.0E-06	1.6E-06	1.3E-03	0.27	3.5E-05	3.3E-06	0.27
330035L	Jasper	Missouri	0.0415	0.0594	162	258	41	93	2.6E-04	5.8E-05	3.7E-06	3.4E-06	1.3E-06	1.1E-03	0.23	3.0E-05	2.7E-06	0.23
330055X	Jasper	Missouri	0.0612	0.0866	378	597	141	315	8.8E-04	2.0E-04	1.3E-05	1.2E-05	4.5E-06	3.6E-03	0.78	1.0E-04	9.4E-06	0.78
330061B	Jasper	Missouri	0.0691	0.0977	595	940	250	559	1.6E-03	3.6E-04	2.3E-05	2.1E-05	8.1E-06	6.5E-03	1.38	1.8E-04	1.7E-05	1.39

Table K.10-3. Grade Crossing Analysis - No Action Criteria Pollutant Emissions by Crossing

			Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		No Action Emissions (tons/year)									
FRA Crossing ID	County	State	NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	NOX	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	CO2e
330045S	Jasper	Missouri	0.0587	0.0830	295	466	105	235	6.6E-04	1.5E-04	9.5E-06	8.6E-06	3.4E-06	2.7E-03	0.58	7.6E-05	7.0E-06	0.58
330053J	Jasper	Missouri	0.0585	0.0828	145	229	52	115	3.2E-04	7.3E-05	4.6E-06	4.2E-06	1.7E-06	1.3E-03	0.28	3.7E-05	3.5E-06	0.29
330178J	McDonald	Missouri	0.0905	0.1263	173	271	95	208	5.9E-04	1.4E-04	8.6E-06	7.8E-06	3.1E-06	2.5E-03	0.52	6.8E-05	6.4E-06	0.53
330102D	Newton	Missouri	0.1270	0.1761	255	399	197	427	1.2E-03	2.8E-04	1.8E-05	1.6E-05	6.3E-06	5.1E-03	1.08	1.4E-04	1.3E-05	1.09
330120B	Newton	Missouri	0.1211	0.1680	127	199	93	203	5.8E-04	1.3E-04	8.4E-06	7.7E-06	3.0E-06	2.4E-03	0.51	6.7E-05	6.2E-06	0.52
330113R	Newton	Missouri	0.1200	0.1664	223	349	163	353	1.0E-03	2.3E-04	1.5E-05	1.3E-05	5.2E-06	4.2E-03	0.90	1.2E-04	1.1E-05	0.90
330101W	Newton	Missouri	0.1166	0.1617	131	206	93	202	5.8E-04	1.3E-04	8.4E-06	7.7E-06	3.0E-06	2.4E-03	0.51	6.7E-05	6.2E-06	0.52
330625H	Adair	Oklahoma	0.0469	0.0704	89	149	25	64	1.6E-04	3.6E-05	2.3E-06	2.1E-06	8.1E-07	6.5E-04	0.14	1.8E-05	1.7E-06	0.14
330612G	Adair	Oklahoma	0.0472	0.0709	106	177	30	76	1.9E-04	4.3E-05	2.7E-06	2.5E-06	9.8E-07	7.8E-04	0.17	2.2E-05	2.0E-06	0.17
330785W	Le Flore	Oklahoma	0.1825	0.2632	335	548	372	877	2.3E-03	5.3E-04	3.4E-05	3.1E-05	1.2E-05	9.6E-03	2.05	2.7E-04	2.5E-05	2.06
330784P	Le Flore	Oklahoma	0.1848	0.2666	355	579	399	939	2.5E-03	5.7E-04	3.6E-05	3.3E-05	1.3E-05	1.0E-02	2.20	2.9E-04	2.7E-05	2.21
330736A	Le Flore	Oklahoma	0.0314	0.0473	84	140	16	40	1.0E-04	2.3E-05	1.4E-06	1.3E-06	5.2E-07	4.1E-04	0.09	1.2E-05	1.1E-06	0.09
330869S	Bowie	Texas	0.0336	0.0499	103	174	21	53	1.3E-04	3.0E-05	1.9E-06	1.7E-06	6.8E-07	5.5E-04	0.12	1.5E-05	1.4E-06	0.12
330872A	Bowie	Texas	0.0546	0.0795	179	300	60	145	3.7E-04	8.5E-05	5.4E-06	4.9E-06	1.9E-06	1.5E-03	0.33	4.3E-05	4.0E-06	0.33
330867D	Bowie	Texas	0.0348	0.0515	98	166	21	52	1.3E-04	3.0E-05	1.9E-06	1.7E-06	6.7E-07	5.4E-04	0.11	1.5E-05	1.4E-06	0.12
021749Y	Collin	Texas	0.0030	0.0033	23	24	0	0	2.7E-06	6.0E-07	3.8E-08	3.5E-08	1.4E-08	1.1E-05	0.00	3.1E-07	2.8E-08	0.00
021770E	Collin	Texas	0.0026	0.0029	12	13	0	0	1.2E-06	2.8E-07	1.8E-08	1.6E-08	6.3E-09	5.1E-06	0.00	1.4E-07	1.3E-08	0.00
789644J	Collin	Texas	0.0033	0.0036	77	81	2	2	9.7E-06	2.2E-06	1.4E-07	1.3E-07	5.0E-08	4.0E-05	0.01	1.1E-06	1.0E-07	0.01
789645R	Collin	Texas	0.0031	0.0034	52	55	1	1	6.2E-06	1.4E-06	8.9E-08	8.1E-08	3.2E-08	2.5E-05	0.01	7.1E-07	6.6E-08	0.01
789633W	Collin	Texas	0.0045	0.0050	7	7	0	0	1.2E-06	2.7E-07	1.7E-08	1.6E-08	6.1E-09	4.9E-06	0.00	1.4E-07	1.3E-08	0.00
021635L	Collin	Texas	0.0031	0.0034	90	95	2	2	1.1E-05	2.5E-06	1.6E-07	1.4E-07	5.6E-08	4.5E-05	0.01	1.2E-06	1.2E-07	0.01
919239F	Collin	Texas	0.0031	0.0034	45	47	1	1	5.3E-06	1.2E-06	7.7E-08	7.0E-08	2.7E-08	2.2E-05	0.00	6.1E-07	5.7E-08	0.00
789632P	Collin	Texas	0.0028	0.0031	54	56	1	1	5.7E-06	1.3E-06	8.3E-08	7.6E-08	3.0E-08	2.4E-05	0.01	6.6E-07	6.1E-08	0.01
789638F	Collin	Texas	0.0036	0.0039	67	70	1	2	9.1E-06	2.1E-06	1.3E-07	1.2E-07	4.7E-08	3.8E-05	0.01	1.0E-06	9.7E-08	0.01
789635K	Collin	Texas	0.0030	0.0033	22	23	0	0	2.5E-06	5.6E-07	3.6E-08	3.3E-08	1.3E-08	1.0E-05	0.00	2.9E-07	2.7E-08	0.00
753583T	Collin	Texas	0.0029	0.0032	25	27	0	1	2.8E-06	6.4E-07	4.0E-08	3.7E-08	1.4E-08	1.2E-05	0.00	3.2E-07	3.0E-08	0.00
789636S	Collin	Texas	0.0045	0.0049	44	46	1	1	7.5E-06	1.7E-06	1.1E-07	9.9E-08	3.9E-08	3.1E-05	0.01	8.7E-07	8.0E-08	0.01
021638G	Collin	Texas	0.0029	0.0032	45	47	1	1	5.0E-06	1.1E-06	7.2E-08	6.5E-08	2.6E-08	2.1E-05	0.00	5.7E-07	5.3E-08	0.00
919268R	Collin	Texas	0.0035	0.0038	65	68	1	2	8.6E-06	2.0E-06	1.2E-07	1.1E-07	4.4E-08	3.6E-05	0.01	9.9E-07	9.2E-08	0.01
789640G	Collin	Texas	0.0029	0.0032	15	15	0	0	1.6E-06	3.6E-07	2.3E-08	2.1E-08	8.3E-09	6.6E-06	0.00	1.8E-07	1.7E-08	0.00
789631H	Collin	Texas	0.0122	0.0134	112	117	8	10	5.2E-05	1.2E-05	7.4E-07	6.8E-07	2.7E-07	2.1E-04	0.05	6.0E-06	5.5E-07	0.05
789629G	Collin	Texas	0.0036	0.0039	41	43	1	1	5.5E-06	1.3E-06	8.0E-08	7.3E-08	2.9E-08	2.3E-05	0.00	6.4E-07	5.9E-08	0.00
753757M	Collin	Texas	0.0028	0.0030	30	31	0	1	3.1E-06	7.1E-07	4.5E-08	4.1E-08	1.6E-08	1.3E-05	0.00	3.6E-07	3.3E-08	0.00
789628A	Collin	Texas	0.0026	0.0029	29	30	0	1	2.9E-06	6.5E-07	4.1E-08	3.8E-08	1.5E-08	1.2E-05	0.00	3.3E-07	3.1E-08	0.00
789648L	Collin	Texas	0.0029	0.0032	31	32	1	1	3.4E-06	7.7E-07	4.8E-08	4.4E-08	1.7E-08	1.4E-05	0.00	3.9E-07	3.6E-08	0.00
789654P	Collin	Texas	0.0030	0.0033	7	7	0	0	7.9E-07	1.8E-07	1.1E-08	1.0E-08	4.1E-09	3.3E-06	0.00	9.1E-08	8.5E-09	0.00
789653H	Collin	Texas	0.0020	0.0022	23	24	0	0	1.7E-06	4.0E-07	2.5E-08	2.3E-08	9.0E-09	7.2E-06	0.00	2.0E-07	1.9E-08	0.00
789652B	Collin	Texas	0.0014	0.0016	18	19	0	0	9.8E-07	2.2E-07	1.4E-08	1.3E-08	5.1E-09	4.0E-06	0.00	1.1E-07	1.0E-08	0.00
790146W	Collin	Texas	0.0032	0.0035	28	29	1	1	3.3E-06	7.6E-07	4.8E-08	4.4E-08	1.7E-08	1.4E-05	0.00	3.8E-07	3.6E-08	0.00
331279Y	Collin	Texas	0.0032	0.0035	30	31	1	1	3.6E-06	8.3E-07	5.3E-08	4.8E-08	1.9E-08	1.5E-05	0.00	4.2E-07	3.9E-08	0.00
021765H	Denton	Texas	0.0038	0.0041	72	75	2	2	1.0E-05	2.3E-06	1.5E-07	1.3E-07	5.3E-08	4.2E-05	0.01	1.2E-06	1.1E-07	0.01
021767W	Denton	Texas	0.0028	0.0030	33	34	1	1	3.4E-06	7.8E-07	5.0E-08	4.5E-08	1.8E-08	1.4E-05	0.00	4.0E-07	3.7E-08	0.00
021691T	Denton	Texas	0.0029	0.0031	10	10	0	0	1.1E-06	2.4E-07	1.5E-08	1.4E-08	5.5E-09	4.4E-06	0.00	1.2E-07	1.1E-08	0.00
021700P	Denton	Texas	0.0028	0.0031	18	19	0	0	1.9E-06	4.4E-07	2.8E-08	2.5E-08	9.9E-09	7.9E-06	0.00	2.2E-07	2.1E-08	0.00
021726S	Denton	Texas	0.0030	0.0032	24	25	0	0	2.7E-06	6.1E-07	3.8E-08	3.5E-08	1.4E-08	1.1E-05	0.00	3.1E-07	2.8E-08	0.00
021696C	Denton	Texas	0.0028	0.0030	10	11	0	0	1.1E-06	2.4E-07	1.5E-08	1.4E-08	5.5E-09	4.4E-06	0.00	1.2E-07	1.1E-08	0.00
021646Y	Denton	Texas	0.0028	0.0031	75	79	1	1	8.1E-06	1.8E-06	1.2E-07	1.1E-07	4.2E-08	3.4E-05	0.01	9.3E-07	8.7E-08	0.01
021676R	Denton	Texas	0.0035	0.0038	26	27	1	1	3.5E-06	7.9E-07	5.0E-08	4.6E-08	1.8E-08	1.4E-05	0.00	4.0E-07	3.7E-08	0.00
021672N	Denton	Texas	0.0030	0.0033	50	53	1	1	5.7E-06	1.3E-06	8.3E-08	7.5E-08	3.0E-08	2.4E-05	0.01	6.6E-07	6.1E-08	0.01
331277K	Denton	Texas	0.0033	0.0037	72	75	1	2	9.1E-06	2.1E-06	1.3E-07	1.2E-07	4.7E-08	3.8E-05	0.01	1.0E-06	9.7E-08	0.01
020557D	Denton	Texas	0.0167	0.0179	158	163	16	18	1.0E-04	2.3E-05	1.4E-06	1.3E-06	5.2E-07	4.2E-04	0.09	1.2E-05	1.1E-06	0.09
020572F	Denton	Texas	0.0209	0.0224	254	263	32	36	2.0E-04	4.6E-05	2.9E-06	2.7E-06	1.0E-06	8.3E-04	0.18	2.3E-05	2.2E-06	0.18
021774G	Denton	Texas	0.0026	0.0028	16	17	0	0	1.6E-06	3.5E-07	2.2E-08	2.0E-08	8.0E-09	6.4E-06	0.00	1.8E-07	1.7E-08	0.00
021669F	Denton	Texas	0.0026	0.0028	10	11	0	0	1.0E-06	2.3E-07	1.5E-08	1.3E-08	5.2E-09	4.2E-06	0.00	1.2E-07	1.1E-08	0.00
919241G	Denton	Texas	0.0026	0.0028	8	9	0	0	8.0E-07	1.8E-07	1.1E-08	1.0E-08	4.1E-09	3.3E-06	0.00	9.2E-08	8.5E-09	0.00
020563G	Denton	Texas	0.0162	0.0173	111	115	11	12	6.8E-05	1.6E-05	9.8E-07	9.0E-07	3.5E-07	2.8E-04	0.06	7.8E-06	7.3E-07	0.06
793688R	Duval	Texas	0.1214	0.1195	524	645	387	469	2.4E-03	5.5E-04	3.5E-05	3.2E-05	1.2E-05	1.0E-02	2.13	2.8E-04	2.6E-05	2.15
743475U	Fort Bend	Texas	0.0212	0.0283	50	80	6	14	4.1E-05	9.2E-06	5.8E-07	5.3E-07	2.1E-07	1.7E-04	0.04	4.7E-06	4.3E-07	0.04
440652H	Fort Bend	Texas	0.1491	0.1549	779	881	706	830	4.4E-03	1.0E-03	6.4E-05	5.8E-05	2.3E-05	1.8E-02	3.89	5.1E-04	4.7E-05	3.92
743483L	Fort Bend	Texas	0.0222	0.0288	44	69	6	12	3.7E-05	8.5E-06	5.4E-07	4.9E-07	1.9E-07	1.5E-04	0.03	4.3E-06	4.0E-07	0.03
743689L	Fort Bend	Texas	0.0790	0.0814	1,147	1,278	552	633	3.4E-03	7.8E-04	5.0E-05	4.5E-05	1.8E-05	1.4E-02	3.04	4.0E-04	3.7E-05	3.06
743726L	Fort Bend	Texas	0.0834	0.0859	750	836	381	437	2.4E-03	5.4E-04	3.4E-05	3.1E-05	1.2E-05	9.8E-03	2.10	2.7E-04	2.5E-05	2.11
743719B	Fort Bend	Texas	0.0863	0.0886	295	328	155	177	9.7E-04	2.2E-04	1.4E-05	1.3E-05	5.0E-06	4.0E-03	0.85	1.1E-04	1.0E-05	0.86
743724X	Fort Bend	Texas	0.0863	0.0889	431	480	226	260	1.4E-03	3.2E-04	2.0E-05	1.9E-05	7.3E-06	5.8E-03	1.25	1.6E-04	1.5E-05	1.26
743731H	Fort Bend	Texas	0.0499	0.0498	257	307	78	93	4.9E-04	1.1E-04	7.0E-06	6.4E-06	2.5E-06	2.0E-03	0.43	5.6E-05	5.2E-06	0.43
743727T	Fort Bend	Texas	0.0427	0.0513	194	250	50	78	3.1E-04	7.2E-05	4.5E-06	4.1E-06	1.6E-06	1.3E-03	0.28	3.6E-05	3.4E-06	0.28
924008H	Fort Bend	Texas	0.0746	0.0769	374	416	170	195	1.1E-03	2.4E-04	1.5E-05	1.4E-05	5.5E-06	4.4E-03	0.93	1.2E-04	1.1E-05	0.94
924009P	Fort Bend	Texas	0.0706	0.0727	336	374	144	165	9.0E-04	2.1E-04	1.3E-05	1.2E-05	4.6E-06	3.7E-03	0.79	1.0E-04	9.6E-06	0.80
743695P	Fort Bend	Texas	0.0823	0.0848	1,412	1,573	707	811	4.4E-03	1.0E-03	6.4E-05	5.8E-05	2.3E-05	1.8E-02	3.89	5.1E-04	4.7E-05	3.92
412514U	Fort Bend	Texas	0.0737	0.0760	331	369	149	171	9.3E-04	2.1E-04	1.3E-05	1.2E-05	4.8E-06	3.8E-03	0.82	1.1E-04	9.9E-06	0.82
924006U	Fort Bend	Texas	0.0740	0.0762	219	244	99	113	6.2E-04	1.4E-04	8.9E-06	8.1E-06	3.2E-06	2.5E-03	0.54	7.1E-05	6.6E-06	0.55
924007B	Fort Bend	Texas	0.0746	0.0769	239	266	109	125	6.8E-04	1.5E-04	9.8E-06	8.9E-06	3.5E-06	2.8E-03	0.60	7.8E-05	7.3E-06	0.60
743699S	Fort Bend	Texas	0.0747	0.0769	749	834	340	390	2.1E-03	4.8E-04	3.1E-05	2.8E-05	1.1E-05	8.8E-03	1.87	2.4E-04	2.3E-05	1.89
745055W	Fort Bend	Texas	0.0826	0.0851	361	402	181	208	1.1E-03	2.6E-04	1.6E-05	1.5E-05	5.8E-06	4.7E-03	1.00	1.3E-04	1.2E-05	1.01
743713K	Fort Bend	Texas	0.0742	0.0765	570	635	257	295	1.6E-03	3.7E-04	2.3E-05	2.1E-05	8.3E-06	6.6E-03	1.42	1.9E-04	1.7E-05	1.43
743698K	Fort Bend	Texas	0.0738	0.0760	499	556	224	257	1.4E-03	3.2E-04	2.0E-05	1.8E-05	7.2E-06	5.8E-03	1.23	1.6E-04	1.5E-05	1.24
743703E	Fort Bend	Texas	0.0709	0.0731	374	416	161	185	1.0E-03	2.3E-04	1.5E-05	1.3E-05	5.2E-06	4.2E-03	0.89	1.2E-04	1.1E-05	0.89
743716F	Fort Bend	Texas	0.0830	0.0856	474	528	239	275	1.5E-03	3.4E-04	2.2E-05	2.0E-05	7.7E-06	6.2E-03	1.32	1.7E-04	1.6E-05	1.33
745044J	Fort Bend	Texas	0.0755	0.0778	1,250	1,392	574	659	3.6E-03	8.2E-04	5.2E-05	4.7E-05	1.9E-05	1.5E-02	3.16	4.1E-04	3.8E-05	3.19
922512N	Fort Bend	Texas	0.0738	0.0760	429	478	193	221	1.2E-03	2.7E-04	1.7E-05	1.6E-05	6.2E-06	5.0E-03	1.06	1.4E-04	1.3E-05	1.07
922513V	Fort Bend	Texas	0.0842	0.0844	478	519	245	266	1.5E-03	3.5E-04	2.2E-05	2.0E-05	7.9E-06	6.3E-03	1.35	1.8E-04	1.6E-05	1.36
762865H	Harris	Texas	0.0433	0.0478	119	141	31	41	1.9E-04	4.4E-05	2.8E-06	2.6E-06	1.0E-06	8.1E-04	0.17	2.2E-05	2.1E-06	0.17
762872T	Harris	Texas	0.0578	0.0634	279	331	98	128	6.1E-04	1.4E-04	8.8E-06	8.1E-06	3.2E-06	2.5E-03	0.54	7.1E-05	6.6E-06	0.54
762869K	Harris	Texas	0.0540	0.0593	132	156	43	56	2.7E-04	6.2E-05	3.9E-06	3.6E-06	1.4E-06	1.1E-03	0.24	3.1E-05	2.9E-06	0.24
758519L	Harris	Texas	0.0611	0.0665	983	1,154	366	467	2.3E-03	5.2E-04	3.3E-05	3.0E-05	1.2E-05	9.4E-03	2.01	2.6E-04	2.4E-05	2.03
758518E	Harris	Texas	0.0625	0.0680	1,639	1,924	623	796	3.9E-03	8.9E-04	5.6E-05	5.1E-05	2.0E-05	1.6E-02	3.43	4.5E-04	4.2E-05	3.46
758517X	Harris	Texas	0.0613	0.0667	995	1,168	371	474	2.3E-03	5.3E-04	3.3E-05	3.0E-05	1.2E-05	9.6E-03	2.04	2.7E-04	2.5E-05	2.06
758521M	Harris	Texas	0.0556	0.0605	482	566	163	208	1.0E-03	2.3E-04	1.5E-05	1.3E-05	5.3E-06	4.2E-03	0.90	1.2E-04	1.1E-05	0.91
762904W	Harris	Texas	0.0444	0.0516	714	894	193	281	1.2E-03	2.7E-04	1.7E-05	1.6E-05	6.2E-06	5.0E-03	1.06	1.4E-04	1.3E-05	1.07
762889W	Harris	Texas	0.0447	0.0520	151	189	41	60	2.6E-04	5.8E-05	3.7E-06	3.4E-06	1.3E-06	1.1E-03	0.23	2.9E-05	2.7E-06	0.23
755621G	Harris	Texas	0.0746	0.0768	926	1,032	420	482	2.6E-03	6.0E-04	3.8E-05	3.5E-05	1.4E-05	1.1E-02	2.32	3.0E-04	2.8E-05	2.33
758533G	Harris	Texas	0.0659	0.0705	1,046	1,210	419	519	2.6E-03	6.0E-04	3.8E-05	3.4E-05	1.4E-05	1.1E-02	2.31	3.0E-04	2.8E-05	2.33
755624C	Harris	Texas	0.0512	0.0534	1,218	1,366	379	444	2.4E-03	5.4E-04	3.4E-05	3.1E-05	1.2E-05	9.8E-03	2.09	2.7E-04	2.5E-05	2.11
758540S	Harris	Texas	0.1324	0.1396	1,938	2,223	1,561	1,887	9.8E-03	2.2E-03	1.4E-04	1.3E-04	5.0E-05	4.0E-02	8.60	1.1E-03	1.0E-04	8.66
758180W	Harris	Texas	0.0701	0.0740	534	608	228	274	1.4E-03	3.2E-04	2.0E-05	1.9E-05	7.3E-06	5.9E-03	1.25	1.6E-04	1.5E-05	1.26
755622N	Harris	Texas	0.0756	0.0778	1,043	1,161	479	550	3.0E-03	6.8E-04	4.3E-05	3.9E-05	1.5E-05	1.2E-02	2.64	3.5E-04	3.2E-05	2.66
758187U	Harris	Texas	0.4121	0.4201	2,020	2,263	5,063	5,784	3.2E-02	7.2E-03	4.6E-04	4.2E-04	1.6E-04	1.3E-01	27.89	3.6E-03	3.4E-04	28.09
762907S	Harris	Texas	0.0539	0.0592	259	307	85	111	5.3E-04	1.2E-04	7.7E-06	7.0E-06	2.7E-06	2.2E-03	0.47	6.1E-05	5.7E-06	0.47

Table K.10-3. Grade Crossing Analysis - No Action Criteria Pollutant Emissions by Crossing

			Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		No Action Emissions (tons/year)									
FRA Crossing ID	County	State	NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	NOX	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	CO2e
758293C	Harris	Texas	0.0676	0.0714	426	485	175	211	1.1E-03	2.5E-04	1.6E-05	1.4E-05	5.6E-06	4.5E-03	0.97	1.3E-04	1.2E-05	0.97
758534N	Harris	Texas	0.1253	0.1321	1,546	1,773	1,179	1,425	7.4E-03	1.7E-03	1.1E-04	9.7E-05	3.8E-05	3.0E-02	6.49	8.5E-04	7.9E-05	6.54
755618Y	Harris	Texas	0.1526	0.1586	832	941	772	908	4.8E-03	1.1E-03	7.0E-05	6.3E-05	2.5E-05	2.0E-02	4.25	5.6E-04	5.2E-05	4.28
758514C	Harris	Texas	0.0604	0.0657	1,377	1,617	506	646	3.2E-03	7.2E-04	4.6E-05	4.2E-05	1.6E-05	1.3E-02	2.79	3.6E-04	3.4E-05	2.80
758532A	Harris	Texas	0.1202	0.1267	310	355	227	274	1.4E-03	3.2E-04	2.0E-05	1.9E-05	7.3E-06	5.9E-03	1.25	1.6E-04	1.5E-05	1.26
758512N	Harris	Texas	0.0582	0.0633	729	856	258	330	1.6E-03	3.7E-04	2.3E-05	2.1E-05	8.3E-06	6.7E-03	1.42	1.9E-04	1.7E-05	1.43
758178V	Harris	Texas	0.0786	0.0829	852	971	407	490	2.5E-03	5.8E-04	3.7E-05	3.3E-05	1.3E-05	1.1E-02	2.24	2.9E-04	2.7E-05	2.26
762892E	Harris	Texas	0.0449	0.0522	308	386	84	122	5.2E-04	1.2E-04	7.6E-06	6.9E-06	2.7E-06	2.2E-03	0.46	6.0E-05	5.6E-06	0.47
758531T	Harris	Texas	0.1177	0.1241	1,069	1,226	765	925	4.8E-03	1.1E-03	6.9E-05	6.3E-05	2.5E-05	2.0E-02	4.22	5.5E-04	5.1E-05	4.25
758610E	Harris	Texas	0.0600	0.0653	285	334	104	133	6.5E-04	1.5E-04	9.4E-06	8.5E-06	3.4E-06	2.7E-03	0.57	7.5E-05	6.9E-06	0.58
758611L	Harris	Texas	0.0601	0.0654	289	339	106	135	6.6E-04	1.5E-04	9.5E-06	8.7E-06	3.4E-06	2.7E-03	0.58	7.6E-05	7.1E-06	0.59
762901B	Harris	Texas	0.0562	0.0617	366	434	125	163	7.8E-04	1.8E-04	1.1E-05	1.0E-05	4.0E-06	3.2E-03	0.69	9.0E-05	8.4E-06	0.70
758523B	Harris	Texas	0.0558	0.0608	504	592	171	219	1.1E-03	2.4E-04	1.5E-05	1.4E-05	5.5E-06	4.4E-03	0.94	1.2E-04	1.1E-05	0.95
758513V	Harris	Texas	0.0622	0.0677	1,337	1,570	506	647	3.2E-03	7.2E-04	4.6E-05	4.2E-05	1.6E-05	1.3E-02	2.79	3.6E-04	3.4E-05	2.81
758525P	Harris	Texas	0.0534	0.0581	249	293	81	103	5.1E-04	1.2E-04	7.3E-06	6.7E-06	2.6E-06	2.1E-03	0.45	5.8E-05	5.4E-06	0.45
746645W	Jackson	Texas	0.0223	0.0289	46	72	6	13	3.9E-05	8.9E-06	5.7E-07	5.2E-07	2.0E-07	1.6E-04	0.03	4.5E-06	4.2E-07	0.03
746643H	Jackson	Texas	0.0222	0.0288	67	105	9	18	5.7E-05	1.3E-05	8.2E-07	7.5E-07	2.9E-07	2.3E-04	0.05	6.5E-06	6.1E-07	0.05
746639T	Jackson	Texas	0.0225	0.0292	166	258	23	46	1.4E-04	3.2E-05	2.0E-06	1.9E-06	7.3E-07	5.9E-04	0.13	1.6E-05	1.5E-06	0.13
746621H	Jackson	Texas	0.0253	0.0328	127	198	20	40	1.2E-04	2.8E-05	1.8E-06	1.6E-06	6.3E-07	5.1E-04	0.11	1.4E-05	1.3E-06	0.11
446594K	Jefferson	Texas	0.0670	0.0707	397	452	162	195	1.0E-03	2.3E-04	1.5E-05	1.3E-05	5.2E-06	4.2E-03	0.89	1.2E-04	1.1E-05	0.90
762721D	Jefferson	Texas	0.0251	0.0316	352	473	54	91	3.4E-04	7.7E-05	4.8E-06	4.4E-06	1.7E-06	1.4E-03	0.30	3.9E-05	3.6E-06	0.30
762739N	Jefferson	Texas	0.0239	0.0301	69	92	10	17	6.3E-05	1.4E-05	9.0E-07	8.2E-07	3.2E-07	2.6E-04	0.06	7.2E-06	6.7E-07	0.06
762743D	Jefferson	Texas	0.0332	0.0414	91	122	18	31	1.1E-04	2.6E-05	1.7E-06	1.5E-06	5.9E-07	4.7E-04	0.10	1.3E-05	1.2E-06	0.10
329544L	Jefferson	Texas	0.0323	0.0456	80	123	16	34	9.8E-05	2.2E-05	1.4E-06	1.3E-06	5.0E-07	4.0E-04	0.09	1.1E-05	1.0E-06	0.09
329542X	Jefferson	Texas	0.0320	0.0453	72	112	14	31	8.8E-05	2.0E-05	1.3E-06	1.2E-06	4.5E-07	3.6E-04	0.08	1.0E-05	9.4E-07	0.08
329540J	Jefferson	Texas	0.0321	0.0454	75	116	15	32	9.1E-05	2.1E-05	1.3E-06	1.2E-06	4.7E-07	3.8E-04	0.08	1.0E-05	9.8E-07	0.08
329546A	Jefferson	Texas	0.0322	0.0455	77	119	15	33	9.4E-05	2.1E-05	1.4E-06	1.2E-06	4.9E-07	3.9E-04	0.08	1.1E-05	1.0E-06	0.08
329545T	Jefferson	Texas	0.0332	0.0469	104	162	21	46	1.3E-04	3.0E-05	1.9E-06	1.7E-06	6.8E-07	5.5E-04	0.12	1.5E-05	1.4E-06	0.12
329531K	Jefferson	Texas	0.0329	0.0464	143	221	29	63	1.8E-04	4.1E-05	2.6E-06	2.3E-06	9.2E-07	7.4E-04	0.16	2.1E-05	1.9E-06	0.16
793696H	Jim Hogg	Texas	0.0652	0.0659	316	395	125	158	7.8E-04	1.8E-04	1.1E-05	1.0E-05	4.0E-06	3.2E-03	0.69	9.0E-05	8.4E-06	0.70
793818K	Jim Wells	Texas	0.2206	0.2129	350	427	469	553	2.9E-03	6.7E-04	4.2E-05	3.9E-05	1.5E-05	1.2E-02	2.58	3.4E-04	3.1E-05	2.60
793651B	Jim Wells	Texas	0.0945	0.0939	361	447	208	255	1.3E-03	3.0E-04	1.9E-05	1.7E-05	6.7E-06	5.4E-03	1.14	1.5E-04	1.4E-05	1.15
793810F	Jim Wells	Texas	0.2428	0.2344	460	561	679	800	4.2E-03	9.7E-04	6.1E-05	5.6E-05	2.2E-05	1.8E-02	3.74	4.9E-04	4.5E-05	3.77
793959U	Jim Wells	Texas	0.2158	0.2083	523	638	687	809	4.3E-03	9.8E-04	6.2E-05	5.6E-05	2.2E-05	1.8E-02	3.78	4.9E-04	4.6E-05	3.81
793649A	Jim Wells	Texas	0.0919	0.0913	134	166	75	92	4.7E-04	1.1E-04	6.8E-06	6.2E-06	2.4E-06	1.9E-03	0.41	5.4E-05	5.0E-06	0.42
793819S	Jim Wells	Texas	0.2475	0.2390	1,566	1,912	2,359	2,779	1.5E-02	3.4E-03	2.1E-04	1.9E-04	7.6E-05	6.1E-02	12.99	1.7E-03	1.6E-04	13.08
793821T	Jim Wells	Texas	0.2146	0.2072	478	583	624	735	3.9E-03	8.9E-04	5.6E-05	5.1E-05	2.0E-05	1.6E-02	3.44	4.5E-04	4.2E-05	3.46
793814H	Jim Wells	Texas	0.3232	0.3120	1,613	1,969	3,171	3,737	2.0E-02	4.5E-03	2.9E-04	2.6E-04	1.0E-04	8.2E-02	17.47	2.3E-03	2.1E-04	17.59
762761B	Liberty	Texas	0.0221	0.0285	55	75	7	13	4.6E-05	1.0E-05	6.6E-07	6.1E-07	2.4E-07	1.9E-04	0.04	5.3E-06	4.9E-07	0.04
762786W	Liberty	Texas	0.0354	0.0441	158	211	34	57	2.1E-04	4.8E-05	3.1E-06	2.8E-06	1.1E-06	8.8E-04	0.19	2.4E-05	2.3E-06	0.19
762789S	Liberty	Texas	0.0361	0.0451	179	240	39	66	2.5E-04	5.6E-05	3.5E-06	3.2E-06	1.3E-06	1.0E-03	0.22	2.8E-05	2.6E-06	0.22
762785P	Liberty	Texas	0.0356	0.0444	254	340	55	92	3.4E-04	7.8E-05	4.9E-06	4.5E-06	1.8E-06	1.4E-03	0.30	4.0E-05	3.7E-06	0.30
762770A	Liberty	Texas	0.0823	0.0894	173	204	87	111	5.4E-04	1.2E-04	7.8E-06	7.1E-06	2.8E-06	2.2E-03	0.48	6.2E-05	5.8E-06	0.48
762765D	Liberty	Texas	0.0544	0.0672	290	386	96	158	6.0E-04	1.4E-04	8.6E-06	7.9E-06	3.1E-06	2.5E-03	0.53	6.9E-05	6.4E-06	0.53
763062E	Liberty	Texas	0.0245	0.0308	279	375	42	70	2.6E-04	5.9E-05	3.7E-06	3.4E-06	1.3E-06	1.1E-03	0.23	3.0E-05	2.8E-06	0.23
427586S	Nueces	Texas	0.0846	0.0843	617	746	317	383	2.0E-03	4.5E-04	2.9E-05	2.6E-05	1.0E-05	8.2E-03	1.75	2.3E-04	2.1E-05	1.76
793749E	Nueces	Texas	0.3269	0.3124	359	436	714	828	4.5E-03	1.0E-03	6.4E-05	5.9E-05	2.3E-05	1.8E-02	3.93	5.1E-04	4.8E-05	3.96
427597E	Nueces	Texas	0.0236	0.0401	40	83	6	20	3.6E-05	8.2E-06	5.2E-07	4.8E-07	1.9E-07	1.5E-04	0.03	4.2E-06	3.9E-07	0.03
793743N	Nueces	Texas	0.1563	0.1524	152	186	144	173	9.0E-04	2.1E-04	1.3E-05	1.2E-05	4.7E-06	3.7E-03	0.80	1.0E-04	9.7E-06	0.80
329460R	Orange	Texas	0.0187	0.0351	44	86	5	18	3.1E-05	7.1E-06	4.5E-07	4.1E-07	1.6E-07	1.3E-04	0.03	3.6E-06	3.3E-07	0.03
329467N	Orange	Texas	0.0184	0.0347	54	107	6	22	3.8E-05	8.6E-06	5.5E-07	5.0E-07	2.0E-07	1.6E-04	0.03	4.4E-06	4.0E-07	0.03
329471D	Orange	Texas	0.0208	0.0390	332	657	42	156	2.6E-04	6.0E-05	3.8E-06	3.4E-06	1.4E-06	1.1E-03	0.23	3.0E-05	2.8E-06	0.23
329472K	Orange	Texas	0.0183	0.0344	46	90	5	19	3.2E-05	7.2E-06	4.6E-07	4.2E-07	1.6E-07	1.3E-04	0.03	3.7E-06	3.4E-07	0.03
927011B	Orange	Texas	0.0183	0.0343	44	87	5	18	3.1E-05	6.9E-06	4.4E-07	4.0E-07	1.6E-07	1.3E-04	0.03	3.5E-06	3.3E-07	0.03
427570V	Refugio	Texas	0.0847	0.0813	280	327	144	162	9.0E-04	2.0E-04	1.3E-05	1.2E-05	4.6E-06	3.7E-03	0.79	1.0E-04	9.6E-06	0.80
436030Y	San Patricio	Texas	0.0614	0.0599	100	117	37	43	2.3E-04	5.3E-05	3.4E-06	3.1E-06	1.2E-06	9.6E-04	0.21	2.7E-05	2.5E-06	0.21
436017K	San Patricio	Texas	0.0607	0.0592	109	129	40	46	2.5E-04	5.7E-05	3.6E-06	3.3E-06	1.3E-06	1.0E-03	0.22	2.9E-05	2.7E-06	0.22
436012B	San Patricio	Texas	0.0604	0.0589	157	184	57	66	3.6E-04	8.2E-05	5.2E-06	4.7E-06	1.9E-06	1.5E-03	0.32	4.1E-05	3.8E-06	0.32
436014P	San Patricio	Texas	0.0603	0.0588	99	116	36	42	2.3E-04	5.2E-05	3.3E-06	3.0E-06	1.2E-06	9.4E-04	0.20	2.6E-05	2.4E-06	0.20
436011U	San Patricio	Texas	0.0594	0.0581	384	453	139	160	8.7E-04	2.0E-04	1.3E-05	1.1E-05	4.5E-06	3.6E-03	0.77	1.0E-04	9.3E-06	0.77
020545J	Tarrant	Texas	0.0233	0.0249	137	142	19	22	1.2E-04	2.8E-05	1.8E-06	1.6E-06	6.3E-07	5.0E-04	0.11	1.4E-05	1.3E-06	0.11
435913V	Victoria	Texas	1.3940	1.1588	679	710	5,759	5,004	3.6E-02	8.2E-03	5.2E-04	4.7E-04	1.9E-04	1.5E-01	31.73	4.1E-03	3.9E-04	31.94
435914C	Victoria	Texas	0.0791	0.0716	377	412	181	179	1.1E-03	2.6E-04	1.6E-05	1.5E-05	5.9E-06	4.7E-03	1.00	1.3E-04	1.2E-05	1.01
746650T	Victoria	Texas	0.2329	0.2316	1,044	1,290	1,480	1,817	9.2E-03	2.1E-03	1.3E-04	1.2E-04	4.8E-05	3.8E-02	8.15	1.1E-03	9.9E-05	8.21
746558T	Victoria	Texas	0.0981	0.1183	484	721	289	518	1.8E-03	4.1E-04	2.6E-05	2.4E-05	9.3E-06	7.5E-03	1.59	2.1E-04	1.9E-05	1.60
746556E	Victoria	Texas	0.0926	0.1116	235	350	132	237	8.3E-04	1.9E-04	1.2E-05	1.1E-05	4.3E-06	3.4E-03	0.73	9.5E-05	8.8E-06	0.73
746653N	Victoria	Texas	0.8498	0.8241	2,102	2,564	10,868	12,853	6.8E-02	1.5E-02	9.8E-04	8.9E-04	3.5E-04	2.8E-01	59.87	7.8E-03	7.3E-04	60.29
746550N	Victoria	Texas	0.0926	0.1117	119	176	67	120	4.2E-04	9.5E-05	6.0E-06	5.5E-06	2.2E-06	1.7E-03	0.37	4.8E-05	4.5E-06	0.37
746510R	Victoria	Texas	0.2192	0.2188	203	252	271	336	1.7E-03	3.9E-04	2.4E-05	2.2E-05	8.8E-06	7.0E-03	1.50	2.0E-04	1.8E-05	1.51
746562H	Victoria	Texas	0.0433	0.0538	281	425	74	139	4.6E-04	1.1E-04	6.7E-06	6.1E-06	2.4E-06	1.9E-03	0.41	5.3E-05	4.9E-06	0.41
912105H	Victoria	Texas	0.1437	0.1446	283	352	247	309	1.5E-03	3.5E-04	2.2E-05	2.0E-05	8.0E-06	6.4E-03	1.36	1.8E-04	1.7E-05	1.37
746652G	Victoria	Texas	0.1519	0.1528	664	825	614	766	3.8E-03	8.7E-04	5.5E-05	5.0E-05	2.0E-05	1.6E-02	3.38	4.4E-04	4.1E-05	3.40
746551V	Victoria	Texas	0.0934	0.1127	138	206	79	141	4.9E-04	1.1E-04	7.1E-06	6.5E-06	2.5E-06	2.0E-03	0.43	5.7E-05	5.3E-06	0.44
793598S	Webb	Texas	0.4558	0.4355	1,758	2,134	4,873	5,654	3.0E-02	6.9E-03	4.4E-04	4.0E-04	1.6E-04	1.3E-01	26.85	3.5E-03	3.3E-04	27.03
793596D	Webb	Texas	0.3297	0.3150	257	313	516	599	3.2E-03	7.3E-04	4.6E-05	4.2E-05	1.7E-05	1.3E-02	2.84	3.7E-04	3.5E-05	2.86
743432B	Wharton	Texas	0.1082	0.1312	195	292	128	233	8.0E-04	1.8E-04	1.2E-05	1.1E-05	4.1E-06	3.3E-03	0.71	9.2E-05	8.6E-06	0.71
743440T	Wharton	Texas	0.1110	0.1346	126	189	85	155	5.3E-04	1.2E-04	7.7E-06	7.0E-06	2.7E-06	2.2E-03	0.47	6.1E-05	5.7E-06	0.47
743438S	Wharton	Texas	0.1105	0.1340	121	181	81	148	5.1E-04	1.2E-04	7.3E-06	6.7E-06	2.6E-06	2.1E-03	0.45	5.8E-05	5.4E-06	0.45
743435W	Wharton	Texas	0.1086	0.1317	404	606	266	485	1.7E-03	3.8E-04	2.4E-05	2.2E-05	8.6E-06	6.9E-03	1.47	1.9E-04	1.8E-05	1.48
743352H	Wharton	Texas	0.0232	0.0302	75	117	11	21	6.6E-05	1.5E-05	9.5E-07	8.7E-07	3.4E-07	2.7E-04	0.06	7.6E-06	7.1E-07	0.06
743359F	Wharton	Texas	0.0252	0.0327	195	303	30	60	1.9E-04	4.2E-05	2.7E-06	2.5E-06	9.6E-07	7.7E-04	0.16	2.1E-05	2.0E-06	0.17

Note:

Vehicles Delayed and Average Delay provided from the transportation study

Table K.10-4. Grade Crossing Analysis - Proposed Acquisition Criteria Pollutant Emissions by Crossing

			Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		With Action Emissions (tons/year)									
FRA Crossing ID	County	State	NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	NOX	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	CO2e
330354E	Benton	Arkansas	0.0913	0.1275	189	296	105	230	1.4E-03	3.3E-04	2.1E-05	1.9E-05	7.4E-06	5.9E-03	1.27	1.7E-04	1.5E-05	1.28
330363D	Benton	Arkansas	0.0561	0.0793	131	207	45	100	6.2E-04	1.4E-04	9.0E-06	8.2E-06	3.2E-06	2.6E-03	0.55	7.2E-05	6.7E-06	0.55
330362W	Benton	Arkansas	0.0580	0.0820	175	276	62	138	8.6E-04	2.0E-04	1.2E-05	1.1E-05	4.4E-06	3.6E-03	0.76	9.9E-05	9.2E-06	0.76
330375X	Benton	Arkansas	0.0579	0.0818	171	270	60	134	8.4E-04	1.9E-04	1.2E-05	1.1E-05	4.3E-06	3.5E-03	0.74	9.7E-05	9.0E-06	0.74
330376E	Benton	Arkansas	0.0560	0.0791	99	157	34	75	4.7E-04	1.1E-04	6.8E-06	6.2E-06	2.4E-06	2.0E-03	0.42	5.4E-05	5.1E-06	0.42
330405M	Benton	Arkansas	0.0566	0.0801	222	351	77	171	1.1E-03	2.4E-04	1.5E-05	1.4E-05	5.5E-06	4.4E-03	0.94	1.2E-04	1.1E-05	0.95
330372C	Benton	Arkansas	0.0548	0.0774	98	155	33	73	4.6E-04	1.0E-04	6.6E-06	6.0E-06	2.4E-06	1.9E-03	0.40	5.3E-05	4.9E-06	0.41
330578C	Little River	Arkansas	0.0417	0.0615	109	184	28	69	4.3E-04	9.8E-05	6.2E-06	5.7E-06	2.2E-06	1.8E-03	0.38	5.0E-05	4.6E-06	0.38
330575G	Little River	Arkansas	0.0471	0.0637	137	211	39	82	5.1E-04	1.2E-04	7.4E-06	6.7E-06	2.6E-06	2.1E-03	0.45	5.9E-05	5.5E-06	0.45
330457E	Polk	Arkansas	0.0573	0.0826	146	242	51	121	7.6E-04	1.7E-04	1.1E-05	1.0E-05	3.9E-06	3.1E-03	0.67	8.7E-05	8.1E-06	0.67
330454J	Polk	Arkansas	0.0571	0.0822	274	452	95	226	1.4E-03	3.2E-04	2.0E-05	1.9E-05	7.3E-06	5.8E-03	1.25	1.6E-04	1.5E-05	1.25
330524W	Sevier	Arkansas	0.0601	0.0866	154	254	56	134	8.4E-04	1.9E-04	1.2E-05	1.1E-05	4.3E-06	3.5E-03	0.74	9.6E-05	8.9E-06	0.74
330546W	Sevier	Arkansas	0.0398	0.0542	89	138	22	46	2.8E-04	6.5E-05	4.1E-06	3.7E-06	1.5E-06	1.2E-03	0.25	3.3E-05	3.0E-06	0.25
372409F	Carroll	Illinois	0.0234	0.0319	63	109	9	21	1.3E-04	3.0E-05	1.9E-06	1.7E-06	6.8E-07	5.5E-04	0.12	1.5E-05	1.4E-06	0.12
372414C	Carroll	Illinois	0.0235	0.0320	67	117	10	23	1.4E-04	3.2E-05	2.0E-06	1.9E-06	7.3E-07	5.9E-04	0.13	1.6E-05	1.5E-06	0.13
372214T	Cook	Illinois	0.0247	0.0372	207	270	31	61	3.8E-04	8.7E-05	5.5E-06	5.0E-06	2.0E-06	1.6E-03	0.34	4.4E-05	4.1E-06	0.34
372210R	Cook	Illinois	0.0391	0.0590	654	854	156	307	1.9E-03	4.4E-04	2.8E-05	2.5E-05	9.9E-06	7.9E-03	1.69	2.2E-04	2.1E-05	1.70
372206B	Cook	Illinois	0.0251	0.0378	449	587	69	135	8.4E-04	1.9E-04	1.2E-05	1.1E-05	4.4E-06	3.5E-03	0.74	9.7E-05	9.0E-06	0.75
372138C	Cook	Illinois	0.0911	0.0859	1,443	1,452	800	759	4.7E-03	1.1E-03	6.8E-05	6.2E-05	2.4E-05	2.0E-02	4.18	5.5E-04	5.1E-05	4.21
372137V	Cook	Illinois	0.0904	0.0853	340	342	187	177	1.1E-03	2.5E-04	1.6E-05	1.5E-05	5.7E-06	4.6E-03	0.98	1.3E-04	1.2E-05	0.98
372202Y	Cook	Illinois	0.0347	0.0524	557	728	118	232	1.4E-03	3.3E-04	2.1E-05	1.9E-05	7.5E-06	6.0E-03	1.28	1.7E-04	1.6E-05	1.29
372289S	De Kalb	Illinois	0.0111	0.0242	26	73	2	11	6.7E-05	1.5E-05	9.7E-07	8.8E-07	3.5E-07	2.8E-04	0.06	7.7E-06	7.2E-07	0.06
372279L	De Kalb	Illinois	0.0109	0.0238	19	52	1	8	4.7E-05	1.1E-05	6.8E-07	6.2E-07	2.4E-07	2.0E-04	0.04	5.4E-06	5.1E-07	0.04
372299X	De Kalb	Illinois	0.0116	0.0252	28	78	2	12	7.4E-05	1.7E-05	1.1E-06	9.8E-07	3.8E-07	3.1E-04	0.07	8.5E-06	7.9E-07	0.07
371997M	Du Page	Illinois	0.0232	0.0349	164	214	23	46	2.8E-04	6.5E-05	4.1E-06	3.7E-06	1.5E-06	1.2E-03	0.25	3.3E-05	3.0E-06	0.25
372174X	Du Page	Illinois	0.0239	0.0361	324	423	47	93	5.8E-04	1.3E-04	8.4E-06	7.6E-06	3.0E-06	2.4E-03	0.51	6.7E-05	6.2E-06	0.51
372170V	Du Page	Illinois	0.0245	0.0369	786	1,028	117	231	1.4E-03	3.3E-04	2.1E-05	1.9E-05	7.4E-06	6.0E-03	1.27	1.7E-04	1.5E-05	1.28
372179G	Du Page	Illinois	0.0244	0.0368	382	499	57	112	7.0E-04	1.6E-04	1.0E-05	9.2E-06	3.6E-06	2.9E-03	0.61	8.0E-05	7.5E-06	0.62
372184D	Du Page	Illinois	0.0316	0.0477	941	1,230	181	357	2.2E-03	5.1E-04	3.2E-05	2.9E-05	1.2E-05	9.2E-03	1.97	2.6E-04	2.4E-05	1.98
372191N	Du Page	Illinois	0.0223	0.0336	297	388	40	79	5.0E-04	1.1E-04	7.1E-06	6.5E-06	2.6E-06	2.0E-03	0.44	5.7E-05	5.3E-06	0.44
372196X	Du Page	Illinois	0.0233	0.0351	527	688	75	147	9.2E-04	2.1E-04	1.3E-05	1.2E-05	4.7E-06	3.8E-03	0.81	1.1E-04	9.8E-06	0.81
372177T	Du Page	Illinois	0.0373	0.0562	1,227	1,603	279	549	3.4E-03	7.8E-04	4.9E-05	4.5E-05	1.8E-05	1.4E-02	3.02	3.9E-04	3.7E-05	3.04
372178A	Du Page	Illinois	0.0220	0.0332	362	473	49	96	6.0E-04	1.4E-04	8.6E-06	7.9E-06	3.1E-06	2.5E-03	0.53	6.9E-05	6.4E-06	0.53
372240H	Kane	Illinois	0.0281	0.0424	705	921	121	237	1.5E-03	3.4E-04	2.1E-05	2.0E-05	7.7E-06	6.1E-03	1.31	1.7E-04	1.6E-05	1.32
372241P	Kane	Illinois	0.0235	0.0355	293	382	42	82	5.2E-04	1.2E-04	7.4E-06	6.8E-06	2.7E-06	2.1E-03	0.45	5.9E-05	5.5E-06	0.46
372217N	Kane	Illinois	0.0297	0.0448	818	1,069	148	291	1.8E-03	4.1E-04	2.6E-05	2.4E-05	9.4E-06	7.5E-03	1.60	2.1E-04	1.9E-05	1.61
372242W	Kane	Illinois	0.0256	0.0385	986	1,288	153	302	1.9E-03	4.3E-04	2.7E-05	2.5E-05	9.7E-06	7.8E-03	1.66	2.2E-04	2.0E-05	1.67
372246Y	Kane	Illinois	0.0263	0.0397	907	1,185	145	286	1.8E-03	4.1E-04	2.6E-05	2.4E-05	9.2E-06	7.4E-03	1.58	2.1E-04	1.9E-05	1.59
372239N	Kane	Illinois	0.0268	0.0412	356	470	58	118	7.4E-04	1.7E-04	1.1E-05	9.7E-06	3.8E-06	3.0E-03	0.65	8.5E-05	7.9E-06	0.65
372235L	Kane	Illinois	0.0256	0.0394	152	201	24	48	3.0E-04	6.9E-05	4.3E-06	4.0E-06	1.6E-06	1.2E-03	0.27	3.5E-05	3.2E-06	0.27
372355C	Ogle	Illinois	0.0253	0.0346	85	147	13	31	1.9E-04	4.4E-05	2.8E-06	2.5E-06	1.0E-06	8.0E-04	0.17	2.2E-05	2.1E-06	0.17
372350T	Ogle	Illinois	0.0236	0.0322	47	81	7	16	9.9E-05	2.3E-05	1.4E-06	1.3E-06	5.1E-07	4.1E-04	0.09	1.1E-05	1.1E-06	0.09
372339T	Ogle	Illinois	0.0244	0.0332	50	86	7	17	1.1E-04	2.5E-05	1.6E-06	1.4E-06	5.6E-07	4.5E-04	0.10	1.3E-05	1.2E-06	0.10
372388P	Ogle	Illinois	0.0227	0.0310	58	101	8	19	1.2E-04	2.7E-05	1.7E-06	1.6E-06	6.1E-07	4.9E-04	0.10	1.4E-05	1.3E-06	0.11
372346D	Ogle	Illinois	0.0232	0.0317	37	65	5	13	7.8E-05	1.8E-05	1.1E-06	1.0E-06	4.0E-07	3.2E-04	0.07	9.0E-06	8.4E-07	0.07
376027Y	Clinton	Iowa	0.1693	0.2863	150	299	155	521	3.3E-03	7.4E-04	4.7E-05	4.3E-05	1.7E-05	1.3E-02	2.87	3.7E-04	3.5E-05	2.89
607245W	Louisa	Iowa	0.0193	0.0483	33	103	4	30	1.9E-04	4.3E-05	2.7E-06	2.5E-06	9.8E-07	7.8E-04	0.17	2.2E-05	2.0E-06	0.17
393258B	Muscatine	Iowa	0.0192	0.0479	46	145	5	42	2.6E-04	6.0E-05	3.8E-06	3.5E-06	1.4E-06	1.1E-03	0.23	3.0E-05	2.8E-06	0.23
607211C	Muscatine	Iowa	0.0202	0.0505	81	258	10	79	4.9E-04	1.1E-04	7.1E-06	6.5E-06	2.6E-06	2.0E-03	0.44	5.7E-05	5.3E-06	0.44
607215E	Muscatine	Iowa	0.0195	0.0486	28	89	3	26	1.6E-04	3.7E-05	2.4E-06	2.2E-06	8.4E-07	6.8E-04	0.14	1.9E-05	1.8E-06	0.15
865646F	Scott	Iowa	0.0385	0.0786	56	132	13	63	3.9E-04	9.0E-05	5.7E-06	5.2E-06	2.0E-06	1.6E-03	0.35	4.5E-05	4.2E-06	0.35
865649B	Scott	Iowa	0.0911	0.1819	132	310	73	343	2.1E-03	4.9E-04	3.1E-05	2.8E-05	1.1E-05	8.9E-03	1.89	2.5E-04	2.3E-05	1.90
865653R	Scott	Iowa	0.1214	0.2425	353	827	261	1,220	7.6E-03	1.7E-03	1.1E-04	1.0E-04	3.9E-05	3.2E-02	6.72	8.8E-04	8.2E-05	6.77
375784R	Wapello	Iowa	0.0652	0.1545	60	186	24	175	1.1E-03	2.5E-04	1.6E-05	1.4E-05	5.6E-06	4.5E-03	0.96	1.3E-04	1.2E-05	0.97
375779U	Wapello	Iowa	0.0662	0.1568	89	274	36	261	1.6E-03	3.7E-04	2.3E-05	2.1E-05	8.4E-06	6.7E-03	1.44	1.9E-04	1.7E-05	1.45
375781V	Wapello	Iowa	0.0658	0.1558	131	402	52	381	2.4E-03	5.4E-04	3.4E-05	3.1E-05	1.2E-05	9.9E-03	2.10	2.7E-04	2.6E-05	2.12
607323B	Washington	Iowa	0.0199	0.0498	72	228	9	69	4.3E-04	9.8E-05	6.2E-06	5.7E-06	2.2E-06	1.8E-03	0.38	5.0E-05	4.6E-06	0.38
607322U	Washington	Iowa	0.0187	0.0467	28	87	3	25	1.5E-04	3.5E-05	2.2E-06	2.0E-06	8.0E-07	6.4E-04	0.14	1.8E-05	1.7E-06	0.14
330258C	Crawford	Kansas	0.0380	0.0545	158	252	37	84	5.2E-04	1.2E-04	7.5E-06	6.9E-06	2.7E-06	2.2E-03	0.46	6.0E-05	5.6E-06	0.46
330256N	Crawford	Kansas	0.0328	0.0471	85	135	17	39	2.4E-04	5.5E-05	3.5E-06	3.2E-06	1.3E-06	1.0E-03	0.21	2.8E-05	2.6E-06	0.22
330257V	Crawford	Kansas	0.0332	0.0477	212	338	43	98	6.1E-04	1.4E-04	8.8E-06	8.1E-06	3.2E-06	2.5E-03	0.54	7.1E-05	6.6E-06	0.54
329322C	Beauregard	Louisiana	0.0413	0.0686	63	114	16	47	3.0E-04	6.7E-05	4.3E-06	3.9E-06	1.5E-06	1.2E-03	0.26	3.4E-05	3.2E-06	0.26
329320N	Beauregard	Louisiana	0.0367	0.0612	92	168	21	63	3.9E-04	8.9E-05	5.6E-06	5.1E-06	2.0E-06	1.6E-03	0.34	4.5E-05	4.2E-06	0.35
329319U	Beauregard	Louisiana	0.0539	0.0899	600	1,092	197	598	3.7E-03	8.5E-04	5.4E-05	4.9E-05	1.9E-05	1.5E-02	3.29	4.3E-04	4.0E-05	3.31
329317F	Beauregard	Louisiana	0.0539	0.0899	600	1,092	197	598	3.7E-03	8.5E-04	5.4E-05	4.9E-05	1.9E-05	1.5E-02	3.29	4.3E-04	4.0E-05	3.31
329337S	Beauregard	Louisiana	0.0234	0.0395	75	137	11	33	2.1E-04	4.7E-05	3.0E-06	2.7E-06	1.1E-06	8.5E-04	0.18	2.4E-05	2.2E-06	0.18
329128J	Caddo	Louisiana	0.0804	0.1028	148	201	72	125	7.8E-04	1.8E-04	1.1E-05	1.0E-05	4.0E-06	3.2E-03	0.69	9.0E-05	8.4E-06	0.70
329154Y	Caddo	Louisiana	0.1394	0.1782	1,034	1,401	877	1,519	9.5E-03	2.2E-03	1.4E-04	1.2E-04	4.9E-05	3.9E-02	8.37	1.1E-03	1.0E-04	8.43
329157U	Caddo	Louisiana	0.0793	0.1014	252	342	122	211	1.3E-03	3.0E-04	1.9E-05	1.7E-05	6.8E-06	5.4E-03	1.16	1.5E-04	1.4E-05	1.17
329006E	Caddo	Louisiana	0.0354	0.0524	114	192	24	61	3.8E-04	8.7E-05	5.5E-06	5.0E-06	2.0E-06	1.6E-03	0.34	4.4E-05	4.1E-06	0.34
328998G	Caddo	Louisiana	0.0378	0.0560	135	228	31	78	4.9E-04	1.1E-04	7.0E-06	6.4E-06	2.5E-06	2.0E-03	0.43	5.6E-05	5.2E-06	0.43
329356W	Calcasieu	Louisiana	0.0493	0.0819	347	631	104	314	2.0E-03	4.5E-04	2.8E-05	2.6E-05	1.0E-05	8.1E-03	1.73	2.3E-04	2.1E-05	1.74
329344C	Calcasieu	Louisiana	0.0419	0.0697	78	142	20	60	3.8E-04	8.5E-05	5.4E-06	4.9E-06	1.9E-06	1.6E-03	0.33	4.3E-05	4.0E-06	0.33
329346R	Calcasieu	Louisiana	0.0379	0.0705	231	454	53	195	1.2E-03	2.8E-04	1.8E-05	1.6E-05	6.3E-06	5.0E-03	1.07	1.4E-04	1.3E-05	1.08
329164E	De Soto	Louisiana	0.0694	0.0889	141	192	60	104	6.5E-04	1.5E-04	9.3E-06	8.5E-06	3.3E-06	2.7E-03	0.57	7.5E-05	6.9E-06	0.58
329162R	De Soto	Louisiana	0.0772	0.0990	368	500	173	301	1.9E-03	4.3E-04	2.7E-05	2.5E-05	9.7E-06	7.8E-03	1.66	2.2E-04	2.0E-05	1.67
329183J	De Soto	Louisiana	0.0443	0.0745	230	423	62	191	1.2E-03	2.7E-04	1.7E-05	1.6E-05	6.2E-06	4.9E-03	1.05	1.4E-04	1.3E-05	1.06
329187L	De Soto	Louisiana	0.0401	0.0676	181	333	44	137	8.5E-04	1.9E-04	1.2E-05	1.1E-05	4.4E-06	3.5E-03	0.75	9.8E-05	9.1E-06	0.76
329182C	De Soto	Louisiana	0.0422	0.0710	328	604	84	261	1.6E-03	3.7E-04	2.3E-05	2.1E-05	8.4E-06	6.7E-03	1.44	1.9E-04	1.7E-05	1.45
329234S	Sabine	Louisiana	0.0235	0.0402	143	265	20	65	4.0E-04	9.2E-05	5.8E-06	5.3E-06	2.1E-06	1.7E-03	0.36	4.7E-05	4.3E-06	0.36
329226A	Sabine	Louisiana	0.0366	0.0622	184	340	41	129	8.0E-04	1.8E-04	1.2E-05	1.1E-05	4.1E-06	3.3E-03	0.71	9.3E-05	8.6E-06	0.71
329227G	Sabine	Louisiana	0.0287	0.0487	50	93	9	28	1.7E-04	3.9E-05	2.5E-06	2.3E-06	8.9E-07	7.1E-04	0.15	2.0E-05	1.8E-06	0.15
329259M	Vernon	Louisiana	0.0420	0.0706	100	184	26	79	4.9E-04	1.1E-04	7.1E-06	6.5E-06	2.6E-06	2.0E-03	0.44	5.7E-05	5.3E-06	0.44
329253W	Vernon	Louisiana	0.0403	0.0678	61	113	15	46	2.9E-04	6.6E-05	4.2E-06	3.8E-06	1.5E-06	1.2E-03	0.26	3.3E-05	3.1E-06	0.26
329279Y	Vernon	Louisiana	0.0416	0.0691	108	197	27	83	5.2E-04	1.2E-04	7.4E-06	6.8E-06	2.7E-06	2.1E-03	0.46	6.0E-05	5.5E-06	0.46
329284V	Vernon	Louisiana	0.0423	0.0702	86	155	22	66	4.1E-04	9.4E-05	6.0E-06	5.5E-06	2.1E-06	1.7E-03	0.37	4.8E-05	4.4E-06	0.37
329641V	Vernon	Louisiana	0.0418	0.0694	74	134	19	57	3.5E-04	8.1E-05	5.1E-06	4.7E-06	1.8E-06	1.5E-03	0.31	4.1E-05	3.8E-06	0.31
329298D	Vernon	Louisiana	0.0338	0.0567	172	314	35	108	6.8E-04	1.5E-04	9.7E-06	8.9E-06	3.5E-06	2.8E-03	0.60	7.8E-05	7.2E-06	0.60
329308G	Vernon	Louisiana	0.0227	0.0383	53	96	7	22	1.4E-04	3.2E-05	2.0E-06	1.8E-06	7.2E-07	5.8E-04	0.12	1.6E-05	1.5E-06	0.12
329839D	Cass	Missouri	0.0391	0.0575	93	148	22	52	3.2E-04	7.4E-05	4.7E-06	4.3E-06	1.7E-06	1.3E-03	0.29	3.7E-05	3.5E-06	0.29
375407C	Clay	Missouri	0.0564	0.0991	43	124	15	75	4.7E-04	1.1E-04	6.7E-06	6.1E-06	2.4E-06	1.9E-03	0.41	5.4E-05	5.0E-06	0.41
375439H	Clay	Missouri	0.0142	0.0289	48	148	4	26	1.6E-04	3.7E-05	2.3E-06	2.1E-06	8.4E-07	6.7E-04	0.14	1.9E-05	1.7E-06	0.14
375440C	Clay	Missouri	0.0128	0.0261	25	77	2	12	7.7E-05	1.7E-05	1.1E-06	1.0E-06	4.0E-07	3.2E-04	0.07	8.9E-06	8.2E-07	0.07
329807X	Jackson	Missouri	0.0412	0.0606	181	289	45	107	6.7E-04	1.5E-04	9.6E-06	8.8E-06	3.4E-06	2.8E-03	0.59	7.7E-05	7.1E-06	0.59
329764G	Jackson	Missouri	0.0659	0.0957	122	193	49	112	7.0E-04	1.6E-04	1.0E-05	9.2E-06	3.6E-06	2.9E-03	0.62	8.1E-05	7.5E-06	0.62
330035L	Jasper	Missouri	0.0415	0.0594	162	258	41	93	5.8E-04	1.3E-04	8.4E-06	7.7E-06	3.0E-06	2.4E-03	0.51	6.7E-05	6.2E-06	0.52
330055X	Jasper	Missouri	0.0612	0.0866	378	597	141	315	2.0E-03	4.5E-04	2.8E-05	2.6E-05	1.0E-05	8.1E-03	1.73	2.3E-04	2.1E-05	1.75
330061B	Jasper	Missouri	0.0691	0.0977	595	940	250	559	3.5E-03	7.9E-04	5.0E-05	4.6E-05	1.8E-05	1.4E-02	3.08	4.0E-04	3.7E-05	3.10

Table K.10-4. Grade Crossing Analysis - Proposed Acquisition Criteria Pollutant Emissions by Crossing

			Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		With Action Emissions (tons/year)									
FRA Crossing ID	County	State	NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	NOX	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	CO2e
330045S	Jasper	Missouri	0.0587	0.0830	295	466	105	235	1.5E-03	3.3E-04	2.1E-05	1.9E-05	7.6E-06	6.1E-03	1.30	1.7E-04	1.6E-05	1.30
330053J	Jasper	Missouri	0.0585	0.0828	145	229	52	115	7.2E-04	1.6E-04	1.0E-05	9.5E-06	3.7E-06	3.0E-03	0.64	8.3E-05	7.7E-06	0.64
330178J	McDonald	Missouri	0.0905	0.1263	173	271	95	208	1.3E-03	3.0E-04	1.9E-05	1.7E-05	6.7E-06	5.4E-03	1.15	1.5E-04	1.4E-05	1.16
330102D	Newton	Missouri	0.1270	0.1761	255	399	197	427	2.7E-03	6.1E-04	3.8E-05	3.5E-05	1.4E-05	1.1E-02	2.35	3.1E-04	2.9E-05	2.37
330120B	Newton	Missouri	0.1211	0.1680	127	199	93	203	1.3E-03	2.9E-04	1.8E-05	1.7E-05	6.5E-06	5.2E-03	1.12	1.5E-04	1.4E-05	1.13
330113R	Newton	Missouri	0.1200	0.1664	223	349	163	353	2.2E-03	5.0E-04	3.2E-05	2.9E-05	1.1E-05	9.1E-03	1.94	2.5E-04	2.4E-05	1.96
330101W	Newton	Missouri	0.1166	0.1617	131	206	93	202	1.3E-03	2.9E-04	1.8E-05	1.7E-05	6.5E-06	5.2E-03	1.12	1.5E-04	1.4E-05	1.12
330625H	Adair	Oklahoma	0.0469	0.0704	89	149	25	64	4.0E-04	9.1E-05	5.7E-06	5.2E-06	2.1E-06	1.6E-03	0.35	4.6E-05	4.3E-06	0.35
330612G	Adair	Oklahoma	0.0472	0.0709	106	177	30	76	4.8E-04	1.1E-04	6.9E-06	6.3E-06	2.5E-06	2.0E-03	0.42	5.5E-05	5.1E-06	0.42
330785W	Le Flore	Oklahoma	0.1825	0.2632	335	548	372	877	5.5E-03	1.2E-03	7.9E-05	7.2E-05	2.8E-05	2.3E-02	4.83	6.3E-04	5.9E-05	4.86
330784P	Le Flore	Oklahoma	0.1848	0.2666	355	579	399	939	5.9E-03	1.3E-03	8.5E-05	7.7E-05	3.0E-05	2.4E-02	5.18	6.8E-04	6.3E-05	5.21
330736A	Le Flore	Oklahoma	0.0314	0.0473	84	140	16	40	2.5E-04	5.7E-05	3.6E-06	3.3E-06	1.3E-06	1.0E-03	0.22	2.9E-05	2.7E-06	0.22
330869S	Bowie	Texas	0.0336	0.0499	103	174	21	53	3.3E-04	7.5E-05	4.7E-06	4.3E-06	1.7E-06	1.4E-03	0.29	3.8E-05	3.5E-06	0.29
330872A	Bowie	Texas	0.0546	0.0795	179	300	60	145	9.1E-04	2.1E-04	1.3E-05	1.2E-05	4.7E-06	3.7E-03	0.80	1.0E-04	9.7E-06	0.80
330867D	Bowie	Texas	0.0348	0.0515	98	166	21	52	3.2E-04	7.4E-05	4.7E-06	4.3E-06	1.7E-06	1.3E-03	0.29	3.7E-05	3.5E-06	0.29
021749Y	Collin	Texas	0.0030	0.0033	23	24	0	0	3.0E-06	6.9E-07	4.4E-08	4.0E-08	1.6E-08	1.3E-05	0.00	3.5E-07	3.3E-08	0.00
021770E	Collin	Texas	0.0026	0.0029	12	13	0	0	1.4E-06	3.2E-07	2.0E-08	1.8E-08	7.2E-09	5.8E-06	0.00	1.6E-07	1.5E-08	0.00
789644J	Collin	Texas	0.0033	0.0036	77	81	2	2	1.1E-05	2.5E-06	1.6E-07	1.5E-07	5.7E-08	4.6E-05	0.01	1.3E-06	1.2E-07	0.01
789645R	Collin	Texas	0.0031	0.0034	52	55	1	1	7.1E-06	1.6E-06	1.0E-07	9.3E-08	3.6E-08	2.9E-05	0.01	8.1E-07	7.6E-08	0.01
789633W	Collin	Texas	0.0045	0.0050	7	7	0	0	1.4E-06	3.1E-07	2.0E-08	1.8E-08	7.1E-09	5.6E-06	0.00	1.6E-07	1.5E-08	0.00
021635L	Collin	Texas	0.0031	0.0034	90	95	2	2	1.2E-05	2.8E-06	1.8E-07	1.6E-07	6.4E-08	5.1E-05	0.01	1.4E-06	1.3E-07	0.01
919239F	Collin	Texas	0.0031	0.0034	45	47	1	1	6.1E-06	1.4E-06	8.8E-08	8.0E-08	3.1E-08	2.5E-05	0.01	7.0E-07	6.5E-08	0.01
789632P	Collin	Texas	0.0028	0.0031	54	56	1	1	6.6E-06	1.5E-06	9.5E-08	8.7E-08	3.4E-08	2.7E-05	0.01	7.6E-07	7.0E-08	0.01
789638F	Collin	Texas	0.0036	0.0039	67	70	1	2	1.0E-05	2.4E-06	1.5E-07	1.4E-07	5.4E-08	4.3E-05	0.01	1.2E-06	1.1E-07	0.01
789635K	Collin	Texas	0.0030	0.0033	22	23	0	0	2.8E-06	6.5E-07	4.1E-08	3.7E-08	1.5E-08	1.2E-05	0.00	3.3E-07	3.0E-08	0.00
753583T	Collin	Texas	0.0029	0.0032	25	27	0	1	3.2E-06	7.3E-07	4.6E-08	4.2E-08	1.7E-08	1.3E-05	0.00	3.7E-07	3.4E-08	0.00
789636S	Collin	Texas	0.0045	0.0049	44	46	1	1	8.6E-06	2.0E-06	1.2E-07	1.1E-07	4.4E-08	3.6E-05	0.01	9.9E-07	9.2E-08	0.01
021638G	Collin	Texas	0.0029	0.0032	45	47	1	1	5.7E-06	1.3E-06	8.2E-08	7.5E-08	2.9E-08	2.4E-05	0.01	6.6E-07	6.1E-08	0.01
919268R	Collin	Texas	0.0035	0.0038	65	68	1	2	9.9E-06	2.2E-06	1.4E-07	1.3E-07	5.1E-08	4.1E-05	0.01	1.1E-06	1.1E-07	0.01
789640G	Collin	Texas	0.0029	0.0032	15	15	0	0	1.8E-06	4.2E-07	2.6E-08	2.4E-08	9.5E-09	7.6E-06	0.00	2.1E-07	2.0E-08	0.00
789631H	Collin	Texas	0.0122	0.0134	112	117	8	10	6.0E-05	1.4E-05	8.6E-07	7.9E-07	3.1E-07	2.5E-04	0.05	6.9E-06	6.4E-07	0.05
789629G	Collin	Texas	0.0036	0.0039	41	43	1	1	6.3E-06	1.4E-06	9.1E-08	8.3E-08	3.3E-08	2.6E-05	0.01	7.3E-07	6.8E-08	0.01
753757M	Collin	Texas	0.0028	0.0030	30	31	0	1	3.6E-06	8.1E-07	5.2E-08	4.7E-08	1.8E-08	1.5E-05	0.00	4.1E-07	3.8E-08	0.00
789628A	Collin	Texas	0.0026	0.0029	29	30	0	1	3.3E-06	7.4E-07	4.7E-08	4.3E-08	1.7E-08	1.4E-05	0.00	3.8E-07	3.5E-08	0.00
789648L	Collin	Texas	0.0029	0.0032	31	32	1	1	3.9E-06	8.8E-07	5.6E-08	5.1E-08	2.0E-08	1.6E-05	0.00	4.4E-07	4.1E-08	0.00
789654P	Collin	Texas	0.0030	0.0033	7	7	0	0	9.1E-07	2.1E-07	1.3E-08	1.2E-08	4.7E-09	3.8E-06	0.00	1.0E-07	9.7E-09	0.00
789653H	Collin	Texas	0.0020	0.0022	23	24	0	0	2.0E-06	4.5E-07	2.8E-08	2.6E-08	1.0E-08	8.1E-06	0.00	2.3E-07	2.1E-08	0.00
789652B	Collin	Texas	0.0014	0.0016	18	19	0	0	1.1E-06	2.5E-07	1.6E-08	1.4E-08	5.7E-09	4.6E-06	0.00	1.3E-07	1.2E-08	0.00
790146W	Collin	Texas	0.0032	0.0035	28	29	1	1	3.8E-06	8.7E-07	5.5E-08	5.0E-08	2.0E-08	1.6E-05	0.00	4.4E-07	4.1E-08	0.00
331279Y	Collin	Texas	0.0032	0.0035	30	31	1	1	4.2E-06	9.5E-07	6.0E-08	5.5E-08	2.2E-08	1.7E-05	0.00	4.8E-07	4.5E-08	0.00
021765H	Denton	Texas	0.0038	0.0041	72	75	2	2	1.2E-05	2.7E-06	1.7E-07	1.5E-07	6.1E-08	4.9E-05	0.01	1.4E-06	1.3E-07	0.01
021767W	Denton	Texas	0.0028	0.0030	33	34	1	1	3.9E-06	9.0E-07	5.7E-08	5.2E-08	2.0E-08	1.6E-05	0.00	4.5E-07	4.2E-08	0.00
021691T	Denton	Texas	0.0029	0.0031	10	10	0	0	1.2E-06	2.8E-07	1.8E-08	1.6E-08	6.3E-09	5.0E-06	0.00	1.4E-07	1.3E-08	0.00
021700P	Denton	Texas	0.0028	0.0031	18	19	0	0	2.2E-06	5.0E-07	3.2E-08	2.9E-08	1.1E-08	9.1E-06	0.00	2.5E-07	2.4E-08	0.00
021726S	Denton	Texas	0.0030	0.0032	24	25	0	0	3.1E-06	6.9E-07	4.4E-08	4.0E-08	1.6E-08	1.3E-05	0.00	3.5E-07	3.3E-08	0.00
021696C	Denton	Texas	0.0028	0.0030	10	11	0	0	1.2E-06	2.8E-07	1.8E-08	1.6E-08	6.3E-09	5.1E-06	0.00	1.4E-07	1.3E-08	0.00
021646Y	Denton	Texas	0.0028	0.0031	75	79	1	1	9.3E-06	2.1E-06	1.3E-07	1.2E-07	4.8E-08	3.8E-05	0.01	1.1E-06	9.9E-08	0.01
021676R	Denton	Texas	0.0035	0.0038	26	27	1	1	4.0E-06	9.0E-07	5.7E-08	5.2E-08	2.0E-08	1.6E-05	0.00	4.6E-07	4.3E-08	0.00
021672N	Denton	Texas	0.0030	0.0033	50	53	1	1	6.6E-06	1.5E-06	9.5E-08	8.6E-08	3.4E-08	2.7E-05	0.01	7.6E-07	7.0E-08	0.01
331277K	Denton	Texas	0.0033	0.0037	72	75	1	2	1.0E-05	2.4E-06	1.5E-07	1.4E-07	5.4E-08	4.3E-05	0.01	1.2E-06	1.1E-07	0.01
020557D	Denton	Texas	0.0167	0.0179	158	163	16	18	1.1E-04	2.5E-05	1.6E-06	1.5E-06	5.7E-07	4.6E-04	0.10	1.3E-05	1.2E-06	0.10
020572F	Denton	Texas	0.0209	0.0224	254	263	32	36	2.2E-04	5.1E-05	3.2E-06	2.9E-06	1.2E-06	9.2E-04	0.20	2.6E-05	2.4E-06	0.20
021774G	Denton	Texas	0.0026	0.0028	16	17	0	0	1.8E-06	4.1E-07	2.6E-08	2.3E-08	9.2E-09	7.4E-06	0.00	2.1E-07	1.9E-08	0.00
021669F	Denton	Texas	0.0026	0.0028	10	11	0	0	1.2E-06	2.6E-07	1.7E-08	1.5E-08	6.0E-09	4.8E-06	0.00	1.3E-07	1.2E-08	0.00
919241G	Denton	Texas	0.0026	0.0028	8	9	0	0	9.1E-07	2.1E-07	1.3E-08	1.2E-08	4.7E-09	3.8E-06	0.00	1.1E-07	9.8E-09	0.00
020563G	Denton	Texas	0.0162	0.0173	111	115	11	12	7.5E-05	1.7E-05	1.1E-06	9.9E-07	3.9E-07	3.1E-04	0.07	8.7E-06	8.1E-07	0.07
793688R	Duval	Texas	0.1214	0.1195	524	645	387	469	2.9E-03	6.7E-04	4.2E-05	3.9E-05	1.5E-05	1.2E-02	2.58	3.4E-04	3.1E-05	2.60
743475U	Fort Bend	Texas	0.0212	0.0283	50	80	6	14	8.7E-05	2.0E-05	1.2E-06	1.1E-06	4.5E-07	3.6E-04	0.08	1.0E-05	9.3E-07	0.08
440652H	Fort Bend	Texas	0.1491	0.1549	779	881	706	830	5.2E-03	1.2E-03	7.5E-05	6.8E-05	2.7E-05	2.1E-02	4.57	6.0E-04	5.6E-05	4.61
743483L	Fort Bend	Texas	0.0222	0.0288	44	69	6	12	7.5E-05	1.7E-05	1.1E-06	9.9E-07	3.9E-07	3.1E-04	0.07	8.6E-06	8.0E-07	0.07
743689L	Fort Bend	Texas	0.0790	0.0814	1,147	1,278	552	633	4.0E-03	9.0E-04	5.7E-05	5.2E-05	2.0E-05	1.6E-02	3.49	4.6E-04	4.2E-05	3.51
743726L	Fort Bend	Texas	0.0834	0.0859	750	836	381	437	2.7E-03	6.2E-04	3.9E-05	3.6E-05	1.4E-05	1.1E-02	2.41	3.1E-04	2.9E-05	2.42
743719B	Fort Bend	Texas	0.0863	0.0886	295	328	155	177	1.1E-03	2.5E-04	1.6E-05	1.5E-05	5.7E-06	4.6E-03	0.98	1.3E-04	1.2E-05	0.98
743724X	Fort Bend	Texas	0.0863	0.0889	431	480	226	260	1.6E-03	3.7E-04	2.3E-05	2.1E-05	8.4E-06	6.7E-03	1.43	1.9E-04	1.7E-05	1.44
743731H	Fort Bend	Texas	0.0499	0.0498	257	307	78	93	5.8E-04	1.3E-04	8.4E-06	7.6E-06	3.0E-06	2.4E-03	0.51	6.7E-05	6.2E-06	0.52
743727T	Fort Bend	Texas	0.0427	0.0513	194	250	50	78	4.9E-04	1.1E-04	7.0E-06	6.4E-06	2.5E-06	2.0E-03	0.43	5.6E-05	5.2E-06	0.43
924008H	Fort Bend	Texas	0.0746	0.0769	374	416	170	195	1.2E-03	2.8E-04	1.8E-05	1.6E-05	6.3E-06	5.0E-03	1.07	1.4E-04	1.3E-05	1.08
924009P	Fort Bend	Texas	0.0706	0.0727	336	374	144	165	1.0E-03	2.4E-04	1.5E-05	1.4E-05	5.3E-06	4.3E-03	0.91	1.2E-04	1.1E-05	0.92
743695P	Fort Bend	Texas	0.0823	0.0848	1,412	1,573	707	811	5.1E-03	1.2E-03	7.3E-05	6.7E-05	2.6E-05	2.1E-02	4.47	5.8E-04	5.4E-05	4.50
412514U	Fort Bend	Texas	0.0737	0.0760	331	369	149	171	1.1E-03	2.4E-04	1.5E-05	1.4E-05	5.5E-06	4.4E-03	0.94	1.2E-04	1.1E-05	0.95
924006U	Fort Bend	Texas	0.0740	0.0762	219	244	99	113	7.1E-04	1.6E-04	1.0E-05	9.3E-06	3.6E-06	2.9E-03	0.62	8.1E-05	7.6E-06	0.63
924007B	Fort Bend	Texas	0.0746	0.0769	239	266	109	125	7.8E-04	1.8E-04	1.1E-05	1.0E-05	4.0E-06	3.2E-03	0.69	9.0E-05	8.3E-06	0.69
743699S	Fort Bend	Texas	0.0747	0.0769	749	834	340	390	2.4E-03	5.6E-04	3.5E-05	3.2E-05	1.3E-05	1.0E-02	2.15	2.8E-04	2.6E-05	2.17
745055W	Fort Bend	Texas	0.0826	0.0851	361	402	181	208	1.3E-03	3.0E-04	1.9E-05	1.7E-05	6.7E-06	5.4E-03	1.15	1.5E-04	1.4E-05	1.15
743713K	Fort Bend	Texas	0.0742	0.0765	570	635	257	295	1.8E-03	4.2E-04	2.7E-05	2.4E-05	9.5E-06	7.6E-03	1.63	2.1E-04	2.0E-05	1.64
743698K	Fort Bend	Texas	0.0738	0.0760	499	556	224	257	1.6E-03	3.7E-04	2.3E-05	2.1E-05	8.3E-06	6.6E-03	1.42	1.9E-04	1.7E-05	1.43
743703E	Fort Bend	Texas	0.0709	0.0731	374	416	161	185	1.2E-03	2.6E-04	1.7E-05	1.5E-05	6.0E-06	4.8E-03	1.02	1.3E-04	1.2E-05	1.03
743716F	Fort Bend	Texas	0.0830	0.0856	474	528	239	275	1.7E-03	3.9E-04	2.5E-05	2.3E-05	8.9E-06	7.1E-03	1.51	2.0E-04	1.8E-05	1.52
745044J	Fort Bend	Texas	0.0755	0.0778	1,250	1,392	574	659	4.1E-03	9.4E-04	5.9E-05	5.4E-05	2.1E-05	1.7E-02	3.63	4.7E-04	4.4E-05	3.66
922512N	Fort Bend	Texas	0.0738	0.0760	429	478	193	221	1.4E-03	3.1E-04	2.0E-05	1.8E-05	7.1E-06	5.7E-03	1.22	1.6E-04	1.5E-05	1.23
922513V	Fort Bend	Texas	0.0842	0.0844	478	519	245	266	1.7E-03	3.8E-04	2.4E-05	2.2E-05	8.6E-06	6.9E-03	1.47	1.9E-04	1.8E-05	1.48
762865H	Harris	Texas	0.0433	0.0478	119	141	31	41	2.6E-04	5.8E-05	3.7E-06	3.4E-06	1.3E-06	1.1E-03	0.23	3.0E-05	2.7E-06	0.23
762872T	Harris	Texas	0.0578	0.0634	279	331	98	128	8.0E-04	1.8E-04	1.1E-05	1.0E-05	4.1E-06	3.3E-03	0.70	9.2E-05	8.5E-06	0.71
762869K	Harris	Texas	0.0540	0.0593	132	156	43	56	3.5E-04	8.0E-05	5.1E-06	4.6E-06	1.8E-06	1.5E-03	0.31	4.1E-05	3.8E-06	0.31
758519L	Harris	Texas	0.0611	0.0665	983	1,154	366	467	2.9E-03	6.6E-04	4.2E-05	3.8E-05	1.5E-05	1.2E-02	2.57	3.4E-04	3.1E-05	2.59
758518E	Harris	Texas	0.0625	0.0680	1,639	1,924	623	796	5.0E-03	1.1E-03	7.2E-05	6.5E-05	2.6E-05	2.1E-02	4.39	5.7E-04	5.3E-05	4.42
758517X	Harris	Texas	0.0613	0.0667	995	1,168	371	474	3.0E-03	6.7E-04	4.3E-05	3.9E-05	1.5E-05	1.2E-02	2.61	3.4E-04	3.2E-05	2.63
758521M	Harris	Texas	0.0556	0.0605	482	566	163	208	1.3E-03	3.0E-04	1.9E-05	1.7E-05	6.7E-06	5.4E-03	1.15	1.5E-04	1.4E-05	1.16
762904W	Harris	Texas	0.0444	0.0516	714	894	193	281	1.8E-03	4.0E-04	2.5E-05	2.3E-05	9.1E-06	7.3E-03	1.55	2.0E-04	1.9E-05	1.56
762889W	Harris	Texas	0.0447	0.0520	151	189	41	60	3.7E-04	8.5E-05	5.4E-06	4.9E-06	1.9E-06	1.5E-03	0.33	4.3E-05	4.0E-06	0.33
755621G	Harris	Texas	0.0746	0.0768	926	1,032	420	482	3.0E-03	6.9E-04	4.3E-05	4.0E-05	1.6E-05	1.2E-02	2.66	3.5E-04	3.2E-05	2.67
758533G	Harris	Texas	0.0659	0.0705	1,046	1,210	419	519	3.2E-03	7.4E-04	4.7E-05	4.3E-05	1.7E-05	1.3E-02	2.86	3.7E-04	3.5E-05	2.88
755624C	Harris	Texas	0.0512	0.0534	1,218	1,366	379	444	2.8E-03	6.3E-04	4.0E-05	3.6E-05	1.4E-05	1.1E-02	2.44	3.2E-04	3.0E-05	2.46
758540S	Harris	Texas	0.1324	0.1396	1,938	2,223	1,561	1,887	1.2E-02	2.7E-03	1.7E-04	1.6E-04	6.1E-05	4.9E-02	10.40	1.4E-03	1.3E-04	10.47
758180W	Harris	Texas	0.0701	0.0740	534	608	228	274	1.7E-03	3.9E-04	2.5E-05	2.2E-05	8.8E-06	7.1E-03	1.51	2.0E-04	1.8E-05	1.52
755622N	Harris	Texas	0.0756	0.0778	1,043	1,161	479	550	3.4E-03	7.8E-04	5.0E-05	4.5E-05	1.8E-05	1.4E-02	3.03	4.0E-04	3.7E-05	3.05
758187U	Harris	Texas	0.4121	0.4201	2,020	2,263	5,063	5,784	3.6E-02	8.2E-03	5.2E-04	4.8E-04	1.9E-04	1.5E-01	31.87	4.2E-03	3.9E-04	32.09
762907S	Harris	Texas	0.0539	0.0592	259	307	85	111	6.9E-04	1.6E-04	1.0E-05	9.1E-06	3.6E-06	2.9E-03	0.61	8.0E-05	7.4E-06	0.61

Table K.10-4. Grade Crossing Analysis - Proposed Acquisition Criteria Pollutant Emissions by Crossing

			Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		With Action Emissions (tons/year)									
FRA Crossing ID	County	State	NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	NOX	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	CO2e
758293C	Harris	Texas	0.0676	0.0714	426	485	175	211	1.3E-03	3.0E-04	1.9E-05	1.7E-05	6.8E-06	5.4E-03	1.16	1.5E-04	1.4E-05	1.17
758534N	Harris	Texas	0.1253	0.1321	1,546	1,773	1,179	1,425	8.9E-03	2.0E-03	1.3E-04	1.2E-04	4.6E-05	3.7E-02	7.85	1.0E-03	9.5E-05	7.90
755618Y	Harris	Texas	0.1526	0.1586	832	941	772	908	5.7E-03	1.3E-03	8.2E-05	7.5E-05	2.9E-05	2.3E-02	5.00	6.5E-04	6.1E-05	5.04
758514C	Harris	Texas	0.0604	0.0657	1,377	1,617	506	646	4.0E-03	9.2E-04	5.8E-05	5.3E-05	2.1E-05	1.7E-02	3.56	4.7E-04	4.3E-05	3.58
758532A	Harris	Texas	0.1202	0.1267	310	355	227	274	1.7E-03	3.9E-04	2.5E-05	2.3E-05	8.8E-06	7.1E-03	1.51	2.0E-04	1.8E-05	1.52
758512N	Harris	Texas	0.0582	0.0633	729	856	258	330	2.1E-03	4.7E-04	3.0E-05	2.7E-05	1.1E-05	8.5E-03	1.82	2.4E-04	2.2E-05	1.83
758178V	Harris	Texas	0.0786	0.0829	852	971	407	490	3.1E-03	7.0E-04	4.4E-05	4.0E-05	1.6E-05	1.3E-02	2.70	3.5E-04	3.3E-05	2.72
762892E	Harris	Texas	0.0449	0.0522	308	386	84	122	7.6E-04	1.7E-04	1.1E-05	1.0E-05	3.9E-06	3.2E-03	0.67	8.8E-05	8.2E-06	0.68
758531T	Harris	Texas	0.1177	0.1241	1,069	1,226	765	925	5.8E-03	1.3E-03	8.3E-05	7.6E-05	3.0E-05	2.4E-02	5.10	6.7E-04	6.2E-05	5.13
758610E	Harris	Texas	0.0600	0.0653	285	334	104	133	8.3E-04	1.9E-04	1.2E-05	1.1E-05	4.3E-06	3.4E-03	0.73	9.6E-05	8.9E-06	0.74
758611L	Harris	Texas	0.0601	0.0654	289	339	106	135	8.4E-04	1.9E-04	1.2E-05	1.1E-05	4.3E-06	3.5E-03	0.74	9.7E-05	9.0E-06	0.75
762901B	Harris	Texas	0.0562	0.0617	366	434	125	163	1.0E-03	2.3E-04	1.5E-05	1.3E-05	5.3E-06	4.2E-03	0.90	1.2E-04	1.1E-05	0.90
758523B	Harris	Texas	0.0558	0.0608	504	592	171	219	1.4E-03	3.1E-04	2.0E-05	1.8E-05	7.1E-06	5.7E-03	1.21	1.6E-04	1.5E-05	1.21
758513V	Harris	Texas	0.0622	0.0677	1,337	1,570	506	647	4.0E-03	9.2E-04	5.8E-05	5.3E-05	2.1E-05	1.7E-02	3.56	4.7E-04	4.3E-05	3.59
758525P	Harris	Texas	0.0534	0.0581	249	293	81	103	6.5E-04	1.5E-04	9.3E-06	8.5E-06	3.3E-06	2.7E-03	0.57	7.4E-05	6.9E-06	0.57
746645W	Jackson	Texas	0.0223	0.0289	46	72	6	13	7.9E-05	1.8E-05	1.1E-06	1.0E-06	4.1E-07	3.3E-04	0.07	9.1E-06	8.5E-07	0.07
746643H	Jackson	Texas	0.0222	0.0288	67	105	9	18	1.1E-04	2.6E-05	1.6E-06	1.5E-06	5.9E-07	4.7E-04	0.10	1.3E-05	1.2E-06	0.10
746639T	Jackson	Texas	0.0225	0.0292	166	258	23	46	2.9E-04	6.5E-05	4.1E-06	3.8E-06	1.5E-06	1.2E-03	0.25	3.3E-05	3.1E-06	0.25
746621H	Jackson	Texas	0.0253	0.0328	127	198	20	40	2.5E-04	5.6E-05	3.6E-06	3.2E-06	1.3E-06	1.0E-03	0.22	2.8E-05	2.6E-06	0.22
446594K	Jefferson	Texas	0.0670	0.0707	397	452	162	195	1.2E-03	2.8E-04	1.8E-05	1.6E-05	6.3E-06	5.0E-03	1.07	1.4E-04	1.3E-05	1.08
762721D	Jefferson	Texas	0.0251	0.0316	352	473	54	91	5.7E-04	1.3E-04	8.2E-06	7.5E-06	2.9E-06	2.4E-03	0.50	6.6E-05	6.1E-06	0.50
762739N	Jefferson	Texas	0.0239	0.0301	69	92	10	17	1.1E-04	2.4E-05	1.5E-06	1.4E-06	5.5E-07	4.4E-04	0.09	1.2E-05	1.1E-06	0.09
762743D	Jefferson	Texas	0.0332	0.0414	91	122	18	31	1.9E-04	4.4E-05	2.8E-06	2.5E-06	9.9E-07	7.9E-04	0.17	2.2E-05	2.1E-06	0.17
329544L	Jefferson	Texas	0.0323	0.0456	80	123	16	34	2.1E-04	4.9E-05	3.1E-06	2.8E-06	1.1E-06	8.9E-04	0.19	2.5E-05	2.3E-06	0.19
329542X	Jefferson	Texas	0.0320	0.0453	72	112	14	31	1.9E-04	4.4E-05	2.8E-06	2.5E-06	1.0E-06	8.0E-04	0.17	2.2E-05	2.1E-06	0.17
329540J	Jefferson	Texas	0.0321	0.0454	75	116	15	32	2.0E-04	4.5E-05	2.9E-06	2.6E-06	1.0E-06	8.3E-04	0.18	2.3E-05	2.1E-06	0.18
329546A	Jefferson	Texas	0.0322	0.0455	77	119	15	33	2.1E-04	4.7E-05	3.0E-06	2.7E-06	1.1E-06	8.5E-04	0.18	2.4E-05	2.2E-06	0.18
329545T	Jefferson	Texas	0.0332	0.0469	104	162	21	46	2.9E-04	6.6E-05	4.2E-06	3.8E-06	1.5E-06	1.2E-03	0.25	3.3E-05	3.1E-06	0.26
329531K	Jefferson	Texas	0.0329	0.0464	143	221	29	63	3.9E-04	8.9E-05	5.6E-06	5.1E-06	2.0E-06	1.6E-03	0.34	4.5E-05	4.2E-06	0.35
793696H	Jim Hogg	Texas	0.0652	0.0659	316	395	125	158	9.9E-04	2.3E-04	1.4E-05	1.3E-05	5.1E-06	4.1E-03	0.87	1.1E-04	1.1E-05	0.88
793818K	Jim Wells	Texas	0.2206	0.2129	350	427	469	553	3.5E-03	7.9E-04	5.0E-05	4.5E-05	1.8E-05	1.4E-02	3.04	4.0E-04	3.7E-05	3.07
793651B	Jim Wells	Texas	0.0945	0.0939	361	447	208	255	1.6E-03	3.6E-04	2.3E-05	2.1E-05	8.2E-06	6.6E-03	1.41	1.8E-04	1.7E-05	1.42
793810F	Jim Wells	Texas	0.2428	0.2344	460	561	679	800	5.0E-03	1.1E-03	7.2E-05	6.6E-05	2.6E-05	2.1E-02	4.41	5.8E-04	5.4E-05	4.44
793959U	Jim Wells	Texas	0.2158	0.2083	523	638	687	809	5.1E-03	1.2E-03	7.3E-05	6.6E-05	2.6E-05	2.1E-02	4.46	5.8E-04	5.4E-05	4.49
793649A	Jim Wells	Texas	0.0919	0.0913	134	166	75	92	5.8E-04	1.3E-04	8.3E-06	7.6E-06	3.0E-06	2.4E-03	0.51	6.6E-05	6.2E-06	0.51
793819S	Jim Wells	Texas	0.2475	0.2390	1,566	1,912	2,359	2,779	1.7E-02	4.0E-03	2.5E-04	2.3E-04	9.0E-05	7.2E-02	15.31	2.0E-03	1.9E-04	15.42
793821T	Jim Wells	Texas	0.2146	0.2072	478	583	624	735	4.6E-03	1.0E-03	6.6E-05	6.0E-05	2.4E-05	1.9E-02	4.05	5.3E-04	4.9E-05	4.08
793814H	Jim Wells	Texas	0.3232	0.3120	1,613	1,969	3,171	3,737	2.3E-02	5.3E-03	3.4E-04	3.1E-04	1.2E-04	9.7E-02	20.59	2.7E-03	2.5E-04	20.73
762761B	Liberty	Texas	0.0221	0.0285	55	75	7	13	8.1E-05	1.9E-05	1.2E-06	1.1E-06	4.2E-07	3.4E-04	0.07	9.4E-06	8.7E-07	0.07
762786W	Liberty	Texas	0.0354	0.0441	158	211	34	57	3.5E-04	8.1E-05	5.1E-06	4.7E-06	1.8E-06	1.5E-03	0.31	4.1E-05	3.8E-06	0.31
762789S	Liberty	Texas	0.0361	0.0451	179	240	39	66	4.1E-04	9.4E-05	5.9E-06	5.4E-06	2.1E-06	1.7E-03	0.36	4.7E-05	4.4E-06	0.36
762785P	Liberty	Texas	0.0356	0.0444	254	340	55	92	5.7E-04	1.3E-04	8.3E-06	7.5E-06	3.0E-06	2.4E-03	0.51	6.6E-05	6.1E-06	0.51
762770A	Liberty	Texas	0.0823	0.0894	173	204	87	111	6.9E-04	1.6E-04	1.0E-05	9.1E-06	3.6E-06	2.9E-03	0.61	8.0E-05	7.4E-06	0.62
762765D	Liberty	Texas	0.0544	0.0672	290	386	96	158	9.9E-04	2.2E-04	1.4E-05	1.3E-05	5.1E-06	4.1E-03	0.87	1.1E-04	1.1E-05	0.88
763062E	Liberty	Texas	0.0245	0.0308	279	375	42	70	4.4E-04	1.0E-04	6.3E-06	5.8E-06	2.3E-06	1.8E-03	0.39	5.1E-05	4.7E-06	0.39
427586S	Nueces	Texas	0.0846	0.0843	617	746	317	383	2.4E-03	5.4E-04	3.4E-05	3.1E-05	1.2E-05	9.9E-03	2.11	2.8E-04	2.6E-05	2.12
793749E	Nueces	Texas	0.3269	0.3124	359	436	714	828	5.2E-03	1.2E-03	7.5E-05	6.8E-05	2.7E-05	2.1E-02	4.56	6.0E-04	5.5E-05	4.59
427597E	Nueces	Texas	0.0236	0.0401	40	83	6	20	1.3E-04	2.9E-05	1.8E-06	1.7E-06	6.5E-07	5.2E-04	0.11	1.5E-05	1.4E-06	0.11
793743N	Nueces	Texas	0.1563	0.1524	152	186	144	173	1.1E-03	2.5E-04	1.6E-05	1.4E-05	5.6E-06	4.5E-03	0.95	1.2E-04	1.2E-05	0.96
329460R	Orange	Texas	0.0187	0.0351	44	86	5	18	1.2E-04	2.6E-05	1.7E-06	1.5E-06	5.9E-07	4.8E-04	0.10	1.3E-05	1.2E-06	0.10
329467N	Orange	Texas	0.0184	0.0347	54	107	6	22	1.4E-04	3.2E-05	2.0E-06	1.8E-06	7.3E-07	5.8E-04	0.12	1.6E-05	1.5E-06	0.12
329471D	Orange	Texas	0.0208	0.0390	332	657	42	156	9.7E-04	2.2E-04	1.4E-05	1.3E-05	5.0E-06	4.0E-03	0.86	1.1E-04	1.0E-05	0.86
329472K	Orange	Texas	0.0183	0.0344	46	90	5	19	1.2E-04	2.7E-05	1.7E-06	1.6E-06	6.1E-07	4.9E-04	0.10	1.4E-05	1.3E-06	0.10
927011B	Orange	Texas	0.0183	0.0343	44	87	5	18	1.1E-04	2.6E-05	1.6E-06	1.5E-06	5.8E-07	4.7E-04	0.10	1.3E-05	1.2E-06	0.10
427570V	Refugio	Texas	0.0847	0.0813	280	327	144	162	1.0E-03	2.3E-04	1.5E-05	1.3E-05	5.2E-06	4.2E-03	0.89	1.2E-04	1.1E-05	0.90
436030Y	San Patricio	Texas	0.0614	0.0599	100	117	37	43	2.7E-04	6.1E-05	3.9E-06	3.5E-06	1.4E-06	1.1E-03	0.24	3.1E-05	2.9E-06	0.24
436017K	San Patricio	Texas	0.0607	0.0592	109	129	40	46	2.9E-04	6.6E-05	4.2E-06	3.8E-06	1.5E-06	1.2E-03	0.26	3.3E-05	3.1E-06	0.26
436012B	San Patricio	Texas	0.0604	0.0589	157	184	57	66	4.1E-04	9.4E-05	5.9E-06	5.4E-06	2.1E-06	1.7E-03	0.36	4.8E-05	4.4E-06	0.37
436014P	San Patricio	Texas	0.0603	0.0588	99	116	36	42	2.6E-04	5.9E-05	3.8E-06	3.4E-06	1.3E-06	1.1E-03	0.23	3.0E-05	2.8E-06	0.23
436011U	San Patricio	Texas	0.0594	0.0581	384	453	139	160	1.0E-03	2.3E-04	1.4E-05	1.3E-05	5.2E-06	4.1E-03	0.88	1.2E-04	1.1E-05	0.89
020545J	Tarrant	Texas	0.0233	0.0249	137	142	19	22	1.3E-04	3.1E-05	1.9E-06	1.8E-06	6.9E-07	5.6E-04	0.12	1.5E-05	1.4E-06	0.12
435913V	Victoria	Texas	1.3940	1.1588	679	710	5,759	5,004	3.1E-02	7.1E-03	4.5E-04	4.1E-04	1.6E-04	1.3E-01	27.57	3.6E-03	3.3E-04	27.76
435914C	Victoria	Texas	0.0791	0.0716	377	412	181	179	1.1E-03	2.5E-04	1.6E-05	1.5E-05	5.8E-06	4.6E-03	0.99	1.3E-04	1.2E-05	0.99
746650T	Victoria	Texas	0.2329	0.2316	1,044	1,290	1,480	1,817	1.1E-02	2.6E-03	1.6E-04	1.5E-04	5.9E-05	4.7E-02	10.01	1.3E-03	1.2E-04	10.08
746558T	Victoria	Texas	0.0981	0.1183	484	721	289	518	3.2E-03	7.4E-04	4.7E-05	4.3E-05	1.7E-05	1.3E-02	2.86	3.7E-04	3.5E-05	2.88
746556E	Victoria	Texas	0.0926	0.1116	235	350	132	237	1.5E-03	3.4E-04	2.1E-05	2.0E-05	7.7E-06	6.1E-03	1.31	1.7E-04	1.6E-05	1.32
746653N	Victoria	Texas	0.8498	0.8241	2,102	2,564	10,868	12,853	8.0E-02	1.8E-02	1.2E-03	1.1E-03	4.1E-04	3.3E-01	70.81	9.3E-03	8.6E-04	71.30
746550N	Victoria	Texas	0.0926	0.1117	119	176	67	120	7.5E-04	1.7E-04	1.1E-05	9.9E-06	3.9E-06	3.1E-03	0.66	8.6E-05	8.0E-06	0.67
746510R	Victoria	Texas	0.2192	0.2188	203	252	271	336	2.1E-03	4.8E-04	3.0E-05	2.8E-05	1.1E-05	8.7E-03	1.85	2.4E-04	2.2E-05	1.86
746562H	Victoria	Texas	0.0433	0.0538	281	425	74	139	8.7E-04	2.0E-04	1.3E-05	1.1E-05	4.5E-06	3.6E-03	0.77	1.0E-04	9.3E-06	0.77
912105H	Victoria	Texas	0.1437	0.1446	283	352	247	309	1.9E-03	4.4E-04	2.8E-05	2.5E-05	1.0E-05	8.0E-03	1.70	2.2E-04	2.1E-05	1.71
746652G	Victoria	Texas	0.1519	0.1528	664	825	614	766	4.8E-03	1.1E-03	6.9E-05	6.3E-05	2.5E-05	2.0E-02	4.22	5.5E-04	5.1E-05	4.25
746551V	Victoria	Texas	0.0934	0.1127	138	206	79	141	8.8E-04	2.0E-04	1.3E-05	1.2E-05	4.6E-06	3.7E-03	0.78	1.0E-04	9.5E-06	0.78
793598S	Webb	Texas	0.4558	0.4355	1,758	2,134	4,873	5,654	3.5E-02	8.0E-03	5.1E-04	4.6E-04	1.8E-04	1.5E-01	31.15	4.1E-03	3.8E-04	31.37
793596D	Webb	Texas	0.3297	0.3150	257	313	516	599	3.7E-03	8.5E-04	5.4E-05	4.9E-05	1.9E-05	1.5E-02	3.30	4.3E-04	4.0E-05	3.32
743432B	Wharton	Texas	0.1082	0.1312	195	292	128	233	1.5E-03	3.3E-04	2.1E-05	1.9E-05	7.5E-06	6.0E-03	1.29	1.7E-04	1.6E-05	1.29
743440T	Wharton	Texas	0.1110	0.1346	126	189	85	155	9.7E-04	2.2E-04	1.4E-05	1.3E-05	5.0E-06	4.0E-03	0.85	1.1E-04	1.0E-05	0.86
743438S	Wharton	Texas	0.1105	0.1340	121	181	81	148	9.2E-04	2.1E-04	1.3E-05	1.2E-05	4.8E-06	3.8E-03	0.81	1.1E-04	9.9E-06	0.82
743435W	Wharton	Texas	0.1086	0.1317	404	606	266	485	3.0E-03	6.9E-04	4.4E-05	4.0E-05	1.6E-05	1.3E-02	2.67	3.5E-04	3.2E-05	2.69
743352H	Wharton	Texas	0.0232	0.0302	75	117	11	21	1.3E-04	3.0E-05	1.9E-06	1.8E-06	6.9E-07	5.5E-04	0.12	1.5E-05	1.4E-06	0.12
743359F	Wharton	Texas	0.0252	0.0327	195	303	30	60	3.8E-04	8.6E-05	5.4E-06	4.9E-06	1.9E-06	1.6E-03	0.33	4.3E-05	4.0E-06	0.33

Note:

Vehicles Delayed and Average Delay provided from the transportation study

Table K.10-5. Grade Crossing Analysis - Acquisition-Related Criteria Pollutant Emissions by Crossing

			Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		Acquisition-Related Emissions (tons/year)						
FRA Crossing ID	County	State	NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	NOX	VOC	PM10	PM2.5	SO2	CO	CO2e
330354E	Benton	Arkansas	0.0913	0.1275	189	296	105	230	7.8E-04	1.8E-04	1.1E-05	1.0E-05	4.0E-06	3.2E-03	0.69
330363D	Benton	Arkansas	0.0561	0.0793	131	207	45	100	3.4E-04	7.9E-05	5.0E-06	4.5E-06	1.8E-06	1.4E-03	0.31
330362W	Benton	Arkansas	0.0580	0.0820	175	276	62	138	4.8E-04	1.1E-04	6.9E-06	6.3E-06	2.5E-06	2.0E-03	0.42
330375X	Benton	Arkansas	0.0579	0.0818	171	270	60	134	4.6E-04	1.1E-04	6.7E-06	6.1E-06	2.4E-06	1.9E-03	0.41
330376E	Benton	Arkansas	0.0560	0.0791	99	157	34	75	2.6E-04	5.9E-05	3.8E-06	3.4E-06	1.3E-06	1.1E-03	0.23
330405M	Benton	Arkansas	0.0566	0.0801	222	351	77	171	5.9E-04	1.3E-04	8.5E-06	7.8E-06	3.0E-06	2.4E-03	0.52
330372C	Benton	Arkansas	0.0548	0.0774	98	155	33	73	2.5E-04	5.8E-05	3.6E-06	3.3E-06	1.3E-06	1.0E-03	0.22
330578C	Little River	Arkansas	0.0417	0.0615	109	184	28	69	2.6E-04	5.8E-05	3.7E-06	3.4E-06	1.3E-06	1.1E-03	0.23
330575G	Little River	Arkansas	0.0471	0.0637	137	211	39	82	2.7E-04	6.1E-05	3.8E-06	3.5E-06	1.4E-06	1.1E-03	0.24
330457E	Polk	Arkansas	0.0573	0.0826	146	242	51	121	4.4E-04	1.0E-04	6.3E-06	5.8E-06	2.3E-06	1.8E-03	0.39
330454J	Polk	Arkansas	0.0571	0.0822	274	452	95	226	8.2E-04	1.9E-04	1.2E-05	1.1E-05	4.2E-06	3.4E-03	0.73
330524W	Sevier	Arkansas	0.0601	0.0866	154	254	56	134	4.8E-04	1.1E-04	7.0E-06	6.4E-06	2.5E-06	2.0E-03	0.43
330546W	Sevier	Arkansas	0.0398	0.0542	89	138	22	46	1.5E-04	3.4E-05	2.2E-06	2.0E-06	7.7E-07	6.2E-04	0.13
372409F	Carroll	Illinois	0.0234	0.0319	63	109	9	21	7.6E-05	1.7E-05	1.1E-06	1.0E-06	3.9E-07	3.2E-04	0.07
372414C	Carroll	Illinois	0.0235	0.0320	67	117	10	23	8.2E-05	1.9E-05	1.2E-06	1.1E-06	4.2E-07	3.4E-04	0.07
372214T	Cook	Illinois	0.0247	0.0372	207	270	31	61	1.9E-04	4.3E-05	2.7E-06	2.5E-06	9.7E-07	7.8E-04	0.17
372210R	Cook	Illinois	0.0391	0.0590	654	854	156	307	9.4E-04	2.1E-04	1.4E-05	1.2E-05	4.9E-06	3.9E-03	0.84
372206B	Cook	Illinois	0.0251	0.0378	449	587	69	135	4.2E-04	9.4E-05	6.0E-06	5.5E-06	2.1E-06	1.7E-03	0.37
372138C	Cook	Illinois	0.0911	0.0859	1,443	1,452	800	759	-2.5E-04	-5.7E-05	-3.6E-06	-3.3E-06	-1.3E-06	-1.0E-03	-0.22
372137V	Cook	Illinois	0.0904	0.0853	340	342	187	177	-5.9E-05	-1.3E-05	-8.5E-07	-7.8E-07	-3.0E-07	-2.4E-04	-0.05
372202Y	Cook	Illinois	0.0347	0.0524	557	728	118	232	7.1E-04	1.6E-04	1.0E-05	9.4E-06	3.7E-06	2.9E-03	0.63
372289S	De Kalb	Illinois	0.0111	0.0242	26	73	2	11	5.6E-05	1.3E-05	8.1E-07	7.4E-07	2.9E-07	2.3E-04	0.05
372279L	De Kalb	Illinois	0.0109	0.0238	19	52	1	8	3.9E-05	9.0E-06	5.7E-07	5.2E-07	2.0E-07	1.6E-04	0.04
372299X	De Kalb	Illinois	0.0116	0.0252	28	78	2	12	6.2E-05	1.4E-05	8.9E-07	8.1E-07	3.2E-07	2.6E-04	0.05
371997M	Du Page	Illinois	0.0232	0.0349	164	214	23	46	1.4E-04	3.2E-05	2.0E-06	1.8E-06	7.2E-07	5.8E-04	0.12
372174X	Du Page	Illinois	0.0239	0.0361	324	423	47	93	2.9E-04	6.5E-05	4.1E-06	3.8E-06	1.5E-06	1.2E-03	0.25
372170V	Du Page	Illinois	0.0245	0.0369	786	1,028	117	231	7.1E-04	1.6E-04	1.0E-05	9.3E-06	3.7E-06	2.9E-03	0.63
372179G	Du Page	Illinois	0.0244	0.0368	382	499	57	112	3.4E-04	7.8E-05	4.9E-06	4.5E-06	1.8E-06	1.4E-03	0.30
372184D	Du Page	Illinois	0.0316	0.0477	941	1,230	181	357	1.1E-03	2.5E-04	1.6E-05	1.4E-05	5.7E-06	4.5E-03	0.97
372191N	Du Page	Illinois	0.0223	0.0336	297	388	40	79	2.4E-04	5.5E-05	3.5E-06	3.2E-06	1.3E-06	1.0E-03	0.22
372196X	Du Page	Illinois	0.0233	0.0351	527	688	75	147	4.5E-04	1.0E-04	6.5E-06	5.9E-06	2.3E-06	1.9E-03	0.40
372177T	Du Page	Illinois	0.0373	0.0562	1,227	1,603	279	549	1.7E-03	3.8E-04	2.4E-05	2.2E-05	8.7E-06	7.0E-03	1.50
372178A	Du Page	Illinois	0.0220	0.0332	362	473	49	96	2.9E-04	6.7E-05	4.2E-06	3.9E-06	1.5E-06	1.2E-03	0.26
372240H	Kane	Illinois	0.0281	0.0424	705	921	121	237	7.3E-04	1.7E-04	1.1E-05	9.6E-06	3.8E-06	3.0E-03	0.65
372241P	Kane	Illinois	0.0235	0.0355	293	382	42	82	2.5E-04	5.8E-05	3.7E-06	3.3E-06	1.3E-06	1.0E-03	0.23
372217N	Kane	Illinois	0.0297	0.0448	818	1,069	148	291	9.0E-04	2.0E-04	1.3E-05	1.2E-05	4.6E-06	3.7E-03	0.79
372242W	Kane	Illinois	0.0256	0.0385	986	1,288	153	302	9.3E-04	2.1E-04	1.3E-05	1.2E-05	4.8E-06	3.8E-03	0.82
372246Y	Kane	Illinois	0.0263	0.0397	907	1,185	145	286	8.8E-04	2.0E-04	1.3E-05	1.2E-05	4.5E-06	3.6E-03	0.78
372239N	Kane	Illinois	0.0268	0.0412	356	470	58	118	3.7E-04	8.5E-05	5.4E-06	4.9E-06	1.9E-06	1.5E-03	0.33
372235L	Kane	Illinois	0.0256	0.0394	152	201	24	48	1.5E-04	3.5E-05	2.2E-06	2.0E-06	7.9E-07	6.3E-04	0.14
372355C	Ogle	Illinois	0.0253	0.0346	85	147	13	31	1.1E-04	2.5E-05	1.6E-06	1.5E-06	5.8E-07	4.6E-04	0.10
372350T	Ogle	Illinois	0.0236	0.0322	47	81	7	16	5.7E-05	1.3E-05	8.3E-07	7.6E-07	3.0E-07	2.4E-04	0.05
372339T	Ogle	Illinois	0.0244	0.0332	50	86	7	17	6.3E-05	1.4E-05	9.1E-07	8.3E-07	3.2E-07	2.6E-04	0.06
372388P	Ogle	Illinois	0.0227	0.0310	58	101	8	19	6.9E-05	1.6E-05	9.9E-07	9.0E-07	3.5E-07	2.8E-04	0.06
372346D	Ogle	Illinois	0.0232	0.0317	37	65	5	13	4.5E-05	1.0E-05	6.5E-07	6.0E-07	2.3E-07	1.9E-04	0.04
376027Y	Clinton	Iowa	0.1693	0.2863	150	299	155	521	2.3E-03	5.2E-04	3.3E-05	3.0E-05	1.2E-05	9.5E-03	2.03
607245W	Louisa	Iowa	0.0193	0.0483	33	103	4	30	1.7E-04	3.8E-05	2.4E-06	2.2E-06	8.6E-07	6.9E-04	0.15
393258B	Muscatine	Iowa	0.0192	0.0479	46	145	5	42	2.3E-04	5.2E-05	3.3E-06	3.0E-06	1.2E-06	9.5E-04	0.20
607211C	Muscatine	Iowa	0.0202	0.0505	81	258	10	79	4.3E-04	9.8E-05	6.2E-06	5.7E-06	2.2E-06	1.8E-03	0.38
607215E	Muscatine	Iowa	0.0195	0.0486	28	89	3	26	1.4E-04	3.3E-05	2.1E-06	1.9E-06	7.4E-07	5.9E-04	0.13
865646F	Scott	Iowa	0.0385	0.0786	56	132	13	63	3.1E-04	7.1E-05	4.5E-06	4.1E-06	1.6E-06	1.3E-03	0.28
865649B	Scott	Iowa	0.0911	0.1819	132	310	73	343	1.7E-03	3.8E-04	2.4E-05	2.2E-05	8.7E-06	7.0E-03	1.49
865653R	Scott	Iowa	0.1214	0.2425	353	827	261	1,220	6.0E-03	1.4E-03	8.6E-05	7.9E-05	3.1E-05	2.5E-02	5.32
375784R	Wapello	Iowa	0.0652	0.1545	60	186	24	175	9.4E-04	2.1E-04	1.4E-05	1.2E-05	4.9E-06	3.9E-03	0.84
375779U	Wapello	Iowa	0.0662	0.1568	89	274	36	261	1.4E-03	3.2E-04	2.0E-05	1.8E-05	7.3E-06	5.8E-03	1.25
375781V	Wapello	Iowa	0.0658	0.1558	131	402	52	381	2.1E-03	4.7E-04	3.0E-05	2.7E-05	1.1E-05	8.5E-03	1.83
607323B	Washington	Iowa	0.0199	0.0498	72	228	9	69	3.8E-04	8.6E-05	5.4E-06	5.0E-06	2.0E-06	1.6E-03	0.34
607322U	Washington	Iowa	0.0187	0.0467	28	87	3	25	1.4E-04	3.1E-05	1.9E-06	1.8E-06	7.0E-07	5.6E-04	0.12
330258C	Crawford	Kansas	0.0380	0.0545	158	252	37	84	2.9E-04	6.7E-05	4.2E-06	3.9E-06	1.5E-06	1.2E-03	0.26
330256N	Crawford	Kansas	0.0328	0.0471	85	135	17	39	1.4E-04	3.1E-05	2.0E-06	1.8E-06	7.0E-07	5.6E-04	0.12
330257V	Crawford	Kansas	0.0332	0.0477	212	338	43	98	3.5E-04	7.9E-05	5.0E-06	4.5E-06	1.8E-06	1.4E-03	0.31
329322C	Beauregard	Louisiana	0.0413	0.0686	63	114	16	47	2.0E-04	4.5E-05	2.9E-06	2.6E-06	1.0E-06	8.2E-04	0.18
329320N	Beauregard	Louisiana	0.0367	0.0612	92	168	21	63	2.6E-04	6.0E-05	3.8E-06	3.5E-06	1.4E-06	1.1E-03	0.23
329319U	Beauregard	Louisiana	0.0539	0.0899	600	1,092	197	598	2.5E-03	5.7E-04	3.6E-05	3.3E-05	1.3E-05	1.0E-02	2.22
329317F	Beauregard	Louisiana	0.0539	0.0899	600	1,092	197	598	2.5E-03	5.7E-04	3.6E-05	3.3E-05	1.3E-05	1.0E-02	2.22
329337S	Beauregard	Louisiana	0.0234	0.0395	75	137	11	33	1.4E-04	3.2E-05	2.0E-06	1.8E-06	7.2E-07	5.8E-04	0.12
329128J	Caddo	Louisiana	0.0804	0.1028	148	201	72	125	3.3E-04	7.5E-05	4.8E-06	4.4E-06	1.7E-06	1.4E-03	0.29
329154Y	Caddo	Louisiana	0.1394	0.1782	1,034	1,401	877	1,519	4.0E-03	9.1E-04	5.8E-05	5.3E-05	2.1E-05	1.7E-02	3.56
329157U	Caddo	Louisiana	0.0793	0.1014	252	342	122	211	5.6E-04	1.3E-04	8.0E-06	7.3E-06	2.9E-06	2.3E-03	0.49
329006E	Caddo	Louisiana	0.0354	0.0524	114	192	24	61	2.3E-04	5.2E-05	3.3E-06	3.0E-06	1.2E-06	9.5E-04	0.20
328998G	Caddo	Louisiana	0.0378	0.0560	135	228	31	78	2.9E-04	6.6E-05	4.2E-06	3.8E-06	1.5E-06	1.2E-03	0.26
329356W	Calcasieu	Louisiana	0.0493	0.0819	347	631	104	314	1.3E-03	3.0E-04	1.9E-05	1.7E-05	6.8E-06	5.4E-03	1.17
329344C	Calcasieu	Louisiana	0.0419	0.0697	78	142	20	60	2.5E-04	5.7E-05	3.6E-06	3.3E-06	1.3E-06	1.0E-03	0.22
329346R	Calcasieu	Louisiana	0.0379	0.0705	231	454	53	195	8.8E-04	2.0E-04	1.3E-05	1.2E-05	4.6E-06	3.7E-03	0.79
329164E	De Soto	Louisiana	0.0694	0.0889	141	192	60	104	2.8E-04	6.3E-05	4.0E-06	3.6E-06	1.4E-06	1.1E-03	0.24
329162R	De Soto	Louisiana	0.0772	0.0990	368	500	173	301	8.0E-04	1.8E-04	1.2E-05	1.1E-05	4.1E-06	3.3E-03	0.71
329183J	De Soto	Louisiana	0.0443	0.0745	230	423	62	191	8.1E-04	1.8E-04	1.2E-05	1.1E-05	4.2E-06	3.3E-03	0.72
329187L	De Soto	Louisiana	0.0401	0.0676	181	333	44	137	5.8E-04	1.3E-04	8.3E-06	7.6E-06	3.0E-06	2.4E-03	0.51
329182C	De Soto	Louisiana	0.0422	0.0710	328	604	84	261	1.1E-03	2.5E-04	1.6E-05	1.5E-05	5.7E-06	4.6E-03	0.98
329234S	Sabine	Louisiana	0.0235	0.0402	143	265	20	65	2.8E-04	6.3E-05	4.0E-06	3.6E-06	1.4E-06	1.1E-03	0.25
329226A	Sabine	Louisiana	0.0366	0.0622	184	340	41	129	5.5E-04	1.2E-04	7.9E-06	7.2E-06	2.8E-06	2.3E-03	0.49
329227G	Sabine	Louisiana	0.0287	0.0487	50	93	9	28	1.2E-04	2.7E-05	1.7E-06	1.5E-06	6.1E-07	4.9E-04	0.10
329259M	Vernon	Louisiana	0.0420	0.0706	100	184	26	79	3.3E-04	7.6E-05	4.8E-06	4.4E-06	1.7E-06	1.4E-03	0.30
329253W	Vernon	Louisiana	0.0403	0.0678	61	113	15	46	2.0E-04	4.5E-05	2.8E-06	2.6E-06	1.0E-06	8.1E-04	0.17
329279Y	Vernon	Louisiana	0.0416	0.0691	108	197	27	83	3.5E-04	7.9E-05	5.0E-06	4.5E-06	1.8E-06	1.4E-03	0.31
329284V	Vernon	Louisiana	0.0423	0.0702	86	155	22	66	2.8E-04	6.3E-05	4.0E-06	3.6E-06	1.4E-06	1.1E-03	0.25
329641V	Vernon	Louisiana	0.0418	0.0694	74	134	19	57	2.4E-04	5.4E-05	3.4E-06	3.1E-06	1.2E-06	9.8E-04	0.21
329298D	Vernon	Louisiana	0.0338	0.0567	172	314	35	108	4.6E-04	1.0E-04	6.6E-06	6.0E-06	2.3E-06	1.9E-03	0.40
329308G	Vernon	Louisiana	0.0227	0.0383	53	96	7	22	9.5E-05	2.2E-05	1.4E-06	1.2E-06	4.9E-07	3.9E-04	0.08
329839D	Cass	Missouri	0.0391	0.0575	93	148	22	52	1.9E-04	4.2E-05	2.7E-06	2.4E-06	9.6E-07	7.7E-04	0.16
375407C	Clay	Missouri	0.0564	0.0991	43	124	15	75	3.8E-04	8.5E-05	5.4E-06	4.9E-06	1.9E-06	1.6E-03	0.33
375439H	Clay	Missouri	0.0142	0.0289	48	148	4	26	1.4E-04	3.1E-05	2.0E-06	1.8E-06	7.1E-07	5.7E-04	0.12
375440C	Clay	Missouri	0.0128	0.0261	25	77	2	12	6.5E-05	1.5E-05	9.3E-07	8.5E-07	3.3E-07	2.7E-04	0.06
329807X	Jackson	Missouri	0.0412	0.0606	181	289	45	107	3.8E-04	8.7E-05	5.5E-06	5.0E-06	2.0E-06	1.6E-03	0.34
329764G	Jackson	Missouri	0.0659	0.0957	122	193	49	112	4.0E-04	9.0E-05	5.7E-06	5.2E-06	2.0E-06	1.6E-03	0.35
330035L	Jasper	Missouri	0.0415	0.0594	162	258	41	93	3.3E-04	7.4E-05	4.7E-06	4.3E-06	1.7E-06	1.3E-03	0.29
330055X	Jasper	Missouri	0.0612	0.0866	378	597	141	315	1.1E-03	2.5E-04	1.6E-05	1.4E-05	5.6E-06	4.5E-03	0.96
330061B	Jasper	Missouri	0.0691	0.0977	595	940	250	559	1.9E-03	4.4E-04	2.8E-05	2.5E-05	1.0E-05	8.0E-03	1.71

Table K.10-5. Grade Crossing Analysis - Acquisition-Related Criteria Pollutant Emissions by Crossing

			Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		Acquisition-Related Emissions (tons/year)						
FRA Crossing ID	County	State	NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	NOX	VOC	PM10	PM2.5	SO2	CO	CO2e
330045S	Jasper	Missouri	0.0587	0.0830	295	466	105	235	8.1E-04	1.8E-04	1.2E-05	1.1E-05	4.2E-06	3.4E-03	0.72
330053J	Jasper	Missouri	0.0585	0.0828	145	229	52	115	4.0E-04	9.1E-05	5.7E-06	5.2E-06	2.1E-06	1.6E-03	0.35
330178J	McDonald	Missouri	0.0905	0.1263	173	271	95	208	7.1E-04	1.6E-04	1.0E-05	9.3E-06	3.7E-06	2.9E-03	0.63
330102D	Newton	Missouri	0.1270	0.1761	255	399	197	427	1.4E-03	3.3E-04	2.1E-05	1.9E-05	7.4E-06	6.0E-03	1.28
330120B	Newton	Missouri	0.1211	0.1680	127	199	93	203	6.8E-04	1.6E-04	9.9E-06	9.0E-06	3.5E-06	2.8E-03	0.61
330113R	Newton	Missouri	0.1200	0.1664	223	349	163	353	1.2E-03	2.7E-04	1.7E-05	1.6E-05	6.1E-06	4.9E-03	1.06
330101W	Newton	Missouri	0.1166	0.1617	131	206	93	202	6.8E-04	1.6E-04	9.8E-06	9.0E-06	3.5E-06	2.8E-03	0.61
330625H	Adair	Oklahoma	0.0469	0.0704	89	149	25	64	2.4E-04	5.5E-05	3.5E-06	3.2E-06	1.2E-06	9.9E-04	0.21
330612G	Adair	Oklahoma	0.0472	0.0709	106	177	30	76	2.9E-04	6.6E-05	4.2E-06	3.8E-06	1.5E-06	1.2E-03	0.26
330785W	Le Flore	Oklahoma	0.1825	0.2632	335	548	372	877	3.2E-03	7.2E-04	4.5E-05	4.1E-05	1.6E-05	1.3E-02	2.80
330784P	Le Flore	Oklahoma	0.1848	0.2666	355	579	399	939	3.4E-03	7.7E-04	4.9E-05	4.4E-05	1.7E-05	1.4E-02	3.00
330736A	Le Flore	Oklahoma	0.0314	0.0473	84	140	16	40	1.5E-04	3.4E-05	2.2E-06	2.0E-06	7.8E-07	6.3E-04	0.13
330869S	Bowie	Texas	0.0336	0.0499	103	174	21	53	2.0E-04	4.5E-05	2.8E-06	2.6E-06	1.0E-06	8.2E-04	0.18
330872A	Bowie	Texas	0.0546	0.0795	179	300	60	145	5.3E-04	1.2E-04	7.7E-06	7.0E-06	2.7E-06	2.2E-03	0.47
330867D	Bowie	Texas	0.0348	0.0515	98	166	21	52	1.9E-04	4.4E-05	2.8E-06	2.6E-06	1.0E-06	8.1E-04	0.17
021749Y	Collin	Texas	0.0030	0.0033	23	24	0	0	3.9E-07	8.8E-08	5.6E-09	5.1E-09	2.0E-09	1.6E-06	0.00
021770E	Collin	Texas	0.0026	0.0029	12	13	0	0	1.8E-07	4.1E-08	2.6E-09	2.4E-09	9.2E-10	7.4E-07	0.00
789644J	Collin	Texas	0.0033	0.0036	77	81	2	2	1.4E-06	3.2E-07	2.0E-08	1.9E-08	7.3E-09	5.9E-06	0.00
789645R	Collin	Texas	0.0031	0.0034	52	55	1	1	9.0E-07	2.1E-07	1.3E-08	1.2E-08	4.7E-09	3.7E-06	0.00
789633W	Collin	Texas	0.0045	0.0050	7	7	0	0	1.9E-07	4.2E-08	2.7E-09	2.4E-09	9.6E-10	7.7E-07	0.00
021635L	Collin	Texas	0.0031	0.0034	90	95	2	2	1.6E-06	3.6E-07	2.3E-08	2.1E-08	8.2E-09	6.5E-06	0.00
919239F	Collin	Texas	0.0031	0.0034	45	47	1	1	7.8E-07	1.8E-07	1.1E-08	1.0E-08	4.0E-09	3.2E-06	0.00
789632P	Collin	Texas	0.0028	0.0031	54	56	1	1	8.4E-07	1.9E-07	1.2E-08	1.1E-08	4.3E-09	3.5E-06	0.00
789638F	Collin	Texas	0.0036	0.0039	67	70	1	2	1.3E-06	3.0E-07	1.9E-08	1.7E-08	6.8E-09	5.5E-06	0.00
789635K	Collin	Texas	0.0030	0.0033	22	23	0	0	3.6E-07	8.2E-08	5.2E-09	4.8E-09	1.9E-09	1.5E-06	0.00
753583T	Collin	Texas	0.0029	0.0032	25	27	0	1	4.1E-07	9.3E-08	5.9E-09	5.4E-09	2.1E-09	1.7E-06	0.00
789636S	Collin	Texas	0.0045	0.0049	44	46	1	1	1.1E-06	2.5E-07	1.6E-08	1.4E-08	5.7E-09	4.5E-06	0.00
021638G	Collin	Texas	0.0029	0.0032	45	47	1	1	7.3E-07	1.7E-07	1.0E-08	9.6E-09	3.8E-09	3.0E-06	0.00
919268R	Collin	Texas	0.0035	0.0038	65	68	1	2	1.3E-06	2.9E-07	1.8E-08	1.7E-08	6.5E-09	5.2E-06	0.00
789640G	Collin	Texas	0.0029	0.0032	15	15	0	0	2.3E-07	5.3E-08	3.4E-09	3.1E-09	1.2E-09	9.7E-07	0.00
789631H	Collin	Texas	0.0122	0.0134	112	117	8	10	8.1E-06	1.9E-06	1.2E-07	1.1E-07	4.2E-08	3.4E-05	0.01
789629G	Collin	Texas	0.0036	0.0039	41	43	1	1	8.1E-07	1.8E-07	1.2E-08	1.1E-08	4.2E-09	3.3E-06	0.00
753757M	Collin	Texas	0.0028	0.0030	30	31	0	1	4.6E-07	1.0E-07	6.6E-09	6.0E-09	2.4E-09	1.9E-06	0.00
789628A	Collin	Texas	0.0026	0.0029	29	30	0	1	4.2E-07	9.5E-08	6.0E-09	5.5E-09	2.2E-09	1.7E-06	0.00
789648L	Collin	Texas	0.0029	0.0032	31	32	1	1	4.9E-07	1.1E-07	7.1E-09	6.5E-09	2.5E-09	2.0E-06	0.00
789654P	Collin	Texas	0.0030	0.0033	7	7	0	0	1.2E-07	2.6E-08	1.7E-09	1.5E-09	6.0E-10	4.8E-07	0.00
789653H	Collin	Texas	0.0020	0.0022	23	24	0	0	2.2E-07	4.9E-08	3.1E-09	2.8E-09	1.1E-09	8.9E-07	0.00
789652B	Collin	Texas	0.0014	0.0016	18	19	0	0	1.2E-07	2.8E-08	1.8E-09	1.6E-09	6.3E-10	5.0E-07	0.00
790146W	Collin	Texas	0.0032	0.0035	28	29	1	1	4.9E-07	1.1E-07	7.0E-09	6.4E-09	2.5E-09	2.0E-06	0.00
331279Y	Collin	Texas	0.0032	0.0035	30	31	1	1	5.3E-07	1.2E-07	7.7E-09	7.0E-09	2.7E-09	2.2E-06	0.00
021765H	Denton	Texas	0.0038	0.0041	72	75	2	2	1.5E-06	3.4E-07	2.2E-08	2.0E-08	7.7E-09	6.2E-06	0.00
021767W	Denton	Texas	0.0028	0.0030	33	34	1	1	5.0E-07	1.1E-07	7.3E-09	6.6E-09	2.6E-09	2.1E-06	0.00
021691T	Denton	Texas	0.0029	0.0031	10	10	0	0	1.6E-07	3.5E-08	2.2E-09	2.0E-09	8.0E-10	6.4E-07	0.00
021700P	Denton	Texas	0.0028	0.0031	18	19	0	0	2.8E-07	6.4E-08	4.0E-09	3.7E-09	1.4E-09	1.2E-06	0.00
021726S	Denton	Texas	0.0030	0.0032	24	25	0	0	3.9E-07	8.9E-08	5.6E-09	5.1E-09	2.0E-09	1.6E-06	0.00
021696C	Denton	Texas	0.0028	0.0030	10	11	0	0	1.6E-07	3.6E-08	2.3E-09	2.1E-09	8.1E-10	6.5E-07	0.00
021646Y	Denton	Texas	0.0028	0.0031	75	79	1	1	1.2E-06	2.7E-07	1.7E-08	1.6E-08	6.1E-09	4.9E-06	0.00
021676R	Denton	Texas	0.0035	0.0038	26	27	1	1	5.1E-07	1.2E-07	7.3E-09	6.7E-09	2.6E-09	2.1E-06	0.00
021672N	Denton	Texas	0.0030	0.0033	50	53	1	1	8.4E-07	1.9E-07	1.2E-08	1.1E-08	4.3E-09	3.5E-06	0.00
331277K	Denton	Texas	0.0033	0.0037	72	75	1	2	1.3E-06	3.0E-07	1.9E-08	1.8E-08	6.9E-09	5.5E-06	0.00
020557D	Denton	Texas	0.0167	0.0179	158	163	16	18	1.1E-05	2.4E-06	1.5E-07	1.4E-07	5.4E-08	4.4E-05	0.01
020572F	Denton	Texas	0.0209	0.0224	254	263	32	36	2.1E-05	4.9E-06	3.1E-07	2.8E-07	1.1E-07	8.8E-05	0.02
021774G	Denton	Texas	0.0026	0.0028	16	17	0	0	2.3E-07	5.2E-08	3.3E-09	3.0E-09	1.2E-09	9.4E-07	0.00
021669F	Denton	Texas	0.0026	0.0028	10	11	0	0	1.5E-07	3.4E-08	2.1E-09	1.9E-09	7.6E-10	6.1E-07	0.00
919241G	Denton	Texas	0.0026	0.0028	8	9	0	0	1.2E-07	2.6E-08	1.7E-09	1.5E-09	6.0E-10	4.8E-07	0.00
020563G	Denton	Texas	0.0162	0.0173	111	115	11	12	7.2E-06	1.6E-06	1.0E-07	9.4E-08	3.7E-08	3.0E-05	0.01
793688R	Duval	Texas	0.1214	0.1195	524	645	387	469	5.1E-04	1.2E-04	7.4E-06	6.8E-06	2.7E-06	2.1E-03	0.46
743475U	Fort Bend	Texas	0.0212	0.0283	50	80	6	14	4.6E-05	1.0E-05	6.6E-07	6.0E-07	2.4E-07	1.9E-04	0.04
440652H	Fort Bend	Texas	0.1491	0.1549	779	881	706	830	7.7E-04	1.8E-04	1.1E-05	1.0E-05	4.0E-06	3.2E-03	0.69
743483L	Fort Bend	Texas	0.0222	0.0288	44	69	6	12	3.8E-05	8.6E-06	5.5E-07	5.0E-07	2.0E-07	1.6E-04	0.03
743689L	Fort Bend	Texas	0.0790	0.0814	1,147	1,278	552	633	5.1E-04	1.2E-04	7.3E-06	6.7E-06	2.6E-06	2.1E-03	0.45
743726L	Fort Bend	Texas	0.0834	0.0859	750	836	381	437	3.5E-04	8.0E-05	5.1E-06	4.6E-06	1.8E-06	1.5E-03	0.31
743719B	Fort Bend	Texas	0.0863	0.0886	295	328	155	177	1.4E-04	3.1E-05	2.0E-06	1.8E-06	7.1E-07	5.7E-04	0.12
743724X	Fort Bend	Texas	0.0863	0.0889	431	480	226	260	2.1E-04	4.8E-05	3.0E-06	2.7E-06	1.1E-06	8.6E-04	0.19
743731H	Fort Bend	Texas	0.0499	0.0498	257	307	78	93	9.2E-05	2.1E-05	1.3E-06	1.2E-06	4.8E-07	3.8E-04	0.08
743727T	Fort Bend	Texas	0.0427	0.0513	194	250	50	78	1.7E-04	3.9E-05	2.5E-06	2.3E-06	8.9E-07	7.1E-04	0.15
924008H	Fort Bend	Texas	0.0746	0.0769	374	416	170	195	1.6E-04	3.6E-05	2.3E-06	2.1E-06	8.1E-07	6.5E-04	0.14
924009P	Fort Bend	Texas	0.0706	0.0727	336	374	144	165	1.3E-04	3.0E-05	1.9E-06	1.7E-06	6.9E-07	5.5E-04	0.12
743695P	Fort Bend	Texas	0.0823	0.0848	1,412	1,573	707	811	6.5E-04	1.5E-04	9.4E-06	8.6E-06	3.4E-06	2.7E-03	0.58
412514U	Fort Bend	Texas	0.0737	0.0760	331	369	149	171	1.4E-04	3.1E-05	2.0E-06	1.8E-06	7.1E-07	5.7E-04	0.12
924006U	Fort Bend	Texas	0.0740	0.0762	219	244	99	113	9.1E-05	2.1E-05	1.3E-06	1.2E-06	4.7E-07	3.8E-04	0.08
924007B	Fort Bend	Texas	0.0746	0.0769	239	266	109	125	1.0E-04	2.3E-05	1.4E-06	1.3E-06	5.2E-07	4.1E-04	0.09
743699S	Fort Bend	Texas	0.0747	0.0769	749	834	340	390	3.1E-04	7.1E-05	4.5E-06	4.1E-06	1.6E-06	1.3E-03	0.28
745055W	Fort Bend	Texas	0.0826	0.0851	361	402	181	208	1.7E-04	3.8E-05	2.4E-06	2.2E-06	8.6E-07	6.9E-04	0.15
743713K	Fort Bend	Texas	0.0742	0.0765	570	635	257	295	2.4E-04	5.4E-05	3.4E-06	3.1E-06	1.2E-06	9.8E-04	0.21
743698K	Fort Bend	Texas	0.0738	0.0760	499	556	224	257	2.1E-04	4.7E-05	3.0E-06	2.7E-06	1.1E-06	8.5E-04	0.18
743703E	Fort Bend	Texas	0.0709	0.0731	374	416	161	185	1.5E-04	3.4E-05	2.1E-06	2.0E-06	7.7E-07	6.1E-04	0.13
743716F	Fort Bend	Texas	0.0830	0.0856	474	528	239	275	2.2E-04	5.0E-05	3.2E-06	2.9E-06	1.1E-06	9.1E-04	0.20
745044J	Fort Bend	Texas	0.0755	0.0778	1,250	1,392	574	659	5.3E-04	1.2E-04	7.6E-06	7.0E-06	2.7E-06	2.2E-03	0.47
922512N	Fort Bend	Texas	0.0738	0.0760	429	478	193	221	1.8E-04	4.0E-05	2.6E-06	2.3E-06	9.2E-07	7.3E-04	0.16
922513V	Fort Bend	Texas	0.0842	0.0844	478	519	245	266	1.3E-04	3.0E-05	1.9E-06	1.8E-06	6.9E-07	5.5E-04	0.12
762865H	Harris	Texas	0.0433	0.0478	119	141	31	41	6.1E-05	1.4E-05	8.8E-07	8.0E-07	3.2E-07	2.5E-04	0.05
762872T	Harris	Texas	0.0578	0.0634	279	331	98	128	1.8E-04	4.2E-05	2.7E-06	2.4E-06	9.5E-07	7.6E-04	0.16
762869K	Harris	Texas	0.0540	0.0593	132	156	43	56	8.2E-05	1.9E-05	1.2E-06	1.1E-06	4.2E-07	3.4E-04	0.07
758519L	Harris	Texas	0.0611	0.0665	983	1,154	366	467	6.3E-04	1.4E-04	9.1E-06	8.3E-06	3.3E-06	2.6E-03	0.56
758518E	Harris	Texas	0.0625	0.0680	1,639	1,924	623	796	1.1E-03	2.5E-04	1.6E-05	1.4E-05	5.6E-06	4.5E-03	0.96
758517X	Harris	Texas	0.0613	0.0667	995	1,168	371	474	6.4E-04	1.5E-04	9.3E-06	8.5E-06	3.3E-06	2.7E-03	0.57
758521M	Harris	Texas	0.0556	0.0605	482	566	163	208	2.8E-04	6.4E-05	4.1E-06	3.7E-06	1.5E-06	1.2E-03	0.25
762904W	Harris	Texas	0.0444	0.0516	714	894	193	281	5.5E-04	1.3E-04	7.9E-06	7.2E-06	2.8E-06	2.3E-03	0.49
762889W	Harris	Texas	0.0447	0.0520	151	189	41	60	1.2E-04	2.7E-05	1.7E-06	1.5E-06	6.0E-07	4.8E-04	0.10
755621G	Harris	Texas	0.0746	0.0768	926	1,032	420	482	3.9E-04	8.8E-05	5.6E-06	5.1E-06	2.0E-06	1.6E-03	0.34
758533G	Harris	Texas	0.0659	0.0705	1,046	1,210	419	519	6.2E-04	1.4E-04	9.0E-06	8.2E-06	3.2E-06	2.6E-03	0.55
755624C	Harris	Texas	0.0512	0.0534	1,218	1,366	379	444	4.0E-04	9.1E-05	5.8E-06	5.3E-06	2.1E-06	1.7E-03	0.36
758540S	Harris	Texas	0.1324	0.1396	1,938	2,223	1,561	1,887	2.0E-03	4.6E-04	2.9E-05	2.7E-05	1.1E-05	8.4E-03	1.81
758180W	Harris	Texas	0.0701	0.0740	534	608	228	274	2.9E-04	6.6E-05	4.2E-06	3.8E-06	1.5E-06	1.2E-03	0.26
755622N	Harris	Texas	0.0756	0.0778	1,043	1,161	479	550	4.4E-04	1.0E-04	6.4E-06	5.8E-06	2.3E-06	1.8E-03	0.39
758187U	Harris	Texas	0.4121	0.4201	2,020	2,263	5,063	5,784	4.5E-03	1.0E-03	6.5E-05	5.9E-05	2.3E-05	1.9E-02	4.00
762907S	Harris	Texas	0.0539	0.0592	259	307	85	111	1.6E-04	3.6E-05	2.3E-06	2.1E-06	8.3E-07	6.6E-04	0.14

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			Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		Acquisition-Related Emissions (tons/year)						
FRA Crossing ID	County	State	NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	NOX	VOC	PM10	PM2.5	SO2	CO	CO2e
758293C	Harris	Texas	0.0676	0.0714	426	485	175	211	2.2E-04	5.1E-05	3.2E-06	2.9E-06	1.1E-06	9.2E-04	0.20
758534N	Harris	Texas	0.1253	0.1321	1,546	1,773	1,179	1,425	1.5E-03	3.5E-04	2.2E-05	2.0E-05	7.9E-06	6.4E-03	1.37
755618Y	Harris	Texas	0.1526	0.1586	832	941	772	908	8.5E-04	1.9E-04	1.2E-05	1.1E-05	4.4E-06	3.5E-03	0.75
758514C	Harris	Texas	0.0604	0.0657	1,377	1,617	506	646	8.8E-04	2.0E-04	1.3E-05	1.2E-05	4.5E-06	3.6E-03	0.78
758532A	Harris	Texas	0.1202	0.1267	310	355	227	274	3.0E-04	6.7E-05	4.3E-06	3.9E-06	1.5E-06	1.2E-03	0.26
758512N	Harris	Texas	0.0582	0.0633	729	856	258	330	4.5E-04	1.0E-04	6.5E-06	5.9E-06	2.3E-06	1.9E-03	0.40
758178V	Harris	Texas	0.0786	0.0829	852	971	407	490	5.2E-04	1.2E-04	7.4E-06	6.8E-06	2.7E-06	2.1E-03	0.46
762892E	Harris	Texas	0.0449	0.0522	308	386	84	122	2.4E-04	5.5E-05	3.5E-06	3.2E-06	1.2E-06	9.9E-04	0.21
758531T	Harris	Texas	0.1177	0.1241	1,069	1,226	765	925	1.0E-03	2.3E-04	1.4E-05	1.3E-05	5.2E-06	4.1E-03	0.89
758610E	Harris	Texas	0.0600	0.0653	285	334	104	133	1.8E-04	4.1E-05	2.6E-06	2.4E-06	9.3E-07	7.5E-04	0.16
758611L	Harris	Texas	0.0601	0.0654	289	339	106	135	1.8E-04	4.2E-05	2.6E-06	2.4E-06	9.5E-07	7.6E-04	0.16
762901B	Harris	Texas	0.0562	0.0617	366	434	125	163	2.4E-04	5.4E-05	3.4E-06	3.1E-06	1.2E-06	9.7E-04	0.21
758523B	Harris	Texas	0.0558	0.0608	504	592	171	219	3.0E-04	6.8E-05	4.3E-06	3.9E-06	1.5E-06	1.2E-03	0.26
758513V	Harris	Texas	0.0622	0.0677	1,337	1,570	506	647	8.8E-04	2.0E-04	1.3E-05	1.2E-05	4.5E-06	3.6E-03	0.78
758525P	Harris	Texas	0.0534	0.0581	249	293	81	103	1.4E-04	3.2E-05	2.0E-06	1.8E-06	7.3E-07	5.8E-04	0.12
746645W	Jackson	Texas	0.0223	0.0289	46	72	6	13	4.0E-05	9.1E-06	5.8E-07	5.3E-07	2.1E-07	1.7E-04	0.04
746643H	Jackson	Texas	0.0222	0.0288	67	105	9	18	5.8E-05	1.3E-05	8.3E-07	7.6E-07	3.0E-07	2.4E-04	0.05
746639T	Jackson	Texas	0.0225	0.0292	166	258	23	46	1.4E-04	3.3E-05	2.1E-06	1.9E-06	7.5E-07	6.0E-04	0.13
746621H	Jackson	Texas	0.0253	0.0328	127	198	20	40	1.2E-04	2.8E-05	1.8E-06	1.6E-06	6.4E-07	5.2E-04	0.11
446594K	Jefferson	Texas	0.0670	0.0707	397	452	162	195	2.1E-04	4.7E-05	3.0E-06	2.7E-06	1.1E-06	8.5E-04	0.18
762721D	Jefferson	Texas	0.0251	0.0316	352	473	54	91	2.3E-04	5.3E-05	3.4E-06	3.1E-06	1.2E-06	9.6E-04	0.21
762739N	Jefferson	Texas	0.0239	0.0301	69	92	10	17	4.3E-05	9.9E-06	6.2E-07	5.7E-07	2.2E-07	1.8E-04	0.04
762743D	Jefferson	Texas	0.0332	0.0414	91	122	18	31	7.7E-05	1.7E-05	1.1E-06	1.0E-06	4.0E-07	3.2E-04	0.07
329544L	Jefferson	Texas	0.0323	0.0456	80	123	16	34	1.2E-04	2.6E-05	1.7E-06	1.5E-06	6.0E-07	4.8E-04	0.10
329542X	Jefferson	Texas	0.0320	0.0453	72	112	14	31	1.0E-04	2.4E-05	1.5E-06	1.4E-06	5.4E-07	4.3E-04	0.09
329540J	Jefferson	Texas	0.0321	0.0454	75	116	15	32	1.1E-04	2.5E-05	1.6E-06	1.4E-06	5.6E-07	4.5E-04	0.10
329546A	Jefferson	Texas	0.0322	0.0455	77	119	15	33	1.1E-04	2.6E-05	1.6E-06	1.5E-06	5.8E-07	4.6E-04	0.10
329545T	Jefferson	Texas	0.0332	0.0469	104	162	21	46	1.6E-04	3.6E-05	2.3E-06	2.1E-06	8.1E-07	6.5E-04	0.14
329531K	Jefferson	Texas	0.0329	0.0464	143	221	29	63	2.1E-04	4.8E-05	3.1E-06	2.8E-06	1.1E-06	8.8E-04	0.19
793696H	Jim Hogg	Texas	0.0652	0.0659	316	395	125	158	2.1E-04	4.7E-05	3.0E-06	2.7E-06	1.1E-06	8.5E-04	0.18
793818K	Jim Wells	Texas	0.2206	0.2129	350	427	469	553	5.2E-04	1.2E-04	7.5E-06	6.9E-06	2.7E-06	2.2E-03	0.46
793651B	Jim Wells	Texas	0.0945	0.0939	361	447	208	255	3.0E-04	6.8E-05	4.3E-06	3.9E-06	1.5E-06	1.2E-03	0.26
793810F	Jim Wells	Texas	0.2428	0.2344	460	561	679	800	7.6E-04	1.7E-04	1.1E-05	9.9E-06	3.9E-06	3.1E-03	0.67
793959U	Jim Wells	Texas	0.2158	0.2083	523	638	687	809	7.7E-04	1.7E-04	1.1E-05	1.0E-05	3.9E-06	3.2E-03	0.68
793649A	Jim Wells	Texas	0.0919	0.0913	134	166	75	92	1.1E-04	2.5E-05	1.6E-06	1.4E-06	5.6E-07	4.5E-04	0.10
793819S	Jim Wells	Texas	0.2475	0.2390	1,566	1,912	2,359	2,779	2.6E-03	6.0E-04	3.8E-05	3.5E-05	1.4E-05	1.1E-02	2.33
793821T	Jim Wells	Texas	0.2146	0.2072	478	583	624	735	6.9E-04	1.6E-04	1.0E-05	9.1E-06	3.6E-06	2.9E-03	0.62
793814H	Jim Wells	Texas	0.3232	0.3120	1,613	1,969	3,171	3,737	3.5E-03	8.0E-04	5.1E-05	4.6E-05	1.8E-05	1.5E-02	3.14
762761B	Liberty	Texas	0.0221	0.0285	55	75	7	13	3.5E-05	8.0E-06	5.1E-07	4.6E-07	1.8E-07	1.5E-04	0.03
762786W	Liberty	Texas	0.0354	0.0441	158	211	34	57	1.4E-04	3.2E-05	2.0E-06	1.9E-06	7.3E-07	5.9E-04	0.13
762789S	Liberty	Texas	0.0361	0.0451	179	240	39	66	1.6E-04	3.7E-05	2.4E-06	2.2E-06	8.5E-07	6.8E-04	0.15
762785P	Liberty	Texas	0.0356	0.0444	254	340	55	92	2.3E-04	5.2E-05	3.3E-06	3.0E-06	1.2E-06	9.5E-04	0.20
762770A	Liberty	Texas	0.0823	0.0894	173	204	87	111	1.5E-04	3.4E-05	2.2E-06	2.0E-06	7.8E-07	6.3E-04	0.13
762765D	Liberty	Texas	0.0544	0.0672	290	386	96	158	3.9E-04	8.8E-05	5.6E-06	5.1E-06	2.0E-06	1.6E-03	0.34
763062E	Liberty	Texas	0.0245	0.0308	279	375	42	70	1.8E-04	4.1E-05	2.6E-06	2.4E-06	9.3E-07	7.4E-04	0.16
427586S	Nueces	Texas	0.0846	0.0843	617	746	317	383	4.1E-04	9.3E-05	5.9E-06	5.4E-06	2.1E-06	1.7E-03	0.36
793749E	Nueces	Texas	0.3269	0.3124	359	436	714	828	7.1E-04	1.6E-04	1.0E-05	9.4E-06	3.7E-06	3.0E-03	0.63
427597E	Nueces	Texas	0.0236	0.0401	40	83	6	20	9.1E-05	2.1E-05	1.3E-06	1.2E-06	4.7E-07	3.7E-04	0.08
793743N	Nueces	Texas	0.1563	0.1524	152	186	144	173	1.8E-04	4.0E-05	2.5E-06	2.3E-06	9.1E-07	7.3E-04	0.16
329460R	Orange	Texas	0.0187	0.0351	44	86	5	18	8.4E-05	1.9E-05	1.2E-06	1.1E-06	4.3E-07	3.5E-04	0.07
329467N	Orange	Texas	0.0184	0.0347	54	107	6	22	1.0E-04	2.3E-05	1.5E-06	1.4E-06	5.3E-07	4.2E-04	0.09
329471D	Orange	Texas	0.0208	0.0390	332	657	42	156	7.1E-04	1.6E-04	1.0E-05	9.4E-06	3.7E-06	2.9E-03	0.63
329472K	Orange	Texas	0.0183	0.0344	46	90	5	19	8.6E-05	2.0E-05	1.2E-06	1.1E-06	4.5E-07	3.6E-04	0.08
927011B	Orange	Texas	0.0183	0.0343	44	87	5	18	8.3E-05	1.9E-05	1.2E-06	1.1E-06	4.3E-07	3.4E-04	0.07
427570V	Refugio	Texas	0.0847	0.0813	280	327	144	162	1.1E-04	2.5E-05	1.6E-06	1.4E-06	5.6E-07	4.5E-04	0.10
436030Y	San Patricio	Texas	0.0614	0.0599	100	117	37	43	3.5E-05	7.9E-06	5.0E-07	4.6E-07	1.8E-07	1.4E-04	0.03
436017K	San Patricio	Texas	0.0607	0.0592	109	129	40	46	3.8E-05	8.5E-06	5.4E-07	4.9E-07	1.9E-07	1.6E-04	0.03
436012B	San Patricio	Texas	0.0604	0.0589	157	184	57	66	5.3E-05	1.2E-05	7.7E-07	7.0E-07	2.8E-07	2.2E-04	0.05
436014P	San Patricio	Texas	0.0603	0.0588	99	116	36	42	3.4E-05	7.7E-06	4.9E-07	4.4E-07	1.7E-07	1.4E-04	0.03
436011U	San Patricio	Texas	0.0594	0.0581	384	453	139	160	1.3E-04	3.0E-05	1.9E-06	1.7E-06	6.8E-07	5.5E-04	0.12
020545J	Tarrant	Texas	0.0233	0.0249	137	142	19	22	1.3E-05	2.9E-06	1.9E-07	1.7E-07	6.7E-08	5.4E-05	0.01
435913V	Victoria	Texas	1.3940	1.1588	679	710	5,759	5,004	-4.7E-03	-1.1E-03	-6.8E-05	-6.2E-05	-2.4E-05	-1.9E-02	-4.19
435914C	Victoria	Texas	0.0791	0.0716	377	412	181	179	-1.4E-05	-3.1E-06	-1.9E-07	-1.8E-07	-7.0E-08	-5.6E-05	-0.01
746650T	Victoria	Texas	0.2329	0.2316	1,044	1,290	1,480	1,817	2.1E-03	4.8E-04	3.0E-05	2.8E-05	1.1E-05	8.7E-03	1.87
746558T	Victoria	Texas	0.0981	0.1183	484	721	289	518	1.4E-03	3.3E-04	2.1E-05	1.9E-05	7.4E-06	5.9E-03	1.27
746556E	Victoria	Texas	0.0926	0.1116	235	350	132	237	6.6E-04	1.5E-04	9.5E-06	8.6E-06	3.4E-06	2.7E-03	0.58
746653N	Victoria	Texas	0.8498	0.8241	2,102	2,564	10,868	12,853	1.2E-02	2.8E-03	1.8E-04	1.6E-04	6.4E-05	5.1E-02	11.01
746550N	Victoria	Texas	0.0926	0.1117	119	176	67	120	3.3E-04	7.6E-05	4.8E-06	4.4E-06	1.7E-06	1.4E-03	0.29
746510R	Victoria	Texas	0.2192	0.2188	203	252	271	336	4.0E-04	9.1E-05	5.8E-06	5.3E-06	2.1E-06	1.7E-03	0.36
746562H	Victoria	Texas	0.0433	0.0538	281	425	74	139	4.1E-04	9.3E-05	5.9E-06	5.4E-06	2.1E-06	1.7E-03	0.36
912105H	Victoria	Texas	0.1437	0.1446	283	352	247	309	3.8E-04	8.8E-05	5.5E-06	5.1E-06	2.0E-06	1.6E-03	0.34
746652G	Victoria	Texas	0.1519	0.1528	664	825	614	766	9.5E-04	2.2E-04	1.4E-05	1.3E-05	4.9E-06	3.9E-03	0.85
746551V	Victoria	Texas	0.0934	0.1127	138	206	79	141	3.9E-04	8.9E-05	5.6E-06	5.1E-06	2.0E-06	1.6E-03	0.35
793598S	Webb	Texas	0.4558	0.4355	1,758	2,134	4,873	5,654	4.9E-03	1.1E-03	7.0E-05	6.4E-05	2.5E-05	2.0E-02	4.33
793596D	Webb	Texas	0.3297	0.3150	257	313	516	599	5.2E-04	1.2E-04	7.4E-06	6.8E-06	2.7E-06	2.1E-03	0.46
743432B	Wharton	Texas	0.1082	0.1312	195	292	128	233	6.6E-04	1.5E-04	9.5E-06	8.6E-06	3.4E-06	2.7E-03	0.58
743440T	Wharton	Texas	0.1110	0.1346	126	189	85	155	4.4E-04	9.9E-05	6.3E-06	5.7E-06	2.3E-06	1.8E-03	0.39
743438S	Wharton	Texas	0.1105	0.1340	121	181	81	148	4.2E-04	9.5E-05	6.0E-06	5.5E-06	2.1E-06	1.7E-03	0.37
743435W	Wharton	Texas	0.1086	0.1317	404	606	266	485	1.4E-03	3.1E-04	2.0E-05	1.8E-05	7.0E-06	5.6E-03	1.21
743352H	Wharton	Texas	0.0232	0.0302	75	117	11	21	6.7E-05	1.5E-05	9.7E-07	8.9E-07	3.5E-07	2.8E-04	0.06
743359F	Wharton	Texas	0.0252	0.0327	195	303	30	60	1.9E-04	4.3E-05	2.7E-06	2.5E-06	9.8E-07	7.9E-04	0.17

Note:

Vehicles Delayed and Average Delay provided from the transportation study

Table K.10-6. Grade Crossing Analysis - No Action HAPs Emissions by Crossing

			Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		No Action Emissions (tons/year)							
FRA Crossing ID	County	State	NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
330354E	Benton	Arkansas	0.0913	0.1275	189	296	105	230	1.6E-06	1.5E-07	1.8E-06	6.9E-08	2.3E-06	2.3E-06	9.2E-08	2.4E-09
330363D	Benton	Arkansas	0.0561	0.0793	131	207	45	100	6.7E-07	6.4E-08	7.6E-07	3.0E-08	9.7E-07	9.8E-07	3.9E-08	1.0E-09
330362W	Benton	Arkansas	0.0580	0.0820	175	276	62	138	9.3E-07	8.8E-08	1.0E-06	4.1E-08	1.3E-06	1.3E-06	5.4E-08	1.4E-09
330375X	Benton	Arkansas	0.0579	0.0818	171	270	60	134	9.0E-07	8.6E-08	1.0E-06	4.0E-08	1.3E-06	1.3E-06	5.3E-08	1.4E-09
330376E	Benton	Arkansas	0.0560	0.0791	99	157	34	75	5.1E-07	4.8E-08	5.7E-07	2.2E-08	7.3E-07	7.4E-07	3.0E-08	7.7E-10
330405M	Benton	Arkansas	0.0566	0.0801	222	351	77	171	1.2E-06	1.1E-07	1.3E-06	5.1E-08	1.7E-06	1.7E-06	6.7E-08	1.7E-09
330372C	Benton	Arkansas	0.0548	0.0774	98	155	33	73	4.9E-07	4.7E-08	5.6E-07	2.2E-08	7.1E-07	7.1E-07	2.9E-08	7.5E-10
330578C	Little River	Arkansas	0.0417	0.0615	109	184	28	69	4.2E-07	4.0E-08	4.7E-07	1.8E-08	6.0E-07	6.1E-07	2.4E-08	6.3E-10
330575G	Little River	Arkansas	0.0471	0.0637	137	211	39	82	5.9E-07	5.6E-08	6.7E-07	2.6E-08	8.5E-07	8.5E-07	3.4E-08	8.9E-10
330457E	Polk	Arkansas	0.0573	0.0826	146	242	51	121	7.7E-07	7.3E-08	8.7E-07	3.4E-08	1.1E-06	1.1E-06	4.5E-08	1.2E-09
330454J	Polk	Arkansas	0.0571	0.0822	274	452	95	226	1.4E-06	1.4E-07	1.6E-06	6.3E-08	2.1E-06	2.1E-06	8.4E-08	2.2E-09
330524W	Sevier	Arkansas	0.0601	0.0866	154	254	56	134	8.4E-07	8.0E-08	9.5E-07	3.7E-08	1.2E-06	1.2E-06	4.9E-08	1.3E-09
330546W	Sevier	Arkansas	0.0398	0.0542	89	138	22	46	3.2E-07	3.1E-08	3.7E-07	1.4E-08	4.7E-07	4.7E-07	1.9E-08	4.9E-10
372409F	Carroll	Illinois	0.0234	0.0319	63	109	9	21	1.3E-07	1.3E-08	1.5E-07	5.9E-09	1.9E-07	1.9E-07	7.9E-09	2.0E-10
372414C	Carroll	Illinois	0.0235	0.0320	67	117	10	23	1.4E-07	1.4E-08	1.6E-07	6.4E-09	2.1E-07	2.1E-07	8.4E-09	2.2E-10
372214T	Cook	Illinois	0.0247	0.0372	207	270	31	61	4.7E-07	4.4E-08	5.3E-07	2.1E-08	6.8E-07	6.8E-07	2.7E-08	7.1E-10
372210R	Cook	Illinois	0.0391	0.0590	654	854	156	307	2.3E-06	2.2E-07	2.6E-06	1.0E-07	3.4E-06	3.4E-06	1.4E-07	3.5E-09
372206B	Cook	Illinois	0.0251	0.0378	449	587	69	135	1.0E-06	9.8E-08	1.2E-06	4.5E-08	1.5E-06	1.5E-06	6.0E-08	1.6E-09
372138C	Cook	Illinois	0.0911	0.0859	1,443	1,452	800	759	1.2E-05	1.1E-06	1.4E-05	5.3E-07	1.7E-05	1.7E-05	7.0E-07	1.8E-08
372137V	Cook	Illinois	0.0904	0.0853	340	342	187	177	2.8E-06	2.7E-07	3.2E-06	1.2E-07	4.1E-06	4.1E-06	1.6E-07	4.3E-09
372202Y	Cook	Illinois	0.0347	0.0524	557	728	118	232	1.8E-06	1.7E-07	2.0E-06	7.8E-08	2.6E-06	2.6E-06	1.0E-07	2.7E-09
372289S	De Kalb	Illinois	0.0111	0.0242	26	73	2	11	2.7E-08	2.6E-09	3.0E-08	1.2E-09	3.9E-08	3.9E-08	1.6E-09	4.1E-11
372279L	De Kalb	Illinois	0.0109	0.0238	19	52	1	8	1.9E-08	1.8E-09	2.1E-08	8.3E-10	2.7E-08	2.7E-08	1.1E-09	2.9E-11
372299X	De Kalb	Illinois	0.0116	0.0252	28	78	2	12	3.0E-08	2.8E-09	3.3E-08	1.3E-09	4.3E-08	4.3E-08	1.7E-09	4.5E-11
371997M	Du Page	Illinois	0.0232	0.0349	164	214	23	46	3.5E-07	3.3E-08	3.9E-07	1.5E-08	5.0E-07	5.0E-07	2.0E-08	5.3E-10
372174X	Du Page	Illinois	0.0239	0.0361	324	423	47	93	7.1E-07	6.7E-08	8.0E-07	3.1E-08	1.0E-06	1.0E-06	4.1E-08	1.1E-09
372170V	Du Page	Illinois	0.0245	0.0369	786	1,028	117	231	1.8E-06	1.7E-07	2.0E-06	7.8E-08	2.5E-06	2.6E-06	1.0E-07	2.7E-09
372179G	Du Page	Illinois	0.0244	0.0368	382	499	57	112	8.5E-07	8.1E-08	9.6E-07	3.8E-08	1.2E-06	1.2E-06	5.0E-08	1.3E-09
372184D	Du Page	Illinois	0.0316	0.0477	941	1,230	181	357	2.7E-06	2.6E-07	3.1E-06	1.2E-07	3.9E-06	4.0E-06	1.6E-07	4.1E-09
372191N	Du Page	Illinois	0.0223	0.0336	297	388	40	79	6.0E-07	5.8E-08	6.8E-07	2.7E-08	8.8E-07	8.8E-07	3.5E-08	9.2E-10
372196X	Du Page	Illinois	0.0233	0.0351	527	688	75	147	1.1E-06	1.1E-07	1.3E-06	4.9E-08	1.6E-06	1.6E-06	6.6E-08	1.7E-09
372177T	Du Page	Illinois	0.0373	0.0562	1,227	1,603	279	549	4.2E-06	4.0E-07	4.7E-06	1.8E-07	6.1E-06	6.1E-06	2.5E-07	6.3E-09
372178A	Du Page	Illinois	0.0220	0.0332	362	473	49	96	7.3E-07	6.9E-08	8.2E-07	3.2E-08	1.1E-06	1.1E-06	4.3E-08	1.1E-09
372240H	Kane	Illinois	0.0281	0.0424	705	921	121	237	1.8E-06	1.7E-07	2.0E-06	8.0E-08	2.6E-06	2.6E-06	1.1E-07	2.7E-09
372241P	Kane	Illinois	0.0235	0.0355	293	382	42	82	6.3E-07	6.0E-08	7.1E-07	2.8E-08	9.1E-07	9.1E-07	3.7E-08	9.5E-10
372217N	Kane	Illinois	0.0297	0.0448	818	1,069	148	291	2.2E-06	2.1E-07	2.5E-06	9.8E-08	3.2E-06	3.2E-06	1.3E-07	3.4E-09
372242W	Kane	Illinois	0.0256	0.0385	986	1,288	153	302	2.3E-06	2.2E-07	2.6E-06	1.0E-07	3.3E-06	3.3E-06	1.3E-07	3.5E-09
372246Y	Kane	Illinois	0.0263	0.0397	907	1,185	145	286	2.2E-06	2.1E-07	2.5E-06	9.6E-08	3.2E-06	3.2E-06	1.3E-07	3.3E-09
372239N	Kane	Illinois	0.0268	0.0412	356	470	58	118	8.7E-07	8.3E-08	9.8E-07	3.8E-08	1.3E-06	1.3E-06	5.1E-08	1.3E-09
372235L	Kane	Illinois	0.0256	0.0394	152	201	24	48	3.6E-07	3.4E-08	4.0E-07	1.6E-08	5.2E-07	5.2E-07	2.1E-08	5.4E-10
372355C	Ogle	Illinois	0.0253	0.0346	85	147	13	31	2.0E-07	1.9E-08	2.2E-07	8.7E-09	2.8E-07	2.9E-07	1.2E-08	3.0E-10
372350T	Ogle	Illinois	0.0236	0.0322	47	81	7	16	1.0E-07	9.6E-09	1.1E-07	4.4E-09	1.5E-07	1.5E-07	5.9E-09	1.5E-10
372339T	Ogle	Illinois	0.0244	0.0332	50	86	7	17	1.1E-07	1.1E-08	1.2E-07	4.9E-09	1.6E-07	1.6E-07	6.5E-09	1.7E-10
372388P	Ogle	Illinois	0.0227	0.0310	58	101	8	19	1.2E-07	1.1E-08	1.4E-07	5.3E-09	1.7E-07	1.7E-07	7.0E-09	1.8E-10
372346D	Ogle	Illinois	0.0232	0.0317	37	65	5	13	7.9E-08	7.6E-09	9.0E-08	3.5E-09	1.2E-07	1.2E-07	4.7E-09	1.2E-10
376027Y	Clinton	Iowa	0.1693	0.2863	150	299	155	521	2.3E-06	2.2E-07	2.6E-06	1.0E-07	3.4E-06	3.4E-06	1.4E-07	3.5E-09
607245W	Louisa	Iowa	0.0193	0.0483	33	103	4	30	5.8E-08	5.5E-09	6.5E-08	2.5E-09	8.4E-08	8.4E-08	3.4E-09	8.8E-11
393258B	Muscatine	Iowa	0.0192	0.0479	46	145	5	42	8.0E-08	7.6E-09	9.1E-08	3.5E-09	1.2E-07	1.2E-07	4.7E-09	1.2E-10
607211C	Muscatine	Iowa	0.0202	0.0505	81	258	10	79	1.5E-07	1.4E-08	1.7E-07	6.6E-09	2.2E-07	2.2E-07	8.8E-09	2.3E-10
607215E	Muscatine	Iowa	0.0195	0.0486	28	89	3	26	5.0E-08	4.7E-09	5.6E-08	2.2E-09	7.2E-08	7.2E-08	2.9E-09	7.6E-11
865646F	Scott	Iowa	0.0385	0.0786	56	132	13	63	2.0E-07	1.9E-08	2.2E-07	8.7E-09	2.8E-07	2.8E-07	1.1E-08	3.0E-10
865649B	Scott	Iowa	0.0911	0.1819	132	310	73	343	1.1E-06	1.0E-07	1.2E-06	4.9E-08	1.6E-06	1.6E-06	6.5E-08	1.7E-09
865653R	Scott	Iowa	0.1214	0.2425	353	827	261	1,220	3.9E-06	3.7E-07	4.4E-06	1.7E-07	5.7E-06	5.7E-06	2.3E-07	5.9E-09
375784R	Wapello	Iowa	0.0652	0.1545	60	186	24	175	3.6E-07	3.4E-08	4.1E-07	1.6E-08	5.2E-07	5.2E-07	2.1E-08	5.5E-10
375779U	Wapello	Iowa	0.0662	0.1568	89	274	36	261	5.4E-07	5.1E-08	6.1E-07	2.4E-08	7.8E-07	7.8E-07	3.2E-08	8.2E-10
375781V	Wapello	Iowa	0.0658	0.1558	131	402	52	381	7.9E-07	7.5E-08	8.9E-07	3.5E-08	1.1E-06	1.1E-06	4.6E-08	1.2E-09
607323B	Washington	Iowa	0.0199	0.0498	72	228	9	69	1.3E-07	1.3E-08	1.5E-07	5.8E-09	1.9E-07	1.9E-07	7.7E-09	2.0E-10
607322U	Washington	Iowa	0.0187	0.0467	28	87	3	25	4.7E-08	4.5E-09	5.3E-08	2.1E-09	6.8E-08	6.8E-08	2.8E-09	7.1E-11
330258C	Crawford	Kansas	0.0380	0.0545	158	252	37	84	5.5E-07	5.2E-08	6.2E-07	2.4E-08	8.0E-07	8.0E-07	3.2E-08	8.3E-10
330256N	Crawford	Kansas	0.0328	0.0471	85	135	17	39	2.5E-07	2.4E-08	2.9E-07	1.1E-08	3.7E-07	3.7E-07	1.5E-08	3.9E-10
330257V	Crawford	Kansas	0.0332	0.0477	212	338	43	98	6.4E-07	6.1E-08	7.3E-07	2.8E-08	9.3E-07	9.4E-07	3.8E-08	9.8E-10
329322C	Beauregard	Louisiana	0.0413	0.0686	63	114	16	47	2.4E-07	2.2E-08	2.7E-07	1.0E-08	3.4E-07	3.4E-07	1.4E-08	3.6E-10
329320N	Beauregard	Louisiana	0.0367	0.0612	92	168	21	63	3.1E-07	2.9E-08	3.5E-07	1.4E-08	4.5E-07	4.5E-07	1.8E-08	4.7E-10
329319U	Beauregard	Louisiana	0.0539	0.0899	600	1,092	197	598	3.0E-06	2.8E-07	3.3E-06	1.3E-07	4.3E-06	4.3E-06	1.7E-07	4.5E-09
329317F	Beauregard	Louisiana	0.0539	0.0899	600	1,092	197	598	3.0E-06	2.8E-07	3.3E-06	1.3E-07	4.3E-06	4.3E-06	1.7E-07	4.5E-09
329337S	Beauregard	Louisiana	0.0234	0.0395	75	137	11	33	1.6E-07	1.5E-08	1.8E-07	7.1E-09	2.3E-07	2.3E-07	9.4E-09	2.4E-10
329128J	Caddo	Louisiana	0.0804	0.1028	148	201	72	125	1.1E-06	1.0E-07	1.2E-06	4.8E-08	1.6E-06	1.6E-06	6.4E-08	1.7E-09
329154Y	Caddo	Louisiana	0.1394	0.1782	1,034	1,401	877	1,519	1.3E-05	1.3E-06	1.5E-05	5.8E-07	1.9E-05	1.9E-05	7.7E-07	2.0E-08
329157U	Caddo	Louisiana	0.0793	0.1014	252	342	122	211	1.8E-06	1.7E-07	2.1E-06	8.1E-08	2.6E-06	2.7E-06	1.1E-07	2.8E-09
329006E	Caddo	Louisiana	0.0354	0.0524	114	192	24	61	3.7E-07	3.5E-08	4.2E-07	1.6E-08	5.3E-07	5.3E-07	2.2E-08	5.6E-10
328998G	Caddo	Louisiana	0.0378	0.0560	135	228	31	78	4.7E-07	4.4E-08	5.3E-07	2.1E-08	6.8E-07	6.8E-07	2.7E-08	7.1E-10
329356W	Calcasieu	Louisiana	0.0493	0.0819	347	631	104	314	1.6E-06	1.5E-07	1.8E-06	6.9E-08	2.3E-06	2.3E-06	9.2E-08	2.4E-09
329344C	Calcasieu	Louisiana	0.0419	0.0697	78	142	20	60	3.0E-07	2.8E-08	3.4E-07	1.3E-08	4.3E-07	4.3E-07	1.8E-08	4.5E-10
329346R	Calcasieu	Louisiana	0.0379	0.0705	231	454	53	195	8.0E-07	7.6E-08	9.0E-07	3.5E-08	1.2E-06	1.2E-06	4.7E-08	1.2E-09
329164E	De Soto	Louisiana	0.0694	0.0889	141	192	60	104	9.0E-07	8.5E-08	1.0E-06	4.0E-08	1.3E-06	1.3E-06	5.3E-08	1.4E-09
329162R	De Soto	Louisiana	0.0772	0.0990	368	500	173	301	2.6E-06	2.5E-07	2.9E-06	1.1E-07	3.8E-06	3.8E-06	1.5E-07	3.9E-09
329183J	De Soto	Louisiana	0.0443	0.0745	230	423	62	191	9.3E-07	8.8E-08	1.1E-06	4.1E-08	1.3E-06	1.3E-06	5.4E-08	1.4E-09
329187L	De Soto	Louisiana	0.0401	0.0676	181	333	44	137	6.6E-07	6.3E-08	7.5E-07	2.9E-08	9.6E-07	9.6E-07	3.9E-08	1.0E-09
329182C	De Soto	Louisiana	0.0422	0.0710	328	604	84	261	1.3E-06	1.2E-07	1.4E-06	5.6E-08	1.8E-06	1.8E-06	7.4E-08	1.9E-09
329234S	Sabine	Louisiana	0.0235	0.0402	143	265	20	65	3.1E-07	2.9E-08	3.5E-07	1.4E-08	4.4E-07	4.5E-07	1.8E-08	4.7E-10
329226A	Sabine	Louisiana	0.0366	0.0622	184	340	41	129	6.2E-07	5.9E-08	7.0E-07	2.7E-08	8.9E-07	8.9E-07	3.6E-08	9.3E-10
329227G	Sabine	Louisiana	0.0287	0.0487	50	93	9	28	1.3E-07	1.3E-08	1.5E-07	5.8E-09	1.9E-07	1.9E-07	7.8E-09	2.0E-10
329259M	Vernon	Louisiana	0.0420	0.0706	100	184	26	79	3.8E-07	3.7E-08	4.3E-07	1.7E-08	5.6E-07	5.6E-07	2.2E-08	5.8E-10
329253W	Vernon	Louisiana	0.0403	0.0678	61	113	15	46	2.3E-07	2.1E-08	2.6E-07	9.9E-09	3.3E-07	3.3E-07	1.3E-08	3.4E-10
329279Y	Vernon	Louisiana	0.0416	0.0691	108	197	27	83	4.1E-07	3.9E-08	4.7E-07	1.8E-08	6.0E-07	6.0E-07	2.4E-08	6.2E-10
329284V	Vernon	Louisiana	0.0423	0.0702	86	155	22	66	3.3E-07	3.1E-08	3.7E-07	1.5E-08	4.8E-07	4.8E-07	1.9E-08	5.0E-10
329641V	Vernon	Louisiana	0.0418	0.0694	74	134	19	57	2.8E-07	2.7E-08	3.2E-07	1.2E-08	4.1E-07	4.1E-07	1.7E-08	4.3E-10
329298D	Vernon	Louisiana	0.0338	0.0567	172	314	35	108	5.3E-07	5.1E-08	6.0E-07	2.3E-08	7.7E-07	7.7E-07	3.1E-08	8.1E-10
329308G	Vernon	Louisiana	0.0227	0.0383	53	96	7	22	1.1E-07	1.0E-08	1.2E-07	4.8E-09	1.6E-07	1.6E-07	6.4E-09	1.7E-10
329839D	Cass	Missouri	0.0391	0.0575	93	148	22	52	3.3E-07	3.2E-08	3.8E-07	1.5E-08	4.8E-07	4.8E-07	1.9E-08	5.0E-10
375407C	Clay	Missouri	0.0564	0.0991	43	124	15	75	2.2E-07	2.1E-08	2.5E-07	9.7E-09	3.2E-07	3.2E-07	1.3E-08	3.3E-10
375439H	Clay	Missouri	0.0142	0.0289	48	148	4	26	6.2E-08	5.9E-09	7.0E-08	2.7E-09	8.9E-08	8.9E-08	3.6E-09	9.3E-11
375440C	Clay	Missouri	0.0128	0.0261	25	77	2	12	2.9E-08	2.8E-09	3.3E-08	1.3E-09	4.2E-08	4.2E-08	1.7E-09	4.4E-11
329807X	Jackson	Missouri	0.0412	0.0606	181	289	45	107	6.8E-07	6.5E-08	7.7E-07	3.0E-08	9.9E-07	9.9E-07	4.0E-08	1.0E-09
329764G	Jackson	Missouri	0.0659	0.0957	122	193	49	112	7.3E-07	7.0E-08	8.3E-07	3.2E-08	1.1E-06	1.1E-06	4.3E-08	1.1E-09
330035L	Jasper	Missouri	0.0415	0.0594	162	258	41	93	6.2E-07	5.9E-08	7.0E-07	2.7E-08	8.9E-07	9.0E-07	3.6E-08	9.4E-10
330055X	Jasper	Missouri	0.0612	0.0866	378	597	141	315	2.1E-06	2.0E-07	2.4E-06	9.3E-08	3.1E-06	3.1E-06	1.2E-07	3.2E-09
330061B	Jasper	Missouri	0.0691	0.0977	595	940	250	559	3.8E-06	3.6E-07	4.2E-06	1.7E-07	5.4E-06	5.5E-06	2.2E-07	5.7E-09

Table K.10-6. Grade Crossing Analysis - No Action HAPs Emissions by Crossing

			Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		No Action Emissions (tons/year)							
FRA Crossing ID	County	State	NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
330045S	Jasper	Missouri	0.0587	0.0830	295	466	105	235	1.6E-06	1.5E-07	1.8E-06	7.0E-08	2.3E-06	2.3E-06	9.3E-08	2.4E-09
330053J	Jasper	Missouri	0.0585	0.0828	145	229	52	115	7.8E-07	7.4E-08	8.8E-07	3.4E-08	1.1E-06	1.1E-06	4.5E-08	1.2E-09
330178J	McDonald	Missouri	0.0905	0.1263	173	271	95	208	1.4E-06	1.4E-07	1.6E-06	6.3E-08	2.1E-06	2.1E-06	8.4E-08	2.2E-09
330102D	Newton	Missouri	0.1270	0.1761	255	399	197	427	3.0E-06	2.8E-07	3.3E-06	1.3E-07	4.3E-06	4.3E-06	1.7E-07	4.5E-09
330120B	Newton	Missouri	0.1211	0.1680	127	199	93	203	1.4E-06	1.3E-07	1.6E-06	6.2E-08	2.0E-06	2.0E-06	8.2E-08	2.1E-09
330113R	Newton	Missouri	0.1200	0.1664	223	349	163	353	2.4E-06	2.3E-07	2.8E-06	1.1E-07	3.5E-06	3.5E-06	1.4E-07	3.7E-09
330101W	Newton	Missouri	0.1166	0.1617	131	206	93	202	1.4E-06	1.3E-07	1.6E-06	6.2E-08	2.0E-06	2.0E-06	8.2E-08	2.1E-09
330625H	Adair	Oklahoma	0.0469	0.0704	89	149	25	64	3.8E-07	3.6E-08	4.3E-07	1.7E-08	5.5E-07	5.5E-07	2.2E-08	5.8E-10
330612G	Adair	Oklahoma	0.0472	0.0709	106	177	30	76	4.6E-07	4.3E-08	5.2E-07	2.0E-08	6.6E-07	6.6E-07	2.7E-08	6.9E-10
330785W	Le Flore	Oklahoma	0.1825	0.2632	335	548	372	877	5.6E-06	5.3E-07	6.3E-06	2.5E-07	8.1E-06	8.1E-06	3.3E-07	8.5E-09
330784P	Le Flore	Oklahoma	0.1848	0.2666	355	579	399	939	6.0E-06	5.7E-07	6.8E-06	2.6E-07	8.7E-06	8.7E-06	3.5E-07	9.1E-09
330736A	Le Flore	Oklahoma	0.0314	0.0473	84	140	16	40	2.4E-07	2.3E-08	2.7E-07	1.1E-08	3.5E-07	3.5E-07	1.4E-08	3.7E-10
330869S	Bowie	Texas	0.0336	0.0499	103	174	21	53	3.2E-07	3.0E-08	3.6E-07	1.4E-08	4.6E-07	4.6E-07	1.9E-08	4.8E-10
330872A	Bowie	Texas	0.0546	0.0795	179	300	60	145	9.0E-07	8.5E-08	1.0E-06	4.0E-08	1.3E-06	1.3E-06	5.2E-08	1.4E-09
330867D	Bowie	Texas	0.0348	0.0515	98	166	21	52	3.1E-07	3.0E-08	3.5E-07	1.4E-08	4.5E-07	4.5E-07	1.8E-08	4.7E-10
021749Y	Collin	Texas	0.0030	0.0033	23	24	0	0	6.4E-09	6.1E-10	7.2E-09	2.8E-10	9.2E-09	9.3E-09	3.7E-10	9.7E-12
021770E	Collin	Texas	0.0026	0.0029	12	13	0	0	2.9E-09	2.8E-10	3.3E-09	1.3E-10	4.3E-09	4.3E-09	1.7E-10	4.5E-12
789644J	Collin	Texas	0.0033	0.0036	77	81	2	2	2.3E-08	2.2E-09	2.6E-08	1.0E-09	3.4E-08	3.4E-08	1.4E-09	3.5E-11
789645R	Collin	Texas	0.0031	0.0034	52	55	1	1	1.5E-08	1.4E-09	1.7E-08	6.5E-10	2.1E-08	2.2E-08	8.7E-10	2.2E-11
789633W	Collin	Texas	0.0045	0.0050	7	7	0	0	2.8E-09	2.7E-10	3.2E-09	1.3E-10	4.1E-09	4.1E-09	1.7E-10	4.3E-12
021635L	Collin	Texas	0.0031	0.0034	90	95	2	2	2.6E-08	2.5E-09	2.9E-08	1.1E-09	3.8E-08	3.8E-08	1.5E-09	3.9E-11
919239F	Collin	Texas	0.0031	0.0034	45	47	1	1	1.3E-08	1.2E-09	1.4E-08	5.6E-10	1.8E-08	1.9E-08	7.5E-10	1.9E-11
789632P	Collin	Texas	0.0028	0.0031	54	56	1	1	1.4E-08	1.3E-09	1.6E-08	6.1E-10	2.0E-08	2.0E-08	8.1E-10	2.1E-11
789638F	Collin	Texas	0.0036	0.0039	67	70	1	2	2.2E-08	2.1E-09	2.5E-08	9.6E-10	3.2E-08	3.2E-08	1.3E-09	3.3E-11
789635K	Collin	Texas	0.0030	0.0033	22	23	0	0	6.0E-09	5.7E-10	6.7E-09	2.6E-10	8.6E-09	8.6E-09	3.5E-10	9.0E-12
753583T	Collin	Texas	0.0029	0.0032	25	27	0	1	6.7E-09	6.4E-10	7.6E-09	3.0E-10	9.7E-09	9.8E-09	3.9E-10	1.0E-11
789636S	Collin	Texas	0.0045	0.0049	44	46	1	1	1.8E-08	1.7E-09	2.0E-08	8.0E-10	2.6E-08	2.6E-08	1.1E-09	2.7E-11
021638G	Collin	Texas	0.0029	0.0032	45	47	1	1	1.2E-08	1.1E-09	1.4E-08	5.3E-10	1.7E-08	1.7E-08	7.0E-10	1.8E-11
919268R	Collin	Texas	0.0035	0.0038	65	68	1	2	2.1E-08	2.0E-09	2.3E-08	9.1E-10	3.0E-08	3.0E-08	1.2E-09	3.1E-11
789640G	Collin	Texas	0.0029	0.0032	15	15	0	0	3.8E-09	3.7E-10	4.3E-09	1.7E-10	5.6E-09	5.6E-09	2.3E-10	5.8E-12
789631H	Collin	Texas	0.0122	0.0134	112	117	8	10	1.2E-07	1.2E-08	1.4E-07	5.5E-09	1.8E-07	1.8E-07	7.3E-09	1.9E-10
789629G	Collin	Texas	0.0036	0.0039	41	43	1	1	1.3E-08	1.3E-09	1.5E-08	5.9E-10	1.9E-08	1.9E-08	7.8E-10	2.0E-11
753757M	Collin	Texas	0.0028	0.0030	30	31	0	1	7.5E-09	7.1E-10	8.5E-09	3.3E-10	1.1E-08	1.1E-08	4.4E-10	1.1E-11
789628A	Collin	Texas	0.0026	0.0029	29	30	0	1	6.9E-09	6.5E-10	7.8E-09	3.0E-10	9.9E-09	1.0E-08	4.0E-10	1.0E-11
789648L	Collin	Texas	0.0029	0.0032	31	32	1	1	8.1E-09	7.7E-10	9.2E-09	3.6E-10	1.2E-08	1.2E-08	4.7E-10	1.2E-11
789654P	Collin	Texas	0.0030	0.0033	7	7	0	0	1.9E-09	1.8E-10	2.2E-09	8.4E-11	2.8E-09	2.8E-09	1.1E-10	2.9E-12
789653H	Collin	Texas	0.0020	0.0022	23	24	0	0	4.2E-09	4.0E-10	4.7E-09	1.8E-10	6.1E-09	6.1E-09	2.5E-10	6.4E-12
789652B	Collin	Texas	0.0014	0.0016	18	19	0	0	2.4E-09	2.2E-10	2.7E-09	1.0E-10	3.4E-09	3.4E-09	1.4E-10	3.6E-12
790146W	Collin	Texas	0.0032	0.0035	28	29	1	1	8.0E-09	7.6E-10	9.1E-09	3.5E-10	1.2E-08	1.2E-08	4.7E-10	1.2E-11
331279Y	Collin	Texas	0.0032	0.0035	30	31	1	1	8.8E-09	8.3E-10	9.9E-09	3.9E-10	1.3E-08	1.3E-08	5.1E-10	1.3E-11
021765H	Denton	Texas	0.0038	0.0041	72	75	2	2	2.5E-08	2.3E-09	2.8E-08	1.1E-09	3.6E-08	3.6E-08	1.4E-09	3.7E-11
021767W	Denton	Texas	0.0028	0.0030	33	34	1	1	8.3E-09	7.9E-10	9.4E-09	3.7E-10	1.2E-08	1.2E-08	4.9E-10	1.3E-11
021691T	Denton	Texas	0.0029	0.0031	10	10	0	0	2.6E-09	2.4E-10	2.9E-09	1.1E-10	3.7E-09	3.7E-09	1.5E-10	3.9E-12
021700P	Denton	Texas	0.0028	0.0031	18	19	0	0	4.6E-09	4.4E-10	5.2E-09	2.0E-10	6.7E-09	6.7E-09	2.7E-10	7.0E-12
021726S	Denton	Texas	0.0030	0.0032	24	25	0	0	6.4E-09	6.1E-10	7.2E-09	2.8E-10	9.3E-09	9.3E-09	3.7E-10	9.7E-12
021696C	Denton	Texas	0.0028	0.0030	10	11	0	0	2.6E-09	2.5E-10	2.9E-09	1.1E-10	3.7E-09	3.7E-09	1.5E-10	3.9E-12
021646Y	Denton	Texas	0.0028	0.0031	75	79	1	1	1.9E-08	1.9E-09	2.2E-08	8.6E-10	2.8E-08	2.8E-08	1.1E-09	3.0E-11
021676R	Denton	Texas	0.0035	0.0038	26	27	1	1	8.3E-09	7.9E-10	9.4E-09	3.7E-10	1.2E-08	1.2E-08	4.9E-10	1.3E-11
021672N	Denton	Texas	0.0030	0.0033	50	53	1	1	1.4E-08	1.3E-09	1.6E-08	6.1E-10	2.0E-08	2.0E-08	8.1E-10	2.1E-11
331277K	Denton	Texas	0.0033	0.0037	72	75	1	2	2.2E-08	2.1E-09	2.5E-08	9.7E-10	3.2E-08	3.2E-08	1.3E-09	3.3E-11
020557D	Denton	Texas	0.0167	0.0179	158	163	16	18	2.4E-07	2.3E-08	2.7E-07	1.1E-08	3.5E-07	3.5E-07	1.4E-08	3.7E-10
020572F	Denton	Texas	0.0209	0.0224	254	263	32	36	4.9E-07	4.6E-08	5.5E-07	2.1E-08	7.0E-07	7.0E-07	2.8E-08	7.4E-10
021774G	Denton	Texas	0.0026	0.0028	16	17	0	0	3.7E-09	3.6E-10	4.2E-09	1.7E-10	5.4E-09	5.4E-09	2.2E-10	5.7E-12
021669F	Denton	Texas	0.0026	0.0028	10	11	0	0	2.4E-09	2.3E-10	2.7E-09	1.1E-10	3.5E-09	3.5E-09	1.4E-10	3.7E-12
919241G	Denton	Texas	0.0026	0.0028	8	9	0	0	1.9E-09	1.8E-10	2.2E-09	8.4E-11	2.8E-09	2.8E-09	1.1E-10	2.9E-12
020563G	Denton	Texas	0.0162	0.0173	111	115	11	12	1.6E-07	1.6E-08	1.9E-07	7.2E-09	2.4E-07	2.4E-07	9.6E-09	2.5E-10
793688R	Duval	Texas	0.1214	0.1195	524	645	387	469	5.8E-06	5.5E-07	6.6E-06	2.6E-07	8.4E-06	8.4E-06	3.4E-07	8.8E-09
743475U	Fort Bend	Texas	0.0212	0.0283	50	80	6	14	9.8E-08	9.3E-09	1.1E-07	4.3E-09	1.4E-07	1.4E-07	5.7E-09	1.5E-10
440652H	Fort Bend	Texas	0.1491	0.1549	779	881	706	830	1.1E-05	1.0E-06	1.2E-05	4.7E-07	1.5E-05	1.5E-05	6.2E-07	1.6E-08
743483L	Fort Bend	Texas	0.0222	0.0288	44	69	6	12	8.9E-08	8.5E-09	1.0E-07	3.9E-09	1.3E-07	1.3E-07	5.2E-09	1.4E-10
743689L	Fort Bend	Texas	0.0790	0.0814	1,147	1,278	552	633	8.3E-06	7.9E-07	9.4E-06	3.7E-07	1.2E-05	1.2E-05	4.9E-07	1.3E-08
743726L	Fort Bend	Texas	0.0834	0.0859	750	836	381	437	5.7E-06	5.4E-07	6.5E-06	2.5E-07	8.3E-06	8.3E-06	3.4E-07	8.7E-09
743719B	Fort Bend	Texas	0.0863	0.0886	295	328	155	177	2.3E-06	2.2E-07	2.6E-06	1.0E-07	3.4E-06	3.4E-06	1.4E-07	3.5E-09
743724X	Fort Bend	Texas	0.0863	0.0889	431	480	226	260	3.4E-06	3.2E-07	3.8E-06	1.5E-07	4.9E-06	4.9E-06	2.0E-07	5.2E-09
743731H	Fort Bend	Texas	0.0499	0.0498	257	307	78	93	1.2E-06	1.1E-07	1.3E-06	5.2E-08	1.7E-06	1.7E-06	6.9E-08	1.8E-09
743727T	Fort Bend	Texas	0.0427	0.0513	194	250	50	78	7.6E-07	7.2E-08	8.5E-07	3.3E-08	1.1E-06	1.1E-06	4.4E-08	1.1E-09
924008H	Fort Bend	Texas	0.0746	0.0769	374	416	170	195	2.5E-06	2.4E-07	2.9E-06	1.1E-07	3.7E-06	3.7E-06	1.5E-07	3.9E-09
924009P	Fort Bend	Texas	0.0706	0.0727	336	374	144	165	2.2E-06	2.1E-07	2.4E-06	9.6E-08	3.1E-06	3.1E-06	1.3E-07	3.3E-09
743695P	Fort Bend	Texas	0.0823	0.0848	1,412	1,573	707	811	1.1E-05	1.0E-06	1.2E-05	4.7E-07	1.5E-05	1.5E-05	6.2E-07	1.6E-08
412514U	Fort Bend	Texas	0.0737	0.0760	331	369	149	171	2.2E-06	2.1E-07	2.5E-06	9.9E-08	3.2E-06	3.2E-06	1.3E-07	3.4E-09
924006U	Fort Bend	Texas	0.0740	0.0762	219	244	99	113	1.5E-06	1.4E-07	1.7E-06	6.5E-08	2.1E-06	2.2E-06	8.7E-08	2.2E-09
924007B	Fort Bend	Texas	0.0746	0.0769	239	266	109	125	1.6E-06	1.6E-07	1.8E-06	7.2E-08	2.4E-06	2.4E-06	9.6E-08	2.5E-09
743699S	Fort Bend	Texas	0.0747	0.0769	749	834	340	390	5.1E-06	4.9E-07	5.8E-06	2.3E-07	7.4E-06	7.4E-06	3.0E-07	7.8E-09
745055W	Fort Bend	Texas	0.0826	0.0851	361	402	181	208	2.7E-06	2.6E-07	3.1E-06	1.2E-07	3.9E-06	4.0E-06	1.6E-07	4.1E-09
743713K	Fort Bend	Texas	0.0742	0.0765	570	635	257	295	3.9E-06	3.7E-07	4.4E-06	1.7E-07	5.6E-06	5.6E-06	2.3E-07	5.9E-09
743698K	Fort Bend	Texas	0.0738	0.0760	499	556	224	257	3.4E-06	3.2E-07	3.8E-06	1.5E-07	4.9E-06	4.9E-06	2.0E-07	5.1E-09
743703E	Fort Bend	Texas	0.0709	0.0731	374	416	161	185	2.4E-06	2.3E-07	2.7E-06	1.1E-07	3.5E-06	3.5E-06	1.4E-07	3.7E-09
743716F	Fort Bend	Texas	0.0830	0.0856	474	528	239	275	3.6E-06	3.4E-07	4.1E-06	1.6E-07	5.2E-06	5.2E-06	2.1E-07	5.5E-09
745044J	Fort Bend	Texas	0.0755	0.0778	1,250	1,392	574	659	8.6E-06	8.2E-07	9.8E-06	3.8E-07	1.2E-05	1.3E-05	5.1E-07	1.3E-08
922512N	Fort Bend	Texas	0.0738	0.0760	429	478	193	221	2.9E-06	2.8E-07	3.3E-06	1.3E-07	4.2E-06	4.2E-06	1.7E-07	4.4E-09
922513V	Fort Bend	Texas	0.0842	0.0844	478	519	245	266	3.7E-06	3.5E-07	4.2E-06	1.6E-07	5.3E-06	5.3E-06	2.2E-07	5.6E-09
762865H	Harris	Texas	0.0433	0.0478	119	141	31	41	4.7E-07	4.5E-08	5.3E-07	2.1E-08	6.8E-07	6.8E-07	2.7E-08	7.1E-10
762872T	Harris	Texas	0.0578	0.0634	279	331	98	128	1.5E-06	1.4E-07	1.7E-06	6.5E-08	2.1E-06	2.1E-06	8.6E-08	2.2E-09
762869K	Harris	Texas	0.0540	0.0593	132	156	43	56	6.5E-07	6.2E-08	7.4E-07	2.9E-08	9.4E-07	9.5E-07	3.8E-08	9.9E-10
758519L	Harris	Texas	0.0611	0.0665	983	1,154	366	467	5.5E-06	5.2E-07	6.2E-06	2.4E-07	8.0E-06	8.0E-06	3.2E-07	8.3E-09
758518E	Harris	Texas	0.0625	0.0680	1,639	1,924	623	796	9.4E-06	8.9E-07	1.1E-05	4.1E-07	1.4E-05	1.4E-05	5.5E-07	1.4E-08
758517X	Harris	Texas	0.0613	0.0667	995	1,168	371	474	5.6E-06	5.3E-07	6.3E-06	2.5E-07	8.1E-06	8.1E-06	3.3E-07	8.5E-09
758521M	Harris	Texas	0.0556	0.0605	482	566	163	208	2.5E-06	2.3E-07	2.8E-06	1.1E-07	3.5E-06	3.6E-06	1.4E-07	3.7E-09
762904W	Harris	Texas	0.0444	0.0516	714	894	193	281	2.9E-06	2.8E-07	3.3E-06	1.3E-07	4.2E-06	4.2E-06	1.7E-07	4.4E-09
762889W	Harris	Texas	0.0447	0.0520	151	189	41	60	6.1E-07	5.9E-08	7.0E-07	2.7E-08	8.9E-07	8.9E-07	3.6E-08	9.3E-10
755621G	Harris	Texas	0.0746	0.0768	926	1,032	420	482	6.3E-06	6.0E-07	7.1E-06	2.8E-07	9.1E-06	9.2E-06	3.7E-07	9.6E-09
758533G	Harris	Texas	0.0659	0.0705	1,046	1,210	419	519	6.3E-06	6.0E-07	7.1E-06	2.8E-07	9.1E-06	9.2E-06	3.7E-07	9.6E-09
755624C	Harris	Texas	0.0512	0.0534	1,218	1,366	379	444	5.7E-06	5.4E-07	6.4E-06	2.5E-07	8.3E-06	8.3E-06	3.3E-07	8.7E-09
758540S	Harris	Texas	0.1324	0.1396	1,938	2,223	1,561	1,887	2.3E-05	2.2E-06	2.7E-05	1.0E-06	3.4E-05	3.4E-05	1.4E-06	3.6E-08
758180W	Harris	Texas	0.0701	0.0740	534	608	228	274	3.4E-06	3.3E-07	3.9E-06	1.5E-07	5.0E-06	5.0E-06	2.0E-07	5.2E-09
755622N	Harris	Texas	0.0756	0.0778	1,043	1,161	479	550	7.2E-06	6.9E-07	8.1E-06	3.2E-07	1.0E-05	1.0E-05	4.2E-07	1.1E-08
758187U	Harris	Texas	0.4121	0.4201	2,020	2,263	5,063	5,784	7.6E-05	7.2E-06	8.6E-05	3.4E-06	1.1E-04	1.1E-04	4.5E-06	1.2E-07
762907S	Harris	Texas	0.0539	0.0592	259	307	85	111	1.3E-06	1.2E-07	1.4E-06	5.6E-08	1.9E-06	1.9E-06	7.5E-08	1.9E-09

Table K.10-6. Grade Crossing Analysis - No Action HAPs Emissions by Crossing

			Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		No Action Emissions (tons/year)							
FRA Crossing ID	County	State	NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
758293C	Harris	Texas	0.0676	0.0714	426	485	175	211	2.6E-06	2.5E-07	3.0E-06	1.2E-07	3.8E-06	3.8E-06	1.5E-07	4.0E-09
758534N	Harris	Texas	0.1253	0.1321	1,546	1,773	1,179	1,425	1.8E-05	1.7E-06	2.0E-05	7.8E-07	2.6E-05	2.6E-05	1.0E-06	2.7E-08
755618Y	Harris	Texas	0.1526	0.1586	832	941	772	908	1.2E-05	1.1E-06	1.3E-05	5.1E-07	1.7E-05	1.7E-05	6.8E-07	1.8E-08
758514C	Harris	Texas	0.0604	0.0657	1,377	1,617	506	646	7.6E-06	7.2E-07	8.6E-06	3.3E-07	1.1E-05	1.1E-05	4.4E-07	1.2E-08
758532A	Harris	Texas	0.1202	0.1267	310	355	227	274	3.4E-06	3.2E-07	3.8E-06	1.5E-07	4.9E-06	4.9E-06	2.0E-07	5.2E-09
758512N	Harris	Texas	0.0582	0.0633	729	856	258	330	3.9E-06	3.7E-07	4.4E-06	1.7E-07	5.6E-06	5.6E-06	2.3E-07	5.9E-09
758178V	Harris	Texas	0.0786	0.0829	852	971	407	490	6.1E-06	5.8E-07	6.9E-06	2.7E-07	8.9E-06	8.9E-06	3.6E-07	9.3E-09
762892E	Harris	Texas	0.0449	0.0522	308	386	84	122	1.3E-06	1.2E-07	1.4E-06	5.6E-08	1.8E-06	1.8E-06	7.4E-08	1.9E-09
758531T	Harris	Texas	0.1177	0.1241	1,069	1,226	765	925	1.1E-05	1.1E-06	1.3E-05	5.1E-07	1.7E-05	1.7E-05	6.7E-07	1.7E-08
758610E	Harris	Texas	0.0600	0.0653	285	334	104	133	1.6E-06	1.5E-07	1.8E-06	6.9E-08	2.3E-06	2.3E-06	9.1E-08	2.4E-09
758611L	Harris	Texas	0.0601	0.0654	289	339	106	135	1.6E-06	1.5E-07	1.8E-06	7.0E-08	2.3E-06	2.3E-06	9.3E-08	2.4E-09
762901B	Harris	Texas	0.0562	0.0617	366	434	125	163	1.9E-06	1.8E-07	2.1E-06	8.3E-08	2.7E-06	2.7E-06	1.1E-07	2.9E-09
758523B	Harris	Texas	0.0558	0.0608	504	592	171	219	2.6E-06	2.4E-07	2.9E-06	1.1E-07	3.7E-06	3.7E-06	1.5E-07	3.9E-09
758513V	Harris	Texas	0.0622	0.0677	1,337	1,570	506	647	7.6E-06	7.2E-07	8.6E-06	3.4E-07	1.1E-05	1.1E-05	4.5E-07	1.2E-08
758525P	Harris	Texas	0.0534	0.0581	249	293	81	103	1.2E-06	1.2E-07	1.4E-06	5.4E-08	1.8E-06	1.8E-06	7.1E-08	1.8E-09
746645W	Jackson	Texas	0.0223	0.0289	46	72	6	13	9.4E-08	9.0E-09	1.1E-07	4.2E-09	1.4E-07	1.4E-07	5.5E-09	1.4E-10
746643H	Jackson	Texas	0.0222	0.0288	67	105	9	18	1.4E-07	1.3E-08	1.5E-07	6.0E-09	2.0E-07	2.0E-07	8.0E-09	2.1E-10
746639T	Jackson	Texas	0.0225	0.0292	166	258	23	46	3.4E-07	3.2E-08	3.9E-07	1.5E-08	4.9E-07	5.0E-07	2.0E-08	5.2E-10
746621H	Jackson	Texas	0.0253	0.0328	127	198	20	40	2.9E-07	2.8E-08	3.3E-07	1.3E-08	4.3E-07	4.3E-07	1.7E-08	4.5E-10
446594K	Jefferson	Texas	0.0670	0.0707	397	452	162	195	2.4E-06	2.3E-07	2.7E-06	1.1E-07	3.5E-06	3.5E-06	1.4E-07	3.7E-09
762721D	Jefferson	Texas	0.0251	0.0316	352	473	54	91	8.1E-07	7.7E-08	9.1E-07	3.6E-08	1.2E-06	1.2E-06	4.7E-08	1.2E-09
762739N	Jefferson	Texas	0.0239	0.0301	69	92	10	17	1.5E-07	1.4E-08	1.7E-07	6.6E-09	2.2E-07	2.2E-07	8.8E-09	2.3E-10
762743D	Jefferson	Texas	0.0332	0.0414	91	122	18	31	2.8E-07	2.6E-08	3.1E-07	1.2E-08	4.0E-07	4.0E-07	1.6E-08	4.2E-10
329544L	Jefferson	Texas	0.0323	0.0456	80	123	16	34	2.3E-07	2.2E-08	2.7E-07	1.0E-08	3.4E-07	3.4E-07	1.4E-08	3.6E-10
329542X	Jefferson	Texas	0.0320	0.0453	72	112	14	31	2.1E-07	2.0E-08	2.4E-07	9.3E-09	3.1E-07	3.1E-07	1.2E-08	3.2E-10
329540J	Jefferson	Texas	0.0321	0.0454	75	116	15	32	2.2E-07	2.1E-08	2.5E-07	9.7E-09	3.2E-07	3.2E-07	1.3E-08	3.3E-10
329546A	Jefferson	Texas	0.0322	0.0455	77	119	15	33	2.3E-07	2.2E-08	2.6E-07	1.0E-08	3.3E-07	3.3E-07	1.3E-08	3.4E-10
329545T	Jefferson	Texas	0.0332	0.0469	104	162	21	46	3.2E-07	3.0E-08	3.6E-07	1.4E-08	4.6E-07	4.6E-07	1.9E-08	4.8E-10
329531K	Jefferson	Texas	0.0329	0.0464	143	221	29	63	4.3E-07	4.1E-08	4.8E-07	1.9E-08	6.2E-07	6.2E-07	2.5E-08	6.5E-10
793696H	Jim Hogg	Texas	0.0652	0.0659	316	395	125	158	1.9E-06	1.8E-07	2.1E-06	8.3E-08	2.7E-06	2.7E-06	1.1E-07	2.9E-09
793818K	Jim Wells	Texas	0.2206	0.2129	350	427	469	553	7.0E-06	6.7E-07	8.0E-06	3.1E-07	1.0E-05	1.0E-05	4.1E-07	1.1E-08
793651B	Jim Wells	Texas	0.0945	0.0939	361	447	208	255	3.1E-06	3.0E-07	3.5E-06	1.4E-07	4.5E-06	4.5E-06	1.8E-07	4.7E-09
793810F	Jim Wells	Texas	0.2428	0.2344	460	561	679	800	1.0E-05	9.7E-07	1.2E-05	4.5E-07	1.5E-05	1.5E-05	6.0E-07	1.5E-08
793959U	Jim Wells	Texas	0.2158	0.2083	523	638	687	809	1.0E-05	9.8E-07	1.2E-05	4.5E-07	1.5E-05	1.5E-05	6.0E-07	1.6E-08
793649A	Jim Wells	Texas	0.0919	0.0913	134	166	75	92	1.1E-06	1.1E-07	1.3E-06	5.0E-08	1.6E-06	1.6E-06	6.6E-08	1.7E-09
793819S	Jim Wells	Texas	0.2475	0.2390	1,566	1,912	2,359	2,779	3.5E-05	3.4E-06	4.0E-05	1.6E-06	5.1E-05	5.1E-05	2.1E-06	5.4E-08
793821T	Jim Wells	Texas	0.2146	0.2072	478	583	624	735	9.4E-06	8.9E-07	1.1E-05	4.1E-07	1.4E-05	1.4E-05	5.5E-07	1.4E-08
793814H	Jim Wells	Texas	0.3232	0.3120	1,613	1,969	3,171	3,737	4.8E-05	4.5E-06	5.4E-05	2.1E-06	6.9E-05	6.9E-05	2.8E-06	7.2E-08
762761B	Liberty	Texas	0.0221	0.0285	55	75	7	13	1.1E-07	1.1E-08	1.3E-07	4.9E-09	1.6E-07	1.6E-07	6.5E-09	1.7E-10
762786W	Liberty	Texas	0.0354	0.0441	158	211	34	57	5.1E-07	4.9E-08	5.8E-07	2.3E-08	7.4E-07	7.4E-07	3.0E-08	7.7E-10
762789S	Liberty	Texas	0.0361	0.0451	179	240	39	66	5.9E-07	5.6E-08	6.7E-07	2.6E-08	8.6E-07	8.6E-07	3.5E-08	9.0E-10
762785P	Liberty	Texas	0.0356	0.0444	254	340	55	92	8.3E-07	7.9E-08	9.3E-07	3.6E-08	1.2E-06	1.2E-06	4.8E-08	1.3E-09
762770A	Liberty	Texas	0.0823	0.0894	173	204	87	111	1.3E-06	1.2E-07	1.5E-06	5.7E-08	1.9E-06	1.9E-06	7.6E-08	2.0E-09
762765D	Liberty	Texas	0.0544	0.0672	290	386	96	158	1.4E-06	1.4E-07	1.6E-06	6.4E-08	2.1E-06	2.1E-06	8.5E-08	2.2E-09
763062E	Liberty	Texas	0.0245	0.0308	279	375	42	70	6.2E-07	5.9E-08	7.1E-07	2.8E-08	9.0E-07	9.1E-07	3.7E-08	9.5E-10
427586S	Nueces	Texas	0.0846	0.0843	617	746	317	383	4.8E-06	4.5E-07	5.4E-06	2.1E-07	6.9E-06	6.9E-06	2.8E-07	7.2E-09
793749E	Nueces	Texas	0.3269	0.3124	359	436	714	828	1.1E-05	1.0E-06	1.2E-05	4.7E-07	1.6E-05	1.6E-05	6.3E-07	1.6E-08
427597E	Nueces	Texas	0.0236	0.0401	40	83	6	20	8.7E-08	8.3E-09	9.8E-08	3.8E-09	1.3E-07	1.3E-07	5.1E-09	1.3E-10
793743N	Nueces	Texas	0.1563	0.1524	152	186	144	173	2.2E-06	2.1E-07	2.5E-06	9.6E-08	3.1E-06	3.1E-06	1.3E-07	3.3E-09
329460R	Orange	Texas	0.0187	0.0351	44	86	5	18	7.4E-08	7.1E-09	8.4E-08	3.3E-09	1.1E-07	1.1E-07	4.4E-09	1.1E-10
329467N	Orange	Texas	0.0184	0.0347	54	107	6	22	9.1E-08	8.7E-09	1.0E-07	4.0E-09	1.3E-07	1.3E-07	5.3E-09	1.4E-10
329471D	Orange	Texas	0.0208	0.0390	332	657	42	156	6.3E-07	6.0E-08	7.1E-07	2.8E-08	9.1E-07	9.2E-07	3.7E-08	9.6E-10
329472K	Orange	Texas	0.0183	0.0344	46	90	5	19	7.6E-08	7.3E-09	8.6E-08	3.4E-09	1.1E-07	1.1E-07	4.5E-09	1.2E-10
927011B	Orange	Texas	0.0183	0.0343	44	87	5	18	7.3E-08	7.0E-09	8.3E-08	3.2E-09	1.1E-07	1.1E-07	4.3E-09	1.1E-10
427570V	Refugio	Texas	0.0847	0.0813	280	327	144	162	2.2E-06	2.1E-07	2.4E-06	9.5E-08	3.1E-06	3.1E-06	1.3E-07	3.3E-09
436030Y	San Patricio	Texas	0.0614	0.0599	100	117	37	43	5.6E-07	5.3E-08	6.3E-07	2.5E-08	8.1E-07	8.1E-07	3.3E-08	8.5E-10
436017K	San Patricio	Texas	0.0607	0.0592	109	129	40	46	6.1E-07	5.8E-08	6.8E-07	2.7E-08	8.8E-07	8.8E-07	3.5E-08	9.2E-10
436012B	San Patricio	Texas	0.0604	0.0589	157	184	57	66	8.6E-07	8.2E-08	9.8E-07	3.8E-08	1.2E-06	1.3E-06	5.1E-08	1.3E-09
436014P	San Patricio	Texas	0.0603	0.0588	99	116	36	42	5.4E-07	5.2E-08	6.2E-07	2.4E-08	7.9E-07	7.9E-07	3.2E-08	8.3E-10
436011U	San Patricio	Texas	0.0594	0.0581	384	453	139	160	2.1E-06	2.0E-07	2.4E-06	9.2E-08	3.0E-06	3.0E-06	1.2E-07	3.2E-09
020545J	Tarrant	Texas	0.0233	0.0249	137	142	19	22	2.9E-07	2.8E-08	3.3E-07	1.3E-08	4.2E-07	4.2E-07	1.7E-08	4.4E-10
435913V	Victoria	Texas	1.3940	1.1588	679	710	5,759	5,004	8.6E-05	8.2E-06	9.8E-05	3.8E-06	1.3E-04	1.3E-04	5.1E-06	1.3E-07
435914C	Victoria	Texas	0.0791	0.0716	377	412	181	179	2.7E-06	2.6E-07	3.1E-06	1.2E-07	3.9E-06	4.0E-06	1.6E-07	4.1E-09
746650T	Victoria	Texas	0.2329	0.2316	1,044	1,290	1,480	1,817	2.2E-05	2.1E-06	2.5E-05	9.8E-07	3.2E-05	3.2E-05	1.3E-06	3.4E-08
746558T	Victoria	Texas	0.0981	0.1183	484	721	289	518	4.3E-06	4.1E-07	4.9E-06	1.9E-07	6.3E-06	6.3E-06	2.5E-07	6.6E-09
746556E	Victoria	Texas	0.0926	0.1116	235	350	132	237	2.0E-06	1.9E-07	2.2E-06	8.8E-08	2.9E-06	2.9E-06	1.2E-07	3.0E-09
746653N	Victoria	Texas	0.8498	0.8241	2,102	2,564	10,868	12,853	1.6E-04	1.6E-05	1.8E-04	7.2E-06	2.4E-04	2.4E-04	9.6E-06	2.5E-07
746550N	Victoria	Texas	0.0926	0.1117	119	176	67	120	1.0E-06	9.5E-08	1.1E-06	4.4E-08	1.5E-06	1.5E-06	5.9E-08	1.5E-09
746510R	Victoria	Texas	0.2192	0.2188	203	252	271	336	4.1E-06	3.9E-07	4.6E-06	1.8E-07	5.9E-06	5.9E-06	2.4E-07	6.2E-09
746562H	Victoria	Texas	0.0433	0.0538	281	425	74	139	1.1E-06	1.1E-07	1.3E-06	4.9E-08	1.6E-06	1.6E-06	6.5E-08	1.7E-09
912105H	Victoria	Texas	0.1437	0.1446	283	352	247	309	3.7E-06	3.5E-07	4.2E-06	1.6E-07	5.4E-06	5.4E-06	2.2E-07	5.6E-09
746652G	Victoria	Texas	0.1519	0.1528	664	825	614	766	9.2E-06	8.8E-07	1.0E-05	4.1E-07	1.3E-05	1.3E-05	5.4E-07	1.4E-08
746551V	Victoria	Texas	0.0934	0.1127	138	206	79	141	1.2E-06	1.1E-07	1.3E-06	5.2E-08	1.7E-06	1.7E-06	6.9E-08	1.8E-09
793598S	Webb	Texas	0.4558	0.4355	1,758	2,134	4,873	5,654	7.3E-05	7.0E-06	8.3E-05	3.2E-06	1.1E-04	1.1E-04	4.3E-06	1.1E-07
793596D	Webb	Texas	0.3297	0.3150	257	313	516	599	7.8E-06	7.4E-07	8.8E-06	3.4E-07	1.1E-05	1.1E-05	4.5E-07	1.2E-08
743432B	Wharton	Texas	0.1082	0.1312	195	292	128	233	1.9E-06	1.8E-07	2.2E-06	8.5E-08	2.8E-06	2.8E-06	1.1E-07	2.9E-09
743440T	Wharton	Texas	0.1110	0.1346	126	189	85	155	1.3E-06	1.2E-07	1.4E-06	5.6E-08	1.9E-06	1.9E-06	7.5E-08	1.9E-09
743438S	Wharton	Texas	0.1105	0.1340	121	181	81	148	1.2E-06	1.2E-07	1.4E-06	5.4E-08	1.8E-06	1.8E-06	7.1E-08	1.9E-09
743435W	Wharton	Texas	0.1086	0.1317	404	606	266	485	4.0E-06	3.8E-07	4.5E-06	1.8E-07	5.8E-06	5.8E-06	2.3E-07	6.1E-09
743352H	Wharton	Texas	0.0232	0.0302	75	117	11	21	1.6E-07	1.5E-08	1.8E-07	7.0E-09	2.3E-07	2.3E-07	9.3E-09	2.4E-10
743359F	Wharton	Texas	0.0252	0.0327	195	303	30	60	4.5E-07	4.3E-08	5.1E-07	2.0E-08	6.5E-07	6.5E-07	2.6E-08	6.8E-10

Note:

Vehicles Delayed and Average Delay provided from the transportation study

Table K.10-7. Grade Crossing Analysis - Proposed Acquisition HAPs Emissions by Crossing

			Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		With Action Emissions (tons/year)							
FRA Crossing ID	County	State	NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
330354E	Benton	Arkansas	0.0913	0.1275	189	296	105	230	3.5E-06	3.3E-07	3.9E-06	1.5E-07	5.0E-06	5.0E-06	2.0E-07	5.2E-09
330363D	Benton	Arkansas	0.0561	0.0793	131	207	45	100	1.5E-06	1.4E-07	1.7E-06	6.6E-08	2.2E-06	2.2E-06	8.8E-08	2.3E-09
330362W	Benton	Arkansas	0.0580	0.0820	175	276	62	138	2.1E-06	2.0E-07	2.3E-06	9.1E-08	3.0E-06	3.0E-06	1.2E-07	3.1E-09
330375X	Benton	Arkansas	0.0579	0.0818	171	270	60	134	2.0E-06	1.9E-07	2.3E-06	8.9E-08	2.9E-06	2.9E-06	1.2E-07	3.1E-09
330376E	Benton	Arkansas	0.0560	0.0791	99	157	34	75	1.1E-06	1.1E-07	1.3E-06	5.0E-08	1.6E-06	1.6E-06	6.6E-08	1.7E-09
330405M	Benton	Arkansas	0.0566	0.0801	222	351	77	171	2.6E-06	2.4E-07	2.9E-06	1.1E-07	3.7E-06	3.7E-06	1.5E-07	3.9E-09
330372C	Benton	Arkansas	0.0548	0.0774	98	155	33	73	1.1E-06	1.0E-07	1.2E-06	4.8E-08	1.6E-06	1.6E-06	6.4E-08	1.7E-09
330578C	Little River	Arkansas	0.0417	0.0615	109	184	28	69	1.0E-06	9.8E-08	1.2E-06	4.6E-08	1.5E-06	1.5E-06	6.1E-08	1.6E-09
330575G	Little River	Arkansas	0.0471	0.0637	137	211	39	82	1.2E-06	1.2E-07	1.4E-06	5.4E-08	1.8E-06	1.8E-06	7.2E-08	1.9E-09
330457E	Polk	Arkansas	0.0573	0.0826	146	242	51	121	1.8E-06	1.7E-07	2.1E-06	8.0E-08	2.6E-06	2.6E-06	1.1E-07	2.8E-09
330454J	Polk	Arkansas	0.0571	0.0822	274	452	95	226	3.4E-06	3.2E-07	3.8E-06	1.5E-07	4.9E-06	4.9E-06	2.0E-07	5.2E-09
330524W	Sevier	Arkansas	0.0601	0.0866	154	254	56	134	2.0E-06	1.9E-07	2.3E-06	8.9E-08	2.9E-06	2.9E-06	1.2E-07	3.0E-09
330546W	Sevier	Arkansas	0.0398	0.0542	89	138	22	46	6.8E-07	6.5E-08	7.7E-07	3.0E-08	9.9E-07	9.9E-07	4.0E-08	1.0E-09
372409F	Carroll	Illinois	0.0234	0.0319	63	109	9	21	3.2E-07	3.0E-08	3.6E-07	1.4E-08	4.6E-07	4.6E-07	1.9E-08	4.8E-10
372414C	Carroll	Illinois	0.0235	0.0320	67	117	10	23	3.4E-07	3.3E-08	3.9E-07	1.5E-08	4.9E-07	5.0E-07	2.0E-08	5.2E-10
372214T	Cook	Illinois	0.0247	0.0372	207	270	31	61	9.2E-07	8.8E-08	1.0E-06	4.1E-08	1.3E-06	1.3E-06	5.4E-08	1.4E-09
372210R	Cook	Illinois	0.0391	0.0590	654	854	156	307	4.6E-06	4.4E-07	5.2E-06	2.0E-07	6.7E-06	6.7E-06	2.7E-07	7.0E-09
372206B	Cook	Illinois	0.0251	0.0378	449	587	69	135	2.0E-06	1.9E-07	2.3E-06	8.9E-08	2.9E-06	2.9E-06	1.2E-07	3.1E-09
372138C	Cook	Illinois	0.0911	0.0859	1,443	1,452	800	759	1.1E-05	1.1E-06	1.3E-05	5.0E-07	1.7E-05	1.7E-05	6.7E-07	1.7E-08
372137V	Cook	Illinois	0.0904	0.0853	340	342	187	177	2.7E-06	2.5E-07	3.0E-06	1.2E-07	3.9E-06	3.9E-06	1.6E-07	4.0E-09
372202Y	Cook	Illinois	0.0347	0.0524	557	728	118	232	3.5E-06	3.3E-07	3.9E-06	1.5E-07	5.0E-06	5.1E-06	2.0E-07	5.3E-09
372289S	De Kalb	Illinois	0.0111	0.0242	26	73	2	11	1.6E-07	1.5E-08	1.8E-07	7.1E-09	2.3E-07	2.3E-07	9.5E-09	2.5E-10
372279L	De Kalb	Illinois	0.0109	0.0238	19	52	1	8	1.1E-07	1.1E-08	1.3E-07	5.0E-09	1.6E-07	1.7E-07	6.7E-09	1.7E-10
372299X	De Kalb	Illinois	0.0116	0.0252	28	78	2	12	1.8E-07	1.7E-08	2.0E-07	7.9E-09	2.6E-07	2.6E-07	1.0E-08	2.7E-10
371997M	Du Page	Illinois	0.0232	0.0349	164	214	23	46	6.8E-07	6.5E-08	7.7E-07	3.0E-08	9.9E-07	9.9E-07	4.0E-08	1.0E-09
372174X	Du Page	Illinois	0.0239	0.0361	324	423	47	93	1.4E-06	1.3E-07	1.6E-06	6.1E-08	2.0E-06	2.0E-06	8.2E-08	2.1E-09
372170V	Du Page	Illinois	0.0245	0.0369	786	1,028	117	231	3.5E-06	3.3E-07	3.9E-06	1.5E-07	5.0E-06	5.0E-06	2.0E-07	5.3E-09
372179G	Du Page	Illinois	0.0244	0.0368	382	499	57	112	1.7E-06	1.6E-07	1.9E-06	7.4E-08	2.4E-06	2.4E-06	9.8E-08	2.5E-09
372184D	Du Page	Illinois	0.0316	0.0477	941	1,230	181	357	5.4E-06	5.1E-07	6.1E-06	2.4E-07	7.8E-06	7.8E-06	3.1E-07	8.1E-09
372191N	Du Page	Illinois	0.0223	0.0336	297	388	40	79	1.2E-06	1.1E-07	1.3E-06	5.3E-08	1.7E-06	1.7E-06	7.0E-08	1.8E-09
372196X	Du Page	Illinois	0.0233	0.0351	527	688	75	147	2.2E-06	2.1E-07	2.5E-06	9.7E-08	3.2E-06	3.2E-06	1.3E-07	3.3E-09
372177T	Du Page	Illinois	0.0373	0.0562	1,227	1,603	279	549	8.2E-06	7.8E-07	9.3E-06	3.6E-07	1.2E-05	1.2E-05	4.8E-07	1.3E-08
372178A	Du Page	Illinois	0.0220	0.0332	362	473	49	96	1.4E-06	1.4E-07	1.6E-06	6.3E-08	2.1E-06	2.1E-06	8.4E-08	2.2E-09
372240H	Kane	Illinois	0.0281	0.0424	705	921	121	237	3.6E-06	3.4E-07	4.0E-06	1.6E-07	5.2E-06	5.2E-06	2.1E-07	5.4E-09
372241P	Kane	Illinois	0.0235	0.0355	293	382	42	82	1.2E-06	1.2E-07	1.4E-06	5.5E-08	1.8E-06	1.8E-06	7.3E-08	1.9E-09
372217N	Kane	Illinois	0.0297	0.0448	818	1,069	148	291	4.4E-06	4.2E-07	4.9E-06	1.9E-07	6.3E-06	6.4E-06	2.6E-07	6.6E-09
372242W	Kane	Illinois	0.0256	0.0385	986	1,288	153	302	4.5E-06	4.3E-07	5.1E-06	2.0E-07	6.6E-06	6.6E-06	2.7E-07	6.9E-09
372246Y	Kane	Illinois	0.0263	0.0397	907	1,185	145	286	4.3E-06	4.1E-07	4.9E-06	1.9E-07	6.2E-06	6.2E-06	2.5E-07	6.5E-09
372239N	Kane	Illinois	0.0268	0.0412	356	470	58	118	1.8E-06	1.7E-07	2.0E-06	7.8E-08	2.6E-06	2.6E-06	1.0E-07	2.7E-09
372235L	Kane	Illinois	0.0256	0.0394	152	201	24	48	7.3E-07	6.9E-08	8.2E-07	3.2E-08	1.1E-06	1.1E-06	4.3E-08	1.1E-09
372355C	Ogle	Illinois	0.0253	0.0346	85	147	13	31	4.7E-07	4.4E-08	5.3E-07	2.1E-08	6.7E-07	6.8E-07	2.7E-08	7.1E-10
372350T	Ogle	Illinois	0.0236	0.0322	47	81	7	16	2.4E-07	2.3E-08	2.7E-07	1.1E-08	3.5E-07	3.5E-07	1.4E-08	3.6E-10
372339T	Ogle	Illinois	0.0244	0.0332	50	86	7	17	2.6E-07	2.5E-08	3.0E-07	1.2E-08	3.8E-07	3.8E-07	1.5E-08	4.0E-10
372388P	Ogle	Illinois	0.0227	0.0310	58	101	8	19	2.8E-07	2.7E-08	3.2E-07	1.3E-08	4.1E-07	4.1E-07	1.7E-08	4.3E-10
372346D	Ogle	Illinois	0.0232	0.0317	37	65	5	13	1.9E-07	1.8E-08	2.1E-07	8.3E-09	2.7E-07	2.7E-07	1.1E-08	2.9E-10
376027Y	Clinton	Iowa	0.1693	0.2863	150	299	155	521	7.8E-06	7.4E-07	8.8E-06	3.4E-07	1.1E-05	1.1E-05	4.6E-07	1.2E-08
607245W	Louisa	Iowa	0.0193	0.0483	33	103	4	30	4.6E-07	4.3E-08	5.2E-07	2.0E-08	6.6E-07	6.6E-07	2.7E-08	6.9E-10
393258B	Muscatine	Iowa	0.0192	0.0479	46	145	5	42	6.3E-07	6.0E-08	7.2E-07	2.8E-08	9.2E-07	9.2E-07	3.7E-08	9.6E-10
607211C	Muscatine	Iowa	0.0202	0.0505	81	258	10	79	1.2E-06	1.1E-07	1.3E-06	5.2E-08	1.7E-06	1.7E-06	7.0E-08	1.8E-09
607215E	Muscatine	Iowa	0.0195	0.0486	28	89	3	26	3.9E-07	3.7E-08	4.5E-07	1.7E-08	5.7E-07	5.7E-07	2.3E-08	6.0E-10
865646F	Scott	Iowa	0.0385	0.0786	56	132	13	63	9.5E-07	9.0E-08	1.1E-06	4.2E-08	1.4E-06	1.4E-06	5.6E-08	1.4E-09
865649B	Scott	Iowa	0.0911	0.1819	132	310	73	343	5.1E-06	4.9E-07	5.8E-06	2.3E-07	7.5E-06	7.5E-06	3.0E-07	7.8E-09
865653R	Scott	Iowa	0.1214	0.2425	353	827	261	1,220	1.8E-05	1.7E-06	2.1E-05	8.1E-07	2.7E-05	2.7E-05	1.1E-06	2.8E-08
375784R	Wapello	Iowa	0.0652	0.1545	60	186	24	175	2.6E-06	2.5E-07	3.0E-06	1.2E-07	3.8E-06	3.8E-06	1.5E-07	4.0E-09
375779U	Wapello	Iowa	0.0662	0.1568	89	274	36	261	3.9E-06	3.7E-07	4.4E-06	1.7E-07	5.7E-06	5.7E-06	2.3E-07	5.9E-09
375781V	Wapello	Iowa	0.0658	0.1558	131	402	52	381	5.7E-06	5.5E-07	6.5E-06	2.5E-07	8.3E-06	8.3E-06	3.4E-07	8.7E-09
607323B	Washington	Iowa	0.0199	0.0498	72	228	9	69	1.0E-06	9.9E-08	1.2E-06	4.6E-08	1.5E-06	1.5E-06	6.1E-08	1.6E-09
607322U	Washington	Iowa	0.0187	0.0467	28	87	3	25	3.7E-07	3.5E-08	4.2E-07	1.6E-08	5.4E-07	5.4E-07	2.2E-08	5.6E-10
330258C	Crawford	Kansas	0.0380	0.0545	158	252	37	84	1.3E-06	1.2E-07	1.4E-06	5.5E-08	1.8E-06	1.8E-06	7.4E-08	1.9E-09
330256N	Crawford	Kansas	0.0328	0.0471	85	135	17	39	5.8E-07	5.5E-08	6.6E-07	2.6E-08	8.4E-07	8.5E-07	3.4E-08	8.8E-10
330257V	Crawford	Kansas	0.0332	0.0477	212	338	43	98	1.5E-06	1.4E-07	1.7E-06	6.5E-08	2.1E-06	2.1E-06	8.6E-08	2.2E-09
329322C	Beauregard	Louisiana	0.0413	0.0686	63	114	16	47	7.1E-07	6.8E-08	8.1E-07	3.1E-08	1.0E-06	1.0E-06	4.2E-08	1.1E-09
329320N	Beauregard	Louisiana	0.0367	0.0612	92	168	21	63	9.4E-07	9.0E-08	1.1E-06	4.1E-08	1.4E-06	1.4E-06	5.5E-08	1.4E-09
329319U	Beauregard	Louisiana	0.0539	0.0899	600	1,092	197	598	9.0E-06	8.5E-07	1.0E-05	4.0E-07	1.3E-05	1.3E-05	5.3E-07	1.4E-08
329317F	Beauregard	Louisiana	0.0539	0.0899	600	1,092	197	598	9.0E-06	8.5E-07	1.0E-05	4.0E-07	1.3E-05	1.3E-05	5.3E-07	1.4E-08
329337S	Beauregard	Louisiana	0.0234	0.0395	75	137	11	33	4.9E-07	4.7E-08	5.6E-07	2.2E-08	7.2E-07	7.2E-07	2.9E-08	7.5E-10
329128J	Caddo	Louisiana	0.0804	0.1028	148	201	72	125	1.9E-06	1.8E-07	2.1E-06	8.3E-08	2.7E-06	2.7E-06	1.1E-07	2.9E-09
329154Y	Caddo	Louisiana	0.1394	0.1782	1,034	1,401	877	1,519	2.3E-05	2.2E-06	2.6E-05	1.0E-06	3.3E-05	3.3E-05	1.3E-06	3.5E-08
329157U	Caddo	Louisiana	0.0793	0.1014	252	342	122	211	3.2E-06	3.0E-07	3.6E-06	1.4E-07	4.6E-06	4.6E-06	1.9E-07	4.8E-09
329006E	Caddo	Louisiana	0.0354	0.0524	114	192	24	61	9.2E-07	8.8E-08	1.0E-06	4.1E-08	1.3E-06	1.3E-06	5.4E-08	1.4E-09
328998G	Caddo	Louisiana	0.0378	0.0560	135	228	31	78	1.2E-06	1.1E-07	1.3E-06	5.2E-08	1.7E-06	1.7E-06	6.8E-08	1.8E-09
329356W	Calcasieu	Louisiana	0.0493	0.0819	347	631	104	314	4.7E-06	4.5E-07	5.3E-06	2.1E-07	6.8E-06	6.9E-06	2.8E-07	7.2E-09
329344C	Calcasieu	Louisiana	0.0419	0.0697	78	142	20	60	9.0E-07	8.6E-08	1.0E-06	4.0E-08	1.3E-06	1.3E-06	5.3E-08	1.4E-09
329346R	Calcasieu	Louisiana	0.0379	0.0705	231	454	53	195	2.9E-06	2.8E-07	3.3E-06	1.3E-07	4.2E-06	4.2E-06	1.7E-07	4.4E-09
329164E	De Soto	Louisiana	0.0694	0.0889	141	192	60	104	1.6E-06	1.5E-07	1.8E-06	6.9E-08	2.3E-06	2.3E-06	9.1E-08	2.4E-09
329162R	De Soto	Louisiana	0.0772	0.0990	368	500	173	301	4.5E-06	4.3E-07	5.1E-06	2.0E-07	6.5E-06	6.6E-06	2.6E-07	6.9E-09
329183J	De Soto	Louisiana	0.0443	0.0745	230	423	62	191	2.9E-06	2.7E-07	3.3E-06	1.3E-07	4.2E-06	4.2E-06	1.7E-07	4.4E-09
329187L	De Soto	Louisiana	0.0401	0.0676	181	333	44	137	2.1E-06	2.0E-07	2.3E-06	9.1E-08	3.0E-06	3.0E-06	1.2E-07	3.1E-09
329182C	De Soto	Louisiana	0.0422	0.0710	328	604	84	261	3.9E-06	3.7E-07	4.4E-06	1.7E-07	5.7E-06	5.7E-06	2.3E-07	5.9E-09
329234S	Sabine	Louisiana	0.0235	0.0402	143	265	20	65	9.7E-07	9.2E-08	1.1E-06	4.3E-08	1.4E-06	1.4E-06	5.7E-08	1.5E-09
329226A	Sabine	Louisiana	0.0366	0.0622	184	340	41	129	1.9E-06	1.8E-07	2.2E-06	8.5E-08	2.8E-06	2.8E-06	1.1E-07	2.9E-09
329227G	Sabine	Louisiana	0.0287	0.0487	50	93	9	28	4.1E-07	4.0E-08	4.7E-07	1.8E-08	6.0E-07	6.0E-07	2.4E-08	6.3E-10
329259M	Vernon	Louisiana	0.0420	0.0706	100	184	26	79	1.2E-06	1.1E-07	1.3E-06	5.2E-08	1.7E-06	1.7E-06	7.0E-08	1.8E-09
329253W	Vernon	Louisiana	0.0403	0.0678	61	113	15	46	7.0E-07	6.6E-08	7.9E-07	3.1E-08	1.0E-06	1.0E-06	4.1E-08	1.1E-09
329279Y	Vernon	Louisiana	0.0416	0.0691	108	197	27	83	1.2E-06	1.2E-07	1.4E-06	5.5E-08	1.8E-06	1.8E-06	7.3E-08	1.9E-09
329284V	Vernon	Louisiana	0.0423	0.0702	86	155	22	66	1.0E-06	9.5E-08	1.1E-06	4.4E-08	1.4E-06	1.4E-06	5.8E-08	1.5E-09
329641V	Vernon	Louisiana	0.0418	0.0694	74	134	19	57	8.5E-07	8.1E-08	9.6E-07	3.8E-08	1.2E-06	1.2E-06	5.0E-08	1.3E-09
329298D	Vernon	Louisiana	0.0338	0.0567	172	314	35	108	1.6E-06	1.5E-07	1.8E-06	7.2E-08	2.4E-06	2.4E-06	9.5E-08	2.5E-09
329308G	Vernon	Louisiana	0.0227	0.0383	53	96	7	22	3.4E-07	3.2E-08	3.8E-07	1.5E-08	4.9E-07	4.9E-07	2.0E-08	5.1E-10
329839D	Cass	Missouri	0.0391	0.0575	93	148	22	52	7.8E-07	7.4E-08	8.8E-07	3.4E-08	1.1E-06	1.1E-06	4.6E-08	1.2E-09
375407C	Clay	Missouri	0.0564	0.0991	43	124	15	75	1.1E-06	1.1E-07	1.3E-06	5.0E-08	1.6E-06	1.6E-06	6.6E-08	1.7E-09
375439H	Clay	Missouri	0.0142	0.0289	48	148	4	26	3.9E-07	3.7E-08	4.4E-07	1.7E-08	5.7E-07	5.7E-07	2.3E-08	5.9E-10
375440C	Clay	Missouri	0.0128	0.0261	25	77	2	12	1.8E-07	1.8E-08	2.1E-07	8.1E-09	2.7E-07	2.7E-07	1.1E-08	2.8E-10
329807X	Jackson	Missouri	0.0412	0.0606	181	289	45	107	1.6E-06	1.5E-07	1.8E-06	7.1E-08	2.3E-06	2.3E-06	9.4E-08	2.4E-09
329764G	Jackson	Missouri	0.0659	0.0957	122	193	49	112	1.7E-06	1.6E-07	1.9E-06	7.4E-08	2.4E-06	2.5E-06	9.9E-08	2.6E-09
330035L	Jasper	Missouri	0.0415	0.0594	162	258	41	93	1.4E-06	1.3E-07	1.6E-06	6.2E-08	2.0E-06	2.0E-06	8.2E-08	2.1E-09
330055X	Jasper	Missouri	0.0612	0.0866	378	597	141	315	4.7E-06	4.5E-07	5.3E-06	2.1E-07	6.8E-06	6.9E-06	2.8E-07	7.2E-09
330061B	Jasper	Missouri	0.0691	0.0977	595	940	250	559	8.4E-06	8.0E-07	9.5E-06	3.7E-07	1.2E-05	1.2E-05	4.9E-07	1.3E-08

Table K.10-7. Grade Crossing Analysis - Proposed Acquisition HAPs Emissions by Crossing

			Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		With Action Emissions (tons/year)							
FRA Crossing ID	County	State	NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
330045S	Jasper	Missouri	0.0587	0.0830	295	466	105	235	3.5E-06	3.4E-07	4.0E-06	1.6E-07	5.1E-06	5.1E-06	2.1E-07	5.4E-09
330053J	Jasper	Missouri	0.0585	0.0828	145	229	52	115	1.7E-06	1.7E-07	2.0E-06	7.6E-08	2.5E-06	2.5E-06	1.0E-07	2.6E-09
330178J	McDonald	Missouri	0.0905	0.1263	173	271	95	208	3.1E-06	3.0E-07	3.5E-06	1.4E-07	4.5E-06	4.5E-06	1.8E-07	4.8E-09
330102D	Newton	Missouri	0.1270	0.1761	255	399	197	427	6.4E-06	6.1E-07	7.3E-06	2.8E-07	9.3E-06	9.3E-06	3.8E-07	9.7E-09
330120B	Newton	Missouri	0.1211	0.1680	127	199	93	203	3.0E-06	2.9E-07	3.4E-06	1.3E-07	4.4E-06	4.4E-06	1.8E-07	4.6E-09
330113R	Newton	Missouri	0.1200	0.1664	223	349	163	353	5.3E-06	5.0E-07	6.0E-06	2.3E-07	7.7E-06	7.7E-06	3.1E-07	8.0E-09
330101W	Newton	Missouri	0.1166	0.1617	131	206	93	202	3.0E-06	2.9E-07	3.4E-06	1.3E-07	4.4E-06	4.4E-06	1.8E-07	4.6E-09
330625H	Adair	Oklahoma	0.0469	0.0704	89	149	25	64	9.6E-07	9.1E-08	1.1E-06	4.2E-08	1.4E-06	1.4E-06	5.6E-08	1.5E-09
330612G	Adair	Oklahoma	0.0472	0.0709	106	177	30	76	1.1E-06	1.1E-07	1.3E-06	5.1E-08	1.7E-06	1.7E-06	6.7E-08	1.7E-09
330785W	Le Flore	Oklahoma	0.1825	0.2632	335	548	372	877	1.3E-05	1.3E-06	1.5E-05	5.8E-07	1.9E-05	1.9E-05	7.7E-07	2.0E-08
330784P	Le Flore	Oklahoma	0.1848	0.2666	355	579	399	939	1.4E-05	1.3E-06	1.6E-05	6.2E-07	2.0E-05	2.0E-05	8.3E-07	2.1E-08
330736A	Le Flore	Oklahoma	0.0314	0.0473	84	140	16	40	6.1E-07	5.8E-08	6.8E-07	2.7E-08	8.8E-07	8.8E-07	3.5E-08	9.2E-10
330869S	Bowie	Texas	0.0336	0.0499	103	174	21	53	7.9E-07	7.5E-08	9.0E-07	3.5E-08	1.1E-06	1.2E-06	4.6E-08	1.2E-09
330872A	Bowie	Texas	0.0546	0.0795	179	300	60	145	2.2E-06	2.1E-07	2.5E-06	9.6E-08	3.2E-06	3.2E-06	1.3E-07	3.3E-09
330867D	Bowie	Texas	0.0348	0.0515	98	166	21	52	7.8E-07	7.4E-08	8.8E-07	3.4E-08	1.1E-06	1.1E-06	4.6E-08	1.2E-09
021749Y	Collin	Texas	0.0030	0.0033	23	24	0	0	7.3E-09	7.0E-10	8.3E-09	3.2E-10	1.1E-08	1.1E-08	4.3E-10	1.1E-11
021770E	Collin	Texas	0.0026	0.0029	12	13	0	0	3.4E-09	3.2E-10	3.8E-09	1.5E-10	4.9E-09	4.9E-09	2.0E-10	5.1E-12
789644J	Collin	Texas	0.0033	0.0036	77	81	2	2	2.7E-08	2.5E-09	3.0E-08	1.2E-09	3.9E-08	3.9E-08	1.6E-09	4.1E-11
789645R	Collin	Texas	0.0031	0.0034	52	55	1	1	1.7E-08	1.6E-09	1.9E-08	7.5E-10	2.5E-08	2.5E-08	1.0E-09	2.6E-11
789633W	Collin	Texas	0.0045	0.0050	7	7	0	0	3.3E-09	3.1E-10	3.7E-09	1.4E-10	4.8E-09	4.8E-09	1.9E-10	5.0E-12
021635L	Collin	Texas	0.0031	0.0034	90	95	2	2	3.0E-08	2.8E-09	3.4E-08	1.3E-09	4.3E-08	4.3E-08	1.7E-09	4.5E-11
919239F	Collin	Texas	0.0031	0.0034	45	47	1	1	1.5E-08	1.4E-09	1.7E-08	6.5E-10	2.1E-08	2.1E-08	8.6E-10	2.2E-11
789632P	Collin	Texas	0.0028	0.0031	54	56	1	1	1.6E-08	1.5E-09	1.8E-08	7.0E-10	2.3E-08	2.3E-08	9.3E-10	2.4E-11
789638F	Collin	Texas	0.0036	0.0039	67	70	1	2	2.5E-08	2.4E-09	2.8E-08	1.1E-09	3.6E-08	3.6E-08	1.5E-09	3.8E-11
789635K	Collin	Texas	0.0030	0.0033	22	23	0	0	6.8E-09	6.5E-10	7.7E-09	3.0E-10	9.9E-09	9.9E-09	4.0E-10	1.0E-11
753583T	Collin	Texas	0.0029	0.0032	25	27	0	1	7.7E-09	7.3E-10	8.7E-09	3.4E-10	1.1E-08	1.1E-08	4.5E-10	1.2E-11
789636S	Collin	Texas	0.0045	0.0049	44	46	1	1	2.1E-08	2.0E-09	2.3E-08	9.1E-10	3.0E-08	3.0E-08	1.2E-09	3.1E-11
021638G	Collin	Texas	0.0029	0.0032	45	47	1	1	1.4E-08	1.3E-09	1.6E-08	6.0E-10	2.0E-08	2.0E-08	8.0E-10	2.1E-11
919268R	Collin	Texas	0.0035	0.0038	65	68	1	2	2.4E-08	2.3E-09	2.7E-08	1.0E-09	3.4E-08	3.4E-08	1.4E-09	3.6E-11
789640G	Collin	Texas	0.0029	0.0032	15	15	0	0	4.4E-09	4.2E-10	5.0E-09	1.9E-10	6.4E-09	6.4E-09	2.6E-10	6.7E-12
789631H	Collin	Texas	0.0122	0.0134	112	117	8	10	1.4E-07	1.4E-08	1.6E-07	6.3E-09	2.1E-07	2.1E-07	8.4E-09	2.2E-10
789629G	Collin	Texas	0.0036	0.0039	41	43	1	1	1.5E-08	1.5E-09	1.7E-08	6.7E-10	2.2E-08	2.2E-08	8.9E-10	2.3E-11
753757M	Collin	Texas	0.0028	0.0030	30	31	0	1	8.6E-09	8.2E-10	9.7E-09	3.8E-10	1.2E-08	1.2E-08	5.0E-10	1.3E-11
789628A	Collin	Texas	0.0026	0.0029	29	30	0	1	7.9E-09	7.5E-10	8.9E-09	3.5E-10	1.1E-08	1.1E-08	4.6E-10	1.2E-11
789648L	Collin	Texas	0.0029	0.0032	31	32	1	1	9.3E-09	8.8E-10	1.0E-08	4.1E-10	1.3E-08	1.3E-08	5.4E-10	1.4E-11
789654P	Collin	Texas	0.0030	0.0033	7	7	0	0	2.2E-09	2.1E-10	2.5E-09	9.6E-11	3.2E-09	3.2E-09	1.3E-10	3.3E-12
789653H	Collin	Texas	0.0020	0.0022	23	24	0	0	4.7E-09	4.5E-10	5.3E-09	2.1E-10	6.8E-09	6.8E-09	2.8E-10	7.1E-12
789652B	Collin	Texas	0.0014	0.0016	18	19	0	0	2.6E-09	2.5E-10	3.0E-09	1.2E-10	3.8E-09	3.8E-09	1.6E-10	4.0E-12
790146W	Collin	Texas	0.0032	0.0035	28	29	1	1	9.2E-09	8.8E-10	1.0E-08	4.1E-10	1.3E-08	1.3E-08	5.4E-10	1.4E-11
331279Y	Collin	Texas	0.0032	0.0035	30	31	1	1	1.0E-08	9.6E-10	1.1E-08	4.4E-10	1.5E-08	1.5E-08	5.9E-10	1.5E-11
021765H	Denton	Texas	0.0038	0.0041	72	75	2	2	2.8E-08	2.7E-09	3.2E-08	1.2E-09	4.1E-08	4.1E-08	1.7E-09	4.3E-11
021767W	Denton	Texas	0.0028	0.0030	33	34	1	1	9.5E-09	9.0E-10	1.1E-08	4.2E-10	1.4E-08	1.4E-08	5.6E-10	1.4E-11
021691T	Denton	Texas	0.0029	0.0031	10	10	0	0	2.9E-09	2.8E-10	3.3E-09	1.3E-10	4.2E-09	4.3E-09	1.7E-10	4.4E-12
021700P	Denton	Texas	0.0028	0.0031	18	19	0	0	5.3E-09	5.0E-10	6.0E-09	2.3E-10	7.7E-09	7.7E-09	3.1E-10	8.0E-12
021726S	Denton	Texas	0.0030	0.0032	24	25	0	0	7.3E-09	7.0E-10	8.3E-09	3.2E-10	1.1E-08	1.1E-08	4.3E-10	1.1E-11
021696C	Denton	Texas	0.0028	0.0030	10	11	0	0	3.0E-09	2.8E-10	3.3E-09	1.3E-10	4.3E-09	4.3E-09	1.7E-10	4.5E-12
021646Y	Denton	Texas	0.0028	0.0031	75	79	1	1	2.2E-08	2.1E-09	2.5E-08	9.9E-10	3.2E-08	3.2E-08	1.3E-09	3.4E-11
021676R	Denton	Texas	0.0035	0.0038	26	27	1	1	9.5E-09	9.1E-10	1.1E-08	4.2E-10	1.4E-08	1.4E-08	5.6E-10	1.4E-11
021672N	Denton	Texas	0.0030	0.0033	50	53	1	1	1.6E-08	1.5E-09	1.8E-08	7.0E-10	2.3E-08	2.3E-08	9.3E-10	2.4E-11
331277K	Denton	Texas	0.0033	0.0037	72	75	1	2	2.5E-08	2.4E-09	2.8E-08	1.1E-09	3.6E-08	3.6E-08	1.5E-09	3.8E-11
020557D	Denton	Texas	0.0167	0.0179	158	163	16	18	2.7E-07	2.5E-08	3.0E-07	1.2E-08	3.9E-07	3.9E-07	1.6E-08	4.0E-10
020572F	Denton	Texas	0.0209	0.0224	254	263	32	36	5.4E-07	5.1E-08	6.1E-07	2.4E-08	7.8E-07	7.8E-07	3.1E-08	8.1E-10
021774G	Denton	Texas	0.0026	0.0028	16	17	0	0	4.3E-09	4.1E-10	4.9E-09	1.9E-10	6.2E-09	6.2E-09	2.5E-10	6.5E-12
021669F	Denton	Texas	0.0026	0.0028	10	11	0	0	2.8E-09	2.6E-10	3.1E-09	1.2E-10	4.0E-09	4.0E-09	1.6E-10	4.2E-12
919241G	Denton	Texas	0.0026	0.0028	8	9	0	0	2.2E-09	2.1E-10	2.5E-09	9.7E-11	3.2E-09	3.2E-09	1.3E-10	3.3E-12
020563G	Denton	Texas	0.0162	0.0173	111	115	11	12	1.8E-07	1.7E-08	2.0E-07	8.0E-09	2.6E-07	2.6E-07	1.1E-08	2.7E-10
793688R	Duval	Texas	0.1214	0.1195	524	645	387	469	7.0E-06	6.7E-07	8.0E-06	3.1E-07	1.0E-05	1.0E-05	4.1E-07	1.1E-08
743475U	Fort Bend	Texas	0.0212	0.0283	50	80	6	14	2.1E-07	2.0E-08	2.4E-07	9.2E-09	3.0E-07	3.0E-07	1.2E-08	3.2E-10
440652H	Fort Bend	Texas	0.1491	0.1549	779	881	706	830	1.2E-05	1.2E-06	1.4E-05	5.5E-07	1.8E-05	1.8E-05	7.3E-07	1.9E-08
743483L	Fort Bend	Texas	0.0222	0.0288	44	69	6	12	1.8E-07	1.7E-08	2.0E-07	8.0E-09	2.6E-07	2.6E-07	1.1E-08	2.7E-10
743689L	Fort Bend	Texas	0.0790	0.0814	1,147	1,278	552	633	9.5E-06	9.1E-07	1.1E-05	4.2E-07	1.4E-05	1.4E-05	5.6E-07	1.4E-08
743726L	Fort Bend	Texas	0.0834	0.0859	750	836	381	437	6.6E-06	6.2E-07	7.4E-06	2.9E-07	9.5E-06	9.5E-06	3.8E-07	1.0E-08
743719B	Fort Bend	Texas	0.0863	0.0886	295	328	155	177	2.7E-06	2.5E-07	3.0E-06	1.2E-07	3.9E-06	3.9E-06	1.6E-07	4.0E-09
743724X	Fort Bend	Texas	0.0863	0.0889	431	480	226	260	3.9E-06	3.7E-07	4.4E-06	1.7E-07	5.6E-06	5.7E-06	2.3E-07	5.9E-09
743731H	Fort Bend	Texas	0.0499	0.0498	257	307	78	93	1.4E-06	1.3E-07	1.6E-06	6.2E-08	2.0E-06	2.0E-06	8.2E-08	2.1E-09
743727T	Fort Bend	Texas	0.0427	0.0513	194	250	50	78	1.2E-06	1.1E-07	1.3E-06	5.2E-08	1.7E-06	1.7E-06	6.9E-08	1.8E-09
924008H	Fort Bend	Texas	0.0746	0.0769	374	416	170	195	2.9E-06	2.8E-07	3.3E-06	1.3E-07	4.2E-06	4.2E-06	1.7E-07	4.4E-09
924009P	Fort Bend	Texas	0.0706	0.0727	336	374	144	165	2.5E-06	2.4E-07	2.8E-06	1.1E-07	3.6E-06	3.6E-06	1.5E-07	3.8E-09
743695P	Fort Bend	Texas	0.0823	0.0848	1,412	1,573	707	811	1.2E-05	1.2E-06	1.4E-05	5.4E-07	1.8E-05	1.8E-05	7.1E-07	1.8E-08
412514U	Fort Bend	Texas	0.0737	0.0760	331	369	149	171	2.6E-06	2.4E-07	2.9E-06	1.1E-07	3.7E-06	3.7E-06	1.5E-07	3.9E-09
924006U	Fort Bend	Texas	0.0740	0.0762	219	244	99	113	1.7E-06	1.6E-07	1.9E-06	7.5E-08	2.5E-06	2.5E-06	1.0E-07	2.6E-09
924007B	Fort Bend	Texas	0.0746	0.0769	239	266	109	125	1.9E-06	1.8E-07	2.1E-06	8.3E-08	2.7E-06	2.7E-06	1.1E-07	2.8E-09
743699S	Fort Bend	Texas	0.0747	0.0769	749	834	340	390	5.9E-06	5.6E-07	6.6E-06	2.6E-07	8.5E-06	8.5E-06	3.4E-07	8.9E-09
745055W	Fort Bend	Texas	0.0826	0.0851	361	402	181	208	3.1E-06	3.0E-07	3.5E-06	1.4E-07	4.5E-06	4.5E-06	1.8E-07	4.7E-09
743713K	Fort Bend	Texas	0.0742	0.0765	570	635	257	295	4.4E-06	4.2E-07	5.0E-06	2.0E-07	6.4E-06	6.4E-06	2.6E-07	6.7E-09
743698K	Fort Bend	Texas	0.0738	0.0760	499	556	224	257	3.9E-06	3.7E-07	4.4E-06	1.7E-07	5.6E-06	5.6E-06	2.3E-07	5.9E-09
743703E	Fort Bend	Texas	0.0709	0.0731	374	416	161	185	2.8E-06	2.6E-07	3.1E-06	1.2E-07	4.0E-06	4.0E-06	1.6E-07	4.2E-09
743716F	Fort Bend	Texas	0.0830	0.0856	474	528	239	275	4.1E-06	3.9E-07	4.7E-06	1.8E-07	6.0E-06	6.0E-06	2.4E-07	6.3E-09
745044J	Fort Bend	Texas	0.0755	0.0778	1,250	1,392	574	659	9.9E-06	9.4E-07	1.1E-05	4.4E-07	1.4E-05	1.4E-05	5.8E-07	1.5E-08
922512N	Fort Bend	Texas	0.0738	0.0760	429	478	193	221	3.3E-06	3.2E-07	3.8E-06	1.5E-07	4.8E-06	4.8E-06	1.9E-07	5.0E-09
922513V	Fort Bend	Texas	0.0842	0.0844	478	519	245	266	4.0E-06	3.8E-07	4.5E-06	1.8E-07	5.8E-06	5.8E-06	2.3E-07	6.1E-09
762865H	Harris	Texas	0.0433	0.0478	119	141	31	41	6.2E-07	5.9E-08	7.0E-07	2.7E-08	8.9E-07	8.9E-07	3.6E-08	9.3E-10
762872T	Harris	Texas	0.0578	0.0634	279	331	98	128	1.9E-06	1.8E-07	2.2E-06	8.4E-08	2.8E-06	2.8E-06	1.1E-07	2.9E-09
762869K	Harris	Texas	0.0540	0.0593	132	156	43	56	8.5E-07	8.1E-08	9.6E-07	3.7E-08	1.2E-06	1.2E-06	5.0E-08	1.3E-09
758519L	Harris	Texas	0.0611	0.0665	983	1,154	366	467	7.0E-06	6.7E-07	7.9E-06	3.1E-07	1.0E-05	1.0E-05	4.1E-07	1.1E-08
758518E	Harris	Texas	0.0625	0.0680	1,639	1,924	623	796	1.2E-05	1.1E-06	1.4E-05	5.3E-07	1.7E-05	1.7E-05	7.0E-07	1.8E-08
758517X	Harris	Texas	0.0613	0.0667	995	1,168	371	474	7.1E-06	6.8E-07	8.1E-06	3.1E-07	1.0E-05	1.0E-05	4.2E-07	1.1E-08
758521M	Harris	Texas	0.0556	0.0605	482	566	163	208	3.1E-06	3.0E-07	3.5E-06	1.4E-07	4.5E-06	4.5E-06	1.8E-07	4.8E-09
762904W	Harris	Texas	0.0444	0.0516	714	894	193	281	4.2E-06	4.0E-07	4.8E-06	1.9E-07	6.1E-06	6.1E-06	2.5E-07	6.4E-09
762889W	Harris	Texas	0.0447	0.0520	151	189	41	60	9.0E-07	8.5E-08	1.0E-06	3.9E-08	1.3E-06	1.3E-06	5.2E-08	1.4E-09
755621G	Harris	Texas	0.0746	0.0768	926	1,032	420	482	7.2E-06	6.9E-07	8.2E-06	3.2E-07	1.0E-05	1.1E-05	4.2E-07	1.1E-08
758533G	Harris	Texas	0.0659	0.0705	1,046	1,210	419	519	7.8E-06	7.4E-07	8.8E-06	3.4E-07	1.1E-05	1.1E-05	4.6E-07	1.2E-08
755624C	Harris	Texas	0.0512	0.0534	1,218	1,366	379	444	6.7E-06	6.3E-07	7.5E-06	2.9E-07	9.6E-06	9.7E-06	3.9E-07	1.0E-08
758540S	Harris	Texas	0.1324	0.1396	1,938	2,223	1,561	1,887	2.8E-05	2.7E-06	3.2E-05	1.2E-06	4.1E-05	4.1E-05	1.7E-06	4.3E-08
758180W	Harris	Texas	0.0701	0.0740	534	608	228	274	4.1E-06	3.9E-07	4.7E-06	1.8E-07	6.0E-06	6.0E-06	2.4E-07	6.2E-09
755622N	Harris	Texas	0.0756	0.0778	1,043	1,161	479	550	8.3E-06	7.9E-07	9.3E-06	3.6E-07	1.2E-05	1.2E-05	4.8E-07	1.3E-08
758187U	Harris	Texas	0.4121	0.4201	2,020	2,263	5,063	5,784	8.7E-05	8.3E-06	9.8E-05	3.8E-06	1.3E-04	1.3E-04	5.1E-06	1.3E-07
762907S	Harris	Texas	0.0539	0.0592	259	307	85	111	1.7E-06	1.6E-07	1.9E-06	7.3E-08	2.4E-06	2.4E-06	9.7E-08	2.5E-09

Table K.10-7. Grade Crossing Analysis - Proposed Acquisition HAPs Emissions by Crossing

			Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		With Action Emissions (tons/year)							
FRA Crossing ID	County	State	NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
758293C	Harris	Texas	0.0676	0.0714	426	485	175	211	3.2E-06	3.0E-07	3.6E-06	1.4E-07	4.6E-06	4.6E-06	1.9E-07	4.8E-09
758534N	Harris	Texas	0.1253	0.1321	1,546	1,773	1,179	1,425	2.1E-05	2.0E-06	2.4E-05	9.4E-07	3.1E-05	3.1E-05	1.3E-06	3.2E-08
755618Y	Harris	Texas	0.1526	0.1586	832	941	772	908	1.4E-05	1.3E-06	1.5E-05	6.0E-07	2.0E-05	2.0E-05	8.0E-07	2.1E-08
758514C	Harris	Texas	0.0604	0.0657	1,377	1,617	506	646	9.7E-06	9.2E-07	1.1E-05	4.3E-07	1.4E-05	1.4E-05	5.7E-07	1.5E-08
758532A	Harris	Texas	0.1202	0.1267	310	355	227	274	4.1E-06	3.9E-07	4.7E-06	1.8E-07	6.0E-06	6.0E-06	2.4E-07	6.2E-09
758512N	Harris	Texas	0.0582	0.0633	729	856	258	330	5.0E-06	4.7E-07	5.6E-06	2.2E-07	7.2E-06	7.2E-06	2.9E-07	7.5E-09
758178V	Harris	Texas	0.0786	0.0829	852	971	407	490	7.4E-06	7.0E-07	8.3E-06	3.2E-07	1.1E-05	1.1E-05	4.3E-07	1.1E-08
762892E	Harris	Texas	0.0449	0.0522	308	386	84	122	1.8E-06	1.8E-07	2.1E-06	8.1E-08	2.7E-06	2.7E-06	1.1E-07	2.8E-09
758531T	Harris	Texas	0.1177	0.1241	1,069	1,226	765	925	1.4E-05	1.3E-06	1.6E-05	6.1E-07	2.0E-05	2.0E-05	8.1E-07	2.1E-08
758610E	Harris	Texas	0.0600	0.0653	285	334	104	133	2.0E-06	1.9E-07	2.3E-06	8.8E-08	2.9E-06	2.9E-06	1.2E-07	3.0E-09
758611L	Harris	Texas	0.0601	0.0654	289	339	106	135	2.0E-06	1.9E-07	2.3E-06	8.9E-08	2.9E-06	2.9E-06	1.2E-07	3.1E-09
762901B	Harris	Texas	0.0562	0.0617	366	434	125	163	2.4E-06	2.3E-07	2.8E-06	1.1E-07	3.5E-06	3.6E-06	1.4E-07	3.7E-09
758523B	Harris	Texas	0.0558	0.0608	504	592	171	219	3.3E-06	3.1E-07	3.7E-06	1.4E-07	4.8E-06	4.8E-06	1.9E-07	5.0E-09
758513V	Harris	Texas	0.0622	0.0677	1,337	1,570	506	647	9.7E-06	9.2E-07	1.1E-05	4.3E-07	1.4E-05	1.4E-05	5.7E-07	1.5E-08
758525P	Harris	Texas	0.0534	0.0581	249	293	81	103	1.6E-06	1.5E-07	1.8E-06	6.9E-08	2.3E-06	2.3E-06	9.1E-08	2.4E-09
746645W	Jackson	Texas	0.0223	0.0289	46	72	6	13	1.9E-07	1.8E-08	2.2E-07	8.4E-09	2.8E-07	2.8E-07	1.1E-08	2.9E-10
746643H	Jackson	Texas	0.0222	0.0288	67	105	9	18	2.8E-07	2.6E-08	3.1E-07	1.2E-08	4.0E-07	4.0E-07	1.6E-08	4.2E-10
746639T	Jackson	Texas	0.0225	0.0292	166	258	23	46	6.9E-07	6.6E-08	7.8E-07	3.0E-08	1.0E-06	1.0E-06	4.0E-08	1.0E-09
746621H	Jackson	Texas	0.0253	0.0328	127	198	20	40	5.9E-07	5.7E-08	6.7E-07	2.6E-08	8.6E-07	8.6E-07	3.5E-08	9.0E-10
446594K	Jefferson	Texas	0.0670	0.0707	397	452	162	195	2.9E-06	2.8E-07	3.3E-06	1.3E-07	4.2E-06	4.2E-06	1.7E-07	4.4E-09
762721D	Jefferson	Texas	0.0251	0.0316	352	473	54	91	1.4E-06	1.3E-07	1.5E-06	6.0E-08	2.0E-06	2.0E-06	8.0E-08	2.1E-09
762739N	Jefferson	Texas	0.0239	0.0301	69	92	10	17	2.5E-07	2.4E-08	2.9E-07	1.1E-08	3.7E-07	3.7E-07	1.5E-08	3.9E-10
762743D	Jefferson	Texas	0.0332	0.0414	91	122	18	31	4.6E-07	4.4E-08	5.2E-07	2.0E-08	6.7E-07	6.7E-07	2.7E-08	7.0E-10
329544L	Jefferson	Texas	0.0323	0.0456	80	123	16	34	5.1E-07	4.9E-08	5.8E-07	2.3E-08	7.5E-07	7.5E-07	3.0E-08	7.8E-10
329542X	Jefferson	Texas	0.0320	0.0453	72	112	14	31	4.6E-07	4.4E-08	5.2E-07	2.0E-08	6.7E-07	6.7E-07	2.7E-08	7.0E-10
329540J	Jefferson	Texas	0.0321	0.0454	75	116	15	32	4.8E-07	4.6E-08	5.4E-07	2.1E-08	6.9E-07	7.0E-07	2.8E-08	7.3E-10
329546A	Jefferson	Texas	0.0322	0.0455	77	119	15	33	5.0E-07	4.7E-08	5.6E-07	2.2E-08	7.2E-07	7.2E-07	2.9E-08	7.5E-10
329545T	Jefferson	Texas	0.0332	0.0469	104	162	21	46	6.9E-07	6.6E-08	7.9E-07	3.1E-08	1.0E-06	1.0E-06	4.1E-08	1.1E-09
329531K	Jefferson	Texas	0.0329	0.0464	143	221	29	63	9.4E-07	8.9E-08	1.1E-06	4.1E-08	1.4E-06	1.4E-06	5.5E-08	1.4E-09
793696H	Jim Hogg	Texas	0.0652	0.0659	316	395	125	158	2.4E-06	2.3E-07	2.7E-06	1.0E-07	3.4E-06	3.5E-06	1.4E-07	3.6E-09
793818K	Jim Wells	Texas	0.2206	0.2129	350	427	469	553	8.3E-06	7.9E-07	9.4E-06	3.7E-07	1.2E-05	1.2E-05	4.9E-07	1.3E-08
793651B	Jim Wells	Texas	0.0945	0.0939	361	447	208	255	3.8E-06	3.7E-07	4.3E-06	1.7E-07	5.6E-06	5.6E-06	2.2E-07	5.8E-09
793810F	Jim Wells	Texas	0.2428	0.2344	460	561	679	800	1.2E-05	1.1E-06	1.4E-05	5.3E-07	1.7E-05	1.7E-05	7.0E-07	1.8E-08
793959U	Jim Wells	Texas	0.2158	0.2083	523	638	687	809	1.2E-05	1.2E-06	1.4E-05	5.4E-07	1.8E-05	1.8E-05	7.1E-07	1.8E-08
793649A	Jim Wells	Texas	0.0919	0.0913	134	166	75	92	1.4E-06	1.3E-07	1.6E-06	6.1E-08	2.0E-06	2.0E-06	8.1E-08	2.1E-09
793819S	Jim Wells	Texas	0.2475	0.2390	1,566	1,912	2,359	2,779	4.2E-05	4.0E-06	4.7E-05	1.8E-06	6.0E-05	6.1E-05	2.4E-06	6.3E-08
793821T	Jim Wells	Texas	0.2146	0.2072	478	583	624	735	1.1E-05	1.1E-06	1.2E-05	4.9E-07	1.6E-05	1.6E-05	6.5E-07	1.7E-08
793814H	Jim Wells	Texas	0.3232	0.3120	1,613	1,969	3,171	3,737	5.6E-05	5.3E-06	6.3E-05	2.5E-06	8.1E-05	8.2E-05	3.3E-06	8.5E-08
762761B	Liberty	Texas	0.0221	0.0285	55	75	7	13	2.0E-07	1.9E-08	2.2E-07	8.6E-09	2.8E-07	2.8E-07	1.1E-08	3.0E-10
762786W	Liberty	Texas	0.0354	0.0441	158	211	34	57	8.5E-07	8.1E-08	9.6E-07	3.8E-08	1.2E-06	1.2E-06	5.0E-08	1.3E-09
762789S	Liberty	Texas	0.0361	0.0451	179	240	39	66	9.9E-07	9.4E-08	1.1E-06	4.4E-08	1.4E-06	1.4E-06	5.8E-08	1.5E-09
762785P	Liberty	Texas	0.0356	0.0444	254	340	55	92	1.4E-06	1.3E-07	1.6E-06	6.1E-08	2.0E-06	2.0E-06	8.1E-08	2.1E-09
762770A	Liberty	Texas	0.0823	0.0894	173	204	87	111	1.7E-06	1.6E-07	1.9E-06	7.4E-08	2.4E-06	2.4E-06	9.8E-08	2.5E-09
762765D	Liberty	Texas	0.0544	0.0672	290	386	96	158	2.4E-06	2.3E-07	2.7E-06	1.0E-07	3.4E-06	3.4E-06	1.4E-07	3.6E-09
763062E	Liberty	Texas	0.0245	0.0308	279	375	42	70	1.1E-06	1.0E-07	1.2E-06	4.7E-08	1.5E-06	1.5E-06	6.2E-08	1.6E-09
427586S	Nueces	Texas	0.0846	0.0843	617	746	317	383	5.7E-06	5.5E-07	6.5E-06	2.5E-07	8.3E-06	8.3E-06	3.4E-07	8.7E-09
793749E	Nueces	Texas	0.3269	0.3124	359	436	714	828	1.2E-05	1.2E-06	1.4E-05	5.5E-07	1.8E-05	1.8E-05	7.3E-07	1.9E-08
427597E	Nueces	Texas	0.0236	0.0401	40	83	6	20	3.0E-07	2.9E-08	3.4E-07	1.3E-08	4.4E-07	4.4E-07	1.8E-08	4.6E-10
793743N	Nueces	Texas	0.1563	0.1524	152	186	144	173	2.6E-06	2.5E-07	2.9E-06	1.1E-07	3.8E-06	3.8E-06	1.5E-07	3.9E-09
329460R	Orange	Texas	0.0187	0.0351	44	86	5	18	2.8E-07	2.6E-08	3.1E-07	1.2E-08	4.0E-07	4.0E-07	1.6E-08	4.2E-10
329467N	Orange	Texas	0.0184	0.0347	54	107	6	22	3.4E-07	3.2E-08	3.8E-07	1.5E-08	4.9E-07	4.9E-07	2.0E-08	5.1E-10
329471D	Orange	Texas	0.0208	0.0390	332	657	42	156	2.3E-06	2.2E-07	2.6E-06	1.0E-07	3.4E-06	3.4E-06	1.4E-07	3.6E-09
329472K	Orange	Texas	0.0183	0.0344	46	90	5	19	2.8E-07	2.7E-08	3.2E-07	1.3E-08	4.1E-07	4.1E-07	1.7E-08	4.3E-10
927011B	Orange	Texas	0.0183	0.0343	44	87	5	18	2.7E-07	2.6E-08	3.1E-07	1.2E-08	3.9E-07	4.0E-07	1.6E-08	4.1E-10
427570V	Refugio	Texas	0.0847	0.0813	280	327	144	162	2.4E-06	2.3E-07	2.7E-06	1.1E-07	3.5E-06	3.5E-06	1.4E-07	3.7E-09
436030Y	San Patricio	Texas	0.0614	0.0599	100	117	37	43	6.4E-07	6.1E-08	7.3E-07	2.8E-08	9.3E-07	9.3E-07	3.8E-08	9.8E-10
436017K	San Patricio	Texas	0.0607	0.0592	109	129	40	46	7.0E-07	6.6E-08	7.9E-07	3.1E-08	1.0E-06	1.0E-06	4.1E-08	1.1E-09
436012B	San Patricio	Texas	0.0604	0.0589	157	184	57	66	9.9E-07	9.4E-08	1.1E-06	4.4E-08	1.4E-06	1.4E-06	5.8E-08	1.5E-09
436014P	San Patricio	Texas	0.0603	0.0588	99	116	36	42	6.3E-07	6.0E-08	7.1E-07	2.8E-08	9.1E-07	9.1E-07	3.7E-08	9.5E-10
436011U	San Patricio	Texas	0.0594	0.0581	384	453	139	160	2.4E-06	2.3E-07	2.7E-06	1.1E-07	3.5E-06	3.5E-06	1.4E-07	3.6E-09
020545J	Tarrant	Texas	0.0233	0.0249	137	142	19	22	3.2E-07	3.1E-08	3.7E-07	1.4E-08	4.7E-07	4.7E-07	1.9E-08	4.9E-10
435913V	Victoria	Texas	1.3940	1.1588	679	710	5,759	5,004	7.5E-05	7.2E-06	8.5E-05	3.3E-06	1.1E-04	1.1E-04	4.4E-06	1.1E-07
435914C	Victoria	Texas	0.0791	0.0716	377	412	181	179	2.7E-06	2.6E-07	3.0E-06	1.2E-07	3.9E-06	3.9E-06	1.6E-07	4.1E-09
746650T	Victoria	Texas	0.2329	0.2316	1,044	1,290	1,480	1,817	2.7E-05	2.6E-06	3.1E-05	1.2E-06	4.0E-05	4.0E-05	1.6E-06	4.1E-08
746558T	Victoria	Texas	0.0981	0.1183	484	721	289	518	7.8E-06	7.4E-07	8.8E-06	3.4E-07	1.1E-05	1.1E-05	4.6E-07	1.2E-08
746556E	Victoria	Texas	0.0926	0.1116	235	350	132	237	3.6E-06	3.4E-07	4.0E-06	1.6E-07	5.2E-06	5.2E-06	2.1E-07	5.4E-09
746653N	Victoria	Texas	0.8498	0.8241	2,102	2,564	10,868	12,853	1.9E-04	1.8E-05	2.2E-04	8.5E-06	2.8E-04	2.8E-04	1.1E-05	2.9E-07
746550N	Victoria	Texas	0.0926	0.1117	119	176	67	120	1.8E-06	1.7E-07	2.0E-06	7.9E-08	2.6E-06	2.6E-06	1.1E-07	2.7E-09
746510R	Victoria	Texas	0.2192	0.2188	203	252	271	336	5.0E-06	4.8E-07	5.7E-06	2.2E-07	7.3E-06	7.3E-06	3.0E-07	7.7E-09
746562H	Victoria	Texas	0.0433	0.0538	281	425	74	139	2.1E-06	2.0E-07	2.4E-06	9.2E-08	3.0E-06	3.0E-06	1.2E-07	3.2E-09
912105H	Victoria	Texas	0.1437	0.1446	283	352	247	309	4.6E-06	4.4E-07	5.3E-06	2.0E-07	6.7E-06	6.7E-06	2.7E-07	7.0E-09
746652G	Victoria	Texas	0.1519	0.1528	664	825	614	766	1.2E-05	1.1E-06	1.3E-05	5.1E-07	1.7E-05	1.7E-05	6.7E-07	1.7E-08
746551V	Victoria	Texas	0.0934	0.1127	138	206	79	141	2.1E-06	2.0E-07	2.4E-06	9.4E-08	3.1E-06	3.1E-06	1.2E-07	3.2E-09
793598S	Webb	Texas	0.4558	0.4355	1,758	2,134	4,873	5,654	8.5E-05	8.1E-06	9.6E-05	3.7E-06	1.2E-04	1.2E-04	5.0E-06	1.3E-07
793596D	Webb	Texas	0.3297	0.3150	257	313	516	599	9.0E-06	8.6E-07	1.0E-05	4.0E-07	1.3E-05	1.3E-05	5.3E-07	1.4E-08
743432B	Wharton	Texas	0.1082	0.1312	195	292	128	233	3.5E-06	3.3E-07	4.0E-06	1.5E-07	5.1E-06	5.1E-06	2.1E-07	5.3E-09
743440T	Wharton	Texas	0.1110	0.1346	126	189	85	155	2.3E-06	2.2E-07	2.6E-06	1.0E-07	3.4E-06	3.4E-06	1.4E-07	3.5E-09
743438S	Wharton	Texas	0.1105	0.1340	121	181	81	148	2.2E-06	2.1E-07	2.5E-06	9.8E-08	3.2E-06	3.2E-06	1.3E-07	3.4E-09
743435W	Wharton	Texas	0.1086	0.1317	404	606	266	485	7.3E-06	6.9E-07	8.2E-06	3.2E-07	1.1E-05	1.1E-05	4.3E-07	1.1E-08
743352H	Wharton	Texas	0.0232	0.0302	75	117	11	21	3.2E-07	3.1E-08	3.6E-07	1.4E-08	4.7E-07	4.7E-07	1.9E-08	4.9E-10
743359F	Wharton	Texas	0.0252	0.0327	195	303	30	60	9.0E-07	8.6E-08	1.0E-06	4.0E-08	1.3E-06	1.3E-06	5.3E-08	1.4E-09

Note:

Vehicles Delayed and Average Delay provided from the transportation study

Table K.10-8. Grade Crossing Analysis - Acquisition-Related HAPs Emissions by Crossing

			Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		Acquisition-Related Emissions (tons/year)							
FRA Crossing ID	County	State	NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
330354E	Benton	Arkansas	0.0913	0.1275	189	296	105	230	1.9E-06	1.8E-07	2.1E-06	8.3E-08	2.7E-06	2.7E-06	1.1E-07	2.9E-09
330363D	Benton	Arkansas	0.0561	0.0793	131	207	45	100	8.3E-07	7.9E-08	9.4E-07	3.7E-08	1.2E-06	1.2E-06	4.9E-08	1.3E-09
330362W	Benton	Arkansas	0.0580	0.0820	175	276	62	138	1.1E-06	1.1E-07	1.3E-06	5.0E-08	1.7E-06	1.7E-06	6.7E-08	1.7E-09
330375X	Benton	Arkansas	0.0579	0.0818	171	270	60	134	1.1E-06	1.1E-07	1.3E-06	4.9E-08	1.6E-06	1.6E-06	6.5E-08	1.7E-09
330376E	Benton	Arkansas	0.0560	0.0791	99	157	34	75	6.3E-07	6.0E-08	7.1E-07	2.8E-08	9.1E-07	9.1E-07	3.7E-08	9.5E-10
330405M	Benton	Arkansas	0.0566	0.0801	222	351	77	171	1.4E-06	1.4E-07	1.6E-06	6.3E-08	2.1E-06	2.1E-06	8.3E-08	2.2E-09
330372C	Benton	Arkansas	0.0548	0.0774	98	155	33	73	6.1E-07	5.8E-08	6.9E-07	2.7E-08	8.8E-07	8.8E-07	3.6E-08	9.2E-10
330578C	Little River	Arkansas	0.0417	0.0615	109	184	28	69	6.2E-07	5.9E-08	7.0E-07	2.7E-08	8.9E-07	9.0E-07	3.6E-08	9.4E-10
330575G	Little River	Arkansas	0.0471	0.0637	137	211	39	82	6.4E-07	6.1E-08	7.3E-07	2.8E-08	9.3E-07	9.3E-07	3.8E-08	9.7E-10
330457E	Polk	Arkansas	0.0573	0.0826	146	242	51	121	1.1E-06	1.0E-07	1.2E-06	4.7E-08	1.5E-06	1.5E-06	6.2E-08	1.6E-09
330454J	Polk	Arkansas	0.0571	0.0822	274	452	95	226	2.0E-06	1.9E-07	2.2E-06	8.7E-08	2.9E-06	2.9E-06	1.2E-07	3.0E-09
330524W	Sevier	Arkansas	0.0601	0.0866	154	254	56	134	1.2E-06	1.1E-07	1.3E-06	5.1E-08	1.7E-06	1.7E-06	6.8E-08	1.8E-09
330546W	Sevier	Arkansas	0.0398	0.0542	89	138	22	46	3.6E-07	3.4E-08	4.1E-07	1.6E-08	5.2E-07	5.2E-07	2.1E-08	5.5E-10
372409F	Carroll	Illinois	0.0234	0.0319	63	109	9	21	1.8E-07	1.8E-08	2.1E-07	8.1E-09	2.7E-07	2.7E-07	1.1E-08	2.8E-10
372414C	Carroll	Illinois	0.0235	0.0320	67	117	10	23	2.0E-07	1.9E-08	2.2E-07	8.7E-09	2.9E-07	2.9E-07	1.2E-08	3.0E-10
372214T	Cook	Illinois	0.0247	0.0372	207	270	31	61	4.5E-07	4.3E-08	5.1E-07	2.0E-08	6.6E-07	6.6E-07	2.7E-08	6.9E-10
372210R	Cook	Illinois	0.0391	0.0590	654	854	156	307	2.3E-06	2.2E-07	2.6E-06	1.0E-07	3.3E-06	3.3E-06	1.3E-07	3.4E-09
372206B	Cook	Illinois	0.0251	0.0378	449	587	69	135	1.0E-06	9.5E-08	1.1E-06	4.4E-08	1.4E-06	1.4E-06	5.8E-08	1.5E-09
372138C	Cook	Illinois	0.0911	0.0859	1,443	1,452	800	759	-6.1E-07	-5.8E-08	-6.9E-07	-2.7E-08	-8.8E-07	-8.8E-07	-3.6E-08	-9.2E-10
372137V	Cook	Illinois	0.0904	0.0853	340	342	187	177	-1.4E-07	-1.3E-08	-1.6E-07	-6.3E-09	-2.1E-07	-2.1E-07	-8.3E-09	-2.2E-10
372202Y	Cook	Illinois	0.0347	0.0524	557	728	118	232	1.7E-06	1.6E-07	1.9E-06	7.6E-08	2.5E-06	2.5E-06	1.0E-07	2.6E-09
372289S	De Kalb	Illinois	0.0111	0.0242	26	73	2	11	1.3E-07	1.3E-08	1.5E-07	5.9E-09	2.0E-07	2.0E-07	7.9E-09	2.0E-10
372279L	De Kalb	Illinois	0.0109	0.0238	19	52	1	8	9.5E-08	9.0E-09	1.1E-07	4.2E-09	1.4E-07	1.4E-07	5.6E-09	1.4E-10
372299X	De Kalb	Illinois	0.0116	0.0252	28	78	2	12	1.5E-07	1.4E-08	1.7E-07	6.6E-09	2.2E-07	2.2E-07	8.7E-09	2.3E-10
371997M	Du Page	Illinois	0.0232	0.0349	164	214	23	46	3.4E-07	3.2E-08	3.8E-07	1.5E-08	4.9E-07	4.9E-07	2.0E-08	5.1E-10
372174X	Du Page	Illinois	0.0239	0.0361	324	423	47	93	6.9E-07	6.5E-08	7.8E-07	3.0E-08	9.9E-07	1.0E-06	4.0E-08	1.0E-09
372170V	Du Page	Illinois	0.0245	0.0369	786	1,028	117	231	1.7E-06	1.6E-07	1.9E-06	7.5E-08	2.5E-06	2.5E-06	1.0E-07	2.6E-09
372179G	Du Page	Illinois	0.0244	0.0368	382	499	57	112	8.2E-07	7.9E-08	9.3E-07	3.6E-08	1.2E-06	1.2E-06	4.8E-08	1.3E-09
372184D	Du Page	Illinois	0.0316	0.0477	941	1,230	181	357	2.6E-06	2.5E-07	3.0E-06	1.2E-07	3.8E-06	3.8E-06	1.5E-07	4.0E-09
372191N	Du Page	Illinois	0.0223	0.0336	297	388	40	79	5.9E-07	5.6E-08	6.6E-07	2.6E-08	8.5E-07	8.5E-07	3.4E-08	8.9E-10
372196X	Du Page	Illinois	0.0233	0.0351	527	688	75	147	1.1E-06	1.0E-07	1.2E-06	4.8E-08	1.6E-06	1.6E-06	6.4E-08	1.6E-09
372177T	Du Page	Illinois	0.0373	0.0562	1,227	1,603	279	549	4.1E-06	3.9E-07	4.6E-06	1.8E-07	5.9E-06	5.9E-06	2.4E-07	6.2E-09
372178A	Du Page	Illinois	0.0220	0.0332	362	473	49	96	7.1E-07	6.7E-08	8.0E-07	3.1E-08	1.0E-06	1.0E-06	4.1E-08	1.1E-09
372240H	Kane	Illinois	0.0281	0.0424	705	921	121	237	1.8E-06	1.7E-07	2.0E-06	7.7E-08	2.5E-06	2.5E-06	1.0E-07	2.7E-09
372241P	Kane	Illinois	0.0235	0.0355	293	382	42	82	6.1E-07	5.8E-08	6.9E-07	2.7E-08	8.8E-07	8.9E-07	3.6E-08	9.3E-10
372217N	Kane	Illinois	0.0297	0.0448	818	1,069	148	291	2.2E-06	2.0E-07	2.4E-06	9.5E-08	3.1E-06	3.1E-06	1.3E-07	3.3E-09
372242W	Kane	Illinois	0.0256	0.0385	986	1,288	153	302	2.2E-06	2.1E-07	2.5E-06	9.8E-08	3.2E-06	3.2E-06	1.3E-07	3.4E-09
372246Y	Kane	Illinois	0.0263	0.0397	907	1,185	145	286	2.1E-06	2.0E-07	2.4E-06	9.3E-08	3.1E-06	3.1E-06	1.2E-07	3.2E-09
372239N	Kane	Illinois	0.0268	0.0412	356	470	58	118	9.0E-07	8.6E-08	1.0E-06	4.0E-08	1.3E-06	1.3E-06	5.3E-08	1.4E-09
372235L	Kane	Illinois	0.0256	0.0394	152	201	24	48	3.7E-07	3.5E-08	4.2E-07	1.6E-08	5.3E-07	5.4E-07	2.2E-08	5.6E-10
372355C	Ogle	Illinois	0.0253	0.0346	85	147	13	31	2.7E-07	2.6E-08	3.0E-07	1.2E-08	3.9E-07	3.9E-07	1.6E-08	4.1E-10
372350T	Ogle	Illinois	0.0236	0.0322	47	81	7	16	1.4E-07	1.3E-08	1.6E-07	6.1E-09	2.0E-07	2.0E-07	8.1E-09	2.1E-10
372339T	Ogle	Illinois	0.0244	0.0332	50	86	7	17	1.5E-07	1.4E-08	1.7E-07	6.7E-09	2.2E-07	2.2E-07	8.9E-09	2.3E-10
372388P	Ogle	Illinois	0.0227	0.0310	58	101	8	19	1.6E-07	1.6E-08	1.9E-07	7.3E-09	2.4E-07	2.4E-07	9.7E-09	2.5E-10
372346D	Ogle	Illinois	0.0232	0.0317	37	65	5	13	1.1E-07	1.0E-08	1.2E-07	4.8E-09	1.6E-07	1.6E-07	6.4E-09	1.7E-10
376027Y	Clinton	Iowa	0.1693	0.2863	150	299	155	521	5.5E-06	5.2E-07	6.2E-06	2.4E-07	8.0E-06	8.0E-06	3.2E-07	8.3E-09
607245W	Louisa	Iowa	0.0193	0.0483	33	103	4	30	4.0E-07	3.8E-08	4.5E-07	1.8E-08	5.8E-07	5.8E-07	2.3E-08	6.0E-10
393258B	Muscatine	Iowa	0.0192	0.0479	46	145	5	42	5.5E-07	5.3E-08	6.3E-07	2.4E-08	8.0E-07	8.0E-07	3.2E-08	8.4E-10
607211C	Muscatine	Iowa	0.0202	0.0505	81	258	10	79	1.0E-06	9.9E-08	1.2E-06	4.6E-08	1.5E-06	1.5E-06	6.1E-08	1.6E-09
607215E	Muscatine	Iowa	0.0195	0.0486	28	89	3	26	3.4E-07	3.3E-08	3.9E-07	1.5E-08	5.0E-07	5.0E-07	2.0E-08	5.2E-10
865646F	Scott	Iowa	0.0385	0.0786	56	132	13	63	7.5E-07	7.2E-08	8.5E-07	3.3E-08	1.1E-06	1.1E-06	4.4E-08	1.1E-09
865649B	Scott	Iowa	0.0911	0.1819	132	310	73	343	4.0E-06	3.9E-07	4.6E-06	1.8E-07	5.9E-06	5.9E-06	2.4E-07	6.1E-09
865653R	Scott	Iowa	0.1214	0.2425	353	827	261	1,220	1.4E-05	1.4E-06	1.6E-05	6.4E-07	2.1E-05	2.1E-05	8.4E-07	2.2E-08
375784R	Wapello	Iowa	0.0652	0.1545	60	186	24	175	2.3E-06	2.2E-07	2.6E-06	1.0E-07	3.3E-06	3.3E-06	1.3E-07	3.4E-09
375779U	Wapello	Iowa	0.0662	0.1568	89	274	36	261	3.4E-06	3.2E-07	3.8E-06	1.5E-07	4.9E-06	4.9E-06	2.0E-07	5.1E-09
375781V	Wapello	Iowa	0.0658	0.1558	131	402	52	381	4.9E-06	4.7E-07	5.6E-06	2.2E-07	7.2E-06	7.2E-06	2.9E-07	7.5E-09
607323B	Washington	Iowa	0.0199	0.0498	72	228	9	69	9.1E-07	8.6E-08	1.0E-06	4.0E-08	1.3E-06	1.3E-06	5.3E-08	1.4E-09
607322U	Washington	Iowa	0.0187	0.0467	28	87	3	25	3.2E-07	3.1E-08	3.7E-07	1.4E-08	4.7E-07	4.7E-07	1.9E-08	4.9E-10
330258C	Crawford	Kansas	0.0380	0.0545	158	252	37	84	7.1E-07	6.7E-08	8.0E-07	3.1E-08	1.0E-06	1.0E-06	4.2E-08	1.1E-09
330256N	Crawford	Kansas	0.0328	0.0471	85	135	17	39	3.3E-07	3.1E-08	3.7E-07	1.4E-08	4.8E-07	4.8E-07	1.9E-08	5.0E-10
330257V	Crawford	Kansas	0.0332	0.0477	212	338	43	98	8.3E-07	7.9E-08	9.4E-07	3.7E-08	1.2E-06	1.2E-06	4.9E-08	1.3E-09
329322C	Beauregard	Louisiana	0.0413	0.0686	63	114	16	47	4.8E-07	4.5E-08	5.4E-07	2.1E-08	6.9E-07	6.9E-07	2.8E-08	7.2E-10
329320N	Beauregard	Louisiana	0.0367	0.0612	92	168	21	63	6.3E-07	6.0E-08	7.1E-07	2.8E-08	9.1E-07	9.2E-07	3.7E-08	9.6E-10
329319U	Beauregard	Louisiana	0.0539	0.0899	600	1,092	197	598	6.0E-06	5.7E-07	6.8E-06	2.7E-07	8.7E-06	8.7E-06	3.5E-07	9.1E-09
329317F	Beauregard	Louisiana	0.0539	0.0899	600	1,092	197	598	6.0E-06	5.7E-07	6.8E-06	2.7E-07	8.7E-06	8.7E-06	3.5E-07	9.1E-09
329337S	Beauregard	Louisiana	0.0234	0.0395	75	137	11	33	3.3E-07	3.2E-08	3.8E-07	1.5E-08	4.8E-07	4.9E-07	2.0E-08	5.1E-10
329128J	Caddo	Louisiana	0.0804	0.1028	148	201	72	125	8.0E-07	7.6E-08	9.0E-07	3.5E-08	1.2E-06	1.2E-06	4.7E-08	1.2E-09
329154Y	Caddo	Louisiana	0.1394	0.1782	1,034	1,401	877	1,519	9.6E-06	9.2E-07	1.1E-05	4.3E-07	1.4E-05	1.4E-05	5.7E-07	1.5E-08
329157U	Caddo	Louisiana	0.0793	0.1014	252	342	122	211	1.3E-06	1.3E-07	1.5E-06	5.9E-08	1.9E-06	1.9E-06	7.8E-08	2.0E-09
329006E	Caddo	Louisiana	0.0354	0.0524	114	192	24	61	5.5E-07	5.3E-08	6.2E-07	2.4E-08	8.0E-07	8.0E-07	3.2E-08	8.4E-10
328998G	Caddo	Louisiana	0.0378	0.0560	135	228	31	78	7.0E-07	6.7E-08	7.9E-07	3.1E-08	1.0E-06	1.0E-06	4.1E-08	1.1E-09
329356W	Calcasieu	Louisiana	0.0493	0.0819	347	631	104	314	3.2E-06	3.0E-07	3.6E-06	1.4E-07	4.6E-06	4.6E-06	1.9E-07	4.8E-09
329344C	Calcasieu	Louisiana	0.0419	0.0697	78	142	20	60	6.0E-07	5.7E-08	6.8E-07	2.7E-08	8.7E-07	8.8E-07	3.5E-08	9.2E-10
329346R	Calcasieu	Louisiana	0.0379	0.0705	231	454	53	195	2.1E-06	2.0E-07	2.4E-06	9.4E-08	3.1E-06	3.1E-06	1.2E-07	3.2E-09
329164E	De Soto	Louisiana	0.0694	0.0889	141	192	60	104	6.6E-07	6.3E-08	7.5E-07	2.9E-08	9.6E-07	9.6E-07	3.9E-08	1.0E-09
329162R	De Soto	Louisiana	0.0772	0.0990	368	500	173	301	1.9E-06	1.8E-07	2.2E-06	8.5E-08	2.8E-06	2.8E-06	1.1E-07	2.9E-09
329183J	De Soto	Louisiana	0.0443	0.0745	230	423	62	191	1.9E-06	1.9E-07	2.2E-06	8.6E-08	2.8E-06	2.8E-06	1.1E-07	3.0E-09
329187L	De Soto	Louisiana	0.0401	0.0676	181	333	44	137	1.4E-06	1.3E-07	1.6E-06	6.1E-08	2.0E-06	2.0E-06	8.1E-08	2.1E-09
329182C	De Soto	Louisiana	0.0422	0.0710	328	604	84	261	2.7E-06	2.5E-07	3.0E-06	1.2E-07	3.8E-06	3.9E-06	1.6E-07	4.0E-09
329234S	Sabine	Louisiana	0.0235	0.0402	143	265	20	65	6.6E-07	6.3E-08	7.5E-07	2.9E-08	9.6E-07	9.6E-07	3.9E-08	1.0E-09
329226A	Sabine	Louisiana	0.0366	0.0622	184	340	41	129	1.3E-06	1.3E-07	1.5E-06	5.8E-08	1.9E-06	1.9E-06	7.7E-08	2.0E-09
329227G	Sabine	Louisiana	0.0287	0.0487	50	93	9	28	2.8E-07	2.7E-08	3.2E-07	1.2E-08	4.1E-07	4.1E-07	1.7E-08	4.3E-10
329259M	Vernon	Louisiana	0.0420	0.0706	100	184	26	79	8.0E-07	7.7E-08	9.1E-07	3.5E-08	1.2E-06	1.2E-06	4.7E-08	1.2E-09
329253W	Vernon	Louisiana	0.0403	0.0678	61	113	15	46	4.7E-07	4.5E-08	5.3E-07	2.1E-08	6.8E-07	6.9E-07	2.8E-08	7.2E-10
329279Y	Vernon	Louisiana	0.0416	0.0691	108	197	27	83	8.3E-07	7.9E-08	9.4E-07	3.7E-08	1.2E-06	1.2E-06	4.9E-08	1.3E-09
329284V	Vernon	Louisiana	0.0423	0.0702	86	155	22	66	6.7E-07	6.4E-08	7.5E-07	2.9E-08	9.7E-07	9.7E-07	3.9E-08	1.0E-09
329641V	Vernon	Louisiana	0.0418	0.0694	74	134	19	57	5.7E-07	5.4E-08	6.5E-07	2.5E-08	8.3E-07	8.3E-07	3.3E-08	8.7E-10
329298D	Vernon	Louisiana	0.0338	0.0567	172	314	35	108	1.1E-06	1.0E-07	1.2E-06	4.8E-08	1.6E-06	1.6E-06	6.4E-08	1.7E-09
329308G	Vernon	Louisiana	0.0227	0.0383	53	96	7	22	2.3E-07	2.2E-08	2.6E-07	1.0E-08	3.3E-07	3.3E-07	1.3E-08	3.5E-10
329839D	Cass	Missouri	0.0391	0.0575	93	148	22	52	4.5E-07	4.3E-08	5.1E-07	2.0E-08	6.5E-07	6.5E-07	2.6E-08	6.8E-10
375407C	Clay	Missouri	0.0564	0.0991	43	124	15	75	9.0E-07	8.6E-08	1.0E-06	4.0E-08	1.3E-06	1.3E-06	5.3E-08	1.4E-09
375439H	Clay	Missouri	0.0142	0.0289	48	148	4	26	3.3E-07	3.1E-08	3.7E-07	1.5E-08	4.8E-07	4.8E-07	1.9E-08	5.0E-10
375440C	Clay	Missouri	0.0128	0.0261	25	77	2	12	1.6E-07	1.5E-08	1.8E-07	6.9E-09	2.3E-07	2.3E-07	9.1E-09	2.4E-10
329807X	Jackson	Missouri	0.0412	0.0606	181	289	45	107	9.2E-07	8.7E-08	1.0E-06	4.0E-08	1.3E-06	1.3E-06	5.4E-08	1.4E-09
329764G	Jackson	Missouri	0.0659	0.0957	122	193	49	112	9.5E-07	9.1E-08	1.1E-06	4.2E-08	1.4E-06	1.4E-06	5.6E-08	1.4E-09
330035L	Jasper	Missouri	0.0415	0.0594	162	258	41	93	7.8E-07	7.5E-08	8.9E-07	3.5E-08	1.1E-06	1.1E-06	4.6E-08	1.2E-09
330055X	Jasper	Missouri	0.0612	0.0866	378	597	141	315	2.6E-06	2.5E-07	3.0E-06	1.2E-07	3.8E-06	3.8E-06	1.5E-07	4.0E-09
330061B	Jasper	Missouri	0.0691	0.0977	595	940	250	559	4.6E-06	4.4E-07	5.2E-06	2.0E-07	6.7E-06	6.7E-06	2.7E-07	7.0E-09

Table K.10-8. Grade Crossing Analysis - Acquisition-Related HAPs Emissions by Crossing

			Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		Acquisition-Related Emissions (tons/year)							
FRA Crossing ID	County	State	NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
330045S	Jasper	Missouri	0.0587	0.0830	295	466	105	235	2.0E-06	1.9E-07	2.2E-06	8.6E-08	2.8E-06	2.8E-06	1.1E-07	3.0E-09
330053J	Jasper	Missouri	0.0585	0.0828	145	229	52	115	9.6E-07	9.1E-08	1.1E-06	4.2E-08	1.4E-06	1.4E-06	5.6E-08	1.5E-09
330178J	McDonald	Missouri	0.0905	0.1263	173	271	95	208	1.7E-06	1.6E-07	1.9E-06	7.5E-08	2.5E-06	2.5E-06	1.0E-07	2.6E-09
330102D	Newton	Missouri	0.1270	0.1761	255	399	197	427	3.5E-06	3.3E-07	3.9E-06	1.5E-07	5.0E-06	5.0E-06	2.0E-07	5.3E-09
330120B	Newton	Missouri	0.1211	0.1680	127	199	93	203	1.6E-06	1.6E-07	1.9E-06	7.2E-08	2.4E-06	2.4E-06	9.6E-08	2.5E-09
330113R	Newton	Missouri	0.1200	0.1664	223	349	163	353	2.9E-06	2.7E-07	3.2E-06	1.3E-07	4.1E-06	4.2E-06	1.7E-07	4.3E-09
330101W	Newton	Missouri	0.1166	0.1617	131	206	93	202	1.6E-06	1.6E-07	1.9E-06	7.2E-08	2.4E-06	2.4E-06	9.6E-08	2.5E-09
330625H	Adair	Oklahoma	0.0469	0.0704	89	149	25	64	5.8E-07	5.5E-08	6.5E-07	2.5E-08	8.3E-07	8.4E-07	3.4E-08	8.7E-10
330612G	Adair	Oklahoma	0.0472	0.0709	106	177	30	76	6.9E-07	6.6E-08	7.8E-07	3.1E-08	1.0E-06	1.0E-06	4.1E-08	1.1E-09
330785W	Le Flore	Oklahoma	0.1825	0.2632	335	548	372	877	7.6E-06	7.2E-07	8.6E-06	3.3E-07	1.1E-05	1.1E-05	4.4E-07	1.2E-08
330784P	Le Flore	Oklahoma	0.1848	0.2666	355	579	399	939	8.1E-06	7.7E-07	9.2E-06	3.6E-07	1.2E-05	1.2E-05	4.8E-07	1.2E-08
330736A	Le Flore	Oklahoma	0.0314	0.0473	84	140	16	40	3.6E-07	3.5E-08	4.1E-07	1.6E-08	5.3E-07	5.3E-07	2.1E-08	5.5E-10
330869S	Bowie	Texas	0.0336	0.0499	103	174	21	53	4.8E-07	4.5E-08	5.4E-07	2.1E-08	6.9E-07	6.9E-07	2.8E-08	7.2E-10
330872A	Bowie	Texas	0.0546	0.0795	179	300	60	145	1.3E-06	1.2E-07	1.4E-06	5.6E-08	1.9E-06	1.9E-06	7.5E-08	1.9E-09
330867D	Bowie	Texas	0.0348	0.0515	98	166	21	52	4.7E-07	4.5E-08	5.3E-07	2.1E-08	6.8E-07	6.8E-07	2.7E-08	7.1E-10
021749Y	Collin	Texas	0.0030	0.0033	23	24	0	0	9.3E-10	8.9E-11	1.1E-09	4.1E-11	1.3E-09	1.4E-09	5.5E-11	1.4E-12
021770E	Collin	Texas	0.0026	0.0029	12	13	0	0	4.3E-10	4.1E-11	4.9E-10	1.9E-11	6.2E-10	6.2E-10	2.5E-11	6.5E-13
789644J	Collin	Texas	0.0033	0.0036	77	81	2	2	3.4E-09	3.2E-10	3.9E-09	1.5E-10	4.9E-09	4.9E-09	2.0E-10	5.2E-12
789645R	Collin	Texas	0.0031	0.0034	52	55	1	1	2.2E-09	2.1E-10	2.5E-09	9.6E-11	3.1E-09	3.1E-09	1.3E-10	3.3E-12
789633W	Collin	Texas	0.0045	0.0050	7	7	0	0	4.5E-10	4.3E-11	5.1E-10	2.0E-11	6.5E-10	6.5E-10	2.6E-11	6.8E-13
021635L	Collin	Texas	0.0031	0.0034	90	95	2	2	3.8E-09	3.6E-10	4.3E-09	1.7E-10	5.5E-09	5.5E-09	2.2E-10	5.8E-12
919239F	Collin	Texas	0.0031	0.0034	45	47	1	1	1.9E-09	1.8E-10	2.1E-09	8.2E-11	2.7E-09	2.7E-09	1.1E-10	2.8E-12
789632P	Collin	Texas	0.0028	0.0031	54	56	1	1	2.0E-09	1.9E-10	2.3E-09	8.9E-11	2.9E-09	2.9E-09	1.2E-10	3.1E-12
789638F	Collin	Texas	0.0036	0.0039	67	70	1	2	3.2E-09	3.0E-10	3.6E-09	1.4E-10	4.6E-09	4.6E-09	1.9E-10	4.8E-12
789635K	Collin	Texas	0.0030	0.0033	22	23	0	0	8.7E-10	8.3E-11	9.8E-10	3.8E-11	1.3E-09	1.3E-09	5.1E-11	1.3E-12
753583T	Collin	Texas	0.0029	0.0032	25	27	0	1	9.8E-10	9.4E-11	1.1E-09	4.3E-11	1.4E-09	1.4E-09	5.8E-11	1.5E-12
789636S	Collin	Texas	0.0045	0.0049	44	46	1	1	2.6E-09	2.5E-10	3.0E-09	1.2E-10	3.8E-09	3.8E-09	1.5E-10	4.0E-12
021638G	Collin	Texas	0.0029	0.0032	45	47	1	1	1.7E-09	1.7E-10	2.0E-09	7.7E-11	2.5E-09	2.5E-09	1.0E-10	2.7E-12
919268R	Collin	Texas	0.0035	0.0038	65	68	1	2	3.0E-09	2.9E-10	3.4E-09	1.3E-10	4.4E-09	4.4E-09	1.8E-10	4.6E-12
789640G	Collin	Texas	0.0029	0.0032	15	15	0	0	5.6E-10	5.3E-11	6.4E-10	2.5E-11	8.1E-10	8.2E-10	3.3E-11	8.5E-13
789631H	Collin	Texas	0.0122	0.0134	112	117	8	10	2.0E-08	1.9E-09	2.2E-08	8.6E-10	2.8E-08	2.8E-08	1.1E-09	3.0E-11
789629G	Collin	Texas	0.0036	0.0039	41	43	1	1	1.9E-09	1.8E-10	2.2E-09	8.6E-11	2.8E-09	2.8E-09	1.1E-10	2.9E-12
753757M	Collin	Texas	0.0028	0.0030	30	31	0	1	1.1E-09	1.0E-10	1.2E-09	4.8E-11	1.6E-09	1.6E-09	6.4E-11	1.7E-12
789628A	Collin	Texas	0.0026	0.0029	29	30	0	1	1.0E-09	9.6E-11	1.1E-09	4.4E-11	1.5E-09	1.5E-09	5.9E-11	1.5E-12
789648L	Collin	Texas	0.0029	0.0032	31	32	1	1	1.2E-09	1.1E-10	1.3E-09	5.2E-11	1.7E-09	1.7E-09	6.9E-11	1.8E-12
789654P	Collin	Texas	0.0030	0.0033	7	7	0	0	2.8E-10	2.7E-11	3.2E-10	1.2E-11	4.0E-10	4.1E-10	1.6E-11	4.2E-13
789653H	Collin	Texas	0.0020	0.0022	23	24	0	0	5.2E-10	4.9E-11	5.9E-10	2.3E-11	7.5E-10	7.5E-10	3.0E-11	7.9E-13
789652B	Collin	Texas	0.0014	0.0016	18	19	0	0	2.9E-10	2.8E-11	3.3E-10	1.3E-11	4.2E-10	4.2E-10	1.7E-11	4.4E-13
790146W	Collin	Texas	0.0032	0.0035	28	29	1	1	1.2E-09	1.1E-10	1.3E-09	5.2E-11	1.7E-09	1.7E-09	6.9E-11	1.8E-12
331279Y	Collin	Texas	0.0032	0.0035	30	31	1	1	1.3E-09	1.2E-10	1.4E-09	5.6E-11	1.9E-09	1.9E-09	7.5E-11	1.9E-12
021765H	Denton	Texas	0.0038	0.0041	72	75	2	2	3.6E-09	3.4E-10	4.1E-09	1.6E-10	5.2E-09	5.2E-09	2.1E-10	5.5E-12
021767W	Denton	Texas	0.0028	0.0030	33	34	1	1	1.2E-09	1.2E-10	1.4E-09	5.3E-11	1.8E-09	1.8E-09	7.1E-11	1.8E-12
021691T	Denton	Texas	0.0029	0.0031	10	10	0	0	3.7E-10	3.6E-11	4.2E-10	1.6E-11	5.4E-10	5.4E-10	2.2E-11	5.7E-13
021700P	Denton	Texas	0.0028	0.0031	18	19	0	0	6.7E-10	6.4E-11	7.6E-10	3.0E-11	9.8E-10	9.8E-10	4.0E-11	1.0E-12
021726S	Denton	Texas	0.0030	0.0032	24	25	0	0	9.4E-10	8.9E-11	1.1E-09	4.1E-11	1.4E-09	1.4E-09	5.5E-11	1.4E-12
021696C	Denton	Texas	0.0028	0.0030	10	11	0	0	3.8E-10	3.6E-11	4.3E-10	1.7E-11	5.5E-10	5.5E-10	2.2E-11	5.7E-13
021646Y	Denton	Texas	0.0028	0.0031	75	79	1	1	2.8E-09	2.7E-10	3.2E-09	1.3E-10	4.1E-09	4.1E-09	1.7E-10	4.3E-12
021676R	Denton	Texas	0.0035	0.0038	26	27	1	1	1.2E-09	1.2E-10	1.4E-09	5.4E-11	1.8E-09	1.8E-09	7.1E-11	1.8E-12
021672N	Denton	Texas	0.0030	0.0033	50	53	1	1	2.0E-09	1.9E-10	2.3E-09	8.9E-11	2.9E-09	2.9E-09	1.2E-10	3.1E-12
331277K	Denton	Texas	0.0033	0.0037	72	75	1	2	3.2E-09	3.0E-10	3.6E-09	1.4E-10	4.6E-09	4.6E-09	1.9E-10	4.9E-12
020557D	Denton	Texas	0.0167	0.0179	158	163	16	18	2.5E-08	2.4E-09	2.9E-08	1.1E-09	3.7E-08	3.7E-08	1.5E-09	3.8E-11
020572F	Denton	Texas	0.0209	0.0224	254	263	32	36	5.1E-08	4.9E-09	5.8E-08	2.3E-09	7.4E-08	7.5E-08	3.0E-09	7.8E-11
021774G	Denton	Texas	0.0026	0.0028	16	17	0	0	5.5E-10	5.2E-11	6.2E-10	2.4E-11	7.9E-10	8.0E-10	3.2E-11	8.3E-13
021669F	Denton	Texas	0.0026	0.0028	10	11	0	0	3.5E-10	3.4E-11	4.0E-10	1.6E-11	5.1E-10	5.2E-10	2.1E-11	5.4E-13
919241G	Denton	Texas	0.0026	0.0028	8	9	0	0	2.8E-10	2.7E-11	3.2E-10	1.2E-11	4.0E-10	4.1E-10	1.6E-11	4.2E-13
020563G	Denton	Texas	0.0162	0.0173	111	115	11	12	1.7E-08	1.6E-09	1.9E-08	7.6E-10	2.5E-08	2.5E-08	1.0E-09	2.6E-11
793688R	Duval	Texas	0.1214	0.1195	524	645	387	469	1.2E-06	1.2E-07	1.4E-06	5.5E-08	1.8E-06	1.8E-06	7.3E-08	1.9E-09
743475U	Fort Bend	Texas	0.0212	0.0283	50	80	6	14	1.1E-07	1.1E-08	1.2E-07	4.9E-09	1.6E-07	1.6E-07	6.5E-09	1.7E-10
440652H	Fort Bend	Texas	0.1491	0.1549	779	881	706	830	1.9E-06	1.8E-07	2.1E-06	8.2E-08	2.7E-06	2.7E-06	1.1E-07	2.8E-09
743483L	Fort Bend	Texas	0.0222	0.0288	44	69	6	12	9.1E-08	8.7E-09	1.0E-07	4.0E-09	1.3E-07	1.3E-07	5.3E-09	1.4E-10
743689L	Fort Bend	Texas	0.0790	0.0814	1,147	1,278	552	633	1.2E-06	1.2E-07	1.4E-06	5.4E-08	1.8E-06	1.8E-06	7.2E-08	1.9E-09
743726L	Fort Bend	Texas	0.0834	0.0859	750	836	381	437	8.4E-07	8.0E-08	9.5E-07	3.7E-08	1.2E-06	1.2E-06	4.9E-08	1.3E-09
743719B	Fort Bend	Texas	0.0863	0.0886	295	328	155	177	3.3E-07	3.1E-08	3.7E-07	1.5E-08	4.8E-07	4.8E-07	1.9E-08	5.0E-10
743724X	Fort Bend	Texas	0.0863	0.0889	431	480	226	260	5.0E-07	4.8E-08	5.7E-07	2.2E-08	7.3E-07	7.3E-07	2.9E-08	7.6E-10
743731H	Fort Bend	Texas	0.0499	0.0498	257	307	78	93	2.2E-07	2.1E-08	2.5E-07	9.8E-09	3.2E-07	3.2E-07	1.3E-08	3.4E-10
743727T	Fort Bend	Texas	0.0427	0.0513	194	250	50	78	4.1E-07	4.0E-08	4.7E-07	1.8E-08	6.0E-07	6.0E-07	2.4E-08	6.3E-10
924008H	Fort Bend	Texas	0.0746	0.0769	374	416	170	195	3.8E-07	3.6E-08	4.3E-07	1.7E-08	5.4E-07	5.5E-07	2.2E-08	5.7E-10
924009P	Fort Bend	Texas	0.0706	0.0727	336	374	144	165	3.2E-07	3.0E-08	3.6E-07	1.4E-08	4.6E-07	4.6E-07	1.9E-08	4.9E-10
743695P	Fort Bend	Texas	0.0823	0.0848	1,412	1,573	707	811	1.6E-06	1.5E-07	1.8E-06	6.9E-08	2.3E-06	2.3E-06	9.2E-08	2.4E-09
412514U	Fort Bend	Texas	0.0737	0.0760	331	369	149	171	3.3E-07	3.1E-08	3.7E-07	1.5E-08	4.8E-07	4.8E-07	1.9E-08	5.0E-10
924006U	Fort Bend	Texas	0.0740	0.0762	219	244	99	113	2.2E-07	2.1E-08	2.5E-07	9.6E-09	3.2E-07	3.2E-07	1.3E-08	3.3E-10
924007B	Fort Bend	Texas	0.0746	0.0769	239	266	109	125	2.4E-07	2.3E-08	2.7E-07	1.1E-08	3.5E-07	3.5E-07	1.4E-08	3.7E-10
743699S	Fort Bend	Texas	0.0747	0.0769	749	834	340	390	7.5E-07	7.2E-08	8.5E-07	3.3E-08	1.1E-06	1.1E-06	4.4E-08	1.1E-09
745055W	Fort Bend	Texas	0.0826	0.0851	361	402	181	208	4.0E-07	3.8E-08	4.5E-07	1.8E-08	5.8E-07	5.8E-07	2.4E-08	6.1E-10
743713K	Fort Bend	Texas	0.0742	0.0765	570	635	257	295	5.7E-07	5.4E-08	6.5E-07	2.5E-08	8.3E-07	8.3E-07	3.3E-08	8.7E-10
743698K	Fort Bend	Texas	0.0738	0.0760	499	556	224	257	5.0E-07	4.7E-08	5.6E-07	2.2E-08	7.2E-07	7.2E-07	2.9E-08	7.5E-10
743703E	Fort Bend	Texas	0.0709	0.0731	374	416	161	185	3.6E-07	3.4E-08	4.0E-07	1.6E-08	5.2E-07	5.2E-07	2.1E-08	5.4E-10
743716F	Fort Bend	Texas	0.0830	0.0856	474	528	239	275	5.3E-07	5.1E-08	6.0E-07	2.3E-08	7.7E-07	7.7E-07	3.1E-08	8.1E-10
745044J	Fort Bend	Texas	0.0755	0.0778	1,250	1,392	574	659	1.3E-06	1.2E-07	1.4E-06	5.6E-08	1.8E-06	1.8E-06	7.5E-08	1.9E-09
922512N	Fort Bend	Texas	0.0738	0.0760	429	478	193	221	4.3E-07	4.1E-08	4.8E-07	1.9E-08	6.2E-07	6.2E-07	2.5E-08	6.5E-10
922513V	Fort Bend	Texas	0.0842	0.0844	478	519	245	266	3.2E-07	3.1E-08	3.6E-07	1.4E-08	4.7E-07	4.7E-07	1.9E-08	4.9E-10
762865H	Harris	Texas	0.0433	0.0478	119	141	31	41	1.5E-07	1.4E-08	1.7E-07	6.5E-09	2.1E-07	2.1E-07	8.6E-09	2.2E-10
762872T	Harris	Texas	0.0578	0.0634	279	331	98	128	4.4E-07	4.2E-08	5.0E-07	2.0E-08	6.4E-07	6.4E-07	2.6E-08	6.7E-10
762869K	Harris	Texas	0.0540	0.0593	132	156	43	56	2.0E-07	1.9E-08	2.2E-07	8.6E-09	2.8E-07	2.8E-07	1.1E-08	3.0E-10
758519L	Harris	Texas	0.0611	0.0665	983	1,154	366	467	1.5E-06	1.5E-07	1.7E-06	6.7E-08	2.2E-06	2.2E-06	8.9E-08	2.3E-09
758518E	Harris	Texas	0.0625	0.0680	1,639	1,924	623	796	2.6E-06	2.5E-07	2.9E-06	1.1E-07	3.8E-06	3.8E-06	1.5E-07	3.9E-09
758517X	Harris	Texas	0.0613	0.0667	995	1,168	371	474	1.5E-06	1.5E-07	1.8E-06	6.8E-08	2.2E-06	2.2E-06	9.1E-08	2.3E-09
758521M	Harris	Texas	0.0556	0.0605	482	566	163	208	6.8E-07	6.5E-08	7.7E-07	3.0E-08	9.9E-07	9.9E-07	4.0E-08	1.0E-09
762904W	Harris	Texas	0.0444	0.0516	714	894	193	281	1.3E-06	1.3E-07	1.5E-06	5.8E-08	1.9E-06	1.9E-06	7.8E-08	2.0E-09
762889W	Harris	Texas	0.0447	0.0520	151	189	41	60	2.8E-07	2.7E-08	3.2E-07	1.2E-08	4.1E-07	4.1E-07	1.6E-08	4.3E-10
755621G	Harris	Texas	0.0746	0.0768	926	1,032	420	482	9.3E-07	8.9E-08	1.1E-06	4.1E-08	1.3E-06	1.4E-06	5.5E-08	1.4E-09
758533G	Harris	Texas	0.0659	0.0705	1,046	1,210	419	519	1.5E-06	1.4E-07	1.7E-06	6.6E-08	2.2E-06	2.2E-06	8.8E-08	2.3E-09
755624C	Harris	Texas	0.0512	0.0534	1,218	1,366	379	444	9.6E-07	9.2E-08	1.1E-06	4.3E-08	1.4E-06	1.4E-06	5.6E-08	1.5E-09
758540S	Harris	Texas	0.1324	0.1396	1,938	2,223	1,561	1,887	4.9E-06	4.7E-07	5.5E-06	2.2E-07	7.1E-06	7.1E-06	2.9E-07	7.4E-09
758180W	Harris	Texas	0.0701	0.0740	534	608	228	274	6.9E-07	6.6E-08	7.8E-07	3.1E-08	1.0E-06	1.0E-06	4.1E-08	1.1E-09
755622N	Harris	Texas	0.0756	0.0778	1,043	1,161	479	550	1.1E-06	1.0E-07	1.2E-06	4.7E-08	1.5E-06	1.5E-06	6.2E-08	1.6E-09
758187U	Harris	Texas	0.4121	0.4201	2,020	2,263	5,063	5,784	1.1E-05	1.0E-06	1.2E-05	4.8E-07	1.6E-05	1.6E-05	6.3E-07	1.6E-08
762907S	Harris	Texas	0.0539	0.0592	259	307	85	111	3.8E-07	3.7E-08	4.3E-07	1.7E-08	5.6E-07	5.6E-07	2.3E-08	5.8E-10

Table K.10-8. Grade Crossing Analysis - Acquisition-Related HAPs Emissions by Crossing

			Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		Acquisition-Related Emissions (tons/year)							
FRA Crossing ID	County	State	NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
758293C	Harris	Texas	0.0676	0.0714	426	485	175	211	5.3E-07	5.1E-08	6.0E-07	2.4E-08	7.7E-07	7.8E-07	3.1E-08	8.1E-10
758534N	Harris	Texas	0.1253	0.1321	1,546	1,773	1,179	1,425	3.7E-06	3.5E-07	4.2E-06	1.6E-07	5.4E-06	5.4E-06	2.2E-07	5.6E-09
755618Y	Harris	Texas	0.1526	0.1586	832	941	772	908	2.0E-06	1.9E-07	2.3E-06	9.0E-08	2.9E-06	3.0E-06	1.2E-07	3.1E-09
758514C	Harris	Texas	0.0604	0.0657	1,377	1,617	506	646	2.1E-06	2.0E-07	2.4E-06	9.3E-08	3.1E-06	3.1E-06	1.2E-07	3.2E-09
758532A	Harris	Texas	0.1202	0.1267	310	355	227	274	7.1E-07	6.8E-08	8.0E-07	3.1E-08	1.0E-06	1.0E-06	4.2E-08	1.1E-09
758512N	Harris	Texas	0.0582	0.0633	729	856	258	330	1.1E-06	1.0E-07	1.2E-06	4.7E-08	1.6E-06	1.6E-06	6.3E-08	1.6E-09
758178V	Harris	Texas	0.0786	0.0829	852	971	407	490	1.2E-06	1.2E-07	1.4E-06	5.5E-08	1.8E-06	1.8E-06	7.3E-08	1.9E-09
762892E	Harris	Texas	0.0449	0.0522	308	386	84	122	5.8E-07	5.5E-08	6.5E-07	2.5E-08	8.4E-07	8.4E-07	3.4E-08	8.8E-10
758531T	Harris	Texas	0.1177	0.1241	1,069	1,226	765	925	2.4E-06	2.3E-07	2.7E-06	1.1E-07	3.5E-06	3.5E-06	1.4E-07	3.6E-09
758610E	Harris	Texas	0.0600	0.0653	285	334	104	133	4.3E-07	4.1E-08	4.9E-07	1.9E-08	6.3E-07	6.3E-07	2.5E-08	6.6E-10
758611L	Harris	Texas	0.0601	0.0654	289	339	106	135	4.4E-07	4.2E-08	5.0E-07	1.9E-08	6.4E-07	6.4E-07	2.6E-08	6.7E-10
762901B	Harris	Texas	0.0562	0.0617	366	434	125	163	5.7E-07	5.4E-08	6.4E-07	2.5E-08	8.2E-07	8.2E-07	3.3E-08	8.6E-10
758523B	Harris	Texas	0.0558	0.0608	504	592	171	219	7.1E-07	6.8E-08	8.1E-07	3.2E-08	1.0E-06	1.0E-06	4.2E-08	1.1E-09
758513V	Harris	Texas	0.0622	0.0677	1,337	1,570	506	647	2.1E-06	2.0E-07	2.4E-06	9.3E-08	3.1E-06	3.1E-06	1.2E-07	3.2E-09
758525P	Harris	Texas	0.0534	0.0581	249	293	81	103	3.4E-07	3.2E-08	3.8E-07	1.5E-08	4.9E-07	4.9E-07	2.0E-08	5.1E-10
746645W	Jackson	Texas	0.0223	0.0289	46	72	6	13	9.6E-08	9.2E-09	1.1E-07	4.2E-09	1.4E-07	1.4E-07	5.6E-09	1.5E-10
746643H	Jackson	Texas	0.0222	0.0288	67	105	9	18	1.4E-07	1.3E-08	1.6E-07	6.1E-09	2.0E-07	2.0E-07	8.1E-09	2.1E-10
746639T	Jackson	Texas	0.0225	0.0292	166	258	23	46	3.5E-07	3.3E-08	3.9E-07	1.5E-08	5.0E-07	5.0E-07	2.0E-08	5.3E-10
746621H	Jackson	Texas	0.0253	0.0328	127	198	20	40	3.0E-07	2.9E-08	3.4E-07	1.3E-08	4.3E-07	4.4E-07	1.8E-08	4.5E-10
446594K	Jefferson	Texas	0.0670	0.0707	397	452	162	195	4.9E-07	4.7E-08	5.6E-07	2.2E-08	7.1E-07	7.2E-07	2.9E-08	7.5E-10
762721D	Jefferson	Texas	0.0251	0.0316	352	473	54	91	5.6E-07	5.3E-08	6.3E-07	2.5E-08	8.1E-07	8.1E-07	3.3E-08	8.5E-10
762739N	Jefferson	Texas	0.0239	0.0301	69	92	10	17	1.0E-07	9.9E-09	1.2E-07	4.6E-09	1.5E-07	1.5E-07	6.1E-09	1.6E-10
762743D	Jefferson	Texas	0.0332	0.0414	91	122	18	31	1.8E-07	1.8E-08	2.1E-07	8.1E-09	2.7E-07	2.7E-07	1.1E-08	2.8E-10
329544L	Jefferson	Texas	0.0323	0.0456	80	123	16	34	2.8E-07	2.7E-08	3.2E-07	1.2E-08	4.1E-07	4.1E-07	1.6E-08	4.2E-10
329542X	Jefferson	Texas	0.0320	0.0453	72	112	14	31	2.5E-07	2.4E-08	2.9E-07	1.1E-08	3.7E-07	3.7E-07	1.5E-08	3.8E-10
329540J	Jefferson	Texas	0.0321	0.0454	75	116	15	32	2.6E-07	2.5E-08	3.0E-07	1.2E-08	3.8E-07	3.8E-07	1.5E-08	4.0E-10
329546A	Jefferson	Texas	0.0322	0.0455	77	119	15	33	2.7E-07	2.6E-08	3.1E-07	1.2E-08	3.9E-07	3.9E-07	1.6E-08	4.1E-10
329545T	Jefferson	Texas	0.0332	0.0469	104	162	21	46	3.8E-07	3.6E-08	4.3E-07	1.7E-08	5.5E-07	5.5E-07	2.2E-08	5.7E-10
329531K	Jefferson	Texas	0.0329	0.0464	143	221	29	63	5.1E-07	4.9E-08	5.8E-07	2.3E-08	7.4E-07	7.4E-07	3.0E-08	7.7E-10
793696H	Jim Hogg	Texas	0.0652	0.0659	316	395	125	158	4.9E-07	4.7E-08	5.6E-07	2.2E-08	7.1E-07	7.2E-07	2.9E-08	7.5E-10
793818K	Jim Wells	Texas	0.2206	0.2129	350	427	469	553	1.3E-06	1.2E-07	1.4E-06	5.5E-08	1.8E-06	1.8E-06	7.4E-08	1.9E-09
793651B	Jim Wells	Texas	0.0945	0.0939	361	447	208	255	7.2E-07	6.8E-08	8.1E-07	3.2E-08	1.0E-06	1.0E-06	4.2E-08	1.1E-09
793810F	Jim Wells	Texas	0.2428	0.2344	460	561	679	800	1.8E-06	1.7E-07	2.1E-06	8.0E-08	2.6E-06	2.6E-06	1.1E-07	2.8E-09
793959U	Jim Wells	Texas	0.2158	0.2083	523	638	687	809	1.8E-06	1.8E-07	2.1E-06	8.1E-08	2.7E-06	2.7E-06	1.1E-07	2.8E-09
793649A	Jim Wells	Texas	0.0919	0.0913	134	166	75	92	2.6E-07	2.5E-08	2.9E-07	1.1E-08	3.7E-07	3.8E-07	1.5E-08	3.9E-10
793819S	Jim Wells	Texas	0.2475	0.2390	1,566	1,912	2,359	2,779	6.3E-06	6.0E-07	7.1E-06	2.8E-07	9.1E-06	9.2E-06	3.7E-07	9.6E-09
793821T	Jim Wells	Texas	0.2146	0.2072	478	583	624	735	1.7E-06	1.6E-07	1.9E-06	7.4E-08	2.4E-06	2.4E-06	9.8E-08	2.5E-09
793814H	Jim Wells	Texas	0.3232	0.3120	1,613	1,969	3,171	3,737	8.5E-06	8.1E-07	9.6E-06	3.7E-07	1.2E-05	1.2E-05	5.0E-07	1.3E-08
762761B	Liberty	Texas	0.0221	0.0285	55	75	7	13	8.5E-08	8.1E-09	9.6E-08	3.7E-09	1.2E-07	1.2E-07	5.0E-09	1.3E-10
762786W	Liberty	Texas	0.0354	0.0441	158	211	34	57	3.4E-07	3.3E-08	3.9E-07	1.5E-08	4.9E-07	5.0E-07	2.0E-08	5.2E-10
762789S	Liberty	Texas	0.0361	0.0451	179	240	39	66	4.0E-07	3.8E-08	4.5E-07	1.7E-08	5.7E-07	5.7E-07	2.3E-08	6.0E-10
762785P	Liberty	Texas	0.0356	0.0444	254	340	55	92	5.5E-07	5.3E-08	6.2E-07	2.4E-08	8.0E-07	8.0E-07	3.2E-08	8.4E-10
762770A	Liberty	Texas	0.0823	0.0894	173	204	87	111	3.6E-07	3.5E-08	4.1E-07	1.6E-08	5.3E-07	5.3E-07	2.1E-08	5.5E-10
762765D	Liberty	Texas	0.0544	0.0672	290	386	96	158	9.3E-07	8.8E-08	1.0E-06	4.1E-08	1.3E-06	1.3E-06	5.4E-08	1.4E-09
763062E	Liberty	Texas	0.0245	0.0308	279	375	42	70	4.3E-07	4.1E-08	4.9E-07	1.9E-08	6.2E-07	6.3E-07	2.5E-08	6.5E-10
427586S	Nueces	Texas	0.0846	0.0843	617	746	317	383	9.8E-07	9.3E-08	1.1E-06	4.3E-08	1.4E-06	1.4E-06	5.7E-08	1.5E-09
793749E	Nueces	Texas	0.3269	0.3124	359	436	714	828	1.7E-06	1.6E-07	1.9E-06	7.6E-08	2.5E-06	2.5E-06	1.0E-07	2.6E-09
427597E	Nueces	Texas	0.0236	0.0401	40	83	6	20	2.2E-07	2.1E-08	2.5E-07	9.6E-09	3.2E-07	3.2E-07	1.3E-08	3.3E-10
793743N	Nueces	Texas	0.1563	0.1524	152	186	144	173	4.2E-07	4.0E-08	4.8E-07	1.9E-08	6.2E-07	6.2E-07	2.5E-08	6.4E-10
329460R	Orange	Texas	0.0187	0.0351	44	86	5	18	2.0E-07	1.9E-08	2.3E-07	8.9E-09	2.9E-07	2.9E-07	1.2E-08	3.1E-10
329467N	Orange	Texas	0.0184	0.0347	54	107	6	22	2.5E-07	2.4E-08	2.8E-07	1.1E-08	3.6E-07	3.6E-07	1.4E-08	3.7E-10
329471D	Orange	Texas	0.0208	0.0390	332	657	42	156	1.7E-06	1.6E-07	1.9E-06	7.5E-08	2.5E-06	2.5E-06	1.0E-07	2.6E-09
329472K	Orange	Texas	0.0183	0.0344	46	90	5	19	2.1E-07	2.0E-08	2.3E-07	9.1E-09	3.0E-07	3.0E-07	1.2E-08	3.1E-10
927011B	Orange	Texas	0.0183	0.0343	44	87	5	18	2.0E-07	1.9E-08	2.3E-07	8.8E-09	2.9E-07	2.9E-07	1.2E-08	3.0E-10
427570V	Refugio	Texas	0.0847	0.0813	280	327	144	162	2.6E-07	2.5E-08	3.0E-07	1.2E-08	3.8E-07	3.8E-07	1.5E-08	4.0E-10
436030Y	San Patricio	Texas	0.0614	0.0599	100	117	37	43	8.3E-08	7.9E-09	9.4E-08	3.7E-09	1.2E-07	1.2E-07	4.9E-09	1.3E-10
436017K	San Patricio	Texas	0.0607	0.0592	109	129	40	46	9.0E-08	8.6E-09	1.0E-07	4.0E-09	1.3E-07	1.3E-07	5.3E-09	1.4E-10
436012B	San Patricio	Texas	0.0604	0.0589	157	184	57	66	1.3E-07	1.2E-08	1.5E-07	5.7E-09	1.9E-07	1.9E-07	7.5E-09	2.0E-10
436014P	San Patricio	Texas	0.0603	0.0588	99	116	36	42	8.1E-08	7.7E-09	9.2E-08	3.6E-09	1.2E-07	1.2E-07	4.8E-09	1.2E-10
436011U	San Patricio	Texas	0.0594	0.0581	384	453	139	160	3.2E-07	3.0E-08	3.6E-07	1.4E-08	4.6E-07	4.6E-07	1.9E-08	4.8E-10
020545J	Tarrant	Texas	0.0233	0.0249	137	142	19	22	3.1E-08	3.0E-09	3.5E-08	1.4E-09	4.5E-08	4.5E-08	1.8E-09	4.7E-11
435913V	Victoria	Texas	1.3940	1.1588	679	710	5,759	5,004	-1.1E-05	-1.1E-06	-1.3E-05	-5.0E-07	-1.6E-05	-1.6E-05	-6.6E-07	-1.7E-08
435914C	Victoria	Texas	0.0791	0.0716	377	412	181	179	-3.2E-08	-3.1E-09	-3.7E-08	-1.4E-09	-4.7E-08	-4.7E-08	-1.9E-09	-4.9E-11
746650T	Victoria	Texas	0.2329	0.2316	1,044	1,290	1,480	1,817	5.1E-06	4.8E-07	5.7E-06	2.2E-07	7.3E-06	7.3E-06	3.0E-07	7.7E-09
746558T	Victoria	Texas	0.0981	0.1183	484	721	289	518	3.5E-06	3.3E-07	3.9E-06	1.5E-07	5.0E-06	5.0E-06	2.0E-07	5.2E-09
746556E	Victoria	Texas	0.0926	0.1116	235	350	132	237	1.6E-06	1.5E-07	1.8E-06	7.0E-08	2.3E-06	2.3E-06	9.3E-08	2.4E-09
746653N	Victoria	Texas	0.8498	0.8241	2,102	2,564	10,868	12,853	3.0E-05	2.8E-06	3.4E-05	1.3E-06	4.3E-05	4.3E-05	1.7E-06	4.5E-08
746550N	Victoria	Texas	0.0926	0.1117	119	176	67	120	8.0E-07	7.6E-08	9.0E-07	3.5E-08	1.2E-06	1.2E-06	4.7E-08	1.2E-09
746510R	Victoria	Texas	0.2192	0.2188	203	252	271	336	9.7E-07	9.2E-08	1.1E-06	4.3E-08	1.4E-06	1.4E-06	5.7E-08	1.5E-09
746562H	Victoria	Texas	0.0433	0.0538	281	425	74	139	9.8E-07	9.3E-08	1.1E-06	4.3E-08	1.4E-06	1.4E-06	5.7E-08	1.5E-09
912105H	Victoria	Texas	0.1437	0.1446	283	352	247	309	9.3E-07	8.8E-08	1.0E-06	4.1E-08	1.3E-06	1.3E-06	5.4E-08	1.4E-09
746652G	Victoria	Texas	0.1519	0.1528	664	825	614	766	2.3E-06	2.2E-07	2.6E-06	1.0E-07	3.3E-06	3.3E-06	1.3E-07	3.5E-09
746551V	Victoria	Texas	0.0934	0.1127	138	206	79	141	9.4E-07	9.0E-08	1.1E-06	4.1E-08	1.4E-06	1.4E-06	5.5E-08	1.4E-09
793598S	Webb	Texas	0.4558	0.4355	1,758	2,134	4,873	5,654	1.2E-05	1.1E-06	1.3E-05	5.2E-07	1.7E-05	1.7E-05	6.9E-07	1.8E-08
793596D	Webb	Texas	0.3297	0.3150	257	313	516	599	1.2E-06	1.2E-07	1.4E-06	5.5E-08	1.8E-06	1.8E-06	7.3E-08	1.9E-09
743432B	Wharton	Texas	0.1082	0.1312	195	292	128	233	1.6E-06	1.5E-07	1.8E-06	7.0E-08	2.3E-06	2.3E-06	9.3E-08	2.4E-09
743440T	Wharton	Texas	0.1110	0.1346	126	189	85	155	1.0E-06	1.0E-07	1.2E-06	4.6E-08	1.5E-06	1.5E-06	6.2E-08	1.6E-09
743438S	Wharton	Texas	0.1105	0.1340	121	181	81	148	1.0E-06	9.5E-08	1.1E-06	4.4E-08	1.4E-06	1.5E-06	5.9E-08	1.5E-09
743435W	Wharton	Texas	0.1086	0.1317	404	606	266	485	3.3E-06	3.1E-07	3.7E-06	1.4E-07	4.8E-06	4.8E-06	1.9E-07	5.0E-09
743352H	Wharton	Texas	0.0232	0.0302	75	117	11	21	1.6E-07	1.5E-08	1.8E-07	7.2E-09	2.3E-07	2.4E-07	9.5E-09	2.5E-10
743359F	Wharton	Texas	0.0252	0.0327	195	303	30	60	4.6E-07	4.3E-08	5.2E-07	2.0E-08	6.6E-07	6.6E-07	2.7E-08	6.9E-10

Note:

Vehicles Delayed and Average Delay provided from the transportation study

Table K.10-9. Grade Crossing Analysis – On-road Vehicle Emission Factors

Roadway Idling Emission Factors (g/hr)

	NOX	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
2027	5.67	1.29	0.08	0.07	0.03	23.44	4997.9	0.65	0.06	1.4E-02	1.3E-03	1.5E-02	6.0E-04	2.0E-02	2.0E-02	8.0E-04	2.1E-05

Source: MOVES 3

Notes:

State-Level Default Scale with Default Inputs except Average Speed Distribution set to SpeedBin 1
Represents an average of emission factors for all 24 hours and 12 months for weekday
All eight States with an analyzed grade crossing included
All Vehicle and Fuel types included
Rural and Urban Unrestricited Access Roadways included

K.11 Truck-to-Rail Diversion Analysis

OEA conducted an analysis of the emissions changes associated with truck-to-rail diversions that would result from the Proposed Acquisition. OEA estimated anticipated truck activity reduction in vehicle miles traveled (VMT) due to the Proposed Acquisition in *Section 3.4.1*. OEA derived Emission Factors for the on-the-road trucks using EPA's MOVES3 model (EPA 2022). OEA ran the MOVES3 model to establish a set of representative emission factors for all states where VMT reduction is expected using model default inputs. The emission factors represent long haul combination trucks traveling default speed distributions for rural and urban restricted roadways in a grams per mile format. OEA combined the resulting emission factors and VMT data to create an emission inventory for system-wide truck-to-rail diversions.

Table K.11-1 and **Table K.11-2** summarize the truck-to-rail diversion analysis. **Table K.11-3** shows the on-road emissions factors.

Table K.11-1. Truck to Rail Diversion Analysis- Criteria Pollutant Summary by State

	Annual Truck Reduction	Acquisition-Related Criteria Emissions (tons/year)									
State	**VMT**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2**	**CH4**	**N2O**	**CO2e**
Arizona	-606,268	-1.7	-0.1	-0.1	0.0	0.0	-1.0	-958	-0.01	0.00	-959
Arkansas	-3,094,745	-8.9	-0.3	-0.3	-0.2	0.0	-5.0	-4,892	-0.04	0.00	-4,895
California	-257,799	-0.7	0.0	0.0	0.0	0.0	-0.4	-408	0.00	0.00	-408
Colorado	-225,090	-0.6	0.0	0.0	0.0	0.0	-0.4	-356	0.00	0.00	-356
Idaho	-91,499	-0.3	0.0	0.0	0.0	0.0	-0.1	-145	0.00	0.00	-145
Illinois	-8,637,622	-24.8	-0.7	-0.9	-0.4	0.0	-13.9	-13,654	-0.11	-0.01	-13,661
Indiana	-2,393,629	-6.9	-0.2	-0.2	-0.1	0.0	-3.9	-3,784	-0.03	0.00	-3,786
Iowa	-5,243,207	-15.1	-0.4	-0.5	-0.3	0.0	-8.5	-8,288	-0.07	-0.01	-8,292
Kansas	-3,204,537	-9.2	-0.3	-0.3	-0.2	0.0	-5.2	-5,066	-0.04	0.00	-5,068
Kentucky	-2,347,935	-6.8	-0.2	-0.2	-0.1	0.0	-3.8	-3,712	-0.03	0.00	-3,713
Michigan	-3,818,716	-11.0	-0.3	-0.4	-0.2	0.0	-6.2	-6,037	-0.05	-0.01	-6,040
Minnesota	-2,099,572	-6.0	-0.2	-0.2	-0.1	0.0	-3.4	-3,319	-0.03	0.00	-3,321
Missouri	-12,228,607	-35.2	-1.0	-1.3	-0.6	-0.1	-19.7	-19,331	-0.16	-0.02	-19,340
Montana	-581,672	-1.7	0.0	-0.1	0.0	0.0	-0.9	-919	-0.01	0.00	-920
Nebraska	-130,578	-0.4	0.0	0.0	0.0	0.0	-0.2	-206	0.00	0.00	-207
New Mexico	-1,206,426	-3.5	-0.1	-0.1	-0.1	0.0	-1.9	-1,907	-0.02	0.00	-1,908
Ohio	-1,315,116	-3.8	-0.1	-0.1	-0.1	0.0	-2.1	-2,079	-0.02	0.00	-2,080
Oklahoma	-11,392,073	-32.8	-1.0	-1.2	-0.6	-0.1	-18.4	-18,008	-0.15	-0.02	-18,017
Oregon	-69,499	-0.2	0.0	0.0	0.0	0.0	-0.1	-110	0.00	0.00	-110
Tennessee	-768,071	-2.2	-0.1	-0.1	0.0	0.0	-1.2	-1,214	-0.01	0.00	-1,215
Texas	-20,096,753	-57.8	-1.7	-2.1	-1.0	-0.1	-32.4	-31,768	-0.26	-0.03	-31,784
Utah	-13,853	0.0	0.0	0.0	0.0	0.0	0.0	-22	0.00	0.00	-22
Washington	-77,567	-0.2	0.0	0.0	0.0	0.0	-0.1	-123	0.00	0.00	-123
Wyoming	-470,876	-1.4	0.0	0.0	0.0	0.0	-0.8	-744	-0.01	0.00	-745
System Wide	**-80,371,708**	**-231.2**	**-6.8**	**-8.3**	**-4.0**	**-0.4**	**-129.6**	**-127,050**	**-1.04**	**-0.13**	**-127,113**

Notes:

Truck VMT Reduction provided from the transportation study

Table K.11-2. Truck to Rail Diversion Analysis- HAPs Summary by State

	Annual Truck Reduction	Acquisition-Related HAP Emissions (tons/year)							
State	**VMT**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
Arizona	-606,268	-2.5E-03	-2.1E-04	-1.1E-04	-3.2E-05	-4.5E-04	-2.7E-03	-6.8E-05	-1.7E-06
Arkansas	-3,094,745	-1.3E-02	-1.1E-03	-5.5E-04	-1.6E-04	-2.3E-03	-1.4E-02	-3.5E-04	-8.8E-06
California	-257,799	-1.1E-03	-9.0E-05	-4.6E-05	-1.4E-05	-1.9E-04	-1.2E-03	-2.9E-05	-7.4E-07
Colorado	-225,090	-9.4E-04	-7.9E-05	-4.0E-05	-1.2E-05	-1.7E-04	-1.0E-03	-2.5E-05	-6.4E-07
Idaho	-91,499	-3.8E-04	-3.2E-05	-1.6E-05	-4.8E-06	-6.7E-05	-4.1E-04	-1.0E-05	-2.6E-07
Illinois	-8,637,622	-3.6E-02	-3.0E-03	-1.5E-03	-4.5E-04	-6.3E-03	-3.9E-02	-9.7E-04	-2.5E-05
Indiana	-2,393,629	-1.0E-02	-8.4E-04	-4.3E-04	-1.3E-04	-1.8E-03	-1.1E-02	-2.7E-04	-6.8E-06
Iowa	-5,243,207	-2.2E-02	-1.8E-03	-9.4E-04	-2.8E-04	-3.9E-03	-2.3E-02	-5.9E-04	-1.5E-05
Kansas	-3,204,537	-1.3E-02	-1.1E-03	-5.7E-04	-1.7E-04	-2.4E-03	-1.4E-02	-3.6E-04	-9.2E-06
Kentucky	-2,347,935	-9.8E-03	-8.2E-04	-4.2E-04	-1.2E-04	-1.7E-03	-1.1E-02	-2.6E-04	-6.7E-06
Michigan	-3,818,716	-1.6E-02	-1.3E-03	-6.8E-04	-2.0E-04	-2.8E-03	-1.7E-02	-4.3E-04	-1.1E-05
Minnesota	-2,099,572	-8.8E-03	-7.3E-04	-3.8E-04	-1.1E-04	-1.5E-03	-9.4E-03	-2.4E-04	-6.0E-06
Missouri	-12,228,607	-5.1E-02	-4.3E-03	-2.2E-03	-6.4E-04	-9.0E-03	-5.5E-02	-1.4E-03	-3.5E-05
Montana	-581,672	-2.4E-03	-2.0E-04	-1.0E-04	-3.1E-05	-4.3E-04	-2.6E-03	-6.5E-05	-1.7E-06
Nebraska	-130,578	-5.5E-04	-4.6E-05	-2.3E-05	-6.9E-06	-9.6E-05	-5.8E-04	-1.5E-05	-3.7E-07
New Mexico	-1,206,426	-5.0E-03	-4.2E-04	-2.2E-04	-6.4E-05	-8.9E-04	-5.4E-03	-1.4E-04	-3.4E-06
Ohio	-1,315,116	-5.5E-03	-4.6E-04	-2.4E-04	-6.9E-05	-9.7E-04	-5.9E-03	-1.5E-04	-3.8E-06
Oklahoma	-11,392,073	-4.8E-02	-4.0E-03	-2.0E-03	-6.0E-04	-8.4E-03	-5.1E-02	-1.3E-03	-3.3E-05
Oregon	-69,499	-2.9E-04	-2.4E-05	-1.2E-05	-3.7E-06	-5.1E-05	-3.1E-04	-7.8E-06	-2.0E-07
Tennessee	-768,071	-3.2E-03	-2.7E-04	-1.4E-04	-4.0E-05	-5.6E-04	-3.4E-03	-8.6E-05	-2.2E-06
Texas	-20,096,753	-8.4E-02	-7.0E-03	-3.6E-03	-1.1E-03	-1.5E-02	-9.0E-02	-2.3E-03	-5.7E-05
Utah	-13,853	-5.8E-05	-4.8E-06	-2.5E-06	-7.3E-07	-1.0E-05	-6.2E-05	-1.6E-06	-4.0E-08
Washington	-77,567	-3.2E-04	-2.7E-05	-1.4E-05	-4.1E-06	-5.7E-05	-3.5E-04	-8.7E-06	-2.2E-07
Wyoming	-470,876	-2.0E-03	-1.6E-04	-8.4E-05	-2.5E-05	-3.5E-04	-2.1E-03	-5.3E-05	-1.3E-06
System Wide	**-80,371,708**	**-3.4E-01**	**-2.8E-02**	**-1.4E-02**	**-4.2E-03**	**-5.9E-02**	**-3.6E-01**	**-9.0E-03**	**-2.3E-04**

Notes:

Truck VMT Reduction provided from the transportation study

Table K.11-3. Truck to Rail Diversion Analysis- On-road Truck Emission Factors

On Road Truck Emission Factors (g/mi)

States Represented	Vehicle	Nox	VOC	PM10	PM25	SO2	CO	CO2	CH4	N2O	Energy
24 States	Combo Long Haul	2.397	0.078	0.089	0.042	0.005	1.777	1416.183	0.167	0.002	0.018

States Represented	Vehicle	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
24 States	Combo Long Haul	3.8E-03	3.2E-04	1.6E-04	4.8E-05	6.7E-04	4.1E-03	1.0E-04	2.6E-06

Source: Calculated using MOVES3

Emission Factor Assumptions:

State-Level Default Scale with Default Inputs
Represents an average of emission factors for all 24 hours and 12 months for weekday
All 24 States with anticipated truck diversions included
Diesel Long-Haul Combination Trucks Included
Rural and Urban Restricted Access Roadways included

K.12 Capital Improvements Analysis

The Proposed Acquisition would not require any construction, as the CP and KCS networks already connect in Kansas City. However, the Applicants expect planned capital improvements resulting from the Proposed Acquisition, due to increased traffic on the combined network. OEA expects these planned capital improvements to result in construction of new and extended sidings, a new double track section, and new working track. Because this work is planned within existing rights of way, it does not qualify as jurisdictional rail line construction. In total, there are 25 planned capital improvement sites.

OEA evaluated emissions associated with the construction of these planned capital improvements. The planned capital improvements analysis estimated the potential duration of construction at each site based on the distance of track work and industry standard production rates. Durations were estimated to range between 1 and 18 days for each site. Exact construction dates of the projects are not known because the planned capital improvements would be built as needed based on increasing traffic. OEA estimated emissions assuming an analysis of year of 2027. Since all sites have relatively short construction durations, OEA assumed all emissions to occur within the same year. Emissions from both nonroad equipment and fugitive dust have been quantified for the planned capital improvements analysis as described in the following sections. Equipment and fugitive dust emissions were summed for each site by county to create a county-level emissions inventory associated with the planned capital improvements.

K.12.1 Equipment Emissions

OEA quantified estimated emissions from nonroad equipment at each site based on the list of assumed equipment necessary to complete the new and extended track work (see planned capital improvements description in *Chapter 2*, *Section 2.3.2*). Equipment expected to be used in the track work are front end loaders, dump trucks, compactor, road grader, thermite welder, crane, rail tensor and rail tamper. OEA derived emission factors for the equipment using the Nonroad module within the MOVES3 model (EPA 2022). OEA ran the MOVES3 model for the counties where the planned capital improvements are located using model default inputs. OEA assumed equipment size and age correspond to the model's default population data. OEA assumed all equipment operate on diesel fuel. OEA then aggregated model outputs on a state-level and applied to the individual planned capital improvement sites. OEA estimated hours of equipment operation assuming an eight-hour workday and using the durations derived for each site. OEA combined these operating hours with emission factors and load factors to estimate equipment emissions.

K.12.2 Fugitive Dust Emissions

OEA quantified fugitive dust emissions associated with the planned capital improvements from general site work and earthwork. Fugitive dust emissions are emissions of the criteria pollutant particulate matter. OEA referenced emission factors from "WRAP Fugitive Dust Handbook" for construction emissions and corresponding earthwork emissions (WGA

2006). Per the guidance, OEA quantified fugitive dust emissions based on the hours of general construction and earthwork. OEA assumed general construction hours to be all the operating hours associated with construction at each site. OEA assumed earthwork hours to be 59 percent of the general construction hours based on the compactor and grader load factors. OEA assumed $PM_{2.5}$ emissions to be 10 percent of the PM_{10} emissions as described by the guidance. OEA assumed no control measures.

Table K.12-1 and **Table K.12-2** summarize the construction analysis. **Table K.12-3** and **Table K.12-4** show the estimated emissions from non-road equipment. **Table K.12-5** shows the estimated emissions from fugitive dust.

Table K.12-1. Construction Analysis- Criteria Pollutant Summary

						Acquisition-Related Criteria Emissions (tons/year)							*De Minimis* Emissions (tons/year)						
State	**County**	**Attainment**	**NA Pollutant**	**Site**	**Activity**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**
Arkansas	Benton	Attainment		Gentry	Equipment Emissions	0.02	0.00	0.00	0.00	0.00	0.01	15.88							
					Fugitive Dust	-	-	2.12	0.21	-	-	-							
					Total	**0.02**	**0.00**	**2.13**	**0.21**	**0.00**	**0.01**	**15.88**	-	-	-	-	-	-	-
Arkansas	Polk	Attainment		Mena	Equipment Emissions	0.02	0.00	0.00	0.00	0.00	0.01	13.99							
					Fugitive Dust	-	-	1.87	0.19	-	-	-							
					Total	**0.02**	**0.00**	**1.87**	**0.19**	**0.00**	**0.01**	**13.99**	-	-	-	-	-	-	-
Illinois	Ogle	Attainment		Monroe	Equipment Emissions	0.02	0.00	0.00	0.00	0.00	0.01	15.9							
					Fugitive Dust	-	-	1.95	0.20	-	-	-							
					Total	**0.02**	**0.00**	**1.96**	**0.20**	**0.00**	**0.01**	**15.88**	-	-	-	-	-	-	-
Iowa	Clayton	Attainment		Turkey River	Equipment Emissions	0.02	0.00	0.00	0.00	0.00	0.01	14.9							
					Fugitive Dust	-	-	1.99	0.20	-	-	-							
					Total	**0.02**	**0.00**	**1.99**	**0.20**	**0.00**	**0.01**	**14.90**	-	-	-	-	-	-	-
Iowa	Clinton	Attainment		Camanche	Equipment Emissions	0.01	0.00	0.00	0.00	0.00	0.00	4.4							
					Fugitive Dust	-	-	0.58	0.06	-	-	-							
				Deer Creek	Equipment Emissions	0.01	0.00	0.00	0.00	0.00	0.00	8.3							
					Fugitive Dust	-	-	1.11	0.11	-	-	-							
					Total	**0.02**	**0.00**	**1.70**	**0.17**	**0.00**	**0.01**	**12.67**	-	-	-	-	-	-	-
Iowa	Jackson	Attainment		Bellevue	Equipment Emissions	0.02	0.00	0.00	0.00	0.00	0.01	12.2							
					Fugitive Dust	-	-	1.63	0.16	-	-	-							
					Total	**0.02**	**0.00**	**1.63**	**0.16**	**0.00**	**0.01**	**12.21**	-	-	-	-	-	-	-
Iowa	Louisa	Attainment		Letts	Equipment Emissions	0.00	0.00	0.00	0.00	0.00	0.00	1.5							
					Fugitive Dust	-	-	0.20	0.02	-	-	-							
					Total	**0.00**	**0.00**	**0.20**	**0.02**	**0.00**	**0.00**	**1.49**	-	-	-	-	-	-	-
Iowa	Monroe	Attainment		Moravia	Equipment Emissions	0.02	0.00	0.00	0.00	0.00	0.01	13.1							
					Fugitive Dust	-	-	1.76	0.18	-	-	-							
					Total	**0.02**	**0.00**	**1.76**	**0.18**	**0.00**	**0.01**	**13.13**	-	-	-	-	-	-	-
Iowa	Wapello	Attainment		Ottumwa	Equipment Emissions	0.00	0.00	0.00	0.00	0.00	0.00	2.7							
					Fugitive Dust	-	-	0.36	0.04	-	-	-							
					Total	**0.00**	**0.00**	**0.36**	**0.04**	**0.00**	**0.00**	**2.69**	-	-	-	-	-	-	-
Iowa	Washington	Attainment		Washington	Equipment Emissions	0.02	0.00	0.00	0.00	0.00	0.01	12.4							
					Fugitive Dust	-	-	1.66	0.17	-	-	-							
					Total	**0.02**	**0.00**	**1.66**	**0.17**	**0.00**	**0.01**	**12.38**	-	-	-	-	-	-	-
Louisianna	Beauregard	Attainment		Singer	Equipment Emissions	0.01	0.00	0.00	0.00	0.00	0.00	6.3							
					Fugitive Dust	-	-	0.84	0.08	-	-	-							
					Total	**0.01**	**0.00**	**0.84**	**0.09**	**0.00**	**0.00**	**6.31**	-	-	-	-	-	-	-
Louisianna	De Soto	Attainment		Mansfield	Equipment Emissions	0.02	0.00	0.00	0.00	0.00	0.01	11.3							
					Fugitive Dust	-	-	1.51	0.15	-	-	-							
					Total	**0.02**	**0.00**	**1.51**	**0.15**	**0.00**	**0.01**	**11.30**	-	-	-	-	-	-	-
Louisianna	Sabine	Attainment		Loring	Equipment Emissions	0.01	0.00	0.00	0.00	0.00	0.01	9.6							
					Fugitive Dust	-	-	1.28	0.13	-	-	-							
					Total	**0.01**	**0.00**	**1.28**	**0.13**	**0.00**	**0.01**	**9.58**	-	-	-	-	-	-	-
Missouri	Grundy	Attainment		Laredo	Equipment Emissions	0.00	0.00	0.00	0.00	0.00	0.00	3.3							
					Fugitive Dust	-	-	0.44	0.04	-	-	-							
					Total	**0.00**	**0.00**	**0.45**	**0.04**	**0.00**	**0.00**	**3.33**	-	-	-	-	-	-	-

Missouri	Jackson	Nonattainment	SO2	Blue Valley	Equipment Emissions	0.02	0.00	0.00	0.00	0.00	0.01	11.9							
					Fugitive Dust	-	-	1.59	0.16	-	-	-							
					Total	**0.02**	**0.00**	**1.59**	**0.16**	**0.00**	**0.01**	**11.88**	**-**	**-**	**-**	**-**	***100***	**-**	**-**
Missouri	Jackson	Attainment		Grandview	Equipment Emissions	0.02	0.00	0.00	0.00	0.00	0.01	14.9							
					Fugitive Dust	-	-	1.99	0.20	-	-	-							
					Total	**0.02**	**0.00**	**2.00**	**0.20**	**0.00**	**0.01**	**14.92**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Missouri	Jasper	Attainment		Asbury	Equipment Emissions	0.02	0.00	0.00	0.00	0.00	0.01	12.7							
					Fugitive Dust	-	-	1.70	0.17	-	-	-							
					Total	**0.02**	**0.00**	**1.70**	**0.17**	**0.00**	**0.01**	**12.74**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Missouri	Livingston	Attainment		Dawn	Equipment Emissions	0.02	0.00	0.00	0.00	0.00	0.01	12.5							
					Fugitive Dust	-	-	1.66	0.17	-	-	-							
					Total	**0.02**	**0.00**	**1.67**	**0.17**	**0.00**	**0.01**	**12.45**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Missouri	McDonald	Attainment		Goodman	Equipment Emissions	0.01	0.00	0.00	0.00	0.00	0.00	6.1							
					Fugitive Dust	-	-	0.82	0.08	-	-	-							
					Total	**0.01**	**0.00**	**0.82**	**0.08**	**0.00**	**0.00**	**6.14**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Missouri	Sullivan	Attainment		Newtown	Equipment Emissions	0.00	0.00	0.00	0.00	0.00	0.00	2.5							
					Fugitive Dust	-	-	0.34	0.03	-	-	-							
					Total	**0.00**	**0.00**	**0.34**	**0.03**	**0.00**	**0.00**	**2.52**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Oklahoma	Adair	Attainment		Baron (MP247)	Equipment Emissions	0.02	0.00	0.00	0.00	0.00	0.01	11.9							
					Fugitive Dust	-	-	1.59	0.16	-	-	-							
				Cave Springs	Equipment Emissions	0.02	0.00	0.00	0.00	0.00	0.01	12.6							
					Fugitive Dust	-	-	1.69	0.17	-	-	-							
					Total	**0.04**	**0.00**	**3.28**	**0.33**	**0.00**	**0.01**	**24.54**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Oklahoma	Le Flore	Attainment		Spiro	Equipment Emissions	0.01	0.00	0.00	0.00	0.00	0.00	6.2							
					Fugitive Dust	-	-	0.83	0.08	-	-	-							
				Heavener	Equipment Emissions	0.01	0.00	0.00	0.00	0.00	0.00	4.6							
					Fugitive Dust	-	-	0.62	0.06	-	-	-							
					Total	**0.02**	**0.00**	**1.45**	**0.15**	**0.00**	**0.01**	**10.84**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Table K.12-2. Construction Analysis- HAPs Summary

				Acquisition-Related HAP Emissions (tons/year)							
State	**County**	**Site**	**Activity**	**Acetaldehyde**	**Acrolein**	**Benzene**	**1,3-Butadiene**	**Ethyl Benzene**	**Formaldehyde**	**Napthalene**	**POM**
Arkansas	Benton	Gentry	Equipment Emissions	2.3E-04	4.9E-05	1.0E-04	4.5E-06	1.4E-05	6.4E-04	4.9E-06	3.6E-07
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**2.3E-04**	**4.9E-05**	**1.0E-04**	**4.5E-06**	**1.4E-05**	**6.4E-04**	**4.9E-06**	**3.6E-07**
Arkansas	Polk	Mena	Equipment Emissions	2.0E-04	4.3E-05	9.0E-05	3.9E-06	1.2E-05	5.6E-04	4.4E-06	3.2E-07
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**2.0E-04**	**4.3E-05**	**9.0E-05**	**3.9E-06**	**1.2E-05**	**5.6E-04**	**4.4E-06**	**3.2E-07**
Illinois	Ogle	Monroe	Equipment Emissions	4.9E-05	1.0E-04	4.5E-06	1.4E-05	6.4E-04	4.9E-06	2.3E-06	2.8E-06
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**4.9E-05**	**1.0E-04**	**4.5E-06**	**1.4E-05**	**6.4E-04**	**4.9E-06**	**2.3E-06**	**2.8E-06**
Iowa	Clayton	Turkey River	Equipment Emissions	1.7E-04	3.9E-05	7.7E-05	3.4E-06	1.1E-05	4.8E-04	3.8E-06	2.8E-07
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**1.7E-04**	**3.9E-05**	**7.7E-05**	**3.4E-06**	**1.1E-05**	**4.8E-04**	**3.8E-06**	**2.8E-07**
Iowa	Clinton	Camanche	Equipment Emissions	5.1E-05	1.1E-05	2.3E-05	9.8E-07	3.3E-06	1.4E-04	1.1E-06	8.2E-08
			Fugitive Dust	-	-	-	-	-	-	-	-
		Deer Creek	Equipment Emissions	9.7E-05	2.2E-05	4.3E-05	1.9E-06	6.2E-06	2.7E-04	2.1E-06	1.6E-07
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**1.5E-04**	**3.3E-05**	**6.6E-05**	**2.9E-06**	**9.5E-06**	**4.1E-04**	**3.3E-06**	**2.4E-07**
Iowa	Jackson	Bellevue	Equipment Emissions	1.4E-04	3.2E-05	6.3E-05	2.8E-06	9.2E-06	4.0E-04	3.1E-06	2.3E-07
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**1.4E-04**	**3.2E-05**	**6.3E-05**	**2.8E-06**	**9.2E-06**	**4.0E-04**	**3.1E-06**	**2.3E-07**
Iowa	Louisa	Letts	Equipment Emissions	1.7E-05	3.9E-06	7.7E-06	3.4E-07	1.1E-06	4.8E-05	3.8E-07	2.8E-08
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**1.7E-05**	**3.9E-06**	**7.7E-06**	**3.4E-07**	**1.1E-06**	**4.8E-05**	**3.8E-07**	**2.8E-08**
Iowa	Monroe	Moravia	Equipment Emissions	1.5E-04	3.4E-05	6.8E-05	3.0E-06	9.8E-06	4.3E-04	3.4E-06	2.5E-07
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**1.5E-04**	**3.4E-05**	**6.8E-05**	**3.0E-06**	**9.8E-06**	**4.3E-04**	**3.4E-06**	**2.5E-07**
Iowa	Wapello	Ottumwa	Equipment Emissions	3.2E-05	7.0E-06	1.4E-05	6.1E-07	2.0E-06	8.7E-05	6.9E-07	5.1E-08
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**3.2E-05**	**7.0E-06**	**1.4E-05**	**6.1E-07**	**2.0E-06**	**8.7E-05**	**6.9E-07**	**5.1E-08**
Iowa	Washington	Washington	Equipment Emissions	1.5E-04	3.2E-05	6.4E-05	2.8E-06	9.3E-06	4.0E-04	3.2E-06	2.3E-07
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**1.5E-04**	**3.2E-05**	**6.4E-05**	**2.8E-06**	**9.3E-06**	**4.0E-04**	**3.2E-06**	**2.3E-07**
Louisianna	Beauregard	Singer	Equipment Emissions	9.4E-05	2.2E-05	3.9E-05	1.9E-06	6.2E-06	2.6E-04	2.0E-06	1.5E-07
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**9.4E-05**	**2.2E-05**	**3.9E-05**	**1.9E-06**	**6.2E-06**	**2.6E-04**	**2.0E-06**	**1.5E-07**
Louisianna	De Soto	Mansfield	Equipment Emissions	1.7E-04	3.9E-05	7.0E-05	3.4E-06	1.1E-05	4.7E-04	3.6E-06	2.7E-07
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**1.7E-04**	**3.9E-05**	**7.0E-05**	**3.4E-06**	**1.1E-05**	**4.7E-04**	**3.6E-06**	**2.7E-07**
Louisianna	Sabine	Loring	Equipment Emissions	1.4E-04	3.3E-05	5.9E-05	2.9E-06	9.5E-06	3.9E-04	3.0E-06	2.3E-07
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**1.4E-04**	**3.3E-05**	**5.9E-05**	**2.9E-06**	**9.5E-06**	**3.9E-04**	**3.0E-06**	**2.3E-07**
Missouri	Grundy	Laredo	Equipment Emissions	4.7E-05	1.1E-05	1.8E-05	9.8E-07	3.3E-06	1.3E-04	9.8E-07	7.6E-08
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**4.7E-05**	**1.1E-05**	**1.8E-05**	**9.8E-07**	**3.3E-06**	**1.3E-04**	**9.8E-07**	**7.6E-08**

Missouri	Jackson	Blue Valley	Equipment Emissions	1.7E-04	4.1E-05	6.5E-05	3.5E-06	1.2E-05	4.7E-04	3.5E-06	2.7E-07
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**1.7E-04**	**4.1E-05**	**6.5E-05**	**3.5E-06**	**1.2E-05**	**4.7E-04**	**3.5E-06**	**2.7E-07**
Missouri	Jackson	Grandview	Equipment Emissions	2.1E-04	5.1E-05	8.2E-05	4.4E-06	1.5E-05	5.9E-04	4.4E-06	3.4E-07
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**2.1E-04**	**5.1E-05**	**8.2E-05**	**4.4E-06**	**1.5E-05**	**5.9E-04**	**4.4E-06**	**3.4E-07**
Missouri	Jasper	Asbury	Equipment Emissions	1.8E-04	4.4E-05	7.0E-05	3.8E-06	1.3E-05	5.0E-04	3.8E-06	2.9E-07
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**1.8E-04**	**4.4E-05**	**7.0E-05**	**3.8E-06**	**1.3E-05**	**5.0E-04**	**3.8E-06**	**2.9E-07**
Missouri	Livingston	Dawn	Equipment Emissions	1.8E-04	4.3E-05	6.8E-05	3.7E-06	1.2E-05	4.9E-04	3.7E-06	2.8E-07
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**1.8E-04**	**4.3E-05**	**6.8E-05**	**3.7E-06**	**1.2E-05**	**4.9E-04**	**3.7E-06**	**2.8E-07**
Missouri	McDonald	Goodman	Equipment Emissions	8.7E-05	2.1E-05	3.4E-05	1.8E-06	6.1E-06	2.4E-04	1.8E-06	1.4E-07
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**8.7E-05**	**2.1E-05**	**3.4E-05**	**1.8E-06**	**6.1E-06**	**2.4E-04**	**1.8E-06**	**1.4E-07**
Missouri	Sullivan	Newtown	Equipment Emissions	3.6E-05	8.7E-06	1.4E-05	7.5E-07	2.5E-06	9.9E-05	7.5E-07	5.7E-08
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**3.6E-05**	**8.7E-06**	**1.4E-05**	**7.5E-07**	**2.5E-06**	**9.9E-05**	**7.5E-07**	**5.7E-08**
Oklahoma	Adair	Baron (MP247)	Equipment Emissions	1.5E-04	3.2E-05	6.2E-05	2.9E-06	9.1E-06	4.1E-04	3.1E-06	2.3E-07
			Fugitive Dust	-	-	-	-	-	-	-	-
		Cave Springs	Equipment Emissions	1.5E-04	3.4E-05	6.6E-05	3.0E-06	9.6E-06	4.3E-04	3.3E-06	2.4E-07
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**3.0E-04**	**6.6E-05**	**1.3E-04**	**5.9E-06**	**1.9E-05**	**8.3E-04**	**6.4E-06**	**4.7E-07**
Oklahoma	Le Flore	Spiro	Equipment Emissions	7.6E-05	1.7E-05	3.2E-05	1.5E-06	4.7E-06	2.1E-04	1.6E-06	1.2E-07
			Fugitive Dust	-	-	-	-	-	-	-	-
		Heavener	Equipment Emissions	5.7E-05	1.3E-05	2.4E-05	1.1E-06	3.5E-06	1.6E-04	1.2E-06	8.8E-08
			Fugitive Dust	-	-	-	-	-	-	-	-
			Total	**1.3E-04**	**2.9E-05**	**5.7E-05**	**2.6E-06**	**8.3E-06**	**3.7E-04**	**2.8E-06**	**2.1E-07**

Table K.12-3. Construction Analysis- Equipment Emissions Criteria Pollutants

							Days of Construction	Total Op Hours	Load	Quantity	State and SCC Code	Criteria Pollutant Emission Factors (g/hr)									Construction Emissions (tons/year)								
Site	County	State	Attainment	NA Pollutant	Equipment	SCC Modeled	days	hrs	Factor	# of pcs		NOX	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	NOX	VOC	PM10	PM2.5	SO2	CO	CO2e	CO2	CH4	N2O
Turkey River	Clayton	IA	Attainment	N/A	Front End Loader	2270002066	17.16	137.28	0.21	2	IA-2270002066	35.30	3.56	4.26	4.14	0.04	24.28	13,061.92	0.20	0.04	0.002	0.000	0.000	0.000	0.000	0.002	0.831	0.830	0.000	0.000
Turkey River	Clayton	IA	Attainment	N/A	Dump Trucks	2270002078	17.16	137.28	0.21	7	IA-2270002078	20.39	3.00	1.89	1.83	0.01	12.46	4,736.27	0.14	0.03	0.005	0.001	0.000	0.000	0.000	0.003	1.056	1.054	0.000	0.000
Turkey River	Clayton	IA	Attainment	N/A	Compactor	2270002015	17.16	137.28	0.59	1	IA-2270002015	47.48	2.02	1.73	1.68	0.08	10.67	30,458.85	0.20	0.04	0.004	0.000	0.000	0.000	0.000	0.001	2.721	2.719	0.000	0.000
Turkey River	Clayton	IA	Attainment	N/A	Road Grader	2270002048	17.16	137.28	0.59	1	IA-2270002048	23.68	1.52	1.48	1.44	0.17	6.41	64,793.95	0.10	0.02	0.002	0.000	0.000	0.000	0.000	0.001	5.786	5.785	0.000	0.000
Turkey River	Clayton	IA	Attainment	N/A	Thermite Welder	2270006025	17.16	137.28	0.21	1	IA-2270006025	30.80	3.71	2.52	2.45	0.02	18.41	6,425.32	0.23	0.04	0.001	0.000	0.000	0.000	0.000	0.001	0.205	0.204	0.000	0.000
Turkey River	Clayton	IA	Attainment	N/A	Crane	2270002045	17.16	137.28	0.43	1	IA-2270002045	50.46	2.79	2.41	2.34	0.14	12.95	52,904.94	0.24	0.05	0.003	0.000	0.000	0.000	0.000	0.001	3.444	3.443	0.000	0.000
Turkey River	Clayton	IA	Attainment	N/A	Rail Tensor	2270006005	17.16	137.28	0.43	1	IA-2270006005	56.76	4.52	2.98	2.89	0.04	19.16	12,120.63	0.31	0.06	0.004	0.000	0.000	0.000	0.000	0.001	0.790	0.789	0.000	0.000
Turkey River	Clayton	IA	Attainment	N/A	Rail Tamper	2270002006	17.16	137.28	0.43	1	IA-2270002006	7.54	1.49	0.43	0.42	0.00	4.42	1,061.94	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.070	0.069	0.000	0.000
Bellevue	Jackson	IA	Attainment	N/A	Front End Loader	2270002066	14.06	112.46	0.21	2	IA-2270002066	35.30	3.56	4.26	4.14	0.04	24.28	13,061.92	0.20	0.04	0.002	0.000	0.000	0.000	0.000	0.001	0.681	0.680	0.000	0.000
Bellevue	Jackson	IA	Attainment	N/A	Dump Trucks	2270002078	14.06	112.46	0.21	7	IA-2270002078	20.39	3.00	1.89	1.83	0.01	12.46	4,736.27	0.14	0.03	0.004	0.001	0.000	0.000	0.000	0.002	0.865	0.863	0.000	0.000
Bellevue	Jackson	IA	Attainment	N/A	Compactor	2270002015	14.06	112.46	0.59	1	IA-2270002015	47.48	2.02	1.73	1.68	0.08	10.67	30,458.85	0.20	0.04	0.003	0.000	0.000	0.000	0.000	0.001	2.229	2.228	0.000	0.000
Bellevue	Jackson	IA	Attainment	N/A	Road Grader	2270002048	14.06	112.46	0.59	1	IA-2270002048	23.68	1.52	1.48	1.44	0.17	6.41	64,793.95	0.10	0.02	0.002	0.000	0.000	0.000	0.000	0.000	4.740	4.739	0.000	0.000
Bellevue	Jackson	IA	Attainment	N/A	Thermite Welder	2270006025	14.06	112.46	0.21	1	IA-2270006025	30.80	3.71	2.52	2.45	0.02	18.41	6,425.32	0.23	0.04	0.001	0.000	0.000	0.000	0.000	0.000	0.168	0.167	0.000	0.000
Bellevue	Jackson	IA	Attainment	N/A	Crane	2270002045	14.06	112.46	0.43	1	IA-2270002045	50.46	2.79	2.41	2.34	0.14	12.95	52,904.94	0.24	0.05	0.003	0.000	0.000	0.000	0.000	0.001	2.821	2.820	0.000	0.000
Bellevue	Jackson	IA	Attainment	N/A	Rail Tensor	2270006005	14.06	112.46	0.43	1	IA-2270006005	56.76	4.52	2.98	2.89	0.04	19.16	12,120.63	0.31	0.06	0.003	0.000	0.000	0.000	0.000	0.001	0.648	0.646	0.000	0.000
Bellevue	Jackson	IA	Attainment	N/A	Rail Tamper	2270002006	14.06	112.46	0.43	1	IA-2270002006	7.54	1.49	0.43	0.42	0.00	4.42	1,061.94	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.057	0.057	0.000	0.000
Monroe	Ogle	IL	Attainment	N/A	Front End Loader	2270002066	16.83	134.64	0.21	2	IL-2270002066	35.82	5.12	3.81	3.69	0.04	22.88	13,057.07	0.23	0.04	0.002	0.000	0.000	0.000	0.000	0.001	0.815	0.814	0.000	0.000
Monroe	Ogle	IL	Attainment	N/A	Dump Trucks	2270002078	16.83	134.64	0.21	7	IL-2270002078	26.96	4.96	3.14	3.05	0.02	21.53	4,738.72	0.21	0.04	0.006	0.001	0.001	0.001	0.000	0.005	1.038	1.034	0.000	0.000
Monroe	Ogle	IL	Attainment	N/A	Compactor	2270002015	16.83	134.64	0.59	1	IL-2270002015	46.12	1.89	1.49	1.45	0.08	9.57	30,462.58	0.19	0.04	0.004	0.000	0.000	0.000	0.000	0.001	2.669	2.667	0.000	0.000
Monroe	Ogle	IL	Attainment	N/A	Road Grader	2270002048	16.83	134.64	0.59	1	IL-2270002048	24.54	1.52	1.48	1.44	0.17	6.34	64,843.40	0.10	0.02	0.002	0.000	0.000	0.000	0.000	0.001	5.679	5.678	0.000	0.000
Monroe	Ogle	IL	Attainment	N/A	Thermite Welder	2270006025	16.83	134.64	0.21	1	IL-2270006025	30.81	3.81	2.57	2.49	0.02	18.50	6,425.16	0.22	0.04	0.001	0.000	0.000	0.000	0.000	0.001	0.201	0.200	0.000	0.000
Monroe	Ogle	IL	Attainment	N/A	Crane	2270002045	16.83	134.64	0.43	1	IL-2270002045	46.72	2.39	1.96	1.90	0.14	10.15	52,956.32	0.16	0.03	0.003	0.000	0.000	0.000	0.000	0.001	3.380	3.380	0.000	0.000
Monroe	Ogle	IL	Attainment	N/A	Rail Tensor	2270006005	16.83	134.64	0.43	1	IL-2270006005	56.39	4.61	3.04	2.95	0.04	19.35	12,120.60	0.31	0.06	0.004	0.000	0.000	0.000	0.000	0.001	0.775	0.774	0.000	0.000
Monroe	Ogle	IL	Attainment	N/A	Rail Tamper	2270002006	16.83	134.64	0.43	1	IL-2270002006	7.61	1.52	0.46	0.45	0.00	4.58	1,061.86	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.068	0.068	0.000	0.000
Deer Creek	Clinton	IA	Attainment	N/A	Front End Loader	2270002066	9.57	76.56	0.21	2	IA-2270002066	35.30	3.56	4.26	4.14	0.04	24.28	13,061.92	0.20	0.04	0.001	0.000	0.000	0.000	0.000	0.001	0.464	0.463	0.000	0.000
Deer Creek	Clinton	IA	Attainment	N/A	Dump Trucks	2270002078	9.57	76.56	0.21	7	IA-2270002078	20.39	3.00	1.89	1.83	0.01	12.46	4,736.27	0.14	0.03	0.003	0.000	0.000	0.000	0.000	0.002	0.589	0.588	0.000	0.000
Deer Creek	Clinton	IA	Attainment	N/A	Compactor	2270002015	9.57	76.56	0.59	1	IA-2270002015	47.48	2.02	1.73	1.68	0.08	10.67	30,458.85	0.20	0.04	0.002	0.000	0.000	0.000	0.000	0.001	1.517	1.517	0.000	0.000
Deer Creek	Clinton	IA	Attainment	N/A	Road Grader	2270002048	9.57	76.56	0.59	1	IA-2270002048	23.68	1.52	1.48	1.44	0.17	6.41	64,793.95	0.10	0.02	0.001	0.000	0.000	0.000	0.000	0.000	3.227	3.226	0.000	0.000
Deer Creek	Clinton	IA	Attainment	N/A	Thermite Welder	2270006025	9.57	76.56	0.21	1	IA-2270006025	30.80	3.71	2.52	2.45	0.02	18.41	6,425.32	0.23	0.04	0.001	0.000	0.000	0.000	0.000	0.000	0.114	0.114	0.000	0.000
Deer Creek	Clinton	IA	Attainment	N/A	Crane	2270002045	9.57	76.56	0.43	1	IA-2270002045	50.46	2.79	2.41	2.34	0.14	12.95	52,904.94	0.24	0.05	0.002	0.000	0.000	0.000	0.000	0.000	1.921	1.920	0.000	0.000
Deer Creek	Clinton	IA	Attainment	N/A	Rail Tensor	2270006005	9.57	76.56	0.43	1	IA-2270006005	56.76	4.52	2.98	2.89	0.04	19.16	12,120.63	0.31	0.06	0.002	0.000	0.000	0.000	0.000	0.001	0.441	0.440	0.000	0.000
Deer Creek	Clinton	IA	Attainment	N/A	Rail Tamper	2270002006	9.57	76.56	0.43	1	IA-2270002006	7.54	1.49	0.43	0.42	0.00	4.42	1,061.94	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.039	0.039	0.000	0.000
Camanche	Clinton	IA	Attainment	N/A	Front End Loader	2270002066	5.02	40.13	0.21	2	IA-2270002066	35.30	3.56	4.26	4.14	0.04	24.28	13,061.92	0.20	0.04	0.001	0.000	0.000	0.000	0.000	0.000	0.243	0.243	0.000	0.000
Camanche	Clinton	IA	Attainment	N/A	Dump Trucks	2270002078	5.02	40.13	0.21	7	IA-2270002078	20.39	3.00	1.89	1.83	0.01	12.46	4,736.27	0.14	0.03	0.001	0.000	0.000	0.000	0.000	0.001	0.309	0.308	0.000	0.000
Camanche	Clinton	IA	Attainment	N/A	Compactor	2270002015	5.02	40.13	0.59	1	IA-2270002015	47.48	2.02	1.73	1.68	0.08	10.67	30,458.85	0.20	0.04	0.001	0.000	0.000	0.000	0.000	0.000	0.795	0.795	0.000	0.000
Camanche	Clinton	IA	Attainment	N/A	Road Grader	2270002048	5.02	40.13	0.59	1	IA-2270002048	23.68	1.52	1.48	1.44	0.17	6.41	64,793.95	0.10	0.02	0.001	0.000	0.000	0.000	0.000	0.000	1.691	1.691	0.000	0.000
Camanche	Clinton	IA	Attainment	N/A	Thermite Welder	2270006025	5.02	40.13	0.21	1	IA-2270006025	30.80	3.71	2.52	2.45	0.02	18.41	6,425.32	0.23	0.04	0.000	0.000	0.000	0.000	0.000	0.000	0.060	0.060	0.000	0.000
Camanche	Clinton	IA	Attainment	N/A	Crane	2270002045	5.02	40.13	0.43	1	IA-2270002045	50.46	2.79	2.41	2.34	0.14	12.95	52,904.94	0.24	0.05	0.001	0.000	0.000	0.000	0.000	0.000	1.007	1.006	0.000	0.000
Camanche	Clinton	IA	Attainment	N/A	Rail Tensor	2270006005	5.02	40.13	0.43	1	IA-2270006005	56.76	4.52	2.98	2.89	0.04	19.16	12,120.63	0.31	0.06	0.001	0.000	0.000	0.000	0.000	0.000	0.231	0.231	0.000	0.000
Camanche	Clinton	IA	Attainment	N/A	Rail Tamper	2270002006	5.02	40.13	0.43	1	IA-2270002006	7.54	1.49	0.43	0.42	0.00	4.42	1,061.94	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.020	0.000	0.000
Letts	Louisa	IA	Attainment	N/A	Front End Loader	2270002066	1.72	13.73	0.21	2	IA-2270002066	35.30	3.56	4.26	4.14	0.04	24.28	13,061.92	0.20	0.04	0.000	0.000	0.000	0.000	0.000	0.000	0.083	0.083	0.000	0.000
Letts	Louisa	IA	Attainment	N/A	Dump Trucks	2270002078	1.72	13.73	0.21	7	IA-2270002078	20.39	3.00	1.89	1.83	0.01	12.46	4,736.27	0.14	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.106	0.105	0.000	0.000
Letts	Louisa	IA	Attainment	N/A	Compactor	2270002015	1.72	13.73	0.59	1	IA-2270002015	47.48	2.02	1.73	1.68	0.08	10.67	30,458.85	0.20	0.04	0.000	0.000	0.000	0.000	0.000	0.000	0.272	0.272	0.000	0.000
Letts	Louisa	IA	Attainment	N/A	Road Grader	2270002048	1.72	13.73	0.59	1	IA-2270002048	23.68	1.52	1.48	1.44	0.17	6.41	64,793.95	0.10	0.02	0.000	0.000	0.000	0.000	0.000	0.000	0.579	0.578	0.000	0.000
Letts	Louisa	IA	Attainment	N/A	Thermite Welder	2270006025	1.72	13.73	0.21	1	IA-2270006025	30.80	3.71	2.52	2.45	0.02	18.41	6,425.32	0.23	0.04	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.020	0.000	0.000
Letts	Louisa	IA	Attainment	N/A	Crane	2270002045	1.72	13.73	0.43	1	IA-2270002045	50.46	2.79	2.41	2.34	0.14	12.95	52,904.94	0.24	0.05	0.000	0.000	0.000	0.000	0.000	0.000	0.344	0.344	0.000	0.000
Letts	Louisa	IA	Attainment	N/A	Rail Tensor	2270006005	1.72	13.73	0.43	1	IA-2270006005	56.76	4.52	2.98	2.89	0.04	19.16	12,120.63	0.31	0.06	0.000	0.000	0.000	0.000	0.000	0.000	0.079	0.079	0.000	0.000
Letts	Louisa	IA	Attainment	N/A	Rail Tamper	2270002006	1.72	13.73	0.43	1	IA-2270002006	7.54	1.49	0.43	0.42	0.00	4.42	1,061.94	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.007	0.000	0.000
Washington	Washington	IA	Attainment	N/A	Front End Loader	2270002066	14.26	114.05	0.21	2	IA-2270002066	35.30	3.56	4.26	4.14	0.04	24.28	13,061.92	0.20	0.04	0.002	0.000	0.000	0.000	0.000	0.001	0.691	0.690	0.000	0.000
Washington	Washington	IA	Attainment	N/A	Dump Trucks	2270002078	14.26	114.05	0.21	7	IA-2270002078	20.39	3.00	1.89	1.83	0.01	12.46	4,736.27	0.14	0.03	0.004	0.001	0.000	0.000	0.000	0.002	0.877	0.875	0.000	0.000
Washington	Washington	IA	Attainment	N/A	Compactor	2270002015	14.26	114.05	0.59	1	IA-2270002015	47.48	2.02	1.73	1.68	0.08	10.67	30,458.85	0.20	0.04	0.004	0.000	0.000	0.000	0.000	0.001	2.260	2.259	0.000	0.000
Washington	Washington	IA	Attainment	N/A	Road Grader	2270002048	14.26	114.05	0.59	1	IA-2270002048	23.68	1.52	1.48	1.44	0.17	6.41	64,793.95	0.10	0.02	0.002	0.000	0.000	0.000	0.000	0.000	4.807	4.806	0.000	0.000
Washington	Washington	IA	Attainment	N/A	Thermite Welder	2270006025	14.26	114.05	0.21	1	IA-2270006025	30.80	3.71	2.52	2.45	0.02	18.41	6,425.32	0.23	0.04	0.001	0.000	0.000	0.000	0.000	0.000	0.170	0.170	0.000	0.000
Washington	Washington	IA	Attainment	N/A	Crane	2270002045	14.26	114.05	0.43	1	IA-2270002045	50.46	2.79	2.41	2.34	0.14	12.95	52,904.94	0.24	0.05	0.003	0.000	0.000	0.000	0.000	0.001	2.861	2.860	0.000	0.000
Washington	Washington	IA	Attainment	N/A	Rail Tensor	2270006005	14.26	114.05	0.43	1	IA-2270006005	56.76	4.52	2.98	2.89	0.04	19.16	12,120.63	0.31	0.06	0.003	0.000	0.000	0.000	0.000	0.001	0.657	0.655	0.000	0.000
Washington	Washington	IA	Attainment	N/A	Rail Tamper	2270002006	14.26	114.05	0.43	1	IA-2270002006	7.54	1.49	0.43	0.42	0.00	4.42	1,061.94	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.058	0.057	0.000	0.000
Ottumwa	Wapello	IA	Attainment	N/A	Front End Loader	2270002066	3.10	24.82	0.21	2	IA-2270002066	35.30	3.56	4.26	4.14	0.04	24.28	13,061.92	0.20	0.04	0.000	0.000	0.000	0.000	0.000	0.000	0.150	0.150	0.000	0.000
Ottumwa	Wapello	IA	Attainment	N/A	Dump Trucks	2270002078	3.10	24.82	0.21	7	IA-2270002078	20.39	3.00	1.89	1.83	0.01	12.46	4,736.27	0.14	0.03	0.001	0.000	0.000	0.000	0.000	0.001	0.191	0.190	0.000	0.000
Ottumwa	Wapello	IA	Attainment	N/A	Compactor	2270002015	3.10	24.82	0.59	1	IA-2270002015	47.48	2.02	1.73	1.68	0.08	10.67	30,458.85	0.20	0.04	0.001	0.000	0.000	0.000	0.000	0.000	0.492	0.492	0.000	0.000
Ottumwa	Wapello	IA	Attainment	N/A	Road Grader	2270002048	3.10	24.82	0.59	1	IA-2270002048	23.68	1.52	1.48	1.44	0.17	6.41	64,793.95	0.10	0.02	0.000	0.000	0.000	0.000	0.000	0.000	1.046	1.046	0.000	0.000
Ottumwa	Wapello	IA	Attainment	N/A	Thermite Welder	2270006025	3.10	24.82	0.21	1	IA-2270006025	30.80	3.71	2.52	2.45	0.02	18.41	6,425.32	0.23	0.04	0.000	0.000	0.000	0.000	0.000	0.000	0.037	0.037	0.000	0.000
Ottumwa	Wapello	IA	Attainment	N/A	Crane	2270002045	3.10	24.82	0.43	1	IA-2270002045	50.46	2.79	2.41	2.34	0.14	12.95	52,904.94	0.24	0.05	0.001	0.000	0.000	0.000	0.000	0.000	0.623	0.622	0.000	0.000
Ottumwa	Wapello	IA	Attainment	N/A	Rail Tensor	2270006005	3.10	24.82	0.43	1	IA-2270006005	56.76	4.52	2.98	2.89	0.04	19.16	12,120.63	0.31	0.06	0.001	0.000	0.000	0.000	0.000	0.000	0.143	0.143	0.000	0.000
Ottumwa	Wapello	IA	Attainment	N/A	Rail Tamper	2270002006	3.10	24.82	0.43	1	IA-2270002006	7.54	1.49	0.43	0.42	0.00	4.42	1,061.94	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.012	0.000	0.000
Moravia	Monroe	IA	Attainment	N/A	Front End Loader	2270002066	15.11	120.91	0.21	2	IA-2270002066	35.30	3.56	4.26	4.14	0.04	24.28	13,061.92	0.20	0.04	0.002	0.000	0.000	0.000	0.000	0.001	0.732	0.731	0.000	0.000
Moravia	Monroe	IA	Attainment	N/A	Dump Trucks	2270002078	15.11	120.91	0.21	7	IA-2270002078	20.39	3.00	1.89	1.83	0.01	12.46	4,736.27	0.14	0.03	0.004	0.001	0.000	0.000	0.000	0.002	0.930	0.928	0.000	0.000
Moravia	Monroe	IA	Attainment	N/A	Compactor	2270002015	15.11	120.91	0.59	1	IA-2270002015	47.48	2.02	1.73	1.68	0.08	10.67	30,458.85	0.20	0.04	0.004	0.000	0.000	0.000	0.000	0.001	2.397	2.395	0.000	0.000
Moravia	Monroe	IA	Attainment	N/A	Road Grader	2270002048	15.11	120.91	0.59	1	IA-2270002048	23.68	1.52	1.48	1.44	0.17	6.41	64,793.95	0.10	0.02	0.002	0.000	0.000	0.000	0.000	0.001	5.096	5.095	0.000	0.000
Moravia	Monroe	IA	Attainment	N/A	Thermite Welder	2270006025	15.11	120.91	0.21	1	IA-2270006025	30.80	3.71	2.52	2.45	0.02	18.41	6,425.32	0.23	0.04	0.001	0.000	0.000	0.000	0.000	0.001	0.180	0.180	0.000	0.000
Moravia	Monroe	IA	Attainment	N/A	Crane	2270002045	15.11	120.91	0.43	1	IA-2270002045	50.46	2.79	2.41	2.34	0.14	12.95	52,904.94	0.24	0.05	0.003	0.000	0.000	0.000	0.000	0.001	3.033	3.032	0.000	0.000
Moravia	Monroe	IA	Attainment	N/A	Rail Tensor	2270006005	15.11	120.91	0.43	1	IA-2270006005	56.76	4.52	2.98	2.89	0.04	19.16	12,120.63	0.31	0.06	0.003	0.000	0.000	0.000	0.000	0.001	0.696	0.695	0.000	0.000
Moravia	Monroe	IA	Attainment	N/A	Rail Tamper	2270002006	15.11	120.91	0.43	1	IA-2270002006	7.54	1.49	0.43	0.42	0.00	4.42	1,061.94	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.061	0.061	0.000	0.000
Newtown	Sullivan	MO	Attainment	N/A	Front End Loader	2270002066	2.90	23.23	0.21	2	MO-2270002066	36.67	5.33	4.44	4.30	0.04	23.85	13,056.13	0.15	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.141	0.140	0.000	0.000
Newtown	Sullivan	MO	Attainment	N/A	Dump Trucks	2270002078	2.90	23.23	0.21	7	MO-2270002078	26.50	5.16	3.31	3.21	0.02	20.71	4,755.62	0.14	0.03	0.001	0.000	0.000	0.000	0.000	0.001	0.179	0.179	0.000	0.000
Newtown	Sullivan	MO	Attainment	N/A	Compactor	2270002015	2.90	23.23	0.59	1	MO-2270002015	45.16	1.93	1.57	1.52	0.08	9.88	30,468.16	0.19	0.04	0.001	0.000	0.000	0.000	0.000	0.000	0.461	0.460	0.000	0.000
Newtown	Sullivan	MO	Attainment	N/A	Road Grader	2270002048	2.90	23.23	0.59	1	MO-2270002048	21.74	1.47	1.41	1.37	0.17	5.90	64,868.38	0.08	0.02	0.000	0.000	0.000	0.000	0.000	0.000	0.980	0.980	0.000	0.000
Newtown	Sullivan	MO	Attainment	N/A	Thermite Welder	2270006025	2.90	23.23	0.21	1	MO-2270006025	30.52	3.74	2.55	2.47	0.02	18.11	6,425.93	0.21	0.04	0.000	0.000	0.000	0.000	0.000	0.000	0.035	0.035	0.000	0.000
Newtown	Sullivan	MO	Attainment	N/A	Crane	2270002045	2.90	23.23	0.43	1	MO-2270002045	46.02	2.49	2.10	2.03	0.14	10.71	53,009.53	0.16	0.03	0.001	0.000	0.000	0.000	0.000	0.000	0.584	0.584	0.000	0.000
Newtown	Sullivan	MO	Attainment	N/A	Rail Tensor	2270006005	2.90	23.23	0.43	1	MO-2270006005	55.71	4.48	2.97	2.88	0.04	18.65	12,120.94	0.29	0.06	0.001	0.000	0.000	0.000	0.000	0.000	0.134	0.133	0.000	0.000
Newtown	Sullivan	MO	Attainment	N/A	Rail Tamper	2270002006	2.90	23.23	0.43	1	MO-2270002006	7.58	1.50	0.45	0.44	0.00	4.52	1,061.89	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.012	0.000	0.000
Laredo	Grundy	MO	Attainment	N/A	Front End Loader	2270002066	3.83	30.62	0.21	2	MO-2270002066	36.67	5.33	4.44	4.30	0.04	23.85	13,056.13	0.15	0.03	0.001	0.000	0.000	0.000	0.000	0.000	0.185	0.185	0.000	0.000
Laredo	Grundy	MO	Attainment	N/A	Dump Trucks	2270002078	3.83	30.62	0.21	7	MO-2270002078	26.50	5.16	3.31	3.21	0.02	20.71	4,755.62	0.14	0.03	0.001	0.000	0.000	0.000	0.000	0.001	0.237	0.236	0.000	0.000
Laredo	Grundy	MO	Attainment	N/A	Compactor	2270002015	3.83	30.62	0.59	1	MO-2270002015	45.16	1.93	1.57	1.52	0.08	9.88	30,468.16	0.19	0.04	0.001	0.000	0.000	0.000	0.000	0.000	0.607	0.607	0.000	0.000

Laredo	Grundy	MO	Attainment	N/A	Road Grader	2270002048	3.83	30.62	0.59	1	MO-2270002048	21.74	1.47	1.41	1.37	0.17	5.90	64,868.38	0.08	0.02	0.000	0.000	0.000	0.000	0.000	0.000	1.292	1.292	0.000	0.000
Laredo	Grundy	MO	Attainment	N/A	Thermite Welder	2270006025	3.83	30.62	0.21	1	MO-2270006025	30.52	3.74	2.55	2.47	0.02	18.11	6,425.93	0.21	0.04	0.000	0.000	0.000	0.000	0.000	0.000	0.046	0.046	0.000	0.000
Laredo	Grundy	MO	Attainment	N/A	Crane	2270002045	3.83	30.62	0.43	1	MO-2270002045	46.02	2.49	2.10	2.03	0.14	10.71	53,009.53	0.16	0.03	0.001	0.000	0.000	0.000	0.000	0.000	0.770	0.769	0.000	0.000
Laredo	Grundy	MO	Attainment	N/A	Rail Tensor	2270006005	3.83	30.62	0.43	1	MO-2270006005	55.71	4.48	2.97	2.88	0.04	18.65	12,120.94	0.29	0.06	0.001	0.000	0.000	0.000	0.000	0.000	0.176	0.176	0.000	0.000
Laredo	Grundy	MO	Attainment	N/A	Rail Tamper	2270002006	3.83	30.62	0.43	1	MO-2270002006	7.58	1.50	0.45	0.44	0.00	4.52	1,061.89	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.016	0.015	0.000	0.000
Dawn	Livingston	MO	Attainment	N/A	Front End Loader	2270002066	14.32	114.58	0.21	2	MO-2270002066	36.67	5.33	4.44	4.30	0.04	23.85	13,056.13	0.15	0.03	0.002	0.000	0.000	0.000	0.000	0.001	0.693	0.693	0.000	0.000
Dawn	Livingston	MO	Attainment	N/A	Dump Trucks	2270002078	14.32	114.58	0.21	7	MO-2270002078	26.50	5.16	3.31	3.21	0.02	20.71	4,755.62	0.14	0.03	0.005	0.001	0.001	0.001	0.000	0.004	0.885	0.883	0.000	0.000
Dawn	Livingston	MO	Attainment	N/A	Compactor	2270002015	14.32	114.58	0.59	1	MO-2270002015	45.16	1.93	1.57	1.52	0.08	9.88	30,468.16	0.19	0.04	0.003	0.000	0.000	0.000	0.000	0.001	2.272	2.270	0.000	0.000
Dawn	Livingston	MO	Attainment	N/A	Road Grader	2270002048	14.32	114.58	0.59	1	MO-2270002048	21.74	1.47	1.41	1.37	0.17	5.90	64,868.38	0.08	0.02	0.002	0.000	0.000	0.000	0.000	0.000	4.834	4.834	0.000	0.000
Dawn	Livingston	MO	Attainment	N/A	Thermite Welder	2270006025	14.32	114.58	0.21	1	MO-2270006025	30.52	3.74	2.55	2.47	0.02	18.11	6,425.93	0.21	0.04	0.001	0.000	0.000	0.000	0.000	0.000	0.171	0.170	0.000	0.000
Dawn	Livingston	MO	Attainment	N/A	Crane	2270002045	14.32	114.58	0.43	1	MO-2270002045	46.02	2.49	2.10	2.03	0.14	10.71	53,009.53	0.16	0.03	0.002	0.000	0.000	0.000	0.000	0.001	2.880	2.879	0.000	0.000
Dawn	Livingston	MO	Attainment	N/A	Rail Tensor	2270006005	14.32	114.58	0.43	1	MO-2270006005	55.71	4.48	2.97	2.88	0.04	18.65	12,120.94	0.29	0.06	0.003	0.000	0.000	0.000	0.000	0.001	0.660	0.658	0.000	0.000
Dawn	Livingston	MO	Attainment	N/A	Rail Tamper	2270002006	14.32	114.58	0.43	1	MO-2270002006	7.58	1.50	0.45	0.44	0.00	4.52	1,061.89	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.058	0.058	0.000	0.000
Blue Valley	Jackson	MO	NonAttainment	SO2	Front End Loader	2270002066	13.66	109.30	0.21	2	MO-2270002066	36.67	5.33	4.44	4.30	0.04	23.85	13,056.13	0.15	0.03	0.002	0.000	0.000	0.000	0.000	0.001	0.661	0.661	0.000	0.000
Blue Valley	Jackson	MO	NonAttainment	SO2	Dump Trucks	2270002078	13.66	109.30	0.21	7	MO-2270002078	26.50	5.16	3.31	3.21	0.02	20.71	4,755.62	0.14	0.03	0.005	0.001	0.001	0.001	0.000	0.004	0.844	0.842	0.000	0.000
Blue Valley	Jackson	MO	NonAttainment	SO2	Compactor	2270002015	13.66	109.30	0.59	1	MO-2270002015	45.16	1.93	1.57	1.52	0.08	9.88	30,468.16	0.19	0.04	0.003	0.000	0.000	0.000	0.000	0.001	2.167	2.166	0.000	0.000
Blue Valley	Jackson	MO	NonAttainment	SO2	Road Grader	2270002048	13.66	109.30	0.59	1	MO-2270002048	21.74	1.47	1.41	1.37	0.17	5.90	64,868.38	0.08	0.02	0.002	0.000	0.000	0.000	0.000	0.000	4.611	4.611	0.000	0.000
Blue Valley	Jackson	MO	NonAttainment	SO2	Thermite Welder	2270006025	13.66	109.30	0.21	1	MO-2270006025	30.52	3.74	2.55	2.47	0.02	18.11	6,425.93	0.21	0.04	0.001	0.000	0.000	0.000	0.000	0.000	0.163	0.163	0.000	0.000
Blue Valley	Jackson	MO	NonAttainment	SO2	Crane	2270002045	13.66	109.30	0.43	1	MO-2270002045	46.02	2.49	2.10	2.03	0.14	10.71	53,009.53	0.16	0.03	0.002	0.000	0.000	0.000	0.000	0.001	2.747	2.746	0.000	0.000
Blue Valley	Jackson	MO	NonAttainment	SO2	Rail Tensor	2270006005	13.66	109.30	0.43	1	MO-2270006005	55.71	4.48	2.97	2.88	0.04	18.65	12,120.94	0.29	0.06	0.003	0.000	0.000	0.000	0.000	0.001	0.629	0.628	0.000	0.000
Blue Valley	Jackson	MO	NonAttainment	SO2	Rail Tamper	2270002006	13.66	109.30	0.43	1	MO-2270002006	7.58	1.50	0.45	0.44	0.00	4.52	1,061.89	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.056	0.055	0.000	0.000
Grandview	Jackson	MO	Attainment	N/A	Front End Loader	2270002066	17.16	137.32	0.21	2	MO-2270002066	36.67	5.33	4.44	4.30	0.04	23.85	13,056.13	0.15	0.03	0.002	0.000	0.000	0.000	0.000	0.002	0.831	0.830	0.000	0.000
Grandview	Jackson	MO	Attainment	N/A	Dump Trucks	2270002078	17.16	137.32	0.21	7	MO-2270002078	26.50	5.16	3.31	3.21	0.02	20.71	4,755.62	0.14	0.03	0.006	0.001	0.001	0.001	0.000	0.005	1.061	1.058	0.000	0.000
Grandview	Jackson	MO	Attainment	N/A	Compactor	2270002015	17.16	137.32	0.59	1	MO-2270002015	45.16	1.93	1.57	1.52	0.08	9.88	30,468.16	0.19	0.04	0.004	0.000	0.000	0.000	0.000	0.001	2.722	2.721	0.000	0.000
Grandview	Jackson	MO	Attainment	N/A	Road Grader	2270002048	17.16	137.32	0.59	1	MO-2270002048	21.74	1.47	1.41	1.37	0.17	5.90	64,868.38	0.08	0.02	0.002	0.000	0.000	0.000	0.000	0.001	5.794	5.793	0.000	0.000
Grandview	Jackson	MO	Attainment	N/A	Thermite Welder	2270006025	17.16	137.32	0.21	1	MO-2270006025	30.52	3.74	2.55	2.47	0.02	18.11	6,425.93	0.21	0.04	0.001	0.000	0.000	0.000	0.000	0.001	0.205	0.204	0.000	0.000
Grandview	Jackson	MO	Attainment	N/A	Crane	2270002045	17.16	137.32	0.43	1	MO-2270002045	46.02	2.49	2.10	2.03	0.14	10.71	53,009.53	0.16	0.03	0.003	0.000	0.000	0.000	0.000	0.001	3.451	3.450	0.000	0.000
Grandview	Jackson	MO	Attainment	N/A	Rail Tensor	2270006005	17.16	137.32	0.43	1	MO-2270006005	55.71	4.48	2.97	2.88	0.04	18.65	12,120.94	0.29	0.06	0.004	0.000	0.000	0.000	0.000	0.001	0.791	0.789	0.000	0.000
Grandview	Jackson	MO	Attainment	N/A	Rail Tamper	2270002006	17.16	137.32	0.43	1	MO-2270002006	7.58	1.50	0.45	0.44	0.00	4.52	1,061.89	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.070	0.069	0.000	0.000
Asbury	Jasper	MO	Attainment	N/A	Front End Loader	2270002066	14.65	117.22	0.21	2	MO-2270002066	36.67	5.33	4.44	4.30	0.04	23.85	13,056.13	0.15	0.03	0.002	0.000	0.000	0.000	0.000	0.001	0.709	0.709	0.000	0.000
Asbury	Jasper	MO	Attainment	N/A	Dump Trucks	2270002078	14.65	117.22	0.21	7	MO-2270002078	26.50	5.16	3.31	3.21	0.02	20.71	4,755.62	0.14	0.03	0.005	0.001	0.001	0.001	0.000	0.004	0.906	0.903	0.000	0.000
Asbury	Jasper	MO	Attainment	N/A	Compactor	2270002015	14.65	117.22	0.59	1	MO-2270002015	45.16	1.93	1.57	1.52	0.08	9.88	30,468.16	0.19	0.04	0.003	0.000	0.000	0.000	0.000	0.001	2.324	2.323	0.000	0.000
Asbury	Jasper	MO	Attainment	N/A	Road Grader	2270002048	14.65	117.22	0.59	1	MO-2270002048	21.74	1.47	1.41	1.37	0.17	5.90	64,868.38	0.08	0.02	0.002	0.000	0.000	0.000	0.000	0.000	4.946	4.945	0.000	0.000
Asbury	Jasper	MO	Attainment	N/A	Thermite Welder	2270006025	14.65	117.22	0.21	1	MO-2270006025	30.52	3.74	2.55	2.47	0.02	18.11	6,425.93	0.21	0.04	0.001	0.000	0.000	0.000	0.000	0.000	0.175	0.174	0.000	0.000
Asbury	Jasper	MO	Attainment	N/A	Crane	2270002045	14.65	117.22	0.43	1	MO-2270002045	46.02	2.49	2.10	2.03	0.14	10.71	53,009.53	0.16	0.03	0.003	0.000	0.000	0.000	0.000	0.001	2.946	2.945	0.000	0.000
Asbury	Jasper	MO	Attainment	N/A	Rail Tensor	2270006005	14.65	117.22	0.43	1	MO-2270006005	55.71	4.48	2.97	2.88	0.04	18.65	12,120.94	0.29	0.06	0.003	0.000	0.000	0.000	0.000	0.001	0.675	0.673	0.000	0.000
Asbury	Jasper	MO	Attainment	N/A	Rail Tamper	2270002006	14.65	117.22	0.43	1	MO-2270002006	7.58	1.50	0.45	0.44	0.00	4.52	1,061.89	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.060	0.059	0.000	0.000
Goodman	McDonald	MO	Attainment	N/A	Front End Loader	2270002066	7.06	56.50	0.21	2	MO-2270002066	36.67	5.33	4.44	4.30	0.04	23.85	13,056.13	0.15	0.03	0.001	0.000	0.000	0.000	0.000	0.001	0.342	0.341	0.000	0.000
Goodman	McDonald	MO	Attainment	N/A	Dump Trucks	2270002078	7.06	56.50	0.21	7	MO-2270002078	26.50	5.16	3.31	3.21	0.02	20.71	4,755.62	0.14	0.03	0.002	0.000	0.000	0.000	0.000	0.002	0.436	0.435	0.000	0.000
Goodman	McDonald	MO	Attainment	N/A	Compactor	2270002015	7.06	56.50	0.59	1	MO-2270002015	45.16	1.93	1.57	1.52	0.08	9.88	30,468.16	0.19	0.04	0.002	0.000	0.000	0.000	0.000	0.000	1.120	1.119	0.000	0.000
Goodman	McDonald	MO	Attainment	N/A	Road Grader	2270002048	7.06	56.50	0.59	1	MO-2270002048	21.74	1.47	1.41	1.37	0.17	5.90	64,868.38	0.08	0.02	0.001	0.000	0.000	0.000	0.000	0.000	2.384	2.383	0.000	0.000
Goodman	McDonald	MO	Attainment	N/A	Thermite Welder	2270006025	7.06	56.50	0.21	1	MO-2270006025	30.52	3.74	2.55	2.47	0.02	18.11	6,425.93	0.21	0.04	0.000	0.000	0.000	0.000	0.000	0.000	0.084	0.084	0.000	0.000
Goodman	McDonald	MO	Attainment	N/A	Crane	2270002045	7.06	56.50	0.43	1	MO-2270002045	46.02	2.49	2.10	2.03	0.14	10.71	53,009.53	0.16	0.03	0.001	0.000	0.000	0.000	0.000	0.000	1.420	1.420	0.000	0.000
Goodman	McDonald	MO	Attainment	N/A	Rail Tensor	2270006005	7.06	56.50	0.43	1	MO-2270006005	55.71	4.48	2.97	2.88	0.04	18.65	12,120.94	0.29	0.06	0.001	0.000	0.000	0.000	0.000	0.000	0.325	0.325	0.000	0.000
Goodman	McDonald	MO	Attainment	N/A	Rail Tamper	2270002006	7.06	56.50	0.43	1	MO-2270002006	7.58	1.50	0.45	0.44	0.00	4.52	1,061.89	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.029	0.028	0.000	0.000
Gentry	Benton	AK	Attainment	N/A	Front End Loader	2270002066	18.28	146.26	0.21	2	AK-2270002066	47.15	6.57	8.56	8.30	0.04	47.16	13,053.39	0.38	0.07	0.003	0.000	0.001	0.001	0.000	0.003	0.886	0.884	0.000	0.000
Gentry	Benton	AK	Attainment	N/A	Dump Trucks	2270002078	18.28	146.26	0.21	7	AK-2270002078	24.72	3.98	3.05	2.96	0.02	19.82	4,742.69	0.20	0.04	0.006	0.001	0.001	0.001	0.000	0.005	1.128	1.124	0.000	0.000
Gentry	Benton	AK	Attainment	N/A	Compactor	2270002015	18.28	146.26	0.59	1	AK-2270002015	46.55	2.10	1.84	1.79	0.08	11.15	30,456.35	0.20	0.04	0.004	0.000	0.000	0.000	0.000	0.001	2.899	2.897	0.000	0.000
Gentry	Benton	AK	Attainment	N/A	Road Grader	2270002048	18.28	146.26	0.59	1	AK-2270002048	20.84	1.43	1.33	1.29	0.17	5.75	64,861.93	0.08	0.02	0.002	0.000	0.000	0.000	0.000	0.001	6.170	6.170	0.000	0.000
Gentry	Benton	AK	Attainment	N/A	Thermite Welder	2270006025	18.28	146.26	0.21	1	AK-2270006025	30.83	3.81	2.60	2.52	0.02	18.63	6,427.13	0.22	0.04	0.001	0.000	0.000	0.000	0.000	0.001	0.218	0.218	0.000	0.000
Gentry	Benton	AK	Attainment	N/A	Crane	2270002045	18.28	146.26	0.43	1	AK-2270002045	52.74	3.41	2.96	2.87	0.15	15.42	52,876.38	0.25	0.05	0.004	0.000	0.000	0.000	0.000	0.001	3.667	3.666	0.000	0.000
Gentry	Benton	AK	Attainment	N/A	Rail Tensor	2270006005	18.28	146.26	0.43	1	AK-2270006005	56.42	4.50	2.96	2.87	0.04	18.67	12,120.79	0.30	0.06	0.004	0.000	0.000	0.000	0.000	0.001	0.842	0.840	0.000	0.000
Gentry	Benton	AK	Attainment	N/A	Rail Tamper	2270002006	18.28	146.26	0.43	1	AK-2270002006	7.54	1.47	0.44	0.43	0.00	4.44	1,061.99	0.13	0.03	0.001	0.000	0.000	0.000	0.000	0.000	0.074	0.074	0.000	0.000
Baron (MP247)	Adair	OK	Attainment	N/A	Front End Loader	2270002066	13.73	109.82	0.21	2	OK-2270002066	31.87	3.92	3.19	3.10	0.04	18.82	13,060.90	0.18	0.03	0.002	0.000	0.000	0.000	0.000	0.001	0.665	0.664	0.000	0.000
Baron (MP247)	Adair	OK	Attainment	N/A	Dump Trucks	2270002078	13.73	109.82	0.21	7	OK-2270002078	22.88	3.79	2.37	2.30	0.01	16.09	4,748.85	0.17	0.03	0.004	0.001	0.000	0.000	0.000	0.003	0.848	0.845	0.000	0.000
Baron (MP247)	Adair	OK	Attainment	N/A	Compactor	2270002015	13.73	109.82	0.59	1	OK-2270002015	46.92	1.92	1.53	1.48	0.08	9.73	30,462.49	0.19	0.04	0.003	0.000	0.000	0.000	0.000	0.001	2.177	2.176	0.000	0.000
Baron (MP247)	Adair	OK	Attainment	N/A	Road Grader	2270002048	13.73	109.82	0.59	1	OK-2270002048	24.36	1.51	1.47	1.42	0.17	6.30	64,817.60	0.10	0.02	0.002	0.000	0.000	0.000	0.000	0.000	4.630	4.630	0.000	0.000
Baron (MP247)	Adair	OK	Attainment	N/A	Thermite Welder	2270006025	13.73	109.82	0.21	1	OK-2270006025	29.95	3.53	2.34	2.27	0.02	16.86	6,426.01	0.21	0.04	0.001	0.000	0.000	0.000	0.000	0.000	0.164	0.163	0.000	0.000
Baron (MP247)	Adair	OK	Attainment	N/A	Crane	2270002045	13.73	109.82	0.43	1	OK-2270002045	45.18	2.35	1.95	1.89	0.14	10.16	52,909.68	0.17	0.03	0.002	0.000	0.000	0.000	0.000	0.001	2.755	2.754	0.000	0.000
Baron (MP247)	Adair	OK	Attainment	N/A	Rail Tensor	2270006005	13.73	109.82	0.43	1	OK-2270006005	53.31	4.12	2.67	2.59	0.04	17.09	12,125.54	0.29	0.06	0.003	0.000	0.000	0.000	0.000	0.001	0.632	0.631	0.000	0.000
Baron (MP247)	Adair	OK	Attainment	N/A	Rail Tamper	2270002006	13.73	109.82	0.43	1	OK-2270002006	7.59	1.51	0.45	0.44	0.00	4.54	1,061.88	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.056	0.055	0.000	0.000
Cave Springs	Adair	OK	Attainment	N/A	Front End Loader	2270002066	14.52	116.16	0.21	2	OK-2270002066	31.87	3.92	3.19	3.10	0.04	18.82	13,060.90	0.18	0.03	0.002	0.000	0.000	0.000	0.000	0.001	0.703	0.702	0.000	0.000
Cave Springs	Adair	OK	Attainment	N/A	Dump Trucks	2270002078	14.52	116.16	0.21	7	OK-2270002078	22.88	3.79	2.37	2.30	0.01	16.09	4,748.85	0.17	0.03	0.004	0.001	0.000	0.000	0.000	0.003	0.896	0.894	0.000	0.000
Cave Springs	Adair	OK	Attainment	N/A	Compactor	2270002015	14.52	116.16	0.59	1	OK-2270002015	46.92	1.92	1.53	1.48	0.08	9.73	30,462.49	0.19	0.04	0.004	0.000	0.000	0.000	0.000	0.001	2.303	2.301	0.000	0.000
Cave Springs	Adair	OK	Attainment	N/A	Road Grader	2270002048	14.52	116.16	0.59	1	OK-2270002048	24.36	1.51	1.47	1.42	0.17	6.30	64,817.60	0.10	0.02	0.002	0.000	0.000	0.000	0.000	0.000	4.897	4.897	0.000	0.000
Cave Springs	Adair	OK	Attainment	N/A	Thermite Welder	2270006025	14.52	116.16	0.21	1	OK-2270006025	29.95	3.53	2.34	2.27	0.02	16.86	6,426.01	0.21	0.04	0.001	0.000	0.000	0.000	0.000	0.000	0.173	0.173	0.000	0.000
Cave Springs	Adair	OK	Attainment	N/A	Crane	2270002045	14.52	116.16	0.43	1	OK-2270002045	45.18	2.35	1.95	1.89	0.14	10.16	52,909.68	0.17	0.03	0.002	0.000	0.000	0.000	0.000	0.001	2.914	2.913	0.000	0.000
Cave Springs	Adair	OK	Attainment	N/A	Rail Tensor	2270006005	14.52	116.16	0.43	1	OK-2270006005	53.31	4.12	2.67	2.59	0.04	17.09	12,125.54	0.29	0.06	0.003	0.000	0.000	0.000	0.000	0.001	0.669	0.668	0.000	0.000
Cave Springs	Adair	OK	Attainment	N/A	Rail Tamper	2270002006	14.52	116.16	0.43	1	OK-2270002006	7.59	1.51	0.45	0.44	0.00	4.54	1,061.88	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.059	0.058	0.000	0.000
Spiro	Le Flore	OK	Attainment	N/A	Front End Loader	2270002066	7.13	57.02	0.21	2	OK-2270002066	31.87	3.92	3.19	3.10	0.04	18.82	13,060.90	0.18	0.03	0.001	0.000	0.000	0.000	0.000	0.000	0.345	0.345	0.000	0.000
Spiro	Le Flore	OK	Attainment	N/A	Dump Trucks	2270002078	7.13	57.02	0.21	7	OK-2270002078	22.88	3.79	2.37	2.30	0.01	16.09	4,748.85	0.17	0.03	0.002	0.000	0.000	0.000	0.000	0.001	0.440	0.439	0.000	0.000
Spiro	Le Flore	OK	Attainment	N/A	Compactor	2270002015	7.13	57.02	0.59	1	OK-2270002015	46.92	1.92	1.53	1.48	0.08	9.73	30,462.49	0.19	0.04	0.002	0.000	0.000	0.000	0.000	0.000	1.130	1.130	0.000	0.000
Spiro	Le Flore	OK	Attainment	N/A	Road Grader	2270002048	7.13	57.02	0.59	1	OK-2270002048	24.36	1.51	1.47	1.42	0.17	6.30	64,817.60	0.10	0.02	0.001	0.000	0.000	0.000	0.000	0.000	2.404	2.404	0.000	0.000
Spiro	Le Flore	OK	Attainment	N/A	Thermite Welder	2270006025	7.13	57.02	0.21	1	OK-2270006025	29.95	3.53	2.34	2.27	0.02	16.86	6,426.01	0.21	0.04	0.000	0.000	0.000	0.000	0.000	0.000	0.085	0.085	0.000	0.000
Spiro	Le Flore	OK	Attainment	N/A	Crane	2270002045	7.13	57.02	0.43	1	OK-2270002045	45.18	2.35	1.95	1.89	0.14	10.16	52,909.68	0.17	0.03	0.001	0.000	0.000	0.000	0.000	0.000	1.430	1.430	0.000	0.000
Spiro	Le Flore	OK	Attainment	N/A	Rail Tensor	2270006005	7.13	57.02	0.43	1	OK-2270006005	53.31	4.12	2.67	2.59	0.04	17.09	12,125.54	0.29	0.06	0.001	0.000	0.000	0.000	0.000	0.000	0.328	0.328	0.000	0.000
Spiro	Le Flore	OK	Attainment	N/A	Rail Tamper	2270002006	7.13	57.02	0.43	1	OK-2270002006	7.59	1.51	0.45	0.44	0.00	4.54	1,061.88	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.029	0.029	0.000	0.000
Heavener	Le Flore	OK	Attainment	N/A	Front End Loader	2270002066	5.35	42.77	0.21	2	OK-2270002066	31.87	3.92	3.19	3.10	0.04	18.82	13,060.90	0.18	0.03	0.001	0.000	0.000	0.000	0.000	0.000	0.259	0.259	0.000	0.000
Heavener	Le Flore	OK	Attainment	N/A	Dump Trucks	2270002078	5.35	42.77	0.21	7	OK-2270002078	22.88	3.79	2.37	2.30	0.01	16.09	4,748.85	0.17	0.03	0.002	0.000	0.000	0.000	0.000	0.001	0.330	0.329	0.000	0.000
Heavener	Le Flore	OK	Attainment	N/A	Compactor	2270002015	5.35	42.77	0.59	1	OK-2270002015	46.92	1.92	1.53	1.48	0.08	9.73	30,462.49	0.19	0.04	0.001	0.000	0.000	0.000	0.000	0.000	0.848	0.847	0.000	0.000
Heavener	Le Flore	OK	Attainment	N/A	Road Grader	2270002048	5.35	42.77	0.59	1	OK-2270002048	24.36	1.51	1.47	1.42	0.17	6.30	64,817.60	0.10	0.02	0.001	0.000	0.000	0.000	0.000	0.000	1.803	1.803	0.000	0.000
Heavener	Le Flore	OK	Attainment	N/A	Thermite Welder	2270006025	5.35	42.77	0.21	1	OK-2270006025	29.95	3.53	2.34	2.27	0.02	16.86	6,426.01	0.21	0.04	0.000	0.000	0.000	0.000	0.000	0.000	0.064	0.064	0.000	0.000
Heavener	Le Flore	OK	Attainment	N/A	Crane	2270002045	5.35	42.77	0.43	1	OK-2270002045	45.18	2.35	1.95	1.89	0.14	10.16	52,909.68	0.17	0.03	0.001	0.000	0.000	0.000	0.000	0.000	1.073	1.073	0.000	0.000
Heavener	Le Flore	OK	Attainment	N/A	Rail Tensor	2270006005	5.35	42.77	0.43	1	OK-2270006005	53.31	4.12	2.67	2.59	0.04	17.09	12,125.54	0.29	0.06	0.001	0.000	0.000	0.000	0.000	0.000	0.246	0.246	0.000	0.000
Heavener	Le Flore	OK	Attainment	N/A	Rail Tamper	2270002006	5.35	42.77	0.43	1	OK-2270002006	7.59	1.51	0.45	0.44	0.00	4.54	1,061.88	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.022	0.022	0.000	0.000
Mena	Polk	AK	Attainment	N/A	Front End Loader	2270002066	16.10	128.83	0.21	2	AK-2270002

Mena	Polk	AK	Attainment	N/A	Compactor	2270002015	16.10	128.83	0.59	1	AK-2270002015	46.55	2.10	1.84	1.79	0.08	11.15	30,456.35	0.20	0.04	0.004	0.000	0.000	0.000	0.000	0.001	2.553	2.552	0.000	0.000
Mena	Polk	AK	Attainment	N/A	Road Grader	2270002048	16.10	128.83	0.59	1	AK-2270002048	20.84	1.43	1.33	1.29	0.17	5.75	64,861.93	0.08	0.02	0.002	0.000	0.000	0.000	0.000	0.000	5.435	5.435	0.000	0.000
Mena	Polk	AK	Attainment	N/A	Thermite Welder	2270006025	16.10	128.83	0.21	1	AK-2270006025	30.83	3.81	2.60	2.52	0.02	18.63	6,427.13	0.22	0.04	0.001	0.000	0.000	0.000	0.000	0.001	0.192	0.192	0.000	0.000
Mena	Polk	AK	Attainment	N/A	Crane	2270002045	16.10	128.83	0.43	1	AK-2270002045	52.74	3.41	2.96	2.87	0.15	15.42	52,876.38	0.25	0.05	0.003	0.000	0.000	0.000	0.000	0.001	3.230	3.229	0.000	0.000
Mena	Polk	AK	Attainment	N/A	Rail Tensor	2270006005	16.10	128.83	0.43	1	AK-2270006005	56.42	4.50	2.96	2.87	0.04	18.67	12,120.79	0.30	0.06	0.003	0.000	0.000	0.000	0.000	0.001	0.742	0.740	0.000	0.000
Mena	Polk	AK	Attainment	N/A	Rail Tamper	2270002006	16.10	128.83	0.43	1	AK-2270002006	7.54	1.47	0.44	0.43	0.00	4.44	1,061.99	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.066	0.065	0.000	0.000
Mansfield	De Soto	LA	Attainment	N/A	Front End Loader	2270002066	13.00	104.02	0.21	2	LA-2270002066	36.66	5.39	4.01	3.89	0.04	24.71	13,055.81	0.24	0.05	0.002	0.000	0.000	0.000	0.000	0.001	0.630	0.629	0.000	0.000
Mansfield	De Soto	LA	Attainment	N/A	Dump Trucks	2270002078	13.00	104.02	0.21	7	LA-2270002078	27.07	5.12	3.27	3.17	0.02	22.12	4,755.35	0.22	0.04	0.005	0.001	0.001	0.001	0.000	0.004	0.805	0.802	0.000	0.000
Mansfield	De Soto	LA	Attainment	N/A	Compactor	2270002015	13.00	104.02	0.59	1	LA-2270002015	44.74	1.89	1.50	1.46	0.08	9.56	30,464.26	0.19	0.04	0.003	0.000	0.000	0.000	0.000	0.001	2.062	2.061	0.000	0.000
Mansfield	De Soto	LA	Attainment	N/A	Road Grader	2270002048	13.00	104.02	0.59	1	LA-2270002048	22.89	1.51	1.45	1.41	0.17	6.13	64,818.26	0.09	0.02	0.002	0.000	0.000	0.000	0.000	0.000	4.385	4.385	0.000	0.000
Mansfield	De Soto	LA	Attainment	N/A	Thermite Welder	2270006025	13.00	104.02	0.21	1	LA-2270006025	30.73	4.25	2.81	2.73	0.02	19.17	6,425.77	0.19	0.04	0.001	0.000	0.000	0.000	0.000	0.000	0.155	0.155	0.000	0.000
Mansfield	De Soto	LA	Attainment	N/A	Crane	2270002045	13.00	104.02	0.43	1	LA-2270002045	45.20	2.47	2.03	1.97	0.14	10.49	52,900.77	0.16	0.03	0.002	0.000	0.000	0.000	0.000	0.001	2.609	2.608	0.000	0.000
Mansfield	De Soto	LA	Attainment	N/A	Rail Tensor	2270006005	13.00	104.02	0.43	1	LA-2270006005	56.94	4.86	3.21	3.11	0.04	19.39	12,121.39	0.27	0.05	0.003	0.000	0.000	0.000	0.000	0.001	0.599	0.598	0.000	0.000
Mansfield	De Soto	LA	Attainment	N/A	Rail Tamper	2270002006	13.00	104.02	0.43	1	LA-2270002006	7.60	1.51	0.46	0.45	0.00	4.59	1,061.88	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.053	0.052	0.000	0.000
Loring	Sabine	LA	Attainment	N/A	Front End Loader	2270002066	11.02	88.18	0.21	2	LA-2270002066	36.66	5.39	4.01	3.89	0.04	24.71	13,055.81	0.24	0.05	0.001	0.000	0.000	0.000	0.000	0.001	0.534	0.533	0.000	0.000
Loring	Sabine	LA	Attainment	N/A	Dump Trucks	2270002078	11.02	88.18	0.21	7	LA-2270002078	27.07	5.12	3.27	3.17	0.02	22.12	4,755.35	0.22	0.04	0.004	0.001	0.000	0.000	0.000	0.003	0.682	0.679	0.000	0.000
Loring	Sabine	LA	Attainment	N/A	Compactor	2270002015	11.02	88.18	0.59	1	LA-2270002015	44.74	1.89	1.50	1.46	0.08	9.56	30,464.26	0.19	0.04	0.003	0.000	0.000	0.000	0.000	0.001	1.748	1.747	0.000	0.000
Loring	Sabine	LA	Attainment	N/A	Road Grader	2270002048	11.02	88.18	0.59	1	LA-2270002048	22.89	1.51	1.45	1.41	0.17	6.13	64,818.26	0.09	0.02	0.001	0.000	0.000	0.000	0.000	0.000	3.718	3.717	0.000	0.000
Loring	Sabine	LA	Attainment	N/A	Thermite Welder	2270006025	11.02	88.18	0.21	1	LA-2270006025	30.73	4.25	2.81	2.73	0.02	19.17	6,425.77	0.19	0.04	0.001	0.000	0.000	0.000	0.000	0.000	0.131	0.131	0.000	0.000
Loring	Sabine	LA	Attainment	N/A	Crane	2270002045	11.02	88.18	0.43	1	LA-2270002045	45.20	2.47	2.03	1.97	0.14	10.49	52,900.77	0.16	0.03	0.002	0.000	0.000	0.000	0.000	0.000	2.212	2.211	0.000	0.000
Loring	Sabine	LA	Attainment	N/A	Rail Tensor	2270006005	11.02	88.18	0.43	1	LA-2270006005	56.94	4.86	3.21	3.11	0.04	19.39	12,121.39	0.27	0.05	0.002	0.000	0.000	0.000	0.000	0.001	0.508	0.507	0.000	0.000
Loring	Sabine	LA	Attainment	N/A	Rail Tamper	2270002006	11.02	88.18	0.43	1	LA-2270002006	7.60	1.51	0.46	0.45	0.00	4.59	1,061.88	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.045	0.044	0.000	0.000
Singer	Beauregard	LA	Attainment	N/A	Front End Loader	2270002066	7.26	58.08	0.21	2	LA-2270002066	36.66	5.39	4.01	3.89	0.04	24.71	13,055.81	0.24	0.05	0.001	0.000	0.000	0.000	0.000	0.001	0.352	0.351	0.000	0.000
Singer	Beauregard	LA	Attainment	N/A	Dump Trucks	2270002078	7.26	58.08	0.21	7	LA-2270002078	27.07	5.12	3.27	3.17	0.02	22.12	4,755.35	0.22	0.04	0.003	0.000	0.000	0.000	0.000	0.002	0.449	0.448	0.000	0.000
Singer	Beauregard	LA	Attainment	N/A	Compactor	2270002015	7.26	58.08	0.59	1	LA-2270002015	44.74	1.89	1.50	1.46	0.08	9.56	30,464.26	0.19	0.04	0.002	0.000	0.000	0.000	0.000	0.000	1.151	1.151	0.000	0.000
Singer	Beauregard	LA	Attainment	N/A	Road Grader	2270002048	7.26	58.08	0.59	1	LA-2270002048	22.89	1.51	1.45	1.41	0.17	6.13	64,818.26	0.09	0.02	0.001	0.000	0.000	0.000	0.000	0.000	2.449	2.448	0.000	0.000
Singer	Beauregard	LA	Attainment	N/A	Thermite Welder	2270006025	7.26	58.08	0.21	1	LA-2270006025	30.73	4.25	2.81	2.73	0.02	19.17	6,425.77	0.19	0.04	0.000	0.000	0.000	0.000	0.000	0.000	0.087	0.086	0.000	0.000
Singer	Beauregard	LA	Attainment	N/A	Crane	2270002045	7.26	58.08	0.43	1	LA-2270002045	45.20	2.47	2.03	1.97	0.14	10.49	52,900.77	0.16	0.03	0.001	0.000	0.000	0.000	0.000	0.000	1.457	1.456	0.000	0.000
Singer	Beauregard	LA	Attainment	N/A	Rail Tensor	2270006005	7.26	58.08	0.43	1	LA-2270006005	56.94	4.86	3.21	3.11	0.04	19.39	12,121.39	0.27	0.05	0.002	0.000	0.000	0.000	0.000	0.001	0.334	0.334	0.000	0.000
Singer	Beauregard	LA	Attainment	N/A	Rail Tamper	2270002006	7.26	58.08	0.43	1	LA-2270002006	7.60	1.51	0.46	0.45	0.00	4.59	1,061.88	0.13	0.03	0.000	0.000	0.000	0.000	0.000	0.000	0.030	0.029	0.000	0.000

Notes:

Work Hours estimated based on the distance of track work and industry standard production rates.
Assumed equipment necessary to complete the new and extended track work
Emission Factors were derived for the equipment using the Nonroad module within the MOVES
Nonroad run for 2027 Analysis
Assumes Default Inputs and Population Data
Accounts for all counties and months of year. Emission factors average to create statewide values for use in the analysis.
Load Factors sourced from "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling" EPA, 2010, EPA-420-R-10-016 N2O
not provided in Nonroad, Estimated using ratio between CH_4/N_2O emission factors based on EPA's "Emission Factors for GHG Inventories" for diesel fuel

Table K.12-4. Construction Analysis- Equipment Emissions HAPs

					Days of Construction	Total Op Hours	Load	Quantity	State and SCC Code	HAPs Emission Factors (g/hr)								Construction Emissions (tons/year)							
Site	County	State	Equipment	SCC Modeled	days	hrs	Factor	# of pcs		Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
Turkey River	Clayton	IA	Front End Loader	2270002066	17.16	137.28	0.21	2	IA-2270002066	0.33	0.08	0.14	0.01	0.02	0.91	0.01	0.00	2.1E-05	4.9E-06	8.8E-06	4.2E-07	1.3E-06	5.8E-05	4.5E-07	3.6E-08
Turkey River	Clayton	IA	Dump Trucks	2270002078	17.16	137.28	0.21	7	IA-2270002078	0.27	0.07	0.11	0.01	0.02	0.74	0.01	0.00	5.9E-05	1.6E-05	2.4E-05	1.2E-06	4.5E-06	1.7E-04	1.3E-06	1.0E-07
Turkey River	Clayton	IA	Compactor	2270002015	17.16	137.28	0.59	1	IA-2270002015	0.20	0.04	0.10	0.00	0.01	0.55	0.00	0.00	1.8E-05	3.2E-06	9.0E-06	3.1E-07	8.8E-07	4.9E-05	4.1E-07	2.7E-08
Turkey River	Clayton	IA	Road Grader	2270002048	17.16	137.28	0.59	1	IA-2270002048	0.12	0.02	0.05	0.00	0.01	0.30	0.00	0.00	1.1E-05	1.8E-06	4.7E-06	1.6E-07	9.4E-07	2.7E-05	2.2E-07	1.5E-08
Turkey River	Clayton	IA	Thermite Welder	2270006025	17.16	137.28	0.21	1	IA-2270006025	0.34	0.08	0.15	0.01	0.02	0.96	0.01	0.00	1.1E-05	2.4E-06	4.7E-06	2.2E-07	6.3E-07	3.1E-05	2.3E-07	1.7E-08
Turkey River	Clayton	IA	Crane	2270002045	17.16	137.28	0.43	1	IA-2270002045	0.26	0.05	0.12	0.00	0.01	0.71	0.01	0.00	1.7E-05	3.0E-06	8.1E-06	2.9E-07	9.7E-07	4.6E-05	3.8E-07	2.5E-08
Turkey River	Clayton	IA	Rail Tensor	2270006005	17.16	137.28	0.43	1	IA-2270006005	0.43	0.09	0.20	0.01	0.02	1.21	0.01	0.00	2.8E-05	5.8E-06	1.3E-05	5.4E-07	1.5E-06	7.8E-05	6.1E-07	4.3E-08
Turkey River	Clayton	IA	Rail Tamper	2270002006	17.16	137.28	0.43	1	IA-2270002006	0.15	0.03	0.08	0.00	0.01	0.43	0.00	0.00	1.0E-05	1.8E-06	5.2E-06	1.8E-07	4.2E-07	2.8E-05	2.2E-07	1.4E-08
Bellevue	Jackson	IA	Front End Loader	2270002066	14.06	112.46	0.21	2	IA-2270002066	0.33	0.08	0.14	0.01	0.02	0.91	0.01	0.00	1.7E-05	4.0E-06	7.2E-06	3.4E-07	1.1E-06	4.7E-05	3.7E-07	2.9E-08
Bellevue	Jackson	IA	Dump Trucks	2270002078	14.06	112.46	0.21	7	IA-2270002078	0.27	0.07	0.11	0.01	0.02	0.74	0.01	0.00	4.8E-05	1.3E-05	2.0E-05	1.0E-06	3.7E-06	1.4E-04	1.1E-06	8.6E-08
Bellevue	Jackson	IA	Compactor	2270002015	14.06	112.46	0.59	1	IA-2270002015	0.20	0.04	0.10	0.00	0.01	0.55	0.00	0.00	1.5E-05	2.6E-06	7.3E-06	2.6E-07	7.2E-07	4.1E-05	3.4E-07	2.2E-08
Bellevue	Jackson	IA	Road Grader	2270002048	14.06	112.46	0.59	1	IA-2270002048	0.12	0.02	0.05	0.00	0.01	0.30	0.00	0.00	9.1E-06	1.5E-06	3.9E-06	1.3E-07	7.7E-07	2.2E-05	1.8E-07	1.2E-08
Bellevue	Jackson	IA	Thermite Welder	2270006025	14.06	112.46	0.21	1	IA-2270006025	0.34	0.08	0.15	0.01	0.02	0.96	0.01	0.00	8.9E-06	2.0E-06	3.9E-06	1.8E-07	5.1E-07	2.5E-05	1.9E-07	1.4E-08
Bellevue	Jackson	IA	Crane	2270002045	14.06	112.46	0.43	1	IA-2270002045	0.26	0.05	0.12	0.00	0.01	0.71	0.01	0.00	1.4E-05	2.5E-06	6.7E-06	2.4E-07	8.0E-07	3.8E-05	3.1E-07	2.0E-08
Bellevue	Jackson	IA	Rail Tensor	2270006005	14.06	112.46	0.43	1	IA-2270006005	0.43	0.09	0.20	0.01	0.02	1.21	0.01	0.00	2.3E-05	4.8E-06	1.0E-05	4.5E-07	1.2E-06	6.4E-05	5.0E-07	3.5E-08
Bellevue	Jackson	IA	Rail Tamper	2270002006	14.06	112.46	0.43	1	IA-2270002006	0.15	0.03	0.08	0.00	0.01	0.43	0.00	0.00	8.3E-06	1.5E-06	4.3E-06	1.5E-07	3.5E-07	2.3E-05	1.8E-07	1.2E-08
Monroe	Ogle	IL	Front End Loader	2270002066	16.83	134.64	0.21	2	IL-2270002066	0.45	0.10	0.17	0.01	0.03	1.25	0.01	0.00	2.8E-05	6.2E-06	1.1E-05	5.9E-07	1.6E-06	7.8E-05	5.6E-07	4.2E-08
Monroe	Ogle	IL	Dump Trucks	2270002078	16.83	134.64	0.21	7	IL-2270002078	0.43	0.11	0.17	0.01	0.03	1.21	0.01	0.00	9.4E-05	2.3E-05	3.6E-05	2.0E-06	6.3E-06	2.6E-04	2.0E-06	1.5E-07
Monroe	Ogle	IL	Compactor	2270002015	16.83	134.64	0.59	1	IL-2270002015	0.19	0.03	0.09	0.00	0.01	0.51	0.00	0.00	1.6E-05	2.9E-06	8.1E-06	2.8E-07	8.1E-07	4.5E-05	3.8E-07	2.4E-08
Monroe	Ogle	IL	Road Grader	2270002048	16.83	134.64	0.59	1	IL-2270002048	0.12	0.02	0.05	0.00	0.01	0.30	0.00	0.00	1.1E-05	1.8E-06	4.6E-06	1.6E-07	9.3E-07	2.6E-05	2.2E-07	1.5E-08
Monroe	Ogle	IL	Thermite Welder	2270006025	16.83	134.64	0.21	1	IL-2270006025	0.35	0.08	0.15	0.01	0.02	0.98	0.01	0.00	1.1E-05	2.5E-06	4.6E-06	2.2E-07	6.7E-07	3.0E-05	2.3E-07	1.7E-08
Monroe	Ogle	IL	Crane	2270002045	16.83	134.64	0.43	1	IL-2270002045	0.21	0.04	0.10	0.00	0.01	0.57	0.00	0.00	1.4E-05	2.4E-06	6.2E-06	2.3E-07	8.6E-07	3.6E-05	2.8E-07	1.9E-08
Monroe	Ogle	IL	Rail Tensor	2270006005	16.83	134.64	0.43	1	IL-2270006005	0.43	0.09	0.20	0.01	0.02	1.22	0.01	0.00	2.8E-05	6.0E-06	1.2E-05	5.4E-07	1.6E-06	7.8E-05	6.1E-07	4.3E-08
Monroe	Ogle	IL	Rail Tamper	2270002006	16.83	134.64	0.43	1	IL-2270002006	0.16	0.03	0.08	0.00	0.01	0.44	0.00	0.00	1.0E-05	1.8E-06	5.2E-06	1.8E-07	4.2E-07	2.8E-05	2.2E-07	1.4E-08
Deer Creek	Clinton	IA	Front End Loader	2270002066	9.57	76.56	0.21	2	IA-2270002066	0.33	0.08	0.14	0.01	0.02	0.91	0.01	0.00	1.2E-05	2.7E-06	4.9E-06	2.3E-07	7.4E-07	3.2E-05	2.5E-07	2.0E-08
Deer Creek	Clinton	IA	Dump Trucks	2270002078	9.57	76.56	0.21	7	IA-2270002078	0.27	0.07	0.11	0.01	0.02	0.74	0.01	0.00	3.3E-05	8.9E-06	1.3E-05	6.9E-07	2.5E-06	9.2E-05	7.2E-07	5.8E-08
Deer Creek	Clinton	IA	Compactor	2270002015	9.57	76.56	0.59	1	IA-2270002015	0.20	0.04	0.10	0.00	0.01	0.55	0.00	0.00	1.0E-05	1.8E-06	5.0E-06	1.7E-07	4.9E-07	2.8E-05	2.3E-07	1.5E-08
Deer Creek	Clinton	IA	Road Grader	2270002048	9.57	76.56	0.59	1	IA-2270002048	0.12	0.02	0.05	0.00	0.01	0.30	0.00	0.00	6.2E-06	1.0E-06	2.6E-06	9.1E-08	5.3E-07	1.5E-05	1.2E-07	8.3E-09
Deer Creek	Clinton	IA	Thermite Welder	2270006025	9.57	76.56	0.21	1	IA-2270006025	0.34	0.08	0.15	0.01	0.02	0.96	0.01	0.00	6.1E-06	1.3E-06	2.6E-06	1.2E-07	3.5E-07	1.7E-05	1.3E-07	9.5E-09
Deer Creek	Clinton	IA	Crane	2270002045	9.57	76.56	0.43	1	IA-2270002045	0.26	0.05	0.12	0.00	0.01	0.71	0.01	0.00	9.5E-06	1.7E-06	4.5E-06	1.6E-07	5.4E-07	2.6E-05	2.1E-07	1.4E-08
Deer Creek	Clinton	IA	Rail Tensor	2270006005	9.57	76.56	0.43	1	IA-2270006005	0.43	0.09	0.20	0.01	0.02	1.21	0.01	0.00	1.6E-05	3.3E-06	7.1E-06	3.0E-07	8.3E-07	4.4E-05	3.4E-07	2.4E-08
Deer Creek	Clinton	IA	Rail Tamper	2270002006	9.57	76.56	0.43	1	IA-2270002006	0.15	0.03	0.08	0.00	0.01	0.43	0.00	0.00	5.6E-06	1.0E-06	2.9E-06	1.0E-07	2.4E-07	1.6E-05	1.3E-07	8.0E-09
Camanche	Clinton	IA	Front End Loader	2270002066	5.02	40.13	0.21	2	IA-2270002066	0.33	0.08	0.14	0.01	0.02	0.91	0.01	0.00	6.0E-06	1.4E-06	2.6E-06	1.2E-07	3.9E-07	1.7E-05	1.3E-07	1.1E-08
Camanche	Clinton	IA	Dump Trucks	2270002078	5.02	40.13	0.21	7	IA-2270002078	0.27	0.07	0.11	0.01	0.02	0.74	0.01	0.00	1.7E-05	4.7E-06	7.0E-06	3.6E-07	1.3E-06	4.8E-05	3.8E-07	3.1E-08
Camanche	Clinton	IA	Compactor	2270002015	5.02	40.13	0.59	1	IA-2270002015	0.20	0.04	0.10	0.00	0.01	0.55	0.00	0.00	5.2E-06	9.3E-07	2.6E-06	9.1E-08	2.6E-07	1.4E-05	1.2E-07	7.8E-09
Camanche	Clinton	IA	Road Grader	2270002048	5.02	40.13	0.59	1	IA-2270002048	0.12	0.02	0.05	0.00	0.01	0.30	0.00	0.00	3.3E-06	5.3E-07	1.4E-06	4.8E-08	2.8E-07	7.9E-06	6.5E-08	4.4E-09
Camanche	Clinton	IA	Thermite Welder	2270006025	5.02	40.13	0.21	1	IA-2270006025	0.34	0.08	0.15	0.01	0.02	0.96	0.01	0.00	3.2E-06	7.0E-07	1.4E-06	6.4E-08	1.8E-07	8.9E-06	6.9E-08	5.0E-09
Camanche	Clinton	IA	Crane	2270002045	5.02	40.13	0.43	1	IA-2270002045	0.26	0.05	0.12	0.00	0.01	0.71	0.01	0.00	5.0E-06	8.8E-07	2.4E-06	8.5E-08	2.8E-07	1.3E-05	1.1E-07	7.2E-09
Camanche	Clinton	IA	Rail Tensor	2270006005	5.02	40.13	0.43	1	IA-2270006005	0.43	0.09	0.20	0.01	0.02	1.21	0.01	0.00	8.2E-06	1.7E-06	3.7E-06	1.6E-07	4.4E-07	2.3E-05	1.8E-07	1.3E-08
Camanche	Clinton	IA	Rail Tamper	2270002006	5.02	40.13	0.43	1	IA-2270002006	0.15	0.03	0.08	0.00	0.01	0.43	0.00	0.00	2.9E-06	5.3E-07	1.5E-06	5.3E-08	1.2E-07	8.3E-06	6.6E-08	4.2E-09
Letts	Louisa	IA	Front End Loader	2270002066	1.72	13.73	0.21	2	IA-2270002066	0.33	0.08	0.14	0.01	0.02	0.91	0.01	0.00	2.1E-06	4.9E-07	8.8E-07	4.2E-08	1.3E-07	5.8E-06	4.5E-08	3.6E-09
Letts	Louisa	IA	Dump Trucks	2270002078	1.72	13.73	0.21	7	IA-2270002078	0.27	0.07	0.11	0.01	0.02	0.74	0.01	0.00	5.9E-06	1.6E-06	2.4E-06	1.2E-07	4.5E-07	1.7E-05	1.3E-07	1.0E-08
Letts	Louisa	IA	Compactor	2270002015	1.72	13.73	0.59	1	IA-2270002015	0.20	0.04	0.10	0.00	0.01	0.55	0.00	0.00	1.8E-06	3.2E-07	9.0E-07	3.1E-08	8.8E-08	4.9E-06	4.1E-08	2.7E-09
Letts	Louisa	IA	Road Grader	2270002048	1.72	13.73	0.59	1	IA-2270002048	0.12	0.02	0.05	0.00	0.01	0.30	0.00	0.00	1.1E-06	1.8E-07	4.7E-07	1.6E-08	9.4E-08	2.7E-06	2.2E-08	1.5E-09
Letts	Louisa	IA	Thermite Welder	2270006025	1.72	13.73	0.21	1	IA-2270006025	0.34	0.08	0.15	0.01	0.02	0.96	0.01	0.00	1.1E-06	2.4E-07	4.7E-07	2.2E-08	6.3E-08	3.1E-06	2.3E-08	1.7E-09
Letts	Louisa	IA	Crane	2270002045	1.72	13.73	0.43	1	IA-2270002045	0.26	0.05	0.12	0.00	0.01	0.71	0.01	0.00	1.7E-06	3.0E-07	8.1E-07	2.9E-08	9.7E-08	4.6E-06	3.8E-08	2.5E-09
Letts	Louisa	IA	Rail Tensor	2270006005	1.72	13.73	0.43	1	IA-2270006005	0.43	0.09	0.20	0.01	0.02	1.21	0.01	0.00	2.8E-06	5.8E-07	1.3E-06	5.4E-08	1.5E-07	7.8E-06	6.1E-08	4.3E-09
Letts	Louisa	IA	Rail Tamper	2270002006	1.72	13.73	0.43	1	IA-2270002006	0.15	0.03	0.08	0.00	0.01	0.43	0.00	0.00	1.0E-06	1.8E-07	5.2E-07	1.8E-08	4.2E-08	2.8E-06	2.2E-08	1.4E-09
Washington	Washington	IA	Front End Loader	2270002066	14.26	114.05	0.21	2	IA-2270002066	0.33	0.08	0.14	0.01	0.02	0.91	0.01	0.00	1.7E-05	4.1E-06	7.3E-06	3.5E-07	1.1E-06	4.8E-05	3.7E-07	3.0E-08
Washington	Washington	IA	Dump Trucks	2270002078	14.26	114.05	0.21	7	IA-2270002078	0.27	0.07	0.11	0.01	0.02	0.74	0.01	0.00	4.9E-05	1.3E-05	2.0E-05	1.0E-06	3.7E-06	1.4E-04	1.1E-06	8.7E-08
Washington	Washington	IA	Compactor	2270002015	14.26	114.05	0.59	1	IA-2270002015	0.20	0.04	0.10	0.00	0.01	0.55	0.00	0.00	1.5E-05	2.6E-06	7.5E-06	2.6E-07	7.3E-07	4.1E-05	3.4E-07	2.2E-08
Washington	Washington	IA	Road Grader	2270002048	14.26	114.05	0.59	1	IA-2270002048	0.12	0.02	0.05	0.00	0.01	0.30	0.00	0.00	9.2E-06	1.5E-06	3.9E-06	1.4E-07	7.8E-07	2.2E-05	1.8E-07	1.2E-08
Washington	Washington	IA	Thermite Welder	2270006025	14.26	114.05	0.21	1	IA-2270006025	0.34	0.08	0.15	0.01	0.02	0.96	0.01	0.00	9.0E-06	2.0E-06	3.9E-06	1.8E-07	5.2E-07	2.5E-05	2.0E-07	1.4E-08
Washington	Washington	IA	Crane	2270002045	14.26	114.05	0.43	1	IA-2270002045	0.26	0.05	0.12	0.00	0.01	0.71	0.01	0.00	1.4E-05	2.5E-06	6.8E-06	2.4E-07	8.1E-07	3.8E-05	3.1E-07	2.1E-08
Washington	Washington	IA	Rail Tensor	2270006005	14.26	114.05	0.43	1	IA-2270006005	0.43	0.09	0.20	0.01	0.02	1.21	0.01	0.00	2.3E-05	4.8E-06	1.1E-05	4.5E-07	1.2E-06	6.5E-05	5.1E-07	3.6E-08
Washington	Washington	IA	Rail Tamper	2270002006	14.26	114.05	0.43	1	IA-2270002006	0.15	0.03	0.08	0.00	0.01	0.43	0.00	0.00	8.4E-06	1.5E-06	4.4E-06	1.5E-07	3.5E-07	2.4E-05	1.9E-07	1.2E-08
Ottumwa	Wapello	IA	Front End Loader	2270002066	3.10	24.82	0.21	2	IA-2270002066	0.33	0.08	0.14	0.01	0.02	0.91	0.01	0.00	3.7E-06	8.9E-07	1.6E-06	7.6E-08	2.4E-07	1.0E-05	8.1E-08	6.5E-09
Ottumwa	Wapello	IA	Dump Trucks	2270002078	3.10	24.82	0.21	7	IA-2270002078	0.27	0.07	0.11	0.01	0.02	0.74	0.01	0.00	1.1E-05	2.9E-06	4.3E-06	2.2E-07	8.1E-07	3.0E-05	2.3E-07	1.9E-08
Ottumwa	Wapello	IA	Compactor	2270002015	3.10	24.82	0.59	1	IA-2270002015	0.20	0.04	0.10	0.00	0.01	0.55	0.00	0.00	3.2E-06	5.7E-07	1.6E-06	5.6E-08	1.6E-07	8.9E-06	7.5E-08	4.8E-09
Ottumwa	Wapello	IA	Road Grader	2270002048	3.10	24.82	0.59	1	IA-2270002048	0.12	0.02	0.05	0.00	0.01	0.30	0.00	0.00	2.0E-06	3.3E-07	8.6E-07	2.9E-08	1.7E-07	4.9E-06	4.0E-08	2.7E-09
Ottumwa	Wapello	IA	Thermite Welder	2270006025	3.10	24.82	0.21	1	IA-2270006025	0.34	0.08	0.15	0.01	0.02	0.96	0.01	0.00	2.0E-06	4.4E-07	8.5E-07	3.9E-08	1.1E-07	5.5E-06	4.2E-08	3.1E-09
Ottumwa	Wapello	IA	Crane	2270002045	3.10	24.82	0.43	1	IA-2270002045	0.26	0.05	0.12	0.00	0.01	0.71	0.01	0.00	3.1E-06	5.5E-07	1.5E-06	5.3E-08	1.8E-07	8.3E-06	6.8E-08	4.5E-09
Ottumwa	Wapello	IA	Rail Tensor	2270006005	3.10	24.82	0.43	1	IA-2270006005	0.43	0.09	0.20	0.01	0.02	1.21	0.01	0.00	5.1E-06	1.1E-06	2.3E-06	9.8E-08	2.7E-07	1.4E-05	1.1E-07	7.7E-09
Ottumwa	Wapello	IA	Rail Tamper	2270002006	3.10	24.82	0.43	1	IA-2270002006	0.15	0.03	0.08	0.00	0.01	0.43	0.00	0.00	1.8E-06	3.3E-07	9.5E-07	3.3E-08	7.7E-08	5.1E-06	4.1E-08	2.6E-09
Moravia	Monroe	IA	Front End Loader	2270002066	15.11	120.91	0.21	2	IA-2270002066	0.33	0.08	0.14	0.01	0.02	0.91	0.01	0.00	1.8E-05	4.3E-06	7.8E-06	3.7E-07	1.2E-06	5.1E-05	4.0E-07	3.2E-08
Moravia	Monroe	IA	Dump Trucks	2270002078	15.11	120.91	0.21	7	IA-2270002078	0.27	0.07	0.11	0.01	0.02	0.74	0.01	0.00	5.2E-05	1.4E-05	2.1E-05	1.1E-06	4.0E-06	1.5E-04	1.1E-06	9.2E-08
Moravia	Monroe	IA	Compactor	2270002015	15.11	120.91	0.59	1	IA-2270002015	0.20	0.04	0.10	0.00	0.01	0.55	0.00	0.00	1.6E-05	2.8E-06	7.9E-06	2.8E-07	7.7E-07	4.4E-05	3.6E-07	2.3E-08
Moravia	Monroe	IA	Road Grader	2270002048	15.11	120.91	0.59	1	IA-2270002048	0.12	0.02	0.05	0.00	0.01	0.30	0.00	0.00	9.8E-06	1.6E-06	4.2E-06	1.4E-07	8.3E-07	2.4E-05	2.0E-07	1.3E-08
Moravia	Monroe	IA	Thermite Welder	2270006025	15.11	120.91	0.21	1	IA-2270006025	0.34	0.08	0.15	0.01	0.02	0.96	0.01	0.00	9.6E-06	2.1E-06	4.1E-06	1.9E-07	5.5E-07	2.7E-05	2.1E-07	1.5E-08
Moravia	Monroe	IA	Crane	2270002045	15.11	120.91	0.43	1	IA-2270002045	0.26	0.05	0.12	0.00	0.01	0.71	0.01	0.00	1.5E-05	2.7E-06	7.2E-06	2.6E-07	8.6E-07	4.0E-05	3.3E-07	2.2E-08
Moravia	Monroe	IA	Rail Tensor	2270006005	15.11	120.91	0.43	1	IA-2270006005	0.43	0.09	0.20	0.01	0.02	1.21	0.01	0.00	2.5E-05	5.1E-06	1.1E-05	4.8E-07	1.3E-06	6.9E-05	5.4E-07	3.8E-08
Moravia	Monroe	IA	Rail Tamper	2270002006	15.11	120.91	0.43	1	IA-2270002006	0.15	0.03	0.08	0.00	0.01	0.43	0.00	0.00	8.9E-06	1.6E-06	4.6E-06	1.6E-07	3.7E-07	2.5E-05	2.0E-07	1.3E-08
Newtown	Sullivan	MO	Front End Loader	2270002066	2.90	23.23	0.21	2	MO-2270002066	0.43	0.11	0.14	0.01	0.03	1.22	0.01	0.00	4.7E-06	1.2E-06	1.5E-06	1.1E-07	3.2E-07	1.3E-05	9.1E-08	7.4E-09
Newtown	Sullivan	MO	Dump Trucks	2270002078	2.90	23.23	0.21	7	MO-2270002078	0.42	0.12	0.14	0.01	0.03	1.18	0.01	0.00	1.6E-05	4.5E-06	5.4E-06	3.6E-07	1.3E-06	4.5E-05	3.2E-07	2.7E-08
Newtown	Sullivan	MO	Compactor	2270002015	2.90	23.23	0.59	1	MO-2270002015	0.19	0.03	0.09	0.00	0.01	0.52	0.00	0.00	2.9E-06	5.1E-07	1.4E-06	5.0E-08	1.4E-07	7.9E-06	6.6E-08	4.2E-09
Newtown	Sullivan	MO	Road Grader	2270002048	2.90	23.23	0.59	1	MO-2270002048	0.12	0.02	0.05	0.00	0.01	0.29	0.00	0.00	1.8E-06	2.9E-07	7.6E-07	2.6E-08	1.6E-07	4.3E-06	3.5E-08	2.4E-09
Newtown	Sullivan	MO	Thermite Welder	2270006025	2.90	23.23	0.21	1	MO-2270006025	0.34	0.08	0.14	0.01	0.02	0.95	0.01	0.00	1.8E-06	4.2E-07	7.6E-07	3.7E-08	1.1E-07	5.1E-06	3.9E-08	2.9E-09
Newtown	Sullivan	MO	Crane	2270002045	2.90	23.23	0.43	1	MO-2270002045	0.22	0.04	0.10	0.00	0.01	0.59	0.00	0.00	2.5E-06	4.4E-07	1.1E-06	4.3E-08	1.5E-07	6.5E-06	5.1E-08	3.5E-09
Newtown	Sullivan	MO	Rail Tensor	2270006005	2.90	23.23	0.43	1	MO-2270006005	0.42	0.09	0.19	0.01	0.02	1.18	0.01	0.00	4.6E-06	1.0E-06	2.1E-06	9.1E-08	2.6E-07	1.3E-05	1.0E-07	7.2E-09
Newtown	Sullivan	MO	Rail Tamper	2270002006	2.90	23.23	0.43	1	MO-2270002006	0.16	0.03	0.08	0.00	0.01	0.44	0.00	0.00	1.7E-06	3.1E-07	8.9E-07	3.1E-08	7.3E-08	4.8E-06	3.8E-08	2.4E-09
Laredo	Grundy	MO	Front End Loader	2270002066	3.83	30.62	0.21	2	MO-2270002066	0.43	0.11	0.14	0.01	0.03	1.22	0.01	0.00	6.1E-06	1.6E-06	2.0E-06	1.4E-07	4.3E-07	1.7E-05	1.2E-07	9.7E-09
Laredo	Grundy	MO	Dump Trucks	2270002078	3.83	30.62	0.21	7	MO-2270002078	0.42	0.12	0.14	0.01	0.03	1.18	0.01	0.00	2.1E-05	6.0E-06	7.1E-06	4.8E-07	1.7E-06	5.9E-05	4.3E-07	3.6E-08
Laredo	Grundy	MO	Compactor	2270002015	3.83	30.62	0.59	1	MO-2270002015	0.19	0.03	0.09	0.00	0.01	0.52	0.00	0.00	3.8E-06	6.7E-07	1.9E-06	6.6E-08	1.9E-07	1.0E-05	8.7E-08	5.6E-09

Laredo	Grundy	MO	Road Grader	2270002048	3.83	30.62	0.59	1	MO-2270002048	0.12	0.02	0.05	0.00	0.01	0.29	0.00	0.00	2.4E-06	3.9E-07	1.0E-06	3.5E-08	2.1E-07	5.7E-06	4.7E-08	3.2E-09
Laredo	Grundy	MO	Thermite Welder	2270006025	3.83	30.62	0.21	1	MO-2270006025	0.34	0.08	0.14	0.01	0.02	0.95	0.01	0.00	2.4E-06	5.6E-07	1.0E-06	4.9E-08	1.5E-07	6.7E-06	5.2E-08	3.8E-09
Laredo	Grundy	MO	Crane	2270002045	3.83	30.62	0.43	1	MO-2270002045	0.22	0.04	0.10	0.00	0.01	0.59	0.00	0.00	3.2E-06	5.8E-07	1.5E-06	5.6E-08	2.0E-07	8.6E-06	6.7E-08	4.6E-09
Laredo	Grundy	MO	Rail Tensor	2270006005	3.83	30.62	0.43	1	MO-2270006005	0.42	0.09	0.19	0.01	0.02	1.18	0.01	0.00	6.1E-06	1.3E-06	2.7E-06	1.2E-07	3.5E-07	1.7E-05	1.3E-07	9.5E-09
Laredo	Grundy	MO	Rail Tamper	2270002006	3.83	30.62	0.43	1	MO-2270002006	0.16	0.03	0.08	0.00	0.01	0.44	0.00	0.00	2.3E-06	4.1E-07	1.2E-06	4.1E-08	9.6E-08	6.4E-06	5.0E-08	3.2E-09
Dawn	Livingston	MO	Front End Loader	2270002066	14.32	114.58	0.21	2	MO-2270002066	0.43	0.11	0.14	0.01	0.03	1.22	0.01	0.00	2.3E-05	5.8E-06	7.6E-06	5.2E-07	1.6E-06	6.5E-05	4.5E-07	3.6E-08
Dawn	Livingston	MO	Dump Trucks	2270002078	14.32	114.58	0.21	7	MO-2270002078	0.42	0.12	0.14	0.01	0.03	1.18	0.01	0.00	7.8E-05	2.2E-05	2.6E-05	1.8E-06	6.3E-06	2.2E-04	1.6E-06	1.3E-07
Dawn	Livingston	MO	Compactor	2270002015	14.32	114.58	0.59	1	MO-2270002015	0.19	0.03	0.09	0.00	0.01	0.52	0.00	0.00	1.4E-05	2.5E-06	7.0E-06	2.5E-07	7.0E-07	3.9E-05	3.2E-07	2.1E-08
Dawn	Livingston	MO	Road Grader	2270002048	14.32	114.58	0.59	1	MO-2270002048	0.12	0.02	0.05	0.00	0.01	0.29	0.00	0.00	8.9E-06	1.4E-06	3.7E-06	1.3E-07	7.8E-07	2.1E-05	1.7E-07	1.2E-08
Dawn	Livingston	MO	Thermite Welder	2270006025	14.32	114.58	0.21	1	MO-2270006025	0.34	0.08	0.14	0.01	0.02	0.95	0.01	0.00	9.0E-06	2.1E-06	3.8E-06	1.8E-07	5.5E-07	2.5E-05	1.9E-07	1.4E-08
Dawn	Livingston	MO	Crane	2270002045	14.32	114.58	0.43	1	MO-2270002045	0.22	0.04	0.10	0.00	0.01	0.59	0.00	0.00	1.2E-05	2.2E-06	5.4E-06	2.1E-07	7.6E-07	3.2E-05	2.5E-07	1.7E-08
Dawn	Livingston	MO	Rail Tensor	2270006005	14.32	114.58	0.43	1	MO-2270006005	0.42	0.09	0.19	0.01	0.02	1.18	0.01	0.00	2.3E-05	4.9E-06	1.0E-05	4.5E-07	1.3E-06	6.4E-05	5.0E-07	3.6E-08
Dawn	Livingston	MO	Rail Tamper	2270002006	14.32	114.58	0.43	1	MO-2270002006	0.16	0.03	0.08	0.00	0.01	0.44	0.00	0.00	8.5E-06	1.5E-06	4.4E-06	1.5E-07	3.6E-07	2.4E-05	1.9E-07	1.2E-08
Blue Valley	Jackson	MO	Front End Loader	2270002066	13.66	109.30	0.21	2	MO-2270002066	0.43	0.11	0.14	0.01	0.03	1.22	0.01	0.00	2.2E-05	5.6E-06	7.2E-06	5.0E-07	1.5E-06	6.2E-05	4.3E-07	3.5E-08
Blue Valley	Jackson	MO	Dump Trucks	2270002078	13.66	109.30	0.21	7	MO-2270002078	0.42	0.12	0.14	0.01	0.03	1.18	0.01	0.00	7.5E-05	2.1E-05	2.5E-05	1.7E-06	6.0E-06	2.1E-04	1.5E-06	1.3E-07
Blue Valley	Jackson	MO	Compactor	2270002015	13.66	109.30	0.59	1	MO-2270002015	0.19	0.03	0.09	0.00	0.01	0.52	0.00	0.00	1.4E-05	2.4E-06	6.7E-06	2.4E-07	6.7E-07	3.7E-05	3.1E-07	2.0E-08
Blue Valley	Jackson	MO	Road Grader	2270002048	13.66	109.30	0.59	1	MO-2270002048	0.12	0.02	0.05	0.00	0.01	0.29	0.00	0.00	8.5E-06	1.4E-06	3.6E-06	1.2E-07	7.4E-07	2.0E-05	1.7E-07	1.1E-08
Blue Valley	Jackson	MO	Thermite Welder	2270006025	13.66	109.30	0.21	1	MO-2270006025	0.34	0.08	0.14	0.01	0.02	0.95	0.01	0.00	8.6E-06	2.0E-06	3.6E-06	1.8E-07	5.3E-07	2.4E-05	1.8E-07	1.4E-08
Blue Valley	Jackson	MO	Crane	2270002045	13.66	109.30	0.43	1	MO-2270002045	0.22	0.04	0.10	0.00	0.01	0.59	0.00	0.00	1.2E-05	2.1E-06	5.2E-06	2.0E-07	7.2E-07	3.1E-05	2.4E-07	1.6E-08
Blue Valley	Jackson	MO	Rail Tensor	2270006005	13.66	109.30	0.43	1	MO-2270006005	0.42	0.09	0.19	0.01	0.02	1.18	0.01	0.00	2.2E-05	4.7E-06	9.7E-06	4.3E-07	1.2E-06	6.1E-05	4.7E-07	3.4E-08
Blue Valley	Jackson	MO	Rail Tamper	2270002006	13.66	109.30	0.43	1	MO-2270002006	0.16	0.03	0.08	0.00	0.01	0.44	0.00	0.00	8.1E-06	1.5E-06	4.2E-06	1.4E-07	3.4E-07	2.3E-05	1.8E-07	1.2E-08
Grandview	Jackson	MO	Front End Loader	2270002066	17.16	137.32	0.21	2	MO-2270002066	0.43	0.11	0.14	0.01	0.03	1.22	0.01	0.00	2.8E-05	7.0E-06	9.1E-06	6.3E-07	1.9E-06	7.8E-05	5.4E-07	4.3E-08
Grandview	Jackson	MO	Dump Trucks	2270002078	17.16	137.32	0.21	7	MO-2270002078	0.42	0.12	0.14	0.01	0.03	1.18	0.01	0.00	9.4E-05	2.7E-05	3.2E-05	2.1E-06	7.6E-06	2.6E-04	1.9E-06	1.6E-07
Grandview	Jackson	MO	Compactor	2270002015	17.16	137.32	0.59	1	MO-2270002015	0.19	0.03	0.09	0.00	0.01	0.52	0.00	0.00	1.7E-05	3.0E-06	8.4E-06	3.0E-07	8.4E-07	4.7E-05	3.9E-07	2.5E-08
Grandview	Jackson	MO	Road Grader	2270002048	17.16	137.32	0.59	1	MO-2270002048	0.12	0.02	0.05	0.00	0.01	0.29	0.00	0.00	1.1E-05	1.7E-06	4.5E-06	1.5E-07	9.3E-07	2.6E-05	2.1E-07	1.4E-08
Grandview	Jackson	MO	Thermite Welder	2270006025	17.16	137.32	0.21	1	MO-2270006025	0.34	0.08	0.14	0.01	0.02	0.95	0.01	0.00	1.1E-05	2.5E-06	4.5E-06	2.2E-07	6.6E-07	3.0E-05	2.3E-07	1.7E-08
Grandview	Jackson	MO	Crane	2270002045	17.16	137.32	0.43	1	MO-2270002045	0.22	0.04	0.10	0.00	0.01	0.59	0.00	0.00	1.5E-05	2.6E-06	6.5E-06	2.5E-07	9.1E-07	3.8E-05	3.0E-07	2.0E-08
Grandview	Jackson	MO	Rail Tensor	2270006005	17.16	137.32	0.43	1	MO-2270006005	0.42	0.09	0.19	0.01	0.02	1.18	0.01	0.00	2.7E-05	5.9E-06	1.2E-05	5.4E-07	1.5E-06	7.7E-05	5.9E-07	4.3E-08
Grandview	Jackson	MO	Rail Tamper	2270002006	17.16	137.32	0.43	1	MO-2270002006	0.16	0.03	0.08	0.00	0.01	0.44	0.00	0.00	1.0E-05	1.8E-06	5.3E-06	1.8E-07	4.3E-07	2.9E-05	2.3E-07	1.4E-08
Asbury	Jasper	MO	Front End Loader	2270002066	14.65	117.22	0.21	2	MO-2270002066	0.43	0.11	0.14	0.01	0.03	1.22	0.01	0.00	2.4E-05	6.0E-06	7.7E-06	5.4E-07	1.6E-06	6.6E-05	4.6E-07	3.7E-08
Asbury	Jasper	MO	Dump Trucks	2270002078	14.65	117.22	0.21	7	MO-2270002078	0.42	0.12	0.14	0.01	0.03	1.18	0.01	0.00	8.0E-05	2.3E-05	2.7E-05	1.8E-06	6.5E-06	2.2E-04	1.6E-06	1.4E-07
Asbury	Jasper	MO	Compactor	2270002015	14.65	117.22	0.59	1	MO-2270002015	0.19	0.03	0.09	0.00	0.01	0.52	0.00	0.00	1.5E-05	2.6E-06	7.2E-06	2.5E-07	7.2E-07	4.0E-05	3.3E-07	2.1E-08
Asbury	Jasper	MO	Road Grader	2270002048	14.65	117.22	0.59	1	MO-2270002048	0.12	0.02	0.05	0.00	0.01	0.29	0.00	0.00	9.1E-06	1.5E-06	3.8E-06	1.3E-07	7.9E-07	2.2E-05	1.8E-07	1.2E-08
Asbury	Jasper	MO	Thermite Welder	2270006025	14.65	117.22	0.21	1	MO-2270006025	0.34	0.08	0.14	0.01	0.02	0.95	0.01	0.00	9.2E-06	2.1E-06	3.8E-06	1.9E-07	5.7E-07	2.6E-05	2.0E-07	1.5E-08
Asbury	Jasper	MO	Crane	2270002045	14.65	117.22	0.43	1	MO-2270002045	0.22	0.04	0.10	0.00	0.01	0.59	0.00	0.00	1.2E-05	2.2E-06	5.6E-06	2.2E-07	7.8E-07	3.3E-05	2.6E-07	1.7E-08
Asbury	Jasper	MO	Rail Tensor	2270006005	14.65	117.22	0.43	1	MO-2270006005	0.42	0.09	0.19	0.01	0.02	1.18	0.01	0.00	2.3E-05	5.1E-06	1.0E-05	4.6E-07	1.3E-06	6.5E-05	5.1E-07	3.6E-08
Asbury	Jasper	MO	Rail Tamper	2270002006	14.65	117.22	0.43	1	MO-2270002006	0.16	0.03	0.08	0.00	0.01	0.44	0.00	0.00	8.7E-06	1.6E-06	4.5E-06	1.6E-07	3.7E-07	2.4E-05	1.9E-07	1.2E-08
Goodman	McDonald	MO	Front End Loader	2270002066	7.06	56.50	0.21	2	MO-2270002066	0.43	0.11	0.14	0.01	0.03	1.22	0.01	0.00	1.1E-05	2.9E-06	3.7E-06	2.6E-07	7.9E-07	3.2E-05	2.2E-07	1.8E-08
Goodman	McDonald	MO	Dump Trucks	2270002078	7.06	56.50	0.21	7	MO-2270002078	0.42	0.12	0.14	0.01	0.03	1.18	0.01	0.00	3.9E-05	1.1E-05	1.3E-05	8.8E-07	3.1E-06	1.1E-04	7.9E-07	6.6E-08
Goodman	McDonald	MO	Compactor	2270002015	7.06	56.50	0.59	1	MO-2270002015	0.19	0.03	0.09	0.00	0.01	0.52	0.00	0.00	7.0E-06	1.2E-06	3.5E-06	1.2E-07	3.5E-07	1.9E-05	1.6E-07	1.0E-08
Goodman	McDonald	MO	Road Grader	2270002048	7.06	56.50	0.59	1	MO-2270002048	0.12	0.02	0.05	0.00	0.01	0.29	0.00	0.00	4.4E-06	7.1E-07	1.8E-06	6.4E-08	3.8E-07	1.1E-05	8.6E-08	5.8E-09
Goodman	McDonald	MO	Thermite Welder	2270006025	7.06	56.50	0.21	1	MO-2270006025	0.34	0.08	0.14	0.01	0.02	0.95	0.01	0.00	4.4E-06	1.0E-06	1.9E-06	9.1E-08	2.7E-07	1.2E-05	9.5E-08	7.1E-09
Goodman	McDonald	MO	Crane	2270002045	7.06	56.50	0.43	1	MO-2270002045	0.22	0.04	0.10	0.00	0.01	0.59	0.00	0.00	6.0E-06	1.1E-06	2.7E-06	1.0E-07	3.7E-07	1.6E-05	1.2E-07	8.4E-09
Goodman	McDonald	MO	Rail Tensor	2270006005	7.06	56.50	0.43	1	MO-2270006005	0.42	0.09	0.19	0.01	0.02	1.18	0.01	0.00	1.1E-05	2.4E-06	5.0E-06	2.2E-07	6.4E-07	3.1E-05	2.4E-07	1.8E-08
Goodman	McDonald	MO	Rail Tamper	2270002006	7.06	56.50	0.43	1	MO-2270002006	0.16	0.03	0.08	0.00	0.01	0.44	0.00	0.00	4.2E-06	7.5E-07	2.2E-06	7.5E-08	1.8E-07	1.2E-05	9.3E-08	6.0E-09
Gentry	Benton	AK	Front End Loader	2270002066	18.28	146.26	0.21	2	AK-2270002066	0.61	0.13	0.27	0.01	0.03	1.71	0.01	0.00	4.1E-05	8.6E-06	1.8E-05	8.3E-07	2.2E-06	1.2E-04	8.7E-07	6.6E-08
Gentry	Benton	AK	Dump Trucks	2270002078	18.28	146.26	0.21	7	AK-2270002078	0.36	0.09	0.15	0.01	0.02	1.01	0.01	0.00	8.5E-05	2.0E-05	3.6E-05	1.8E-06	5.5E-06	2.4E-04	1.8E-06	1.4E-07
Gentry	Benton	AK	Compactor	2270002015	18.28	146.26	0.59	1	AK-2270002015	0.21	0.04	0.10	0.00	0.01	0.57	0.00	0.00	2.0E-05	3.5E-06	9.8E-06	3.5E-07	9.7E-07	5.4E-05	4.5E-07	2.9E-08
Gentry	Benton	AK	Road Grader	2270002048	18.28	146.26	0.59	1	AK-2270002048	0.11	0.02	0.05	0.00	0.01	0.27	0.00	0.00	1.1E-05	1.8E-06	4.5E-06	1.6E-07	9.8E-07	2.6E-05	2.1E-07	1.4E-08
Gentry	Benton	AK	Thermite Welder	2270006025	18.28	146.26	0.21	1	AK-2270006025	0.35	0.08	0.15	0.01	0.02	0.97	0.01	0.00	1.2E-05	2.7E-06	4.9E-06	2.4E-07	7.1E-07	3.3E-05	2.5E-07	1.9E-08
Gentry	Benton	AK	Crane	2270002045	18.28	146.26	0.43	1	AK-2270002045	0.32	0.06	0.15	0.01	0.02	0.87	0.01	0.00	2.2E-05	4.0E-06	1.1E-05	3.9E-07	1.2E-06	6.0E-05	4.7E-07	3.2E-08
Gentry	Benton	AK	Rail Tensor	2270006005	18.28	146.26	0.43	1	AK-2270006005	0.42	0.09	0.19	0.01	0.02	1.18	0.01	0.00	2.9E-05	6.3E-06	1.3E-05	5.8E-07	1.6E-06	8.2E-05	6.4E-07	4.5E-08
Gentry	Benton	AK	Rail Tamper	2270002006	18.28	146.26	0.43	1	AK-2270002006	0.15	0.03	0.08	0.00	0.01	0.43	0.00	0.00	1.1E-05	1.9E-06	5.5E-06	1.9E-07	4.5E-07	3.0E-05	2.4E-07	1.5E-08
Baron (MP247)	Adair	OK	Front End Loader	2270002066	13.73	109.82	0.21	2	OK-2270002066	0.34	0.08	0.13	0.01	0.02	0.96	0.01	0.00	1.7E-05	4.0E-06	6.7E-06	3.7E-07	1.0E-06	4.9E-05	3.6E-07	2.7E-08
Baron (MP247)	Adair	OK	Dump Trucks	2270002078	13.73	109.82	0.21	7	OK-2270002078	0.33	0.08	0.13	0.01	0.02	0.93	0.01	0.00	5.9E-05	1.5E-05	2.3E-05	1.3E-06	4.0E-06	1.7E-04	1.2E-06	9.6E-08
Baron (MP247)	Adair	OK	Compactor	2270002015	13.73	109.82	0.59	1	OK-2270002015	0.19	0.03	0.09	0.00	0.01	0.52	0.00	0.00	1.4E-05	2.4E-06	6.8E-06	2.4E-07	6.7E-07	3.7E-05	3.1E-07	2.0E-08
Baron (MP247)	Adair	OK	Road Grader	2270002048	13.73	109.82	0.59	1	OK-2270002048	0.12	0.02	0.05	0.00	0.01	0.30	0.00	0.00	8.8E-06	1.4E-06	3.7E-06	1.3E-07	7.5E-07	2.1E-05	1.8E-07	1.2E-08
Baron (MP247)	Adair	OK	Thermite Welder	2270006025	13.73	109.82	0.21	1	OK-2270006025	0.32	0.07	0.14	0.01	0.02	0.91	0.01	0.00	8.2E-06	1.9E-06	3.5E-06	1.7E-07	5.0E-07	2.3E-05	1.8E-07	1.3E-08
Baron (MP247)	Adair	OK	Crane	2270002045	13.73	109.82	0.43	1	OK-2270002045	0.21	0.04	0.10	0.00	0.01	0.56	0.00	0.00	1.1E-05	2.0E-06	5.1E-06	1.9E-07	6.9E-07	2.9E-05	2.4E-07	1.6E-08
Baron (MP247)	Adair	OK	Rail Tensor	2270006005	13.73	109.82	0.43	1	OK-2270006005	0.39	0.08	0.18	0.01	0.02	1.09	0.01	0.00	2.0E-05	4.3E-06	9.2E-06	4.0E-07	1.1E-06	5.7E-05	4.5E-07	3.1E-08
Baron (MP247)	Adair	OK	Rail Tamper	2270002006	13.73	109.82	0.43	1	OK-2270002006	0.16	0.03	0.08	0.00	0.01	0.44	0.00	0.00	8.2E-06	1.5E-06	4.2E-06	1.5E-07	3.4E-07	2.3E-05	1.8E-07	1.2E-08
Cave Springs	Adair	OK	Front End Loader	2270002066	14.52	116.16	0.21	2	OK-2270002066	0.34	0.08	0.13	0.01	0.02	0.96	0.01	0.00	1.8E-05	4.2E-06	7.1E-06	3.9E-07	1.1E-06	5.2E-05	3.8E-07	2.8E-08
Cave Springs	Adair	OK	Dump Trucks	2270002078	14.52	116.16	0.21	7	OK-2270002078	0.33	0.08	0.13	0.01	0.02	0.93	0.01	0.00	6.2E-05	1.6E-05	2.4E-05	1.3E-06	4.2E-06	1.8E-04	1.3E-06	1.0E-07
Cave Springs	Adair	OK	Compactor	2270002015	14.52	116.16	0.59	1	OK-2270002015	0.19	0.03	0.09	0.00	0.01	0.52	0.00	0.00	1.4E-05	2.5E-06	7.2E-06	2.5E-07	7.1E-07	3.9E-05	3.3E-07	2.1E-08
Cave Springs	Adair	OK	Road Grader	2270002048	14.52	116.16	0.59	1	OK-2270002048	0.12	0.02	0.05	0.00	0.01	0.30	0.00	0.00	9.3E-06	1.5E-06	4.0E-06	1.4E-07	8.0E-07	2.3E-05	1.9E-07	1.3E-08
Cave Springs	Adair	OK	Thermite Welder	2270006025	14.52	116.16	0.21	1	OK-2270006025	0.32	0.07	0.14	0.01	0.02	0.91	0.01	0.00	8.7E-06	2.0E-06	3.7E-06	1.8E-07	5.3E-07	2.4E-05	1.9E-07	1.4E-08
Cave Springs	Adair	OK	Crane	2270002045	14.52	116.16	0.43	1	OK-2270002045	0.21	0.04	0.10	0.00	0.01	0.56	0.00	0.00	1.2E-05	2.1E-06	5.4E-06	2.0E-07	7.3E-07	3.1E-05	2.5E-07	1.7E-08
Cave Springs	Adair	OK	Rail Tensor	2270006005	14.52	116.16	0.43	1	OK-2270006005	0.39	0.08	0.18	0.01	0.02	1.09	0.01	0.00	2.1E-05	4.6E-06	9.8E-06	4.2E-07	1.2E-06	6.0E-05	4.7E-07	3.3E-08
Cave Springs	Adair	OK	Rail Tamper	2270002006	14.52	116.16	0.43	1	OK-2270002006	0.16	0.03	0.08	0.00	0.01	0.44	0.00	0.00	8.6E-06	1.6E-06	4.5E-06	1.5E-07	3.6E-07	2.4E-05	1.9E-07	1.2E-08
Spiro	Le Flore	OK	Front End Loader	2270002066	7.13	57.02	0.21	2	OK-2270002066	0.34	0.08	0.13	0.01	0.02	0.96	0.01	0.00	9.0E-06	2.1E-06	3.5E-06	1.9E-07	5.4E-07	2.5E-05	1.8E-07	1.4E-08
Spiro	Le Flore	OK	Dump Trucks	2270002078	7.13	57.02	0.21	7	OK-2270002078	0.33	0.08	0.13	0.01	0.02	0.93	0.01	0.00	3.1E-05	7.6E-06	1.2E-05	6.5E-07	2.1E-06	8.6E-05	6.4E-07	5.0E-08
Spiro	Le Flore	OK	Compactor	2270002015	7.13	57.02	0.59	1	OK-2270002015	0.19	0.03	0.09	0.00	0.01	0.52	0.00	0.00	7.0E-06	1.2E-06	3.5E-06	1.2E-07	3.5E-07	1.9E-05	1.6E-07	1.0E-08
Spiro	Le Flore	OK	Road Grader	2270002048	7.13	57.02	0.59	1	OK-2270002048	0.12	0.02	0.05	0.00	0.01	0.30	0.00	0.00	4.6E-06	7.5E-07	1.9E-06	6.7E-08	3.9E-07	1.1E-05	9.2E-08	6.1E-09
Spiro	Le Flore	OK	Thermite Welder	2270006025	7.13	57.02	0.21	1	OK-2270006025	0.32	0.07	0.14	0.01	0.02	0.91	0.01	0.00	4.3E-06	9.9E-07	1.8E-06	8.6E-08	2.6E-07	1.2E-05	9.3E-08	6.9E-09
Spiro	Le Flore	OK	Crane	2270002045	7.13	57.02	0.43	1	OK-2270002045	0.21	0.04	0.10	0.00	0.01	0.56	0.00	0.00	5.8E-06	1.0E-06	2.6E-06	9.8E-08	3.6E-07	1.5E-05	1.2E-07	8.1E-09
Spiro	Le Flore	OK	Rail Tensor	2270006005	7.13	57.02	0.43	1	OK-2270006005	0.39	0.08	0.18	0.01	0.02	1.09	0.01	0.00	1.1E-05	2.2E-06	4.8E-06	2.1E-07	5.8E-07	3.0E-05	2.3E-07	1.6E-08
Spiro	Le Flore	OK	Rail Tamper	2270002006	7.13	57.02	0.43	1	OK-2270002006	0.16	0.03	0.08	0.00	0.01	0.44	0.00	0.00	4.2E-06	7.6E-07	2.2E-06	7.6E-08	1.8E-07	1.2E-05	9.4E-08	6.0E-09
Heavener	Le Flore	OK	Front End Loader	2270002066	5.35	42.77	0.21	2	OK-2270002066	0.34	0.08	0.13	0.01	0.02	0.96	0.01	0.00	6.8E-06	1.5E-06	2.6E-06	1.4E-07	4.1E-07	1.9E-05	1.4E-07	1.0E-08
Heavener	Le Flore	OK	Dump Trucks	2270002078	5.35	42.77	0.21	7	OK-2270002078	0.33	0.08	0.13	0.01	0.02	0.93	0.01	0.00	2.3E-05	5.7E-06	9.0E-06	4.9E-07	1.6E-06	6.4E-05	4.8E-07	3.7E-08
Heavener	Le Flore	OK	Compactor	2270002015	5.35	42.77	0.59	1	OK-2270002015	0.19	0.03	0.09	0.00	0.01	0.52	0.00	0.00	5.3E-06	9.3E-07	2.6E-06	9.2E-08	2.6E-07	1.5E-05	1.2E-07	7.7E-09
Heavener	Le Flore	OK	Road Grader	2270002048	5.35	42.77	0.59	1	OK-2270002048	0.12	0.02	0.05	0.00	0.01	0.30	0.00	0.00	3.4E-06	5.6E-07	1.5E-06	5.0E-08	2.9E-07	8.3E-06	6.9E-08	4.6E-09
Heavener	Le Flore	OK	Thermite Welder	2270006025	5.35	42.77	0.21	1	OK-2270006025	0.32	0.07	0.14	0.01	0.02	0.91	0.01	0.00	3.2E-06	7.4E-07	1.4E-06	6.5E-08	2.0E-07	9.0E-06	7.0E-08	5.1E-09
Heavener	Le Flore	OK	Crane	2270002045	5.35	42.77	0.43	1	OK-2270002045	0.21	0.04	0.10	0.00	0.01	0.56	0.00	0.00	4.3E-06	7.6E-07	2.0E-06	7.3E-08	2.7E-07	1.1E-05	9.2E-08	6.1E-09
Heavener	Le Flore	OK	Rail Tensor	2270006005	5.35	42.77	0.43	1	OK-2270006005	0.39	0.08	0.18	0.01	0.02	1.09	0.01	0.00	7.9E-06	1.7E-06	3.6E-06	1.5E-07	4.3E-07	2.2E-05	1.7E-07	1.2E-08
Heavener	Le Flore	OK	Rail Tamper	2270002006	5.35	42.77	0.43	1	OK-2270002006	0.16	0.03	0.08	0.00	0.01	0.44	0.00	0.00	3.2E-06	5.7E-07	1.6E-06	5.7E-08	1.3E-07	8.9E-06	7.1E-08	4.5E-09
Mena	Polk	AK	Front End Loader	2270002066	16.10	128.83	0.21	2	AK-2270002066	0.61	0.13	0.27	0.01	0.03	1.71	0.01	0.00	3.6E-05	7.6E-06	1.6E-05	7.3E-07	1.9E-06	1.0E-04	7.6E-07	5.8E-08
Mena	Polk	AK	Dump Trucks	2270002078	16.10	128.83	0.21	7	AK-2270002078	0.36	0.09	0.15	0.01	0.02	1.01	0.01	0.00	7.5E-05	1.8E-05	3.1E-05	1.5E-06	4.8E-06	2.1E-04	1.6E-06	1.2E-07

Mena	Polk	AK	Compactor	2270002015	16.10	128.83	0.59	1	AK-2270002015	0.21	0.04	0.10	0.00	0.01	0.57	0.00	0.00	1.7E-05	3.1E-06	8.7E-06	3.0E-07	8.5E-07	4.8E-05	4.0E-07	2.6E-08
Mena	Polk	AK	Road Grader	2270002048	16.10	128.83	0.59	1	AK-2270002048	0.11	0.02	0.05	0.00	0.01	0.27	0.00	0.00	9.6E-06	1.6E-06	4.0E-06	1.4E-07	8.6E-07	2.3E-05	1.9E-07	1.3E-08
Mena	Polk	AK	Thermite Welder	2270006025	16.10	128.83	0.21	1	AK-2270006025	0.35	0.08	0.15	0.01	0.02	0.97	0.01	0.00	1.0E-05	2.4E-06	4.4E-06	2.1E-07	6.3E-07	2.9E-05	2.2E-07	1.6E-08
Mena	Polk	AK	Crane	2270002045	16.10	128.83	0.43	1	AK-2270002045	0.32	0.06	0.15	0.01	0.02	0.87	0.01	0.00	2.0E-05	3.5E-06	9.3E-06	3.4E-07	1.1E-06	5.3E-05	4.2E-07	2.8E-08
Mena	Polk	AK	Rail Tensor	2270006005	16.10	128.83	0.43	1	AK-2270006005	0.42	0.09	0.19	0.01	0.02	1.18	0.01	0.00	2.6E-05	5.5E-06	1.1E-05	5.1E-07	1.4E-06	7.2E-05	5.6E-07	4.0E-08
Mena	Polk	AK	Rail Tamper	2270002006	16.10	128.83	0.43	1	AK-2270002006	0.15	0.03	0.08	0.00	0.01	0.43	0.00	0.00	9.3E-06	1.7E-06	4.9E-06	1.7E-07	3.9E-07	2.6E-05	2.1E-07	1.3E-08
Mansfield	De Soto	LA	Front End Loader	2270002066	13.00	104.02	0.21	2	LA-2270002066	0.47	0.11	0.19	0.01	0.03	1.33	0.01	0.00	2.3E-05	5.3E-06	8.9E-06	4.8E-07	1.4E-06	6.4E-05	4.7E-07	3.6E-08
Mansfield	De Soto	LA	Dump Trucks	2270002078	13.00	104.02	0.21	7	LA-2270002078	0.45	0.12	0.17	0.01	0.03	1.25	0.01	0.00	7.5E-05	1.9E-05	2.9E-05	1.6E-06	5.3E-06	2.1E-04	1.6E-06	1.3E-07
Mansfield	De Soto	LA	Compactor	2270002015	13.00	104.02	0.59	1	LA-2270002015	0.19	0.03	0.09	0.00	0.01	0.51	0.00	0.00	1.3E-05	2.2E-06	6.3E-06	2.2E-07	6.3E-07	3.5E-05	2.9E-07	1.9E-08
Mansfield	De Soto	LA	Road Grader	2270002048	13.00	104.02	0.59	1	LA-2270002048	0.12	0.02	0.05	0.00	0.01	0.30	0.00	0.00	8.3E-06	1.4E-06	3.5E-06	1.2E-07	7.1E-07	2.0E-05	1.6E-07	1.1E-08
Mansfield	De Soto	LA	Thermite Welder	2270006025	13.00	104.02	0.21	1	LA-2270006025	0.37	0.10	0.14	0.01	0.03	1.03	0.01	0.00	8.9E-06	2.4E-06	3.4E-06	1.9E-07	6.6E-07	2.5E-05	1.9E-07	1.5E-08
Mansfield	De Soto	LA	Crane	2270002045	13.00	104.02	0.43	1	LA-2270002045	0.22	0.04	0.10	0.00	0.01	0.59	0.00	0.00	1.1E-05	1.9E-06	5.0E-06	1.9E-07	6.8E-07	2.9E-05	2.3E-07	1.5E-08
Mansfield	De Soto	LA	Rail Tensor	2270006005	13.00	104.02	0.43	1	LA-2270006005	0.44	0.10	0.18	0.01	0.03	1.23	0.01	0.00	2.2E-05	5.1E-06	9.1E-06	4.4E-07	1.4E-06	6.1E-05	4.7E-07	3.5E-08
Mansfield	De Soto	LA	Rail Tamper	2270002006	13.00	104.02	0.43	1	LA-2270002006	0.16	0.03	0.08	0.00	0.01	0.44	0.00	0.00	7.7E-06	1.4E-06	4.0E-06	1.4E-07	3.3E-07	2.2E-05	1.7E-07	1.1E-08
Loring	Sabine	LA	Front End Loader	2270002066	11.02	88.18	0.21	2	LA-2270002066	0.47	0.11	0.19	0.01	0.03	1.33	0.01	0.00	1.9E-05	4.5E-06	7.6E-06	4.1E-07	1.2E-06	5.4E-05	4.0E-07	3.0E-08
Loring	Sabine	LA	Dump Trucks	2270002078	11.02	88.18	0.21	7	LA-2270002078	0.45	0.12	0.17	0.01	0.03	1.25	0.01	0.00	6.4E-05	1.6E-05	2.5E-05	1.4E-06	4.5E-06	1.8E-04	1.3E-06	1.1E-07
Loring	Sabine	LA	Compactor	2270002015	11.02	88.18	0.59	1	LA-2270002015	0.19	0.03	0.09	0.00	0.01	0.51	0.00	0.00	1.1E-05	1.9E-06	5.3E-06	1.9E-07	5.3E-07	2.9E-05	2.5E-07	1.6E-08
Loring	Sabine	LA	Road Grader	2270002048	11.02	88.18	0.59	1	LA-2270002048	0.12	0.02	0.05	0.00	0.01	0.30	0.00	0.00	7.0E-06	1.1E-06	3.0E-06	1.0E-07	6.0E-07	1.7E-05	1.4E-07	9.4E-09
Loring	Sabine	LA	Thermite Welder	2270006025	11.02	88.18	0.21	1	LA-2270006025	0.37	0.10	0.14	0.01	0.03	1.03	0.01	0.00	7.5E-06	2.0E-06	2.9E-06	1.6E-07	5.6E-07	2.1E-05	1.6E-07	1.3E-08
Loring	Sabine	LA	Crane	2270002045	11.02	88.18	0.43	1	LA-2270002045	0.22	0.04	0.10	0.00	0.01	0.59	0.00	0.00	9.3E-06	1.7E-06	4.2E-06	1.6E-07	5.8E-07	2.5E-05	1.9E-07	1.3E-08
Loring	Sabine	LA	Rail Tensor	2270006005	11.02	88.18	0.43	1	LA-2270006005	0.44	0.10	0.18	0.01	0.03	1.23	0.01	0.00	1.8E-05	4.4E-06	7.7E-06	3.7E-07	1.2E-06	5.1E-05	4.0E-07	3.0E-08
Loring	Sabine	LA	Rail Tamper	2270002006	11.02	88.18	0.43	1	LA-2270002006	0.16	0.03	0.08	0.00	0.01	0.44	0.00	0.00	6.5E-06	1.2E-06	3.4E-06	1.2E-07	2.8E-07	1.8E-05	1.5E-07	9.3E-09
Singer	Beauregard	LA	Front End Loader	2270002066	7.26	58.08	0.21	2	LA-2270002066	0.47	0.11	0.19	0.01	0.03	1.33	0.01	0.00	1.3E-05	3.0E-06	5.0E-06	2.7E-07	7.9E-07	3.6E-05	2.6E-07	2.0E-08
Singer	Beauregard	LA	Dump Trucks	2270002078	7.26	58.08	0.21	7	LA-2270002078	0.45	0.12	0.17	0.01	0.03	1.25	0.01	0.00	4.2E-05	1.1E-05	1.6E-05	9.0E-07	3.0E-06	1.2E-04	8.8E-07	7.0E-08
Singer	Beauregard	LA	Compactor	2270002015	7.26	58.08	0.59	1	LA-2270002015	0.19	0.03	0.09	0.00	0.01	0.51	0.00	0.00	7.1E-06	1.2E-06	3.5E-06	1.2E-07	3.5E-07	1.9E-05	1.6E-07	1.0E-08
Singer	Beauregard	LA	Road Grader	2270002048	7.26	58.08	0.59	1	LA-2270002048	0.12	0.02	0.05	0.00	0.01	0.30	0.00	0.00	4.6E-06	7.5E-07	2.0E-06	6.8E-08	4.0E-07	1.1E-05	9.1E-08	6.2E-09
Singer	Beauregard	LA	Thermite Welder	2270006025	7.26	58.08	0.21	1	LA-2270006025	0.37	0.10	0.14	0.01	0.03	1.03	0.01	0.00	4.9E-06	1.3E-06	1.9E-06	1.1E-07	3.7E-07	1.4E-05	1.1E-07	8.5E-09
Singer	Beauregard	LA	Crane	2270002045	7.26	58.08	0.43	1	LA-2270002045	0.22	0.04	0.10	0.00	0.01	0.59	0.00	0.00	6.1E-06	1.1E-06	2.8E-06	1.1E-07	3.8E-07	1.6E-05	1.3E-07	8.6E-09
Singer	Beauregard	LA	Rail Tensor	2270006005	7.26	58.08	0.43	1	LA-2270006005	0.44	0.10	0.18	0.01	0.03	1.23	0.01	0.00	1.2E-05	2.9E-06	5.1E-06	2.5E-07	7.8E-07	3.4E-05	2.6E-07	2.0E-08
Singer	Beauregard	LA	Rail Tamper	2270002006	7.26	58.08	0.43	1	LA-2270002006	0.16	0.03	0.08	0.00	0.01	0.44	0.00	0.00	4.3E-06	7.8E-07	2.2E-06	7.7E-08	1.8E-07	1.2E-05	9.6E-08	6.1E-09

Notes:

Work Hours estimated based on the distance of track work and industry standard production rates.
Assumed equipment necessary to complete the new and extended track work
Emission Factors were derived for the equipment using the Nonroad module within the MOVES
Nonroad run for 2027 Analysis
Assumes Default Inputs and Population Data
Accounts for all counties and months of year. Emission factors average to create statewide values for use in the analysis.
Load Factors sourced from "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling" EPA, 2010, EPA-420-R-10-016 N2O
not provided in Nonroad, Estimated using ratio between CH_4/N_2O emission factors based on EPA's "Emission Factors for GHG Inventories" for diesel fuel

Table K.12-5. Construction Analysis- Fugitive Dust Emissions

						Work Hours	Emission Factors (lbs/hr)		Emissions (tons/year)	
Site	County	State	Attainment	NA Pollutant	Dust Source	hrs	PM10	PM2.5	PM10	PM2.5
Turkey River	Clayton	IA	Attainment	N/A	General Construction	137.3	0.13	0.013	0.009	0.001
Turkey River	Clayton	IA	Attainment	N/A	Earthwork	81.0	49	4.9	1.984	0.198
Bellevue	Jackson	IA	Attainment	N/A	General Construction	112.5	0.13	0.013	0.007	0.001
Bellevue	Jackson	IA	Attainment	N/A	Earthwork	66.4	49	4.9	1.626	0.163
Monroe	Ogle	IL	Attainment	N/A	General Construction	134.6	0.13	0.013	0.009	0.001
Monroe	Ogle	IL	Attainment	N/A	Earthwork	79.4	49	4.9	1.946	0.195
Deer Creek	Clinton	IA	Attainment	N/A	General Construction	76.6	0.13	0.013	0.005	0.000
Deer Creek	Clinton	IA	Attainment	N/A	Earthwork	45.2	49	4.9	1.107	0.111
Camanche	Clinton	IA	Attainment	N/A	General Construction	40.1	0.13	0.013	0.003	0.000
Camanche	Clinton	IA	Attainment	N/A	Earthwork	23.7	49	4.9	0.580	0.058
Letts	Louisa	IA	Attainment	N/A	General Construction	13.7	0.13	0.013	0.001	0.000
Letts	Louisa	IA	Attainment	N/A	Earthwork	8.1	49	4.9	0.198	0.020
Washington	Washington	IA	Attainment	N/A	General Construction	114.0	0.13	0.013	0.007	0.001
Washington	Washington	IA	Attainment	N/A	Earthwork	67.3	49	4.9	1.649	0.165
Ottumwa	Wapello	IA	Attainment	N/A	General Construction	24.8	0.13	0.013	0.002	0.000
Ottumwa	Wapello	IA	Attainment	N/A	Earthwork	14.6	49	4.9	0.359	0.036
Moravia	Monroe	IA	Attainment	N/A	General Construction	120.9	0.13	0.013	0.008	0.001
Moravia	Monroe	IA	Attainment	N/A	Earthwork	71.3	49	4.9	1.748	0.175
Newtown	Sullivan	MO	Attainment	N/A	General Construction	23.2	0.13	0.013	0.002	0.000
Newtown	Sullivan	MO	Attainment	N/A	Earthwork	13.7	49	4.9	0.336	0.034
Laredo	Grundy	MO	Attainment	N/A	General Construction	30.6	0.13	0.013	0.002	0.000
Laredo	Grundy	MO	Attainment	N/A	Earthwork	18.1	49	4.9	0.443	0.044
Dawn	Livingston	MO	Attainment	N/A	General Construction	114.6	0.13	0.013	0.007	0.001
Dawn	Livingston	MO	Attainment	N/A	Earthwork	67.6	49	4.9	1.656	0.166
Blue Valley	Jackson	MO	NonAttainment	SO2	General Construction	109.3	0.13	0.013	0.007	0.001
Blue Valley	Jackson	MO	NonAttainment	SO2	Earthwork	64.5	49	4.9	1.580	0.158
Grandview	Jackson	MO	Attainment	N/A	General Construction	137.3	0.13	0.013	0.009	0.001
Grandview	Jackson	MO	Attainment	N/A	Earthwork	81.0	49	4.9	1.985	0.198
Asbury	Jasper	MO	Attainment	N/A	General Construction	117.2	0.13	0.013	0.008	0.001
Asbury	Jasper	MO	Attainment	N/A	Earthwork	69.2	49	4.9	1.694	0.169
Goodman	McDonald	MO	Attainment	N/A	General Construction	56.5	0.13	0.013	0.004	0.000
Goodman	McDonald	MO	Attainment	N/A	Earthwork	33.3	49	4.9	0.817	0.082
Gentry	Benton	AK	Attainment	N/A	General Construction	146.3	0.13	0.013	0.010	0.001
Gentry	Benton	AK	Attainment	N/A	Earthwork	86.3	49	4.9	2.114	0.211
Baron (MP247)	Adair	OK	Attainment	N/A	General Construction	109.8	0.13	0.013	0.007	0.001
Baron (MP247)	Adair	OK	Attainment	N/A	Earthwork	64.8	49	4.9	1.588	0.159
Cave Springs	Adair	OK	Attainment	N/A	General Construction	116.2	0.13	0.013	0.008	0.001
Cave Springs	Adair	OK	Attainment	N/A	Earthwork	68.5	49	4.9	1.679	0.168
Spiro	Le Flore	OK	Attainment	N/A	General Construction	57.0	0.13	0.013	0.004	0.000
Mena	Polk	AK	Attainment	N/A	General Construction	128.8	0.13	0.013	0.008	0.001
Mena	Polk	AK	Attainment	N/A	Earthwork	76.0	49	4.9	1.862	0.186
Mansfield	De Soto	LA	Attainment	N/A	General Construction	104.0	0.13	0.013	0.007	0.001

Mansfield	De Soto	LA	Attainment	N/A	Earthwork	61.4	49	4.9	1.504	0.150
Loring	Sabine	LA	Attainment	N/A	General Construction	88.2	0.13	0.013	0.006	0.001
Loring	Sabine	LA	Attainment	N/A	Earthwork	52.0	49	4.9	1.275	0.127
Singer	Beauregard	LA	Attainment	N/A	General Construction	58.1	0.13	0.013	0.004	0.000
Singer	Beauregard	LA	Attainment	N/A	Earthwork	34.3	49	4.9	0.840	0.084

Notes:

Work Hours estimated based on the distance of track work and industry standard production rates.

Earthwork hours estimated using the total work hours and compactor/grader load factor

Fugitive Dust Emissions rates taken from WRAP Fugitive Dust Handbook.

Western Governors' Association (WGA). "WRAP Fugitive Dust Handbook" September 7, 2006.

$PM_{2.5}$ emissions were assumed to be 10 percent of the PM_{10} emissions as described by the guidance.

K.13 Rail Segment Analysis - Historical Baseline

As discussed above in this appendix and in *Section 3.7* of the EIS, OEA estimated locomotive emissions under the Proposed Acquisition and the No-Action Alternative using modeled baseline (2019) gross tons per mile (GT/M) data provided by the Applicants. Those modeled baseline GT/M data are presented in Appendix T of the Applicants' Amended Operating Plan and in **Appendix C** of this EIS. In response to comments on the Draft EIS expressing concerns about the reliability of the modeled baseline GT/M data that the Applicants provided, OEA considered whether using historical reported GT/M data from 2019, as reported in Exhibit 14 of the Applicants' Amended Operating Plan, would affect OEA's results or conclusions. OEA found that using historical reported GT/M data instead of modeled baseline GT/M data would not have affected the extent of the study area for air quality (or for other resource areas considered in the EIS) because no additional rail line segments would have met or exceeded the thresholds for environmental review set forth in the Board's environmental regulations at 49 C.F.R. § 1105.7(e).

Additionally, OEA conducted a sensitivity analysis for locomotive emissions under the Proposed Acquisition and the No-Action Alternative using historical reported baseline GT/M data. Other than using the historical reported baseline GT/M data from Exhibit 14 of the Applicants' Amended Operating Plan rather than the modeled baseline GT/M data from Appendix T of the Amended Operating Plan, OEA used the same analysis methods described in *Section K.7* of this appendix for the sensitivity analysis and estimated locomotive emissions for the same set of rail line segments and sub-segments described in *Section K.7*. **Table K.13-1** and **Table K.13-2** below present the rail segment analysis using the historical reported baseline GT/M data. **Table K.13-3** through **Table K.13-8** show results of the sensitivity analysis by rail line sub-segment.

Overall, the results of the sensitivity analysis demonstrate that using the historical reported baseline GT/M data rather than the modeled baseline GT/M data to predict locomotive emissions would not have meaningfully changed the emissions estimates or OEA's conclusions regarding the air quality impacts of the Proposed Acquisition as presented in *Section 3.7* of the EIS. Using historical reported baseline GT/M data resulted in a slightly (approximately 1.3 percent) lower estimate of Proposed Acquisition-related air emissions compared to using modeled baseline GT/M data across all the rail line segments in the study area. For rail line sub-segments within the Houston-Galveston-Brazoria Ozone Nonattainment Area, the estimated Proposed Acquisition-related NO_x emissions were 23 tons per year lower using the historical reported baseline GT/M data compared to using the modeled baseline GT/M data. For sub-segments within the Chicago Ozone Nonattainment Area, the estimated Proposed Acquisition-related NO_x emissions were 2 tons per year higher using the historical reported baseline GT/M data compared to using the modeled baseline GT/M data. Regardless of whether modeled baseline GT/M data or historical reported GT/M data were used, the predicted Proposed Acquisition-related NO_x emissions would be above EPA's *de minimis* thresholds in the Chicago Ozone Nonattainment Area, the Houston-Galveston-Brazoria Ozone Nonattainment Area, the Dallas-Fort Worth Nonattainment Area, and the Beaumont-Port Arthur Ozone Maintenance Area, but would be less than 1 percent of the total applicable emissions budget for mobile sources in each ozone nonattainment area.

Table K.13-1. Historical Baseline- Rail Segment Analysis- Criteria Pollutant Summary

					Acquisition-Related Criteria Emissions (tons/year)							*De Minimis* Emissions (tons/year)						
State	**County**	**Attainment**	**NA Pollutant**	**Sub Segment ID**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**	**NOX**	**VOC**	**PM10**	**PM2.5**	**SO2**	**CO**	**CO2e**
Arkansas	Benton	Attainment		K-HEAV-01-06	122.1	5.1	3.3	3.2	0.1	23.2	8,924							
				05007 **Total**	**122.1**	**5.1**	**3.3**	**3.2**	**0.1**	**23.2**	**8,924**	-	-	-	-	-	-	-
Arkansas	Little River	Attainment		K-SHRE-02-02	90.9	3.8	2.4	2.4	0.1	17.3	6,645							
				K-SHRE-03-01	50.4	2.1	1.3	1.3	0.0	9.6	3,682							
				05081 **Total**	**141.3**	**5.9**	**3.8**	**3.7**	**0.1**	**26.8**	**10,326**	-	-	-	-	-	-	-
Arkansas	Miller	Attainment		K-SHRE-03-04	32.5	1.4	0.9	0.8	0.0	6.2	2,375							
				05091 **Total**	**32.5**	**1.4**	**0.9**	**0.8**	**0.0**	**6.2**	**2,375**	-	-	-	-	-	-	-
Arkansas	Polk	Attainment		K-SHRE-01-02	231.0	9.7	6.2	6.0	0.2	43.9	16,880							
				05113 **Total**	**231.0**	**9.7**	**6.2**	**6.0**	**0.2**	**43.9**	**16,880**	-	-	-	-	-	-	-
Arkansas	Sevier	Attainment		K-SHRE-01-03	62.4	2.6	1.7	1.6	0.0	11.9	4,563							
				K-SHRE-02-01	43.2	1.8	1.2	1.1	0.0	8.2	3,154							
				05133 **Total**	**105.6**	**4.4**	**2.8**	**2.7**	**0.1**	**20.1**	**7,717**	-	-	-	-	-	-	-
Illinois	Carroll	Attainment		C-CHIC-01-02	0.4	0.0	0.0	0.0	0.0	0.1	28							
				C-CHIC-02-01	70.1	2.9	1.9	1.8	0.0	13.3	5,121							
				17015 **Total**	**70.4**	**3.0**	**1.9**	**1.8**	**0.0**	**13.4**	**5,149**	-	-	-	-	-	-	-
Illinois	Cook	Nonattainment	Ozone-Serious	C-ELGI-01-02	16.3	0.7	0.4	0.4	0.0	3.1	1,194							
				C-ELGI-02-02	8.7	0.4	0.2	0.2	0.0	1.7	638							
				17031 **Total**	**25.1**	**1.1**	**0.7**	**0.6**	**0.0**	**4.8**	**1,832**	***50***	***50***	-	-	-	-	-
Illinois	DeKalb	Attainment		C-CHIC-03-02	44.9	1.9	1.2	1.2	0.0	8.5	3,279							
				17037 **Total**	**44.9**	**1.9**	**1.2**	**1.2**	**0.0**	**8.5**	**3,279**	-	-	-	-	-	-	-
Illinois	DuPage	Nonattainment	Ozone-Serious	C-ELGI-01-03	27.6	1.2	0.7	0.7	0.0	5.2	2,017							
				C-ELGI-02-01	2.0	0.1	0.1	0.1	0.0	0.4	143							
				17043 **Total**	**29.6**	**1.2**	**0.8**	**0.8**	**0.0**	**5.6**	**2,160**	***50***	***50***	-	-	-	-	-
Illinois	Kane	Nonattainment	Ozone-Serious	C-CHIC-03-03	0.2	0.0	0.0	0.0	0.0	0.0	12							
				C-CHIC-03-04	30.4	1.3	0.8	0.8	0.0	5.8	2,225							
				C-ELGI-01-01	14.7	0.6	0.4	0.4	0.0	2.8	1,071							
				17089 **Total**	**45.3**	**1.9**	**1.2**	**1.2**	**0.0**	**8.6**	**3,308**	***50***	***50***	-	-	-	-	-
Illinois	Ogle	Attainment		C-CHIC-02-02	80.3	3.4	2.1	2.1	0.1	15.3	5,872							
				C-CHIC-03-01	17.8	0.7	0.5	0.5	0.0	3.4	1,298							
				17141 **Total**	**98.1**	**4.1**	**2.6**	**2.5**	**0.1**	**18.6**	**7,169**	-	-	-	-	-	-	-
Iowa	Appanoose	Attainment		C-LARE-01-03	85.6	3.6	2.3	2.2	0.1	16.3	6,259							
				19007 **Total**	**85.6**	**3.6**	**2.3**	**2.2**	**0.1**	**16.3**	**6,259**	-	-	-	-	-	-	-
Iowa	Clinton	Attainment		C-DAVE-01-02	47.6	2.0	1.3	1.2	0.0	9.0	3,477							
				C-DAVE-02-01	27.2	1.1	0.7	0.7	0.0	5.2	1,989							
				19045 **Total**	**74.8**	**3.1**	**2.0**	**1.9**	**0.1**	**14.2**	**5,466**	-	-	-	-	-	-	-
Iowa	Jackson	Attainment		C-CHIC-01-01	2.1	0.1	0.1	0.1	0.0	0.4	151							
				C-DAVE-01-01	5.9	0.2	0.2	0.2	0.0	1.1	431							
				19097 **Total**	**8.0**	**0.3**	**0.2**	**0.2**	**0.0**	**1.5**	**582**	-	-	-	-	-	-	-
Iowa	Jefferson	Attainment		C-OTTU-02-05	16.3	0.7	0.4	0.4	0.0	3.1	1,188							
				19101 **Total**	**16.3**	**0.7**	**0.4**	**0.4**	**0.0**	**3.1**	**1,188**	-	-	-	-	-	-	-
Iowa	Keokuk	Attainment		C-OTTU-02-04	29.0	1.2	0.8	0.8	0.0	5.5	2,121							
				19107 **Total**	**29.0**	**1.2**	**0.8**	**0.8**	**0.0**	**5.5**	**2,121**	-	-	-	-	-	-	-
Iowa	Louisa	Attainment		C-OTTU-02-02	66.6	2.8	1.8	1.7	0.0	12.7	4,870							
				19115 **Total**	**66.6**	**2.8**	**1.8**	**1.7**	**0.0**	**12.7**	**4,870**	-	-	-	-	-	-	-
Iowa	Monroe	Attainment		C-LARE-01-02	38.7	1.6	1.0	1.0	0.0	7.4	2,828							
				19135 **Total**	**38.7**	**1.6**	**1.0**	**1.0**	**0.0**	**7.4**	**2,828**	-	-	-	-	-	-	-
Iowa	Muscatine	Nonattainment	SO2	C-OTTU-01-03	21.0	0.9	0.6	0.5	0.0	4.0	1,538							
				C-OTTU-02-01	22.4	0.9	0.6	0.6	0.0	4.2	1,634							
				19139N **Total**	**43.4**	**1.8**	**1.2**	**1.1**	**0.0**	**8.2**	**3,172**	-	-	-	-	***100***	-	-
Iowa	Muscatine	Attainment		C-OTTU-01-02	19.7	0.8	0.5	0.5	0.0	3.7	1,442							
				19139A **Total**	**19.7**	**0.8**	**0.5**	**0.5**	**0.0**	**3.7**	**1,442**	-	-	-	-	-	-	-

Iowa	Scott	Attainment			C-DAVE-02-02	58.0	2.4	1.5	1.5	0.0	11.0	4,238							
					C-DAVE-03-01	14.6	0.6	0.4	0.4	0.0	2.8	1,067							
					C-OTTU-01-01	23.7	1.0	0.6	0.6	0.0	4.5	1,736							
				19163	**Total**	**96.3**	**4.0**	**2.6**	**2.5**	**0.1**	**18.3**	**7,041**	-	-	-	-	-	-	-
Iowa	Wapello	Attainment			C-LARE-01-01	49.2	2.1	1.3	1.3	0.0	9.3	3,598							
					C-OTTU-02-06	54.9	2.3	1.5	1.4	0.0	10.4	4,012							
				19179	**Total**	**104.1**	**4.4**	**2.8**	**2.7**	**0.1**	**19.8**	**7,609**	-	-	-	-	-	-	-
Iowa	Washington	Attainment			C-OTTU-02-03	79.0	3.3	2.1	2.0	0.1	15.0	5,775							
				19183	**Total**	**79.0**	**3.3**	**2.1**	**2.0**	**0.1**	**15.0**	**5,775**	-	-	-	-	-	-	-
Iowa	Wayne	Attainment			C-LARE-01-04	59.9	2.5	1.6	1.6	0.0	11.4	4,376							
				19185	**Total**	**59.9**	**2.5**	**1.6**	**1.6**	**0.0**	**11.4**	**4,376**	-	-	-	-	-	-	-
Kansas	Cherokee	Attainment			K-HEAV-01-02	13.9	0.6	0.4	0.4	0.0	2.6	1,015							
				20021	**Total**	**13.9**	**0.6**	**0.4**	**0.4**	**0.0**	**2.6**	**1,015**	-	-	-	-	-	-	-
Kansas	Crawford	Attainment			K-HEAV-01-01	25.9	1.1	0.7	0.7	0.0	4.9	1,897							
					K-PITT-01-07	34.6	1.5	0.9	0.9	0.0	6.6	2,527							
				20037	**Total**	**60.5**	**2.5**	**1.6**	**1.6**	**0.0**	**11.5**	**4,423**	-	-	-	-	-	-	-
Louisiana	Beauregard	Attainment	Ozone '79 Revoked		K-BEAU-02-02	135.3	5.7	3.6	3.5	0.1	25.7	9,891							
					K-BEAU-03-02	11.9	0.5	0.3	0.3	0.0	2.3	872							
				22011	**Total**	**147.3**	**6.2**	**3.9**	**3.8**	**0.1**	**28.0**	**10,763**	-	-	-	-	-	-	-
Louisiana	Caddo	Attainment			K-SHRE-03-05	209.1	8.8	5.6	5.4	0.1	39.7	15,285							
					K-SHRE-04-01	94.9	4.0	2.5	2.5	0.1	18.0	6,934							
				22017	**Total**	**304.0**	**12.8**	**8.1**	**7.9**	**0.2**	**57.7**	**22,219**	-	-	-	-	-	-	-
Louisiana	Calcasieu	Attainment	Ozone '79 Revoked		K-BEAU-02-03	11.9	0.5	0.3	0.3	0.0	2.3	867							
					K-BEAU-03-01	77.4	3.3	2.1	2.0	0.1	14.7	5,660							
				22019	**Total**	**89.3**	**3.8**	**2.4**	**2.3**	**0.1**	**17.0**	**6,527**	-	-	-	-	-	-	-
Louisiana	De Soto	Attainment			K-BEAU-01-01	113.7	4.8	3.0	2.9	0.1	21.6	8,311							
					K-SHRE-04-02	26.8	1.1	0.7	0.7	0.0	5.1	1,958							
				22031	**Total**	**140.5**	**5.9**	**3.8**	**3.6**	**0.1**	**26.7**	**10,269**	-	-	-	-	-	-	-
Louisiana	Sabine	Attainment			K-BEAU-01-02	178.2	7.5	4.8	4.6	0.1	33.9	13,025							
				22085	**Total**	**178.2**	**7.5**	**4.8**	**4.6**	**0.1**	**33.9**	**13,025**	-	-	-	-	-	-	-
Louisiana	Vernon	Attainment			K-BEAU-01-03	61.4	2.6	1.6	1.6	0.0	11.7	4,487							
					K-BEAU-02-01	94.6	4.0	2.5	2.5	0.1	18.0	6,915							
				22115	**Total**	**156.0**	**6.6**	**4.2**	**4.0**	**0.1**	**29.6**	**11,402**	-	-	-	-	-	-	-
Missouri	Barton	Attainment			K-PITT-01-06	43.9	1.8	1.2	1.1	0.0	8.3	3,209							
				29011	**Total**	**43.9**	**1.8**	**1.2**	**1.1**	**0.0**	**8.3**	**3,209**	-	-	-	-	-	-	-
Missouri	Bates	Attainment			K-PITT-01-04	115.7	4.9	3.1	3.0	0.1	22.0	8,458							
				29013	**Total**	**115.7**	**4.9**	**3.1**	**3.0**	**0.1**	**22.0**	**8,458**	-	-	-	-	-	-	-
Missouri	Caldwell	Attainment			C-KACI-01-03	77.2	3.2	2.1	2.0	0.1	14.7	5,640							
					C-KACI-02-01	24.8	1.0	0.7	0.6	0.0	4.7	1,810							
				29025	**Total**	**101.9**	**4.3**	**2.7**	**2.6**	**0.1**	**19.4**	**7,450**	-	-	-	-	-	-	-
Missouri	Cass	Attainment			K-PITT-01-03	121.2	5.1	3.2	3.1	0.1	23.0	8,857							
				29037	**Total**	**121.2**	**5.1**	**3.2**	**3.1**	**0.1**	**23.0**	**8,857**	-	-	-	-	-	-	-
Missouri	Clay	Attainment	Ozone '79 Revoked		C-KACI-02-03	122.7	5.2	3.3	3.2	0.1	23.3	8,966							
				29047	**Total**	**122.7**	**5.2**	**3.3**	**3.2**	**0.1**	**23.3**	**8,966**	-	-	-	-	-	-	-
Missouri	Grundy	Attainment			C-KACI-01-01	20.9	0.9	0.6	0.5	0.0	4.0	1,526							
					C-LARE-02-03	37.7	1.6	1.0	1.0	0.0	7.2	2,757							
				29079	**Total**	**58.6**	**2.5**	**1.6**	**1.5**	**0.0**	**11.1**	**4,283**	-	-	-	-	-	-	-
Missouri	Jackson	Nonattainment	SO2		C-KACI-02-05	1.4	0.1	0.0	0.0	0.0	0.3	102							
					K-PITT-01-01	19.3	0.8	0.5	0.5	0.0	3.7	1,412							
				29095N	**Total**	**20.7**	**0.9**	**0.6**	**0.5**	**0.0**	**3.9**	**1,514**	-	-	-	-	***100***	-	-
Missouri	Jackson	Attainment			C-KACI-02-04	7.7	0.3	0.2	0.2	0.0	1.5	560							
					K-PITT-01-02	69.5	2.9	1.9	1.8	0.0	13.2	5,080							
				29095A	**Total**	**77.2**	**3.2**	**2.1**	**2.0**	**0.1**	**14.7**	**5,641**	-	-	-	-	-	-	-
Missouri	Jasper	Attainment			K-HEAV-01-03	87.0	3.7	2.3	2.3	0.1	16.5	6,360							
				29097	**Total**	**87.0**	**3.7**	**2.3**	**2.3**	**0.1**	**16.5**	**6,360**	-	-	-	-	-	-	-

Missouri	Livingston	Attainment			C-KACI-01-02	138.5	5.8	3.7	3.6	0.1	26.3	10,123							
				29117	**Total**	**138.5**	**5.8**	**3.7**	**3.6**	**0.1**	**26.3**	**10,123**	-	-	-	-	-	-	-
Missouri	McDonald	Attainment			K-HEAV-01-05	87.4	3.7	2.3	2.3	0.1	16.6	6,389							
				29119	**Total**	**87.4**	**3.7**	**2.3**	**2.3**	**0.1**	**16.6**	**6,389**	-	-	-	-	-	-	-
Missouri	Newton	Attainment			K-HEAV-01-04	109.5	4.6	2.9	2.8	0.1	20.8	8,001							
				29145	**Total**	**109.5**	**4.6**	**2.9**	**2.8**	**0.1**	**20.8**	**8,001**	-	-	-	-	-	-	-
Missouri	Putnam	Attainment			C-LARE-02-01	82.8	3.5	2.2	2.1	0.1	15.7	6,054							
				29171	**Total**	**82.8**	**3.5**	**2.2**	**2.1**	**0.1**	**15.7**	**6,054**	-	-	-	-	-	-	-
Missouri	Ray	Attainment			C-KACI-02-02	52.8	2.2	1.4	1.4	0.0	10.0	3,861							
				29177	**Total**	**52.8**	**2.2**	**1.4**	**1.4**	**0.0**	**10.0**	**3,861**	-	-	-	-	-	-	-
Missouri	Sullivan	Attainment			C-LARE-02-02	94.0	4.0	2.5	2.4	0.1	17.9	6,873							
				29211	**Total**	**94.0**	**4.0**	**2.5**	**2.4**	**0.1**	**17.9**	**6,873**	-	-	-	-	-	-	-
Missouri	Vernon	Attainment			K-PITT-01-05	110.7	4.7	3.0	2.9	0.1	21.0	8,089							
				29217	**Total**	**110.7**	**4.7**	**3.0**	**2.9**	**0.1**	**21.0**	**8,089**	-	-	-	-	-	-	-
Oklahoma	Adair	Attainment			K-HEAV-01-07	12.6	0.5	0.3	0.3	0.0	2.4	922							
					K-HEAV-02-01	154.5	6.5	4.1	4.0	0.1	29.4	11,295							
				40001	**Total**	**167.1**	**7.0**	**4.5**	**4.3**	**0.1**	**31.8**	**12,216**	-	-	-	-	-	-	-
Oklahoma	Le Flore	Attainment			K-HEAV-02-03	73.1	3.1	2.0	1.9	0.0	13.9	5,345							
					K-HEAV-03-01	52.5	2.2	1.4	1.4	0.0	10.0	3,837							
					K-SHRE-01-01	85.3	3.6	2.3	2.2	0.1	16.2	6,235							
				40079	**Total**	**210.9**	**8.9**	**5.6**	**5.5**	**0.1**	**40.1**	**15,417**	-	-	-	-	-	-	-
Oklahoma	Sequoyah	Attainment			K-HEAV-02-02	127.8	5.4	3.4	3.3	0.1	24.3	9,341							
				40135	**Total**	**127.8**	**5.4**	**3.4**	**3.3**	**0.1**	**24.3**	**9,341**	-	-	-	-	-	-	-
Texas	Bowie	Attainment			K-SHRE-03-02	110.6	4.6	3.0	2.9	0.1	21.0	8,084							
				48037	**Total**	**110.6**	**4.6**	**3.0**	**2.9**	**0.1**	**21.0**	**8,084**	-	-	-	-	-	-	-
Texas	Cass	Attainment			K-SHRE-03-03	59.6	2.5	1.6	1.5	0.0	11.3	4,353							
				48067	**Total**	**59.6**	**2.5**	**1.6**	**1.5**	**0.0**	**11.3**	**4,353**	-	-	-	-	-	-	-
Texas	Collin	Nonattainment	Ozone-Severe		K-ALLI-02-02	2.9	0.1	0.1	0.1	0.0	0.5	211							
					K-ALLI-03-01	3.4	0.1	0.1	0.1	0.0	0.7	251							
				48085	**Total**	**6.3**	**0.3**	**0.2**	**0.2**	**0.0**	**1.2**	**462**	***25***	***25***	-	-	-	-	-
Texas	Denton	Nonattainment	Ozone-Severe		K-ALLI-01-02	6.8	0.3	0.2	0.2	0.0	1.3	496							
					K-ALLI-02-01	10.3	0.4	0.3	0.3	0.0	2.0	751							
				48121	**Total**	**17.1**	**0.7**	**0.5**	**0.4**	**0.0**	**3.2**	**1,247**	***25***	***25***	-	-	-	-	-
Texas	Duval	Attainment			K-LARE-02-02	63.8	2.7	1.7	1.7	0.0	12.1	4,661							
				48131	**Total**	**63.8**	**2.7**	**1.7**	**1.7**	**0.0**	**12.1**	**4,661**	-	-	-	-	-	-	-
Texas	Fort Bend	Nonattainment	Ozone-Severe		K-ROSE-01-01	22.8	1.0	0.6	0.6	0.0	4.3	1,664							
					K-ROSE-02-01	1.9	0.1	0.1	0.1	0.0	0.4	141							
					U-BEAU-01-04	8.5	0.4	0.2	0.2	0.0	1.6	621							
				48157	**Total**	**33.2**	**1.4**	**0.9**	**0.9**	**0.0**	**6.3**	**2,426**	***25***	***25***	-	-	-	-	-
Texas	Harris	Nonattainment	Ozone-Severe		U-BEAU-01-03	21.1	0.9	0.6	0.5	0.0	4.0	1,541							
				48201	**Total**	**21.1**	**0.9**	**0.6**	**0.5**	**0.0**	**4.0**	**1,541**	***25***	***25***	-	-	-	-	-
Texas	Jackson	Attainment			K-ROSE-02-03	34.6	1.5	0.9	0.9	0.0	6.6	2,528							
				48239	**Total**	**34.6**	**1.5**	**0.9**	**0.9**	**0.0**	**6.6**	**2,528**	-	-	-	-	-	-	-
Texas	Jefferson	Attainment	Ozone '97 '79 Revoked		K-BEAU-03-05	2.9	0.1	0.1	0.1	0.0	0.5	211							
					K-BEAU-04-01	93.9	3.9	2.5	2.4	0.1	17.8	6,861							
					U-BEAU-01-01	9.6	0.4	0.3	0.2	0.0	1.8	699							
				48245	**Total**	**106.3**	**4.5**	**2.8**	**2.8**	**0.1**	**20.2**	**7,771**	***100***	***100***	-	-	-	-	-
Texas	Jim Hogg	Attainment			K-LARE-02-03	17.0	0.7	0.5	0.4	0.0	3.2	1,244							
				48247	**Total**	**17.0**	**0.7**	**0.5**	**0.4**	**0.0**	**3.2**	**1,244**	-	-	-	-	-	-	-
Texas	Jim Wells	Attainment			K-LARE-02-04	28.0	1.2	0.7	0.7	0.0	5.3	2,045							
				48249	**Total**	**28.0**	**1.2**	**0.7**	**0.7**	**0.0**	**5.3**	**2,045**	-	-	-	-	-	-	-
Texas	Liberty	Nonattainment	Ozone-Severe		U-BEAU-01-02	16.2	0.7	0.4	0.4	0.0	3.1	1,182							
				48291	**Total**	**16.2**	**0.7**	**0.4**	**0.4**	**0.0**	**3.1**	**1,182**	***25***	***25***	-	-	-	-	-
Texas	Newton	Attainment			K-BEAU-03-03	21.3	0.9	0.6	0.6	0.0	4.0	1,556							
				48351	**Total**	**21.3**	**0.9**	**0.6**	**0.6**	**0.0**	**4.0**	**1,556**	-	-	-	-	-	-	-

Texas	Nueces	Attainment		K-LARE-02-05	23.9	1.0	0.6	0.6	0.0	4.5	1,743								
				U-VICT-02-01	13.0	0.5	0.3	0.3	0.0	2.5	952								
			48355	**Total**	**36.9**	**1.6**	**1.0**	**1.0**	**0.0**	**7.0**	**2,696**	-	-	-	-	-	-	-	
Texas	Orange	Attainment	Ozone '97 '79 Revoked	K-BEAU-03-04	74.5	3.1	2.0	1.9	0.0	14.1	5,443								
			48361	**Total**	**74.5**	**3.1**	**2.0**	**1.9**	**0.0**	**14.1**	**5,443**	***100***	***100***	-	-	-	-	-	
Texas	Refugio	Attainment		U-VICT-02-03	58.4	2.5	1.6	1.5	0.0	11.1	4,271								
			48391	**Total**	**58.4**	**2.5**	**1.6**	**1.5**	**0.0**	**11.1**	**4,271**	-	-	-	-	-	-	-	
Texas	San Patricio	Attainment		U-VICT-02-02	32.4	1.4	0.9	0.8	0.0	6.2	2,370								
			48409	**Total**	**32.4**	**1.4**	**0.9**	**0.8**	**0.0**	**6.2**	**2,370**	-	-	-	-	-	-	-	
Texas	Tarrant	Nonattainment	Ozone-Severe	K-ALLI-01-01	1.4	0.1	0.0	0.0	0.0	0.3	102								
			48439	**Total**	**1.4**	**0.1**	**0.0**	**0.0**	**0.0**	**0.3**	**102**	***25***	***25***	-	-	-	-	-	
Texas	Victoria	Attainment	Ozone '79 Revoked	K-ROSE-02-04	22.9	1.0	0.6	0.6	0.0	4.3	1,672								
				U-VICT-01-01	19.4	0.8	0.5	0.5	0.0	3.7	1,421								
				U-VICT-02-04	28.5	1.2	0.8	0.7	0.0	5.4	2,082								
			48469	**Total**	**70.8**	**3.0**	**1.9**	**1.8**	**0.0**	**13.5**	**5,175**	-	-	-	-	-	-	-	
Texas	Webb	Attainment		K-LARE-02-01	73.0	3.1	1.9	1.9	0.0	13.9	5,332								
			48479	**Total**	**73.0**	**3.1**	**1.9**	**1.9**	**0.0**	**13.9**	**5,332**	-	-	-	-	-	-	-	
Texas	Wharton	Attainment		K-ROSE-02-02	56.2	2.4	1.5	1.5	0.0	10.7	4,107								
			48481	**Total**	**56.2**	**2.4**	**1.5**	**1.5**	**0.0**	**10.7**	**4,107**	-	-	-	-	-	-	-	

Table K.13-2. Historical Baseline- Rail Segment Analysis- HAPs Summary

			Acquisition-Related HAP Emissions (tons/year)							
State	County	Sub Segment ID	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
Arkansas	Benton	K-HEAV-01-06	4.0E-01	8.2E-02	1.2E-01	9.5E-03	2.0E-02	1.1E+00	1.4E-02	1.4E-02
		Total	**4.0E-01**	**8.2E-02**	**1.2E-01**	**9.5E-03**	**2.0E-02**	**1.1E+00**	**1.4E-02**	**1.4E-02**
Arkansas	Little River	K-SHRE-02-02	3.0E-01	6.1E-02	8.6E-02	7.1E-03	1.5E-02	8.5E-01	1.0E-02	1.1E-02
		K-SHRE-03-01	1.7E-01	3.4E-02	4.8E-02	3.9E-03	8.1E-03	4.7E-01	5.8E-03	5.9E-03
		Total	**4.7E-01**	**9.5E-02**	**1.3E-01**	**1.1E-02**	**2.3E-02**	**1.3E+00**	**1.6E-02**	**1.7E-02**
Arkansas	Miller	K-SHRE-03-04	1.1E-01	2.2E-02	3.1E-02	2.5E-03	5.2E-03	3.0E-01	3.7E-03	3.8E-03
		Total	**1.1E-01**	**2.2E-02**	**3.1E-02**	**2.5E-03**	**5.2E-03**	**3.0E-01**	**3.7E-03**	**3.8E-03**
Arkansas	Polk	K-SHRE-01-02	7.6E-01	1.6E-01	2.2E-01	1.8E-02	3.7E-02	2.2E+00	2.7E-02	2.7E-02
		Total	**7.6E-01**	**1.6E-01**	**2.2E-01**	**1.8E-02**	**3.7E-02**	**2.2E+00**	**2.7E-02**	**2.7E-02**
Arkansas	Sevier	K-SHRE-01-03	2.1E-01	4.2E-02	5.9E-02	4.9E-03	1.0E-02	5.9E-01	7.2E-03	7.3E-03
		K-SHRE-02-01	1.4E-01	2.9E-02	4.1E-02	3.4E-03	7.0E-03	4.0E-01	5.0E-03	5.1E-03
		Total	**3.5E-01**	**7.1E-02**	**1.0E-01**	**8.3E-03**	**1.7E-02**	**9.9E-01**	**1.2E-02**	**1.2E-02**
Illinois	Carroll	C-CHIC-01-02	1.3E-03	2.6E-04	3.6E-04	3.0E-05	6.1E-05	3.6E-03	4.4E-05	4.5E-05
		C-CHIC-02-01	2.3E-01	4.7E-02	6.6E-02	5.5E-03	1.1E-02	6.6E-01	8.0E-03	8.2E-03
		Total	**2.3E-01**	**4.7E-02**	**6.7E-02**	**5.5E-03**	**1.1E-02**	**6.6E-01**	**8.1E-03**	**8.3E-03**
Illinois	Cook	C-ELGI-01-02	5.4E-02	1.1E-02	1.5E-02	1.3E-03	2.6E-03	1.5E-01	1.9E-03	1.9E-03
		C-ELGI-02-02	2.9E-02	5.9E-03	8.3E-03	6.8E-04	1.4E-03	8.2E-02	1.0E-03	1.0E-03
		Total	**8.2E-02**	**1.7E-02**	**2.4E-02**	**2.0E-03**	**4.0E-03**	**2.3E-01**	**2.9E-03**	**2.9E-03**
Illinois	DeKalb	C-CHIC-03-02	1.5E-01	3.0E-02	4.2E-02	3.5E-03	7.2E-03	4.2E-01	5.1E-03	5.3E-03
		Total	**1.5E-01**	**3.0E-02**	**4.2E-02**	**3.5E-03**	**7.2E-03**	**4.2E-01**	**5.1E-03**	**5.3E-03**
Illinois	DuPage	C-ELGI-01-03	9.1E-02	1.9E-02	2.6E-02	2.2E-03	4.5E-03	2.6E-01	3.2E-03	3.2E-03
		C-ELGI-02-01	6.4E-03	1.3E-03	1.9E-03	1.5E-04	3.2E-04	1.8E-02	2.2E-04	2.3E-04
		Total	**9.7E-02**	**2.0E-02**	**2.8E-02**	**2.3E-03**	**4.8E-03**	**2.8E-01**	**3.4E-03**	**3.5E-03**
Illinois	Kane	C-CHIC-03-03	5.2E-04	1.1E-04	1.5E-04	1.2E-05	2.6E-05	1.5E-03	1.8E-05	1.9E-05
		C-CHIC-03-04	1.0E-01	2.0E-02	2.9E-02	2.4E-03	4.9E-03	2.9E-01	3.5E-03	3.6E-03
		C-ELGI-01-01	4.8E-02	9.9E-03	1.4E-02	1.1E-03	2.4E-03	1.4E-01	1.7E-03	1.7E-03
		Total	**1.5E-01**	**3.0E-02**	**4.3E-02**	**3.5E-03**	**7.3E-03**	**4.2E-01**	**5.2E-03**	**5.3E-03**
Illinois	Ogle	C-CHIC-02-02	2.6E-01	5.4E-02	7.6E-02	6.3E-03	1.3E-02	7.5E-01	9.2E-03	9.4E-03
		C-CHIC-03-01	5.8E-02	1.2E-02	1.7E-02	1.4E-03	2.9E-03	1.7E-01	2.0E-03	2.1E-03
		Total	**3.2E-01**	**6.6E-02**	**9.3E-02**	**7.7E-03**	**1.6E-02**	**9.2E-01**	**1.1E-02**	**1.2E-02**
Iowa	Appanoose	C-LARE-01-03	2.8E-01	5.8E-02	8.1E-02	6.7E-03	1.4E-02	8.0E-01	9.8E-03	1.0E-02
		Total	**2.8E-01**	**5.8E-02**	**8.1E-02**	**6.7E-03**	**1.4E-02**	**8.0E-01**	**9.8E-03**	**1.0E-02**
Iowa	Clinton	C-DAVE-01-02	1.6E-01	3.2E-02	4.5E-02	3.7E-03	7.7E-03	4.5E-01	5.5E-03	5.6E-03
		C-DAVE-02-01	9.0E-02	1.8E-02	2.6E-02	2.1E-03	4.4E-03	2.6E-01	3.1E-03	3.2E-03
		Total	**2.5E-01**	**5.0E-02**	**7.1E-02**	**5.8E-03**	**1.2E-02**	**7.0E-01**	**8.6E-03**	**8.8E-03**
Iowa	Jackson	C-CHIC-01-01	6.8E-03	1.4E-03	2.0E-03	1.6E-04	3.3E-04	1.9E-02	2.4E-04	2.4E-04
		C-DAVE-01-01	1.9E-02	4.0E-03	5.6E-03	4.6E-04	9.5E-04	5.5E-02	6.8E-04	6.9E-04
		Total	**2.6E-02**	**5.4E-03**	**7.5E-03**	**6.2E-04**	**1.3E-03**	**7.5E-02**	**9.1E-04**	**9.3E-04**
Iowa	Jefferson	C-OTTU-02-05	5.3E-02	1.1E-02	1.5E-02	1.3E-03	2.6E-03	1.5E-01	1.9E-03	1.9E-03
		Total	**5.3E-02**	**1.1E-02**	**1.5E-02**	**1.3E-03**	**2.6E-03**	**1.5E-01**	**1.9E-03**	**1.9E-03**
Iowa	Keokuk	C-OTTU-02-04	9.5E-02	2.0E-02	2.7E-02	2.3E-03	4.7E-03	2.7E-01	3.3E-03	3.4E-03
		Total	**9.5E-02**	**2.0E-02**	**2.7E-02**	**2.3E-03**	**4.7E-03**	**2.7E-01**	**3.3E-03**	**3.4E-03**
Iowa	Louisa	C-OTTU-02-02	2.2E-01	4.5E-02	6.3E-02	5.2E-03	1.1E-02	6.2E-01	7.6E-03	7.8E-03
		Total	**2.2E-01**	**4.5E-02**	**6.3E-02**	**5.2E-03**	**1.1E-02**	**6.2E-01**	**7.6E-03**	**7.8E-03**
Iowa	Monroe	C-LARE-01-02	1.3E-01	2.6E-02	3.7E-02	3.0E-03	6.2E-03	3.6E-01	4.4E-03	4.5E-03
		Total	**1.3E-01**	**2.6E-02**	**3.7E-02**	**3.0E-03**	**6.2E-03**	**3.6E-01**	**4.4E-03**	**4.5E-03**
Iowa	Muscatine	C-OTTU-01-03	6.9E-02	1.4E-02	2.0E-02	1.6E-03	3.4E-03	2.0E-01	2.4E-03	2.5E-03
		C-OTTU-02-01	7.4E-02	1.5E-02	2.1E-02	1.7E-03	3.6E-03	2.1E-01	2.6E-03	2.6E-03
		Total	**1.4E-01**	**2.9E-02**	**4.1E-02**	**3.4E-03**	**7.0E-03**	**4.1E-01**	**5.0E-03**	**5.1E-03**
Iowa	Muscatine	C-OTTU-01-02	6.5E-02	1.3E-02	1.9E-02	1.5E-03	3.2E-03	1.8E-01	2.3E-03	2.3E-03
		Total	**6.5E-02**	**1.3E-02**	**1.9E-02**	**1.5E-03**	**3.2E-03**	**1.8E-01**	**2.3E-03**	**2.3E-03**

Iowa	Scott	C-DAVE-02-02	1.9E-01	3.9E-02	5.5E-02	4.5E-03	9.4E-03	5.4E-01	6.7E-03	6.8E-03
		C-DAVE-03-01	4.8E-02	9.8E-03	1.4E-02	1.1E-03	2.4E-03	1.4E-01	1.7E-03	1.7E-03
		C-OTTU-01-01	7.8E-02	1.6E-02	2.2E-02	1.9E-03	3.8E-03	2.2E-01	2.7E-03	2.8E-03
		Total	**3.2E-01**	**6.5E-02**	**9.1E-02**	**7.5E-03**	**1.6E-02**	**9.0E-01**	**1.1E-02**	**1.1E-02**
Iowa	Wapello	C-LARE-01-01	1.6E-01	3.3E-02	4.7E-02	3.8E-03	7.9E-03	4.6E-01	5.6E-03	5.8E-03
		C-OTTU-02-06	1.8E-01	3.7E-02	5.2E-02	4.3E-03	8.9E-03	5.1E-01	6.3E-03	6.4E-03
		Total	**3.4E-01**	**7.0E-02**	**9.8E-02**	**8.1E-03**	**1.7E-02**	**9.8E-01**	**1.2E-02**	**1.2E-02**
Iowa	Washington	C-OTTU-02-03	2.6E-01	5.3E-02	7.5E-02	6.2E-03	1.3E-02	7.4E-01	9.1E-03	9.3E-03
		Total	**2.6E-01**	**5.3E-02**	**7.5E-02**	**6.2E-03**	**1.3E-02**	**7.4E-01**	**9.1E-03**	**9.3E-03**
Iowa	Wayne	C-LARE-01-04	2.0E-01	4.0E-02	5.7E-02	4.7E-03	9.7E-03	5.6E-01	6.9E-03	7.0E-03
		Total	**2.0E-01**	**4.0E-02**	**5.7E-02**	**4.7E-03**	**9.7E-03**	**5.6E-01**	**6.9E-03**	**7.0E-03**
Kansas	Cherokee	K-HEAV-01-02	4.6E-02	9.3E-03	1.3E-02	1.1E-03	2.2E-03	1.3E-01	1.6E-03	1.6E-03
		Total	**4.6E-02**	**9.3E-03**	**1.3E-02**	**1.1E-03**	**2.2E-03**	**1.3E-01**	**1.6E-03**	**1.6E-03**
Kansas	Crawford	K-HEAV-01-01	8.5E-02	1.7E-02	2.5E-02	2.0E-03	4.2E-03	2.4E-01	3.0E-03	3.0E-03
		K-PITT-01-07	1.1E-01	2.3E-02	3.3E-02	2.7E-03	5.6E-03	3.2E-01	4.0E-03	4.1E-03
		Total	**2.0E-01**	**4.1E-02**	**5.7E-02**	**4.7E-03**	**9.8E-03**	**5.7E-01**	**6.9E-03**	**7.1E-03**
Louisiana	Beauregard	K-BEAU-02-02	4.5E-01	9.1E-02	1.3E-01	1.1E-02	2.2E-02	1.3E+00	1.6E-02	1.6E-02
		K-BEAU-03-02	3.9E-02	8.0E-03	1.1E-02	9.3E-04	1.9E-03	1.1E-01	1.4E-03	1.4E-03
		Total	**4.8E-01**	**9.9E-02**	**1.4E-01**	**1.2E-02**	**2.4E-02**	**1.4E+00**	**1.7E-02**	**1.7E-02**
Louisiana	Caddo	K-SHRE-03-05	6.9E-01	1.4E-01	2.0E-01	1.6E-02	3.4E-02	2.0E+00	2.4E-02	2.5E-02
		K-SHRE-04-01	3.1E-01	6.4E-02	9.0E-02	7.4E-03	1.5E-02	8.9E-01	1.1E-02	1.1E-02
		Total	**1.0E+00**	**2.0E-01**	**2.9E-01**	**2.4E-02**	**4.9E-02**	**2.8E+00**	**3.5E-02**	**3.6E-02**
Louisiana	Calcasieu	K-BEAU-02-03	3.9E-02	8.0E-03	1.1E-02	9.3E-04	1.9E-03	1.1E-01	1.4E-03	1.4E-03
		K-BEAU-03-01	2.5E-01	5.2E-02	7.3E-02	6.1E-03	1.2E-02	7.3E-01	8.9E-03	9.1E-03
		Total	**2.9E-01**	**6.0E-02**	**8.4E-02**	**7.0E-03**	**1.4E-02**	**8.4E-01**	**1.0E-02**	**1.0E-02**
Louisiana	De Soto	K-BEAU-01-01	3.7E-01	7.6E-02	1.1E-01	8.9E-03	1.8E-02	1.1E+00	1.3E-02	1.3E-02
		K-SHRE-04-02	8.8E-02	1.8E-02	2.5E-02	2.1E-03	4.3E-03	2.5E-01	3.1E-03	3.1E-03
		Total	**4.6E-01**	**9.5E-02**	**1.3E-01**	**1.1E-02**	**2.3E-02**	**1.3E+00**	**1.6E-02**	**1.7E-02**
Louisiana	Sabine	K-BEAU-01-02	5.9E-01	1.2E-01	1.7E-01	1.4E-02	2.9E-02	1.7E+00	2.0E-02	2.1E-02
		Total	**5.9E-01**	**1.2E-01**	**1.7E-01**	**1.4E-02**	**2.9E-02**	**1.7E+00**	**2.0E-02**	**2.1E-02**
Louisiana	Vernon	K-BEAU-01-03	2.0E-01	4.1E-02	5.8E-02	4.8E-03	9.9E-03	5.8E-01	7.0E-03	7.2E-03
		K-BEAU-02-01	3.1E-01	6.4E-02	8.9E-02	7.4E-03	1.5E-02	8.9E-01	1.1E-02	1.1E-02
		Total	**5.1E-01**	**1.0E-01**	**1.5E-01**	**1.2E-02**	**2.5E-02**	**1.5E+00**	**1.8E-02**	**1.8E-02**
Missouri	Barton	K-PITT-01-06	1.4E-01	3.0E-02	4.2E-02	3.4E-03	7.1E-03	4.1E-01	5.0E-03	5.2E-03
		Total	**1.4E-01**	**3.0E-02**	**4.2E-02**	**3.4E-03**	**7.1E-03**	**4.1E-01**	**5.0E-03**	**5.2E-03**
Missouri	Bates	K-PITT-01-04	3.8E-01	7.8E-02	1.1E-01	9.0E-03	1.9E-02	1.1E+00	1.3E-02	1.4E-02
		Total	**3.8E-01**	**7.8E-02**	**1.1E-01**	**9.0E-03**	**1.9E-02**	**1.1E+00**	**1.3E-02**	**1.4E-02**
Missouri	Caldwell	C-KACI-01-03	2.5E-01	5.2E-02	7.3E-02	6.0E-03	1.2E-02	7.2E-01	8.9E-03	9.1E-03
		C-KACI-02-01	8.2E-02	1.7E-02	2.3E-02	1.9E-03	4.0E-03	2.3E-01	2.8E-03	2.9E-03
		Total	**3.4E-01**	**6.9E-02**	**9.6E-02**	**8.0E-03**	**1.6E-02**	**9.6E-01**	**1.2E-02**	**1.2E-02**
Missouri	Cass	K-PITT-01-03	4.0E-01	8.1E-02	1.1E-01	9.5E-03	2.0E-02	1.1E+00	1.4E-02	1.4E-02
		Total	**4.0E-01**	**8.1E-02**	**1.1E-01**	**9.5E-03**	**2.0E-02**	**1.1E+00**	**1.4E-02**	**1.4E-02**
Missouri	Clay	C-KACI-02-03	4.0E-01	8.3E-02	1.2E-01	9.6E-03	2.0E-02	1.1E+00	1.4E-02	1.4E-02
		Total	**4.0E-01**	**8.3E-02**	**1.2E-01**	**9.6E-03**	**2.0E-02**	**1.1E+00**	**1.4E-02**	**1.4E-02**
Missouri	Grundy	C-KACI-01-01	6.9E-02	1.4E-02	2.0E-02	1.6E-03	3.4E-03	2.0E-01	2.4E-03	2.5E-03
		C-LARE-02-03	1.2E-01	2.5E-02	3.6E-02	2.9E-03	6.1E-03	3.5E-01	4.3E-03	4.4E-03
		Total	**1.9E-01**	**3.9E-02**	**5.5E-02**	**4.6E-03**	**9.5E-03**	**5.5E-01**	**6.7E-03**	**6.9E-03**
Missouri	Jackson	C-KACI-02-05	4.6E-03	9.4E-04	1.3E-03	1.1E-04	2.3E-04	1.3E-02	1.6E-04	1.6E-04
		K-PITT-01-01	6.4E-02	1.3E-02	1.8E-02	1.5E-03	3.1E-03	1.8E-01	2.2E-03	2.3E-03
		Total	**6.8E-02**	**1.4E-02**	**2.0E-02**	**1.6E-03**	**3.3E-03**	**1.9E-01**	**2.4E-03**	**2.4E-03**
Missouri	Jackson	C-KACI-02-04	2.5E-02	5.2E-03	7.3E-03	6.0E-04	1.2E-03	7.2E-02	8.8E-04	9.0E-04
		K-PITT-01-02	2.3E-01	4.7E-02	6.6E-02	5.4E-03	1.1E-02	6.5E-01	8.0E-03	8.2E-03
		Total	**2.5E-01**	**5.2E-02**	**7.3E-02**	**6.0E-03**	**1.2E-02**	**7.2E-01**	**8.9E-03**	**9.1E-03**
Missouri	Jasper	K-HEAV-01-03	2.9E-01	5.9E-02	8.2E-02	6.8E-03	1.4E-02	8.2E-01	1.0E-02	1.0E-02
		Total	**2.9E-01**	**5.9E-02**	**8.2E-02**	**6.8E-03**	**1.4E-02**	**8.2E-01**	**1.0E-02**	**1.0E-02**

Missouri	Livingston	C-KACI-01-02	4.6E-01	9.3E-02	1.3E-01	1.1E-02	2.2E-02	1.3E+00	1.6E-02	1.6E-02
		Total	**4.6E-01**	**9.3E-02**	**1.3E-01**	**1.1E-02**	**2.2E-02**	**1.3E+00**	**1.6E-02**	**1.6E-02**
Missouri	McDonald	K-HEAV-01-05	2.9E-01	5.9E-02	8.3E-02	6.8E-03	1.4E-02	8.2E-01	1.0E-02	1.0E-02
		Total	**2.9E-01**	**5.9E-02**	**8.3E-02**	**6.8E-03**	**1.4E-02**	**8.2E-01**	**1.0E-02**	**1.0E-02**
Missouri	Newton	K-HEAV-01-04	3.6E-01	7.4E-02	1.0E-01	8.6E-03	1.8E-02	1.0E+00	1.3E-02	1.3E-02
		Total	**3.6E-01**	**7.4E-02**	**1.0E-01**	**8.6E-03**	**1.8E-02**	**1.0E+00**	**1.3E-02**	**1.3E-02**
Missouri	Putnam	C-LARE-02-01	2.7E-01	5.6E-02	7.8E-02	6.5E-03	1.3E-02	7.8E-01	9.5E-03	9.7E-03
		Total	**2.7E-01**	**5.6E-02**	**7.8E-02**	**6.5E-03**	**1.3E-02**	**7.8E-01**	**9.5E-03**	**9.7E-03**
Missouri	Ray	C-KACI-02-02	1.7E-01	3.6E-02	5.0E-02	4.1E-03	8.5E-03	5.0E-01	6.1E-03	6.2E-03
		Total	**1.7E-01**	**3.6E-02**	**5.0E-02**	**4.1E-03**	**8.5E-03**	**5.0E-01**	**6.1E-03**	**6.2E-03**
Missouri	Sullivan	C-LARE-02-02	3.1E-01	6.3E-02	8.9E-02	7.4E-03	1.5E-02	8.8E-01	1.1E-02	1.1E-02
		Total	**3.1E-01**	**6.3E-02**	**8.9E-02**	**7.4E-03**	**1.5E-02**	**8.8E-01**	**1.1E-02**	**1.1E-02**
Missouri	Vernon	K-PITT-01-05	3.6E-01	7.4E-02	1.0E-01	8.7E-03	1.8E-02	1.0E+00	1.3E-02	1.3E-02
		Total	**3.6E-01**	**7.4E-02**	**1.0E-01**	**8.7E-03**	**1.8E-02**	**1.0E+00**	**1.3E-02**	**1.3E-02**
Oklahoma	Adair	K-HEAV-01-07	4.2E-02	8.5E-03	1.2E-02	9.9E-04	2.0E-03	1.2E-01	1.4E-03	1.5E-03
		K-HEAV-02-01	5.1E-01	1.0E-01	1.5E-01	1.2E-02	2.5E-02	1.4E+00	1.8E-02	1.8E-02
		Total	**5.5E-01**	**1.1E-01**	**1.6E-01**	**1.3E-02**	**2.7E-02**	**1.6E+00**	**1.9E-02**	**2.0E-02**
Oklahoma	Le Flore	K-HEAV-02-03	2.4E-01	4.9E-02	6.9E-02	5.7E-03	1.2E-02	6.9E-01	8.4E-03	8.6E-03
		K-HEAV-03-01	1.7E-01	3.5E-02	5.0E-02	4.1E-03	8.5E-03	4.9E-01	6.0E-03	6.2E-03
		K-SHRE-01-01	2.8E-01	5.7E-02	8.1E-02	6.7E-03	1.4E-02	8.0E-01	9.8E-03	1.0E-02
		Total	**6.9E-01**	**1.4E-01**	**2.0E-01**	**1.6E-02**	**3.4E-02**	**2.0E+00**	**2.4E-02**	**2.5E-02**
Oklahoma	Sequoyah	K-HEAV-02-02	4.2E-01	8.6E-02	1.2E-01	1.0E-02	2.1E-02	1.2E+00	1.5E-02	1.5E-02
		Total	**4.2E-01**	**8.6E-02**	**1.2E-01**	**1.0E-02**	**2.1E-02**	**1.2E+00**	**1.5E-02**	**1.5E-02**
Texas	Bowie	K-SHRE-03-02	3.6E-01	7.4E-02	1.0E-01	8.6E-03	1.8E-02	1.0E+00	1.3E-02	1.3E-02
		Total	**3.6E-01**	**7.4E-02**	**1.0E-01**	**8.6E-03**	**1.8E-02**	**1.0E+00**	**1.3E-02**	**1.3E-02**
Texas	Cass	K-SHRE-03-03	2.0E-01	4.0E-02	5.6E-02	4.7E-03	9.6E-03	5.6E-01	6.8E-03	7.0E-03
		Total	**2.0E-01**	**4.0E-02**	**5.6E-02**	**4.7E-03**	**9.6E-03**	**5.6E-01**	**6.8E-03**	**7.0E-03**
Texas	Collin	K-ALLI-02-02	9.5E-03	1.9E-03	2.7E-03	2.3E-04	4.7E-04	2.7E-02	3.3E-04	3.4E-04
		K-ALLI-03-01	1.1E-02	2.3E-03	3.2E-03	2.7E-04	5.5E-04	3.2E-02	3.9E-04	4.0E-04
		Total	**2.1E-02**	**4.2E-03**	**6.0E-03**	**4.9E-04**	**1.0E-03**	**5.9E-02**	**7.2E-04**	**7.4E-04**
Texas	Denton	K-ALLI-01-02	2.2E-02	4.6E-03	6.4E-03	5.3E-04	1.1E-03	6.4E-02	7.8E-04	8.0E-04
		K-ALLI-02-01	3.4E-02	6.9E-03	9.7E-03	8.0E-04	1.7E-03	9.6E-02	1.2E-03	1.2E-03
		Total	**5.6E-02**	**1.1E-02**	**1.6E-02**	**1.3E-03**	**2.8E-03**	**1.6E-01**	**2.0E-03**	**2.0E-03**
Texas	Duval	K-LARE-02-02	2.1E-01	4.3E-02	6.0E-02	5.0E-03	1.0E-02	6.0E-01	7.3E-03	7.5E-03
		Total	**2.1E-01**	**4.3E-02**	**6.0E-02**	**5.0E-03**	**1.0E-02**	**6.0E-01**	**7.3E-03**	**7.5E-03**
Texas	Fort Bend	K-ROSE-01-01	7.5E-02	1.5E-02	2.2E-02	1.8E-03	3.7E-03	2.1E-01	2.6E-03	2.7E-03
		K-ROSE-02-01	6.4E-03	1.3E-03	1.8E-03	1.5E-04	3.1E-04	1.8E-02	2.2E-04	2.3E-04
		U-BEAU-01-04	2.8E-02	5.7E-03	8.0E-03	6.6E-04	1.4E-03	8.0E-02	9.8E-04	1.0E-03
		Total	**1.1E-01**	**2.2E-02**	**3.1E-02**	**2.6E-03**	**5.4E-03**	**3.1E-01**	**3.8E-03**	**3.9E-03**
Texas	Harris	U-BEAU-01-03	6.9E-02	1.4E-02	2.0E-02	1.6E-03	3.4E-03	2.0E-01	2.4E-03	2.5E-03
		Total	**6.9E-02**	**1.4E-02**	**2.0E-02**	**1.6E-03**	**3.4E-03**	**2.0E-01**	**2.4E-03**	**2.5E-03**
Texas	Jackson	K-ROSE-02-03	1.1E-01	2.3E-02	3.3E-02	2.7E-03	5.6E-03	3.2E-01	4.0E-03	4.1E-03
		Total	**1.1E-01**	**2.3E-02**	**3.3E-02**	**2.7E-03**	**5.6E-03**	**3.2E-01**	**4.0E-03**	**4.1E-03**
Texas	Jefferson	K-BEAU-03-05	9.5E-03	1.9E-03	2.7E-03	2.3E-04	4.7E-04	2.7E-02	3.3E-04	3.4E-04
		K-BEAU-04-01	3.1E-01	6.3E-02	8.9E-02	7.3E-03	1.5E-02	8.8E-01	1.1E-02	1.1E-02
		U-BEAU-01-01	3.1E-02	6.4E-03	9.0E-03	7.5E-04	1.5E-03	9.0E-02	1.1E-03	1.1E-03
		Total	**3.5E-01**	**7.2E-02**	**1.0E-01**	**8.3E-03**	**1.7E-02**	**1.0E+00**	**1.2E-02**	**1.2E-02**
Texas	Jim Hogg	K-LARE-02-03	5.6E-02	1.1E-02	1.6E-02	1.3E-03	2.7E-03	1.6E-01	2.0E-03	2.0E-03
		Total	**5.6E-02**	**1.1E-02**	**1.6E-02**	**1.3E-03**	**2.7E-03**	**1.6E-01**	**2.0E-03**	**2.0E-03**
Texas	Jim Wells	K-LARE-02-04	9.2E-02	1.9E-02	2.6E-02	2.2E-03	4.5E-03	2.6E-01	3.2E-03	3.3E-03
		Total	**9.2E-02**	**1.9E-02**	**2.6E-02**	**2.2E-03**	**4.5E-03**	**2.6E-01**	**3.2E-03**	**3.3E-03**
Texas	Liberty	U-BEAU-01-02	5.3E-02	1.1E-02	1.5E-02	1.3E-03	2.6E-03	1.5E-01	1.9E-03	1.9E-03
		Total	**5.3E-02**	**1.1E-02**	**1.5E-02**	**1.3E-03**	**2.6E-03**	**1.5E-01**	**1.9E-03**	**1.9E-03**
Texas	Newton	K-BEAU-03-03	7.0E-02	1.4E-02	2.0E-02	1.7E-03	3.4E-03	2.0E-01	2.4E-03	2.5E-03
		Total	**7.0E-02**	**1.4E-02**	**2.0E-02**	**1.7E-03**	**3.4E-03**	**2.0E-01**	**2.4E-03**	**2.5E-03**

Texas	Nueces	K-LARE-02-05	7.9E-02	1.6E-02	2.3E-02	1.9E-03	3.9E-03	2.2E-01	2.7E-03	2.8E-03
		U-VICT-02-01	4.3E-02	8.8E-03	1.2E-02	1.0E-03	2.1E-03	1.2E-01	1.5E-03	1.5E-03
		Total	**1.2E-01**	**2.5E-02**	**3.5E-02**	**2.9E-03**	**6.0E-03**	**3.5E-01**	**4.2E-03**	**4.3E-03**
Texas	Orange	K-BEAU-03-04	2.5E-01	5.0E-02	7.0E-02	5.8E-03	1.2E-02	7.0E-01	8.5E-03	8.7E-03
		Total	**2.5E-01**	**5.0E-02**	**7.0E-02**	**5.8E-03**	**1.2E-02**	**7.0E-01**	**8.5E-03**	**8.7E-03**
Texas	Refugio	U-VICT-02-03	1.9E-01	3.9E-02	5.5E-02	4.6E-03	9.4E-03	5.5E-01	6.7E-03	6.9E-03
		Total	**1.9E-01**	**3.9E-02**	**5.5E-02**	**4.6E-03**	**9.4E-03**	**5.5E-01**	**6.7E-03**	**6.9E-03**
Texas	San Patricio	U-VICT-02-02	1.1E-01	2.2E-02	3.1E-02	2.5E-03	5.2E-03	3.0E-01	3.7E-03	3.8E-03
		Total	**1.1E-01**	**2.2E-02**	**3.1E-02**	**2.5E-03**	**5.2E-03**	**3.0E-01**	**3.7E-03**	**3.8E-03**
Texas	Tarrant	K-ALLI-01-01	4.6E-03	9.4E-04	1.3E-03	1.1E-04	2.3E-04	1.3E-02	1.6E-04	1.6E-04
		Total	**4.6E-03**	**9.4E-04**	**1.3E-03**	**1.1E-04**	**2.3E-04**	**1.3E-02**	**1.6E-04**	**1.6E-04**
Texas	Victoria	K-ROSE-02-04	7.5E-02	1.5E-02	2.2E-02	1.8E-03	3.7E-03	2.1E-01	2.6E-03	2.7E-03
		U-VICT-01-01	6.4E-02	1.3E-02	1.8E-02	1.5E-03	3.1E-03	1.8E-01	2.2E-03	2.3E-03
		U-VICT-02-04	9.4E-02	1.9E-02	2.7E-02	2.2E-03	4.6E-03	2.7E-01	3.3E-03	3.3E-03
		Total	**2.3E-01**	**4.8E-02**	**6.7E-02**	**5.5E-03**	**1.1E-02**	**6.6E-01**	**8.1E-03**	**8.3E-03**
Texas	Webb	K-LARE-02-01	2.4E-01	4.9E-02	6.9E-02	5.7E-03	1.2E-02	6.8E-01	8.4E-03	8.6E-03
		Total	**2.4E-01**	**4.9E-02**	**6.9E-02**	**5.7E-03**	**1.2E-02**	**6.8E-01**	**8.4E-03**	**8.6E-03**
Texas	Wharton	K-ROSE-02-02	1.8E-01	3.8E-02	5.3E-02	4.4E-03	9.1E-03	5.3E-01	6.4E-03	6.6E-03
		Total	**1.8E-01**	**3.8E-02**	**5.3E-02**	**4.4E-03**	**9.1E-03**	**5.3E-01**	**6.4E-03**	**6.6E-03**

Table K.13-3. Historical Baseline- Rail Segment Analysis- No Action Criteria Pollutant Emissions by Subsegment

							Segment Tons per Mile		Sub-Segment Ton-Miles		Sub-Segment Fuel Use		No Action Emissions (tons/year)									
SubCode	Code	County	State	Attainment	NA Pollutant	SubSeg Length	NA GT	WA GT	NA GTM	WA GTM	NA Gallons	WA Gallons	NOX	VOC	PM10	PM2.5	SO2	CO	CO2e	CO2	CH4	N2O
C-CHIC-01-01	C-CHIC-01	Jackson	Iowa	Attainment	N/A	1.0	16,252,107	30,433,569	16,735,558	31,338,876	17,235	30,604	2.7	0.1	0.1	0.1	0.0	0.5	195	194	0.008	0.002
C-CHIC-01-02	C-CHIC-01	Carroll	Illinois	Attainment	N/A	0.2	16,252,107	30,433,569	3,084,325	5,775,683	3,176	5,640	0.5	0.0	0.0	0.0	0.0	0.1	36	36	0.001	0.000
C-CHIC-02-01	C-CHIC-02	Carroll	Illinois	Attainment	N/A	28.5	14,931,913	32,029,336	425,854,791	913,469,427	438,573	892,060	67.8	2.8	1.8	1.8	0.0	12.9	4,952	4,936	0.198	0.039
C-CHIC-02-02	C-CHIC-02	Ogle	Illinois	Attainment	N/A	32.7	14,931,913	32,029,336	488,301,381	1,047,418,961	502,885	1,022,870	77.7	3.3	2.1	2.0	0.1	14.8	5,679	5,660	0.227	0.044
C-CHIC-03-01	C-CHIC-03	Ogle	Illinois	Attainment	N/A	7.9	13,836,360	29,428,586	109,740,520	233,407,353	113,018	227,937	17.5	0.7	0.5	0.5	0.0	3.3	1,276	1,272	0.051	0.010
C-CHIC-03-02	C-CHIC-03	DeKalb	Illinois	Attainment	N/A	20.0	13,836,360	29,428,586	277,325,258	589,843,703	285,608	576,019	44.1	1.9	1.2	1.1	0.0	8.4	3,225	3,214	0.129	0.025
C-CHIC-03-03	C-CHIC-03	Kane	Illinois	NonAttainment	OZone	0.1	13,836,360	29,428,586	977,151	2,078,306	1,006	2,030	0.2	0.0	0.0	0.0	0.0	0.0	11	11	0.000	0.000
C-CHIC-03-04	C-CHIC-03	Kane	Illinois	NonAttainment	OZone	13.6	13,836,360	29,428,586	188,187,647	400,256,721	193,808	390,876	29.9	1.3	0.8	0.8	0.0	5.7	2,189	2,181	0.088	0.017
C-DAVE-01-01	C-DAVE-01	Jackson	Iowa	Attainment	N/A	1.8	32,193,786	55,328,310	58,800,565	101,054,778	60,557	98,686	9.4	0.4	0.2	0.2	0.0	1.8	684	682	0.027	0.005
C-DAVE-01-02	C-DAVE-01	Clinton	Iowa	Attainment	N/A	14.8	32,193,786	55,328,310	474,869,737	816,112,151	489,052	796,985	75.6	3.2	2.0	2.0	0.1	14.4	5,522	5,504	0.221	0.043
C-DAVE-02-01	C-DAVE-02	Clinton	Iowa	Attainment	N/A	10.5	23,995,580	42,470,476	252,136,409	446,263,578	259,667	435,804	40.1	1.7	1.1	1.0	0.0	7.6	2,932	2,922	0.117	0.023
C-DAVE-02-02	C-DAVE-02	Scott	Iowa	Attainment	N/A	22.4	23,995,580	42,470,476	537,279,579	950,946,782	553,326	928,659	85.5	3.6	2.3	2.2	0.1	16.2	6,248	6,227	0.250	0.049
C-DAVE-03-01	C-DAVE-03	Scott	Iowa	Attainment	N/A	5.6	24,180,184	42,655,080	136,390,964	240,600,629	140,464	234,962	21.7	0.9	0.6	0.6	0.0	4.1	1,586	1,581	0.063	0.012
C-ELGI-01-01	C-ELGI-01	Kane	Illinois	NonAttainment	OZone	5.8	15,100,901	32,537,663	88,307,847	190,275,468	90,945	185,816	14.1	0.6	0.4	0.4	0.0	2.7	1,027	1,024	0.041	0.008
C-ELGI-01-02	C-ELGI-01	Cook	Illinois	NonAttainment	OZone	6.5	15,100,901	32,537,663	98,392,077	212,003,793	101,331	207,035	15.7	0.7	0.4	0.4	0.0	3.0	1,144	1,140	0.046	0.009
C-ELGI-01-03	C-ELGI-01	DuPage	Illinois	NonAttainment	OZone	11.0	15,100,901	32,537,663	166,297,475	358,318,439	171,264	349,920	26.5	1.1	0.7	0.7	0.0	5.0	1,934	1,928	0.077	0.015
C-ELGI-02-01	C-ELGI-02	DuPage	Illinois	NonAttainment	OZone	0.8	66,977,791	87,091,230	52,800,803	68,656,891	54,378	67,048	8.4	0.4	0.2	0.2	0.0	1.6	614	612	0.025	0.005
C-ELGI-02-02	C-ELGI-02	Cook	Illinois	NonAttainment	OZone	3.5	66,977,791	87,091,230	235,407,848	306,100,853	242,439	298,927	37.5	1.6	1.0	1.0	0.0	7.1	2,738	2,729	0.110	0.021
C-KACI-01-01	C-KACI-01	Grundy	Missouri	Attainment	N/A	4.5	17,654,701	49,073,779	80,201,706	222,932,168	82,597	217,707	12.8	0.5	0.3	0.3	0.0	2.4	933	930	0.037	0.007
C-KACI-01-02	C-KACI-01	Livingston	Missouri	Attainment	N/A	30.1	17,654,701	49,073,779	532,158,085	1,479,209,877	548,052	1,444,541	84.7	3.6	2.3	2.2	0.1	16.1	6,189	6,168	0.248	0.048
C-KACI-01-03	C-KACI-01	Caldwell	Missouri	Attainment	N/A	16.8	17,654,701	49,073,779	296,457,407	824,045,970	305,311	804,732	47.2	2.0	1.3	1.2	0.0	9.0	3,448	3,436	0.138	0.027
C-KACI-02-01	C-KACI-02	Caldwell	Missouri	Attainment	N/A	5.0	17,132,673	50,963,778	85,506,738	254,352,981	88,060	248,392	13.6	0.6	0.4	0.4	0.0	2.6	994	991	0.040	0.008
C-KACI-02-02	C-KACI-02	Ray	Missouri	Attainment	N/A	10.6	17,132,673	50,963,778	182,348,914	542,424,974	187,795	529,712	29.0	1.2	0.8	0.8	0.0	5.5	2,121	2,114	0.085	0.017
C-KACI-02-03	C-KACI-02	Clay	Missouri	Attainment	N/A	24.7	17,132,673	50,963,778	423,454,142	1,259,629,666	436,101	1,230,107	67.4	2.8	1.8	1.7	0.0	12.8	4,925	4,908	0.197	0.038
C-KACI-02-04	C-KACI-02	Jackson	Missouri	Attainment	N/A	1.5	17,132,673	50,963,778	26,466,091	78,727,469	27,257	76,882	4.2	0.2	0.1	0.1	0.0	0.8	308	307	0.012	0.002
C-KACI-02-05	C-KACI-02	Jackson	Missouri	NonAttainment	SO2	0.3	17,132,673	50,963,778	4,826,617	14,357,516	4,971	14,021	0.8	0.0	0.0	0.0	0.0	0.1	56	56	0.002	0.000
C-LARE-01-01	C-LARE-01	Wapello	Iowa	Attainment	N/A	13.3	16,859,450	42,277,516	224,516,692	563,008,164	231,222	549,813	35.7	1.5	1.0	0.9	0.0	6.8	2,611	2,602	0.105	0.020
C-LARE-01-02	C-LARE-01	Monroe	Iowa	Attainment	N/A	10.5	16,859,450	42,277,516	176,500,640	442,600,951	181,772	432,227	28.1	1.2	0.7	0.7	0.0	5.3	2,053	2,046	0.082	0.016
C-LARE-01-03	C-LARE-01	Appanoose	Iowa	Attainment	N/A	23.2	16,859,450	42,277,516	390,603,401	979,494,674	402,269	956,538	62.2	2.6	1.7	1.6	0.0	11.8	4,542	4,527	0.182	0.035
C-LARE-01-04	C-LARE-01	Wayne	Iowa	Attainment	N/A	16.2	16,859,450	42,277,516	273,093,522	684,821,611	281,250	668,771	43.5	1.8	1.2	1.1	0.0	8.3	3,176	3,165	0.127	0.025
C-LARE-02-01	C-LARE-02	Putnam	Missouri	Attainment	N/A	17.9	17,202,275	48,866,740	307,349,448	873,091,829	316,529	852,629	48.9	2.1	1.3	1.3	0.0	9.3	3,574	3,562	0.143	0.028
C-LARE-02-02	C-LARE-02	Sullivan	Missouri	Attainment	N/A	20.3	17,202,275	48,866,740	348,963,489	991,305,409	359,386	968,072	55.5	2.3	1.5	1.4	0.0	10.5	4,058	4,045	0.162	0.032
C-LARE-02-03	C-LARE-02	Grundy	Missouri	Attainment	N/A	8.1	17,202,275	48,866,740	139,977,662	397,636,482	144,158	388,317	22.3	0.9	0.6	0.6	0.0	4.2	1,628	1,622	0.065	0.013
C-OTTU-01-01	C-OTTU-01	Scott	Iowa	Attainment	N/A	9.0	19,976,527	38,516,496	180,200,896	347,443,138	185,583	339,300	28.7	1.2	0.8	0.7	0.0	5.4	2,096	2,089	0.084	0.016
C-OTTU-01-02	C-OTTU-01	Muscatine	Iowa	Attainment	N/A	7.5	19,976,527	38,516,496	149,723,129	288,679,329	154,195	281,913	23.8	1.0	0.6	0.6	0.0	4.5	1,741	1,735	0.070	0.014
C-OTTU-01-03	C-OTTU-01	Muscatine	Iowa	NonAttainment	SO2	8.0	19,976,527	38,516,496	159,657,695	307,834,045	164,426	300,619	25.4	1.1	0.7	0.7	0.0	4.8	1,857	1,851	0.074	0.014
C-OTTU-02-01	C-OTTU-02	Muscatine	Iowa	NonAttainment	SO2	7.3	22,824,238	44,501,158	165,489,074	322,659,431	170,432	315,097	26.3	1.1	0.7	0.7	0.0	5.0	1,925	1,918	0.077	0.015
C-OTTU-02-02	C-OTTU-02	Louisa	Iowa	Attainment	N/A	21.6	22,824,238	44,501,158	493,325,397	961,852,576	508,059	939,309	78.5	3.3	2.1	2.0	0.1	14.9	5,737	5,718	0.230	0.045
C-OTTU-02-03	C-OTTU-02	Washington	Iowa	Attainment	N/A	25.6	22,824,238	44,501,158	585,062,536	1,140,715,459	602,536	1,113,980	93.1	3.9	2.5	2.4	0.1	17.7	6,804	6,781	0.272	0.053
C-OTTU-02-04	C-OTTU-02	Keokuk	Iowa	Attainment	N/A	9.4	22,824,238	44,501,158	214,825,672	418,852,601	221,242	409,036	34.2	1.4	0.9	0.9	0.0	6.5	2,498	2,490	0.100	0.020
C-OTTU-02-05	C-OTTU-02	Jefferson	Iowa	Attainment	N/A	5.3	22,824,238	44,501,158	120,324,404	234,600,406	123,918	229,102	19.1	0.8	0.5	0.5	0.0	3.6	1,399	1,395	0.056	0.011
C-OTTU-02-06	C-OTTU-02	Wapello	Iowa	Attainment	N/A	17.8	22,824,238	44,501,158	406,388,881	792,349,622	418,526	773,779	64.7	2.7	1.7	1.7	0.0	12.3	4,726	4,710	0.189	0.037
K-ALLI-01-01	K-ALLI-01	Tarrant	Texas	NonAttainment	OZone	4.8	1,883,878	3,918,441	9,015,767	18,752,681	9,285	18,313	1.4	0.1	0.0	0.0	0.0	0.3	105	104	0.004	0.001
K-ALLI-01-02	K-ALLI-01	Denton	Texas	NonAttainment	OZone	23.3	1,883,878	3,918,441	43,891,768	91,294,315	45,203	89,155	7.0	0.3	0.2	0.2	0.0	1.3	510	509	0.020	0.004
K-ALLI-02-01	K-ALLI-02	Denton	Texas	NonAttainment	OZone	31.8	2,054,407	4,307,918	65,326,571	136,984,339	67,278	133,774	10.4	0.4	0.3	0.3	0.0	2.0	760	757	0.030	0.006
K-ALLI-02-02	K-ALLI-02	Collin	Texas	NonAttainment	OZone	8.9	2,054,407	4,307,918	18,339,417	38,456,219	18,887	37,555	2.9	0.1	0.1	0.1	0.0	0.6	213	213	0.009	0.002
K-ALLI-03-01	K-ALLI-03	Collin	Texas	NonAttainment	OZone	11.5	2,837,445	4,973,240	32,587,433	57,116,566	33,561	55,778	5.2	0.2	0.1	0.1	0.0	1.0	379	378	0.015	0.003
K-BEAU-01-01	K-BEAU-01	De Soto	Louisiana	Attainment	N/A	31.1	37,701,111	64,012,328	1,171,555,643	1,989,172,263	1,206,545	1,942,551	186.4	7.8	5.0	4.8	0.1	35.4	13,625	13,579	0.545	0.106
K-BEAU-01-02	K-BEAU-01	Sabine	Louisiana	Attainment	N/A	48.7	37,701,111	64,012,328	1,836,090,726	3,117,479,540	1,890,928	3,044,414	292.1	12.3	7.8	7.6	0.2	55.5	21,353	21,282	0.855	0.167
K-BEAU-01-03	K-BEAU-01	Vernon	Louisiana	Attainment	N/A	16.8	37,701,111	64,012,328	632,529,819	1,073,965,867	651,421	1,048,795	100.6	4.2	2.7	2.6	0.1	19.1	7,356	7,331	0.294	0.057
K-BEAU-02-01	K-BEAU-02	Vernon	Louisiana	Attainment	N/A	21.8	34,212,150	64,819,659	746,449,764	1,414,252,505	768,743	1,381,106	118.8	5.0	3.2	3.1	0.1	22.6	8,681	8,652	0.347	0.068
K-BEAU-02-02	K-BEAU-02	Beauregard	Louisiana	Attainment	N/A	31.2	34,212,150	64,819,659	1,067,729,227	2,022,960,962	1,099,618	1,975,548	169.9	7.1	4.5	4.4	0.1	32.3	12,417	12,376	0.497	0.097
K-BEAU-02-03	K-BEAU-02	Calcasieu	Louisiana	Attainment	N/A	2.7	34,212,150	64,819,659	93,565,750	177,273,277	96,360	173,118	14.9	0.6	0.4	0.4	0.0	2.8	1,088	1,084	0.044	0.008
K-BEAU-03-01	K-BEAU-03	Calcasieu	Louisiana	Attainment	N/A	22.0	36,681,557	62,014,224	806,958,164	1,364,251,910	831,059	1,332,277	128.4	5.4	3.4	3.3	0.1	24.4	9,384	9,353	0.376	0.073
K-BEAU-03-02	K-BEAU-03	Beauregard	Louisiana	Attainment	N/A	3.4	36,681,557	62,014,224	124,366,949	210,256,064	128,081	205,328	19.8	0.8	0.5	0.5	0.0	3.8	1,446	1,442	0.058	0.011
K-BEAU-03-03	K-BEAU-03	Newton	Texas	Attainment	N/A	6.0	36,681,557	62,014,224	221,842,428	375,049,129	228,468	366,259	35.3	1.5	0.9	0.9	0.0	6.7	2,580	2,571	0.103	0.020
K-BEAU-03-04	K-BEAU-03	Orange	Texas	Attainment	N/A	21.2	36,681,557	62,014,224	776,012,355	1,311,934,602	799,189	1,281,186	123.5	5.2	3.3	3.2	0.1	23.5	9,025	8,995	0.361	0.070
K-BEAU-03-05	K-BEAU-03	Jefferson	Texas	Attainment	N/A	0.8	36,681,557	62,014,224	30,090,908	50,872,805	30,990	49,680	4.8	0.2	0.1	0.1	0.0	0.9	350	349	0.014	0.003
K-BEAU-04-01	K-BEAU-04	Jefferson	Texas	Attainment	N/A	17.5	13,958,314	50,312,818	243,995,815	879,484,207	251,283	858,871	38.8	1.6	1.0	1.0	0.0	7.4	2,838	2,828	0.114	0.022
K-HEAV-01-01	K-HEAV-01	Crawford	Kansas	Attainment	N/A	6.2	48,029,520	78,299,593	298,756,868	487,045,077	307,680	475,630	47.5	2.0	1.3	1.2	0.0	9.0	3,474	3,463	0.139	0.027
K-HEAV-01-02	K-HEAV-01	Cherokee	Kansas	Attainment	N/A	3.3	48,029,520	78,299,593	159,877,783	260,638,986	164,653	254,530	25.4	1.1	0.7	0.7	0.0	4.8	1,859	1,853	0.074	0.015
K-HEAV-01-03	K-HEAV-01	Jasper	Missouri	Attainment	N/A	20.9	48,029,520	78,299,593	1,001,941,694	1,633,404,356	1,031,866	1,595,121	159.4	6.7	4.3	4.1	0.1	30.3	11,652	11,613	0.466	0.091
K-HEAV-01-04	K-HEAV-01	Newton	Missouri	Attainment	N/A	26.2	48,029,520	78,299,593	1,260,432,293	2,054,805,795	1,298,077	2,006,646	200.6	8.4	5.4	5.2	0.1	38.1	14,658	14,609	0.587	0.114
K-HEAV-01-05	K-HEAV-01	McDonald	Missouri	Attainment	N/A	21.0	48,029,520	78,299,593	1,006,480,771	1,640,804,138	1,036,540	1,602,348	160.1	6.7	4.3	4.1	0.1	30.4	11,705	11,666	0.468	0.091
K-HEAV-01-06	K-HEAV-01	Benton	Arkansas	Attainment	N/A	29.3	48,029,520	78,299,593	1,405,787,150	2,291,768,942	1,447,773	2,238,056	223.7	9.4	6.0	5.8	0.1	42.5	16,349	16,294	0.654	0.128
K-HEAV-01-07	K-HEAV-01	Adair	Oklahoma	Attainment	N/A	3.0	48,029,520	78,299,593	145,181,614	236,680,720	149,518	231,134	23.1	1.0	0.6	0.6	0.0	4.4	1,688	1,683	0.068	0.013
K-HEAV-02-01	K-HEAV-02	Adair	Oklahoma	Attainment	N/A	39.7	44,369,646	72,564,181	1,763,312,467	2,883,803,174	1,815,976	2,816,214	280.6	11.8	7.5	7.3	0.2	53.3	20,506	20,438	0.821	0.160
K-HEAV-02-02	K-HEAV-02	Sequoyah	Oklahoma	Attainment	N/A	32.9	44,369,646	72,564,181	1,458,349,996	2,385,053,373	1,501,905	2,329,154	232.0	9.8	6.2	6.0	0.2	44.1	16,960	16,903	0.679	0.132
K-HEAV-02-03	K-HEAV-02	Le Flore	Oklahoma	Attainment	N/A	18.8	44,369,646	72,564,181	834,517,966	1,364,809,473	859,442	1,332,822	132.8	5.6	3.5	3.4	0.1	25.2	9,705	9,673	0.388	0.076
K-HEAV-03-01	K-HEAV-03	Le Flore	Oklahoma	Attainment	N/A	12.7	45,295,351	75,224,110	573,948,761	953,183,576	591,090	930,843	91.3	3.8	2.4	2.3	0.1	17.3	6,675	6,652	0.267	0.052
K-LARE-02-01	K-LARE-02	Webb	Texas	Attainment	N/A	52.4	44,507,641	56,171,441	2,330,478,894	2,941,210,839	2,400,081	2,872,276	370.8	15.6	9.9	9.6	0.2	70.4	27,102	27,012	1.085	0.212
K-LARE-02-02	K-LARE-02	Duval	Texas	Attainment	N/A	45.8	44,507,641	56,171,441	2,037,328,113	2,571,236,128	2,098,175	2,510,973	324.2	13.6	8.7	8.4	0.2	61.6	23,693	23,614	0.948	0.185
K-LARE-02-03	K-LARE-02	Jim Hogg	Texas	Attainment	N/A	12.2	44,507,641	56,171,441	543,732,051	686,224,023	559,971	670,141	86.5	3.6	2.3	2.2	0.1	16.4	6,323	6,302	0.253	0.049
K-LARE-02-04	K-LARE-02	Jim Wells	Texas	Attainment	N/A	20.1	44,507,641	56,171,441	893,865,298	1,128,114,187	920,562	1,101,674	142.2	6.0	3.8	3.7	0.1	27.0	10,395	10,361	0.416	0.081
K-LARE-02-05	K-LARE-02	Nueces	Texas	Attainment	N/A	17.1	44,507,641	56,171,441	762,005,046	961,698,261	784,763	939,158	121.2	5.1	3.2	3.1	0.1	23.0	8,862	8,832	0.355	0.069
K-PITT-01-01	K-PITT-01	Jackson	Missouri	NonAttainment	SO2	4.9	57,926,843	87,064,386	285,475,588	429,071,491	294,002	419,015	45.4	1.9	1.2	1.2	0.0	8.6	3,320	3,309	0.133	0.026
K-PITT-01-02	K-PITT-01	Jackson	Missouri	Attainment	N/A	17.7	57,926,843	87,064,386	1,027,374,785	1,544,150,357	1,058,058	1,507,959	163.5	6.9	4.4	4.2	0.1	31.1	11,948	11,908	0.478	0.093
K-PITT-01-03	K-PITT-01	Cass	Missouri	Attainment	N/A	30.9	57,926,843	87,064,386	1,791,020,183	2,691,913,889	1,844,511	2,628,822	285.0	12.0	7.6	7.4	0.2	54.1	20,829	20,759	0.834	0.163
K-PITT-01-04	K-PITT-01	Bates	Missouri	Attainment	N/A	29.5	57,926,843	87,064,386	1,710,398,472	2,570,738,983	1,761,481	2,510,487	272.2	11.4	7.3	7.0	0.2	51.7	19,891	19,825	0.796	0.155
K-PITT-01-05	K-PITT-01	Vernon	Missouri	Attainment	N/A	28.2	57,926,843	87,064,386	1,635,887,869	2,458,749,108	1,684,745	2,401,122	260.3	10.9	7.0	6.7	0.2	49.4	19,024	18,961	0.761	0.149
K-PITT-01-06	K-PITT-01	Barton	Missouri	Attainment	N/A	11.2	57,926,843	87,064,386	648,855,480	975,233,611	668,234	952,377	103.2	4.3	2.8	2.7	0.1	19.6	7,546	7,521	0.302	0.059
K-PITT-01-07	K-PITT-01	Crawford	Kansas	Attainment	N/A	8.8	57,926,843	87,064,386	510,993,823	768,026,728	526,255	750,026	81.3	3.4	2.2	2.1	0.1	15.4	5,943	5,923	0.238	0.046
K-ROSE-01-01	K-ROSE-01	Fort Bend	Texas	NonAttainment	OZone	14.8	32,250,691	44,194,323	477,825,687	654,782,341	492,096	639,436	76.0	3.2	2.0	2.0	0.1	14.4	5,557	5,538	0.222	0.043
K-ROSE-02-01	K-ROSE-02	Fort Bend	Texas	NonAttainment	OZone	1.3	30,175,789	41,809,854	38,695,953	53,614,907	39,852	52,358	6.2	0.3	0.2	0.2	0.0	1.2	450	449	0.018	0.004
K-ROSE-02-02	K-ROSE-02	Wharton	Texas	Attainment	N/A	37.3	30,175,789	41,809,854	1,125,235,483	1,559,062,177	1,158,842	1,522,522	179.0	7.5	4.8	4.6	0.1	34.0	13,086	13,042	0.524	0.102
K-ROSE-02-03	K-ROSE-02	Jackson	Texas	Attainment	N/A	23.0	30,175,789	41,809,854	692,682,331	959,741,174	713,370	937,247	110.2	4.6	2.9	2.9	0.1	20.9	8,056	8,029	0.322	0.063
K-ROSE-02-04	K-ROSE-02	Victoria	Texas	Attainment	N/A	15.2	30,175,789	41,809,854	458,167,237	634,810,420	471,851	619,932	72.9	3.1	1.9	1.9	0.0	13.8	5,328	5,310	0.213	0.042
K-SHRE-01-01	K-SHRE-01	Le Flore	Oklahoma	Attainment	N/A	22.0	48,157,807	76,436,313	1,061,596,150	1,684,970,710	1,093,302	1,645,479	168.9	7.1	4.5	4.4	0.1	32.1	12,346	12,305	0.494	0.096
K-SHRE-01-02	K-SHRE-01	Polk	Arkansas	Attainment	N/A	59.7	48,157,807	76,436,313	2,873,998,523	4,561,624,809	2,959,834	4,454,712	457.3	19.2	12.2	11.8	0.3	86.9	33,423	33,312	1.338	0.261
K-SHRE-01-03	K-SHRE-01	Sevier	Arkansas	Attainment	N/A	16.1	48,157,807	76,436,313	776,832,966	1,232,993,164	800,034	1,204,095	123.6	5.2	3.3	3.2	0.1	23.5	9,034	9,004	0.362	0.071
K-SHRE-02-01	K-SHRE-02	Sevier	Arkansas	Attainment	N/A	12.9	50,385,405	75,293,128	650,341,700	971,834,235	669,765	949,057	103.5	4.3	2.8	2.7	0.1	19.7	7,563	7,538	0.303	0.059
K-SHRE-02-02	K-SHRE-02	Little River	Arkansas	Attainment	N/A	27.2	50,385,405	75,293,128	1,370,168,703	2,047,503,417	1,411,090	1,999,515	218.0	9.2	5.8	5.6	0.1	41.4	15,934	15,881	0.638	0.124
K-SHRE-03-01	K-SHRE-03	Little River	Arkansas	Attainment	N/A	10.1	51,700,200	87,700,309	520,225,452	882,471,120	535,763	861,788	82.8	3.5	2.2	2.1	0.1	15.7	6,050	6,030	0.242	0.047
K-SHRE-03-02	K-SHRE-03	Bowie	Texas	Attainment	N/A	22.1	51,700,200	87,700,309	1,142,355,616	1,937,805,690	1,176,473	1,892,388	181.8	7.6	4.9	4.7	0.1	34.5	13,285	13,241	0.532	0.104
K-SHRE-03-03	K-SHRE-03	Cass	Texas	Attainment	N/A	11.9	51,700,200	87,700,309	615,045,066	1,043,315,943	633,414	1,018,863	97.9	4.1	2.6	2.5	0.1	18.6	7,153	7,129	0.286	0.056
K-SHRE-03-04	K-SHRE-03	Miller	Arkansas	Attainment	N/A	6.5	51,700,200	87,700,309	335,537,449	569,180,358	345,559	555,840	53.4	2.2	1.4	1.4	0.0	10.1	3,902	3,889	0.156	0.030
K-SHRE-03-05	K-SHRE-03	Caddo	Louisiana	Attainment	N/A	41.8	51,700,200	87,700,309	2,159,846,048	3,663,799,522	2,224,352	3,577,929	343.7	14.4	9.2	8.9	0.2	65.3	25,118	25,034	1.005	0.196
K-SHRE-04-01	K-SHRE-04	Caddo	Louisiana	Attainment	N/A	18.3	56,569,305	94,085,740	1,033,194,634	1,718,403,313	1,064,052	1,678,128	164.4	6.9	4.4	4.3	0.1	31.2	12,015	11,975	0.481	0.094
K-SHRE-04-02	K-SHRE-04	De Soto	Louisiana	Attainment	N/A	5.2	56,569,305	94,085,740	291,769,882	485,269,973	300,484	473,896	46.4	2.0	1.2	1.2	0.0	8.8	3,393	3,382	0.136	0.026
U-BEAU-01-01	U-BEAU-01	Jefferson	Texas	Attainment	N/A	20.8	30,684,850	35,411,728	637,149,606	735,299,959	656,179	718,066	101.4	4.3	2.7	2.6	0.1	19.3	7,410	7,385	0.297	0.058

U-BEAU-01-02	U-BEAU-01	Liberty	Texas	NonAttainment	OZone	35.1	30,684,850	35,411,728	1,077,753,300	1,243,776,893	1,109,942	1,214,626	171.5	7.2	4.6	4.4	0.1	32.6	12,534	12,492	0.502	0.098
U-BEAU-01-03	U-BEAU-01	Harris	Texas	NonAttainment	OZone	45.8	30,684,850	35,411,728	1,405,236,099	1,621,707,110	1,447,205	1,583,698	223.6	9.4	6.0	5.8	0.1	42.5	16,342	16,288	0.654	0.128
U-BEAU-01-04	U-BEAU-01	Fort Bend	Texas	NonAttainment	OZone	18.5	30,684,850	35,411,728	566,510,658	653,779,364	583,430	638,456	90.1	3.8	2.4	2.3	0.1	17.1	6,588	6,566	0.264	0.051
U-VICT-01-01	U-VICT-01	Victoria	Texas	Attainment	N/A	12.3	28,707,698	40,773,489	352,248,961	500,298,537	362,769	488,573	56.0	2.4	1.5	1.5	0.0	10.6	4,096	4,083	0.164	0.032
U-VICT-02-01	U-VICT-02	Nueces	Texas	Attainment	N/A	8.2	28,711,992	40,777,783	236,155,470	335,396,327	243,209	327,535	37.6	1.6	1.0	1.0	0.0	7.1	2,746	2,737	0.110	0.021
U-VICT-02-02	U-VICT-02	San Patricio	Texas	Attainment	N/A	20.5	28,711,992	40,777,783	587,821,866	834,845,344	605,378	815,279	93.5	3.9	2.5	2.4	0.1	17.8	6,836	6,813	0.274	0.053
U-VICT-02-03	U-VICT-02	Refugio	Texas	Attainment	N/A	36.9	28,711,992	40,777,783	1,059,219,794	1,504,341,304	1,090,855	1,469,083	168.5	7.1	4.5	4.4	0.1	32.0	12,318	12,277	0.493	0.096
U-VICT-02-04	U-VICT-02	Victoria	Texas	Attainment	N/A	18.0	28,711,992	40,777,783	516,460,479	733,495,386	531,885	716,304	82.2	3.5	2.2	2.1	0.1	15.6	6,006	5,986	0.240	0.047

Notes:
Segment Ton-Mileage provided by Applicant, based on historical basline data; Sub Segment ton-mileage proportioned from whole segment based on the Length Proportion
No Action and With Action Fuel Efficiency estimated based on data provided in the "Verified Statement of Michael R. Baranowski" (No Action- 971 ton-miles/gal; With Action- 1024 ton-miles/gal)

Table K.13-4. Historical Baseline- Rail Segment Analysis- Proposed Acquisition Criteria Pollutant Emissions by Subsegment

							Segment Tons per Mile		Sub-Segment Ton-Miles		Sub-Segment Fuel Use		With Action Emissions (tons/year)								
SubCode	Code	County	State	Attainment	NA Pollutant	SubSeg Length	NA GT	WA GT	NA GTM	WA GTM	NA Gallons	WA Gallons	NOX	VOC	PM10	PM2.5	SO2	CO	CO2e	CO2	CH4	N2O
C-CHIC-01-01	C-CHIC-01	Jackson	Iowa	Attainment	N/A	1.0	16,252,107	30,433,569	16,735,558	31,338,876	17,235	30,604	4.7	0.2	0.1	0.1	0.0	0.9	346	344	0.014	0.003
C-CHIC-01-02	C-CHIC-01	Carroll	Illinois	Attainment	N/A	0.2	16,252,107	30,433,569	3,084,325	5,775,683	3,176	5,640	0.9	0.0	0.0	0.0	0.0	0.2	64	63	0.003	0.000
C-CHIC-02-01	C-CHIC-02	Carroll	Illinois	Attainment	N/A	28.5	14,931,913	32,029,336	425,854,791	913,469,427	438,573	892,060	137.8	5.8	3.7	3.6	0.1	26.2	10,073	10,040	0.403	0.079
C-CHIC-02-02	C-CHIC-02	Ogle	Illinois	Attainment	N/A	32.7	14,931,913	32,029,336	488,301,381	1,047,418,961	502,885	1,022,870	158.0	6.6	4.2	4.1	0.1	30.0	11,550	11,512	0.462	0.090
C-CHIC-03-01	C-CHIC-03	Ogle	Illinois	Attainment	N/A	7.9	13,836,360	29,428,586	109,740,520	233,407,353	113,018	227,937	35.2	1.5	0.9	0.9	0.0	6.7	2,574	2,565	0.103	0.020
C-CHIC-03-02	C-CHIC-03	DeKalb	Illinois	Attainment	N/A	20.0	13,836,360	29,428,586	277,325,258	589,843,703	285,608	576,019	89.0	3.7	2.4	2.3	0.1	16.9	6,505	6,483	0.260	0.051
C-CHIC-03-03	C-CHIC-03	Kane	Illinois	NonAttainment	OZone	0.1	13,836,360	29,428,586	977,151	2,078,306	1,006	2,030	0.3	0.0	0.0	0.0	0.0	0.1	23	23	0.001	0.000
C-CHIC-03-04	C-CHIC-03	Kane	Illinois	NonAttainment	OZone	13.6	13,836,360	29,428,586	188,187,647	400,256,721	193,808	390,876	60.4	2.5	1.6	1.6	0.0	11.5	4,414	4,399	0.177	0.034
C-DAVE-01-01	C-DAVE-01	Jackson	Iowa	Attainment	N/A	1.8	32,193,786	55,328,310	58,800,565	101,054,778	60,557	98,686	15.2	0.6	0.4	0.4	0.0	2.9	1,114	1,111	0.045	0.009
C-DAVE-01-02	C-DAVE-01	Clinton	Iowa	Attainment	N/A	14.8	32,193,786	55,328,310	474,869,737	816,112,151	489,052	796,985	123.1	5.2	3.3	3.2	0.1	23.4	9,000	8,970	0.360	0.070
C-DAVE-02-01	C-DAVE-02	Clinton	Iowa	Attainment	N/A	10.5	23,995,580	42,470,476	252,136,409	446,263,578	259,667	435,804	67.3	2.8	1.8	1.7	0.0	12.8	4,921	4,905	0.197	0.038
C-DAVE-02-02	C-DAVE-02	Scott	Iowa	Attainment	N/A	22.4	23,995,580	42,470,476	537,279,579	950,946,782	553,326	928,659	143.5	6.0	3.8	3.7	0.1	27.3	10,487	10,452	0.420	0.082
C-DAVE-03-01	C-DAVE-03	Scott	Iowa	Attainment	N/A	5.6	24,180,184	42,655,080	136,390,964	240,600,629	140,464	234,962	36.3	1.5	1.0	0.9	0.0	6.9	2,653	2,644	0.106	0.021
C-ELGI-01-01	C-ELGI-01	Kane	Illinois	NonAttainment	OZone	5.8	15,100,901	32,537,663	88,307,847	190,275,468	90,945	185,816	28.7	1.2	0.8	0.7	0.0	5.5	2,098	2,091	0.084	0.016
C-ELGI-01-02	C-ELGI-01	Cook	Illinois	NonAttainment	OZone	6.5	15,100,901	32,537,663	98,392,077	212,003,793	101,331	207,035	32.0	1.3	0.9	0.8	0.0	6.1	2,338	2,330	0.094	0.018
C-ELGI-01-03	C-ELGI-01	DuPage	Illinois	NonAttainment	OZone	11.0	15,100,901	32,537,663	166,297,475	358,318,439	171,264	349,920	54.1	2.3	1.4	1.4	0.0	10.3	3,951	3,938	0.158	0.031
C-ELGI-02-01	C-ELGI-02	DuPage	Illinois	NonAttainment	OZone	0.8	66,977,791	87,091,230	52,800,803	68,656,891	54,378	67,048	10.4	0.4	0.3	0.3	0.0	2.0	757	755	0.030	0.006
C-ELGI-02-02	C-ELGI-02	Cook	Illinois	NonAttainment	OZone	3.5	66,977,791	87,091,230	235,407,848	306,100,853	242,439	298,927	46.2	1.9	1.2	1.2	0.0	8.8	3,376	3,364	0.135	0.026
C-KACI-01-01	C-KACI-01	Grundy	Missouri	Attainment	N/A	4.5	17,654,701	49,073,779	80,201,706	222,932,168	82,597	217,707	33.6	1.4	0.9	0.9	0.0	6.4	2,458	2,450	0.098	0.019
C-KACI-01-02	C-KACI-01	Livingston	Missouri	Attainment	N/A	30.1	17,654,701	49,073,779	532,158,085	1,479,209,877	548,052	1,444,541	223.2	9.4	6.0	5.8	0.1	42.4	16,312	16,258	0.653	0.127
C-KACI-01-03	C-KACI-01	Caldwell	Missouri	Attainment	N/A	16.8	17,654,701	49,073,779	296,457,407	824,045,970	305,311	804,732	124.3	5.2	3.3	3.2	0.1	23.6	9,087	9,057	0.364	0.071
C-KACI-02-01	C-KACI-02	Caldwell	Missouri	Attainment	N/A	5.0	17,132,673	50,963,778	85,506,738	254,352,981	88,060	248,392	38.4	1.6	1.0	1.0	0.0	7.3	2,805	2,796	0.112	0.022
C-KACI-02-02	C-KACI-02	Ray	Missouri	Attainment	N/A	10.6	17,132,673	50,963,778	182,348,914	542,424,974	187,795	529,712	81.8	3.4	2.2	2.1	0.1	15.5	5,982	5,962	0.239	0.047
C-KACI-02-03	C-KACI-02	Clay	Missouri	Attainment	N/A	24.7	17,132,673	50,963,778	423,454,142	1,259,629,666	436,101	1,230,107	190.1	8.0	5.1	4.9	0.1	36.1	13,891	13,844	0.556	0.108
C-KACI-02-04	C-KACI-02	Jackson	Missouri	Attainment	N/A	1.5	17,132,673	50,963,778	26,466,091	78,727,469	27,257	76,882	11.9	0.5	0.3	0.3	0.0	2.3	868	865	0.035	0.007
C-KACI-02-05	C-KACI-02	Jackson	Missouri	NonAttainment	SO2	0.3	17,132,673	50,963,778	4,826,617	14,357,516	4,971	14,021	2.2	0.1	0.1	0.1	0.0	0.4	158	158	0.006	0.001
C-LARE-01-01	C-LARE-01	Wapello	Iowa	Attainment	N/A	13.3	16,859,450	42,277,516	224,516,692	563,008,164	231,222	549,813	84.9	3.6	2.3	2.2	0.1	16.1	6,209	6,188	0.248	0.048
C-LARE-01-02	C-LARE-01	Monroe	Iowa	Attainment	N/A	10.5	16,859,450	42,277,516	176,500,640	442,600,951	181,772	432,227	66.8	2.8	1.8	1.7	0.0	12.7	4,881	4,865	0.195	0.038
C-LARE-01-03	C-LARE-01	Appanoose	Iowa	Attainment	N/A	23.2	16,859,450	42,277,516	390,603,401	979,494,674	402,269	956,538	147.8	6.2	3.9	3.8	0.1	28.1	10,801	10,765	0.432	0.084
C-LARE-01-04	C-LARE-01	Wayne	Iowa	Attainment	N/A	16.2	16,859,450	42,277,516	273,093,522	684,821,611	281,252	668,771	103.3	4.3	2.8	2.7	0.1	19.6	7,552	7,527	0.302	0.059
C-LARE-02-01	C-LARE-02	Putnam	Missouri	Attainment	N/A	17.9	17,202,275	48,866,740	307,349,448	873,097,329	316,529	852,629	131.7	5.5	3.5	3.4	0.1	25.0	9,628	9,596	0.385	0.075
C-LARE-02-02	C-LARE-02	Sullivan	Missouri	Attainment	N/A	20.3	17,202,275	48,866,740	348,963,489	991,305,409	359,386	968,072	149.6	6.3	4.0	3.9	0.1	28.4	10,932	10,895	0.438	0.085
C-LARE-02-03	C-LARE-02	Grundy	Missouri	Attainment	N/A	8.1	17,202,275	48,866,740	139,977,662	397,636,482	144,158	388,317	60.0	2.5	1.6	1.6	0.0	11.4	4,385	4,370	0.175	0.034
C-OTTU-01-01	C-OTTU-01	Scott	Iowa	Attainment	N/A	9.0	19,976,527	38,516,496	180,200,896	347,443,138	185,583	339,300	52.4	2.2	1.4	1.4	0.0	10.0	3,831	3,819	0.153	0.030
C-OTTU-01-02	C-OTTU-01	Muscatine	Iowa	Attainment	N/A	7.5	19,976,527	38,516,496	149,723,129	288,679,329	154,195	281,913	43.6	1.8	1.2	1.1	0.0	8.3	3,183	3,173	0.127	0.025
C-OTTU-01-03	C-OTTU-01	Muscatine	Iowa	NonAttainment	SO2	8.0	19,976,527	38,516,496	159,657,695	307,834,045	164,426	300,619	46.4	2.0	1.2	1.2	0.0	8.8	3,395	3,383	0.136	0.027
C-OTTU-02-01	C-OTTU-02	Muscatine	Iowa	NonAttainment	SO2	7.3	22,824,238	44,501,158	165,489,074	322,659,431	170,432	315,097	48.7	2.0	1.3	1.3	0.0	9.2	3,558	3,546	0.142	0.028
C-OTTU-02-02	C-OTTU-02	Louisa	Iowa	Attainment	N/A	21.6	22,824,238	44,501,158	493,325,397	961,852,576	508,059	939,309	145.1	6.1	3.9	3.8	0.1	27.6	10,607	10,572	0.425	0.083
C-OTTU-02-03	C-OTTU-02	Washington	Iowa	Attainment	N/A	25.6	22,824,238	44,501,158	585,062,536	1,140,715,459	602,536	1,113,980	172.1	7.2	4.6	4.5	0.1	32.7	12,579	12,537	0.503	0.098
C-OTTU-02-04	C-OTTU-02	Keokuk	Iowa	Attainment	N/A	9.4	22,824,238	44,501,158	214,825,672	418,852,601	221,242	409,036	63.2	2.7	1.7	1.6	0.0	12.0	4,619	4,604	0.185	0.036
C-OTTU-02-05	C-OTTU-02	Jefferson	Iowa	Attainment	N/A	5.3	22,824,238	44,501,158	120,324,404	234,600,406	123,918	229,102	35.4	1.5	0.9	0.9	0.0	6.7	2,587	2,578	0.104	0.020
C-OTTU-02-06	C-OTTU-02	Wapello	Iowa	Attainment	N/A	17.8	22,824,238	44,501,158	406,388,881	792,349,622	418,526	773,779	119.5	5.0	3.2	3.1	0.1	22.7	8,738	8,709	0.350	0.068
K-ALLI-01-01	K-ALLI-01	Tarrant	Texas	NonAttainment	OZone	4.8	1,883,878	3,918,441	9,015,767	18,752,681	9,285	18,313	2.8	0.1	0.1	0.1	0.0	0.5	207	206	0.008	0.002
K-ALLI-01-02	K-ALLI-01	Denton	Texas	NonAttainment	OZone	23.3	1,883,878	3,918,441	43,891,768	91,294,315	45,203	89,155	13.8	0.6	0.4	0.4	0.0	2.6	1,007	1,003	0.040	0.008
K-ALLI-02-01	K-ALLI-02	Denton	Texas	NonAttainment	OZone	31.8	2,054,407	4,307,918	65,326,571	136,984,339	67,278	133,774	20.7	0.9	0.6	0.5	0.0	3.9	1,511	1,506	0.060	0.012
K-ALLI-02-02	K-ALLI-02	Collin	Texas	NonAttainment	OZone	8.9	2,054,407	4,307,918	18,339,417	38,456,219	18,887	37,555	5.8	0.2	0.2	0.2	0.0	1.1	424	423	0.017	0.003
K-ALLI-03-01	K-ALLI-03	Collin	Texas	NonAttainment	OZone	11.5	2,837,445	4,973,240	32,587,433	57,116,566	33,561	55,778	8.6	0.4	0.2	0.2	0.0	1.6	630	628	0.025	0.005
K-BEAU-01-01	K-BEAU-01	De Soto	Louisiana	Attainment	N/A	31.1	37,701,111	64,012,328	1,171,555,643	1,989,172,263	1,206,545	1,942,551	300.1	12.6	8.0	7.8	0.2	57.0	21,936	21,863	0.878	0.171
K-BEAU-01-02	K-BEAU-01	Sabine	Louisiana	Attainment	N/A	48.7	37,701,111	64,012,328	1,836,090,726	3,117,479,540	1,890,928	3,044,414	470.4	19.8	12.6	12.2	0.3	89.3	34,378	34,264	1.376	0.268
K-BEAU-01-03	K-BEAU-01	Vernon	Louisiana	Attainment	N/A	16.8	37,701,111	64,012,328	632,529,819	1,073,965,867	651,421	1,048,795	162.0	6.8	4.3	4.2	0.1	30.8	11,843	11,804	0.474	0.092
K-BEAU-02-01	K-BEAU-02	Vernon	Louisiana	Attainment	N/A	21.8	34,212,150	64,819,659	746,449,764	1,414,252,505	768,743	1,381,106	213.4	9.0	5.7	5.5	0.1	40.5	15,596	15,544	0.624	0.122
K-BEAU-02-02	K-BEAU-02	Beauregard	Louisiana	Attainment	N/A	31.2	34,212,150	64,819,659	1,067,729,227	2,022,960,962	1,099,618	1,975,548	305.2	12.8	8.2	7.9	0.2	58.0	22,308	22,234	0.893	0.174
K-BEAU-02-03	K-BEAU-02	Calcasieu	Louisiana	Attainment	N/A	2.7	34,212,150	64,819,659	93,565,750	177,273,277	96,360	173,118	26.7	1.1	0.7	0.7	0.0	5.1	1,955	1,948	0.078	0.015
K-BEAU-03-01	K-BEAU-03	Calcasieu	Louisiana	Attainment	N/A	22.0	36,681,557	62,014,224	806,958,164	1,364,251,910	831,059	1,332,277	205.8	8.7	5.5	5.3	0.1	39.1	15,044	14,994	0.602	0.117
K-BEAU-03-02	K-BEAU-03	Beauregard	Louisiana	Attainment	N/A	3.4	36,681,557	62,014,224	124,366,949	210,256,064	128,081	205,328	31.7	1.3	0.8	0.8	0.0	6.0	2,319	2,311	0.093	0.018
K-BEAU-03-03	K-BEAU-03	Newton	Texas	Attainment	N/A	6.0	36,681,557	62,014,224	221,842,428	375,049,129	228,468	366,259	56.6	2.4	1.5	1.5	0.0	10.7	4,136	4,122	0.166	0.032
K-BEAU-03-04	K-BEAU-03	Orange	Texas	Attainment	N/A	21.2	36,681,557	62,014,224	776,167,355	1,311,934,602	799,189	1,281,186	197.9	8.3	5.3	5.1	0.1	37.6	14,467	14,419	0.579	0.113
K-BEAU-03-05	K-BEAU-03	Jefferson	Texas	Attainment	N/A	0.8	36,681,557	62,014,224	30,090,908	50,872,005	30,990	49,680	7.7	0.3	0.2	0.2	0.0	1.5	561	559	0.022	0.004
K-BEAU-04-01	K-BEAU-04	Jefferson	Texas	Attainment	N/A	17.5	13,958,314	50,312,818	243,995,815	879,484,207	251,283	858,871	132.7	5.6	3.5	3.4	0.1	25.2	9,699	9,666	0.388	0.076
K-HEAV-01-01	K-HEAV-01	Crawford	Kansas	Attainment	N/A	6.2	48,029,520	78,299,593	298,756,868	487,045,077	307,680	475,630	73.5	3.1	2.0	1.9	0.0	14.0	5,371	5,353	0.215	0.042
K-HEAV-01-02	K-HEAV-01	Cherokee	Kansas	Attainment	N/A	3.3	48,029,520	78,299,593	159,877,783	260,638,986	164,653	254,530	39.3	1.7	1.1	1.0	0.0	7.5	2,874	2,865	0.115	0.022
K-HEAV-01-03	K-HEAV-01	Jasper	Missouri	Attainment	N/A	20.9	48,029,520	78,299,593	1,001,941,694	1,633,404,356	1,031,866	1,595,121	246.4	10.4	6.6	6.4	0.2	46.8	18,012	17,952	0.721	0.141
K-HEAV-01-04	K-HEAV-01	Newton	Missouri	Attainment	N/A	26.2	48,029,520	78,299,593	1,260,432,293	2,054,805,795	1,298,077	2,006,646	310.0	13.0	8.3	8.0	0.2	58.9	22,659	22,584	0.907	0.177
K-HEAV-01-05	K-HEAV-01	McDonald	Missouri	Attainment	N/A	21.0	48,029,520	78,299,593	1,006,480,771	1,640,804,138	1,036,540	1,602,348	247.6	10.4	6.6	6.4	0.2	47.0	18,094	18,034	0.724	0.141
K-HEAV-01-06	K-HEAV-01	Benton	Arkansas	Attainment	N/A	29.3	48,029,520	78,299,593	1,405,787,150	2,291,768,942	1,447,773	2,238,056	345.8	14.5	9.2	9.0	0.2	65.7	25,273	25,188	1.011	0.197
K-HEAV-01-07	K-HEAV-01	Adair	Oklahoma	Attainment	N/A	3.0	48,029,520	78,299,593	145,181,614	236,680,720	149,518	231,134	35.7	1.5	1.0	0.9	0.0	6.8	2,610	2,601	0.104	0.020
K-HEAV-02-01	K-HEAV-02	Adair	Oklahoma	Attainment	N/A	39.7	44,369,646	72,564,181	1,763,312,467	2,883,803,174	1,815,976	2,816,214	435.1	18.3	11.6	11.3	0.3	82.7	31,801	31,695	1.273	0.248
K-HEAV-02-02	K-HEAV-02	Sequoyah	Oklahoma	Attainment	N/A	32.9	44,369,646	72,564,181	1,458,349,996	2,385,053,373	1,501,905	2,329,154	359.9	15.1	9.6	9.3	0.2	68.4	26,301	26,214	1.053	0.205
K-HEAV-02-03	K-HEAV-02	Le Flore	Oklahoma	Attainment	N/A	18.8	44,369,646	72,564,181	834,517,966	1,364,809,473	859,442	1,332,822	205.9	8.7	5.5	5.3	0.1	39.1	15,050	15,000	0.602	0.118
K-HEAV-03-01	K-HEAV-03	Le Flore	Oklahoma	Attainment	N/A	12.7	45,295,351	75,224,110	573,948,761	953,183,576	591,090	930,843	143.8	6.0	3.8	3.7	0.1	27.3	10,511	10,476	0.421	0.082
K-LARE-02-01	K-LARE-02	Webb	Texas	Attainment	N/A	52.4	44,507,641	56,171,441	2,330,478,894	2,941,217,839	2,400,081	2,872,276	443.8	18.7	11.9	11.5	0.3	84.3	32,434	32,326	1.298	0.253
K-LARE-02-02	K-LARE-02	Duval	Texas	Attainment	N/A	45.8	44,507,641	56,171,441	2,037,328,113	2,571,236,128	2,098,175	2,510,973	387.9	16.3	10.4	10.0	0.3	73.7	28,354	28,260	1.135	0.221
K-LARE-02-03	K-LARE-02	Jim Hogg	Texas	Attainment	N/A	12.2	44,507,641	56,171,441	543,732,051	686,224,023	559,971	670,141	103.5	4.4	2.8	2.7	0.1	19.7	7,567	7,542	0.303	0.059
K-LARE-02-04	K-LARE-02	Jim Wells	Texas	Attainment	N/A	20.1	44,507,641	56,171,441	893,865,298	1,128,114,187	920,562	1,101,674	170.2	7.2	4.5	4.4	0.1	32.3	12,440	12,399	0.498	0.097
K-LARE-02-05	K-LARE-02	Nueces	Texas	Attainment	N/A	17.1	44,507,641	56,171,441	762,005,046	961,698,261	784,763	939,158	145.1	6.1	3.9	3.8	0.1	27.6	10,605	10,570	0.424	0.083
K-PITT-01-01	K-PITT-01	Jackson	Missouri	NonAttainment	SO2	4.9	57,926,843	87,064,386	285,475,588	429,071,491	294,002	419,015	64.7	2.7	1.7	1.7	0.0	12.3	4,732	4,716	0.189	0.037
K-PITT-01-02	K-PITT-01	Jackson	Missouri	Attainment	N/A	17.7	57,926,843	87,064,386	1,027,374,785	1,544,150,357	1,058,058	1,507,959	233.0	9.8	6.2	6.0	0.2	44.3	17,028	16,971	0.682	0.133
K-PITT-01-03	K-PITT-01	Cass	Missouri	Attainment	N/A	30.9	57,926,843	87,064,386	1,791,020,183	2,691,913,889	1,844,511	2,628,822	406.2	17.1	10.8	10.5	0.3	77.2	29,685	29,586	1.188	0.232
K-PITT-01-04	K-PITT-01	Bates	Missouri	Attainment	N/A	29.5	57,926,843	87,064,386	1,710,398,472	2,570,738,983	1,761,481	2,510,487	387.9	16.3	10.4	10.0	0.3	73.7	28,349	28,255	1.135	0.221
K-PITT-01-05	K-PITT-01	Vernon	Missouri	Attainment	N/A	28.2	57,926,843	87,064,386	1,635,887,869	2,458,749,108	1,684,745	2,401,122	371.0	15.6	9.9	9.6	0.2	70.5	27,114	27,024	1.085	0.212
K-PITT-01-06	K-PITT-01	Barton	Missouri	Attainment	N/A	11.2	57,926,843	87,064,386	648,855,480	975,233,611	668,234	952,377	147.1	6.2	3.9	3.8	0.1	28.0	10,754	10,719	0.430	0.084
K-PITT-01-07	K-PITT-01	Crawford	Kansas	Attainment	N/A	8.8	57,926,843	87,064,386	510,993,823	768,026,728	526,255	750,026	115.9	4.9	3.1	3.0	0.1	22.0	8,469	8,441	0.339	0.066
K-ROSE-01-01	K-ROSE-01	Fort Bend	Texas	NonAttainment	OZone	14.8	32,250,691	44,194,323	477,825,687	654,782,341	492,096	639,436	98.8	4.2	2.6	2.6	0.1	18.8	7,221	7,197	0.289	0.056
K-ROSE-02-01	K-ROSE-02	Fort Bend	Texas	NonAttainment	OZone	1.3	30,175,789	41,809,854	38,695,953	53,614,907	39,852	52,358	8.1	0.3	0.2	0.2	0.0	1.5	591	589	0.024	0.005
K-ROSE-02-02	K-ROSE-02	Wharton	Texas	Attainment	N/A	37.3	30,175,789	41,809,854	1,125,235,483	1,559,002,177	1,158,842	1,522,522	235.2	9.9	6.3	6.1	0.2	44.7	17,193	17,135	0.688	0.134
K-ROSE-02-03	K-ROSE-02	Jackson	Texas	Attainment	N/A	23.0	30,175,789	41,809,854	692,682,331	959,741,174	713,370	937,247	144.8	6.1	3.9	3.8	0.1	27.5	10,584	10,548	0.424	0.083
K-ROSE-02-04	K-ROSE-02	Victoria	Texas	Attainment	N/A	15.2	30,175,789	41,809,854	458,167,237	634,810,420	471,851	619,932	95.8	4.0	2.6	2.5	0.1	18.2	7,000	6,977	0.280	0.055
K-SHRE-01-01	K-SHRE-01	Le Flore	Oklahoma	Attainment	N/A	22.0	48,157,807	76,436,313	1,061,596,150	1,684,970,710	1,093,302	1,645,479	254.2	10.7	6.8	6.6	0.2	48.3	18,581	18,519	0.744	0.145
K-SHRE-01-02	K-SHRE-01	Polk	Arkansas	Attainment	N/A	59.7	48,157,807	76,436,313	2,873,998,523	4,561,624,809	2,959,834	4,454,712	688.3	28.9	18.4	17.8	0.5	130.7	50,303	50,136	2.013	0.393
K-SHRE-01-03	K-SHRE-01	Sevier	Arkansas	Attainment	N/A	16.1	48,157,807	76,436,313	776,832,966	1,232,993,164	800,034	1,204,095	186.0	7.8	5.0	4.8	0.1	35.3	13,597	13,552	0.544	0.106
K-SHRE-02-01	K-SHRE-02	Sevier	Arkansas	Attainment	N/A	12.9	50,385,405	75,293,128	650,341,700	971,834,235	669,765	949,057	146.6	6.2	3.9	3.8	0.1	27.9	10,717	10,681	0.429	0.084
K-SHRE-02-02	K-SHRE-02	Little River	Arkansas	Attainment	N/A	27.2	50,385,405	75,293,128	1,370,168,703	2,047,503,417	1,411,090	1,999,515	308.9	13.0	8.2	8.0	0.2	58.7	22,579	22,504	0.904	0.176
K-SHRE-03-01	K-SHRE-03	Little River	Arkansas	Attainment	N/A	10.1	51,700,200	87,700,309	520,225,452	882,471,120	535,763	861,788	133.1	5.6	3.6	3.4	0.1	25.3	9,731	9,699	0.389	0.076
K-SHRE-03-02	K-SHRE-03	Bowie	Texas	Attainment	N/A	22.1	51,700,200	87,700,309	1,142,355,616	1,937,805,690	1,176,473	1,892,388	292.4	12.3	7.8	7.6	0.2	55.5	21,369	21,298	0.855	0.167
K-SHRE-03-03	K-SHRE-03	Cass	Texas	Attainment	N/A	11.9	51,700,200	87,700,309	615,045,066	1,043,315,943	633,414	1,018,863	157.4	6.6	4.2	4.1	0.1	29.9	11,505	11,467	0.460	0.090
K-SHRE-03-04	K-SHRE-03	Miller	Arkansas	Attainment	N/A	6.5	51,700,200	87,700,309	335,537,449	569,180,358	345,559	555,840	85.9	3.6	2.3	2.2	0.1	16.3	6,277	6,256	0.251	0.049
K-SHRE-03-05	K-SHRE-03	Caddo	Louisiana	Attainment	N/A	41.8	51,700,200	87,700,309	2,159,846,048	3,663,799,522	2,224,352	3,577,929	552.8	23.2	14.8	14.3	0.4	105.0	40,403	40,268	1.617	0.316
K-SHRE-04-01	K-SHRE-04	Caddo	Louisiana	Attainment	N/A	18.3	56,569,305	94,085,740	1,033,194,634	1,718,403,313	1,064,052	1,678,128	259.3	10.9	6.9	6.7	0.2	49.2	18,950	18,887	0.758	0.148
K-SHRE-04-02	K-SHRE-04	De Soto	Louisiana	Attainment	N/A	5.2	56,569,305	94,085,740	291,769,882	485,269,973	300,484	473,896	73.2	3.1	2.0	1.9	0.0	13.9	5,351	5,334	0.214	0.042
U-BEAU-01-01	U-BEAU-01	Jefferson	Texas	Attainment	N/A	20.8	30,684,850	35,411,728	637,149,606	735,299,959	656,179	718,066	110.9	4.7	3.0	2.9	0.1	21.1	8,109	8,082	0.325	0.063

U-BEAU-01-02	U-BEAU-01	Liberty	Texas	NonAttainment	OZone	35.1	30,684,850	35,411,728	1,077,753,300	1,243,776,893	1,109,942	1,214,626	187.7	7.9	5.0	4.9	0.1	35.6	13,716	13,670	0.549	0.107
U-BEAU-01-03	U-BEAU-01	Harris	Texas	NonAttainment	OZone	45.8	30,684,850	35,411,728	1,405,236,099	1,621,707,110	1,447,205	1,583,698	244.7	10.3	6.5	6.3	0.2	46.5	17,883	17,824	0.716	0.140
U-BEAU-01-04	U-BEAU-01	Fort Bend	Texas	NonAttainment	OZone	18.5	30,684,850	35,411,728	566,510,658	653,779,364	583,430	638,456	98.6	4.1	2.6	2.6	0.1	18.7	7,210	7,186	0.289	0.056
U-VICT-01-01	U-VICT-01	Victoria	Texas	Attainment	N/A	12.3	28,707,698	40,773,489	352,248,961	500,298,537	362,769	488,573	75.5	3.2	2.0	2.0	0.1	14.3	5,517	5,499	0.221	0.043
U-VICT-02-01	U-VICT-02	Nueces	Texas	Attainment	N/A	8.2	28,711,992	40,777,783	236,155,470	335,396,327	243,209	327,535	50.6	2.1	1.4	1.3	0.0	9.6	3,699	3,686	0.148	0.029
U-VICT-02-02	U-VICT-02	San Patricio	Texas	Attainment	N/A	20.5	28,711,992	40,777,783	587,821,866	834,845,344	605,378	815,279	126.0	5.3	3.4	3.3	0.1	23.9	9,206	9,176	0.368	0.072
U-VICT-02-03	U-VICT-02	Refugio	Texas	Attainment	N/A	36.9	28,711,992	40,777,783	1,059,219,794	1,504,341,304	1,090,855	1,469,083	227.0	9.5	6.1	5.9	0.2	43.1	16,589	16,534	0.664	0.130
U-VICT-02-04	U-VICT-02	Victoria	Texas	Attainment	N/A	18.0	28,711,992	40,777,783	516,460,479	733,495,386	531,885	716,304	110.7	4.7	3.0	2.9	0.1	21.0	8,089	8,062	0.324	0.063

Notes:
Segment Ton-Mileage provided by Applicant, based on historical basline data; Sub Segment ton-mileage proportioned from whole segment based on the Length Proportion
No Action and With Action Fuel Efficiency estimated based on data provided in the "Verified Statement of Michael R. Baranowski" (No Action- 971 ton-miles/gal; With Action- 1024 ton-miles/gal)

Table K.13-5. Historical Baseline- Rail Segment Analysis- Acquisition-Related Criteria Pollutant Emissions by Subsegment

							Segment Tons per Mile		Sub-Segment Ton-Miles		Sub-Segment Fuel Use		Acquisition-Related Emissions (tons/year)						
SubCode	Code	County	State	Attainment	NA Pollutant	SubSeg Length	NA GT	WA GT	NA GTM	WA GTM	NA Gallons	WA Gallons	NOX	VOC	PM10	PM2.5	SO2	CO	CO2e
C-CHIC-01-01	C-CHIC-01	Jackson	Iowa	Attainment	N/A	1.0	16,252,107	30,433,569	16,735,558	31,338,876	17,235	30,604	2.1	0.1	0.1	0.0	0.0	0.4	151
C-CHIC-01-02	C-CHIC-01	Carroll	Illinois	Attainment	N/A	0.2	16,252,107	30,433,569	3,084,325	5,775,683	3,176	5,640	0.4	0.0	0.0	0.0	0.0	0.1	28
C-CHIC-02-01	C-CHIC-02	Carroll	Illinois	Attainment	N/A	28.5	14,931,913	32,029,336	425,854,791	913,469,427	438,573	892,060	70.1	2.9	1.9	1.8	0.0	13.3	5,121
C-CHIC-02-02	C-CHIC-02	Ogle	Illinois	Attainment	N/A	32.7	14,931,913	32,029,336	488,301,381	1,047,418,961	502,885	1,022,870	80.3	3.4	2.1	2.1	0.1	15.3	5,872
C-CHIC-03-01	C-CHIC-03	Ogle	Illinois	Attainment	N/A	7.9	13,836,360	29,428,586	109,740,520	233,407,353	113,018	227,937	17.8	0.7	0.5	0.5	0.0	3.4	1,298
C-CHIC-03-02	C-CHIC-03	DeKalb	Illinois	Attainment	N/A	20.0	13,836,360	29,428,586	277,325,258	589,843,703	285,608	576,019	44.9	1.9	1.2	1.2	0.0	8.5	3,279
C-CHIC-03-03	C-CHIC-03	Kane	Illinois	NonAttainment	OZone	0.1	13,836,360	29,428,586	977,151	2,078,306	1,006	2,030	0.2	0.0	0.0	0.0	0.0	0.0	12
C-CHIC-03-04	C-CHIC-03	Kane	Illinois	NonAttainment	OZone	13.6	13,836,360	29,428,586	188,187,647	400,256,721	193,808	390,876	30.4	1.3	0.8	0.8	0.0	5.8	2,225
C-DAVE-01-01	C-DAVE-01	Jackson	Iowa	Attainment	N/A	1.8	32,193,786	55,328,310	58,800,565	101,054,778	60,557	98,686	5.9	0.2	0.2	0.2	0.0	1.1	431
C-DAVE-01-02	C-DAVE-01	Clinton	Iowa	Attainment	N/A	14.8	32,193,786	55,328,310	474,869,737	816,112,151	489,052	796,985	47.6	2.0	1.3	1.2	0.0	9.0	3,477
C-DAVE-02-01	C-DAVE-02	Clinton	Iowa	Attainment	N/A	10.5	23,995,580	42,470,476	252,136,409	446,263,578	259,667	435,804	27.2	1.1	0.7	0.7	0.0	5.2	1,989
C-DAVE-02-02	C-DAVE-02	Scott	Iowa	Attainment	N/A	22.4	23,995,580	42,470,476	537,279,579	950,946,782	553,326	928,659	58.0	2.4	1.5	1.5	0.0	11.0	4,238
C-DAVE-03-01	C-DAVE-03	Scott	Iowa	Attainment	N/A	5.6	24,180,184	42,655,080	136,390,964	240,600,629	140,464	234,962	14.6	0.6	0.4	0.4	0.0	2.8	1,067
C-ELGI-01-01	C-ELGI-01	Kane	Illinois	NonAttainment	OZone	5.8	15,100,901	32,537,663	88,307,847	190,275,468	90,945	185,816	14.7	0.6	0.4	0.4	0.0	2.8	1,071
C-ELGI-01-02	C-ELGI-01	Cook	Illinois	NonAttainment	OZone	6.5	15,100,901	32,537,663	98,392,077	212,003,793	101,331	207,035	16.3	0.7	0.4	0.4	0.0	3.1	1,194
C-ELGI-01-03	C-ELGI-01	DuPage	Illinois	NonAttainment	OZone	11.0	15,100,901	32,537,663	166,297,475	358,318,439	171,264	349,920	27.6	1.2	0.7	0.7	0.0	5.2	2,017
C-ELGI-02-01	C-ELGI-02	DuPage	Illinois	NonAttainment	OZone	0.8	66,977,791	87,091,230	52,800,803	68,656,891	54,378	67,048	2.0	0.1	0.1	0.1	0.0	0.4	143
C-ELGI-02-02	C-ELGI-02	Cook	Illinois	NonAttainment	OZone	3.5	66,977,791	87,091,230	235,407,848	306,100,853	242,439	298,927	8.7	0.4	0.2	0.2	0.0	1.7	638
C-KACI-01-01	C-KACI-01	Grundy	Missouri	Attainment	N/A	4.5	17,654,701	49,073,779	80,201,706	222,932,168	82,597	217,707	20.9	0.9	0.6	0.5	0.0	4.0	1,526
C-KACI-01-02	C-KACI-01	Livingston	Missouri	Attainment	N/A	30.1	17,654,701	49,073,779	532,158,085	1,479,209,877	548,052	1,444,541	138.5	5.8	3.7	3.6	0.1	26.3	10,123
C-KACI-01-03	C-KACI-01	Caldwell	Missouri	Attainment	N/A	16.8	17,654,701	49,073,779	296,457,407	824,045,970	305,311	804,732	77.2	3.2	2.1	2.0	0.1	14.7	5,640
C-KACI-02-01	C-KACI-02	Caldwell	Missouri	Attainment	N/A	5.0	17,132,673	50,963,778	85,506,738	254,352,981	88,060	248,392	24.8	1.0	0.7	0.6	0.0	4.7	1,810
C-KACI-02-02	C-KACI-02	Ray	Missouri	Attainment	N/A	10.6	17,132,673	50,963,778	182,348,914	542,424,974	187,795	529,712	52.8	2.2	1.4	1.4	0.0	10.0	3,861
C-KACI-02-03	C-KACI-02	Clay	Missouri	Attainment	N/A	24.7	17,132,673	50,963,778	423,454,142	1,259,629,666	436,101	1,230,107	122.7	5.2	3.3	3.2	0.1	23.3	8,966
C-KACI-02-04	C-KACI-02	Jackson	Missouri	Attainment	N/A	1.5	17,132,673	50,963,778	26,466,091	78,727,469	27,257	76,882	7.7	0.3	0.2	0.2	0.0	1.5	560
C-KACI-02-05	C-KACI-02	Jackson	Missouri	NonAttainment	SO2	0.3	17,132,673	50,963,778	4,826,617	14,357,516	4,971	14,021	1.4	0.1	0.0	0.0	0.0	0.3	102
C-LARE-01-01	C-LARE-01	Wapello	Iowa	Attainment	N/A	13.3	16,859,450	42,277,516	224,516,692	563,008,164	231,222	549,813	49.2	2.1	1.3	1.3	0.0	9.3	3,598
C-LARE-01-02	C-LARE-01	Monroe	Iowa	Attainment	N/A	10.5	16,859,450	42,277,516	176,500,640	442,600,951	181,772	432,227	38.7	1.6	1.0	1.0	0.0	7.4	2,828
C-LARE-01-03	C-LARE-01	Appanoose	Iowa	Attainment	N/A	23.2	16,859,450	42,277,516	390,603,401	979,494,674	402,269	956,538	85.6	3.6	2.3	2.2	0.1	16.3	6,259
C-LARE-01-04	C-LARE-01	Wayne	Iowa	Attainment	N/A	16.2	16,859,450	42,277,516	273,093,522	684,821,611	281,250	668,771	59.9	2.5	1.6	1.6	0.0	11.4	4,376
C-LARE-02-01	C-LARE-02	Putnam	Missouri	Attainment	N/A	17.9	17,202,275	48,866,740	307,349,448	873,091,829	316,529	852,629	82.8	3.5	2.2	2.1	0.1	15.7	6,054
C-LARE-02-02	C-LARE-02	Sullivan	Missouri	Attainment	N/A	20.3	17,202,275	48,866,740	348,963,489	991,305,409	359,386	968,072	94.0	4.0	2.5	2.4	0.1	17.9	6,873
C-LARE-02-03	C-LARE-02	Grundy	Missouri	Attainment	N/A	8.1	17,202,275	48,866,740	139,977,662	397,636,482	144,158	388,317	37.7	1.6	1.0	1.0	0.0	7.2	2,757
C-OTTU-01-01	C-OTTU-01	Scott	Iowa	Attainment	N/A	9.0	19,976,527	38,516,496	180,200,896	347,443,138	185,583	339,300	23.7	1.0	0.6	0.6	0.0	4.5	1,736
C-OTTU-01-02	C-OTTU-01	Muscatine	Iowa	Attainment	N/A	7.5	19,976,527	38,516,496	149,723,129	288,679,329	154,195	281,913	19.7	0.8	0.5	0.5	0.0	3.7	1,442
C-OTTU-01-03	C-OTTU-01	Muscatine	Iowa	NonAttainment	SO2	8.0	19,976,527	38,516,496	159,657,695	307,834,045	164,426	300,619	21.0	0.9	0.6	0.5	0.0	4.0	1,538
C-OTTU-02-01	C-OTTU-02	Muscatine	Iowa	NonAttainment	SO2	7.3	22,824,238	44,501,158	165,489,074	322,659,431	170,432	315,097	22.4	0.9	0.6	0.6	0.0	4.2	1,634
C-OTTU-02-02	C-OTTU-02	Louisa	Iowa	Attainment	N/A	21.6	22,824,238	44,501,158	493,325,397	961,852,576	508,059	939,309	66.6	2.8	1.8	1.7	0.0	12.7	4,870
C-OTTU-02-03	C-OTTU-02	Washington	Iowa	Attainment	N/A	25.6	22,824,238	44,501,158	585,062,536	1,140,715,459	602,536	1,113,980	79.0	3.3	2.1	2.0	0.1	15.0	5,775
C-OTTU-02-04	C-OTTU-02	Keokuk	Iowa	Attainment	N/A	9.4	22,824,238	44,501,158	214,825,672	418,852,601	221,242	409,036	29.0	1.2	0.8	0.8	0.0	5.5	2,121
C-OTTU-02-05	C-OTTU-02	Jefferson	Iowa	Attainment	N/A	5.3	22,824,238	44,501,158	120,324,404	234,600,406	123,918	229,102	16.3	0.7	0.4	0.4	0.0	3.1	1,188
C-OTTU-02-06	C-OTTU-02	Wapello	Iowa	Attainment	N/A	17.8	22,824,238	44,501,158	406,388,881	792,349,622	418,526	773,779	54.9	2.3	1.5	1.4	0.0	10.4	4,012
K-ALLI-01-01	K-ALLI-01	Tarrant	Texas	NonAttainment	OZone	4.8	1,883,878	3,918,441	9,015,767	18,752,681	9,285	18,313	1.4	0.1	0.0	0.0	0.0	0.3	102
K-ALLI-01-02	K-ALLI-01	Denton	Texas	NonAttainment	OZone	23.3	1,883,878	3,918,441	43,891,768	91,294,315	45,203	89,155	6.8	0.3	0.2	0.2	0.0	1.3	496
K-ALLI-02-01	K-ALLI-02	Denton	Texas	NonAttainment	OZone	31.8	2,054,407	4,307,918	65,326,571	136,984,339	67,278	133,774	10.3	0.4	0.3	0.3	0.0	2.0	751
K-ALLI-02-02	K-ALLI-02	Collin	Texas	NonAttainment	OZone	8.9	2,054,407	4,307,918	18,339,417	38,456,219	18,887	37,555	2.9	0.1	0.1	0.1	0.0	0.5	211
K-ALLI-03-01	K-ALLI-03	Collin	Texas	NonAttainment	OZone	11.5	2,837,445	4,973,240	32,587,433	57,116,566	33,561	55,778	3.4	0.1	0.1	0.1	0.0	0.7	251
K-BEAU-01-01	K-BEAU-01	De Soto	Louisiana	Attainment	N/A	31.1	37,701,111	64,012,328	1,171,555,643	1,989,172,263	1,206,545	1,942,551	113.7	4.8	3.0	2.9	0.1	21.6	8,311
K-BEAU-01-02	K-BEAU-01	Sabine	Louisiana	Attainment	N/A	48.7	37,701,111	64,012,328	1,836,090,726	3,117,479,540	1,890,928	3,044,414	178.2	7.5	4.8	4.6	0.1	33.9	13,025
K-BEAU-01-03	K-BEAU-01	Vernon	Louisiana	Attainment	N/A	16.8	37,701,111	64,012,328	632,529,819	1,073,965,867	651,421	1,048,795	61.4	2.6	1.6	1.6	0.0	11.7	4,487
K-BEAU-02-01	K-BEAU-02	Vernon	Louisiana	Attainment	N/A	21.8	34,212,150	64,819,659	746,449,764	1,414,252,505	768,743	1,381,106	94.6	4.0	2.5	2.5	0.1	18.0	6,915
K-BEAU-02-02	K-BEAU-02	Beauregard	Louisiana	Attainment	N/A	31.2	34,212,150	64,819,659	1,067,729,227	2,022,960,962	1,099,618	1,975,548	135.3	5.7	3.6	3.5	0.1	25.7	9,891
K-BEAU-02-03	K-BEAU-02	Calcasieu	Louisiana	Attainment	N/A	2.7	34,212,150	64,819,659	93,565,750	177,273,277	96,360	173,118	11.9	0.5	0.3	0.3	0.0	2.3	867
K-BEAU-03-01	K-BEAU-03	Calcasieu	Louisiana	Attainment	N/A	22.0	36,681,557	62,014,224	806,958,164	1,364,251,910	831,059	1,332,277	77.4	3.3	2.1	2.0	0.1	14.7	5,660
K-BEAU-03-02	K-BEAU-03	Beauregard	Louisiana	Attainment	N/A	3.4	36,681,557	62,014,224	124,366,949	210,256,064	128,081	205,328	11.9	0.5	0.3	0.3	0.0	2.3	872
K-BEAU-03-03	K-BEAU-03	Newton	Texas	Attainment	N/A	6.0	36,681,557	62,014,224	221,842,428	375,049,129	228,468	366,259	21.3	0.9	0.6	0.6	0.0	4.0	1,556
K-BEAU-03-04	K-BEAU-03	Orange	Texas	Attainment	N/A	21.2	36,681,557	62,014,224	776,012,355	1,311,934,602	799,189	1,281,186	74.5	3.1	2.0	1.9	0.0	14.1	5,443
K-BEAU-03-05	K-BEAU-03	Jefferson	Texas	Attainment	N/A	0.8	36,681,557	62,014,224	30,090,908	50,879,005	30,990	49,680	2.9	0.1	0.1	0.1	0.0	0.5	211
K-BEAU-04-01	K-BEAU-04	Jefferson	Texas	Attainment	N/A	17.5	13,958,314	50,312,818	243,995,815	879,484,207	251,283	858,871	93.9	3.9	2.5	2.4	0.1	17.8	6,861
K-HEAV-01-01	K-HEAV-01	Crawford	Kansas	Attainment	N/A	6.2	48,029,520	78,299,593	298,756,868	487,045,077	307,680	475,630	25.9	1.1	0.7	0.7	0.0	4.9	1,897
K-HEAV-01-02	K-HEAV-01	Cherokee	Kansas	Attainment	N/A	3.3	48,029,520	78,299,593	159,877,783	260,638,986	164,653	254,530	13.9	0.6	0.4	0.4	0.0	2.6	1,015
K-HEAV-01-03	K-HEAV-01	Jasper	Missouri	Attainment	N/A	20.9	48,029,520	78,299,593	1,001,941,694	1,633,404,356	1,031,866	1,595,121	87.0	3.7	2.3	2.3	0.1	16.5	6,360
K-HEAV-01-04	K-HEAV-01	Newton	Missouri	Attainment	N/A	26.2	48,029,520	78,299,593	1,260,432,293	2,054,805,795	1,298,077	2,006,646	109.5	4.6	2.9	2.8	0.1	20.8	8,001
K-HEAV-01-05	K-HEAV-01	McDonald	Missouri	Attainment	N/A	21.0	48,029,520	78,299,593	1,006,480,771	1,640,804,138	1,036,540	1,602,348	87.4	3.7	2.3	2.3	0.1	16.6	6,389
K-HEAV-01-06	K-HEAV-01	Benton	Arkansas	Attainment	N/A	29.3	48,029,520	78,299,593	1,405,787,150	2,291,768,942	1,447,773	2,238,056	122.1	5.1	3.3	3.2	0.1	23.2	8,924
K-HEAV-01-07	K-HEAV-01	Adair	Oklahoma	Attainment	N/A	3.0	48,029,520	78,299,593	145,181,614	236,680,720	149,518	231,134	12.6	0.5	0.3	0.3	0.0	2.4	922
K-HEAV-02-01	K-HEAV-02	Adair	Oklahoma	Attainment	N/A	39.7	44,369,646	72,564,181	1,763,312,467	2,883,803,174	1,815,976	2,816,214	154.5	6.5	4.1	4.0	0.1	29.4	11,295
K-HEAV-02-02	K-HEAV-02	Sequoyah	Oklahoma	Attainment	N/A	32.9	44,369,646	72,564,181	1,458,349,996	2,385,053,373	1,501,905	2,329,154	127.8	5.4	3.4	3.3	0.1	24.3	9,341
K-HEAV-02-03	K-HEAV-02	Le Flore	Oklahoma	Attainment	N/A	18.8	44,369,646	72,564,181	834,517,966	1,364,809,473	859,442	1,332,822	73.1	3.1	2.0	1.9	0.0	13.9	5,345
K-HEAV-03-01	K-HEAV-03	Le Flore	Oklahoma	Attainment	N/A	12.7	45,295,351	75,224,110	573,948,761	953,183,576	591,090	930,843	52.5	2.2	1.4	1.4	0.0	10.0	3,837
K-LARE-02-01	K-LARE-02	Webb	Texas	Attainment	N/A	52.4	44,507,641	56,171,441	2,330,478,894	2,941,210,839	2,400,081	2,872,276	73.0	3.1	1.9	1.9	0.0	13.9	5,332
K-LARE-02-02	K-LARE-02	Duval	Texas	Attainment	N/A	45.8	44,507,641	56,171,441	2,037,328,113	2,571,236,128	2,098,175	2,510,973	63.8	2.7	1.7	1.7	0.0	12.1	4,661
K-LARE-02-03	K-LARE-02	Jim Hogg	Texas	Attainment	N/A	12.2	44,507,641	56,171,441	543,732,051	686,224,023	559,971	670,141	17.0	0.7	0.5	0.4	0.0	3.2	1,244
K-LARE-02-04	K-LARE-02	Jim Wells	Texas	Attainment	N/A	20.1	44,507,641	56,171,441	893,865,298	1,128,114,187	920,562	1,101,674	28.0	1.2	0.7	0.7	0.0	5.3	2,045
K-LARE-02-05	K-LARE-02	Nueces	Texas	Attainment	N/A	17.1	44,507,641	56,171,441	762,005,046	961,698,261	784,763	939,158	23.9	1.0	0.6	0.6	0.0	4.5	1,743
K-PITT-01-01	K-PITT-01	Jackson	Missouri	NonAttainment	SO2	4.9	57,926,843	87,064,386	285,475,588	429,071,491	294,002	419,015	19.3	0.8	0.5	0.5	0.0	3.7	1,412
K-PITT-01-02	K-PITT-01	Jackson	Missouri	Attainment	N/A	17.7	57,926,843	87,064,386	1,027,374,785	1,544,150,357	1,058,058	1,507,959	69.5	2.9	1.9	1.8	0.0	13.2	5,080
K-PITT-01-03	K-PITT-01	Cass	Missouri	Attainment	N/A	30.9	57,926,843	87,064,386	1,791,020,183	2,691,913,889	1,844,511	2,628,822	121.2	5.1	3.2	3.1	0.1	23.0	8,857
K-PITT-01-04	K-PITT-01	Bates	Missouri	Attainment	N/A	29.5	57,926,843	87,064,386	1,710,398,472	2,570,738,983	1,761,481	2,510,487	115.7	4.9	3.1	3.0	0.1	22.0	8,458
K-PITT-01-05	K-PITT-01	Vernon	Missouri	Attainment	N/A	28.2	57,926,843	87,064,386	1,635,887,869	2,458,749,108	1,684,745	2,401,122	110.7	4.7	3.0	2.9	0.1	21.0	8,089
K-PITT-01-06	K-PITT-01	Barton	Missouri	Attainment	N/A	11.2	57,926,843	87,064,386	648,855,480	975,233,611	668,234	952,377	43.9	1.8	1.2	1.1	0.0	8.3	3,209
K-PITT-01-07	K-PITT-01	Crawford	Kansas	Attainment	N/A	8.8	57,926,843	87,064,386	510,993,823	768,026,728	526,255	750,026	34.6	1.5	0.9	0.9	0.0	6.6	2,527
K-ROSE-01-01	K-ROSE-01	Fort Bend	Texas	NonAttainment	OZone	14.8	32,250,691	44,194,323	477,825,687	654,782,341	492,096	639,436	22.8	1.0	0.6	0.6	0.0	4.3	1,664
K-ROSE-02-01	K-ROSE-02	Fort Bend	Texas	NonAttainment	OZone	1.3	30,175,789	41,809,854	38,695,953	53,614,907	39,852	52,358	1.9	0.1	0.1	0.1	0.0	0.4	141
K-ROSE-02-02	K-ROSE-02	Wharton	Texas	Attainment	N/A	37.3	30,175,789	41,809,854	1,125,235,483	1,559,062,177	1,158,842	1,527,522	56.2	2.4	1.5	1.5	0.0	10.7	4,107
K-ROSE-02-03	K-ROSE-02	Jackson	Texas	Attainment	N/A	23.0	30,175,789	41,809,854	692,682,331	959,741,174	713,370	937,247	34.6	1.5	0.9	0.9	0.0	6.6	2,528
K-ROSE-02-04	K-ROSE-02	Victoria	Texas	Attainment	N/A	15.2	30,175,789	41,809,854	458,167,237	634,810,420	471,851	619,932	22.9	1.0	0.6	0.6	0.0	4.3	1,672
K-SHRE-01-01	K-SHRE-01	Le Flore	Oklahoma	Attainment	N/A	22.0	48,157,807	76,436,313	1,061,596,150	1,684,970,710	1,093,302	1,645,479	85.3	3.6	2.3	2.2	0.1	16.2	6,235
K-SHRE-01-02	K-SHRE-01	Polk	Arkansas	Attainment	N/A	59.7	48,157,807	76,436,313	2,873,998,523	4,561,624,809	2,959,834	4,454,712	231.0	9.7	6.2	6.0	0.2	43.9	16,880
K-SHRE-01-03	K-SHRE-01	Sevier	Arkansas	Attainment	N/A	16.1	48,157,807	76,436,313	776,832,966	1,232,993,164	800,034	1,204,095	62.4	2.6	1.7	1.6	0.0	11.9	4,563
K-SHRE-02-01	K-SHRE-02	Sevier	Arkansas	Attainment	N/A	12.9	50,385,405	75,293,128	650,341,700	971,834,235	669,765	949,057	43.2	1.8	1.2	1.1	0.0	8.2	3,154
K-SHRE-02-02	K-SHRE-02	Little River	Arkansas	Attainment	N/A	27.2	50,385,405	75,293,128	1,370,168,703	2,047,503,417	1,411,090	1,999,515	90.9	3.8	2.4	2.4	0.1	17.3	6,645
K-SHRE-03-01	K-SHRE-03	Little River	Arkansas	Attainment	N/A	10.1	51,700,200	87,700,309	520,225,452	882,471,120	535,763	861,788	50.4	2.1	1.3	1.3	0.0	9.6	3,682
K-SHRE-03-02	K-SHRE-03	Bowie	Texas	Attainment	N/A	22.1	51,700,200	87,700,309	1,142,355,616	1,937,805,690	1,176,473	1,892,388	110.6	4.6	3.0	2.9	0.1	21.0	8,084
K-SHRE-03-03	K-SHRE-03	Cass	Texas	Attainment	N/A	11.9	51,700,200	87,700,309	615,045,066	1,043,315,943	633,414	1,018,863	59.6	2.5	1.6	1.5	0.0	11.3	4,353
K-SHRE-03-04	K-SHRE-03	Miller	Arkansas	Attainment	N/A	6.5	51,700,200	87,700,309	335,537,449	569,180,358	345,559	555,840	32.5	1.4	0.9	0.8	0.0	6.2	2,375
K-SHRE-03-05	K-SHRE-03	Caddo	Louisiana	Attainment	N/A	41.8	51,700,200	87,700,309	2,159,846,048	3,663,799,522	2,224,352	3,577,929	209.1	8.8	5.6	5.4	0.1	39.7	15,285
K-SHRE-04-01	K-SHRE-04	Caddo	Louisiana	Attainment	N/A	18.3	56,569,305	94,085,740	1,033,194,634	1,718,403,313	1,064,052	1,678,128	94.9	4.0	2.5	2.5	0.1	18.0	6,934
K-SHRE-04-02	K-SHRE-04	De Soto	Louisiana	Attainment	N/A	5.2	56,569,305	94,085,740	291,769,882	485,269,973	300,484	473,896	26.8	1.1	0.7	0.7	0.0	5.1	1,958
U-BEAU-01-01	U-BEAU-01	Jefferson	Texas	Attainment	N/A	20.8	30,684,850	35,411,728	637,149,606	735,299,959	656,179	718,066	9.6	0.4	0.3	0.2	0.0	1.8	699

U-BEAU-01-02	U-BEAU-01	Liberty	Texas	NonAttainment	OZone	35.1	30,684,850	35,411,728	1,077,753,300	1,243,776,893	1,109,942	1,214,626	16.2	0.7	0.4	0.4	0.0	3.1	1,182
U-BEAU-01-03	U-BEAU-01	Harris	Texas	NonAttainment	OZone	45.8	30,684,850	35,411,728	1,405,236,099	1,621,707,110	1,447,205	1,583,698	21.1	0.9	0.6	0.5	0.0	4.0	1,541
U-BEAU-01-04	U-BEAU-01	Fort Bend	Texas	NonAttainment	OZone	18.5	30,684,850	35,411,728	566,510,658	653,779,364	583,430	638,456	8.5	0.4	0.2	0.2	0.0	1.6	621
U-VICT-01-01	U-VICT-01	Victoria	Texas	Attainment	N/A	12.3	28,707,698	40,773,489	352,248,961	500,298,537	362,769	488,573	19.4	0.8	0.5	0.5	0.0	3.7	1,421
U-VICT-02-01	U-VICT-02	Nueces	Texas	Attainment	N/A	8.2	28,711,992	40,777,783	236,155,470	335,396,327	243,209	327,535	13.0	0.5	0.3	0.3	0.0	2.5	952
U-VICT-02-02	U-VICT-02	San Patricio	Texas	Attainment	N/A	20.5	28,711,992	40,777,783	587,821,866	834,845,344	605,378	815,279	32.4	1.4	0.9	0.8	0.0	6.2	2,370
U-VICT-02-03	U-VICT-02	Refugio	Texas	Attainment	N/A	36.9	28,711,992	40,777,783	1,059,219,794	1,504,341,304	1,090,855	1,469,083	58.4	2.5	1.6	1.5	0.0	11.1	4,271
U-VICT-02-04	U-VICT-02	Victoria	Texas	Attainment	N/A	18.0	28,711,992	40,777,783	516,460,479	733,495,386	531,885	716,304	28.5	1.2	0.8	0.7	0.0	5.4	2,082

Notes:
Segment Ton-Mileage provided by Applicant, based on historical basline data; Sub Segment ton-mileage proportioned from whole segment based on the Length Proportion
No Action and With Action Fuel Efficiency estimated based on data provided in the "Verified Statement of Michael R. Baranowski" (No Action- 971 ton-miles/gal; With Action- 1024 ton-miles/gal)

Table K.13-6. Historical Baseline- Rail Segment Analysis- No Action HAPs Emissions by Subsegment

					Segment Tons per Mile		Sub-Segment Ton-Miles		Sub-Segment Fuel Use		No Action Emissions (tons/year)							
SubCode	Code	County	State	SubSeg Length	NA GT	WA GT	NA GTM	WA GTM	NA Gallons	WA Gallons	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
C-CHIC-01-01	C-CHIC-01	Jackson	Iowa	1.0	16,252,107	30,433,569	16,735,558	31,338,876	17,235	30,604	0.009	0.002	0.003	0.000	0.000	0.025	0.000	0.000
C-CHIC-01-02	C-CHIC-01	Carroll	Illinois	0.2	16,252,107	30,433,569	3,084,325	5,775,683	3,176	5,640	0.002	0.000	0.000	0.000	0.000	0.005	0.000	0.000
C-CHIC-02-01	C-CHIC-02	Carroll	Illinois	28.5	14,931,913	32,029,336	425,854,791	913,469,427	438,573	892,060	0.223	0.046	0.064	0.005	0.011	0.635	0.008	0.008
C-CHIC-02-02	C-CHIC-02	Ogle	Illinois	32.7	14,931,913	32,029,336	488,301,381	1,047,418,961	502,885	1,022,870	0.256	0.052	0.073	0.006	0.013	0.728	0.009	0.009
C-CHIC-03-01	C-CHIC-03	Ogle	Illinois	7.9	13,836,360	29,428,586	109,740,520	233,407,353	113,018	227,937	0.057	0.012	0.017	0.001	0.003	0.164	0.002	0.002
C-CHIC-03-02	C-CHIC-03	DeKalb	Illinois	20.0	13,836,360	29,428,586	277,325,258	589,843,703	285,608	576,019	0.145	0.030	0.042	0.003	0.007	0.414	0.005	0.005
C-CHIC-03-03	C-CHIC-03	Kane	Illinois	0.1	13,836,360	29,428,586	977,151	2,078,306	1,006	2,030	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000
C-CHIC-03-04	C-CHIC-03	Kane	Illinois	13.6	13,836,360	29,428,586	188,187,647	400,256,721	193,808	390,876	0.099	0.020	0.028	0.002	0.005	0.281	0.003	0.004
C-DAVE-01-01	C-DAVE-01	Jackson	Iowa	1.8	32,193,786	55,328,310	58,800,565	101,054,778	60,557	98,686	0.031	0.006	0.009	0.001	0.002	0.088	0.001	0.001
C-DAVE-01-02	C-DAVE-01	Clinton	Iowa	14.8	32,193,786	55,328,310	474,869,737	816,112,151	489,052	796,985	0.249	0.051	0.071	0.006	0.012	0.708	0.009	0.009
C-DAVE-02-01	C-DAVE-02	Clinton	Iowa	10.5	23,995,580	42,470,476	252,136,409	446,263,578	259,667	435,804	0.132	0.027	0.038	0.003	0.006	0.376	0.005	0.005
C-DAVE-02-02	C-DAVE-02	Scott	Iowa	22.4	23,995,580	42,470,476	537,279,579	950,946,782	553,326	928,659	0.281	0.057	0.081	0.007	0.014	0.801	0.010	0.010
C-DAVE-03-01	C-DAVE-03	Scott	Iowa	5.6	24,180,184	42,655,080	136,390,964	240,600,629	140,464	234,962	0.071	0.015	0.021	0.002	0.004	0.203	0.002	0.003
C-ELGI-01-01	C-ELGI-01	Kane	Illinois	5.8	15,100,901	32,537,663	88,307,847	190,275,468	90,945	185,816	0.046	0.009	0.013	0.001	0.002	0.132	0.002	0.002
C-ELGI-01-02	C-ELGI-01	Cook	Illinois	6.5	15,100,901	32,537,663	98,392,077	212,003,793	101,331	207,035	0.052	0.011	0.015	0.001	0.003	0.147	0.002	0.002
C-ELGI-01-03	C-ELGI-01	DuPage	Illinois	11.0	15,100,901	32,537,663	166,297,475	358,318,439	171,264	349,920	0.087	0.018	0.025	0.002	0.004	0.248	0.003	0.003
C-ELGI-02-01	C-ELGI-02	DuPage	Illinois	0.8	66,977,791	87,091,230	52,800,803	68,656,891	54,378	67,048	0.028	0.006	0.008	0.001	0.001	0.079	0.001	0.001
C-ELGI-02-02	C-ELGI-02	Cook	Illinois	3.5	66,977,791	87,091,230	235,407,848	306,100,853	242,439	298,927	0.123	0.025	0.035	0.003	0.006	0.351	0.004	0.004
C-KACI-01-01	C-KACI-01	Grundy	Missouri	4.5	17,654,701	49,073,779	80,201,706	222,932,168	82,597	217,707	0.042	0.009	0.012	0.001	0.002	0.120	0.001	0.001
C-KACI-01-02	C-KACI-01	Livingston	Missouri	30.1	17,654,701	49,073,779	532,158,085	1,479,209,877	548,052	1,444,541	0.279	0.057	0.080	0.007	0.014	0.794	0.010	0.010
C-KACI-01-03	C-KACI-01	Caldwell	Missouri	16.8	17,654,701	49,073,779	296,457,407	824,045,970	305,311	804,732	0.155	0.032	0.045	0.004	0.008	0.442	0.005	0.006
C-KACI-02-01	C-KACI-02	Caldwell	Missouri	5.0	17,132,673	50,963,778	85,506,738	254,352,981	88,060	248,392	0.045	0.009	0.013	0.001	0.002	0.128	0.002	0.002
C-KACI-02-02	C-KACI-02	Ray	Missouri	10.6	17,132,673	50,963,778	182,348,914	542,424,974	187,795	529,712	0.095	0.020	0.027	0.002	0.005	0.272	0.003	0.003
C-KACI-02-03	C-KACI-02	Clay	Missouri	24.7	17,132,673	50,963,778	423,454,142	1,259,629,666	436,101	1,230,107	0.222	0.045	0.064	0.005	0.011	0.632	0.008	0.008
C-KACI-02-04	C-KACI-02	Jackson	Missouri	1.5	17,132,673	50,963,778	26,466,091	78,727,469	27,257	76,882	0.014	0.003	0.004	0.000	0.001	0.039	0.000	0.000
C-KACI-02-05	C-KACI-02	Jackson	Missouri	0.3	17,132,673	50,963,778	4,826,617	14,357,516	4,971	14,021	0.003	0.001	0.001	0.000	0.000	0.007	0.000	0.000
C-LARE-01-01	C-LARE-01	Wapello	Iowa	13.3	16,859,450	42,277,516	224,516,692	563,008,164	231,222	549,813	0.118	0.024	0.034	0.003	0.006	0.335	0.004	0.004
C-LARE-01-02	C-LARE-01	Monroe	Iowa	10.5	16,859,450	42,277,516	176,500,640	442,600,951	181,772	432,227	0.092	0.019	0.027	0.002	0.005	0.263	0.003	0.003
C-LARE-01-03	C-LARE-01	Appanoose	Iowa	23.2	16,859,450	42,277,516	390,603,401	979,494,674	402,269	956,538	0.205	0.042	0.059	0.005	0.010	0.583	0.007	0.007
C-LARE-01-04	C-LARE-01	Wayne	Iowa	16.2	16,859,450	42,277,516	273,093,522	684,821,611	281,250	668,771	0.143	0.029	0.041	0.003	0.007	0.407	0.005	0.005
C-LARE-02-01	C-LARE-02	Putnam	Missouri	17.9	17,202,275	48,866,740	307,149,448	873,091,829	316,529	852,629	0.161	0.033	0.046	0.004	0.008	0.458	0.006	0.006
C-LARE-02-02	C-LARE-02	Sullivan	Missouri	20.3	17,202,275	48,866,740	348,963,489	991,305,409	359,386	968,072	0.183	0.037	0.053	0.004	0.009	0.520	0.006	0.007
C-LARE-02-03	C-LARE-02	Grundy	Missouri	8.1	17,202,275	48,866,740	139,977,662	397,636,482	144,158	388,317	0.073	0.015	0.021	0.002	0.004	0.209	0.003	0.003
C-OTTU-01-01	C-OTTU-01	Scott	Iowa	9.0	19,976,527	38,516,496	180,200,896	347,443,138	185,583	339,300	0.094	0.019	0.027	0.002	0.005	0.269	0.003	0.003
C-OTTU-01-02	C-OTTU-01	Muscatine	Iowa	7.5	19,976,527	38,516,496	149,723,129	288,679,329	154,195	281,913	0.078	0.016	0.023	0.002	0.004	0.223	0.003	0.003
C-OTTU-01-03	C-OTTU-01	Muscatine	Iowa	8.0	19,976,527	38,516,496	159,657,695	307,834,045	164,426	300,619	0.084	0.017	0.024	0.002	0.004	0.238	0.003	0.003
C-OTTU-02-01	C-OTTU-02	Muscatine	Iowa	7.3	22,824,238	44,501,158	165,489,074	322,659,431	170,432	315,097	0.087	0.018	0.025	0.002	0.004	0.247	0.003	0.003
C-OTTU-02-02	C-OTTU-02	Louisa	Iowa	21.6	22,824,238	44,501,158	493,325,397	961,852,576	508,059	939,309	0.258	0.053	0.074	0.006	0.013	0.736	0.009	0.009
C-OTTU-02-03	C-OTTU-02	Washington	Iowa	25.6	22,824,238	44,501,158	585,062,536	1,140,715,459	602,536	1,113,980	0.306	0.063	0.088	0.007	0.015	0.873	0.011	0.011
C-OTTU-02-04	C-OTTU-02	Keokuk	Iowa	9.4	22,824,238	44,501,158	214,825,672	418,852,601	221,242	409,036	0.113	0.023	0.032	0.003	0.006	0.320	0.004	0.004
C-OTTU-02-05	C-OTTU-02	Jefferson	Iowa	5.3	22,824,238	44,501,158	120,324,404	234,600,406	123,918	229,102	0.063	0.013	0.018	0.001	0.003	0.179	0.002	0.002
C-OTTU-02-06	C-OTTU-02	Wapello	Iowa	17.8	22,824,238	44,501,158	406,388,881	792,349,622	418,526	773,779	0.213	0.043	0.061	0.005	0.010	0.606	0.007	0.008
K-ALLI-01-01	K-ALLI-01	Tarrant	Texas	4.8	1,883,878	3,918,441	9,015,767	18,752,681	9,285	18,313	0.005	0.001	0.001	0.000	0.000	0.013	0.000	0.000
K-ALLI-01-02	K-ALLI-01	Denton	Texas	23.3	1,883,878	3,918,441	43,891,768	91,294,315	45,203	89,155	0.023	0.005	0.007	0.001	0.001	0.065	0.001	0.001
K-ALLI-02-01	K-ALLI-02	Denton	Texas	31.8	2,054,407	4,307,918	65,326,571	136,984,339	67,278	133,774	0.034	0.007	0.010	0.001	0.002	0.097	0.001	0.001
K-ALLI-02-02	K-ALLI-02	Collin	Texas	8.9	2,054,407	4,307,918	18,339,417	38,456,219	18,887	37,555	0.010	0.002	0.003	0.000	0.000	0.027	0.000	0.000
K-ALLI-03-01	K-ALLI-03	Collin	Texas	11.5	2,837,445	4,973,240	32,587,433	57,116,566	33,561	55,778	0.017	0.003	0.005	0.000	0.001	0.049	0.001	0.001
K-BEAU-01-01	K-BEAU-01	De Soto	Louisiana	31.1	37,701,111	64,012,328	1,171,555,643	1,989,172,263	1,206,545	1,942,551	0.614	0.125	0.176	0.015	0.030	1.747	0.021	0.022
K-BEAU-01-02	K-BEAU-01	Sabine	Louisiana	48.7	37,701,111	64,012,328	1,836,090,726	3,117,479,540	1,890,928	3,044,414	0.962	0.196	0.276	0.023	0.047	2.739	0.034	0.034
K-BEAU-01-03	K-BEAU-01	Vernon	Louisiana	16.8	37,701,111	64,012,328	632,529,819	1,073,965,867	651,421	1,048,795	0.331	0.068	0.095	0.008	0.016	0.943	0.012	0.012
K-BEAU-02-01	K-BEAU-02	Vernon	Louisiana	21.8	34,212,150	64,819,659	746,449,764	1,414,252,505	768,743	1,381,106	0.391	0.080	0.112	0.009	0.019	1.113	0.014	0.014
K-BEAU-02-02	K-BEAU-02	Beauregard	Louisiana	31.2	34,212,150	64,819,659	1,067,729,227	2,022,960,962	1,099,618	1,975,548	0.559	0.114	0.161	0.013	0.027	1.593	0.019	0.020
K-BEAU-02-03	K-BEAU-02	Calcasieu	Louisiana	2.7	34,212,150	64,819,659	93,565,750	177,273,277	96,360	173,118	0.049	0.010	0.014	0.001	0.002	0.140	0.002	0.002
K-BEAU-03-01	K-BEAU-03	Calcasieu	Louisiana	22.0	36,681,557	62,014,224	806,958,164	1,364,251,910	831,059	1,332,277	0.423	0.086	0.121	0.010	0.021	1.204	0.015	0.015
K-BEAU-03-02	K-BEAU-03	Beauregard	Louisiana	3.4	36,681,557	62,014,224	124,366,949	210,256,064	128,081	205,328	0.065	0.013	0.019	0.002	0.003	0.185	0.002	0.002
K-BEAU-03-03	K-BEAU-03	Newton	Texas	6.0	36,681,557	62,014,224	221,842,428	375,049,129	228,468	366,259	0.116	0.024	0.033	0.003	0.006	0.331	0.004	0.004
K-BEAU-03-04	K-BEAU-03	Orange	Texas	21.2	36,681,557	62,014,224	776,012,355	1,311,934,602	799,189	1,281,186	0.406	0.083	0.117	0.010	0.020	1.157	0.014	0.015
K-BEAU-03-05	K-BEAU-03	Jefferson	Texas	0.8	36,681,557	62,014,224	30,090,908	50,872,005	30,990	49,680	0.016	0.003	0.005	0.000	0.001	0.045	0.001	0.001
K-BEAU-04-01	K-BEAU-04	Jefferson	Texas	17.5	13,958,314	50,312,818	243,995,815	879,484,207	251,283	858,871	0.128	0.026	0.037	0.003	0.006	0.364	0.004	0.005
K-HEAV-01-01	K-HEAV-01	Crawford	Kansas	6.2	48,029,520	78,299,593	298,756,868	487,045,077	307,680	475,630	0.156	0.032	0.045	0.004	0.008	0.446	0.005	0.006
K-HEAV-01-02	K-HEAV-01	Cherokee	Kansas	3.3	48,029,520	78,299,593	159,877,783	260,638,986	164,653	254,530	0.084	0.017	0.024	0.002	0.004	0.238	0.003	0.003
K-HEAV-01-03	K-HEAV-01	Jasper	Missouri	20.9	48,029,520	78,299,593	1,001,941,694	1,633,404,356	1,031,866	1,595,121	0.525	0.107	0.151	0.012	0.026	1.494	0.018	0.019
K-HEAV-01-04	K-HEAV-01	Newton	Missouri	26.2	48,029,520	78,299,593	1,260,432,293	2,054,805,795	1,298,077	2,006,646	0.660	0.135	0.190	0.016	0.032	1.880	0.023	0.024
K-HEAV-01-05	K-HEAV-01	McDonald	Missouri	21.0	48,029,520	78,299,593	1,006,480,771	1,640,804,138	1,036,540	1,602,348	0.527	0.108	0.151	0.013	0.026	1.501	0.018	0.019
K-HEAV-01-06	K-HEAV-01	Benton	Arkansas	29.3	48,029,520	78,299,593	1,405,787,150	2,291,768,942	1,447,773	2,238,056	0.736	0.150	0.212	0.017	0.036	2.097	0.026	0.026
K-HEAV-01-07	K-HEAV-01	Adair	Oklahoma	3.0	48,029,520	78,299,593	145,181,614	236,680,720	149,518	231,134	0.076	0.016	0.022	0.002	0.004	0.217	0.003	0.003
K-HEAV-02-01	K-HEAV-02	Adair	Oklahoma	39.7	44,369,646	72,564,181	1,763,312,467	2,883,803,174	1,815,976	2,816,214	0.923	0.189	0.265	0.022	0.045	2.630	0.032	0.033
K-HEAV-02-02	K-HEAV-02	Sequoyah	Oklahoma	32.9	44,369,646	72,564,181	1,458,349,996	2,385,053,373	1,501,905	2,329,154	0.764	0.156	0.219	0.018	0.037	2.175	0.027	0.027
K-HEAV-02-03	K-HEAV-02	Le Flore	Oklahoma	18.8	44,369,646	72,564,181	834,517,966	1,364,809,473	859,442	1,332,822	0.437	0.089	0.126	0.010	0.021	1.245	0.015	0.016
K-HEAV-03-01	K-HEAV-03	Le Flore	Oklahoma	12.7	45,295,351	75,224,110	573,948,761	953,183,576	591,090	930,843	0.301	0.061	0.086	0.007	0.015	0.856	0.010	0.011
K-LARE-02-01	K-LARE-02	Webb	Texas	52.4	44,507,641	56,171,441	2,330,478,894	2,941,210,839	2,400,081	2,872,276	1.220	0.249	0.351	0.029	0.060	3.476	0.043	0.044
K-LARE-02-02	K-LARE-02	Duval	Texas	45.8	44,507,641	56,171,441	2,037,328,113	2,571,236,128	2,098,175	2,510,973	1.067	0.218	0.307	0.025	0.052	3.039	0.037	0.038
K-LARE-02-03	K-LARE-02	Jim Hogg	Texas	12.2	44,507,641	56,171,441	543,732,051	686,224,023	559,971	670,141	0.285	0.058	0.082	0.007	0.014	0.811	0.010	0.010
K-LARE-02-04	K-LARE-02	Jim Wells	Texas	20.1	44,507,641	56,171,441	893,865,298	1,128,114,187	920,562	1,101,674	0.468	0.096	0.135	0.011	0.023	1.333	0.016	0.017
K-LARE-02-05	K-LARE-02	Nueces	Texas	17.1	44,507,641	56,171,441	762,005,046	961,698,261	784,763	939,158	0.399	0.082	0.115	0.009	0.020	1.137	0.014	0.014
K-PITT-01-01	K-PITT-01	Jackson	Missouri	4.9	57,926,843	87,064,386	285,475,588	429,071,491	294,002	419,015	0.150	0.031	0.043	0.004	0.007	0.426	0.005	0.005
K-PITT-01-02	K-PITT-01	Jackson	Missouri	17.7	57,926,843	87,064,386	1,027,374,785	1,544,150,357	1,058,058	1,507,959	0.538	0.110	0.155	0.013	0.026	1.532	0.019	0.019
K-PITT-01-03	K-PITT-01	Cass	Missouri	30.9	57,926,843	87,064,386	1,791,020,183	2,691,913,889	1,844,511	2,628,822	0.938	0.192	0.270	0.022	0.046	2.671	0.033	0.033
K-PITT-01-04	K-PITT-01	Bates	Missouri	29.5	57,926,843	87,064,386	1,710,398,472	2,570,738,983	1,761,481	2,510,487	0.896	0.183	0.257	0.021	0.044	2.551	0.031	0.032
K-PITT-01-05	K-PITT-01	Vernon	Missouri	28.2	57,926,843	87,064,386	1,635,887,869	2,458,749,108	1,684,745	2,401,122	0.857	0.175	0.246	0.020	0.042	2.440	0.030	0.031
K-PITT-01-06	K-PITT-01	Barton	Missouri	11.2	57,926,843	87,064,386	648,855,480	975,233,611	668,234	952,377	0.340	0.069	0.098	0.008	0.017	0.968	0.012	0.012
K-PITT-01-07	K-PITT-01	Crawford	Kansas	8.8	57,926,843	87,064,386	510,993,823	768,026,728	526,255	750,026	0.268	0.055	0.077	0.006	0.013	0.762	0.009	0.010
K-ROSE-01-01	K-ROSE-01	Fort Bend	Texas	14.8	32,250,691	44,194,323	477,825,687	654,782,341	492,096	639,436	0.250	0.051	0.072	0.006	0.012	0.713	0.009	0.009
K-ROSE-02-01	K-ROSE-02	Fort Bend	Texas	1.3	30,175,789	41,809,854	38,695,953	53,614,907	39,852	52,358	0.020	0.004	0.006	0.000	0.001	0.058	0.001	0.001
K-ROSE-02-02	K-ROSE-02	Wharton	Texas	37.3	30,175,789	41,809,854	1,125,235,483	1,559,062,177	1,158,842	1,522,522	0.589	0.120	0.169	0.014	0.029	1.678	0.021	0.021
K-ROSE-02-03	K-ROSE-02	Jackson	Texas	23.0	30,175,789	41,809,854	692,682,331	959,741,174	713,370	937,247	0.363	0.074	0.104	0.009	0.018	1.033	0.013	0.013
K-ROSE-02-04	K-ROSE-02	Victoria	Texas	15.2	30,175,789	41,809,854	458,167,237	634,810,420	471,851	619,932	0.240	0.049	0.069	0.006	0.012	0.683	0.008	0.009
K-SHRE-01-01	K-SHRE-01	Le Flore	Oklahoma	22.0	48,157,807	76,436,313	1,061,596,150	1,684,970,710	1,093,302	1,645,479	0.556	0.114	0.160	0.013	0.027	1.583	0.019	0.020
K-SHRE-01-02	K-SHRE-01	Polk	Arkansas	59.7	48,157,807	76,436,313	2,873,998,523	4,561,624,809	2,959,834	4,454,712	1.505	0.308	0.433	0.036	0.074	4.287	0.052	0.054
K-SHRE-01-03	K-SHRE-01	Sevier	Arkansas	16.1	48,157,807	76,436,313	776,832,966	1,232,993,164	800,034	1,204,095	0.407	0.083	0.117	0.010	0.020	1.159	0.014	0.015
K-SHRE-02-01	K-SHRE-02	Sevier	Arkansas	12.9	50,385,405	75,293,128	650,341,700	971,834,235	669,765	949,057	0.341	0.070	0.098	0.008	0.017	0.970	0.012	0.012
K-SHRE-02-02	K-SHRE-02	Little River	Arkansas	27.2	50,385,405	75,293,128	1,370,168,703	2,047,503,417	1,411,090	1,999,515	0.718	0.147	0.206	0.017	0.035	2.044	0.025	0.026
K-SHRE-03-01	K-SHRE-03	Little River	Arkansas	10.1	51,700,200	87,700,309	520,225,452	882,471,120	535,763	861,788	0.272	0.056	0.078	0.006	0.013	0.776	0.009	0.010
K-SHRE-03-02	K-SHRE-03	Bowie	Texas	22.1	51,700,200	87,700,309	1,142,355,616	1,937,805,690	1,176,473	1,892,388	0.598	0.122	0.172	0.014	0.029	1.704	0.021	0.021
K-SHRE-03-03	K-SHRE-03	Cass	Texas	11.9	51,700,200	87,700,309	615,045,066	1,043,315,943	633,414	1,018,863	0.322	0.066	0.093	0.008	0.016	0.917	0.011	0.011
K-SHRE-03-04	K-SHRE-03	Miller	Arkansas	6.5	51,700,200	87,700,309	335,537,449	569,180,358	345,559	555,840	0.176	0.036	0.050	0.004	0.009	0.500	0.006	0.006
K-SHRE-03-05	K-SHRE-03	Caddo	Louisiana	41.8	51,700,200	87,700,309	2,159,846,048	3,663,799,522	2,224,352	3,577,929	1.131	0.231	0.325	0.027	0.055	3.221	0.039	0.040
K-SHRE-04-01	K-SHRE-04	Caddo	Louisiana	18.3	56,569,305	94,085,740	1,033,194,634	1,718,403,313	1,064,052	1,678,128	0.541	0.111	0.155	0.013	0.027	1.541	0.019	0.019
K-SHRE-04-02	K-SHRE-04	De Soto	Louisiana	5.2	56,569,305	94,085,740	291,769,882	485,269,973	300,484	473,896	0.153	0.031	0.044	0.004	0.007	0.435	0.005	0.005
U-BEAU-01-01	U-BEAU-01	Jefferson	Texas	20.8	30,684,850	35,411,728	637,149,606	735,299,959	656,179	718,066	0.334	0.068	0.096	0.008	0.016	0.950	0.012	0.012

U-BEAU-01-02	U-BEAU-01	Liberty	Texas	35.1	30,684,850	35,411,728	1,077,753,300	1,243,776,893	1,109,942	1,214,626	0.564	0.115	0.162	0.013	0.028	1.608	0.020	0.020
U-BEAU-01-03	U-BEAU-01	Harris	Texas	45.8	30,684,850	35,411,728	1,405,236,099	1,621,707,110	1,447,205	1,583,698	0.736	0.150	0.211	0.017	0.036	2.096	0.026	0.026
U-BEAU-01-04	U-BEAU-01	Fort Bend	Texas	18.5	30,684,850	35,411,728	566,510,658	653,779,364	583,430	638,456	0.297	0.061	0.085	0.007	0.015	0.845	0.010	0.011
U-VICT-01-01	U-VICT-01	Victoria	Texas	12.3	28,707,698	40,773,489	352,248,961	500,298,537	362,769	488,573	0.184	0.038	0.053	0.004	0.009	0.525	0.006	0.007
U-VICT-02-01	U-VICT-02	Nueces	Texas	8.2	28,711,992	40,777,783	236,155,470	335,396,327	243,209	327,535	0.124	0.025	0.036	0.003	0.006	0.352	0.004	0.004
U-VICT-02-02	U-VICT-02	San Patricio	Texas	20.5	28,711,992	40,777,783	587,821,866	834,845,344	605,378	815,279	0.308	0.063	0.088	0.007	0.015	0.877	0.011	0.011
U-VICT-02-03	U-VICT-02	Refugio	Texas	36.9	28,711,992	40,777,783	1,059,219,794	1,504,341,304	1,090,855	1,469,083	0.555	0.113	0.159	0.013	0.027	1.580	0.019	0.020
U-VICT-02-04	U-VICT-02	Victoria	Texas	18.0	28,711,992	40,777,783	516,460,479	733,495,386	531,885	716,304	0.270	0.055	0.078	0.006	0.013	0.770	0.009	0.010

Notes:
Segment Ton-Mileage provided by Applicant, based on historical basline data; Sub Segment ton-mileage proportioned from whole segment based on the Length Proportion
No Action and With Action Fuel Efficiency estimated based on data provided in the "Verified Statement of Michael R. Baranowski" (No Action- 971 ton-miles/gal; With Action- 1024 ton-miles/gal)

Table K.13-7. Historical Baseline- Rail Segment Analysis- Proposed Acquisition HAPs Emissions by Subsegment

					Segment Tons per Mile		Sub-Segment Ton-Miles		Sub-Segment Fuel Use		With Action Emissions (tons/year)							
SubCode	Code	County	State	SubSeg Length	NA GT	WA GT	NA GTM	WA GTM	NA Gallons	WA Gallons	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
C-CHIC-01-01	C-CHIC-01	Jackson	Iowa	1.0	16,252,107	30,433,569	16,735,558	31,338,876	17,235	30,604	0.016	0.003	0.004	0.000	0.001	0.044	0.001	0.001
C-CHIC-01-02	C-CHIC-01	Carroll	Illinois	0.2	16,252,107	30,433,569	3,084,325	5,775,683	3,176	5,640	0.003	0.001	0.001	0.000	0.000	0.008	0.000	0.000
C-CHIC-02-01	C-CHIC-02	Carroll	Illinois	28.5	14,931,913	32,029,336	425,854,791	913,469,427	438,573	892,060	0.454	0.093	0.130	0.011	0.022	1.292	0.016	0.016
C-CHIC-02-02	C-CHIC-02	Ogle	Illinois	32.7	14,931,913	32,029,336	488,301,381	1,047,418,961	502,885	1,022,870	0.520	0.106	0.149	0.012	0.026	1.481	0.018	0.019
C-CHIC-03-01	C-CHIC-03	Ogle	Illinois	7.9	13,836,360	29,428,586	109,740,520	233,407,353	113,018	227,937	0.116	0.024	0.033	0.003	0.006	0.330	0.004	0.004
C-CHIC-03-02	C-CHIC-03	DeKalb	Illinois	20.0	13,836,360	29,428,586	277,325,258	589,843,703	285,608	576,019	0.293	0.060	0.084	0.007	0.014	0.834	0.010	0.010
C-CHIC-03-03	C-CHIC-03	Kane	Illinois	0.1	13,836,360	29,428,586	977,151	2,078,306	1,006	2,030	0.001	0.000	0.000	0.000	0.000	0.003	0.000	0.000
C-CHIC-03-04	C-CHIC-03	Kane	Illinois	13.6	13,836,360	29,428,586	188,187,647	400,256,721	193,808	390,876	0.199	0.041	0.057	0.005	0.010	0.566	0.007	0.007
C-DAVE-01-01	C-DAVE-01	Jackson	Iowa	1.8	32,193,786	55,328,310	58,800,565	101,054,778	60,557	98,686	0.050	0.010	0.014	0.001	0.002	0.143	0.002	0.002
C-DAVE-01-02	C-DAVE-01	Clinton	Iowa	14.8	32,193,786	55,328,310	474,869,737	816,112,151	489,052	796,985	0.405	0.083	0.116	0.010	0.020	1.154	0.014	0.014
C-DAVE-02-01	C-DAVE-02	Clinton	Iowa	10.5	23,995,580	42,470,476	252,136,409	446,263,578	259,667	435,804	0.222	0.045	0.064	0.005	0.011	0.631	0.008	0.008
C-DAVE-02-02	C-DAVE-02	Scott	Iowa	22.4	23,995,580	42,470,476	537,279,579	950,946,782	553,326	928,659	0.472	0.096	0.136	0.011	0.023	1.345	0.016	0.017
C-DAVE-03-01	C-DAVE-03	Scott	Iowa	5.6	24,180,184	42,655,080	136,390,964	240,600,629	140,464	234,962	0.119	0.024	0.034	0.003	0.006	0.340	0.004	0.004
C-ELGI-01-01	C-ELGI-01	Kane	Illinois	5.8	15,100,901	32,537,663	88,307,847	190,275,468	90,945	185,816	0.094	0.019	0.027	0.002	0.005	0.269	0.003	0.003
C-ELGI-01-02	C-ELGI-01	Cook	Illinois	6.5	15,100,901	32,537,663	98,392,077	212,003,793	101,331	207,035	0.105	0.022	0.030	0.003	0.005	0.300	0.004	0.004
C-ELGI-01-03	C-ELGI-01	DuPage	Illinois	11.0	15,100,901	32,537,663	166,297,475	358,318,439	171,264	349,920	0.178	0.036	0.051	0.004	0.009	0.507	0.006	0.006
C-ELGI-02-01	C-ELGI-02	DuPage	Illinois	0.8	66,977,791	87,091,230	52,800,803	68,656,891	54,378	67,048	0.034	0.007	0.010	0.001	0.002	0.097	0.001	0.001
C-ELGI-02-02	C-ELGI-02	Cook	Illinois	3.5	66,977,791	87,091,230	235,407,848	306,100,853	242,439	298,927	0.152	0.031	0.044	0.004	0.007	0.433	0.005	0.005
C-KACI-01-01	C-KACI-01	Grundy	Missouri	4.5	17,654,701	49,073,779	80,201,706	222,932,168	82,597	217,707	0.111	0.023	0.032	0.003	0.005	0.315	0.004	0.004
C-KACI-01-02	C-KACI-01	Livingston	Missouri	30.1	17,654,701	49,073,779	532,158,085	1,479,209,877	548,052	1,444,541	0.735	0.150	0.211	0.017	0.036	2.092	0.026	0.026
C-KACI-01-03	C-KACI-01	Caldwell	Missouri	16.8	17,654,701	49,073,779	296,457,407	824,045,970	305,311	804,732	0.409	0.084	0.118	0.010	0.020	1.165	0.014	0.015
C-KACI-02-01	C-KACI-02	Caldwell	Missouri	5.0	17,132,673	50,963,778	85,506,738	254,352,981	88,060	248,392	0.126	0.026	0.036	0.003	0.006	0.360	0.004	0.005
C-KACI-02-02	C-KACI-02	Ray	Missouri	10.6	17,132,673	50,963,778	182,348,914	542,424,974	187,795	529,712	0.269	0.055	0.077	0.006	0.013	0.767	0.009	0.010
C-KACI-02-03	C-KACI-02	Clay	Missouri	24.7	17,132,673	50,963,778	423,454,142	1,259,629,666	436,101	1,230,107	0.626	0.128	0.180	0.015	0.031	1.782	0.022	0.022
C-KACI-02-04	C-KACI-02	Jackson	Missouri	1.5	17,132,673	50,963,778	26,466,091	78,727,469	27,257	76,882	0.039	0.008	0.011	0.001	0.002	0.111	0.001	0.001
C-KACI-02-05	C-KACI-02	Jackson	Missouri	0.3	17,132,673	50,963,778	4,826,617	14,357,516	4,971	14,021	0.007	0.001	0.002	0.000	0.000	0.020	0.000	0.000
C-LARE-01-01	C-LARE-01	Wapello	Iowa	13.3	16,859,450	42,277,516	224,516,692	563,008,164	231,222	549,813	0.280	0.057	0.080	0.007	0.014	0.796	0.010	0.010
C-LARE-01-02	C-LARE-01	Monroe	Iowa	10.5	16,859,450	42,277,516	176,500,640	442,600,951	181,772	432,227	0.220	0.045	0.063	0.005	0.011	0.626	0.008	0.008
C-LARE-01-03	C-LARE-01	Appanoose	Iowa	23.2	16,859,450	42,277,516	390,603,401	979,494,674	402,269	956,538	0.486	0.099	0.140	0.012	0.024	1.385	0.017	0.017
C-LARE-01-04	C-LARE-01	Wayne	Iowa	16.2	16,859,450	42,277,516	273,093,522	684,821,611	281,250	668,771	0.340	0.069	0.098	0.008	0.017	0.969	0.012	0.012
C-LARE-02-01	C-LARE-02	Putnam	Missouri	17.9	17,202,275	48,866,740	307,149,448	873,091,829	316,529	852,629	0.434	0.089	0.125	0.010	0.021	1.235	0.015	0.015
C-LARE-02-02	C-LARE-02	Sullivan	Missouri	20.3	17,202,275	48,866,740	348,963,489	991,305,409	359,386	968,072	0.492	0.101	0.141	0.012	0.024	1.402	0.017	0.018
C-LARE-02-03	C-LARE-02	Grundy	Missouri	8.1	17,202,275	48,866,740	139,977,662	397,636,482	144,158	388,317	0.197	0.040	0.057	0.005	0.010	0.562	0.007	0.007
C-OTTU-01-01	C-OTTU-01	Scott	Iowa	9.0	19,976,527	38,516,496	180,200,896	347,443,138	185,583	339,300	0.173	0.035	0.050	0.004	0.008	0.491	0.006	0.006
C-OTTU-01-02	C-OTTU-01	Muscatine	Iowa	7.5	19,976,527	38,516,496	149,723,129	288,679,329	154,195	281,913	0.143	0.029	0.041	0.003	0.007	0.408	0.005	0.005
C-OTTU-01-03	C-OTTU-01	Muscatine	Iowa	8.0	19,976,527	38,516,496	159,657,695	307,834,045	164,426	300,619	0.153	0.031	0.044	0.004	0.007	0.435	0.005	0.005
C-OTTU-02-01	C-OTTU-02	Muscatine	Iowa	7.3	22,824,238	44,501,158	165,489,074	322,659,431	170,432	315,097	0.160	0.033	0.046	0.004	0.008	0.456	0.006	0.006
C-OTTU-02-02	C-OTTU-02	Louisa	Iowa	21.6	22,824,238	44,501,158	493,325,397	961,852,576	508,059	939,309	0.478	0.098	0.137	0.011	0.023	1.360	0.017	0.017
C-OTTU-02-03	C-OTTU-02	Washington	Iowa	25.6	22,824,238	44,501,158	585,062,536	1,140,715,459	602,536	1,113,980	0.566	0.116	0.163	0.013	0.028	1.613	0.020	0.020
C-OTTU-02-04	C-OTTU-02	Keokuk	Iowa	9.4	22,824,238	44,501,158	214,825,672	418,852,601	221,242	409,036	0.208	0.043	0.060	0.005	0.010	0.592	0.007	0.007
C-OTTU-02-05	C-OTTU-02	Jefferson	Iowa	5.3	22,824,238	44,501,158	120,324,404	234,600,406	123,918	229,102	0.117	0.024	0.033	0.003	0.006	0.332	0.004	0.004
C-OTTU-02-06	C-OTTU-02	Wapello	Iowa	17.8	22,824,238	44,501,158	406,388,881	792,349,622	418,526	773,779	0.393	0.080	0.113	0.009	0.019	1.121	0.014	0.014
K-ALLI-01-01	K-ALLI-01	Tarrant	Texas	4.8	1,883,878	3,918,441	9,015,767	18,752,681	9,285	18,313	0.009	0.002	0.003	0.000	0.000	0.027	0.000	0.000
K-ALLI-01-02	K-ALLI-01	Denton	Texas	23.3	1,883,878	3,918,441	43,891,768	91,294,315	45,203	89,155	0.045	0.009	0.013	0.001	0.002	0.129	0.002	0.002
K-ALLI-02-01	K-ALLI-02	Denton	Texas	31.8	2,054,407	4,307,918	65,326,571	136,984,339	67,278	133,774	0.068	0.014	0.020	0.002	0.003	0.194	0.002	0.002
K-ALLI-02-02	K-ALLI-02	Collin	Texas	8.9	2,054,407	4,307,918	18,339,417	38,456,219	18,887	37,555	0.019	0.004	0.005	0.000	0.001	0.054	0.001	0.001
K-ALLI-03-01	K-ALLI-03	Collin	Texas	11.5	2,837,445	4,973,240	32,587,433	57,116,566	33,561	55,778	0.028	0.006	0.008	0.001	0.001	0.081	0.001	0.001
K-BEAU-01-01	K-BEAU-01	De Soto	Louisiana	31.1	37,701,111	64,012,328	1,171,555,643	1,989,172,263	1,206,545	1,942,551	0.988	0.202	0.284	0.023	0.048	2.813	0.034	0.035
K-BEAU-01-02	K-BEAU-01	Sabine	Louisiana	48.7	37,701,111	64,012,328	1,836,090,726	3,117,479,540	1,890,928	3,044,414	1.548	0.316	0.445	0.037	0.076	4.409	0.054	0.055
K-BEAU-01-03	K-BEAU-01	Vernon	Louisiana	16.8	37,701,111	64,012,328	632,529,819	1,073,965,867	651,421	1,048,795	0.533	0.109	0.153	0.013	0.026	1.519	0.019	0.019
K-BEAU-02-01	K-BEAU-02	Vernon	Louisiana	21.8	34,212,150	64,819,659	746,449,764	1,414,252,505	768,743	1,381,106	0.702	0.144	0.202	0.017	0.034	2.000	0.024	0.025
K-BEAU-02-02	K-BEAU-02	Beauregard	Louisiana	31.2	34,212,150	64,819,659	1,067,729,227	2,022,960,962	1,099,618	1,975,548	1.005	0.205	0.289	0.024	0.049	2.861	0.035	0.036
K-BEAU-02-03	K-BEAU-02	Calcasieu	Louisiana	2.7	34,212,150	64,819,659	93,565,750	177,273,277	96,360	173,118	0.088	0.018	0.025	0.002	0.004	0.251	0.003	0.003
K-BEAU-03-01	K-BEAU-03	Calcasieu	Louisiana	22.0	36,681,557	62,014,224	806,958,164	1,364,251,910	831,059	1,332,277	0.677	0.138	0.195	0.016	0.033	1.930	0.024	0.024
K-BEAU-03-02	K-BEAU-03	Beauregard	Louisiana	3.4	36,681,557	62,014,224	124,366,949	210,256,064	128,081	205,328	0.104	0.021	0.030	0.002	0.005	0.297	0.004	0.004
K-BEAU-03-03	K-BEAU-03	Newton	Texas	6.0	36,681,557	62,014,224	221,842,428	375,049,129	228,468	366,259	0.186	0.038	0.054	0.004	0.009	0.530	0.006	0.007
K-BEAU-03-04	K-BEAU-03	Orange	Texas	21.2	36,681,557	62,014,224	776,012,355	1,311,934,602	799,189	1,281,186	0.652	0.133	0.187	0.015	0.032	1.856	0.023	0.023
K-BEAU-03-05	K-BEAU-03	Jefferson	Texas	0.8	36,681,557	62,014,224	30,090,908	50,872,005	30,990	49,680	0.025	0.005	0.007	0.001	0.001	0.072	0.001	0.001
K-BEAU-04-01	K-BEAU-04	Jefferson	Texas	17.5	13,958,314	50,312,818	243,995,815	879,484,207	251,283	858,871	0.437	0.089	0.126	0.010	0.021	1.244	0.015	0.016
K-HEAV-01-01	K-HEAV-01	Crawford	Kansas	6.2	48,029,520	78,299,593	298,756,868	487,045,077	307,680	475,630	0.242	0.049	0.070	0.006	0.012	0.689	0.008	0.009
K-HEAV-01-02	K-HEAV-01	Cherokee	Kansas	3.3	48,029,520	78,299,593	159,877,783	260,638,986	164,653	254,530	0.129	0.026	0.037	0.003	0.006	0.369	0.005	0.005
K-HEAV-01-03	K-HEAV-01	Jasper	Missouri	20.9	48,029,520	78,299,593	1,001,941,694	1,633,404,356	1,031,866	1,595,121	0.811	0.166	0.233	0.019	0.040	2.310	0.028	0.029
K-HEAV-01-04	K-HEAV-01	Newton	Missouri	26.2	48,029,520	78,299,593	1,260,432,293	2,054,805,795	1,298,077	2,006,646	1.020	0.209	0.293	0.024	0.050	2.906	0.036	0.036
K-HEAV-01-05	K-HEAV-01	McDonald	Missouri	21.0	48,029,520	78,299,593	1,006,480,771	1,640,804,138	1,036,540	1,602,348	0.815	0.167	0.234	0.019	0.040	2.321	0.028	0.029
K-HEAV-01-06	K-HEAV-01	Benton	Arkansas	29.3	48,029,520	78,299,593	1,405,787,150	2,291,768,942	1,447,773	2,238,056	1.138	0.233	0.327	0.027	0.056	3.241	0.040	0.041
K-HEAV-01-07	K-HEAV-01	Adair	Oklahoma	3.0	48,029,520	78,299,593	145,181,614	236,680,720	149,518	231,134	0.118	0.024	0.034	0.003	0.006	0.335	0.004	0.004
K-HEAV-02-01	K-HEAV-02	Adair	Oklahoma	39.7	44,369,646	72,564,181	1,763,312,467	2,883,803,174	1,815,976	2,816,214	1.432	0.293	0.412	0.034	0.070	4.079	0.050	0.051
K-HEAV-02-02	K-HEAV-02	Sequoyah	Oklahoma	32.9	44,369,646	72,564,181	1,458,349,996	2,385,053,373	1,501,905	2,329,154	1.184	0.242	0.340	0.028	0.058	3.373	0.041	0.042
K-HEAV-02-03	K-HEAV-02	Le Flore	Oklahoma	18.8	44,369,646	72,564,181	834,517,966	1,364,809,473	859,442	1,332,822	0.678	0.138	0.195	0.016	0.033	1.930	0.024	0.024
K-HEAV-03-01	K-HEAV-03	Le Flore	Oklahoma	12.7	45,295,351	75,224,110	573,948,761	953,183,576	591,090	930,843	0.473	0.097	0.136	0.011	0.023	1.348	0.017	0.017
K-LARE-02-01	K-LARE-02	Webb	Texas	52.4	44,507,641	56,171,441	2,330,478,894	2,941,210,839	2,400,081	2,872,276	1.461	0.298	0.420	0.035	0.072	4.160	0.051	0.052
K-LARE-02-02	K-LARE-02	Duval	Texas	45.8	44,507,641	56,171,441	2,037,328,113	2,571,236,128	2,098,175	2,510,973	1.277	0.261	0.367	0.030	0.063	3.637	0.045	0.046
K-LARE-02-03	K-LARE-02	Jim Hogg	Texas	12.2	44,507,641	56,171,441	543,732,051	686,224,023	559,971	670,141	0.341	0.070	0.098	0.008	0.017	0.971	0.012	0.012
K-LARE-02-04	K-LARE-02	Jim Wells	Texas	20.1	44,507,641	56,171,441	893,865,298	1,128,114,187	920,562	1,101,674	0.560	0.114	0.161	0.013	0.027	1.596	0.020	0.020
K-LARE-02-05	K-LARE-02	Nueces	Texas	17.1	44,507,641	56,171,441	762,005,046	961,698,261	784,763	939,158	0.478	0.098	0.137	0.011	0.023	1.360	0.017	0.017
K-PITT-01-01	K-PITT-01	Jackson	Missouri	4.9	57,926,843	87,064,386	285,475,588	429,071,491	294,002	419,015	0.213	0.044	0.061	0.005	0.010	0.607	0.007	0.008
K-PITT-01-02	K-PITT-01	Jackson	Missouri	17.7	57,926,843	87,064,386	1,027,374,785	1,544,150,357	1,058,058	1,507,959	0.767	0.157	0.220	0.018	0.038	2.184	0.027	0.027
K-PITT-01-03	K-PITT-01	Cass	Missouri	30.9	57,926,843	87,064,386	1,791,020,183	2,691,913,889	1,844,511	2,628,822	1.337	0.273	0.384	0.032	0.066	3.807	0.047	0.048
K-PITT-01-04	K-PITT-01	Bates	Missouri	29.5	57,926,843	87,064,386	1,710,398,472	2,570,738,983	1,761,481	2,510,487	1.277	0.261	0.367	0.030	0.063	3.636	0.045	0.046
K-PITT-01-05	K-PITT-01	Vernon	Missouri	28.2	57,926,843	87,064,386	1,635,887,869	2,458,749,108	1,684,745	2,401,122	1.221	0.250	0.351	0.029	0.060	3.478	0.043	0.044
K-PITT-01-06	K-PITT-01	Barton	Missouri	11.2	57,926,843	87,064,386	648,855,480	975,233,611	668,234	952,377	0.484	0.099	0.139	0.012	0.024	1.379	0.017	0.017
K-PITT-01-07	K-PITT-01	Crawford	Kansas	8.8	57,926,843	87,064,386	510,993,823	768,026,728	526,255	750,026	0.381	0.078	0.110	0.009	0.019	1.086	0.013	0.014
K-ROSE-01-01	K-ROSE-01	Fort Bend	Texas	14.8	32,250,691	44,194,323	477,825,687	654,782,341	492,096	639,436	0.325	0.066	0.093	0.008	0.016	0.926	0.011	0.012
K-ROSE-02-01	K-ROSE-02	Fort Bend	Texas	1.3	30,175,789	41,809,854	38,695,953	53,614,907	39,852	52,358	0.027	0.005	0.008	0.001	0.001	0.076	0.001	0.001
K-ROSE-02-02	K-ROSE-02	Wharton	Texas	37.3	30,175,789	41,809,854	1,125,235,483	1,559,062,177	1,158,842	1,522,522	0.774	0.158	0.222	0.018	0.038	2.205	0.027	0.028
K-ROSE-02-03	K-ROSE-02	Jackson	Texas	23.0	30,175,789	41,809,854	692,682,331	959,741,174	713,370	937,247	0.477	0.097	0.137	0.011	0.023	1.357	0.017	0.017
K-ROSE-02-04	K-ROSE-02	Victoria	Texas	15.2	30,175,789	41,809,854	458,167,237	634,810,420	471,851	619,932	0.315	0.064	0.091	0.007	0.015	0.898	0.011	0.011
K-SHRE-01-01	K-SHRE-01	Le Flore	Oklahoma	22.0	48,157,807	76,436,313	1,061,596,150	1,684,970,710	1,093,302	1,645,479	0.837	0.171	0.240	0.020	0.041	2.383	0.029	0.030
K-SHRE-01-02	K-SHRE-01	Polk	Arkansas	59.7	48,157,807	76,436,313	2,873,998,523	4,561,624,809	2,959,834	4,454,712	2.265	0.463	0.651	0.054	0.111	6.452	0.079	0.081
K-SHRE-01-03	K-SHRE-01	Sevier	Arkansas	16.1	48,157,807	76,436,313	776,832,966	1,232,993,164	800,034	1,204,095	0.612	0.125	0.176	0.015	0.030	1.744	0.021	0.022
K-SHRE-02-01	K-SHRE-02	Sevier	Arkansas	12.9	50,385,405	75,293,128	650,341,700	971,834,235	669,765	949,057	0.483	0.099	0.139	0.011	0.024	1.375	0.017	0.017
K-SHRE-02-02	K-SHRE-02	Little River	Arkansas	27.2	50,385,405	75,293,128	1,370,168,703	2,047,503,417	1,411,090	1,999,515	1.017	0.208	0.292	0.024	0.050	2.896	0.035	0.036
K-SHRE-03-01	K-SHRE-03	Little River	Arkansas	10.1	51,700,200	87,700,309	520,225,452	882,471,120	535,763	861,788	0.438	0.090	0.126	0.010	0.021	1.248	0.015	0.016
K-SHRE-03-02	K-SHRE-03	Bowie	Texas	22.1	51,700,200	87,700,309	1,142,355,616	1,937,805,690	1,176,473	1,892,388	0.962	0.197	0.277	0.023	0.047	2.741	0.034	0.034
K-SHRE-03-03	K-SHRE-03	Cass	Texas	11.9	51,700,200	87,700,309	615,045,066	1,043,315,943	633,414	1,018,863	0.518	0.106	0.149	0.012	0.025	1.476	0.018	0.018
K-SHRE-03-04	K-SHRE-03	Miller	Arkansas	6.5	51,700,200	87,700,309	335,537,449	569,180,358	345,559	555,840	0.283	0.058	0.081	0.007	0.014	0.805	0.010	0.010
K-SHRE-03-05	K-SHRE-03	Caddo	Louisiana	41.8	51,700,200	87,700,309	2,159,846,048	3,663,799,522	2,224,352	3,577,929	1.819	0.372	0.523	0.043	0.089	5.182	0.063	0.065
K-SHRE-04-01	K-SHRE-04	Caddo	Louisiana	18.3	56,569,305	94,085,740	1,033,194,634	1,718,403,313	1,064,052	1,678,128	0.853	0.174	0.245	0.020	0.042	2.430	0.030	0.030
K-SHRE-04-02	K-SHRE-04	De Soto	Louisiana	5.2	56,569,305	94,085,740	291,769,882	485,269,973	300,484	473,896	0.241	0.049	0.069	0.006	0.012	0.686	0.008	0.009
U-BEAU-01-01	U-BEAU-01	Jefferson	Texas	20.8	30,684,850	35,411,728	637,149,606	735,299,959	656,179	718,066	0.365	0.075	0.105	0.009	0.018	1.040	0.013	0.013

U-BEAU-01-02	U-BEAU-01	Liberty	Texas	35.1	30,684,850	35,411,728	1,077,753,300	1,243,776,893	1,109,942	1,214,626	0.618	0.126	0.177	0.015	0.030	1.759	0.022	0.022
U-BEAU-01-03	U-BEAU-01	Harris	Texas	45.8	30,684,850	35,411,728	1,405,236,099	1,621,707,110	1,447,205	1,583,698	0.805	0.165	0.231	0.019	0.039	2.294	0.028	0.029
U-BEAU-01-04	U-BEAU-01	Fort Bend	Texas	18.5	30,684,850	35,411,728	566,510,658	653,779,364	583,430	638,456	0.325	0.066	0.093	0.008	0.016	0.925	0.011	0.012
U-VICT-01-01	U-VICT-01	Victoria	Texas	12.3	28,707,698	40,773,489	352,248,961	500,298,537	362,769	488,573	0.248	0.051	0.071	0.006	0.012	0.708	0.009	0.009
U-VICT-02-01	U-VICT-02	Nueces	Texas	8.2	28,711,992	40,777,783	236,155,470	335,396,327	243,209	327,535	0.167	0.034	0.048	0.004	0.008	0.474	0.006	0.006
U-VICT-02-02	U-VICT-02	San Patricio	Texas	20.5	28,711,992	40,777,783	587,821,866	834,845,344	605,378	815,279	0.415	0.085	0.119	0.010	0.020	1.181	0.014	0.015
U-VICT-02-03	U-VICT-02	Refugio	Texas	36.9	28,711,992	40,777,783	1,059,219,794	1,504,341,304	1,090,855	1,469,083	0.747	0.153	0.215	0.018	0.037	2.128	0.026	0.027
U-VICT-02-04	U-VICT-02	Victoria	Texas	18.0	28,711,992	40,777,783	516,460,479	733,495,386	531,885	716,304	0.364	0.074	0.105	0.009	0.018	1.037	0.013	0.013

Notes:
Segment Ton-Mileage provided by Applicant, based on historical basline data; Sub Segment ton-mileage proportioned from whole segment based on the Length Proportion
No Action and With Action Fuel Efficiency estimated based on data provided in the "Verified Statement of Michael R. Baranowski" (No Action- 971 ton-miles/gal; With Action- 1024 ton-miles/gal)

Table K.13-8. Historical Baseline- Rail Segment Analysis- Acquisition-Related HAPs Emissions by Subsegment

					Segment Tons per Mile		Sub-Segment Ton-Miles		Sub-Segment Fuel Use		Acquisition-Related Emissions (tons/year)							
SubCode	Code	County	State	bSeg Leng	NA GT	WA GT	NA GTM	WA GTM	NA Gallons	WA Gallons	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
C-CHIC-01-01	C-CHIC-01	Jackson	Iowa	1.0	16,252,107	30,433,569	16,735,558	31,338,876	17,235	30,604	0.007	0.001	0.002	0.000	0.000	0.019	0.000	0.000
C-CHIC-01-02	C-CHIC-01	Carroll	Illinois	0.2	16,252,107	30,433,569	3,084,325	5,775,683	3,176	5,640	0.001	0.000	0.000	0.000	0.000	0.004	0.000	0.000
C-CHIC-02-01	C-CHIC-02	Carroll	Illinois	28.5	14,931,913	32,029,336	425,854,791	913,469,427	438,573	892,060	0.231	0.047	0.066	0.005	0.011	0.657	0.008	0.008
C-CHIC-02-02	C-CHIC-02	Ogle	Illinois	32.7	14,931,913	32,029,336	488,301,381	1,047,418,961	502,885	1,022,870	0.264	0.054	0.076	0.006	0.013	0.753	0.009	0.009
C-CHIC-03-01	C-CHIC-03	Ogle	Illinois	7.9	13,836,360	29,428,586	109,740,520	233,407,353	113,018	227,937	0.058	0.012	0.017	0.001	0.003	0.166	0.002	0.002
C-CHIC-03-02	C-CHIC-03	DeKalb	Illinois	20.0	13,836,360	29,428,586	277,325,258	589,843,703	285,608	576,019	0.148	0.030	0.042	0.004	0.007	0.421	0.005	0.005
C-CHIC-03-03	C-CHIC-03	Kane	Illinois	0.1	13,836,360	29,428,586	977,151	2,078,306	1,006	2,030	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000
C-CHIC-03-04	C-CHIC-03	Kane	Illinois	13.6	13,836,360	29,428,586	188,187,647	400,256,721	193,808	390,876	0.100	0.020	0.029	0.002	0.005	0.285	0.003	0.004
C-DAVE-01-01	C-DAVE-01	Jackson	Iowa	1.8	32,193,786	55,328,310	58,800,565	101,054,778	60,557	98,686	0.019	0.004	0.006	0.000	0.001	0.055	0.001	0.001
C-DAVE-01-02	C-DAVE-01	Clinton	Iowa	14.8	32,193,786	55,328,310	474,869,737	816,112,151	489,052	796,985	0.157	0.032	0.045	0.004	0.008	0.446	0.005	0.006
C-DAVE-02-01	C-DAVE-02	Clinton	Iowa	10.5	23,995,580	42,470,476	252,136,409	446,263,578	259,667	435,804	0.090	0.018	0.026	0.002	0.004	0.255	0.003	0.003
C-DAVE-02-02	C-DAVE-02	Scott	Iowa	22.4	23,995,580	42,470,476	537,279,579	950,946,782	553,326	928,659	0.191	0.039	0.055	0.005	0.009	0.544	0.007	0.007
C-DAVE-03-01	C-DAVE-03	Scott	Iowa	5.6	24,180,184	42,655,080	136,390,964	240,600,629	140,464	234,962	0.048	0.010	0.014	0.001	0.002	0.137	0.002	0.002
C-ELGI-01-01	C-ELGI-01	Kane	Illinois	5.8	15,100,901	32,537,663	88,307,847	190,275,468	90,945	185,816	0.048	0.010	0.014	0.001	0.002	0.137	0.002	0.002
C-ELGI-01-02	C-ELGI-01	Cook	Illinois	6.5	15,100,901	32,537,663	98,392,077	212,003,793	101,331	207,035	0.054	0.011	0.015	0.001	0.003	0.153	0.002	0.002
C-ELGI-01-03	C-ELGI-01	DuPage	Illinois	11.0	15,100,901	32,537,663	166,297,475	358,318,439	171,264	349,920	0.091	0.019	0.026	0.002	0.004	0.259	0.003	0.003
C-ELGI-02-01	C-ELGI-02	DuPage	Illinois	0.8	66,977,791	87,091,230	52,800,803	68,656,891	54,378	67,048	0.006	0.001	0.002	0.000	0.000	0.018	0.000	0.000
C-ELGI-02-02	C-ELGI-02	Cook	Illinois	3.5	66,977,791	87,091,230	235,407,848	306,100,853	242,439	298,927	0.029	0.006	0.008	0.001	0.001	0.082	0.001	0.001
C-KACI-01-01	C-KACI-01	Grundy	Missouri	4.5	17,654,701	49,073,779	80,201,706	222,932,168	82,597	217,707	0.069	0.014	0.020	0.002	0.003	0.196	0.002	0.002
C-KACI-01-02	C-KACI-01	Livingston	Missouri	30.1	17,654,701	49,073,779	532,158,085	1,479,209,877	548,052	1,444,541	0.456	0.093	0.131	0.011	0.022	1.298	0.016	0.016
C-KACI-01-03	C-KACI-01	Caldwell	Missouri	16.8	17,654,701	49,073,779	296,457,407	824,045,970	305,311	804,732	0.254	0.052	0.073	0.006	0.012	0.723	0.009	0.009
C-KACI-02-01	C-KACI-02	Caldwell	Missouri	5.0	17,132,673	50,963,778	85,506,738	254,352,981	88,060	248,392	0.082	0.017	0.023	0.002	0.004	0.232	0.003	0.003
C-KACI-02-02	C-KACI-02	Ray	Missouri	10.6	17,132,673	50,963,778	182,348,914	542,424,974	187,795	529,712	0.174	0.036	0.050	0.004	0.009	0.495	0.006	0.006
C-KACI-02-03	C-KACI-02	Clay	Missouri	24.7	17,132,673	50,963,778	423,454,142	1,259,629,666	436,101	1,230,107	0.404	0.083	0.116	0.010	0.020	1.150	0.014	0.014
C-KACI-02-04	C-KACI-02	Jackson	Missouri	1.5	17,132,673	50,963,778	26,466,091	78,727,469	27,257	76,882	0.025	0.005	0.007	0.001	0.001	0.072	0.001	0.001
C-KACI-02-05	C-KACI-02	Jackson	Missouri	0.3	17,132,673	50,963,778	4,826,617	14,357,516	4,971	14,021	0.005	0.001	0.001	0.000	0.000	0.013	0.000	0.000
C-LARE-01-01	C-LARE-01	Wapello	Iowa	13.3	16,859,450	42,277,516	224,516,692	563,008,164	231,222	549,813	0.162	0.033	0.047	0.004	0.008	0.461	0.006	0.006
C-LARE-01-02	C-LARE-01	Monroe	Iowa	10.5	16,859,450	42,277,516	176,500,640	442,600,951	181,772	432,227	0.127	0.026	0.037	0.003	0.006	0.363	0.004	0.005
C-LARE-01-03	C-LARE-01	Appanoose	Iowa	23.2	16,859,450	42,277,516	390,603,401	979,494,674	402,269	956,538	0.282	0.058	0.081	0.007	0.014	0.803	0.010	0.010
C-LARE-01-04	C-LARE-01	Wayne	Iowa	16.2	16,859,450	42,277,516	273,093,522	684,821,611	281,250	668,771	0.197	0.040	0.057	0.005	0.010	0.561	0.007	0.007
C-LARE-02-01	C-LARE-02	Putnam	Missouri	17.9	17,202,275	48,866,740	307,349,448	873,091,829	316,529	852,629	0.273	0.056	0.078	0.006	0.013	0.776	0.010	0.010
C-LARE-02-02	C-LARE-02	Sullivan	Missouri	20.3	17,202,275	48,866,740	348,963,489	991,305,409	359,386	968,072	0.310	0.063	0.089	0.007	0.015	0.882	0.011	0.011
C-LARE-02-03	C-LARE-02	Grundy	Missouri	8.1	17,202,275	48,866,740	139,977,662	397,636,482	144,158	388,317	0.124	0.025	0.036	0.003	0.006	0.354	0.004	0.004
C-OTTU-01-01	C-OTTU-01	Scott	Iowa	9.0	19,976,527	38,516,496	180,200,896	347,443,138	185,583	339,300	0.078	0.016	0.022	0.002	0.004	0.223	0.003	0.003
C-OTTU-01-02	C-OTTU-01	Muscatine	Iowa	7.5	19,976,527	38,516,496	149,723,129	288,679,329	154,195	281,913	0.065	0.013	0.019	0.002	0.003	0.185	0.002	0.002
C-OTTU-01-03	C-OTTU-01	Muscatine	Iowa	8.0	19,976,527	38,516,496	159,657,695	307,834,045	164,426	300,619	0.069	0.014	0.020	0.002	0.003	0.197	0.002	0.002
C-OTTU-02-01	C-OTTU-02	Muscatine	Iowa	7.3	22,824,238	44,501,158	165,489,074	322,659,431	170,432	315,097	0.074	0.015	0.021	0.002	0.004	0.210	0.003	0.003
C-OTTU-02-02	C-OTTU-02	Louisa	Iowa	21.6	22,824,238	44,501,158	493,325,397	961,852,576	508,059	939,309	0.219	0.045	0.063	0.005	0.011	0.625	0.008	0.008
C-OTTU-02-03	C-OTTU-02	Washington	Iowa	25.6	22,824,238	44,501,158	585,062,536	1,140,715,459	602,536	1,113,980	0.260	0.053	0.075	0.006	0.013	0.741	0.009	0.009
C-OTTU-02-04	C-OTTU-02	Keokuk	Iowa	9.4	22,824,238	44,501,158	214,825,672	418,852,601	221,242	409,036	0.095	0.020	0.027	0.002	0.005	0.272	0.003	0.003
C-OTTU-02-05	C-OTTU-02	Jefferson	Iowa	5.3	22,824,238	44,501,158	120,324,404	234,600,406	123,918	229,102	0.053	0.011	0.015	0.001	0.003	0.152	0.002	0.002
C-OTTU-02-06	C-OTTU-02	Wapello	Iowa	17.8	22,824,238	44,501,158	406,388,881	792,349,622	418,526	773,779	0.181	0.037	0.052	0.004	0.009	0.515	0.006	0.006
K-ALLI-01-01	K-ALLI-01	Tarrant	Texas	4.1	1,883,878	3,918,441	9,015,767	18,752,681	9,285	18,313	0.005	0.001	0.001	0.000	0.000	0.013	0.000	0.000
K-ALLI-01-02	K-ALLI-01	Denton	Texas	23.3	1,883,878	3,918,441	43,891,768	91,294,315	45,203	89,155	0.022	0.005	0.006	0.001	0.001	0.064	0.001	0.001
K-ALLI-02-01	K-ALLI-02	Denton	Texas	31.8	2,054,407	4,307,918	65,326,571	136,984,339	67,278	133,774	0.034	0.007	0.010	0.001	0.002	0.096	0.001	0.001
K-ALLI-02-02	K-ALLI-02	Collin	Texas	8.9	2,054,407	4,307,918	18,339,417	38,456,219	18,887	37,555	0.009	0.002	0.003	0.000	0.000	0.027	0.000	0.000
K-ALLI-03-01	K-ALLI-03	Collin	Texas	11.5	2,837,445	4,973,240	32,587,433	57,116,566	33,561	55,778	0.011	0.002	0.003	0.000	0.001	0.032	0.000	0.000
K-BEAU-01-01	K-BEAU-01	De Soto	Louisiana	31.1	37,701,111	64,012,328	1,171,555,643	1,989,172,263	1,206,545	1,942,551	0.374	0.076	0.108	0.009	0.018	1.066	0.013	0.013
K-BEAU-01-02	K-BEAU-01	Sabine	Louisiana	48.7	37,701,111	64,012,328	1,836,090,726	3,117,479,540	1,890,928	3,044,414	0.587	0.120	0.169	0.014	0.029	1.671	0.020	0.021
K-BEAU-01-03	K-BEAU-01	Vernon	Louisiana	16.8	37,701,111	64,012,328	632,529,819	1,073,965,867	651,421	1,048,795	0.202	0.041	0.058	0.005	0.010	0.576	0.007	0.007
K-BEAU-02-01	K-BEAU-02	Vernon	Louisiana	21.8	34,212,150	64,819,659	746,449,764	1,414,252,505	768,743	1,381,106	0.311	0.064	0.089	0.007	0.015	0.887	0.011	0.011
K-BEAU-02-02	K-BEAU-02	Beauregard	Louisiana	31.2	34,212,150	64,819,659	1,067,729,227	2,022,960,962	1,099,618	1,975,548	0.445	0.091	0.128	0.011	0.022	1.269	0.016	0.016
K-BEAU-02-03	K-BEAU-02	Calcasieu	Louisiana	2.7	34,212,150	64,819,659	93,565,750	177,273,277	96,360	173,118	0.039	0.008	0.011	0.001	0.002	0.111	0.001	0.001
K-BEAU-03-01	K-BEAU-03	Calcasieu	Louisiana	22.0	36,681,557	62,014,224	806,958,164	1,364,251,910	831,059	1,332,277	0.255	0.052	0.073	0.006	0.012	0.726	0.009	0.009
K-BEAU-03-02	K-BEAU-03	Beauregard	Louisiana	3.4	36,681,557	62,014,224	124,366,949	210,256,064	128,081	205,328	0.039	0.008	0.011	0.001	0.002	0.112	0.001	0.001
K-BEAU-03-03	K-BEAU-03	Newton	Texas	6.0	36,681,557	62,014,224	221,842,428	375,049,129	228,468	366,259	0.070	0.014	0.020	0.002	0.003	0.200	0.002	0.003
K-BEAU-03-04	K-BEAU-03	Orange	Texas	21.2	36,681,557	62,014,224	776,012,355	1,311,934,602	799,189	1,281,186	0.245	0.050	0.070	0.006	0.012	0.698	0.009	0.009
K-BEAU-03-05	K-BEAU-03	Jefferson	Texas	0.8	36,681,557	62,014,224	30,090,908	50,872,005	30,990	49,680	0.010	0.002	0.003	0.000	0.000	0.027	0.000	0.000
K-BEAU-04-01	K-BEAU-04	Jefferson	Texas	17.5	13,958,314	50,312,818	243,995,815	879,484,207	251,283	858,871	0.309	0.063	0.089	0.007	0.015	0.880	0.011	0.011
K-HEAV-01-01	K-HEAV-01	Crawford	Kansas	6.2	48,029,520	78,299,593	298,756,868	487,045,077	307,680	475,630	0.085	0.017	0.025	0.002	0.004	0.243	0.003	0.003
K-HEAV-01-02	K-HEAV-01	Cherokee	Kansas	3.3	48,029,520	78,299,593	159,877,783	260,638,986	164,653	254,530	0.046	0.009	0.013	0.001	0.002	0.130	0.002	0.002
K-HEAV-01-03	K-HEAV-01	Jasper	Missouri	20.9	48,029,520	78,299,593	1,001,941,694	1,633,404,356	1,031,866	1,595,121	0.286	0.059	0.082	0.007	0.014	0.816	0.010	0.010
K-HEAV-01-04	K-HEAV-01	Newton	Missouri	26.2	48,029,520	78,299,593	1,260,432,293	2,054,805,795	1,298,077	2,006,646	0.360	0.074	0.104	0.009	0.018	1.026	0.013	0.013
K-HEAV-01-05	K-HEAV-01	McDonald	Missouri	21.0	48,029,520	78,299,593	1,006,480,771	1,640,804,138	1,036,540	1,602,348	0.288	0.059	0.083	0.007	0.014	0.819	0.010	0.010
K-HEAV-01-06	K-HEAV-01	Benton	Arkansas	29.3	48,029,520	78,299,593	1,405,787,150	2,291,768,942	1,447,773	2,238,056	0.402	0.082	0.115	0.010	0.020	1.145	0.014	0.014
K-HEAV-01-07	K-HEAV-01	Adair	Oklahoma	3.0	48,029,520	78,299,593	145,181,614	236,680,720	149,518	231,134	0.042	0.008	0.012	0.001	0.002	0.118	0.001	0.001
K-HEAV-02-01	K-HEAV-02	Adair	Oklahoma	39.7	44,369,646	72,564,181	1,763,312,467	2,883,803,174	1,815,976	2,816,214	0.509	0.104	0.146	0.012	0.025	1.449	0.018	0.018
K-HEAV-02-02	K-HEAV-02	Sequoyah	Oklahoma	32.9	44,369,646	72,564,181	1,458,349,996	2,385,053,373	1,501,905	2,329,154	0.421	0.086	0.121	0.010	0.021	1.198	0.015	0.015
K-HEAV-02-03	K-HEAV-02	Le Flore	Oklahoma	18.8	44,369,646	72,564,181	834,517,966	1,364,809,473	859,442	1,332,822	0.241	0.049	0.069	0.006	0.012	0.686	0.008	0.009
K-HEAV-03-01	K-HEAV-03	Le Flore	Oklahoma	12.7	45,295,351	75,224,110	573,948,761	953,183,576	591,090	930,843	0.173	0.035	0.050	0.004	0.008	0.492	0.006	0.006
K-LARE-02-01	K-LARE-02	Webb	Texas	52.4	44,507,641	56,171,441	2,330,478,894	2,941,210,839	2,400,081	2,872,276	0.240	0.049	0.069	0.006	0.012	0.684	0.008	0.009
K-LARE-02-02	K-LARE-02	Duval	Texas	45.8	44,507,641	56,171,441	2,037,328,113	2,571,236,128	2,098,175	2,510,973	0.210	0.043	0.060	0.005	0.010	0.598	0.007	0.007
K-LARE-02-03	K-LARE-02	Jim Hogg	Texas	12.2	44,507,641	56,171,441	543,732,051	686,224,023	559,971	670,141	0.056	0.011	0.016	0.001	0.003	0.160	0.002	0.002
K-LARE-02-04	K-LARE-02	Jim Wells	Texas	20.1	44,507,641	56,171,441	893,865,298	1,128,114,187	920,562	1,101,674	0.092	0.019	0.026	0.002	0.005	0.262	0.003	0.003
K-LARE-02-05	K-LARE-02	Nueces	Texas	17.1	44,507,641	56,171,441	762,005,046	961,698,261	784,763	939,158	0.079	0.016	0.023	0.002	0.004	0.224	0.003	0.003
K-PITT-01-01	K-PITT-01	Jackson	Missouri	4.9	57,926,843	87,064,386	285,475,588	429,071,491	294,002	419,015	0.064	0.013	0.018	0.002	0.003	0.181	0.002	0.002
K-PITT-01-02	K-PITT-01	Jackson	Missouri	17.7	57,926,843	87,064,386	1,027,374,785	1,544,150,357	1,058,058	1,507,959	0.229	0.047	0.066	0.005	0.011	0.652	0.008	0.008
K-PITT-01-03	K-PITT-01	Cass	Missouri	30.9	57,926,843	87,064,386	1,791,020,183	2,691,913,889	1,844,511	2,628,822	0.399	0.081	0.115	0.009	0.020	1.136	0.014	0.014
K-PITT-01-04	K-PITT-01	Bates	Missouri	29.5	57,926,843	87,064,386	1,710,398,472	2,570,738,983	1,761,481	2,510,487	0.381	0.078	0.109	0.009	0.019	1.085	0.013	0.014
K-PITT-01-05	K-PITT-01	Vernon	Missouri	28.2	57,926,843	87,064,386	1,635,887,869	2,458,749,108	1,684,745	2,401,122	0.364	0.074	0.105	0.009	0.018	1.038	0.013	0.013
K-PITT-01-06	K-PITT-01	Barton	Missouri	11.2	57,926,843	87,064,386	648,855,480	975,233,611	668,234	952,377	0.144	0.030	0.042	0.003	0.007	0.412	0.005	0.005
K-PITT-01-07	K-PITT-01	Crawford	Kansas	8.8	57,926,843	87,064,386	510,993,823	768,026,728	526,255	750,026	0.114	0.023	0.033	0.003	0.006	0.324	0.004	0.004
K-ROSE-01-01	K-ROSE-01	Fort Bend	Texas	14.8	32,250,691	44,194,323	477,825,687	654,782,341	492,096	639,436	0.075	0.015	0.022	0.002	0.004	0.213	0.003	0.003
K-ROSE-02-01	K-ROSE-02	Fort Bend	Texas	3.3	30,175,789	41,809,854	38,695,953	53,614,907	39,852	52,358	0.006	0.001	0.002	0.000	0.000	0.018	0.000	0.000
K-ROSE-02-02	K-ROSE-02	Wharton	Texas	37.3	30,175,789	41,809,854	1,125,235,483	1,559,062,177	1,158,842	1,522,522	0.185	0.038	0.053	0.004	0.009	0.527	0.006	0.007
K-ROSE-02-03	K-ROSE-02	Jackson	Texas	23.0	30,175,789	41,809,854	692,682,331	959,741,174	713,370	937,247	0.114	0.023	0.033	0.003	0.006	0.324	0.004	0.004
K-ROSE-02-04	K-ROSE-02	Victoria	Texas	15.2	30,175,789	41,809,854	458,167,237	634,810,420	471,851	619,932	0.075	0.015	0.022	0.002	0.004	0.214	0.003	0.003
K-SHRE-01-01	K-SHRE-01	Le Flore	Oklahoma	22.0	48,157,807	76,436,313	1,061,596,150	1,684,970,710	1,093,302	1,645,479	0.281	0.057	0.081	0.007	0.014	0.800	0.010	0.010
K-SHRE-01-02	K-SHRE-01	Polk	Arkansas	59.7	48,157,807	76,436,313	2,873,998,523	4,561,624,809	2,959,834	4,454,712	0.760	0.155	0.218	0.018	0.037	2.165	0.027	0.027
K-SHRE-01-03	K-SHRE-01	Sevier	Arkansas	16.1	48,157,807	76,436,313	776,832,966	1,232,993,164	800,034	1,204,095	0.205	0.042	0.059	0.005	0.010	0.585	0.007	0.007
K-SHRE-02-01	K-SHRE-02	Sevier	Arkansas	12.9	50,385,405	75,293,128	650,341,700	971,834,235	669,765	949,057	0.142	0.029	0.041	0.003	0.007	0.404	0.005	0.005
K-SHRE-02-02	K-SHRE-02	Little River	Arkansas	27.2	50,385,405	75,293,128	1,370,168,703	2,047,503,417	1,411,090	1,999,515	0.299	0.061	0.086	0.007	0.015	0.852	0.010	0.011
K-SHRE-03-01	K-SHRE-03	Little River	Arkansas	10.1	51,700,200	87,700,309	520,225,452	882,471,120	535,763	861,788	0.166	0.034	0.048	0.004	0.008	0.472	0.006	0.006
K-SHRE-03-02	K-SHRE-03	Bowie	Texas	22.1	51,700,200	87,700,309	1,142,355,616	1,937,805,690	1,176,473	1,892,388	0.364	0.074	0.105	0.009	0.018	1.037	0.013	0.013
K-SHRE-03-03	K-SHRE-03	Cass	Texas	11.9	51,700,200	87,700,309	615,045,066	1,043,315,943	633,414	1,018,863	0.196	0.040	0.056	0.005	0.010	0.558	0.007	0.007
K-SHRE-03-04	K-SHRE-03	Miller	Arkansas	6.5	51,700,200	87,700,309	335,537,449	569,180,358	345,559	555,840	0.107	0.022	0.031	0.003	0.005	0.305	0.004	0.004
K-SHRE-03-05	K-SHRE-03	Caddo	Louisiana	41.8	51,700,200	87,700,309	2,159,846,048	3,663,799,522	2,224,352	3,577,929	0.688	0.141	0.198	0.016	0.034	1.960	0.024	0.025
K-SHRE-04-01	K-SHRE-04	Caddo	Louisiana	18.3	56,569,305	94,085,740	1,033,194,634	1,718,403,313	1,064,052	1,678,128	0.312	0.064	0.090	0.007	0.015	0.889	0.011	0.011
K-SHRE-04-02	K-SHRE-04	De Soto	Louisiana	5.2	56,569,305	94,085,740	291,769,882	485,269,973	300,484	473,896	0.088	0.018	0.025	0.002	0.004	0.251	0.003	0.003
U-BEAU-01-01	U-BEAU-01	Jefferson	Texas	20.8	30,684,850	35,411,728	637,149,606	735,299,959	656,179	718,066	0.031	0.006	0.009	0.001	0.002	0.090	0.001	0.001

U-BEAU-01-02	U-BEAU-01	Liberty	Texas	35.1	30,684,850	35,411,728	1,077,753,300	1,243,776,893	1,109,942	1,214,626	0.053	0.011	0.015	0.001	0.003	0.152	0.002	0.002
U-BEAU-01-03	U-BEAU-01	Harris	Texas	45.8	30,684,850	35,411,728	1,405,236,099	1,621,707,110	1,447,205	1,583,698	0.069	0.014	0.020	0.002	0.003	0.198	0.002	0.002
U-BEAU-01-04	U-BEAU-01	Fort Bend	Texas	18.5	30,684,850	35,411,728	566,510,658	653,779,364	583,430	638,456	0.028	0.006	0.008	0.001	0.001	0.080	0.001	0.001
U-VICT-01-01	U-VICT-01	Victoria	Texas	12.3	28,707,698	40,773,489	352,248,961	500,298,537	362,769	488,573	0.064	0.013	0.018	0.002	0.003	0.182	0.002	0.002
U-VICT-02-01	U-VICT-02	Nueces	Texas	8.2	28,711,992	40,777,783	236,155,470	335,396,327	243,209	327,535	0.043	0.009	0.012	0.001	0.002	0.122	0.001	0.002
U-VICT-02-02	U-VICT-02	San Patricio	Texas	20.5	28,711,992	40,777,783	587,821,866	834,845,344	605,378	815,279	0.107	0.022	0.031	0.003	0.005	0.304	0.004	0.004
U-VICT-02-03	U-VICT-02	Refugio	Texas	36.9	28,711,992	40,777,783	1,059,219,794	1,504,341,304	1,090,855	1,469,083	0.192	0.039	0.055	0.005	0.009	0.548	0.007	0.007
U-VICT-02-04	U-VICT-02	Victoria	Texas	18.0	28,711,992	40,777,783	516,460,479	733,495,386	531,885	716,304	0.094	0.019	0.027	0.002	0.005	0.267	0.003	0.003

Notes:
Segment Ton-Mileage provided by Applicant, based on historical basline data; Sub Segment ton-mileage proportioned from whole segment based on the Length Proportion
No Action and With Action Fuel Efficiency estimated based on data provided in the "Verified Statement of Michael R. Baranowski" (No Action- 971 ton-miles/gal; With Action- 1024 ton-miles/gal)

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Appendix L

Hazardous Material Release Sites

This appendix provides technical information on the approach used in the analysis of hazardous material release sites (*Chapter 3, Section 3.10*).

L.1 Approach to Analyzing Hazardous Material Release Sites

OEA used the following methods to identify hazardous materials release sites and evaluate each site's potential to affect or be affected by the planned capital improvements related to the Proposed Acquisition of KCS by CP. The study area for hazardous material release sites includes the estimated footprint of each planned capital improvement, plus a 500-foot buffer. OEA identified hazardous material release sites within the study area and within the footprint. OEA also determined if contamination from surrounding properties could migrate (for example, via groundwater) into a planned capital improvement footprint.

In order to search for documented spills and releases of hazardous materials, OEA obtained environmental database reports from Environmental Data Resources, Inc. (EDR) to identify environmental database listings (including hazardous materials release sites) within the study area. The database reports included database listings from federal and state environmental databases, such as reports of spills/releases and hazardous waste generators, similar to those listed in *ASTM Standard 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. The databases that OEA searched as part of this analysis are described below.

L.1.1 Federal Environmental Databases:

- **Federal National Priorities List (NPL, Superfund) Sites:** Operated by the U.S. Environmental Protection Agency (EPA) as an inventory of hazardous materials sites that have been reported to the federal government and determined to be a priority for a federal cleanup.
- **Superfund Enterprise Management System (SEMS) Sites:** Operated by the EPA as an inventory of potential hazardous materials sites that have been reported to the federal government by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act.
- **Resource Conservation and Recovery Act (RCRA) (40 C.F.R. § 30.16) Corrective Action (CORRACTS):** Operated by the EPA as an inventory of hazardous waste

treatment, storage, and disposal facilities requiring federal oversight and which have corrective action activity.

- **RCRA Generator Sites:** Operated by the EPA as an inventory of hazardous waste generators that store hazardous waste. This includes RCRA Large Quantity Generators (RCRA-LQG), RCRA Small Quantity Generators (RCRA-SQG), RCRA Treatment, Storage, and Disposal, and RCRA Very Small Quantity Generators (RCRA-VSQG).
- **Engineering/Institutional Control Sites:** Operated by EPA to provide information on sites with Activity and Use Limitations (AULs), which establish limits and conditions of the future use of a contaminated property.
- **Emergency Release Notification System (ERNS):** Operated by the EPA as an inventory of hazardous materials or petroleum spills.

L.1.2 State and Tribal Environmental Databases:

- **State and Tribal Equivalent SEMS Sites:** Provides information on releases of hazardous materials that have been reported to a state agency.
- **IA ALLSITES:** Provides a list of all the properties listed in the Contaminated Sites Tracking Database specific to Iowa.
- **Landfill or Solid Waste Disposal Sites:** Provides information of active and closed solid waste landfills.
- **Leaking Storage Tank Sites:** Provides information of leaking aboveground storage tanks or leaking underground storage tanks.
- **Registered Storage Tank Sites:** Aboveground storage tank (AST) and underground storage tank (UST) database. Provides a list of all properties with a registered AST or UST.
- **Engineering/Institutional Control Sites:** Provides information of sites with AULs and Environmental Covenants, which establish limits and conditions of the future use of a contaminated property.
- **Voluntary Cleanup Program (VCP) Sites:** Provides information on properties that are listed in a state-level VCP, which allows interested parties to expedite the assessment and remediation of hazardous materials.
- **Brownfield Sites:** Provides information on properties that have been registered for state-level funding to assist in the cleanup of the property.

L.2 Refining Environmental Listings

OEA used the environmental databases to identify environmental listings within the study areas. OEA further assessed these listings to refine the locations of the hazardous material release sites within the study area for each respective planned capital improvement. OEA used the following process for refining the listings:

- The location of environmental listings obtained from EDR are subject to inaccuracies. Therefore, OEA verified environmental database listings provided by EDR using aerial

imagery and available state documentation. In the event that minimal documentation was available, locations were approximated based on available information.

- If OEA determined that an environmental listing was located within the study area, OEA researched the listing further by identifying online files (if available) pertaining to that listing. For example, for state-listed documented releases/spills, the spill reports were located on the respective state's environmental program website and downloaded for review.

After locating hazardous material release sites and rail incidents within the study areas, OEA considered the impacts of potential construction activities related to each planned capital improvement. OEA assessed each hazardous material release site or rail incident for its potential to impact soil or groundwater near the planned capital improvement based on the proximity, regulatory status, and presence of land use restrictions, such as Environmental Covenants or Activity and Use Limitations. OEA identified hazardous material release sites that required further evaluation based on the following criteria:

- Spills or releases of hazardous materials were not evaluated further and were considered unlikely to impact environmental conditions (such as, soil or groundwater) at the planned capital improvement location if the spills or releases were located within the study area but outside the estimated construction footprint; received a "No Further Action" determination by the applicable state agency; and the affected property was not subjected to environmental land use restrictions.
- Environmental listings in the state Registered Storage Tank sites databases (such as AST or UST databases) or federal RCRA Generator Sites databases (such as RCRA-SQG, RCRA-VSQG, RCRA-LQG) were determined unlikely to impact environmental conditions at a planned capital improvement if no known releases or violations were documented. Therefore, these listings were not further evaluated.

L.3 Identifying Hazardous Materials Incidents

In addition to the process noted above, OEA conducted a review of the Federal Railroad Administration's (FRA) database of train collision reports and incidents for the Pipeline and Hazardous Materials Safety Administration (PHMSA) to identify incidents within the planned capital improvement involving hazardous materials and waste. Incidents were identified and evaluated only if environmental media (such as soil, groundwater, sediment) were affected by a spill or release of hazardous materials. OEA used mile marker information of the planned capital improvement projects to determine the locations of rail incidents relative to the planned capital improvement projects.

L.3.1 Hazardous Materials Release Sites: Potential Environmental Consequences of the Proposed Acquisition

If the Board authorizes the Proposed Acquisition, the Applicants intend to make certain planned capital improvements within the existing railroad right-of-way (ROW). Because the Applicants would make the planned capital improvements as needed to support future

rail traffic, the Applicants have not yet completed engineering and design for the planned capital improvements and would not complete engineering and design until after the environmental review process for the Proposed Acquisition is complete. Therefore, the details and timing of construction activities are not known. However, OEA assumes that construction of the planned capital improvements would involve ground-disturbing activities that could encounter hazardous materials if such materials are present.

Based on the criteria described above, OEA concluded that four planned capital improvements have the potential to impact or be impacted by environmental listings located within the study area. The evaluation for these environmental listings, organized by each respective planned capital improvement, is provided below.

L.3.1.1 Camanche Siding Extension – Clinton, Iowa

According to the database report, one property with environmental listings was identified immediately adjacent to and partially within the planned siding extension near Camanche, Iowa. A detailed map of this area can be found in **Figure L.3-1**. An evaluation of the property is below:

- Archer Daniels Midland (ADM) Corn Processing Facility Industrial Waste Landfill, 1251 Beaver Channel Parkway: The property is a permitted industrial landfill that receives waste generated from the ADM Corn Processing Facility located at 1251 Beaver Channel Parkway. The property has accepted various wastes including metals, solvents, and ignitable and corrosive wastes since at least 1995.
- The solid residues disposed of at the landfill include bottom ash, fly ash, river mud, and rubble. Although the landfill has been closed since at least 2000, groundwater, gas, and leachate monitoring at the landfill are ongoing. According to documentation from the Iowa Department of Natural Resources, the existing waste boundary of the landfill is located beneath a portion of the railroad tracks within the proposed Camanche siding location. Although it is unlikely that landfill waste was deposited beneath the railroad tracks, the Iowa Department of Natural Resources indicated that fill material used in the vicinity and beneath the tracks may be indistinguishable from landfill waste.

The planned siding extension would be located within the documented limits of the ADM Corn Processing Facility Industrial Waste Landfill; however, landfill debris is unlikely located beneath the proposed siding location. Subsurface construction activities, if any, could potentially encounter solid waste, debris, and contaminated soils.

OEA identified four additional environmental listings associated with a different property located within the study area for the Camanche siding extension. The evaluation of the environmental listings is provided below.

- Alliant Energy Generating Station, 2001 Beaver Channel Parkway, abutting the planned siding location to the north: The property was the location of the Interstate Power and Light Company power plant, which generated various wastes including metals, ignitable wastes, and spent halogenated and nonhalogenated solvents associated with degreasing agents. The property managed coal combustion residuals generated at the Interstate Power and Light Company plant. Coal combustion residue consisting primarily of fly

ash could not be sent to a dry ash silo; and therefore, were sluiced to an ash pond at the property. The power plant switched to natural gas in mid-2015 and was retired in 2018 (EIA 2022). In November 2016, a Closure Permit Application was submitted for the landfill proposing to leave coal ash residuals in place. No additional documentation regarding the closure of the landfill was obtained; however, the closure was reportedly scheduled to be conducted in 2017.

- Four listings in the ERNS database are associated with the Alliant Energy Generating Station. In August 1990, an overfilling incident caused the release of 700 gallons of sulfuric acid. In January 1999, a continuous release was discovered; the leak caused a release of approximately 29.2 tons of hydrofluoric acid over the course of one year. In March 1995, tank corrosion caused the release of 100 gallons of sulfuric acid. In June 2010, the potential release of approximately 15 gallons of lubricating oil to the Mississippi River was reported.

Based on the proximity of the Alliant Energy Generating Station to the estimated construction footprint of the Camanche planned capital improvement, there is potential for contamination associated with coal sluicing to migrate into the construction footprint. Additionally, the releases associated with the four ERNS listings have the potential to impact soil conditions within the construction footprint.

L.3.1.2 Ottumwa Siding Extension – Wapello, Iowa

According to the available FRA and PHMSA data, at least one incident was documented that impacted environmental media within the Ottumwa planned capital improvement location. A detailed map of this area can be found in **Figure L.3-2**. A summary of this incident, Incident ID I-1985060133, is provided below:

- I-1985060133: Spillage reportedly occurred from a tank car containing acetic acid solution from a defective auxiliary valve. No additional information was obtained regarding the volume of the release or any response actions performed.

Based on the limited documentation associated with I-1985060133, residual concentrations of acetic acid may be present within the construction footprint of the Ottumwa planned capital improvement project.

L.3.1.3 Blue Valley Double-Track – Kansas City, Missouri

Ten properties with environmental listings were identified within the Blue Valley planned capital improvement study area. OEA determined that the environmental listings at three of these properties required evaluation due to their proximity to the estimated construction footprint of the planned double track. A detailed map of this area can be found in **Figure L.3-3** and **Figure L.3-4**. A summary of the evaluations is provided below.

- Kerr-McGee Chemical Corp, 2300 Oakland Avenue, abutting the planned double-track location to the west: The property formerly operated as a wood treatment facility with two impoundments containing "bottom sediment sludge from the treatment of waste-water" (Missouri Department of Natural Resources n.d.). Three Solid Waste Units associated with the impoundments and groundwater contamination are being addressed

at the property under the Missouri Hazardous Waste Program. A Deed Notice has been placed on the Solid Waste Units to prohibit future use. Assessment activities are ongoing to confirm the extent of contamination in groundwater. Based on the ongoing assessment activities at the Kerr-McGee Chemical Corp, there is potential for contaminated groundwater to migrate into the estimated construction footprint of the Blue Valley planned capital improvement project.

- Union Wire Rope, 2100 Manchester Trafficway, abutting the planned double-track location to the east: The property housed a large-scale wire and cable manufacturing company that contaminated soil and groundwater with lead and volatile organic compounds. The responsible party entered into an Administrative Order on Consent with the EPA in June 1990 and EPA oversaw the removal of the landfill at the property, which was completed by December 1992. In December 1992, the requirements of the Consent agreement were met and the property was withdrawn from the Registry of Confirmed Abandoned or Uncontrolled Hazardous Waste Disposal Sites in Missouri. Based on the presence of contaminated soil and groundwater at the property, there is potential for contaminated groundwater to migrate into the estimated construction footprint of the Blue Valley planned capital improvement project.
- Former General Motors Leeds Plant, 6817 Stadium Drive, abutting the planned double-track location to the west: The property historically operated as an automotive assembly manufacturing facility from the early 1920s until the 1990s. The Missouri Department of Natural Resources has been providing oversight of ongoing investigations since 2011, which has included soil and groundwater sampling, ground penetrating radar surveys, and test pitting. Based on the ongoing assessment activities at the former General Motors Leeds Plant, there is potential for contaminated groundwater to migrate into the construction footprint of the Blue Valley planned capital improvement project.

L.3.1.4 Laredo Siding Extension – Grundy, Missouri

According to the available FRA and PHMSA data, at least one incident, associated with Incident ID I-2003060224, was documented at the planned siding location of the planned capital improvement. A detailed map of this area can be found in **Figure L.3-5**. This incident involved the release of approximately 200 gallons of argon from a tank car within the siding location in May 2003 due to a loose valve. The valve was closed and the release was stopped. No additional response actions were performed.

L.3.1.5 Asbury Siding Extension – Jasper, Missouri

According to the database reports, one environmental listing was identified within the Asbury planned capital improvement location. A detailed map of this area can be found in **Figure L.3-6**. A summary of the environmental listing is detailed below.

- Oronogo-Duenweg Mining Belt, various locations: The Superfund site covers approximately 270 square miles of Jasper County and Newton County, Missouri and encompasses the planned Asbury siding location. The Superfund site is associated with former mining and smelting operations which contaminated soil, groundwater, and surface water with lead, zinc, and cadmium. Cleanup activities are ongoing and include

the removal of mine waste associated with Operable Unit 1 and assessing the surface water and sediment contamination associated with Operable Unit 2. According to available EPA documentation, the proposed Asbury siding is not located within an Operable Unit or within an area where mining or smelting occurred. Based on the location of the Asbury planned capital improvement project outside any Operable Units associated with the Superfund site, it is unlikely that contaminated soil or groundwater would be encountered during construction activities.

Figure L.3-1. Planned Capital Improvement Project: Camanche

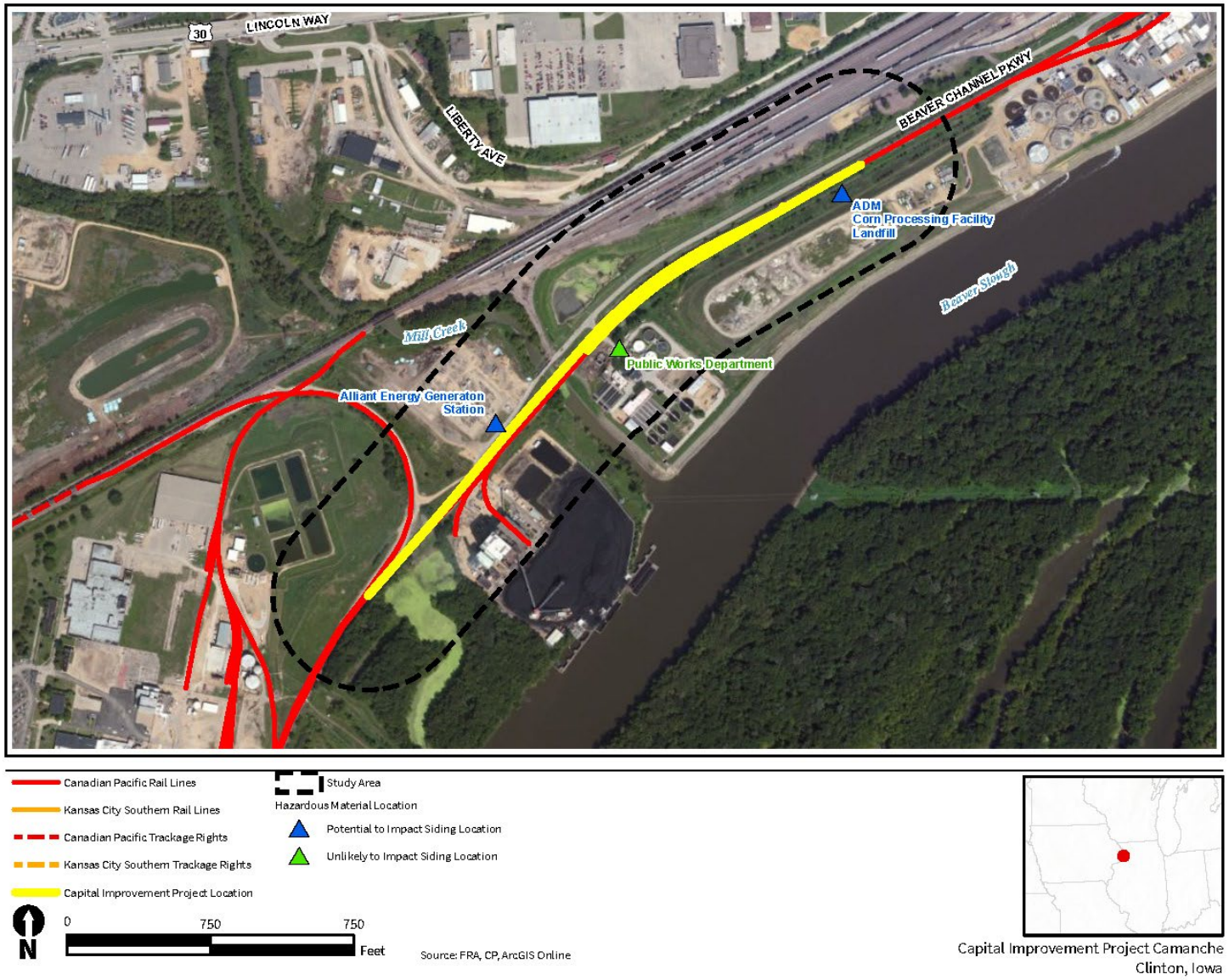


Figure L.3-2. Planned Capital Improvement Project: Ottumwa

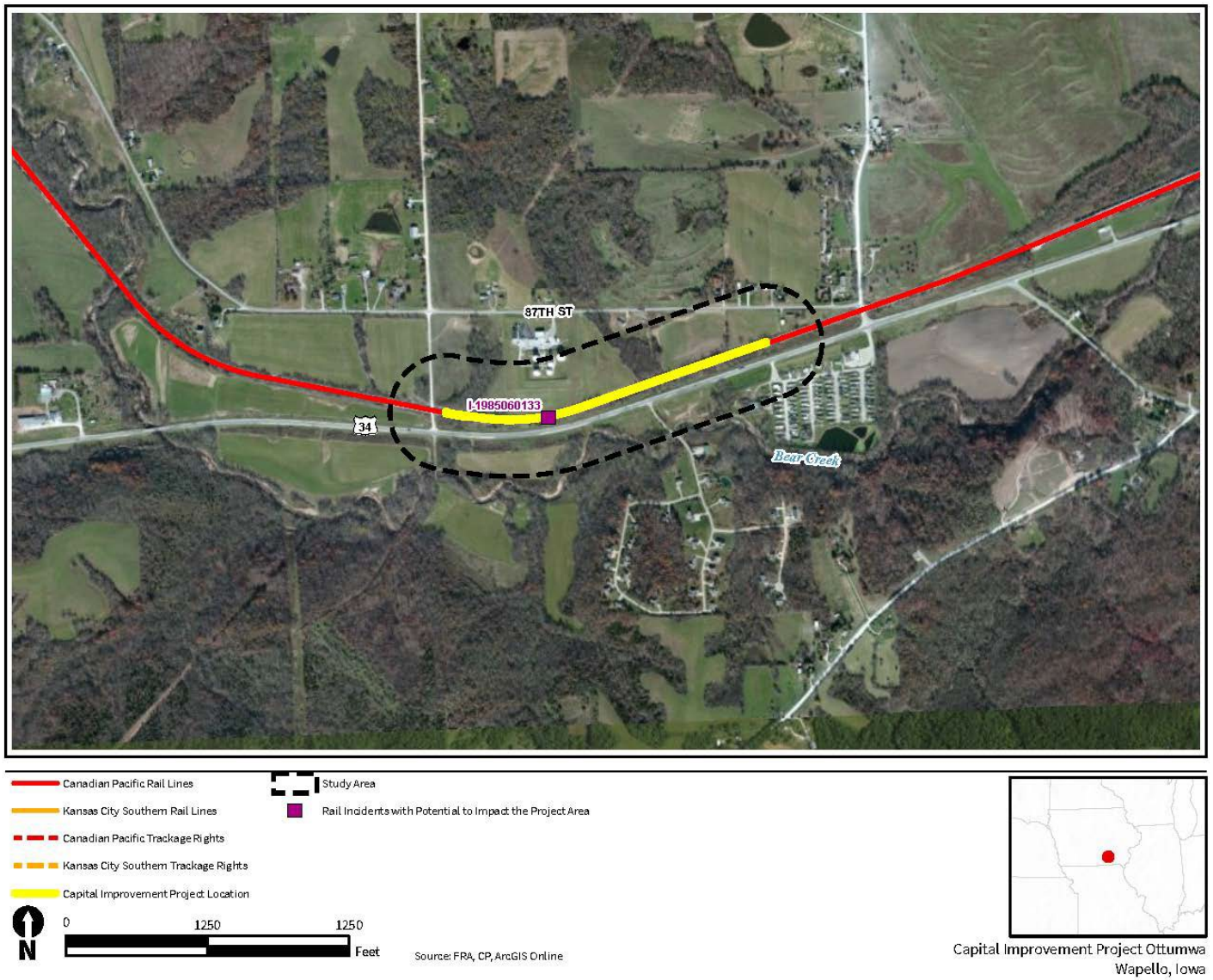


Figure L.3-3. Planned Capital Improvement Project: Blue Valley - North Segment

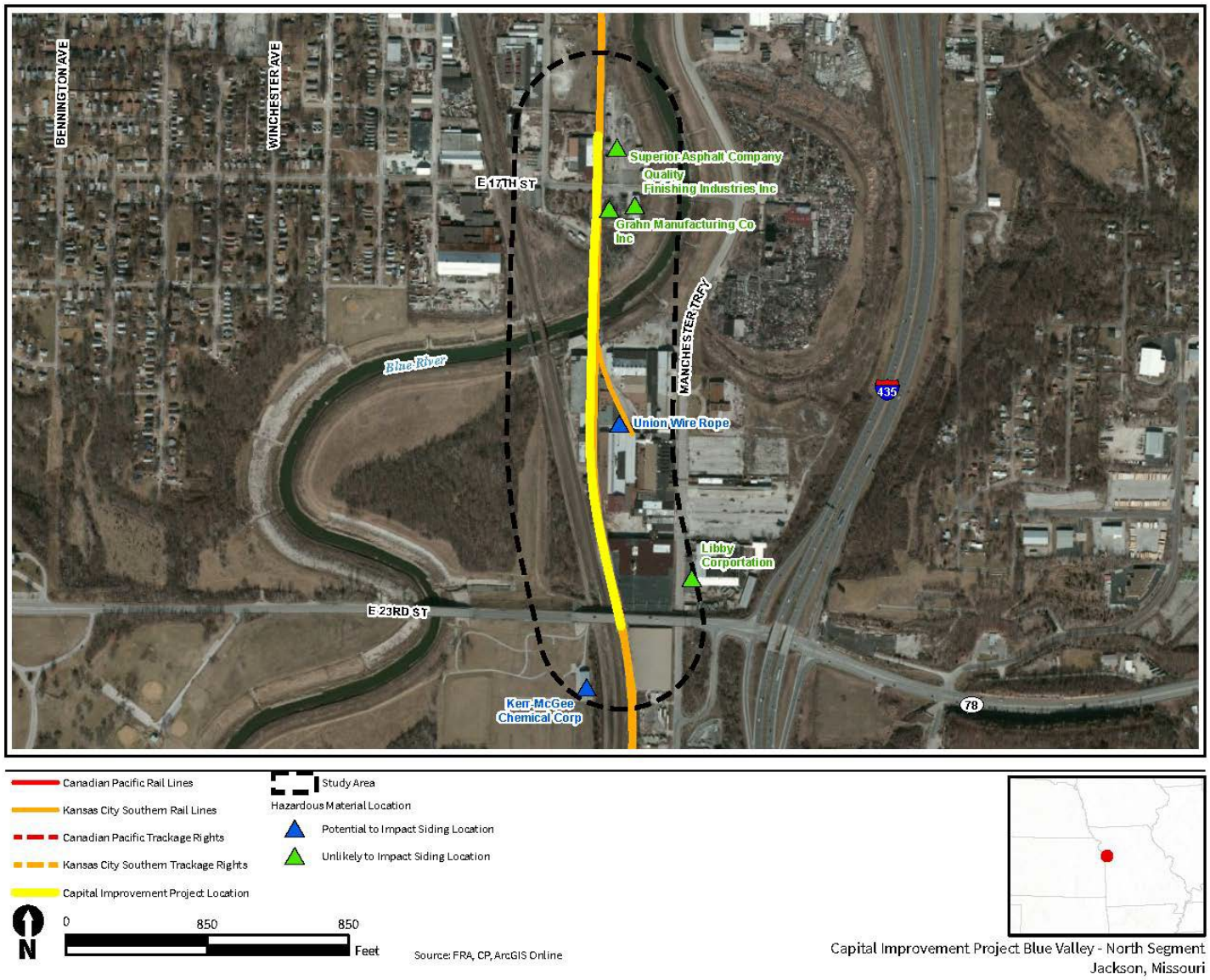
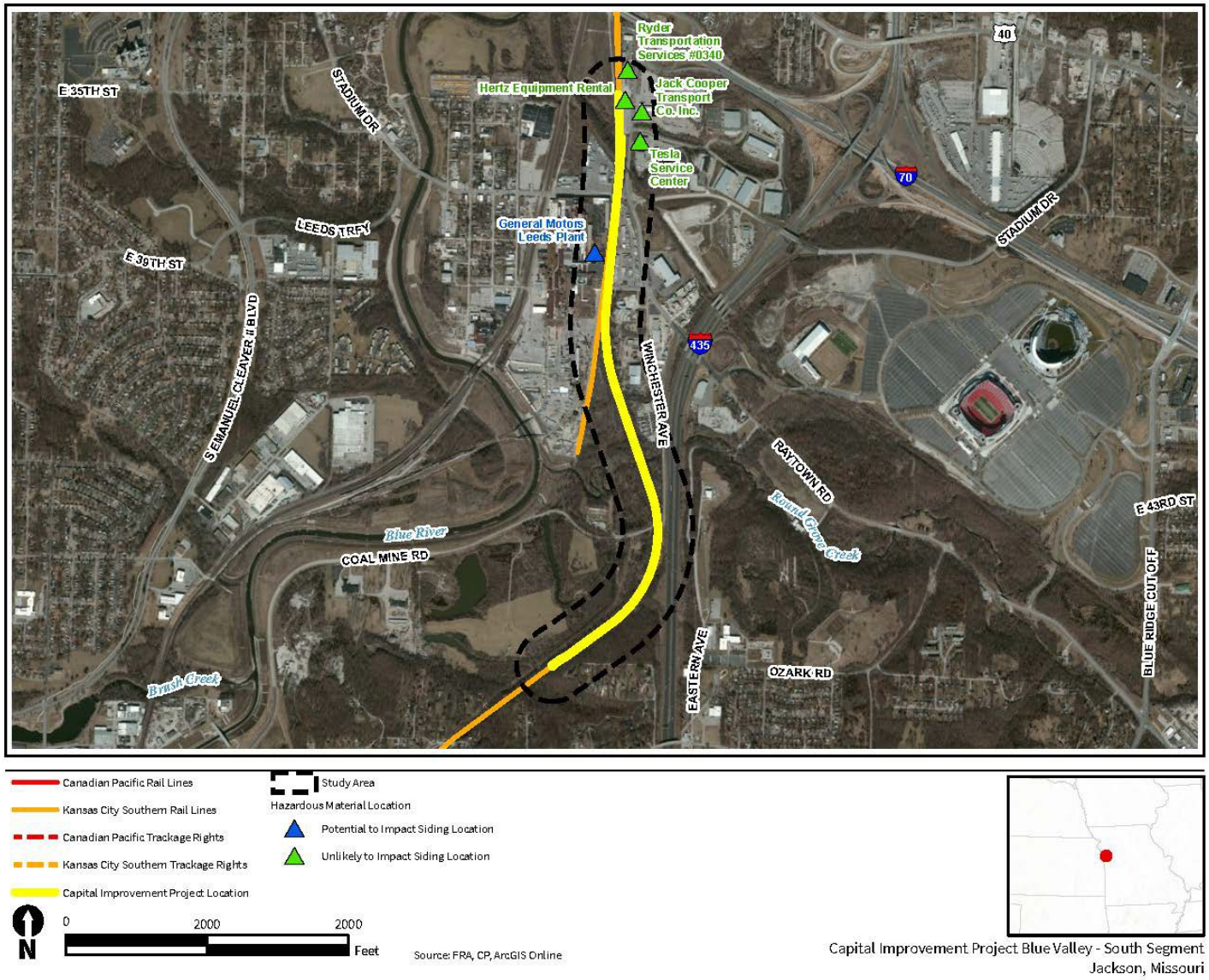


Figure L.3-4. Planned Capital Improvement Project: Blue Valley - South Segment



Capital Improvement Project Blue Valley - South Segment
Jackson, Missouri

Figure L.3-5. Planned Capital Improvement Project: Laredo

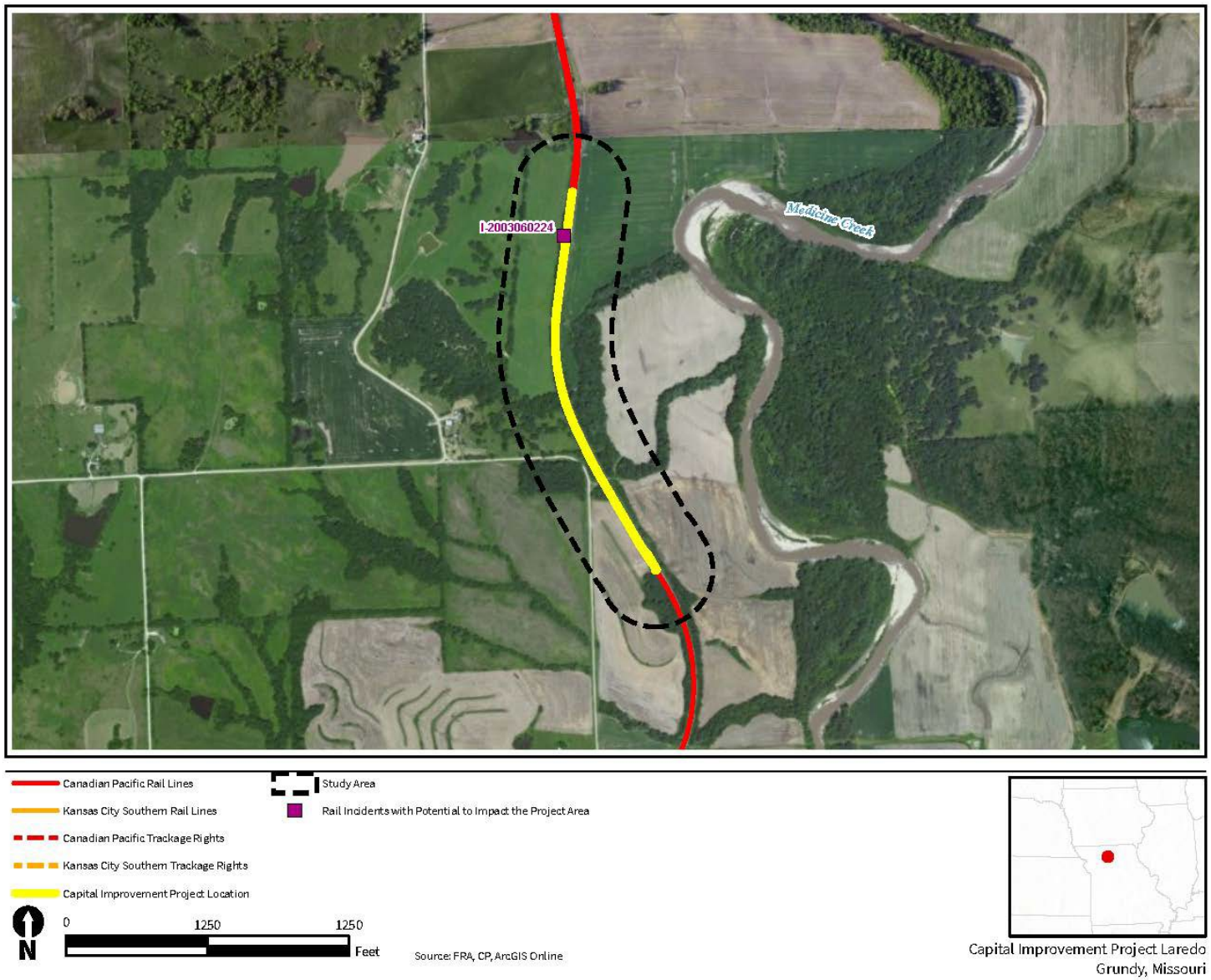
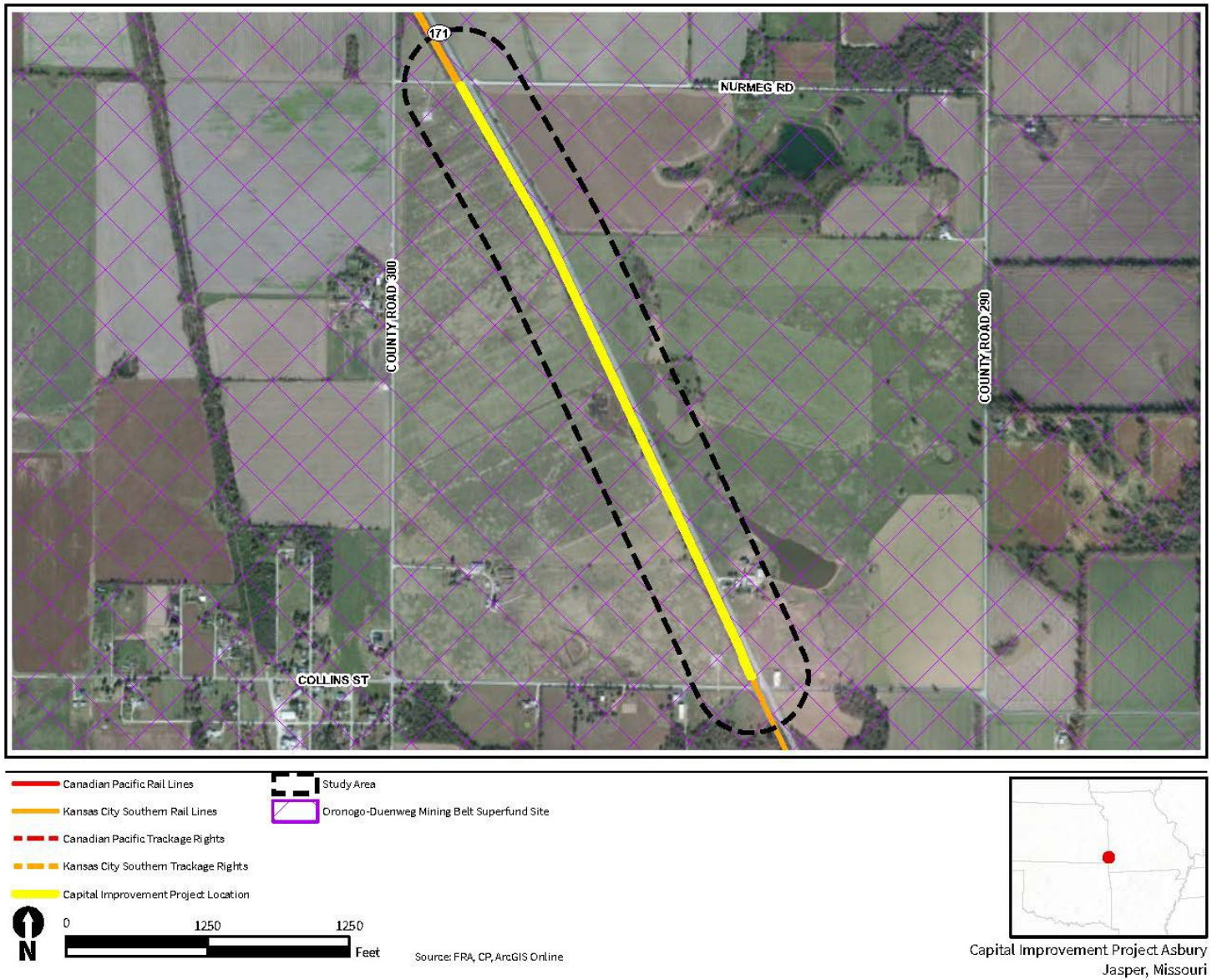


Figure L.3-6. Planned Capital Improvement Project: Asbury



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Appendix M
Noise and Vibration

M.1 Noise and Vibration

This appendix includes technical information on the noise and vibration modeling and measurements used in the analysis presented in *Section 3.5, Noise and Vibration*. This appendix includes figures presenting the noise impacts of the Proposed Acquisition and the No Action Alternative. The appendix includes maps showing the extent of the existing 65 A-weighted decibel (dBA) day-night average sound level (Ldn) contour in the study area, the 65 dBA (Ldn) contour under the Proposed Acquisition, and locations in which adverse noise impacts (65 dBA (Ldn) and a 3 dBA increase) would occur as a result of the Proposed Acquisition. It also includes figures showing the locations of the Bensenville, Schiller Park, Detroit Container Terminal, Wylie, Minneapolis, and International Freight Gateway intermodal facilities, as well as the locations of rail yards and noise sensitive receptors (receptors). Finally, this appendix also includes noise impact assessment results for the ~~205~~ 206 cities and towns within the study area.

M.1.1 Sound and Vibration Measurements

OEA conducted sound level measurements of freight train operations at 10 locations, and vibration measurements at seven locations in the study area to characterize the sound and vibration emissions of CP and KCS trains. OEA conducted sound level measurements on wayside segments of track and near or at grade-crossings to determine levels with and without the train horn. OEA collected these data to supplement the broader set of data available on sound and vibration emissions of freight trains, and to evaluate actual measurements with the emissions that have been used for prior mergers (Surface Transportation Board 1997; Surface Transportation Board 2015; Surface Transportation Board 2021).

OEA conducted measurements in Davis Junction and Stillman, Illinois; Clinton, Iowa; Kansas City and Grandview, Missouri; and Shreveport, Louisiana between November 29, and December 4, 2021. OEA made observations of train speed, consist, and length for some train events; some measurements were unattended and the actual train speed, consist and lengths were not observed. OEA calculated the sound exposure level (SEL), energy average sound level (Leq), and frequency content of locomotives, railcars, and horns from the sound level measurements.

OEA used Larson Davis model LxT and model 831 sound level meters, which meet Type 1 accuracy according to the American National Standards Institute Standard S1.4, to collect sound level data. The sound level data recorded included overall A-weighted and octave-band sound levels every second. The model 831 sound level meters also collected periodic

and event-based audio recordings. OEA reviewed these recordings to aid in identifying sources of sound in the environment including freight trains. OEA calibrated the sound level meters by a laboratory whose test equipment is confirmed to provide accurate results according to the National Institute of Standards and Technology and in the field prior to and after measurements using a field calibrator.

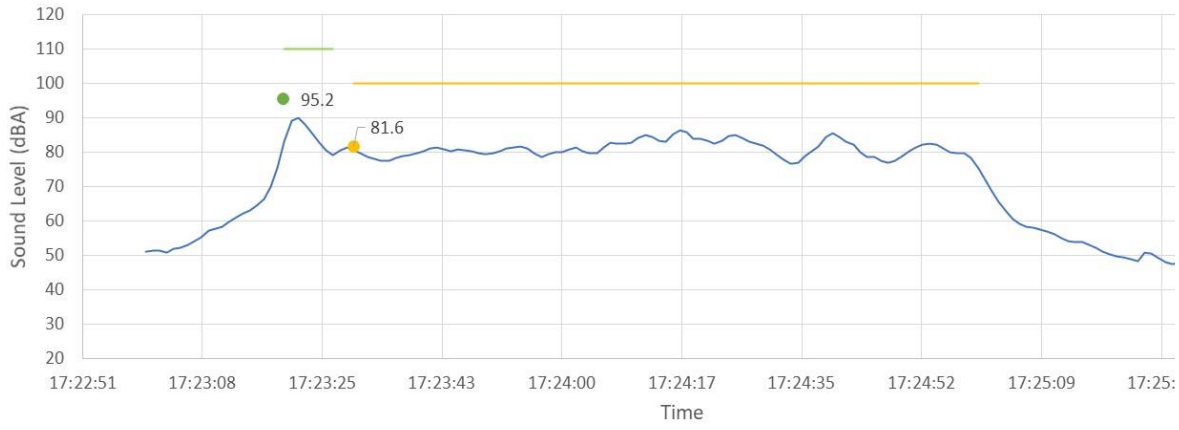
Vibration data was collected using a Rion DA-21 digital recorder, PCB model 480 E09 power supplies, and PCB Piezotronics model 393A accelerometers. OEA recorded the vibration data as acceleration levels, integrated using digital signal processing software, and analyzed as vibration velocity levels in VdB.

The atmospheric conditions were suitable for sound and vibration measurement and did not adversely influence the measurement results. The air temperature in Davis Junction ranged from 30 to 35 degrees Fahrenheit, wind speeds were generally below 10 mph, and there was no precipitation. The air temperature in Clinton ranged from 32 to 55 degrees Fahrenheit, wind speeds were generally below 10 mph, and there was no precipitation. The air temperature in Kansas City and Grandview ranged from 40 to 71 degrees Fahrenheit, wind speeds were generally 8 mph or less, and there was no precipitation. The air temperature in Shreveport ranged from 55 to 73 degrees Fahrenheit, wind speeds were generally 10 mph or less, and there was no precipitation.

M.1.1.1 Sound Measurement Results

OEA isolated sound levels from each source by reviewing the time history of train pass-by sound levels and separating out periods of time when train horns, locomotives, or railcars were the dominant source. For example, as shown in **Figure M.1-1**, the locomotives (green portion) had an SEL of 95.2 dBA, and the railcars (yellow portion) had an Leq of 81.6 dBA.

Figure M.1-1. Freight Train Pass-By Sounds Level Time History



Source: VHB 2022

As shown in **Table M.1-1**, locomotives generated sound levels from 85 to 100 dBA (SEL), with an average of 92 dBA (SEL) depending on train speed. Horns typically ranged from 106 to 116 dBA (SEL) with an average of 108 dBA (SEL) at locations between ¼-mile and 1/8-mile from grade-crossings and 111 dBA (SEL) at the grade-crossing. Railcars ranged from 63 to 83 dBA (Leq) with an average of 75 dBA (Leq) depending on train speed. For

sound measurements conducted at distances other than 100 feet, OEA adjusted the levels to 100 feet based on a 4.5 dB per distance doubling.

Table M.1-1. Sound Measurement Results

Site	Location	Site Type	Speed (mph)	Sound Level at 100 feet (dBA), Range (Average)		
				Locomotives (SEL)	Horns (SEL)	Railcars (Leq)
M1	Davis Junction, IL Prairie Moon Drive	Wayside	40	88.6 - 95.4 (92.0)		66.0 - 69.9 (68.0)
M2	Stillman Valley, IL E Main Street	Wayside	40	90.7 - 96.7 (93.7)		74.9 - 78.6 (76.7)
M3	Clinton, IA Earl Mayer Park	Wayside	20	84.6 - 89.4 (87.4)		69.8 - 73.1 (71.9)
M4	Clinton, IA 4th Avenue	Wayside	20	91.9 - 91.9 (91.9)		71.9 - 75.1 (73.7)
M5	Clinton, IA 5th Avenue	Crossing	20		106.4 - 115.0 (110.9)	70.5 - 75.8 (73.1)
M6	Kansas City, MO Sni A Bar Road	Wayside	45	87.3 - 97.3 (92.3)		65.3 - 80.6 (71.0)
M7	Kansas City, MO East 91st Street	Wayside	59	85.7 - 99.9 (92.7)		68.9 - 81.5 (75.6)
M8	Grandview, MO Main Street	Crossing	59	85.8 - 88.2 (87.0)	107.7 - 116.1 (111.9)	62.6 - 77.8 (70.1)
M9	Shreveport, LA 81st Street	Both	50	92.1 - 94.7 (93.3)	100.7 - 115.9 (108.0)	71.7 - 82.2 (76.9)
M10	Shreveport, LA Pleasant Hills Drive	Wayside	50	85.4 - 96.7 (92.4)		75.8 - 83.3 (79.3)

Source: VHB 2022

Figure M.1-2 presents the measured locomotive sound level (SEL) versus speed. The measurements primarily reflect trains with two locomotives. The figure also shows the corresponding reference emission level of 98 dBA (SEL) for two locomotives at 40 mph. This figure shows that the measured levels were similar or slightly lower than the reference locomotive level.

Figure M.1-3 presents the measured railcar sound level (Leq) versus speed and the reference emission level of 79 dBA (Leq) for railcars at 40 mph. This figure shows that the measured levels were similar or slightly lower than the reference railcar level.

Figure M.1-4 presents the measured train horn sound level (SEL) versus distance from the crossing and the reference emission levels of 110 dBA (SEL) within 1/8-mile and 107 dBA (SEL) between 1/4 and 1/8-mile from the crossing. This figure shows that the measured levels were similar to the reference horn levels.

Figure M.1-5 presents the average measured sound level spectra for the locomotives, railcars, and train horns. Sound from the train horns is primarily in frequency bands 250-Hz and higher due to the fundamental tone of the horns. Sound from the locomotives and

railcars have relatively similar average spectra with the highest levels in the 500 to 4,000-Hz octave-bands.

Figure M.1-2. Locomotive Sound Exposure Levels at 100 Feet

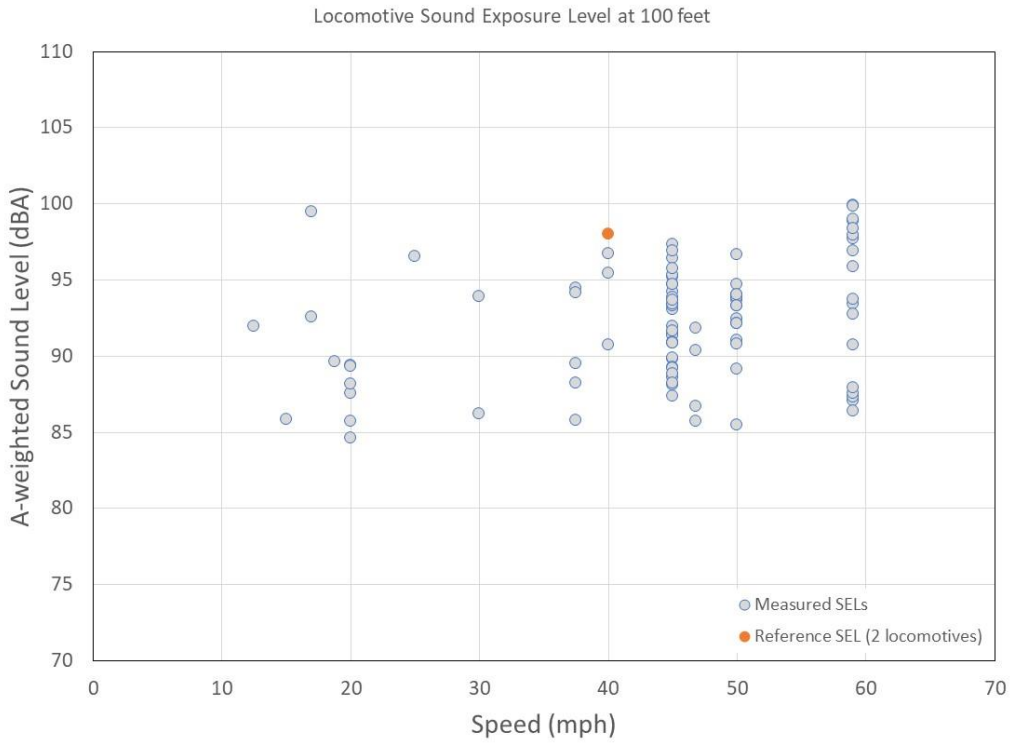


Figure M.1-3. Railcar Leq Levels at 100 feet

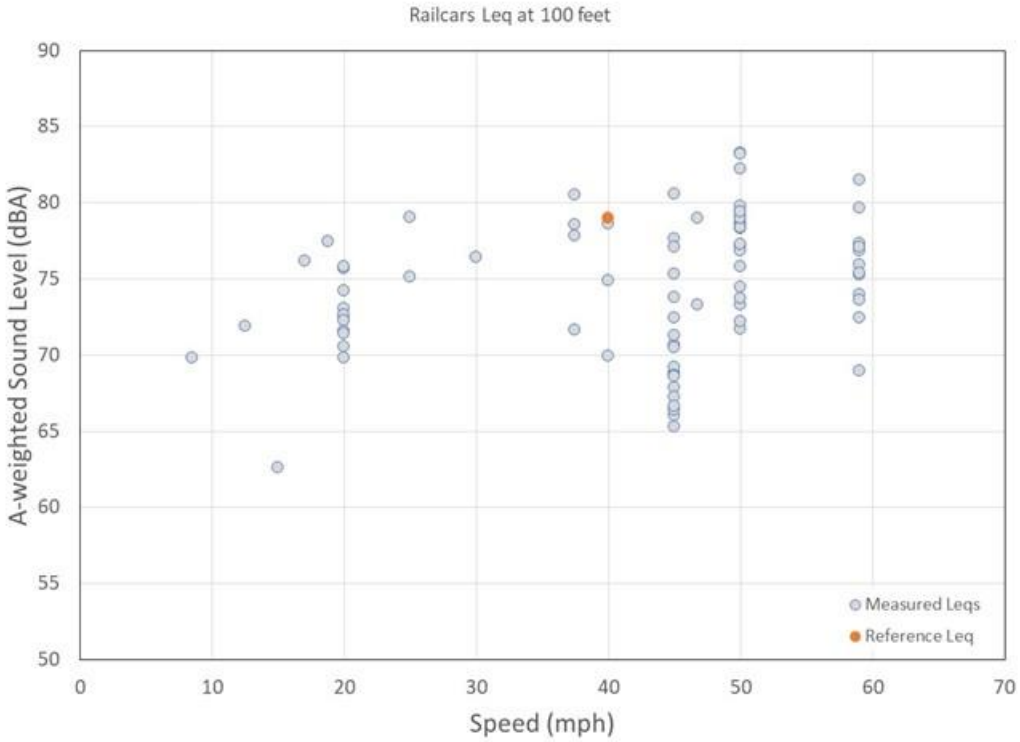


Figure M.1-4. Horn Sound Exposure Levels at 100 feet

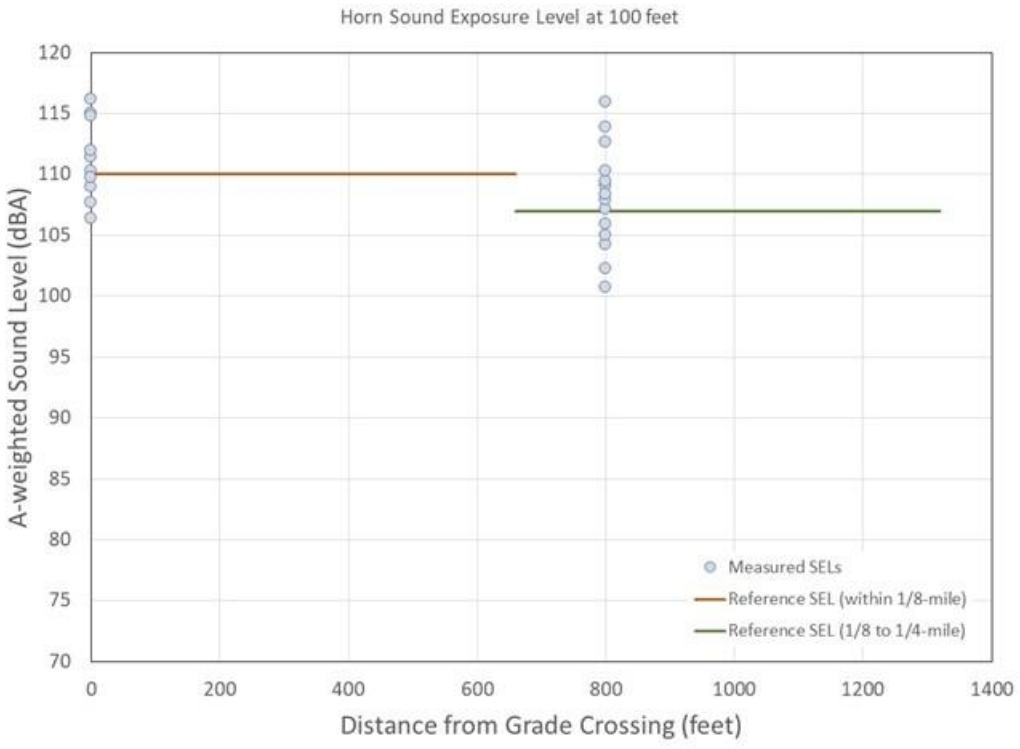
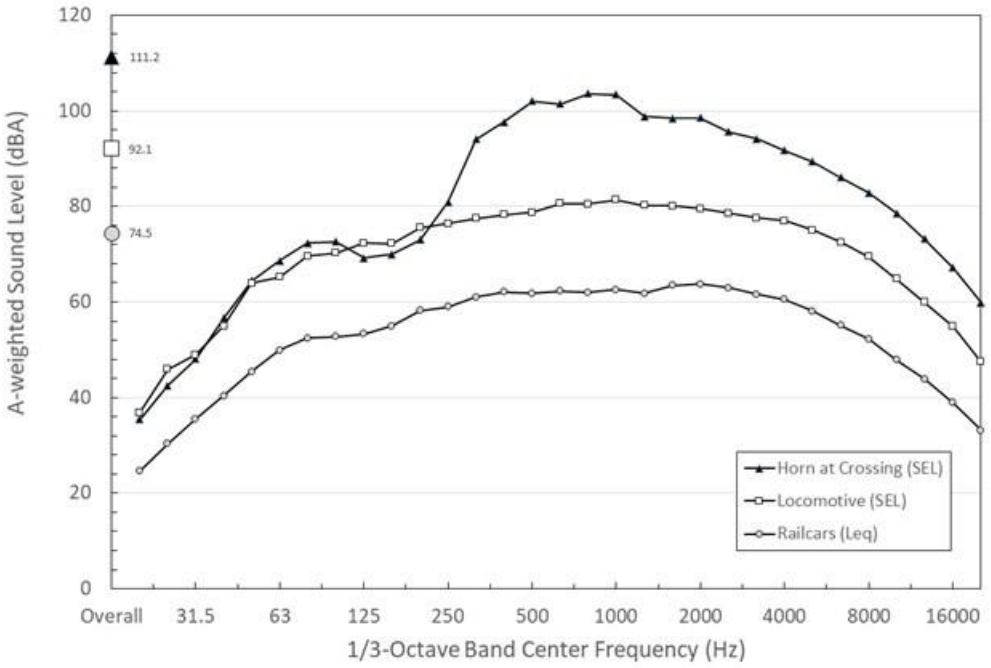


Figure M.1-5. Locomotive, Railcar, and Horn Measured Spectra



The sound level measurements of freight trains are relatively consistent with the reference emissions used for prior mergers. Since the reference levels used for prior mergers are based on a more extensive set of measurements and observations, modeling has been based on reference levels used in the Conrail (Surface Transportation Board 1997), Tongue River (Surface Transportation Board 2015), and Uinta Basin (Surface Transportation Board 2021) EISs. The reference emissions at 100 feet used include the following:

- A single locomotive at 40 mph generates sound levels of 95 dBA (SEL),
- Railcars at 40 mph generate sound levels of 82 dBA (Leq), and
- Train horns generate sound levels of 107 dBA (SEL) between 1/4 and 1/8-mile from a crossing and 110 dBA (SEL) within 1/8-mile from a crossing.

Idling locomotives are assumed to generate a sound level of 70 dBA (Leq) at 100 feet based on the EPA's Railroad Noise Emission Compliance regulation (40 C.F.R. Part 201.11(b)) for stationary locomotives built after December 1979 under idle throttle operation.

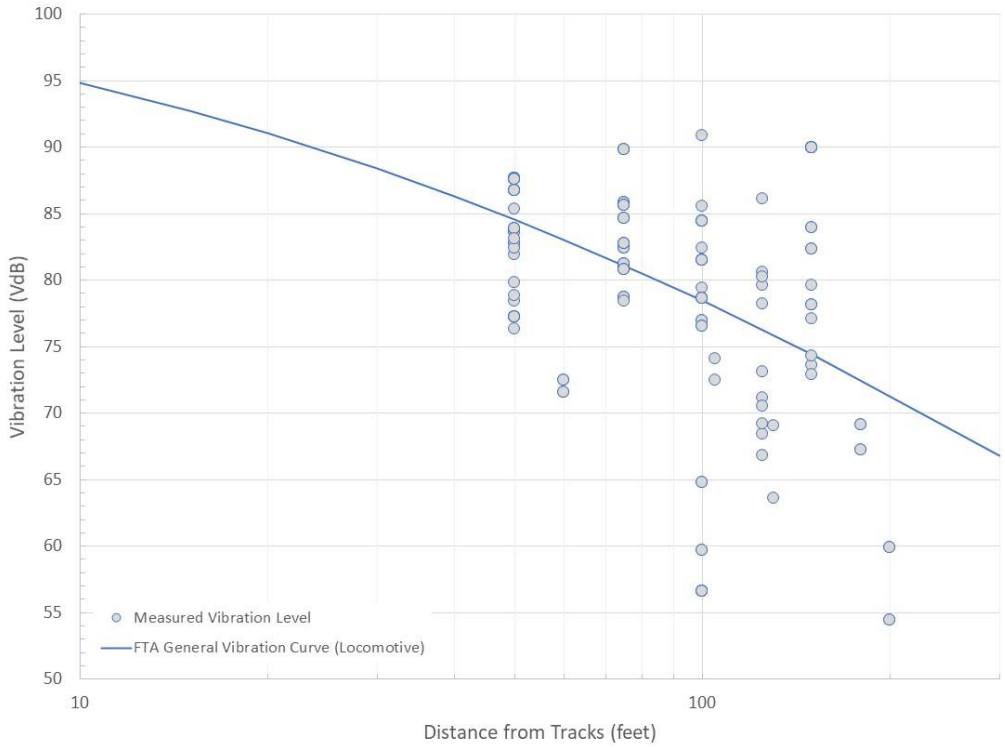
M.1.1.2 Vibration Measurement Results

OEA measured vibration levels from train pass-bys at a range of distances from 50 to 200 feet at seven measurement sites including Davis Junction, Illinois (M1), Stillman Valley, Illinois (M2), Clinton, Iowa (M3 and M4), Kansas City, Missouri (M7), and Shreveport, Louisiana (M9 and M10).

OEA separated the maximum vibration level generated by the locomotives from the vibration pass-by, similar to the method used for determining the noise level from individual sources. **Figure M.1-6** presents the maximum vibration level from the locomotives versus distance from the tracks for all measurement locations as well as the FTA general ground-borne vibration curve for freight locomotives operating at 50 mph.

This figure shows that there is a relatively broad range of vibration levels generated by the trains across the range of distances and sites. The specific reasons that vibration levels vary depend on the vibration propagation characteristics of the soil, train wheel conditions, rail conditions, and train speed. While there are similar trends with the measured vibration levels and FTA general ground vibration curves, the FTA's general curve is based on a more extensive dataset. Therefore, as discussed in the *Vibration Modeling Methodology Section* below, vibration predictions have been based on the FTA's general curve.

Figure M.1-6. Maximum Vibration Levels of Locomotives at 50 mph



M.1.2 Noise Modeling Approach

M.1.2.1 Freight Trains

Noise from the freight operations have been predicted throughout the study area using Cadna-A sound prediction software, which implements the International Standards Organization Standard (ISO) 9613-2:1996 "Acoustics — Attenuation of sound during propagation outdoors — Part 2: General method of calculation". Cadna-A is a three-dimensional model that accounts for the sound emissions of sources in octave bands, terrain,

intervening objects such as buildings, ground cover, and atmospheric conditions. Noise levels from locomotives, railcars, and horns have been modeled in octave-bands from 31.5 to 8,000 Hz.

OEA calculated noise levels (Ldn) for each segment of track at a reference distance of 100 feet using fundamental equations based on the daily train volumes, number of locomotives, train length, and speed assuming flat acoustically soft ground conditions. OEA computed noise levels for wayside track segments (without train horns), the first half of horn sounding segments (within 1/4 to 1/8-mile from the grade-crossing), and the second half of horn sounding segments (within 1/8-mile to the grade-crossing). OEA also modeled noise at proposed new track siding locations where locomotives would idle. Based on freight train emissions used in prior mergers, the sound emissions at 100 feet of a single locomotive at 40 mph is 95 dBA (SEL), railcars at 40 mph is 82 dBA (Leq), train horns are 107 dBA (SEL) between 1/4 and 1/8-mile from a crossing, train horns are 110 dBA (SEL) within 1/8-mile from a crossing, and idling locomotives are 70 dBA (Leq).

OEA used train speeds for each portion of track based on the CP U.S. East and U.S. West Timetables (March 25, 2021), the KCS System Timetable No. 15 (April 1, 2020) and the FRA grade-crossing database (January 5, 2022) for the Union Pacific (UP) Beaumont segment from Beaumont, Texas to Rosenberg, Texas and the Alliance segment from Renner, Texas to Alliance, Texas.

OEA calculated noise from freight operations at 100 feet based on the following equations as used in previous merger projects (Surface Transportation Board 2015 [Tongue River], Surface Transportation Board 2021 [Uinta]):

$$SEL_{cars} = Leq_{cars} + 10Log\left(T_{passby}\right) + 30Log(\frac{S}{S_{ref}}),$$

$$SEL_{locos} = SEL_{1\ loco\ at\ 40\ mph} + 10Log(N_{locos}) - 10Log(\frac{S}{S_{ref}}),$$

$$SEL_{trains} = 10Log(10^{\frac{SEL_{locos}}{10}} + 10^{\frac{SEL_{cars}}{10}} + 10^{\frac{SEL_{horns}}{10}}),$$

$$Ldn_{trains} = SEL_{train} + 10Log(N_d + 10N_n) - 10Log(86{,}400),$$

$$Ldn_{sidings} = Leq_{locomotive\ idling} + 10Log(T_{idle}) + 10Log(N_d + 10N_n) - 10Log(86{,}400);$$

where the SELs and Leqs correspond to each source of sound (i.e., railcars, locomotives, horns, idling locomotives at track sidings), N_{locos} is the number of locomotives per train, N_d is the number of trains during the day (7:00 a.m. to 10:00 p.m.), N_n is the number of trains during the night (10:00 p.m. to 7:00 a.m.), S is the train speed in mph, and T is the time in seconds for a train pass-by or the duration of a train idling at a siding.

Based on freight train emissions used in prior mergers, the sound emissions at 100 feet of a single locomotive at 40 mph is 95 dBA (SEL), railcars at 40 mph is 82 dBA (Leq), train horns are 107 dBA (SEL) between 1/4 and 1/8-mile from a crossing, train horns are 110 dBA (SEL) within 1/8-mile from a crossing, and idling locomotives are 70 dBA (Leq).

Cadna-A has been used to predict train noise beyond 100 feet accounting for terrain, intervening objects, ground cover, and atmospheric conditions. OEA conducted the Cadna-A calculations in a grid with 30-foot spacing at a height of five feet above ground across an area 1/2 of a mile from either side of the tracks. OEA used Digital Elevation Models with 1/3 arc-second resolution from the United States Geological Survey (USGS) in the model for terrain. OEA included buildings and structures from the Microsoft National Building Footprints dataset in the model to identify receptors. OEA categorized buildings as residences, schools, libraries, museums, places of worship, and nursing homes based on review of aerial photography, state and/or municipal zoning maps, and limited field observations.

M.1.2.2 Passenger Train Noise

OEA predicted noise levels from METRA and Amtrak passenger trains in a similar manner to freight noise, with fundamental equations being used to predict noise levels at 100 feet based on the daytime and nighttime train volumes, number of locomotives, train length, and speed assuming flat acoustically soft ground conditions. OEA then used Cadna-A to predict train noise beyond 100 feet accounting for terrain, intervening objects, ground cover, and atmospheric conditions. OEA calculated reference noise levels at 100 feet with and without train horn noise using the FTA's Noise Impact Assessment Spreadsheet (dated October 1, 2018) based on the METRA train schedule (dated July 12, 2021), Amtrak Sunset Limited train schedule (current as of January 5, 2022), METRA train speeds based on the CP US East and US West Timetables (March 25, 2021) for passenger trains, and Amtrak train speeds based on the FRA grade-crossing database (January 5, 2022).

M.1.2.3 Rail Yards and Intermodal Facilities

Noise from the intermodal facilities includes cranes for lifts and trucking operations. Noise from the rail yards includes switching engine movements that process rail cars from the departure yard to the receiving yard, and car impacts from building trains. Impact noise from coupling of railcars during the building of trains is assumed to occur once per block of railcars processed. The rail yards do not include wheel retarders which generate noise when braking railcars.

OEA modeled noise from rail yards and intermodal facilities based on methods used in previous studies (Surface Transportation Board 1997, EPA 1979, FRA 1982). The noise modeling accounts for the volume of lifts, trucking operations, rail cars processed, and the hours of operations of the rail yards and intermodal facilities. OEA calculated noise from rail yards and intermodal facilities based on the following equations:

$$Ldn_{cranes} = SEL_{cranes} + 10Log(N_d + 10N_n) - 49.4 - 10Log\left(\frac{D}{100}\right)^2 - k(D - 100),$$

$$Ldn_{trucks} = 28.2 - 15Log(\frac{D}{450}) + 10Log(\frac{N_{total}(H_d+10H_n)}{(H_d+10H_n)}),$$

$$SEL_{trains} = 10Log(10^{\frac{SEL_{locos}}{10}} + 10^{\frac{SEL_{cars}}{10}} + 10^{\frac{SEL_{horns}}{10}}) \quad ,$$

$$Ldn_{intermodal\ facility} = 10Log\left(10^{\frac{Ldn_{cranes}}{10}} + 10^{\frac{Ldn_{trucks}}{10}}\right),$$

$$Ldn_{car\ impacts} = SEL_{car\ impact} + 10Log(N_d + 10N_n) - 49.4 - 10Log\left(\frac{D}{100}\right)^2 - k(D - 100),$$

$$Ldn_{engines} = SEL_{engines} + 10Log(N_d + 10N_n) - 49.4 - 10Log\left(\frac{D}{100}\right)^1 - k(D - 100),$$

$$Ldn_{rail\ yard} = 10Log\left(10^{\frac{Ldn_{car\ impacts}}{10}} + 10^{\frac{Ldn_{engines}}{10}}\right).$$

Where D is the distance from the receptor to the center of the rail yard or intermodal facility, k is the acoustical absorption (dB reduction per distance), H_d is the number of daytime hours the facility operates, and H_n is the number of nighttime hours the facility operates.

The switching engines are assumed to move 10 railcars at a time from the receiving portion of the yard to the departure portion of the yard at flat yards such as Schiller Park and 50 railcars at a time at hump yards such as the Bensenville yard. The switching engines are assumed to make two movements for each block of railcars.

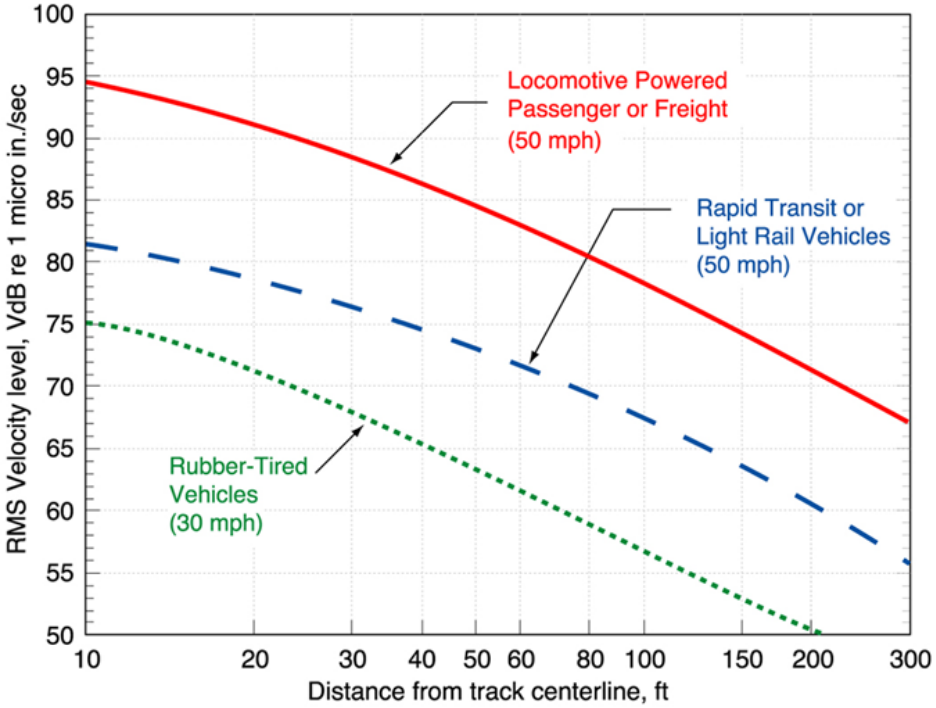
M.1.3 Vibration Modeling Methodology

Trains generate ground-borne vibration from the forces of the locomotives and railcars on the track. Vibration propagates through the track structure, through the ground, into nearby buildings, and has the potential to cause human annoyance. Locomotives typically generate higher vibration levels compared to railcars due to their greater weight. FTA has established general ground-borne vibration curves for freight locomotives and railcars (which are characterized similarly to light rail rapid transit and light rail vehicles) that provide the outdoor vibration level based on the distance from the track.

For example, as shown in **Figure M.1-7**, the outdoor vibration level is approximately 85 VdB at a distance of 50 feet from freight locomotives traveling at 50 mph. Vibration levels are reduced as it propagates to farther distances due to the attenuation from the soil and as it propagates inside buildings depending on the type of building construction. For most wood-framed buildings, interior vibration levels are 5 VdB lower than outdoor levels. Larger buildings or heavier masonry buildings generally provide additional vibration attenuation to the interior of the building. An outdoor-to-indoor building vibration attenuation of 5 VdB has been assumed for all buildings in this analysis.

Train speed also affects vibration levels. According to FTA guidelines, a doubling in speed typically corresponds to a 6 VdB difference in vibration level. For example, a train that generates 60 VdB at 50 mph would generate 54 VdB at 25 mph.

Figure M.1-7. FTA Ground-Borne Vibration General Curves



Source: FTA, 2018

M.1.4 Noise Assessment Results by Cities and Towns

Table M.1-2 presents the number of receptors within the 65 dBA (Ldn) for the existing condition, No-Action Alternative, and Proposed Acquisition and the number of noise impacts (65 dBA (Ldn) and 3 dBA increase) within ~~205~~ 206 cities and towns throughout the study area. Not all of the receptors are within cities and towns. Those that are not within cities and towns are in unincorporated portions of their respective counties. This table also presents a summary by state of the receptors within cities and towns. The number of receptors within cities and towns include:

- ~~10,125~~11,922 of the ~~12,385~~16,043 total receptors within the existing 65 dBA (Ldn),
- ~~19,369~~22,307 of the ~~23,742~~29,853 total receptors within the Proposed Acquisition 65 dBA (Ldn),
- ~~12,329~~14,741 of the ~~15,197~~20,029 total receptors within the No-Action Alternative 65 dBA (Ldn), and
- 5,158 of the 6,307 total noise impacts.

Table M.1-2. Noise Assessment Results by Cities and Towns

City/Town	Receptors within 65 dBA (Ldn)			Receptors with Adverse Noise Impacts (65 dBA Ldn and 3 dBA increase)
	Existing	Proposed Acquisition	No-Action	
Bensenville, IL	19	54	28	50
Wood Dale, IL	37	73	39	0
Itasca, IL	11	53	20	42
Medinah, IL	14	50	17	0
Roselle, IL	30	44	30	20
Schaumburg, IL	0	0	0	0
Hanover Park, IL	5	22	8	22
Streamwood, IL	0	0	0	0
Bartlett, IL	26	140	36	1
South Elgin, IL	0	0	0	0
Elgin, IL	48	126	60	9
Pingree Grove, IL	9	53	25	53
Hampshire, IL	19	52	20	52
Genoa, IL	28	93	35	93
Kingston, IL	40	98	48	98
Kirkland, IL	14	64	24	64
Monroe Center, IL	47	87	50	87
Davis Junction, IL	59	97	63	82
Stillman Valley, IL	19	31	20	31
Byron, IL	24	59	29	44
Leaf River, IL	29	48	30	48
Lanark, IL	34	80	38	80
Mount Carroll, IL	0	2	0	2
Savanna, IL	11	30	16	19
Sabula, IA	1	4	1	0
Clinton, IA	133	260	142	252
Camanche, IA	180	312	194	312
Princeton, IA	116	206	128	206
Le Claire, IA	148	273	175	273
Riverdale, IA	41	55	45	55
Bettendorf, IA	24	88	39	88
Davenport, IA	7	66	10	66
Buffalo, IA	36	62	40	62
Montpelier, IA	24	52	25	52
Fairport, IA	49	74	49	74

Table M.1-2. Noise Assessment Results by Cities and Towns

City/Town	Receptors within 65 dBA (Ldn)			Receptors with Adverse Noise Impacts (65 dBA Ldn and 3 dBA increase)
	Existing	Proposed Acquisition	No-Action	
Muscatine, IA	111	329	125	329
Fruitland, IA	26	91	30	91
Letts, IA	24	71	30	71
Fredonia, IA	25	51	27	51
Columbus Junction, IA	5	21	6	21
Cotter, IA	3	15	4	15
Ainsworth, IA	35	80	38	80
Washington, IA	42	206	49	206
Ottumwa, IA	42	117	50	117
Blakesburg, IA	14	67	18	67
Moravia, IA	28	72	31	72
Rathbun, IA	0	8	0	8
Mystic, IA	1	13	2	13
Seymour, IA	47	154	51	154
Powersville, MO	5	19	7	19
Lucerne, MO	2	9	2	9
Newtown, MO	1	10	1	10
Harris, MO	3	22	3	22
Osgood, MO	1	3	1	3
Laredo, MO	2	12	3	12
Chula, MO	0	10	0	10
Chillicothe, MO	33	127	42	127
Ludlow, MO	4	16	5	16
Braymer, MO	1	17	2	17
Cowgill, MO	12	29	12	29
Polo, MO	1	7	3	7
Elmira, MO	1	9	3	9
Lawson, MO	84	215	100	215
Excelsior Estates, MO	0	1	0	1
Excelsior Springs, MO	66	218	91	218
Mosby, MO	1	1	1	1
Liberty, MO	19	121	53	121
Birmingham, MO	0	28	2	28
Kansas City, MO	139	305	234	6
Grandview, MO	30	72	44	0

Table M.1-2. Noise Assessment Results by Cities and Towns

City/Town	Receptors within 65 dBA (Ldn)			Receptors with Adverse Noise Impacts (65 dBA Ldn and 3 dBA increase)
	Existing	Proposed Acquisition	No-Action	
Belton, MO	0	0	0	0
Cleveland, MO	46	93	69	0
Drexel, MO	62	112	81	0
Merwin, MO	20	24	24	0
Amsterdam, MO	40	73	50	0
Amoret, MO	15	26	20	0
Hume, MO	31	50	40	0
Stotesbury, MO	0	0	0	0
Richards, MO	36	40	40	0
Mulberry, KS	3	16	6	0
Yale, KS	11	17	12	0
Frontenac, KS	17	39	31	0
Pittsburg, KS	346	652	430	0
Asbury, MO	23	36	26	0
Carl Junction, MO	75	127	87	0
Airport Drive, MO	1	4	1	0
Joplin, MO	221	382	268	0
Saginaw, MO	9	14	10	0
Neosho, MO	115	180	137	0
Goodman, MO	80	141	92	0
Anderson, MO	85	163	106	0
Lanagan, MO	31	48	35	0
Noel, MO	83	117	91	0
Sulphur Springs, AR	33	58	38	0
Gravette, AR	70	131	81	0
Decatur, AR	62	94	66	0
Gentry, AR	77	154	91	0
Siloam Springs, AR	63	163	84	0
Watts, OK	6	26	10	0
Westville, OK	86	143	97	0
Baron, OK	11	14	11	0
West Peavine, OK	3	6	3	0
Peavine, OK	9	15	9	0
Fairfield, OK	1	1	1	0
Zion, OK	2	4	2	0

Table M.1-2. Noise Assessment Results by Cities and Towns

City/Town	Receptors within 65 dBA (Ldn)			Receptors with Adverse Noise Impacts (65 dBA Ldn and 3 dBA increase)
	Existing	Proposed Acquisition	No-Action	
Stilwell, OK	107	166	126	0
Lyons Switch, OK	2	5	2	0
Cave Spring, OK	6	9	7	0
Bunch, OK	15	17	15	0
Flute Springs, OK	3	3	3	0
Marble City, OK	27	46	32	0
Sallisaw, OK	160	293	191	0
Gans, OK	8	14	10	0
Spiro, OK	76	139	102	0
Panama, OK	111	195	132	0
Shady Point, OK	28	52	35	0
Poteau, OK	171	353	224	0
Howe, OK	2	7	3	0
Heavener, OK	64	154	79	0
Hodgen, OK	23	31	25	0
Acorn, AR	14	19	16	0
Mena, AR	60	165	86	0
Hatfield, AR	26	43	30	0
Cove, AR	23	46	28	0
Vandervoort, AR	19	31	21	0
Wickes, AR	32	54	37	0
Grannis, AR	28	49	32	0
Gillham, AR	27	36	30	0
De Queen, AR	15	50	25	0
Winthrop, AR	31	45	32	0
Alleene, AR	8	13	9	0
Wilton, AR	61	89	72	0
Ashdown, AR	84	187	113	0
Ogden, AR	30	48	33	0
Texarkana, TX	173	346	223	0
Bloomburg, TX	35	74	50	0
Rodessa, LA	40	65	48	0
Vivian, LA	96	210	147	0
Oil City, LA	87	127	97	0
Mooringsport, LA	46	83	56	0

Table M.1-2. Noise Assessment Results by Cities and Towns

City/Town	Receptors within 65 dBA (Ldn)			Receptors with Adverse Noise Impacts (65 dBA Ldn and 3 dBA increase)
	Existing	Proposed Acquisition	No-Action	
Blanchard, LA	50	115	68	0
Shreveport, LA	373	665	486	0
Frierson, LA	50	54	50	0
Mansfield, LA	151	289	175	0
South Mansfield, LA	18	31	21	0
Converse, LA	25	46	30	0
Noble, LA	24	42	25	0
Zwolle, LA	32	57	37	0
Many, LA	18	49	24	0
Fisher, LA	39	54	45	0
Florien, LA	54	95	63	0
Hornbeck, LA	16	38	18	0
Anacoco, LA	68	117	84	0
Leesville, LA	135	217	152	0
New Llano, LA	26	38	30	0
Rosepine, LA	37	68	43	0
DeRidder, LA	95	152	106	0
Singer, LA	20	32	26	0
Oretta, LA	11	24	15	0
DeQuincy, LA	112	203	127	113
Starks, LA	31	68	42	68
Deweyville, TX	1	3	1	3
Mauriceville, TX	17	40	25	21
Vidor, TX	199	392	230	377
Rose City, TX	37	70	41	64
Beaumont, TX	6	23	12	0
Central Gardens, TX	10	14	11	0
Nederland, TX	49	84	55	0
Port Neches, TX	51	71	56	0
Port Arthur, TX	212	348	256	0
Houston, TX	1,647	2,712	2,218	0
Rosenberg, TX	~~69~~219	~~103~~329	~~91~~285	0
Beasley, TX	29	59	38	0
Kendleton, TX	88	135	100	0
Hungerford, TX	53	84	60	0

Table M.1-2. Noise Assessment Results by Cities and Towns

City/Town	Receptors within 65 dBA (Ldn)			Receptors with Adverse Noise Impacts (65 dBA Ldn and 3 dBA increase)
	Existing	Proposed Acquisition	No-Action	
Wharton, TX	15	41	26	0
El Campo, TX	13	32	22	0
Louise, TX	25	44	36	0
Ganado, TX	36	59	42	0
Edna, TX	53	98	79	0
Inez, TX	46	79	63	0
Victoria, TX	200	347	224	0
Placedo, TX	16	25	18	0
Bloomington, TX	97	150	105	0
Refugio, TX	155	227	167	0
Woodsboro, TX	15	28	17	0
Sinton, TX	143	222	149	0
Morgan Farm, TX	4	5	5	0
Odem, TX	56	86	61	0
Corpus Christi, TX	30	59	36	0
Robstown, TX	204	320	242	0
Banquete, TX	92	120	101	0
Agua Dulce, TX	49	82	63	0
Alice, TX	161	326	240	0
Rancho Alegre, TX	5	20	8	0
Loma Linda East, TX	9	20	16	0
San Diego, TX	245	342	291	0
Benavides, TX	135	206	166	0
Realitos, TX	41	51	45	0
Hebbronville, TX	125	226	160	0
Bruni, TX	1	2	2	0
Oilton, TX	4	10	8	0
Mirando City, TX	51	73	57	0
Aguilares, TX	9	10	10	0
La Coma, TX	4	8	6	0
Laredo, TX	279	390	347	0
Totals by State				
Illinois	523	1,356	636	897
Iowa	1,162	2,747	1,309	2,735
Missouri	1,378	2,881	1,786	880

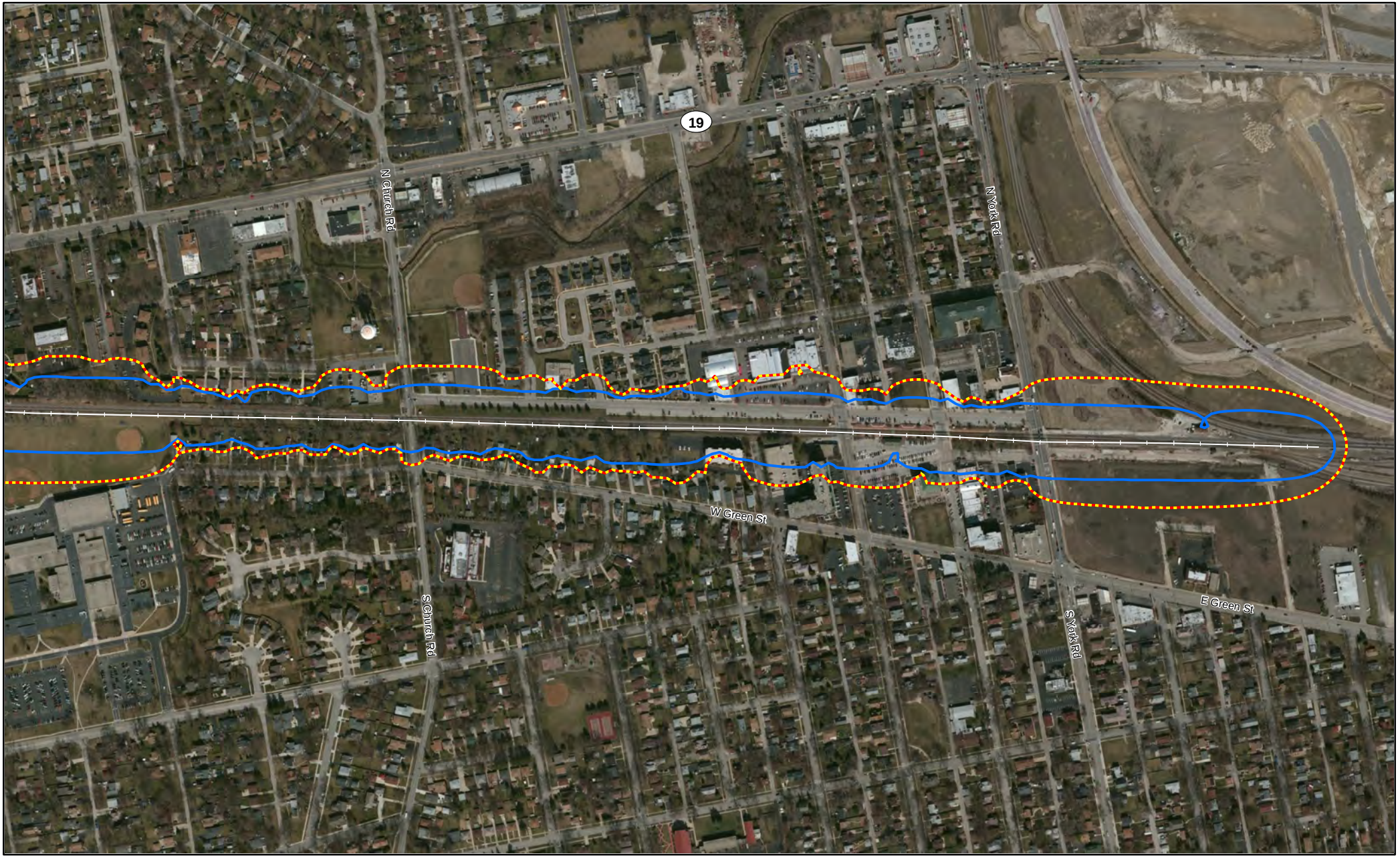
Table M.1-2. Noise Assessment Results by Cities and Towns

City/Town	Receptors within 65 dBA (Ldn)			Receptors with Adverse Noise Impacts (65 dBA Ldn and 3 dBA increase)
	Existing	Proposed Acquisition	No-Action	
Kansas	377	724	479	0
Oklahoma	921	1,693	1,119	0
Arkansas	763	1,475	924	0
Louisiana	1,654	2,939	2,015	181
Texas	~~3,347~~5,144	~~5,554~~8,492	~~4,061~~6,473	465
Total	~~10,125~~11,922	~~19,369~~22,307	~~12,329~~14,741	5,158

M.1.5 Noise and Vibration Figures

The following section includes figures throughout the study area presenting the existing, No-Action, and Proposed Acquisition 65 dBA (Ldn) noise contours, the noise impact contours (65 dBA (Ldn) and 3 dBA increase), and the Proposed Acquisition vibration contours. This section also includes figures of the railyards and intermodal facilities showing the closest receptor locations used in the noise impact assessment.

Appendix M – Attachment 1: Illinois



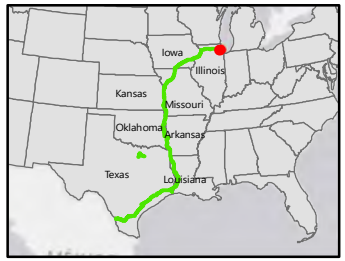
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

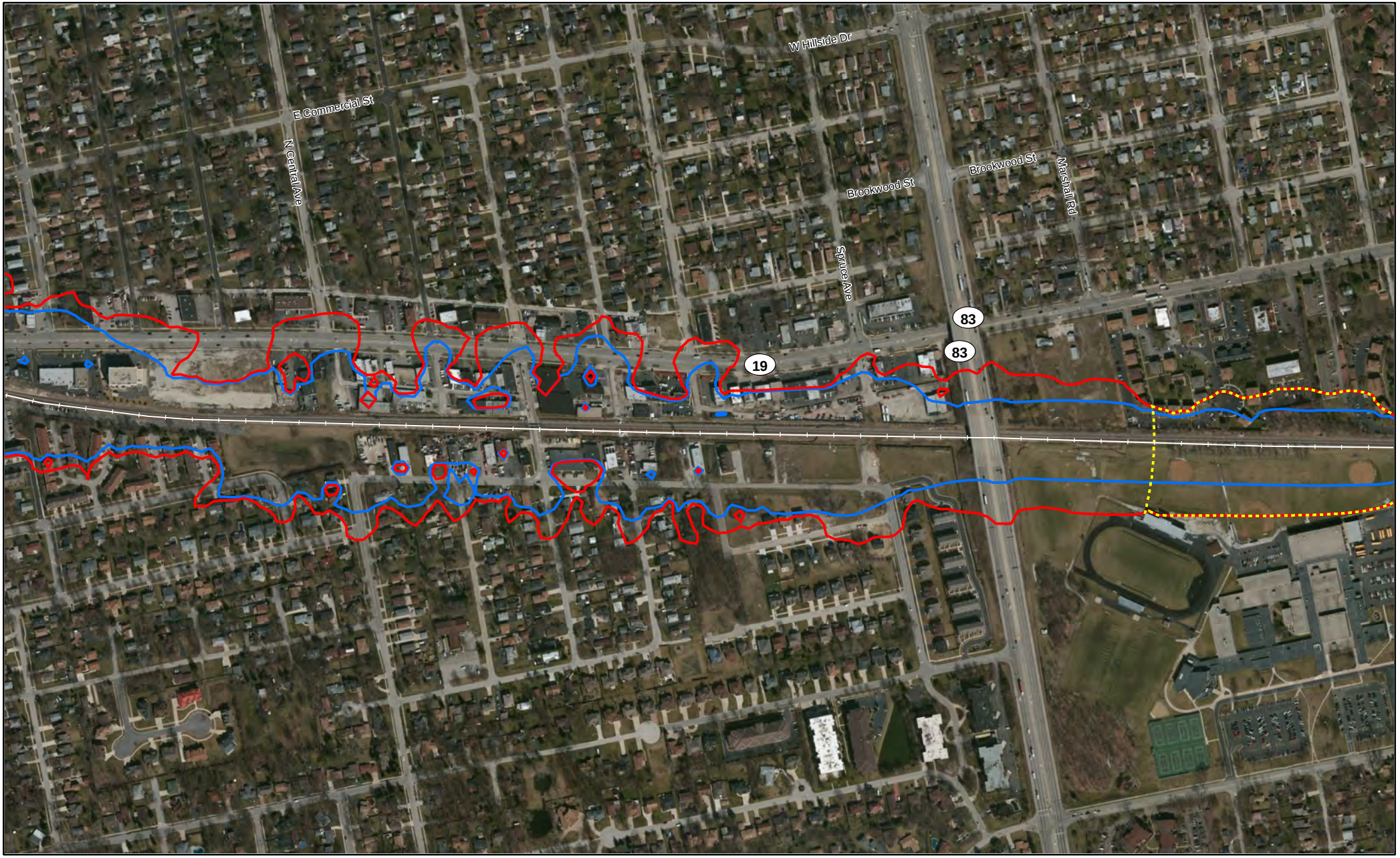
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Noise Contours
DuPage County, IL

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



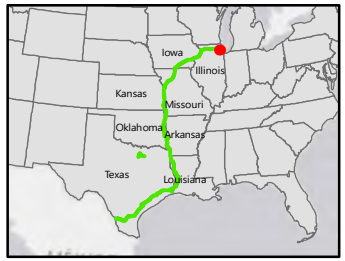
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
DuPage County, IL

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



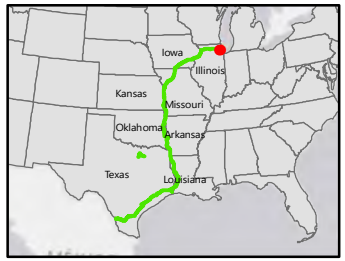
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
DuPage County, IL

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



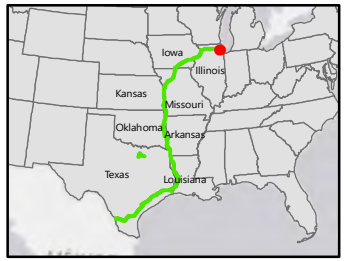
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

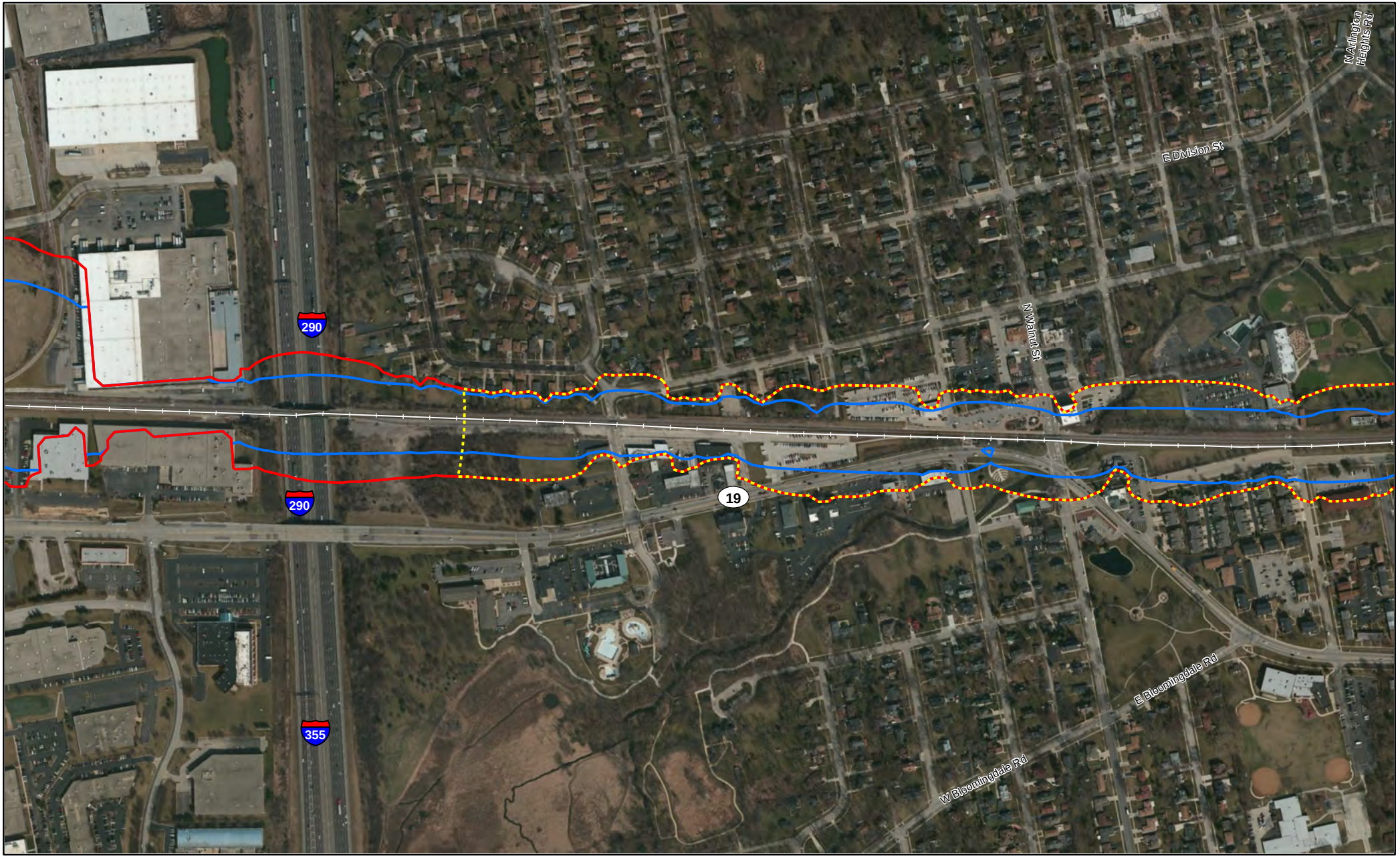
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Noise Contours
DuPage County, IL

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



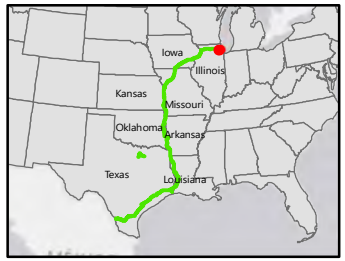
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

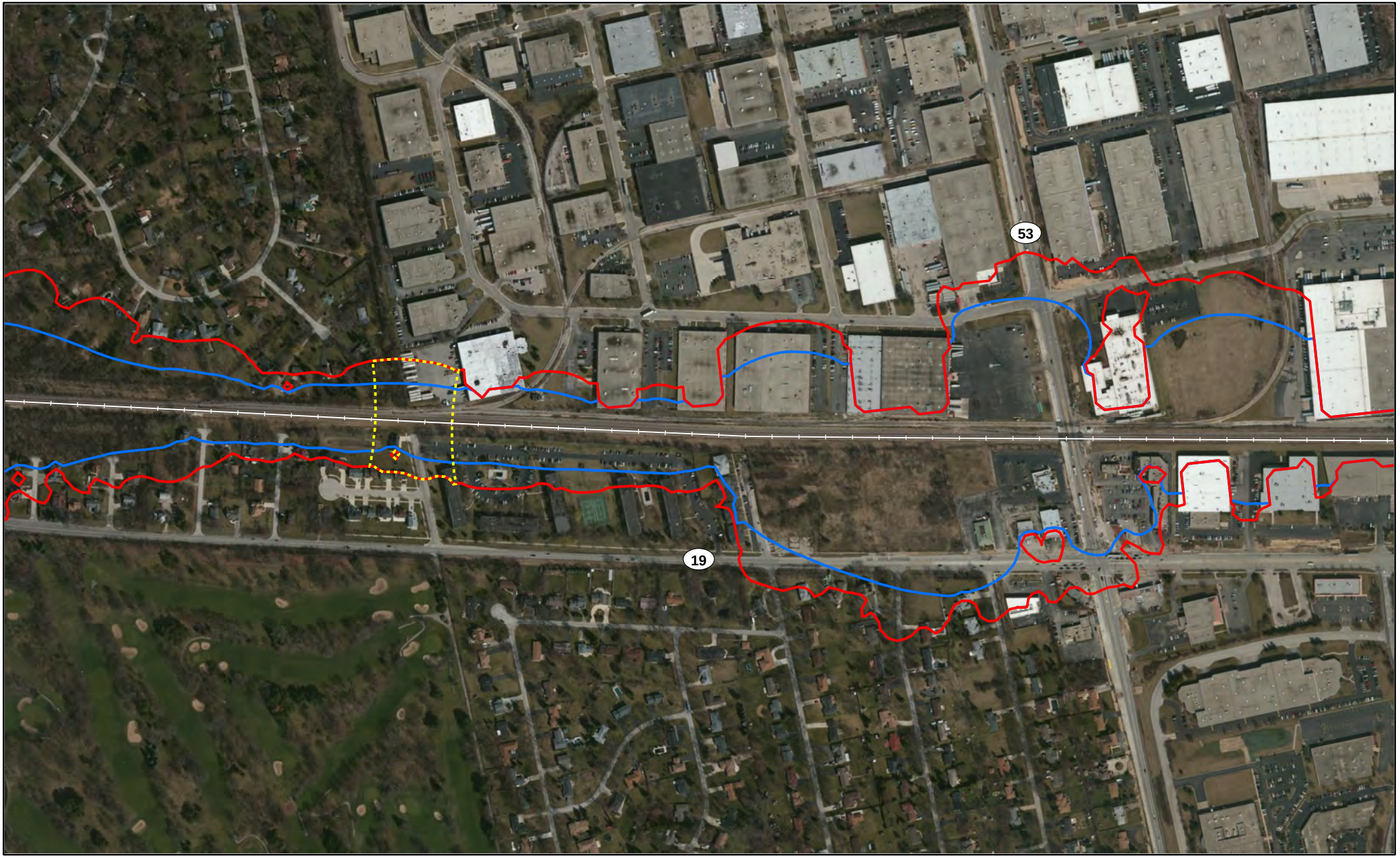
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Noise Contours
DuPage County, IL

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



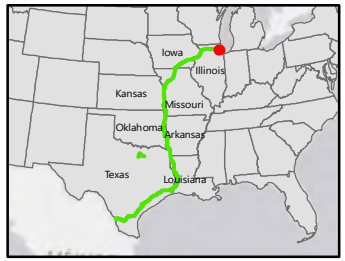
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

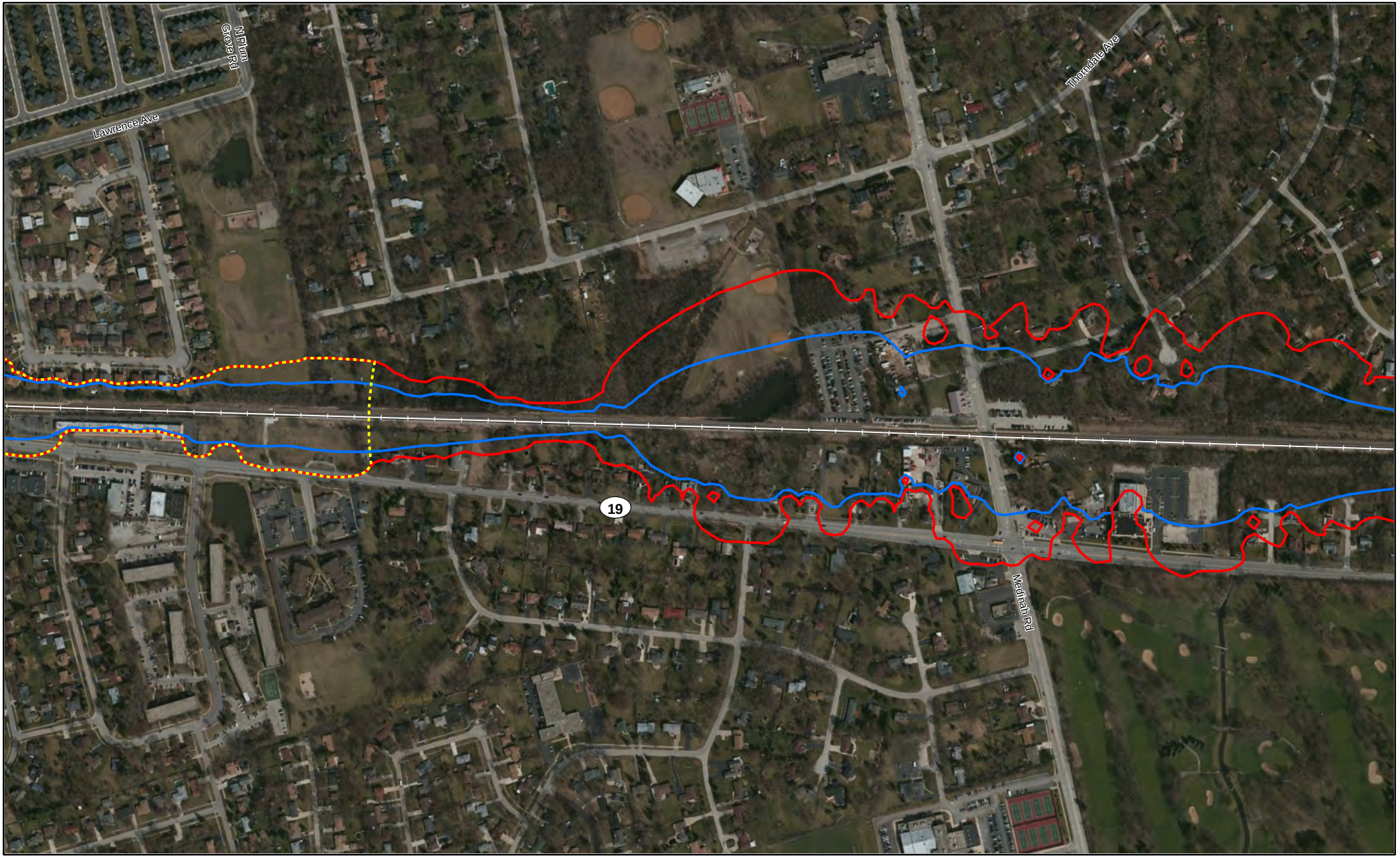
Tracks

Source: ESRI.



Noise Contours
DuPage County, IL

Miles
0 0.05 0.1



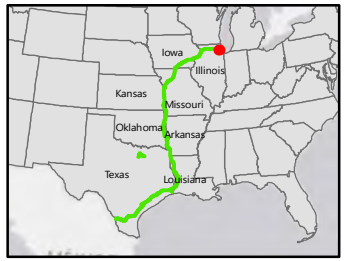
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

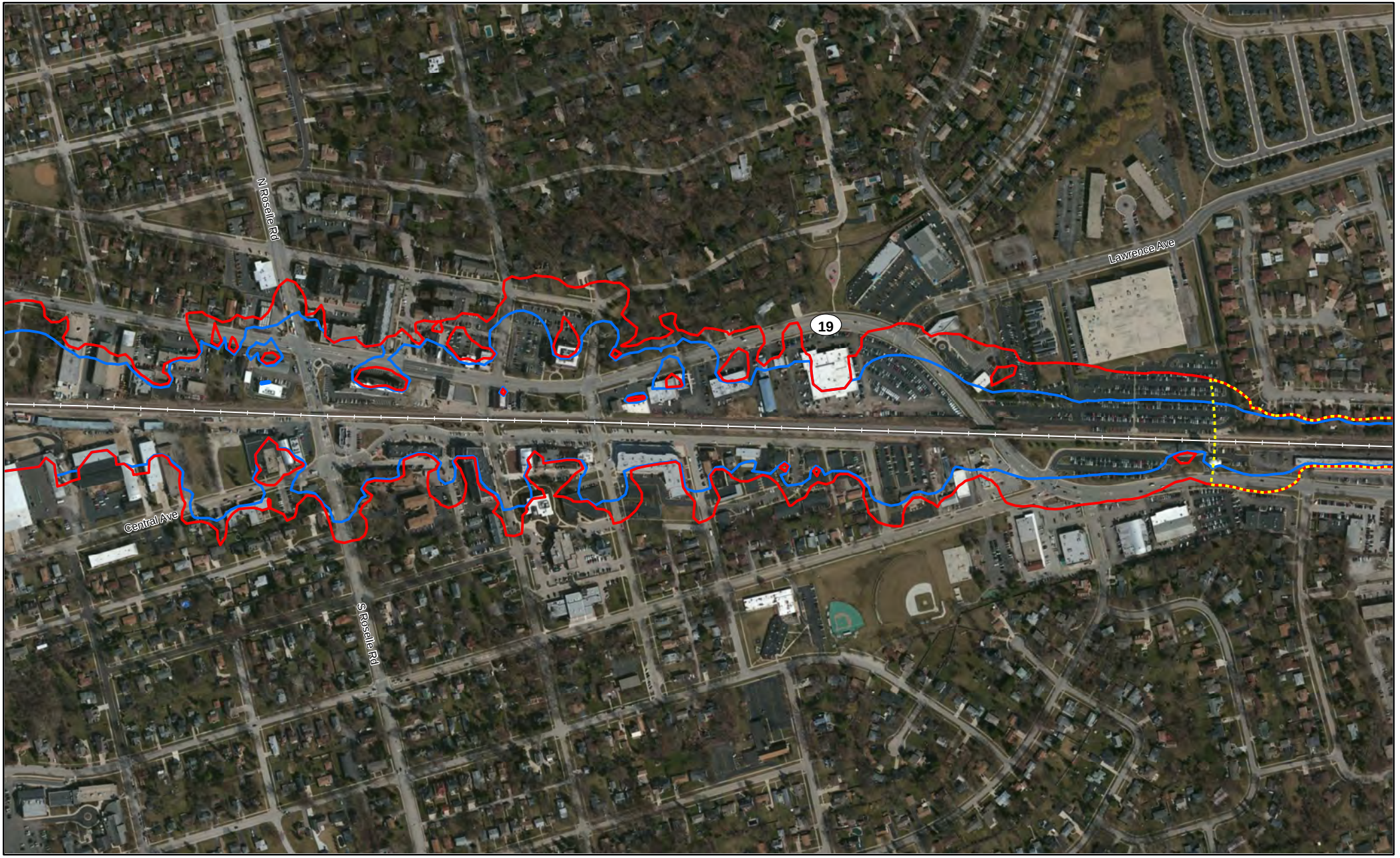
Source: ESRI.



Noise Contours
DuPage County, IL

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



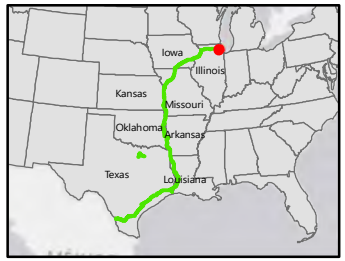
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

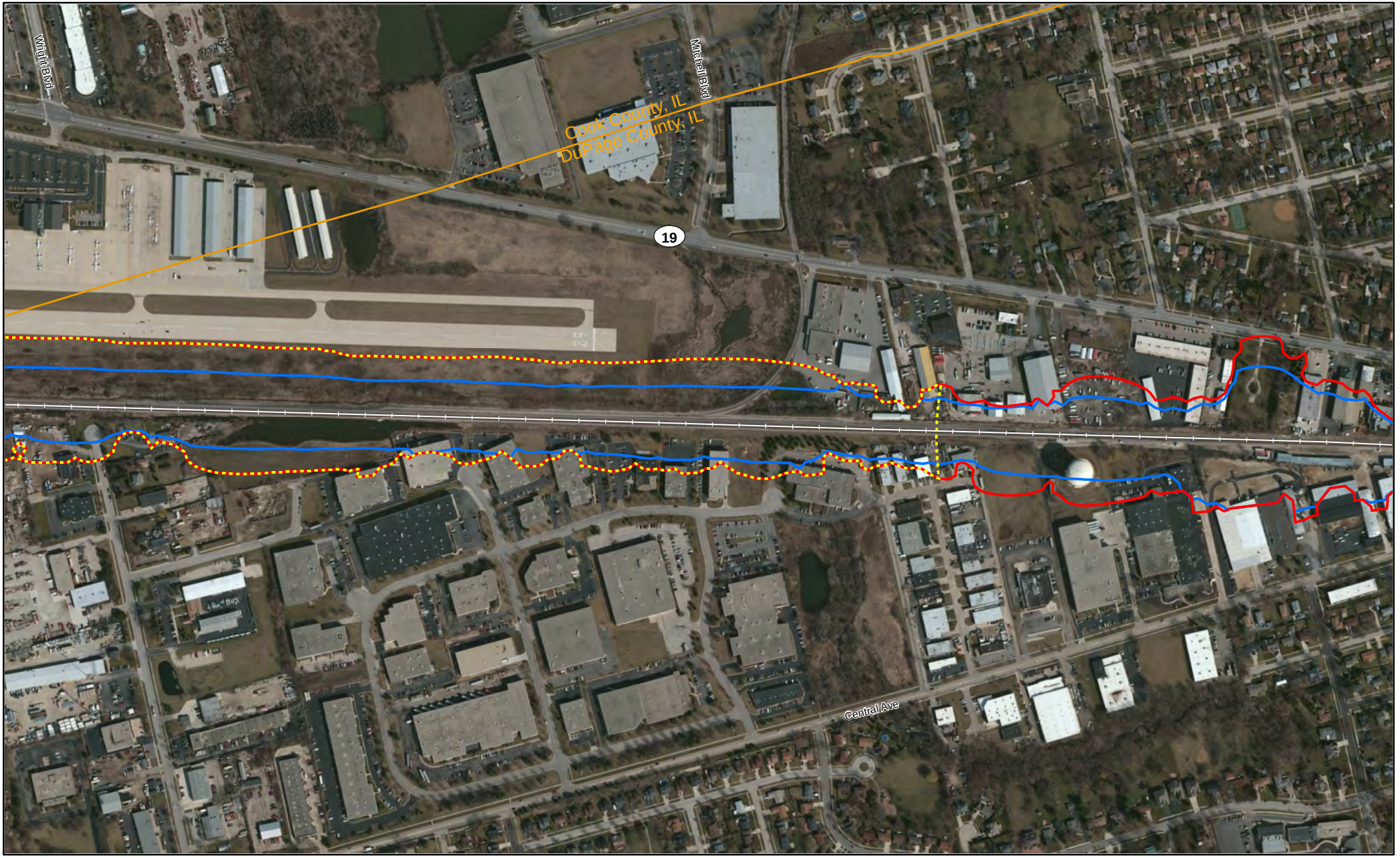
Source: ESRI.



Noise Contours
DuPage County, IL

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

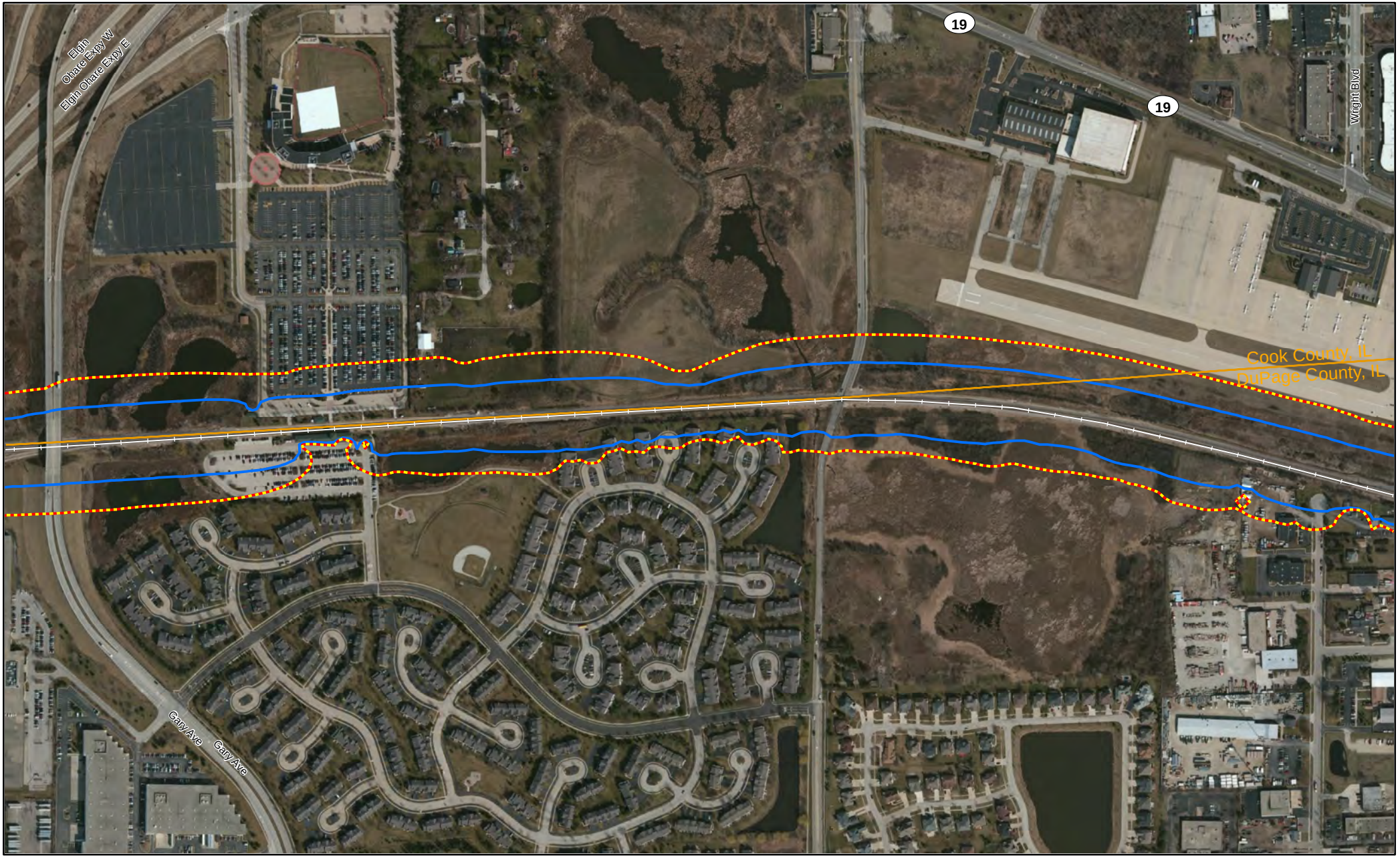


Noise Contours
Cook County, IL

Page 9 of 1588

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



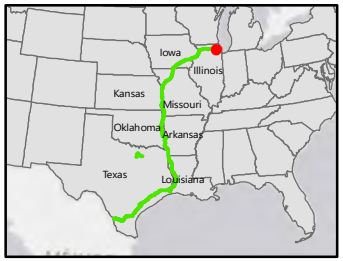
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

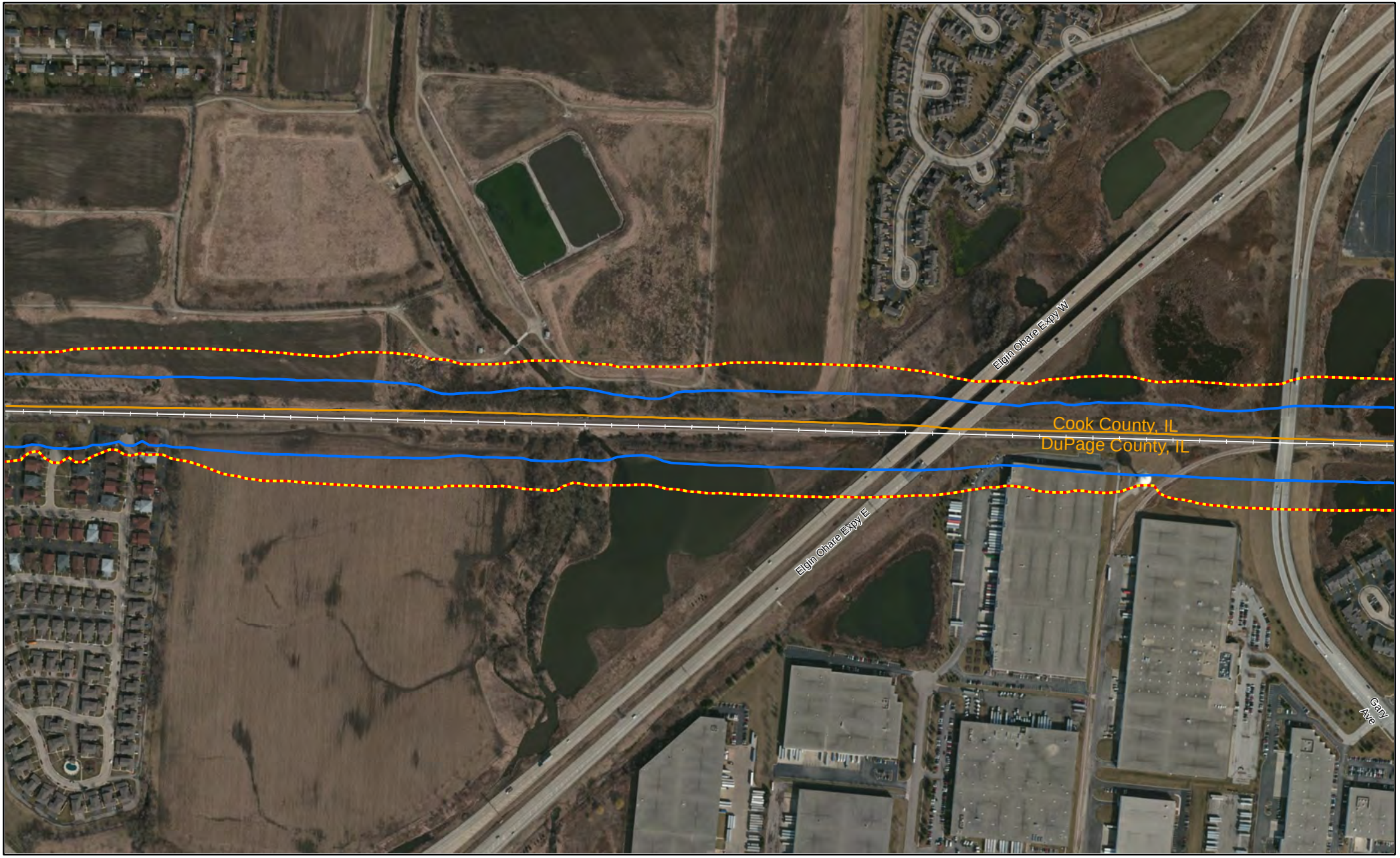


Noise Contours
Cook County, IL

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



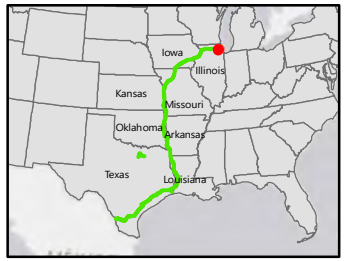
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Noise Contours
Cook County, IL

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



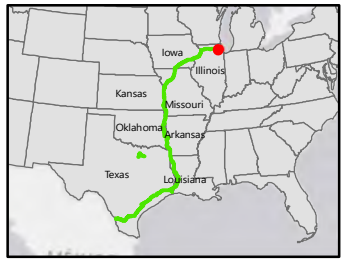
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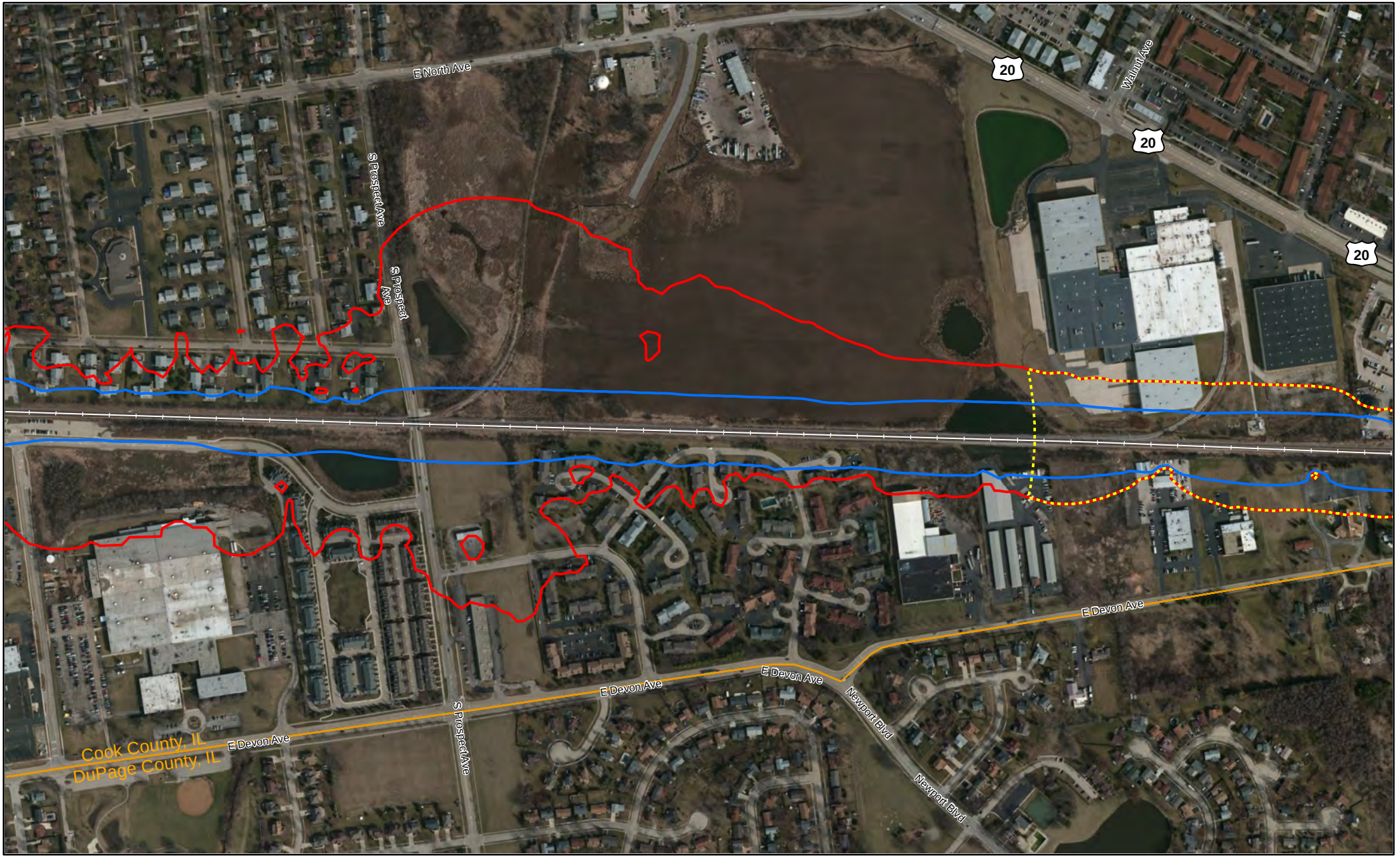


Noise Contours
Cook County, IL

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

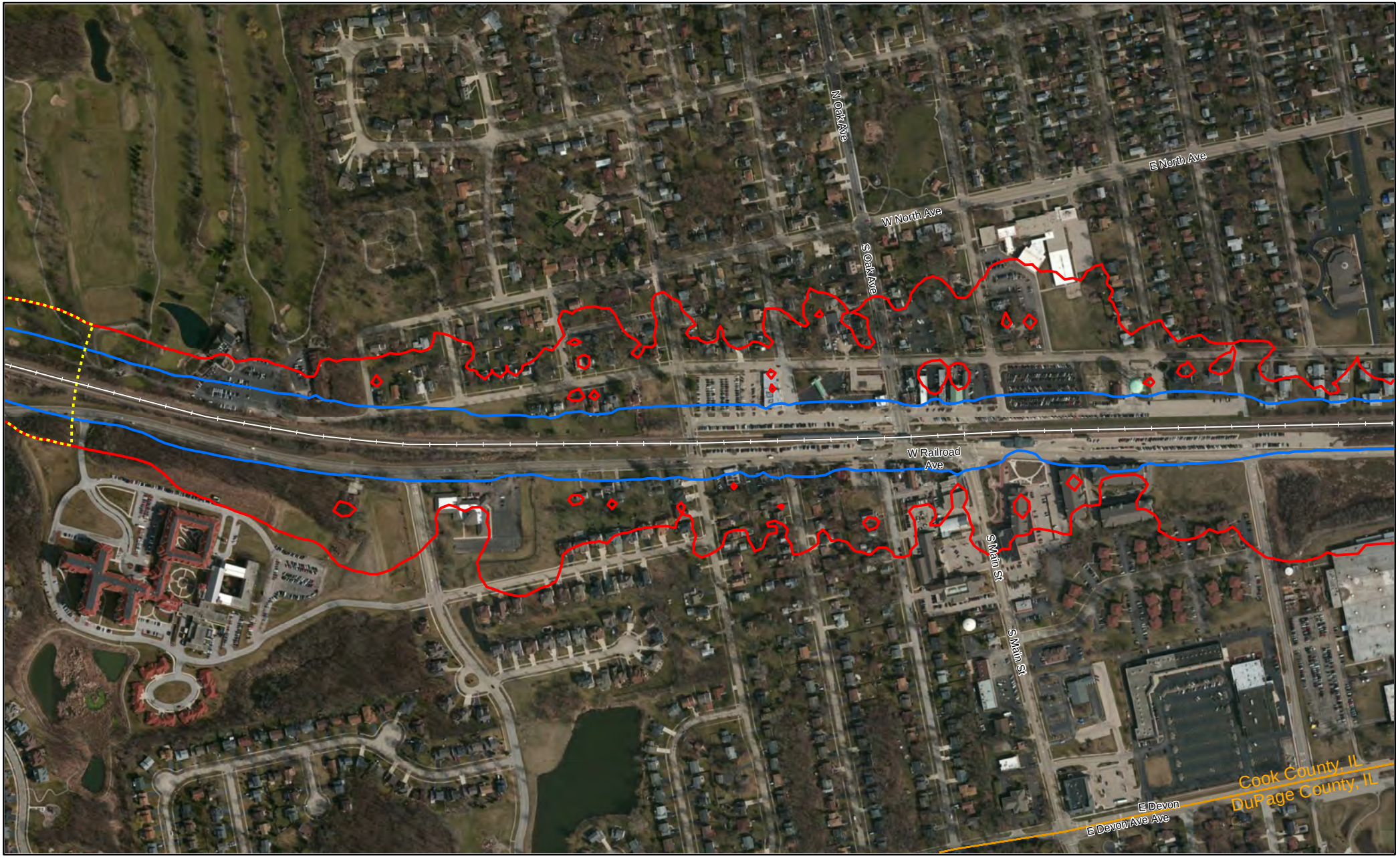
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Noise Contours
Cook County, IL

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



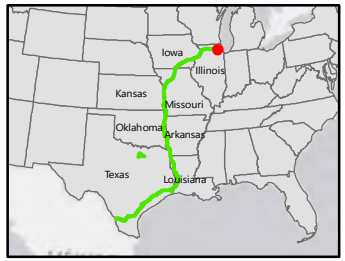
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Proposed Acquisition Noise (65 Ldn)

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Tracks

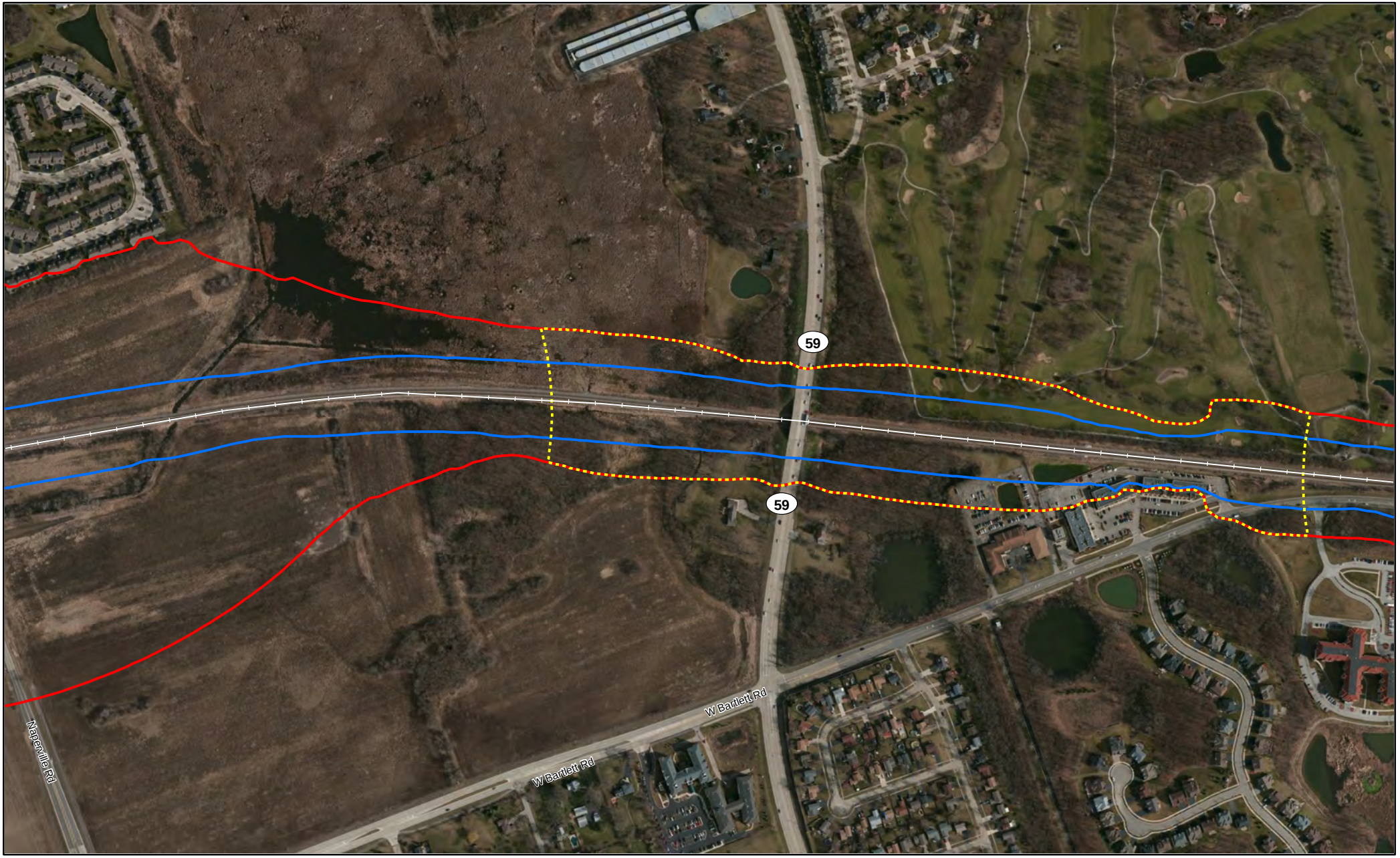
Source: ESRI.



Noise Contours
Cook County, IL

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Miles
0 0.05 0.1



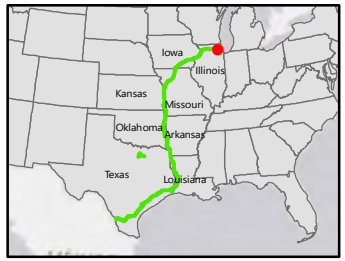
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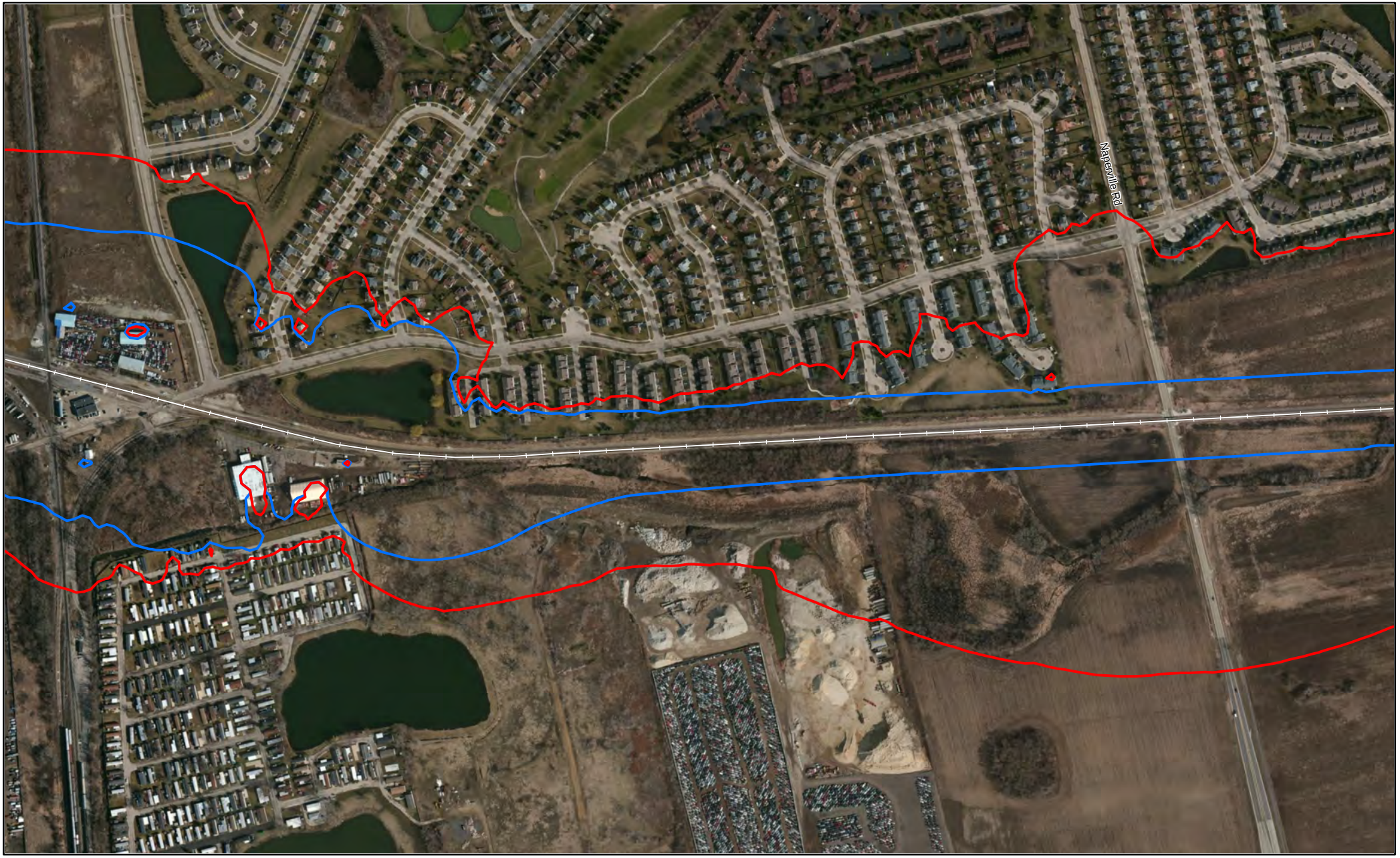
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Noise Contours
Cook County, IL

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



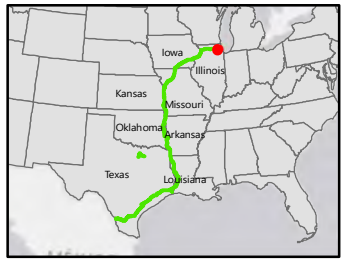
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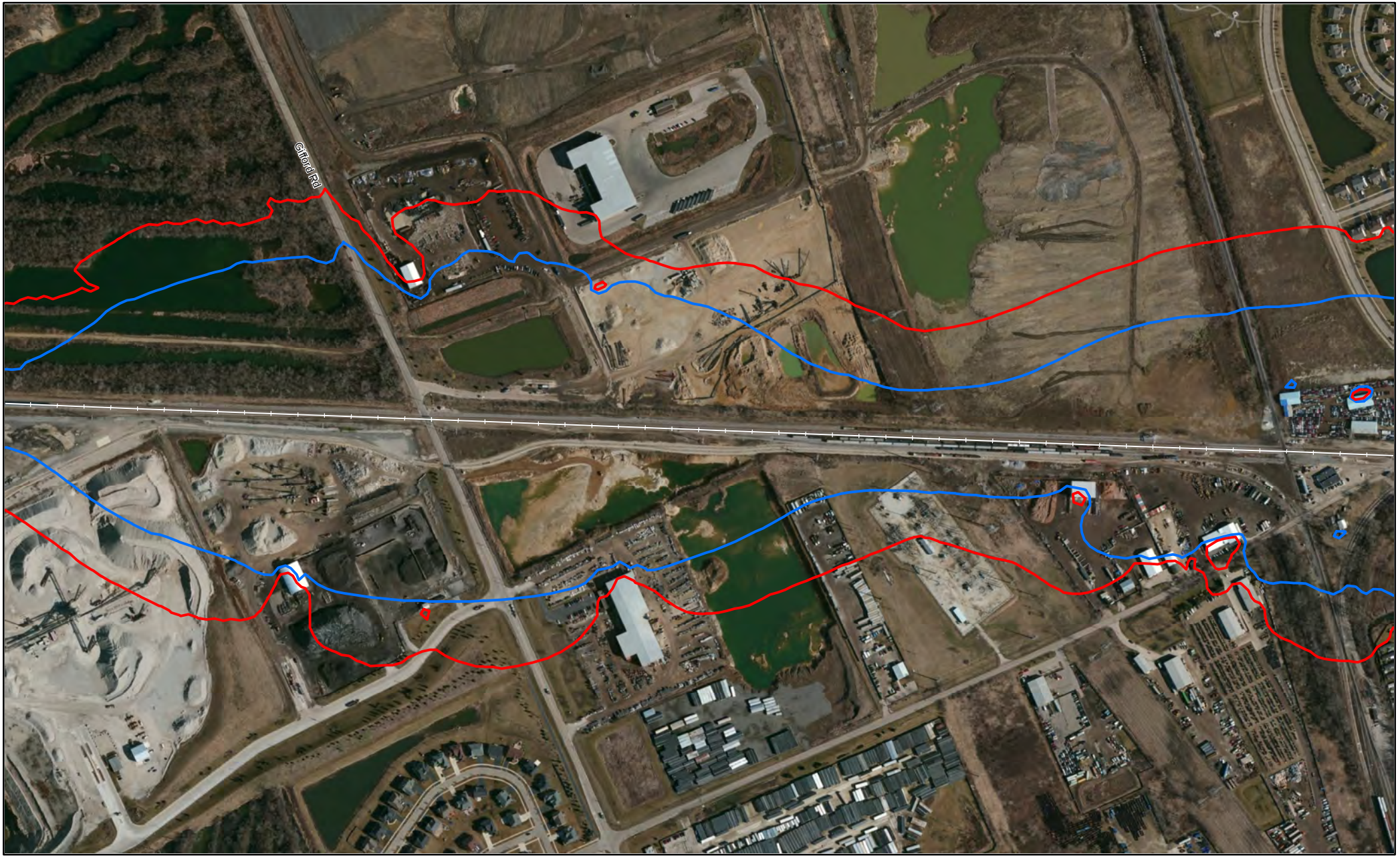
Tracks

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Noise Contours
Cook County, IL

Miles
0 0.05 0.1



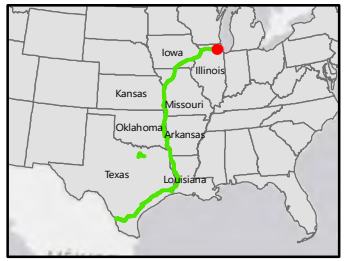
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Noise Contours
Cook County, IL

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



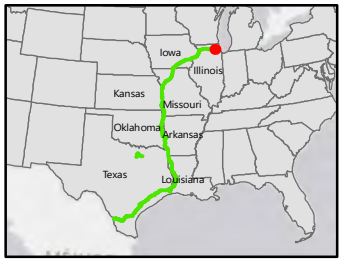
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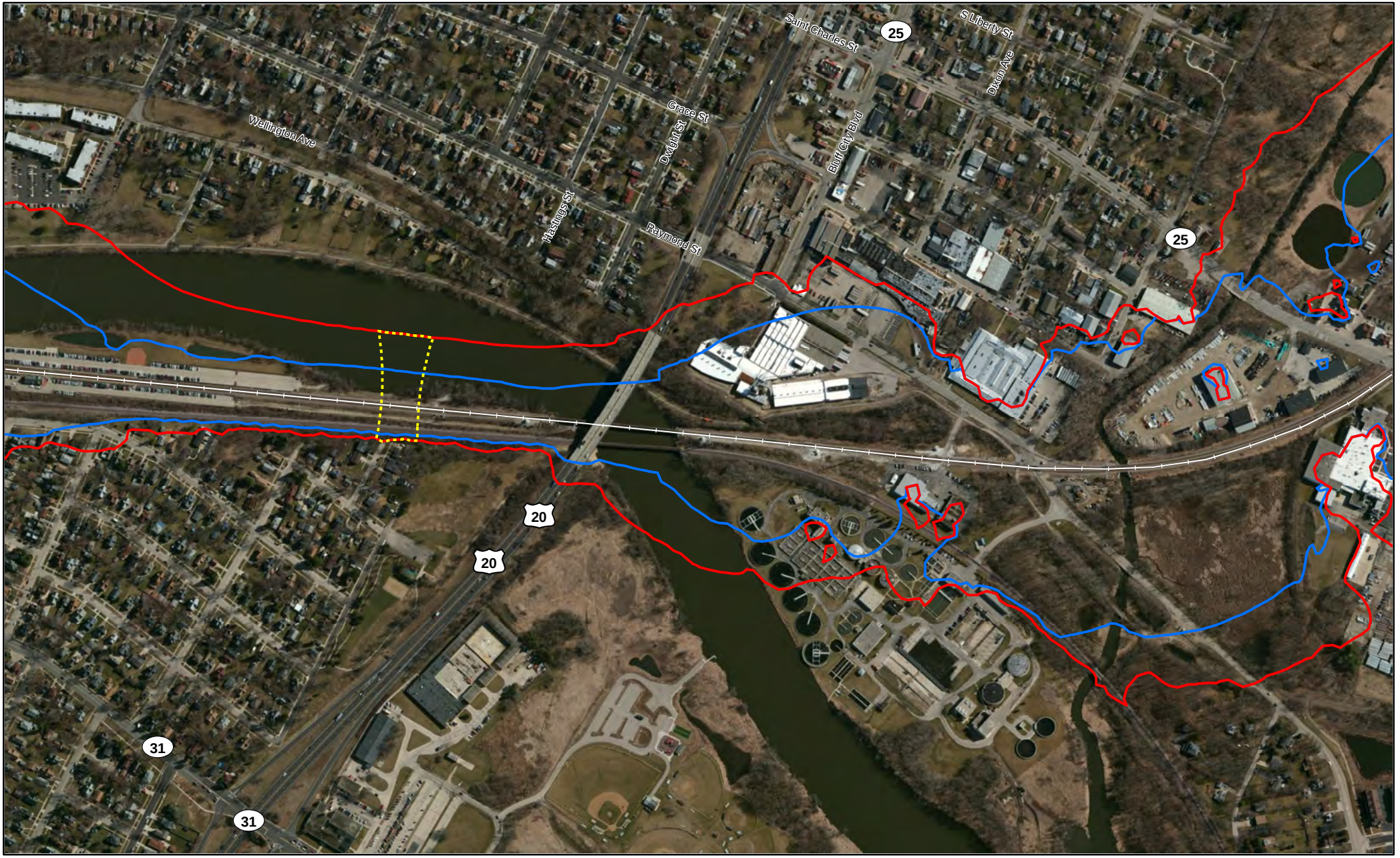
Tracks

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Noise Contours
Cook County, IL

Miles
0 0.05 0.1



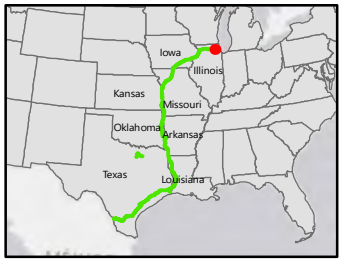
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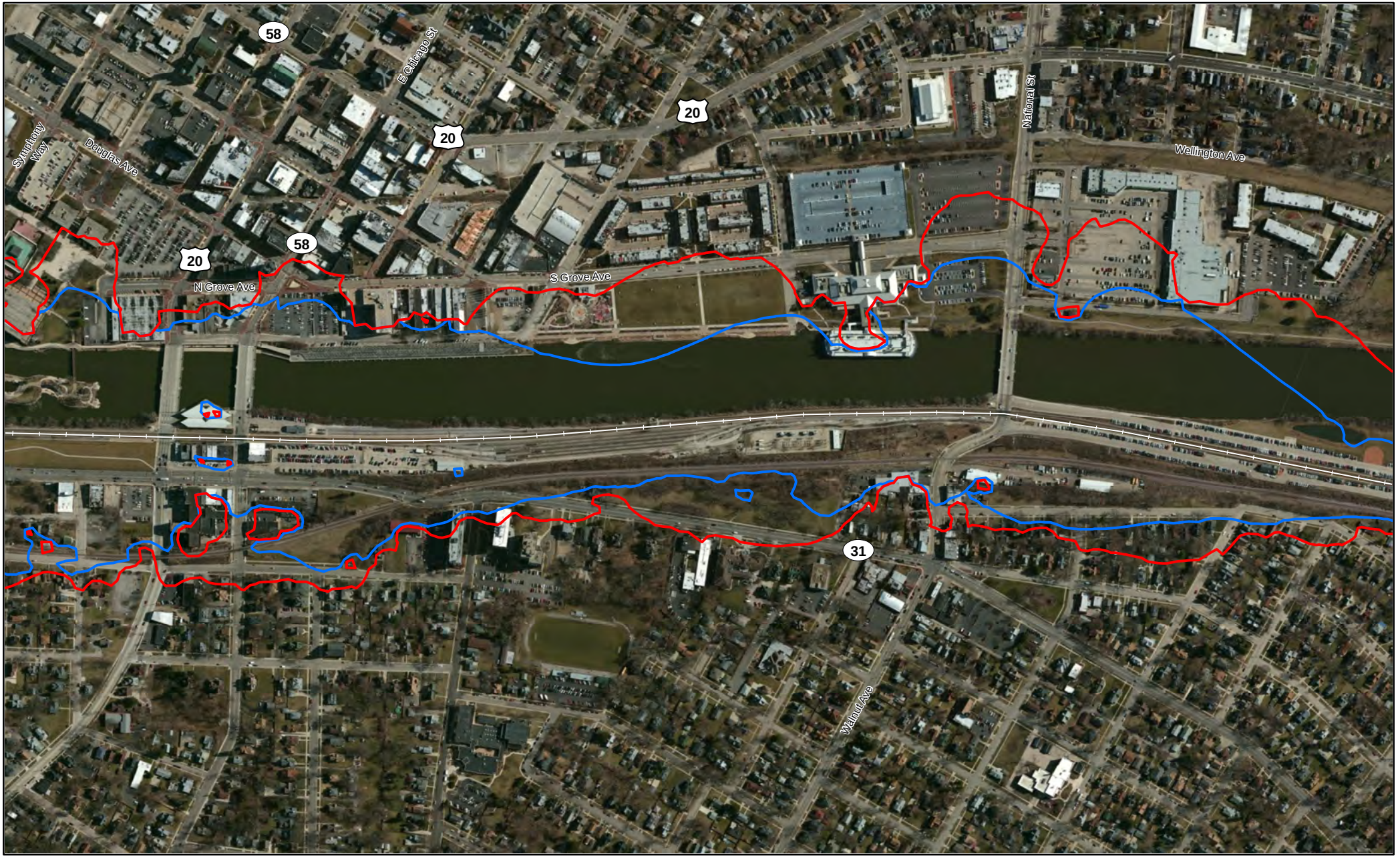
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Noise Contours
Kane County, IL

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



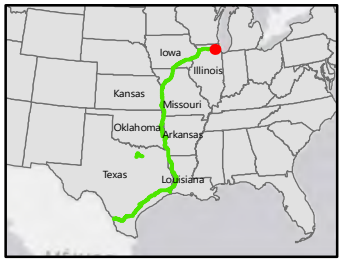
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Noise Contours
Kane County, IL

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



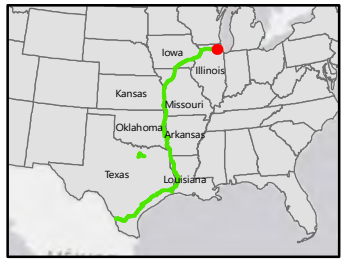
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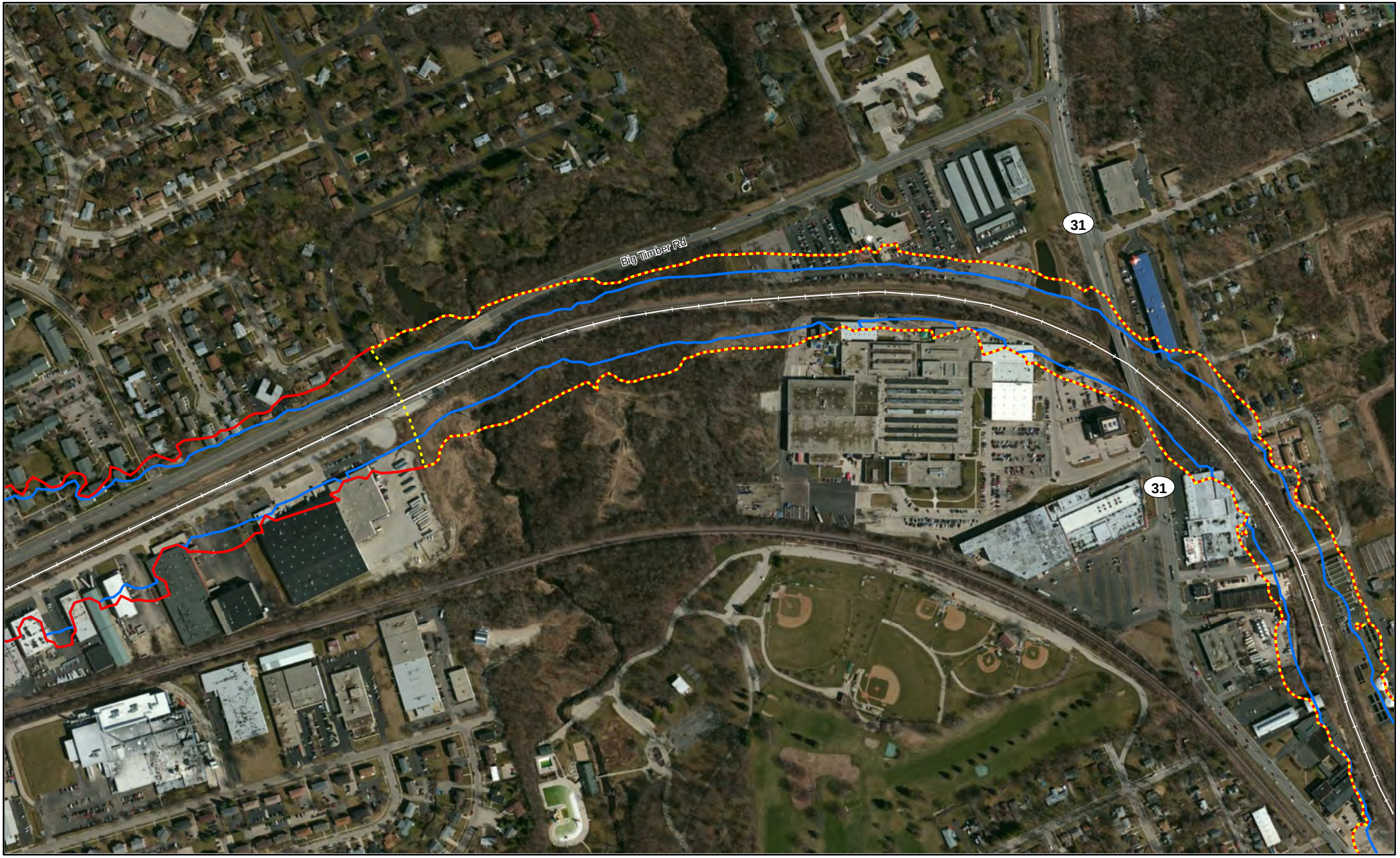


Noise Contours
Kane County, IL

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



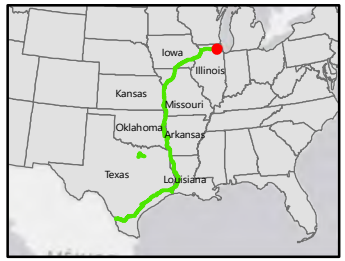
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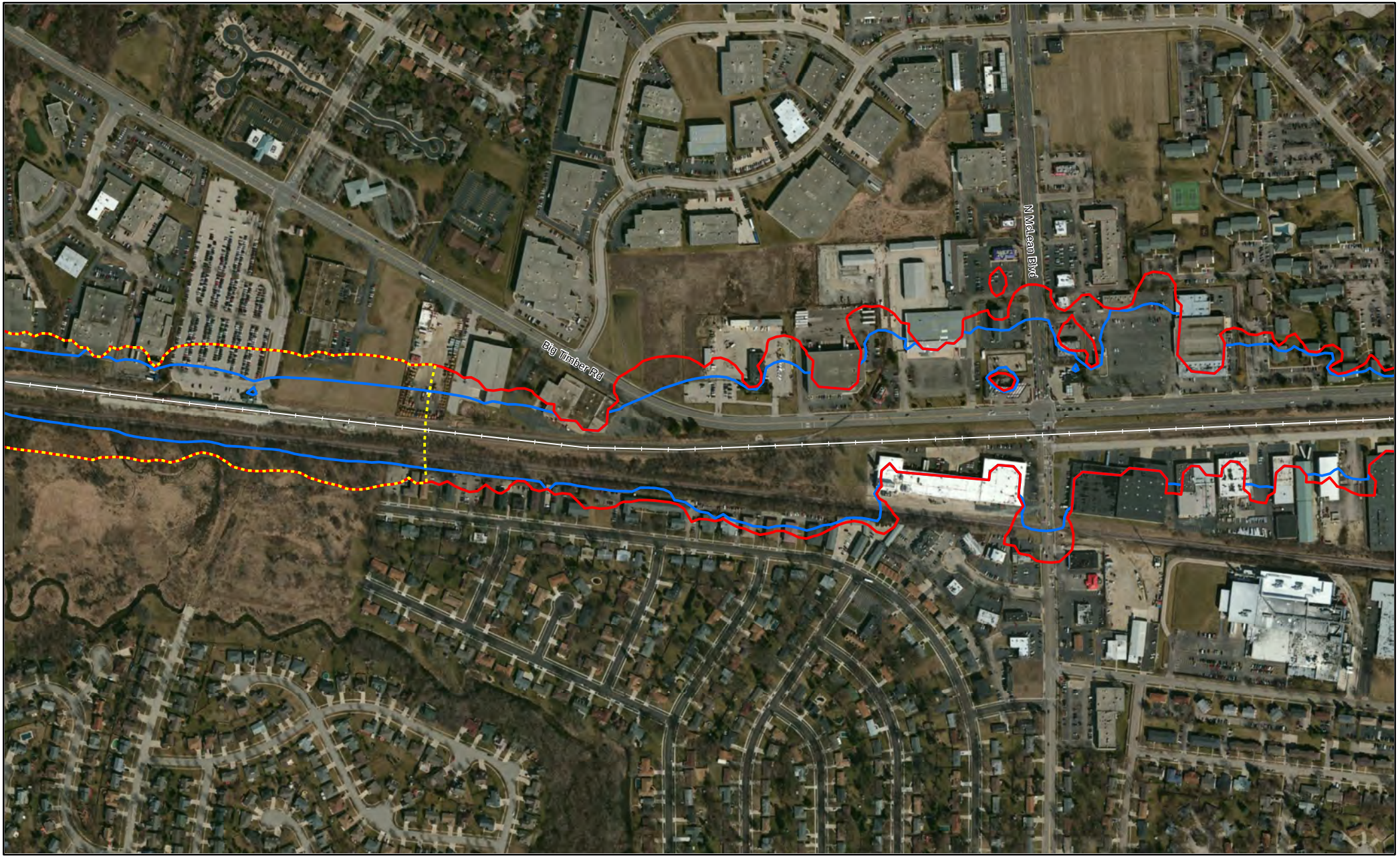
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Noise Contours
Kane County, IL

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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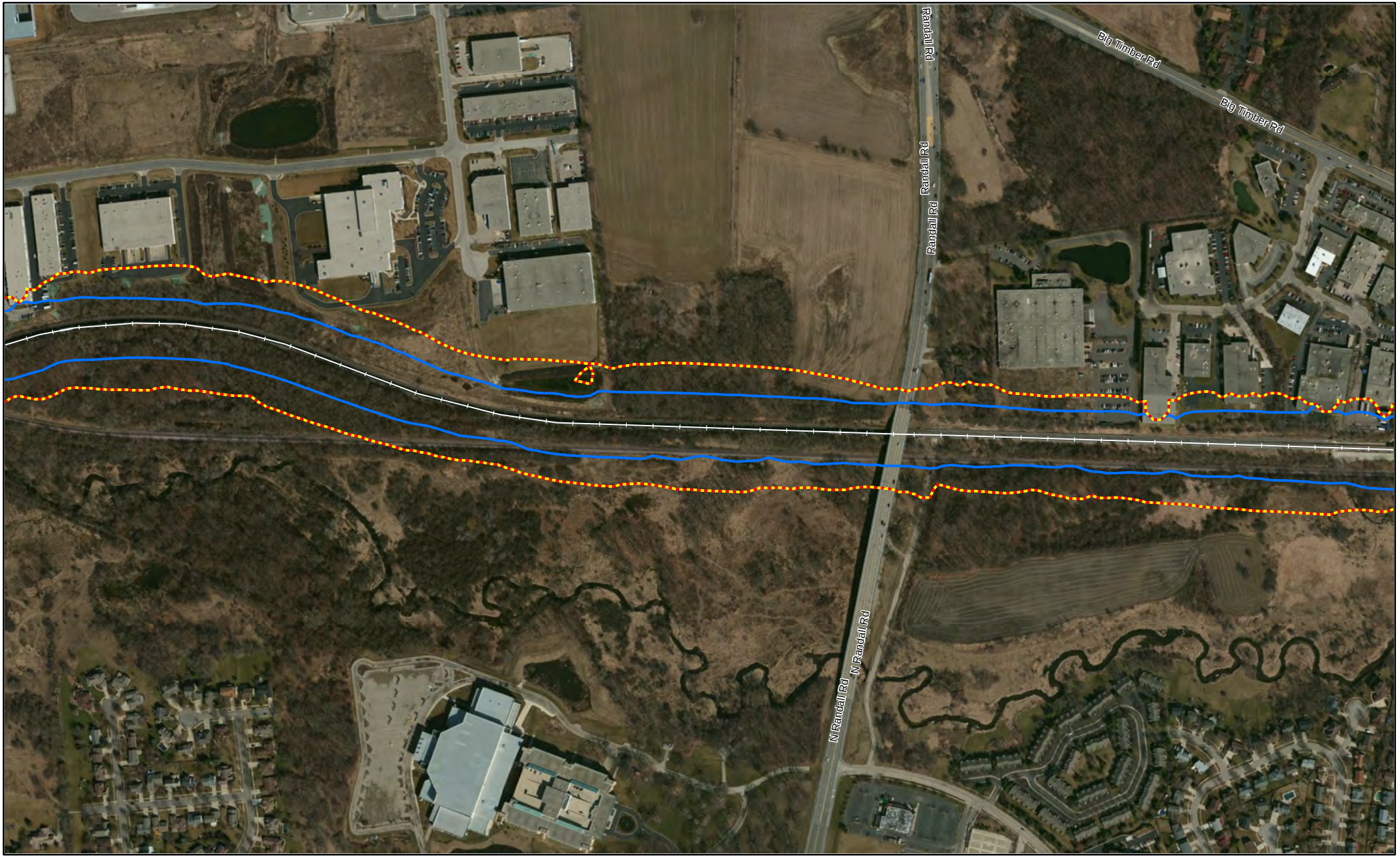


Noise Contours
Kane County, IL

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



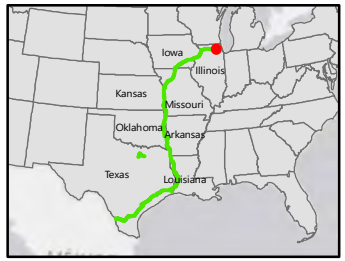
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Noise Contours
Kane County, IL

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



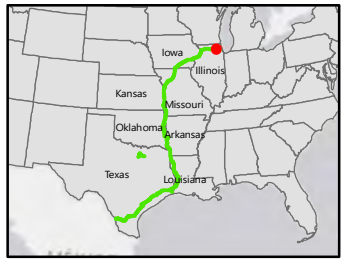
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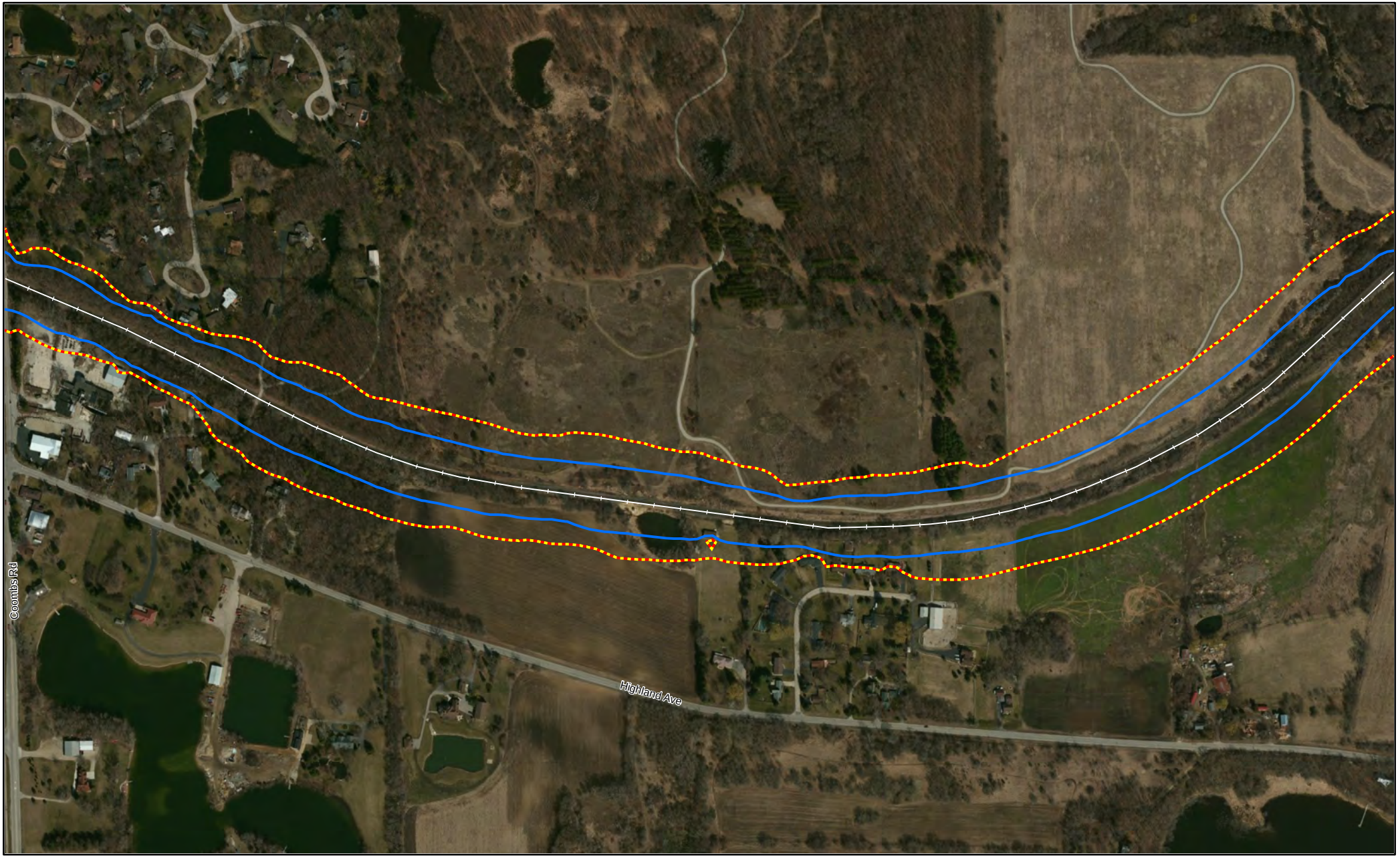
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Noise Contours
Kane County, IL

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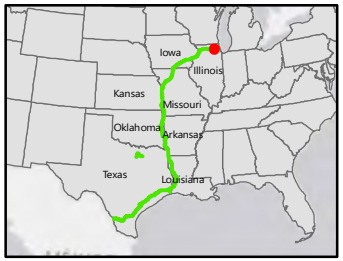
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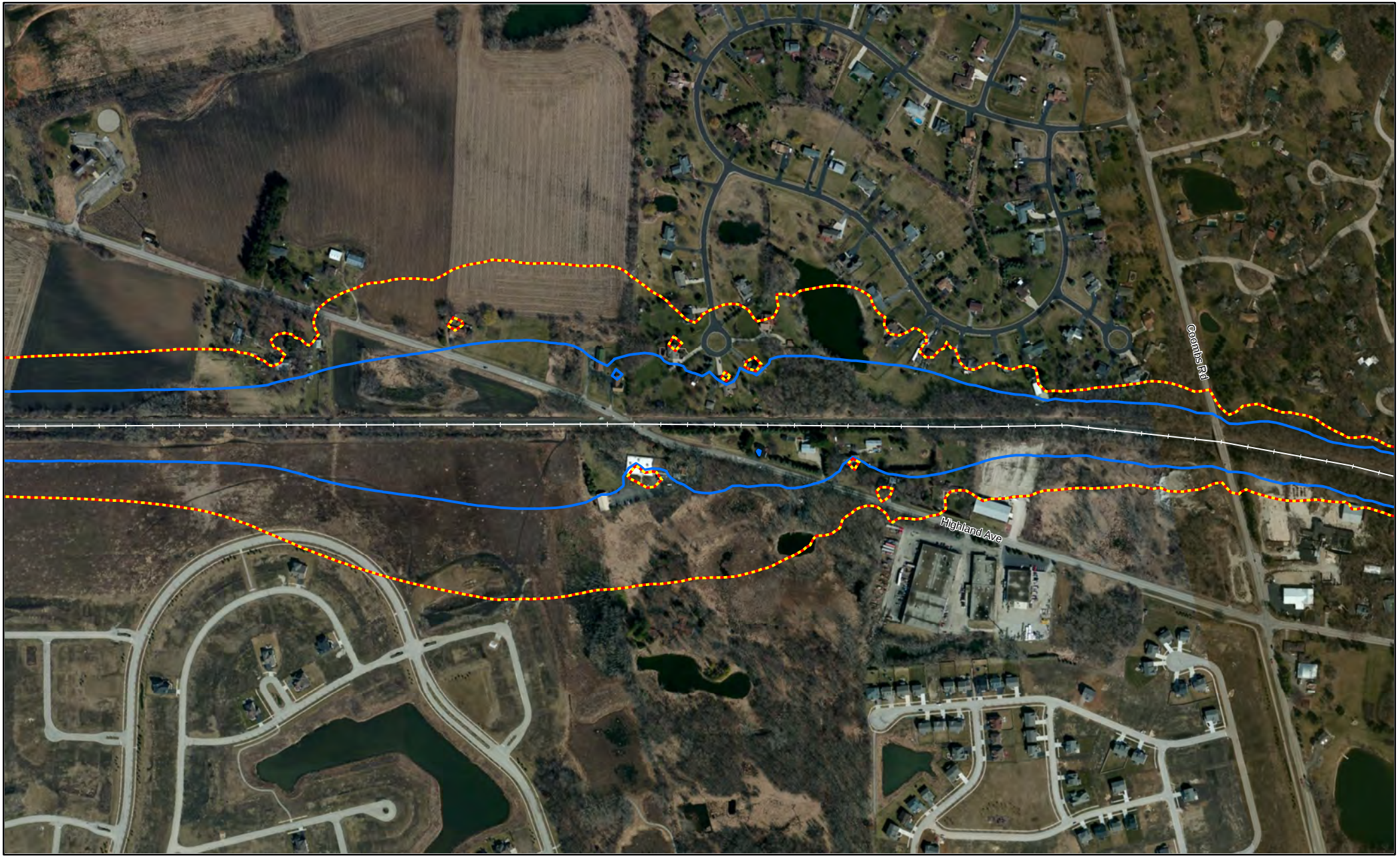
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Noise Contours
Kane County, IL

Miles
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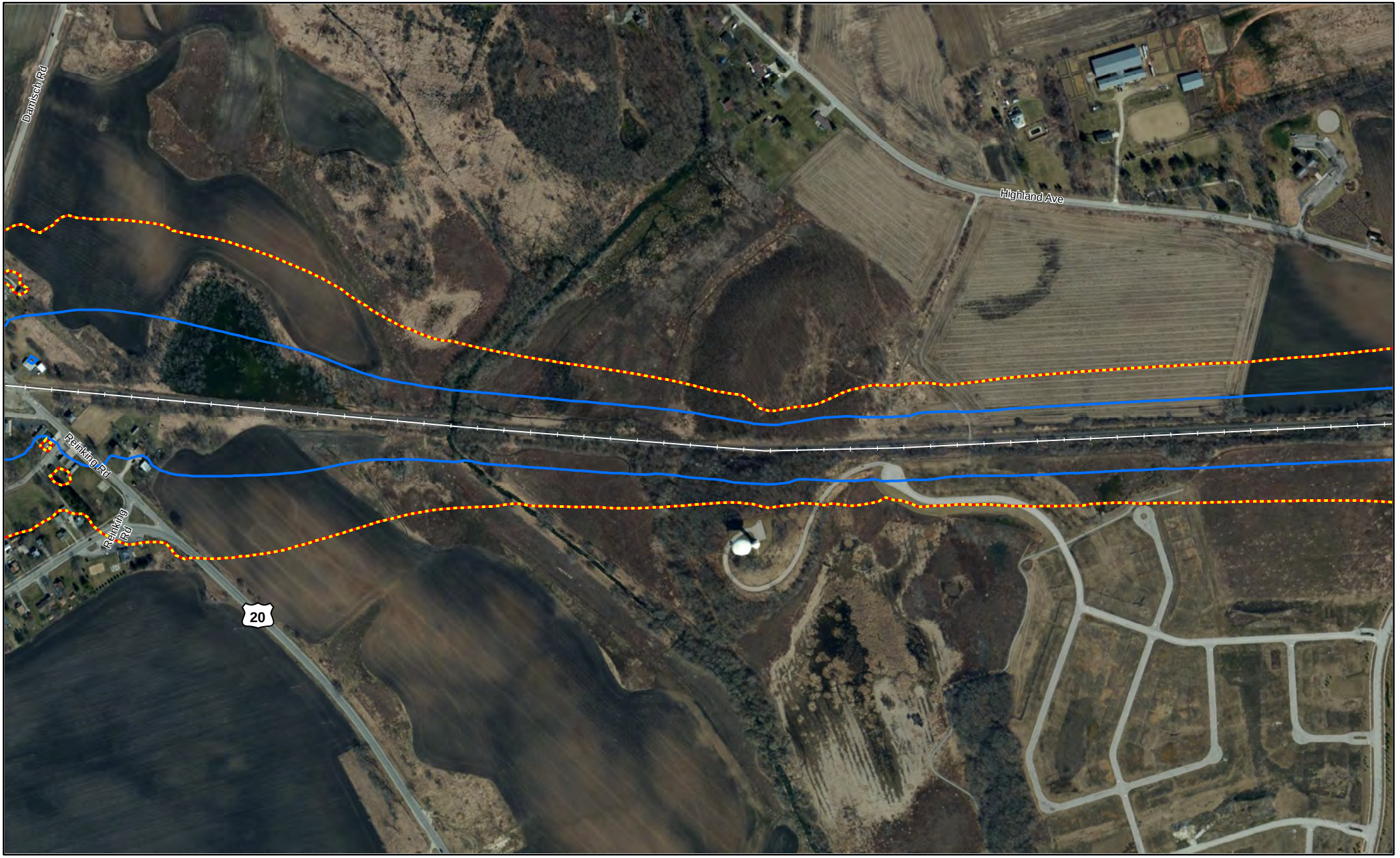
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Noise Contours
Kane County, IL

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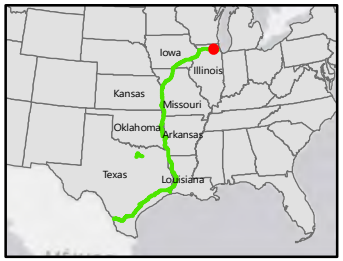
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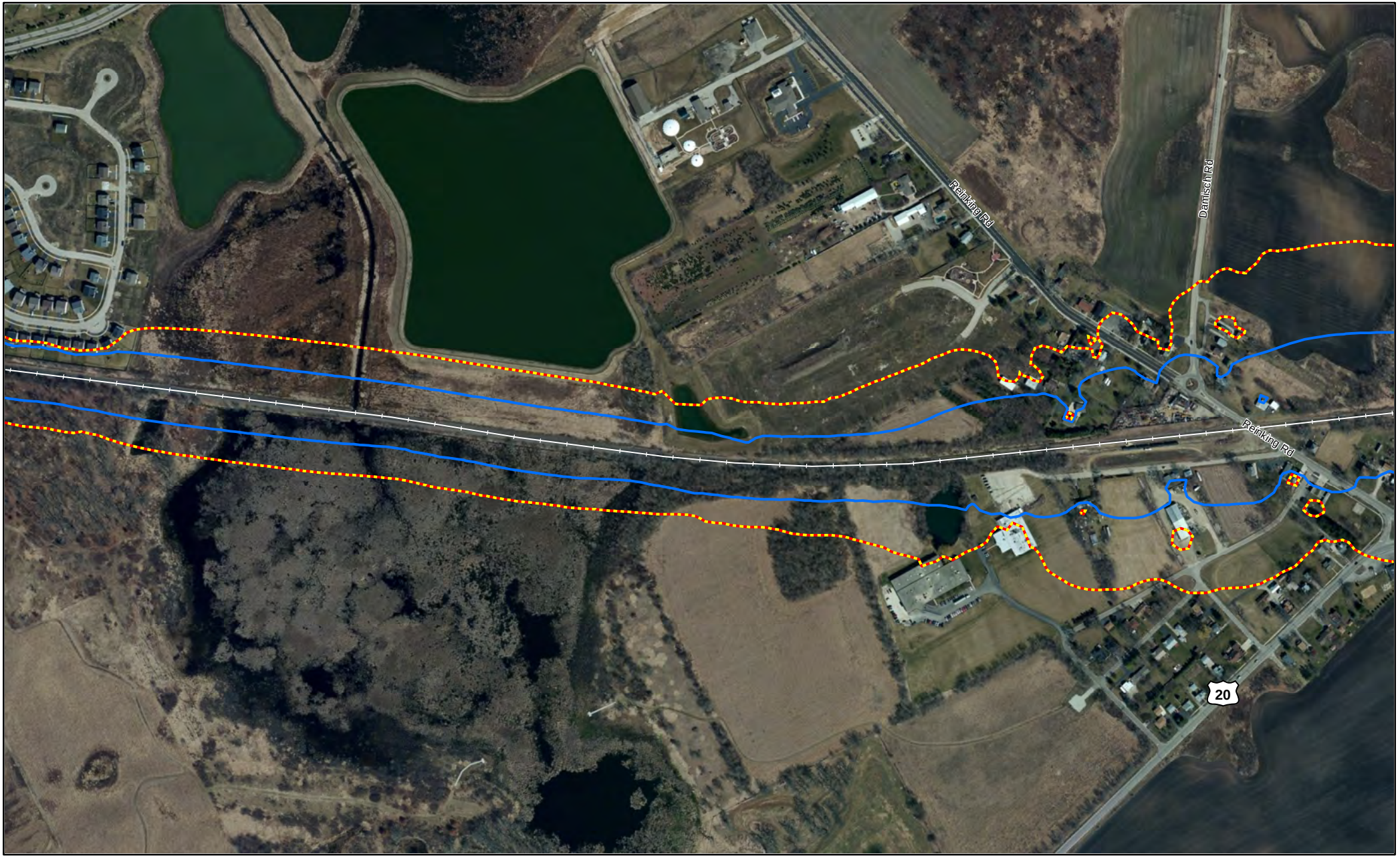
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Noise Contours
Kane County, IL

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



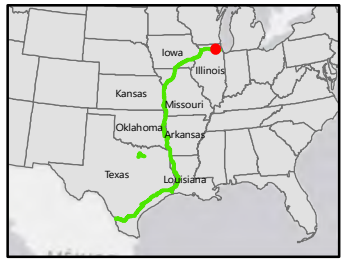
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Noise Contours
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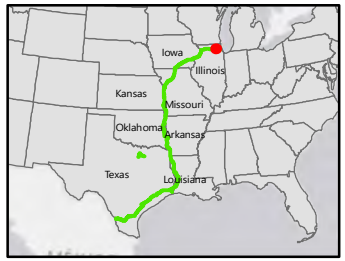
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Kane County, IL

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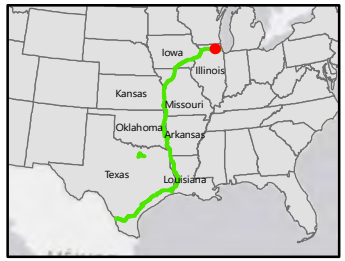
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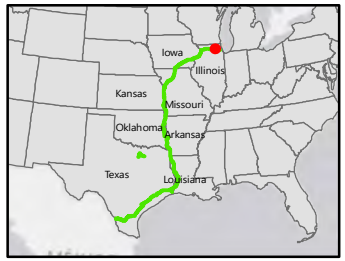
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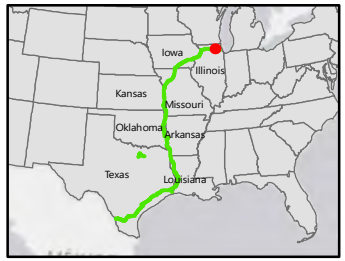
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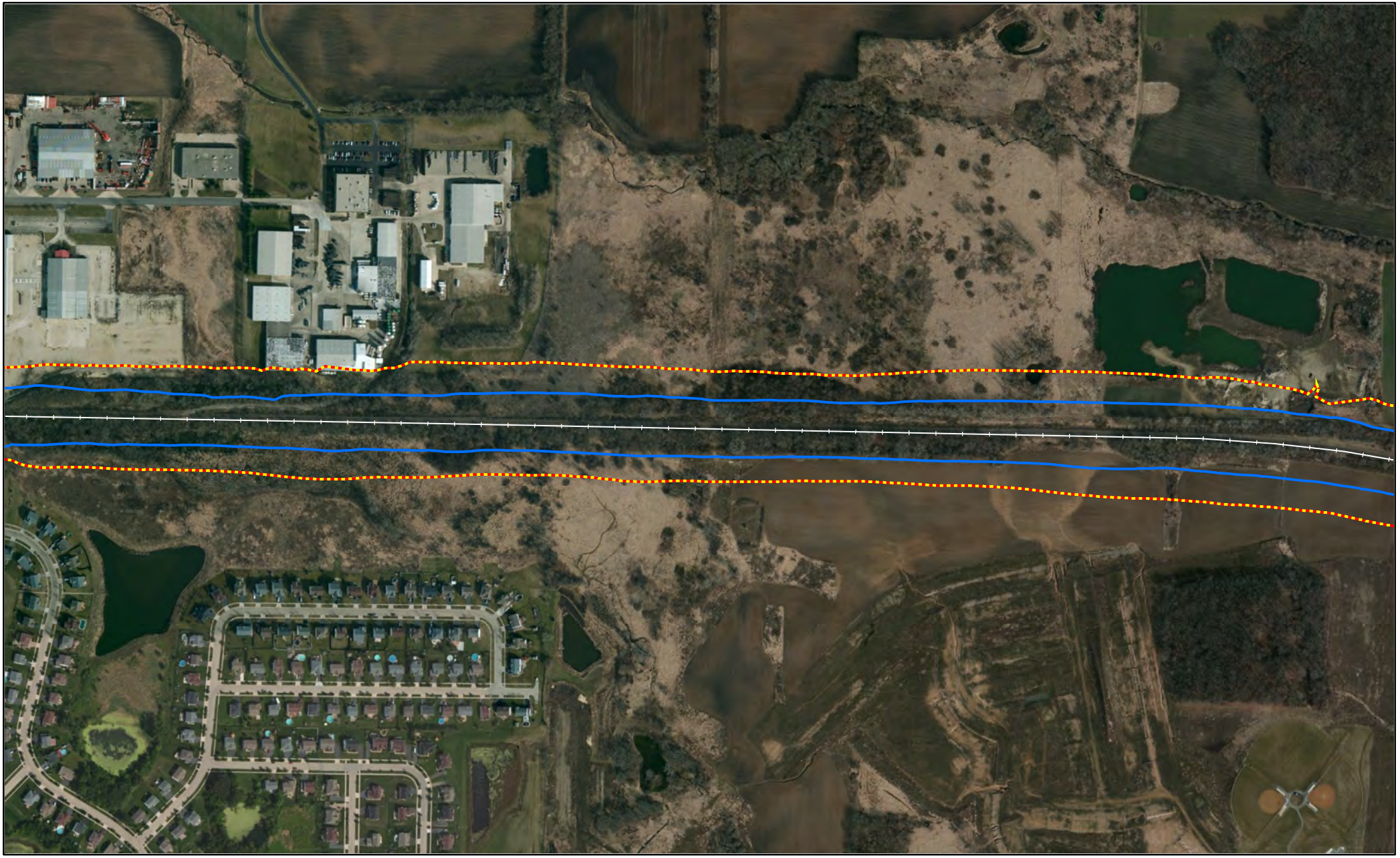
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Noise Contours
Kane County, IL

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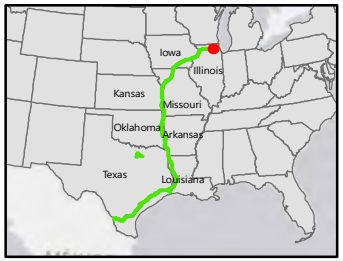
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Kane County, IL

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0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



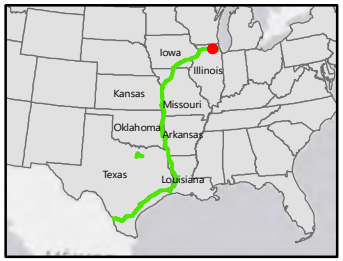
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Kane County, IL

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



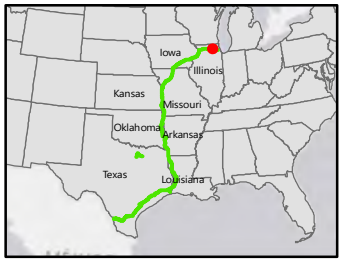
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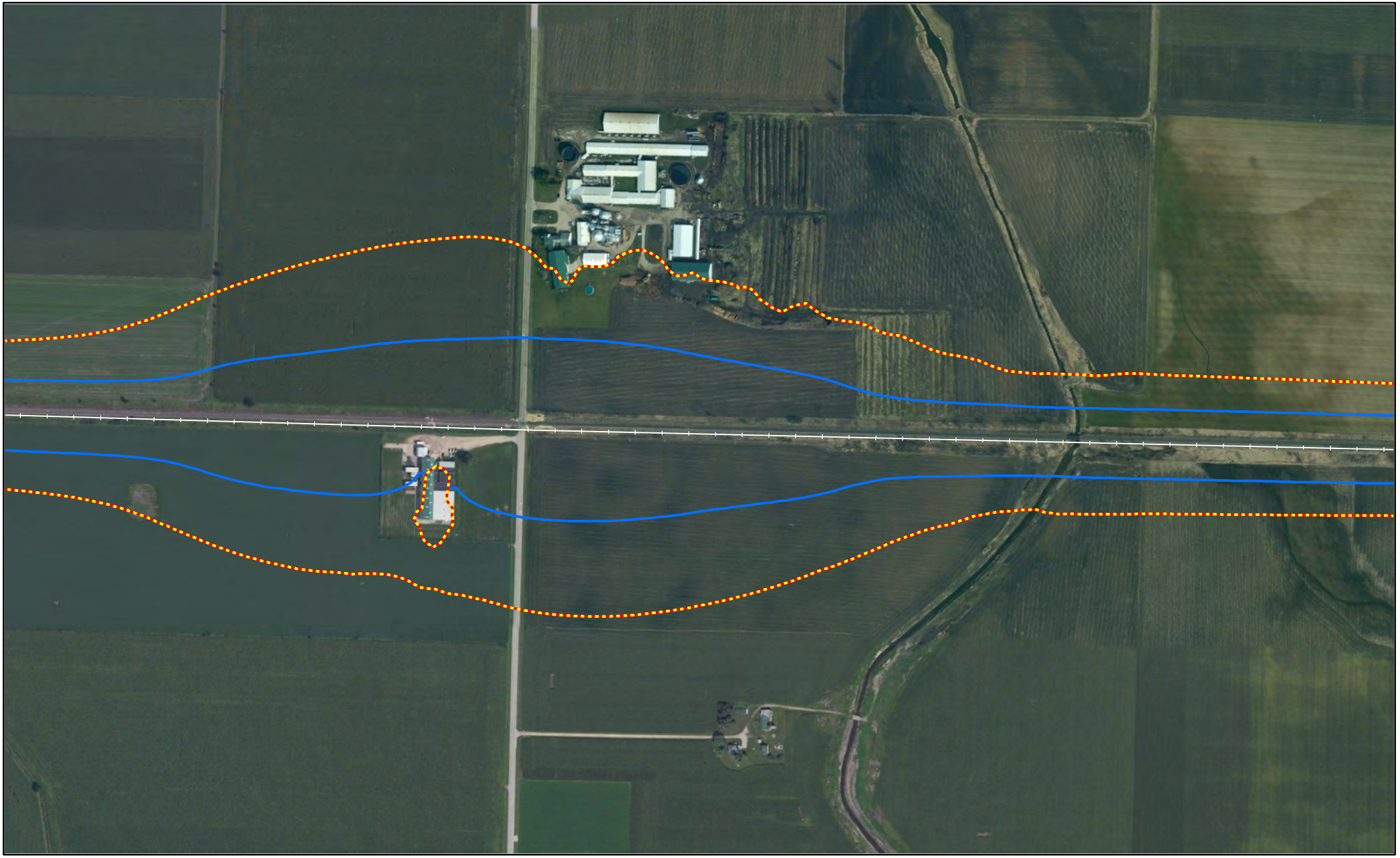
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Noise Contours
Kane County, IL

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



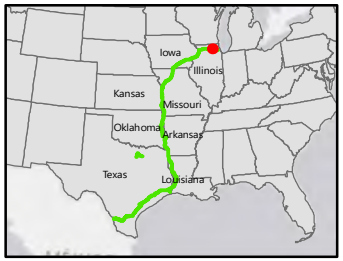
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Tracks

Source: ESRI.



Noise Contours
Kane County, IL

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



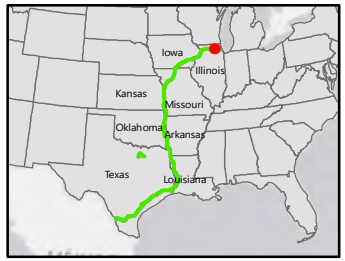
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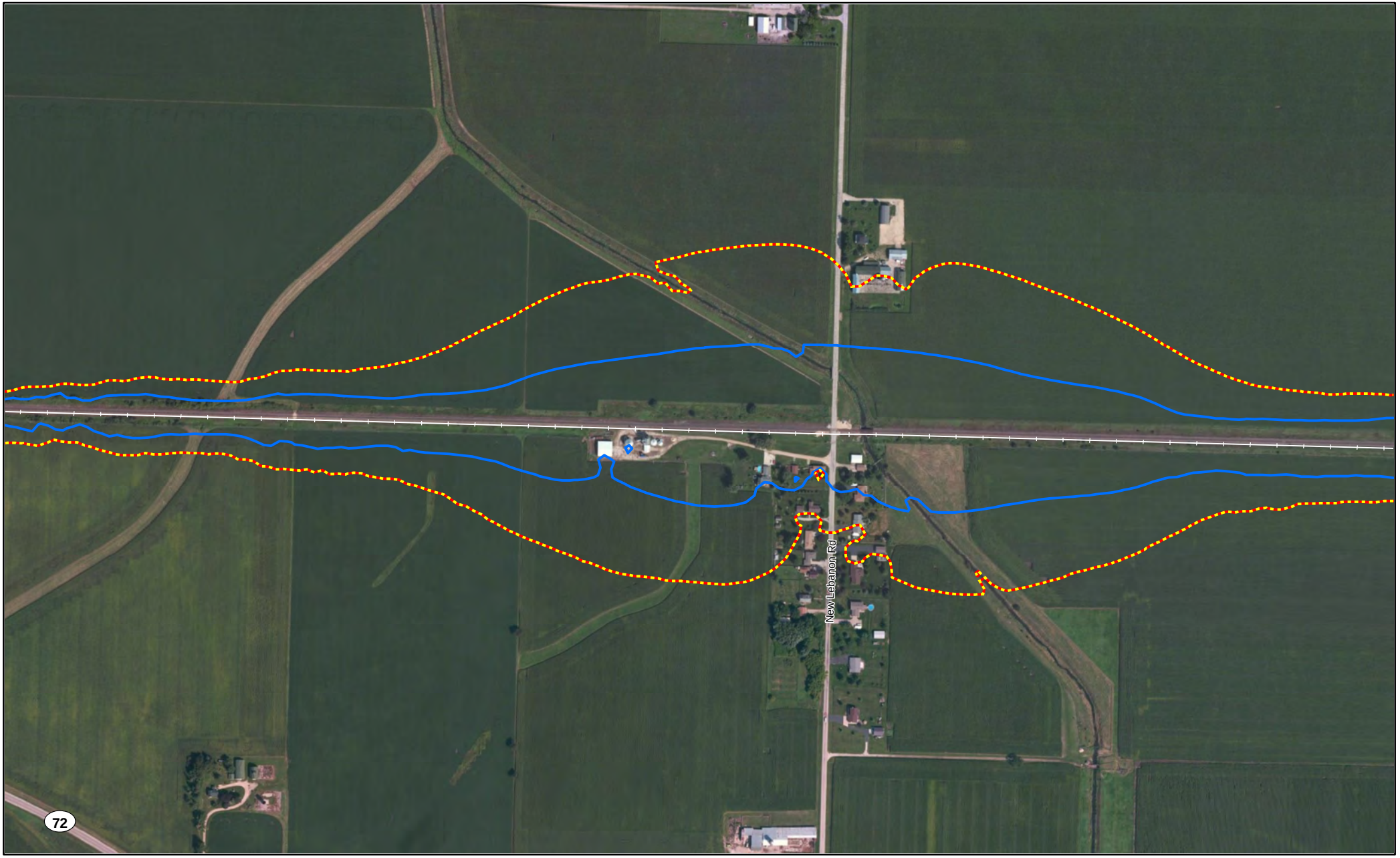


Noise Contours
Kane County, IL

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



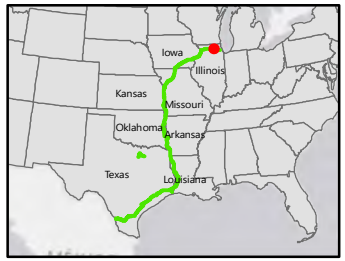
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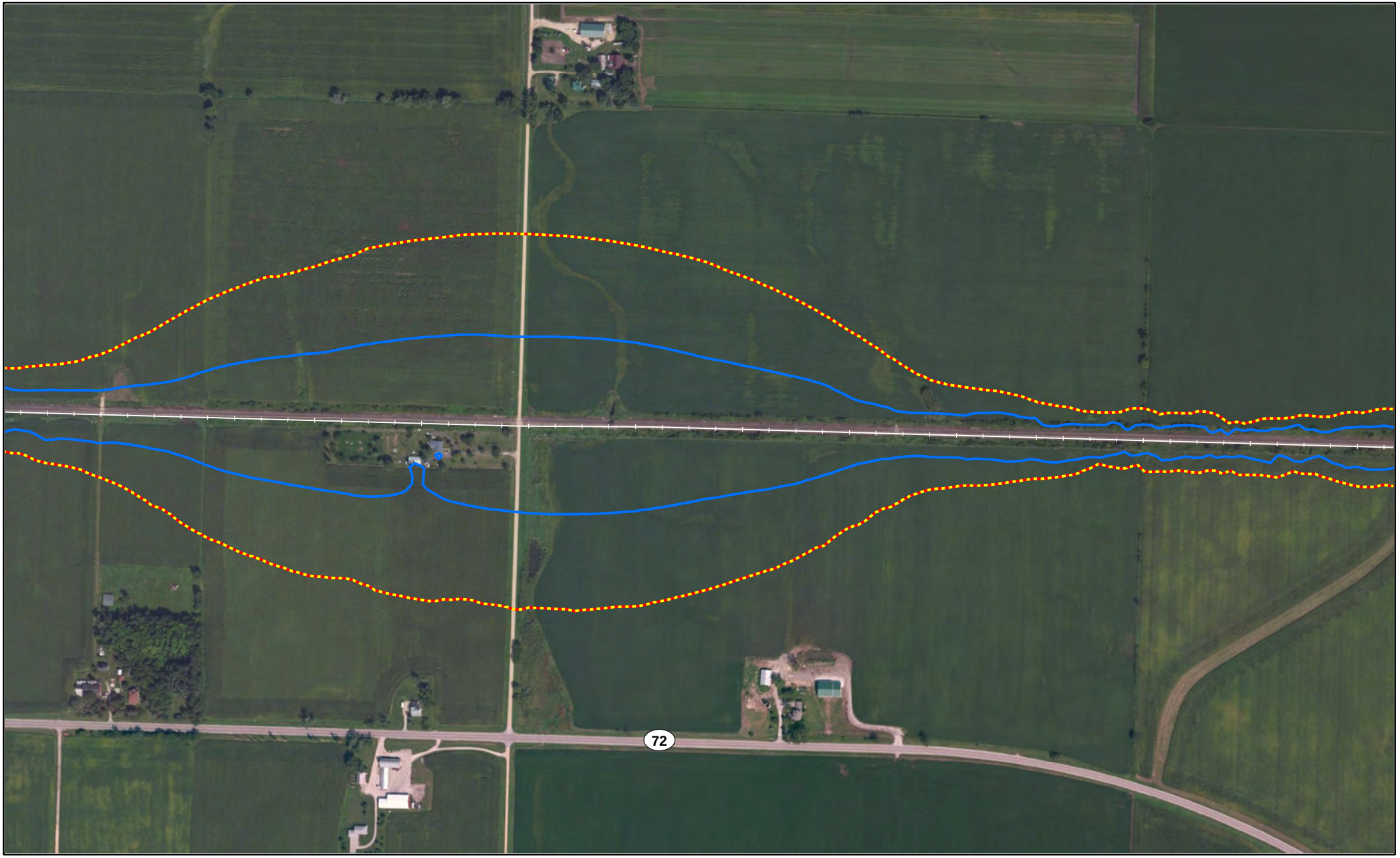
Source: ESRI.



Noise Contours
DeKalb County, IL

0 0.05 0.1 Miles

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



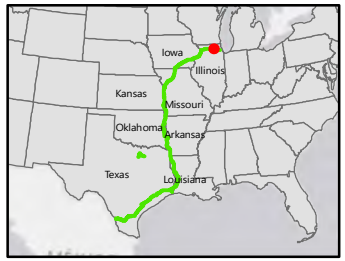
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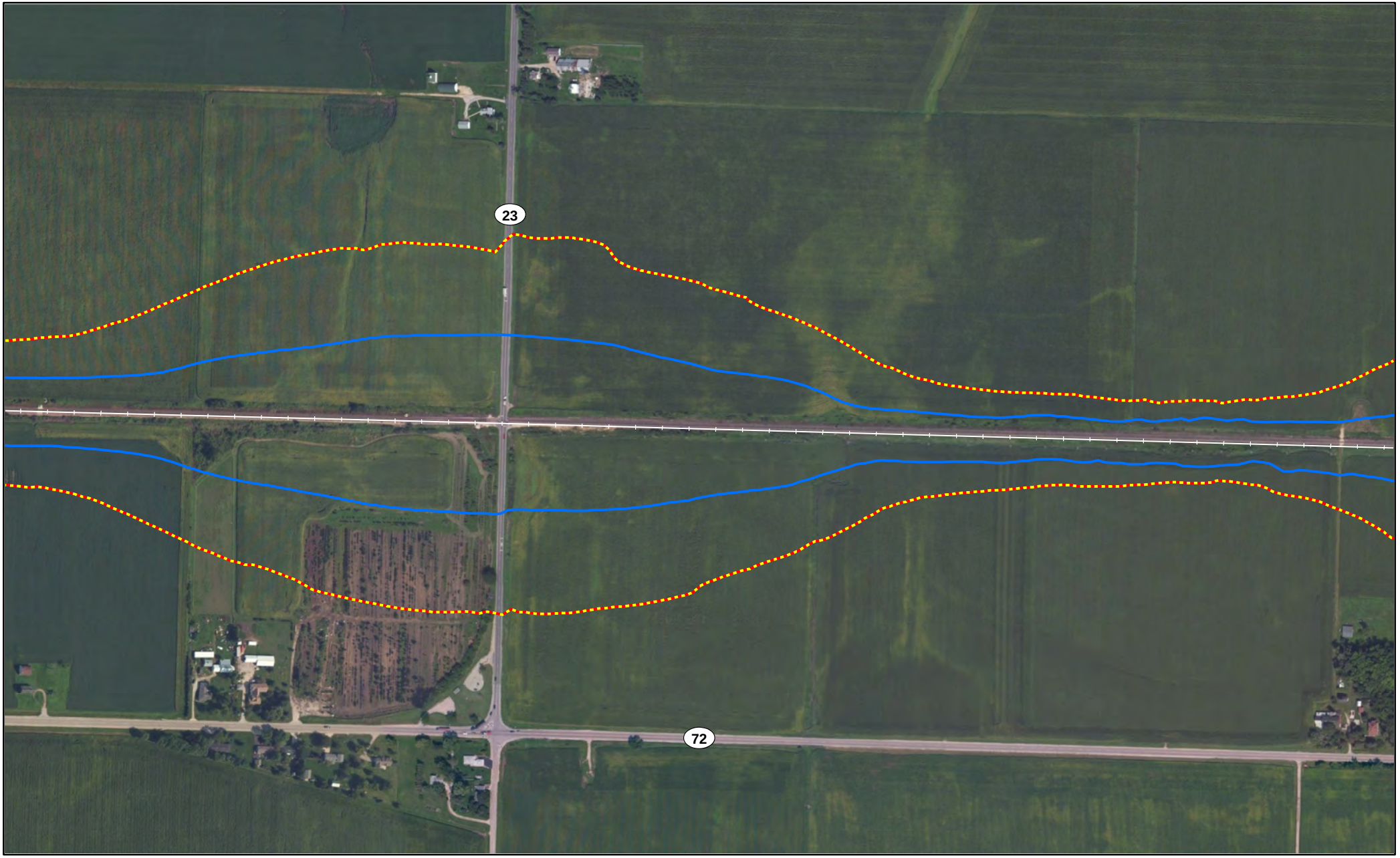
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Noise Contours
DeKalb County, IL

Miles
0 0.05 0.1

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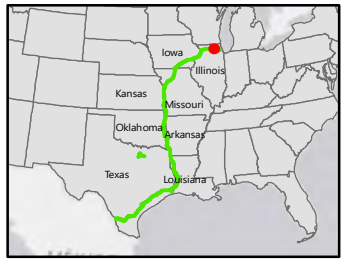
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Noise Contours
DeKalb County, IL

Miles
0 0.05 0.1



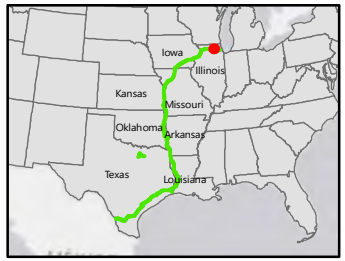
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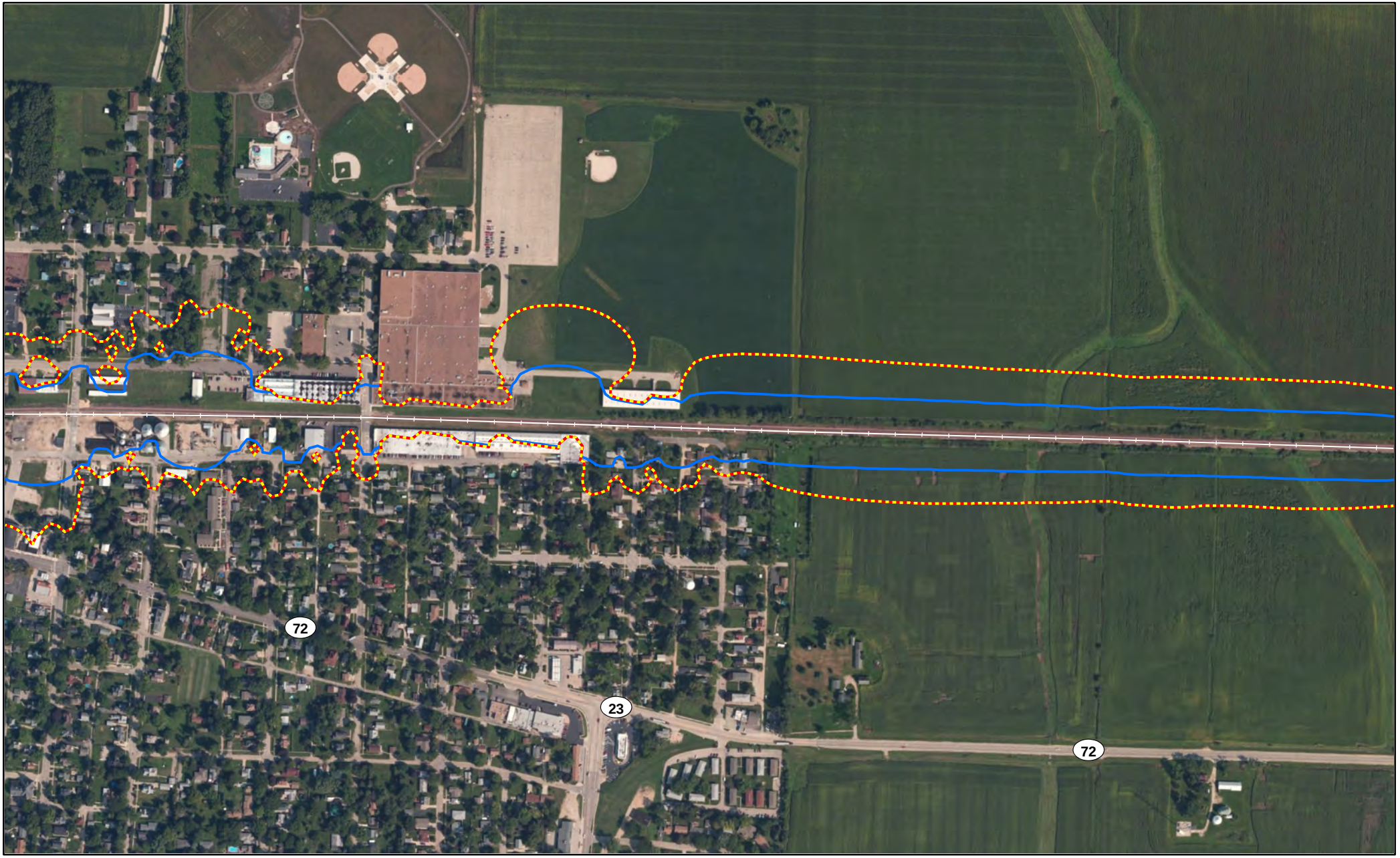
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Noise Contours
DeKalb County, IL

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



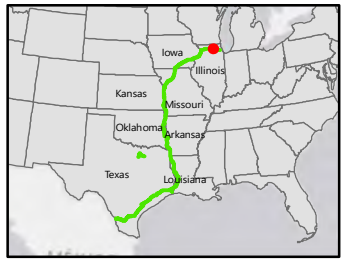
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Noise Contours
DeKalb County, IL

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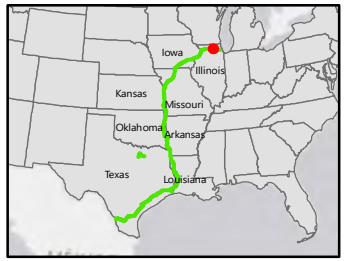
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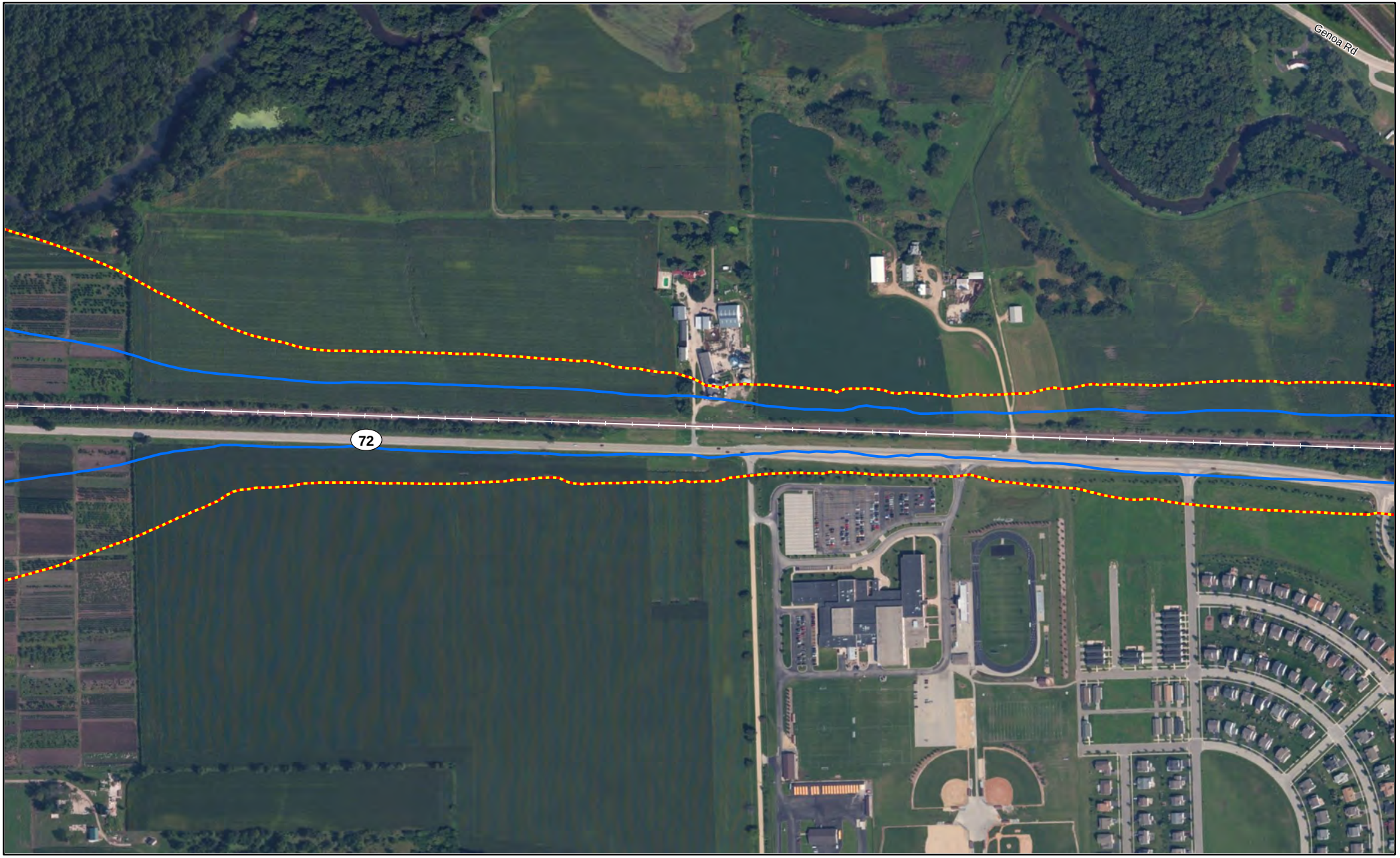
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Noise Contours
DeKalb County, IL

Miles
0 0.05 0.1

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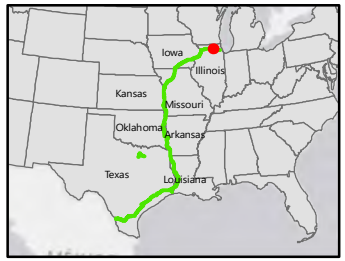
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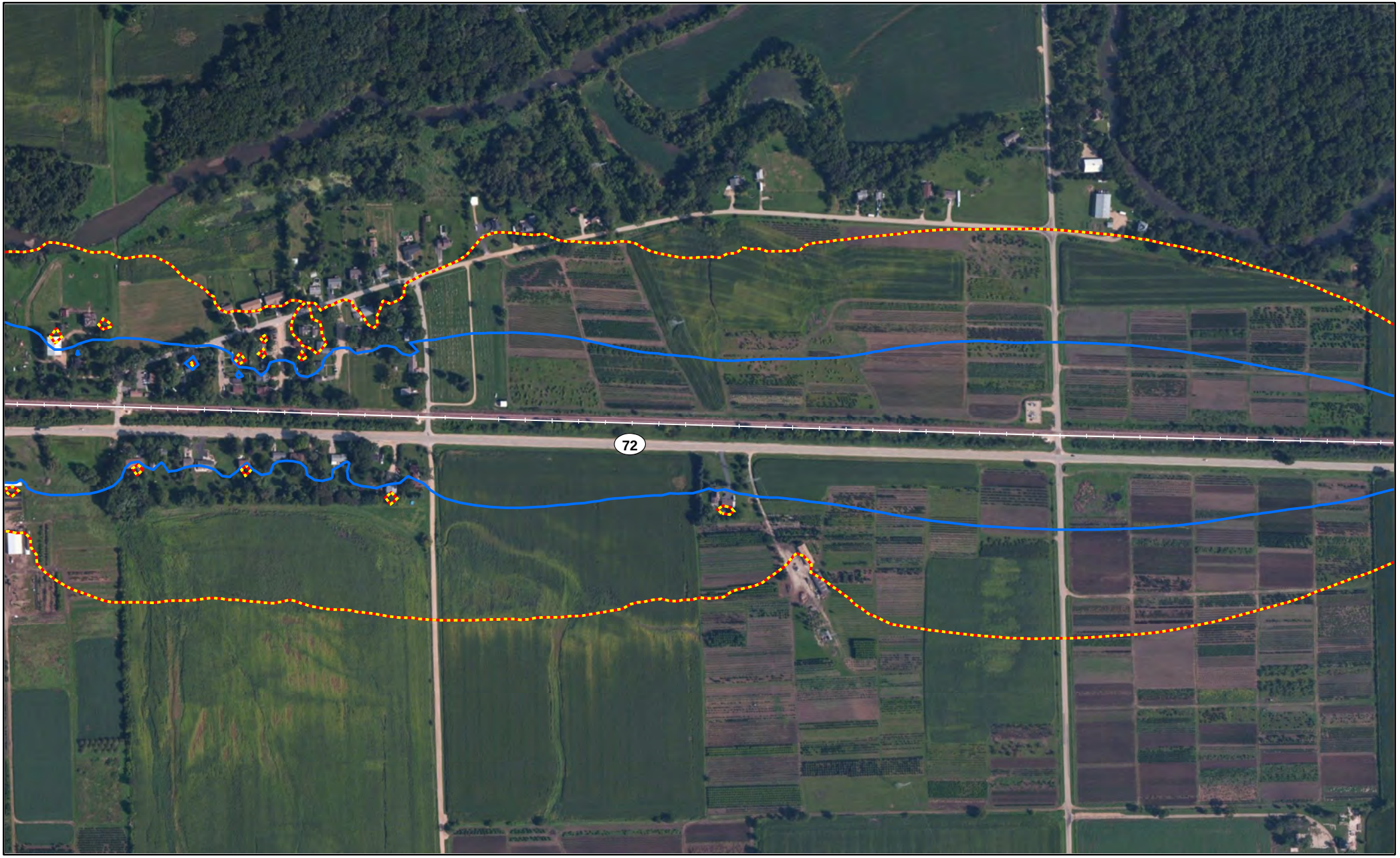
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Noise Contours
DeKalb County, IL

Miles
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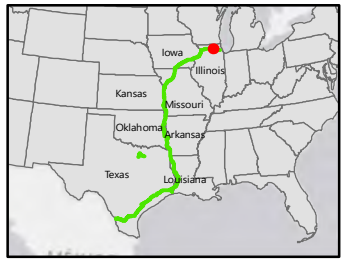
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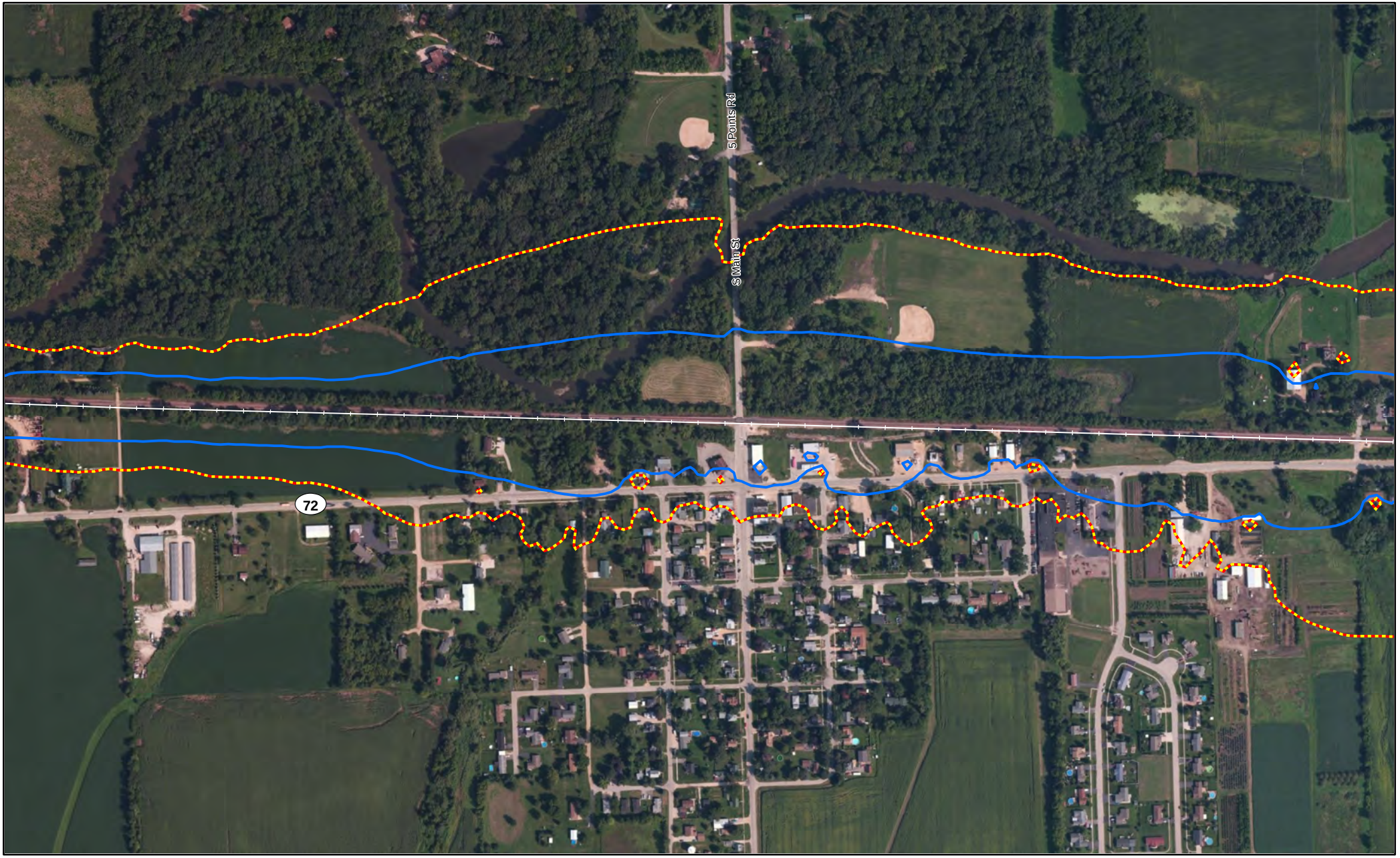


Noise Contours
DeKalb County, IL

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



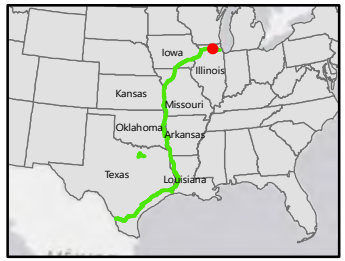
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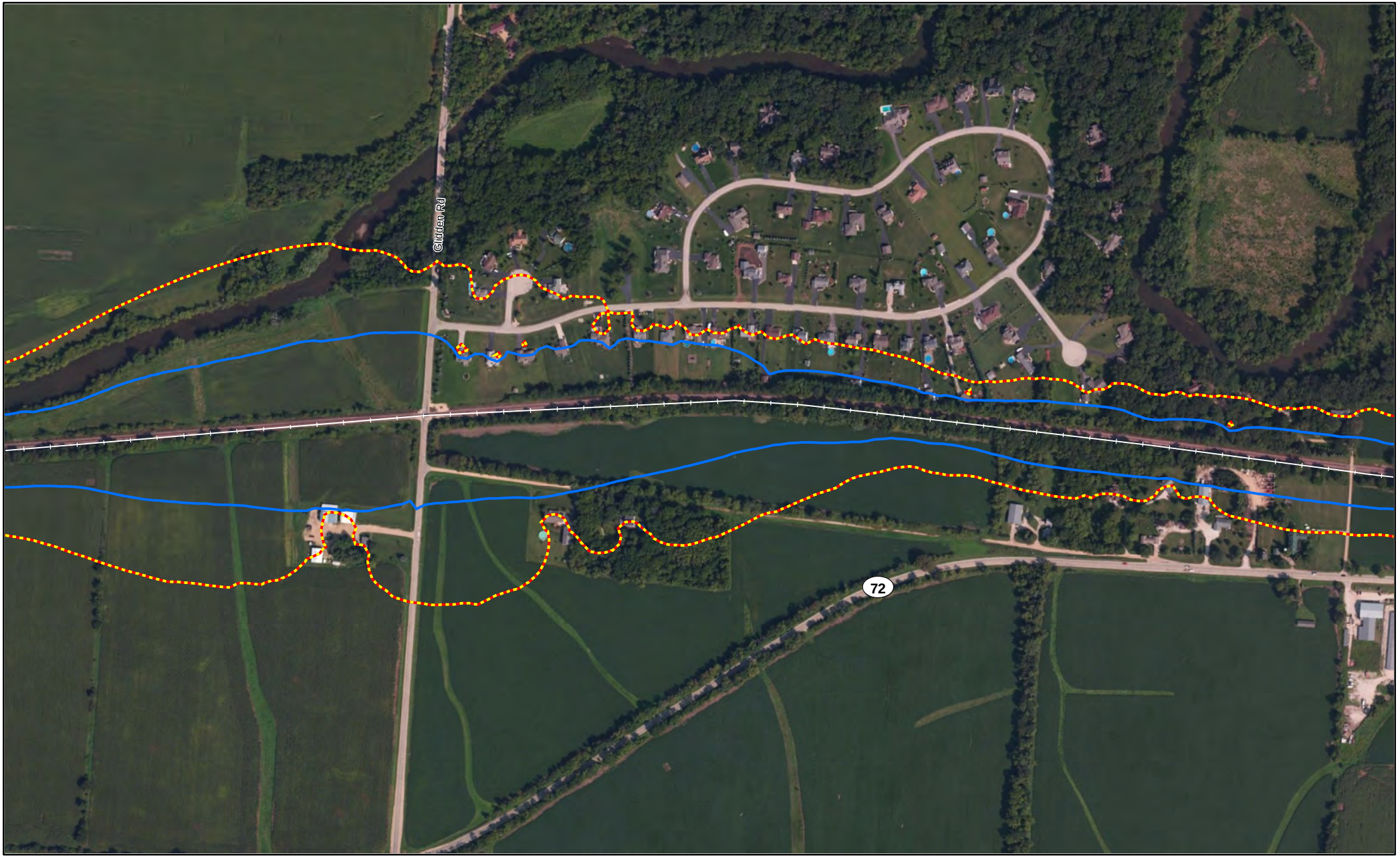
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Noise Contours
DeKalb County, IL

Miles
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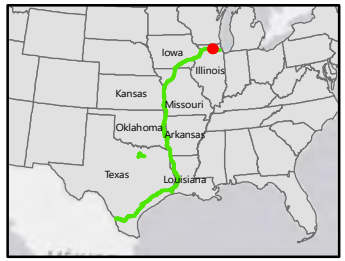
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Noise Contours
DeKalb County, IL

Miles
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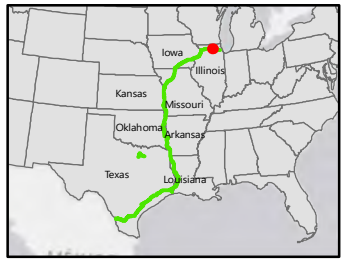
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Noise Contours
DeKalb County, IL

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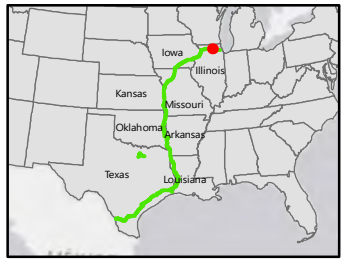
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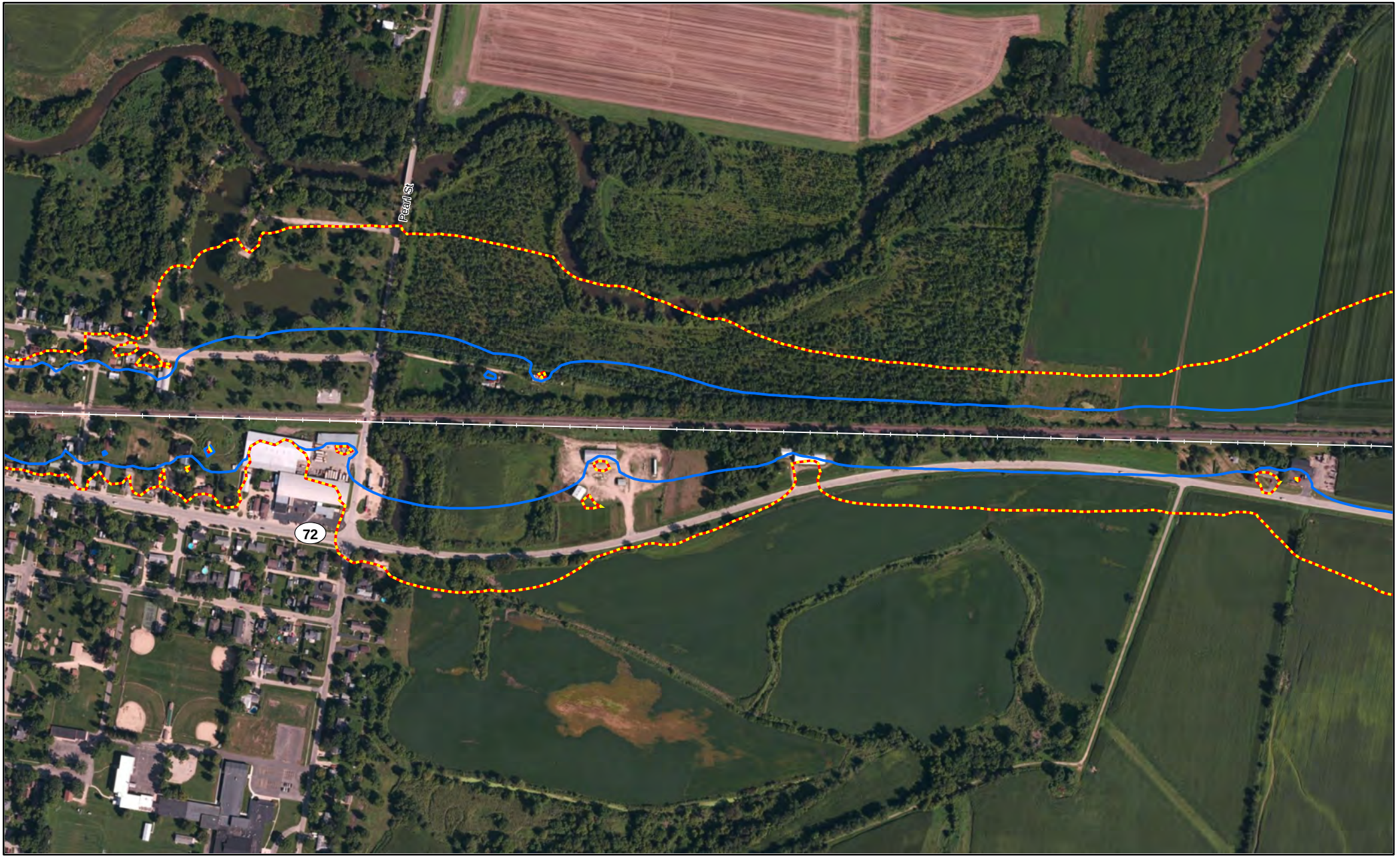
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Noise Contours
DeKalb County, IL

Miles
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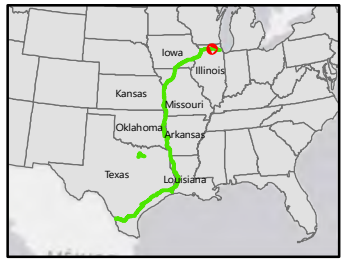
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Noise Contours
DeKalb County, IL

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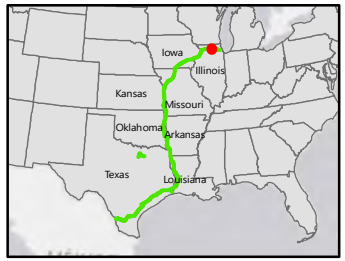
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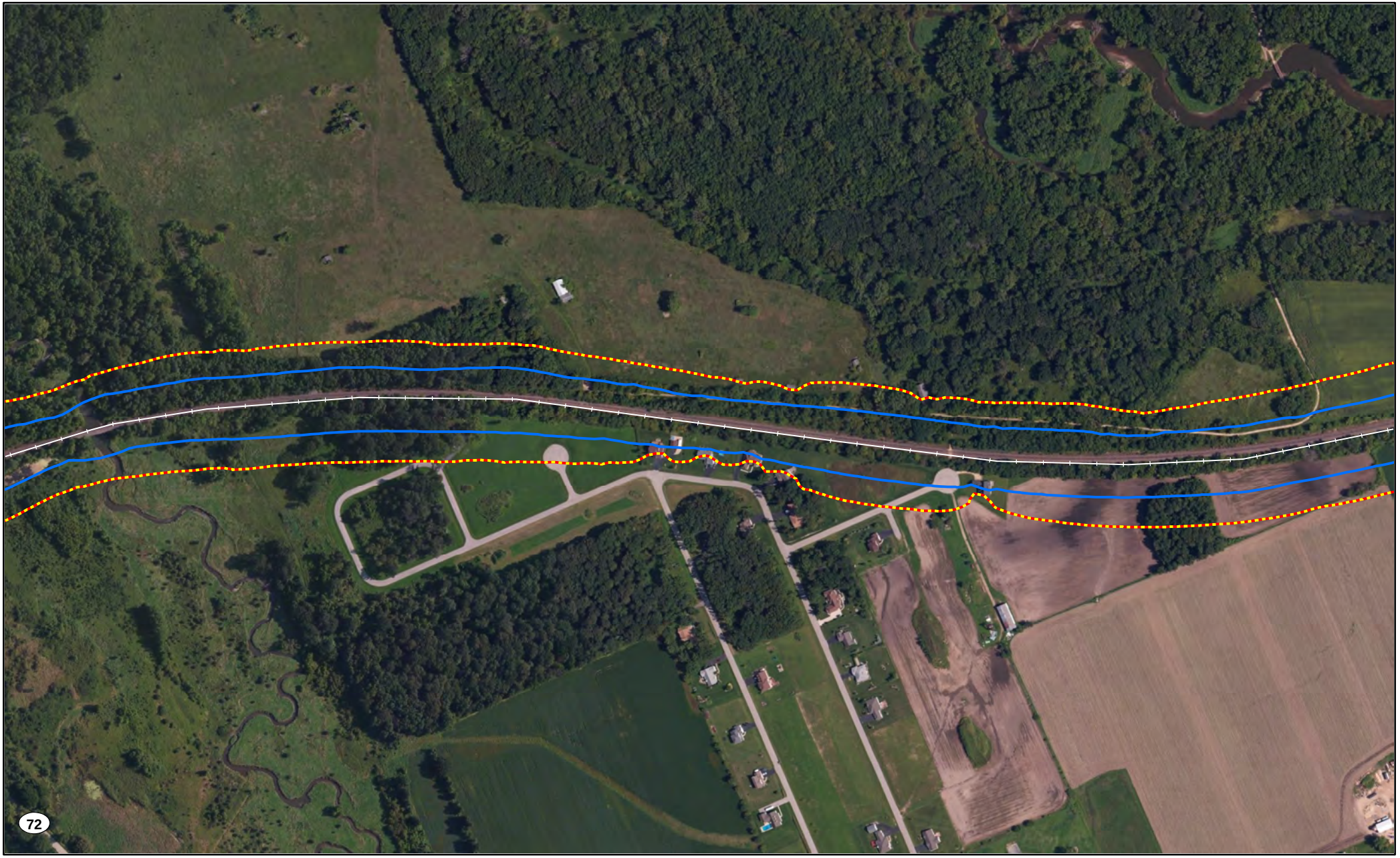
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Noise Contours
DeKalb County, IL

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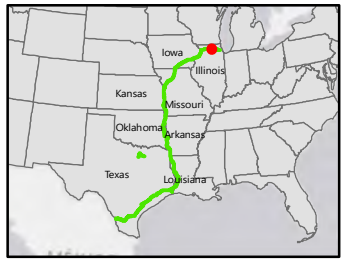
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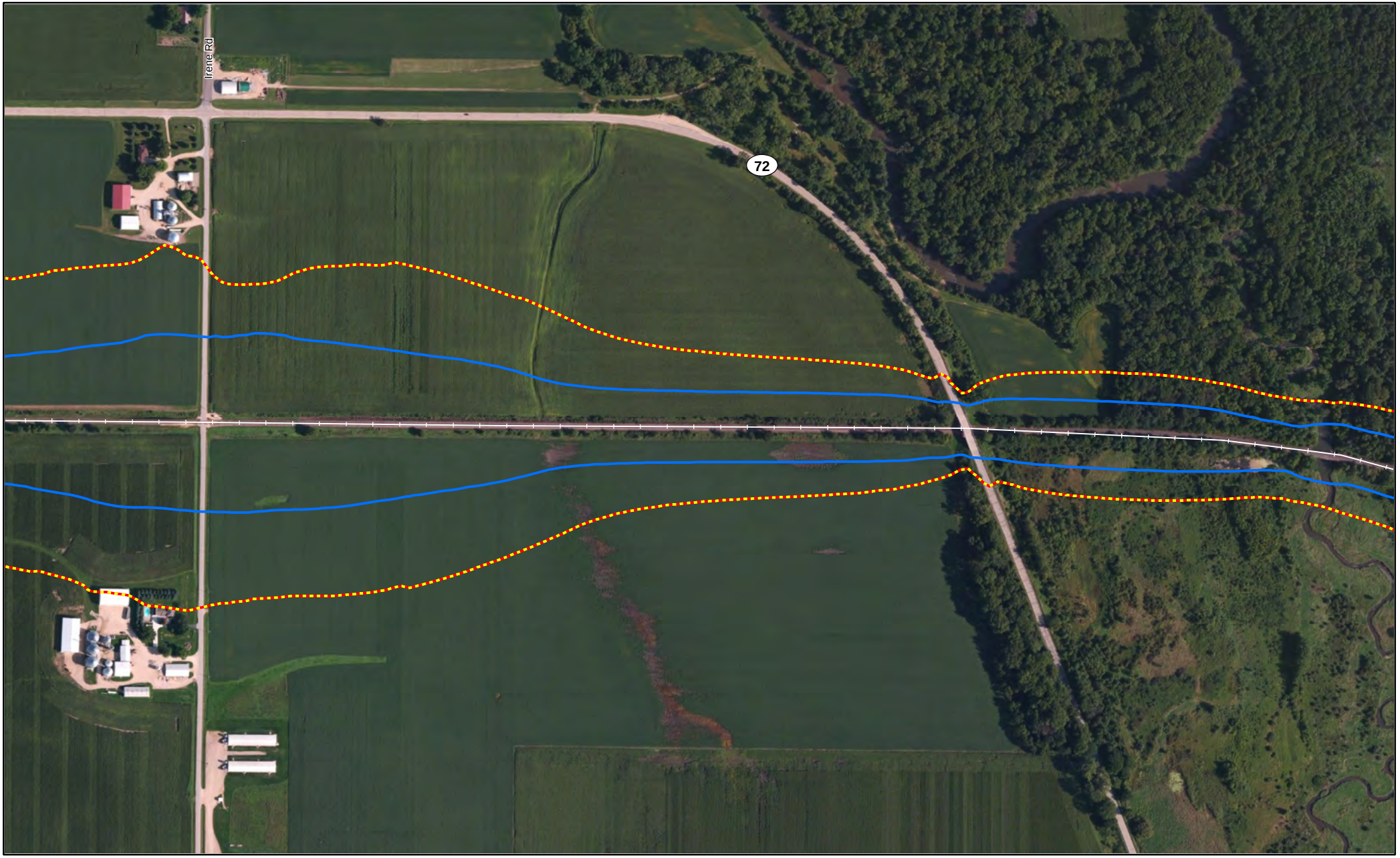
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Noise Contours
DeKalb County, IL

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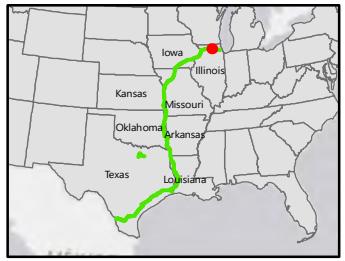
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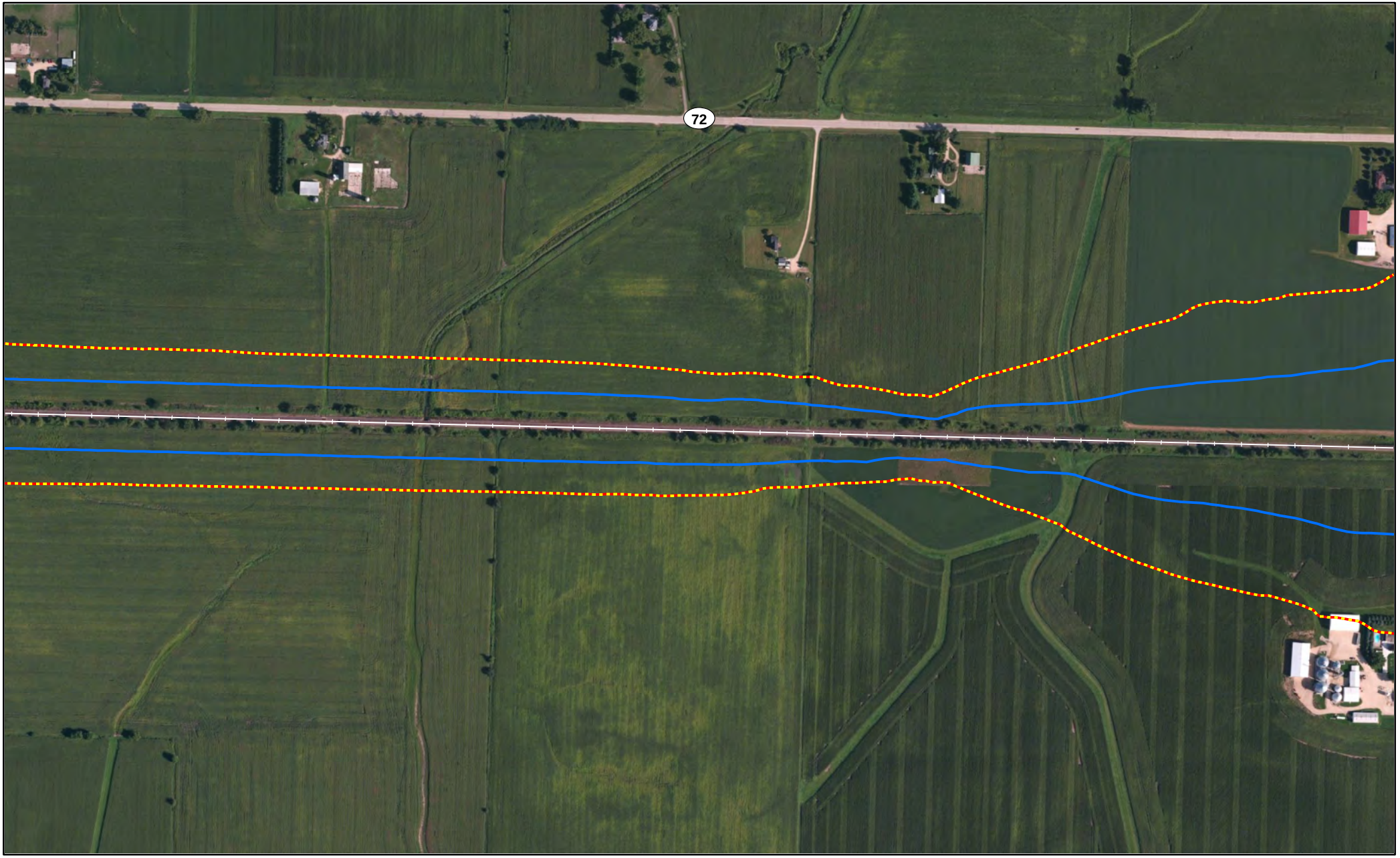
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Noise Contours
DeKalb County, IL

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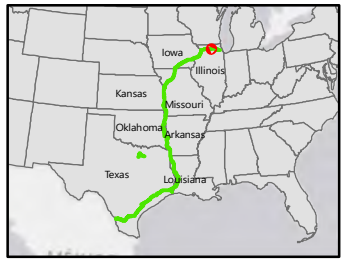
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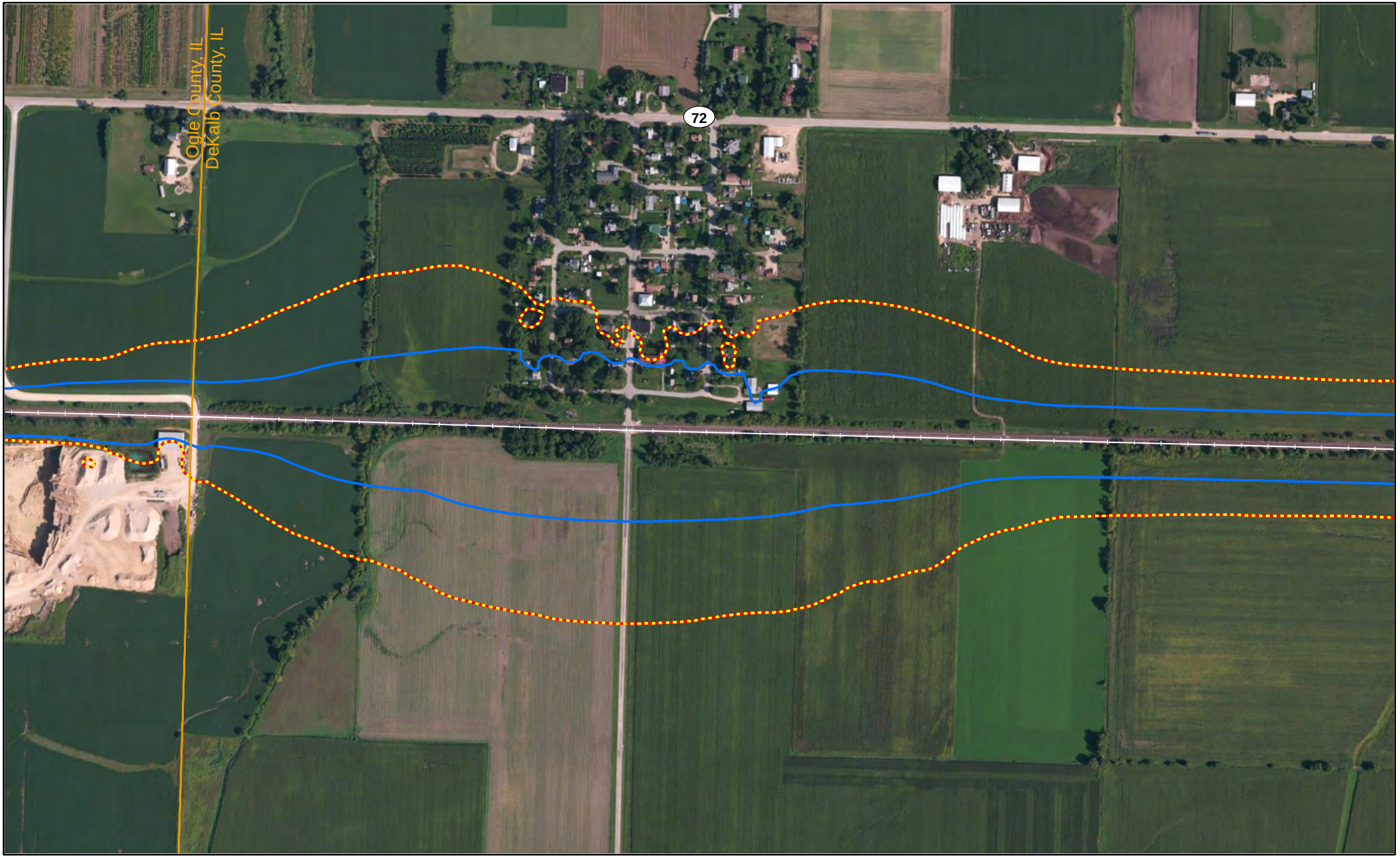
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Noise Contours
DeKalb County, IL

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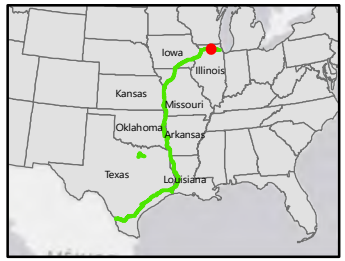
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Noise Contours
DeKalb County, IL

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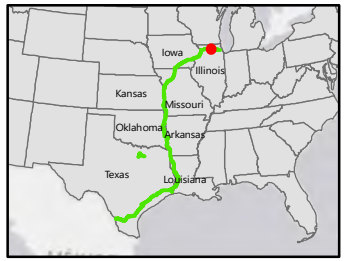
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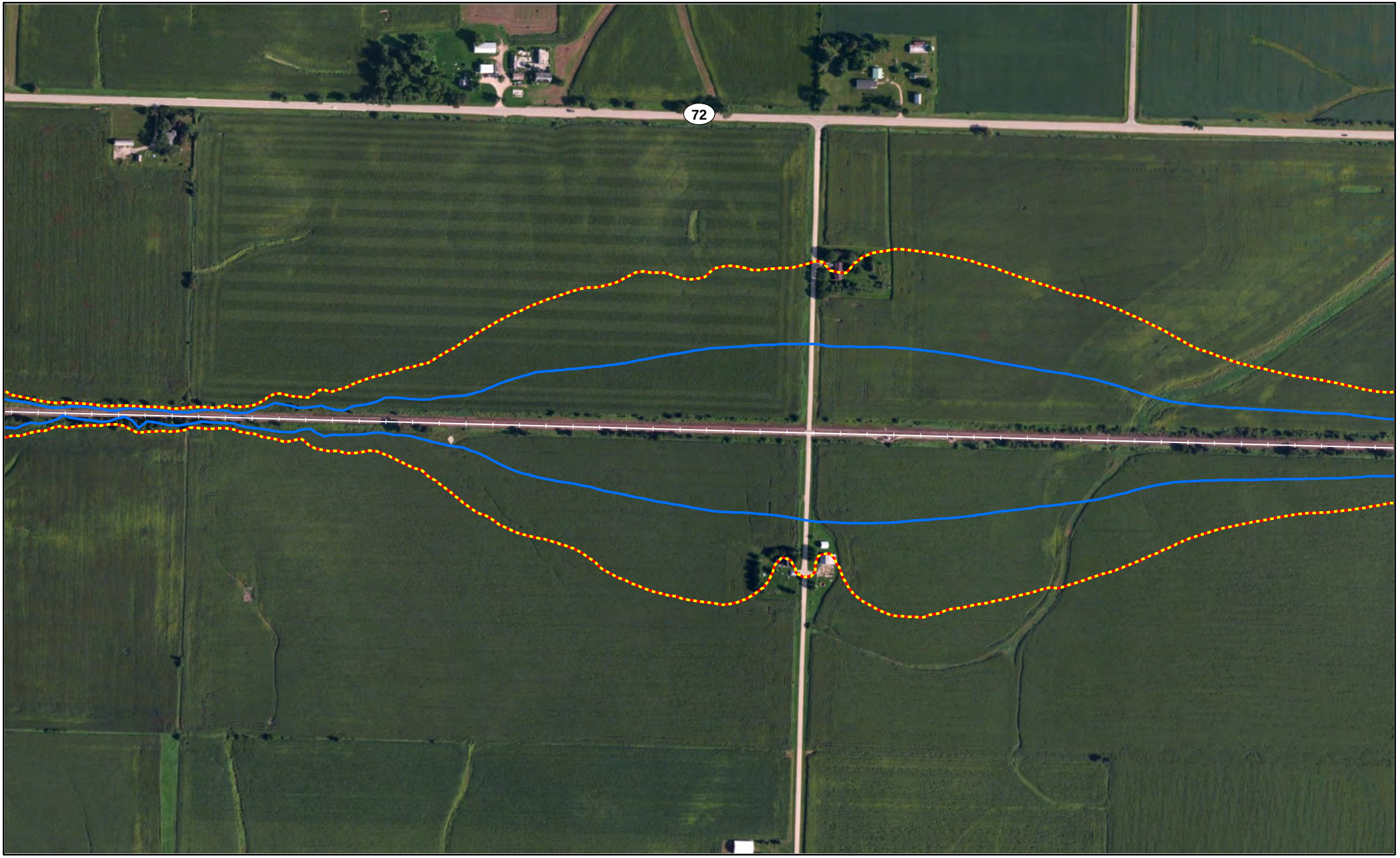
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Noise Contours
Ogle County, IL

Miles
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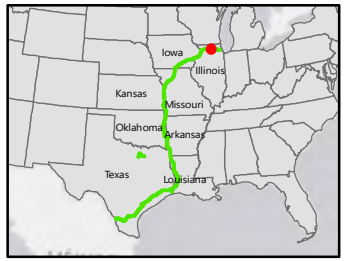
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Noise Contours
Ogle County, IL

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Miles
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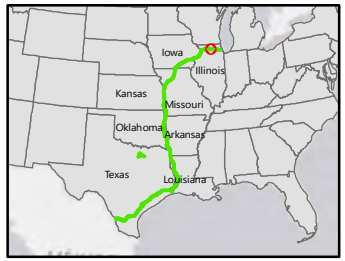
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Noise Contours
Ogle County, IL

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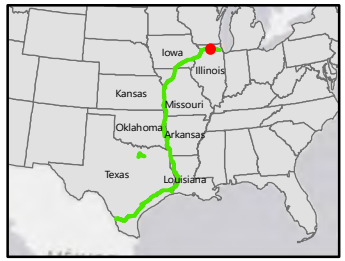
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Tracks

Source: ESRI.



Noise Contours
Ogle County, IL

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



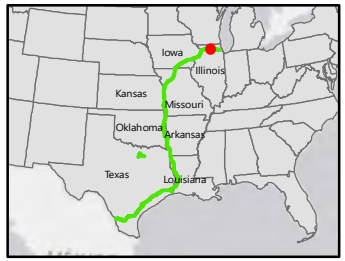
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

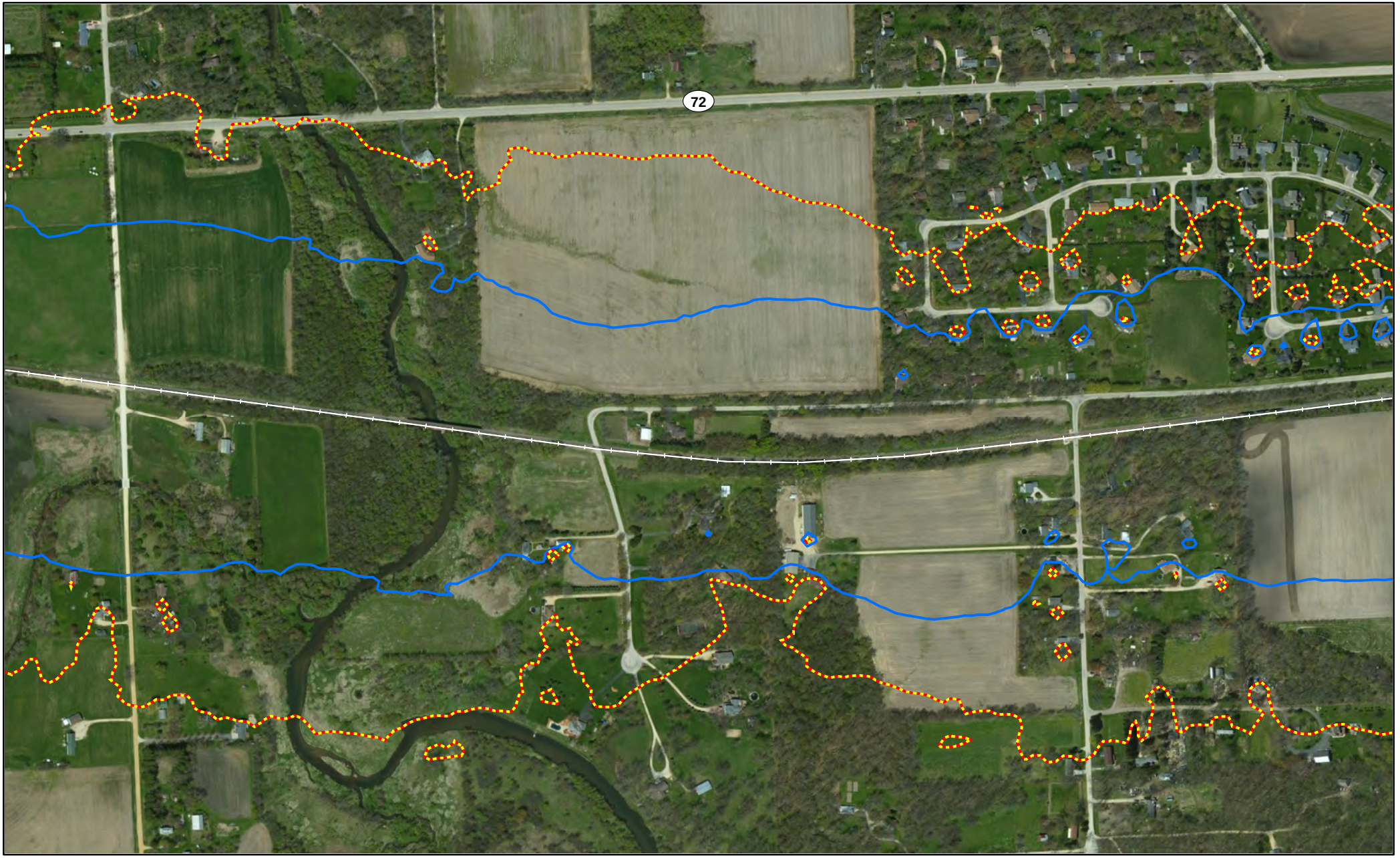
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Noise Contours
Ogle County, IL

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



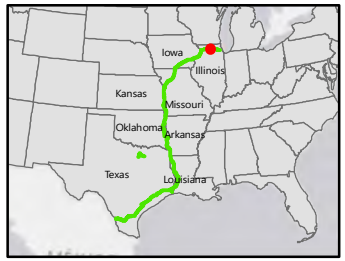
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Tracks

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Noise Contours
Ogle County, IL

0 0.05 0.1 Miles

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



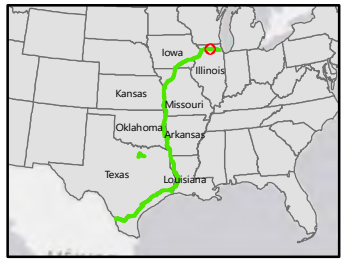
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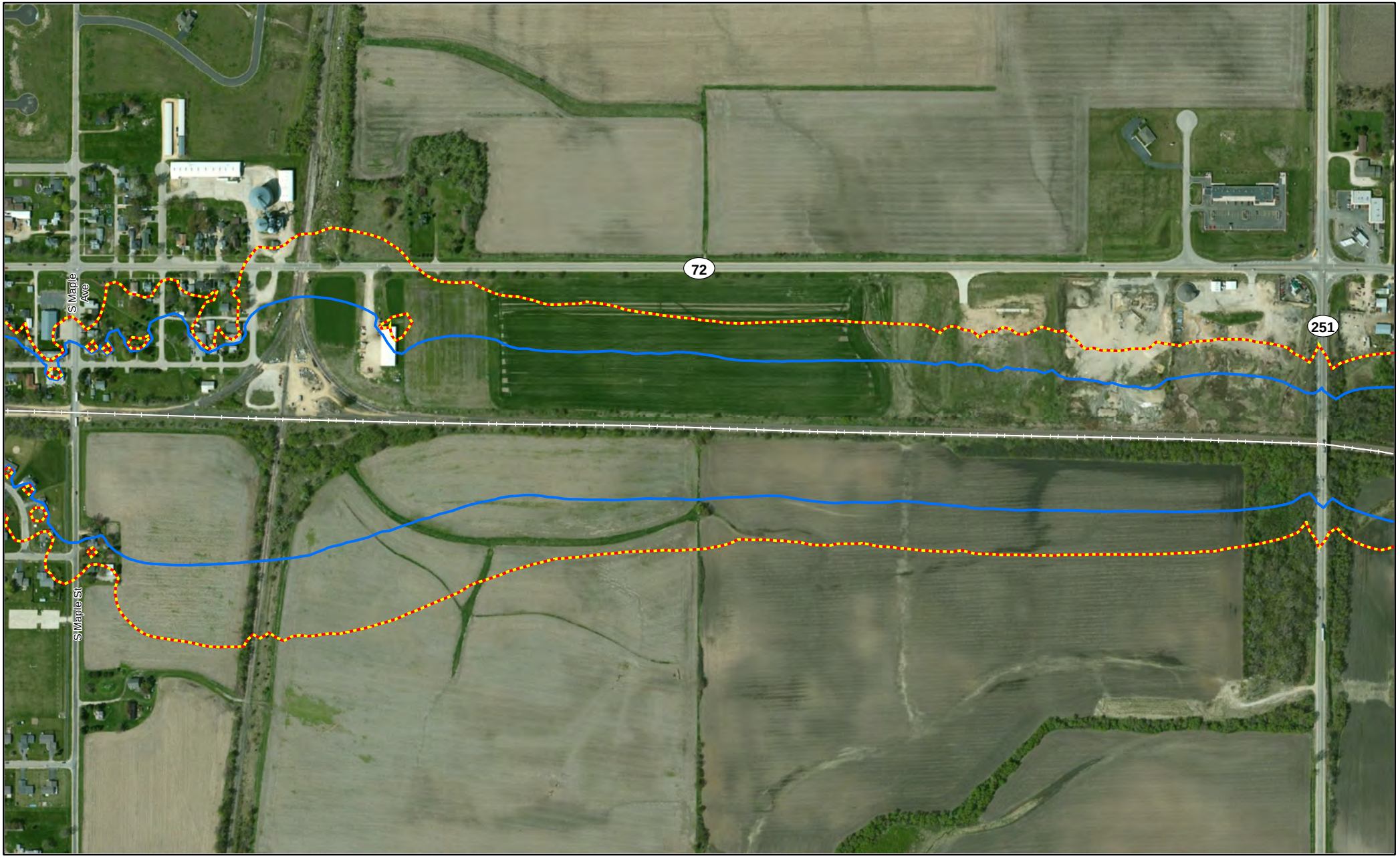
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Noise Contours
Ogle County, IL

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



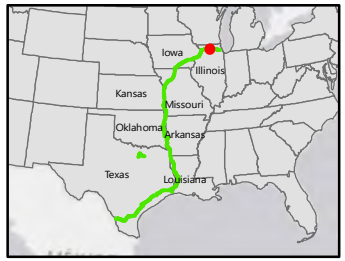
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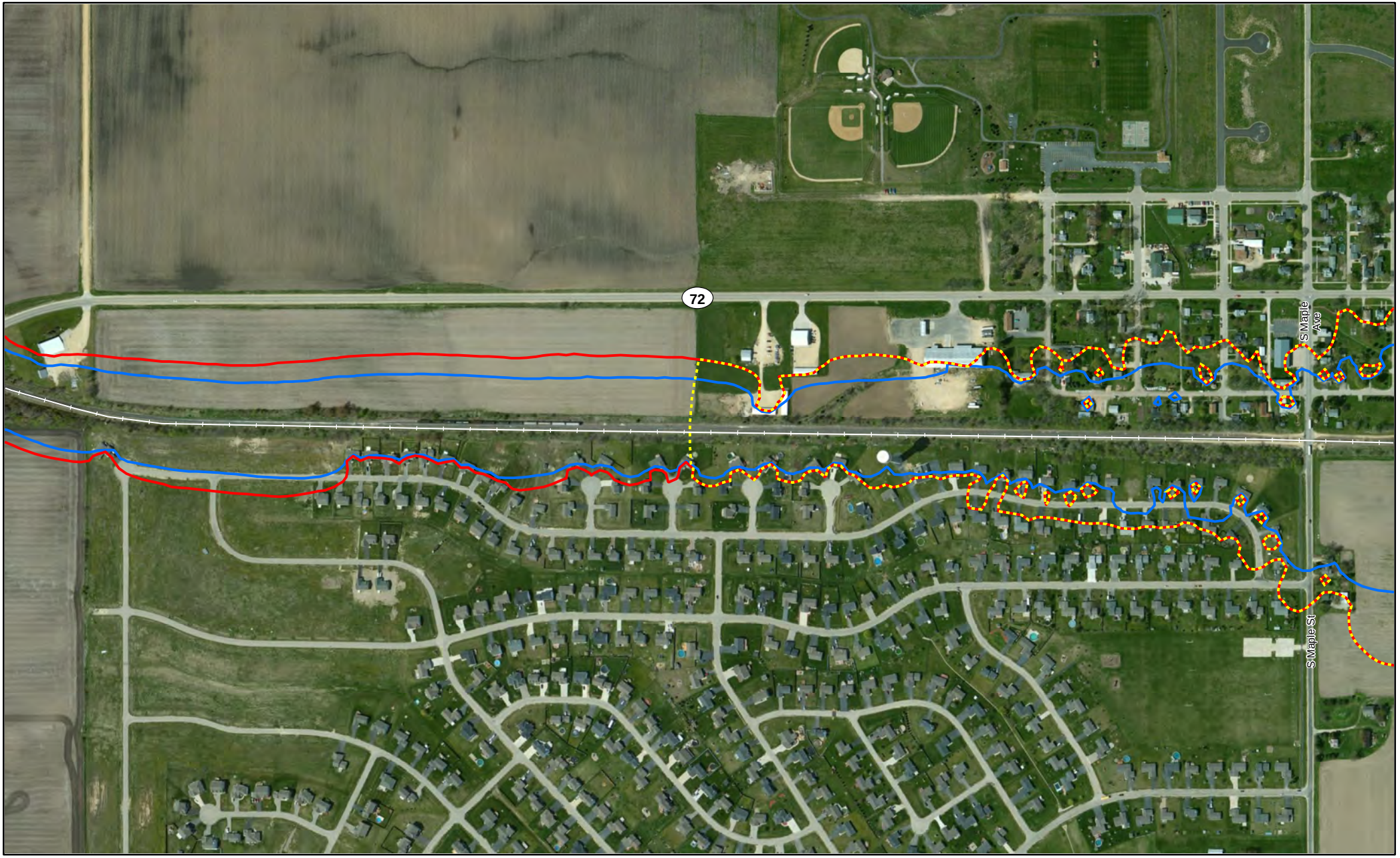
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Noise Contours
Ogle County, IL

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



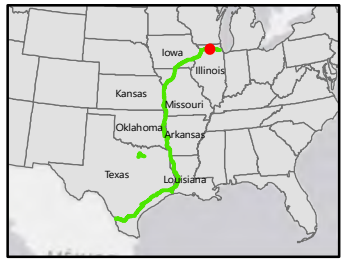
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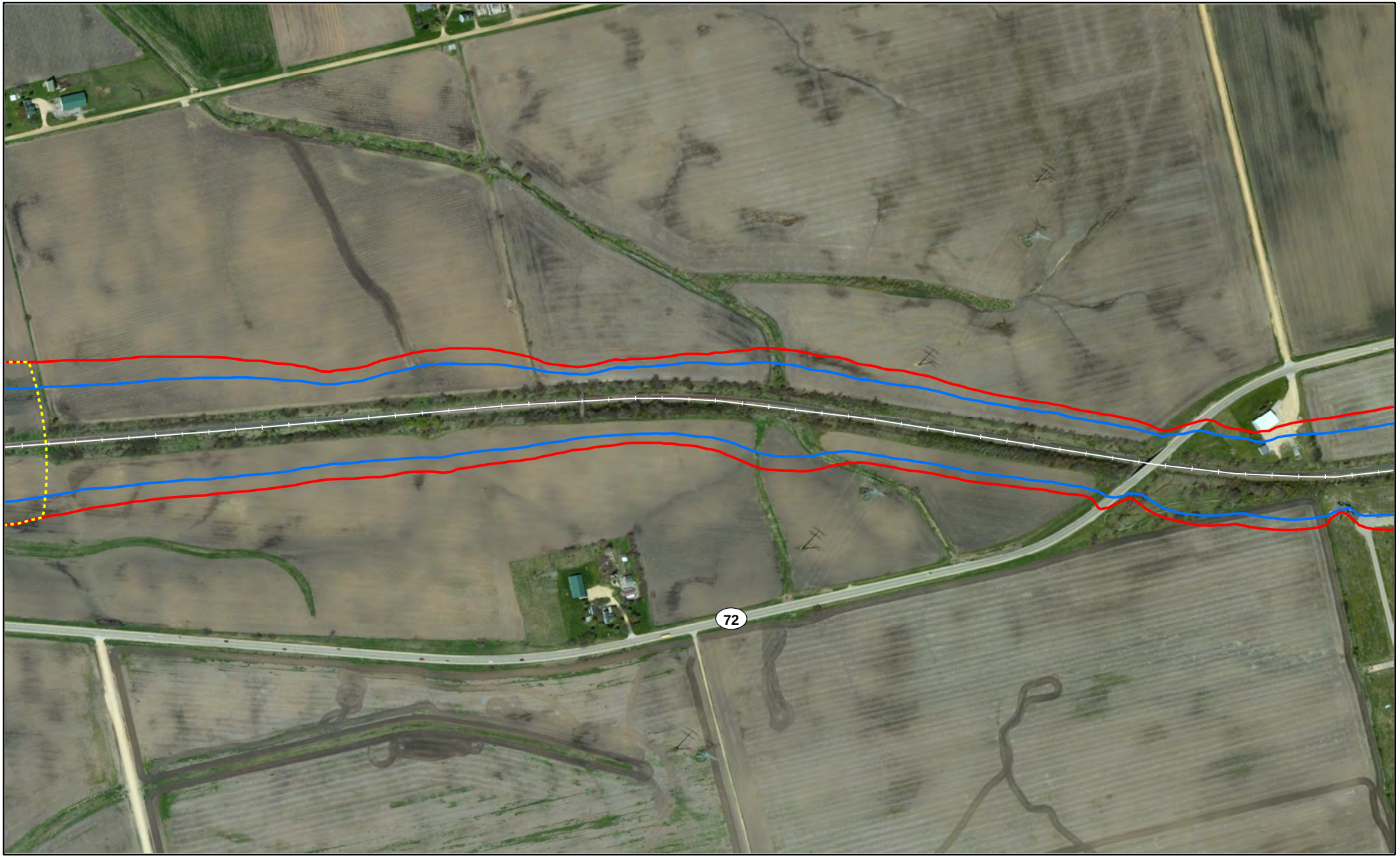
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Noise Contours
Ogle County, IL

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



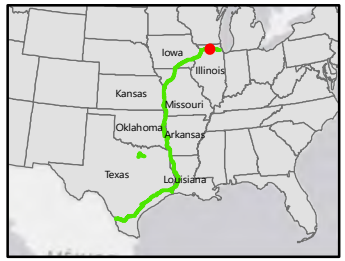
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Noise Contours
Ogle County, IL

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



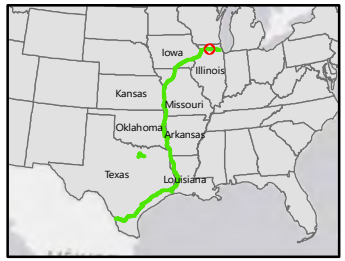
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Tracks

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Noise Contours
Ogle County, IL

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



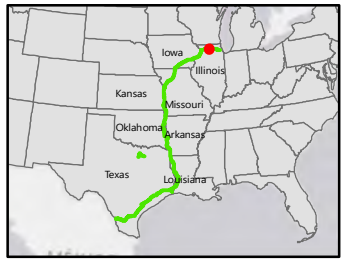
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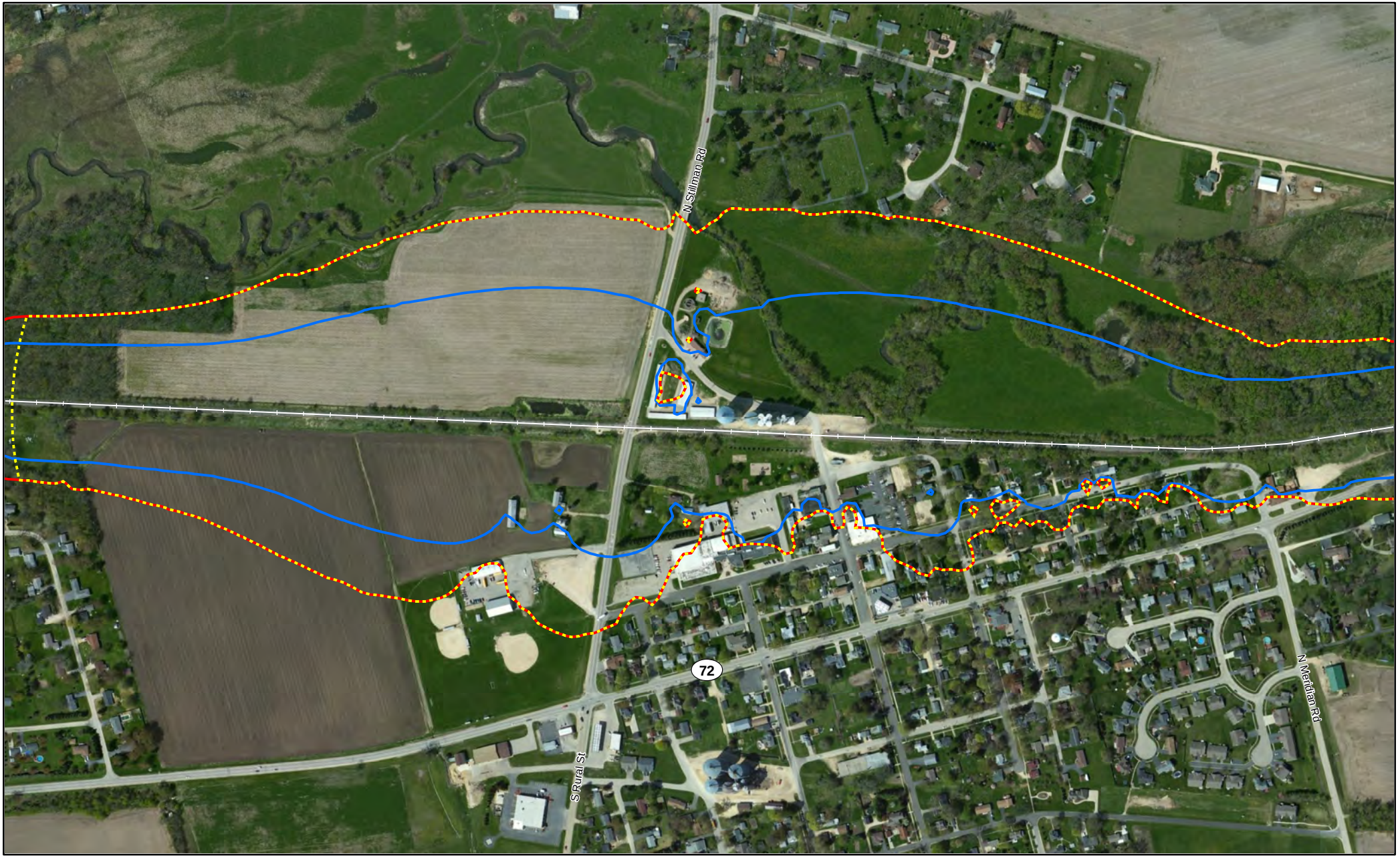


Noise Contours
Ogle County, IL

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



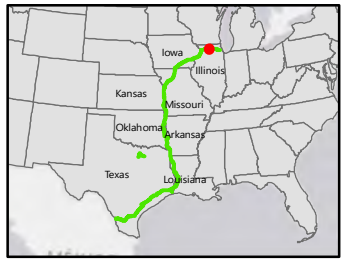
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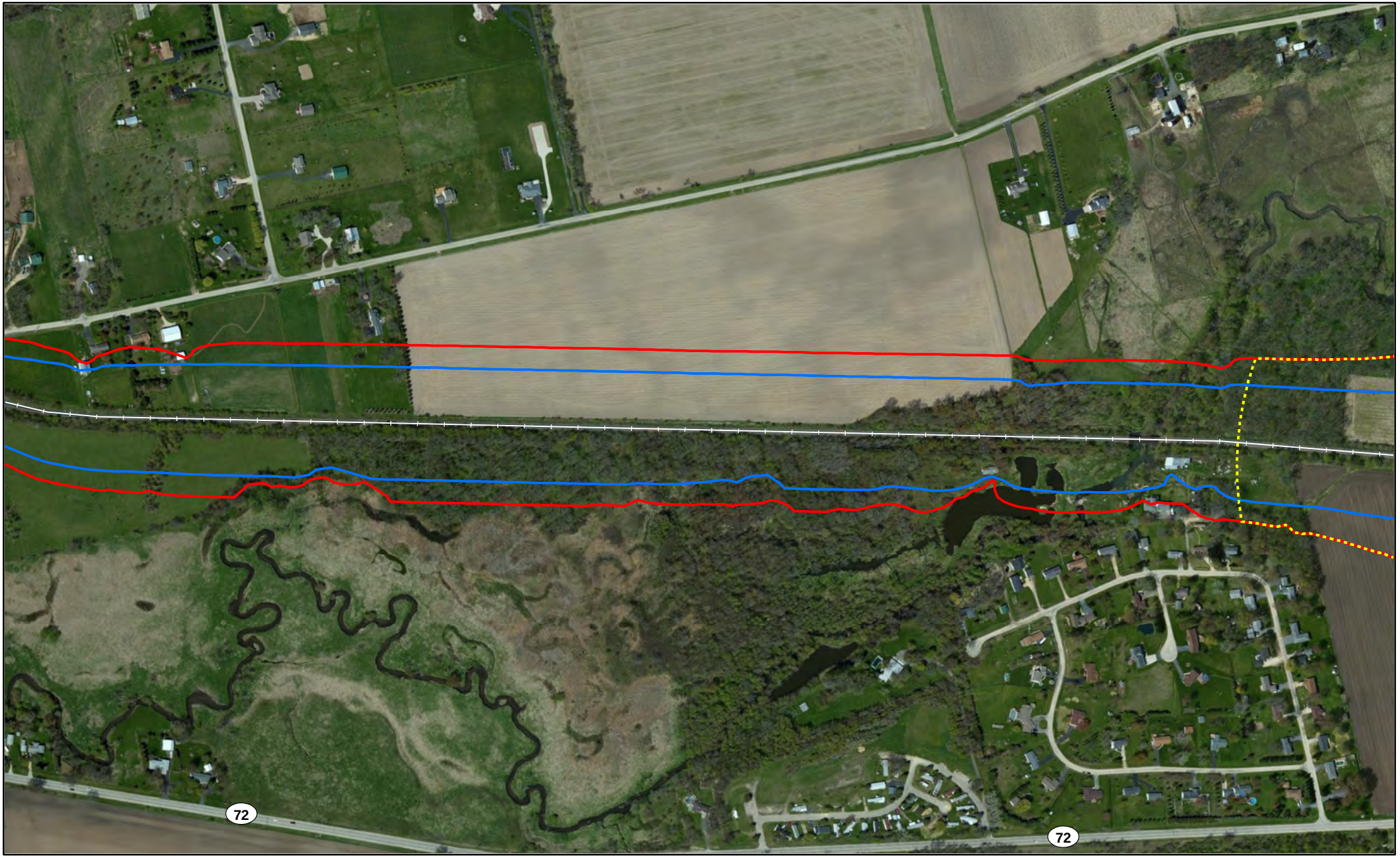
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Noise Contours
Ogle County, IL

Miles
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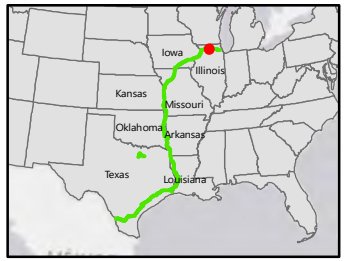
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Noise Contours
Ogle County, IL

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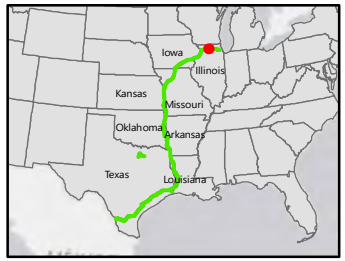
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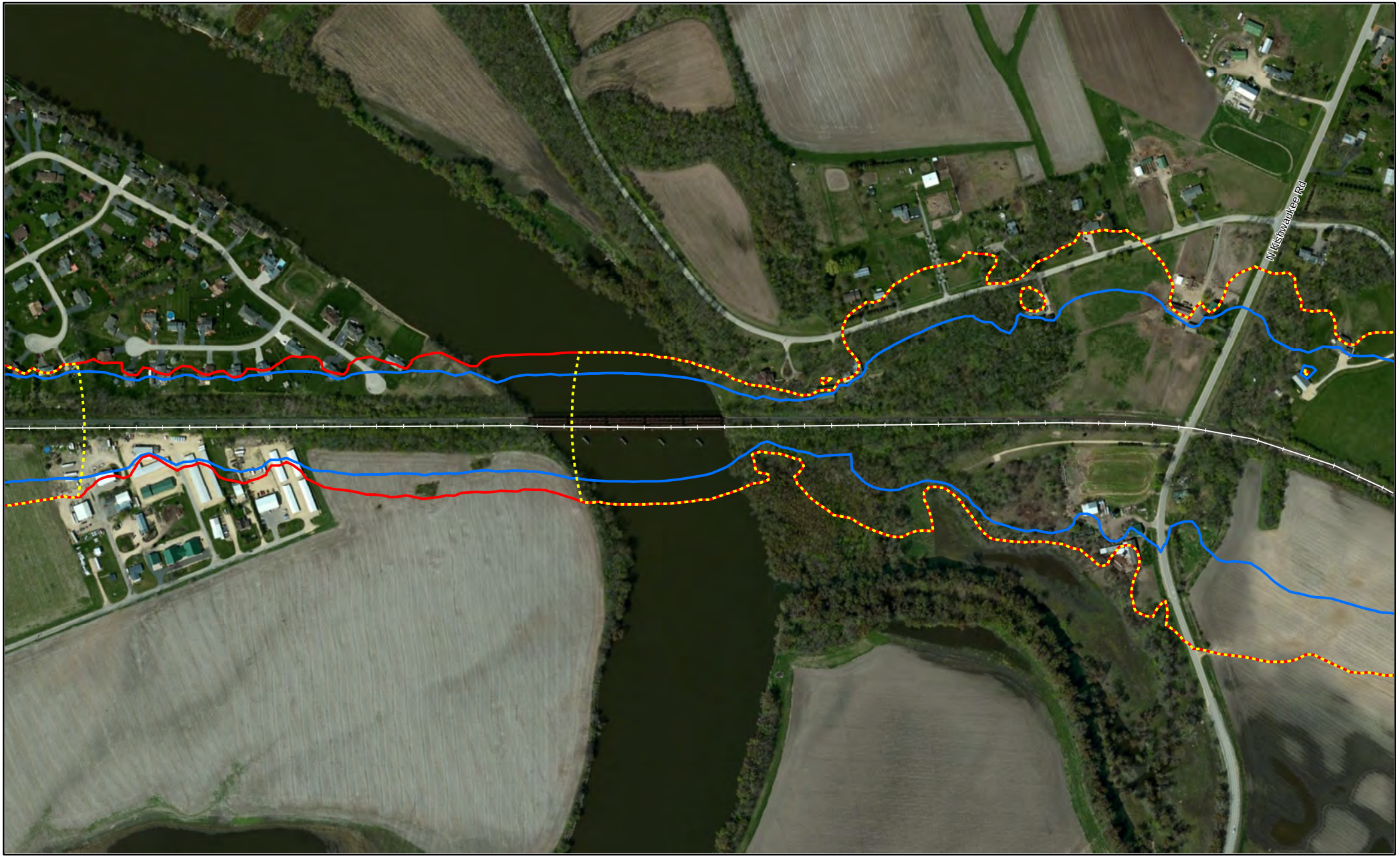
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Noise Contours
Ogle County, IL

Miles
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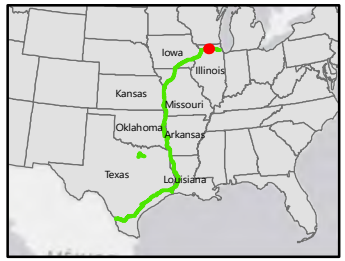
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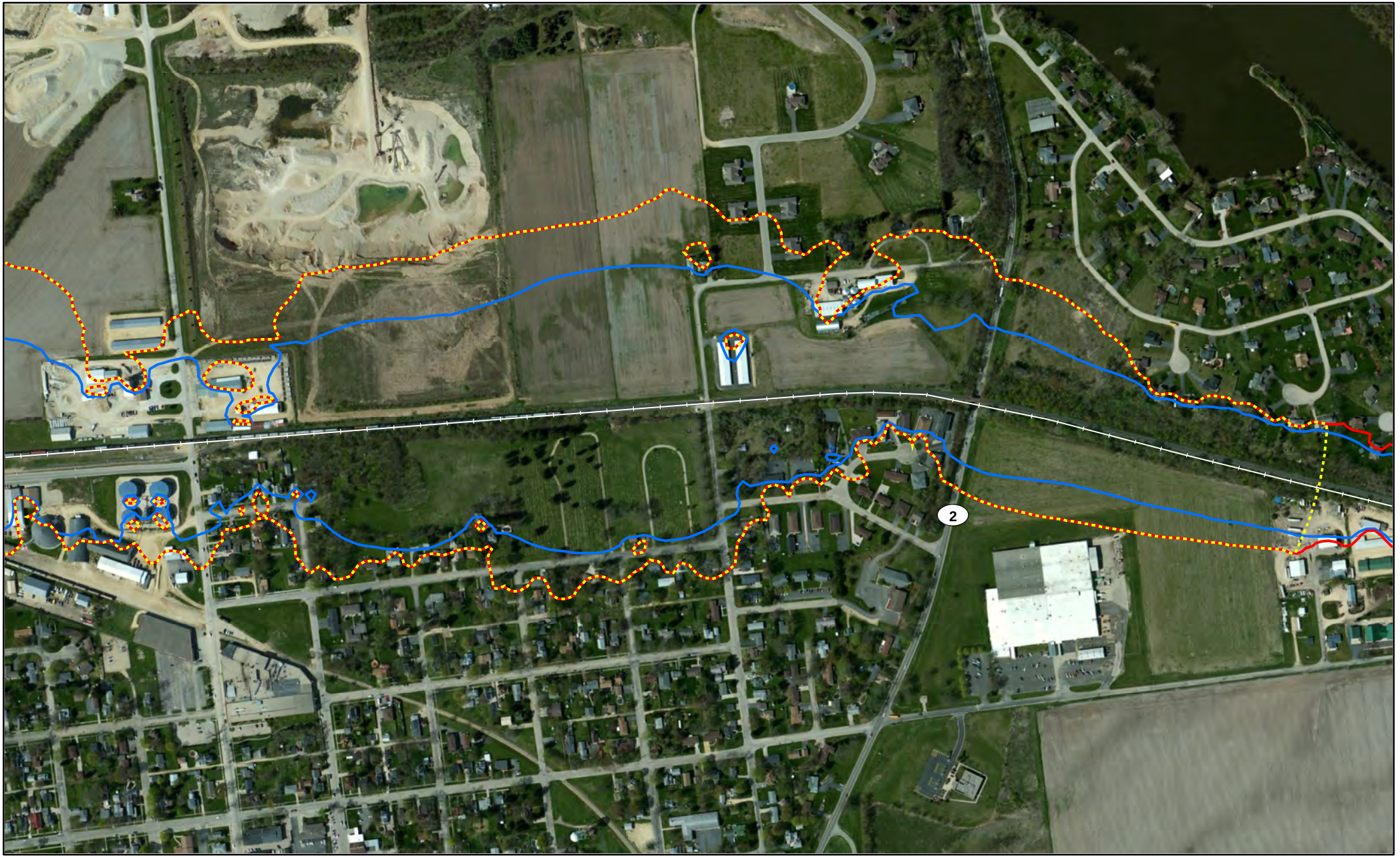


Noise Contours
Ogle County, IL

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



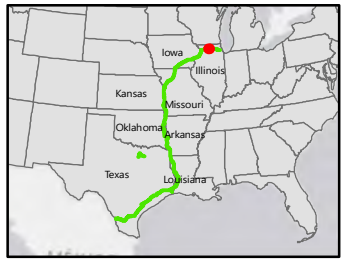
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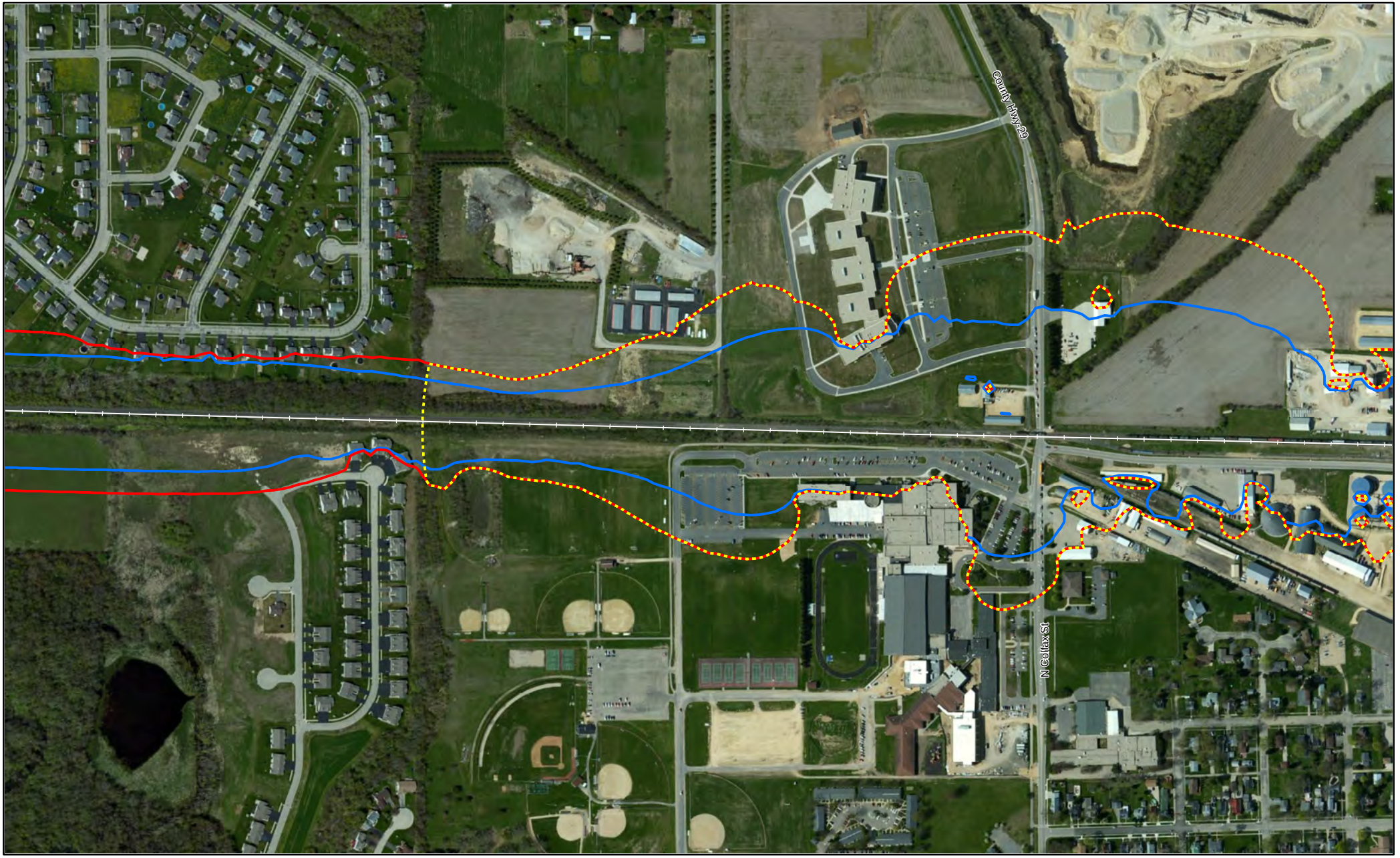
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Noise Contours
Ogle County, IL

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



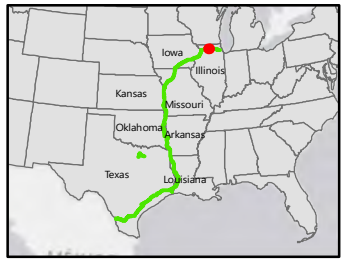
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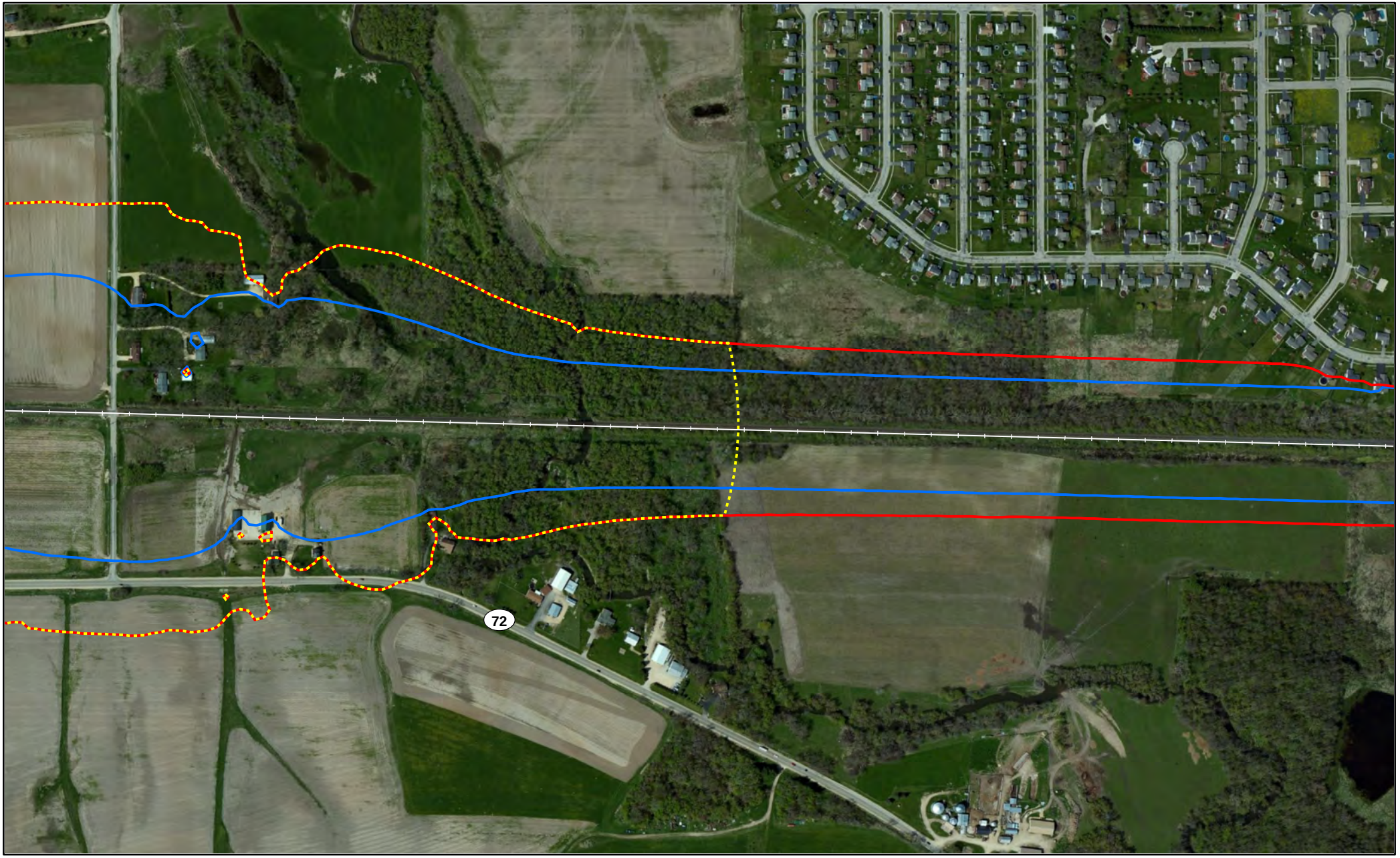
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Noise Contours
Ogle County, IL

Miles
0 0.05 0.1



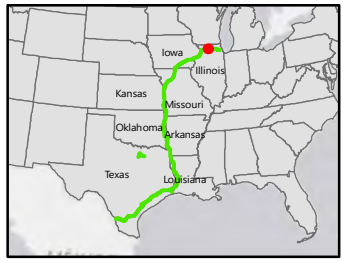
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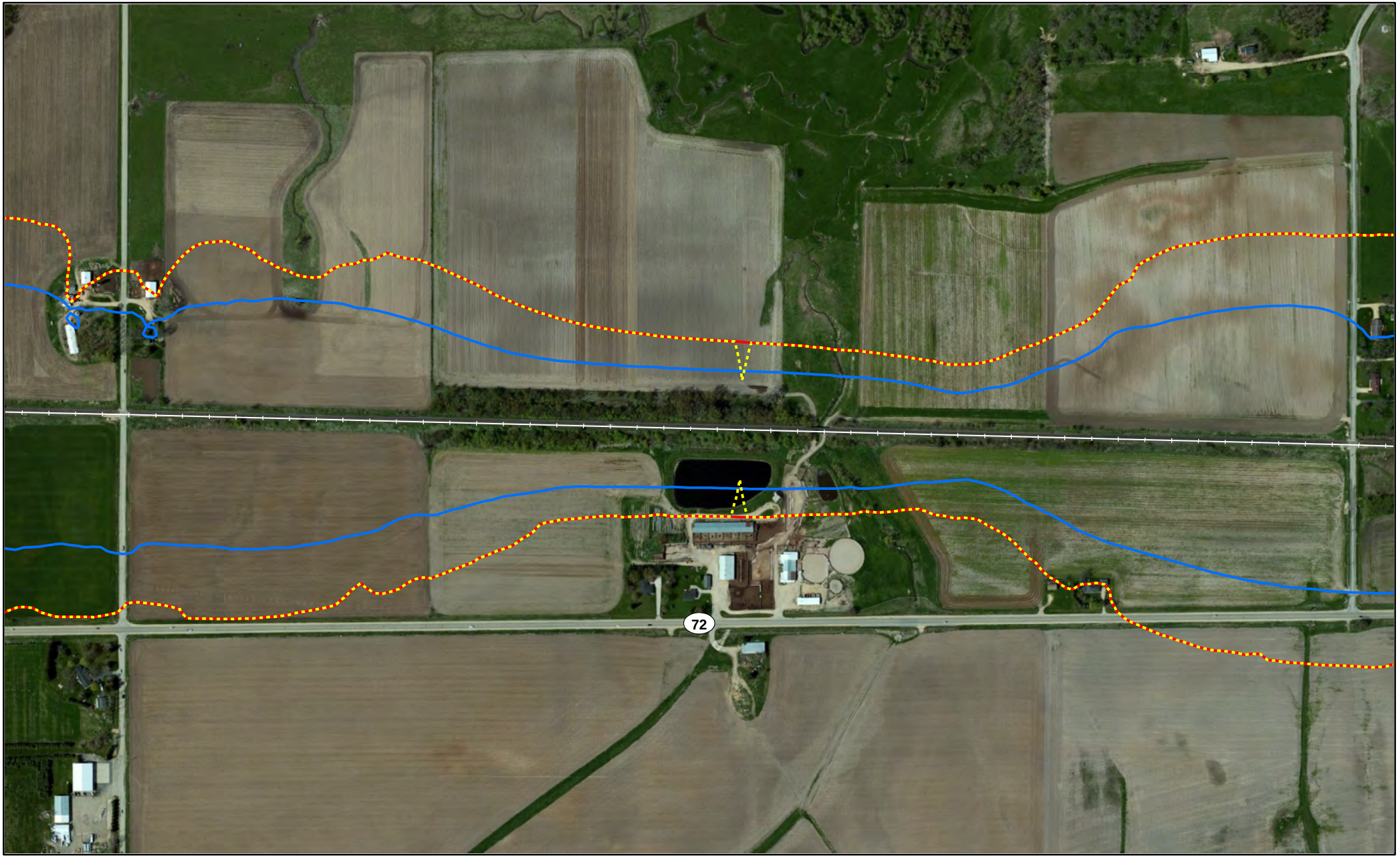


Noise Contours
Ogle County, IL

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



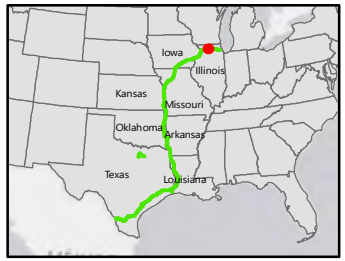
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Noise Contours
Ogle County, IL

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



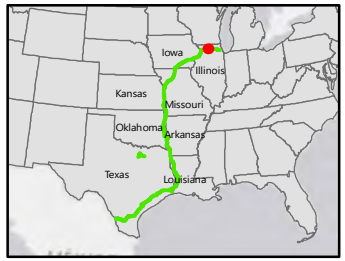
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Noise Contours
Ogle County, IL

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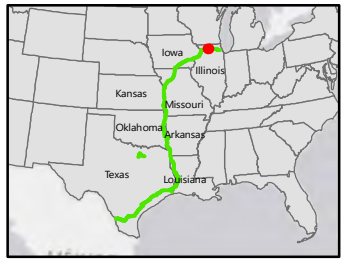
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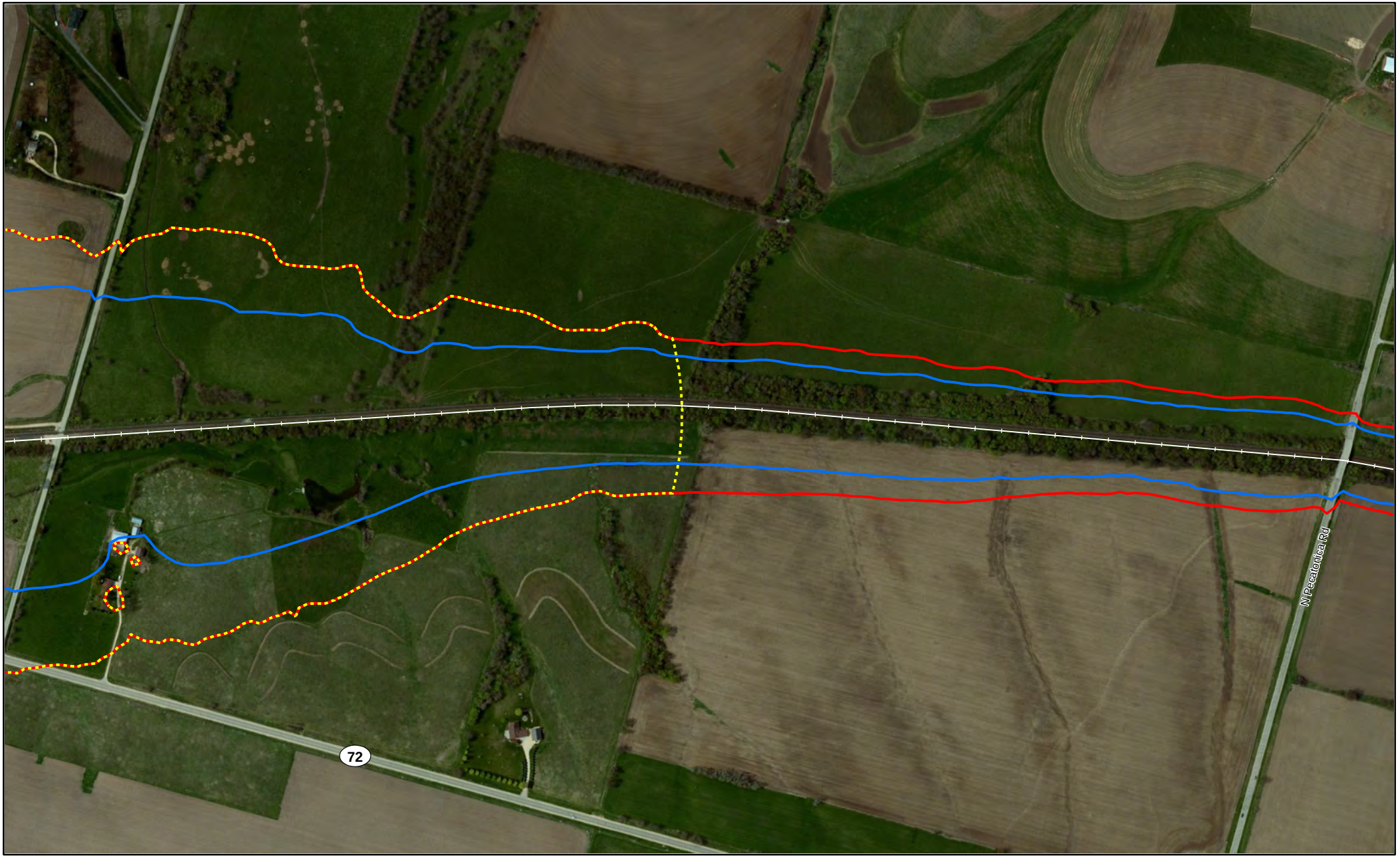
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Noise Contours
Ogle County, IL

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



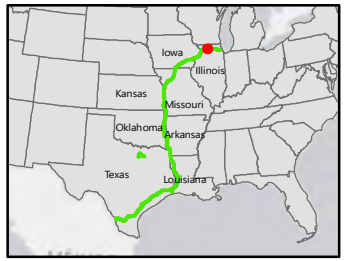
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Noise Contours
Ogle County, IL

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



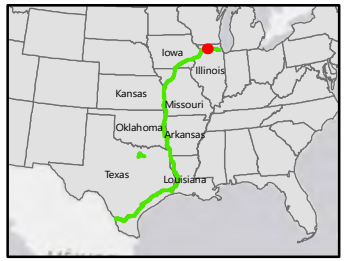
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Noise Contours
Ogle County, IL

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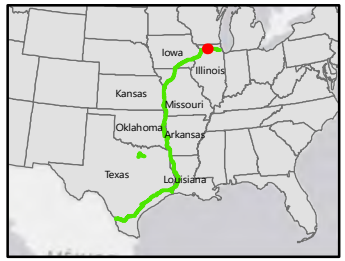
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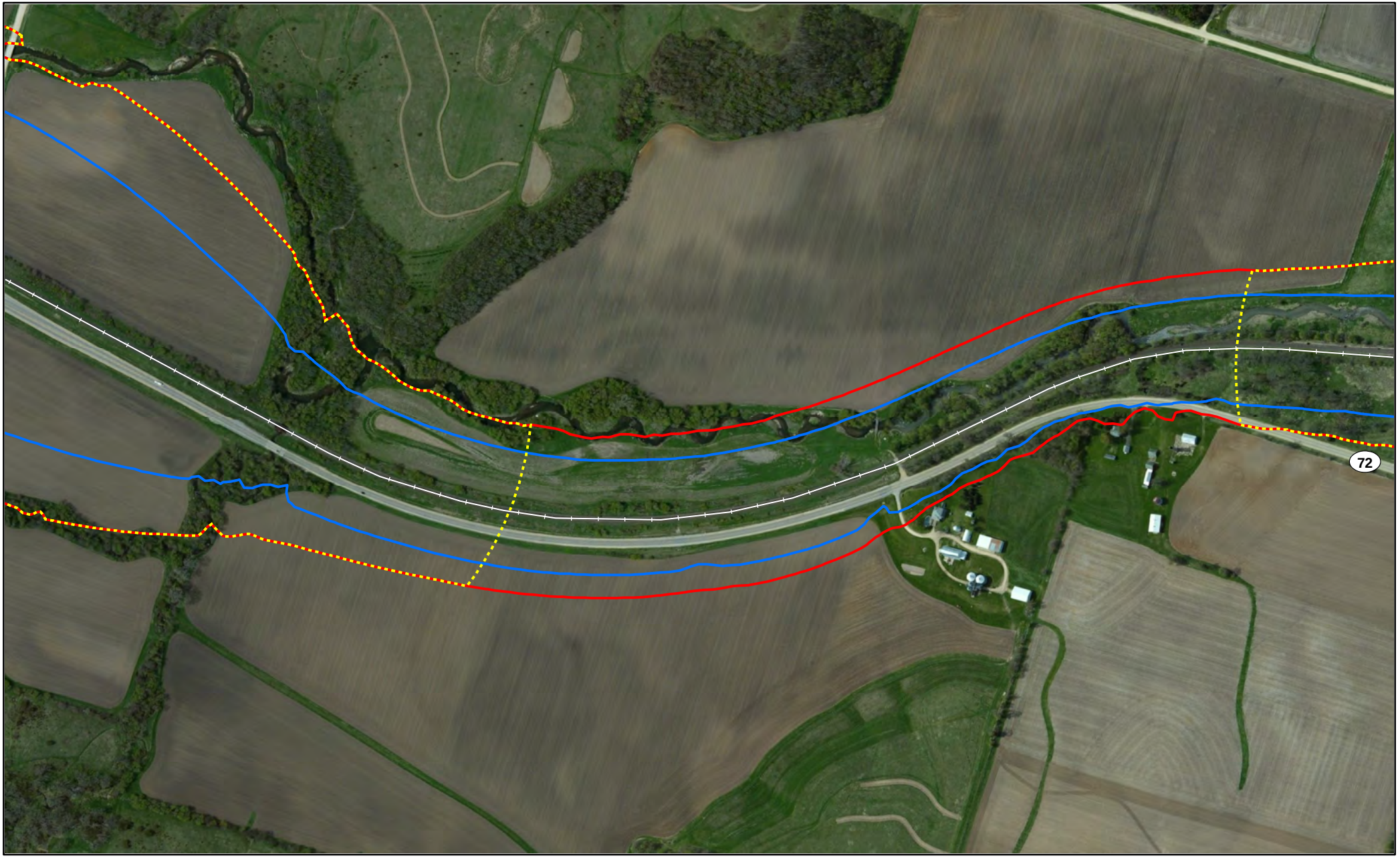
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Ogle County, IL

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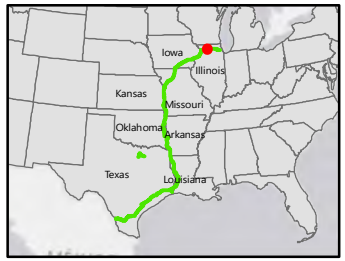
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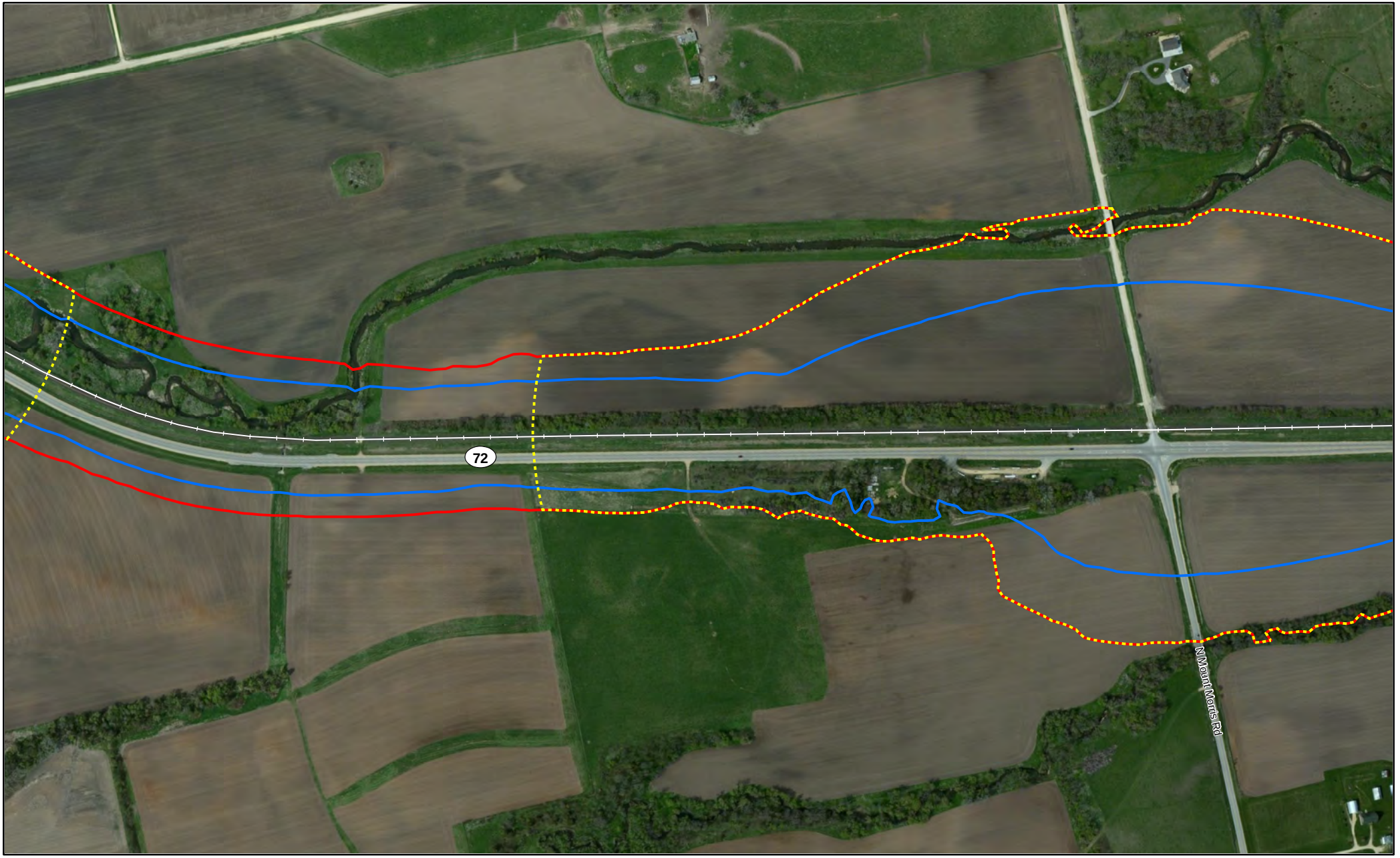
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Ogle County, IL

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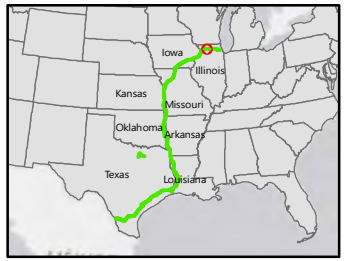
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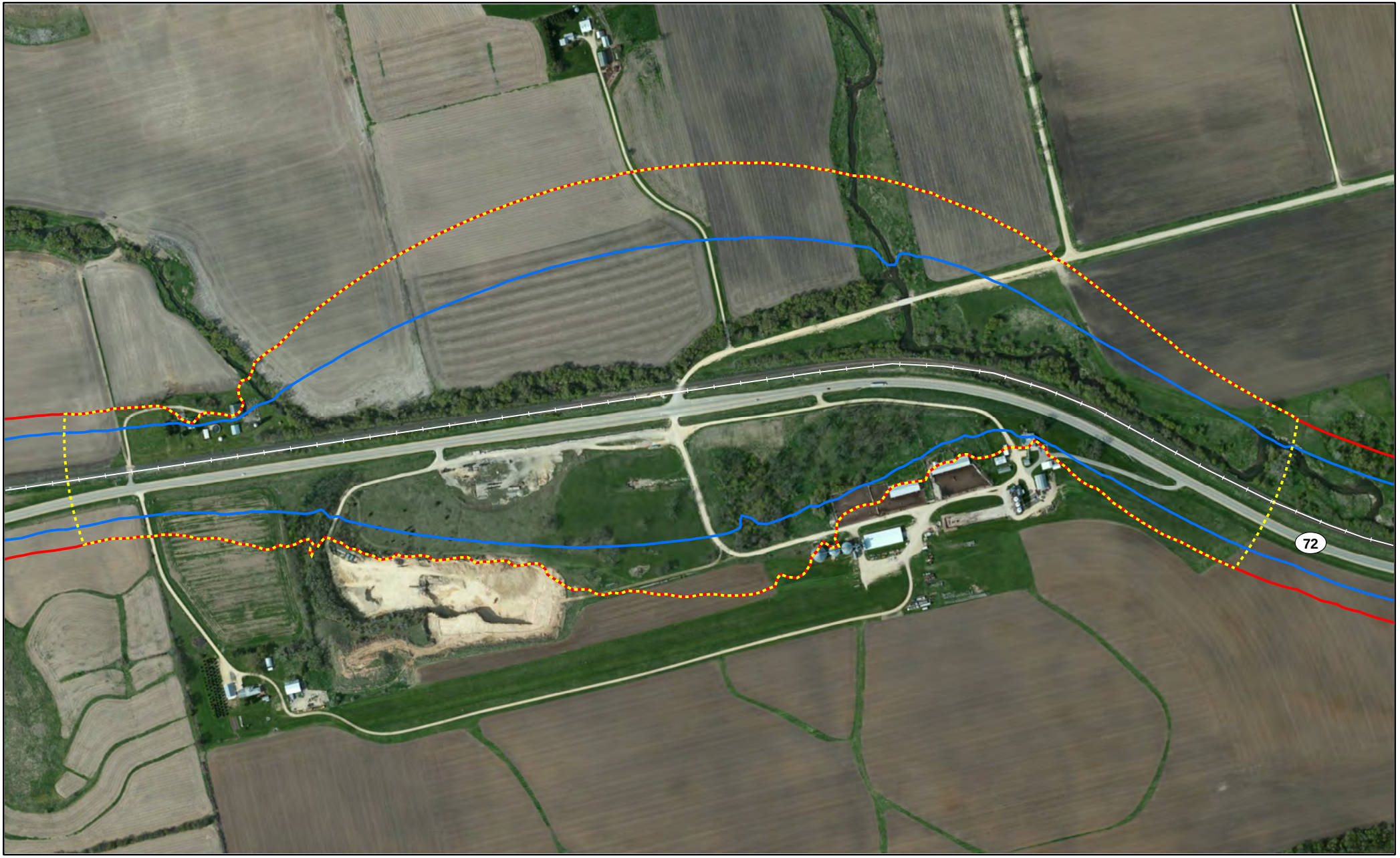
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Noise Contours
Ogle County, IL

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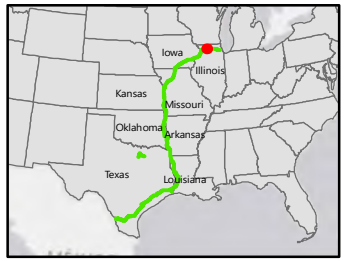
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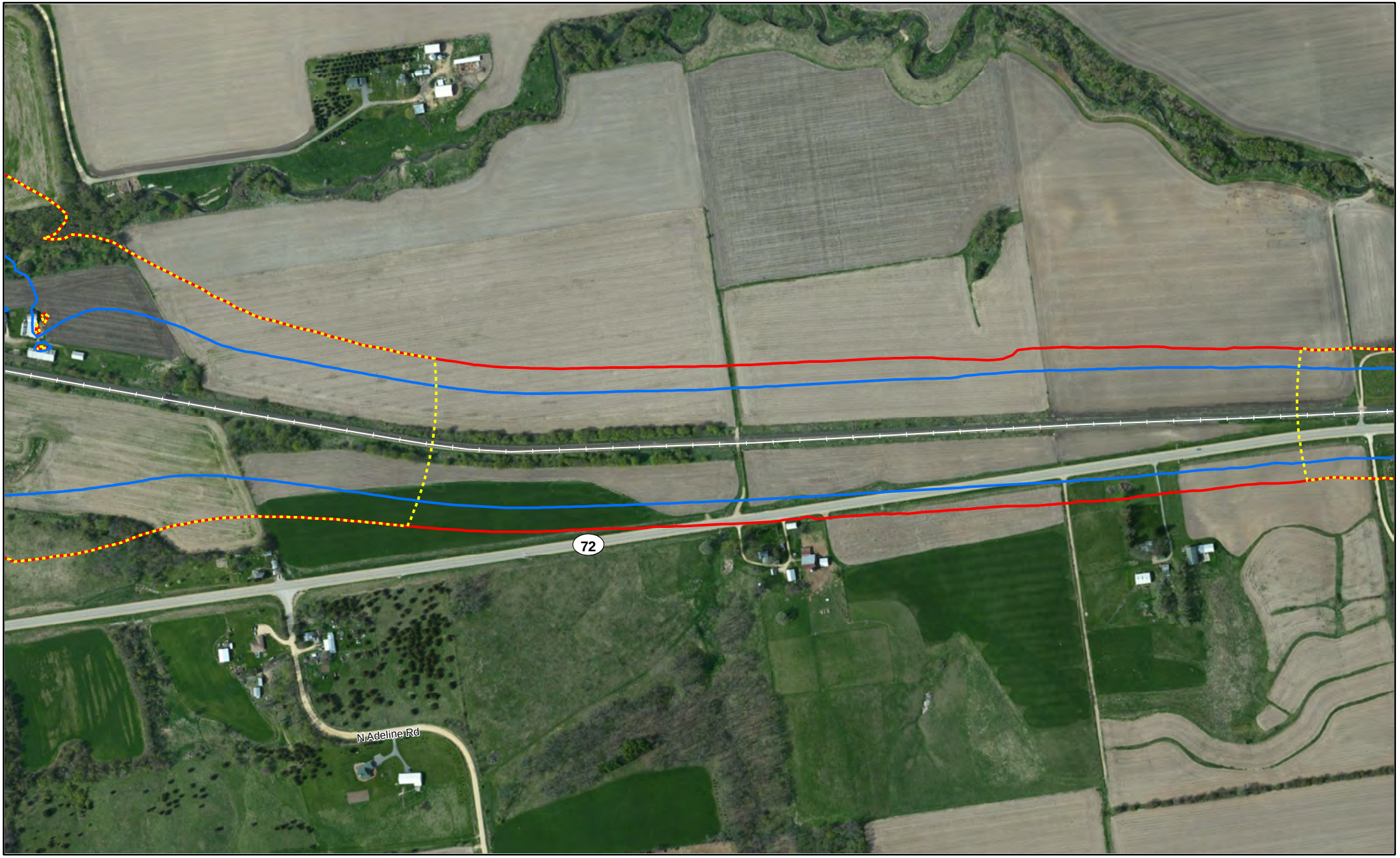
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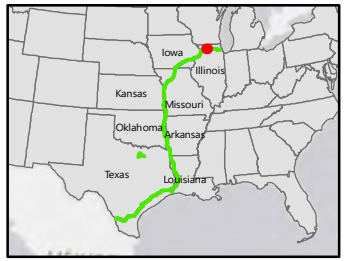
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Noise Contours
Ogle County, IL

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Miles
0 0.05 0.1



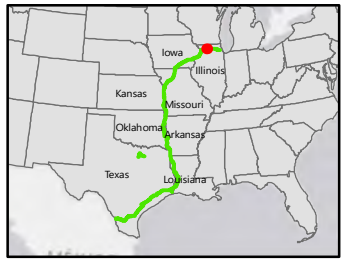
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Ogle County, IL

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Miles
0 0.05 0.1



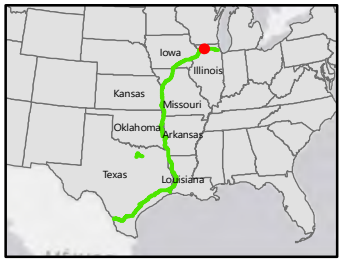
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Tracks

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Noise Contours
Ogle County, IL

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



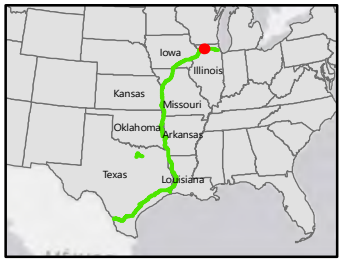
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Noise Contours
Ogle County, IL

Miles
0 0.05 0.1



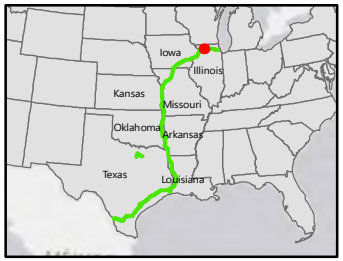
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Noise Contours
Ogle County, IL

Miles
0 0.05 0.1



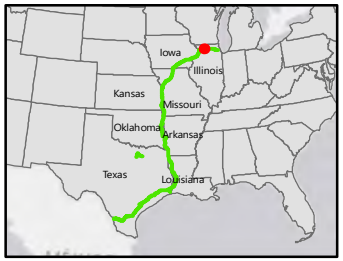
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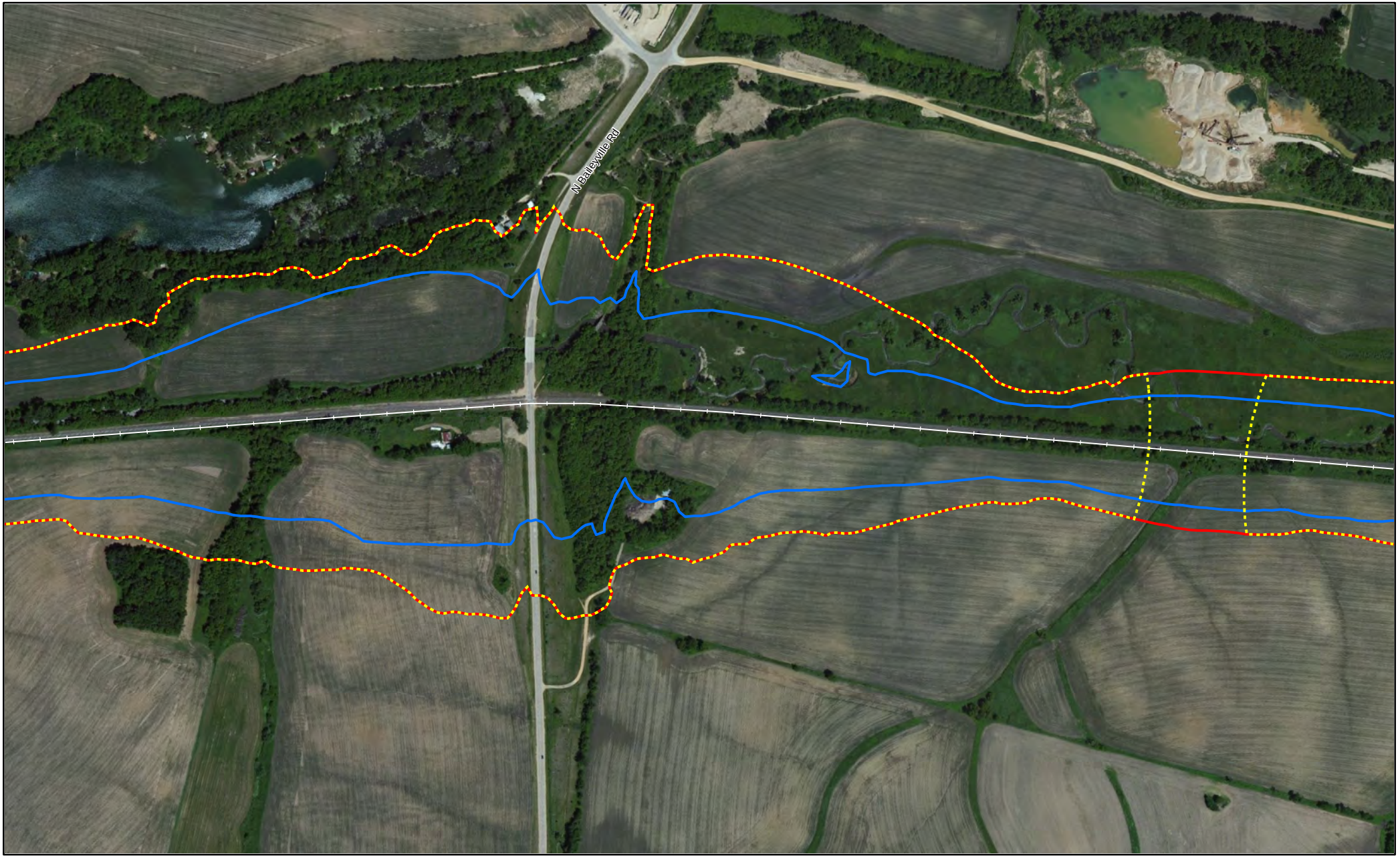
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Noise Contours
Ogle County, IL

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



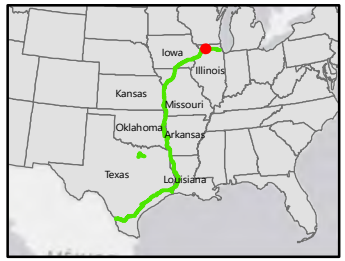
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Noise Contours
Ogle County, IL

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



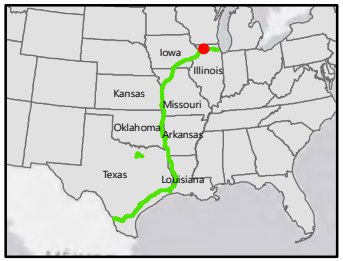
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Noise Contours
Ogle County, IL

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0 0.05 0.1



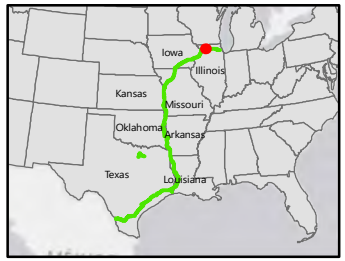
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Noise Contours
Ogle County, IL

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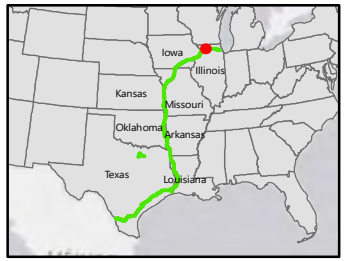
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Ogle County, IL

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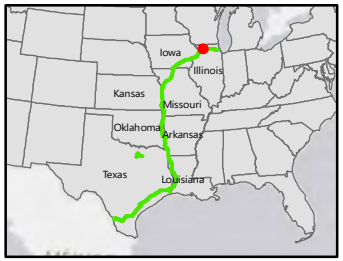
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Noise Contours
Ogle County, IL

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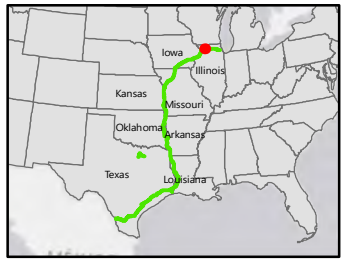
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Noise Contours
Ogle County, IL

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



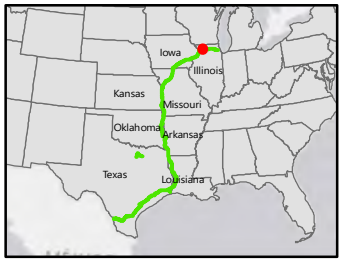
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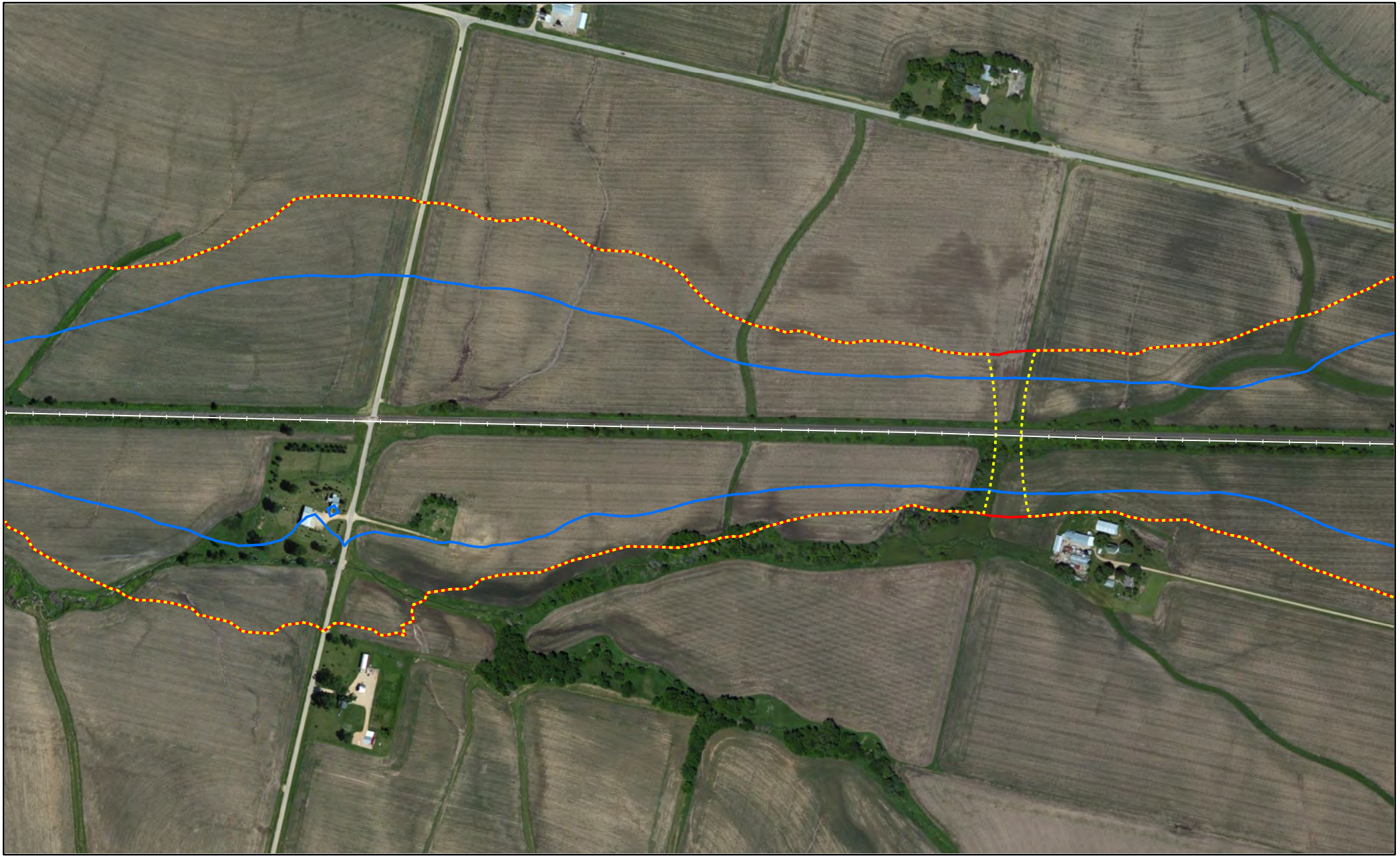


Noise Contours
Carroll County, IL

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0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



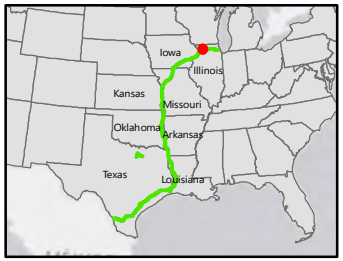
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Noise Contours
Carroll County, IL

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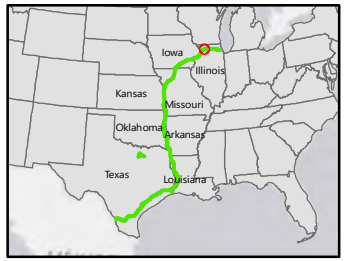
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Noise Contours
Carroll County, IL

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Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



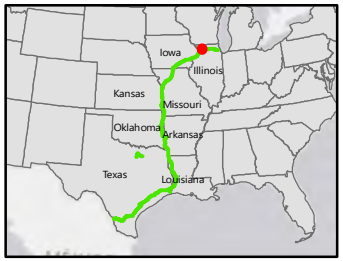
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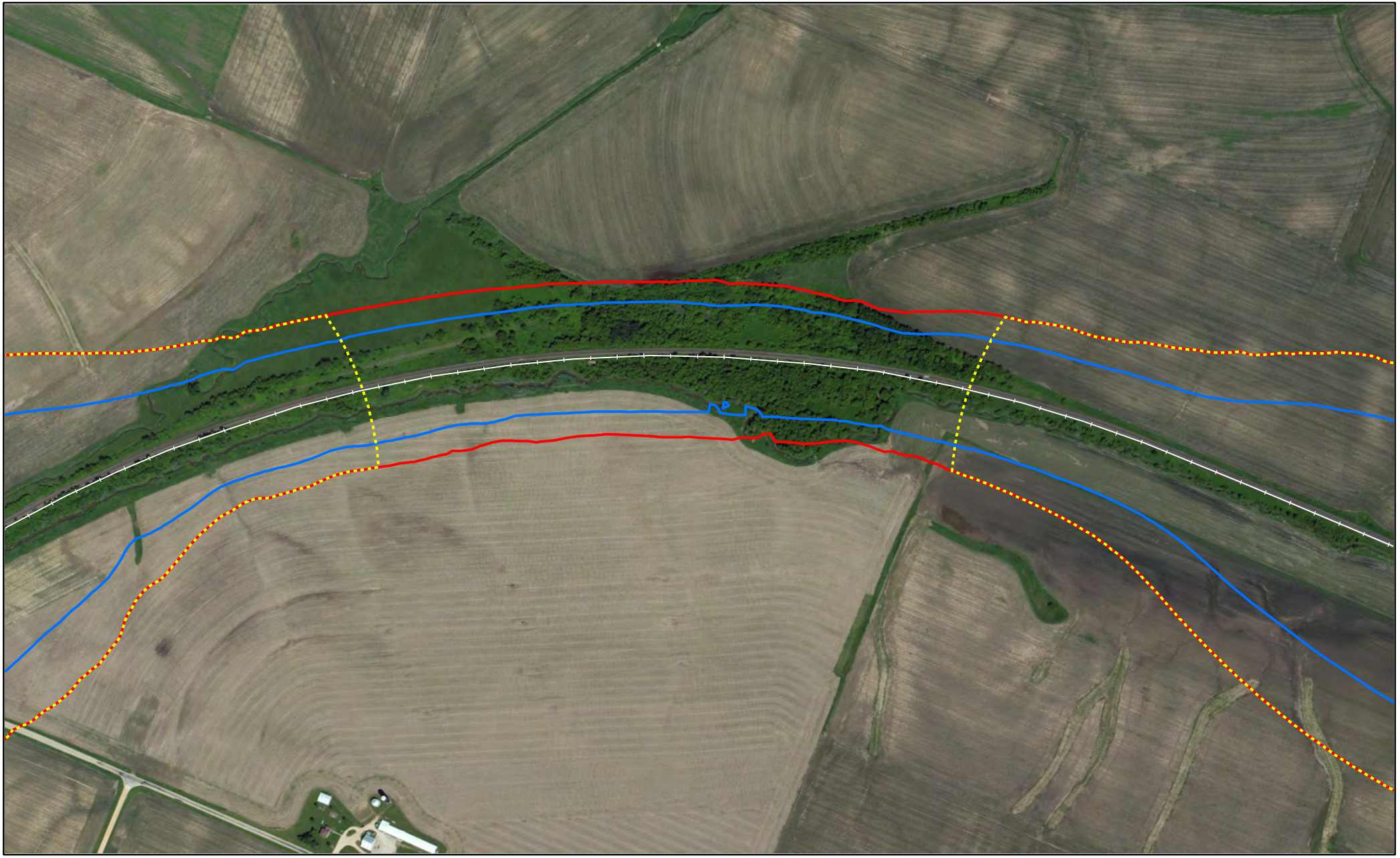
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Noise Contours
Carroll County, IL

Miles
0 0.05 0.1



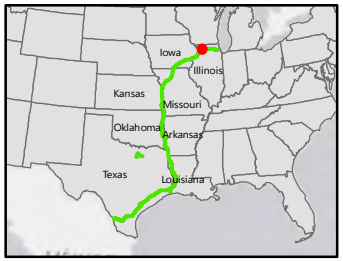
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Noise Contours
Carroll County, IL

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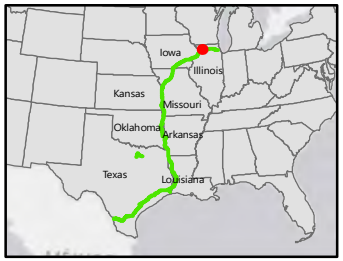
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Carroll County, IL

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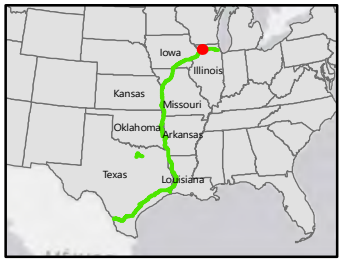
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Noise Contours
Carroll County, IL

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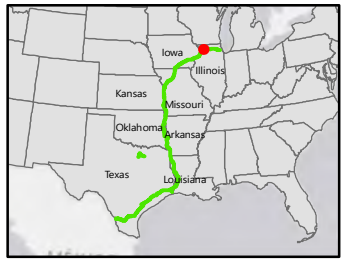
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Noise Contours
Carroll County, IL

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



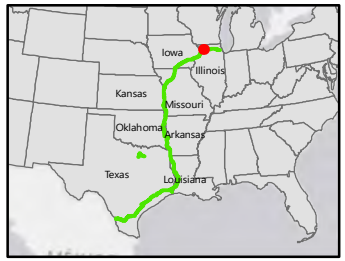
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Noise Contours
Carroll County, IL

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



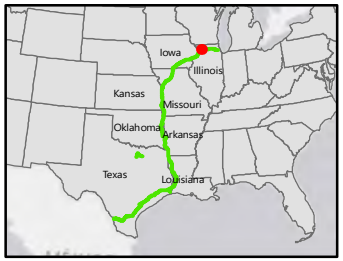
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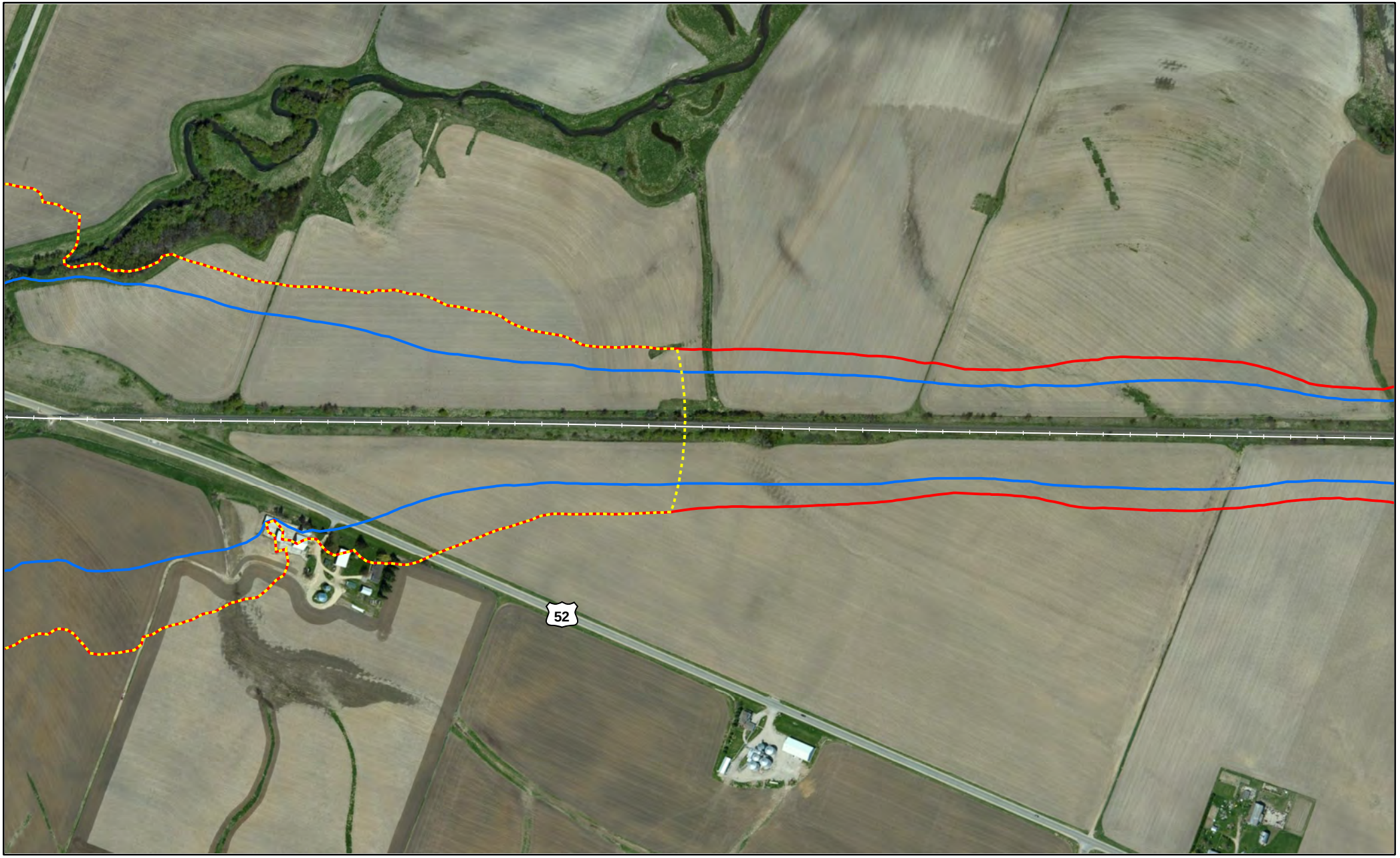
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Noise Contours
Carroll County, IL

Miles
0 0.05 0.1



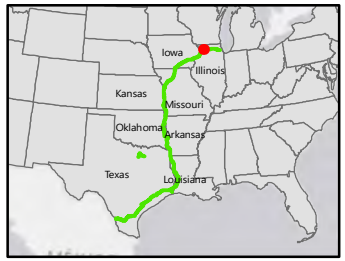
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Noise Contours
Carroll County, IL

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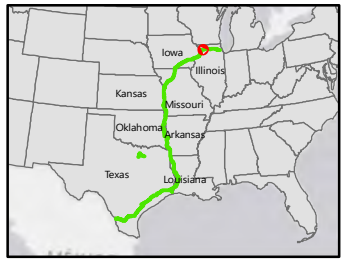
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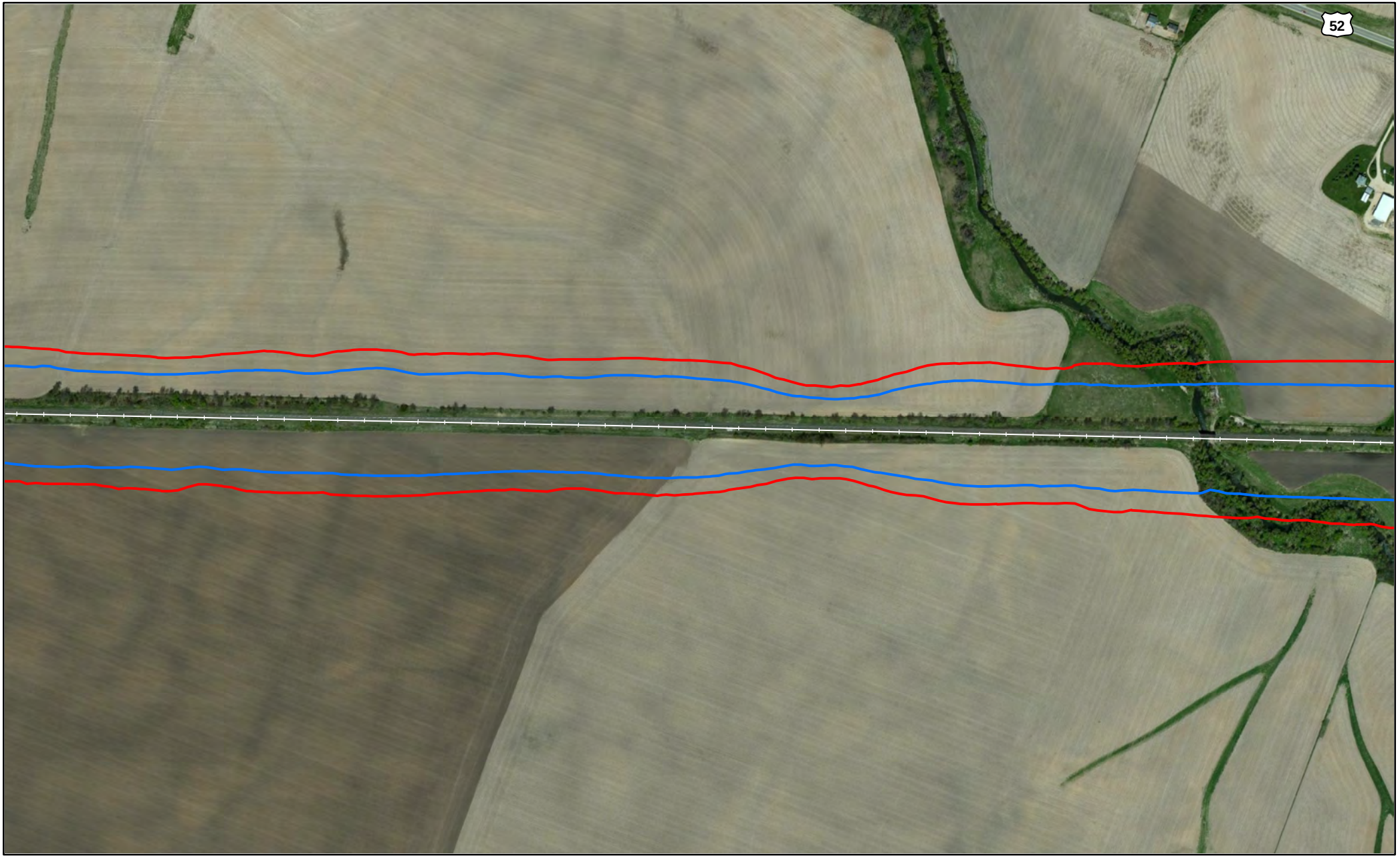
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Noise Contours
Carroll County, IL

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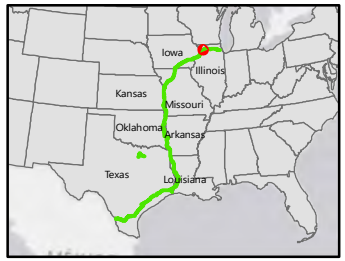
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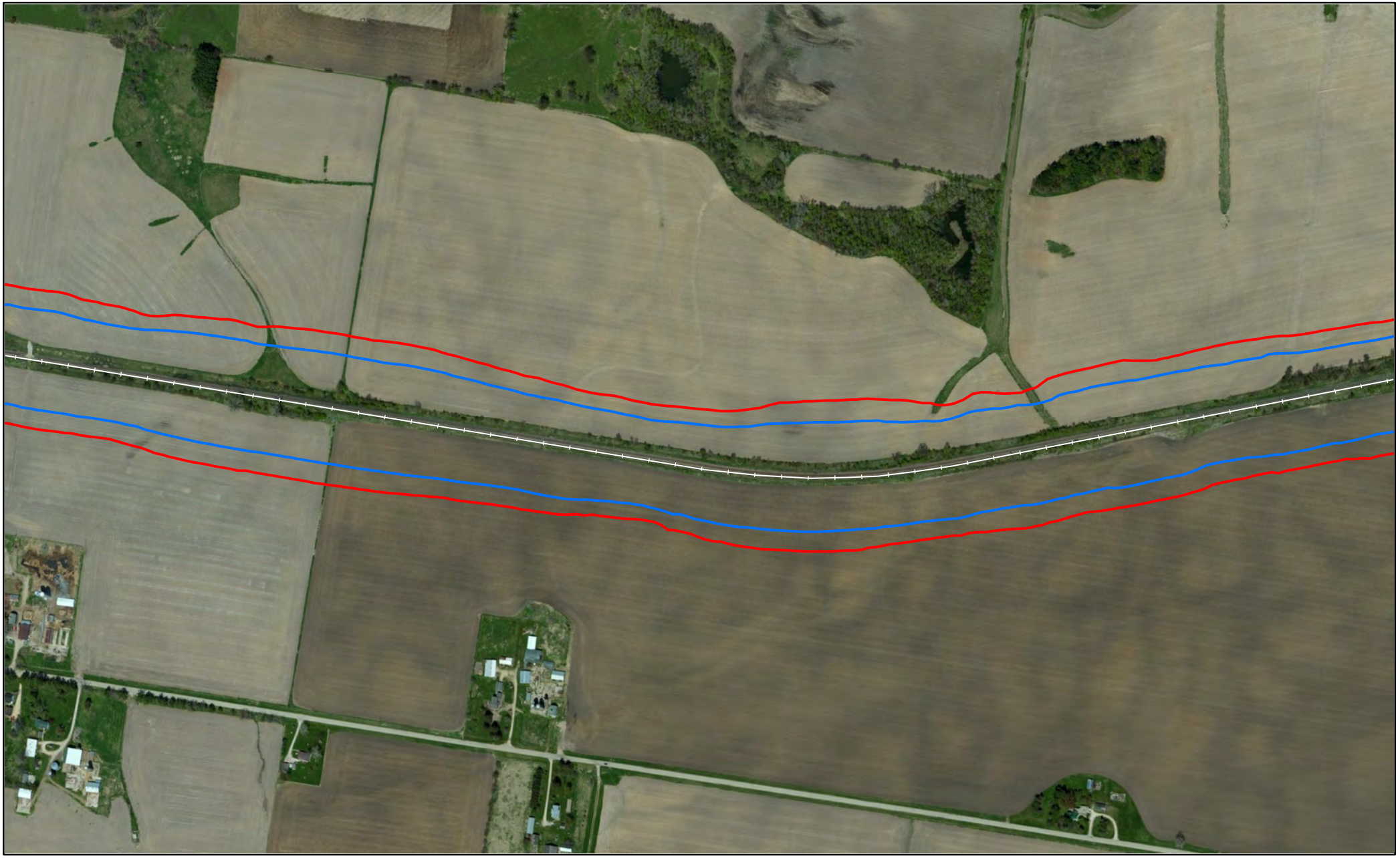
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Noise Contours
Carroll County, IL

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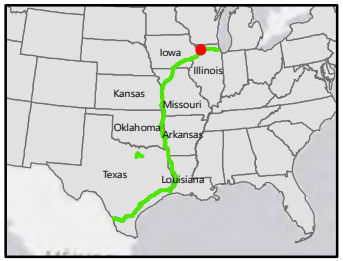
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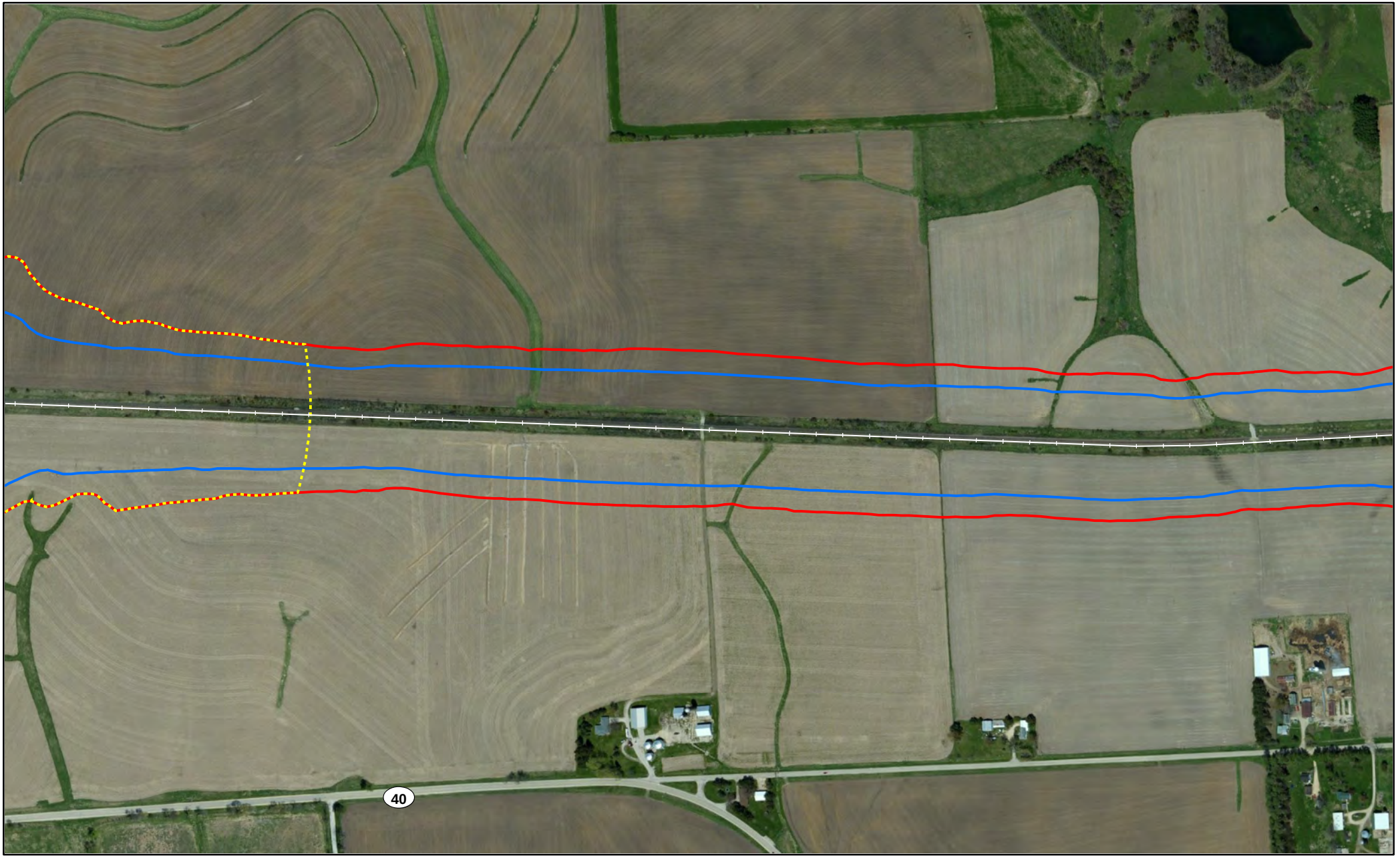


Noise Contours
Carroll County, IL

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



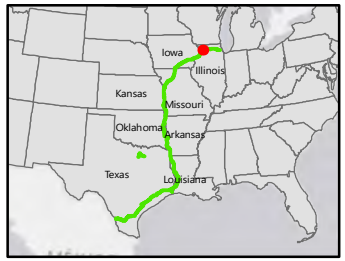
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Noise Contours
Carroll County, IL

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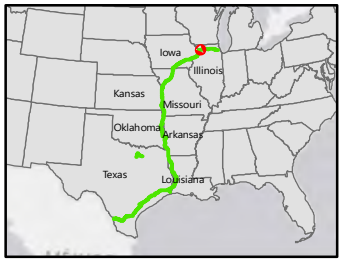
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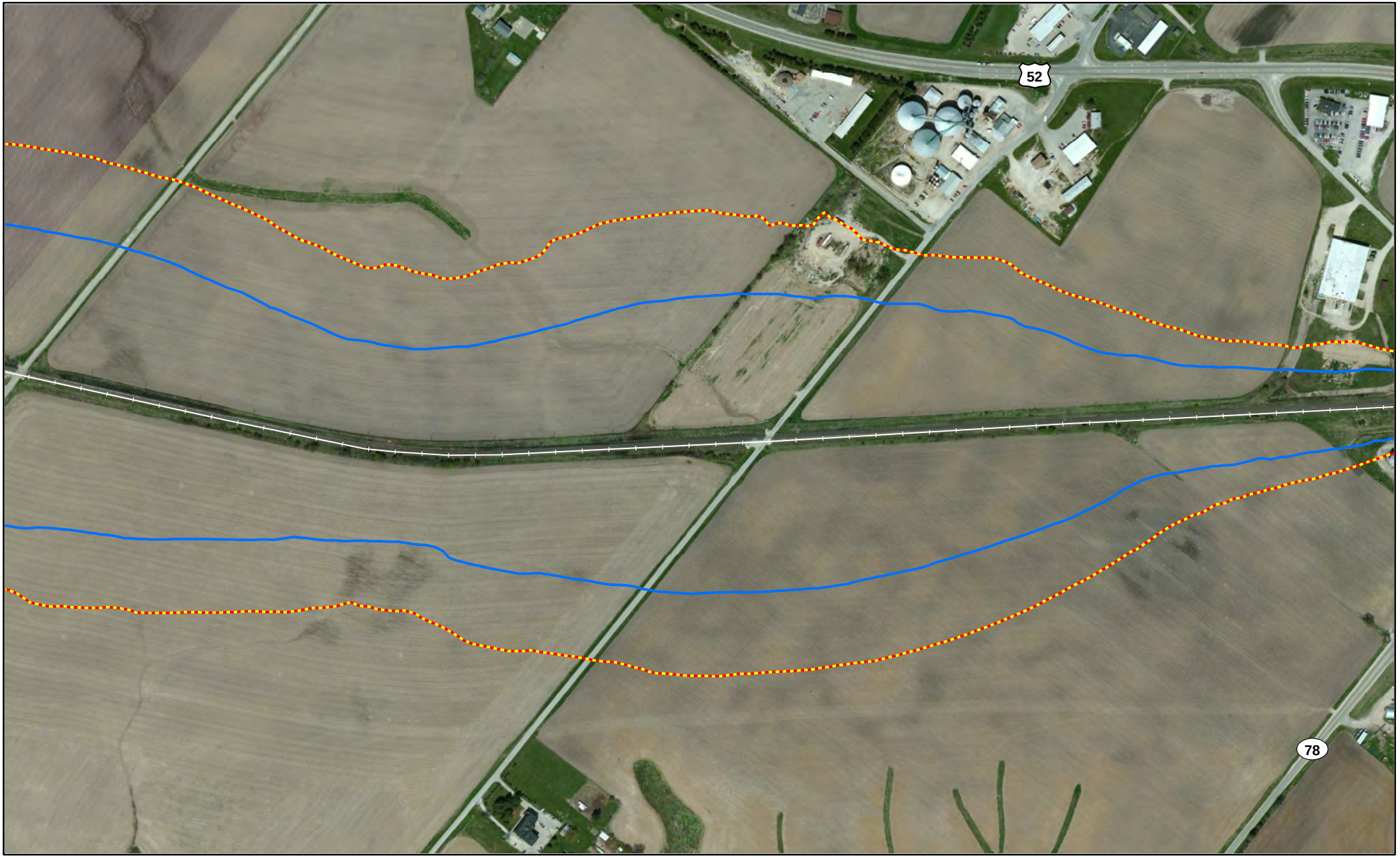
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Noise Contours
Carroll County, IL

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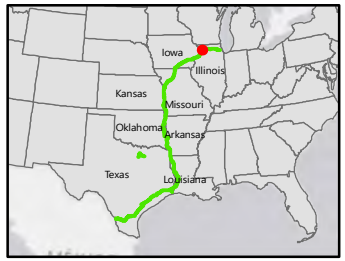
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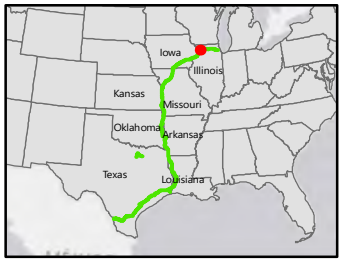
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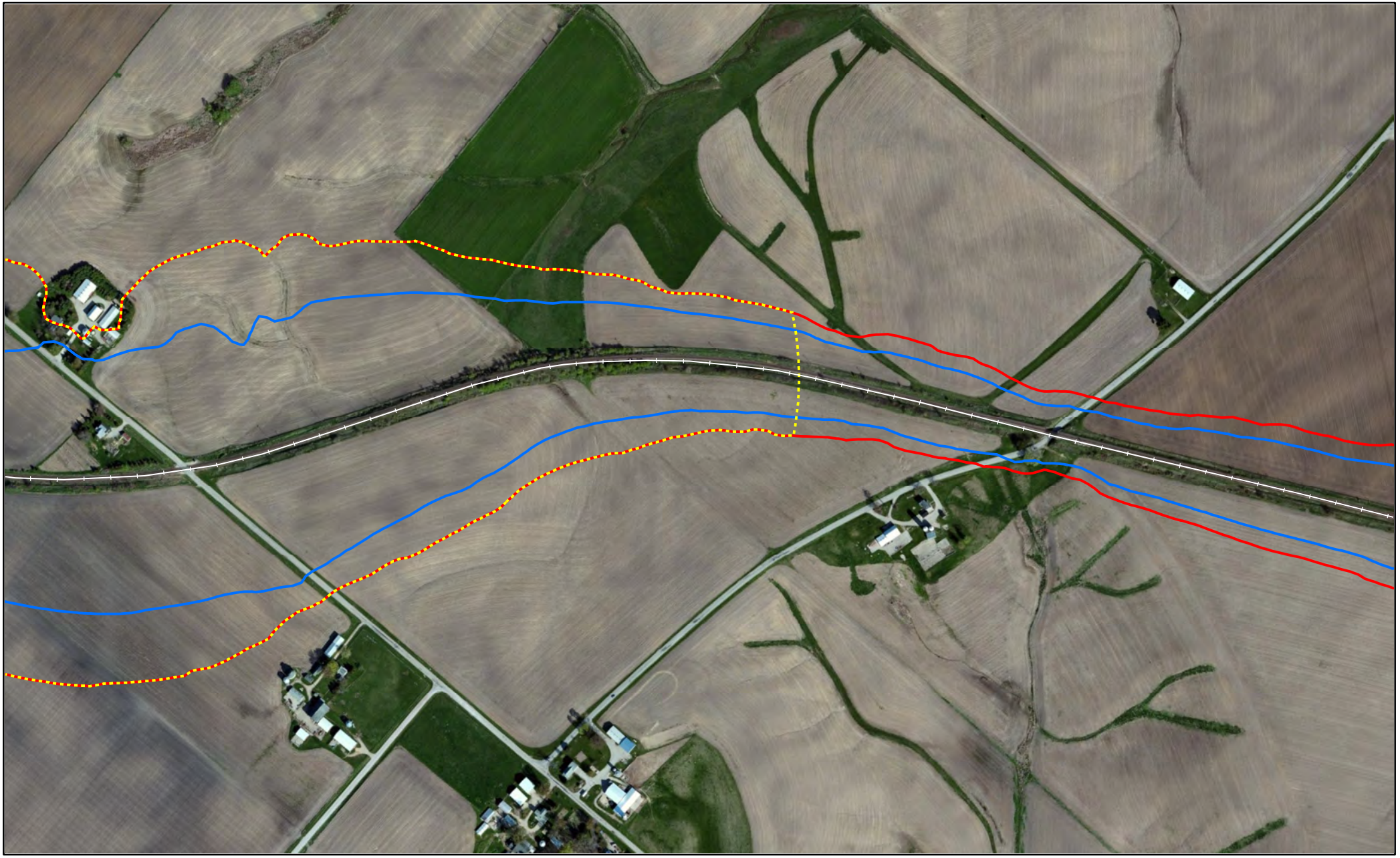


Noise Contours
Carroll County, IL

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Miles
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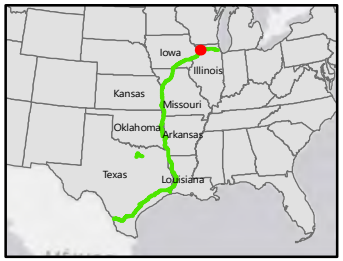
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Carroll County, IL

Miles
0 0.05 0.1



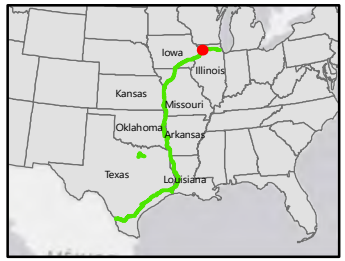
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Carroll County, IL

Miles
0 0.05 0.1



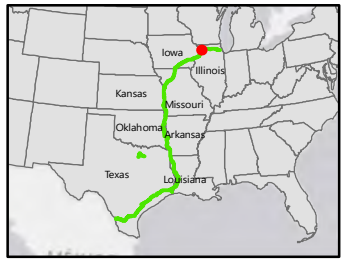
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

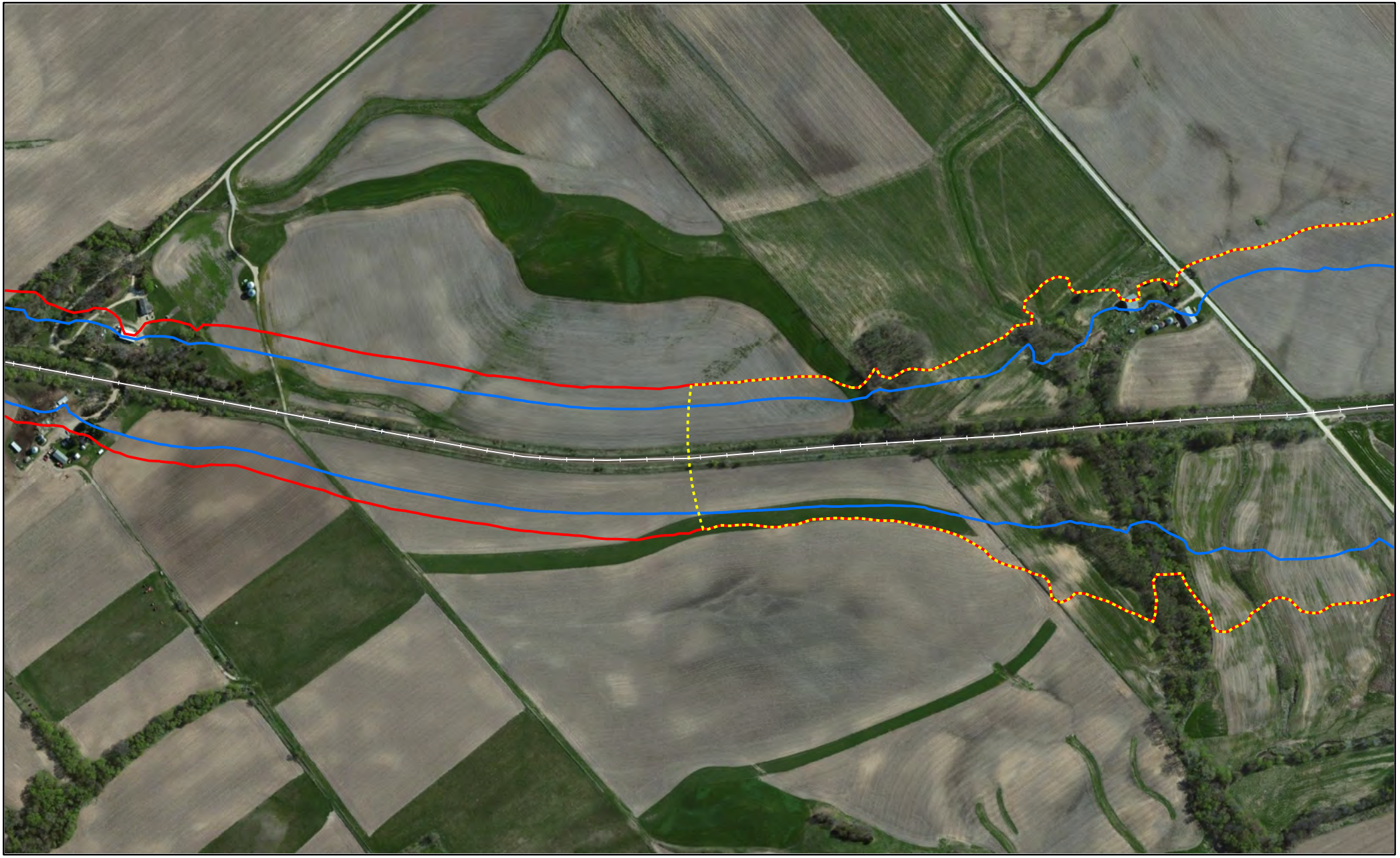
Source: ESRI.



Noise Contours
Carroll County, IL

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



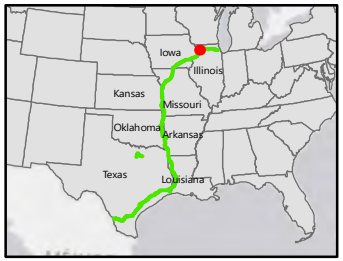
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Carroll County, IL

Miles
0 0.05 0.1



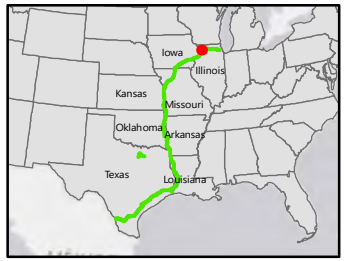
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

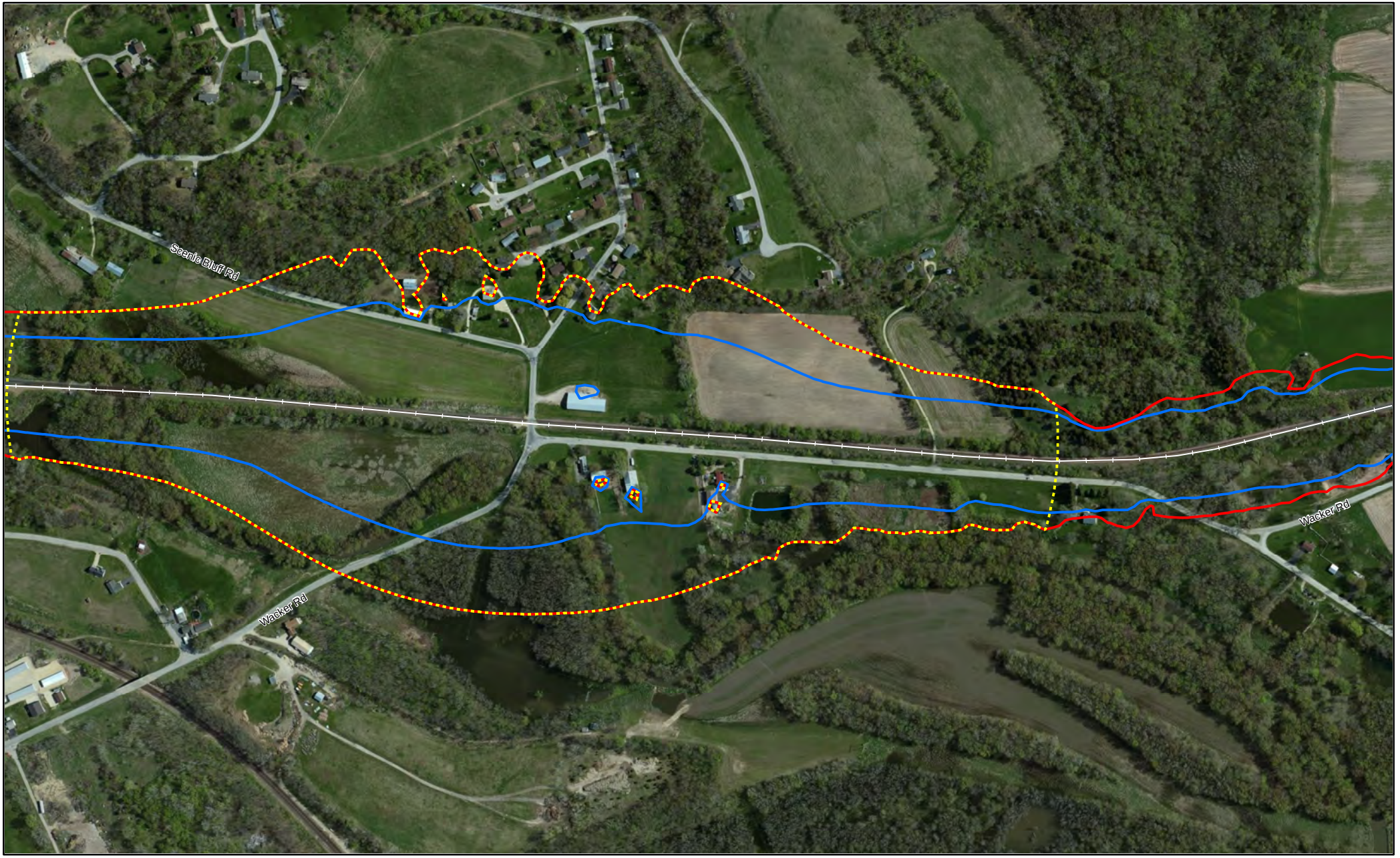
Tracks

Source: ESRI.



Noise Contours
Carroll County, IL

Miles
0 0.05 0.1



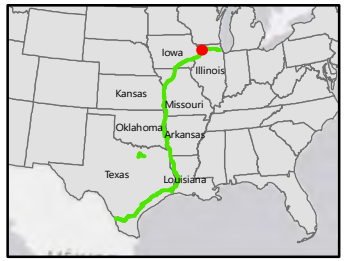
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

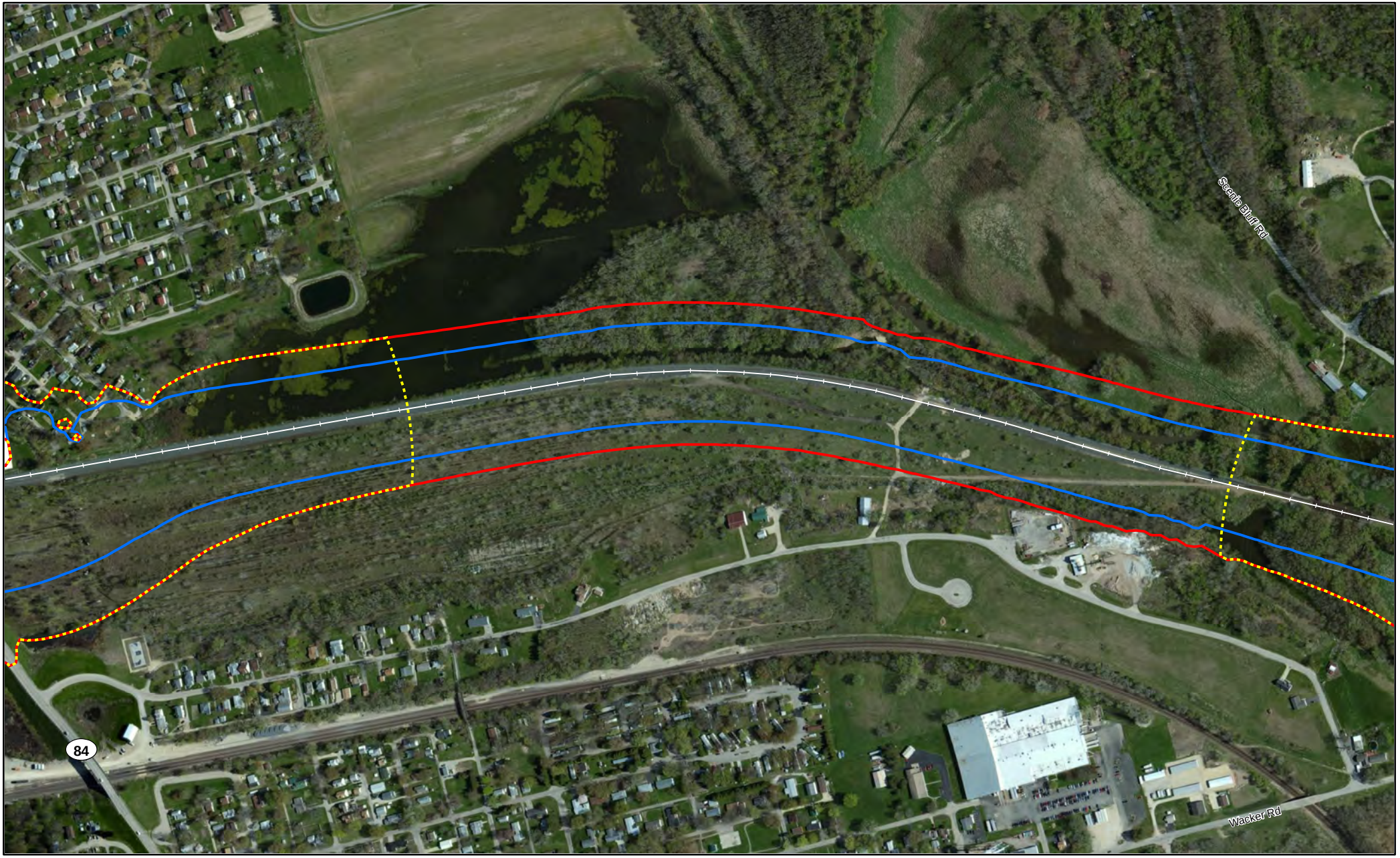
Source: ESRI.



Noise Contours
Carroll County, IL

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



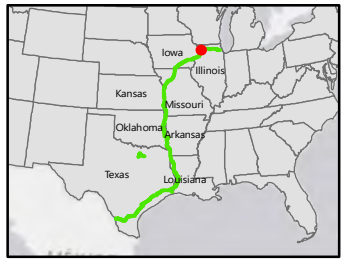
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Carroll County, IL

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



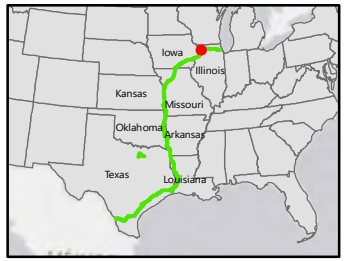
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

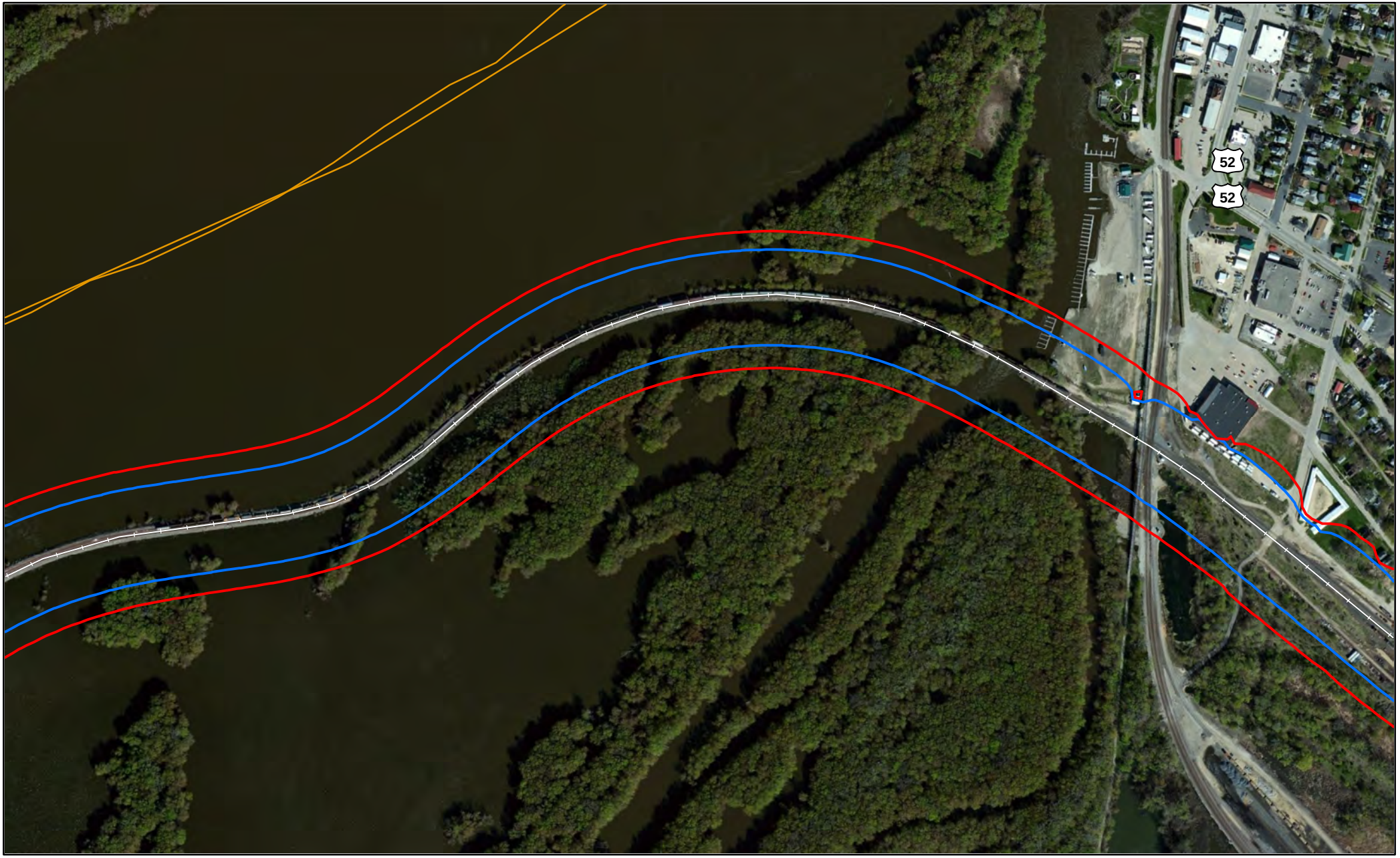
Source: ESRI.



Noise Contours
Carroll County, IL

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



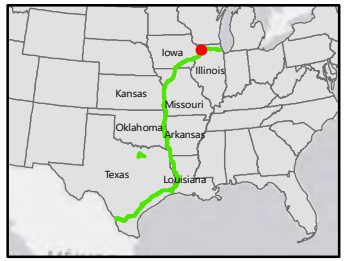
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

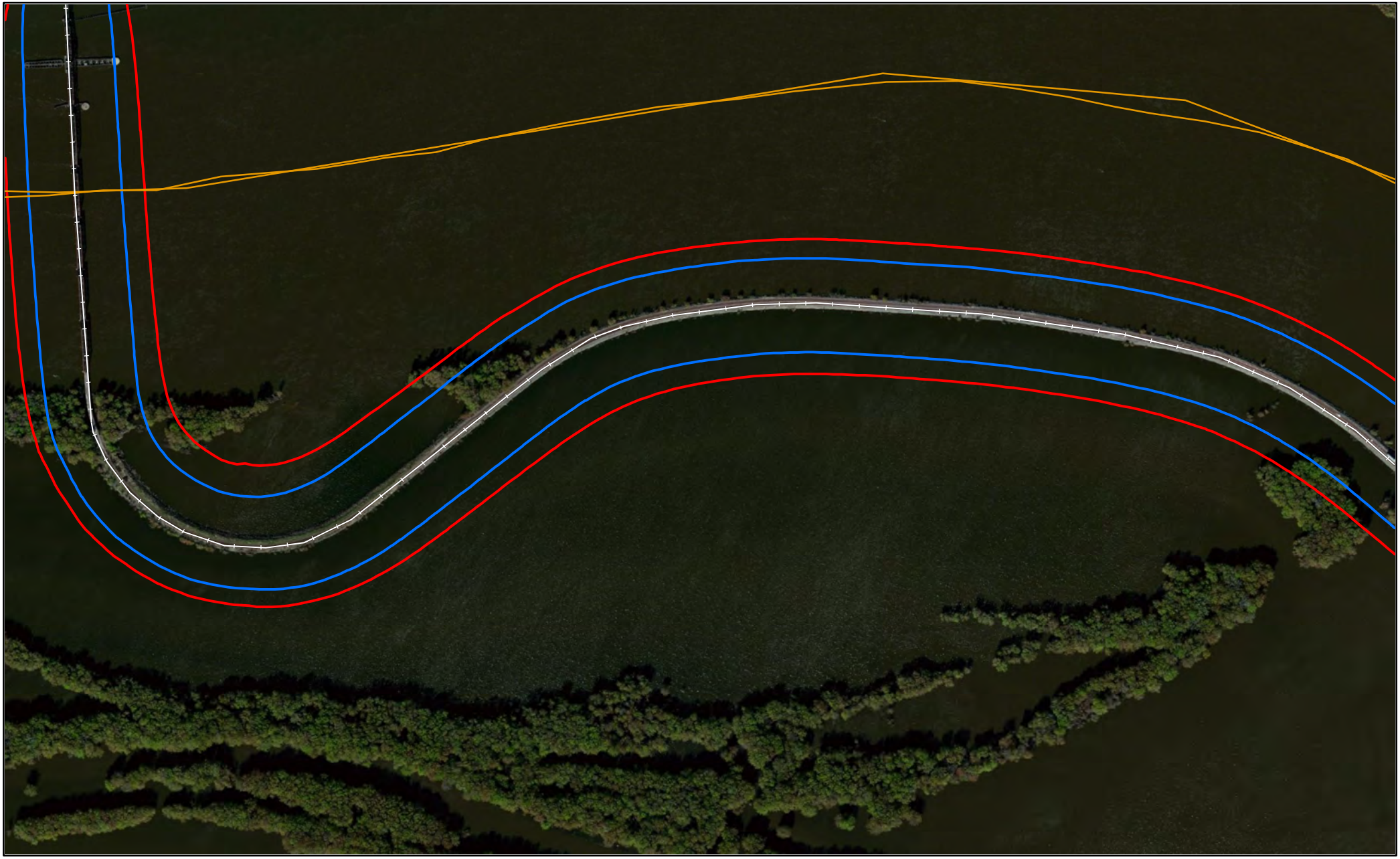
Source: ESRI.



Noise Contours
Jackson County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



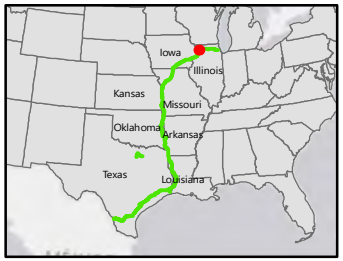
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

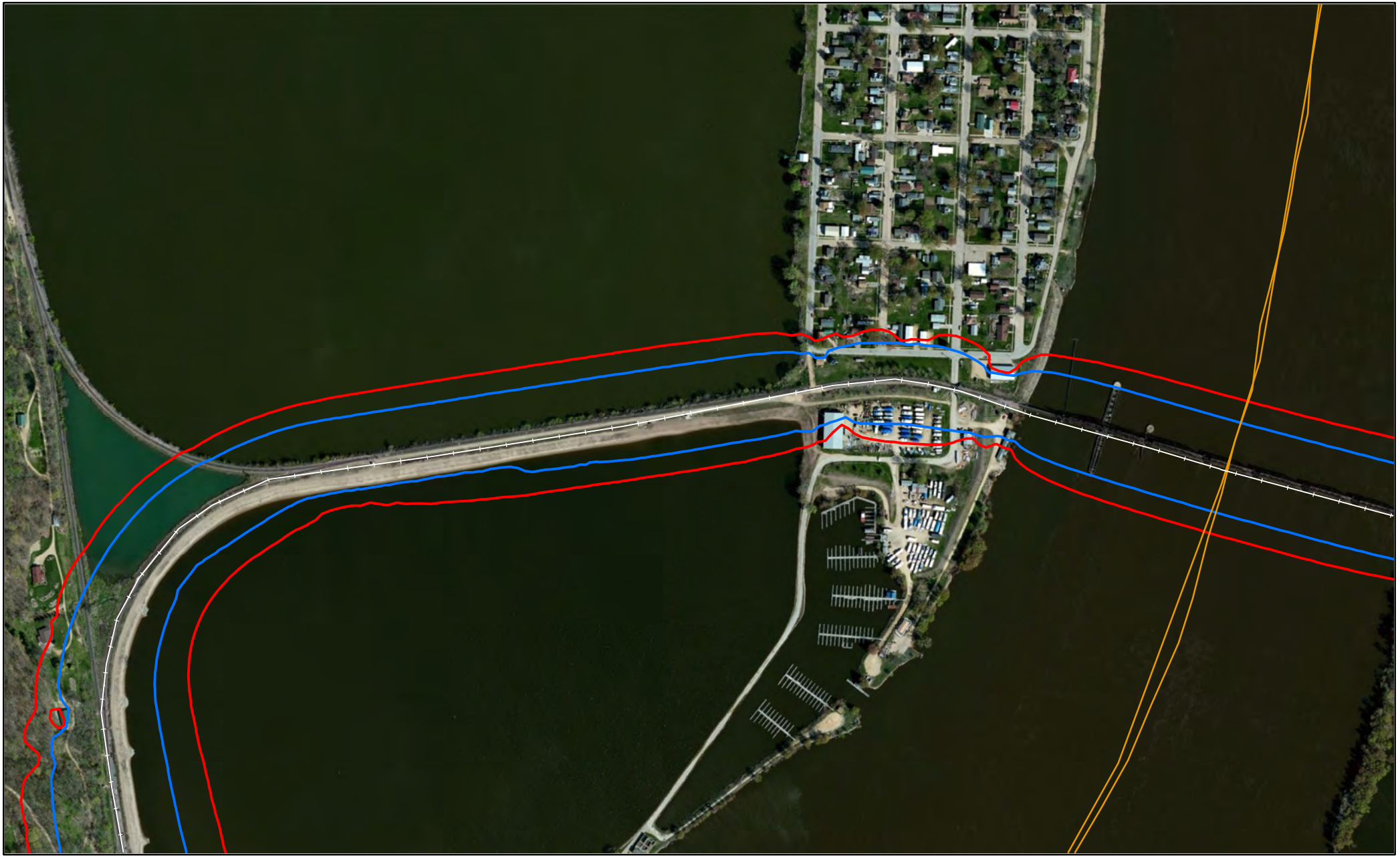
Source: ESRI.



Noise Contours
Jackson County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



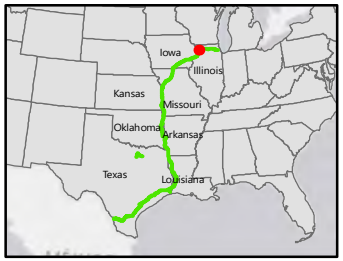
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jackson County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



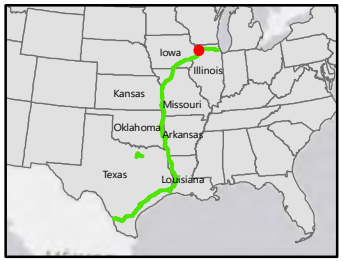
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jackson County, IA

Miles
0 0.05 0.1



Noise Receptors

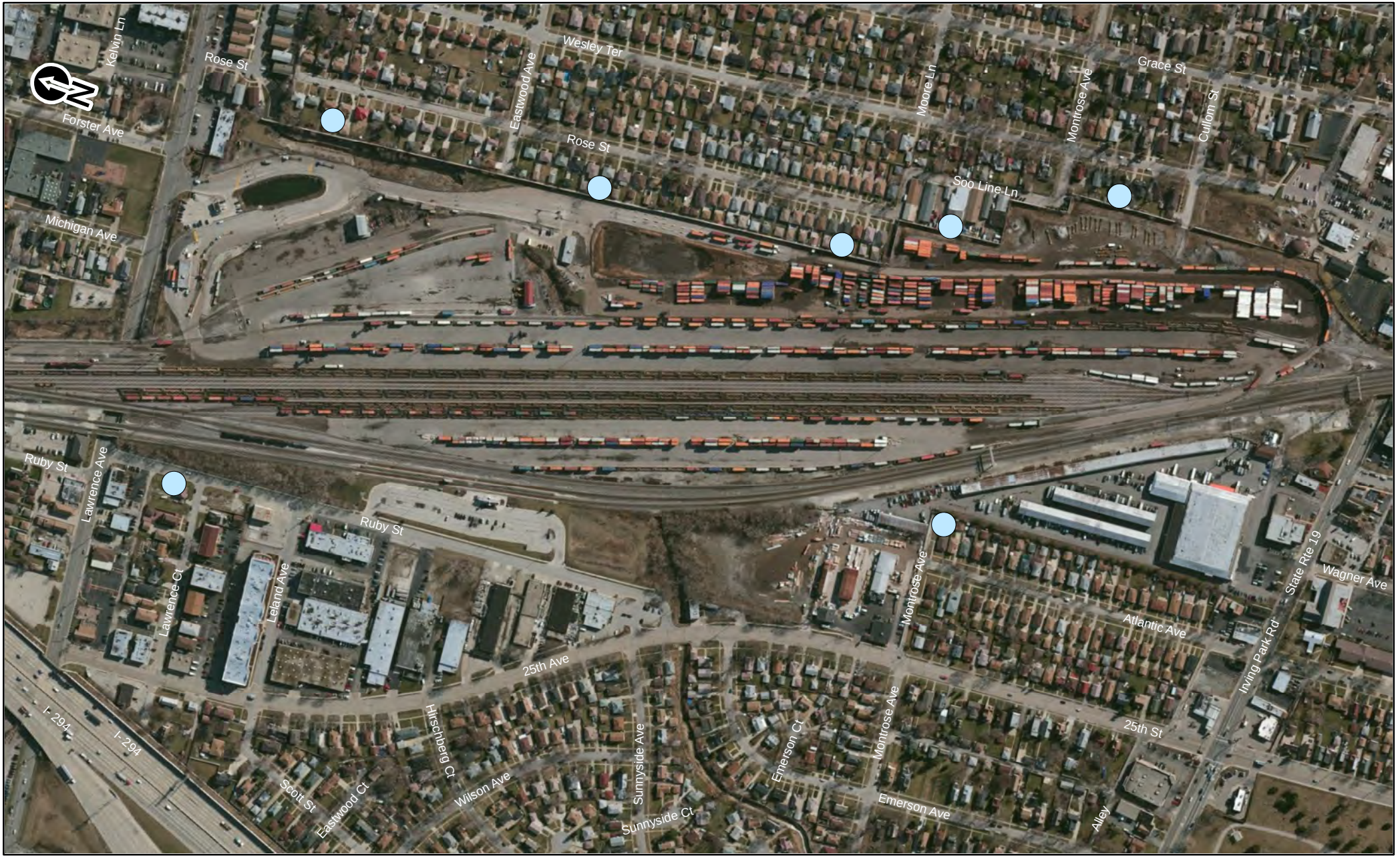
0 0.175 0.35 Miles

Source: ESRI, VHB.



Noise at Rail Yards and Intermodal Facilities
Bensenville
Franklin Park, IL

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



Noise Receptors

0 0.075 0.15 Miles

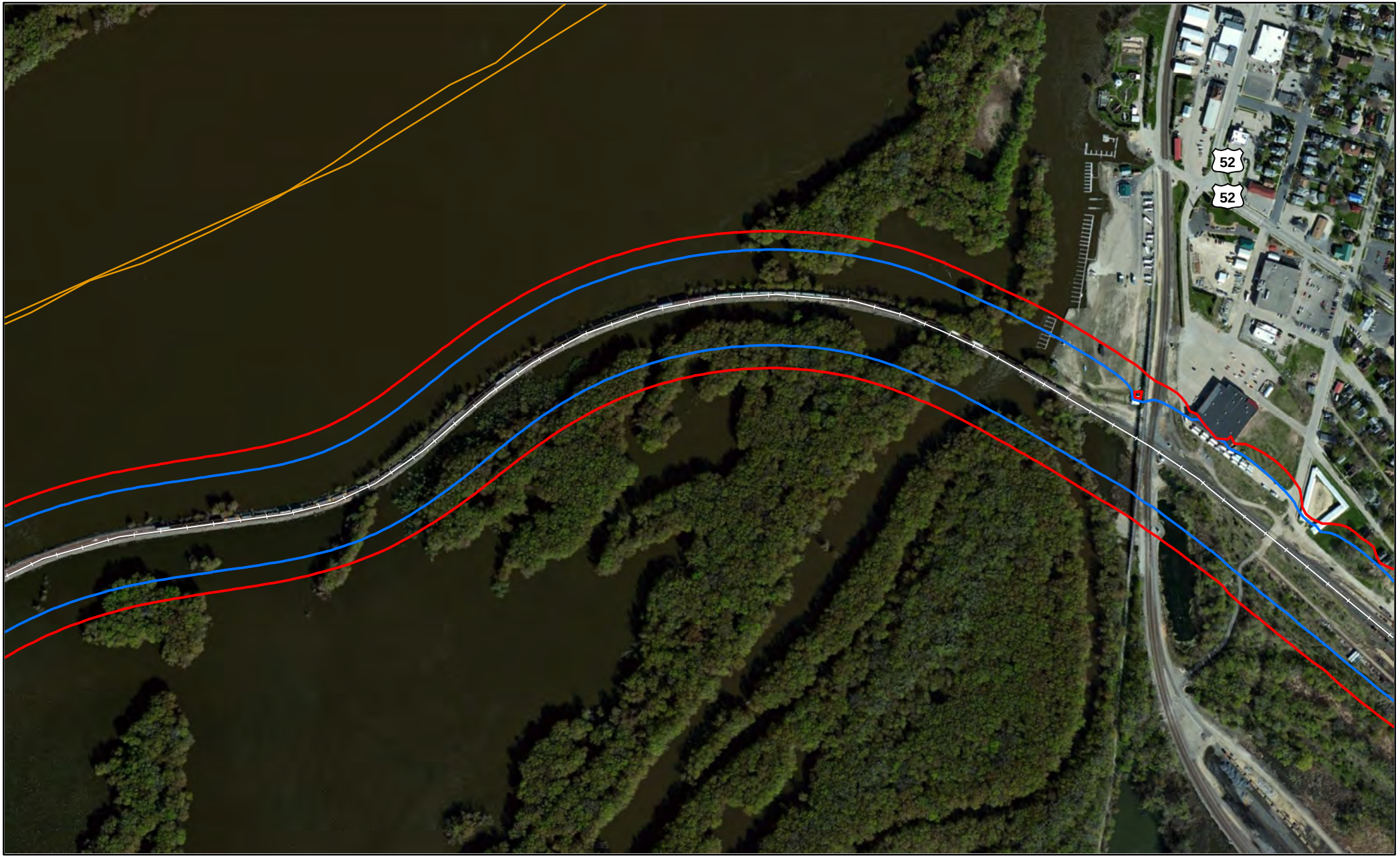
Source: ESRI, VHB.



Noise at Rail Yards and Intermodal Facilities
Schiller Park
Schiller Park, IL

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN

Appendix M – Attachment 2: Iowa



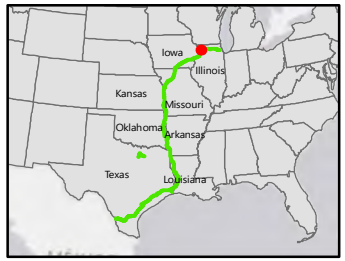
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

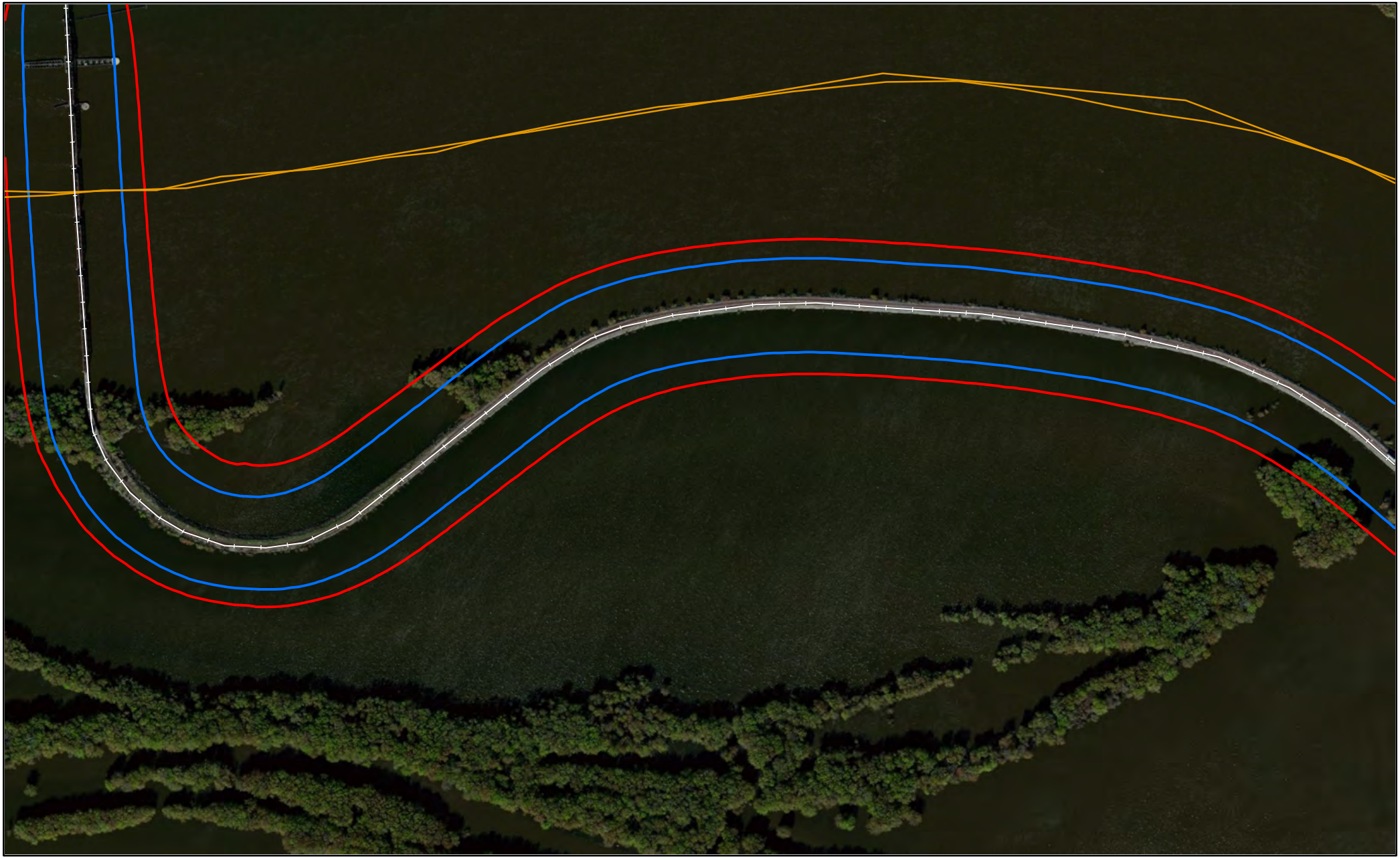
Source: ESRI.



Noise Contours
Jackson County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



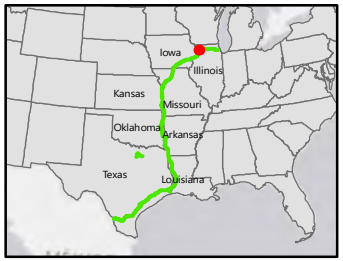
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

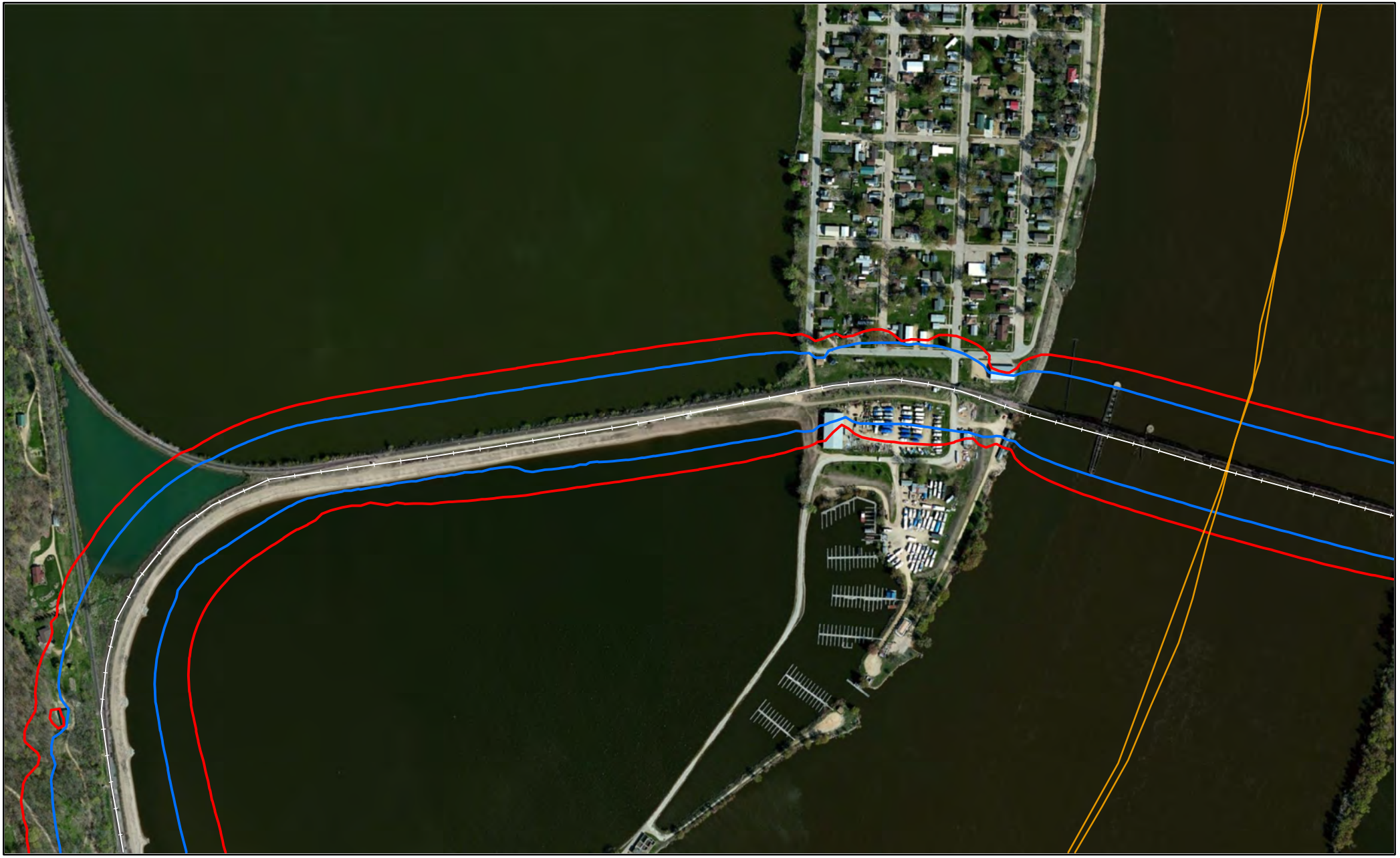
Source: ESRI.



Noise Contours
Jackson County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



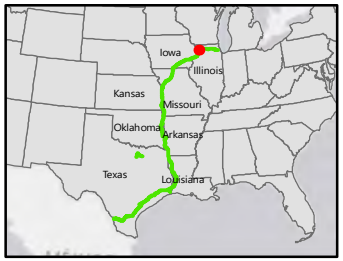
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jackson County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



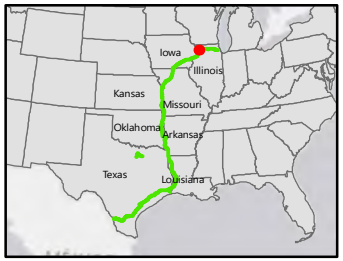
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jackson County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



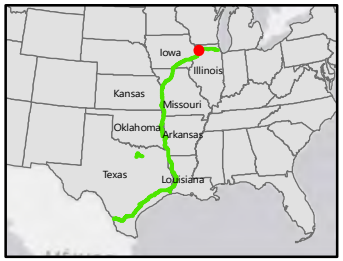
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jackson County, IA

Miles
0 0.05 0.1



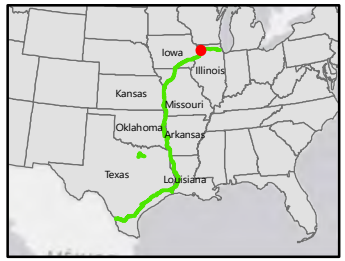
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Clinton County, IA

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



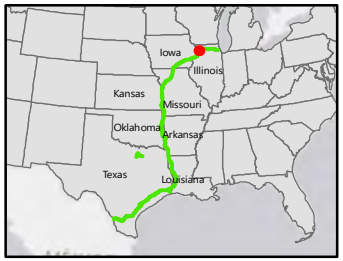
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Clinton County, IA

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



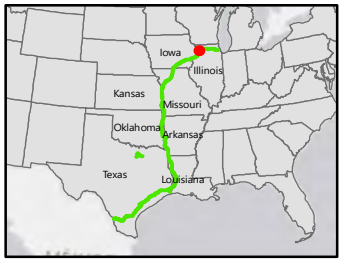
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Clinton County, IA

Page 130 of 1588

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



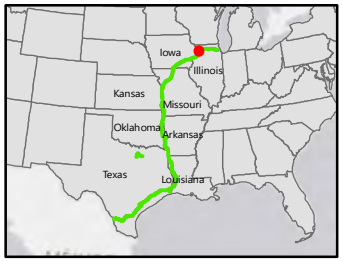
No-Action Alternative Noise (65 Ldn)

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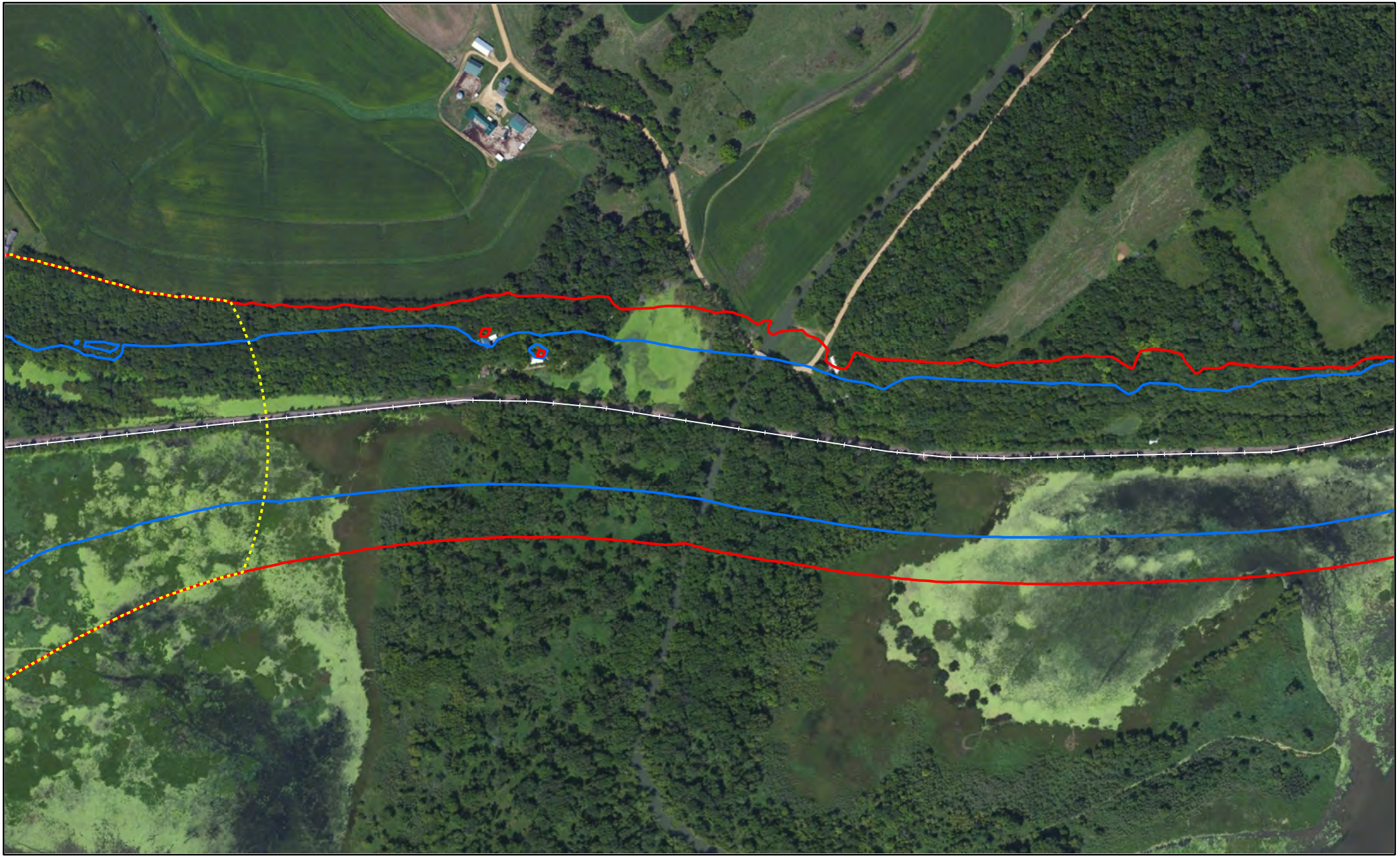
Tracks

Source: ESRI.



Noise Contours
Clinton County, IA

Miles
0 0.05 0.1



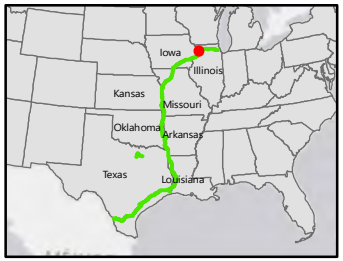
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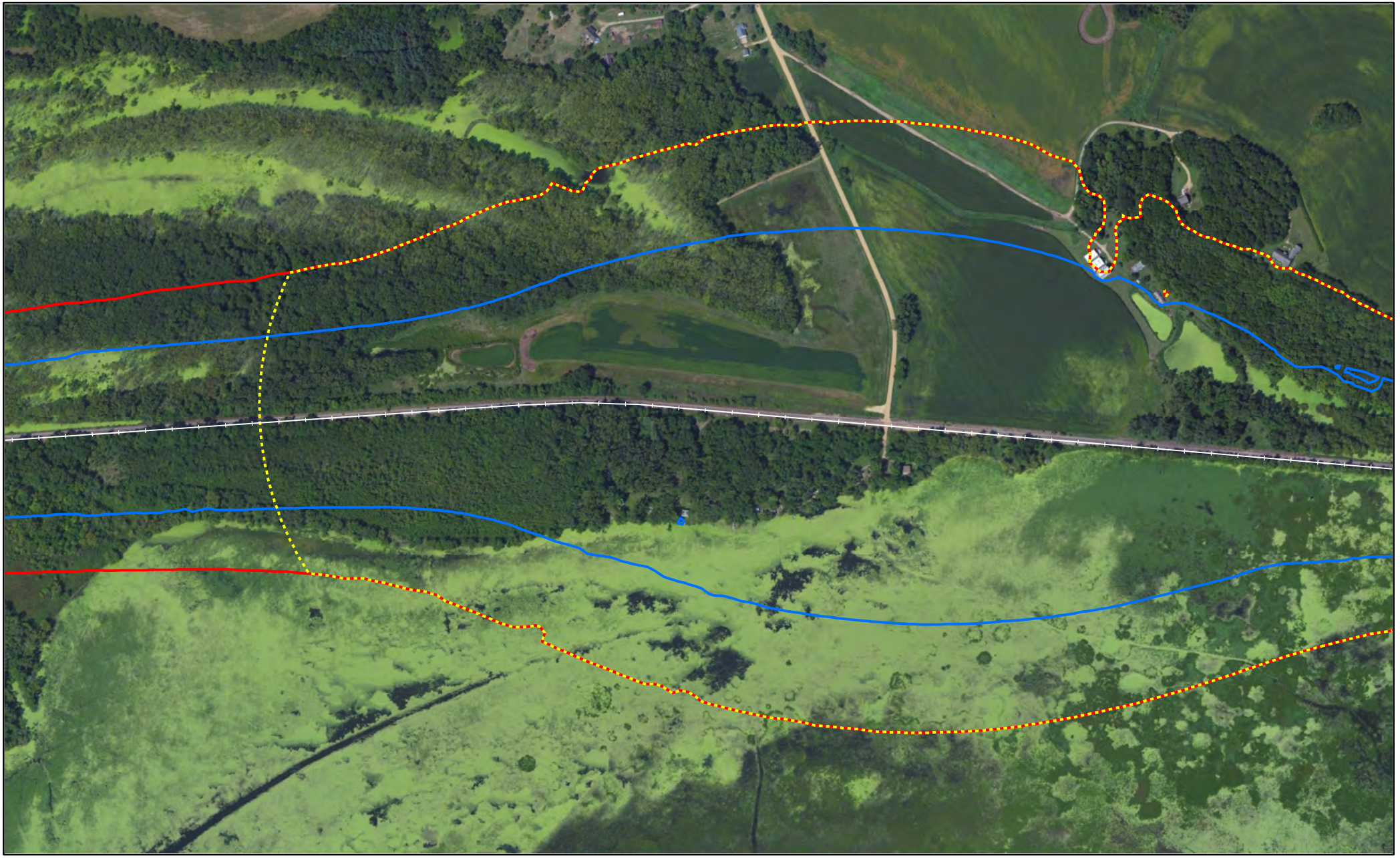
Tracks

Source: ESRI.



Noise Contours
Clinton County, IA

Miles
0 0.05 0.1



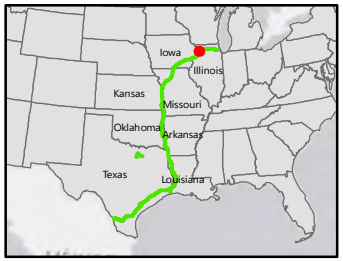
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

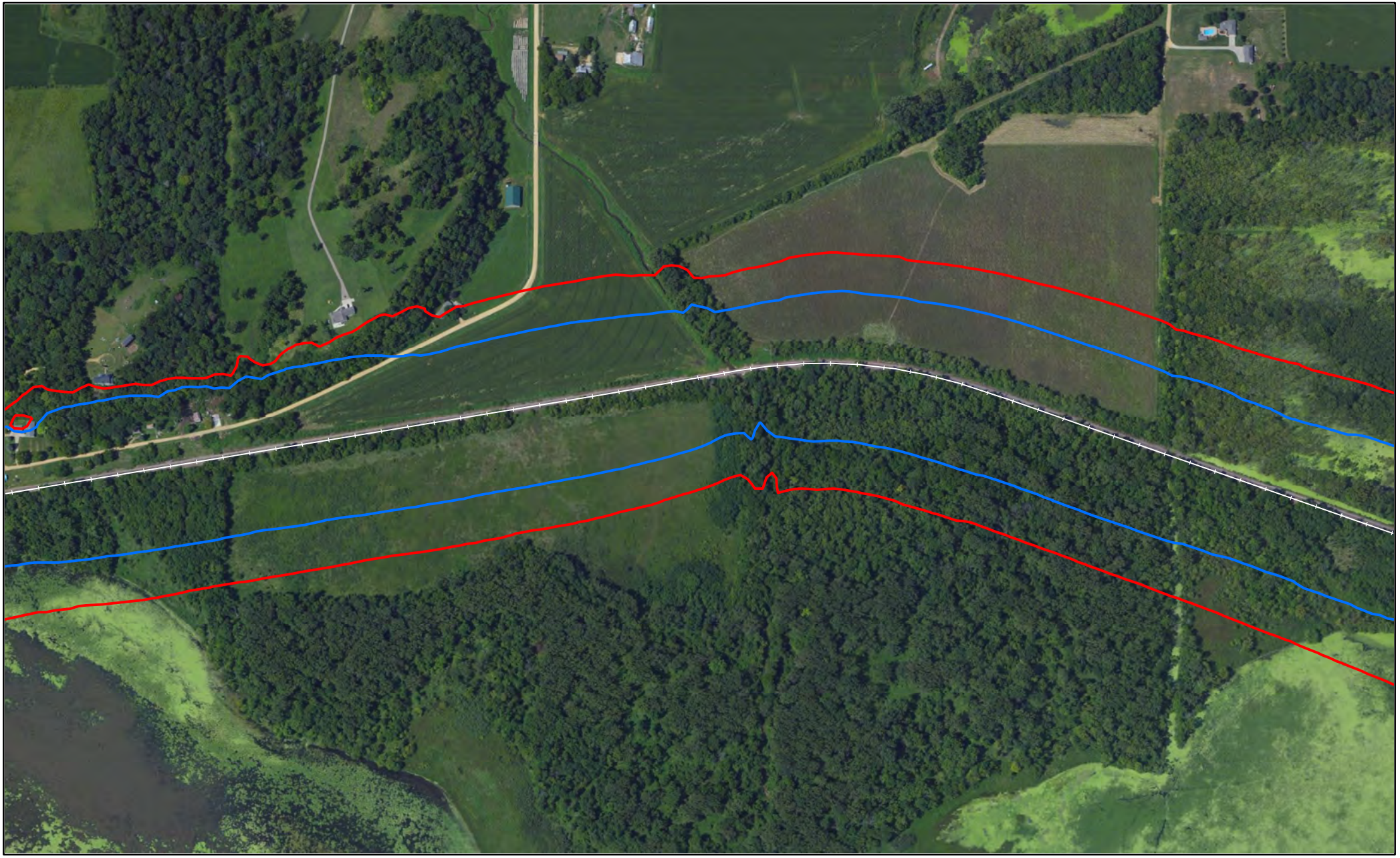
Tracks

Source: ESRI.



Noise Contours
Clinton County, IA

Miles
0 0.05 0.1



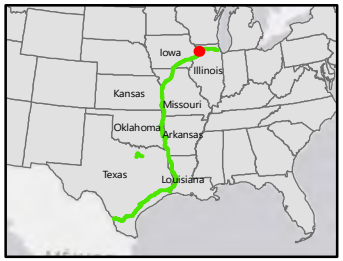
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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

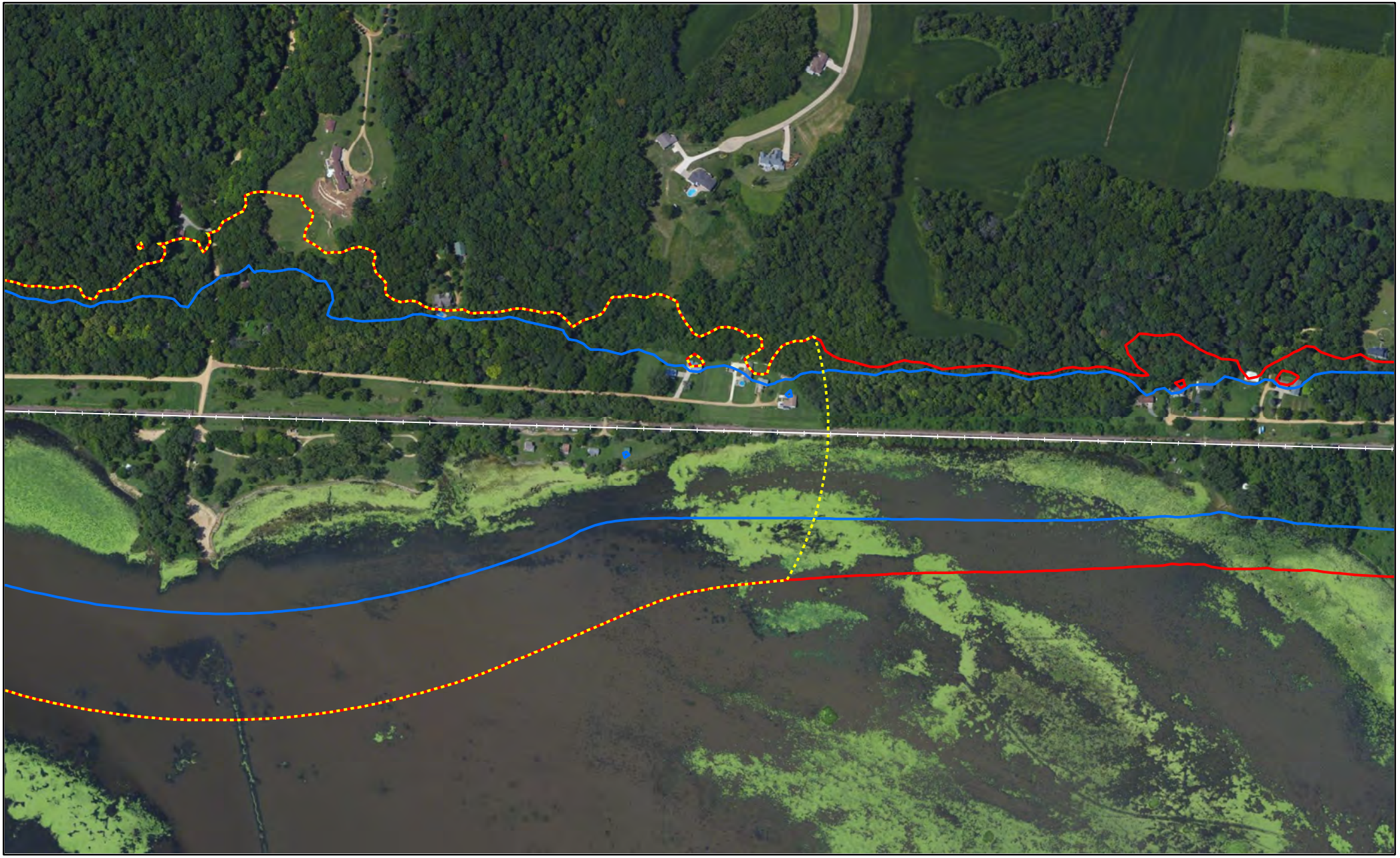


Noise Contours
Clinton County, IA

Page 134 of 1588

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



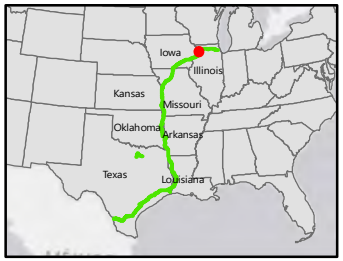
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

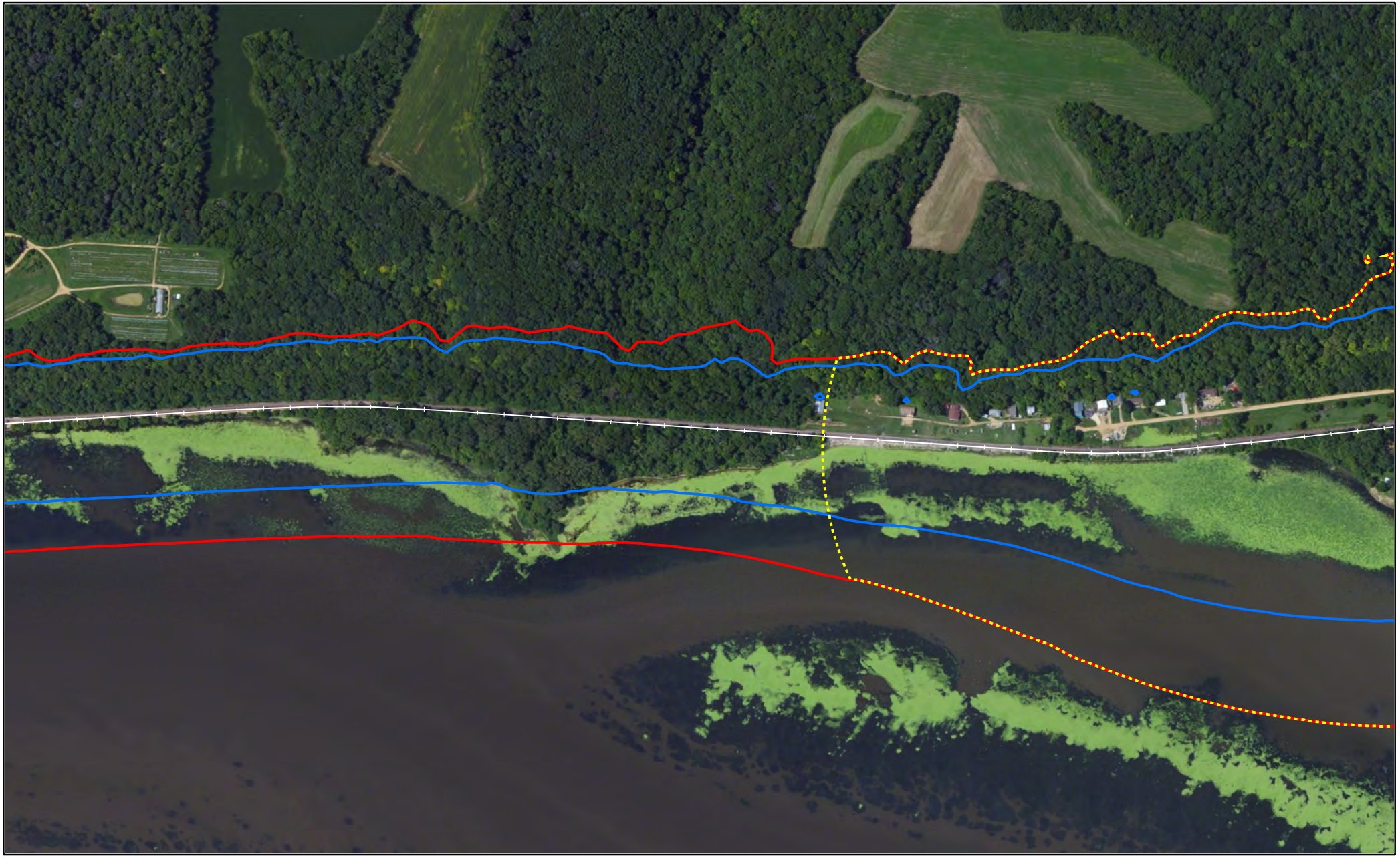


Noise Contours
Clinton County, IA

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



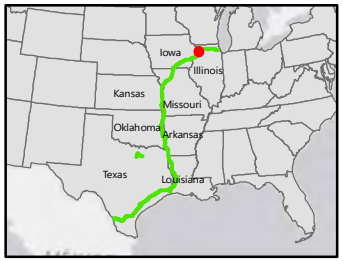
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Clinton County, IA

Page 136 of 1588

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



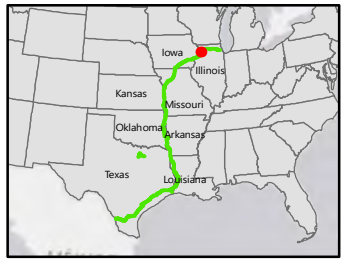
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Clinton County, IA

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



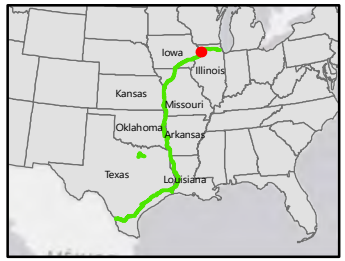
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Noise Contours
Clinton County, IA

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



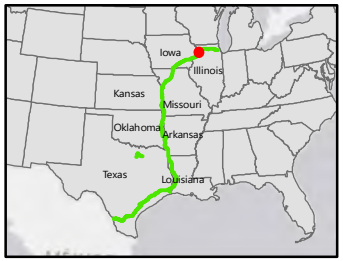
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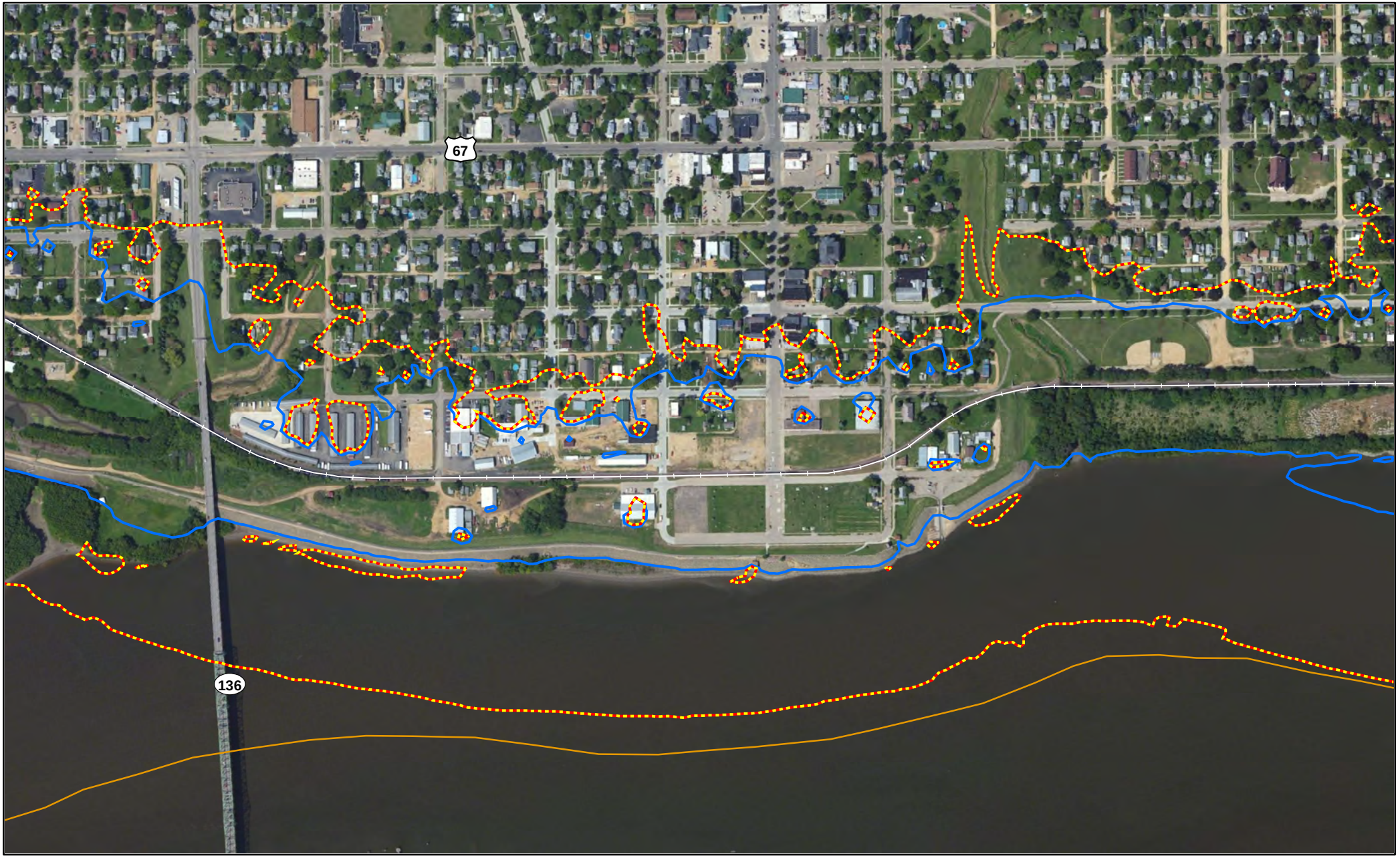


Noise Contours
Clinton County, IA

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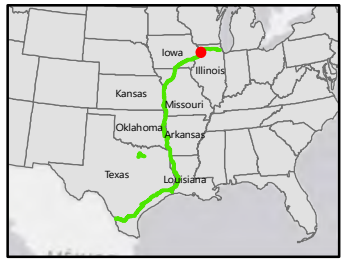
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Clinton County, IA

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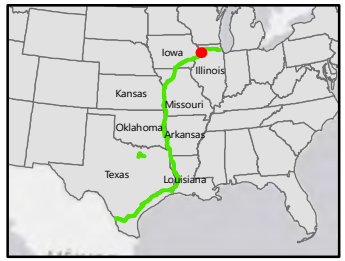
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Clinton County, IA

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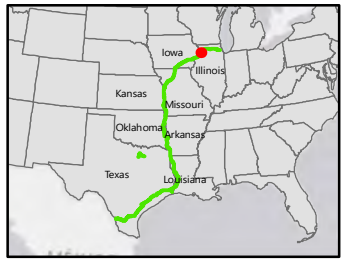
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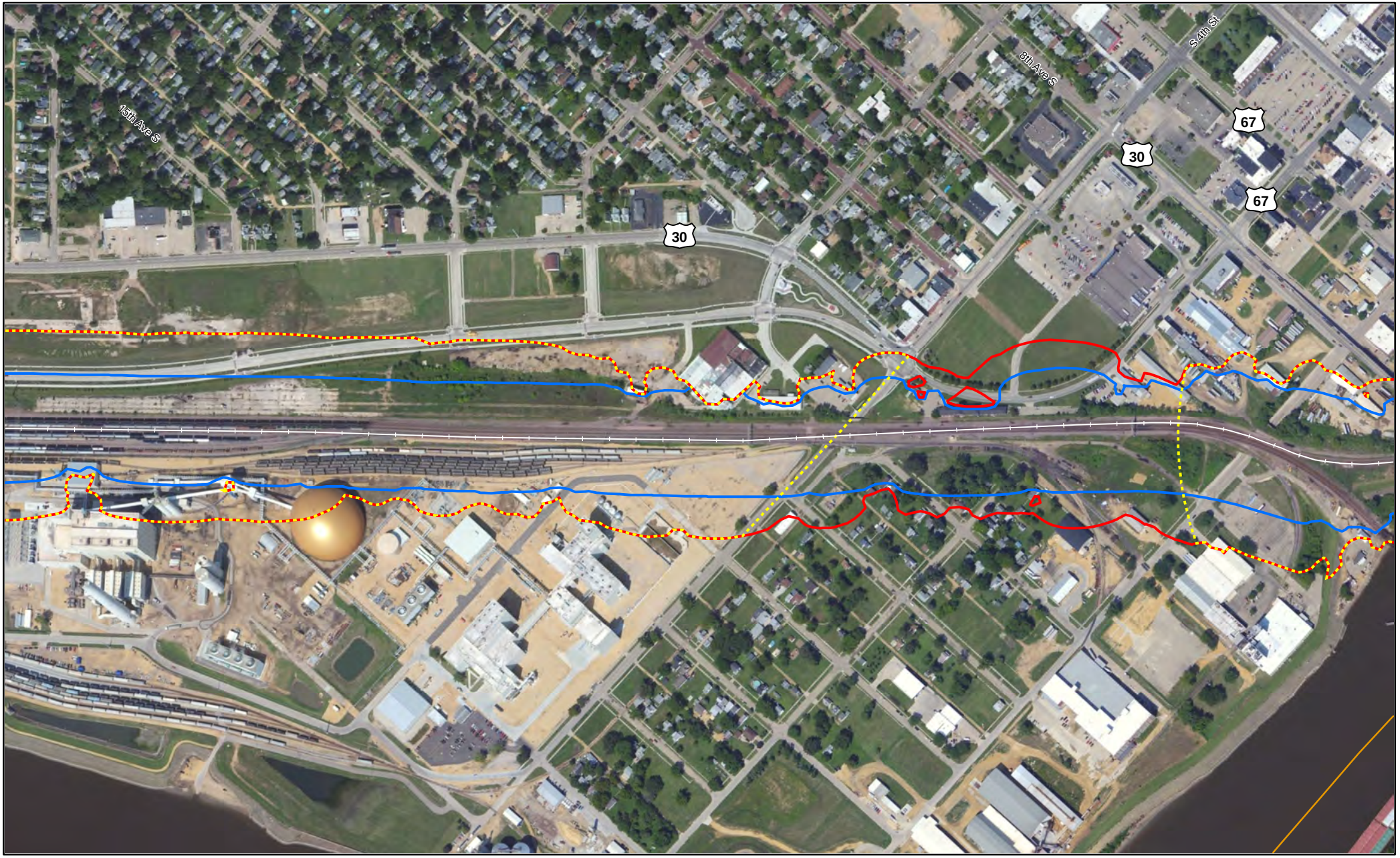
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Noise Contours
Clinton County, IA

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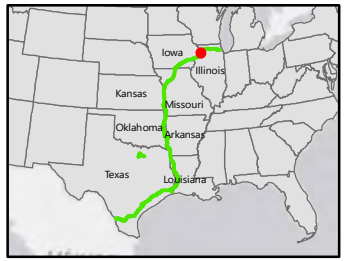
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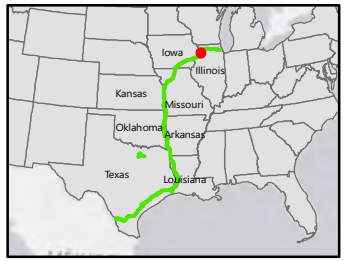
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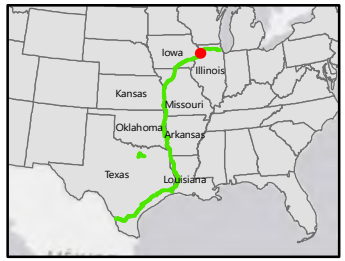
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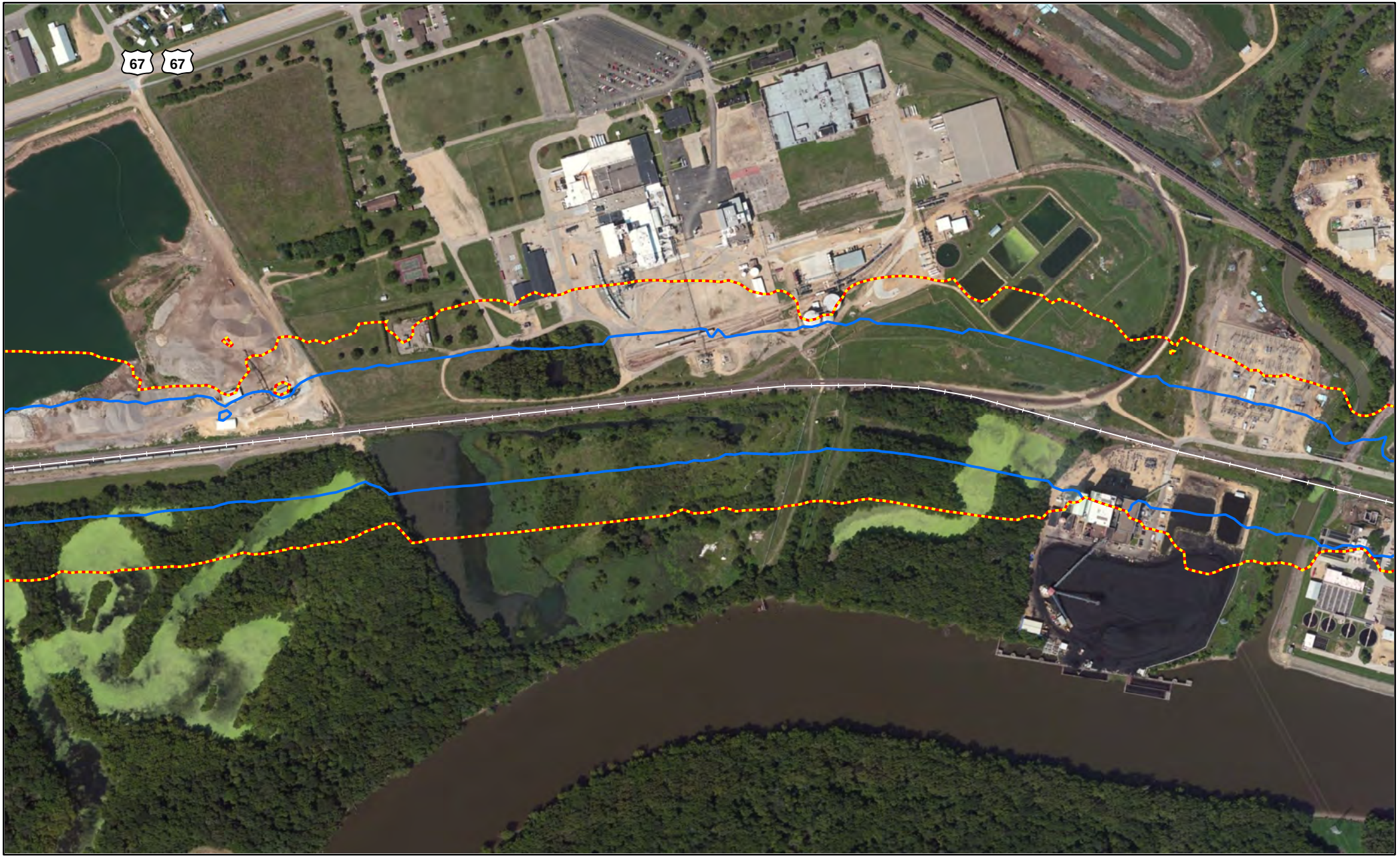
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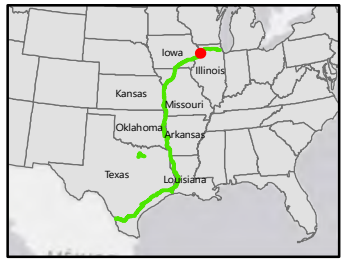
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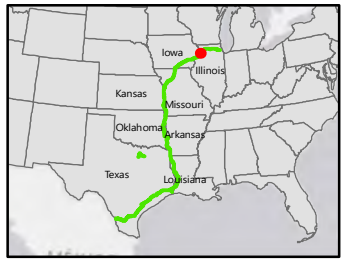
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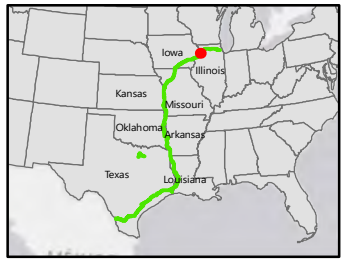
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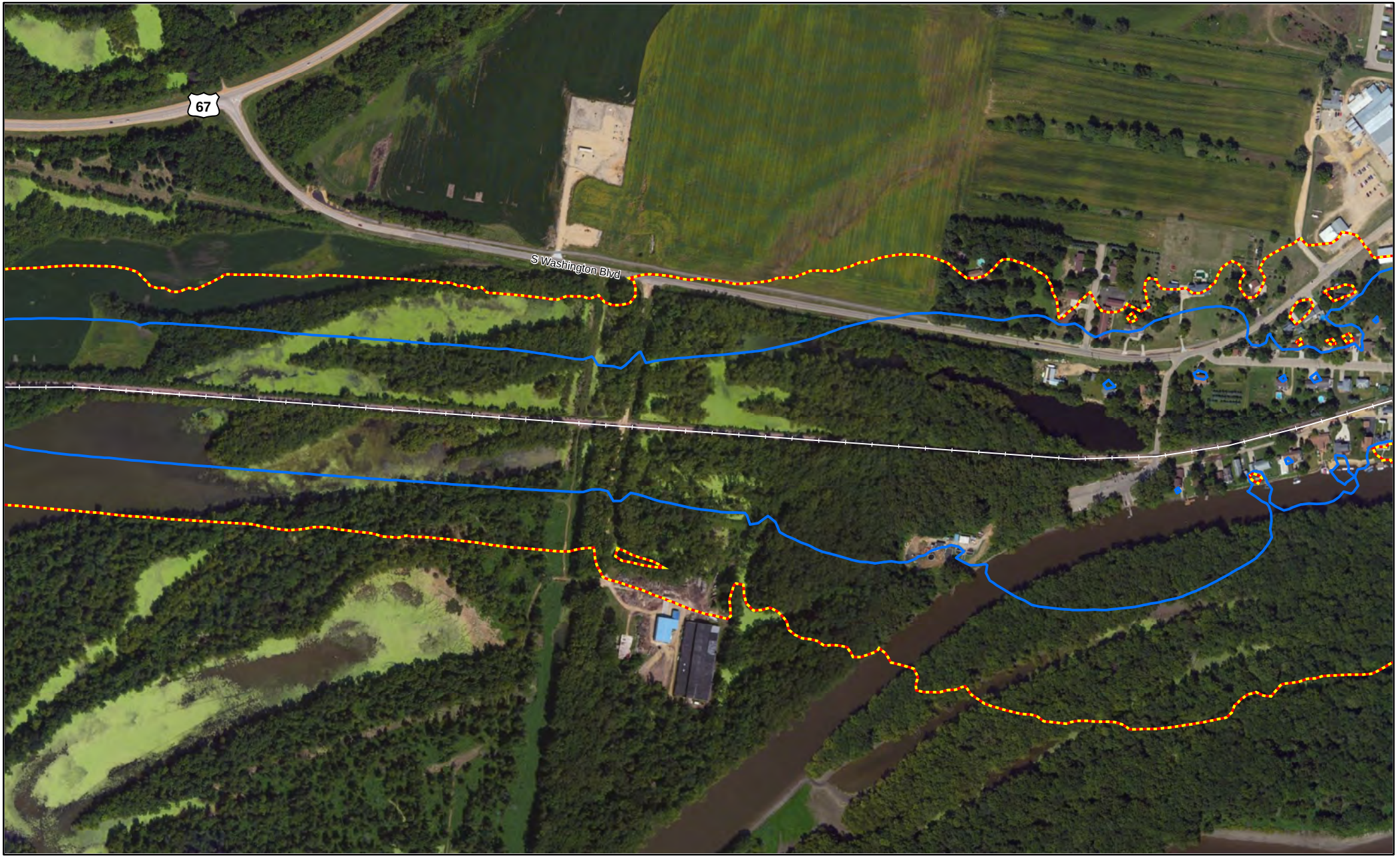
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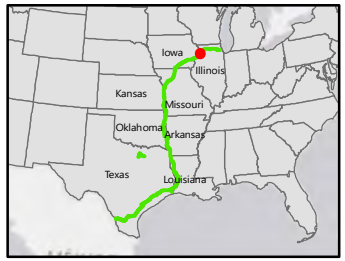
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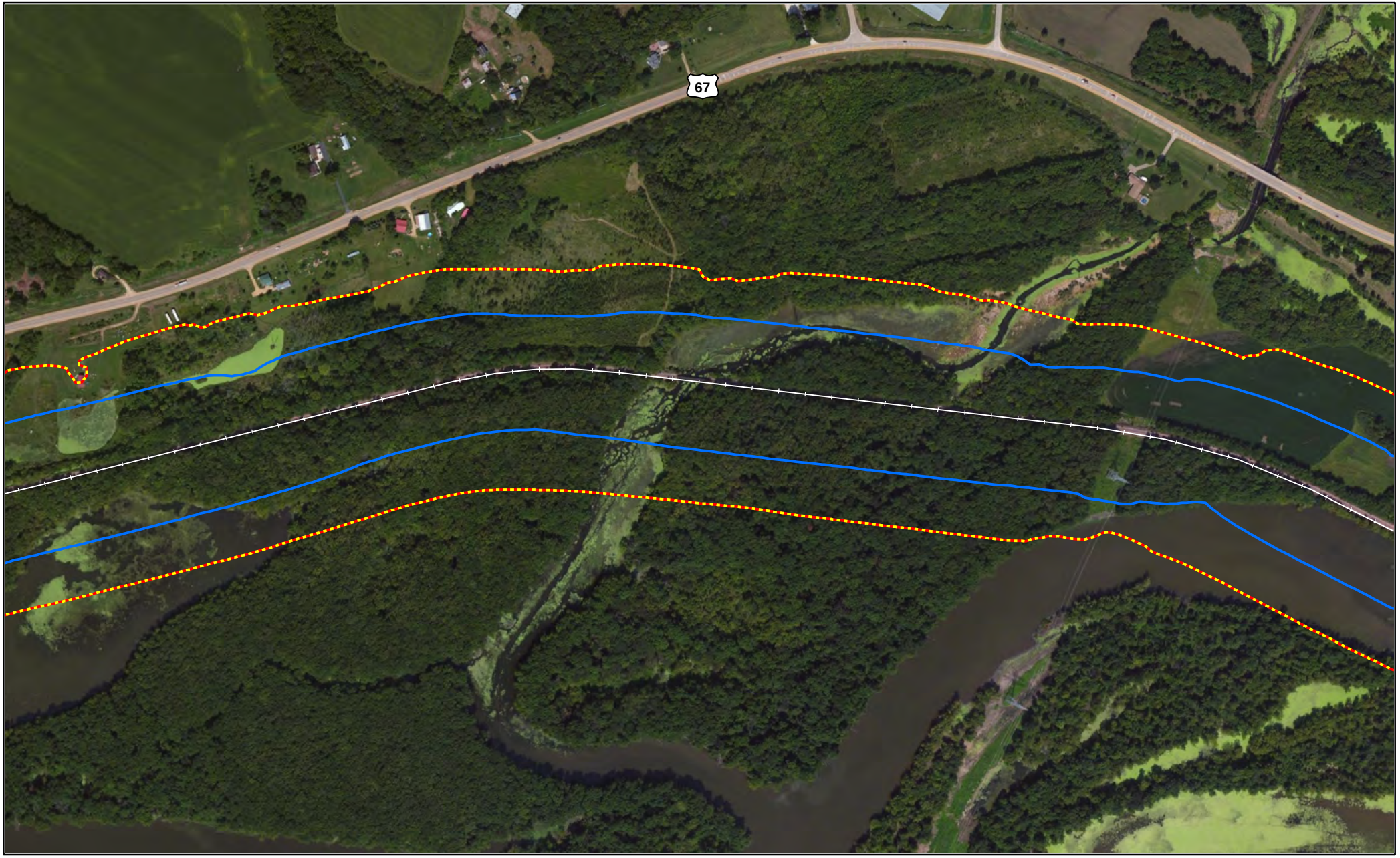
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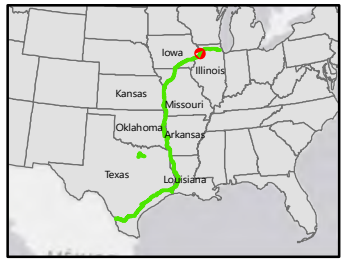
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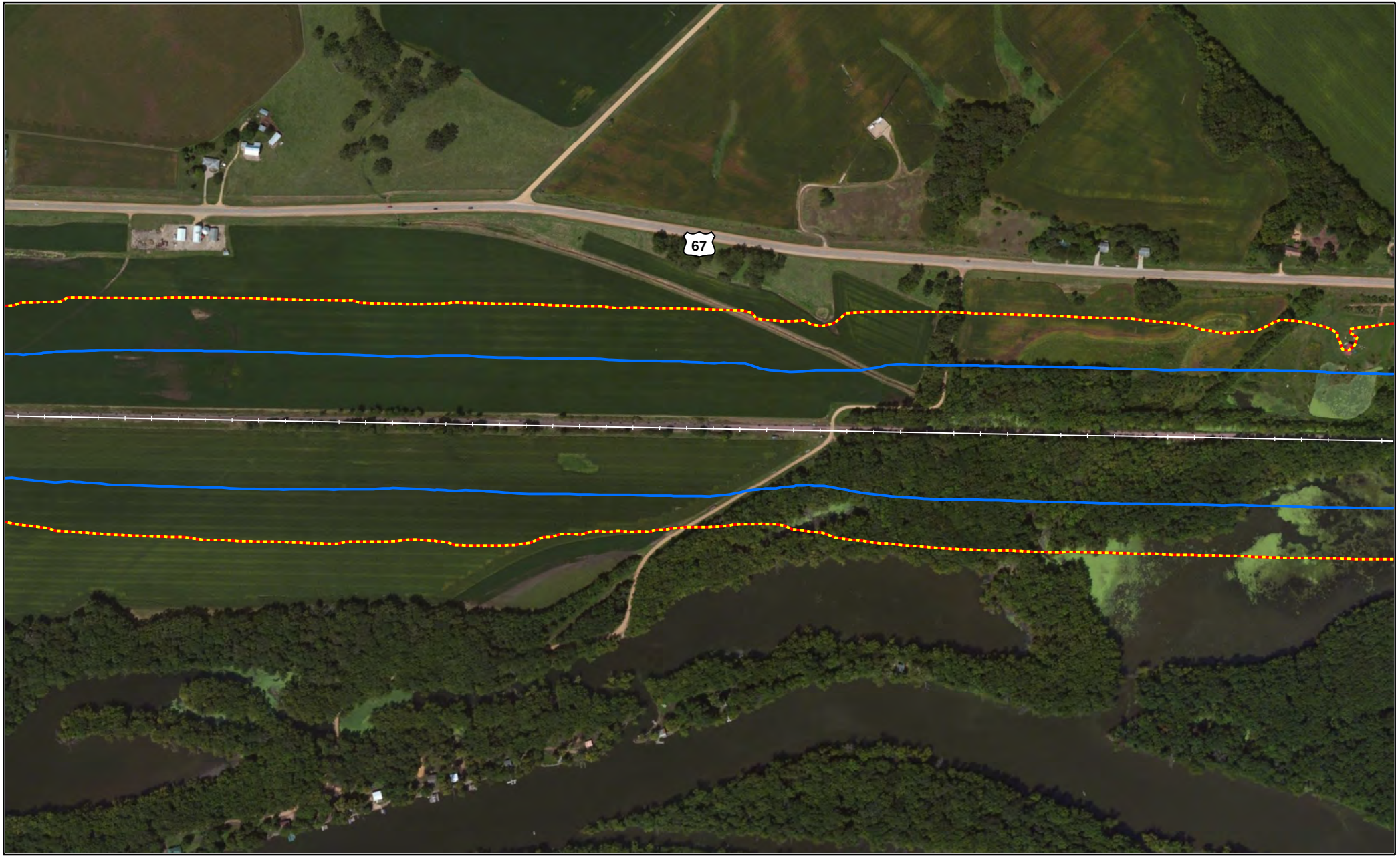
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Noise Contours
Clinton County, IA

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Miles
0 0.05 0.1



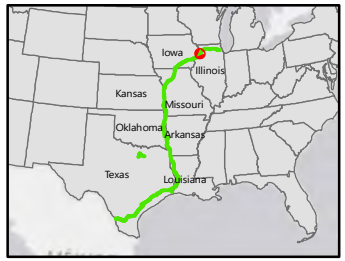
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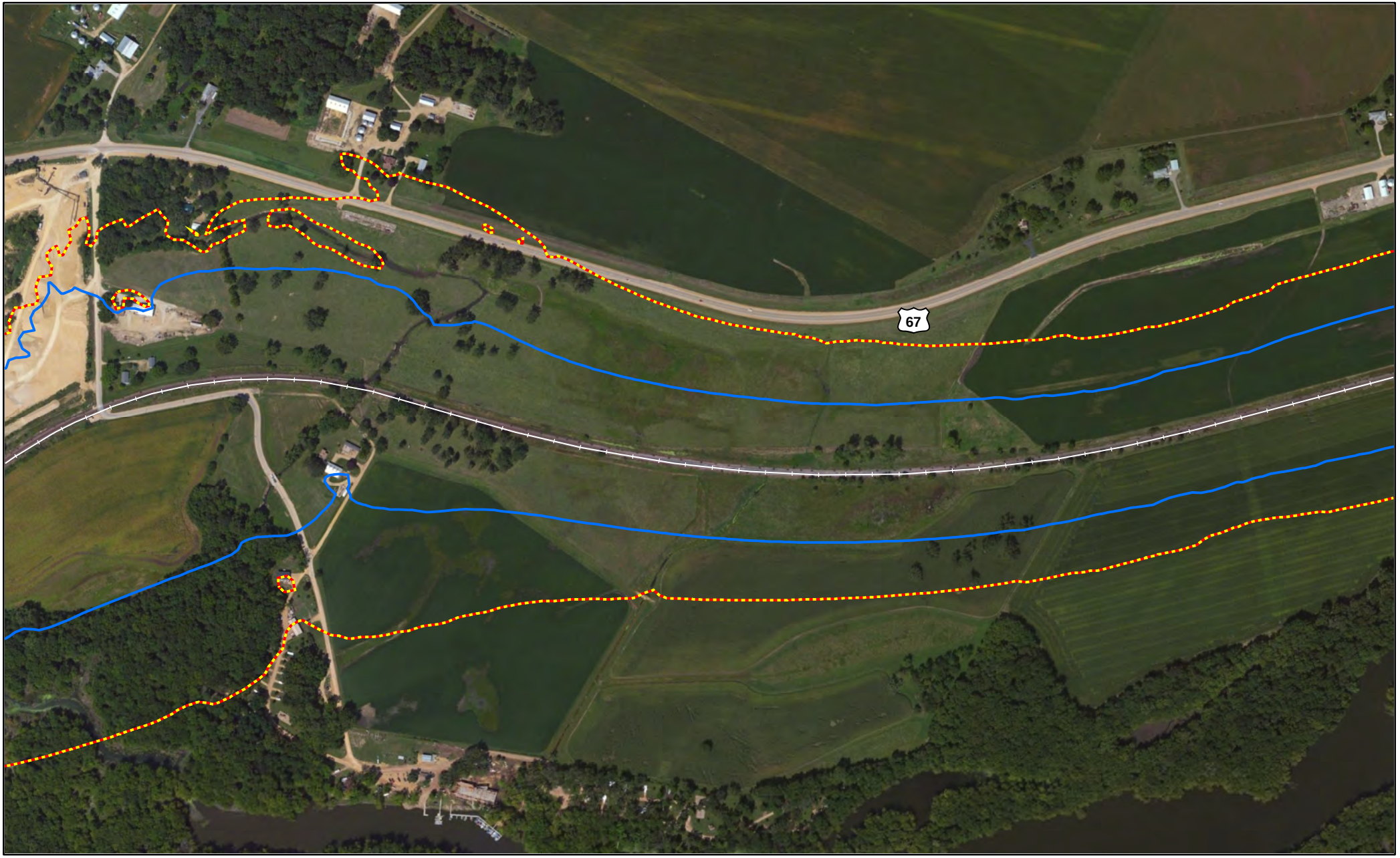


Noise Contours
Clinton County, IA

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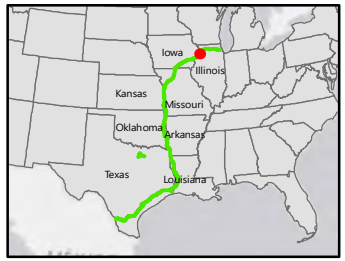
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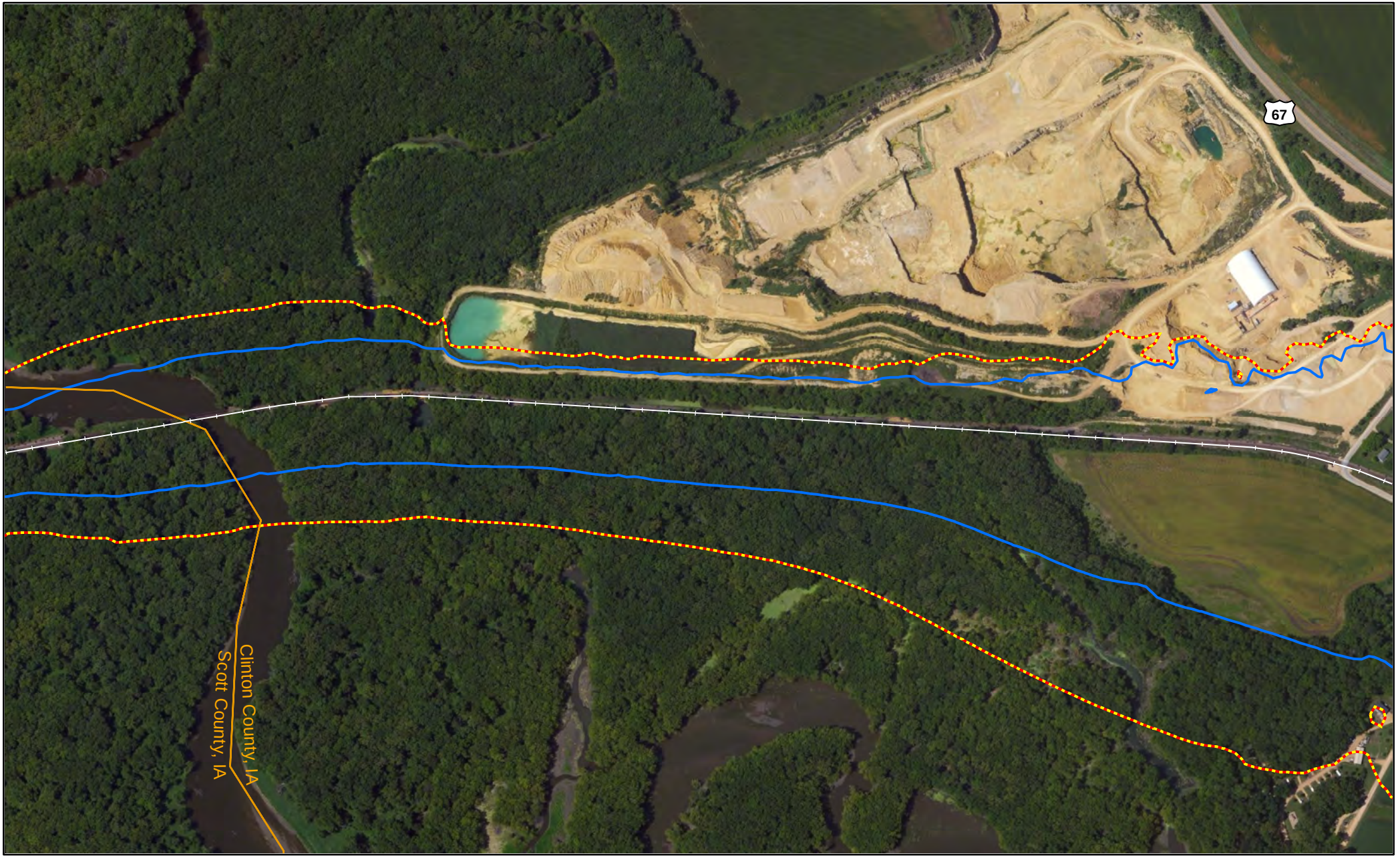
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Noise Contours
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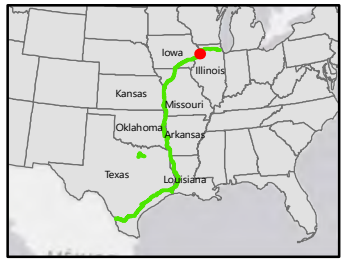
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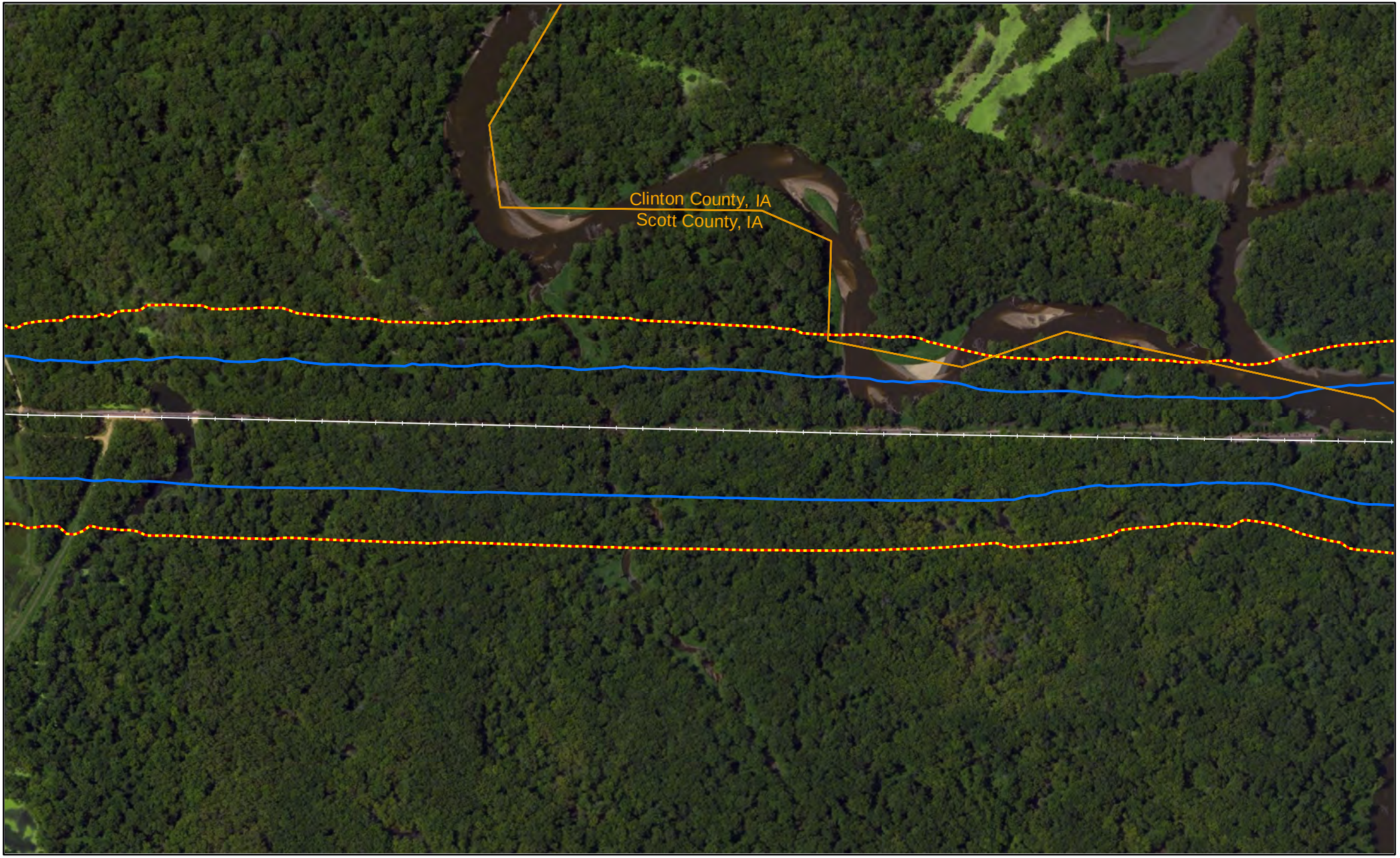
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Noise Contours
Clinton County, IA

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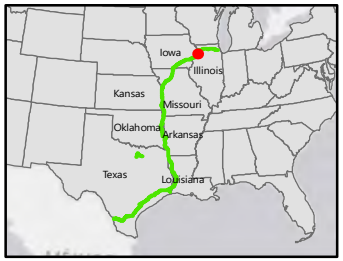
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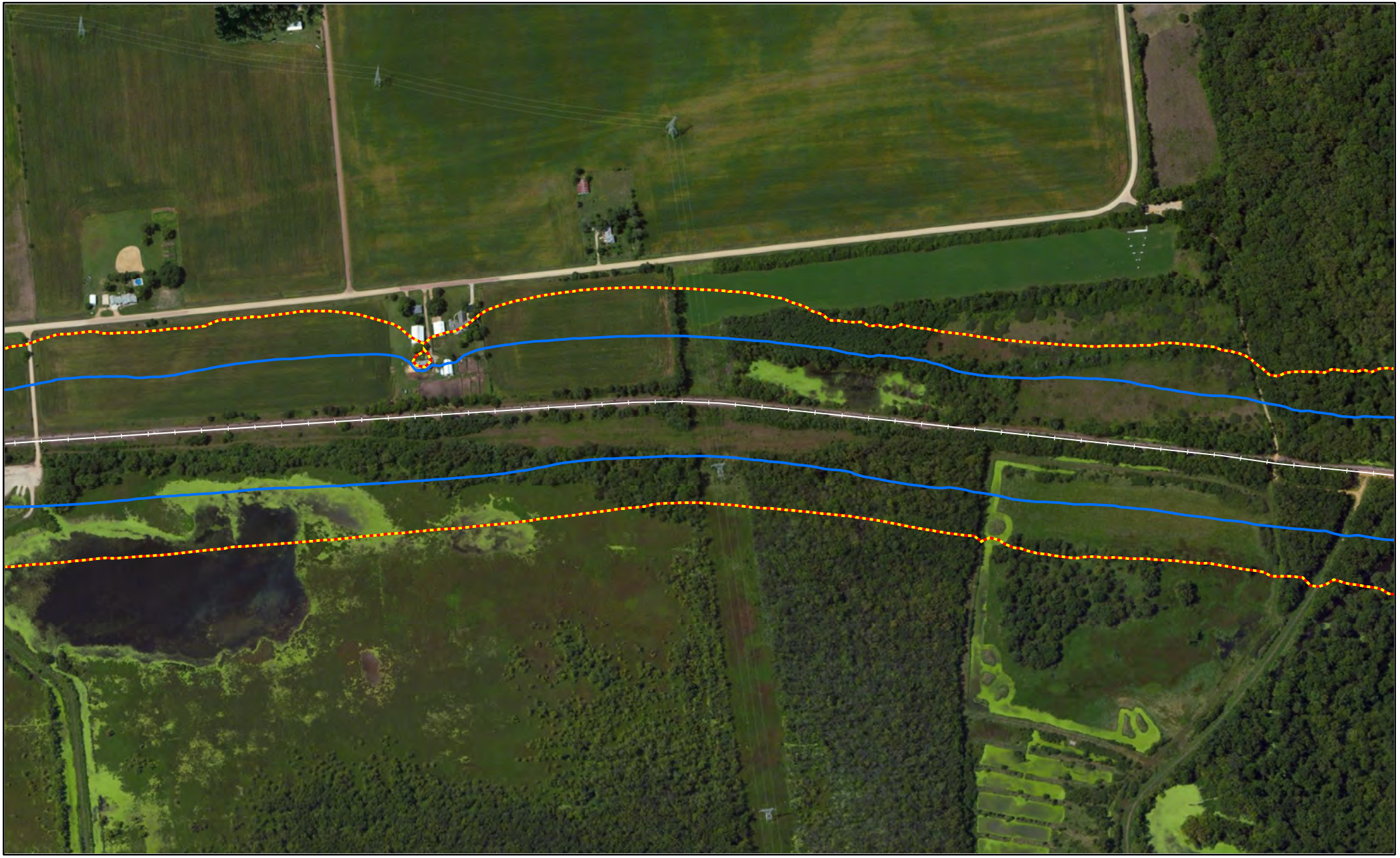
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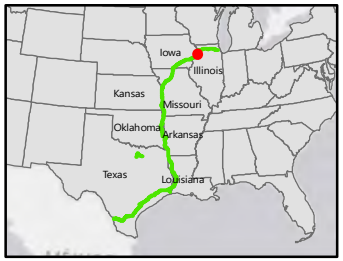
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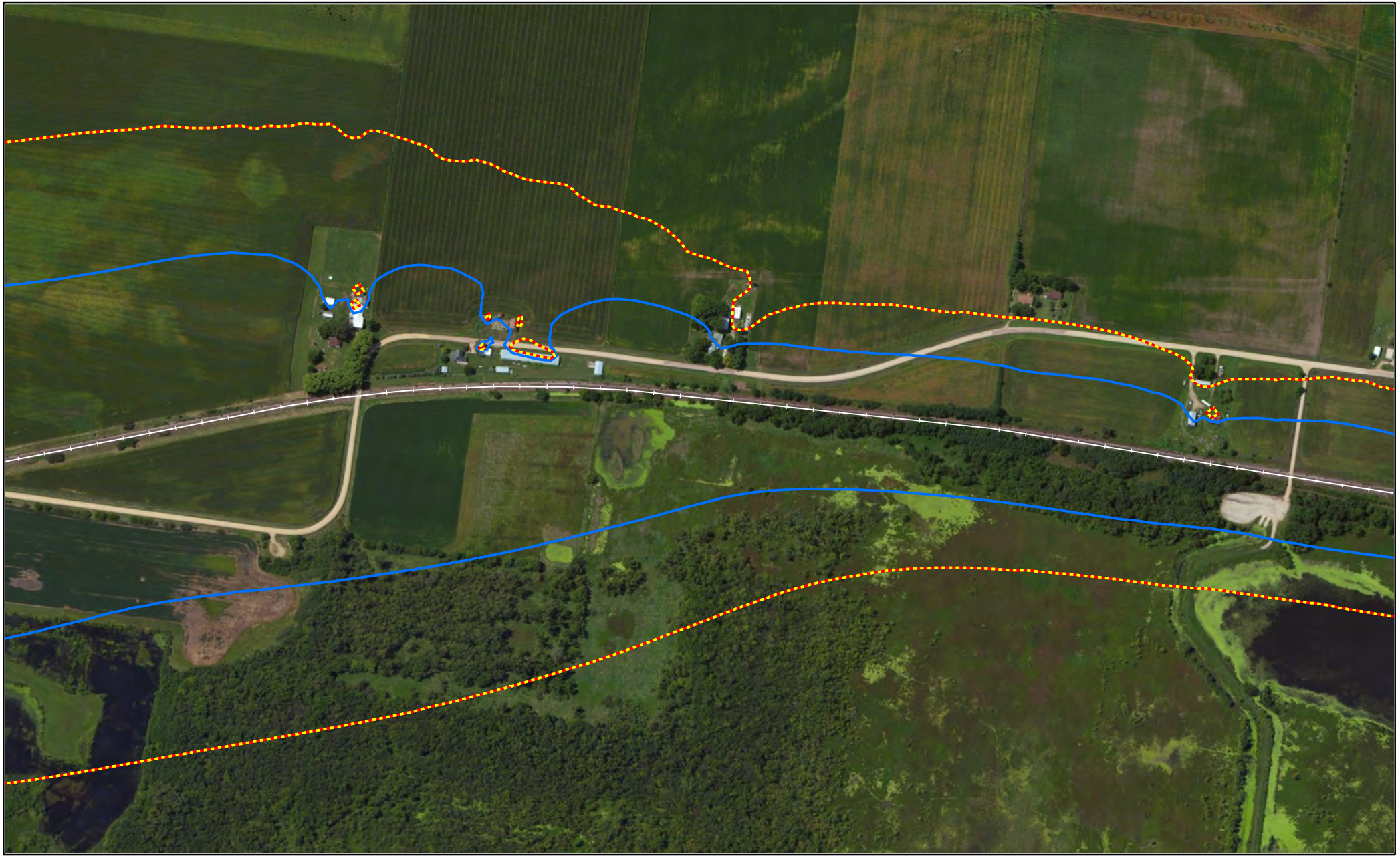
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Noise Contours
Scott County, IA

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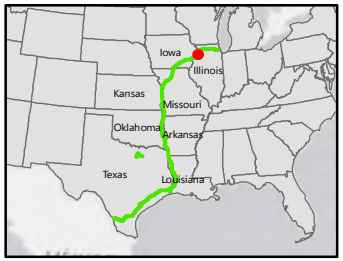
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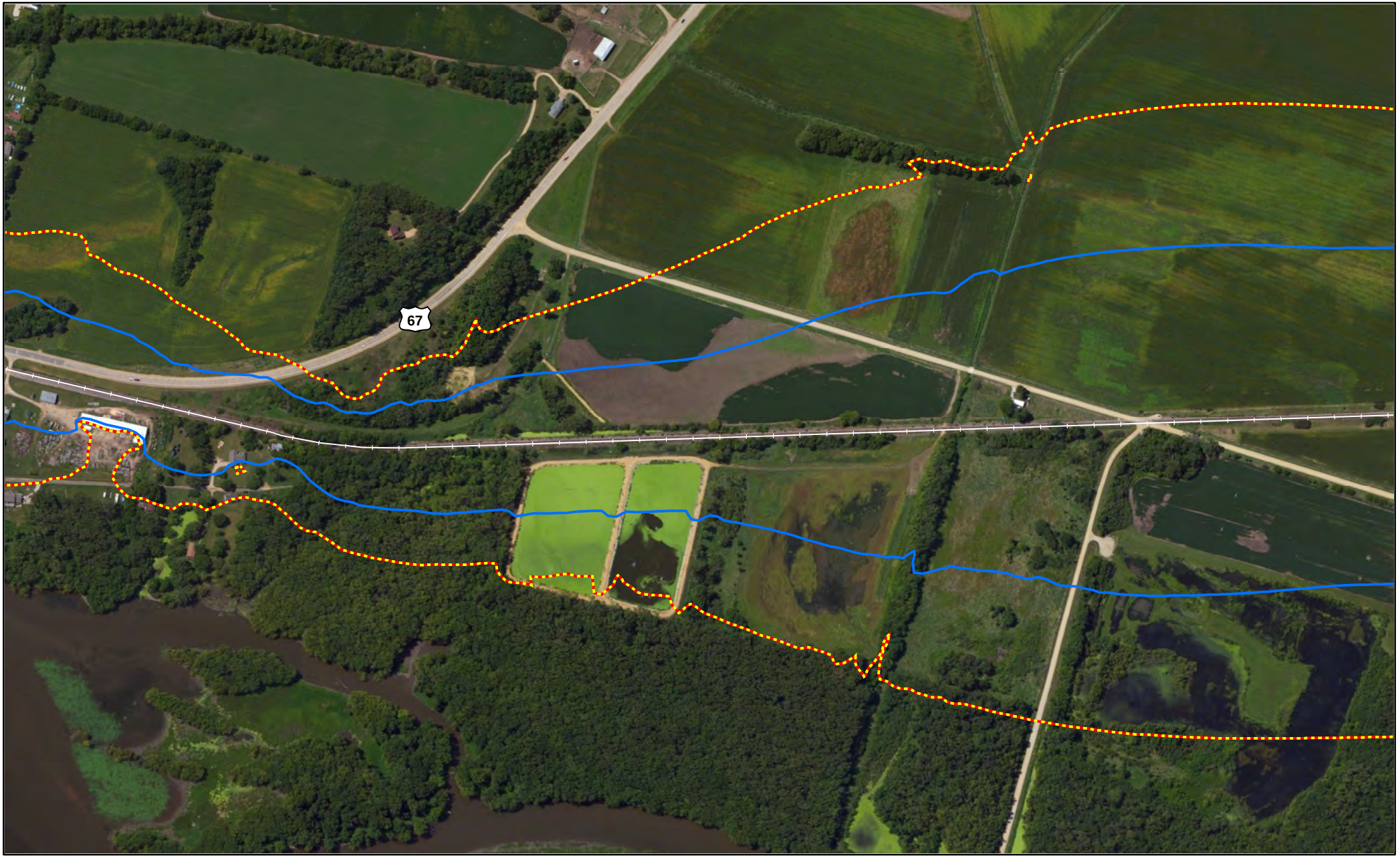
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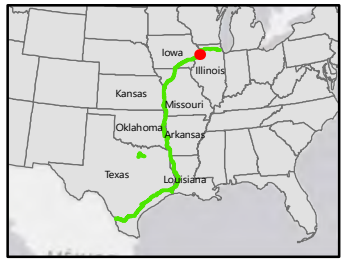
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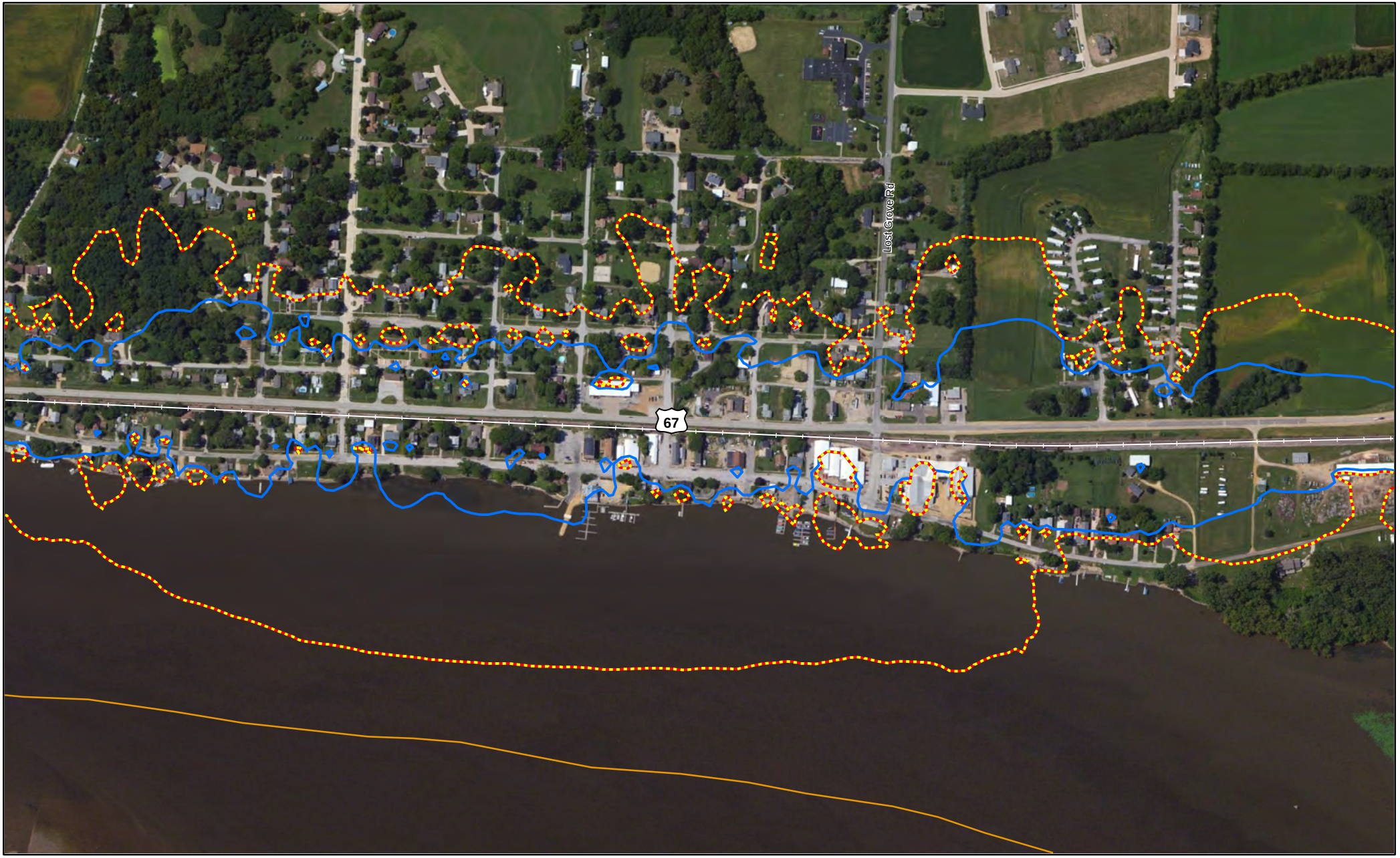
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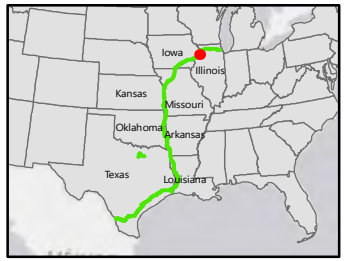
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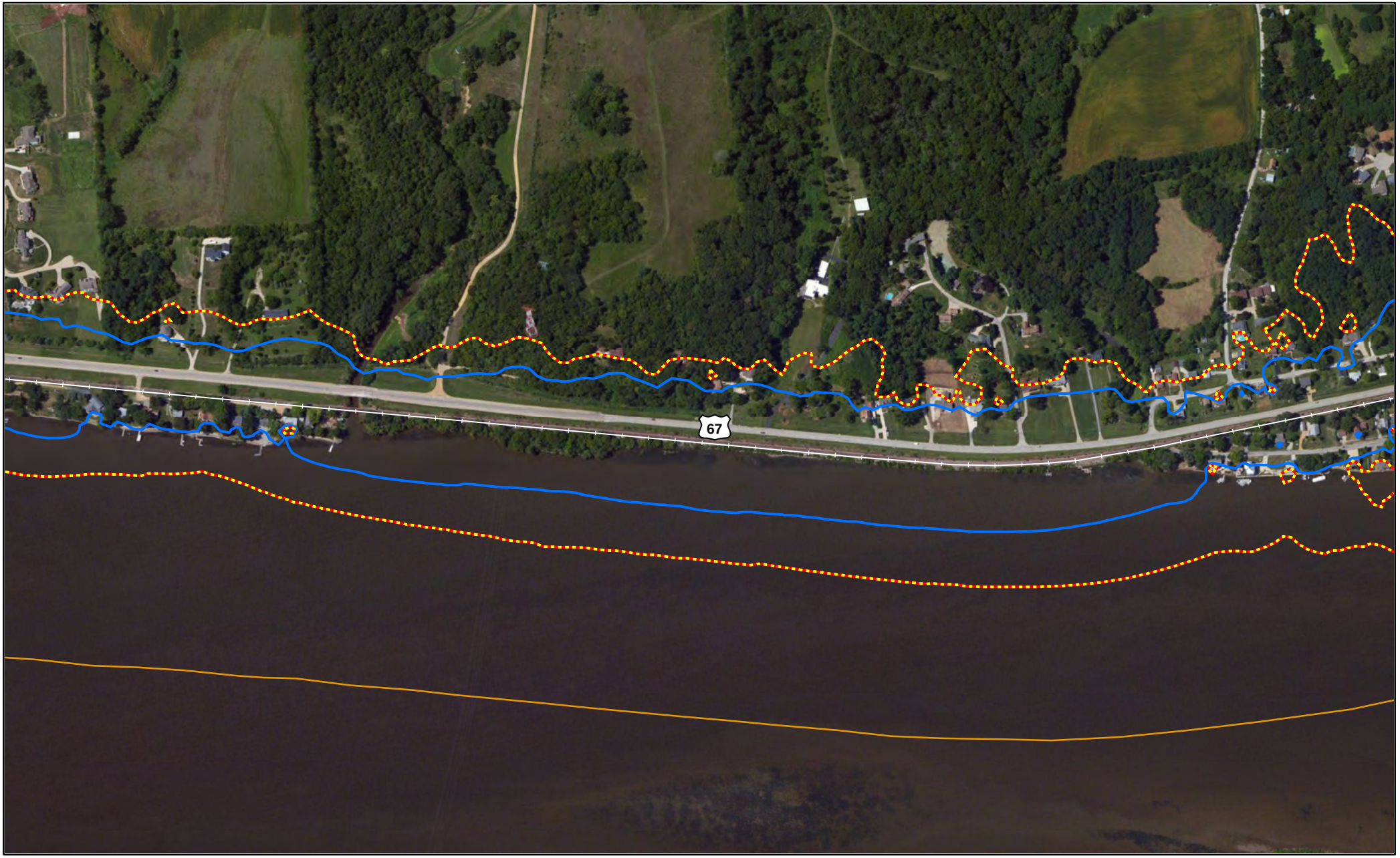


Noise Contours
Scott County, IA

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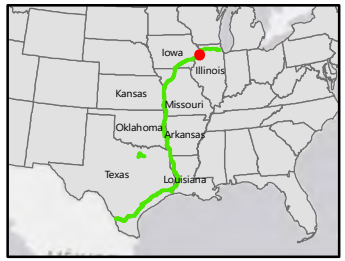
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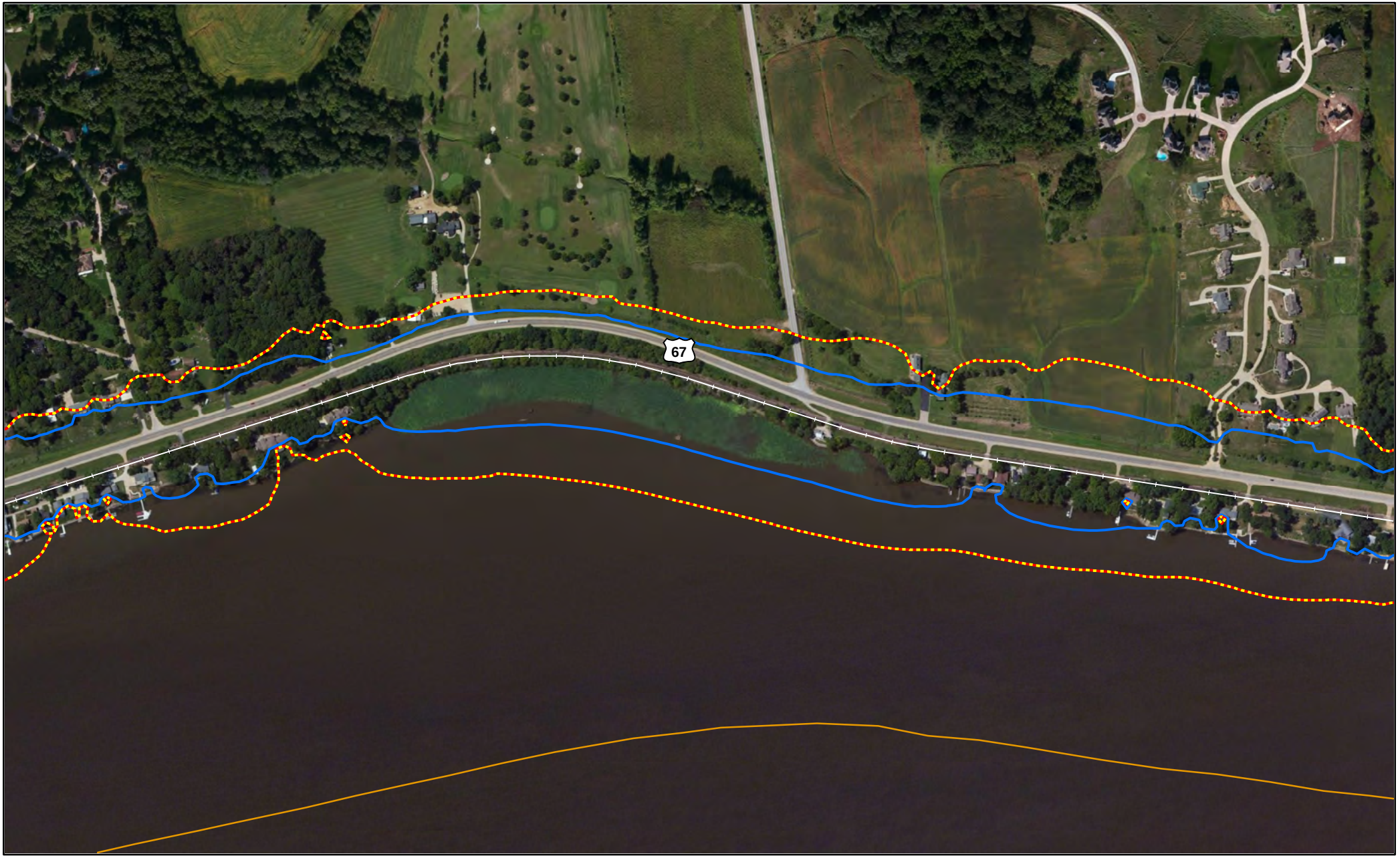
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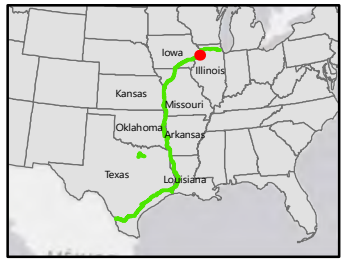
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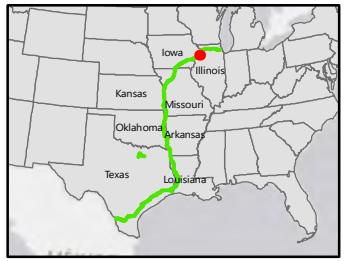
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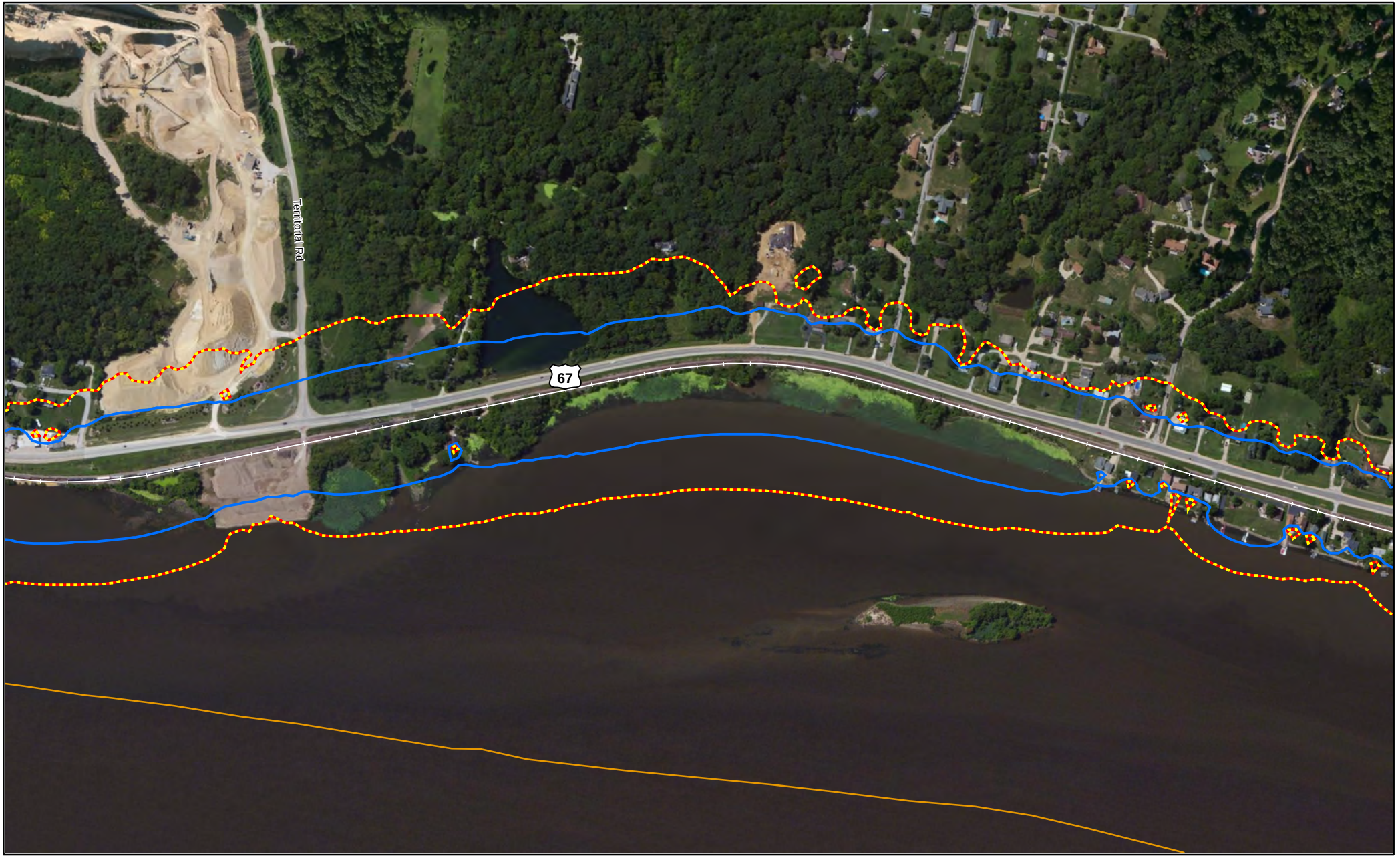
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0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



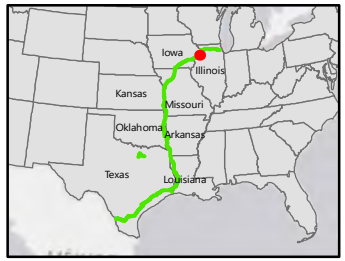
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

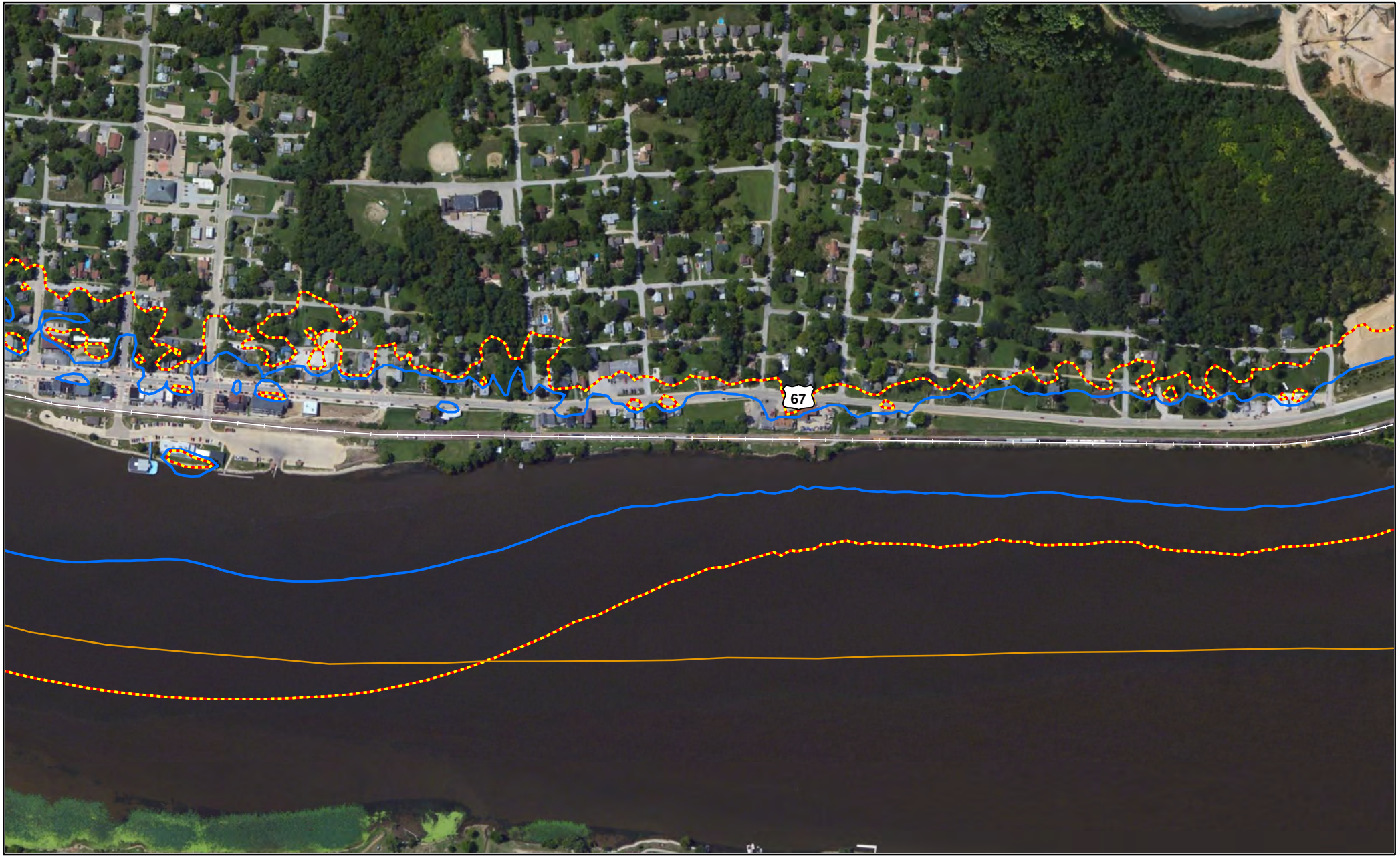
Tracks

Source: ESRI.



Noise Contours
Scott County, IA

Miles
0 0.05 0.1



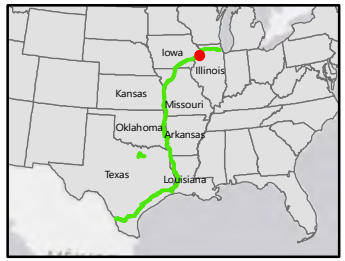
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Tracks

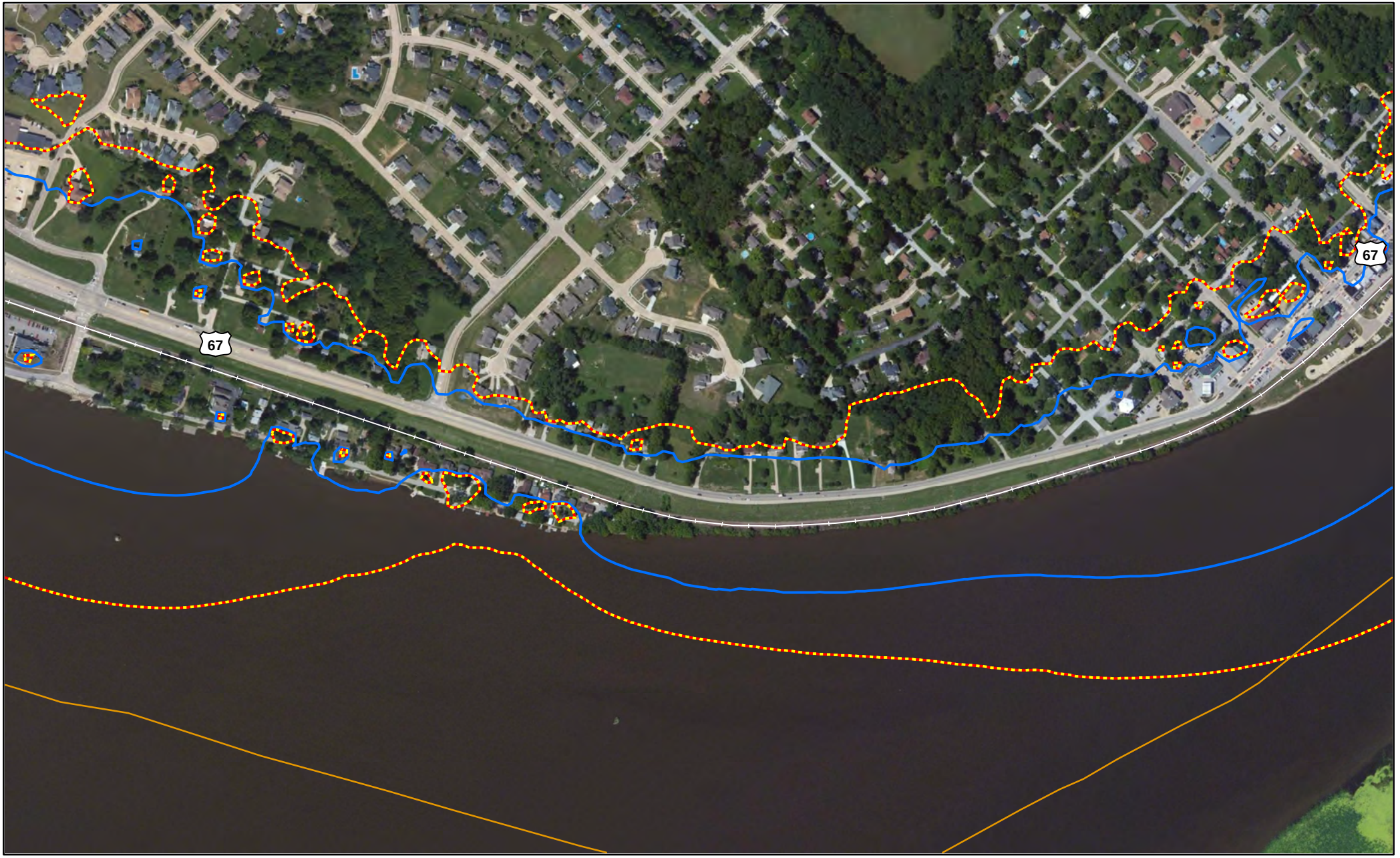
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Noise Contours
Scott County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



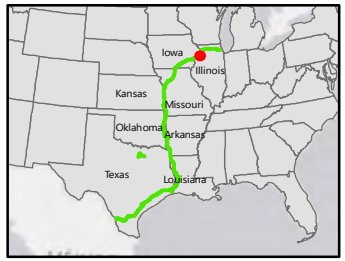
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Noise Contours
Scott County, IA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



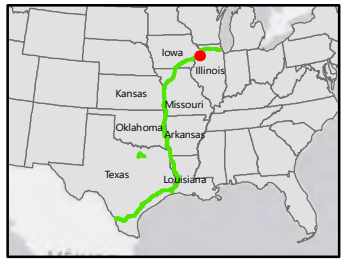
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Tracks

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Noise Contours
Scott County, IA

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



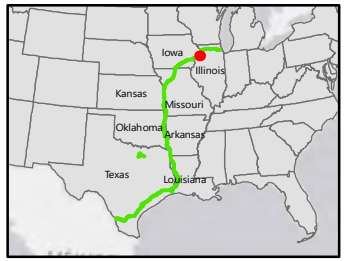
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Noise Contours
Scott County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



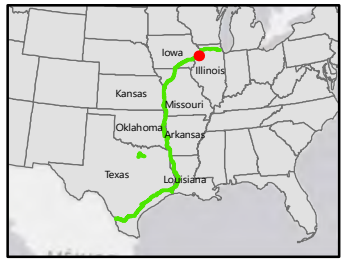
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Noise Contours
Scott County, IA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



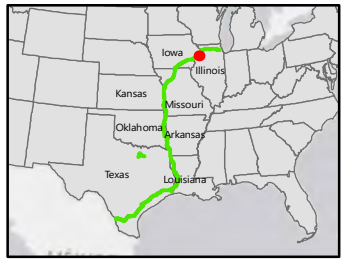
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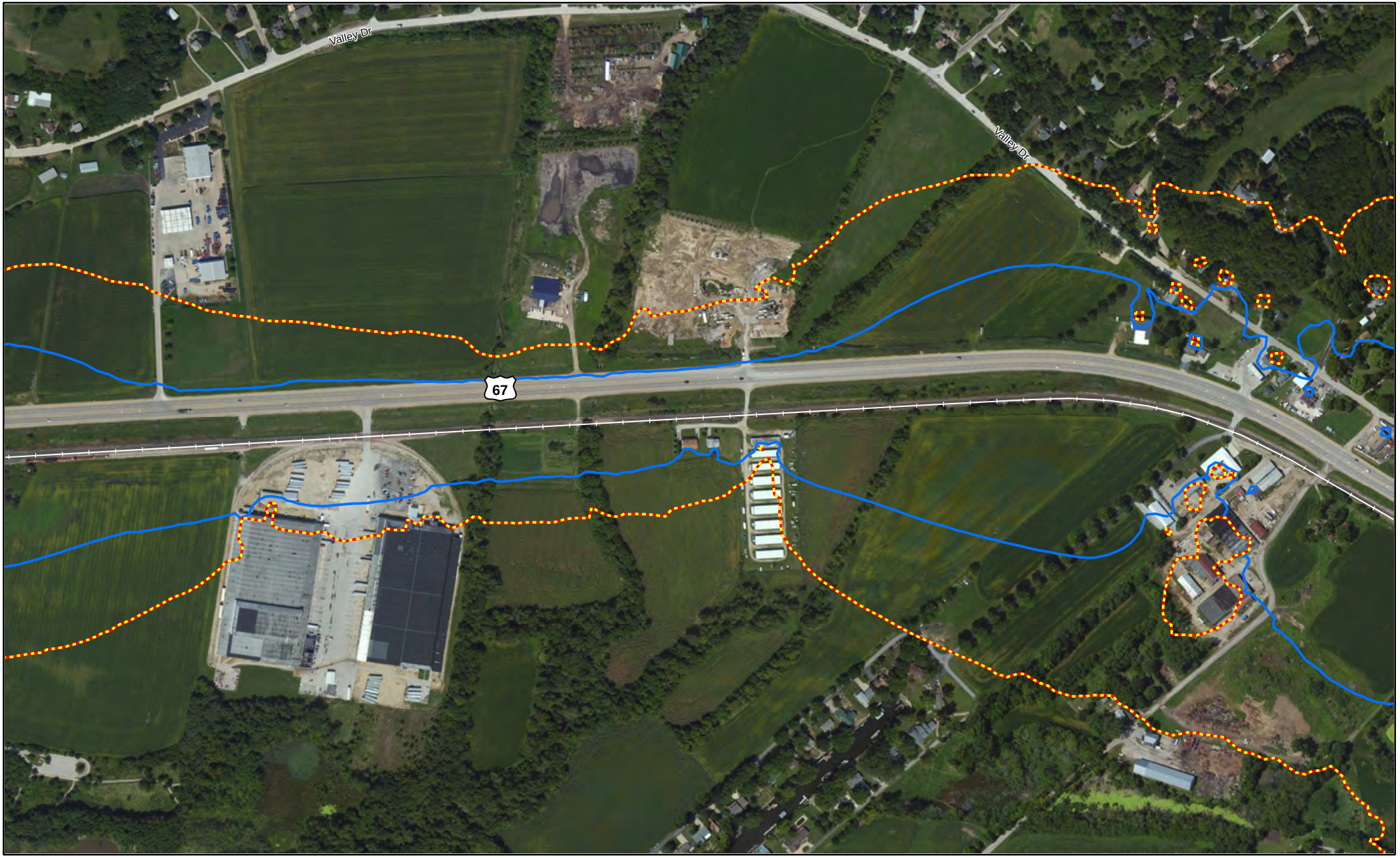
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Noise Contours
Scott County, IA

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



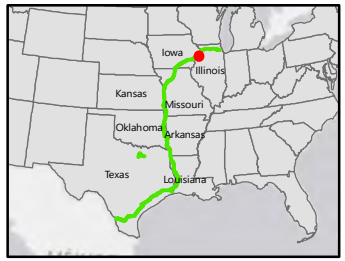
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Noise Contours
Scott County, IA

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Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



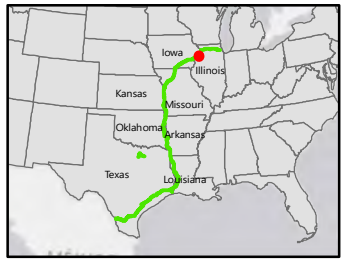
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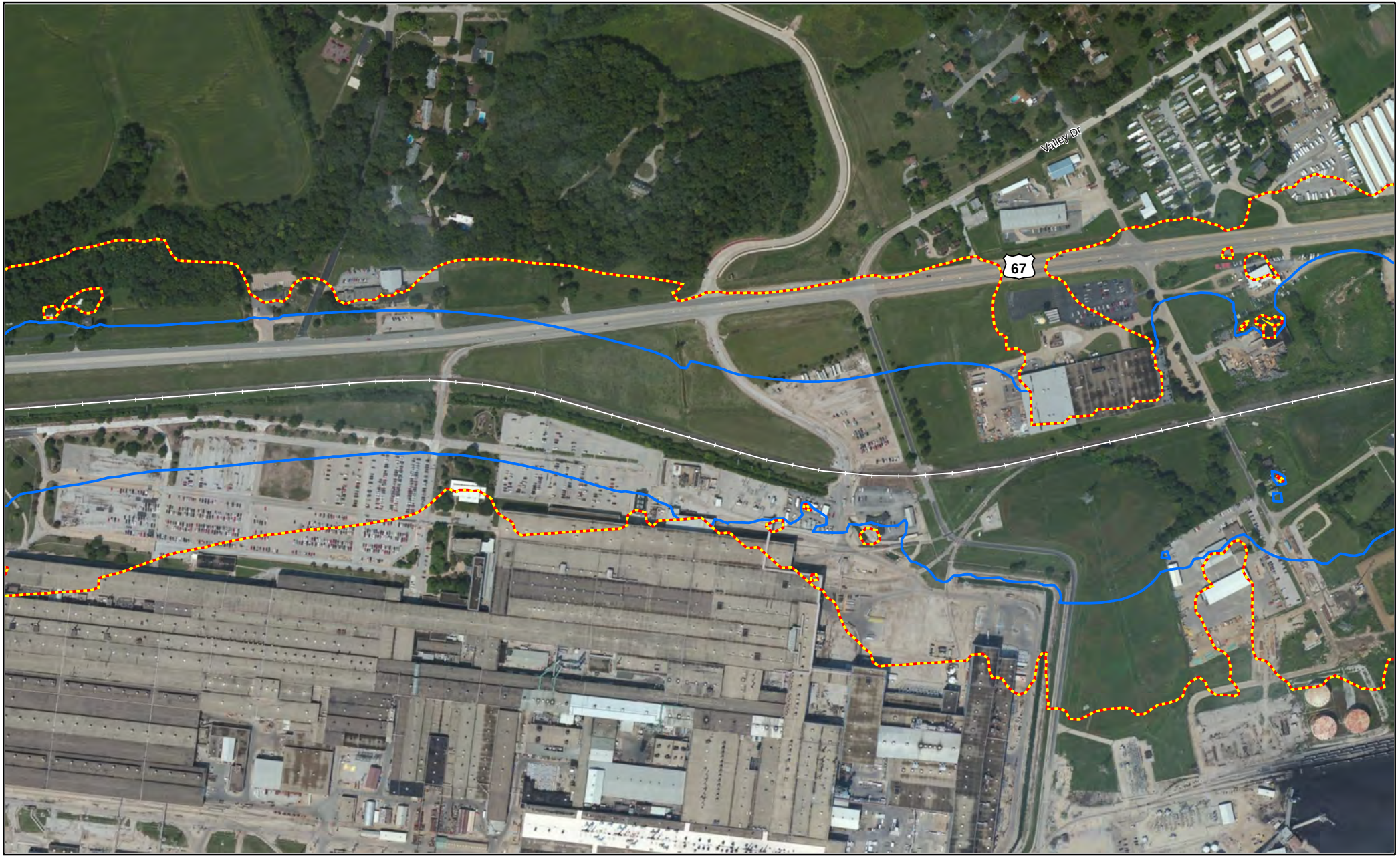
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Noise Contours
Scott County, IA

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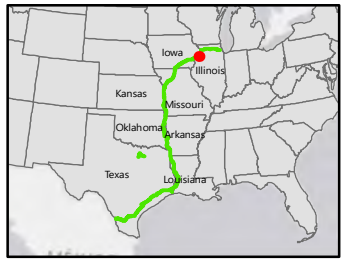
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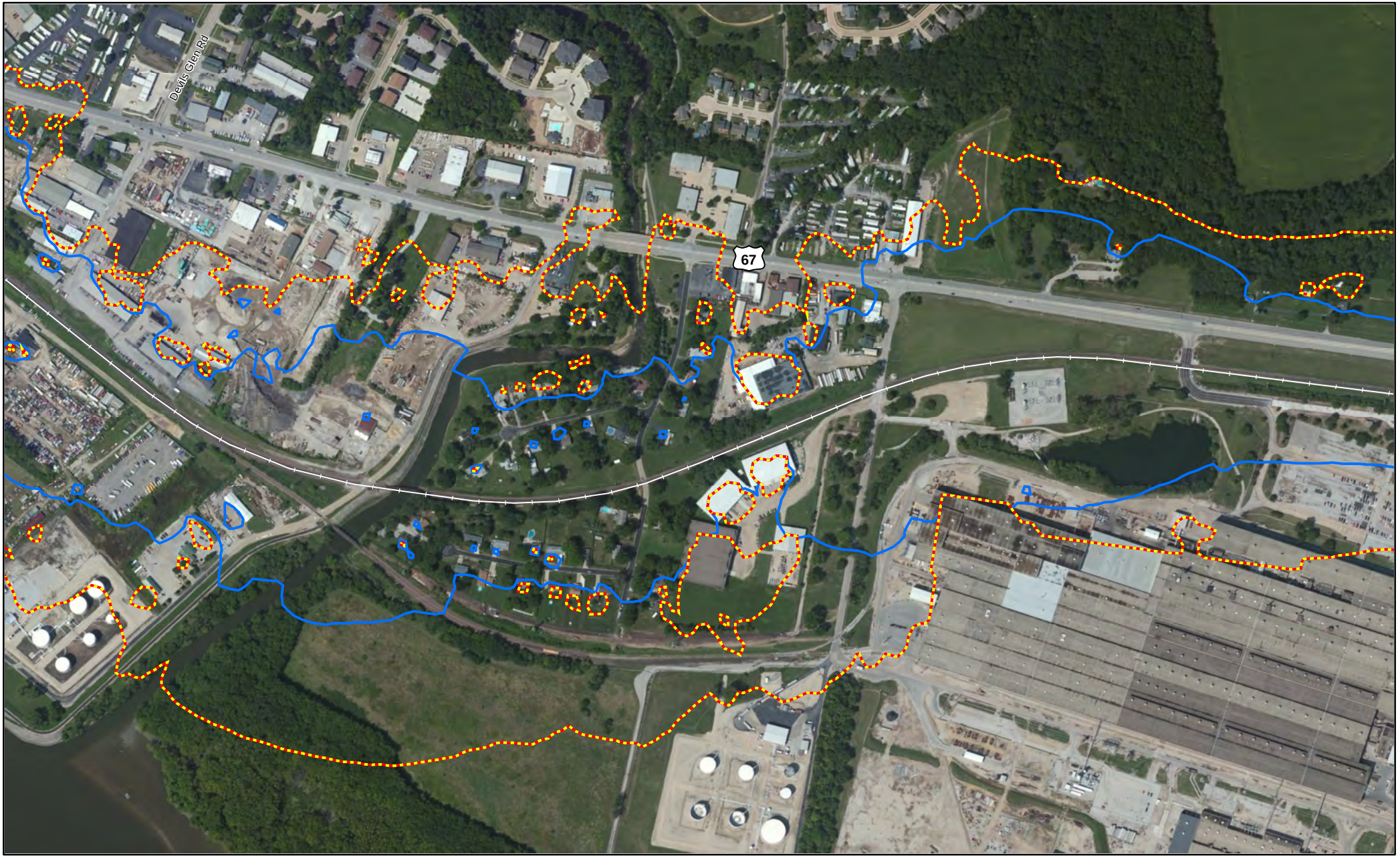
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Noise Contours
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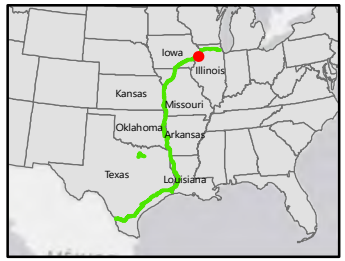
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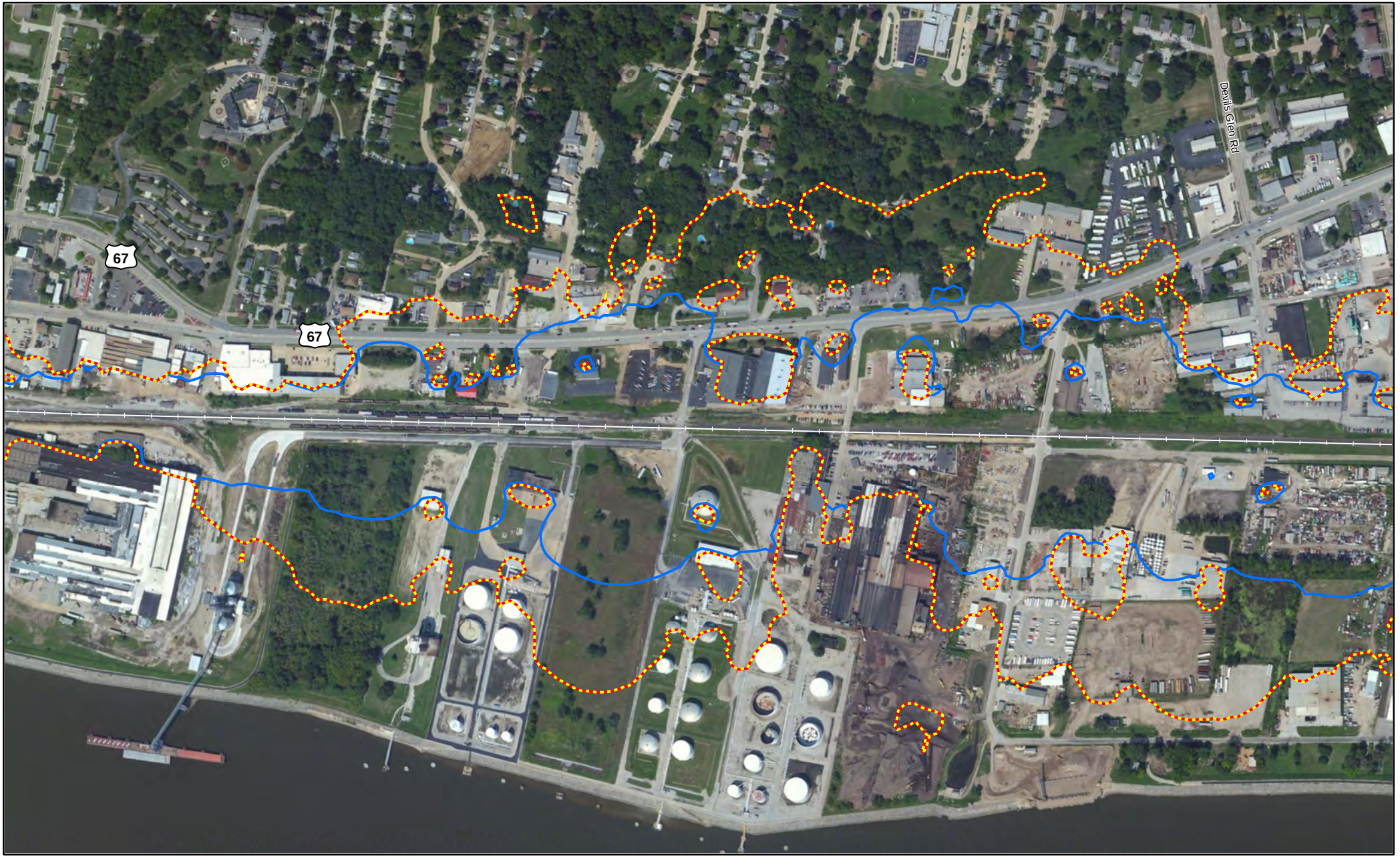
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Noise Contours
Scott County, IA

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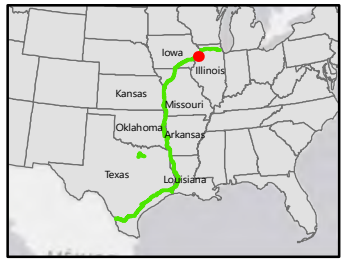
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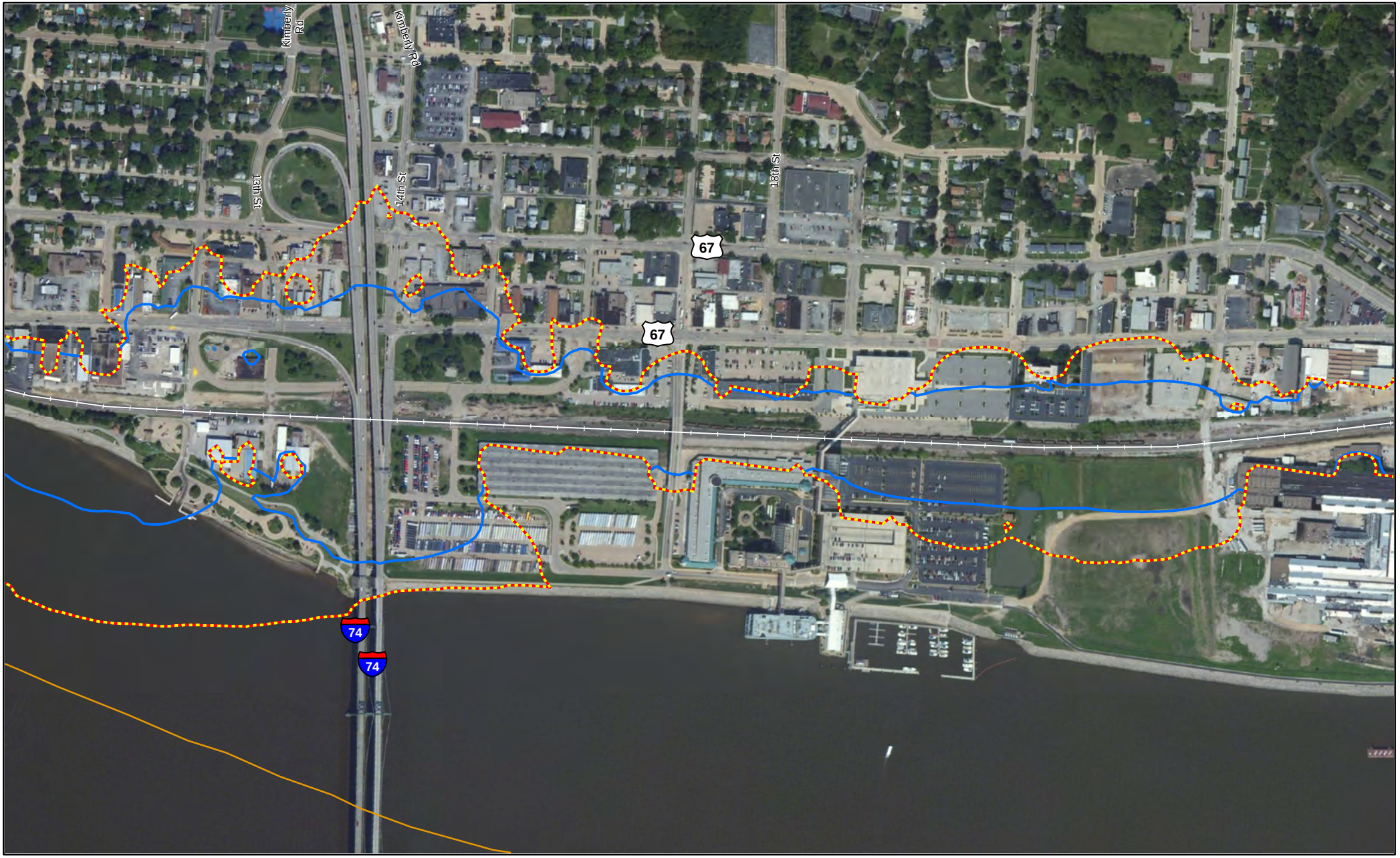
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Noise Contours
Scott County, IA

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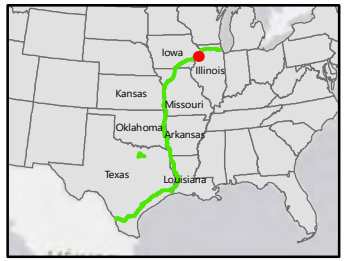
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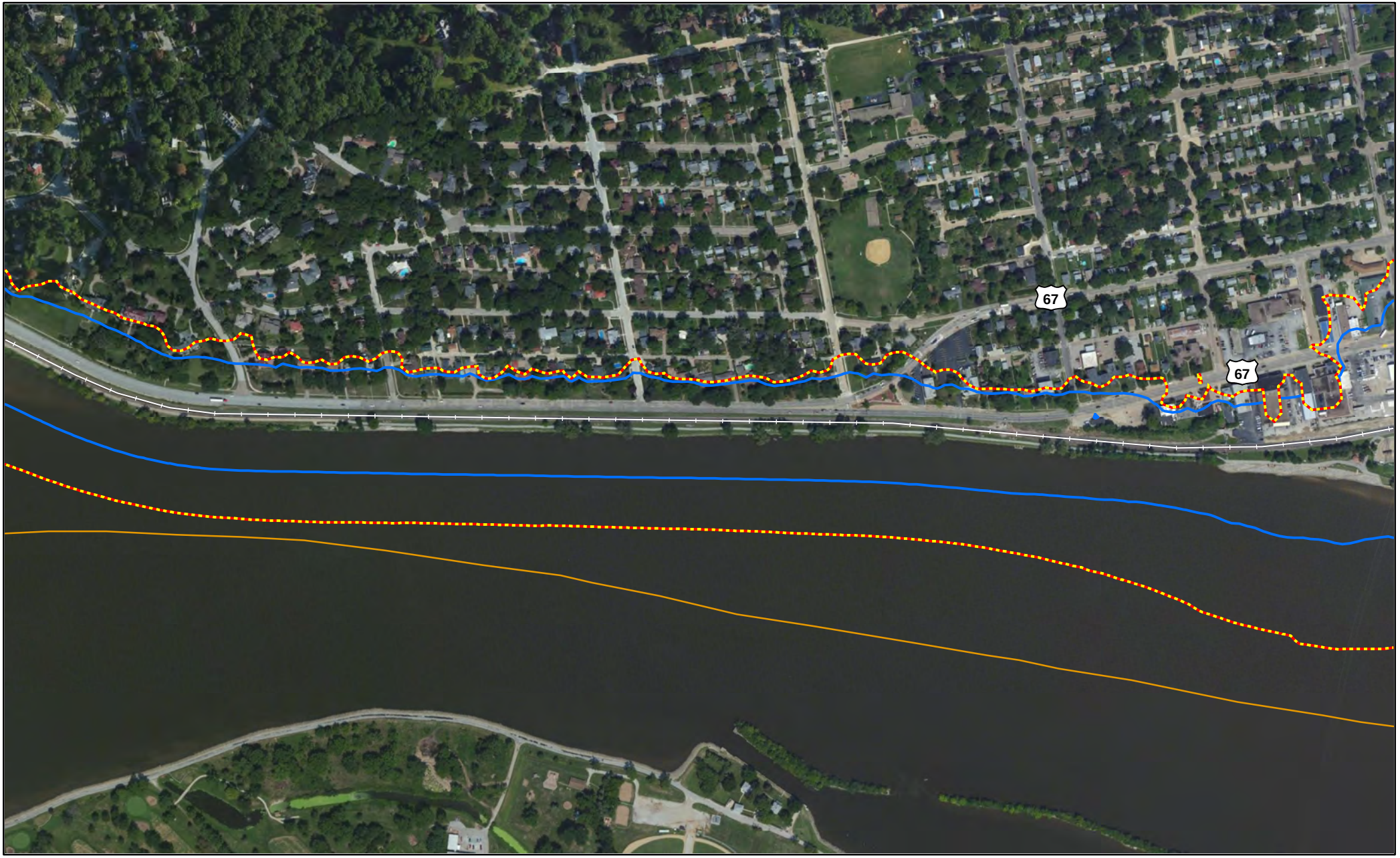


Noise Contours
Scott County, IA

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



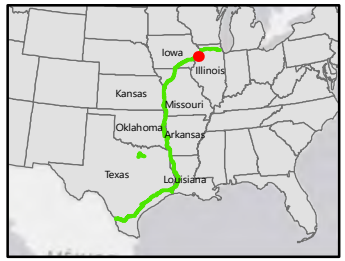
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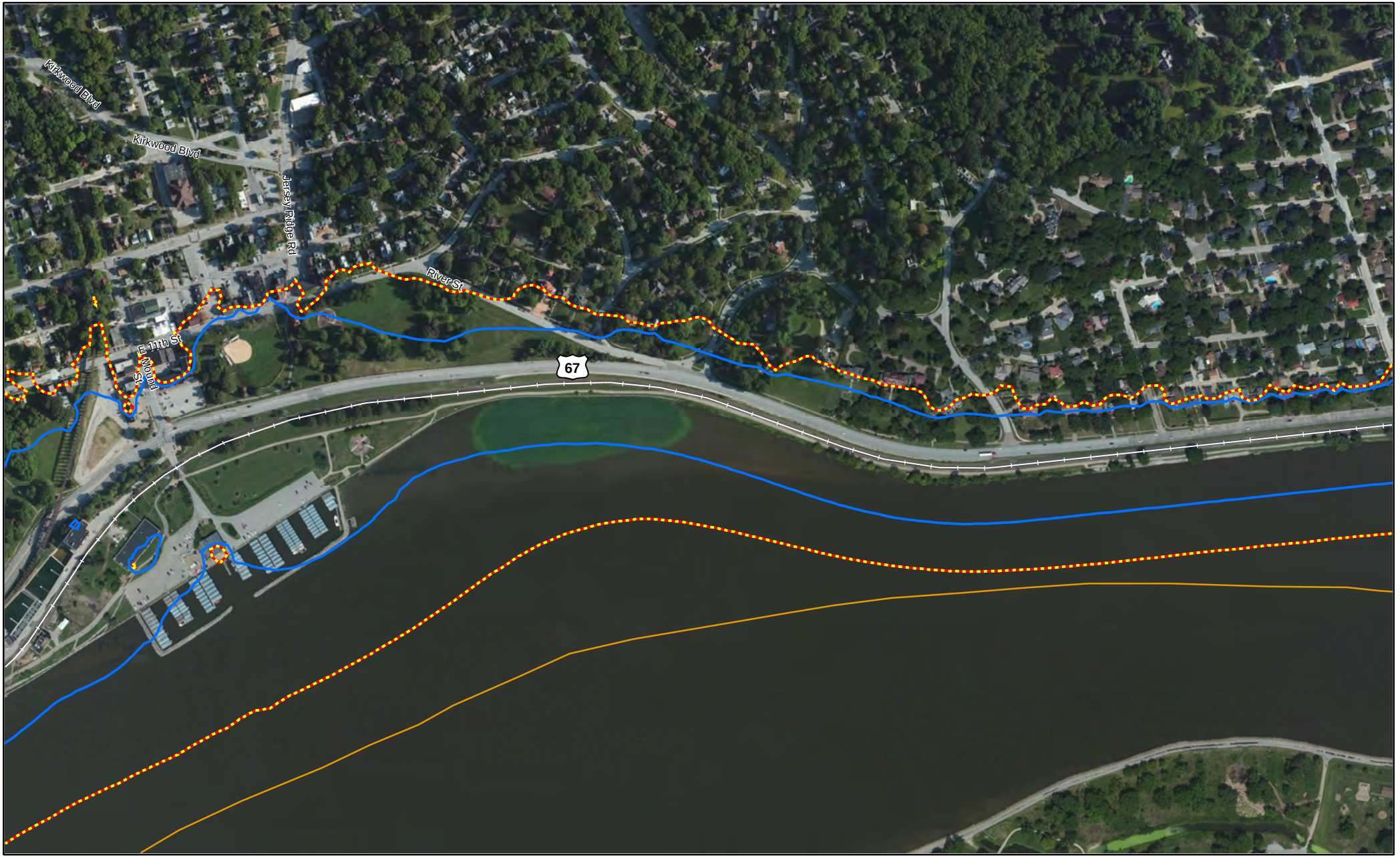


Noise Contours
Scott County, IA

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



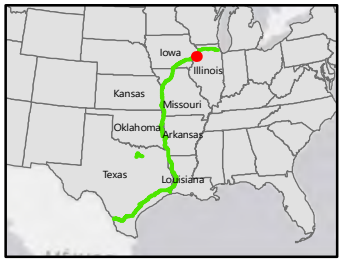
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Noise Contours
Scott County, IA

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



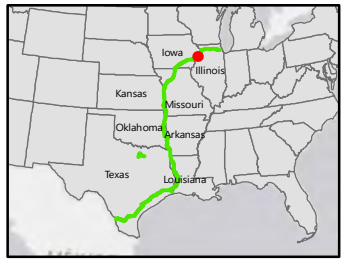
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Noise Contours
Scott County, IA

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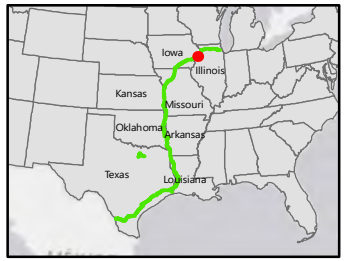
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Noise Contours
Scott County, IA

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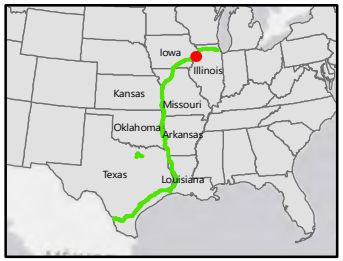
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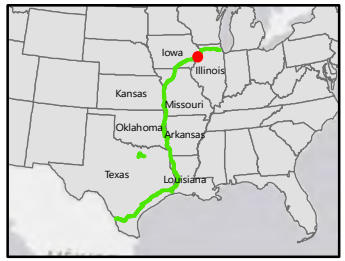
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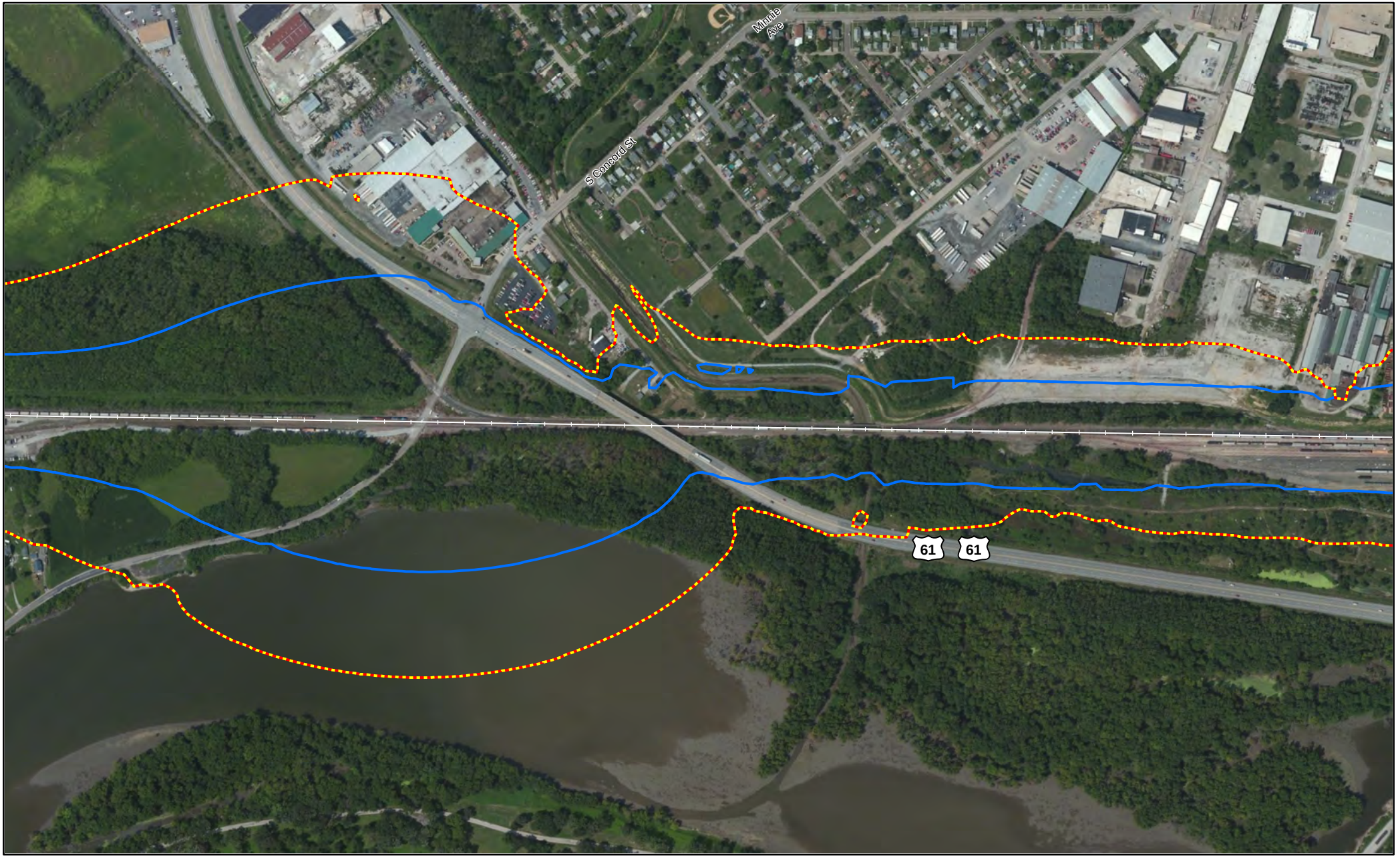
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Noise Contours
Scott County, IA

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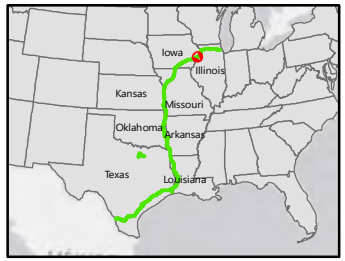
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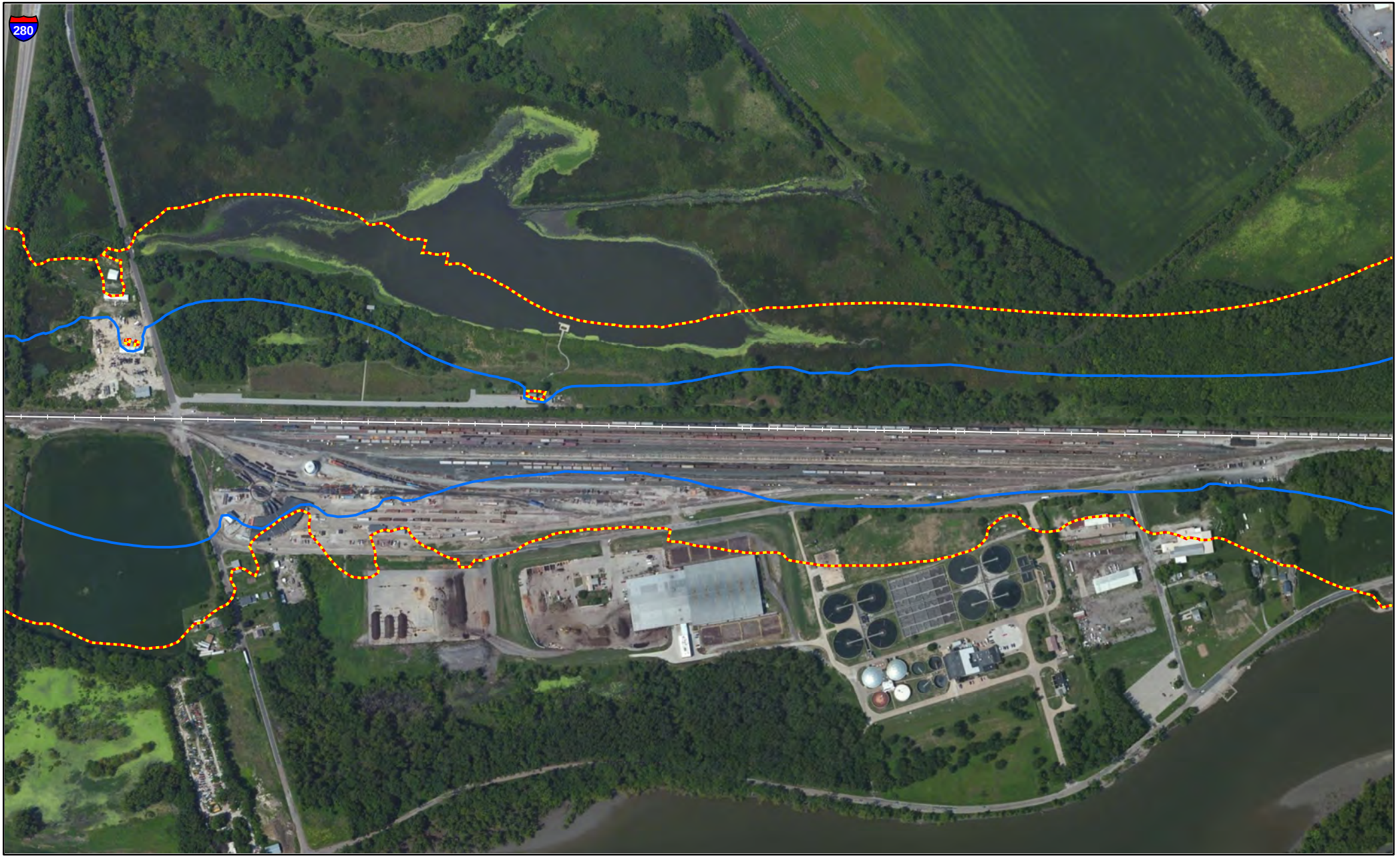
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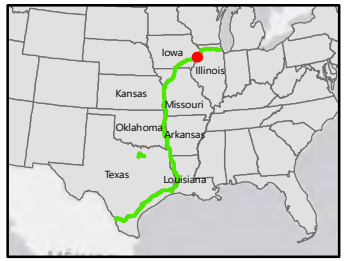
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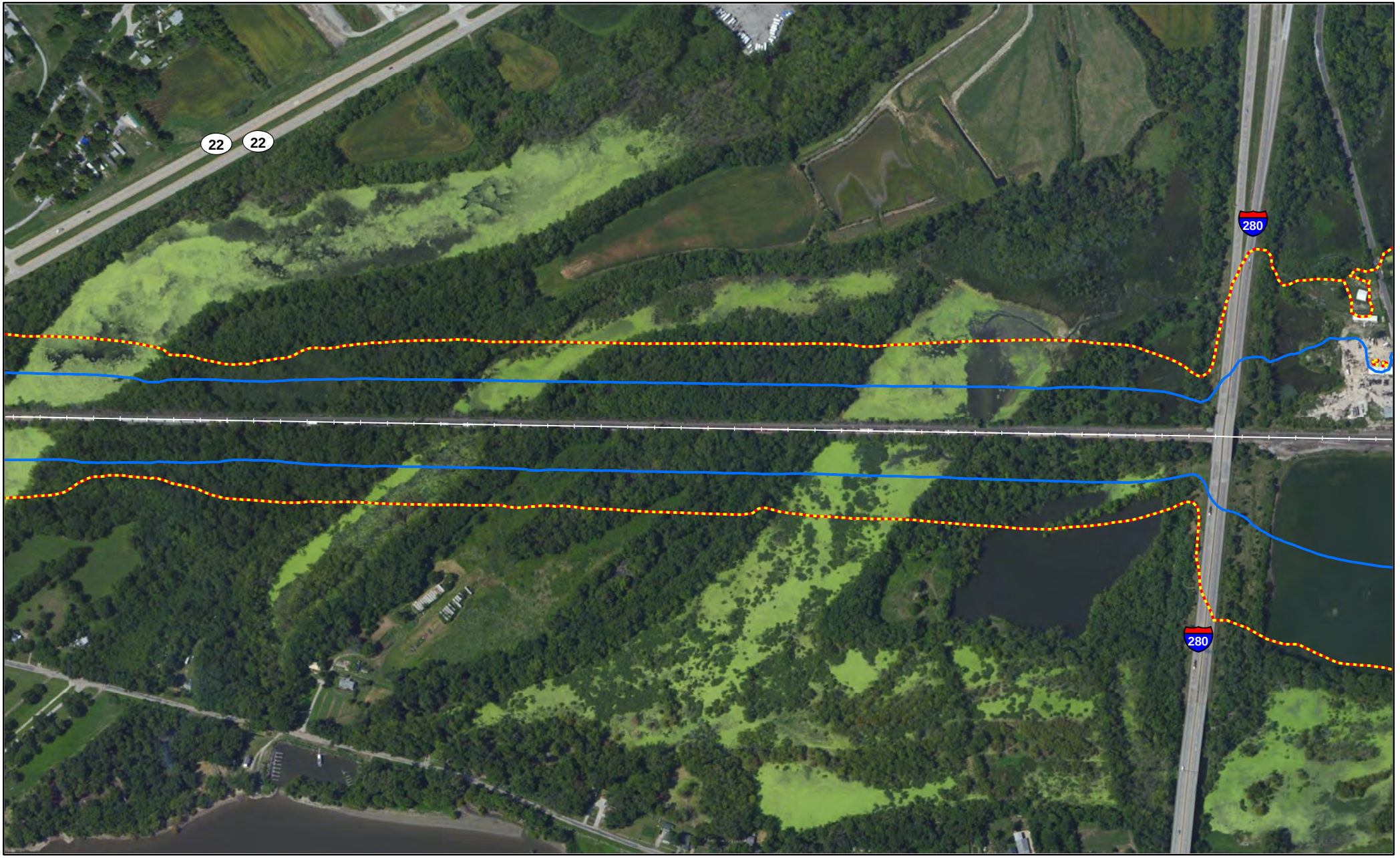
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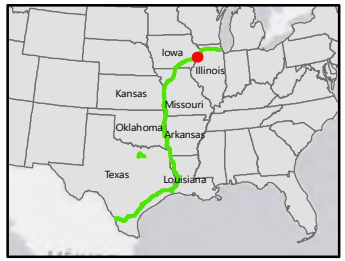
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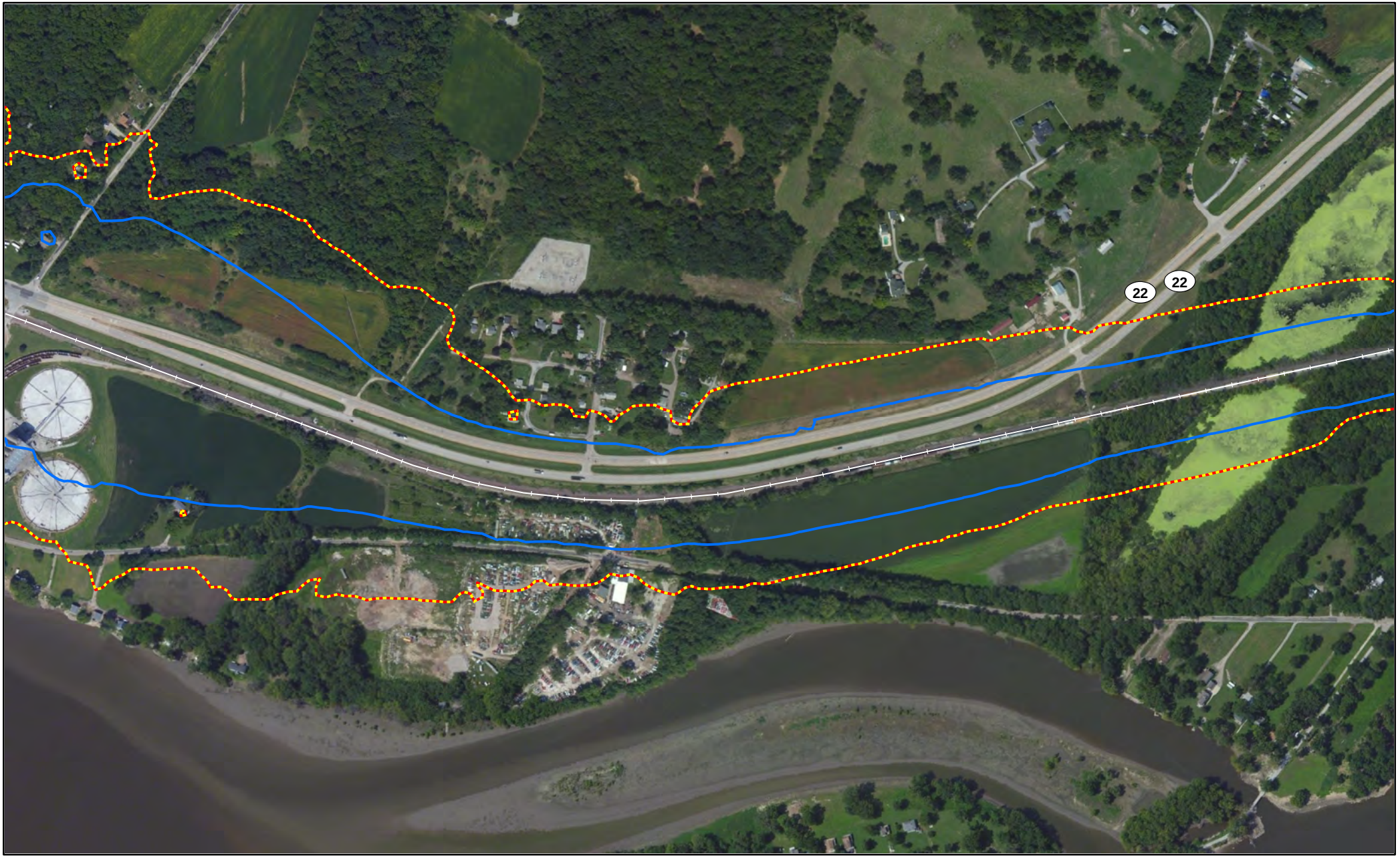
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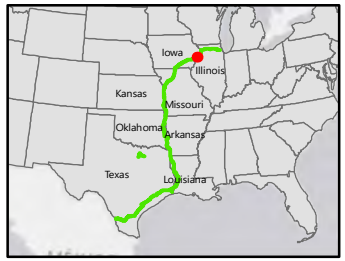
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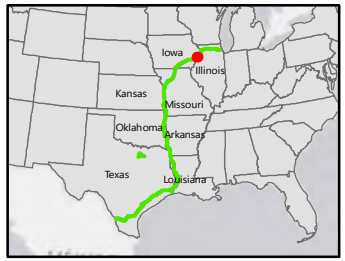
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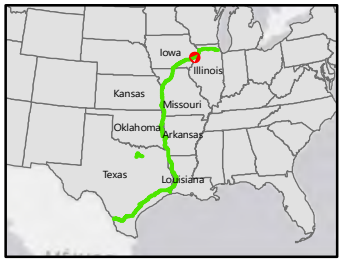
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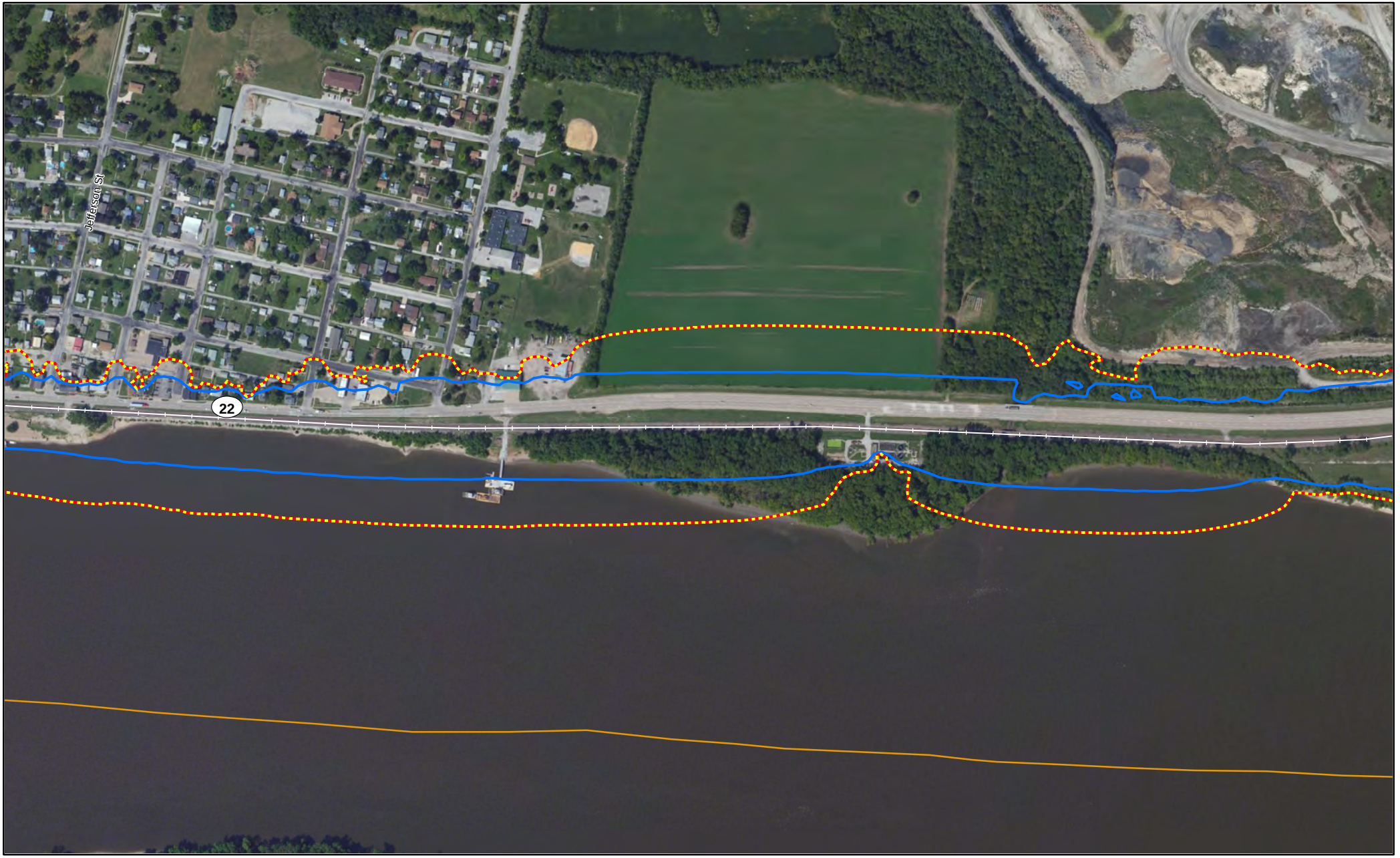
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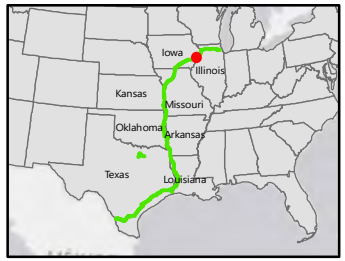
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Miles
0 0.05 0.1



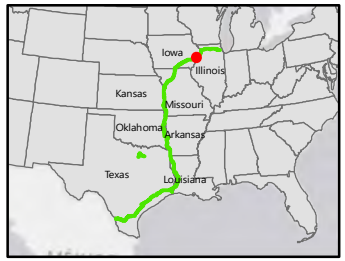
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Scott County, IA

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



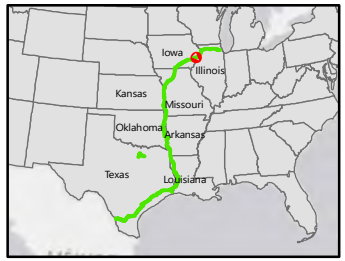
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Tracks

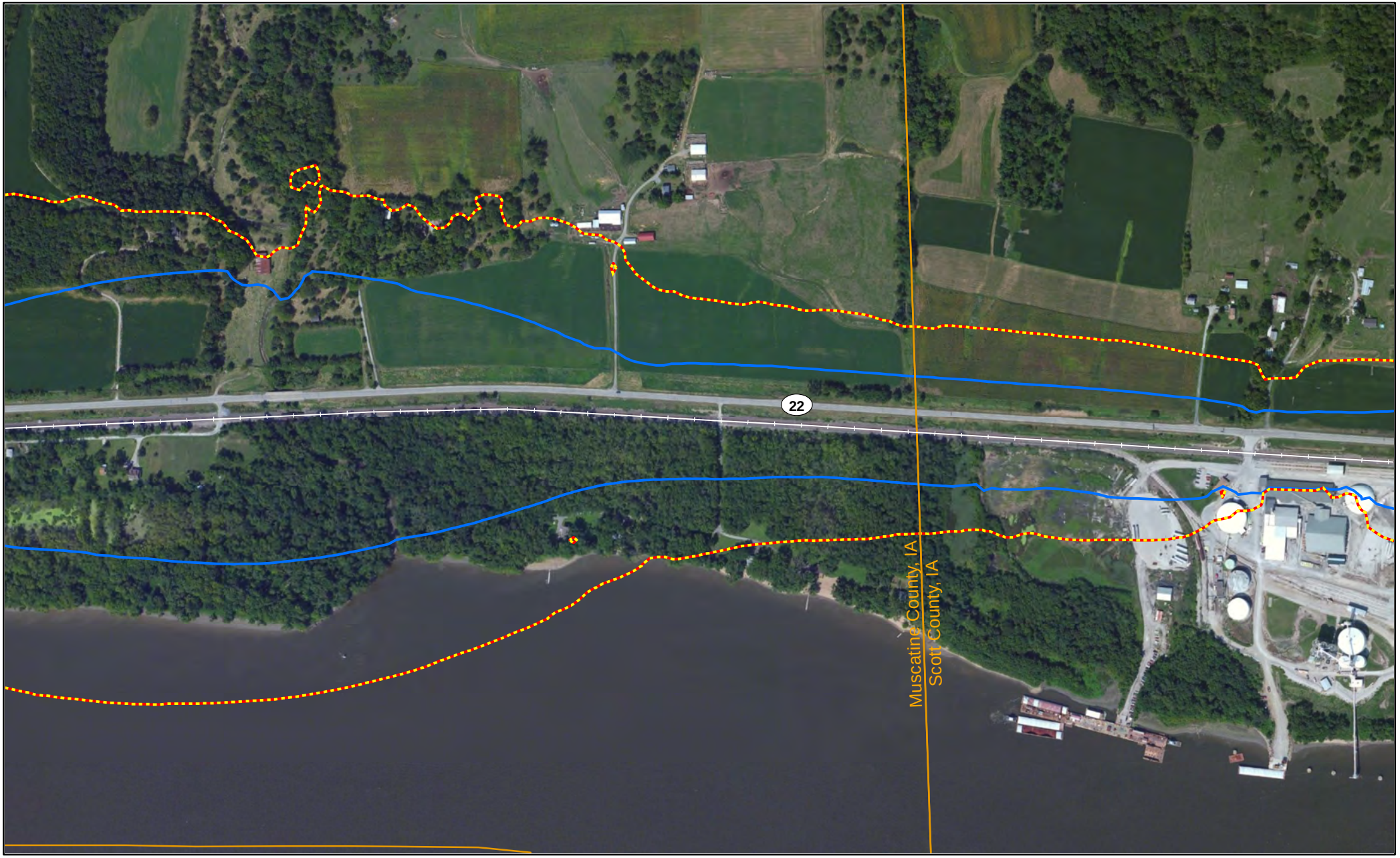
Source: ESRI.



Noise Contours
Scott County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

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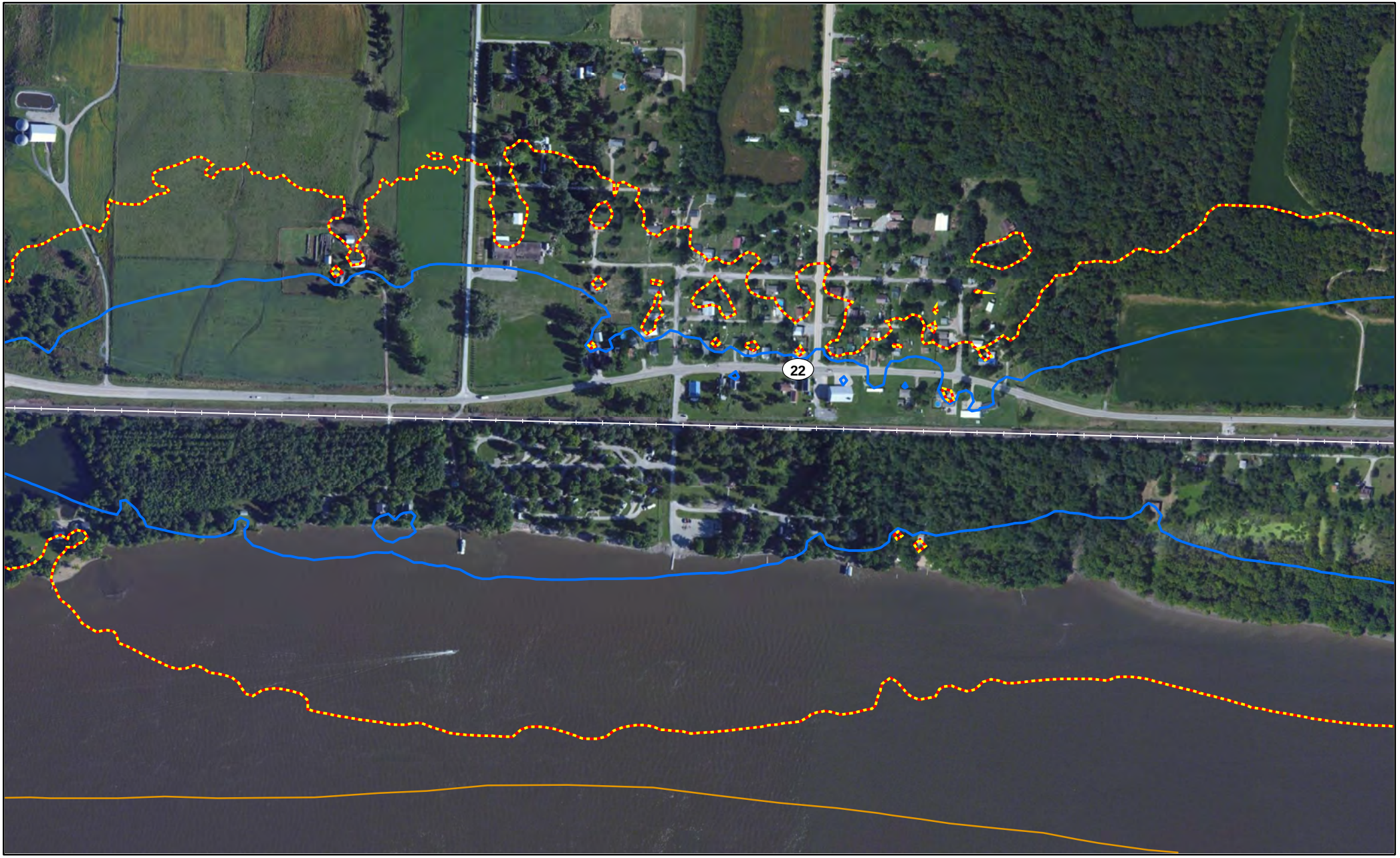


Noise Contours
Muscatine County, IA

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



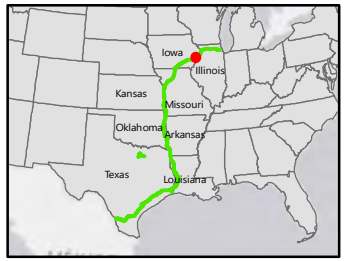
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Noise Contours
Muscatine County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



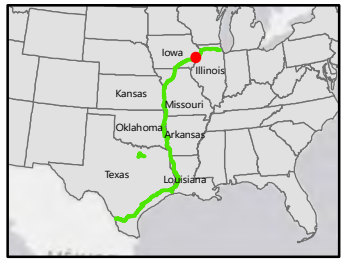
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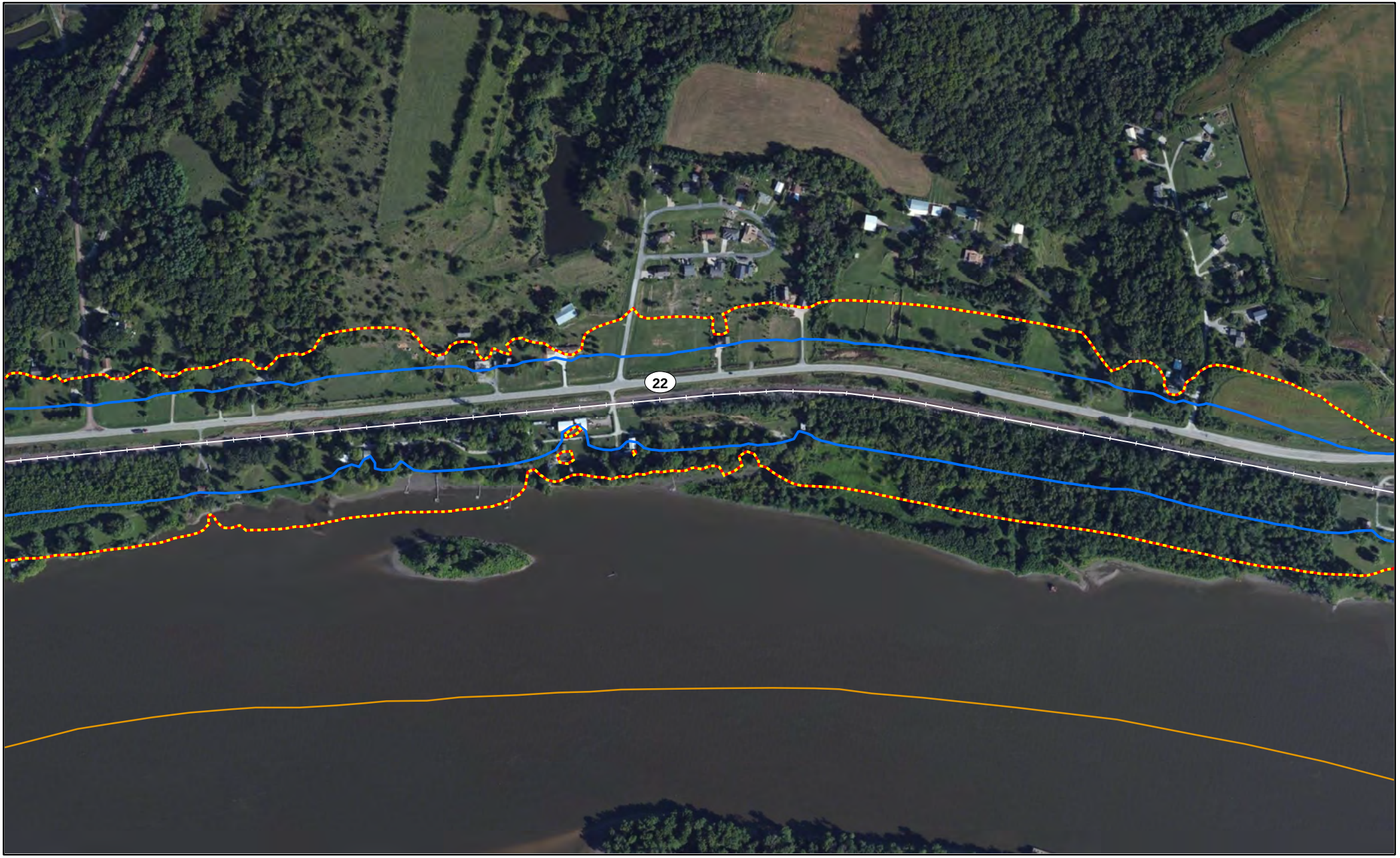
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Noise Contours
Muscatine County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



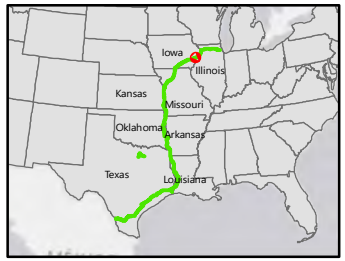
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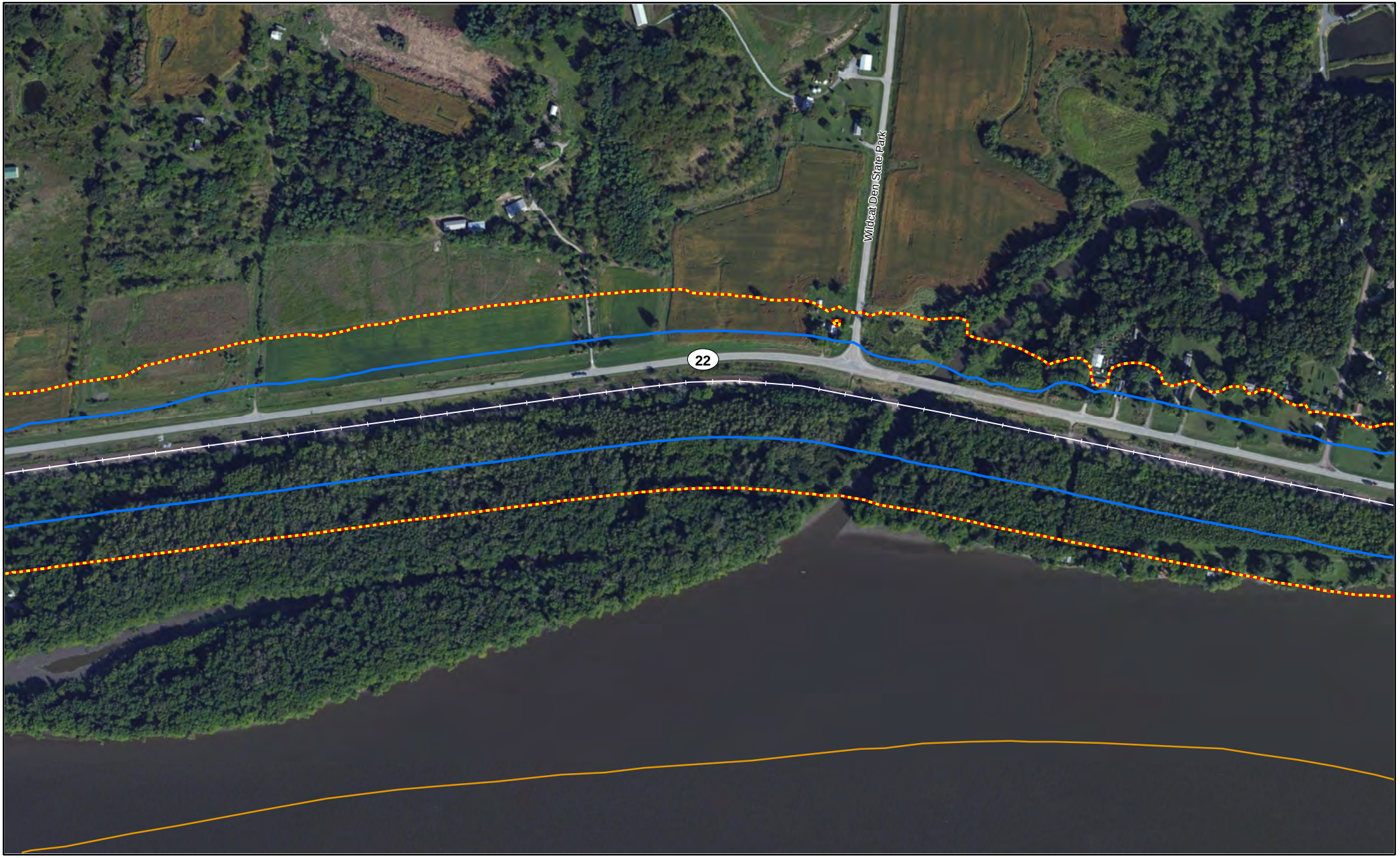
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Noise Contours
Muscatine County, IA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



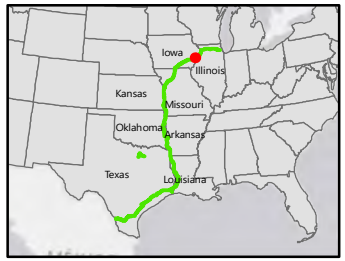
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Noise Contours
Muscatine County, IA

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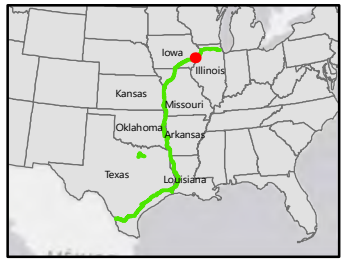
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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

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Noise Contours
Muscatine County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



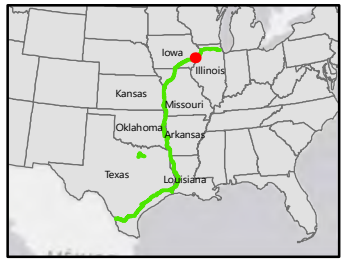
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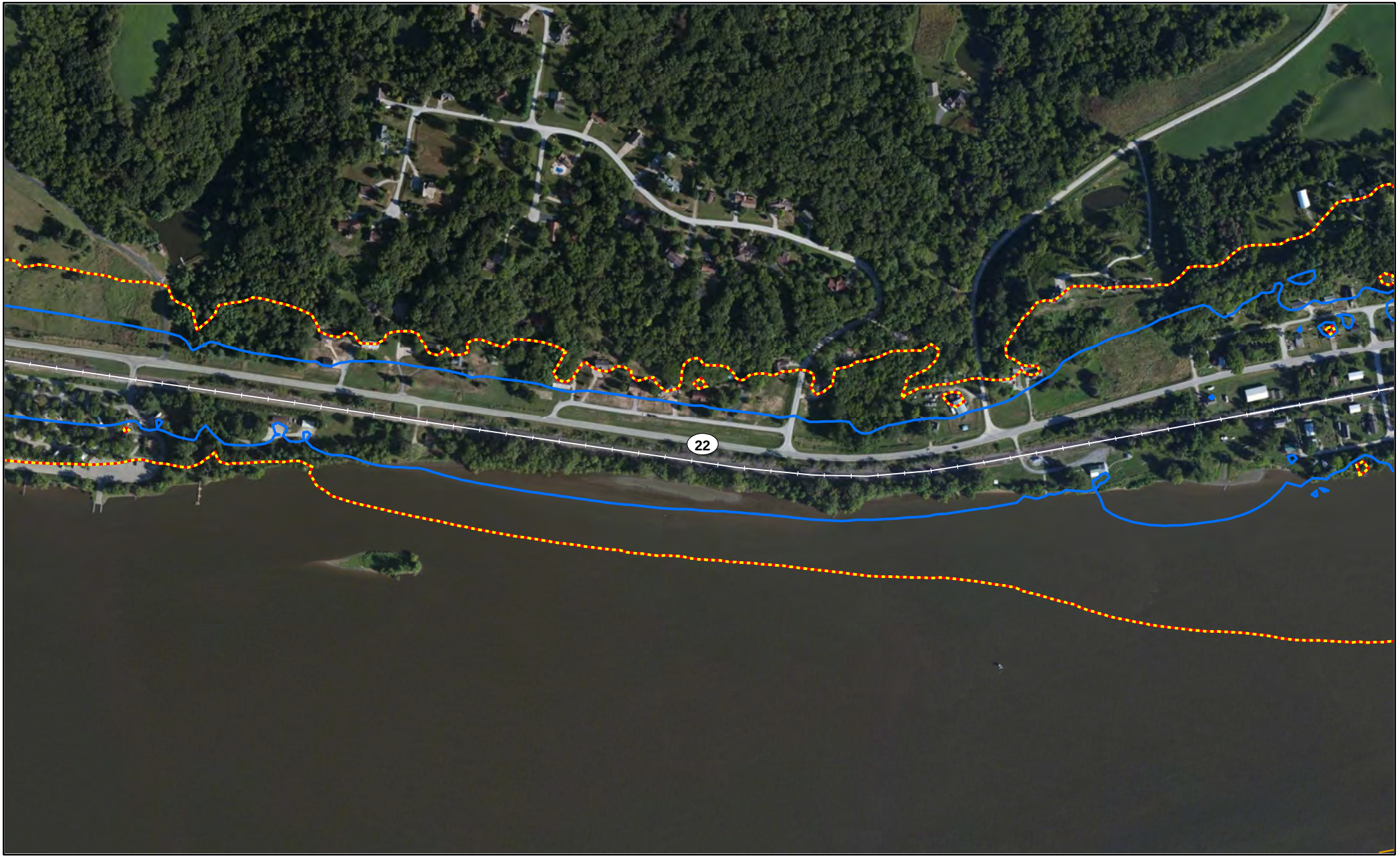
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Noise Contours
Muscatine County, IA

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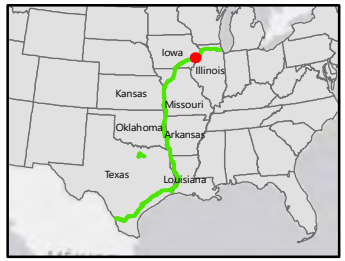
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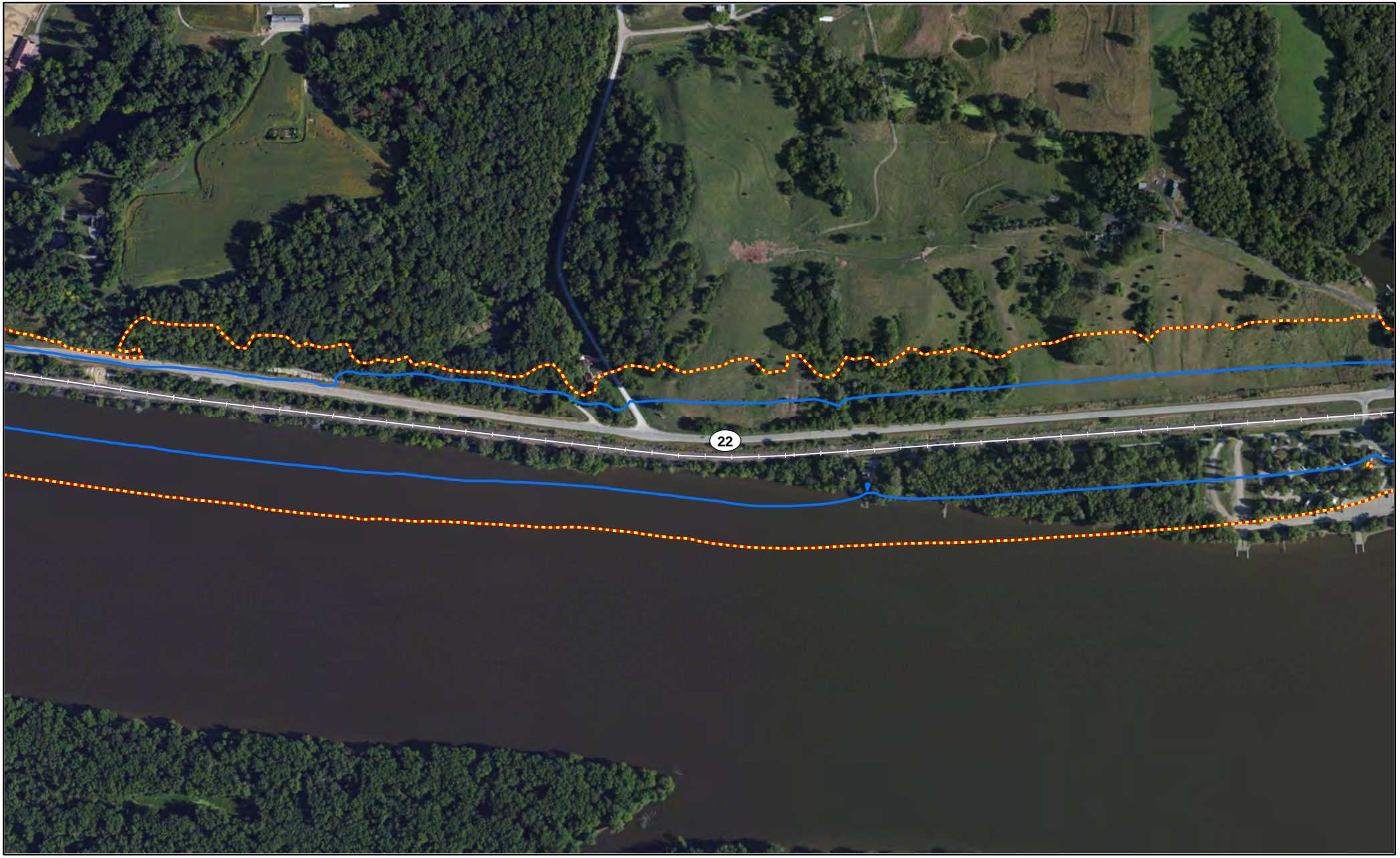
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Noise Contours
Muscatine County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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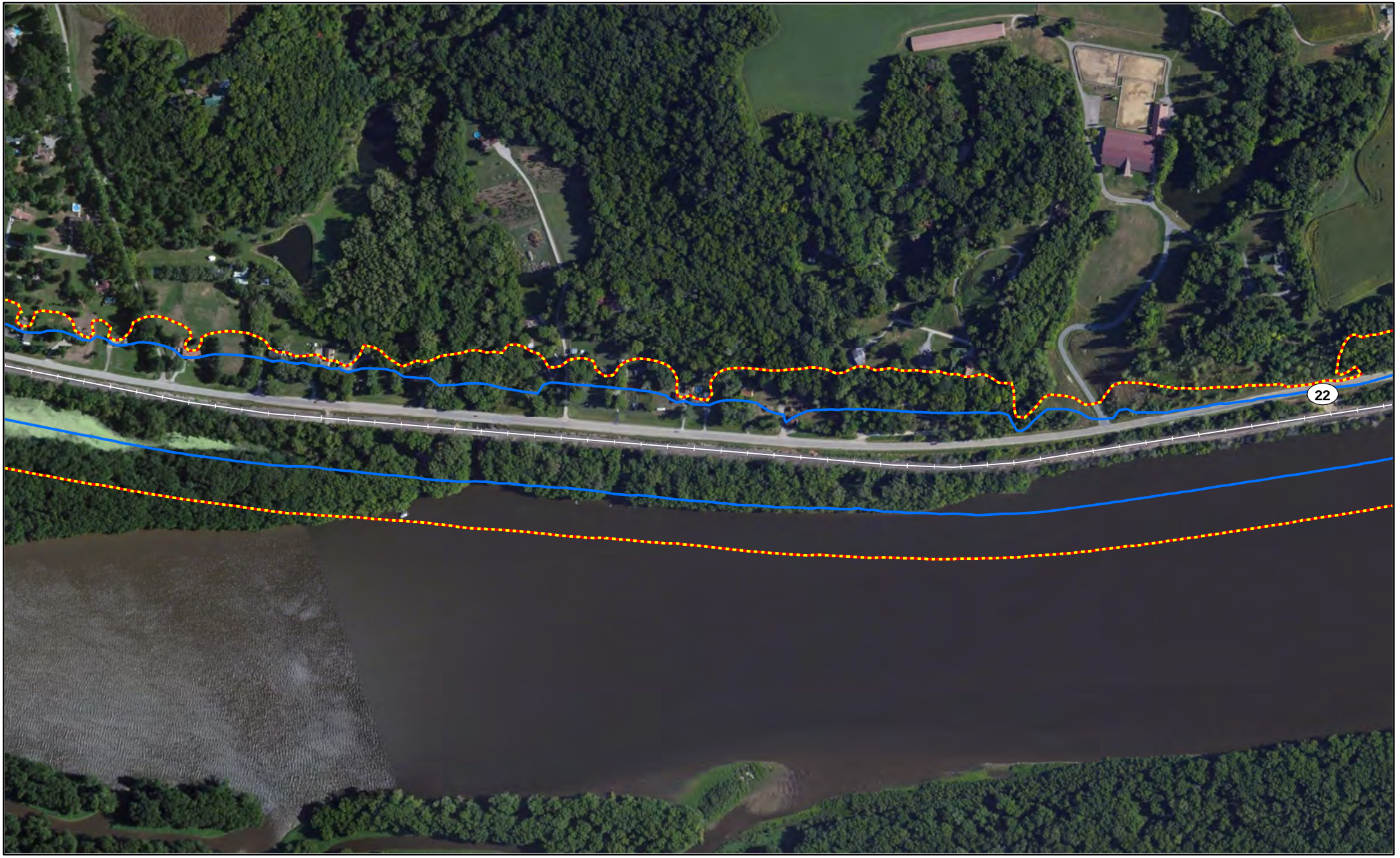
Tracks

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Noise Contours
Muscatine County, IA

Miles
0 0.05 0.1



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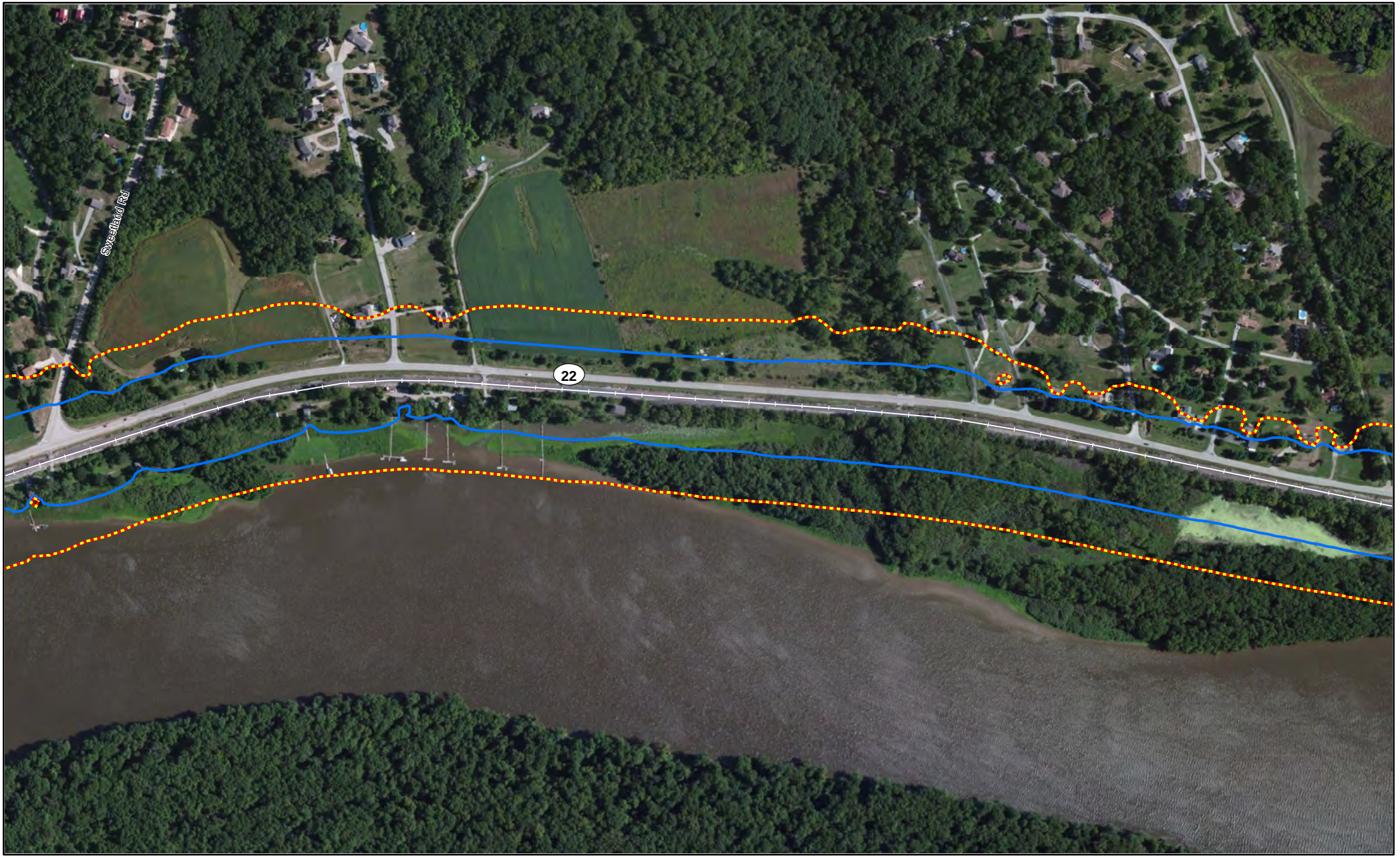
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Noise Contours
Muscatine County, IA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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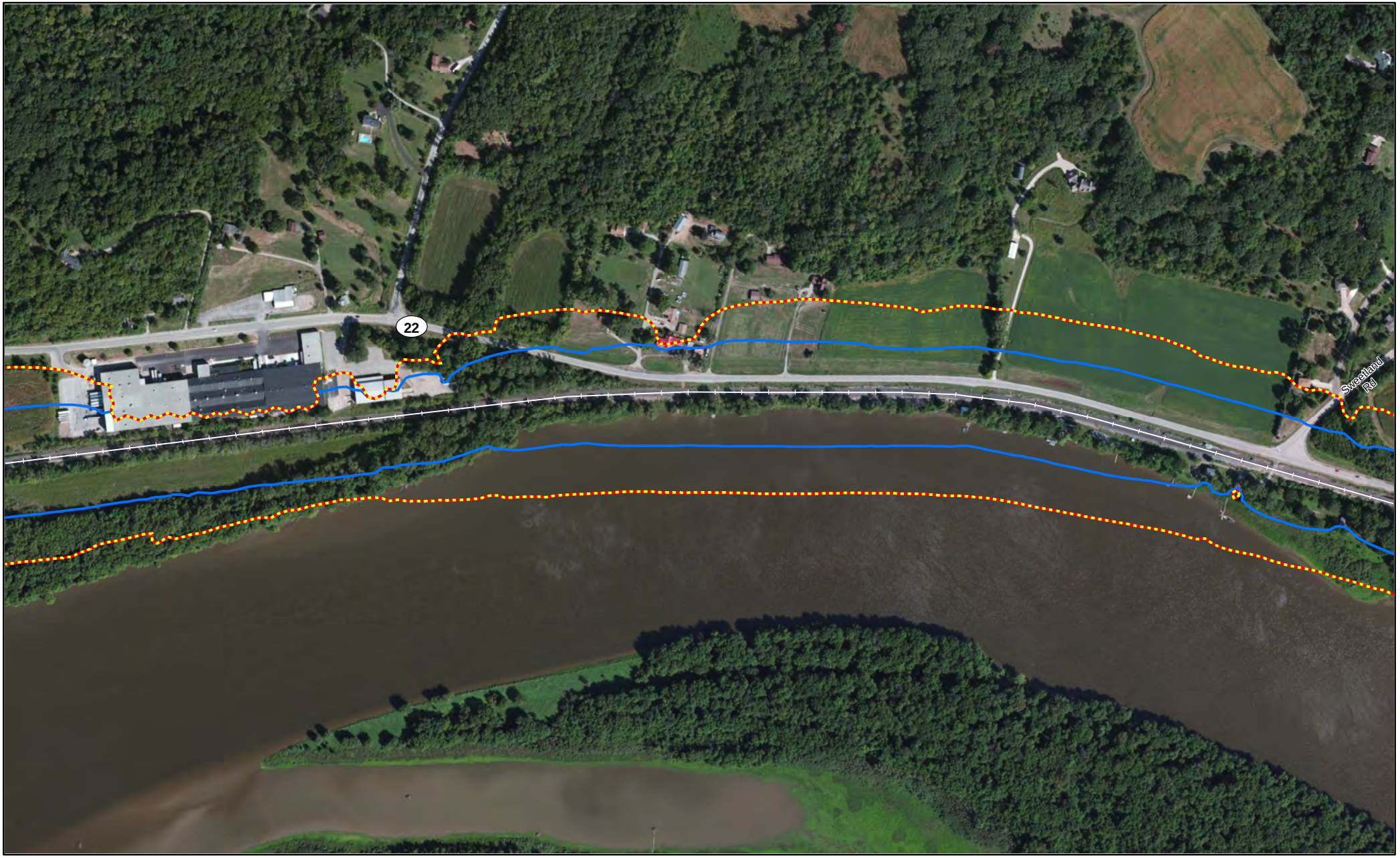
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Noise Contours
Muscatine County, IA

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Miles
0 0.05 0.1



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Noise Impact (65 Ldn and 3 dBA Increase)

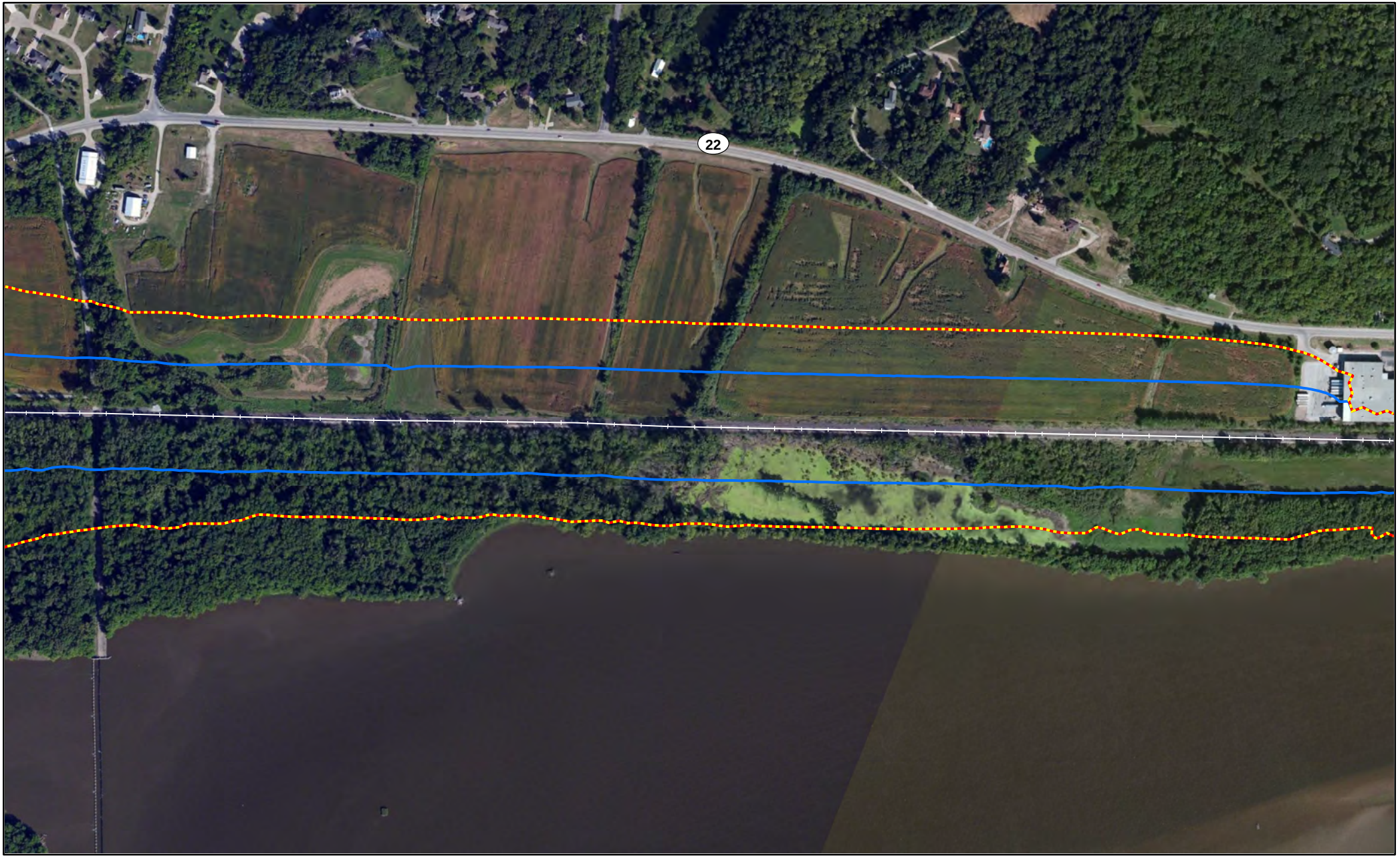
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Noise Contours
Muscatine County, IA

Miles
0 0.05 0.1



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Noise Contours
Muscatine County, IA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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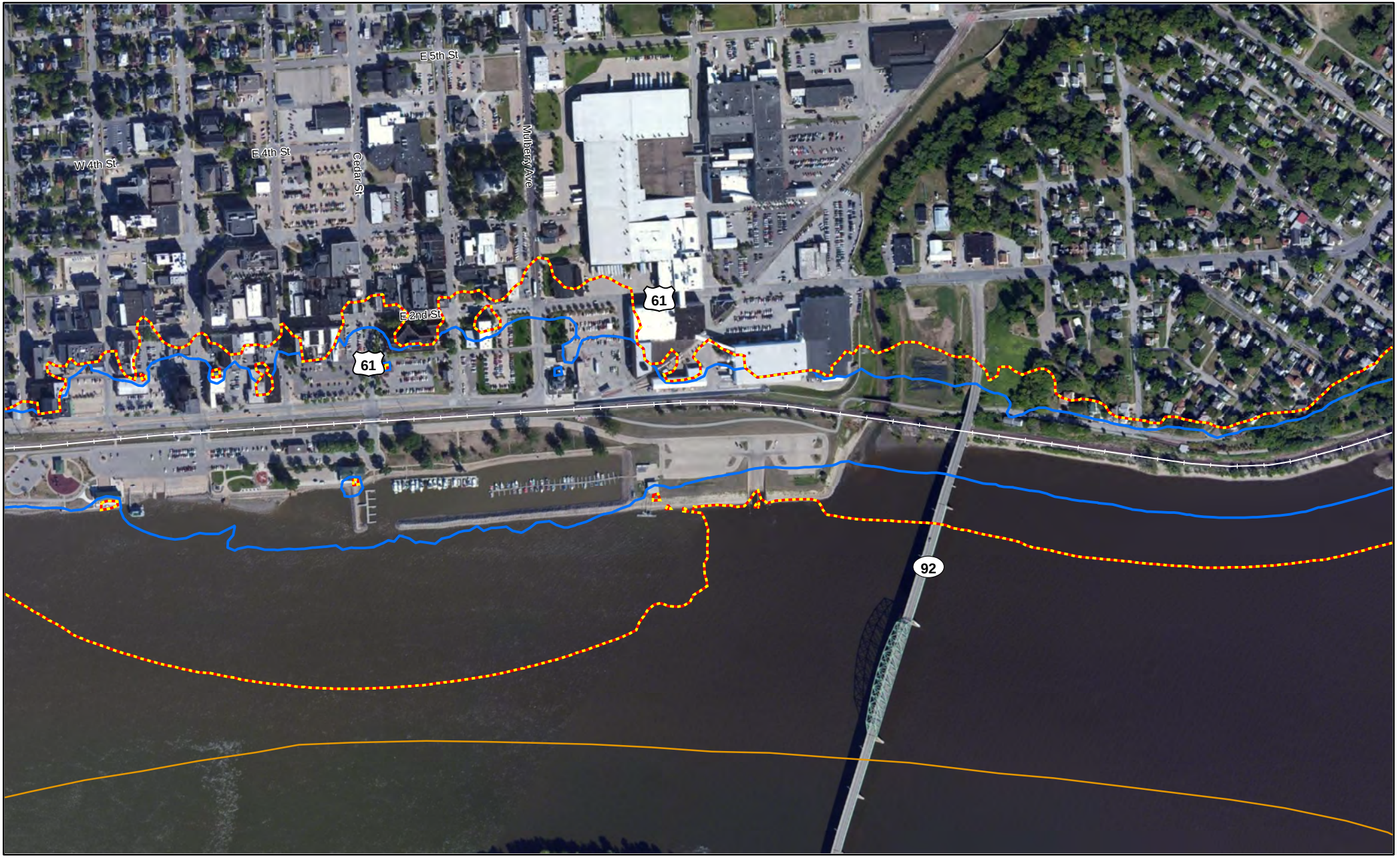
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Noise Contours
Muscatine County, IA

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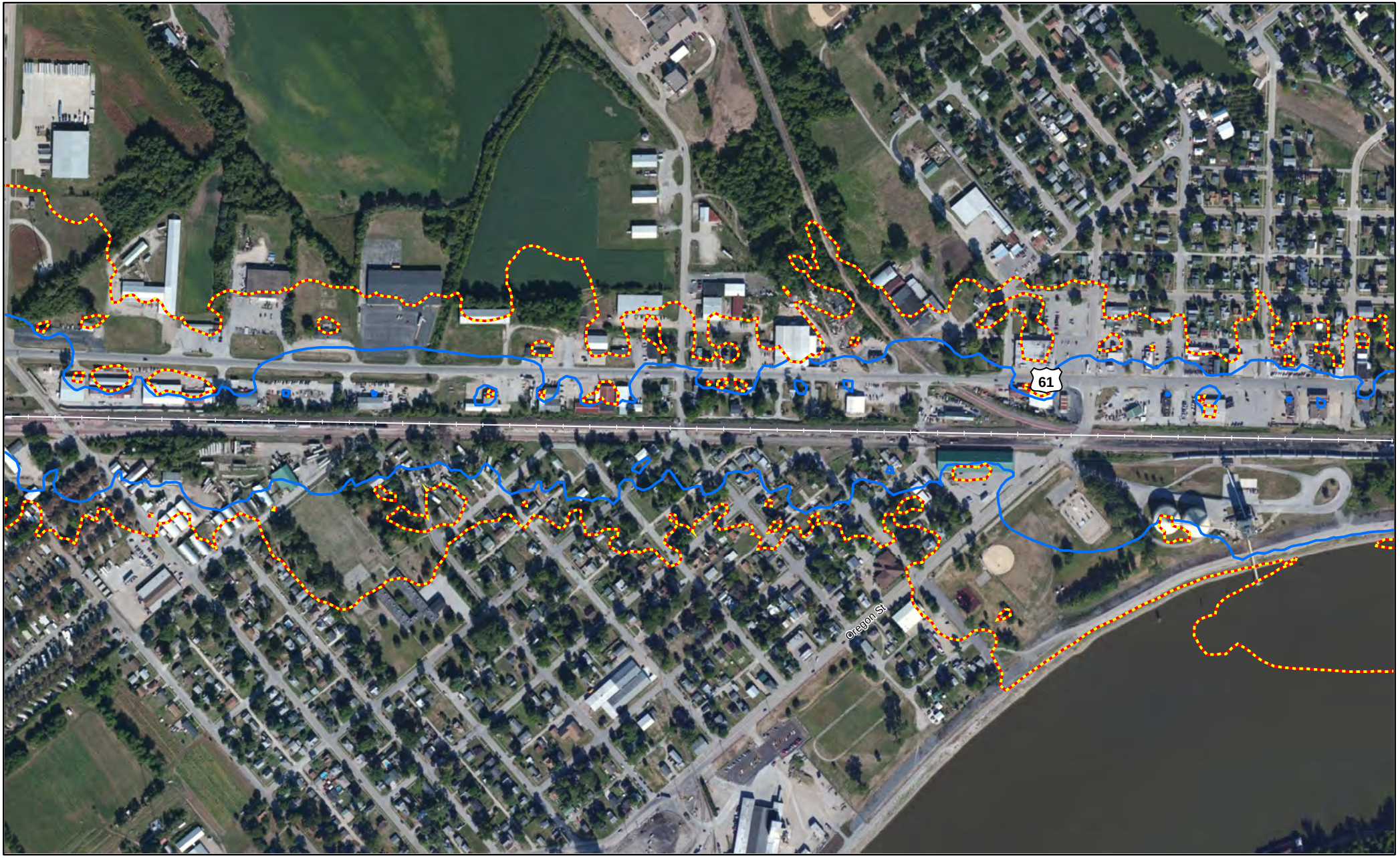
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Noise Contours
Muscatine County, IA

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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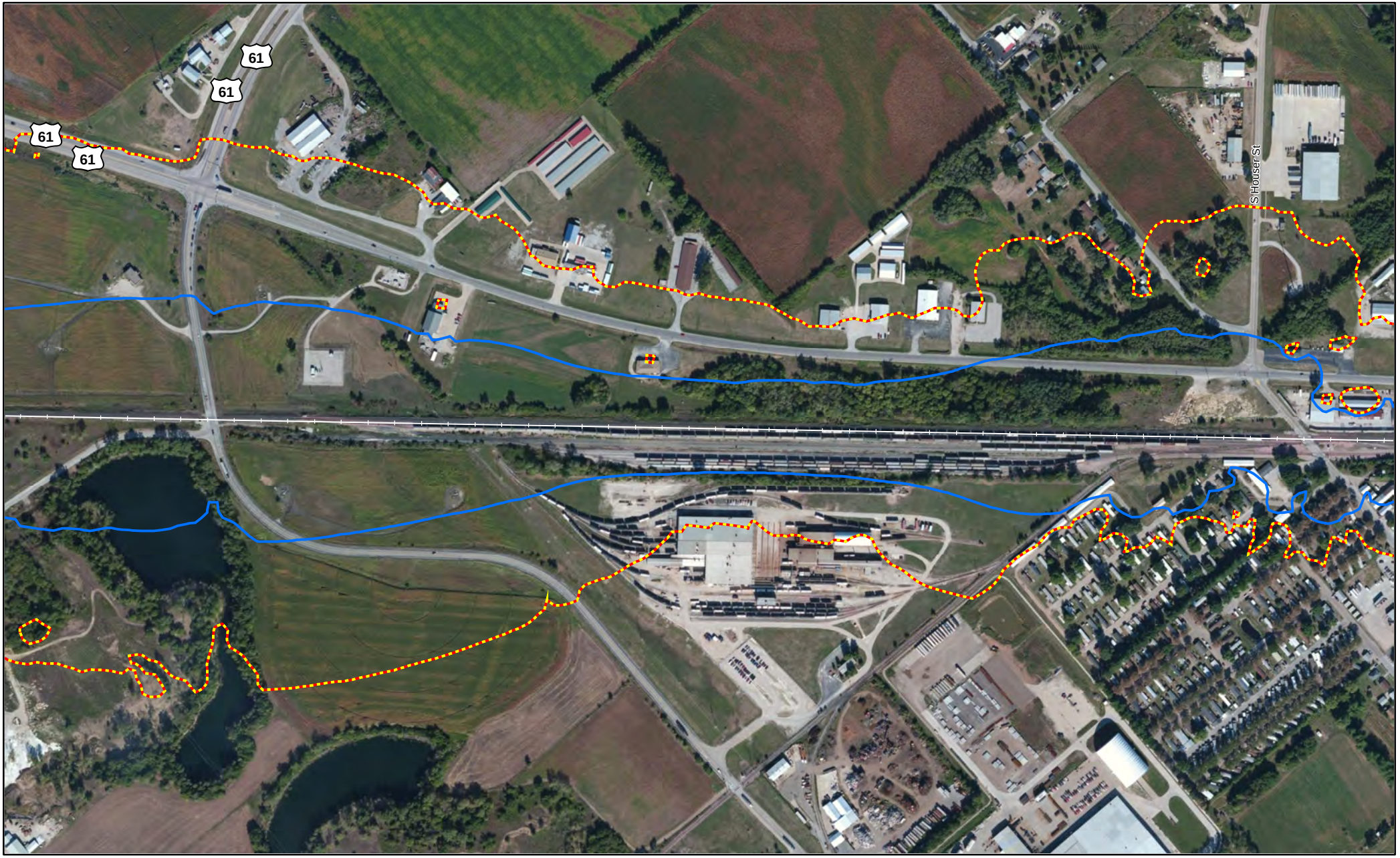
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Noise Contours
Muscatine County, IA

Miles
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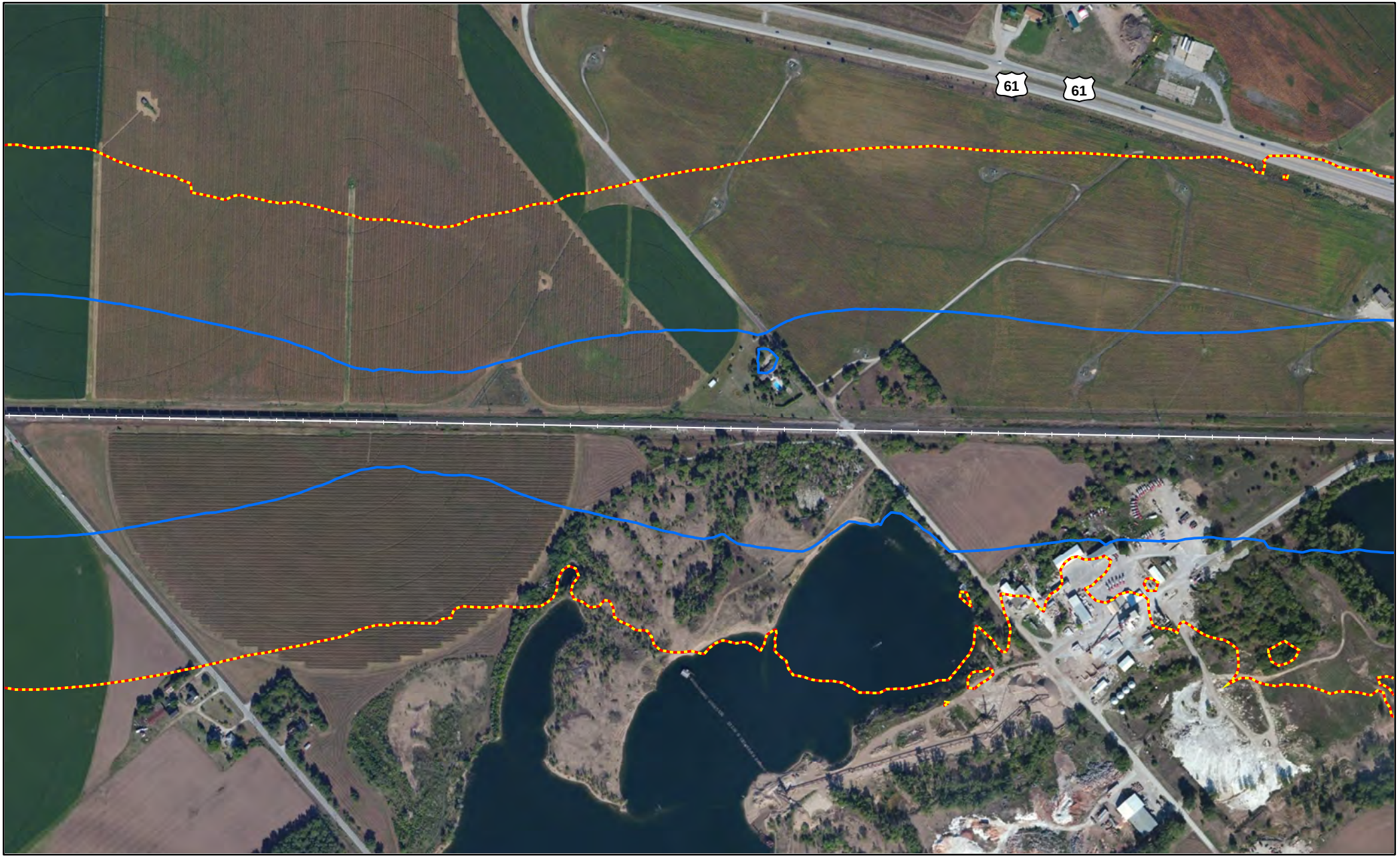
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Noise Contours
Muscatine County, IA

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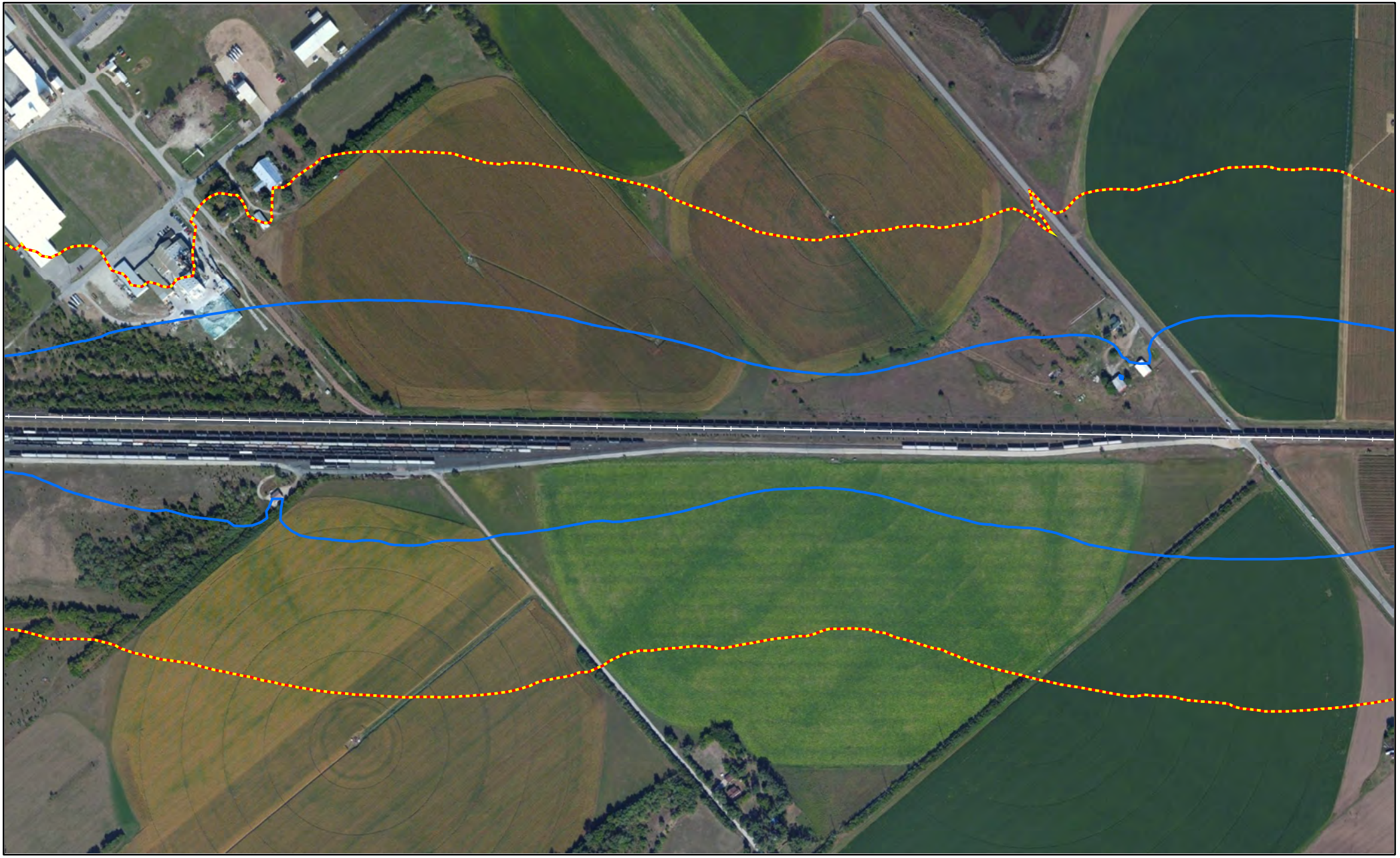
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Noise Contours
Muscatine County, IA

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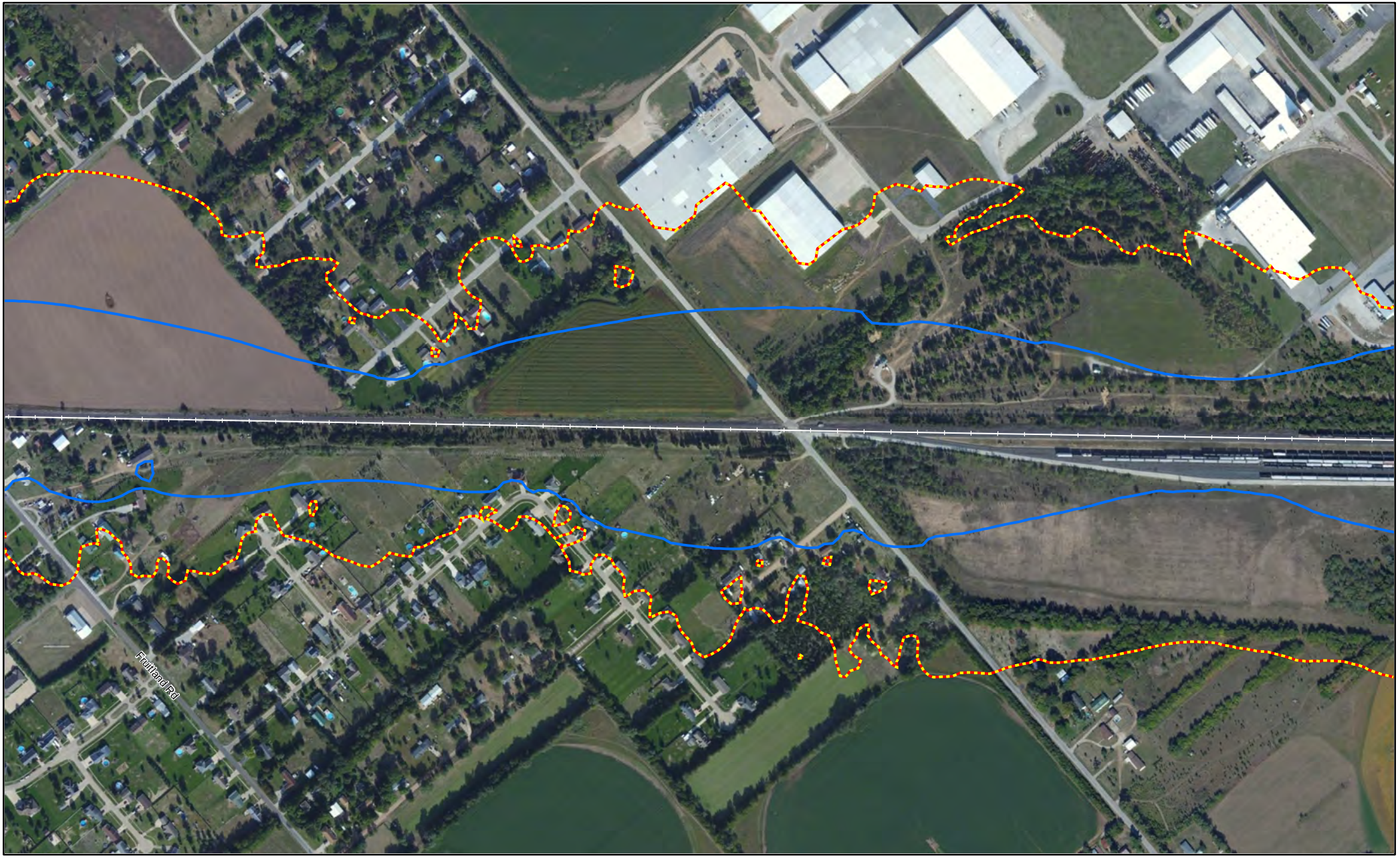
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Noise Contours
Muscatine County, IA

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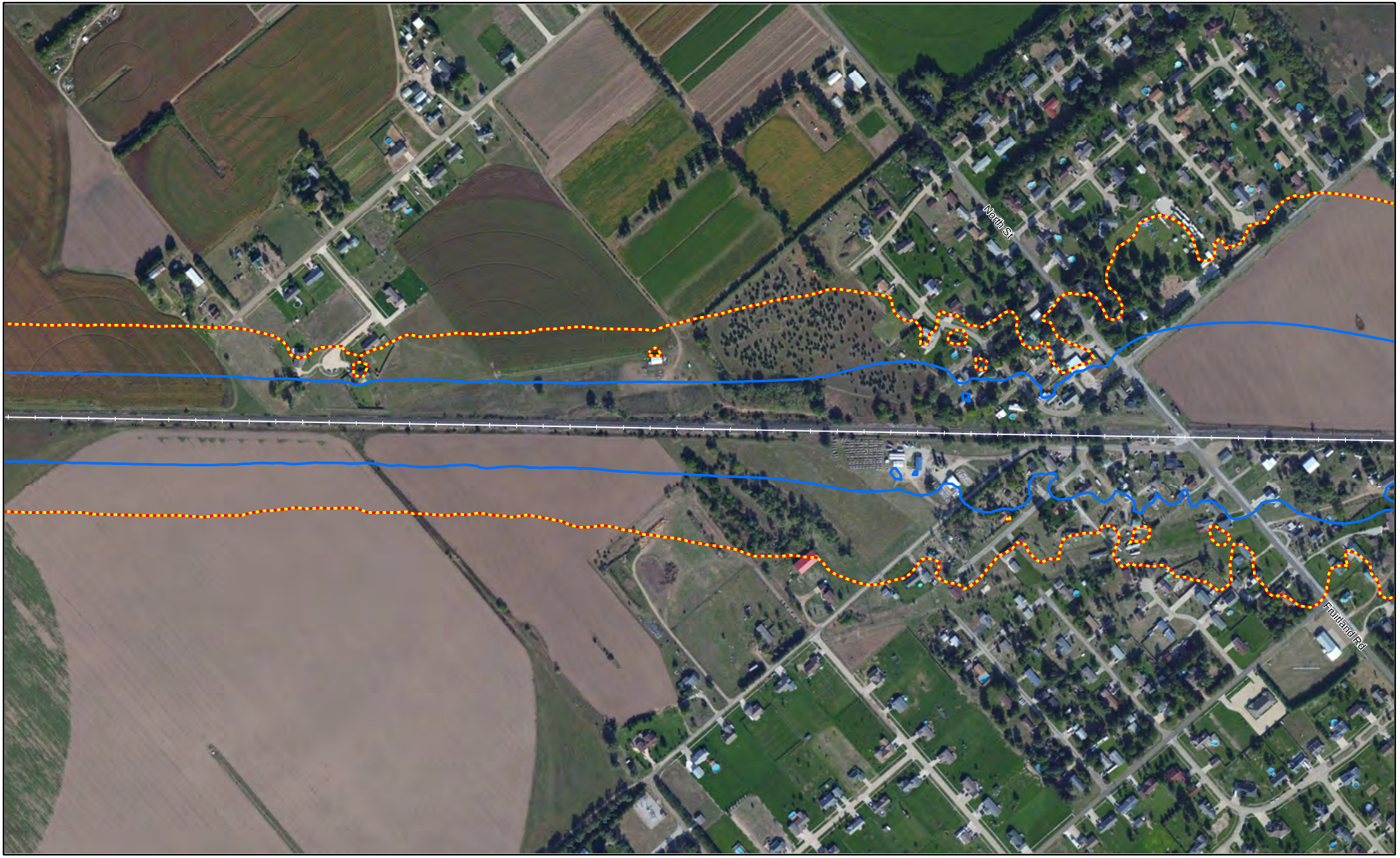
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Noise Contours
Muscatine County, IA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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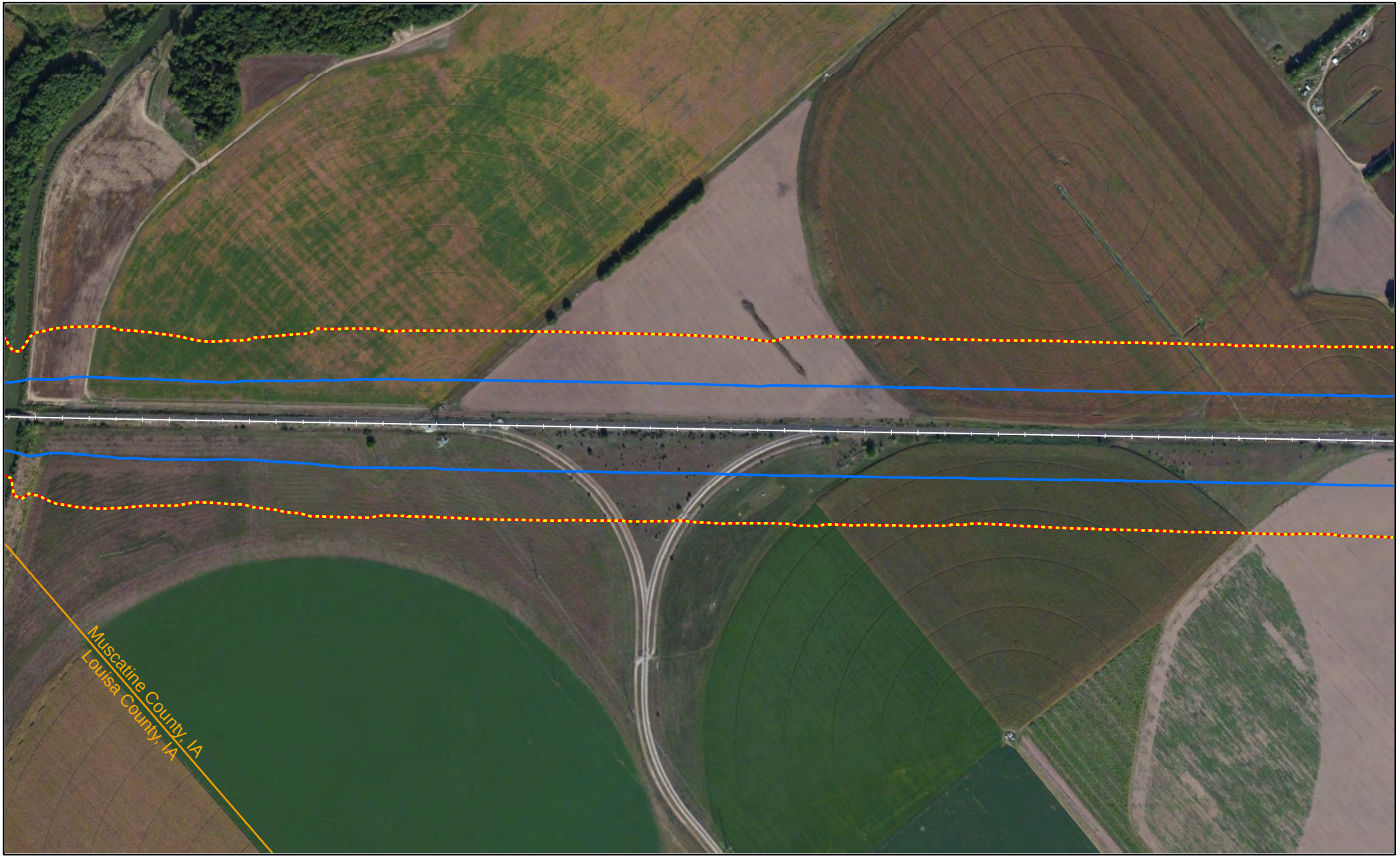
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Noise Contours
Muscatine County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Louisa County, IA

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

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Noise Impact (65 Ldn and 3 dBA Increase)

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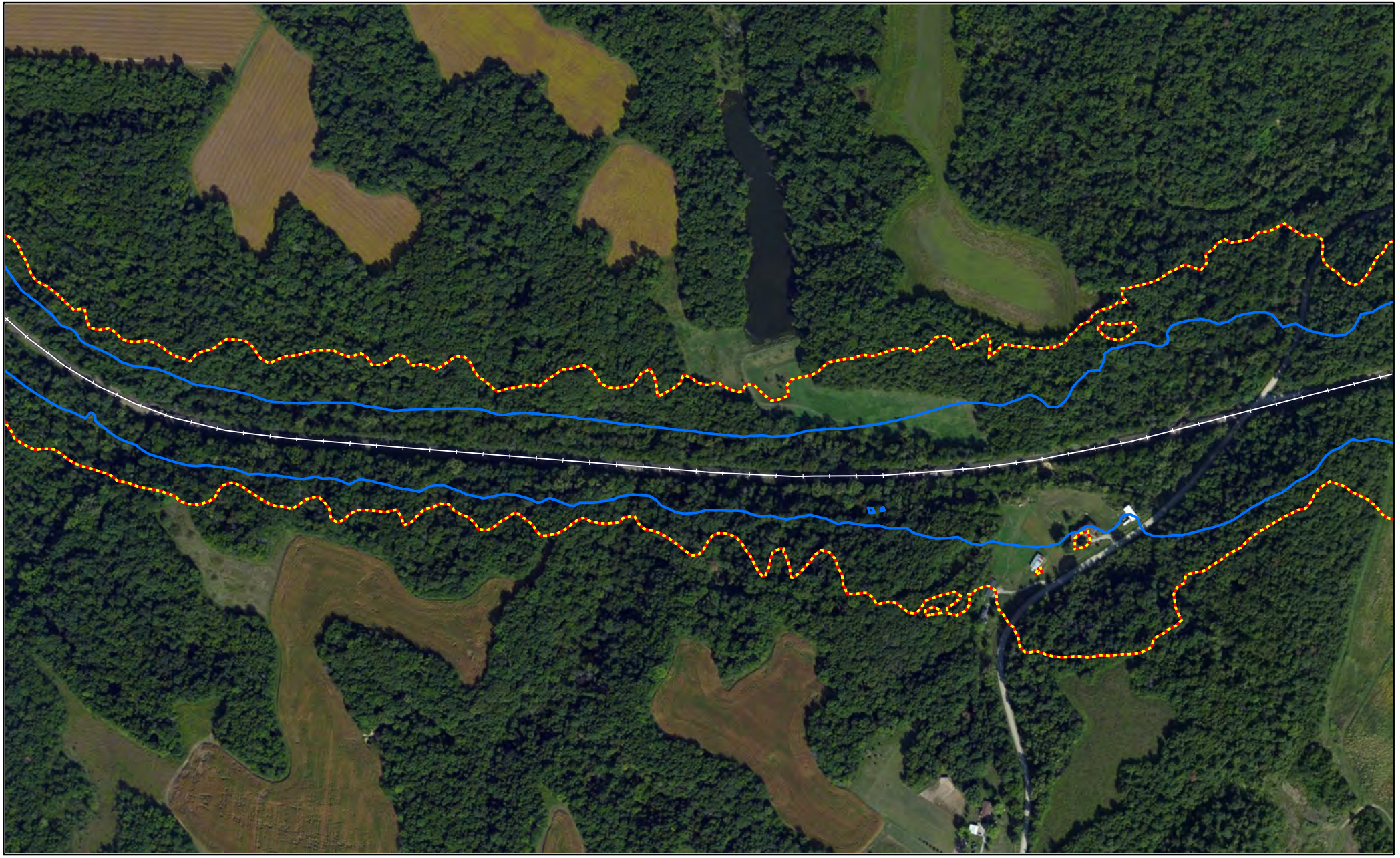


Noise Contours
Louisa County, IA

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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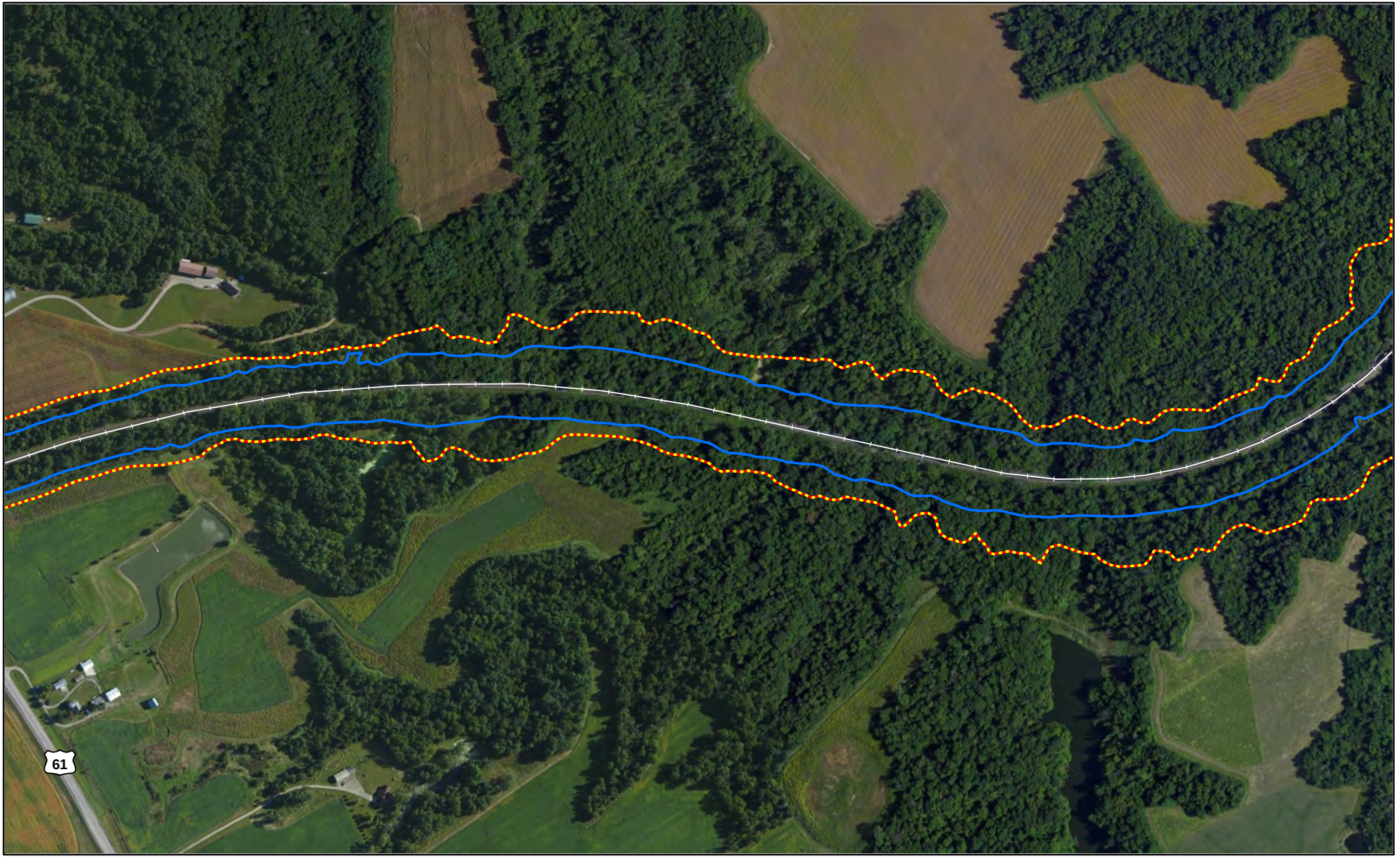
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Noise Contours
Louisa County, IA

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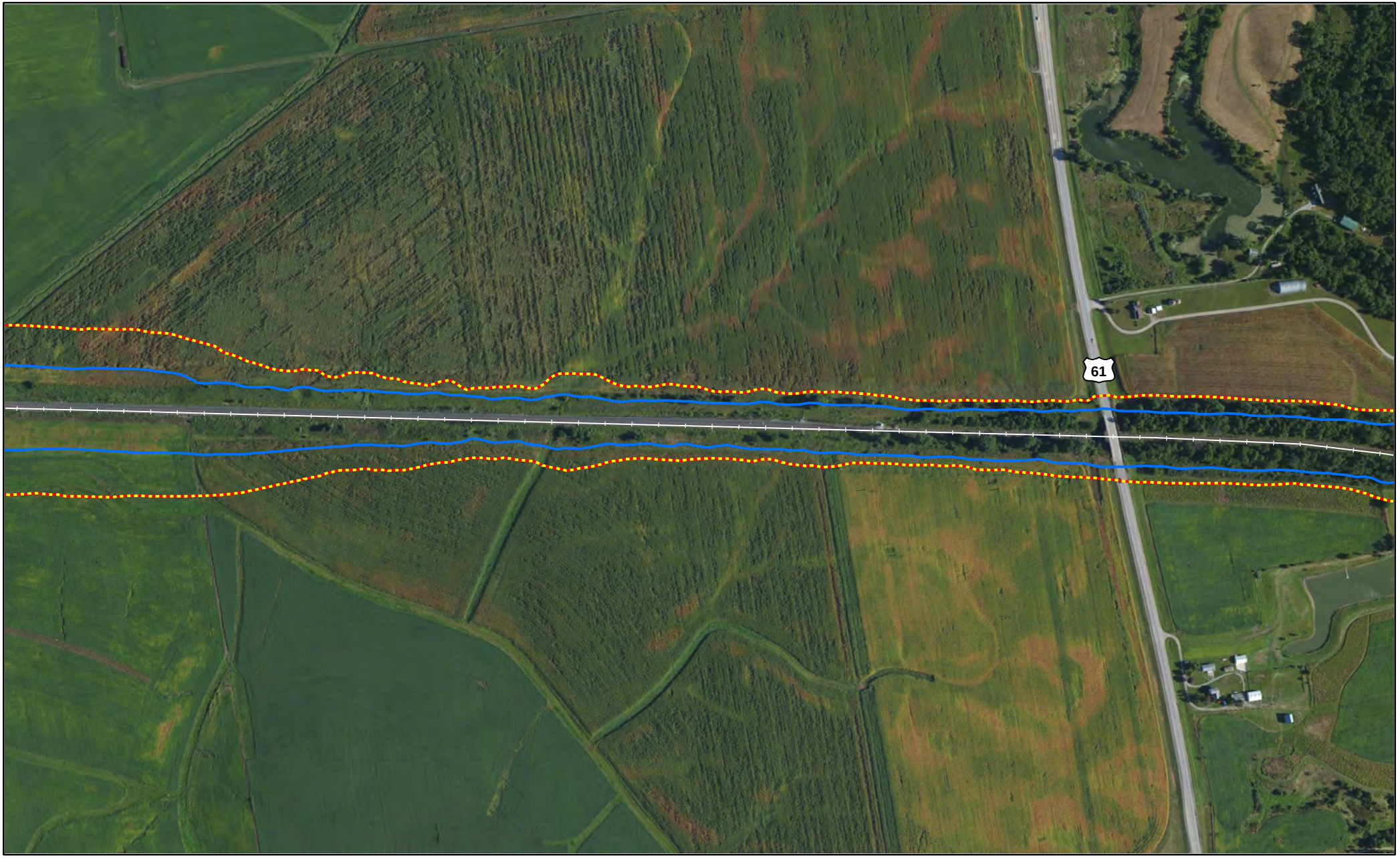
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Noise Contours
Louisa County, IA

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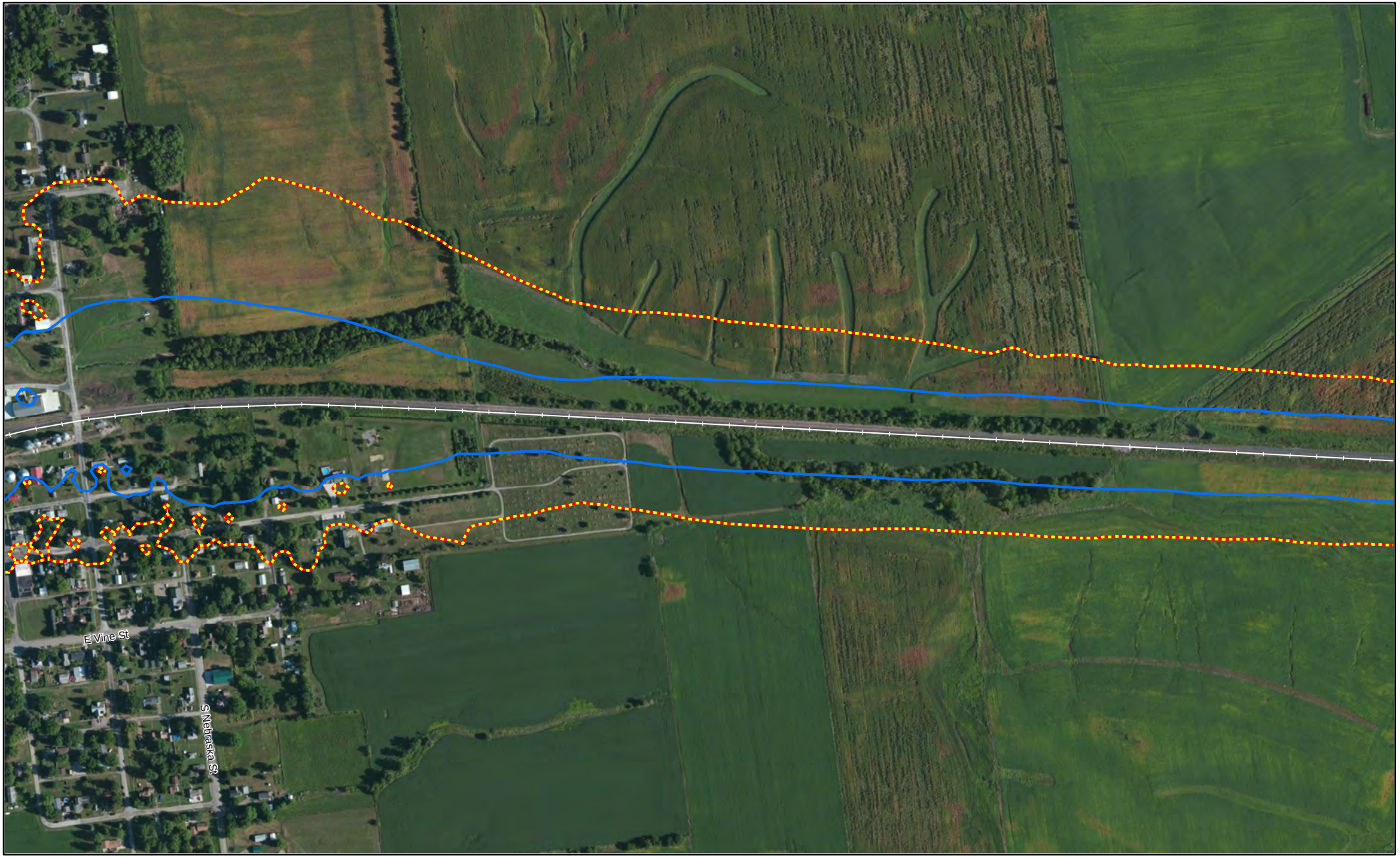
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Noise Contours
Louisa County, IA

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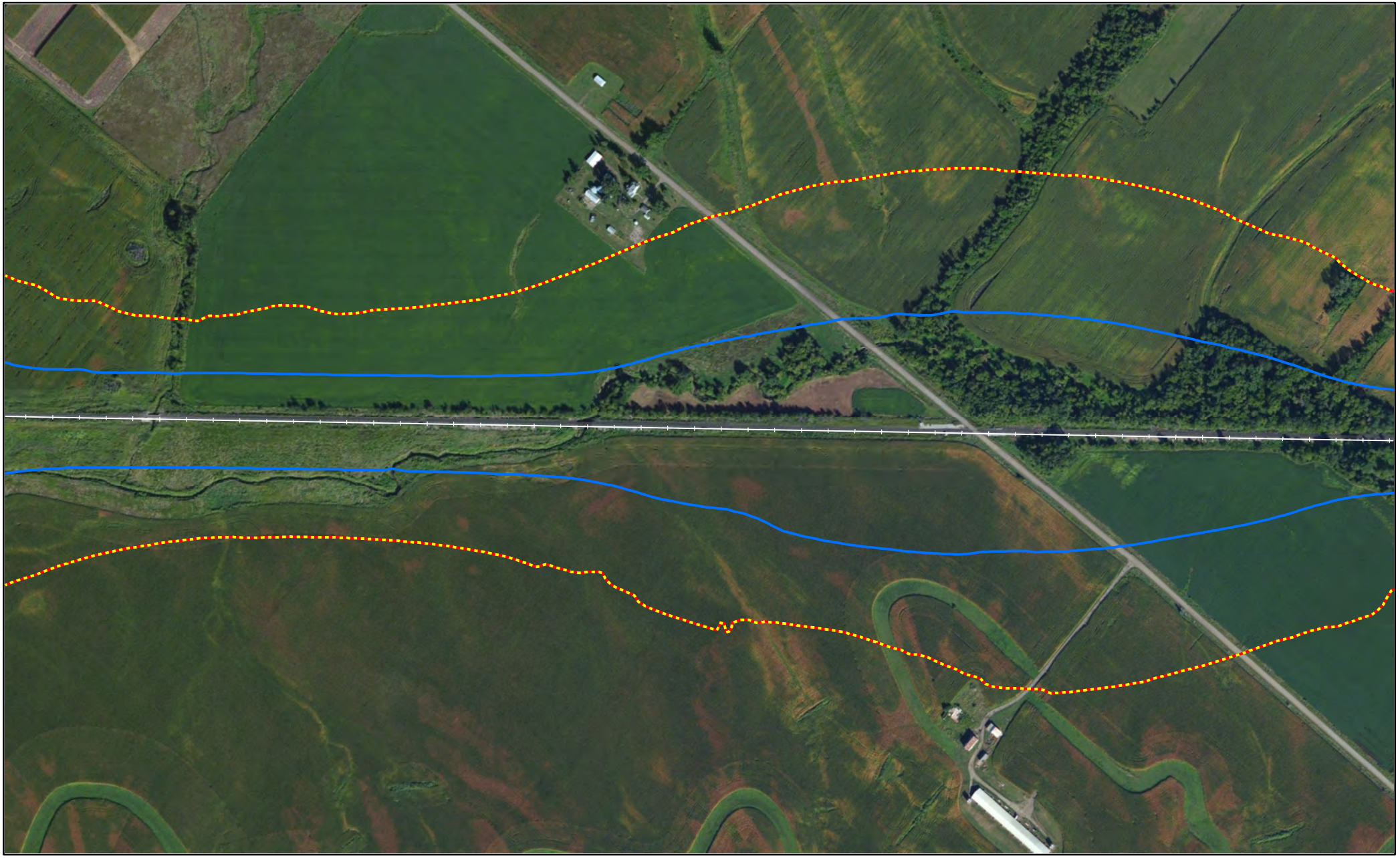
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Noise Contours
Louisa County, IA

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Louisa County, IA

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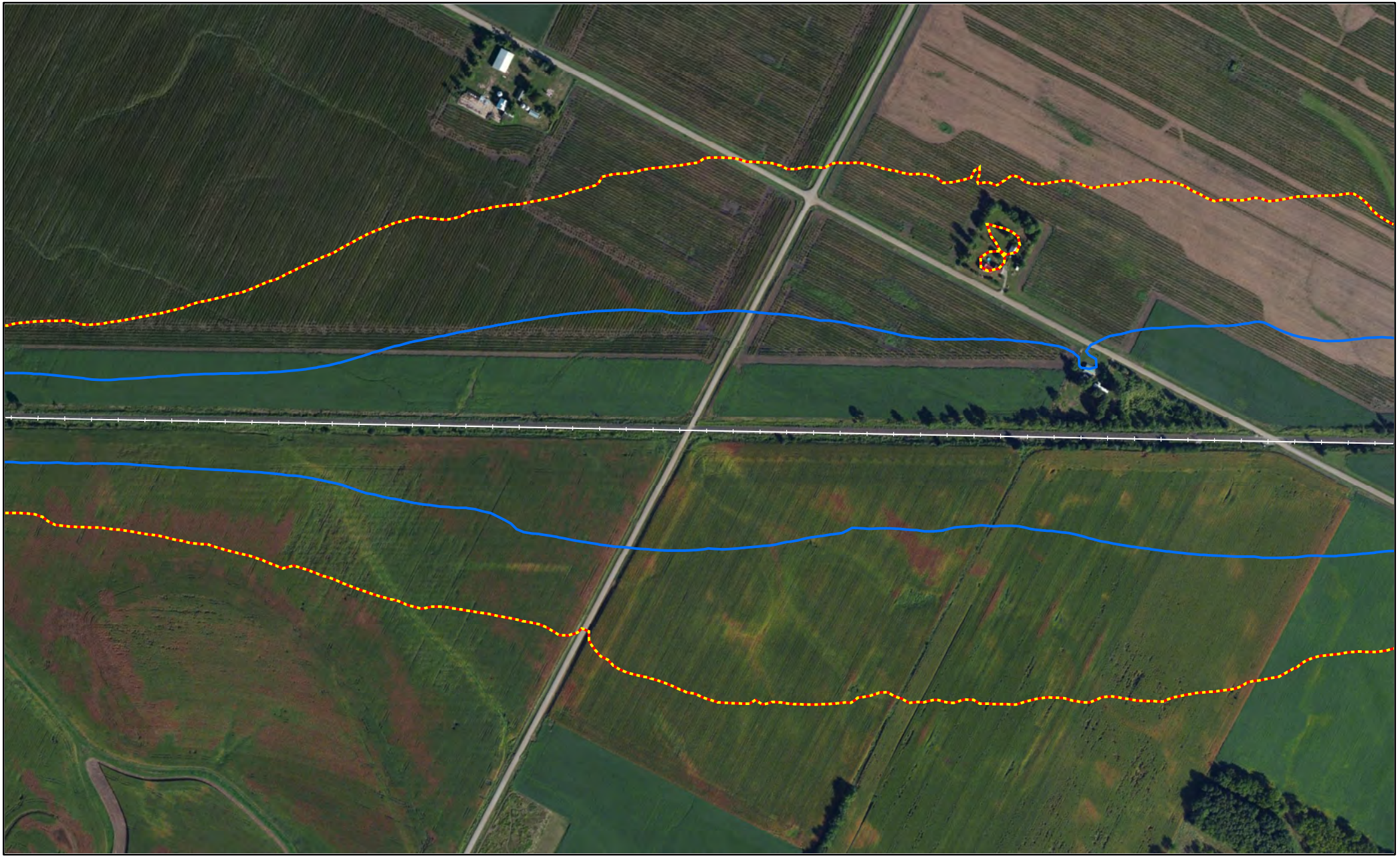
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Louisa County, IA

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Louisa County, IA

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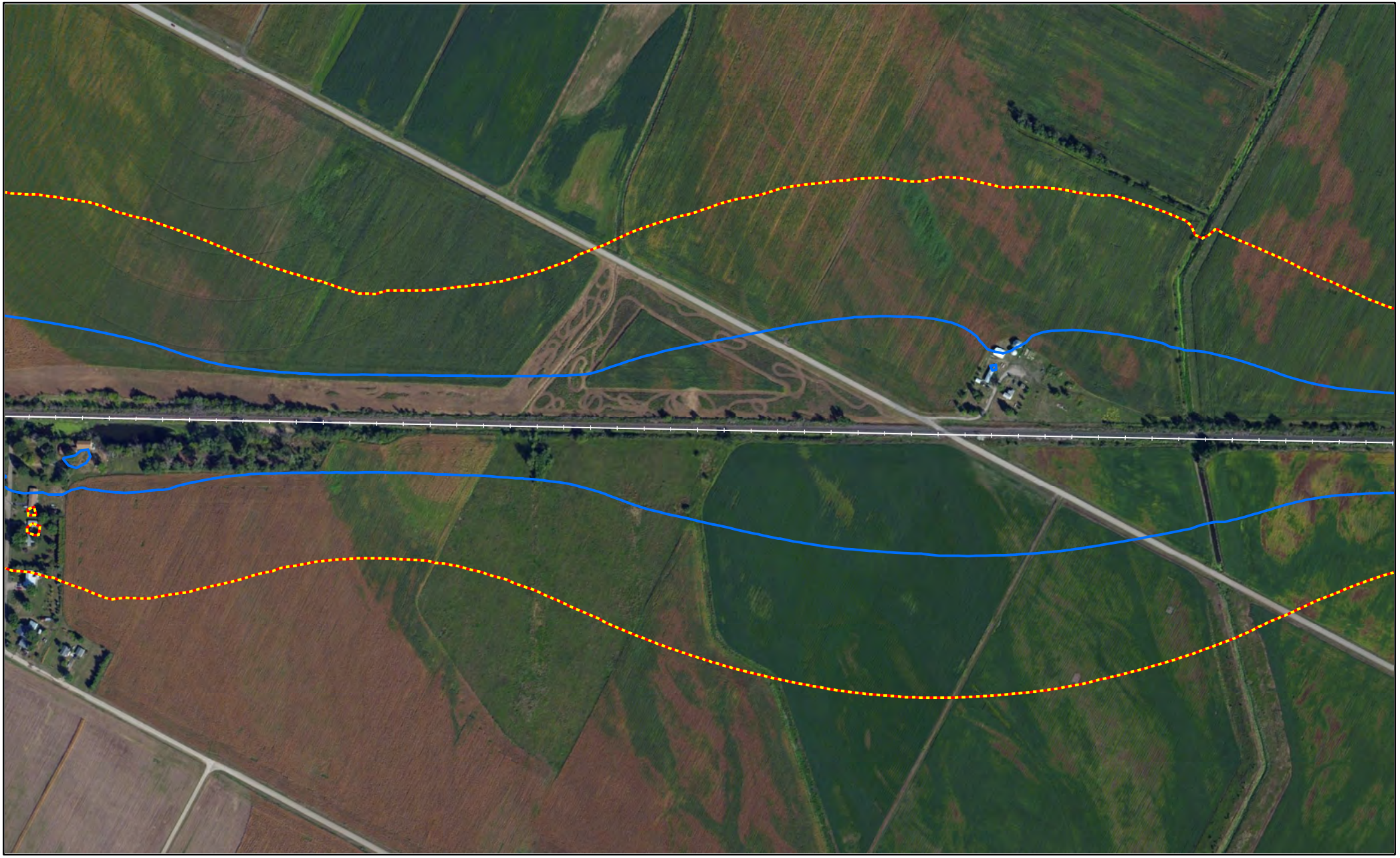
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Proposed Acquisition Noise (65 Ldn)

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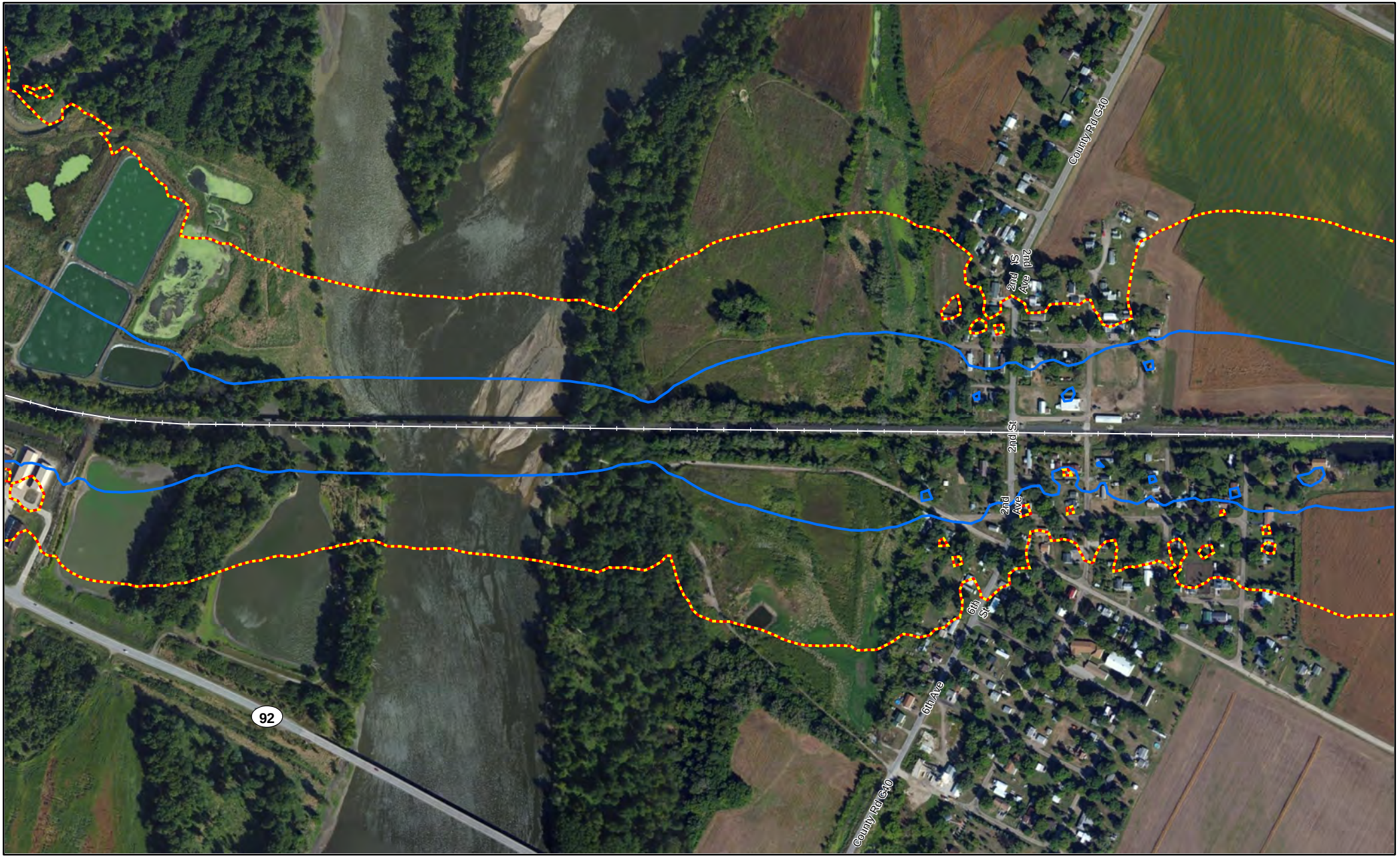
Tracks

Source: ESRI.



Noise Contours
Louisa County, IA

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

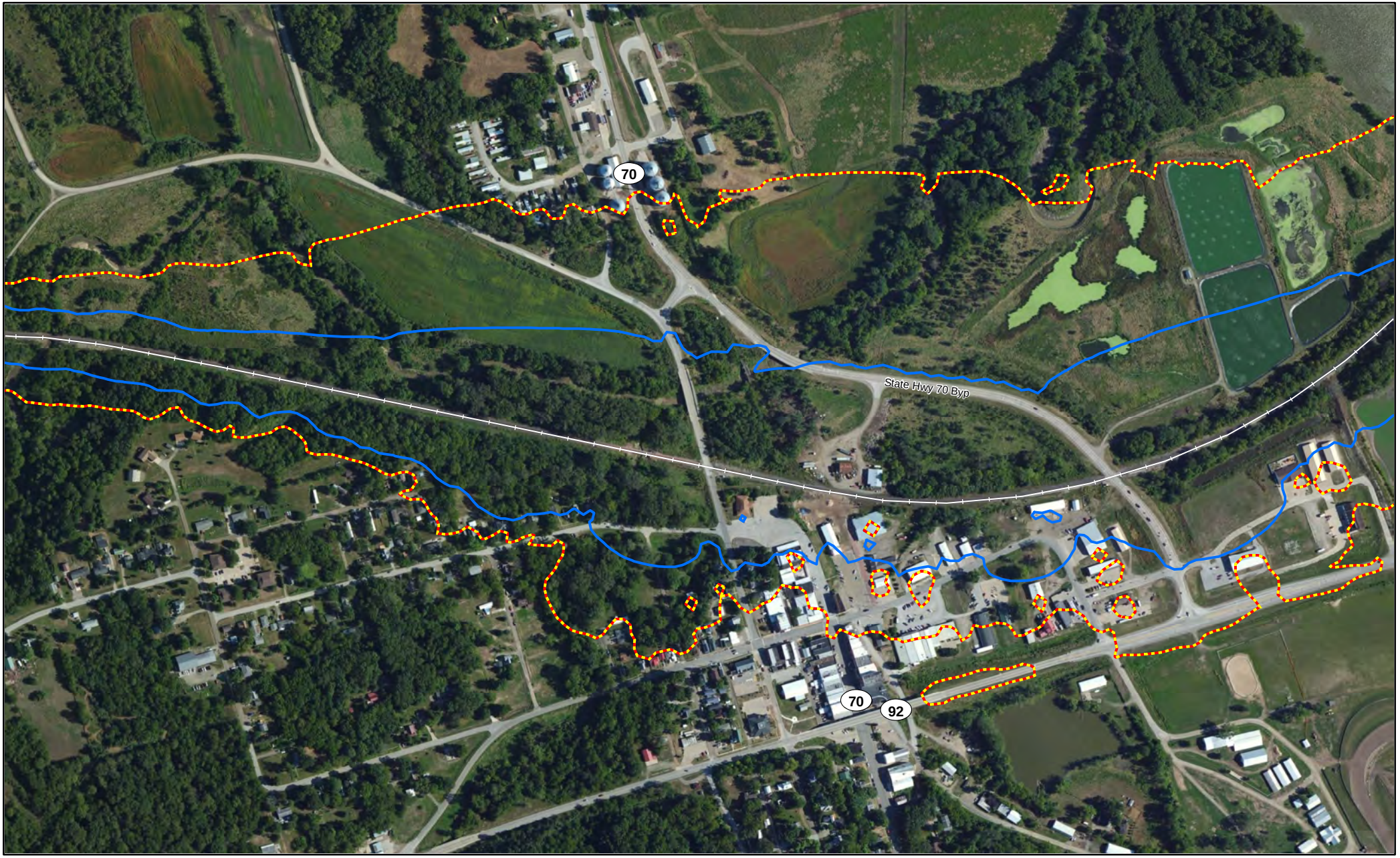
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Noise Contours
Louisa County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

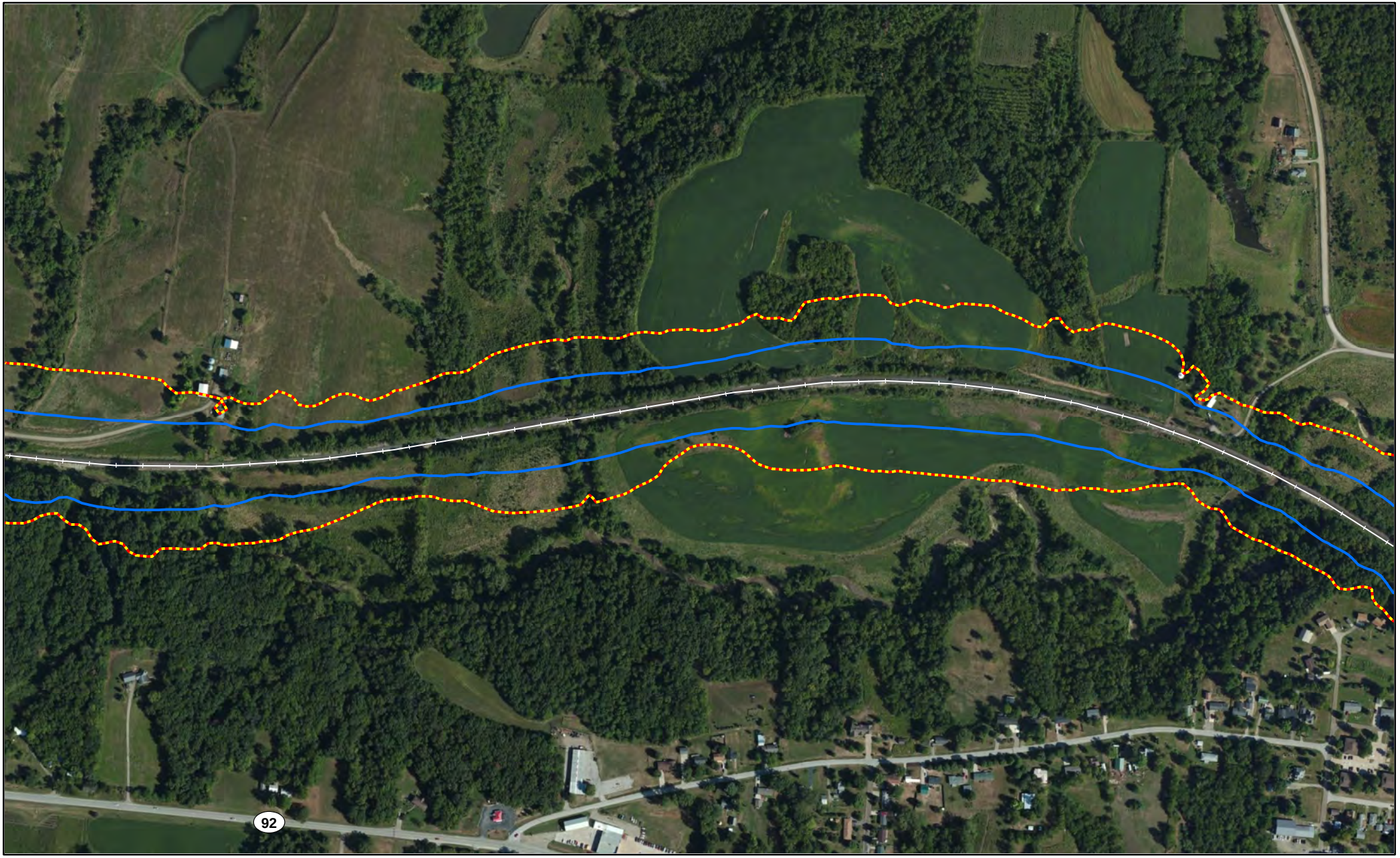
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Noise Contours
Louisa County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

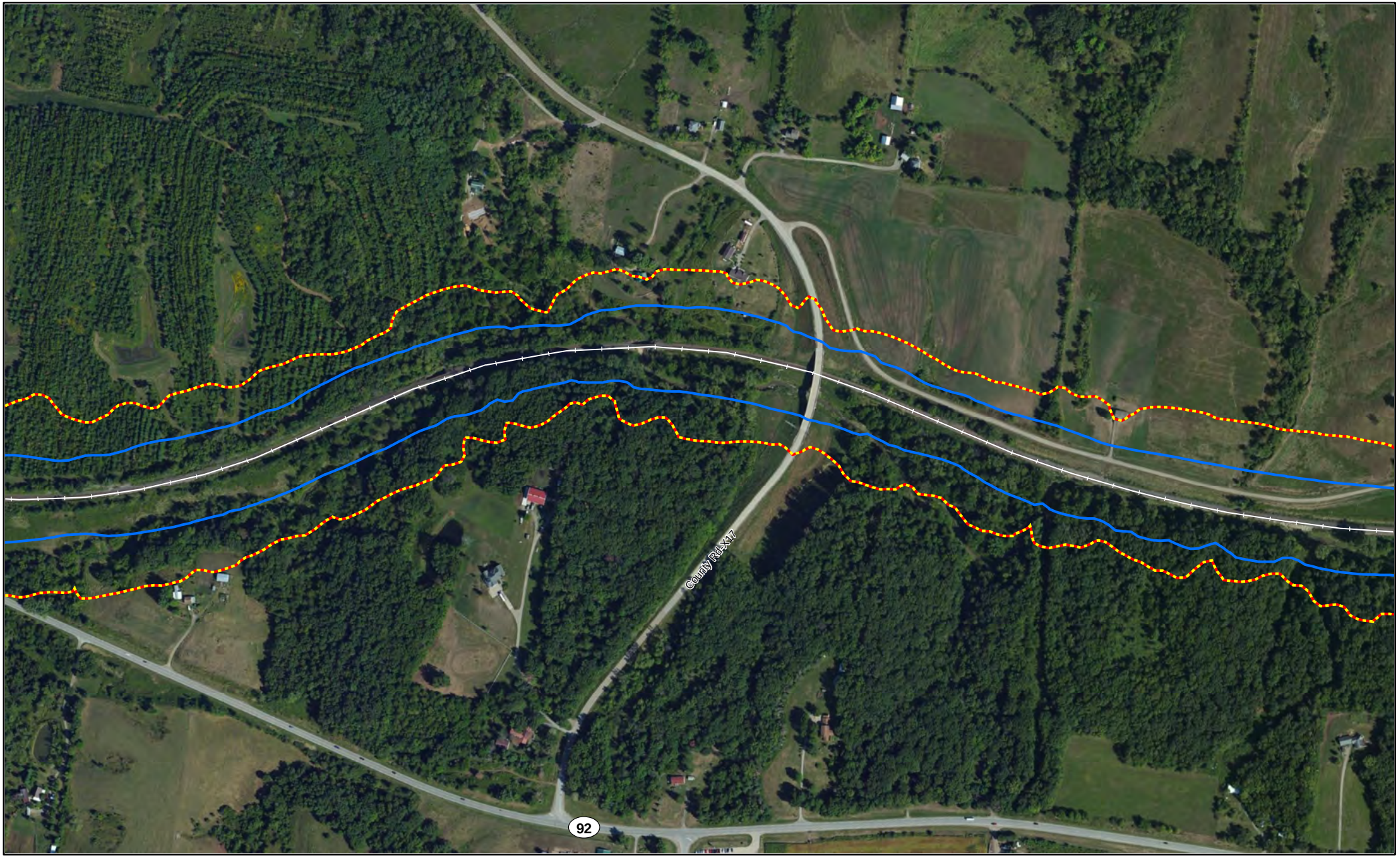
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Noise Contours
Louisa County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

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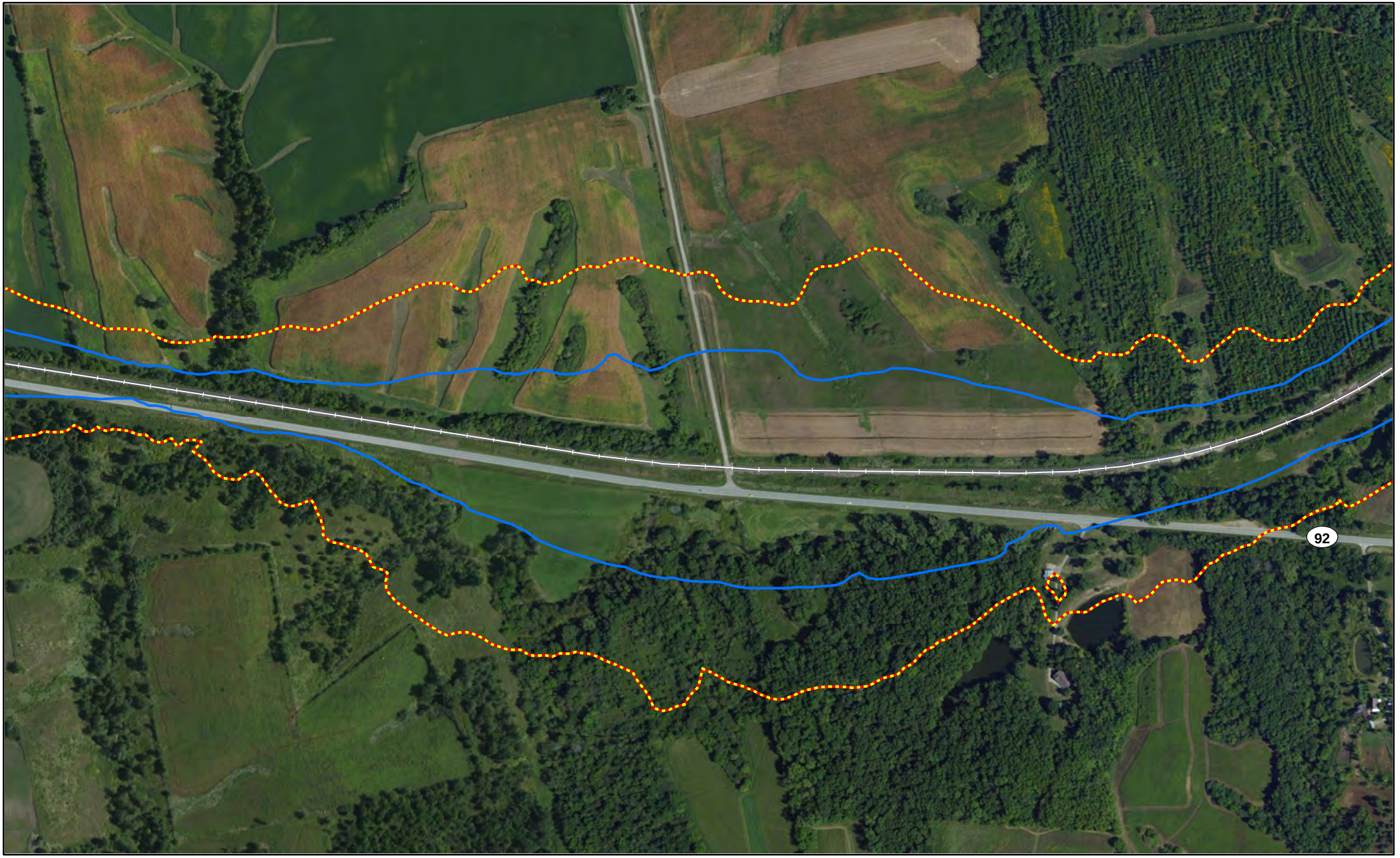
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Source: ESRI.



Noise Contours
Louisa County, IA

Miles
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No-Action Alternative Noise (65 Ldn)

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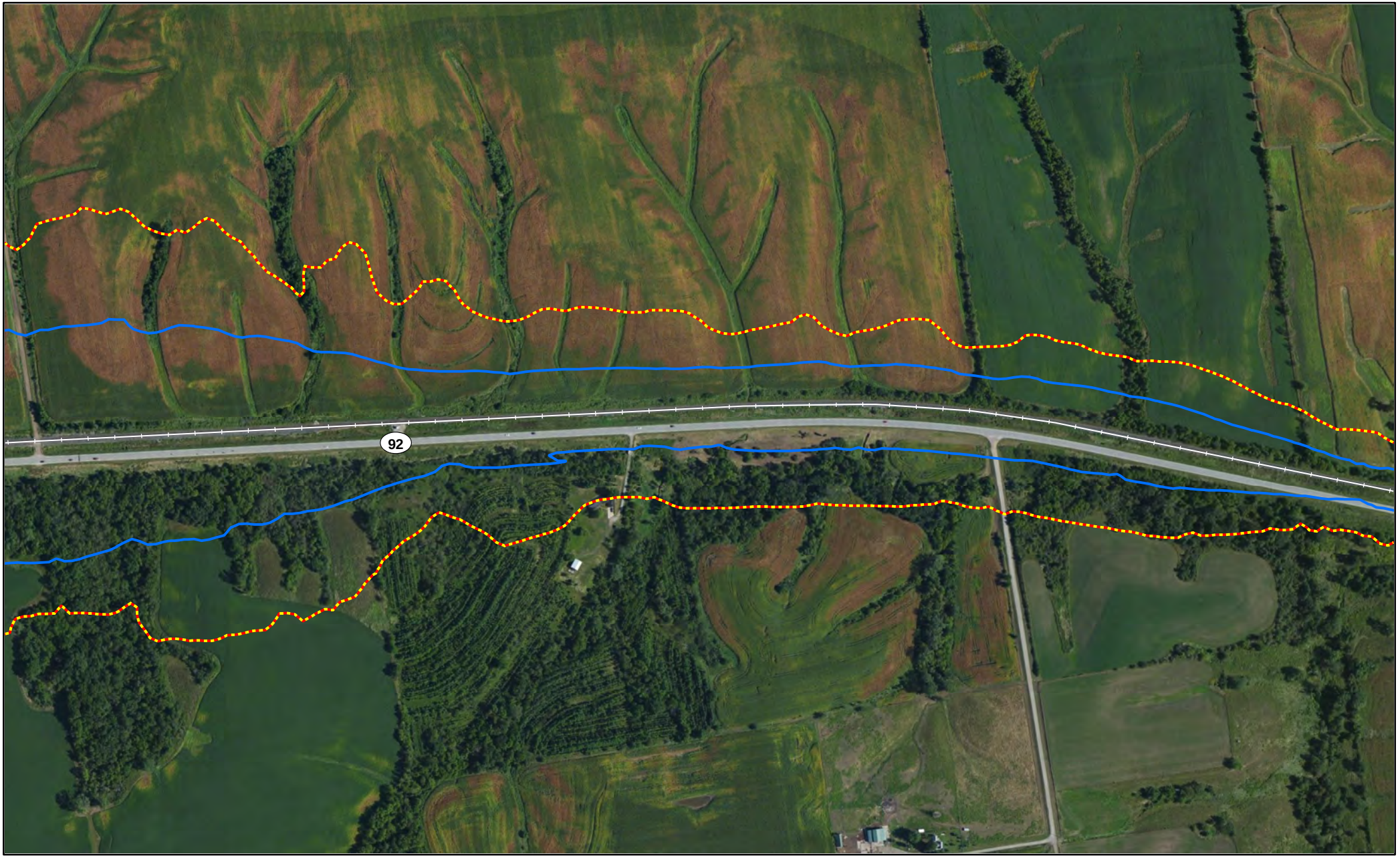
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Noise Contours
Louisa County, IA

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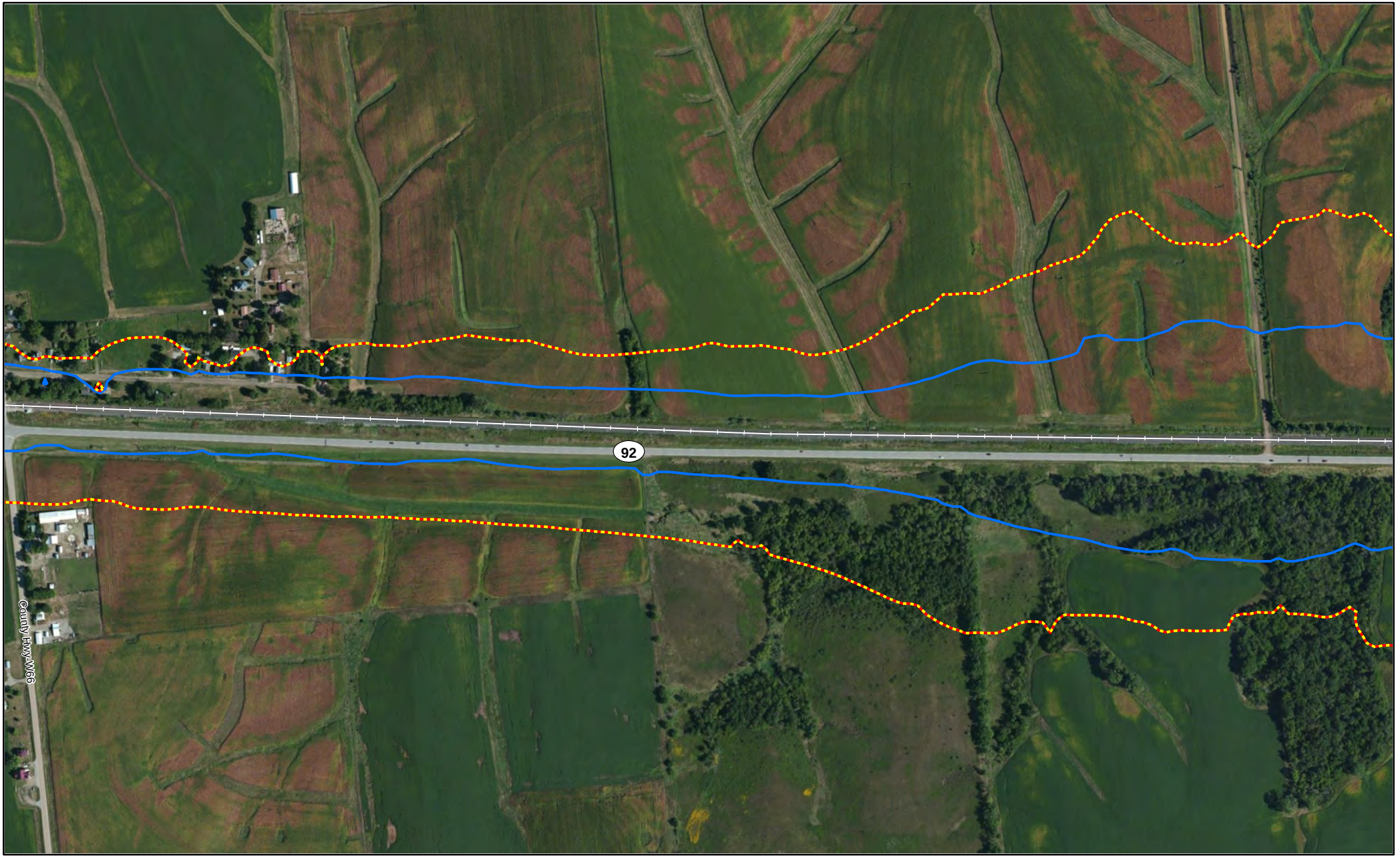
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Louisa County, IA

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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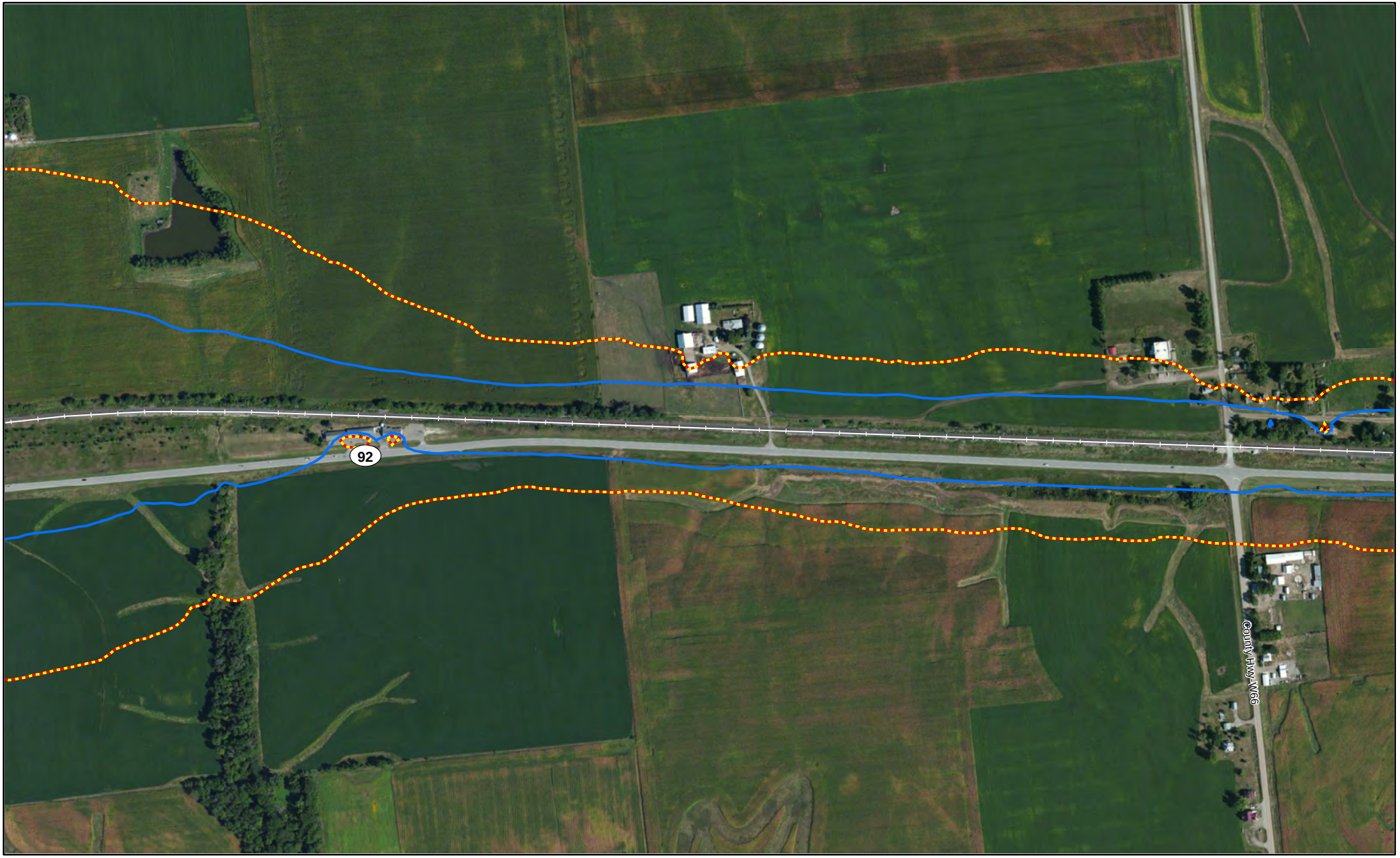
Tracks

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Noise Contours
Louisa County, IA

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0 0.05 0.1



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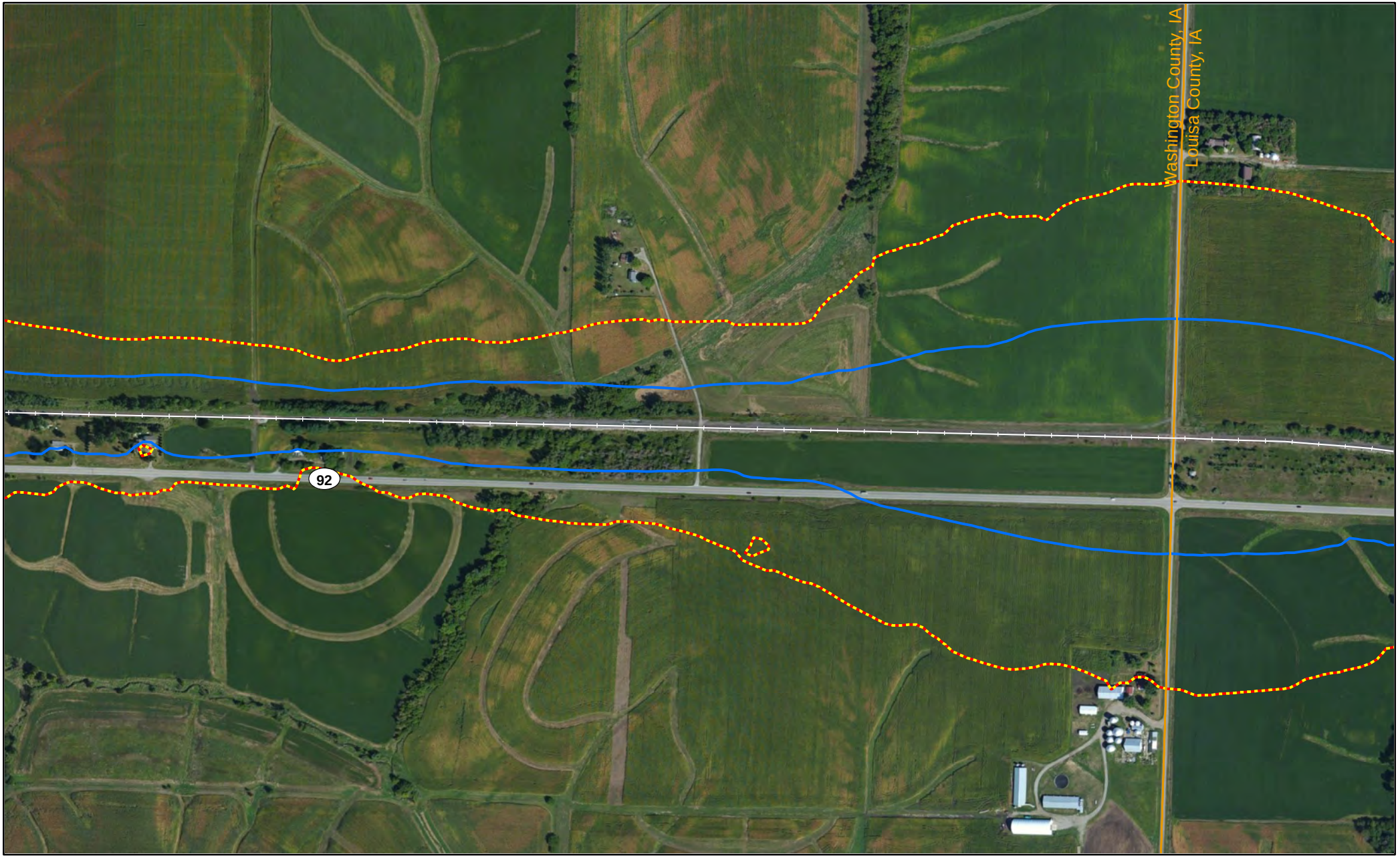
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Noise Contours
Louisa County, IA

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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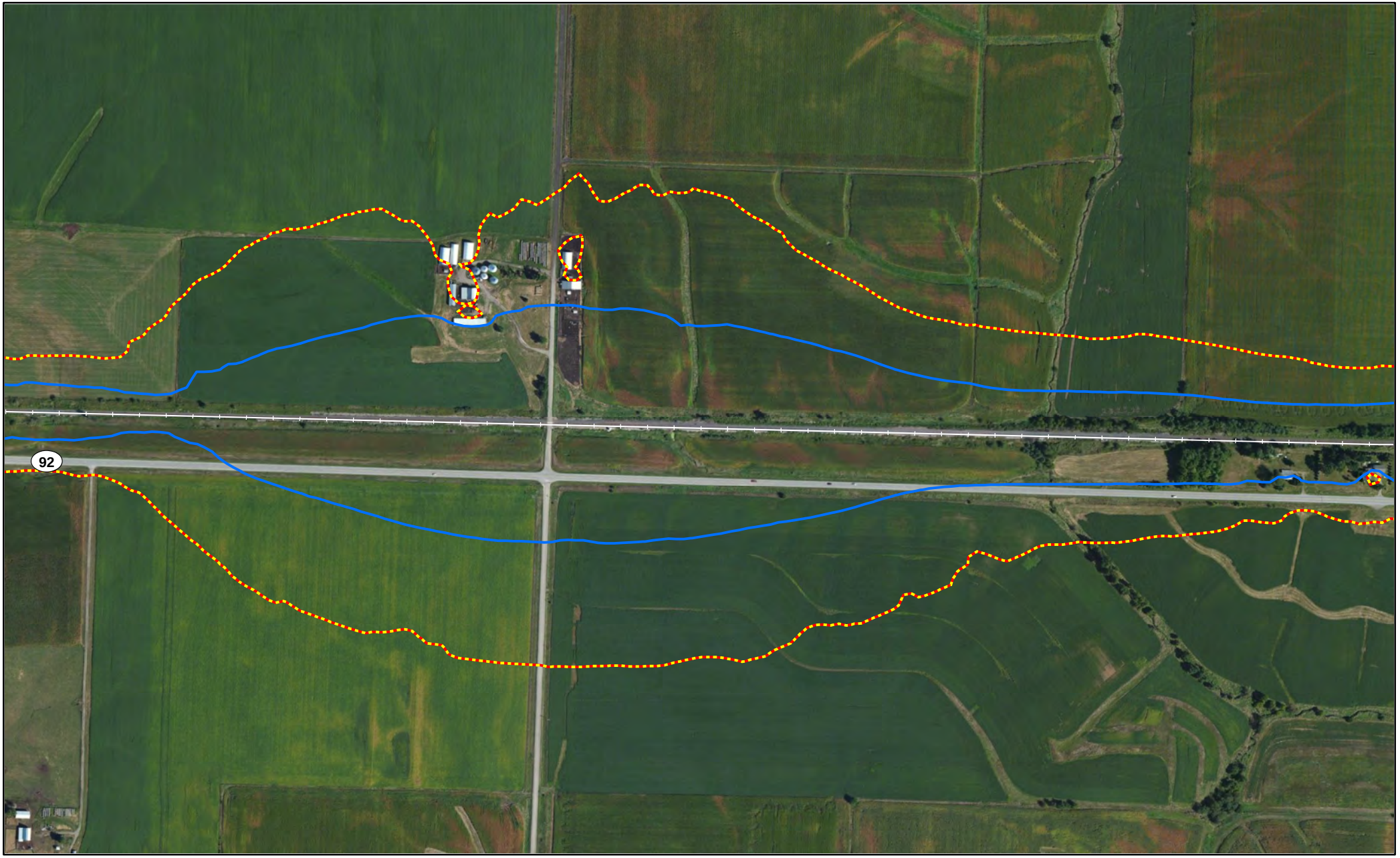
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Noise Contours
Louisa County, IA

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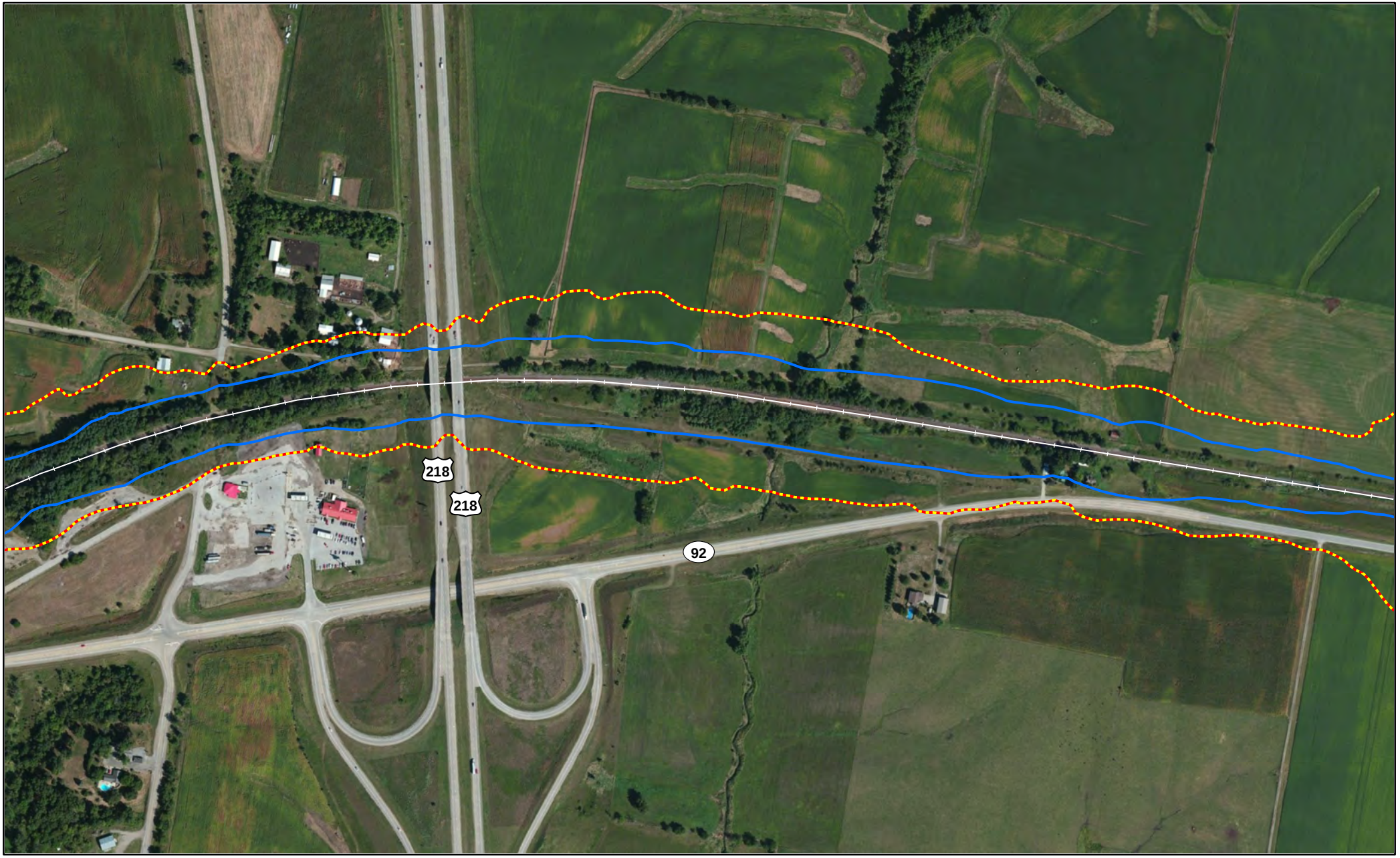
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Noise Contours
Washington County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



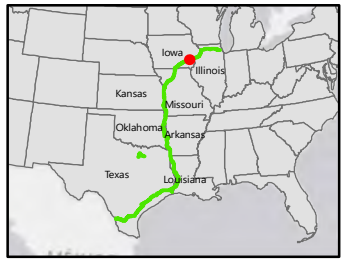
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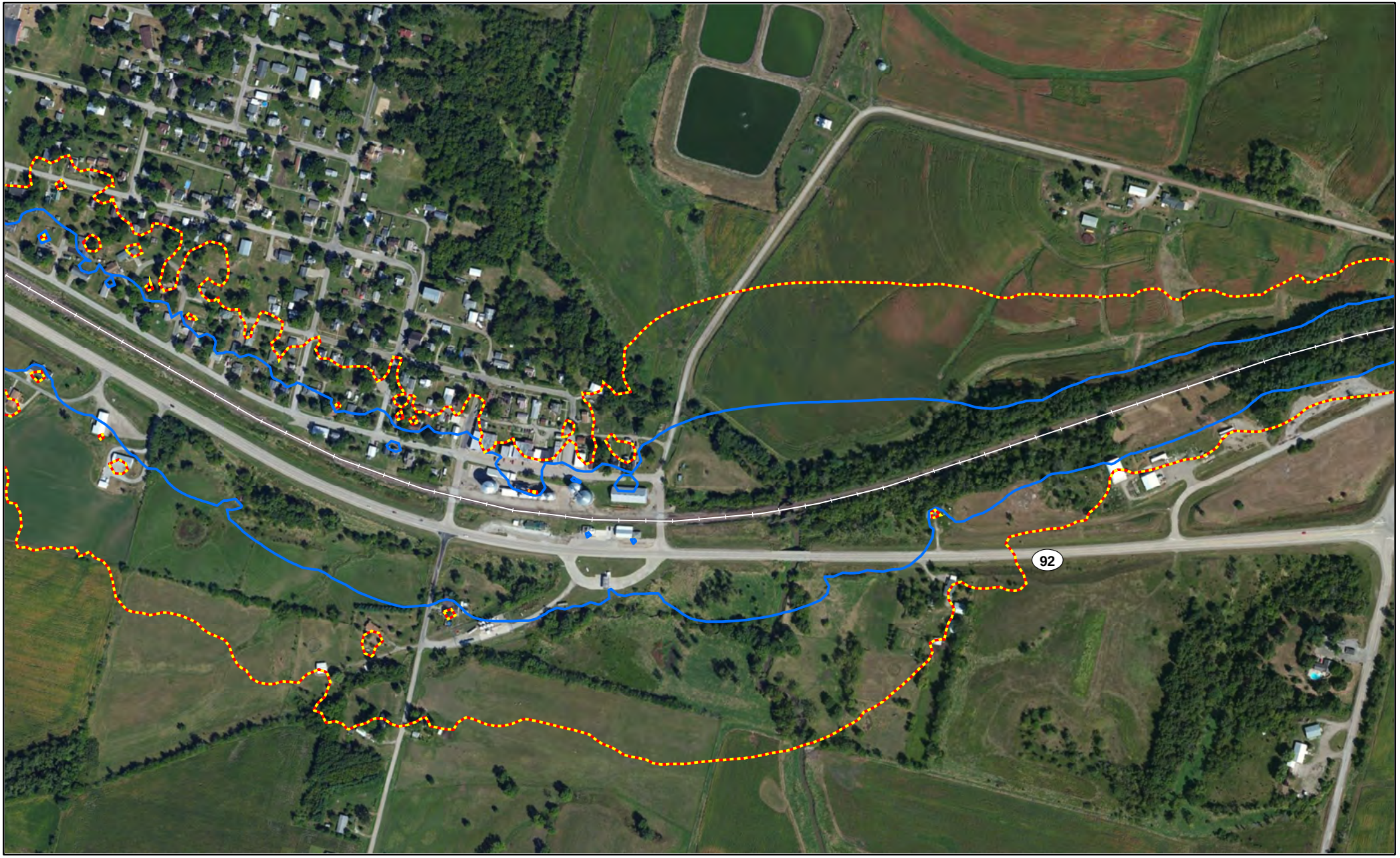
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Noise Contours
Washington County, IA

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



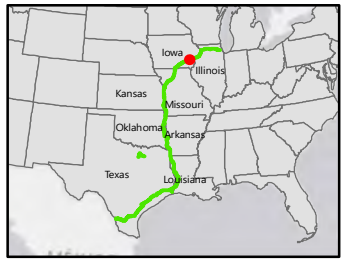
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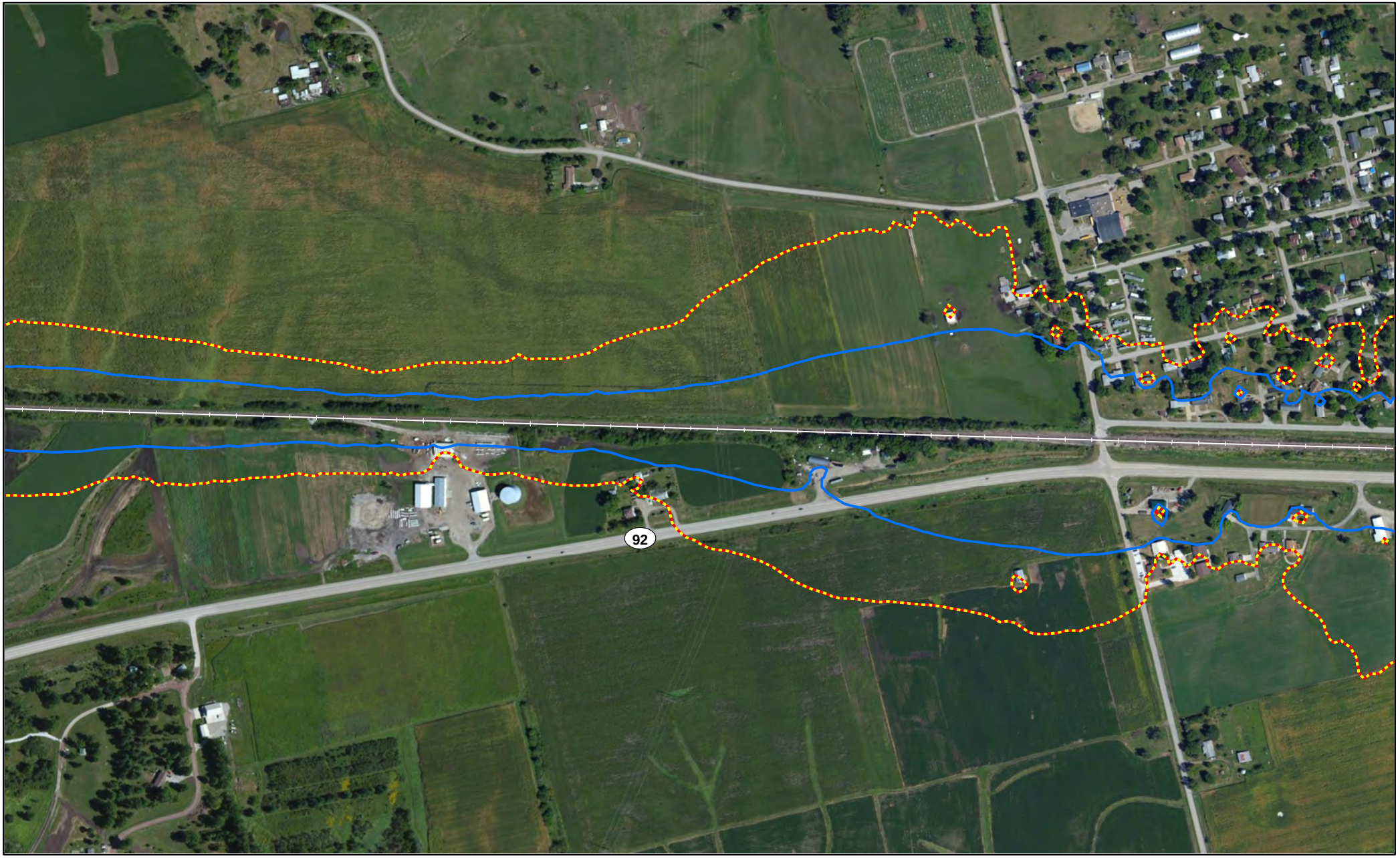
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Noise Contours
Washington County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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Washington County, IA

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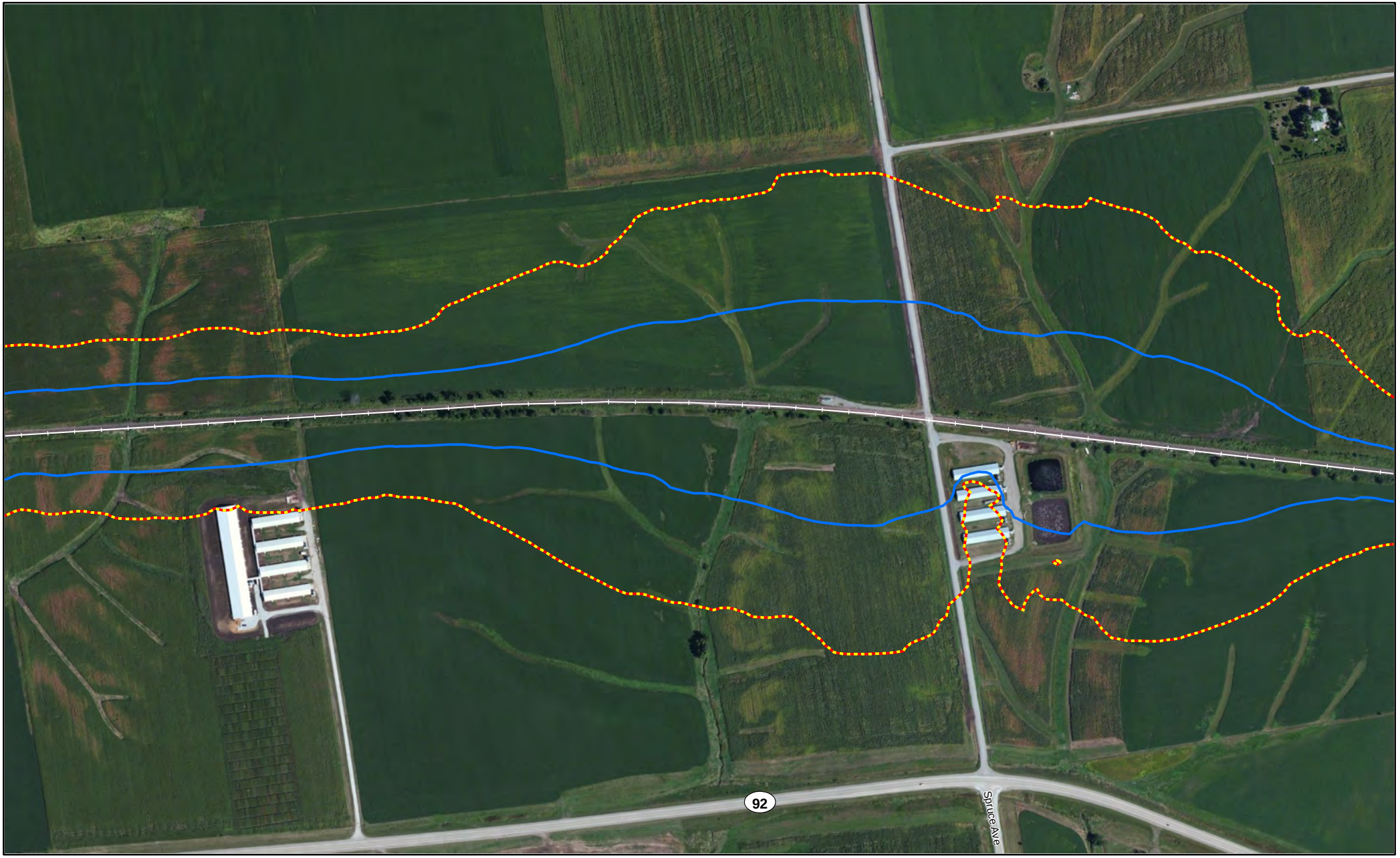
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Noise Contours
Washington County, IA

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



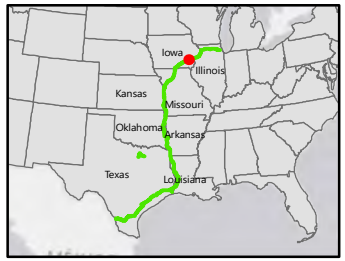
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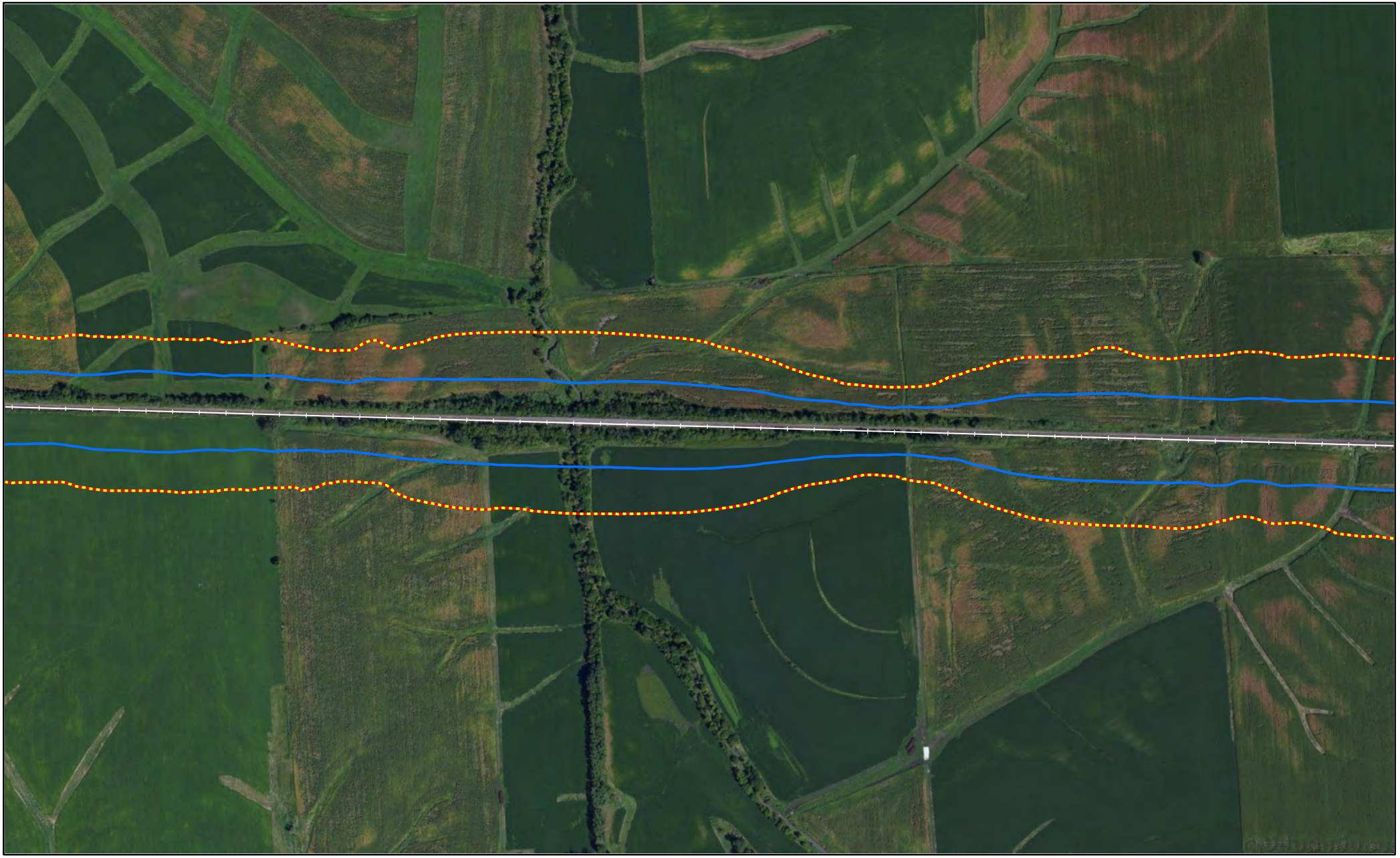
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Noise Contours
Washington County, IA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



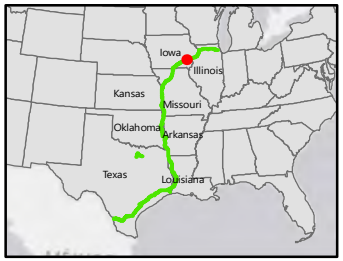
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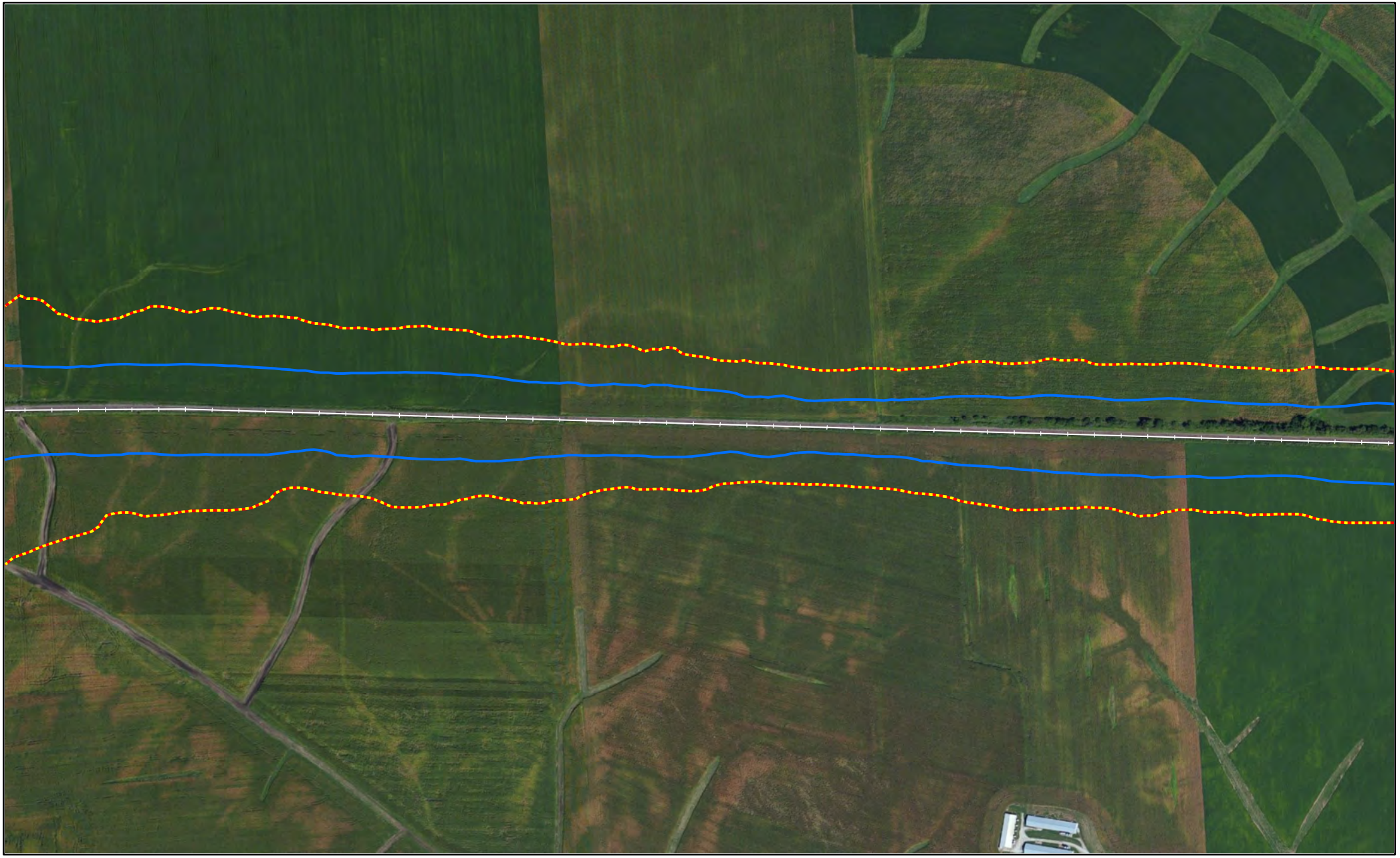
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Noise Contours
Washington County, IA

Miles
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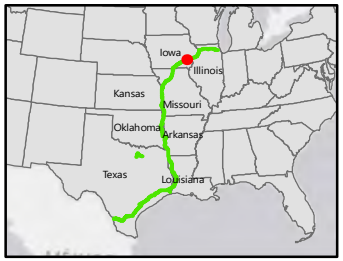
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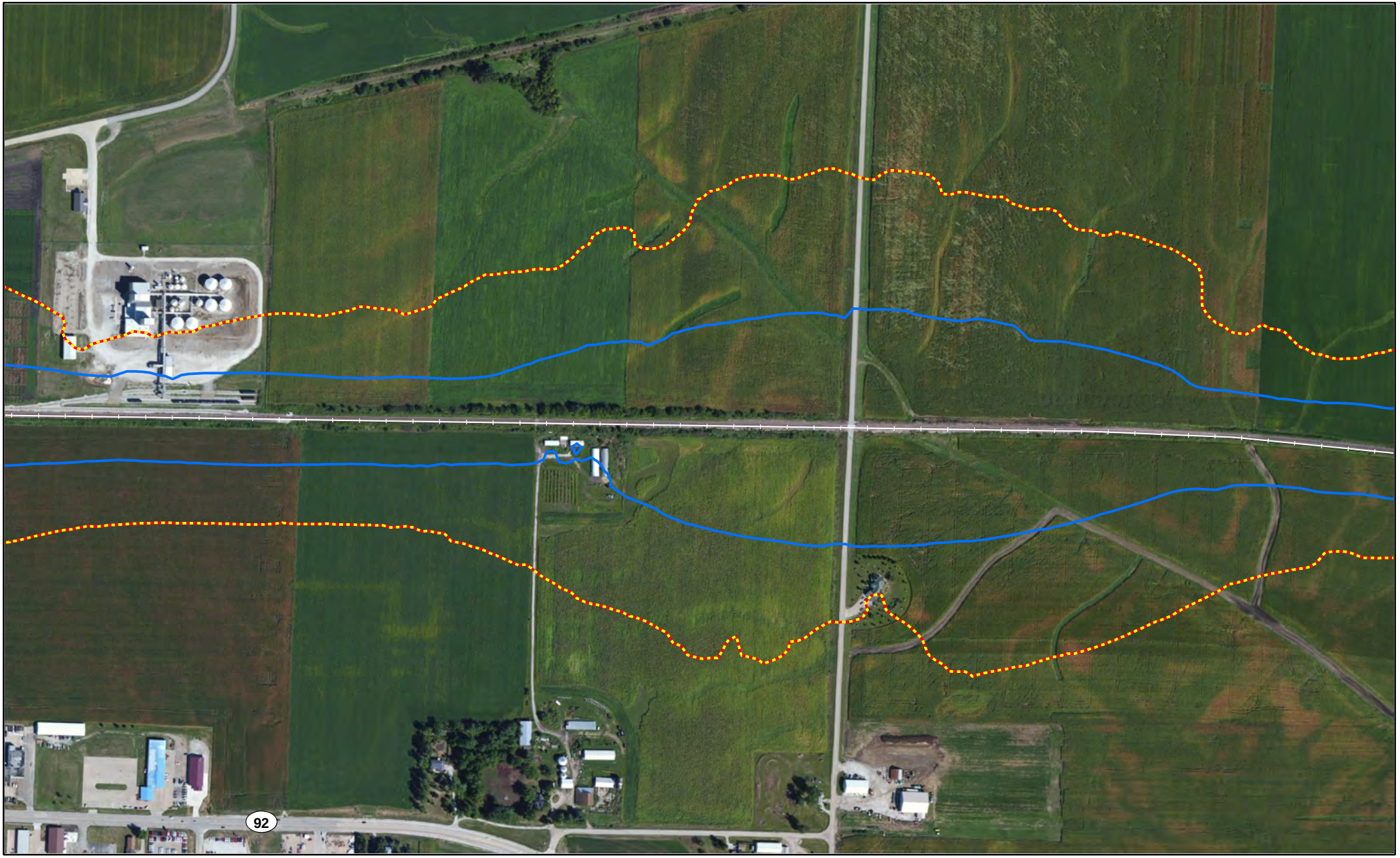
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Noise Contours
Washington County, IA

Miles
0 0.05 0.1



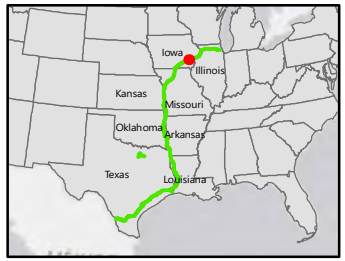
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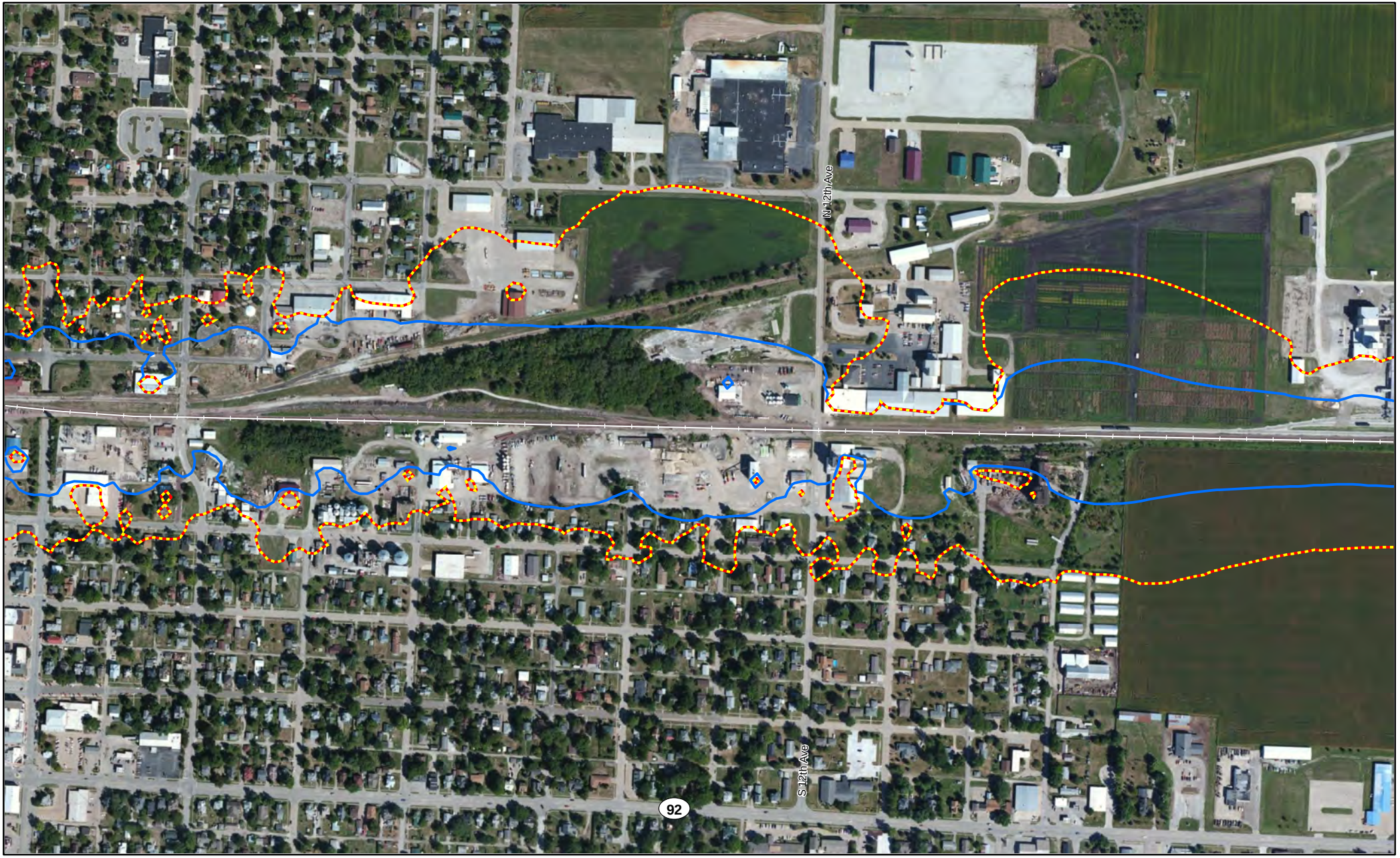
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Noise Contours
Washington County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



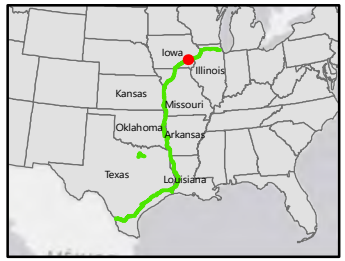
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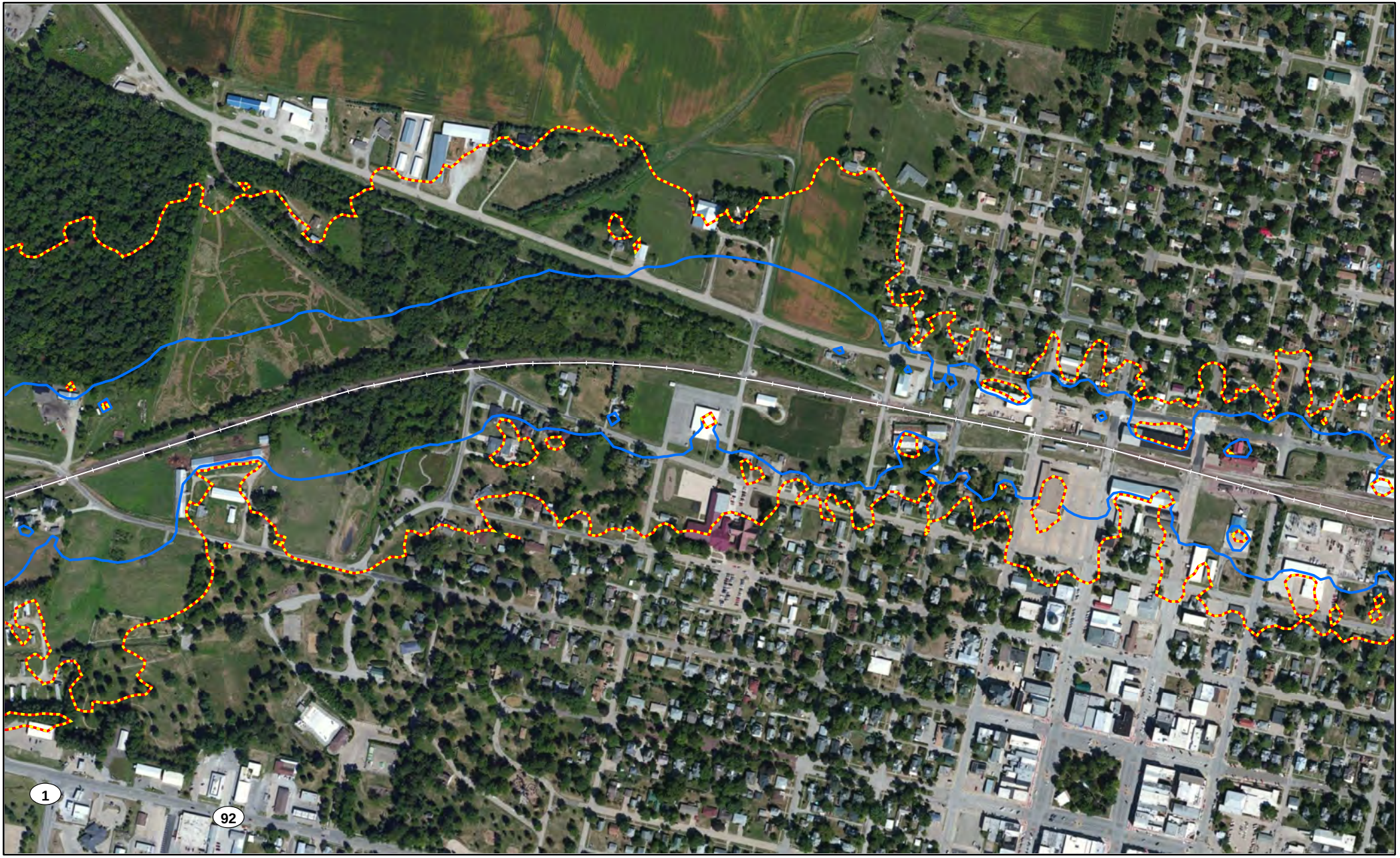
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Noise Contours
Washington County, IA

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



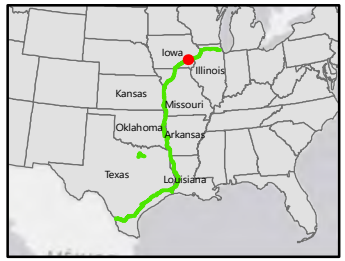
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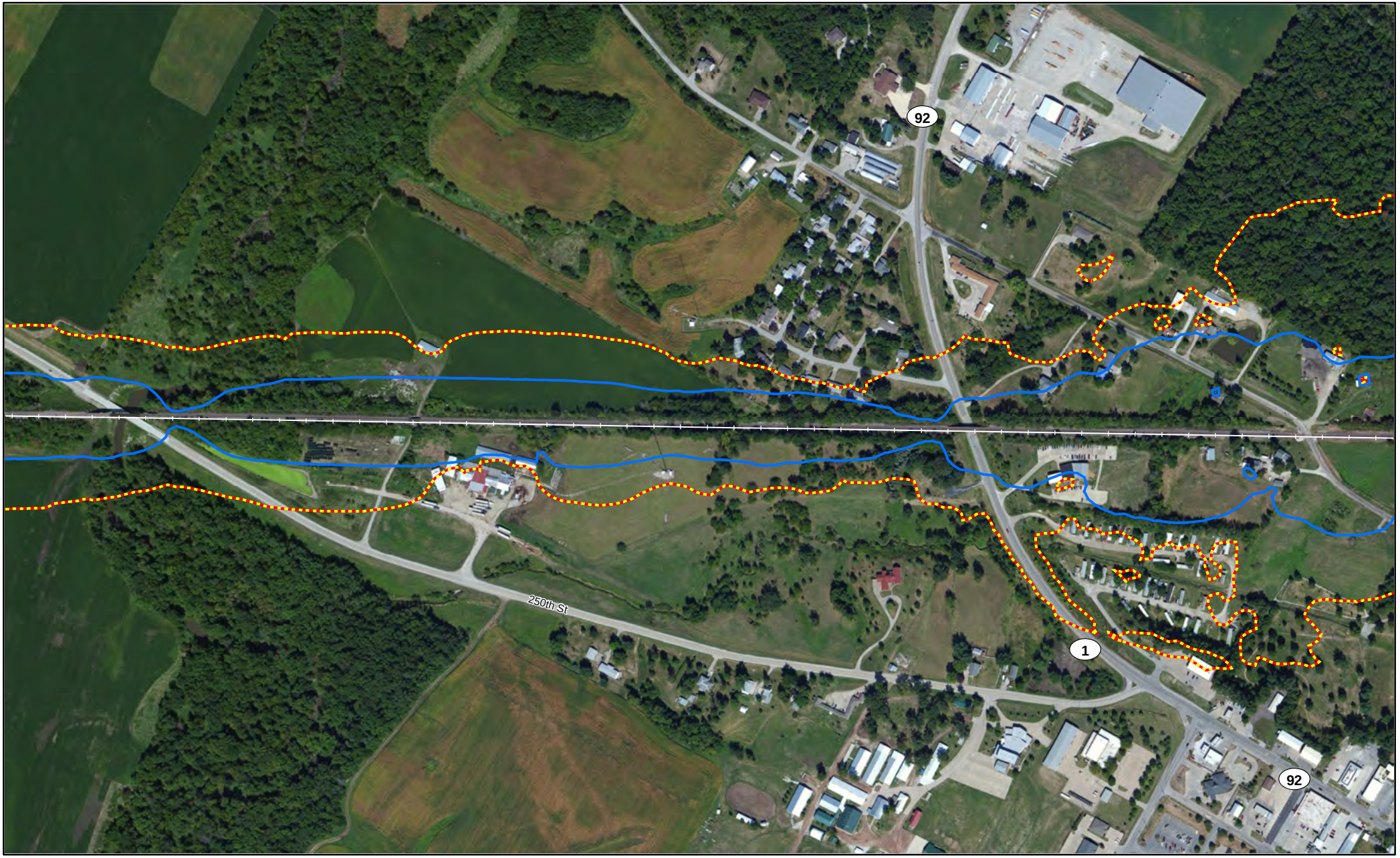
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Noise Contours
Washington County, IA

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



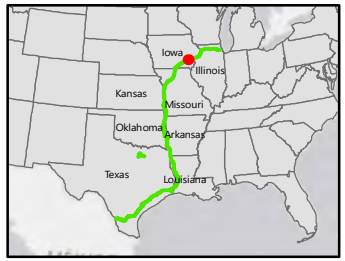
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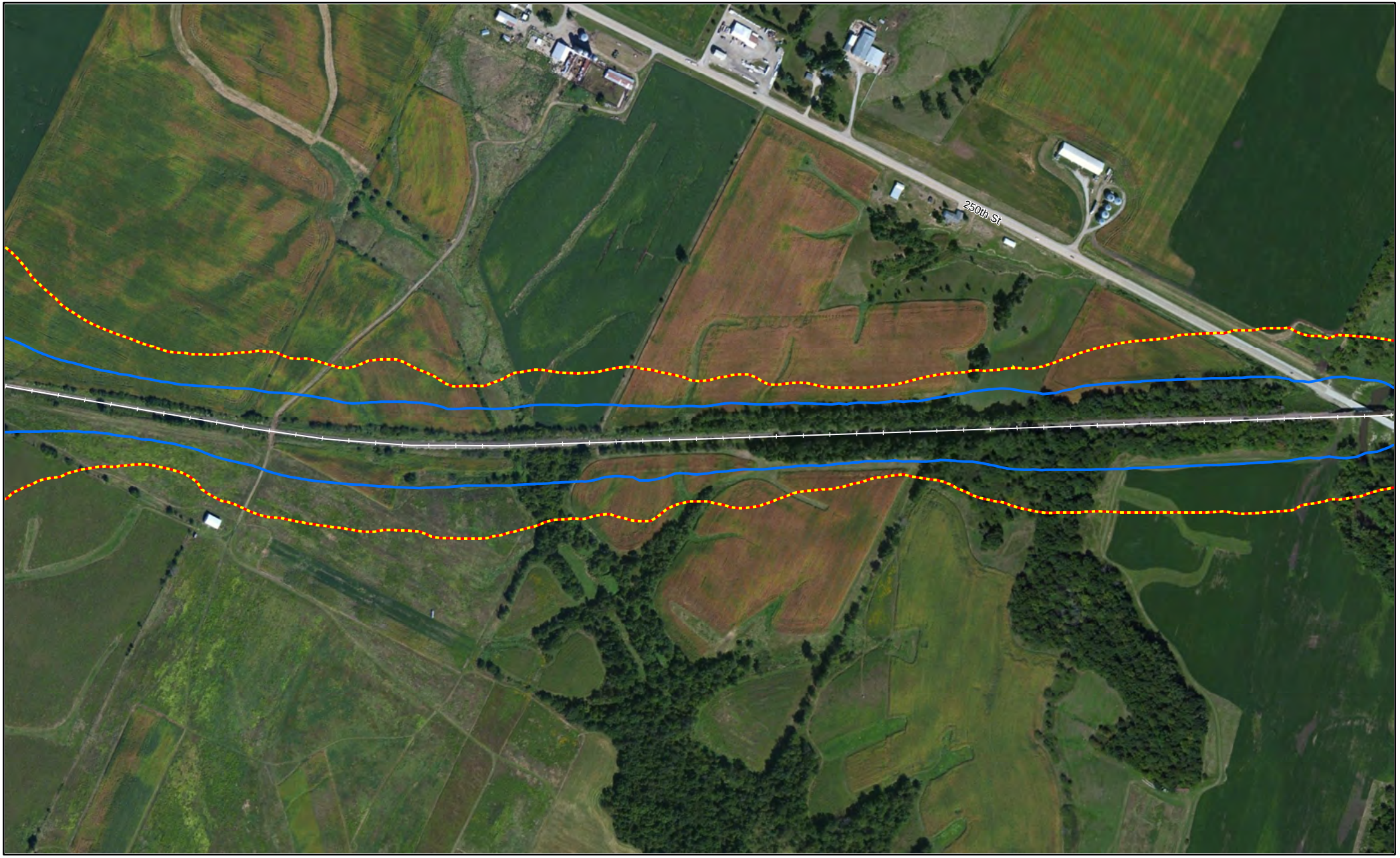
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Washington County, IA

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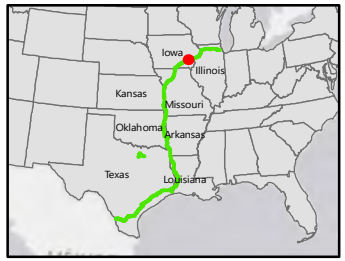
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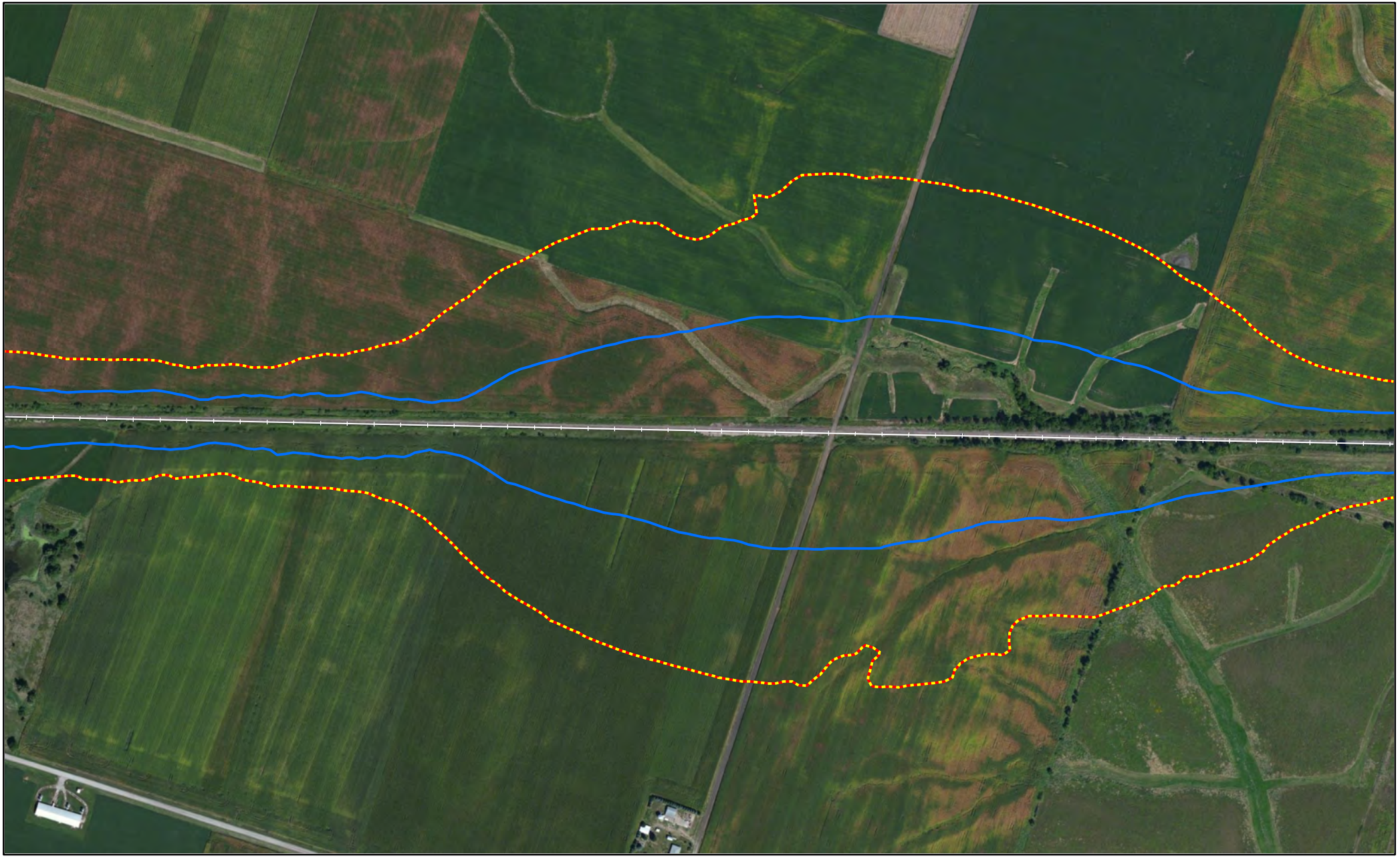
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Noise Contours
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



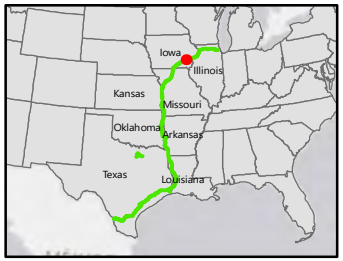
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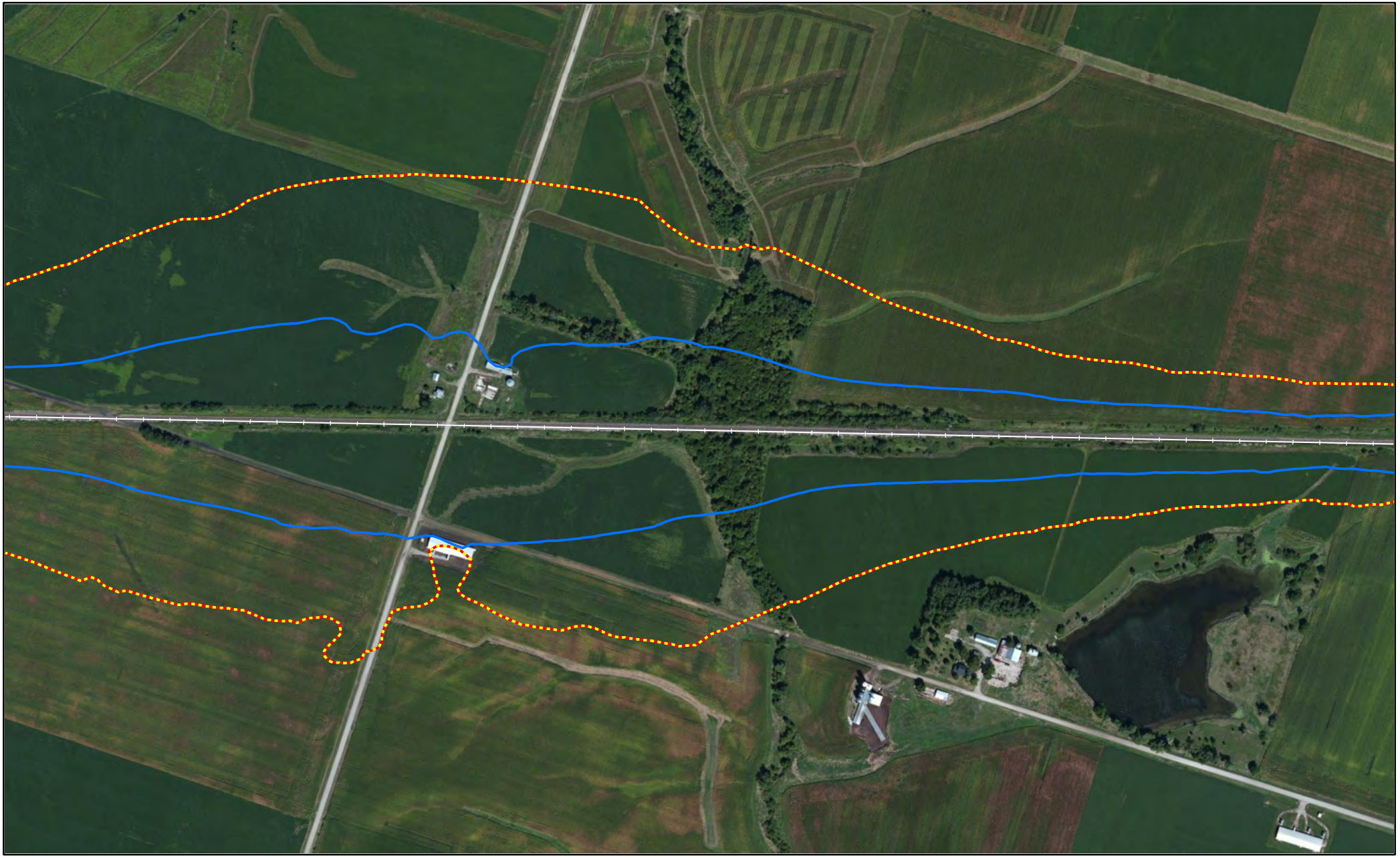
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Noise Contours
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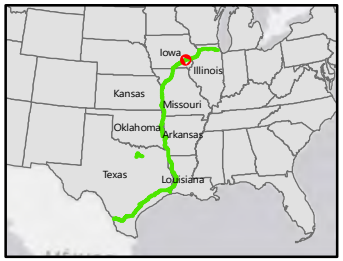
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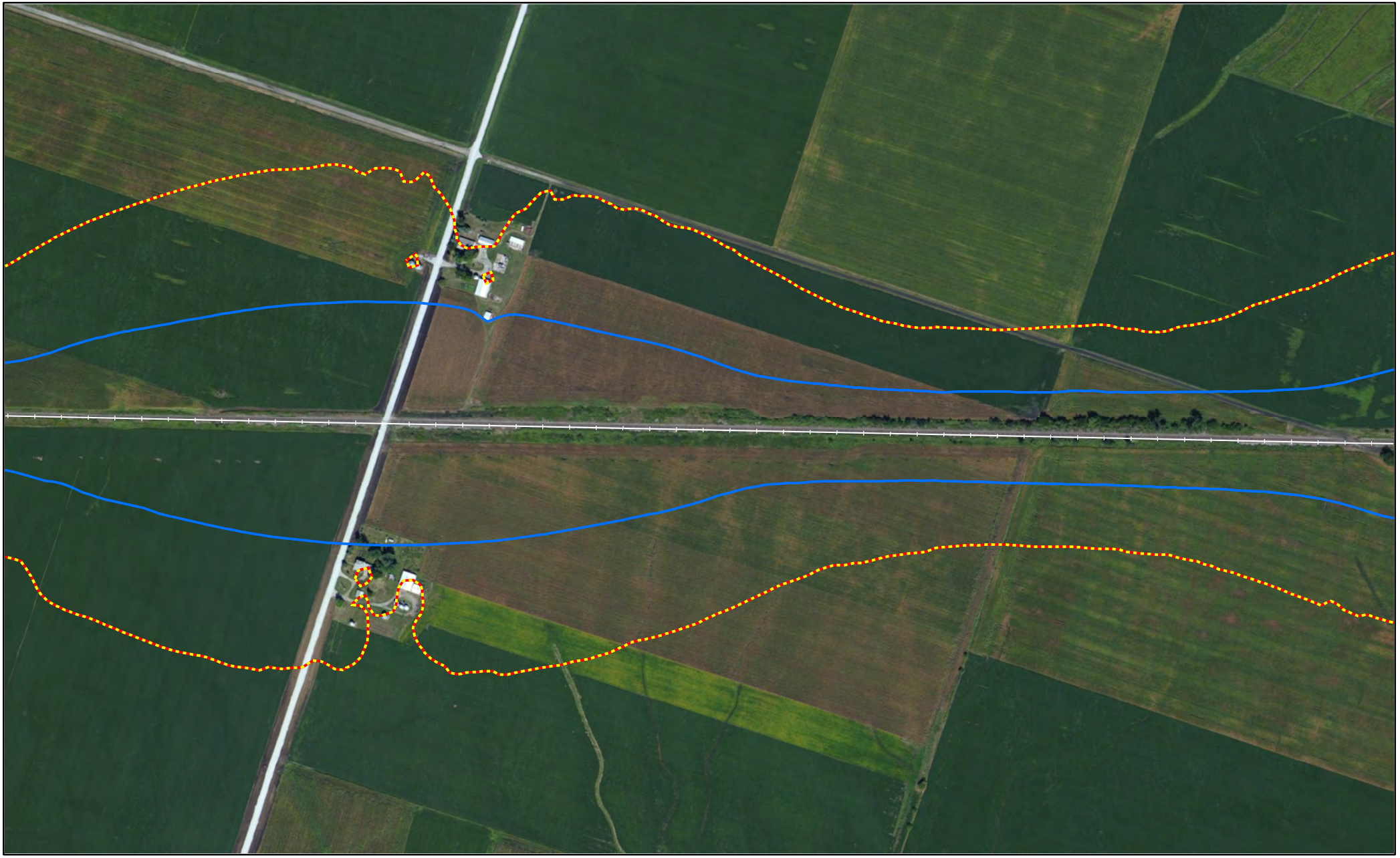
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Noise Contours
Washington County, IA

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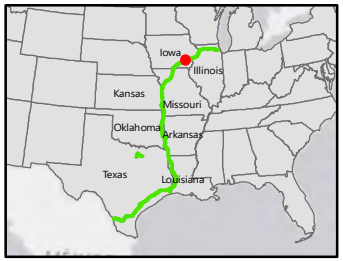
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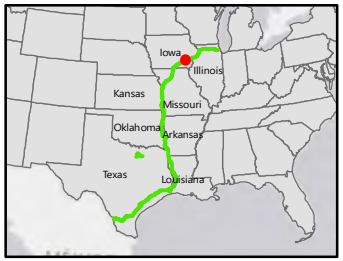
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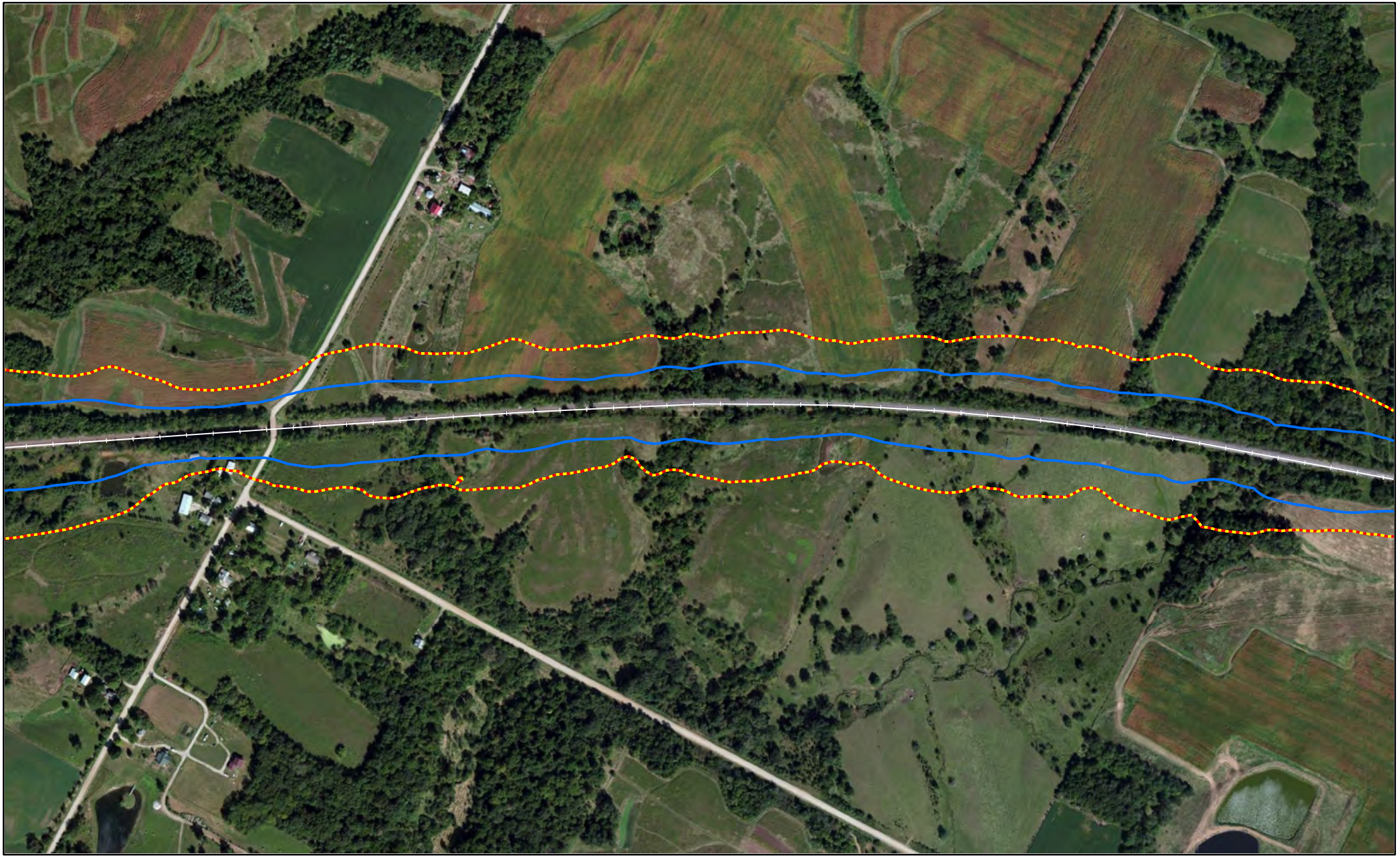
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Noise Contours
Washington County, IA

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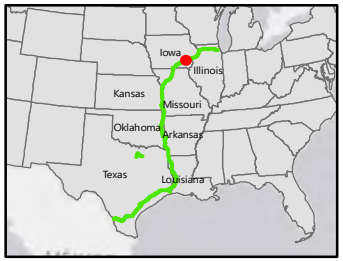
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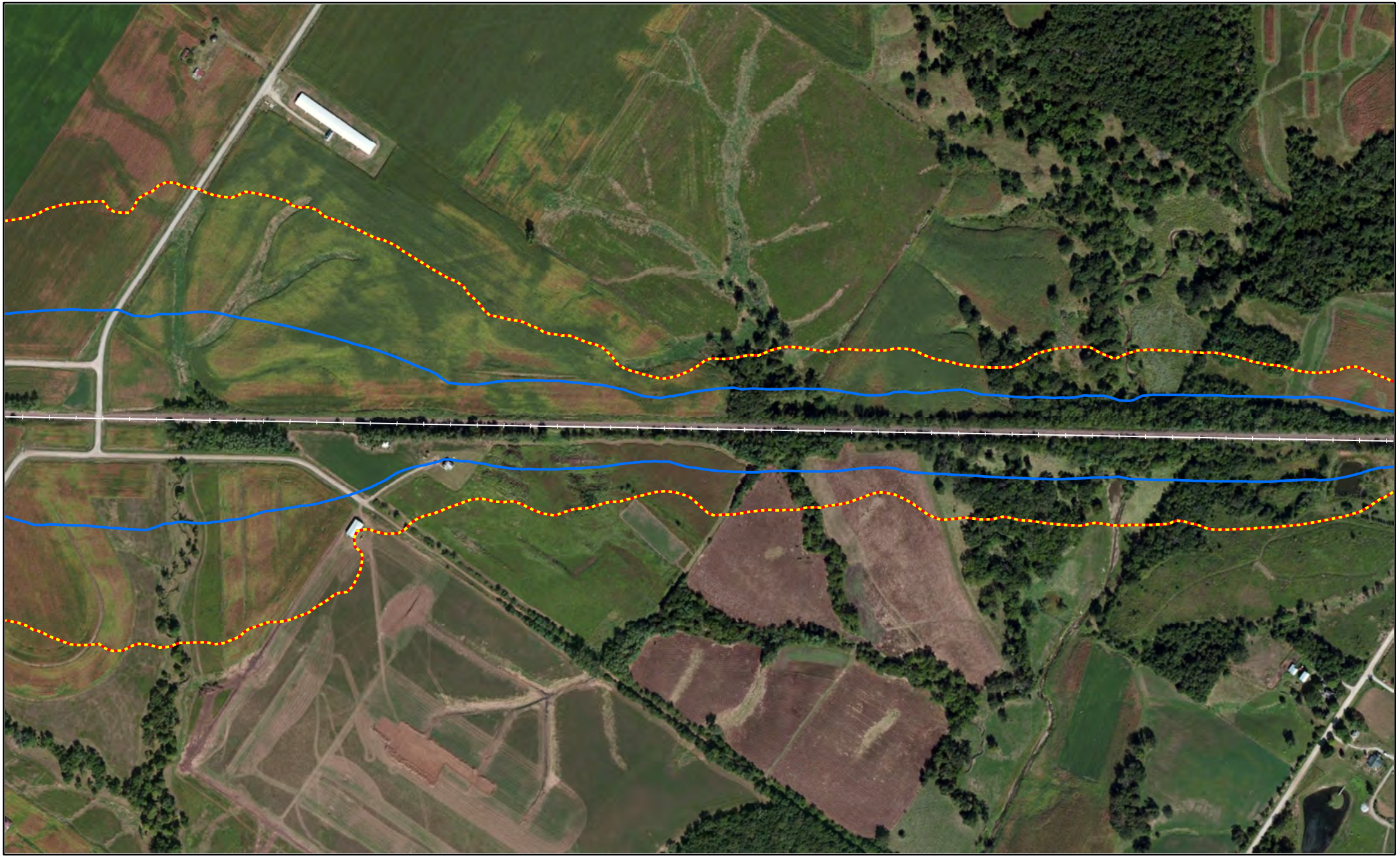
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Source: ESRI.



Noise Contours
Washington County, IA

Miles
0 0.05 0.1



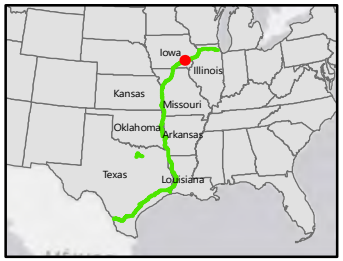
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

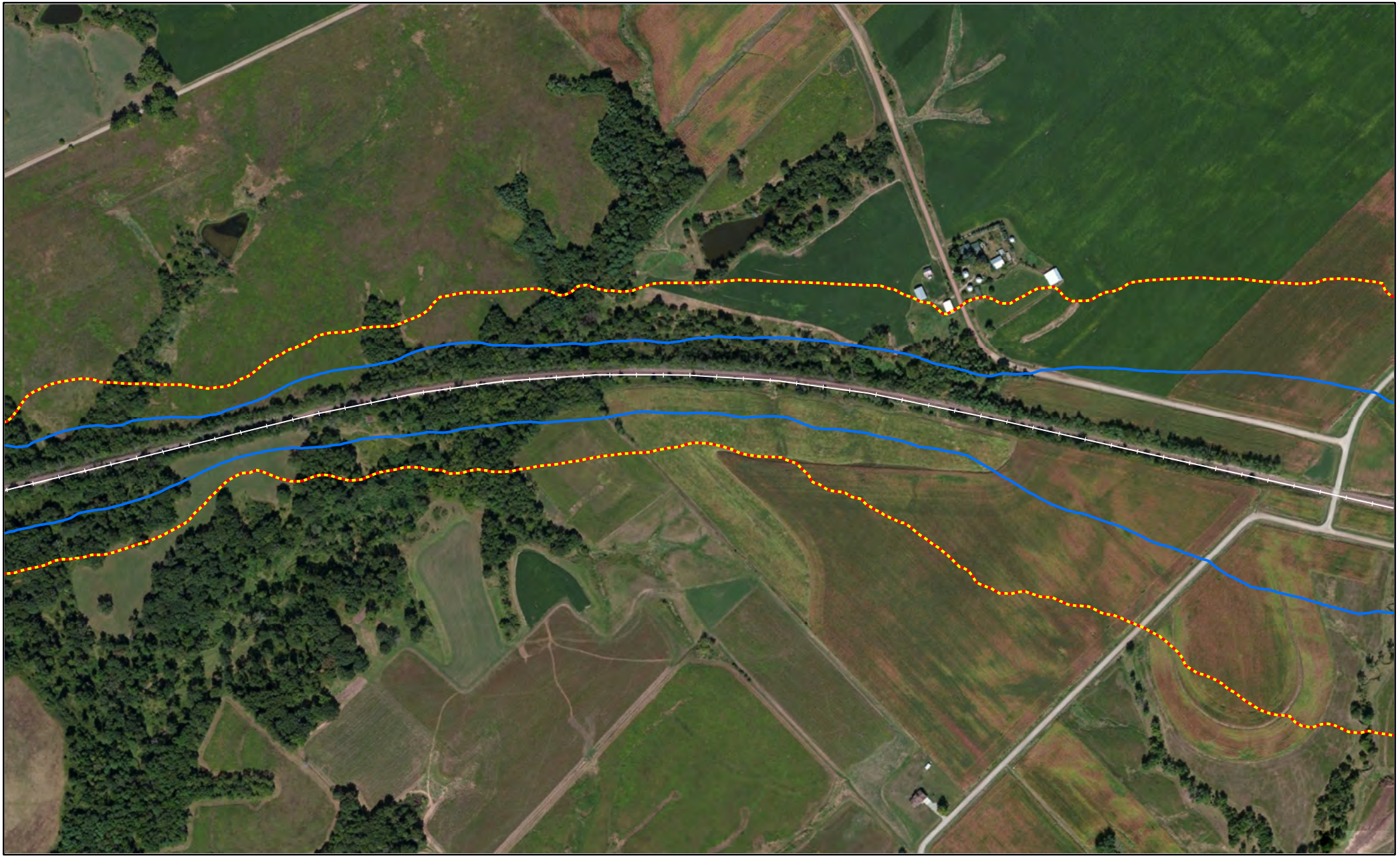
Source: ESRI.



Noise Contours
Washington County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



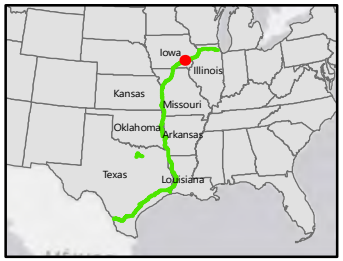
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

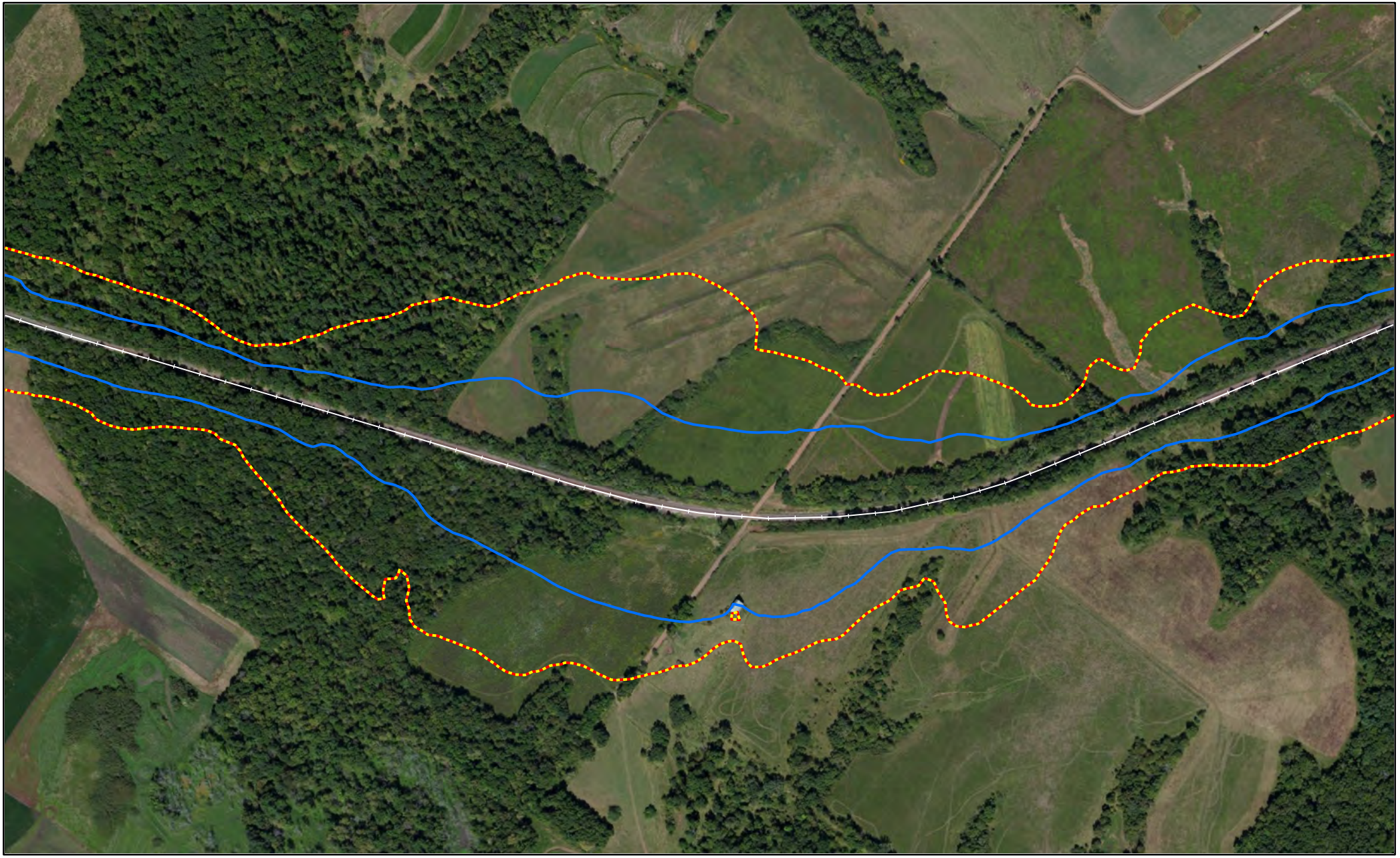
Source: ESRI.



Noise Contours
Washington County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



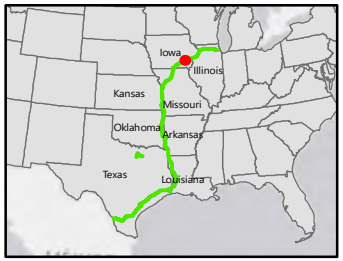
No-Action Alternative Noise (65 Ldn)

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Tracks

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Noise Contours
Washington County, IA

Miles
0 0.05 0.1



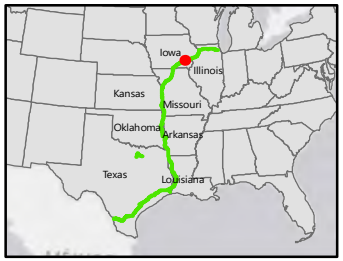
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Noise Impact (65 Ldn and 3 dBA Increase)

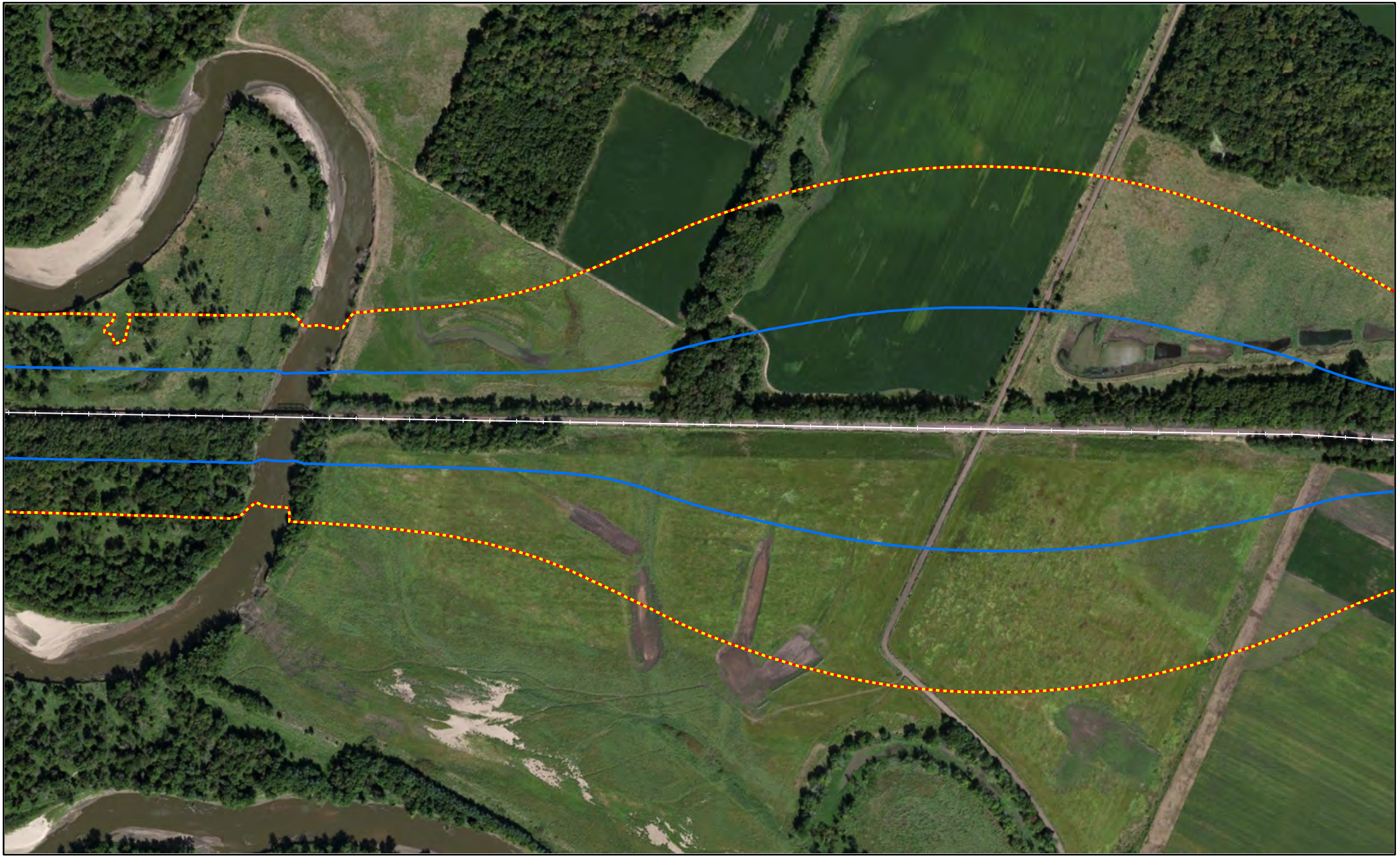
Tracks

Source: ESRI.



Noise Contours
Washington County, IA

Miles
0 0.05 0.1



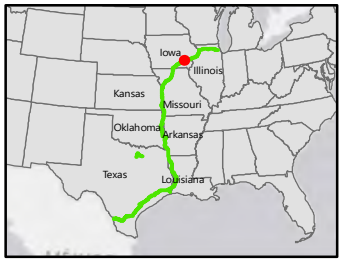
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Tracks

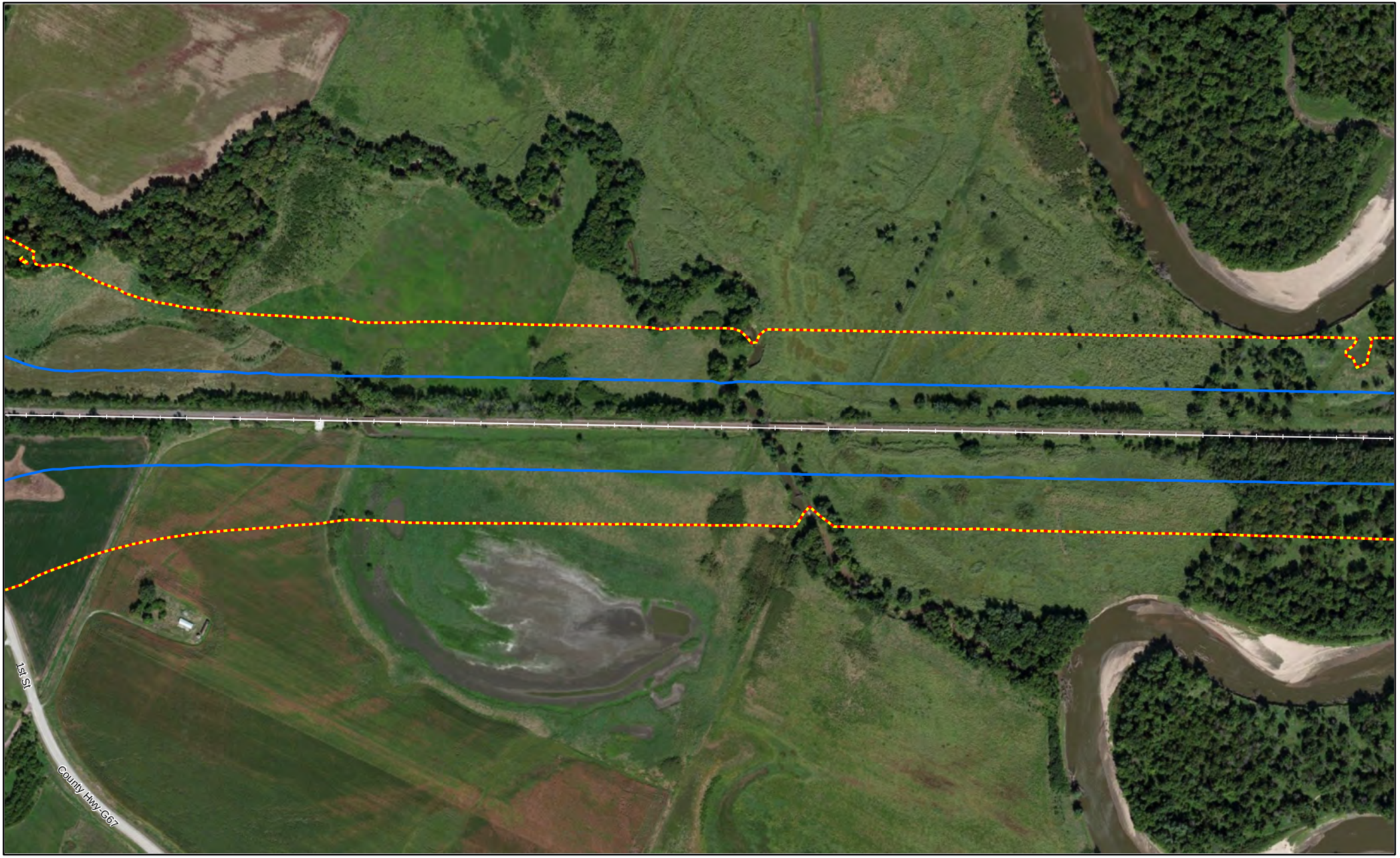
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Noise Contours
Washington County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



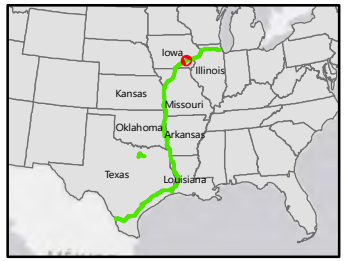
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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

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Noise Contours
Washington County, IA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



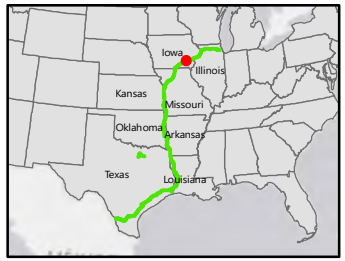
No-Action Alternative Noise (65 Ldn)

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Tracks

Source: ESRI.



Noise Contours
Keokuk County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



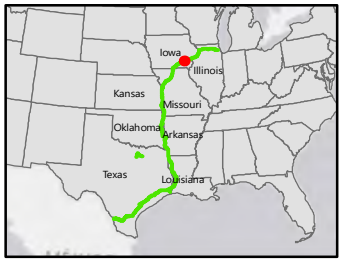
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Tracks

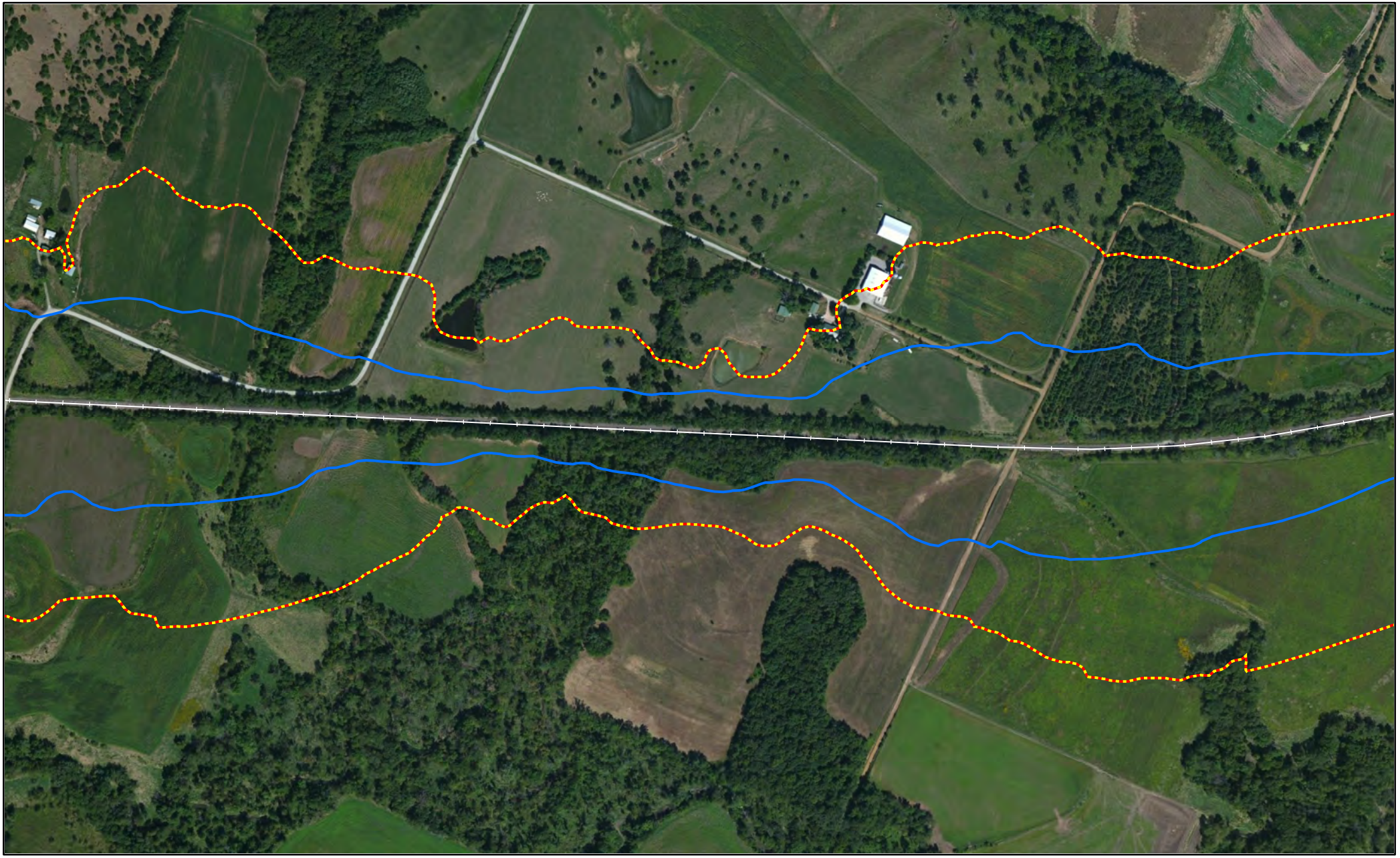
Source: ESRI.



Noise Contours
Keokuk County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



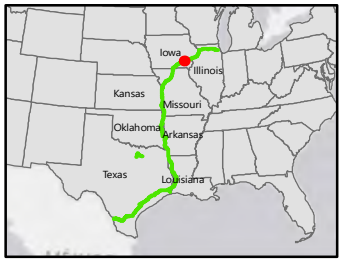
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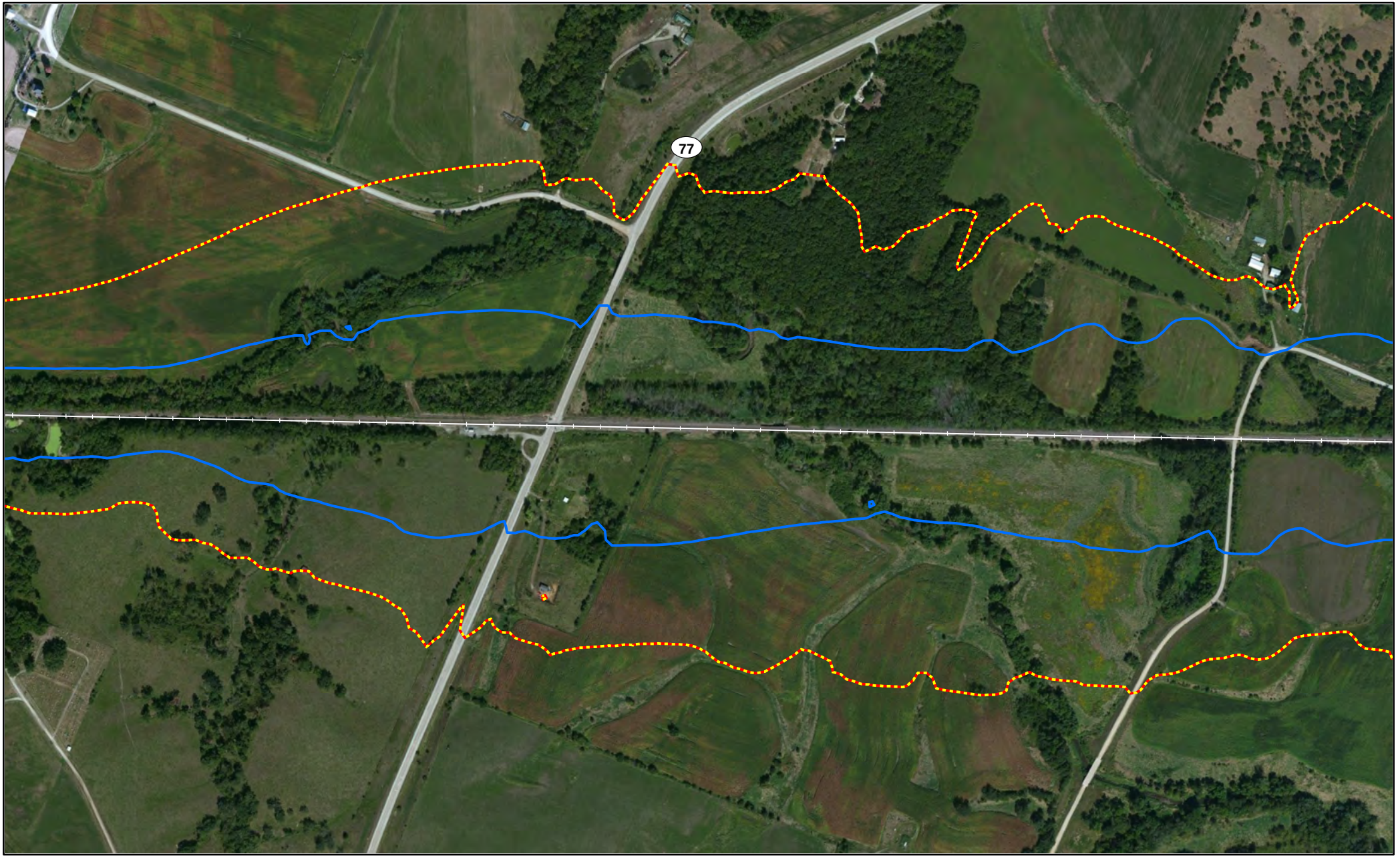
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Noise Contours
Keokuk County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



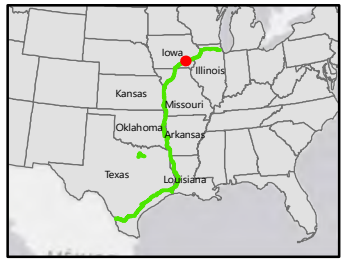
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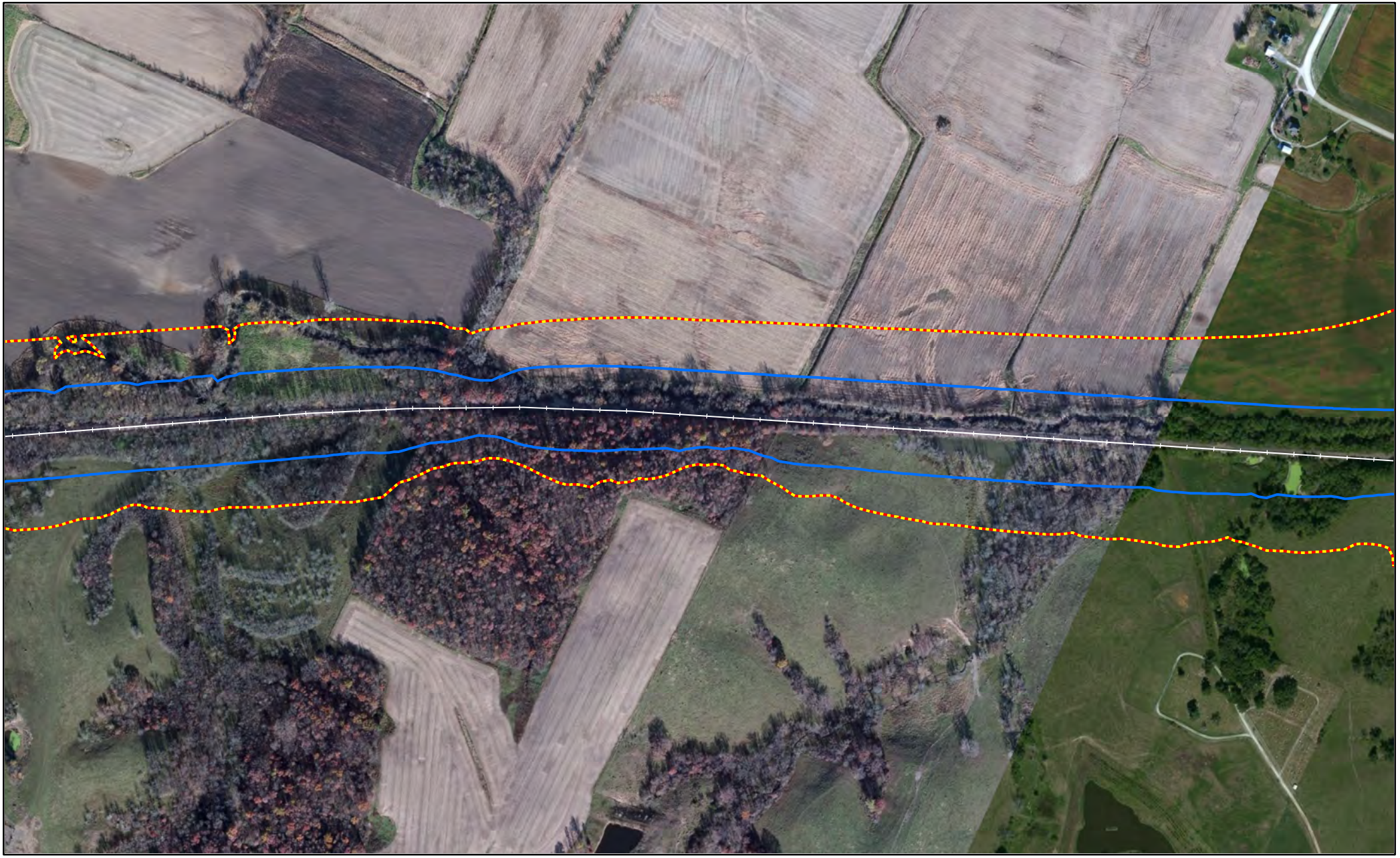
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Noise Contours
Keokuk County, IA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



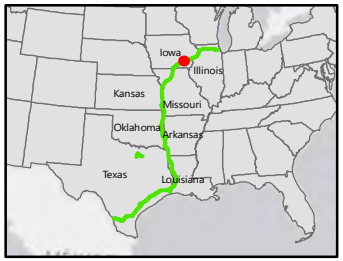
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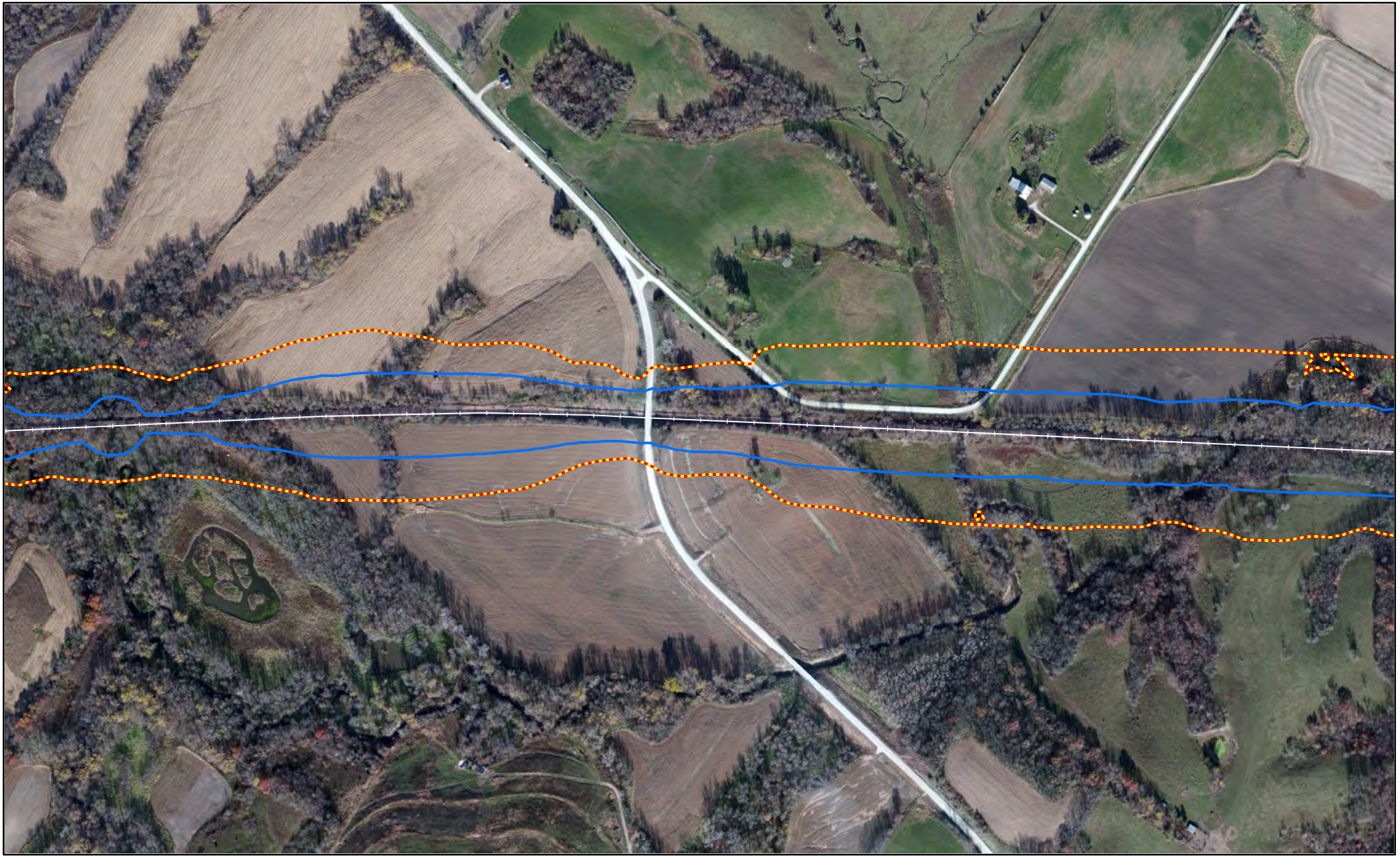
Tracks

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Noise Contours
Keokuk County, IA

Miles
0 0.05 0.1



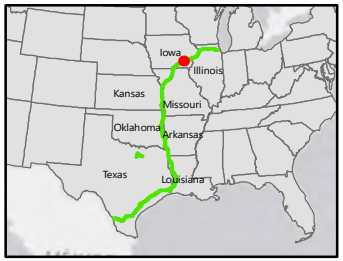
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Noise Contours
Keokuk County, IA

Miles
0 0.05 0.1



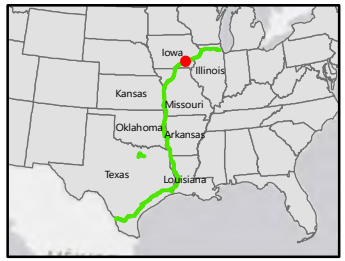
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Tracks

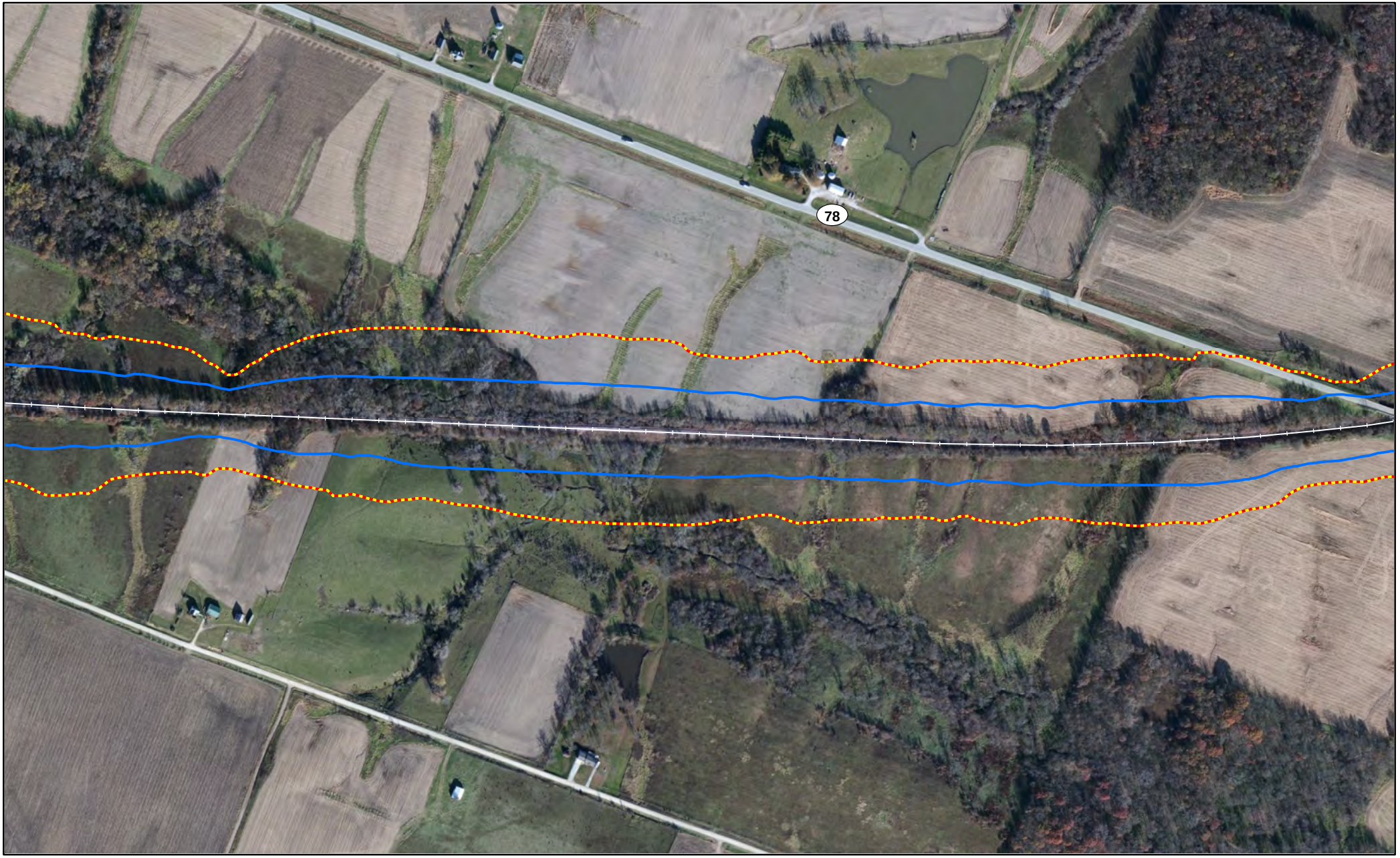
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Noise Contours
Keokuk County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



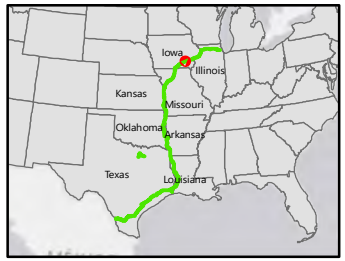
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Tracks

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Noise Contours
Keokuk County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



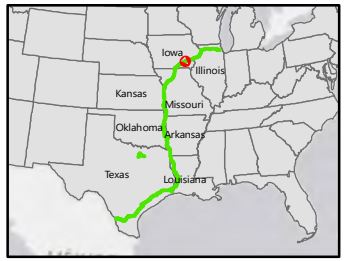
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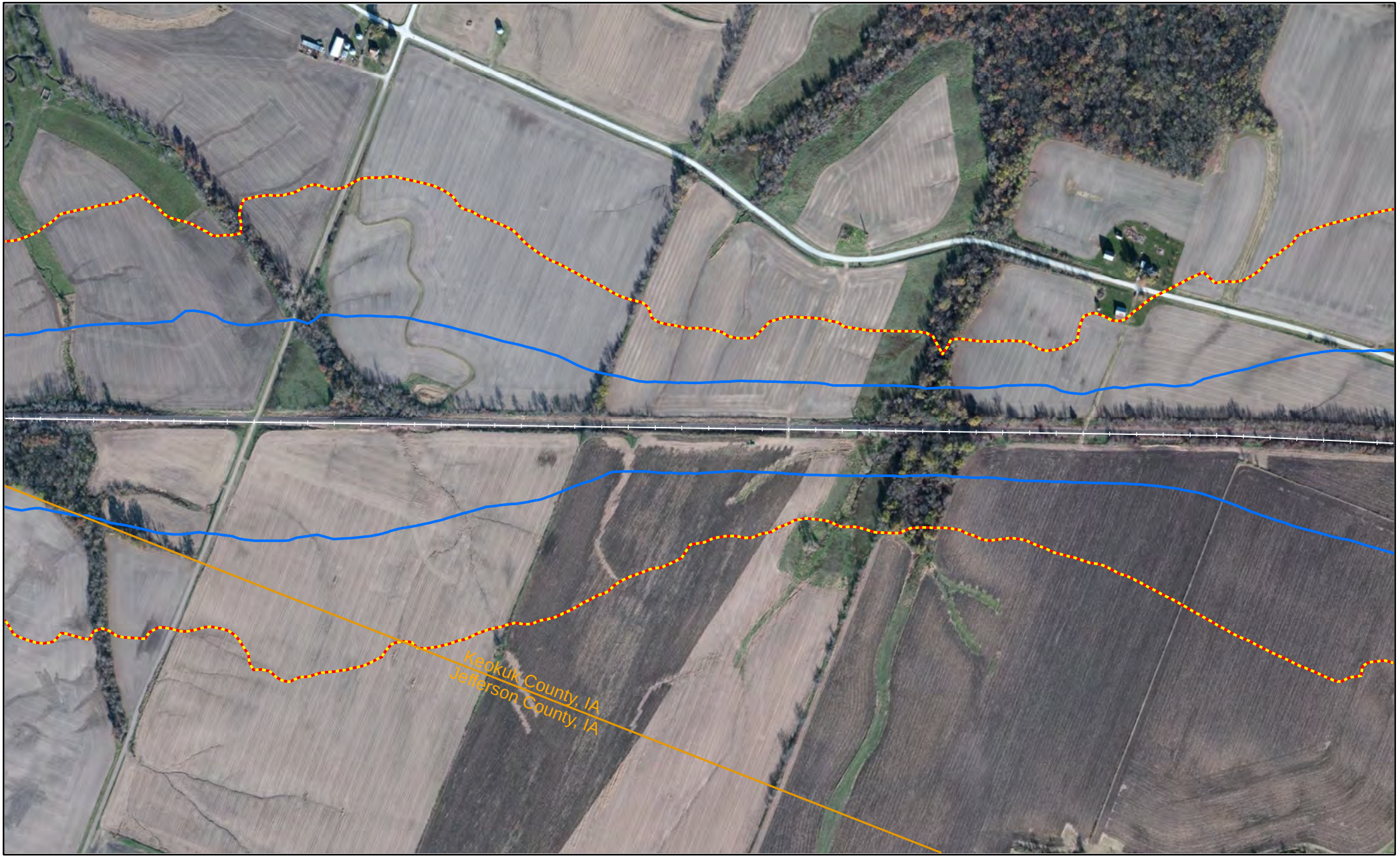
Source: ESRI.



Noise Contours
Keokuk County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



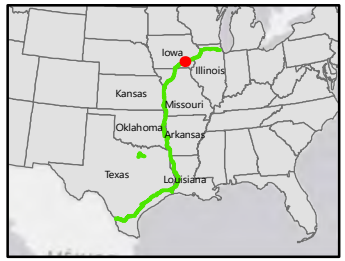
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jefferson County, IA

Miles
0 0.05 0.1



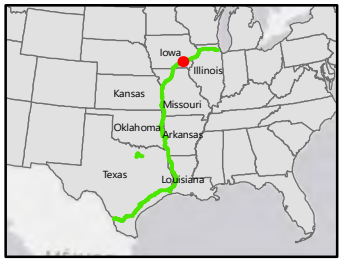
No-Action Alternative Noise (65 Ldn)

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Tracks

Source: ESRI.



Noise Contours
Jefferson County, IA

Miles
0 0.05 0.1



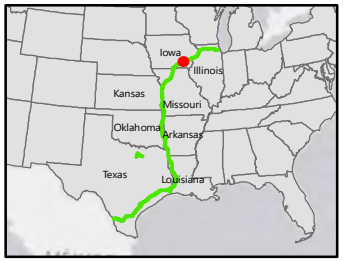
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

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Noise Contours
Jefferson County, IA

Page 269 of 1588

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



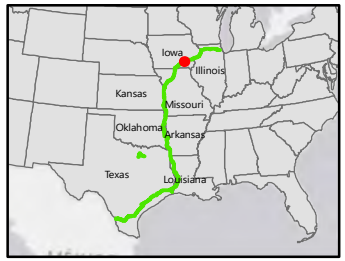
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Tracks

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Noise Contours
Jefferson County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



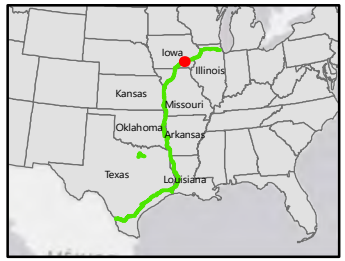
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Noise Contours
Jefferson County, IA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



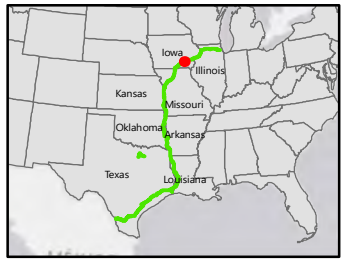
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Tracks

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Noise Contours
Jefferson County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



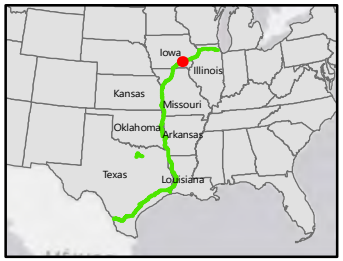
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Wapello County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



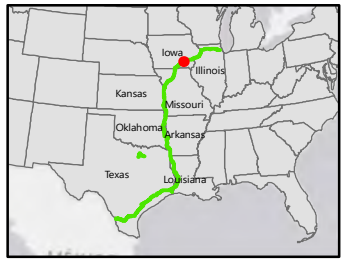
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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

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Noise Contours
Wapello County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



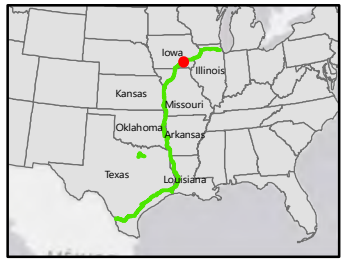
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

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Noise Contours
Wapello County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



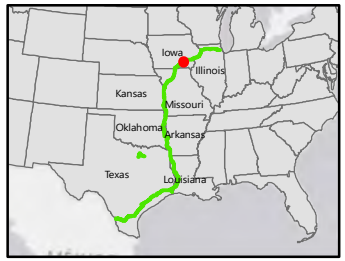
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Tracks

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Noise Contours
Wapello County, IA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



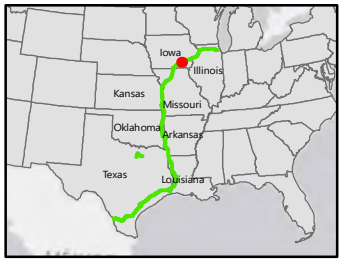
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Tracks

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Noise Contours
Wapello County, IA

Miles
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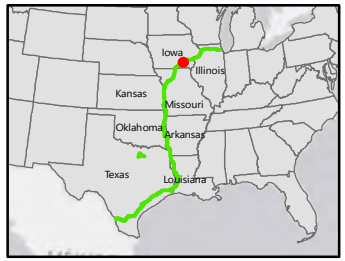
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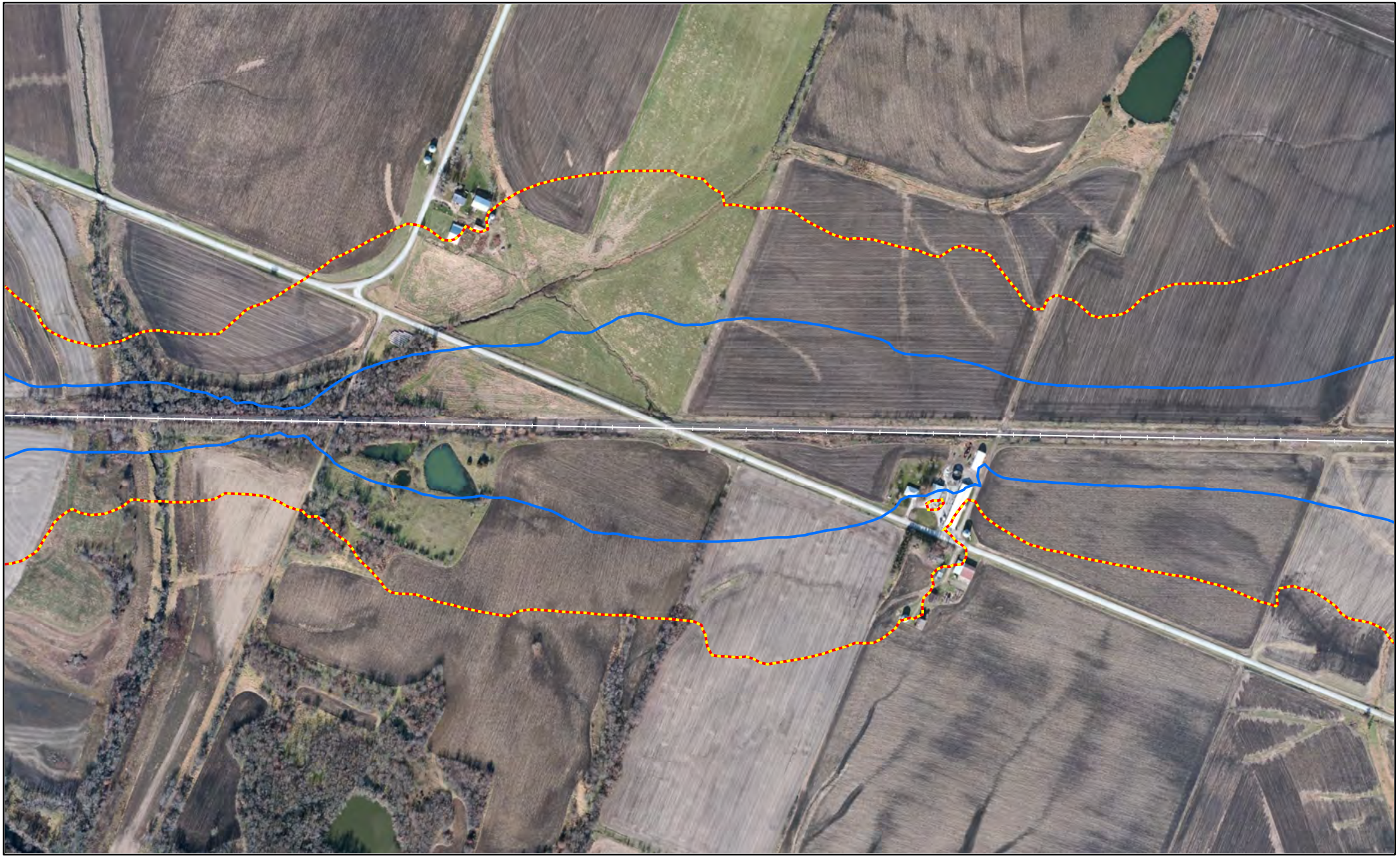
Tracks

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Noise Contours
Wapello County, IA

Miles
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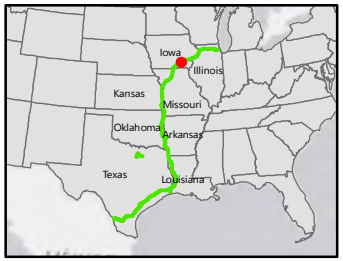
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Noise Contours
Wapello County, IA

Miles
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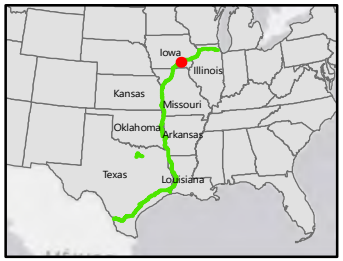
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Noise Impact (65 Ldn and 3 dBA Increase)

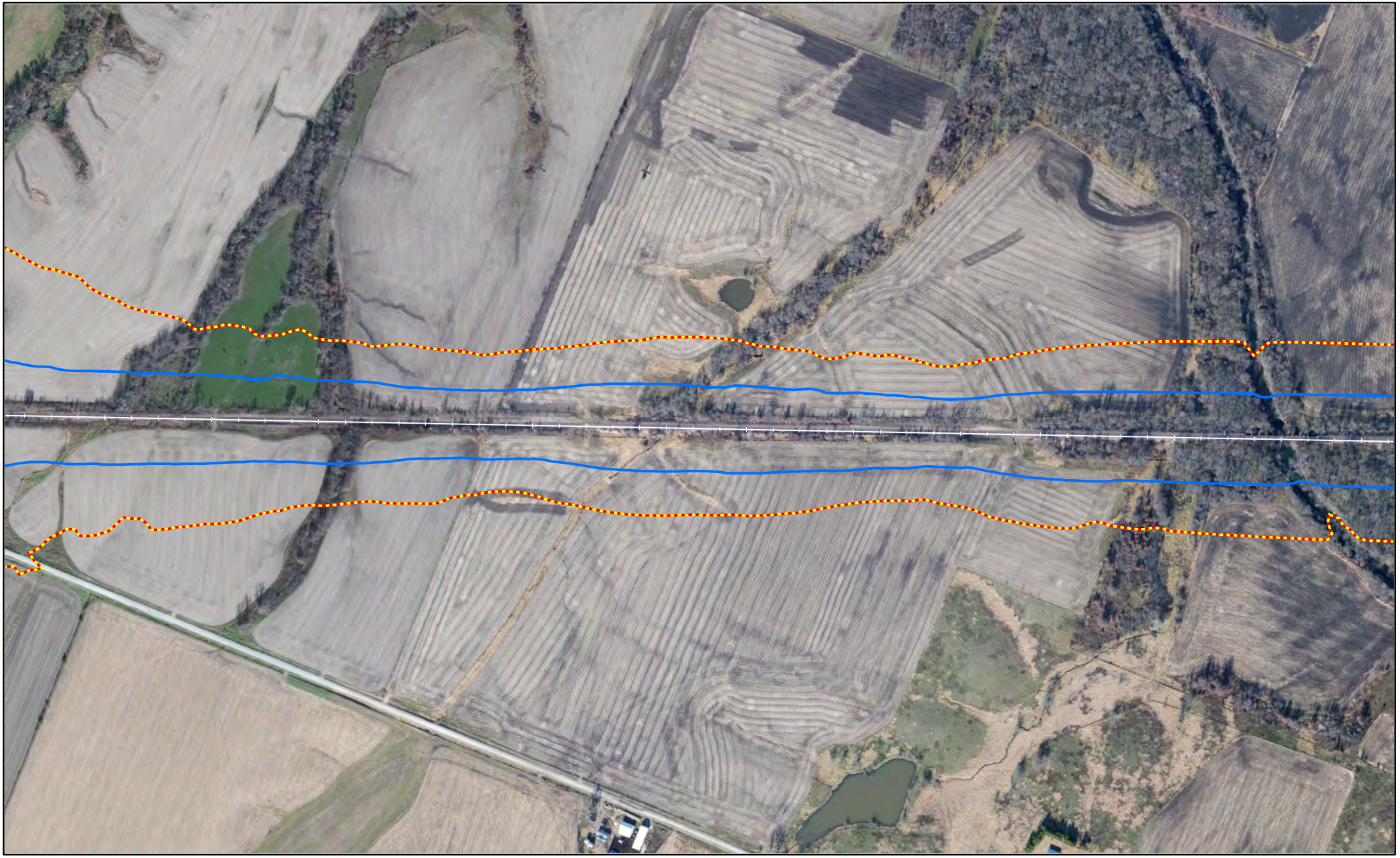
Tracks

Source: ESRI.



Noise Contours
Wapello County, IA

Miles
0 0.05 0.1



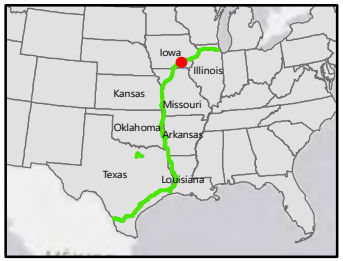
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Wapello County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



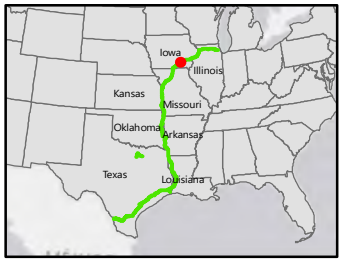
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Noise Impact (65 Ldn and 3 dBA Increase)

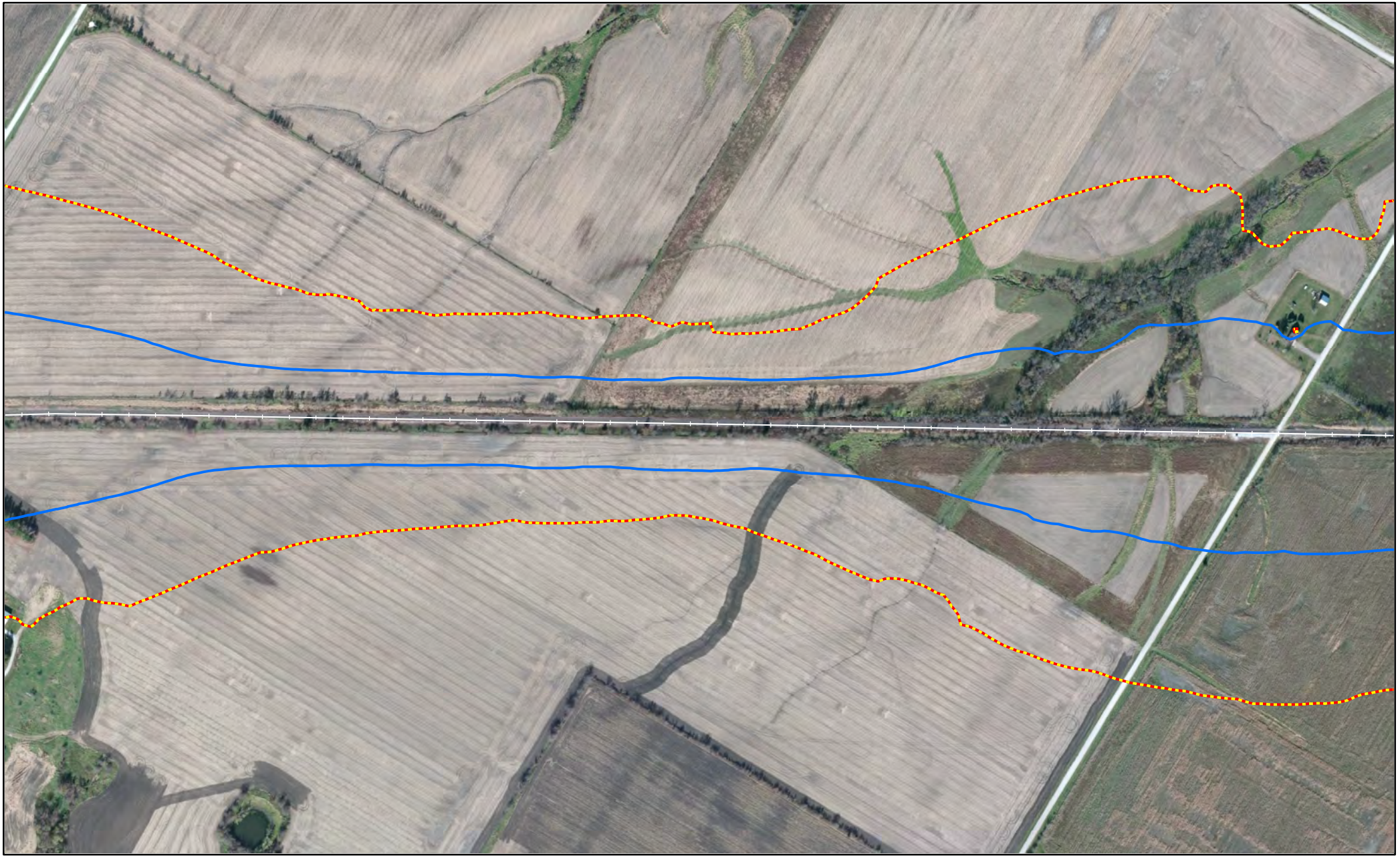
Tracks

Source: ESRI.



Noise Contours
Wapello County, IA

Miles
0 0.05 0.1



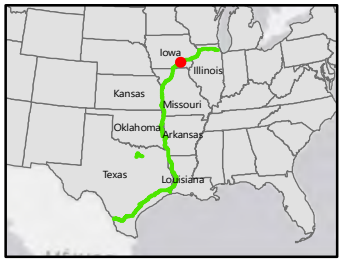
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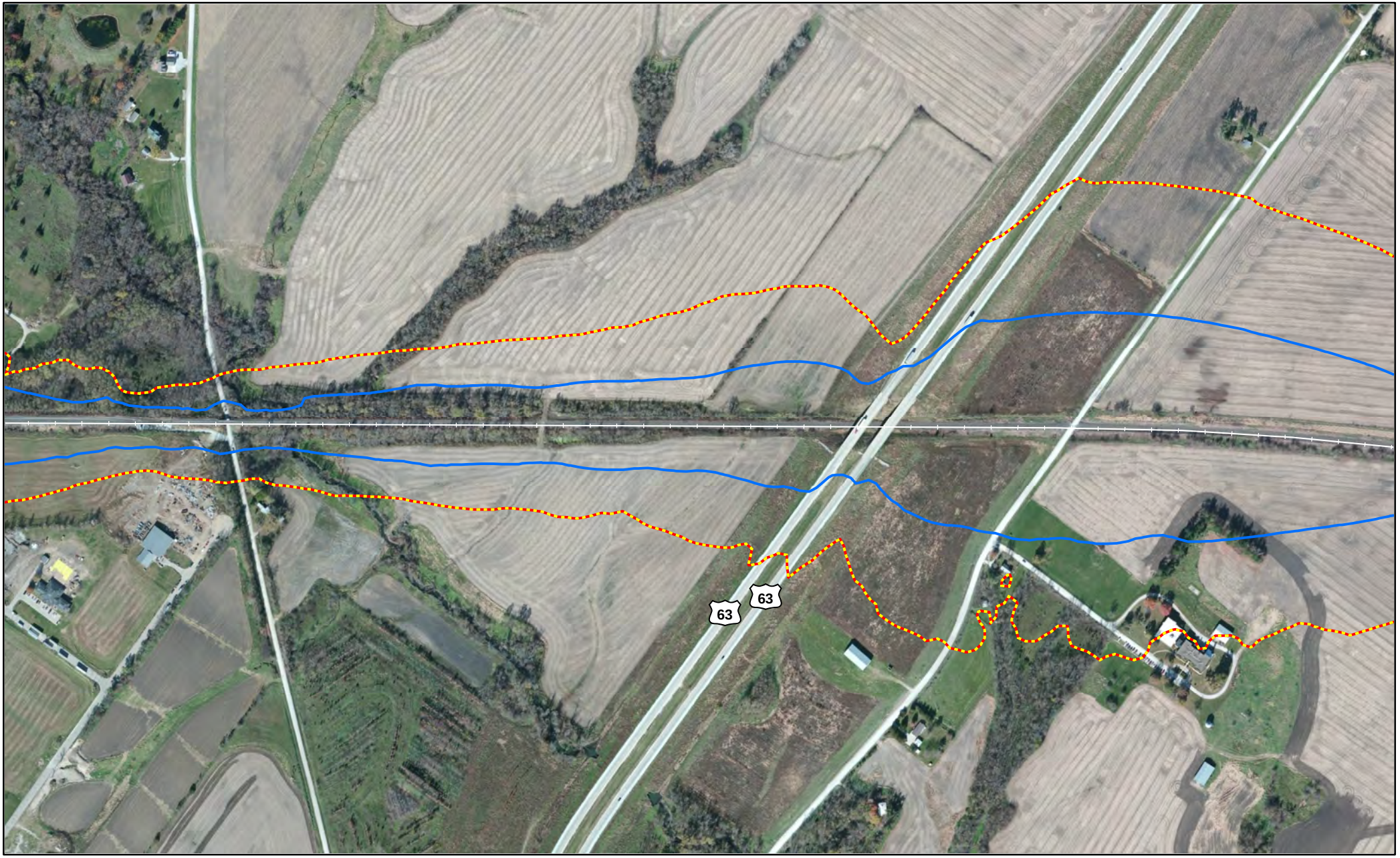
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Noise Contours
Wapello County, IA

Miles
0 0.05 0.1



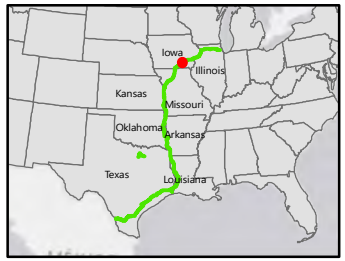
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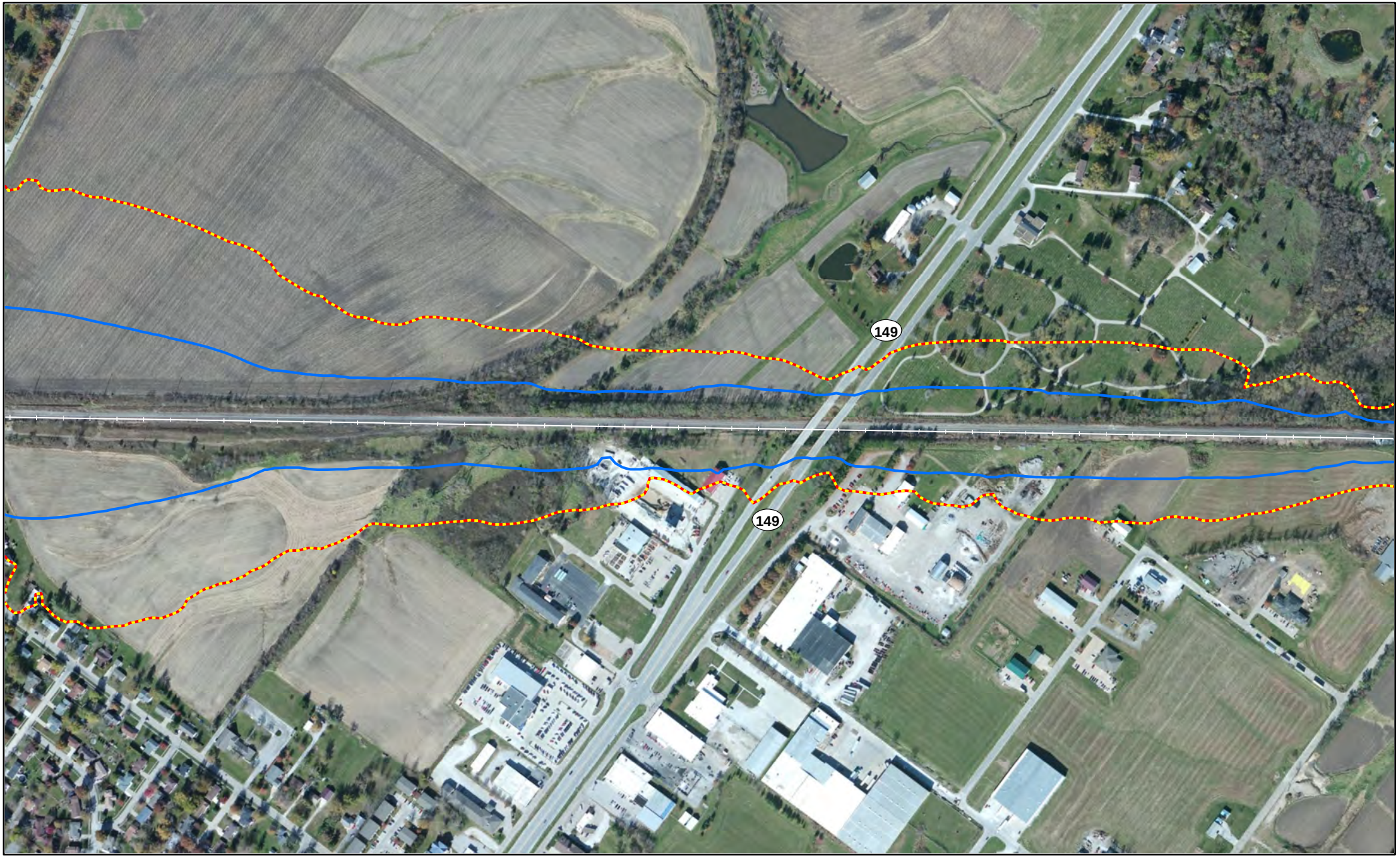
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Noise Contours
Wapello County, IA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



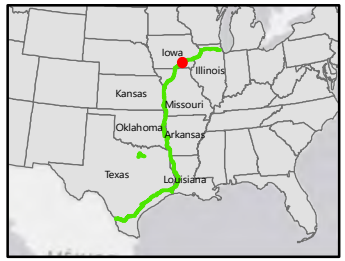
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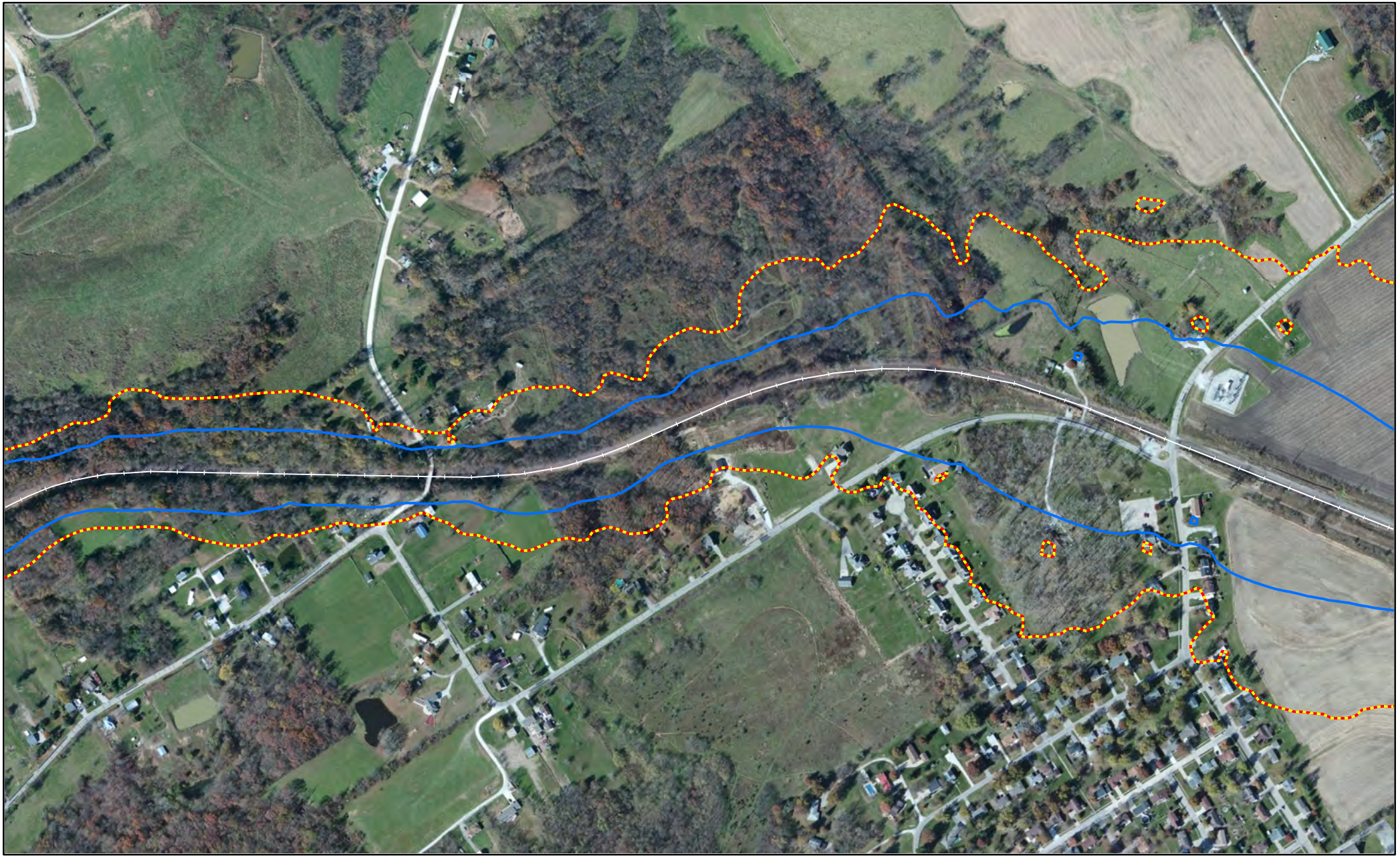
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Noise Contours
Wapello County, IA

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



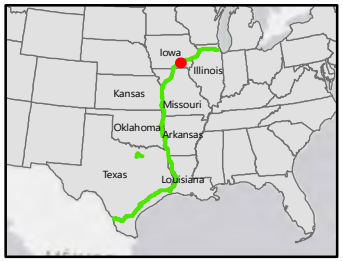
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Noise Contours
Wapello County, IA

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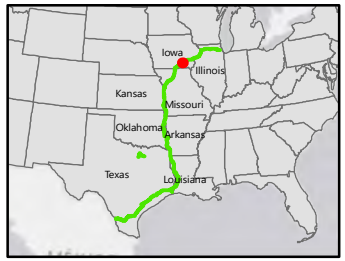
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Noise Contours
Wapello County, IA

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



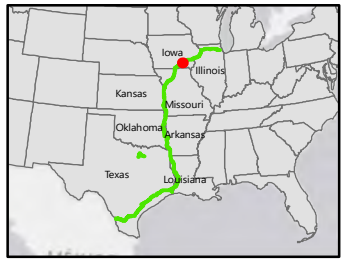
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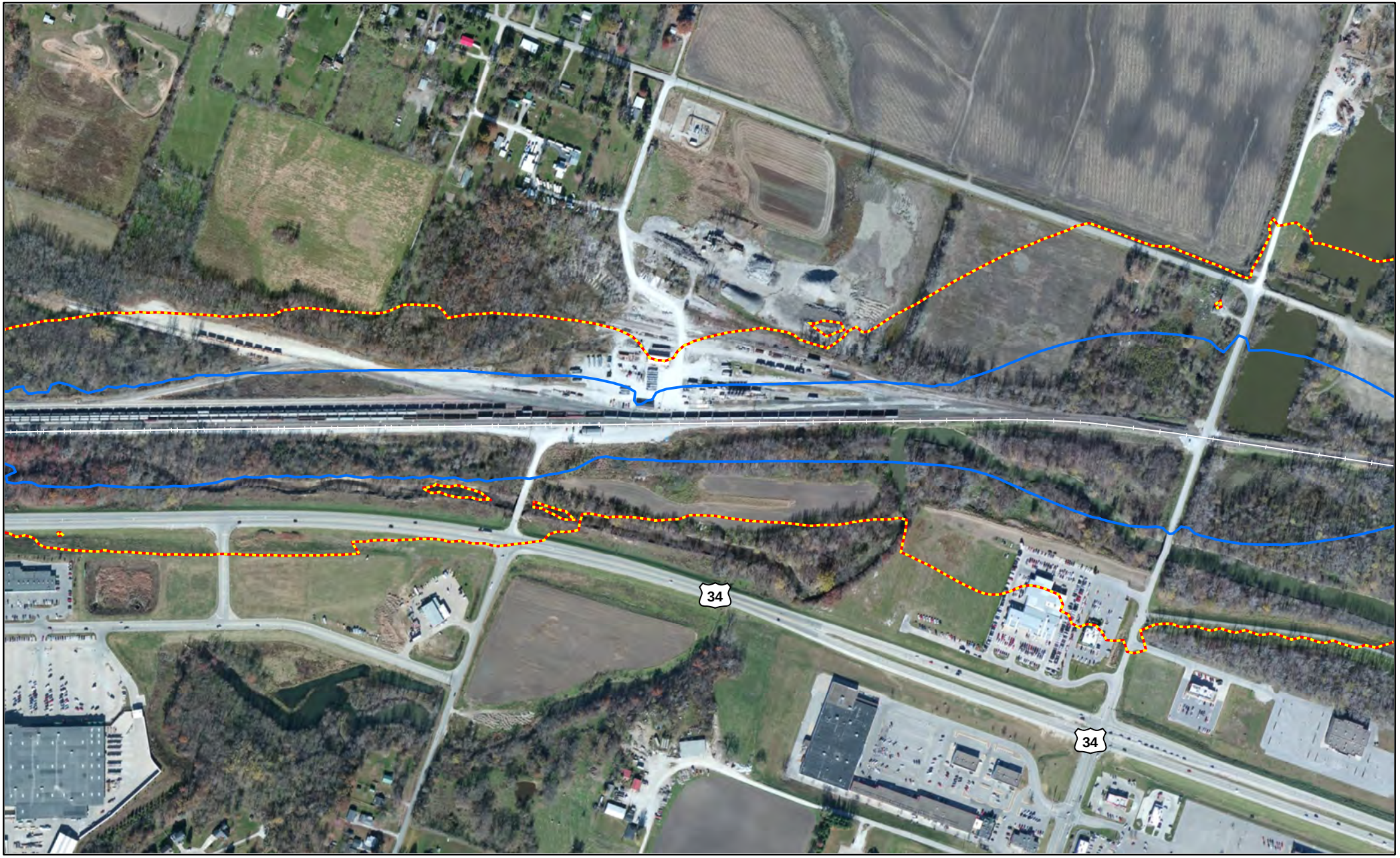
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Noise Contours
Wapello County, IA

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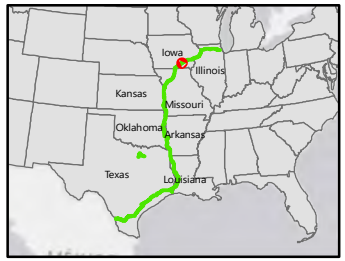
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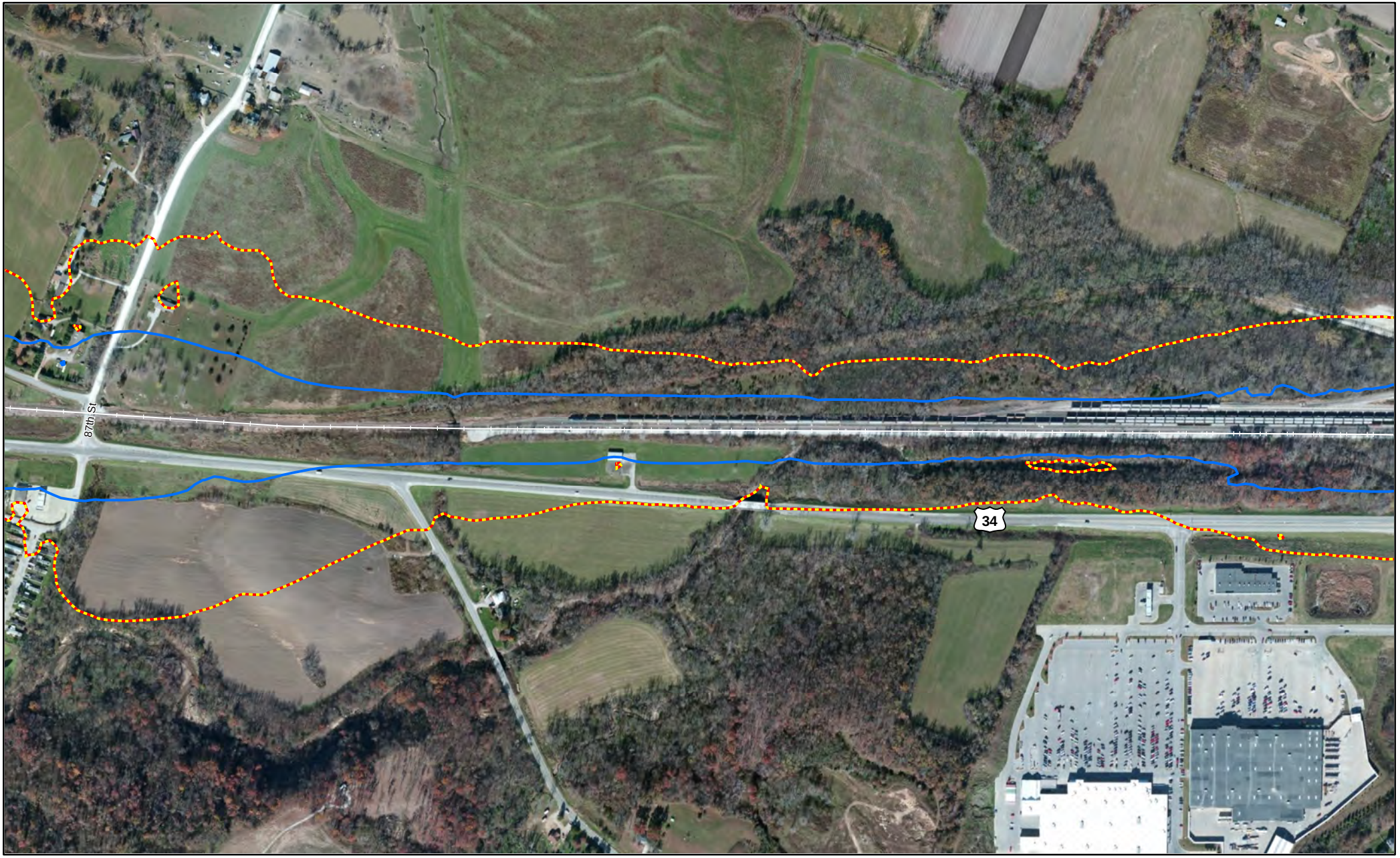
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Noise Contours
Wapello County, IA

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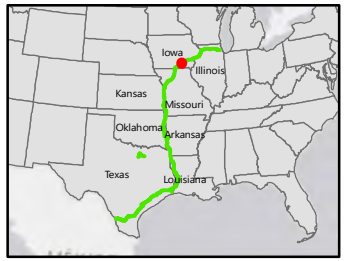
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Noise Contours
Wapello County, IA

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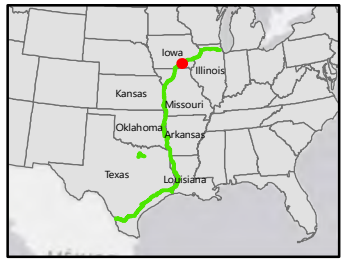
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Noise Contours
Wapello County, IA

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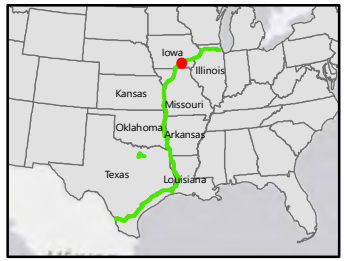
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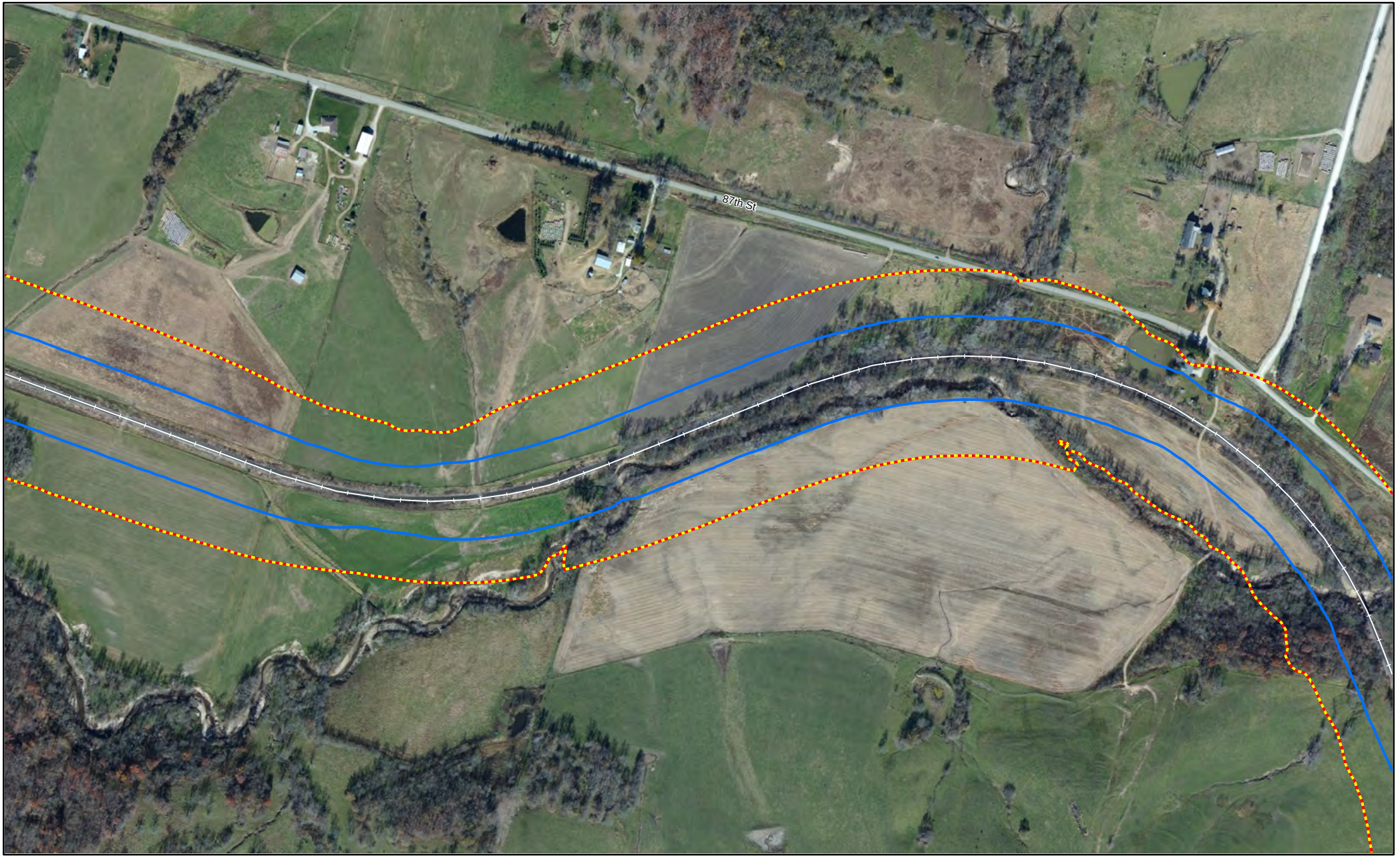
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Noise Contours
Wapello County, IA

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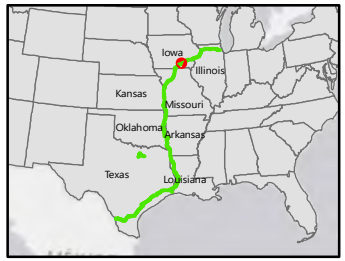
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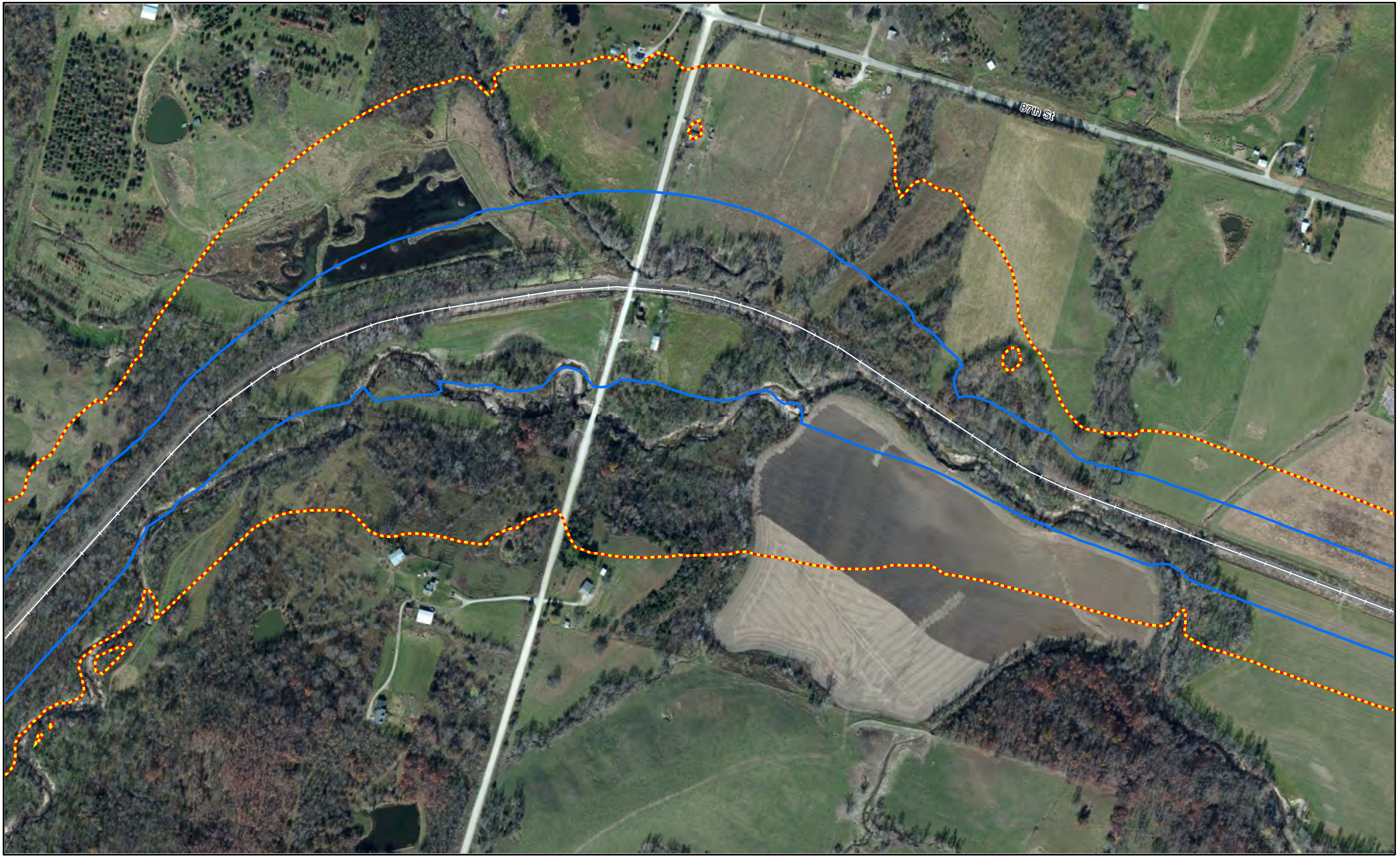
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Noise Contours
Wapello County, IA

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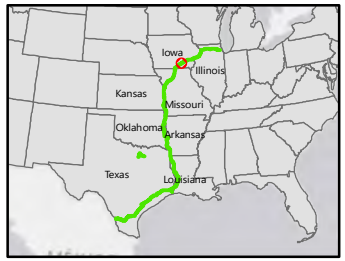
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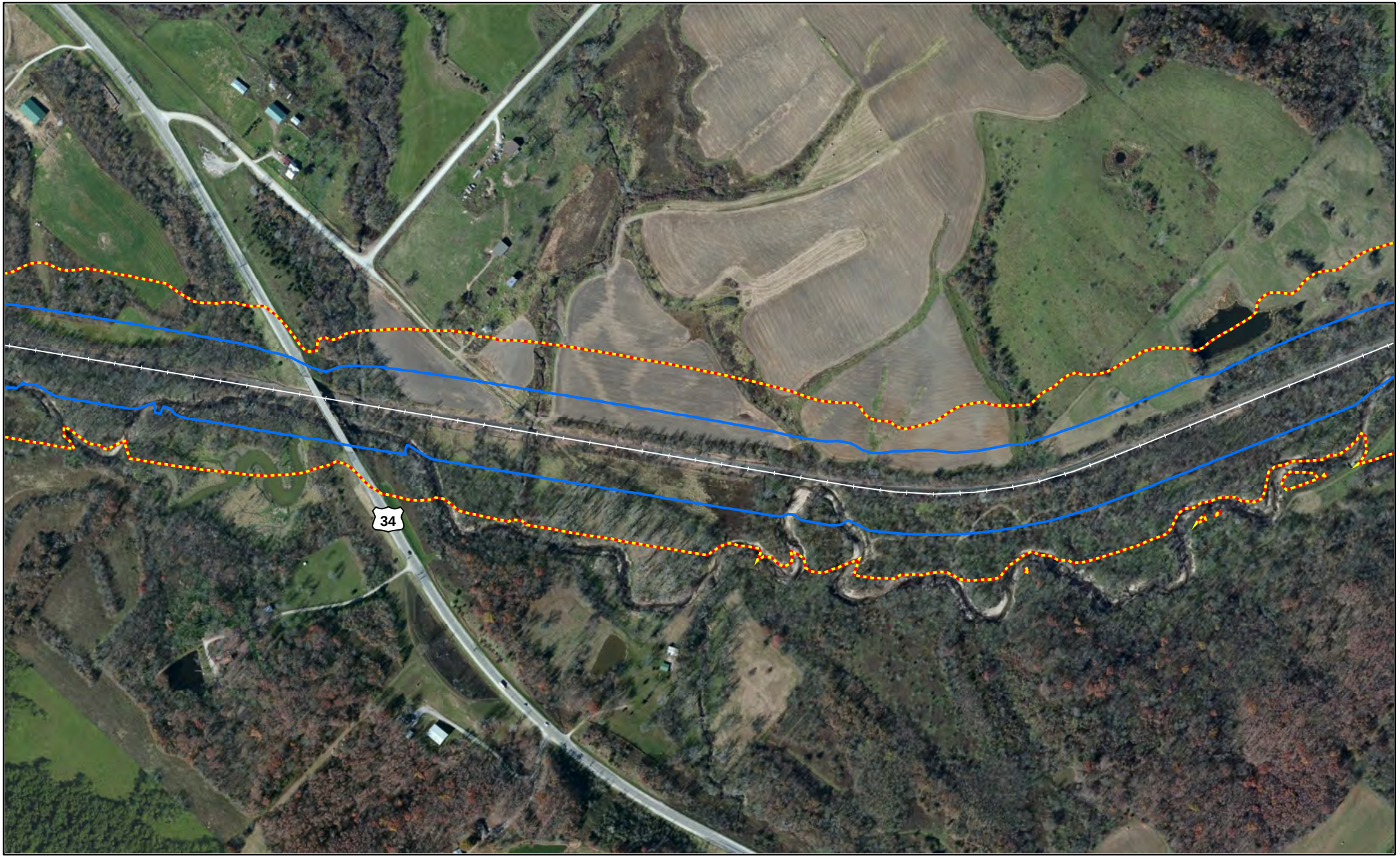
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Noise Contours
Wapello County, IA

Miles
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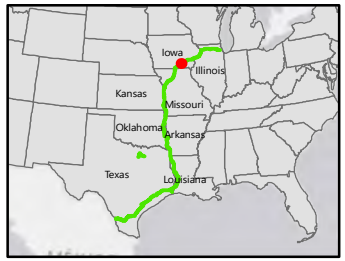
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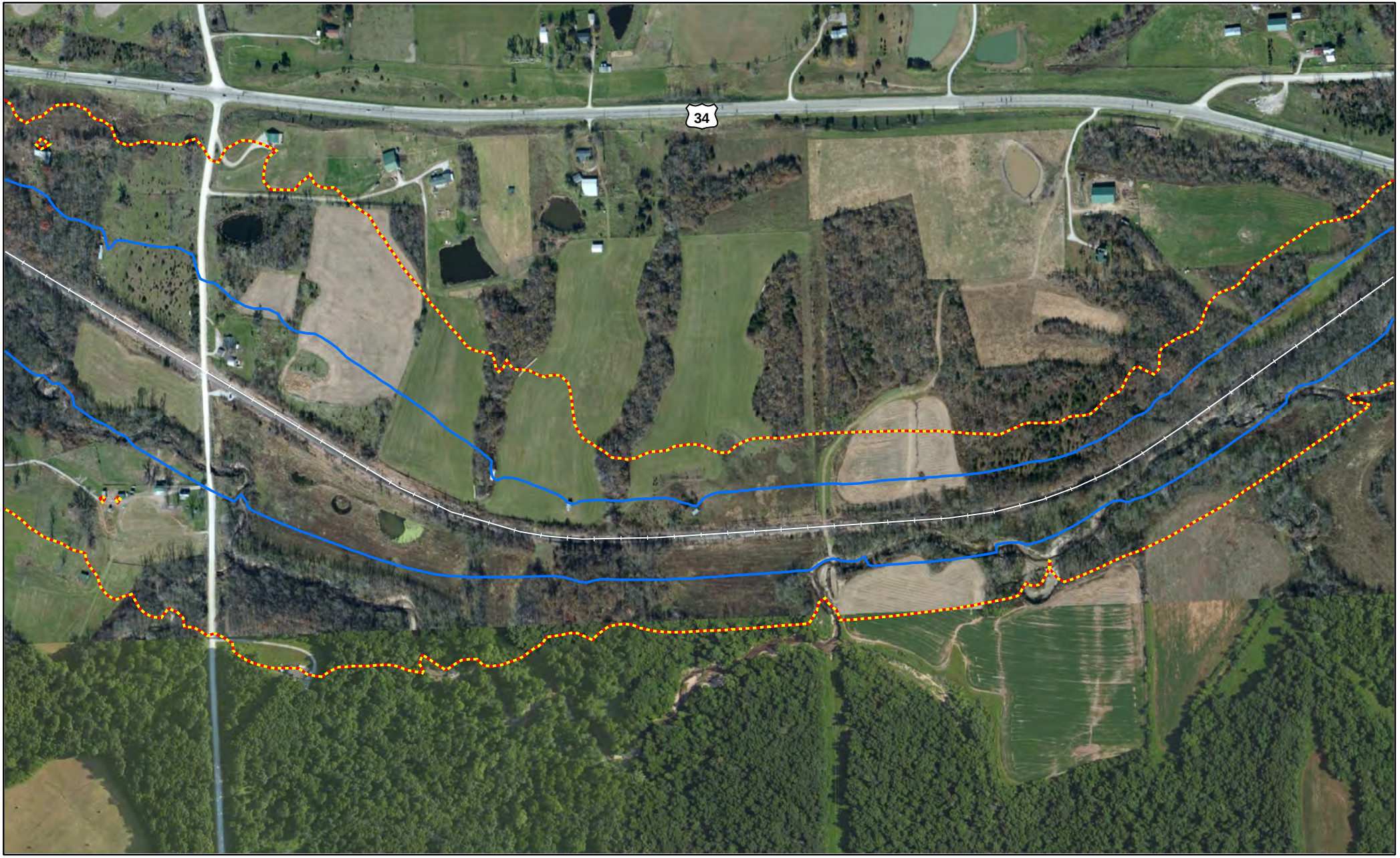
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Noise Contours
Wapello County, IA

Miles
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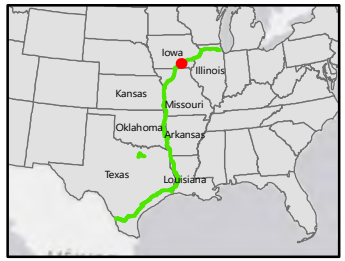
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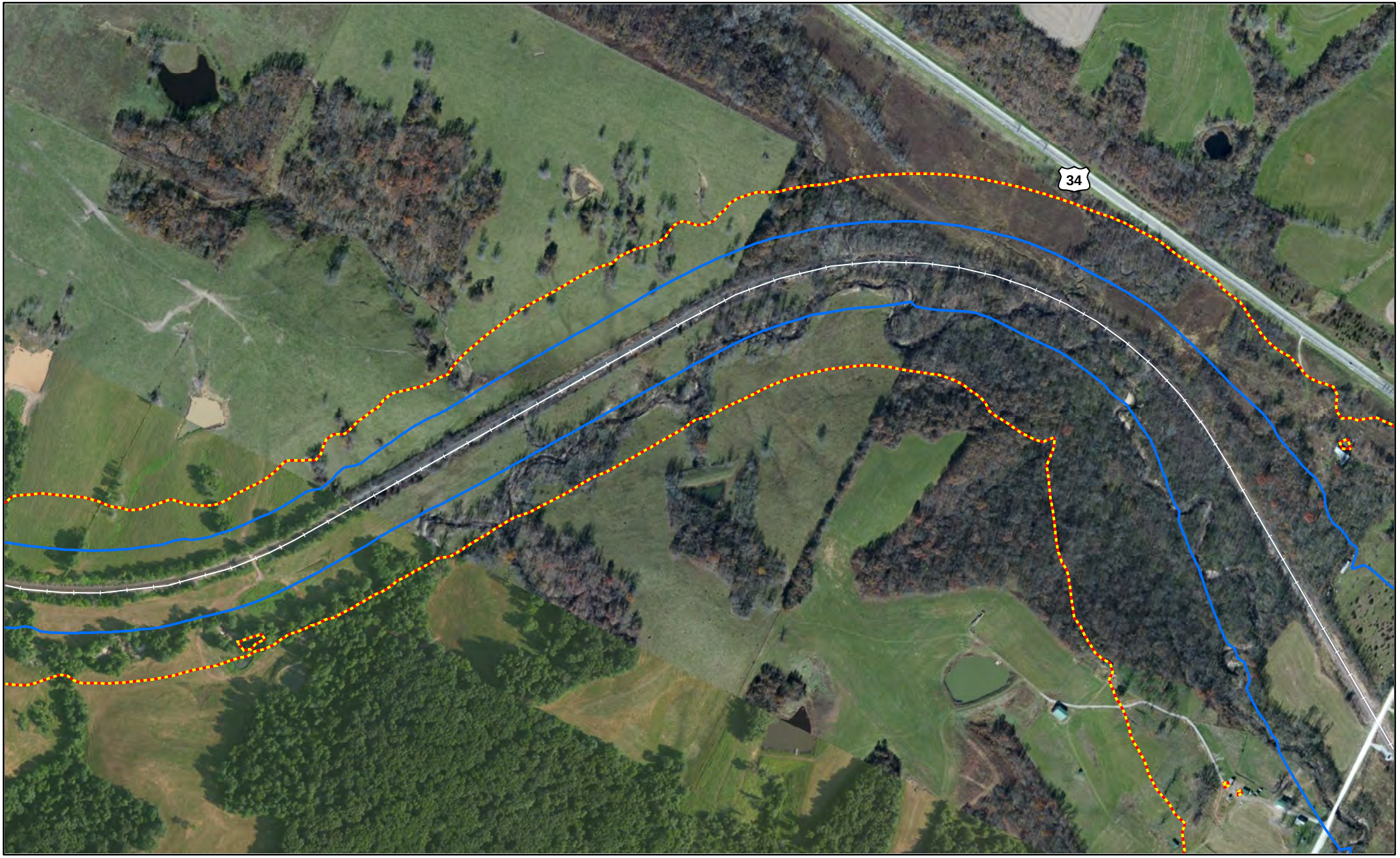
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Noise Contours
Wapello County, IA

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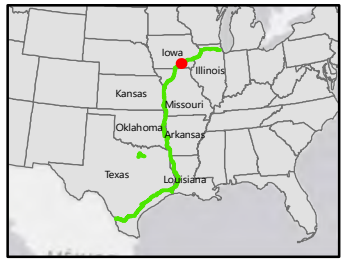
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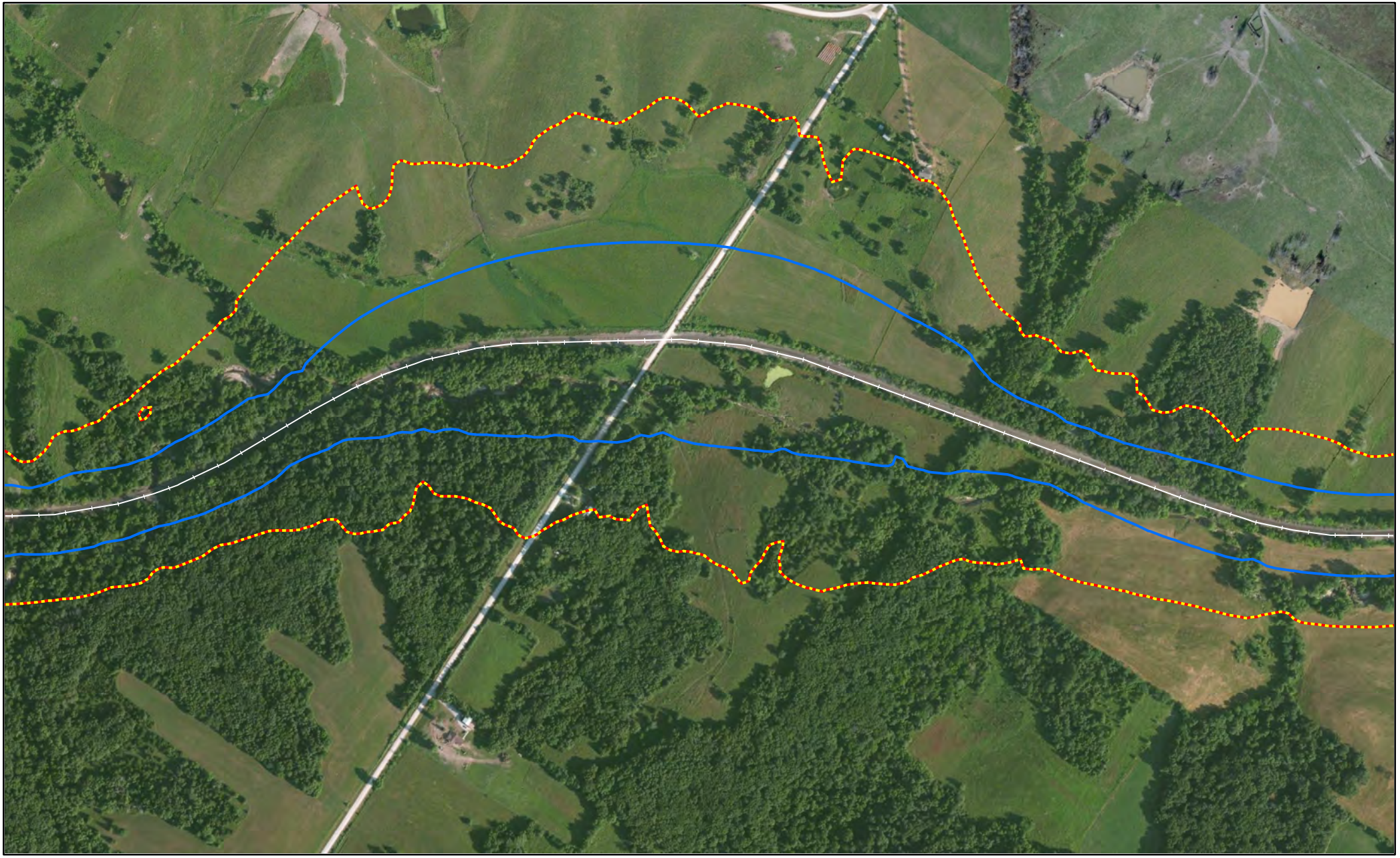
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Noise Contours
Wapello County, IA

Miles
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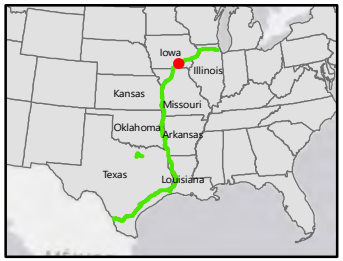
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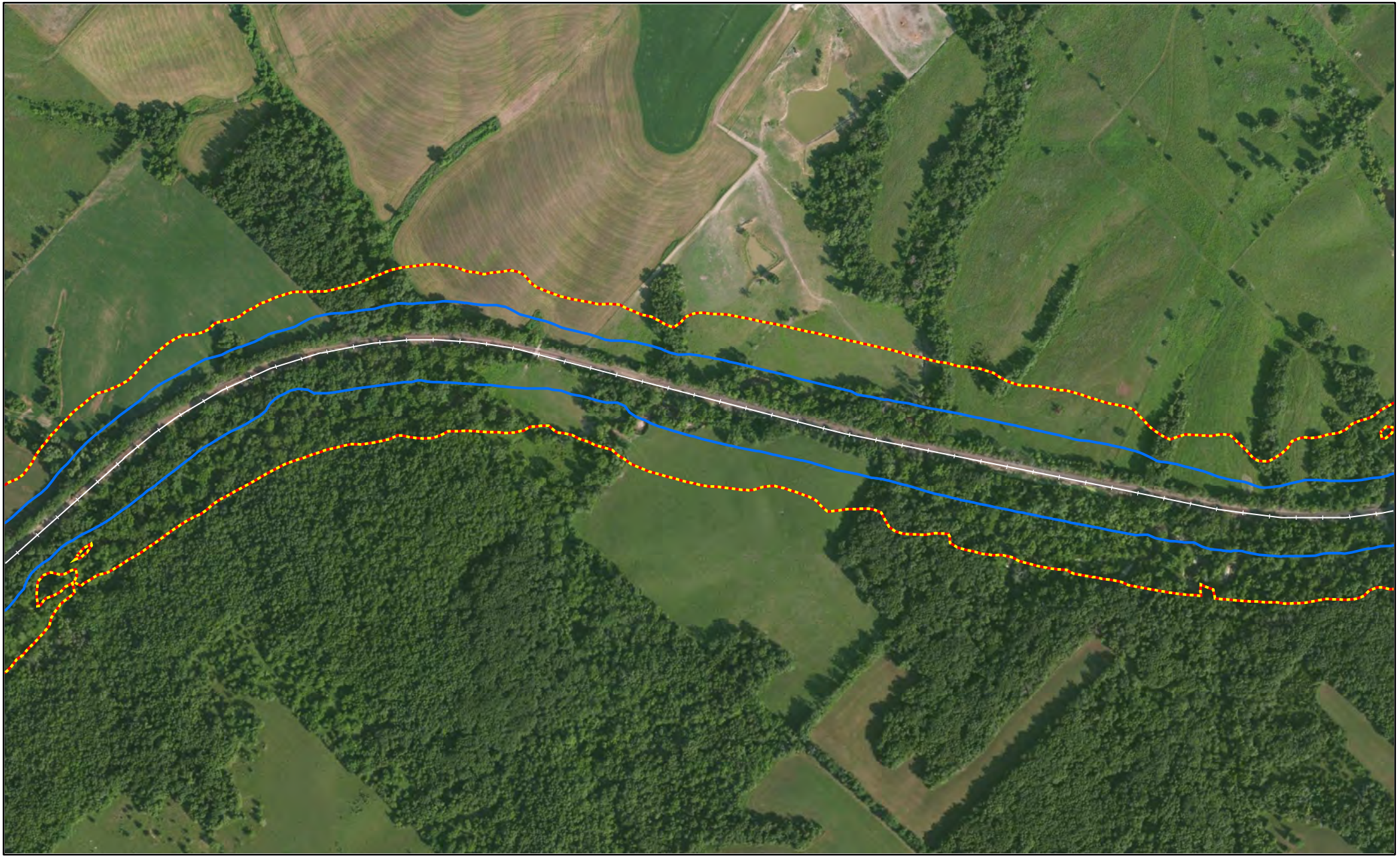
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Noise Contours
Wapello County, IA

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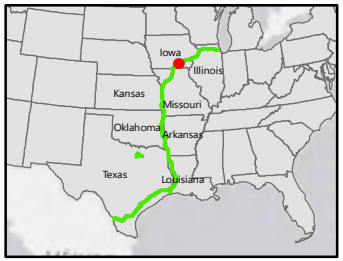
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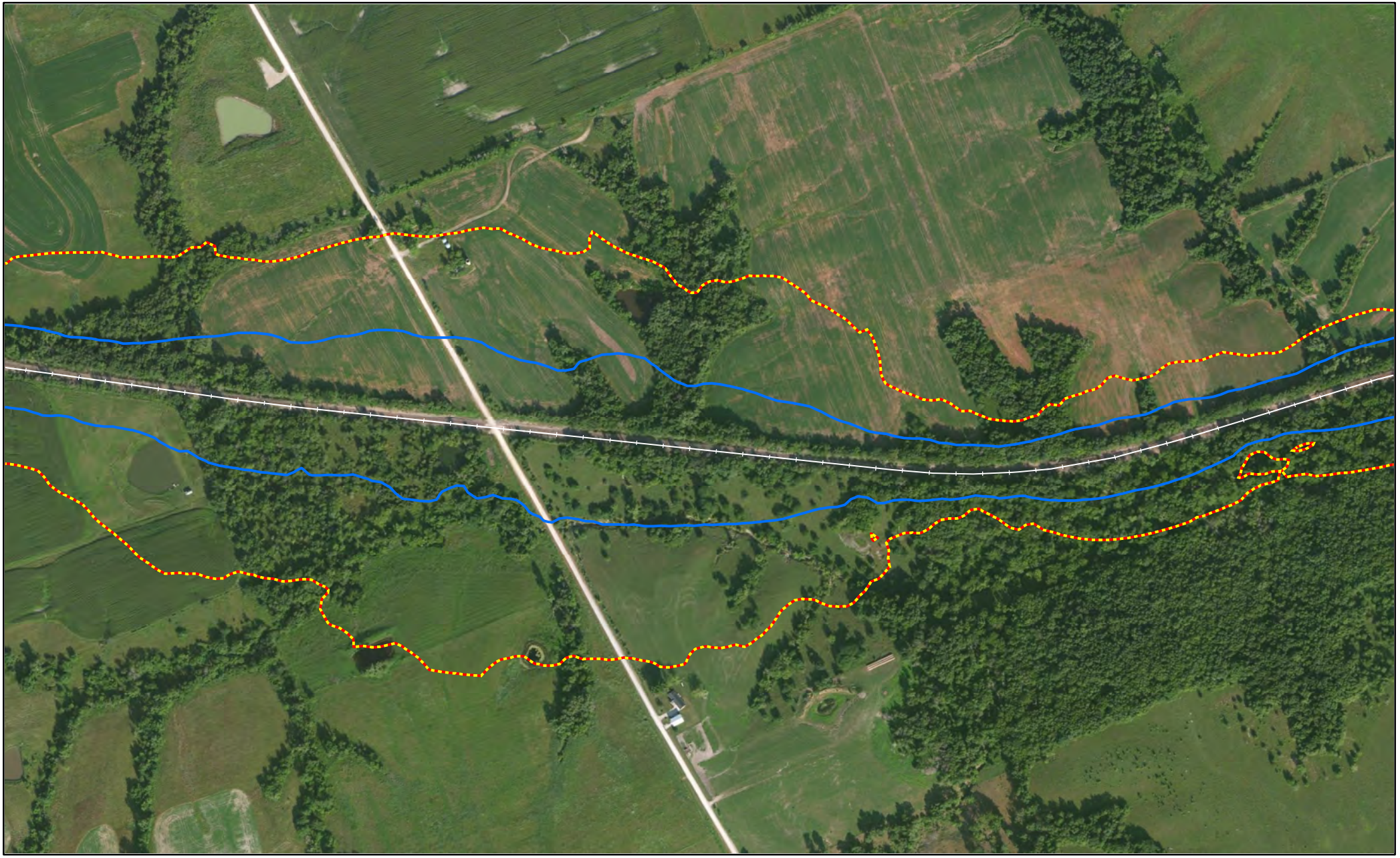
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Noise Contours
Wapello County, IA

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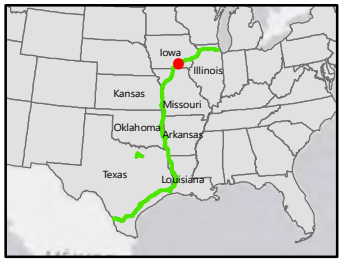
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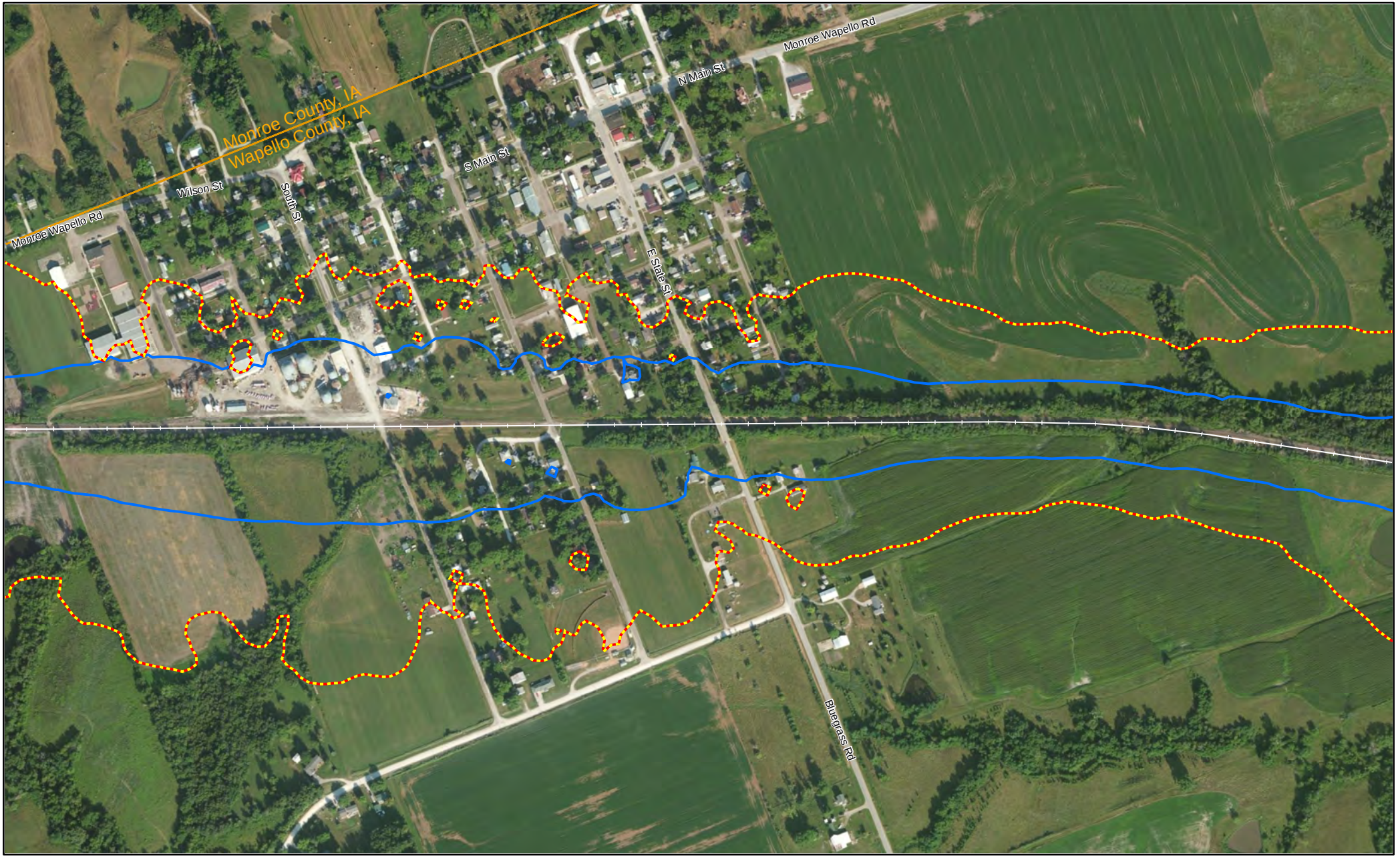
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Noise Contours
Wapello County, IA

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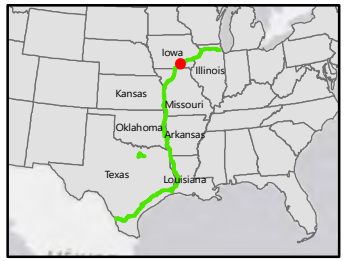
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Noise Contours
Monroe County, IA

Miles
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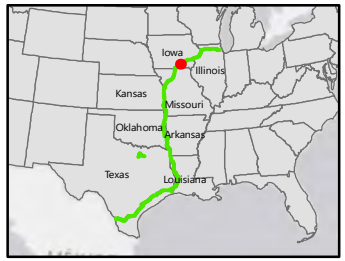
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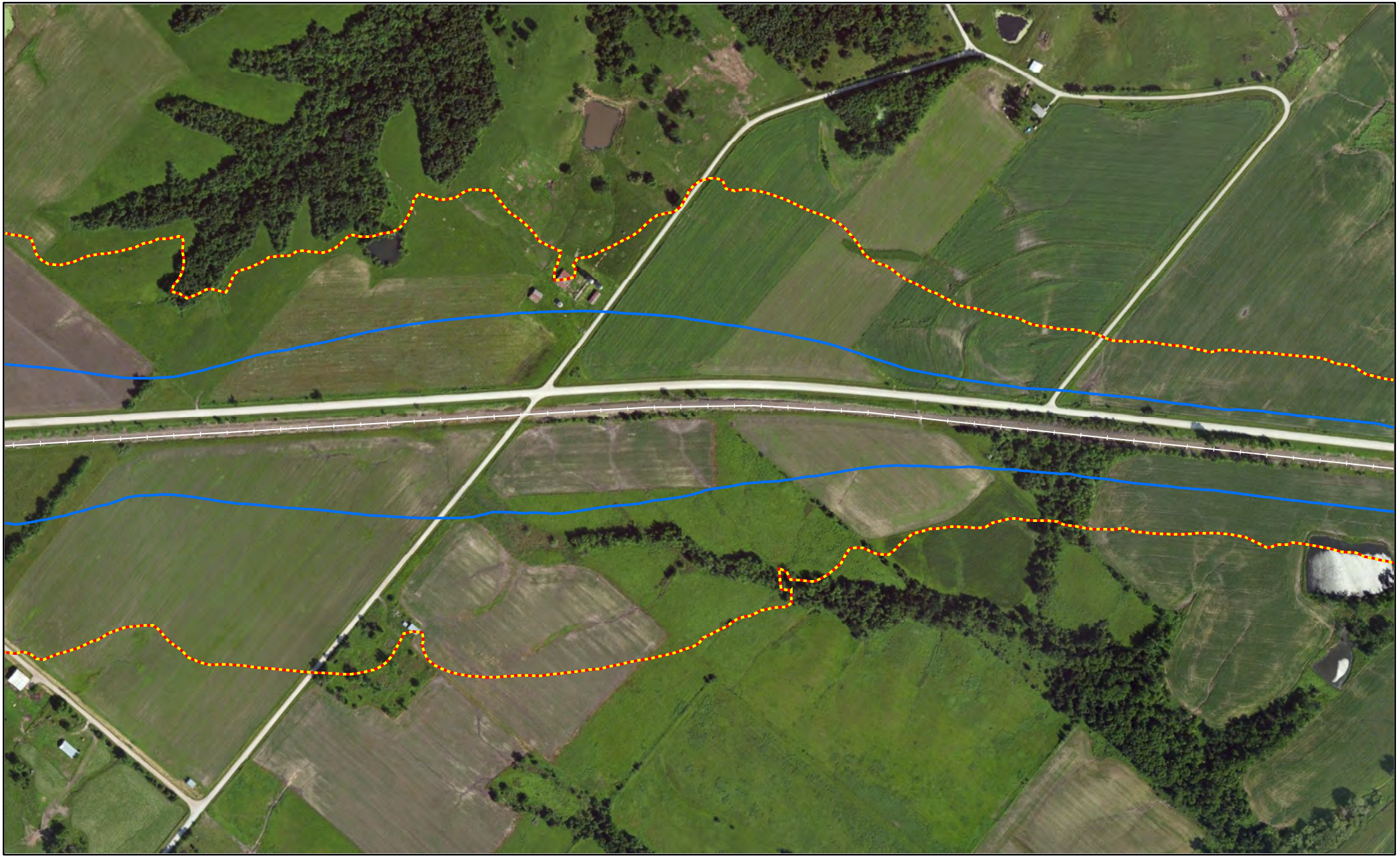
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Noise Contours
Monroe County, IA

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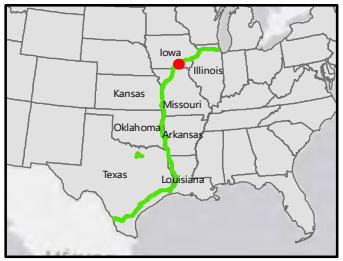
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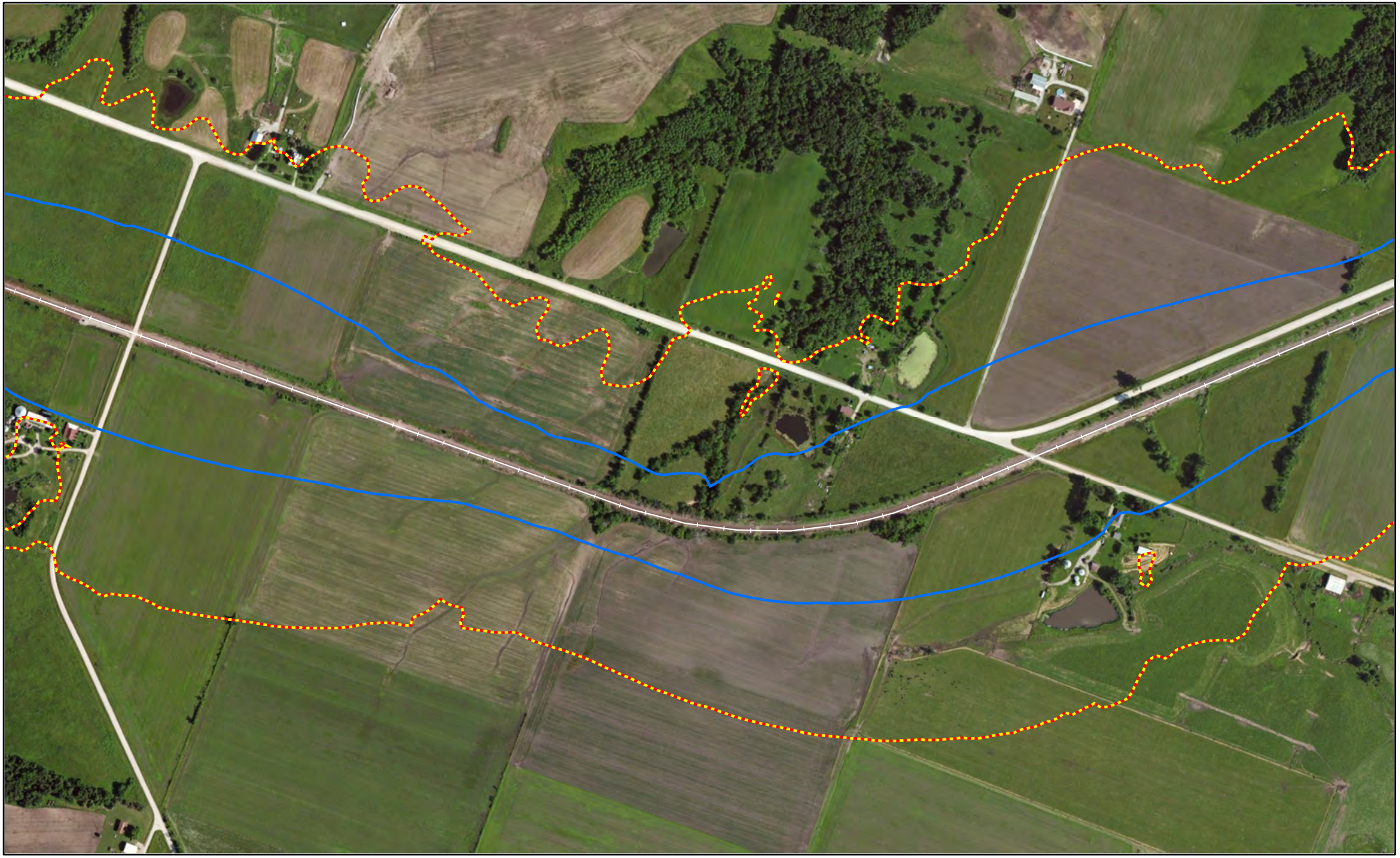
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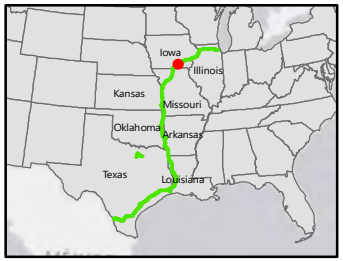
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0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



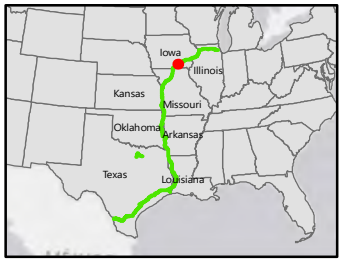
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

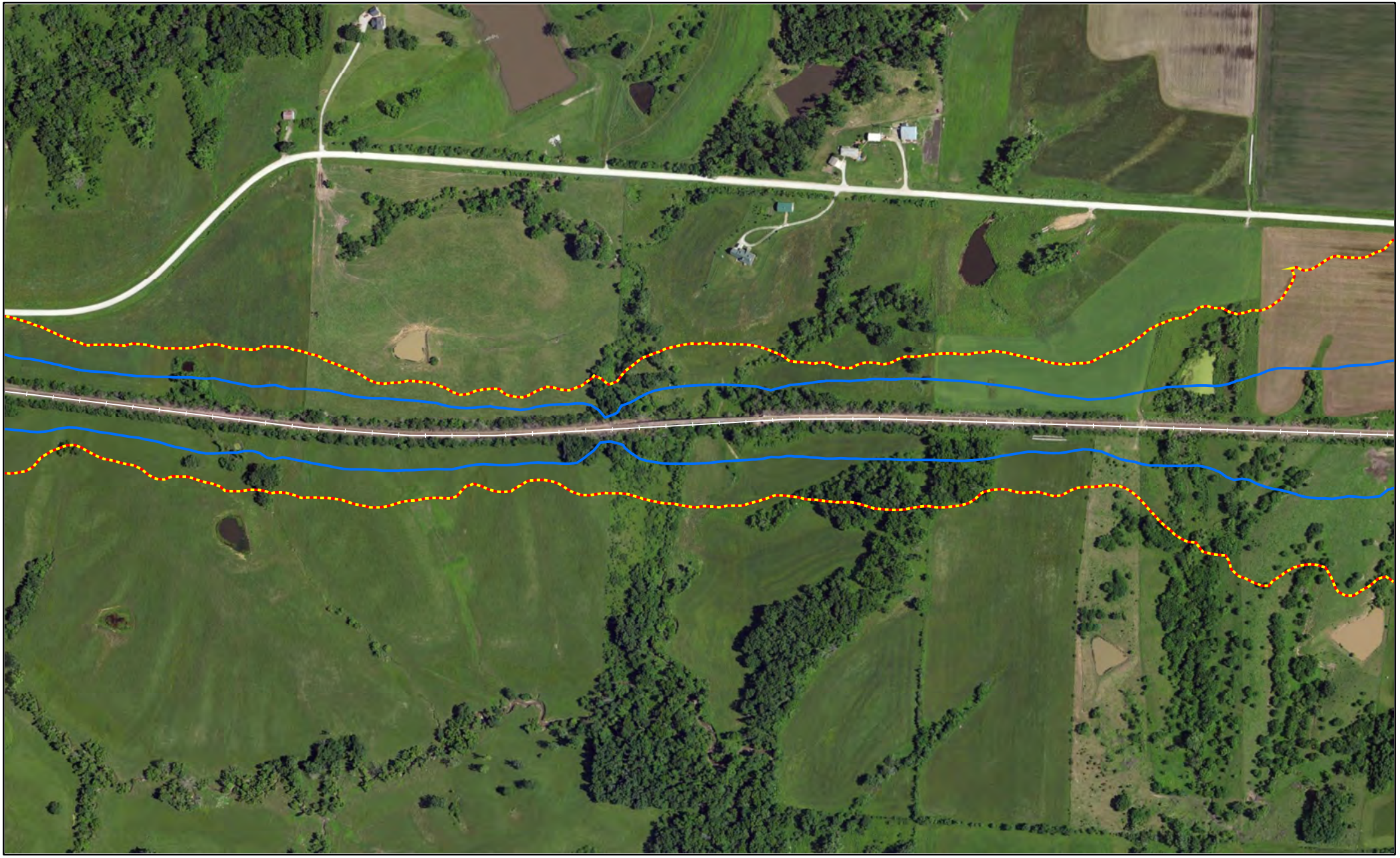
Source: ESRI.



Noise Contours
Monroe County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



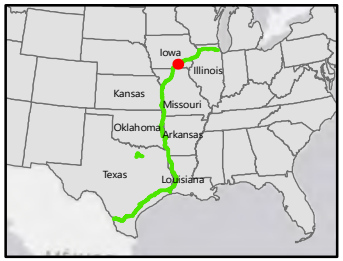
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Noise Contours
Monroe County, IA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



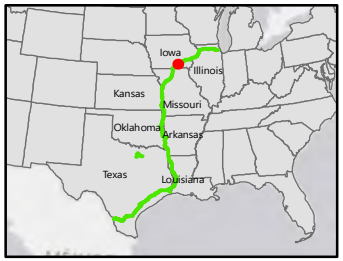
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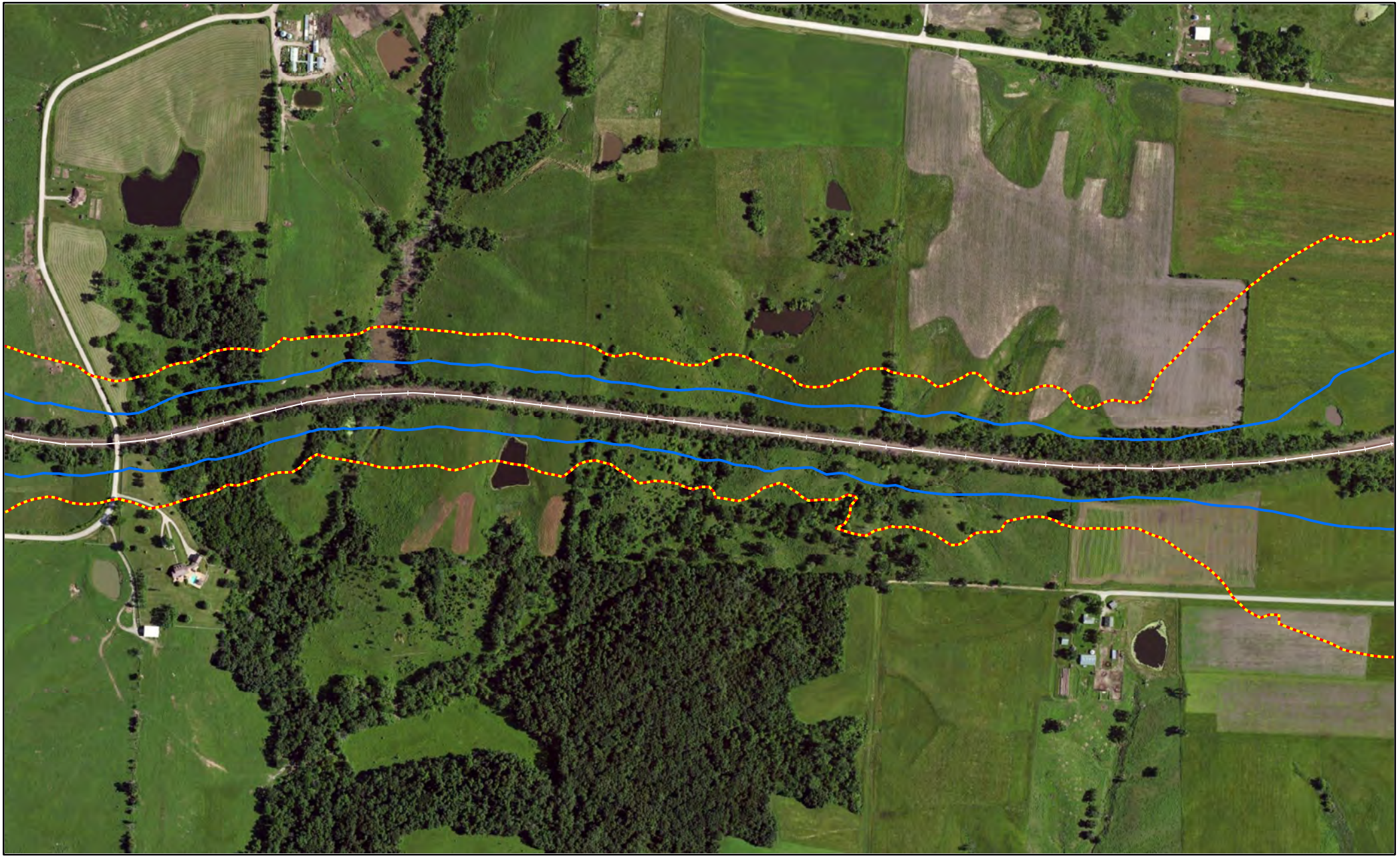
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Noise Contours
Monroe County, IA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



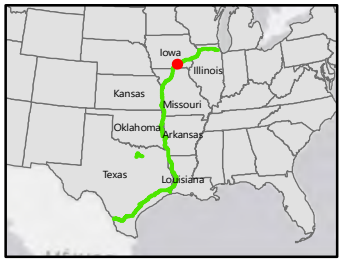
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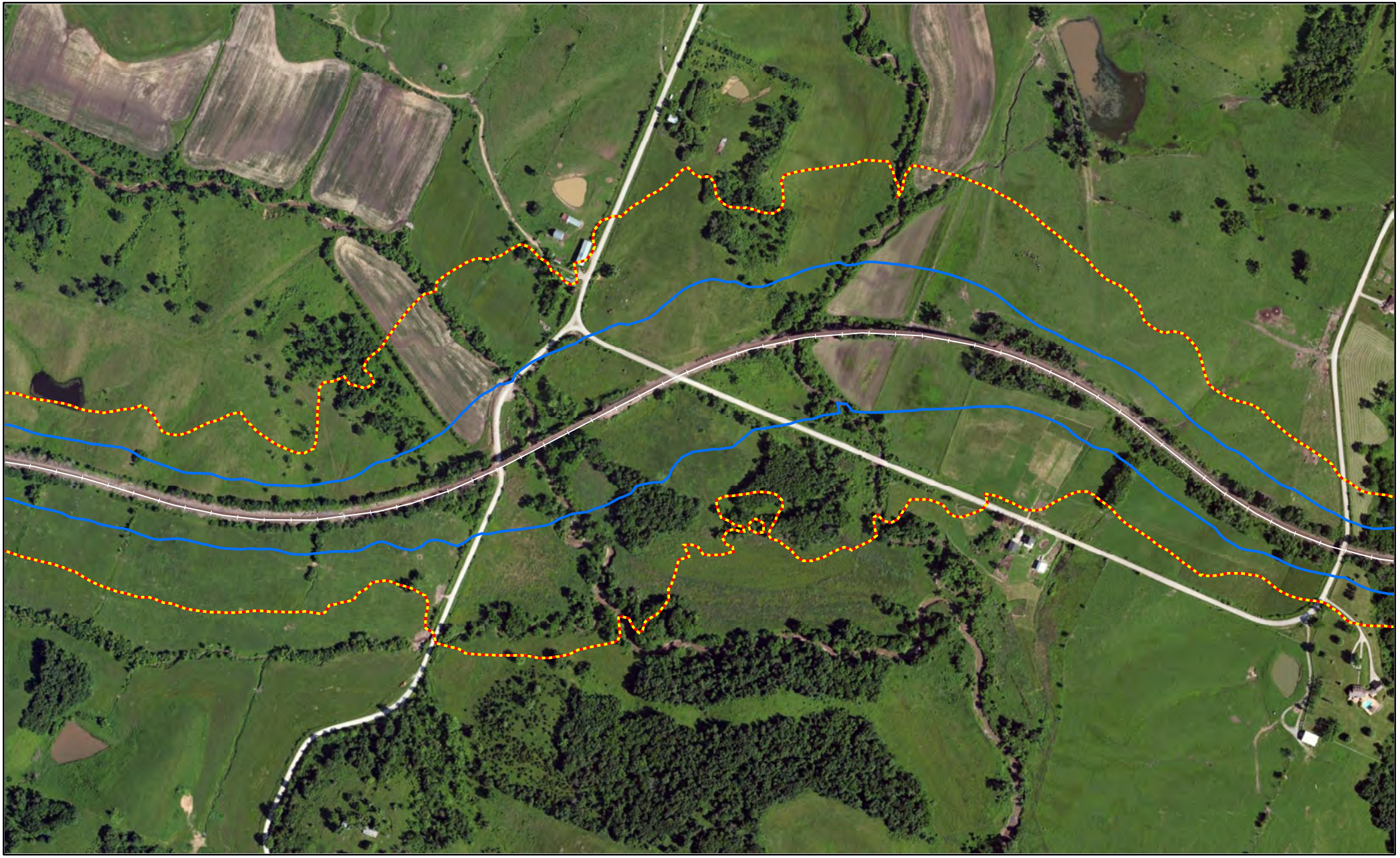
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Noise Contours
Monroe County, IA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



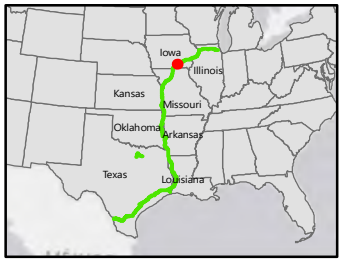
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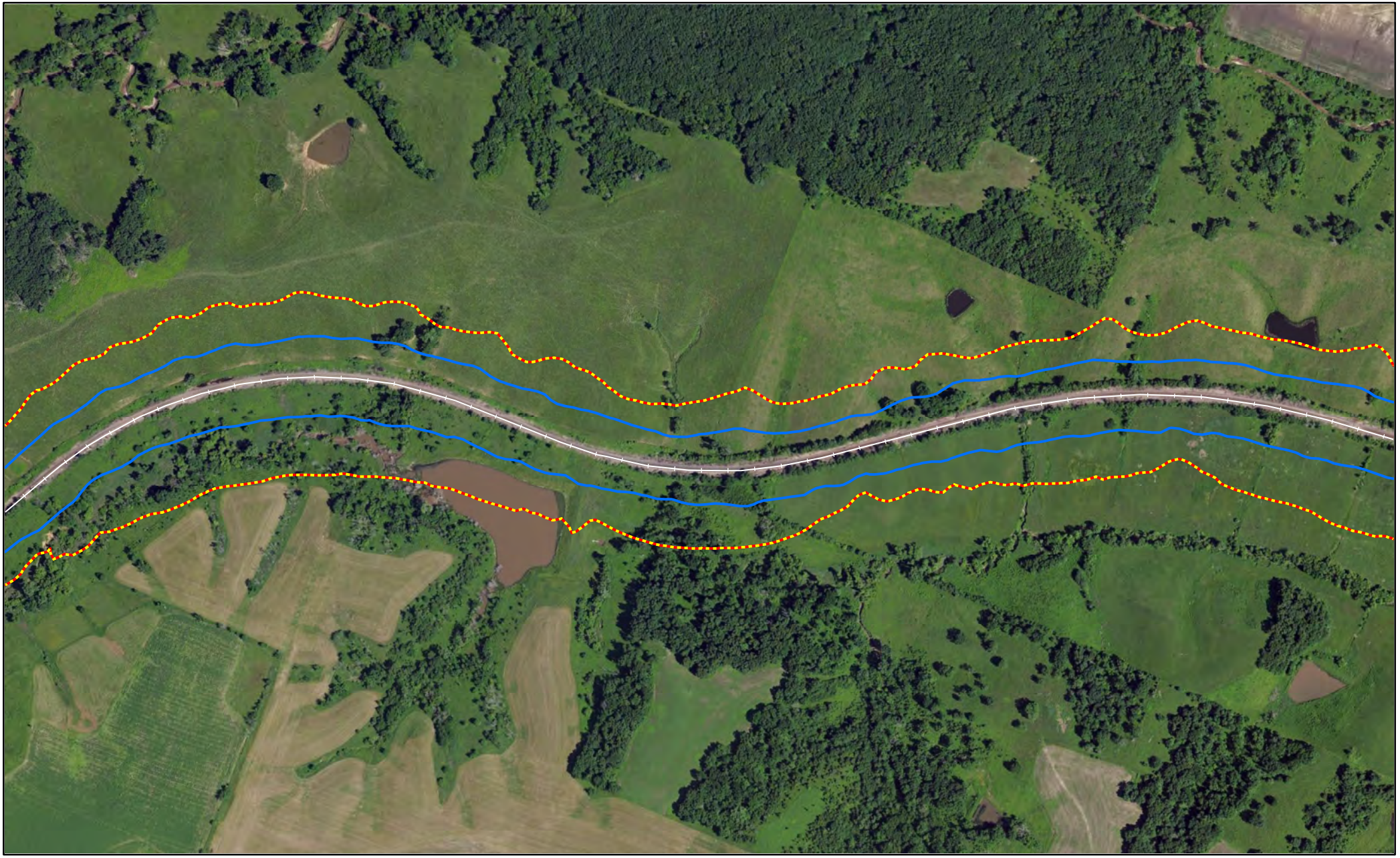
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Noise Contours
Monroe County, IA

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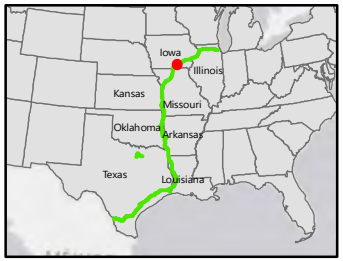
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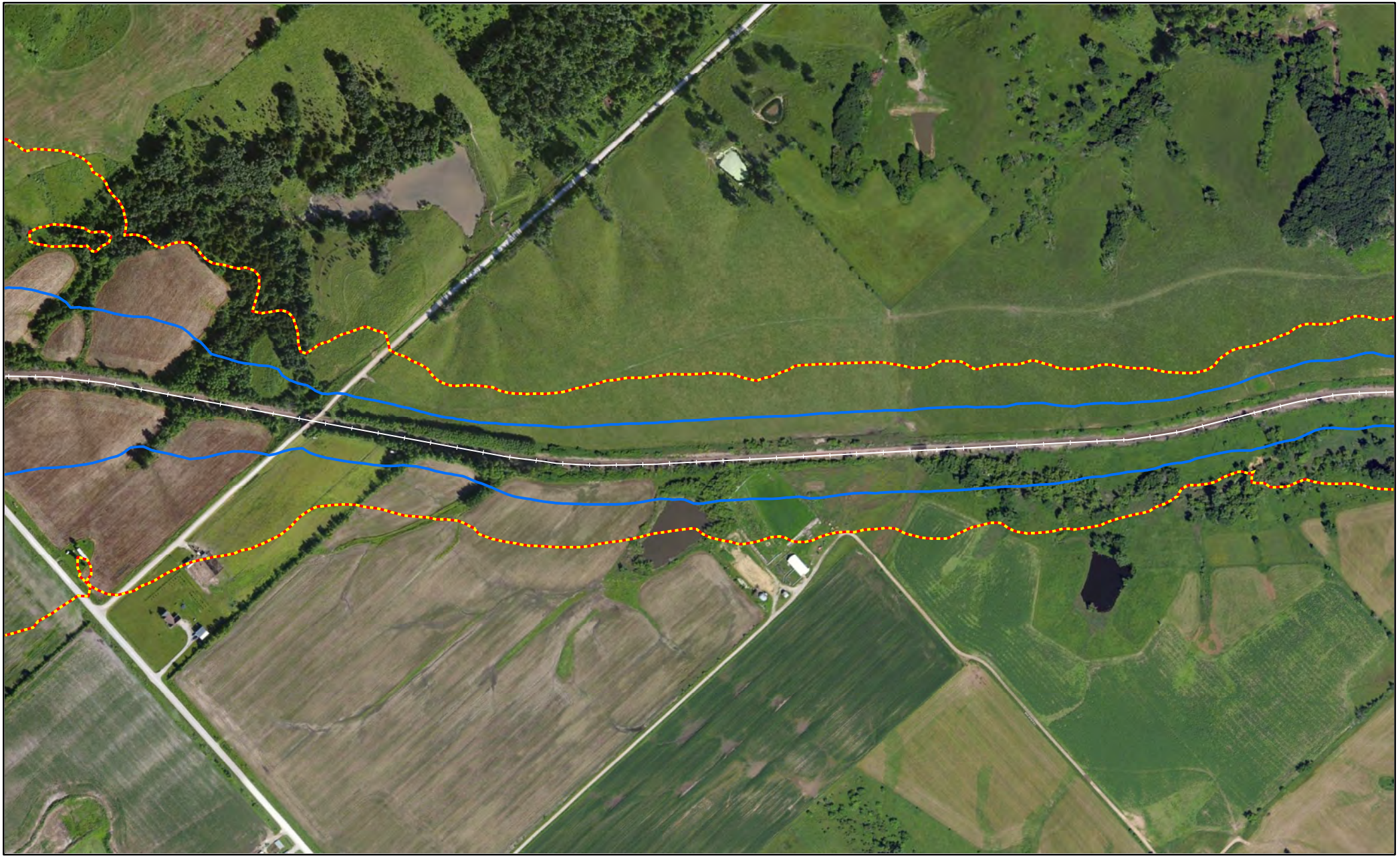
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Monroe County, IA

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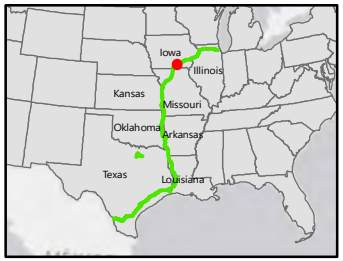
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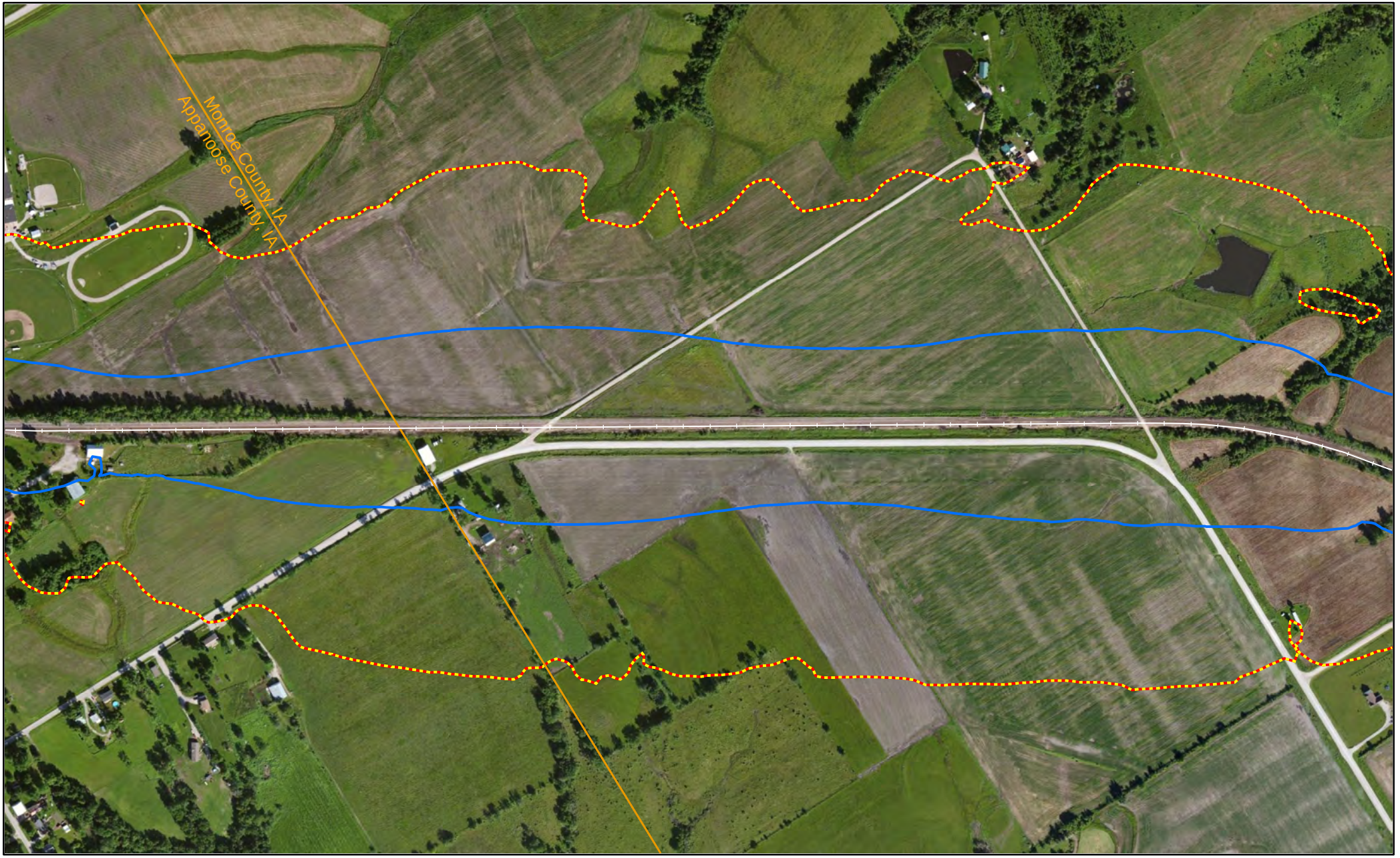
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Noise Contours
Monroe County, IA

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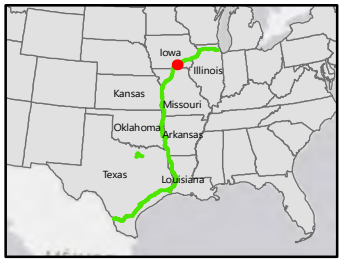
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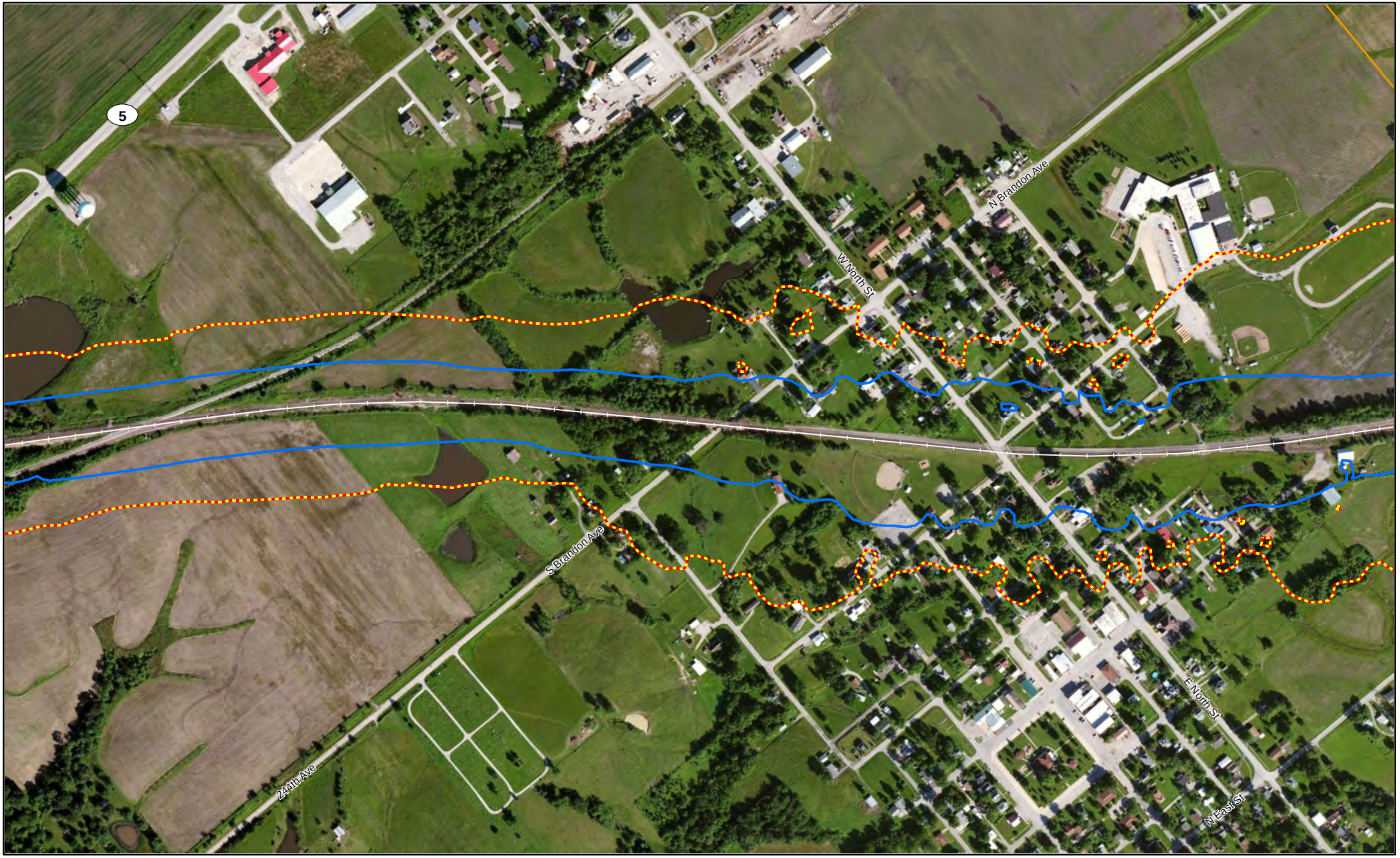
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Noise Contours
Appanoose County, IA

Miles
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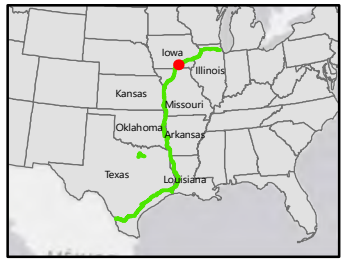
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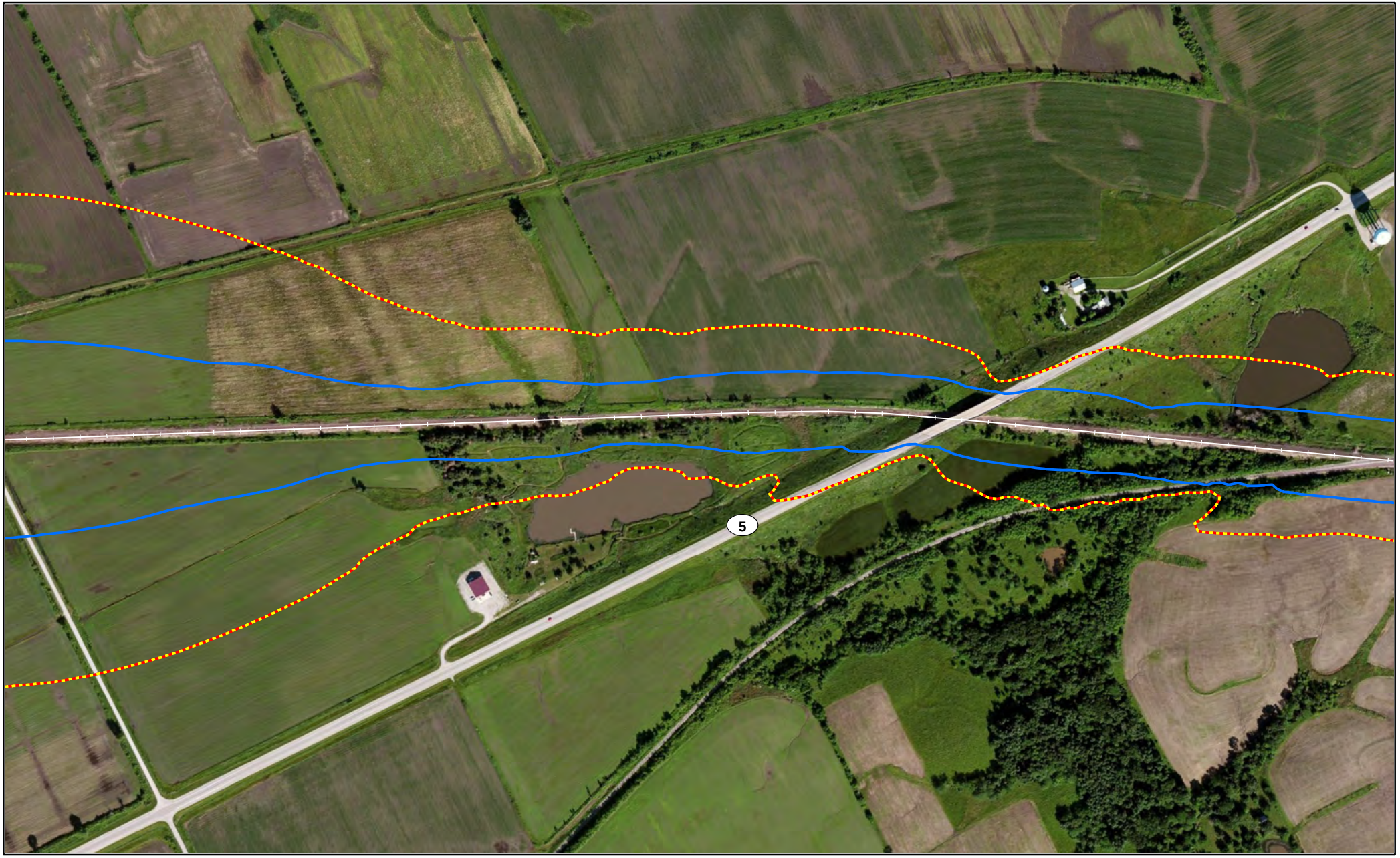
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Noise Contours
Appanoose County, IA

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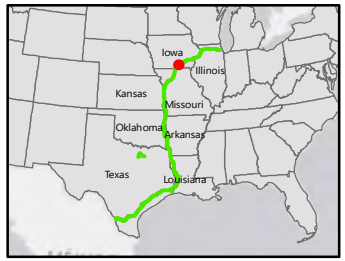
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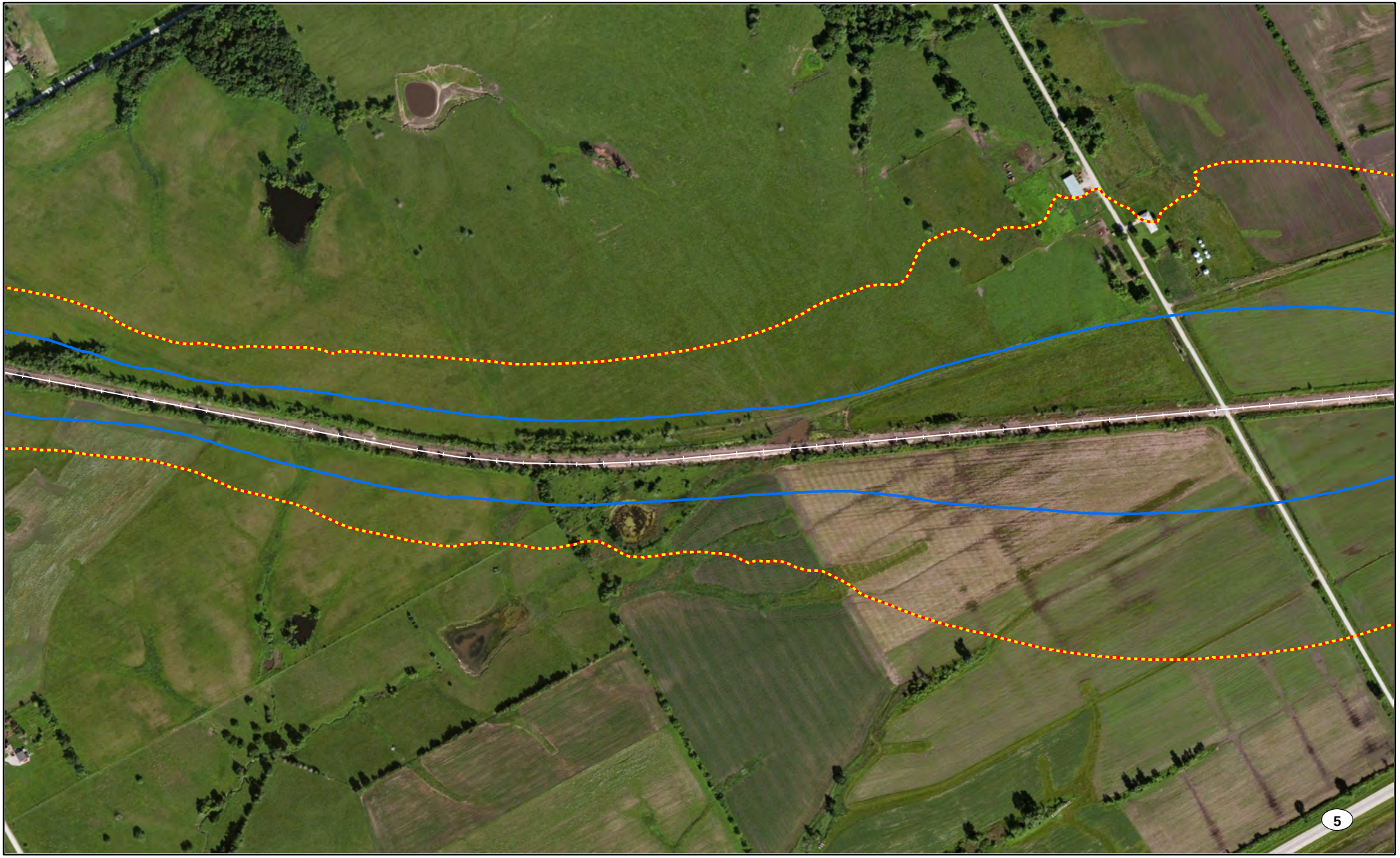
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Noise Contours
Appanoose County, IA

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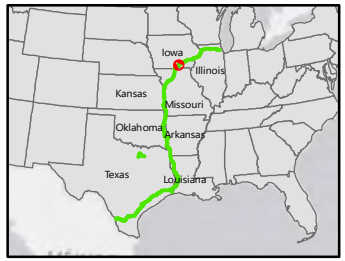
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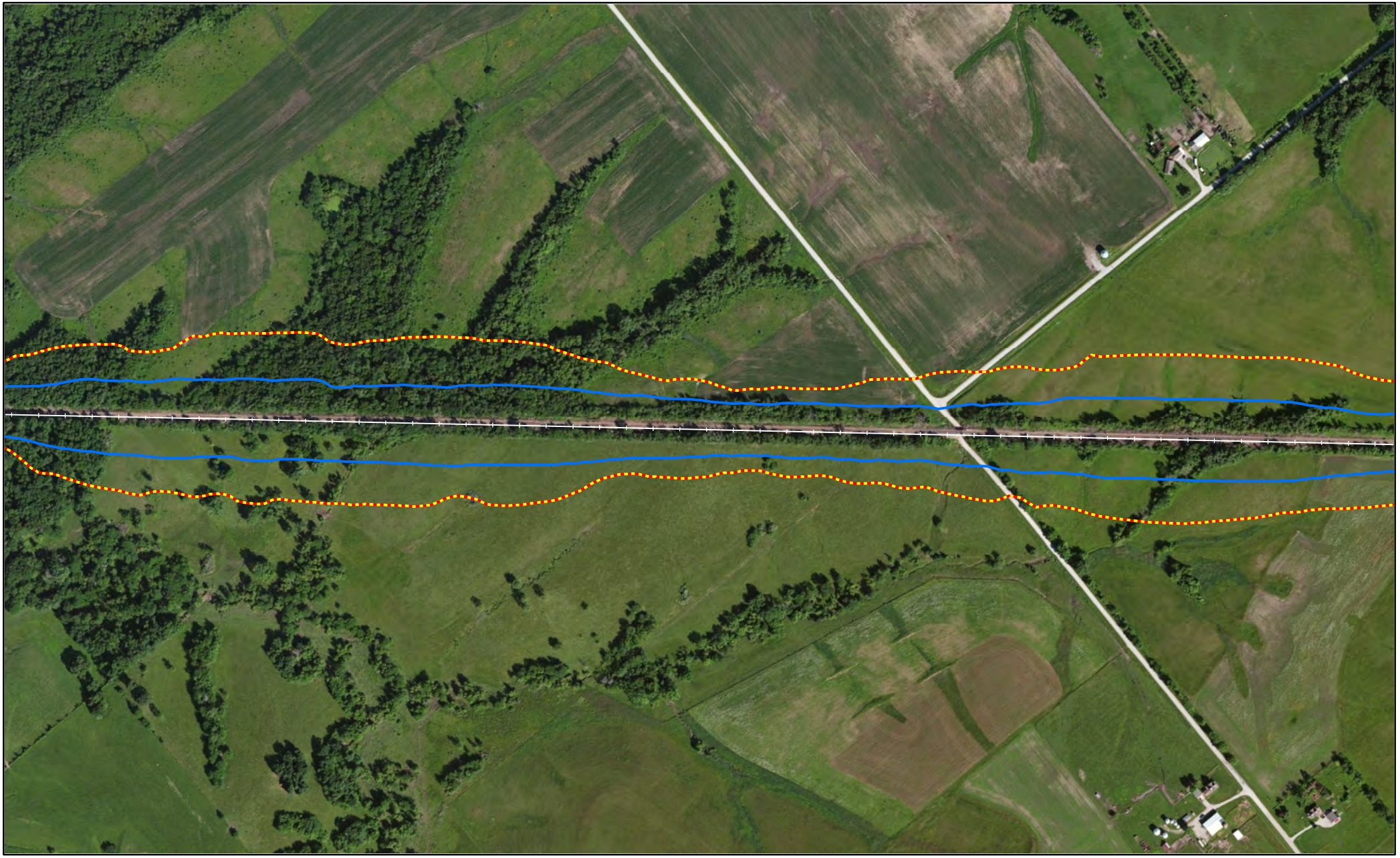
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Noise Contours
Appanoose County, IA

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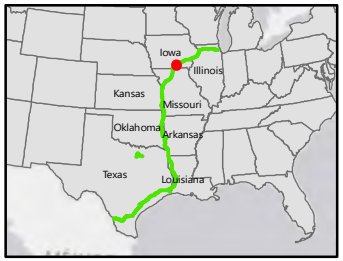
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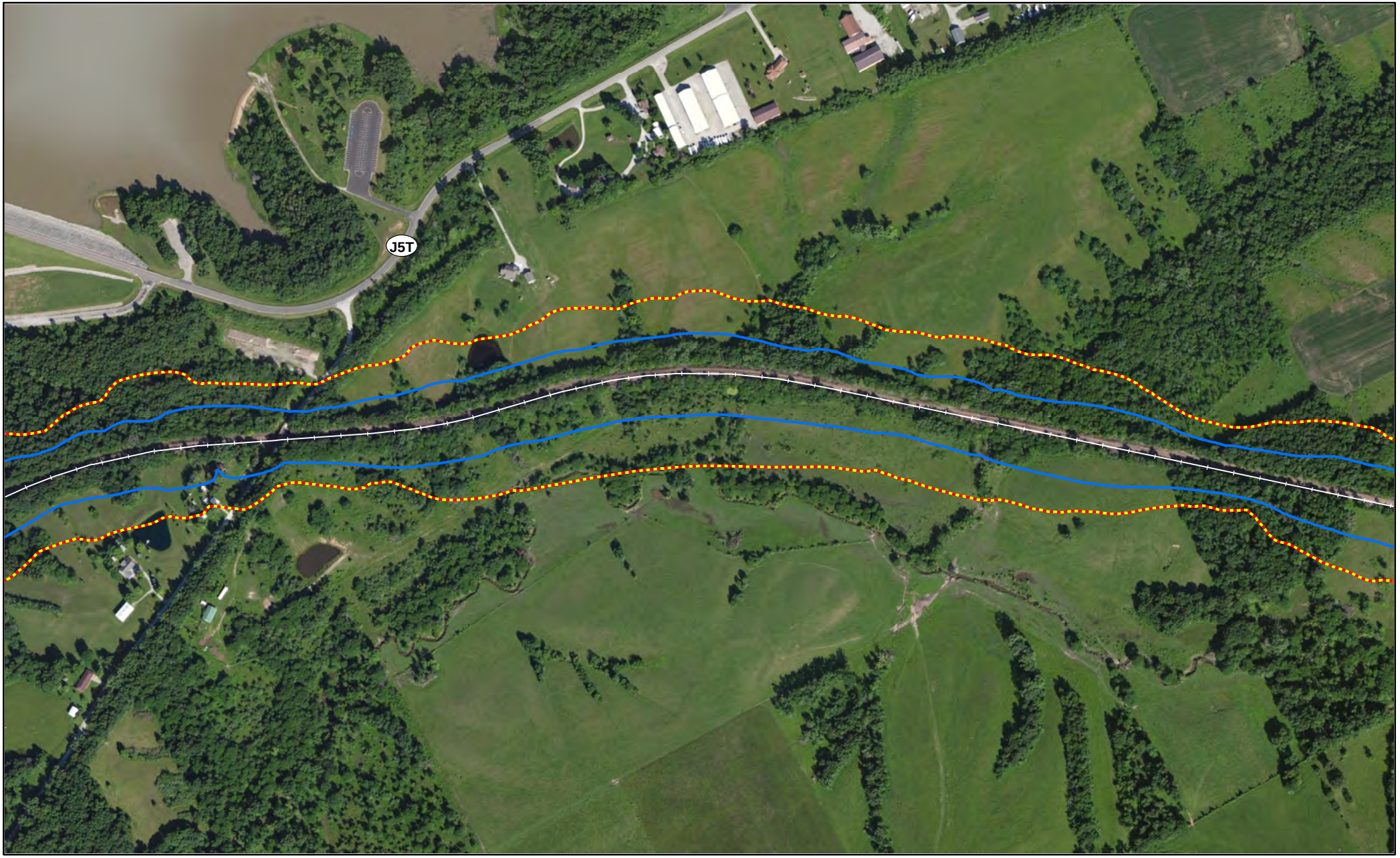
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Noise Contours
Appanoose County, IA

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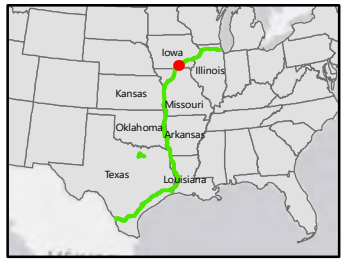
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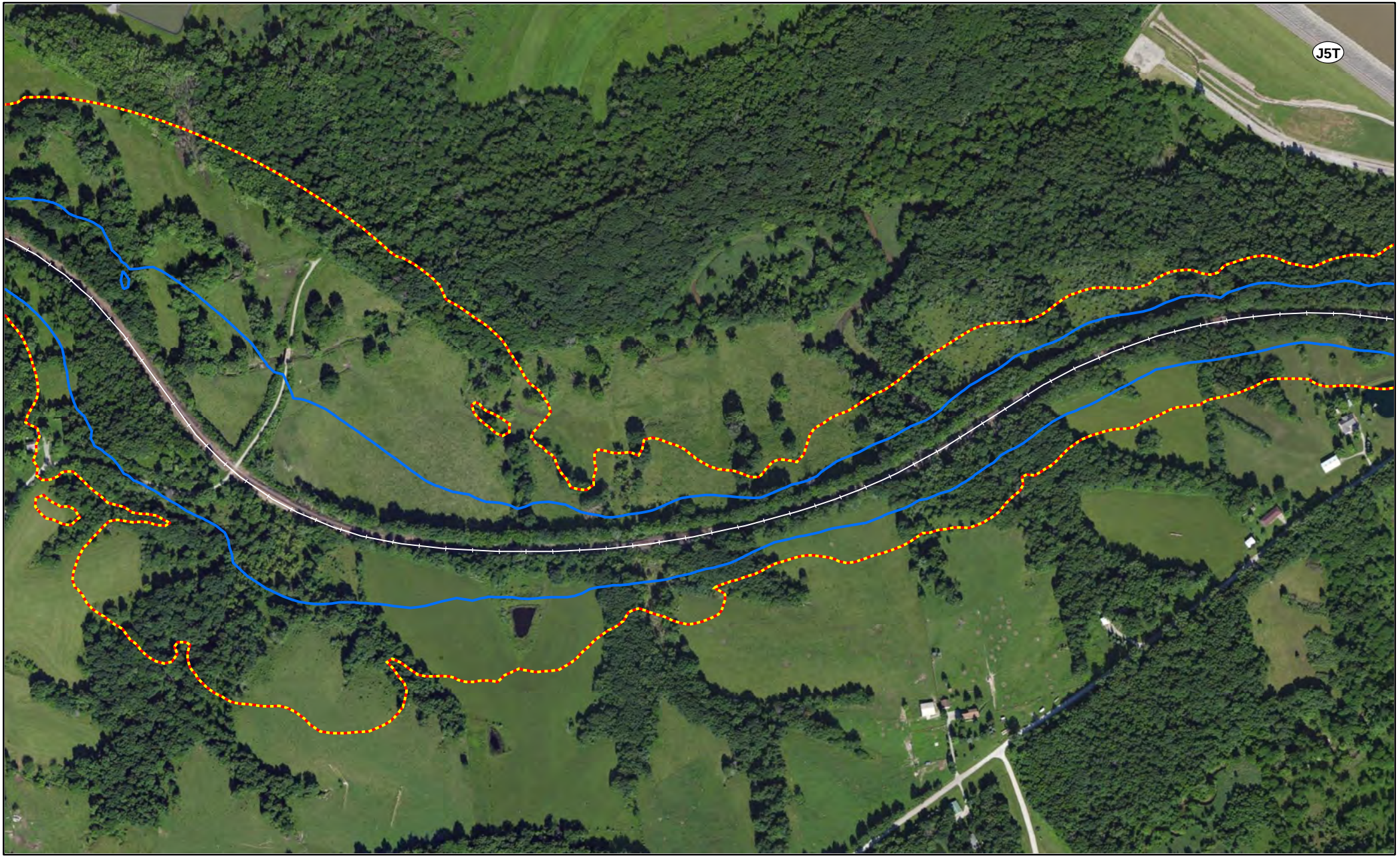
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Noise Contours
Appanoose County, IA

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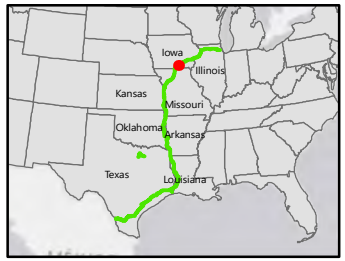
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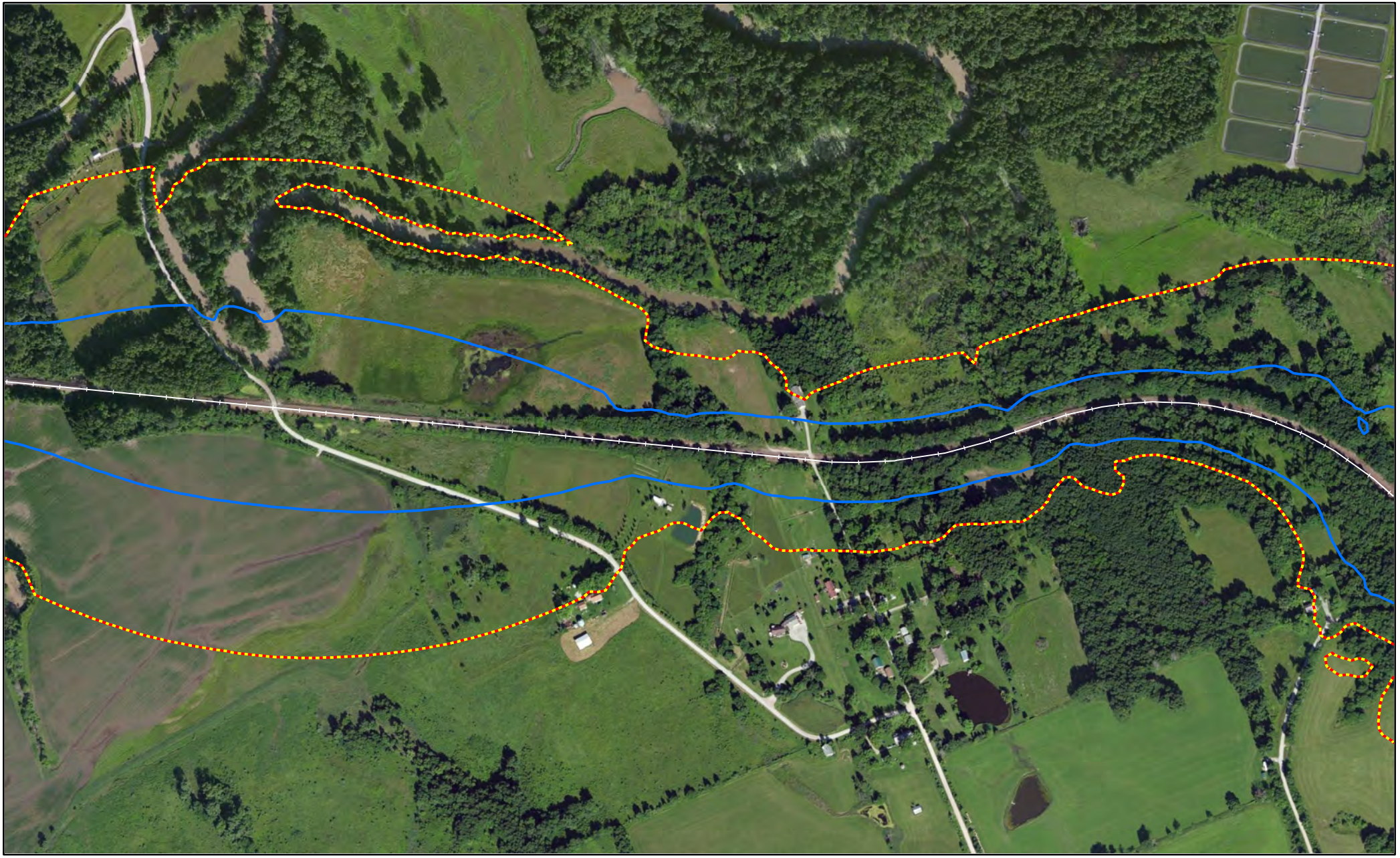
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Noise Contours
Appanoose County, IA

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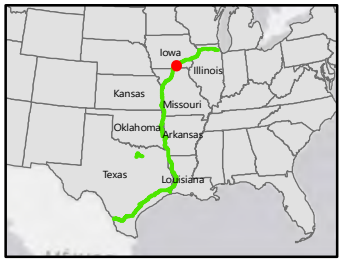
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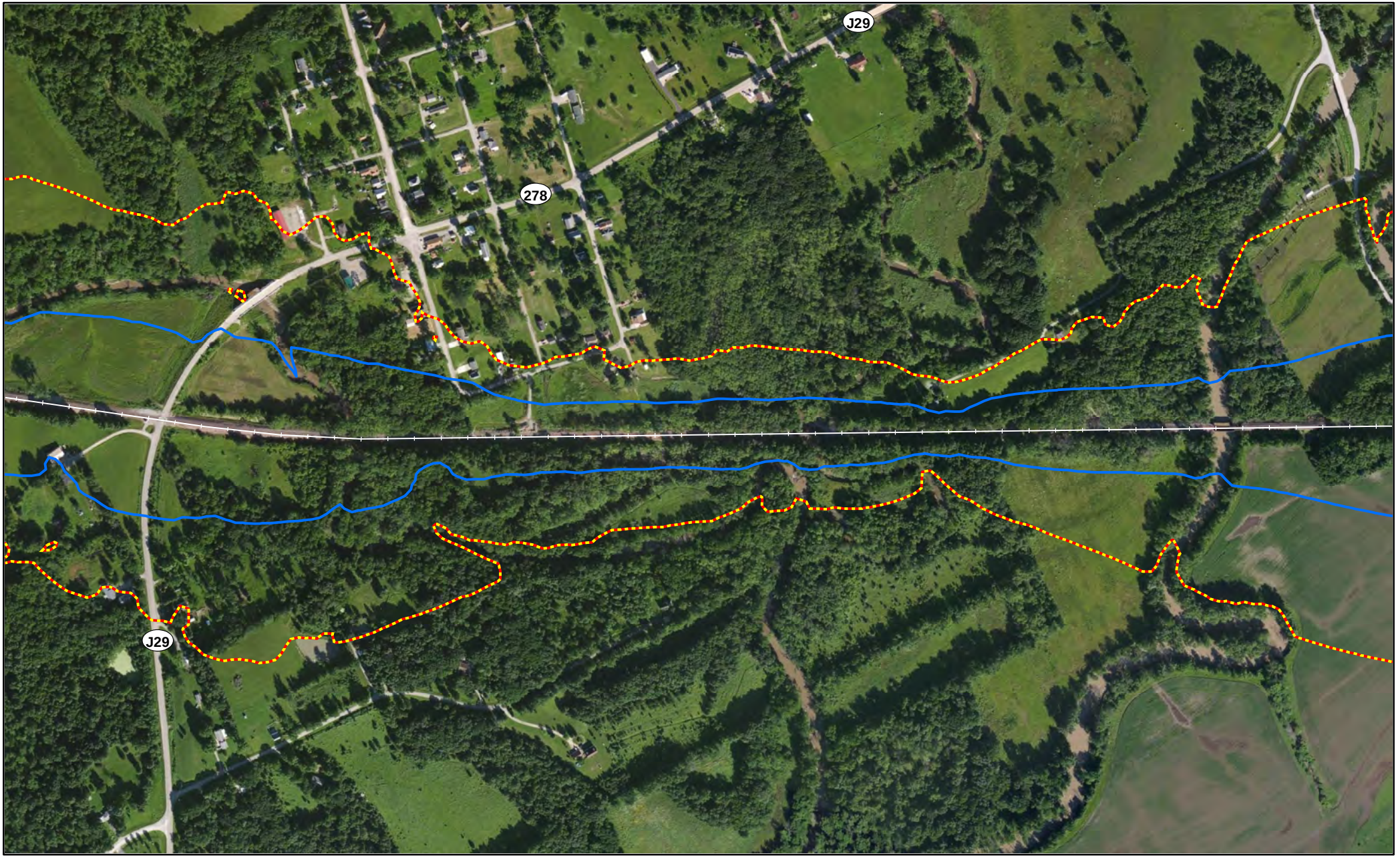
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Noise Contours
Appanoose County, IA

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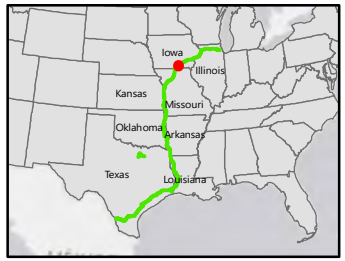
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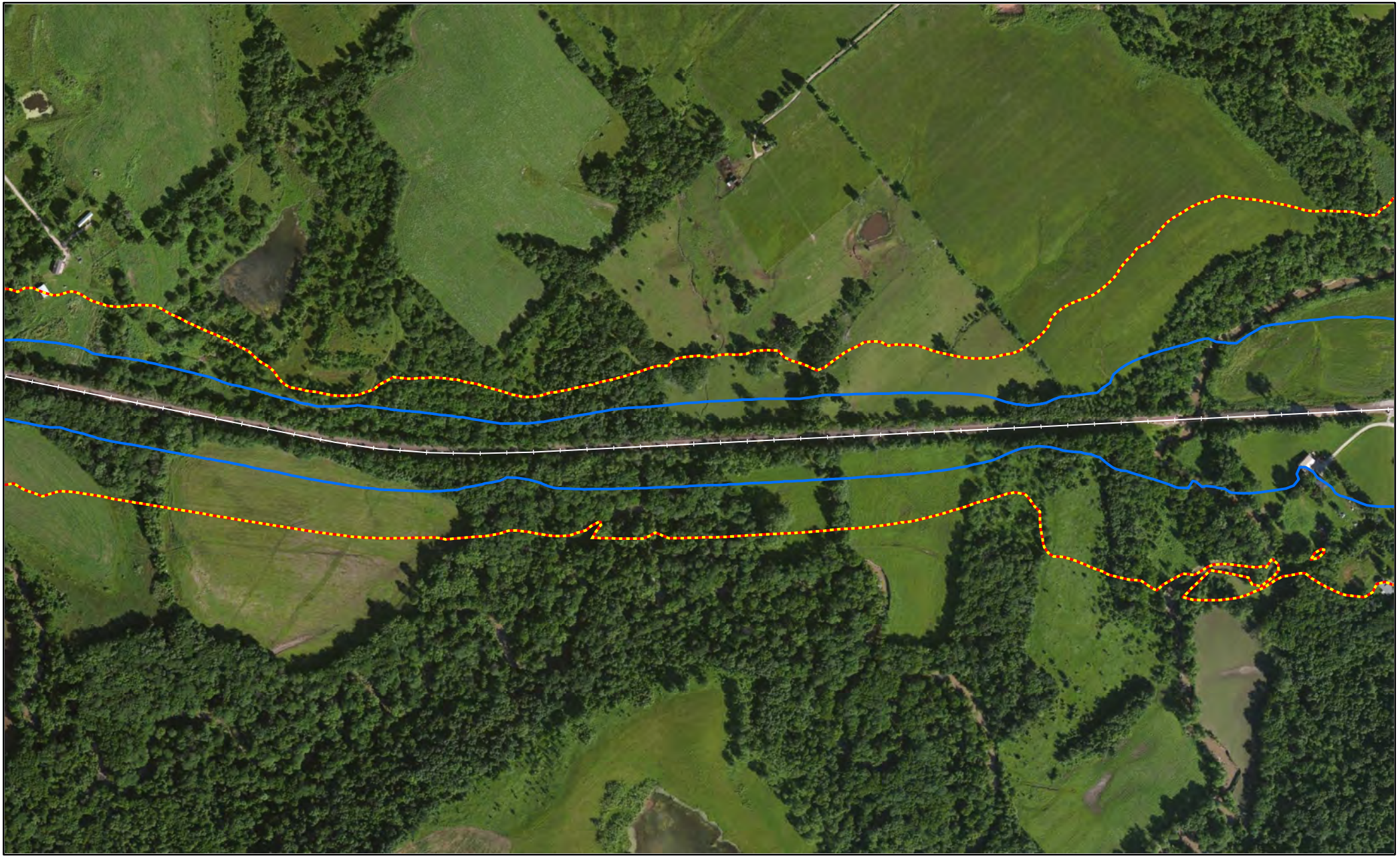
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Noise Contours
Appanoose County, IA

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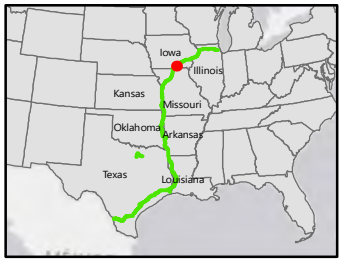
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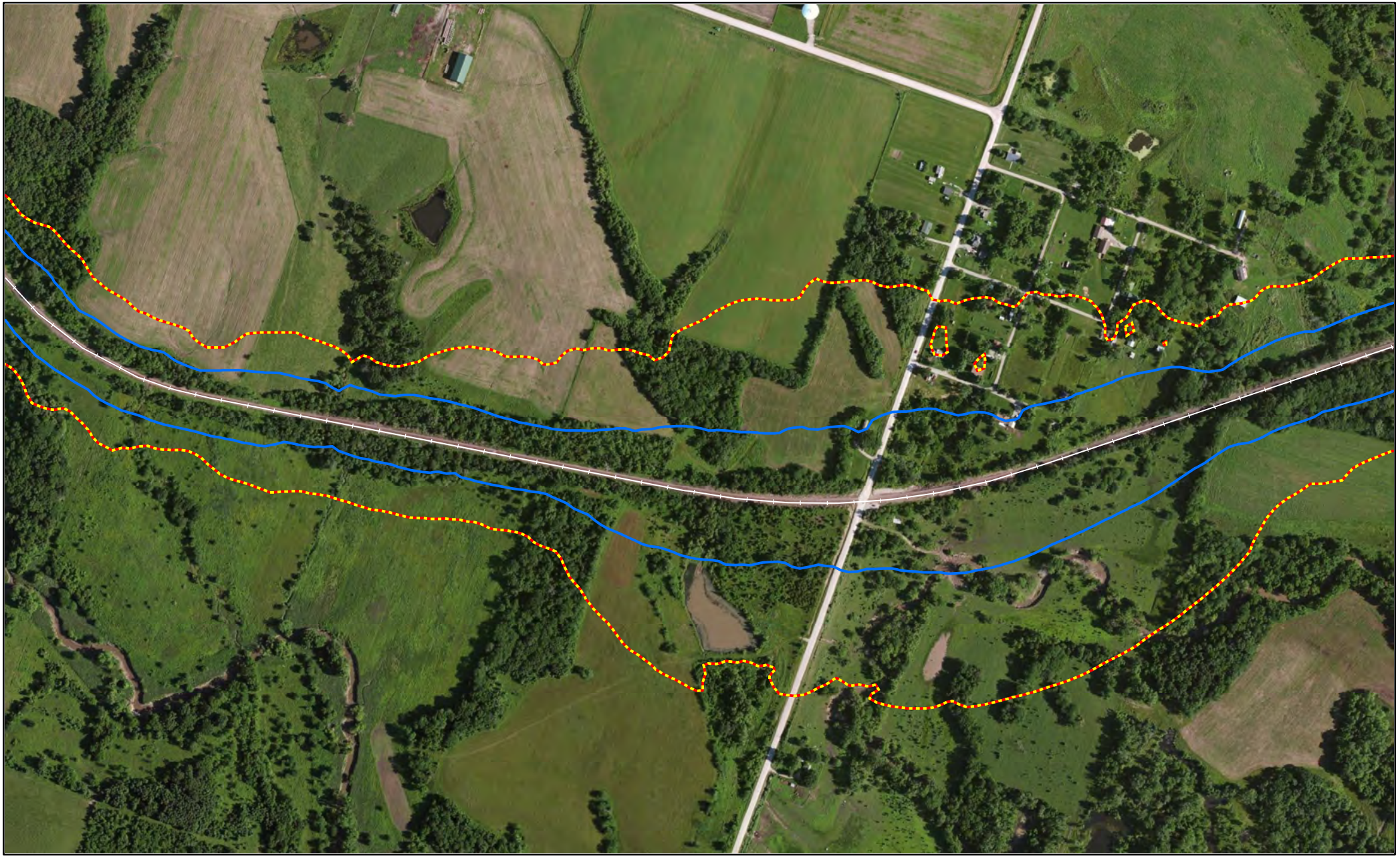
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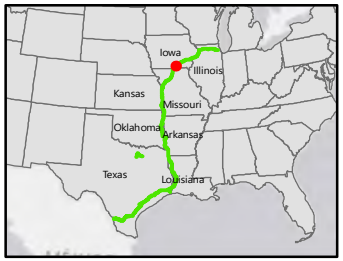
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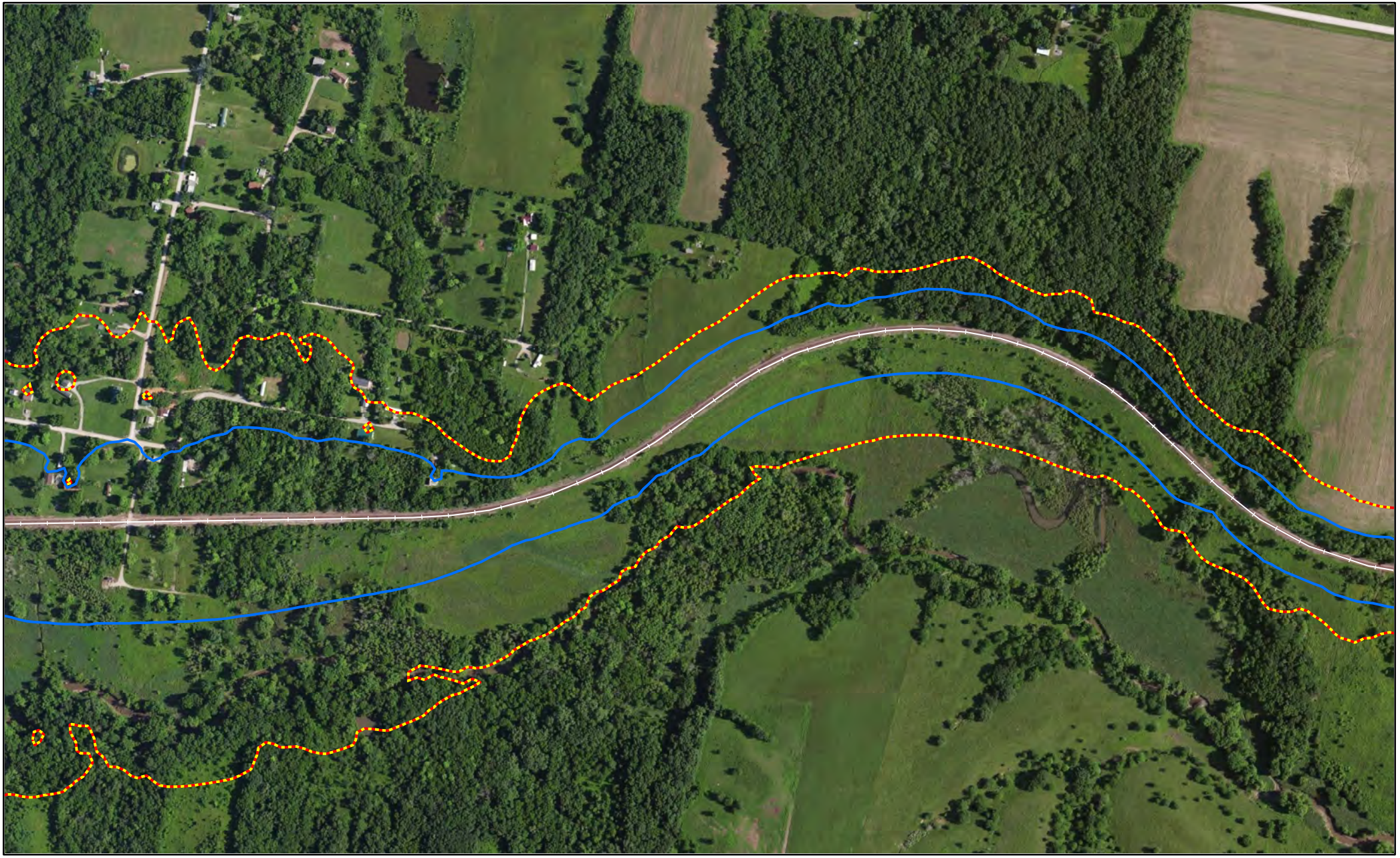
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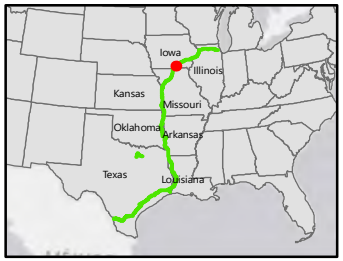
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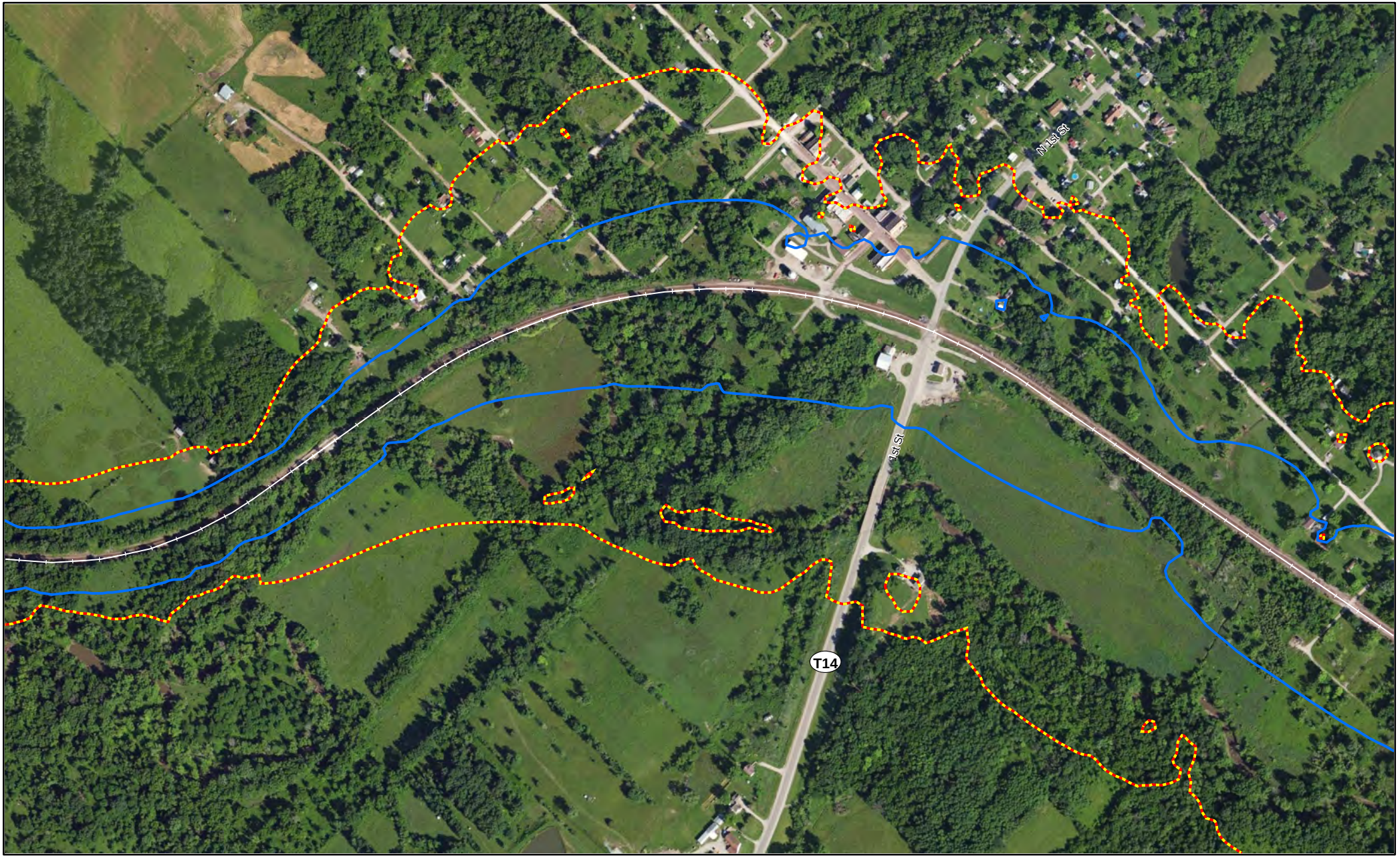
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Appanoose County, IA

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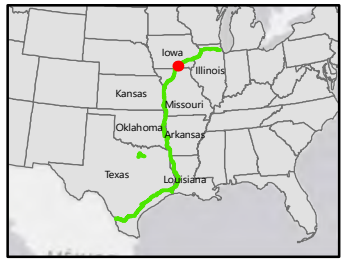
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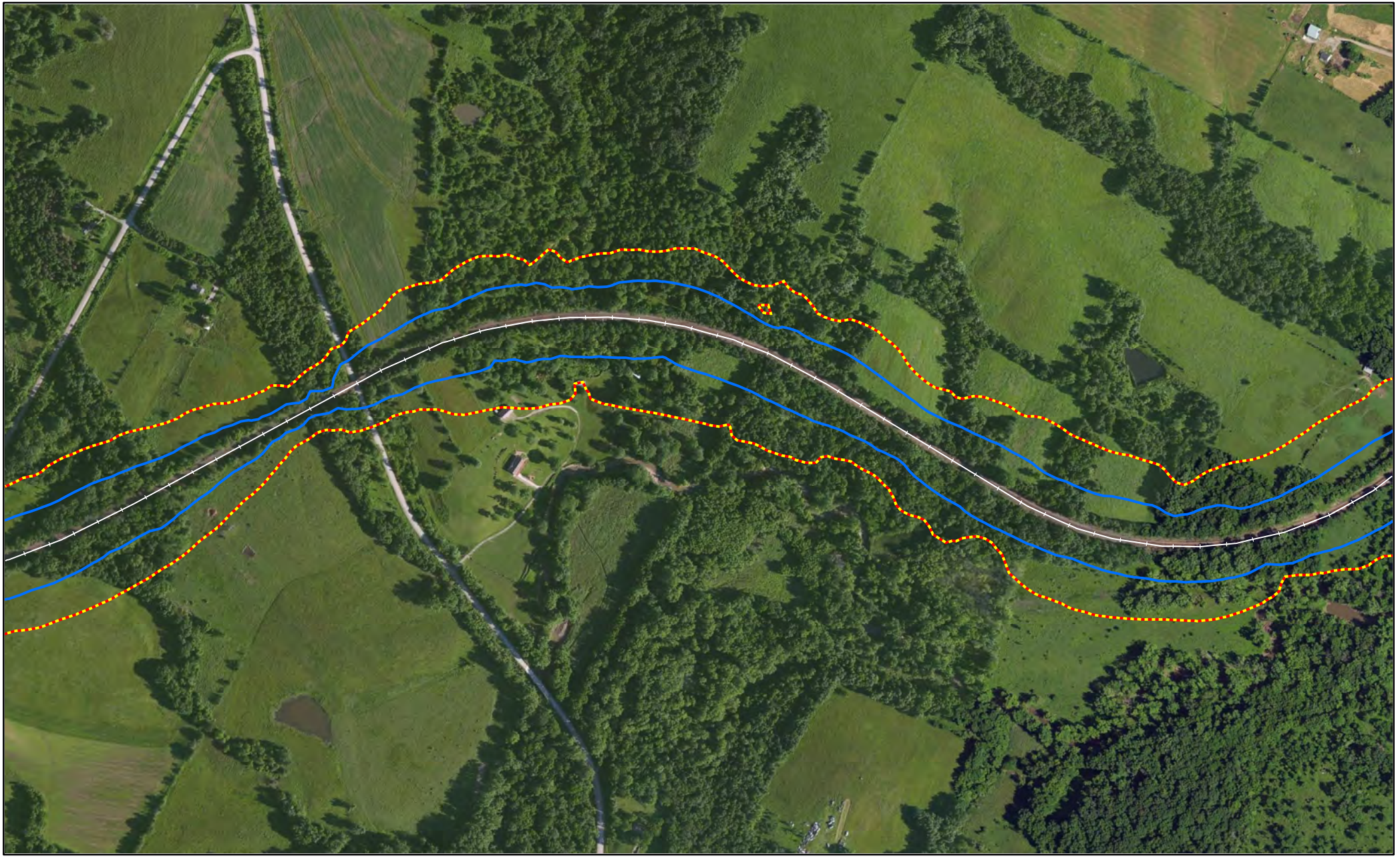
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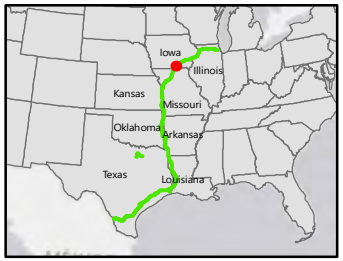
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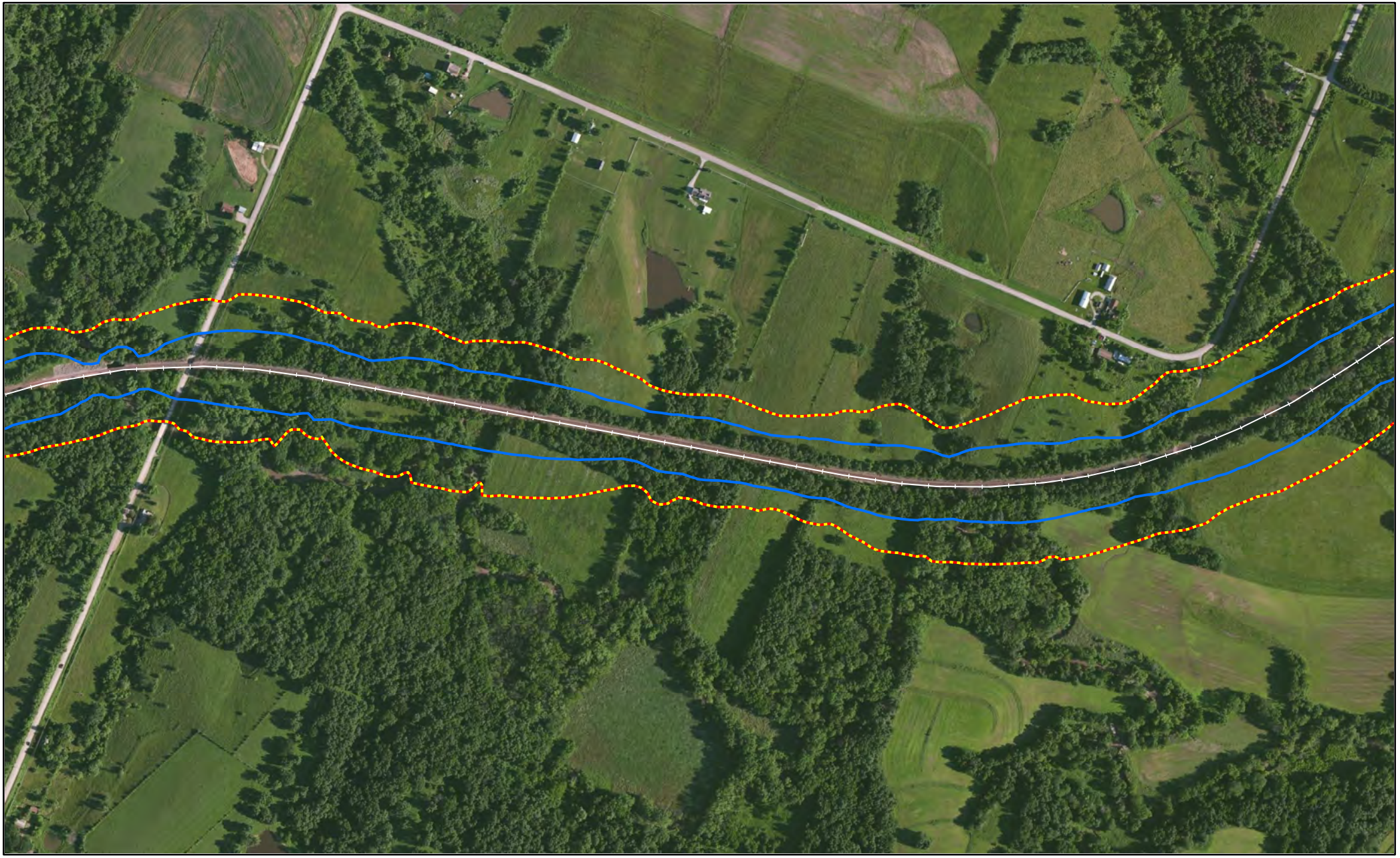
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Appanoose County, IA

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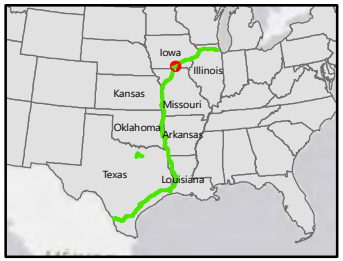
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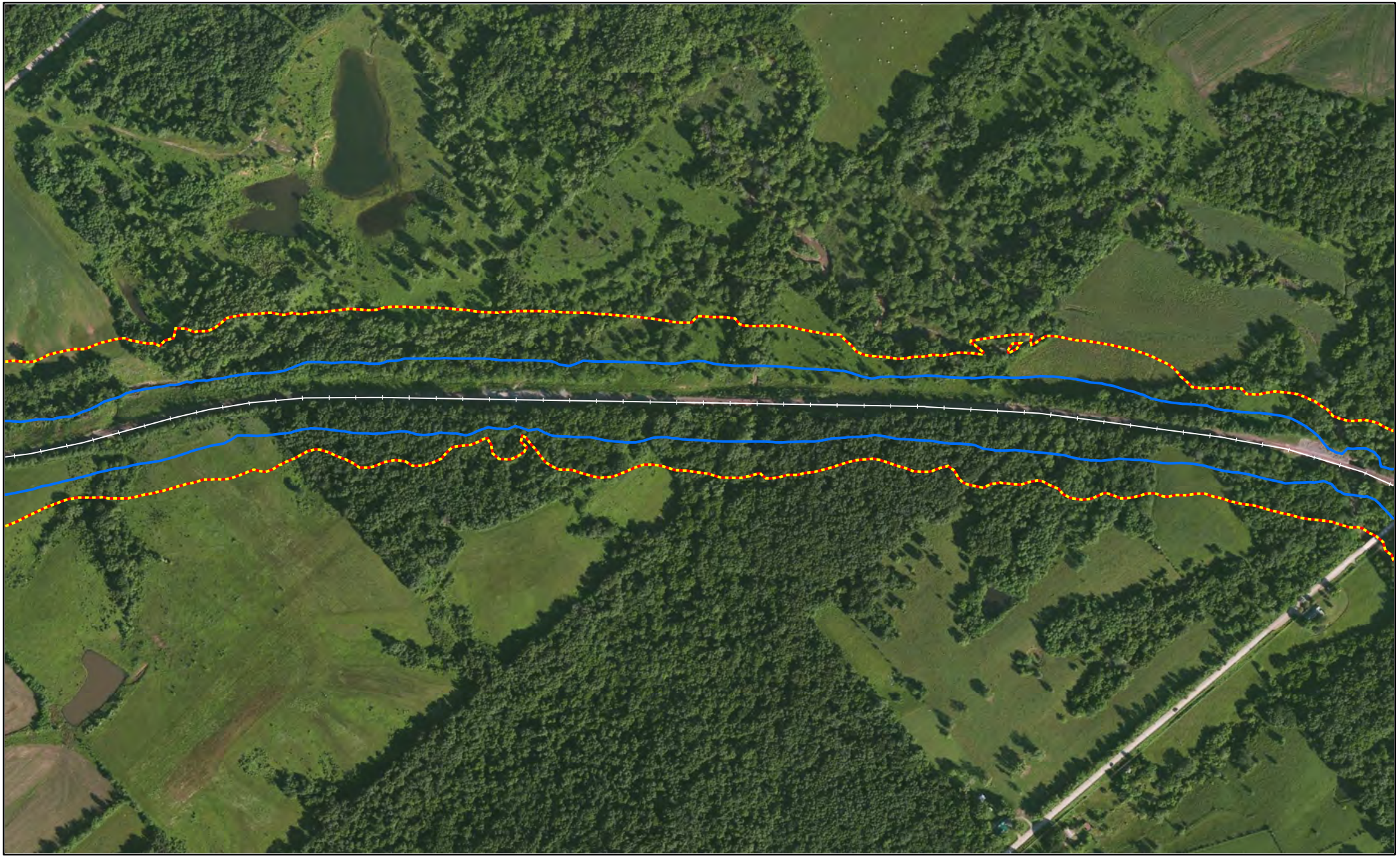
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Miles
0 0.05 0.1



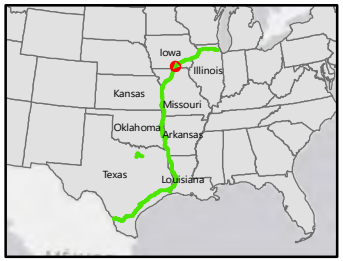
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Appanoose County, IA

Miles
0 0.05 0.1



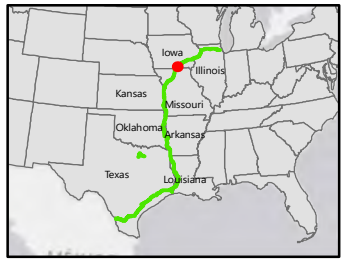
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

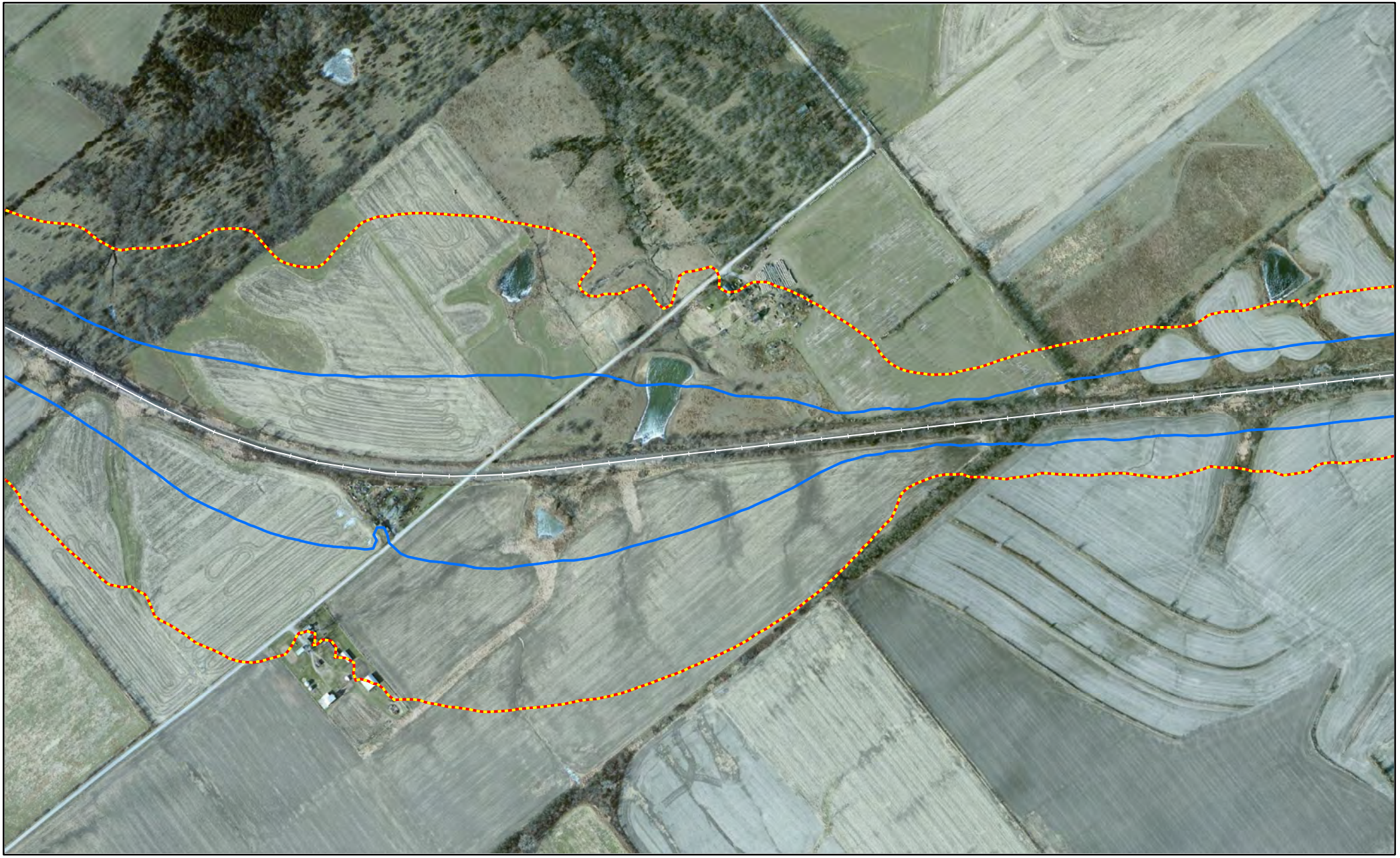
Source: ESRI.



Noise Contours
Appanoose County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



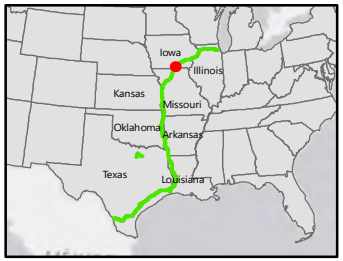
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Appanoose County, IA

Miles
0 0.05 0.1



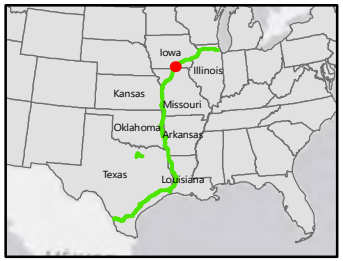
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

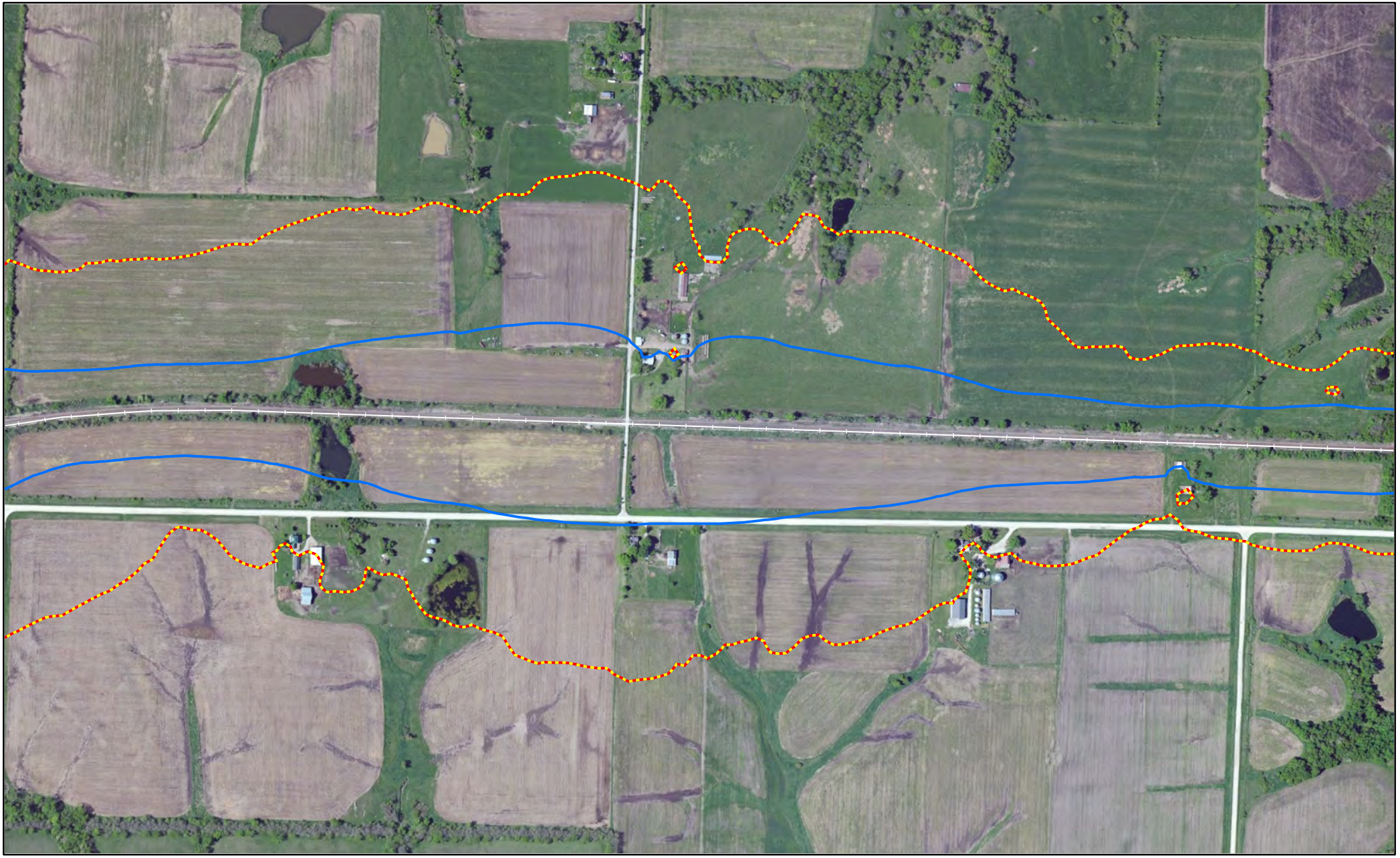
Source: ESRI.



Noise Contours
Appanoose County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



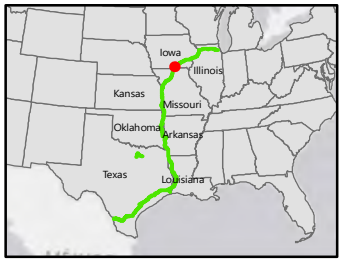
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Appanoose County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



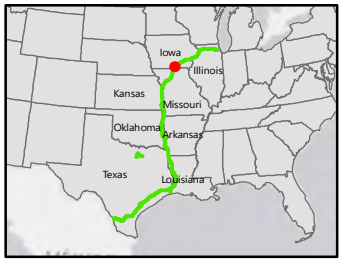
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

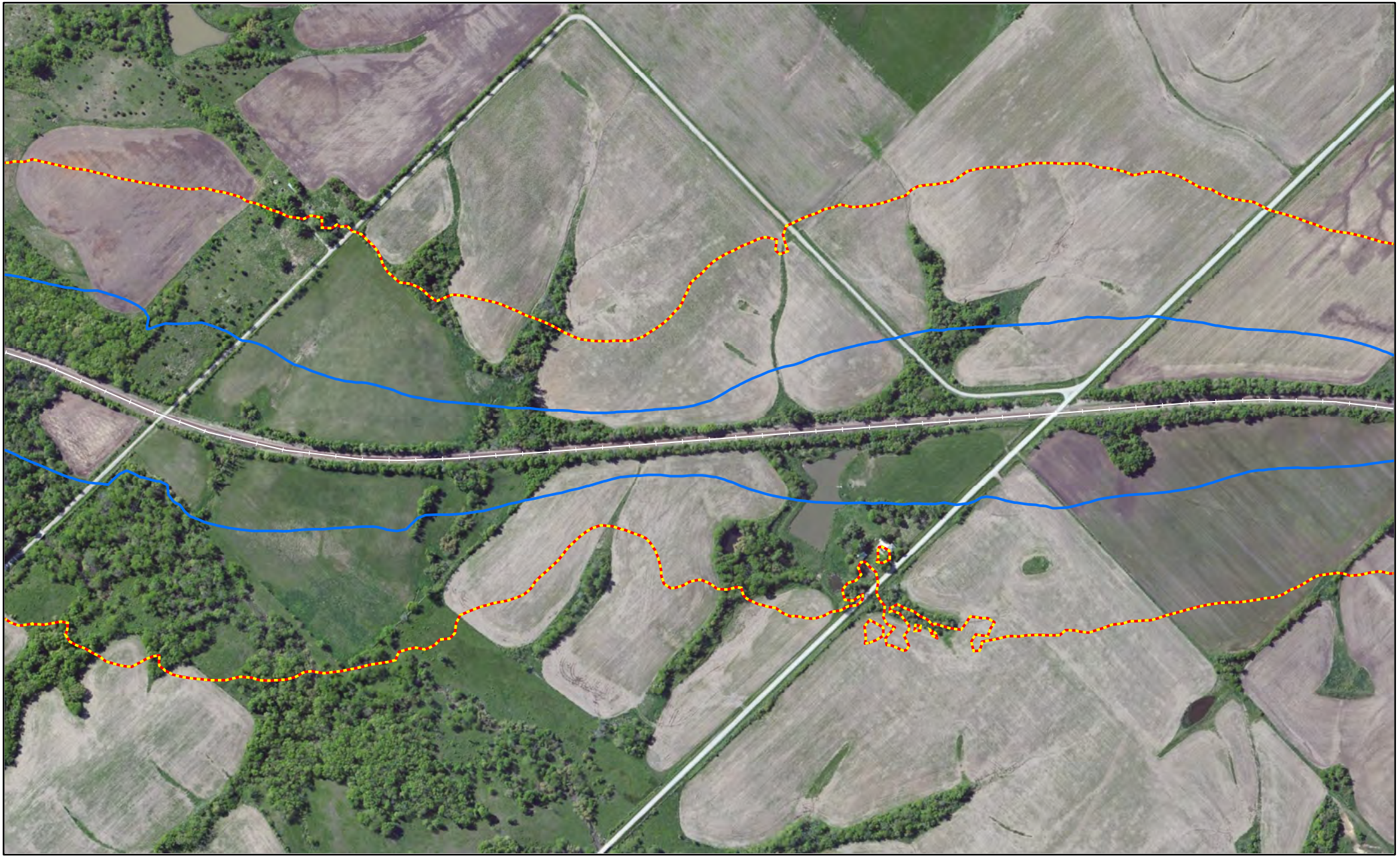
Tracks

Source: ESRI.



Noise Contours
Appanoose County, IA

Miles
0 0.05 0.1



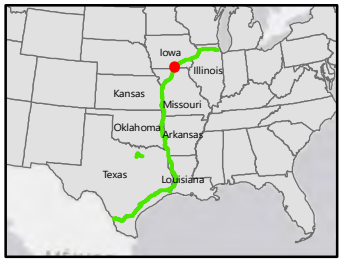
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Appanoose County, IA

Miles
0 0.05 0.1



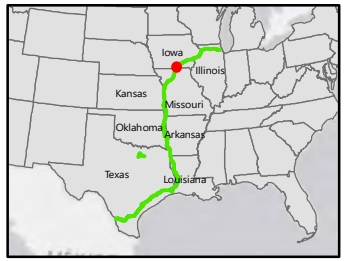
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Appanoose County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



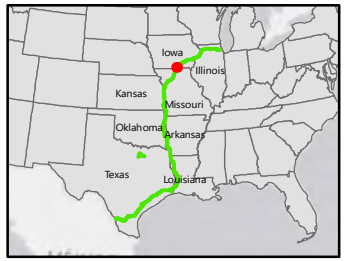
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

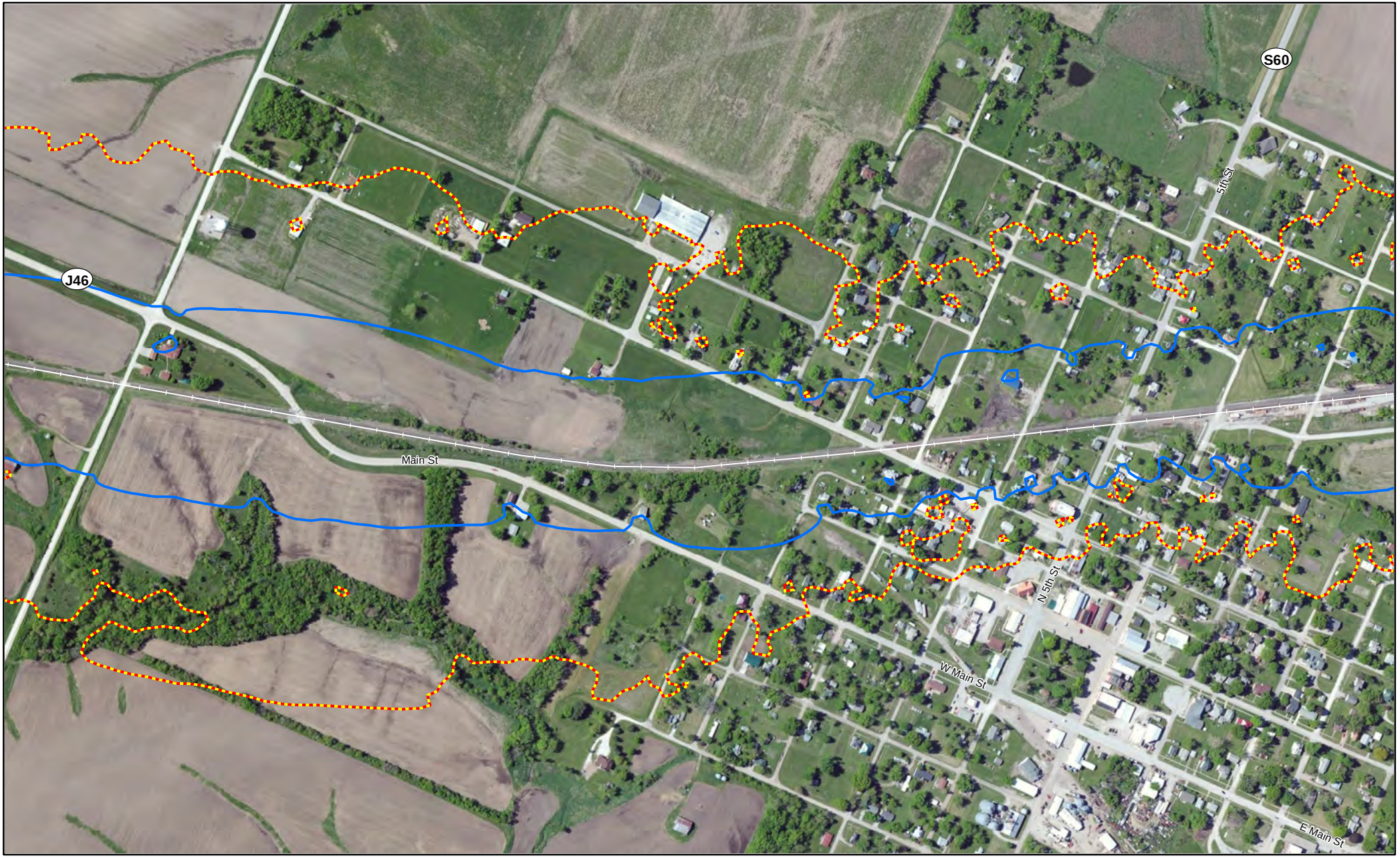
Source: ESRI.



Noise Contours
Wayne County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



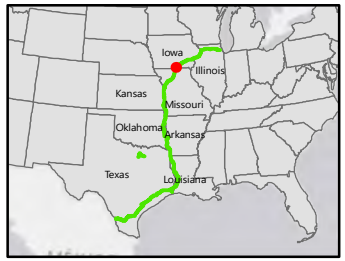
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Wayne County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



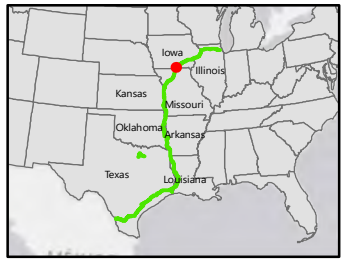
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

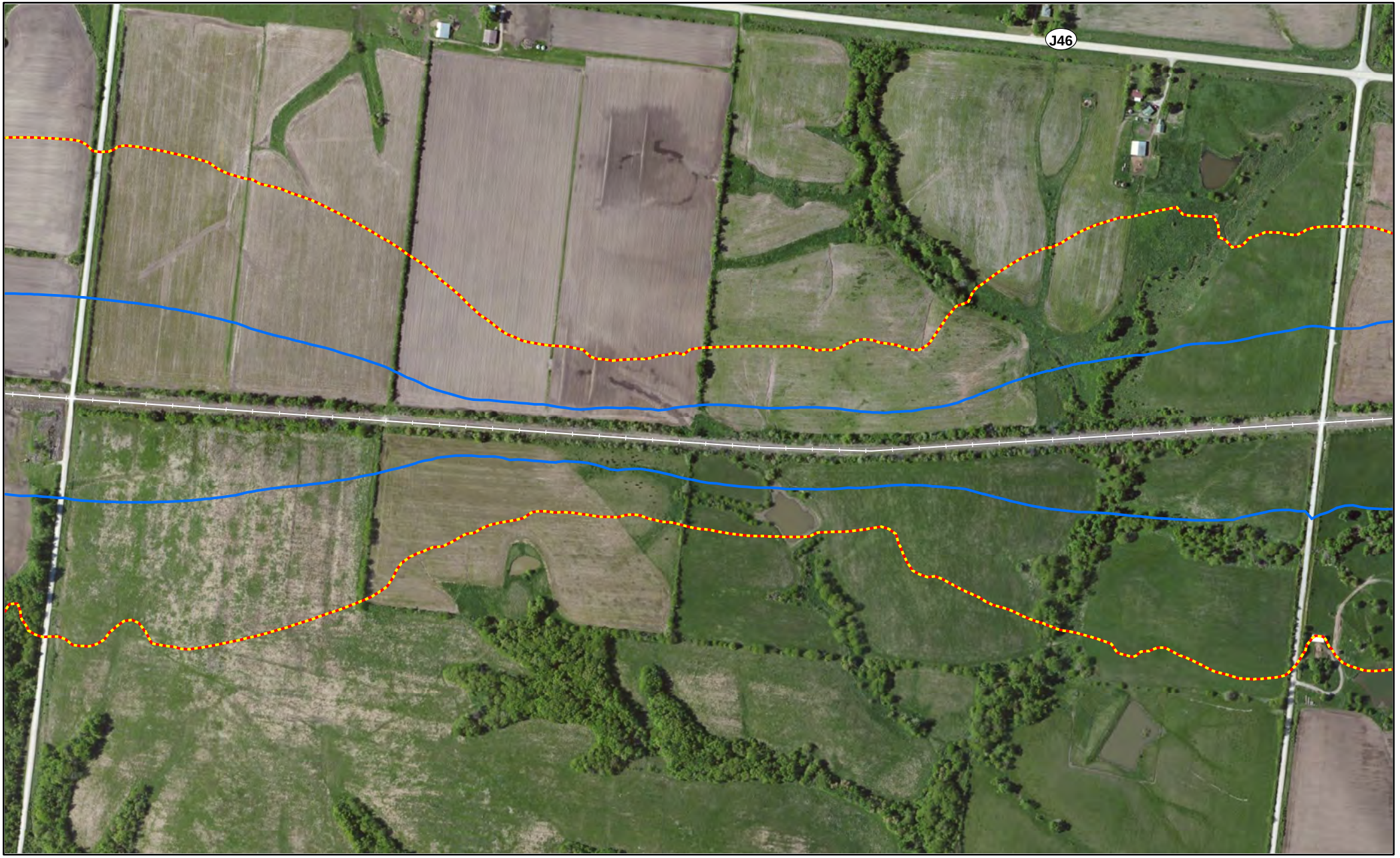
Source: ESRI.



Noise Contours
Wayne County, IA

0 0.05 0.1 Miles

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



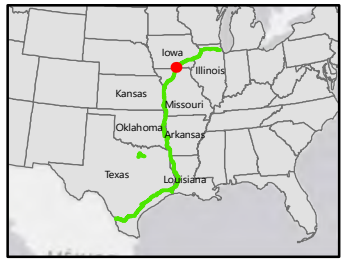
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Wayne County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



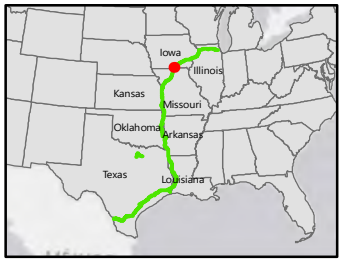
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Wayne County, IA

Miles
0 0.05 0.1



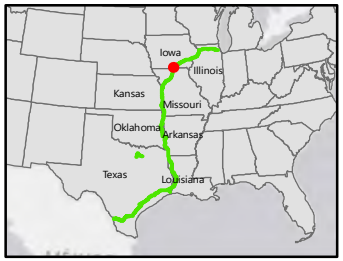
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Wayne County, IA

Miles
0 0.05 0.1



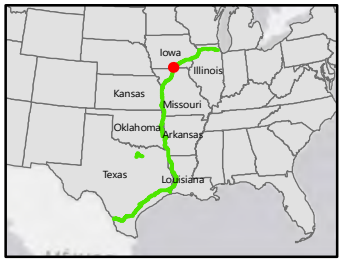
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

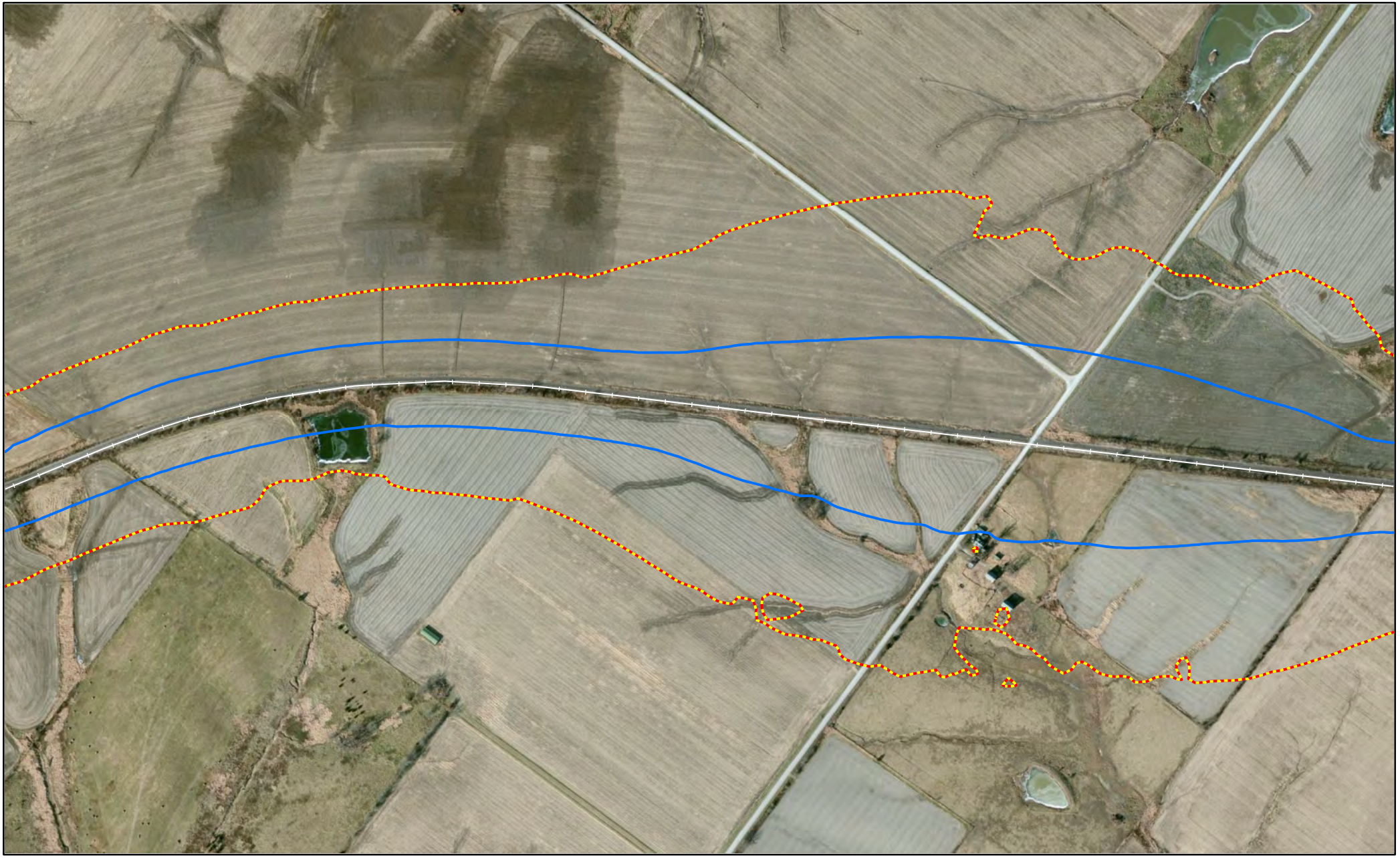
Tracks

Source: ESRI.



Noise Contours
Wayne County, IA

Miles
0 0.05 0.1



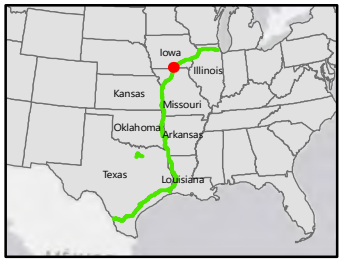
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Wayne County, IA

Miles
0 0.05 0.1



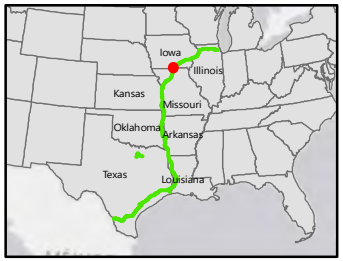
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Wayne County, IA

Miles
0 0.05 0.1



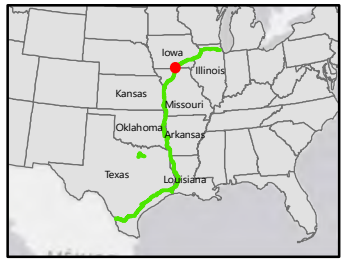
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

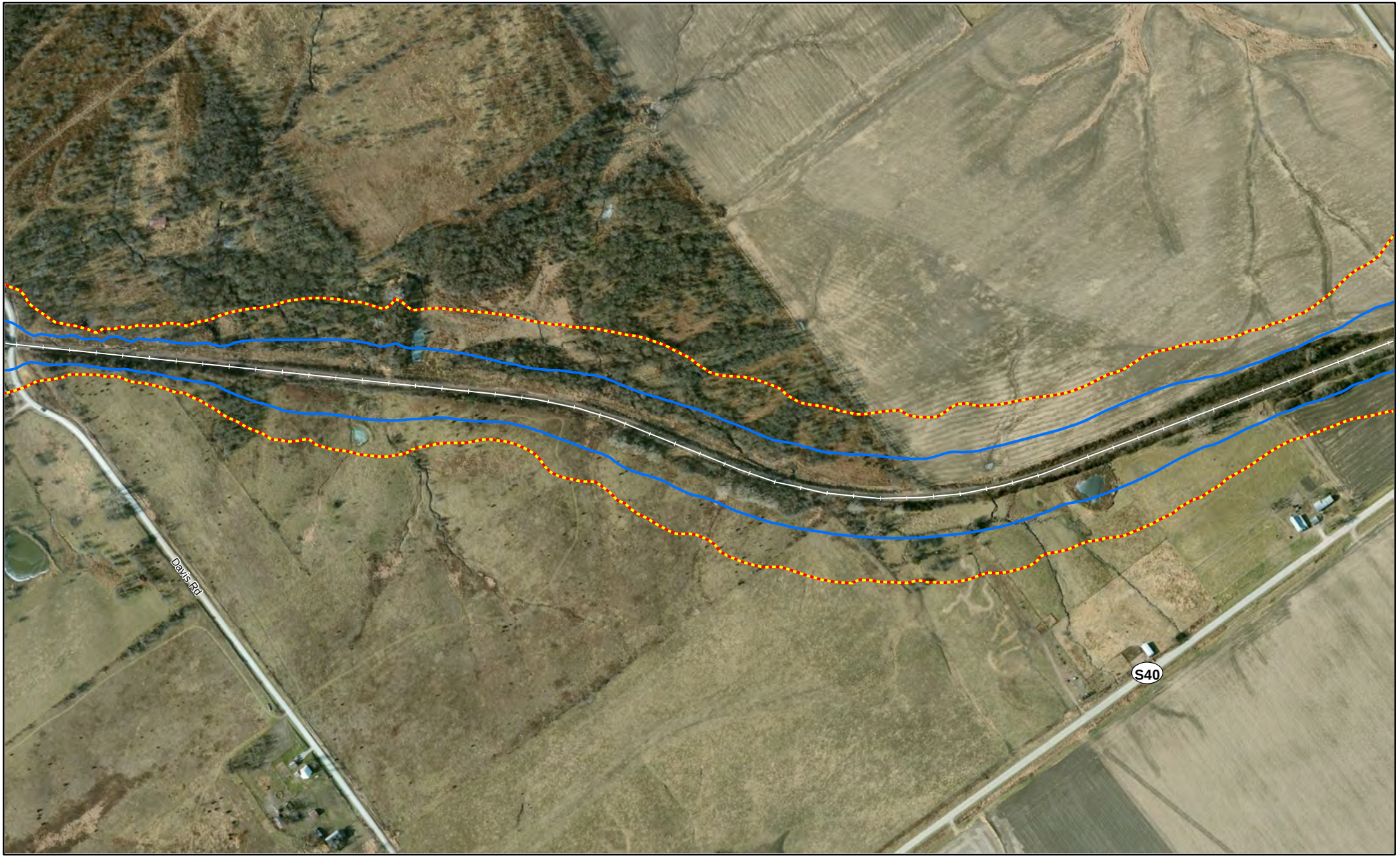
Source: ESRI.



Noise Contours
Wayne County, IA

0 0.05 0.1 Miles

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



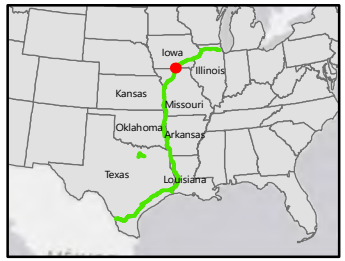
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Wayne County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



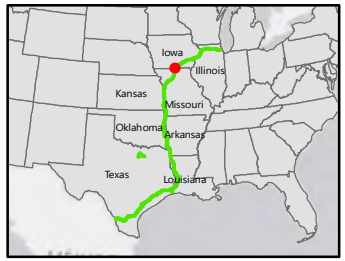
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

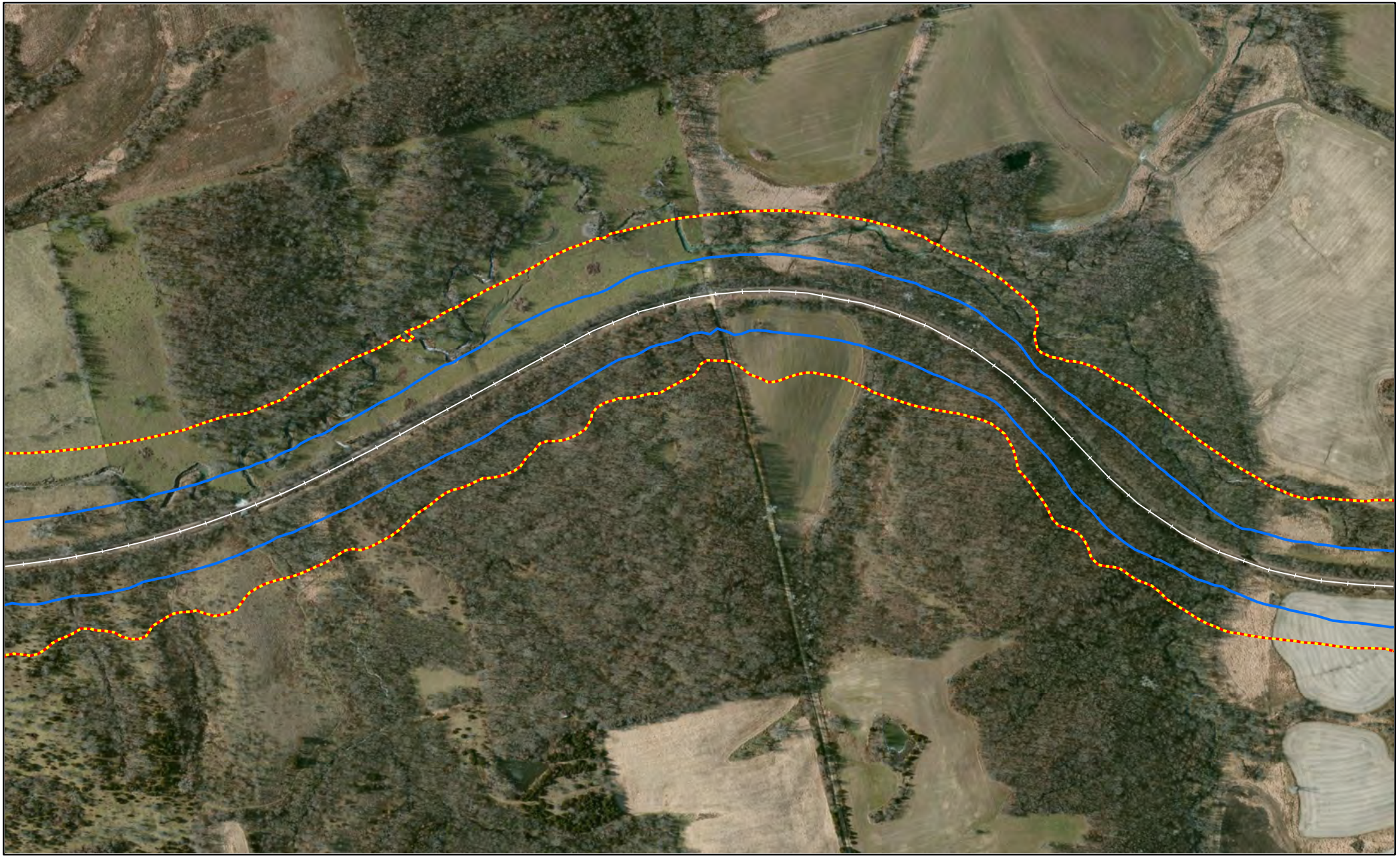
Source: ESRI.



Noise Contours
Wayne County, IA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



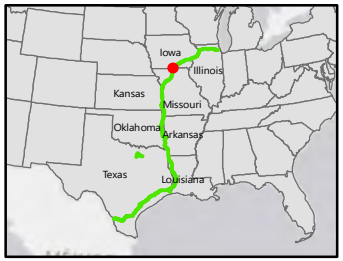
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

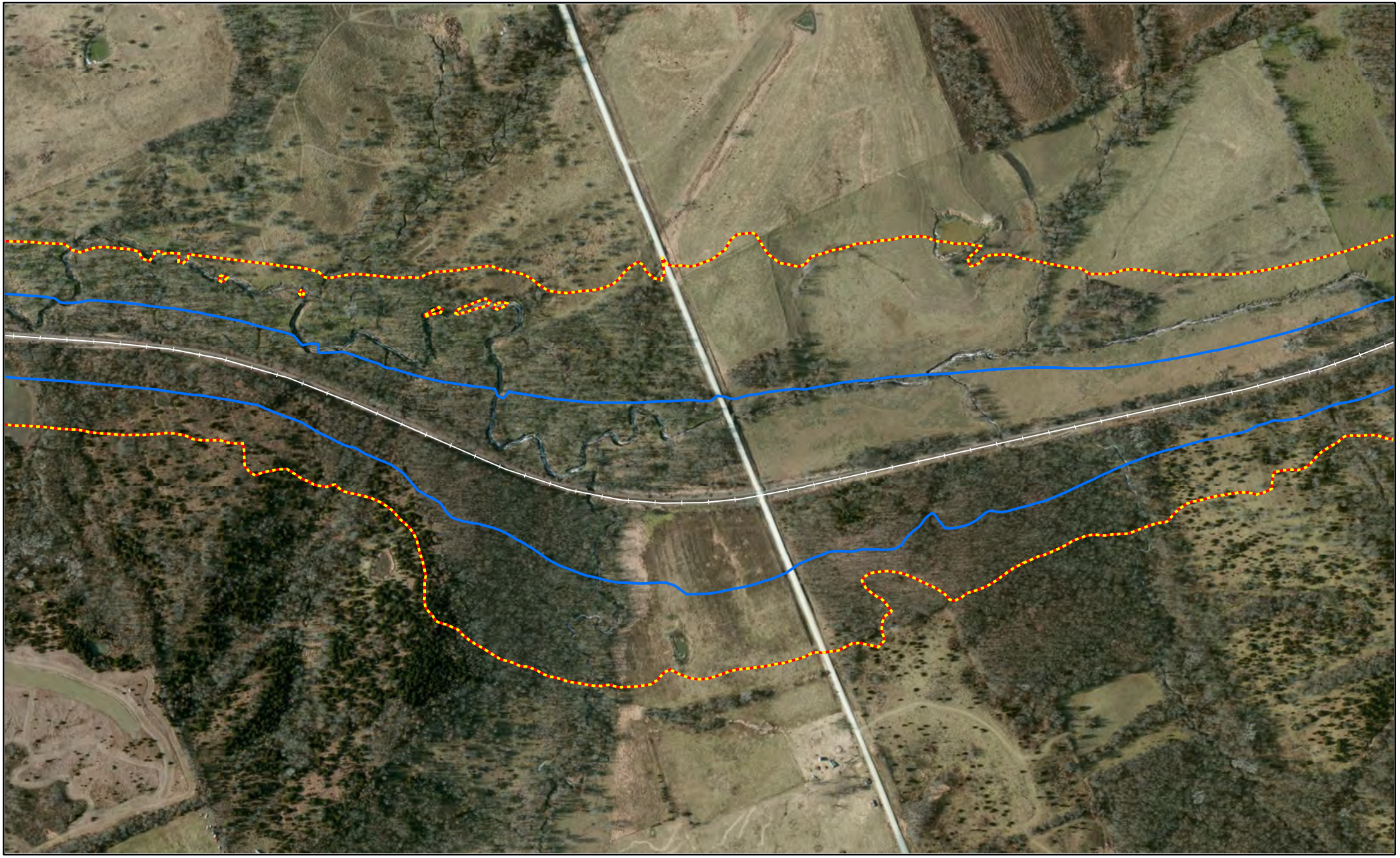
Tracks

Source: ESRI.



Noise Contours
Wayne County, IA

Miles
0 0.05 0.1



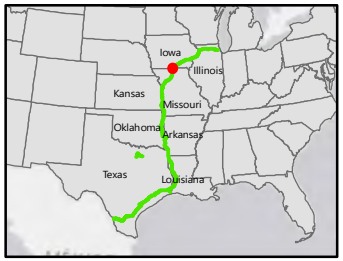
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

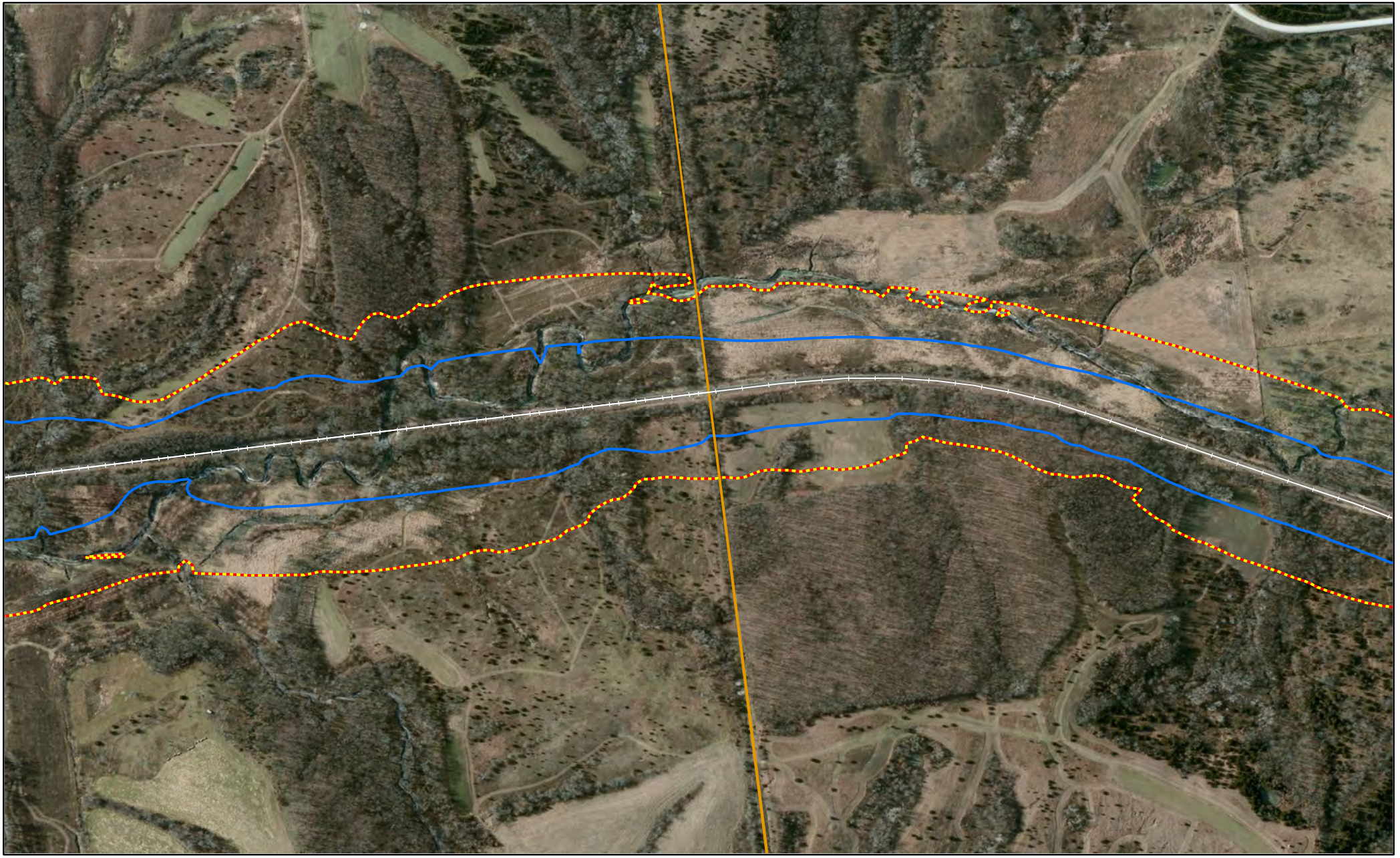
Tracks

Source: ESRI.



Noise Contours
Wayne County, IA

Miles
0 0.05 0.1



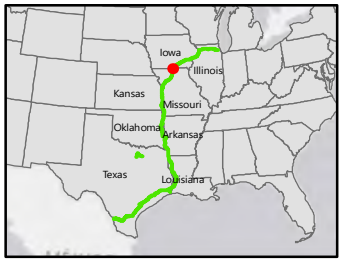
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

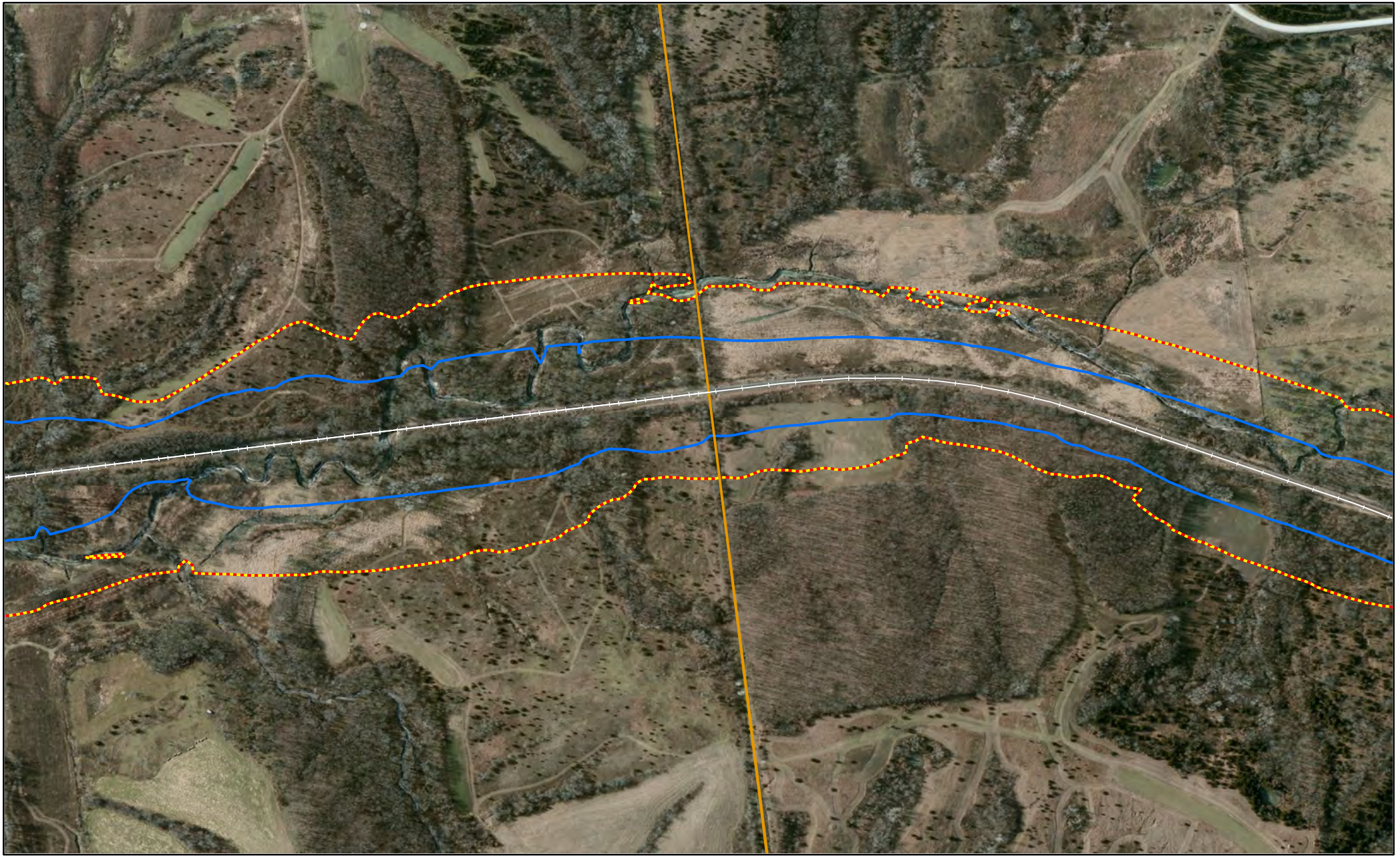
Source: ESRI.



Noise Contours
Wayne County, IA

Miles
0 0.05 0.1

Appendix M – Attachment 3: Missouri



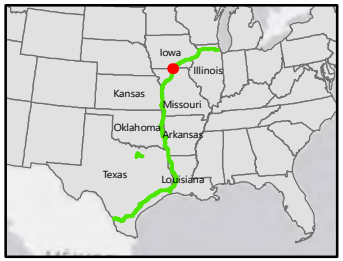
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

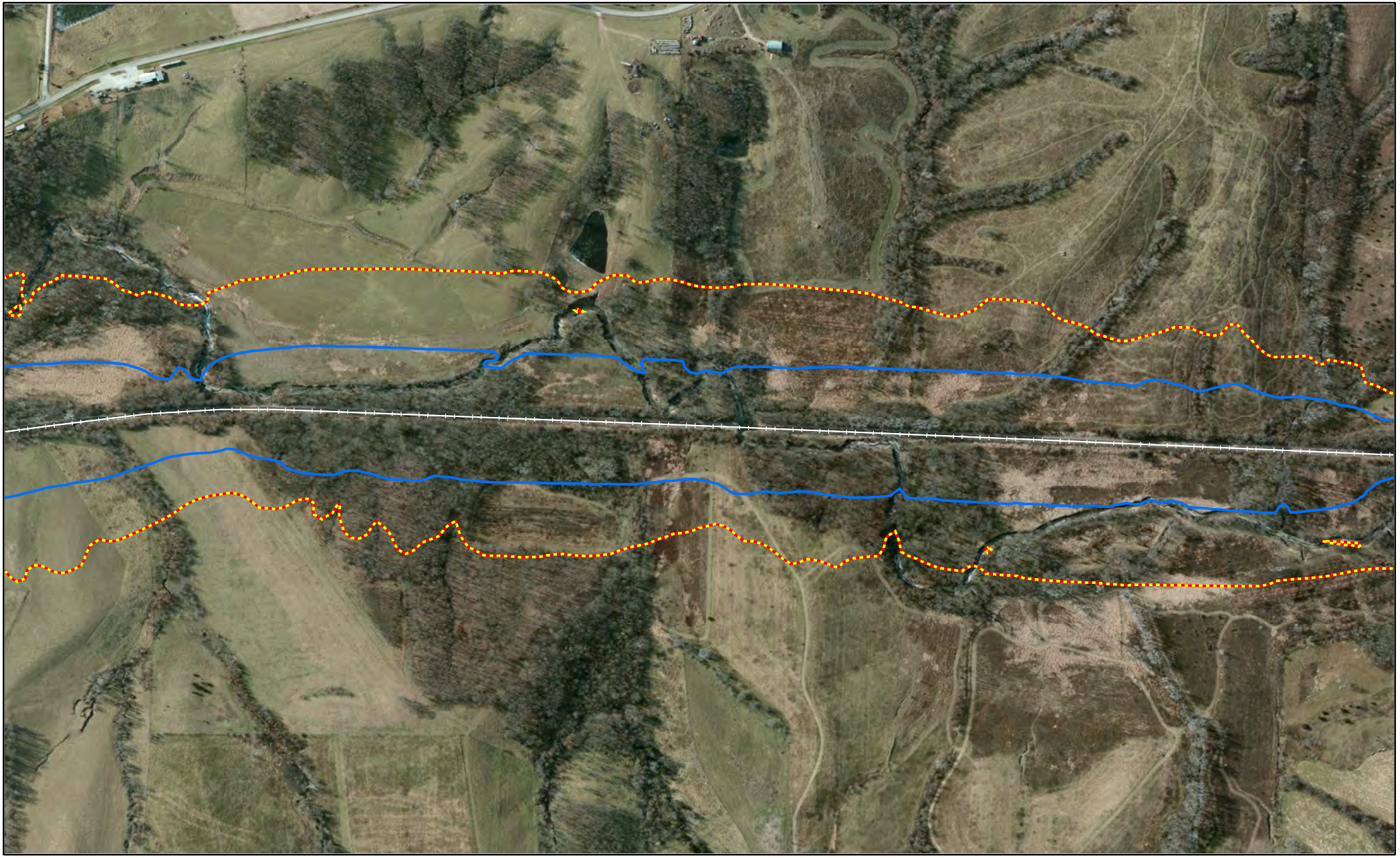
Tracks

Source: ESRI.



Noise Contours
Wayne County, IA

Miles
0 0.05 0.1



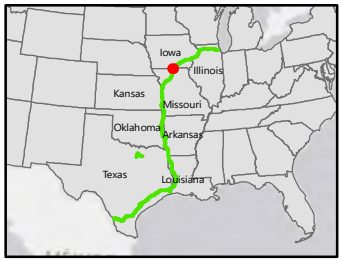
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

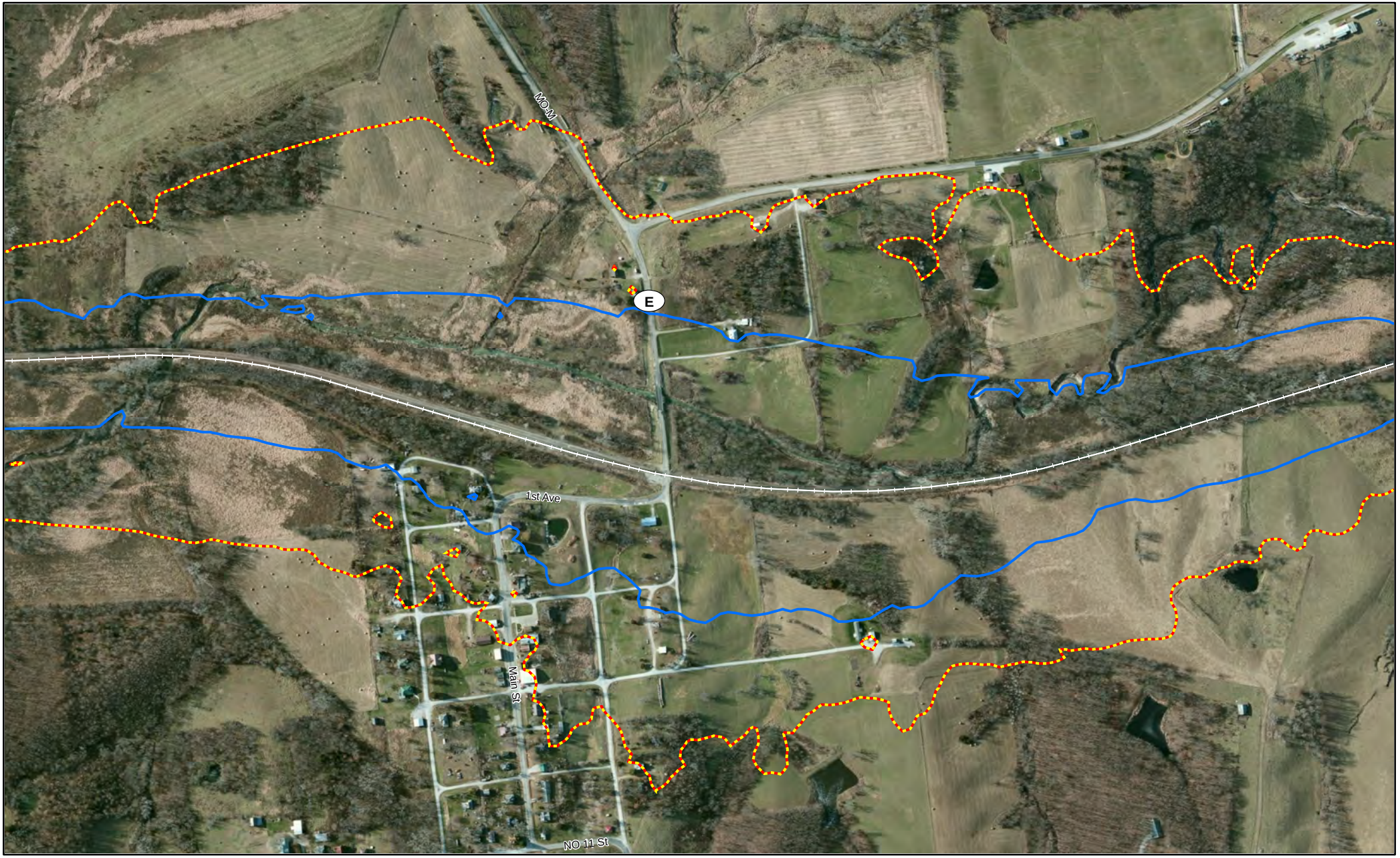
Source: ESRI.



Noise Contours
Putnam County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



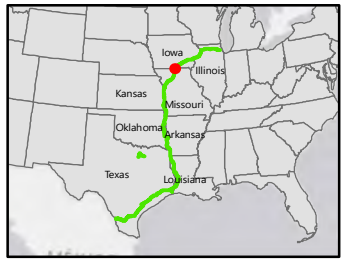
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Putnam County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



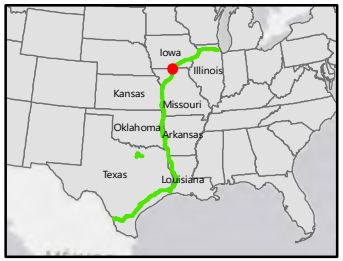
No-Action Alternative Noise (65 Ldn)

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Noise Impact (65 Ldn and 3 dBA Increase)

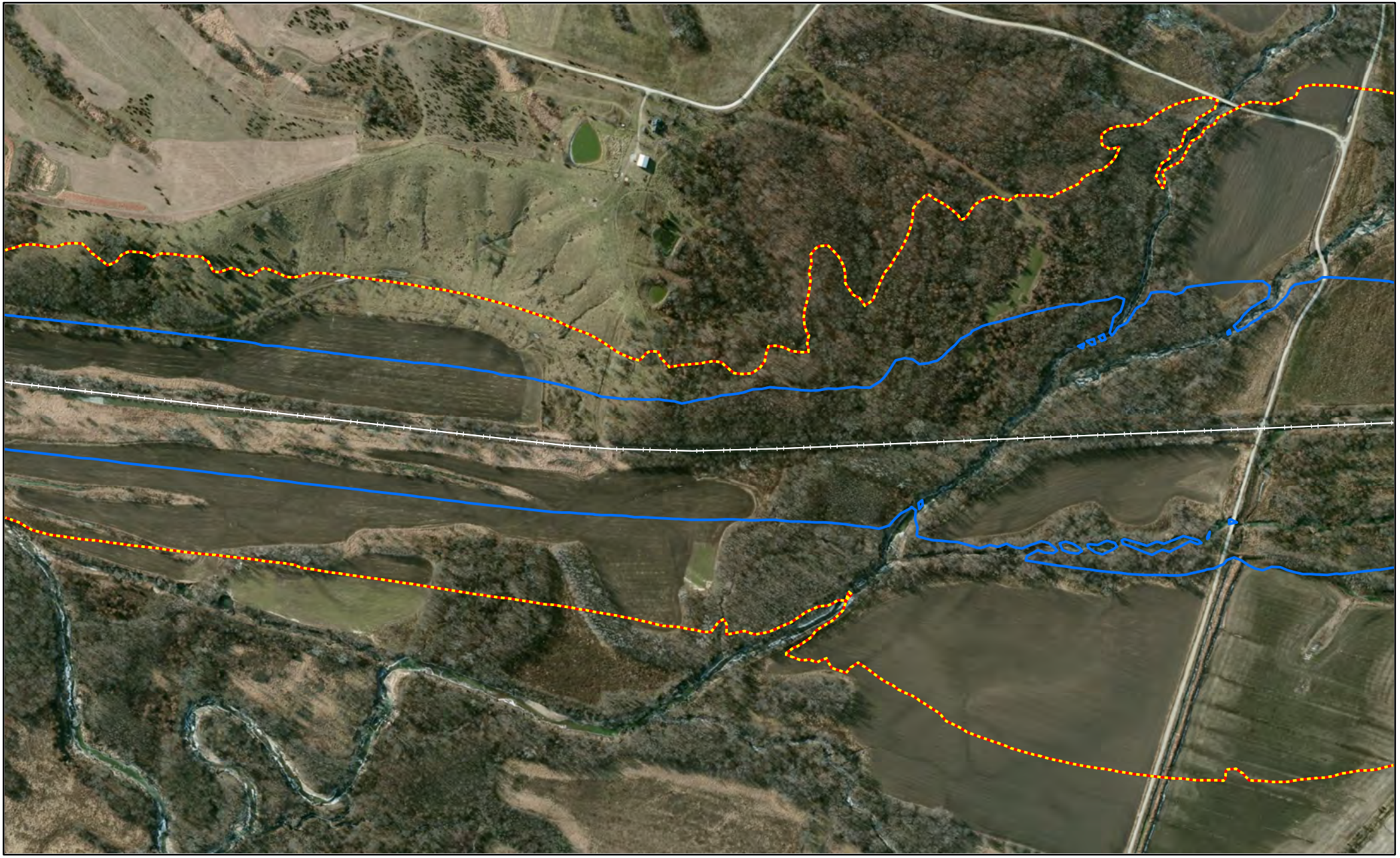
Tracks

Source: ESRI.



Noise Contours
Putnam County, MO

Miles
0 0.05 0.1



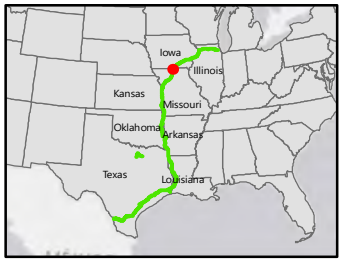
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Putnam County, MO

Miles
0 0.05 0.1



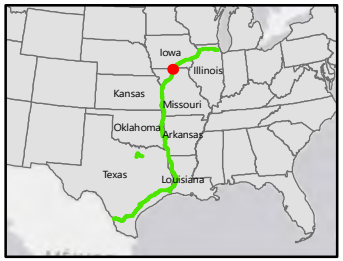
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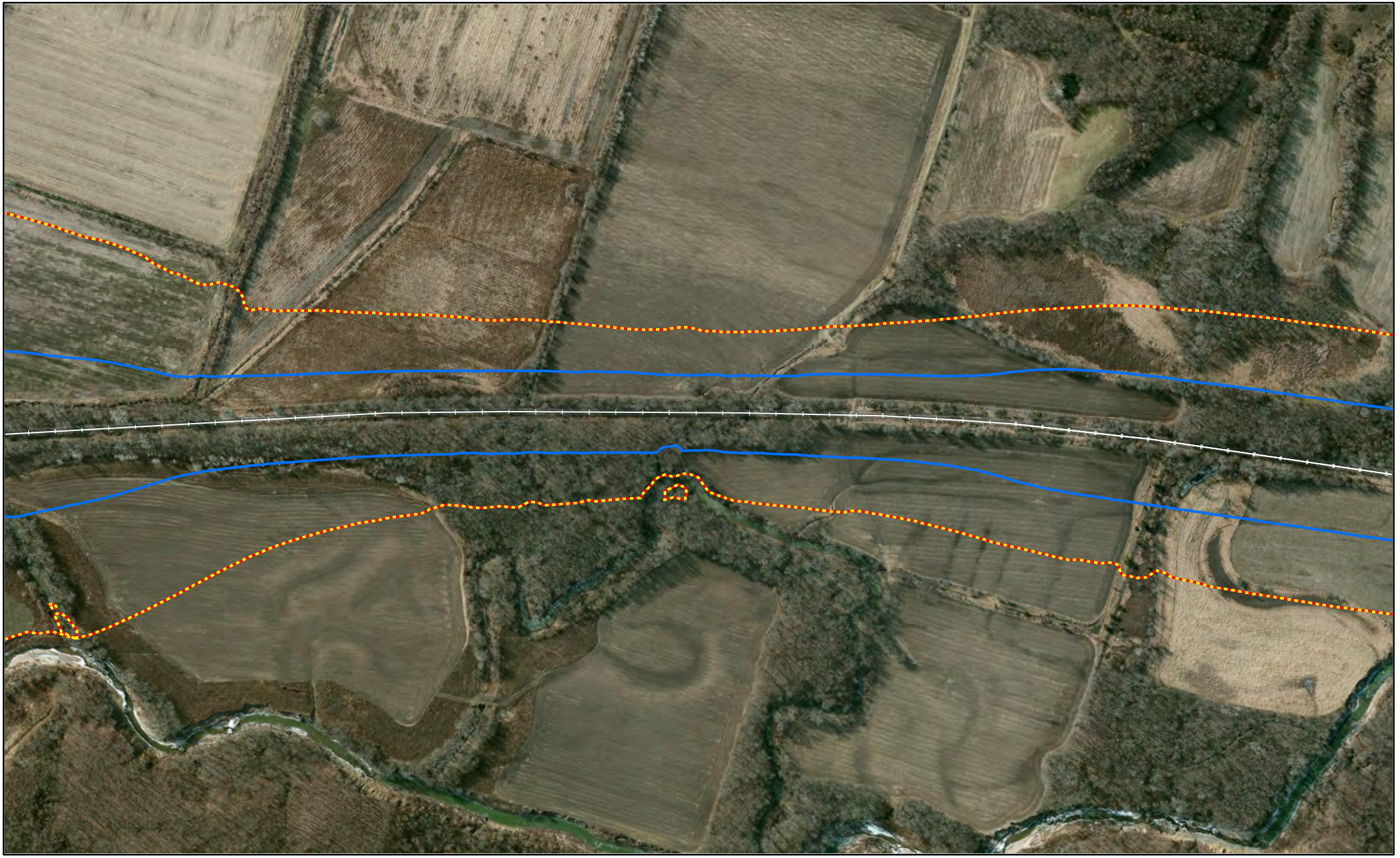
Tracks

Source: ESRI.



Noise Contours
Putnam County, MO

Miles
0 0.05 0.1



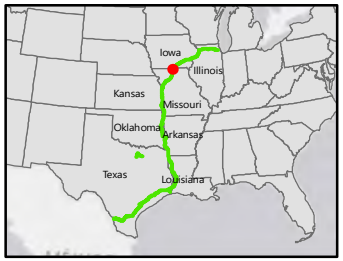
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Tracks

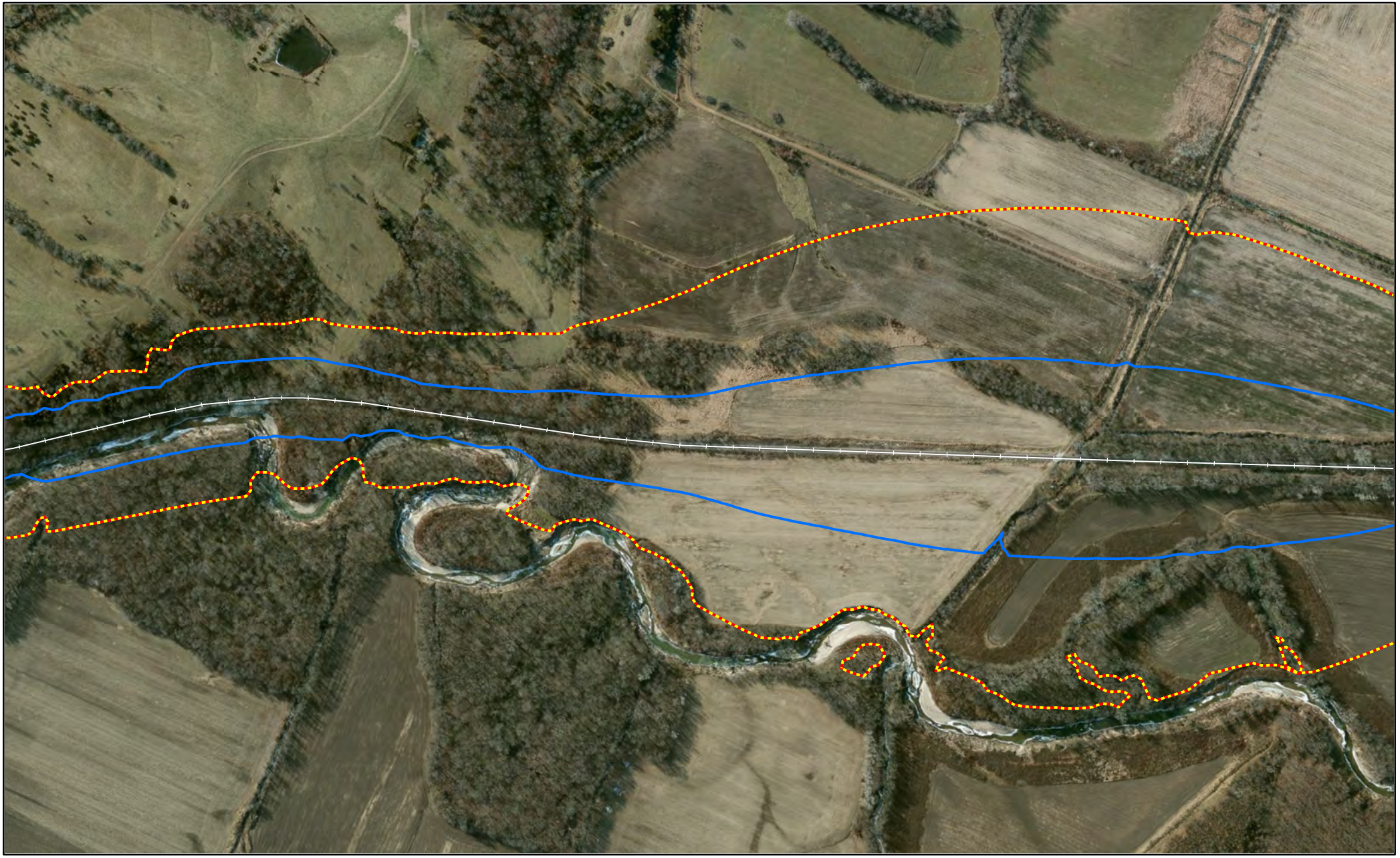
Source: ESRI.



Noise Contours
Putnam County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



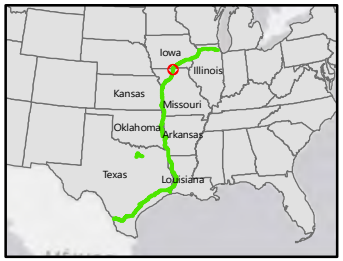
No-Action Alternative Noise (65 Ldn)

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Noise Impact (65 Ldn and 3 dBA Increase)

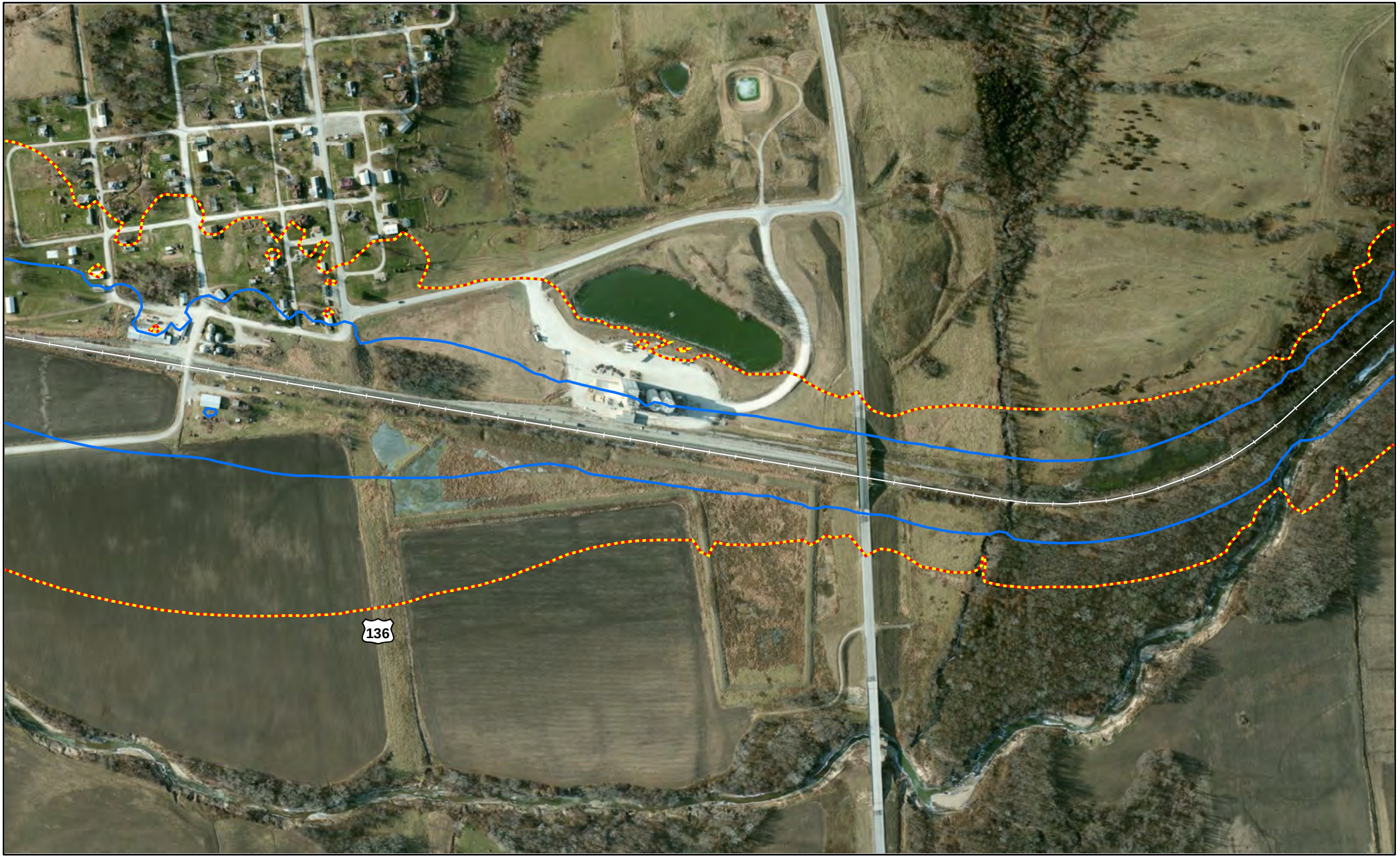
Tracks

Source: ESRI.



Noise Contours
Putnam County, MO

Miles
0 0.05 0.1



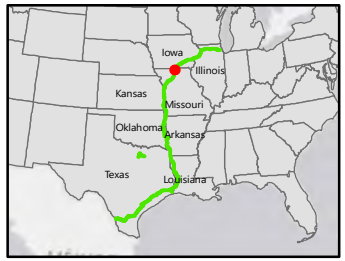
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

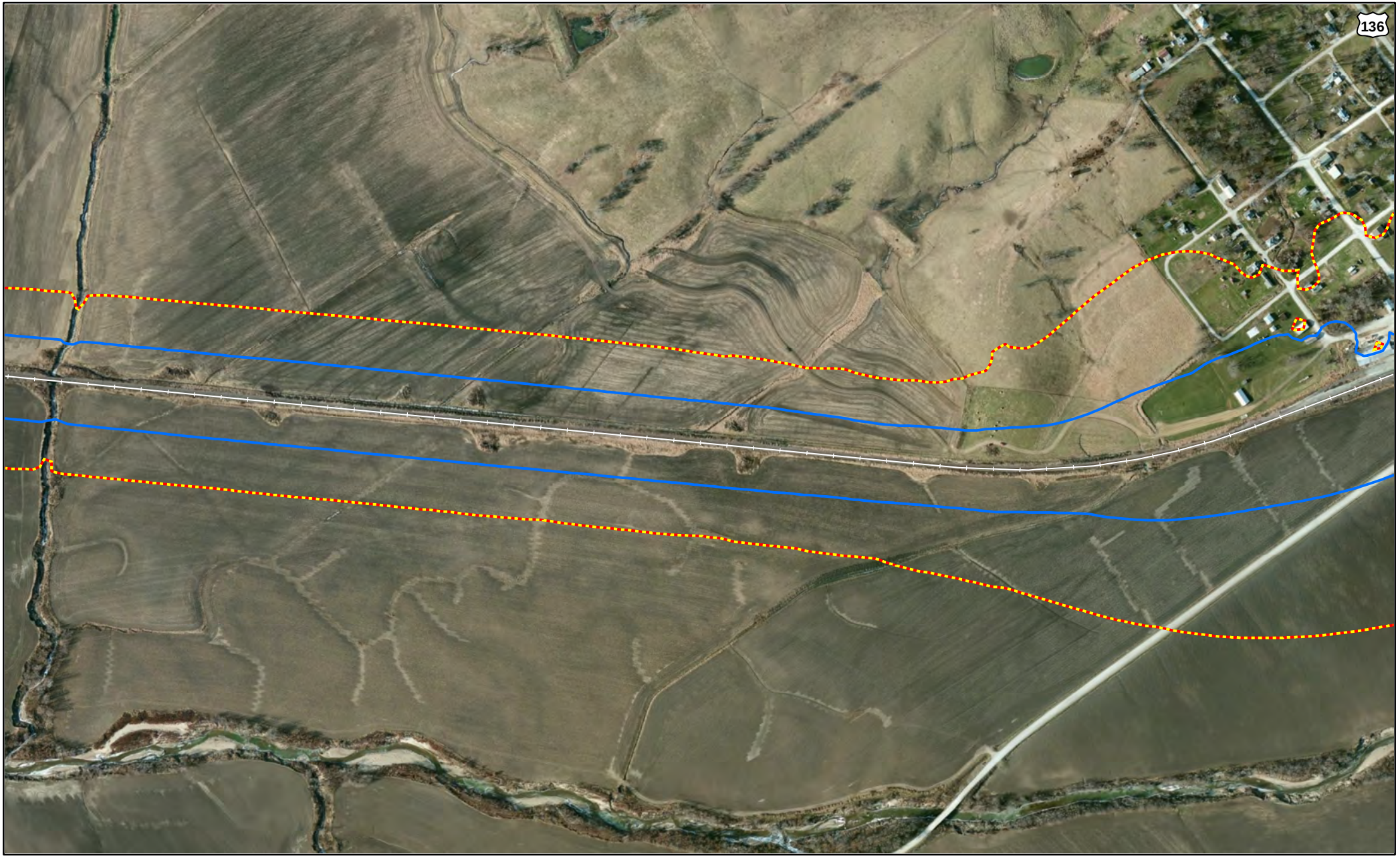
Source: ESRI.



Noise Contours
Putnam County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



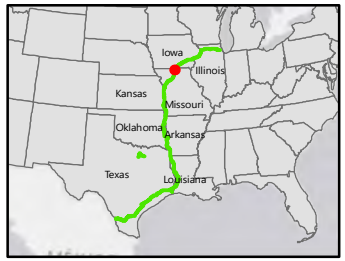
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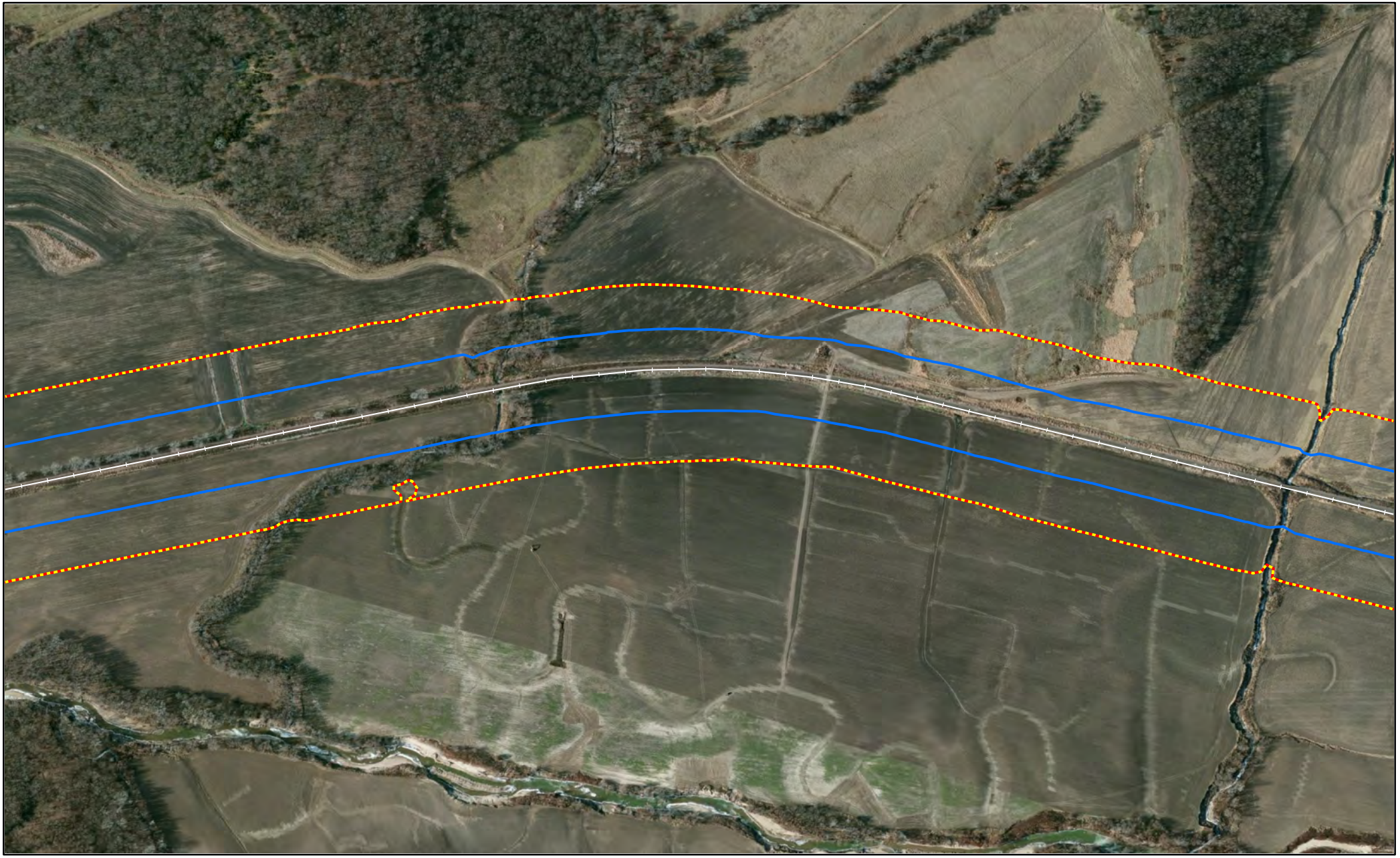
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Noise Contours
Putnam County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



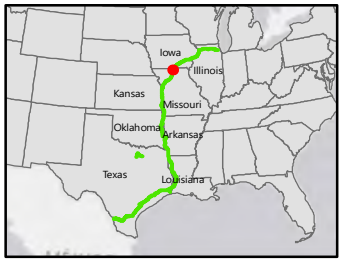
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Tracks

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Noise Contours
Putnam County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



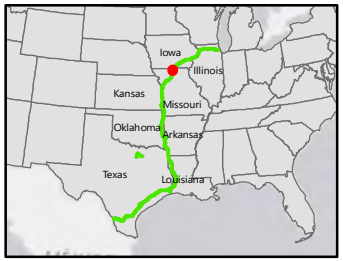
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Noise Contours
Putnam County, MO

Miles
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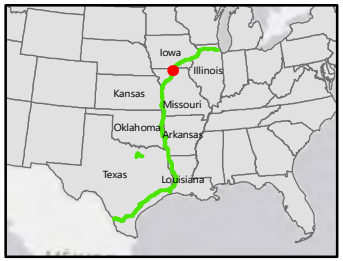
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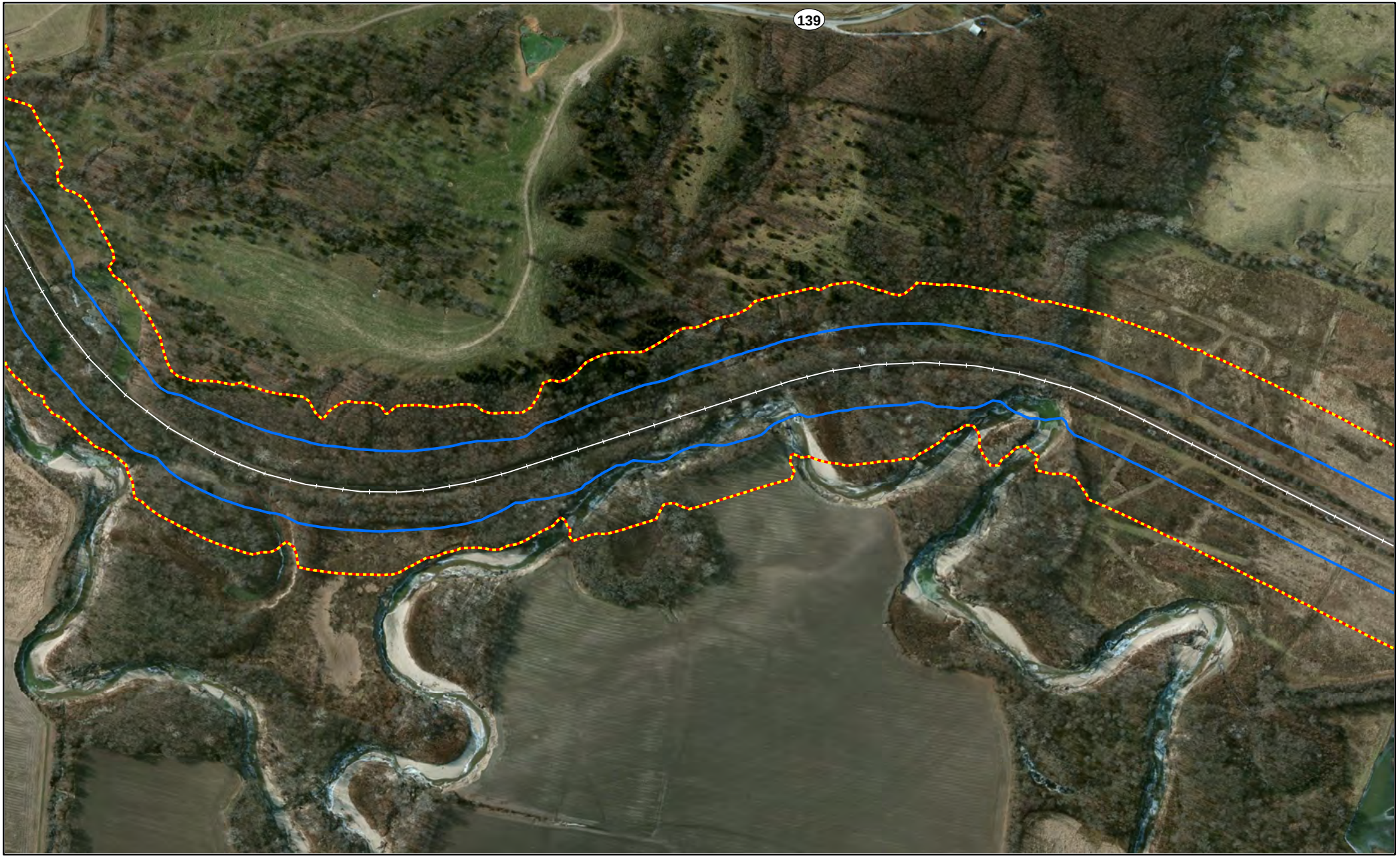
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Noise Contours
Putnam County, MO

Miles
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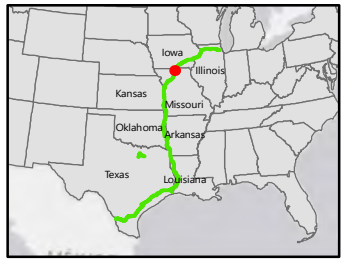
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Noise Contours
Putnam County, MO

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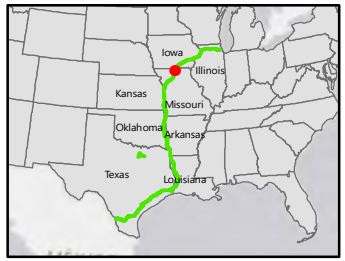
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Noise Contours
Putnam County, MO

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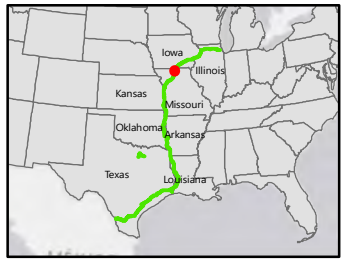
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Noise Contours
Putnam County, MO

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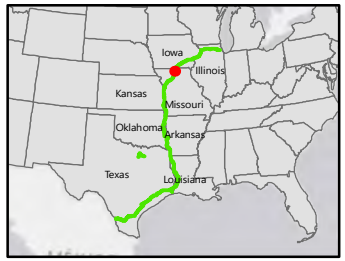
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Noise Contours
Sullivan County, MO

Miles
0 0.05 0.1

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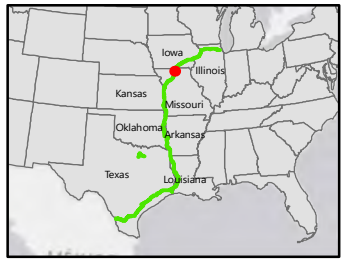
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Noise Contours
Sullivan County, MO

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



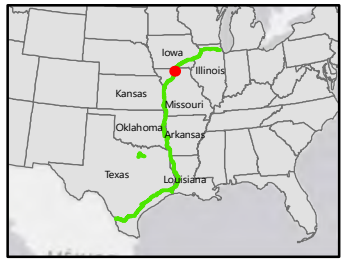
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Noise Contours
Sullivan County, MO

Miles
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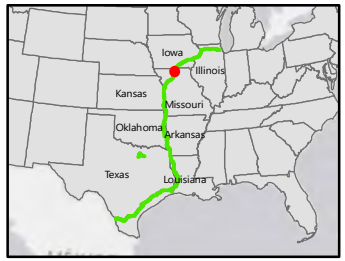
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Noise Contours
Sullivan County, MO

Miles
0 0.05 0.1



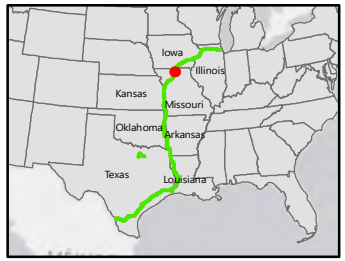
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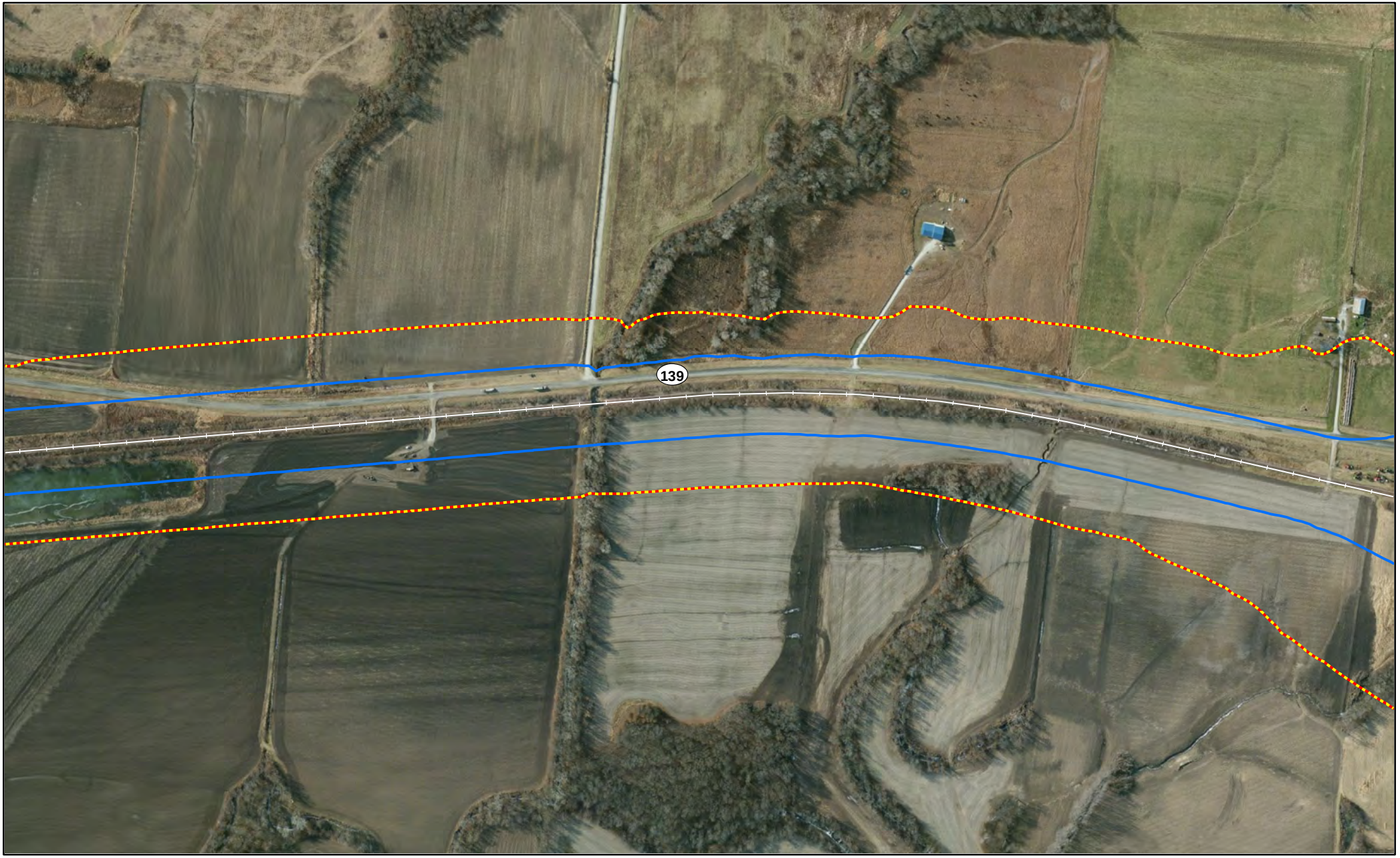
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Noise Contours
Sullivan County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



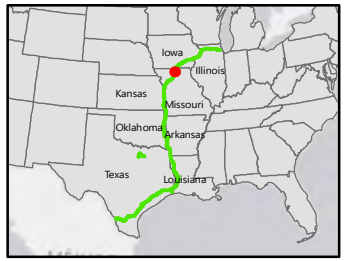
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Noise Contours
Sullivan County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



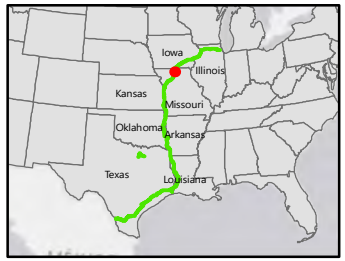
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Noise Contours
Sullivan County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



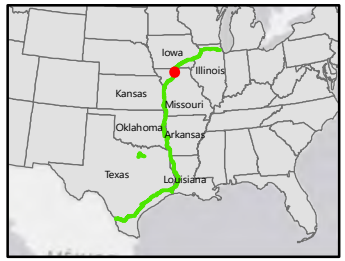
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Noise Contours
Sullivan County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

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Tracks

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Noise Contours
Sullivan County, MO

Miles
0 0.05 0.1



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Noise Contours
Sullivan County, MO

Miles
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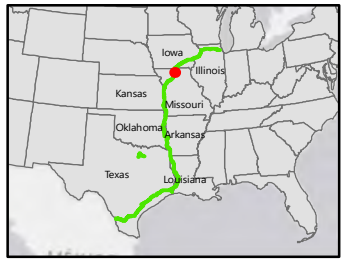
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Noise Contours
Sullivan County, MO

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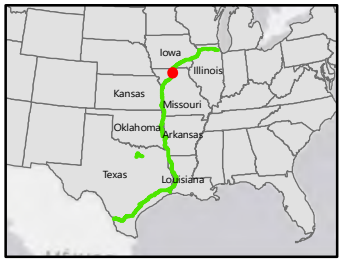
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Noise Contours
Sullivan County, MO

Miles
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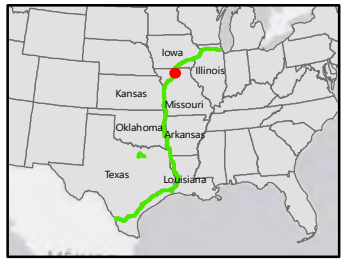
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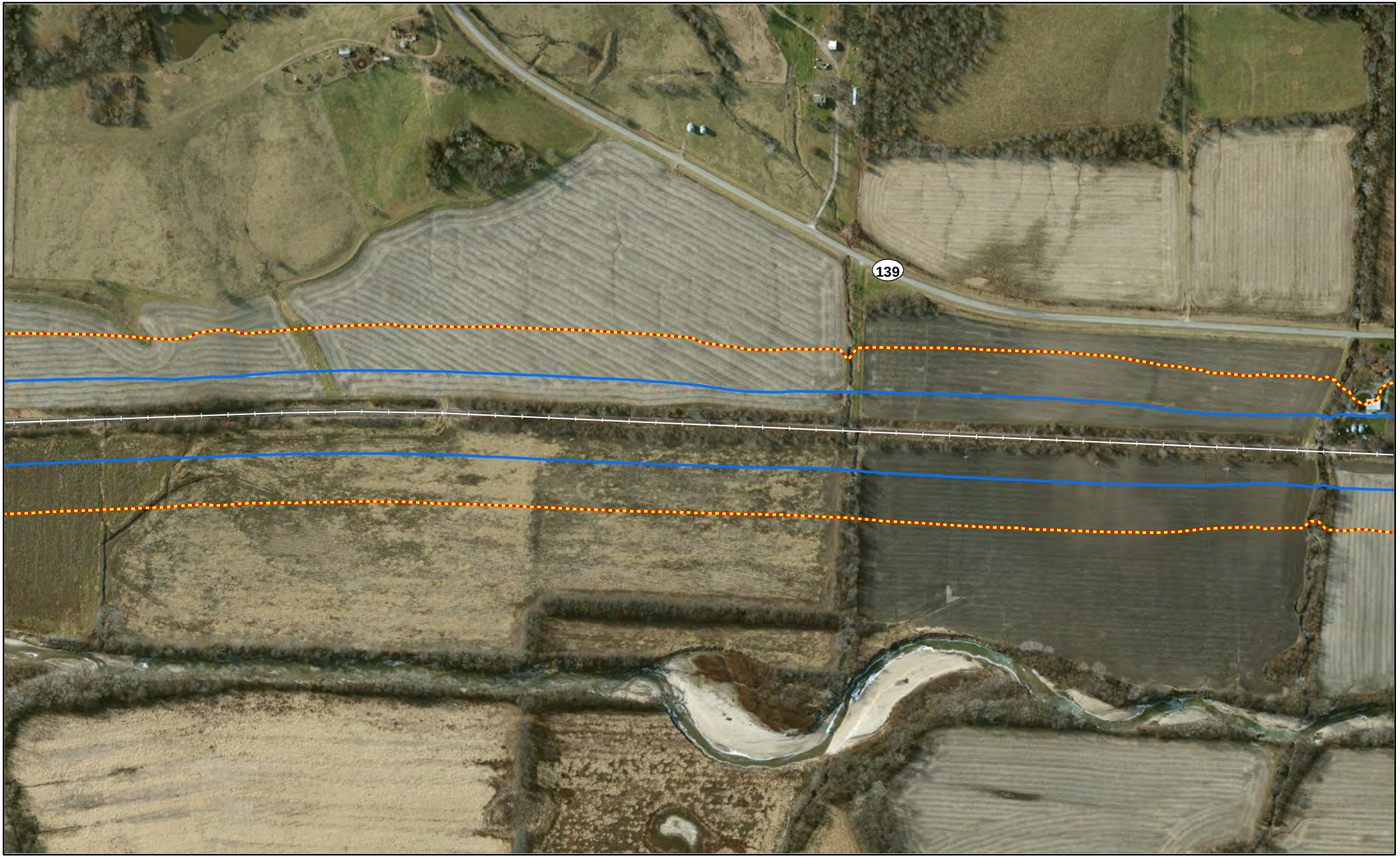
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Noise Contours
Sullivan County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



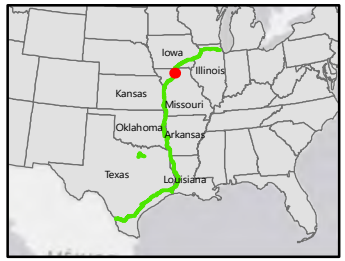
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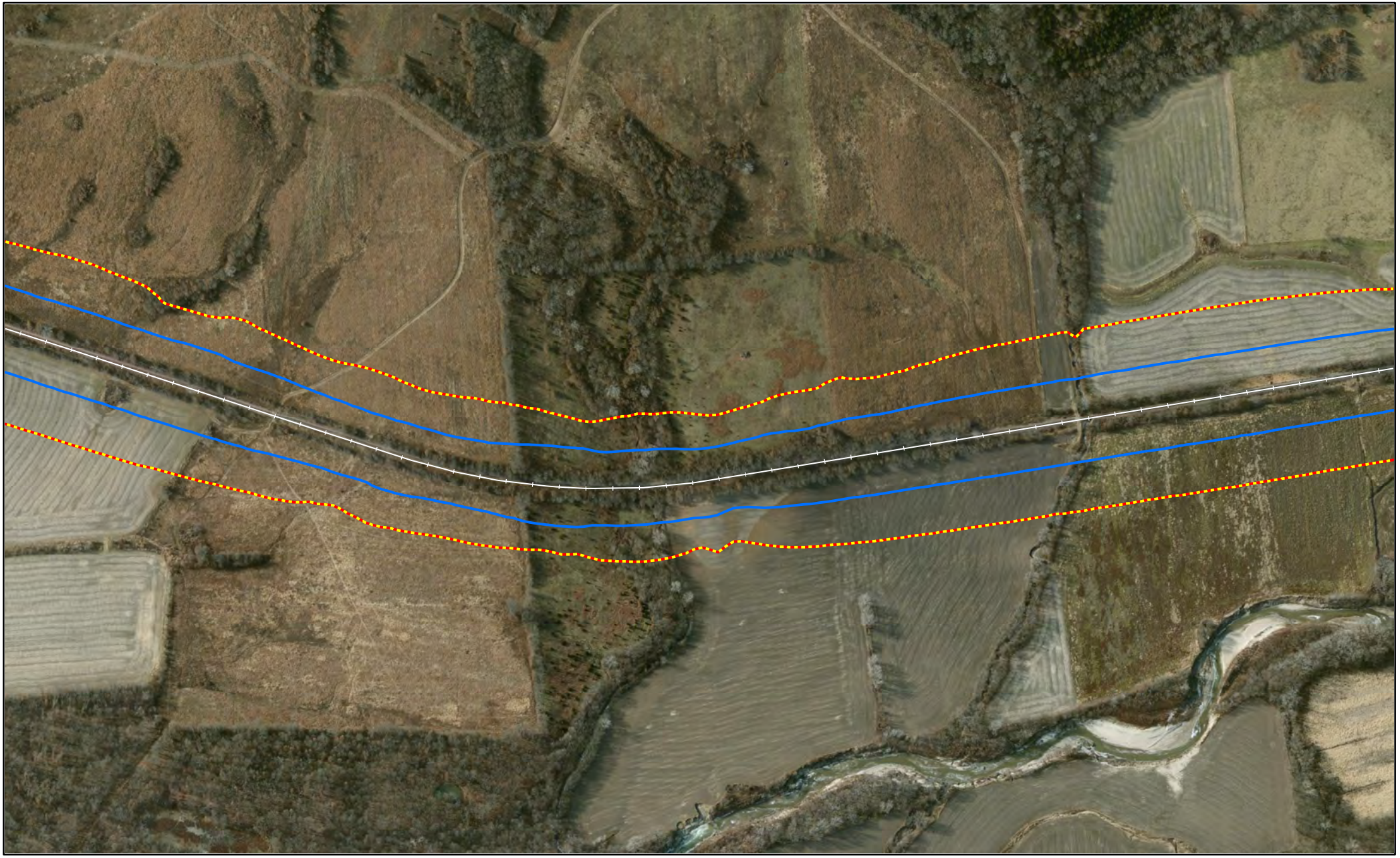
Tracks

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Noise Contours
Sullivan County, MO

Miles
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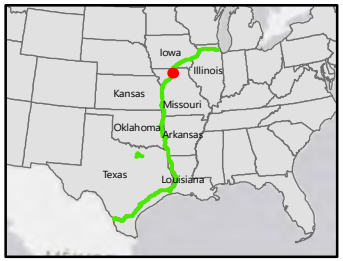
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Noise Contours
Sullivan County, MO

Miles
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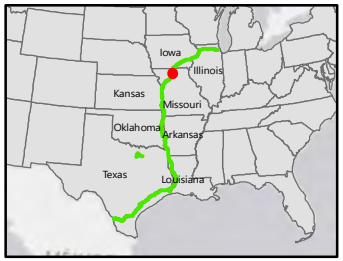
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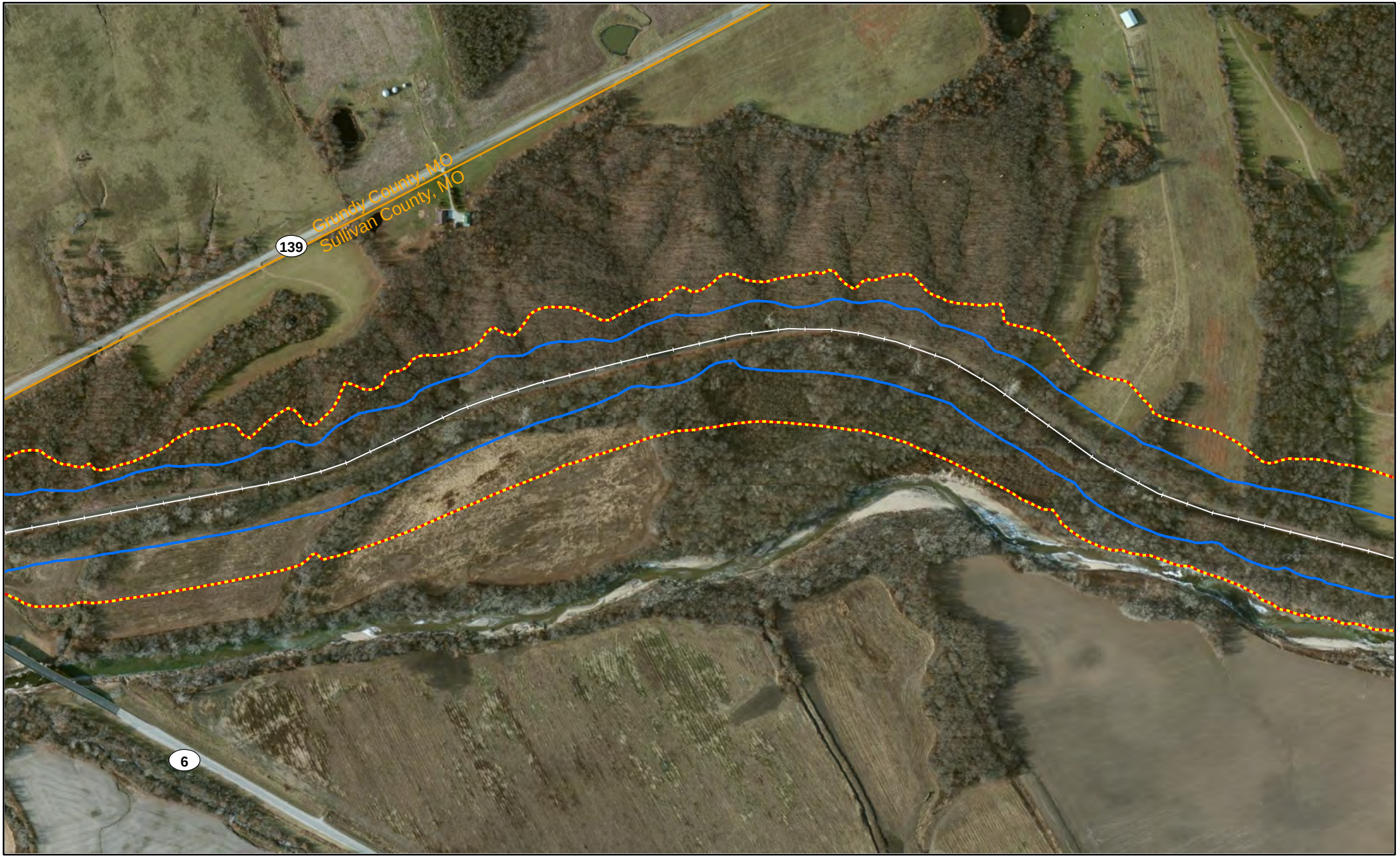
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Noise Contours
Sullivan County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



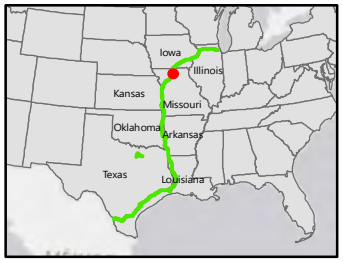
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Noise Contours
Sullivan County, MO

Miles
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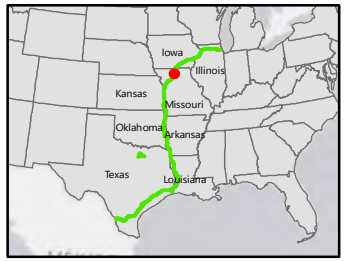
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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

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Noise Contours
Sullivan County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



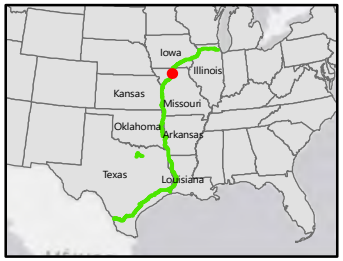
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Grundy County, MO

Miles
0 0.05 0.1



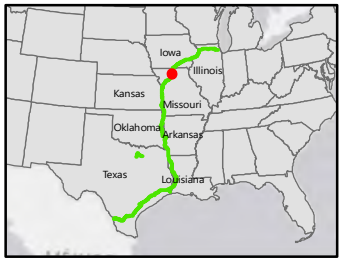
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Grundy County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



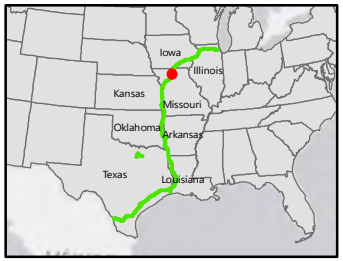
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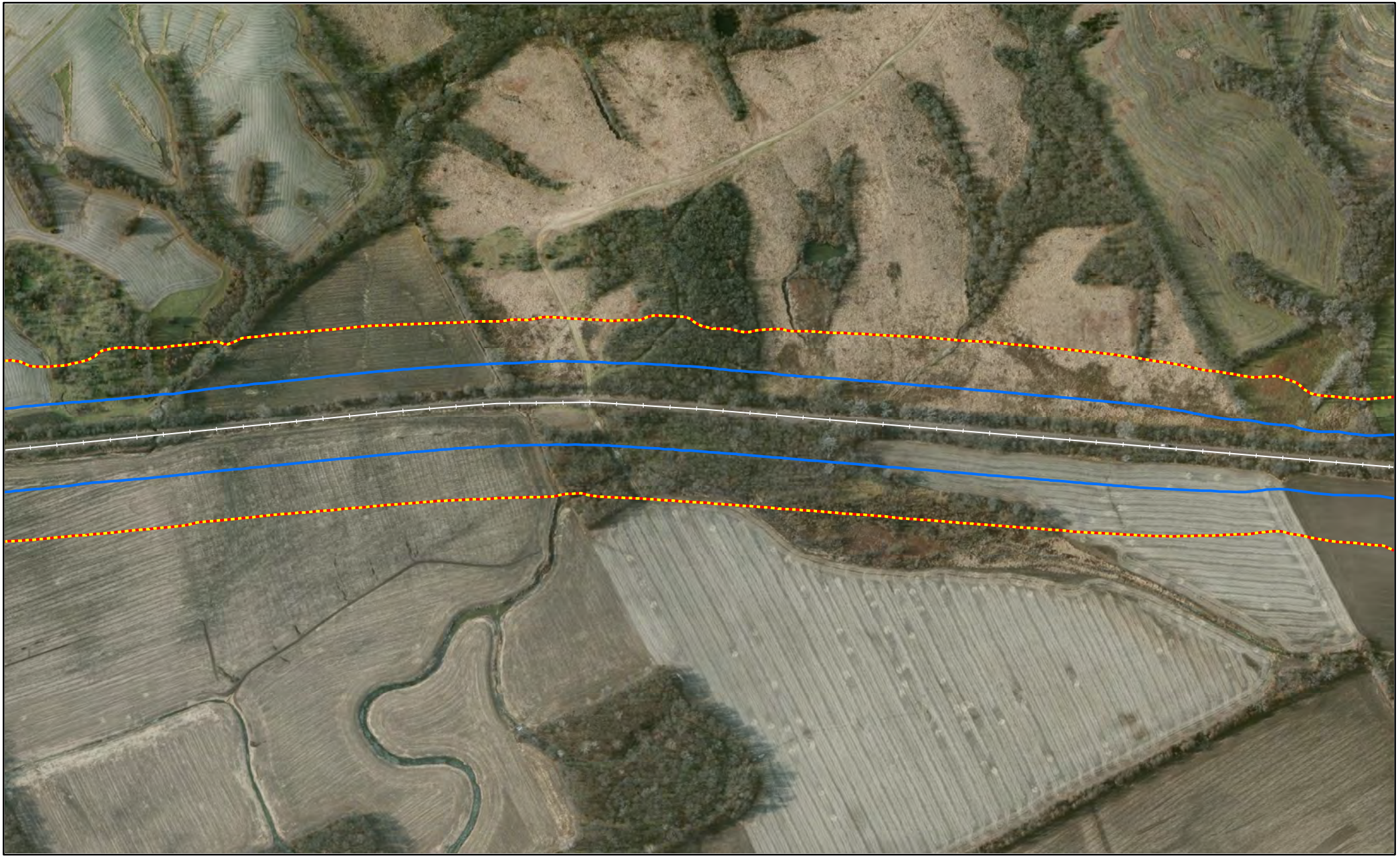
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Noise Contours
Grundy County, MO

Miles
0 0.05 0.1



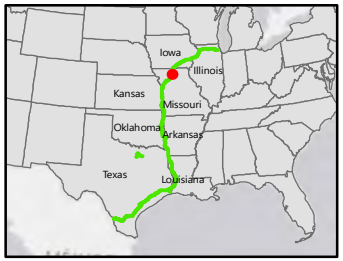
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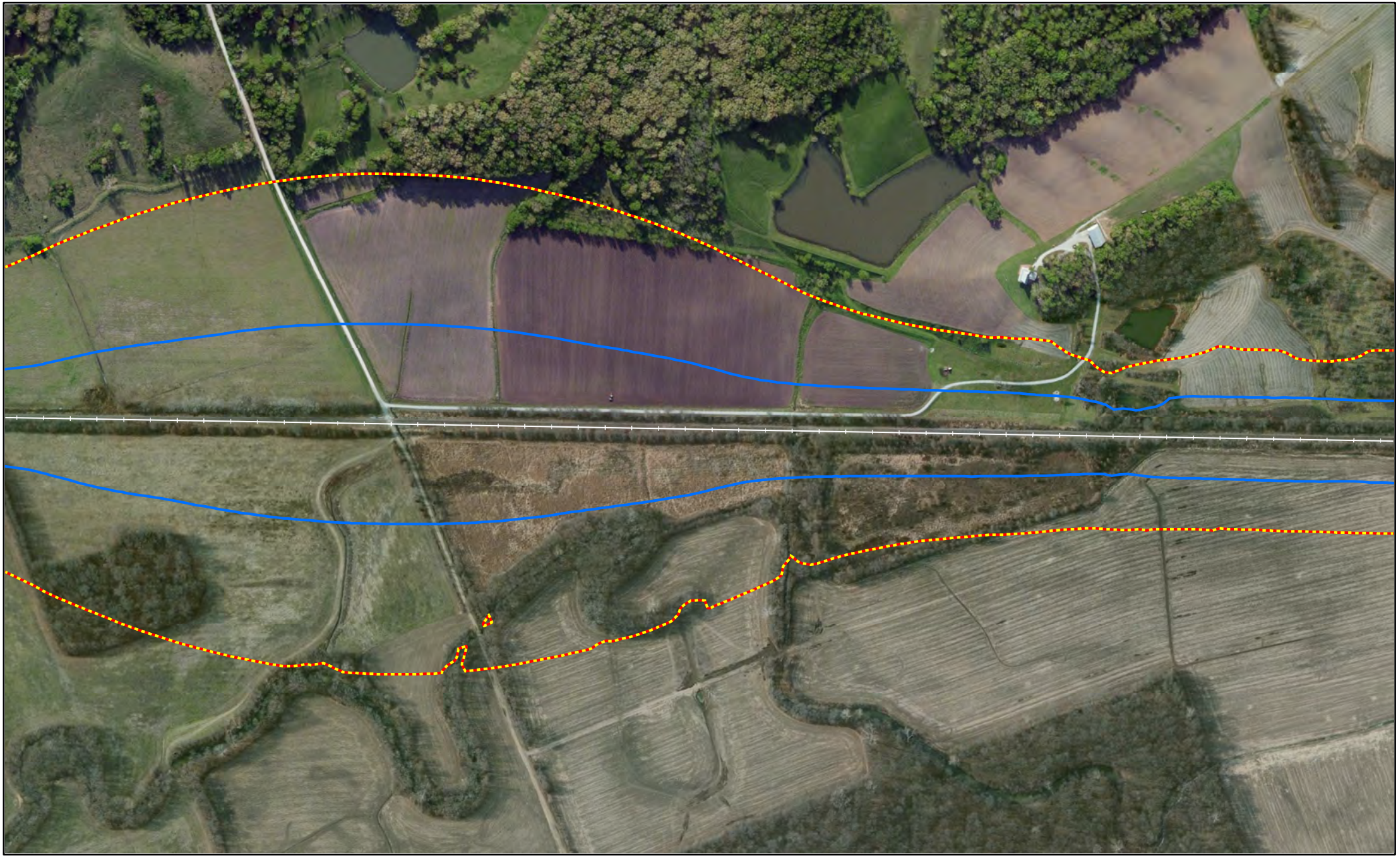
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Noise Contours
Grundy County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



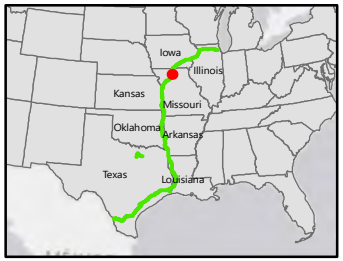
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Noise Contours
Grundy County, MO

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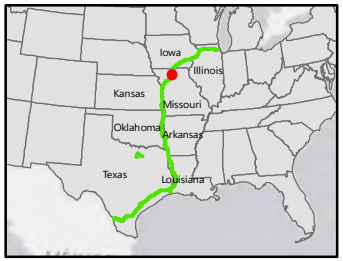
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Grundy County, MO

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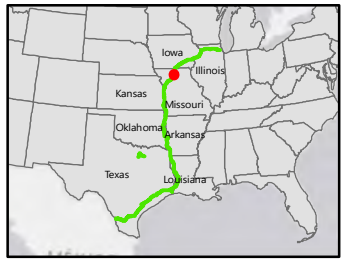
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Noise Contours
Grundy County, MO

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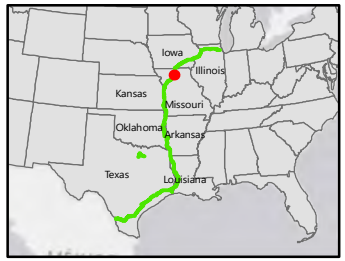
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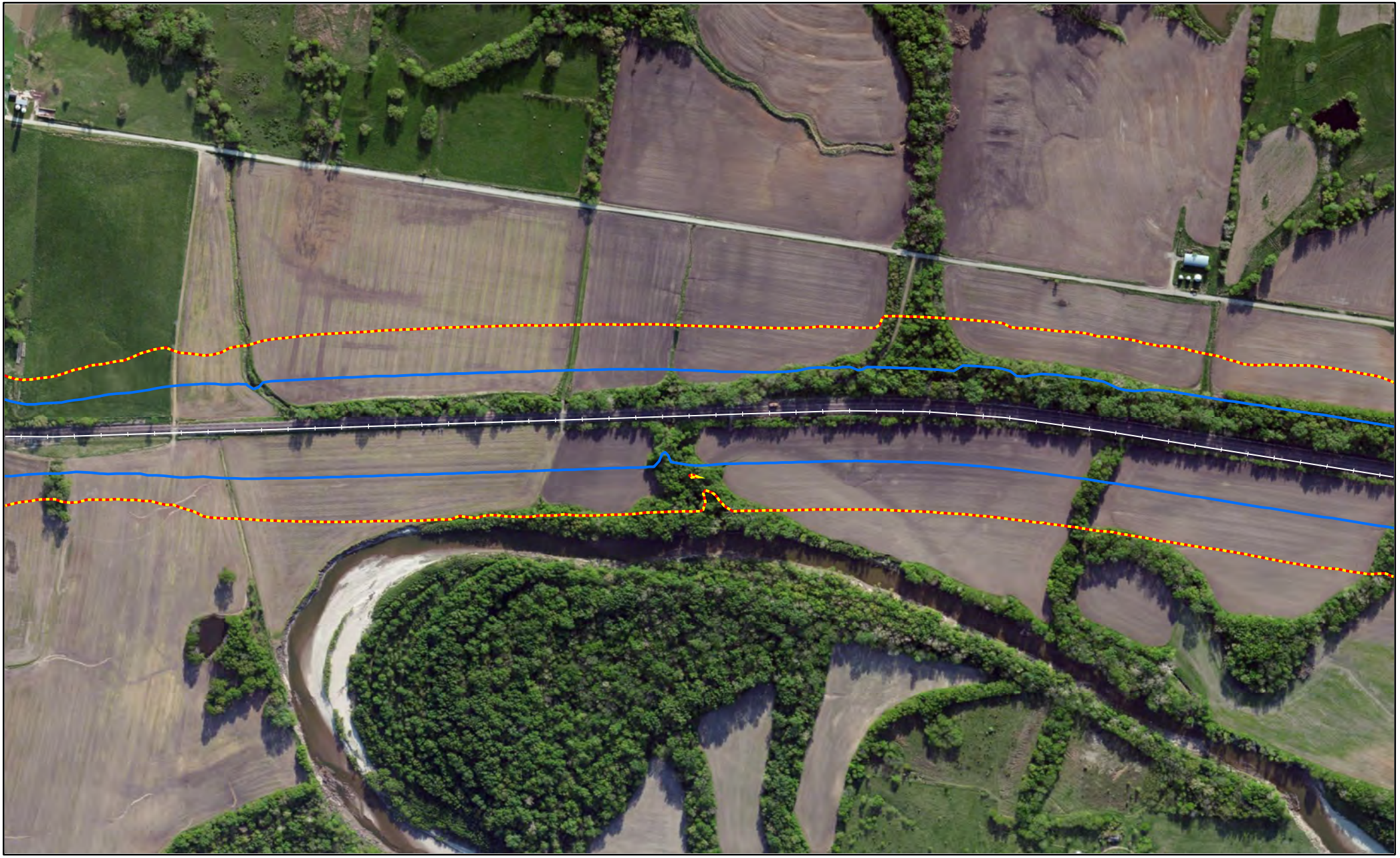
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Noise Contours
Grundy County, MO

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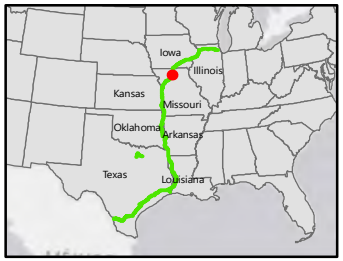
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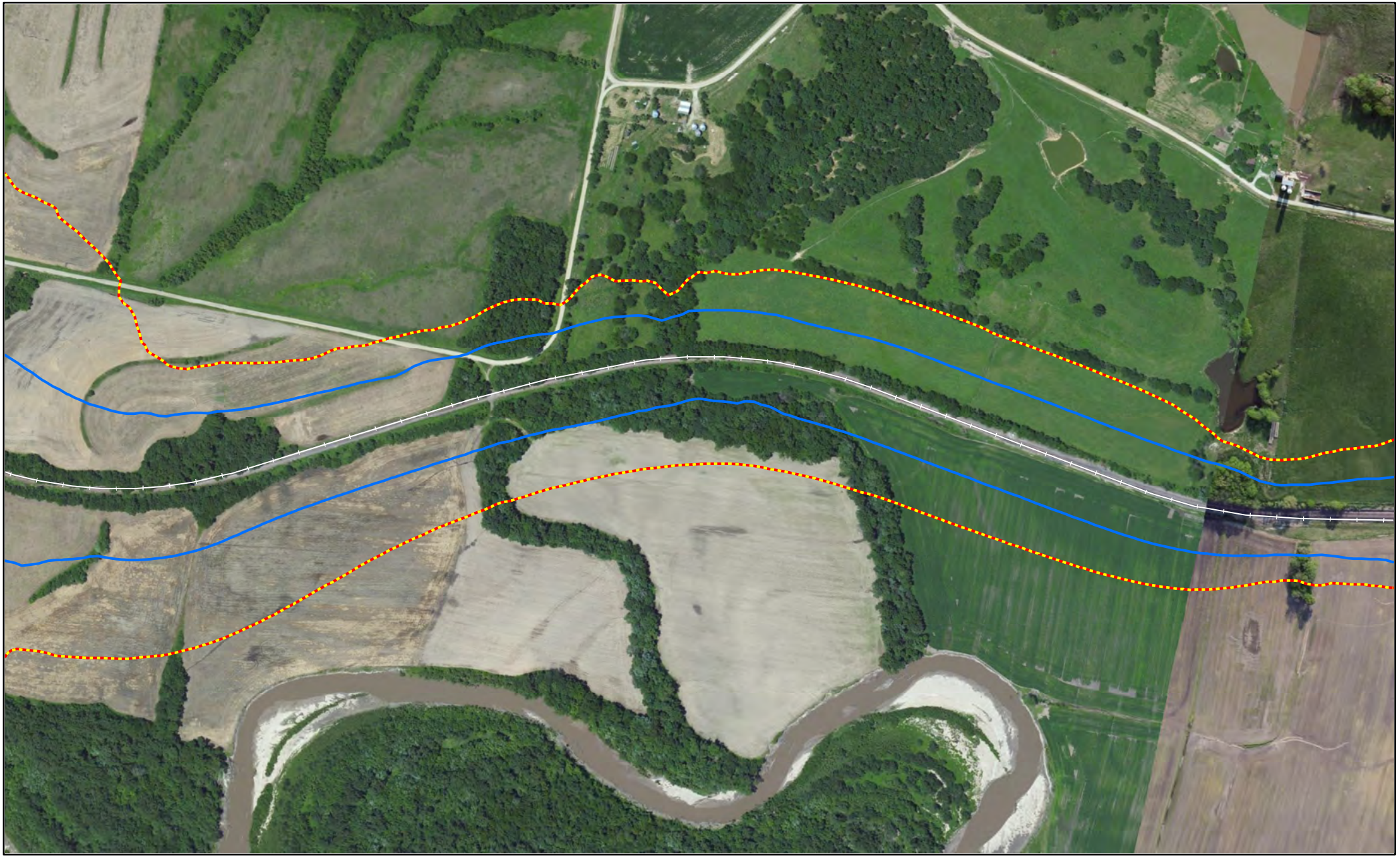
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Noise Contours
Grundy County, MO

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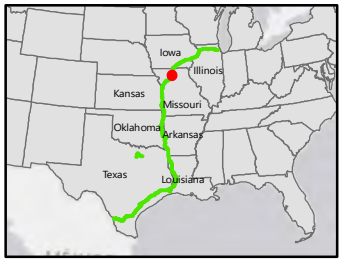
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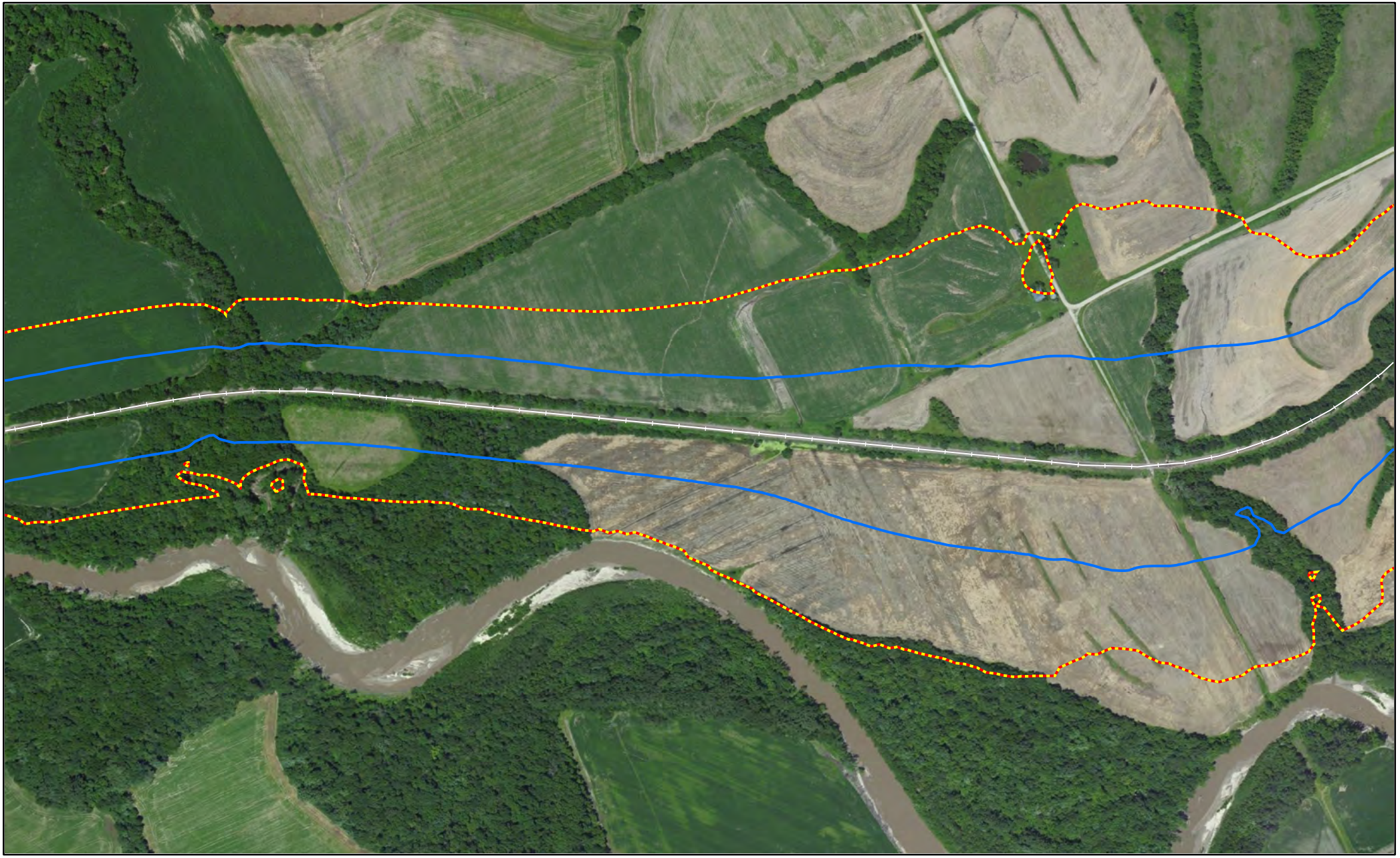
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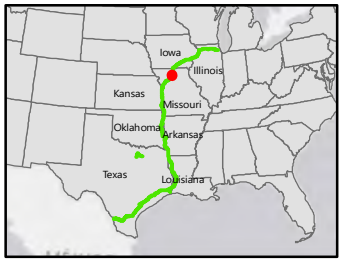
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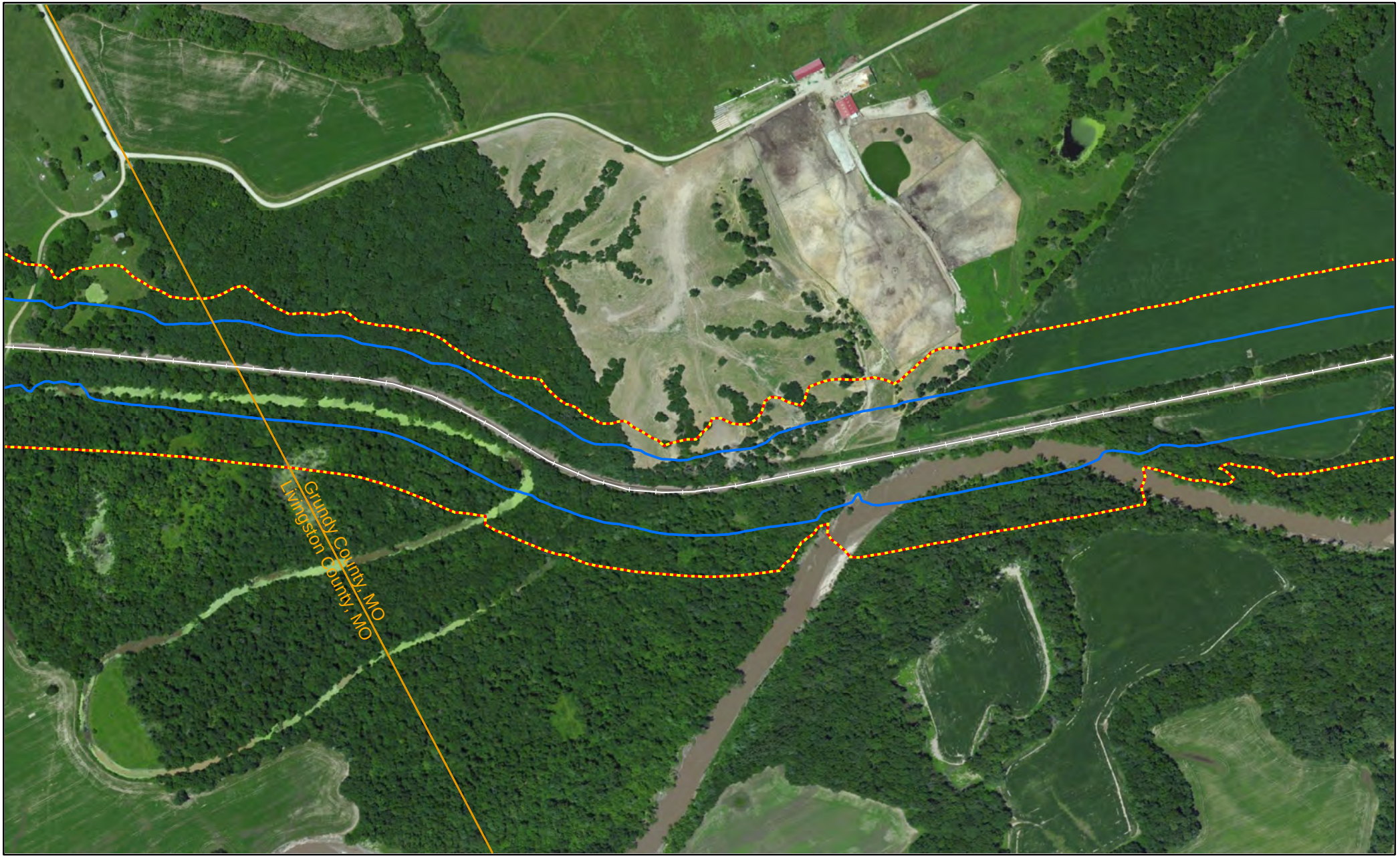
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Noise Contours
Grundy County, MO

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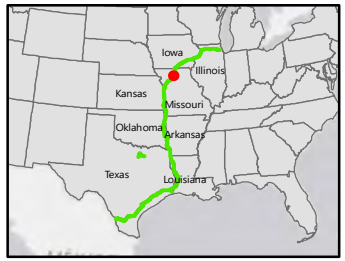
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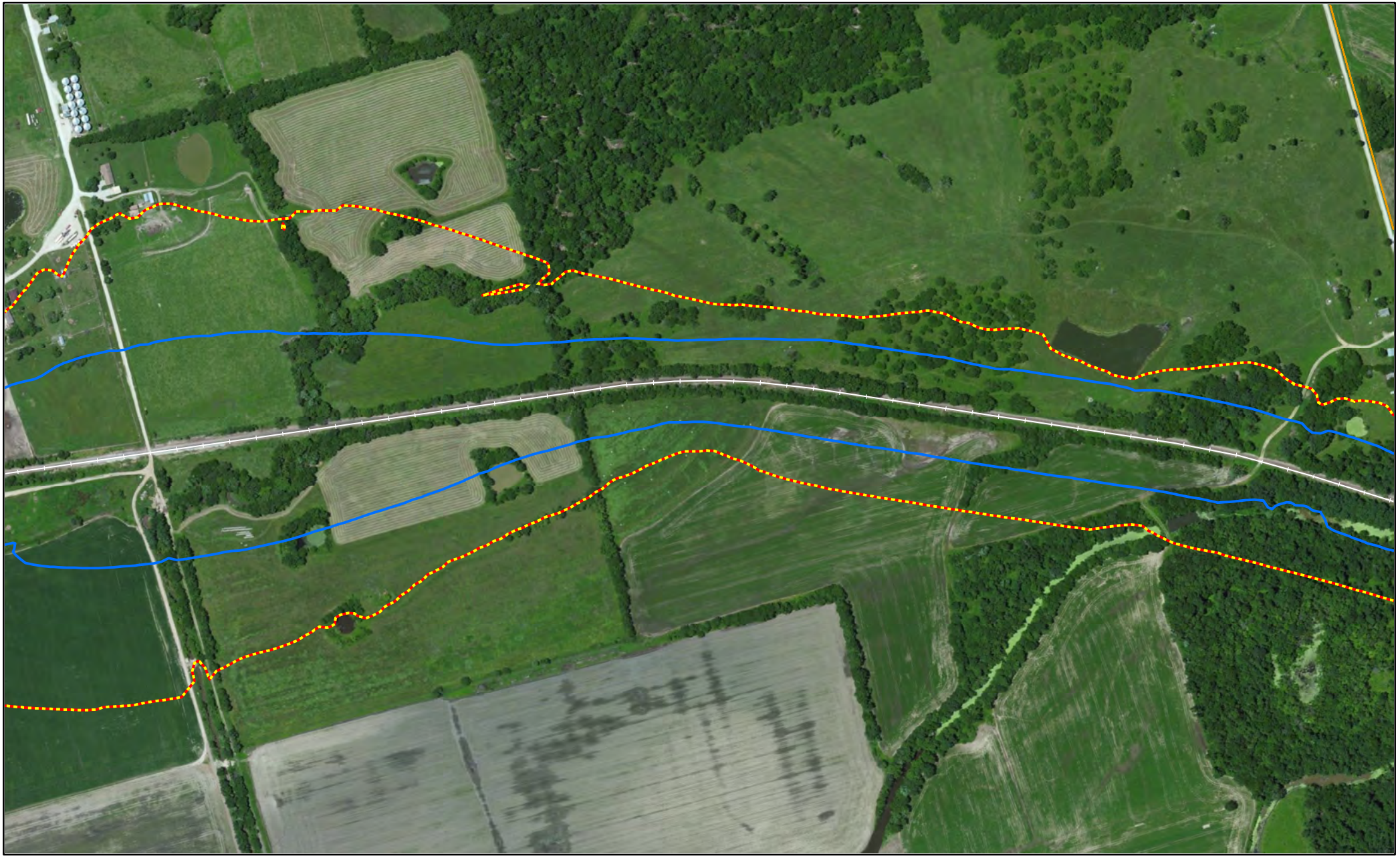
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Noise Contours
Grundy County, MO

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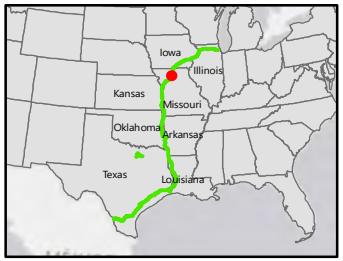
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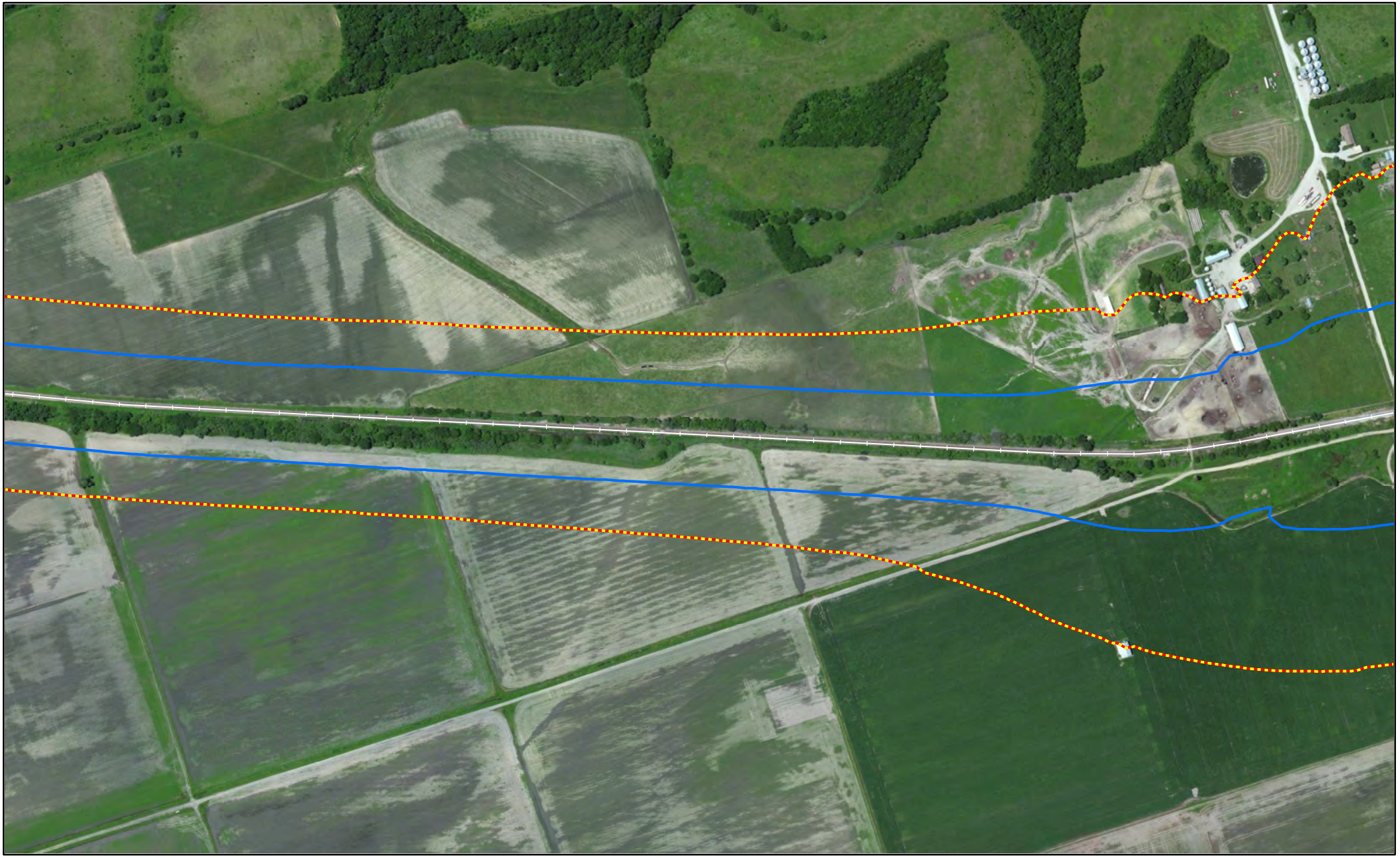
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Noise Contours
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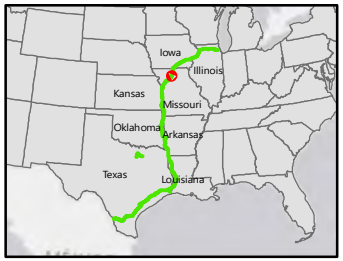
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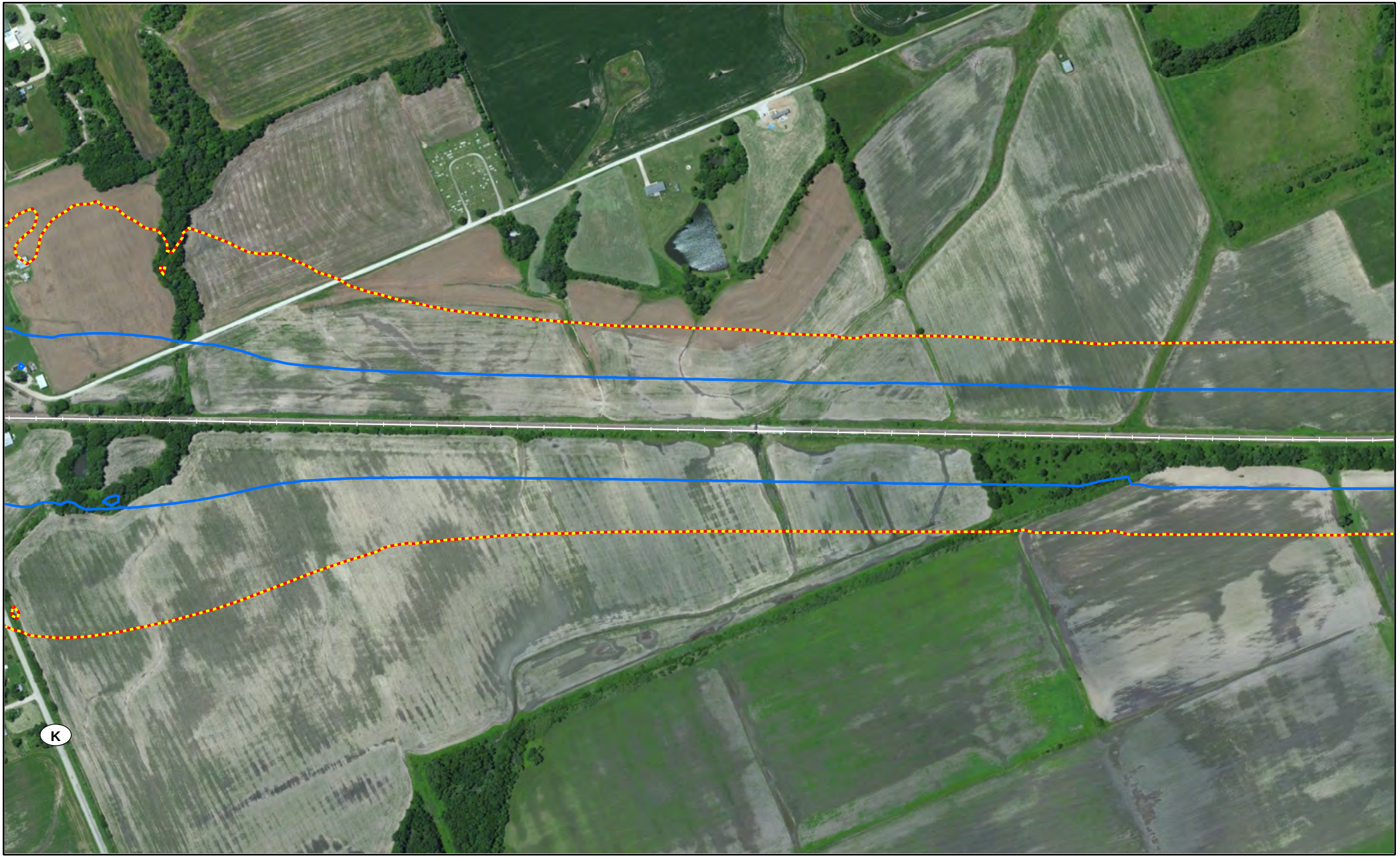
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Noise Contours
Livingston County, MO

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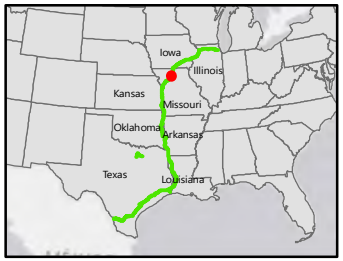
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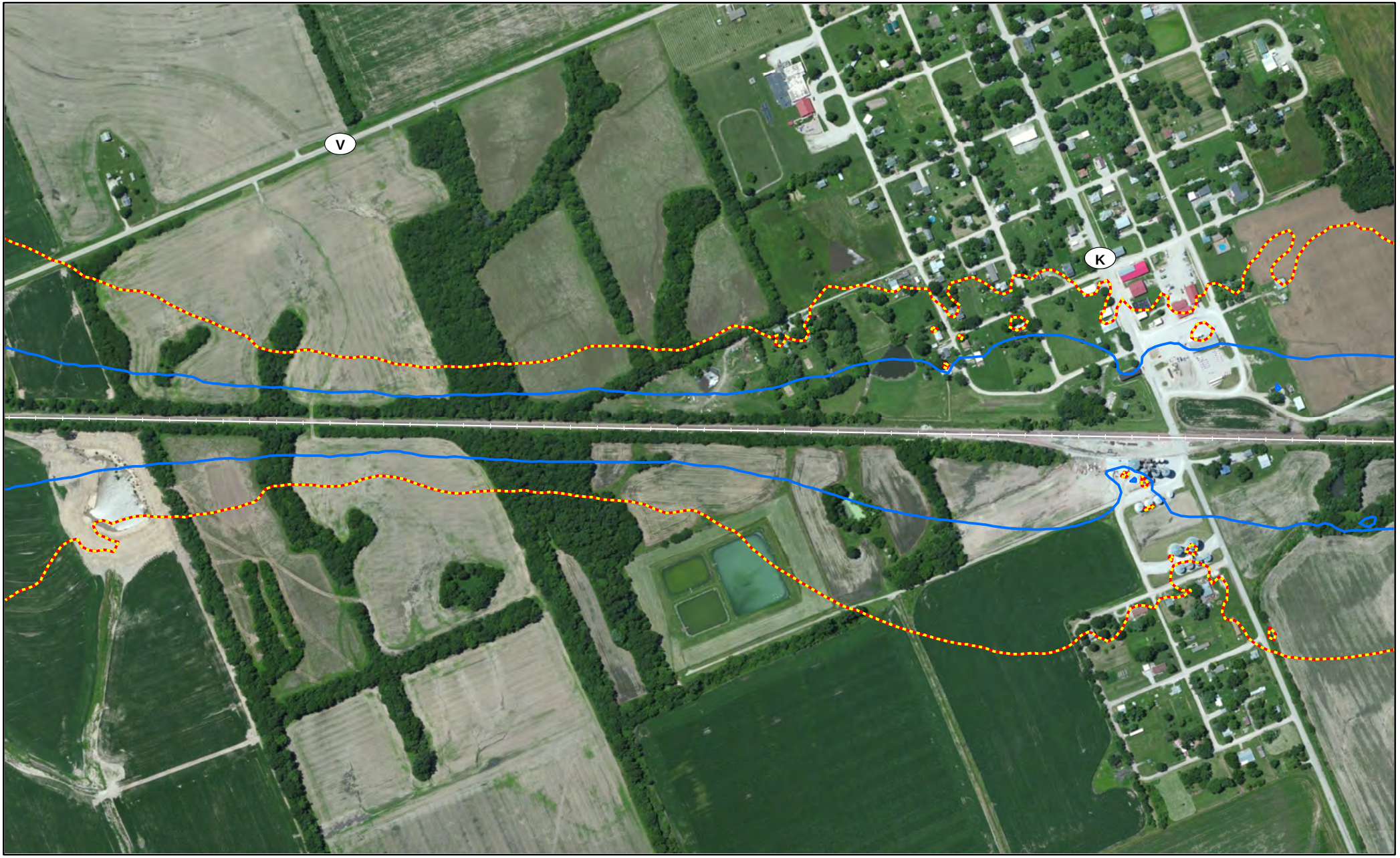
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Noise Contours
Livingston County, MO

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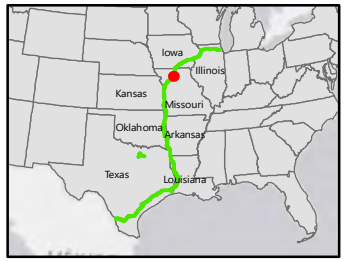
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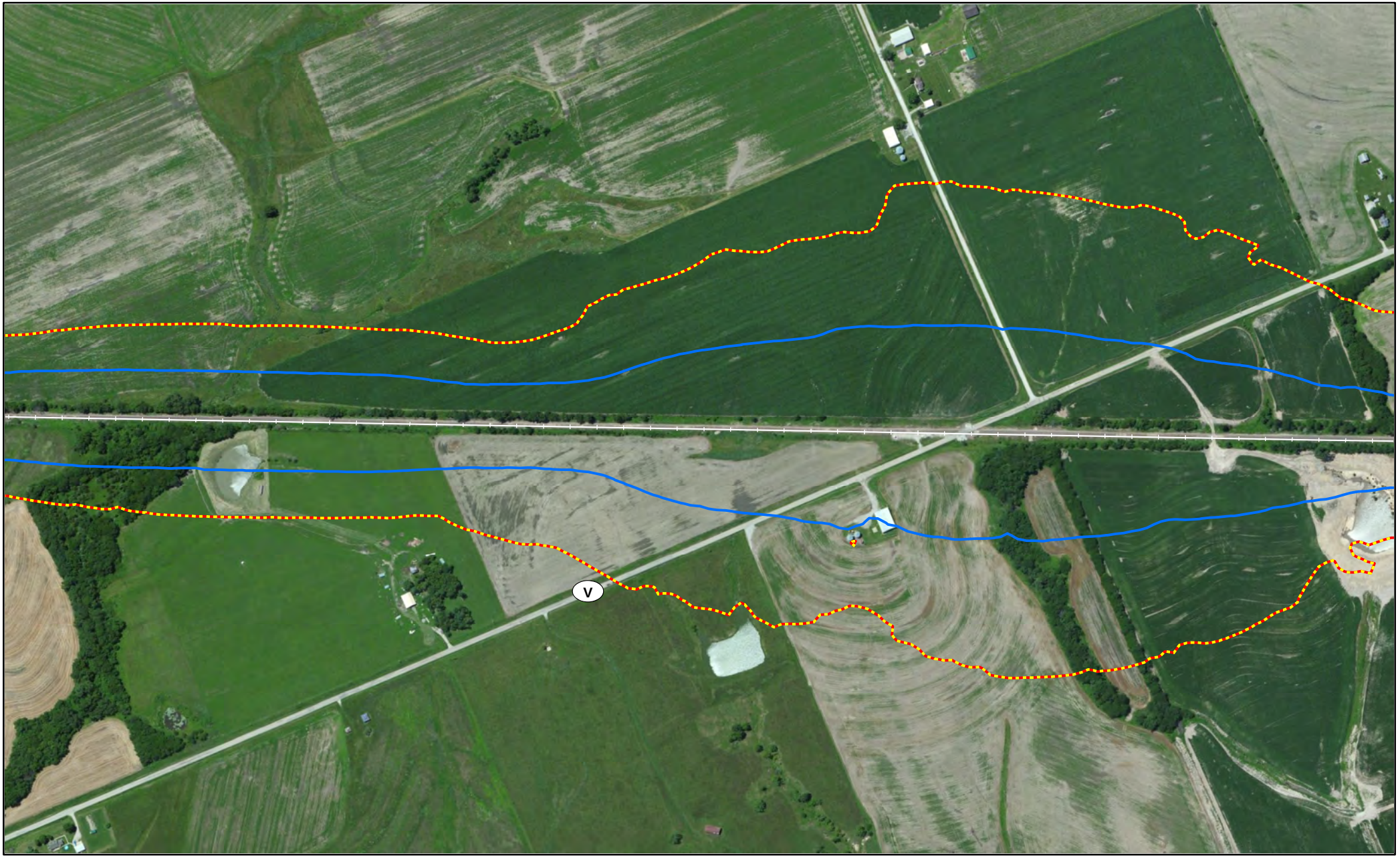
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Noise Contours
Livingston County, MO

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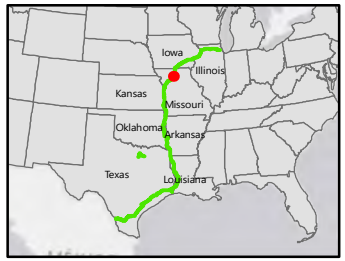
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Noise Contours
Livingston County, MO

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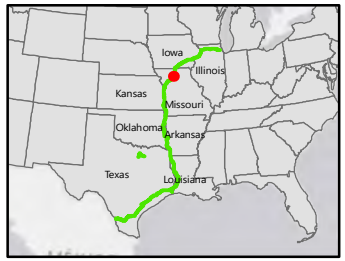
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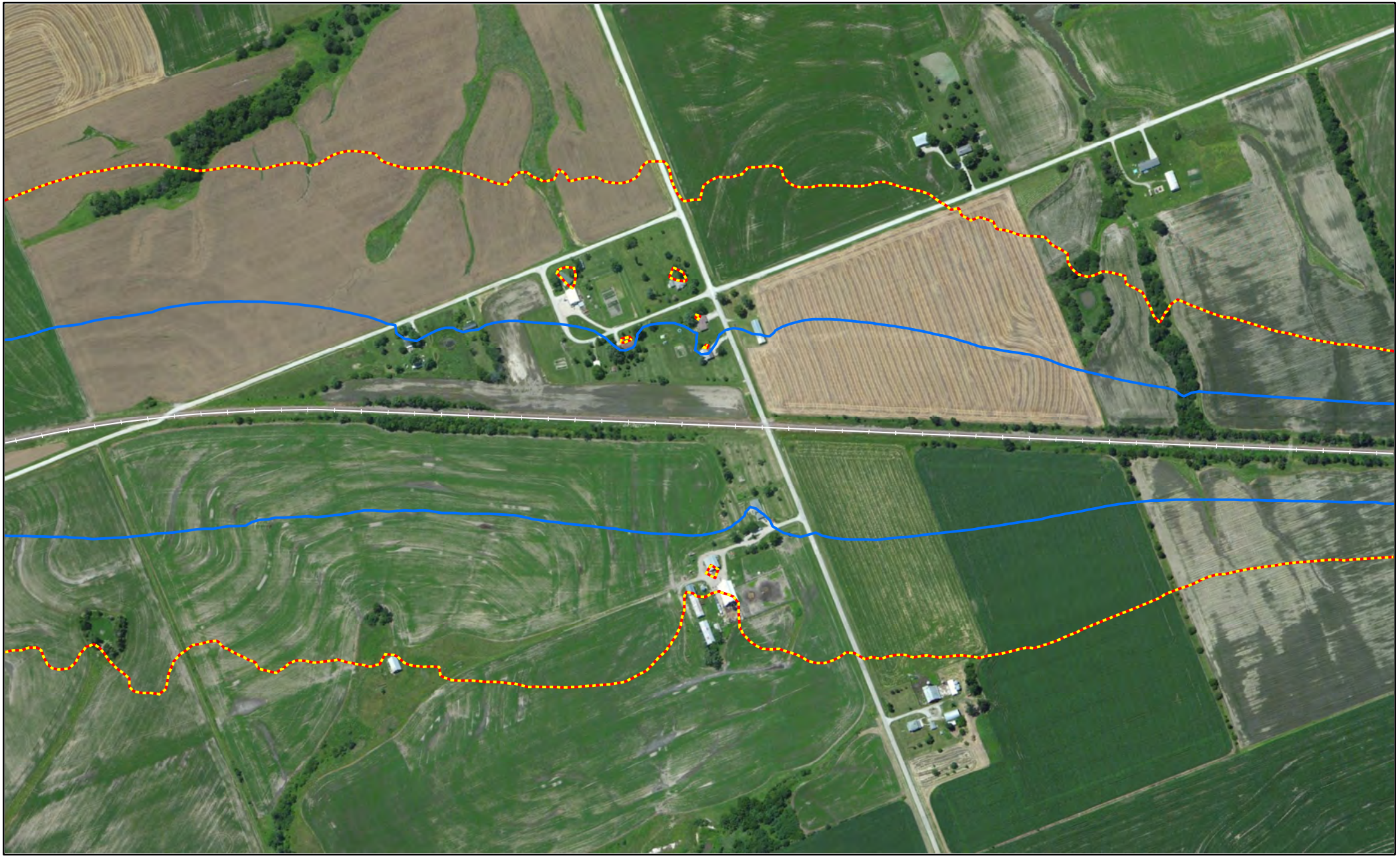
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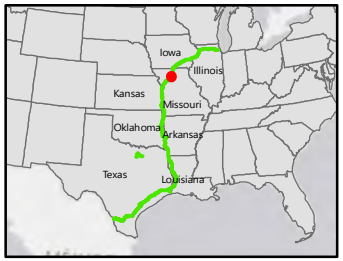
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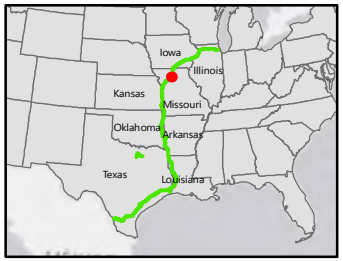
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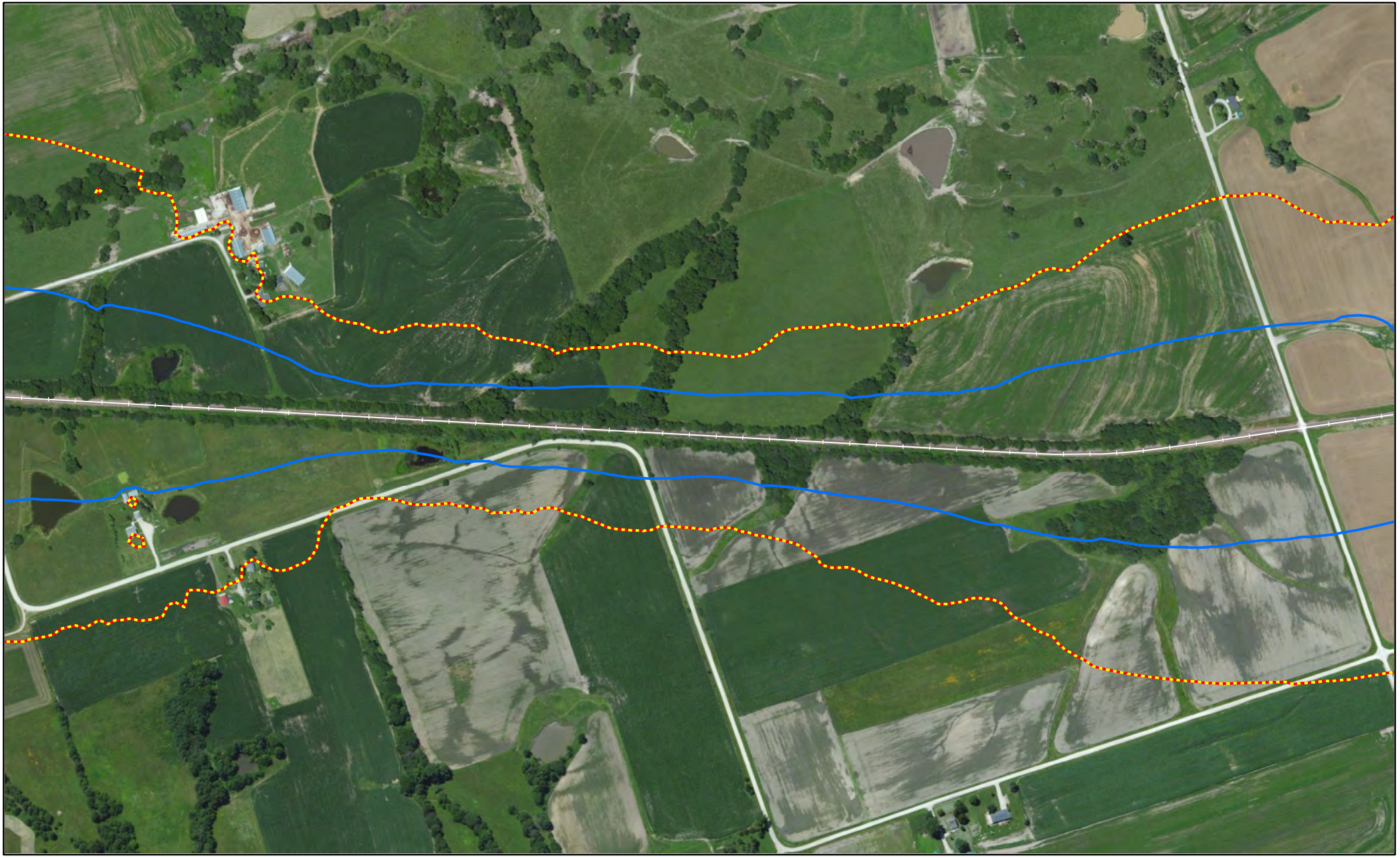
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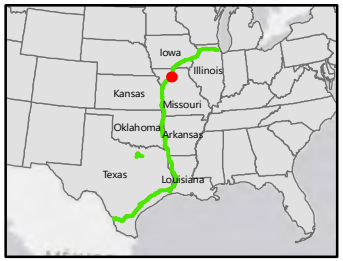
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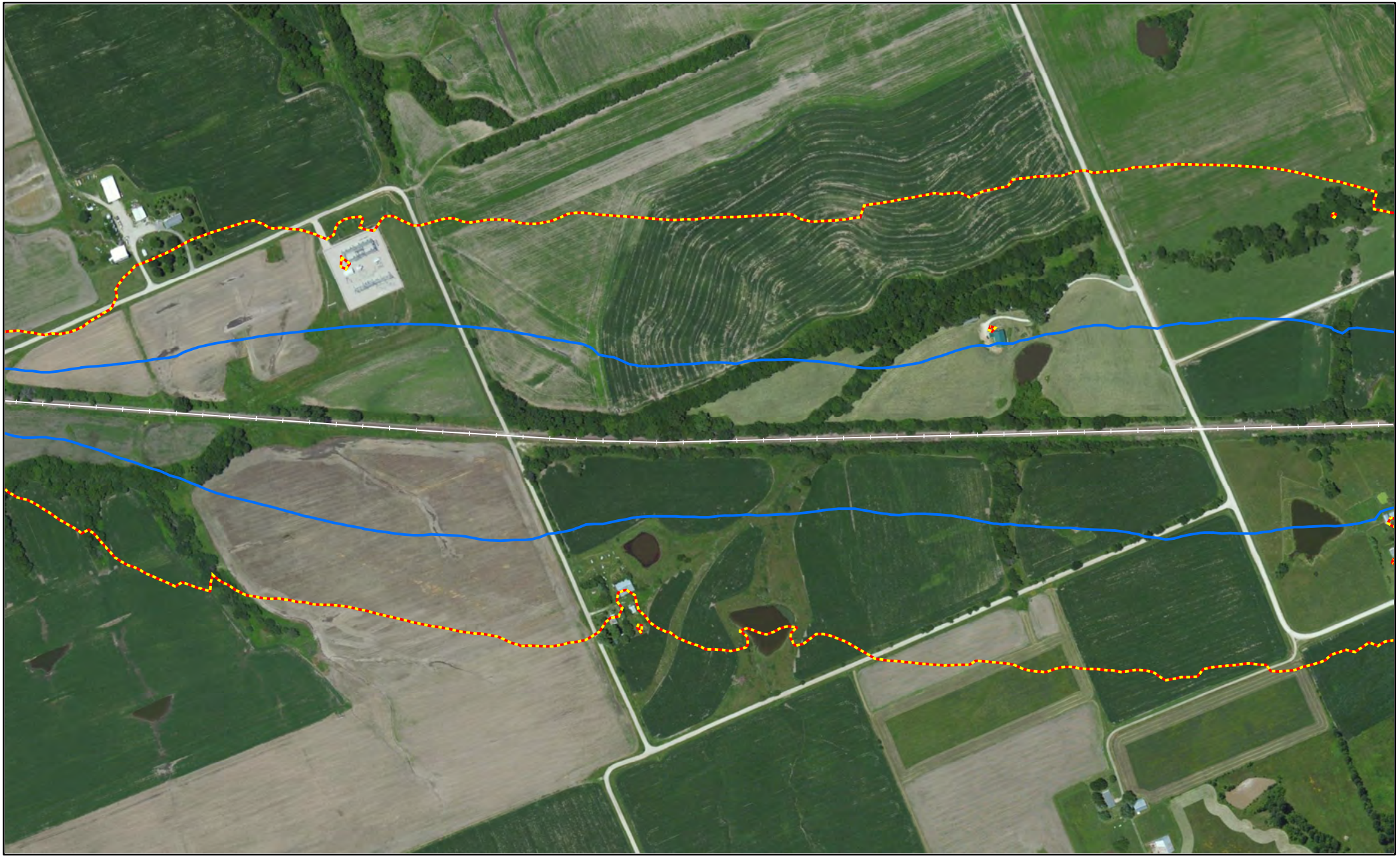
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



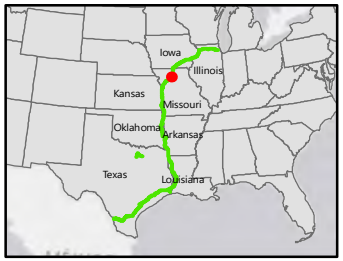
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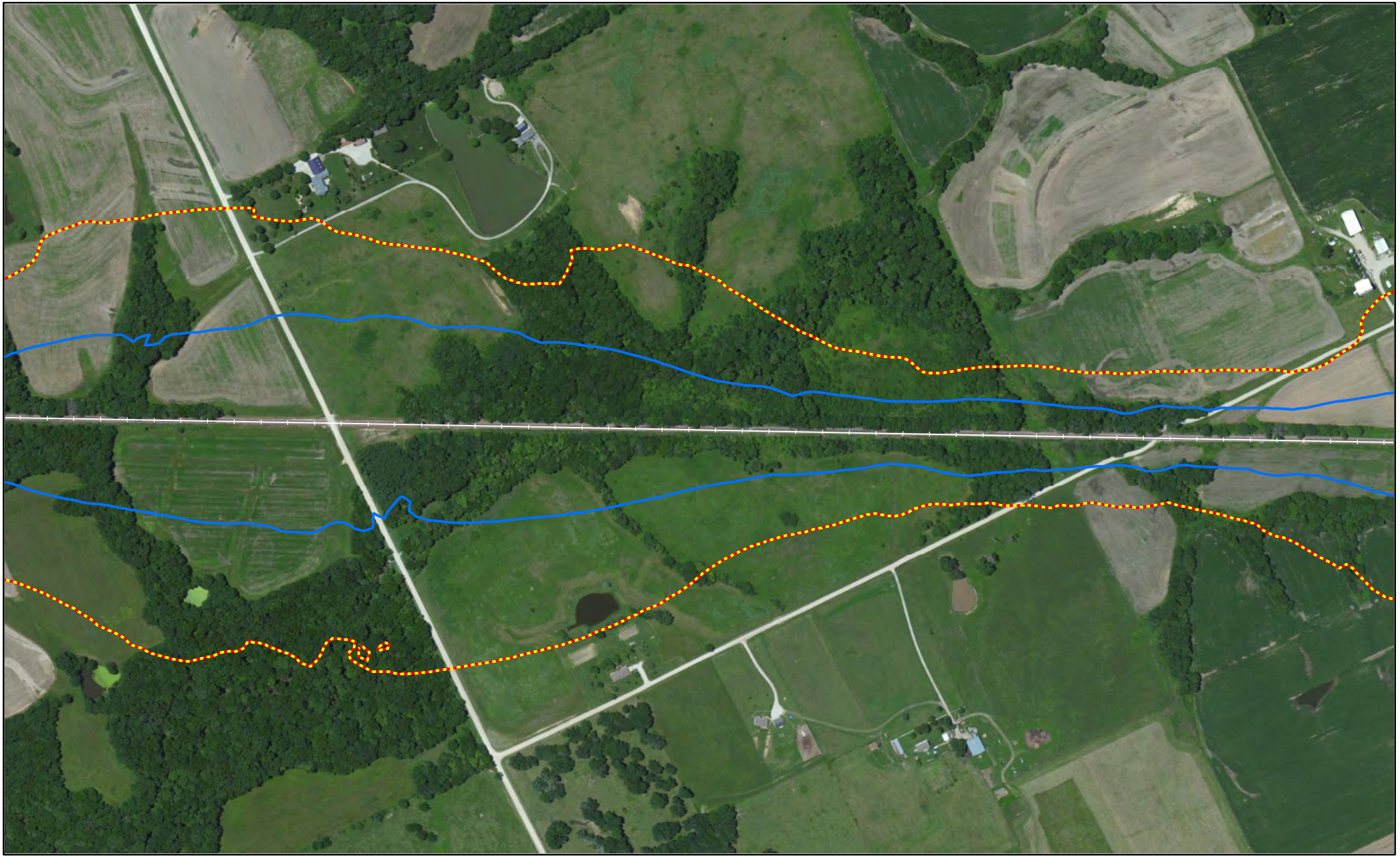
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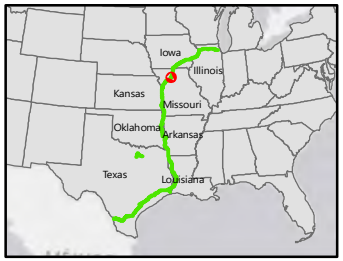
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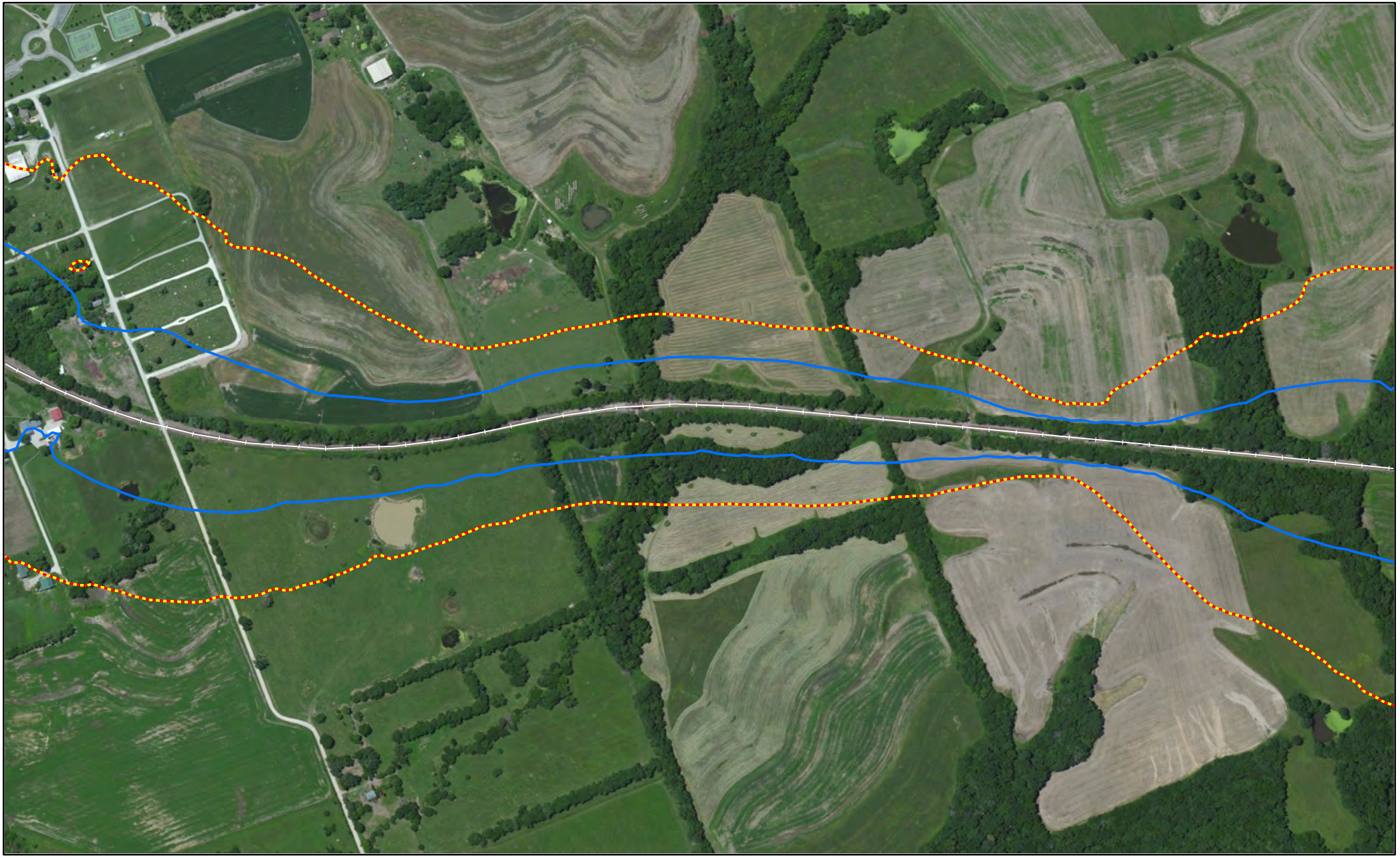
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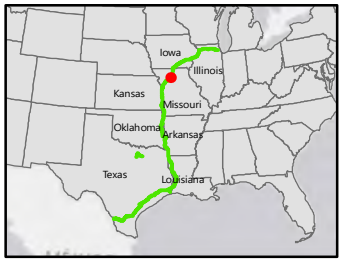
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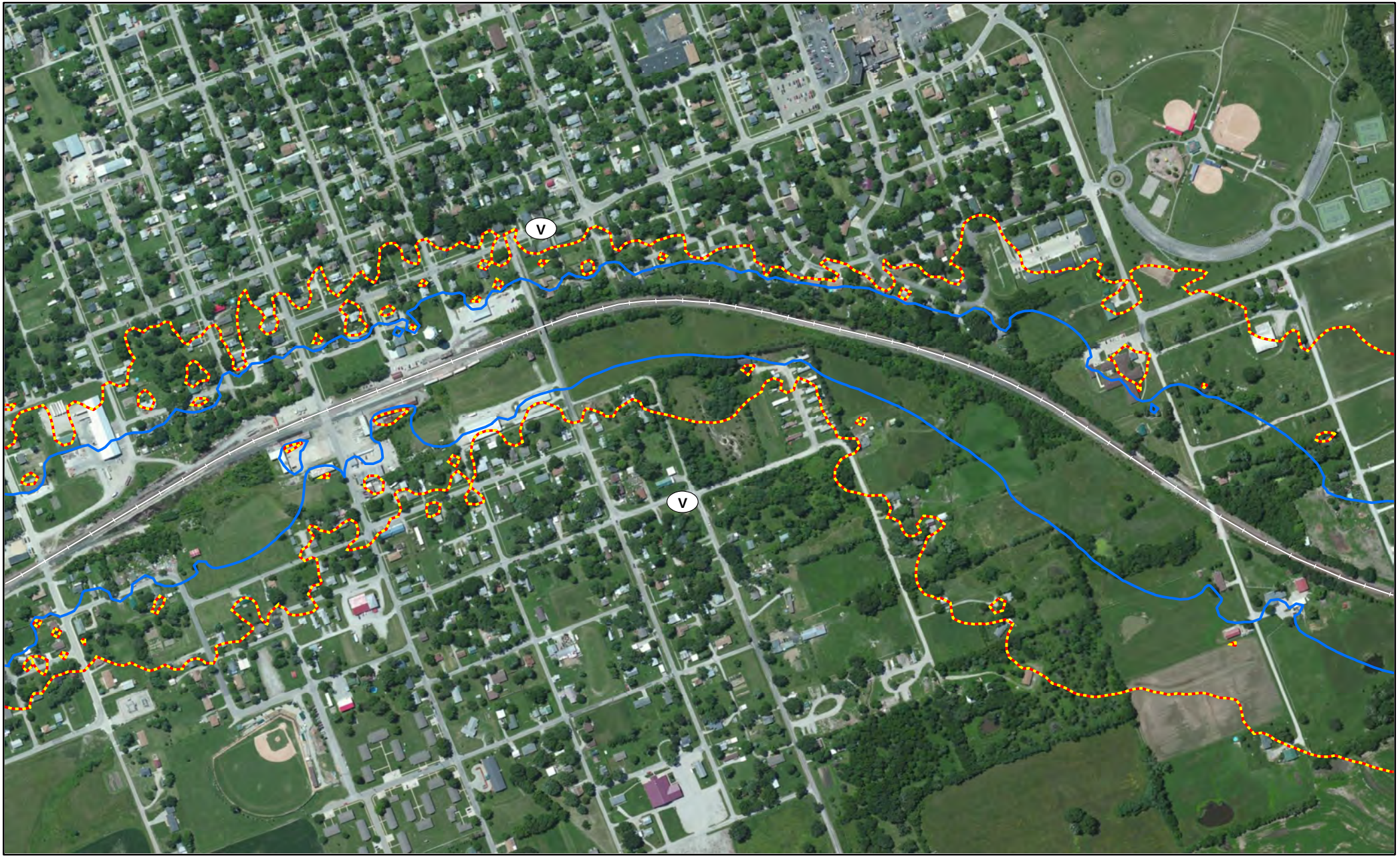
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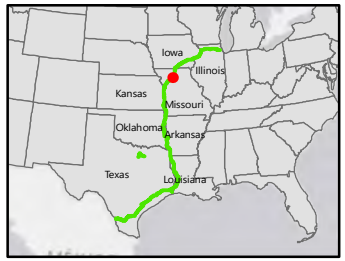
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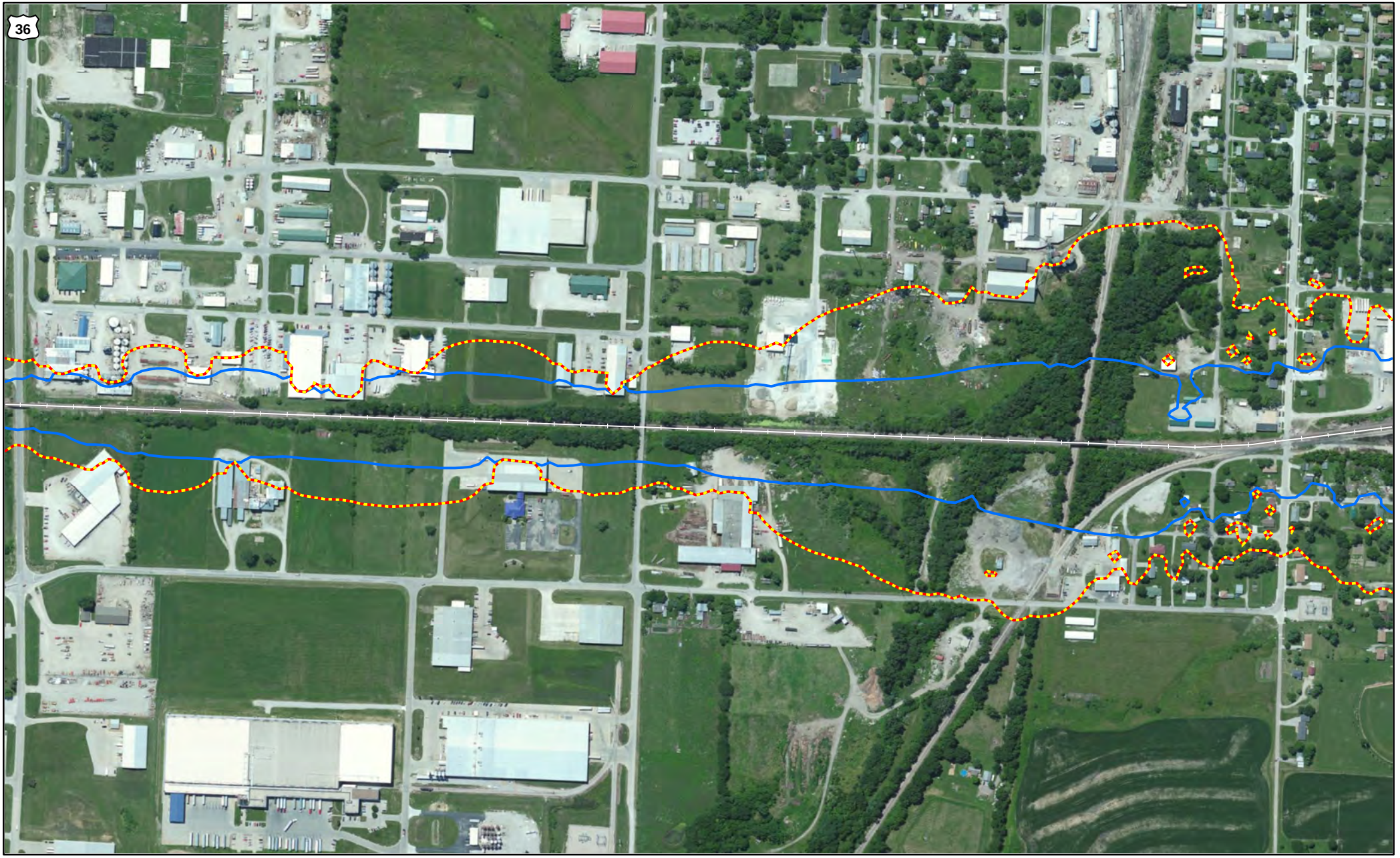
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



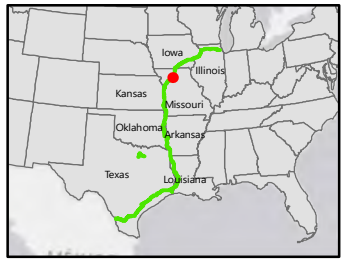
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Tracks

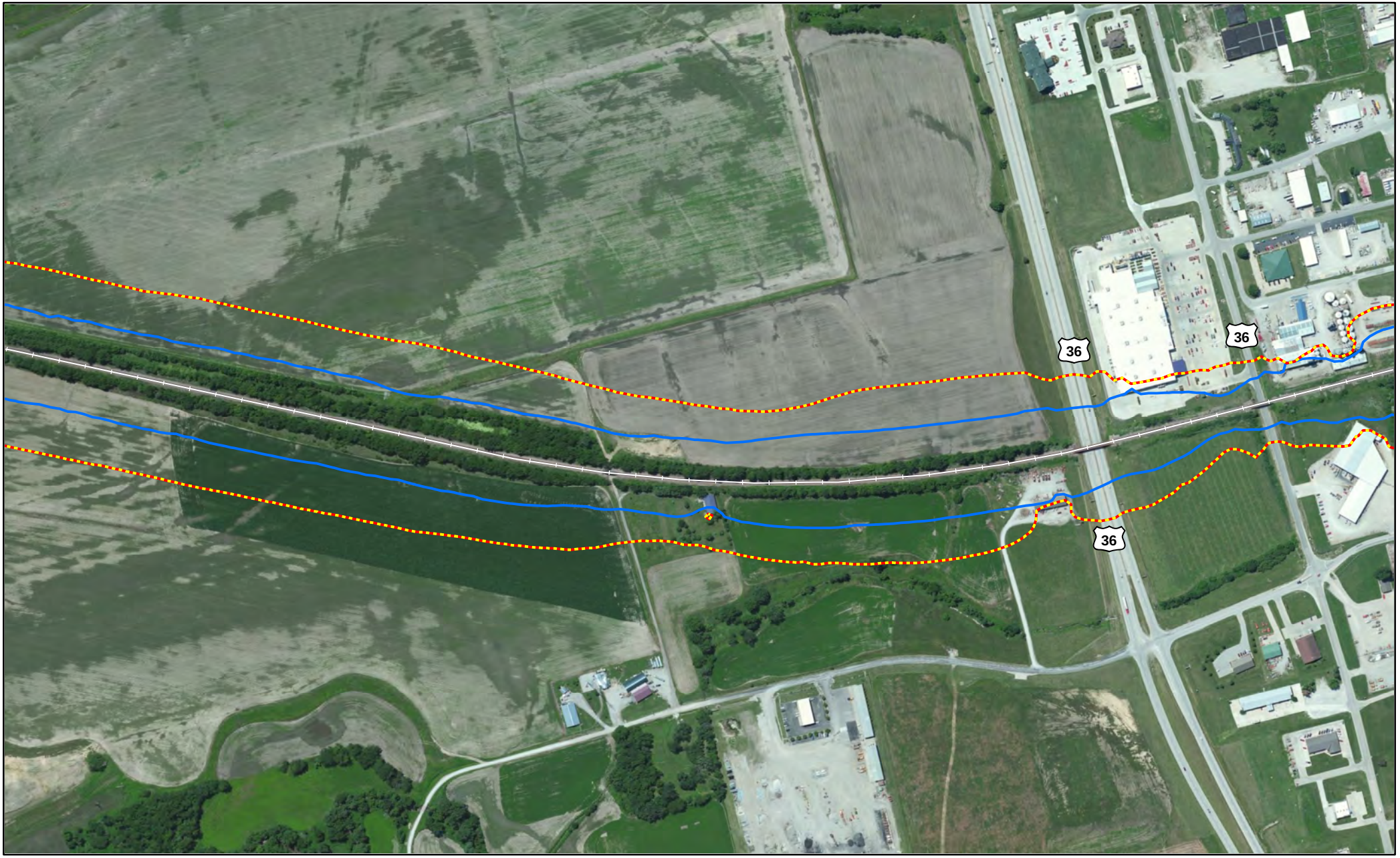
Source: ESRI.



Noise Contours
Livingston County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



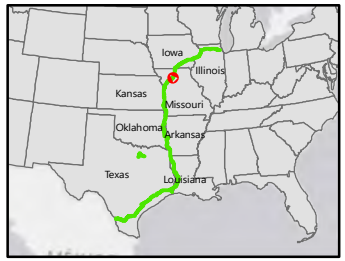
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

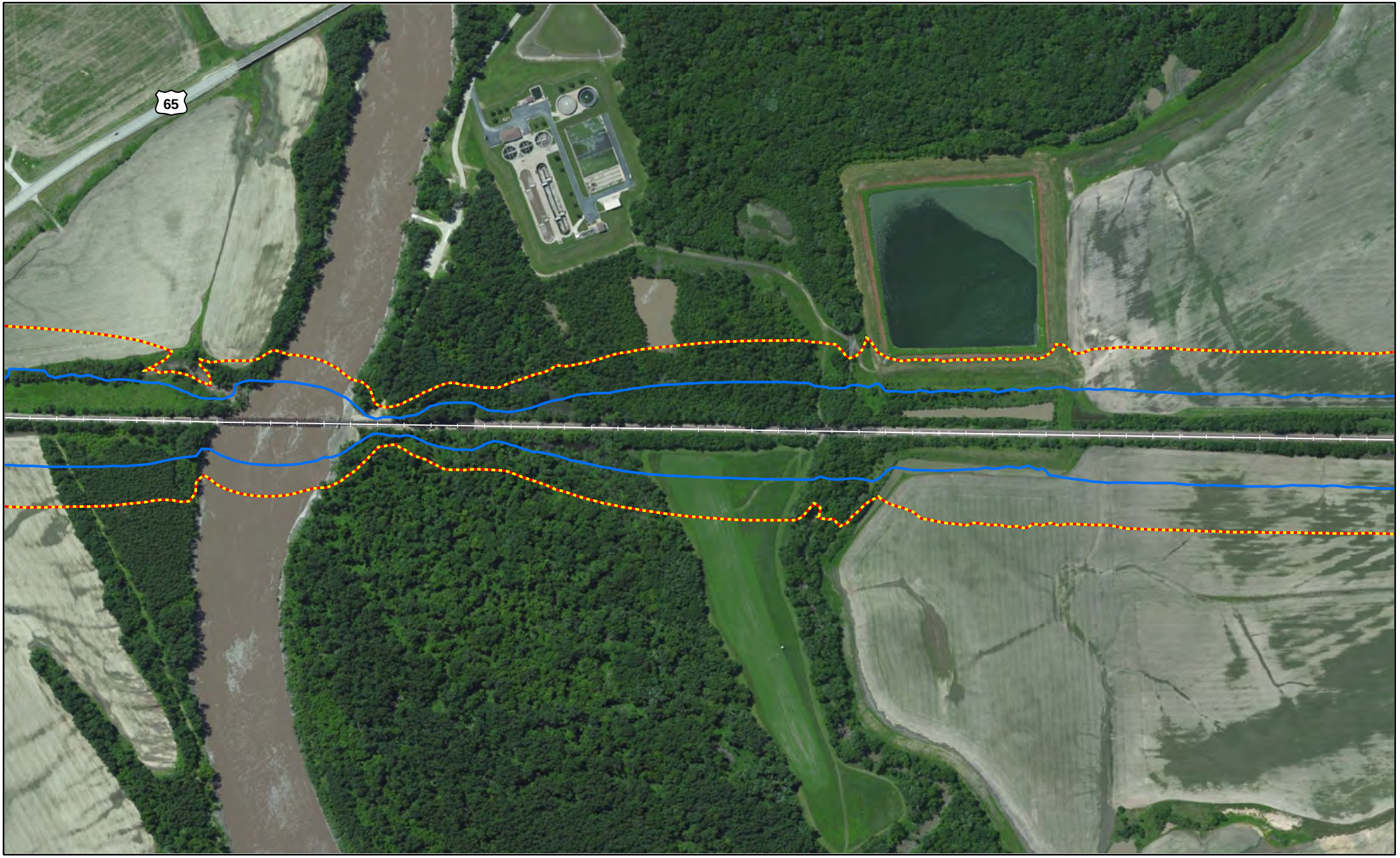
Tracks

Source: ESRI.



Noise Contours
Livingston County, MO

Miles
0 0.05 0.1



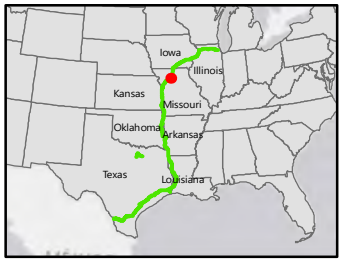
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

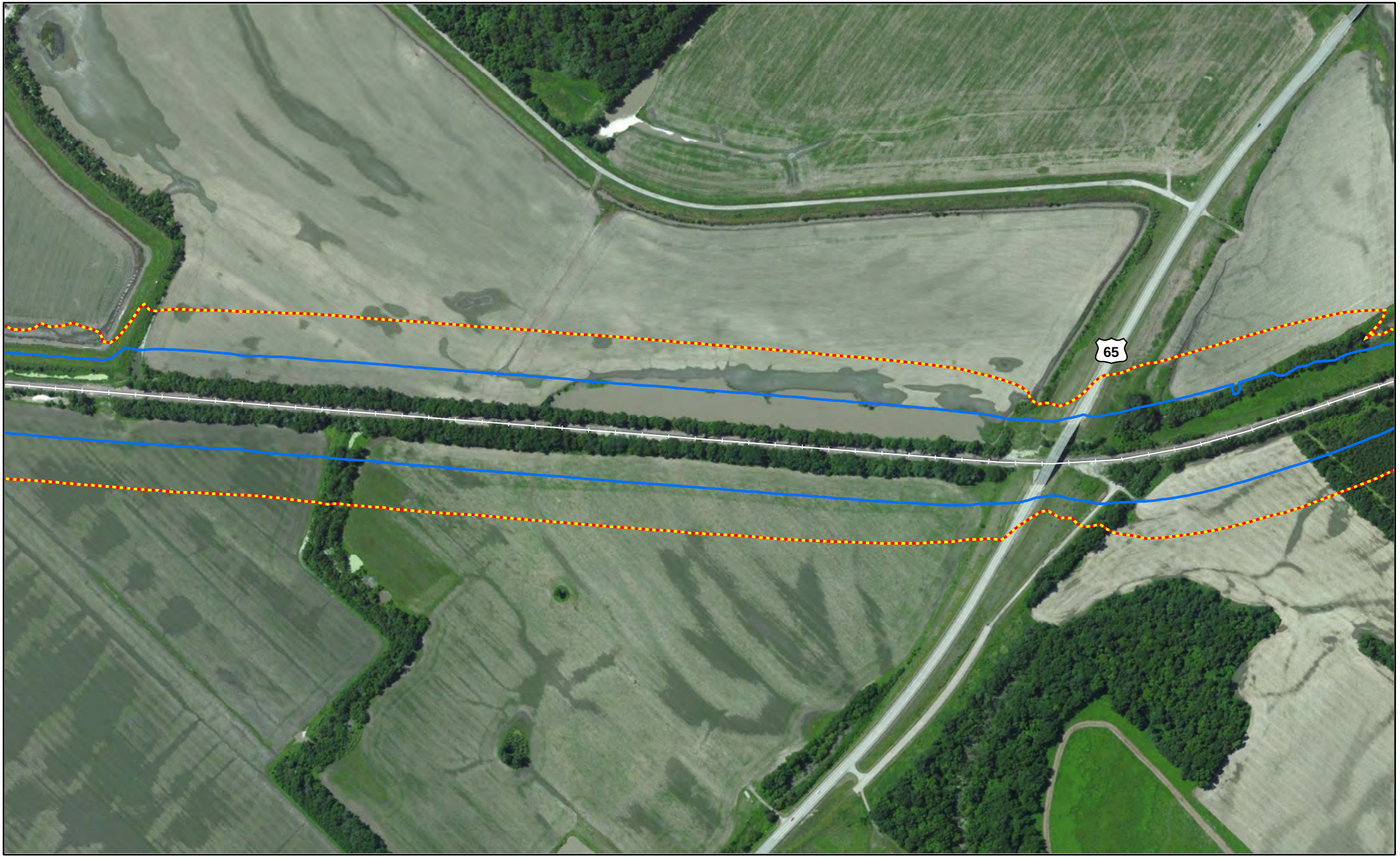
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Noise Contours
Livingston County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



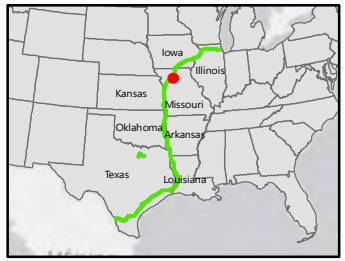
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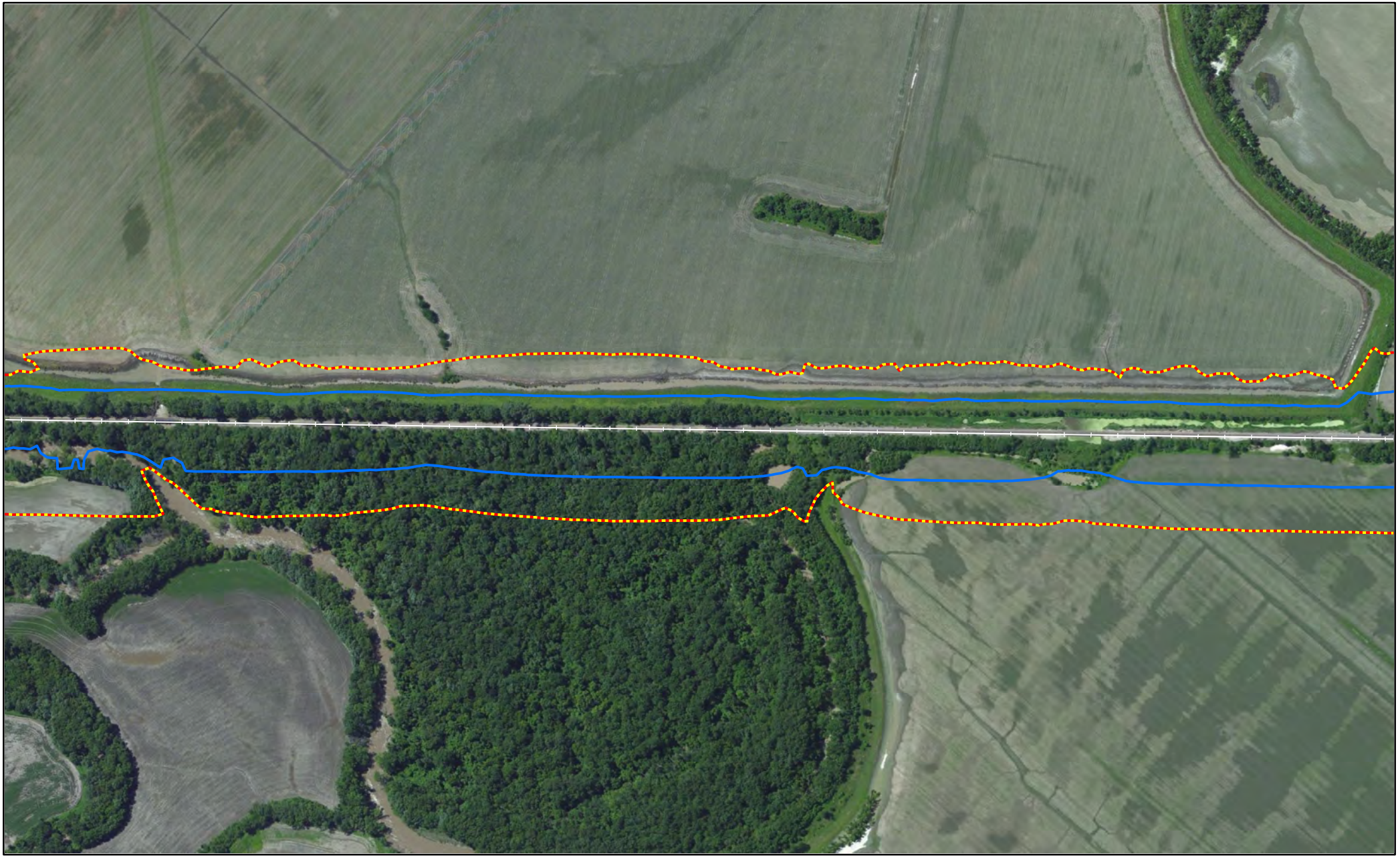
Tracks

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Noise Contours
Livingston County, MO

Miles
0 0.05 0.1



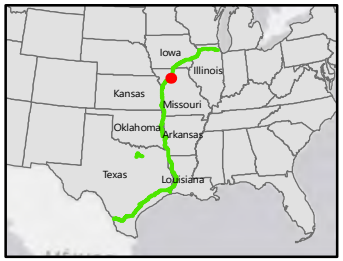
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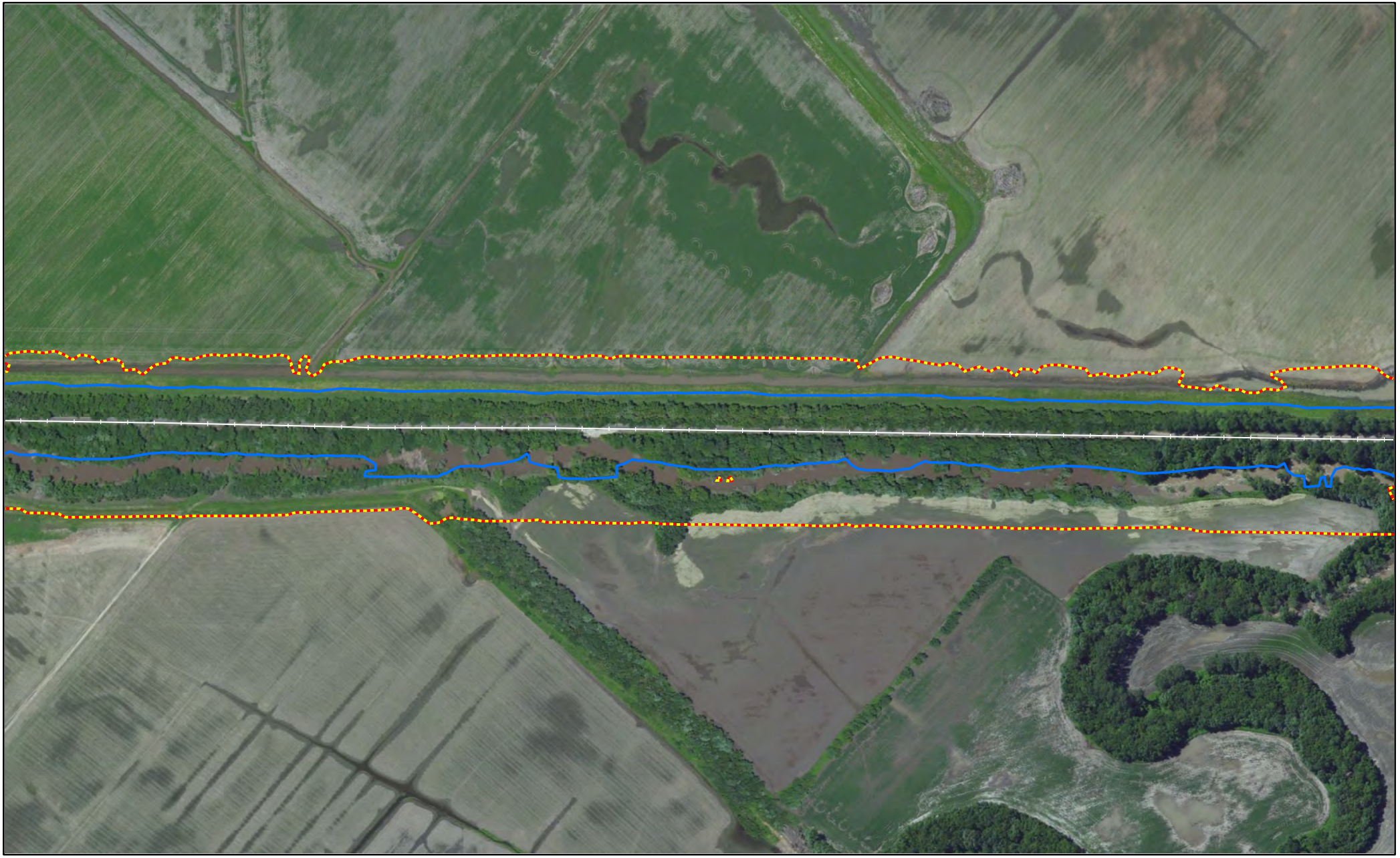
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Noise Contours
Livingston County, MO

Miles
0 0.05 0.1



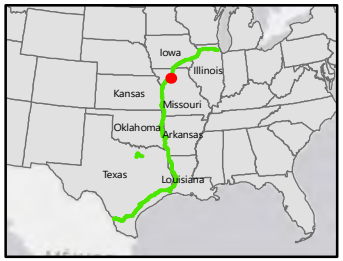
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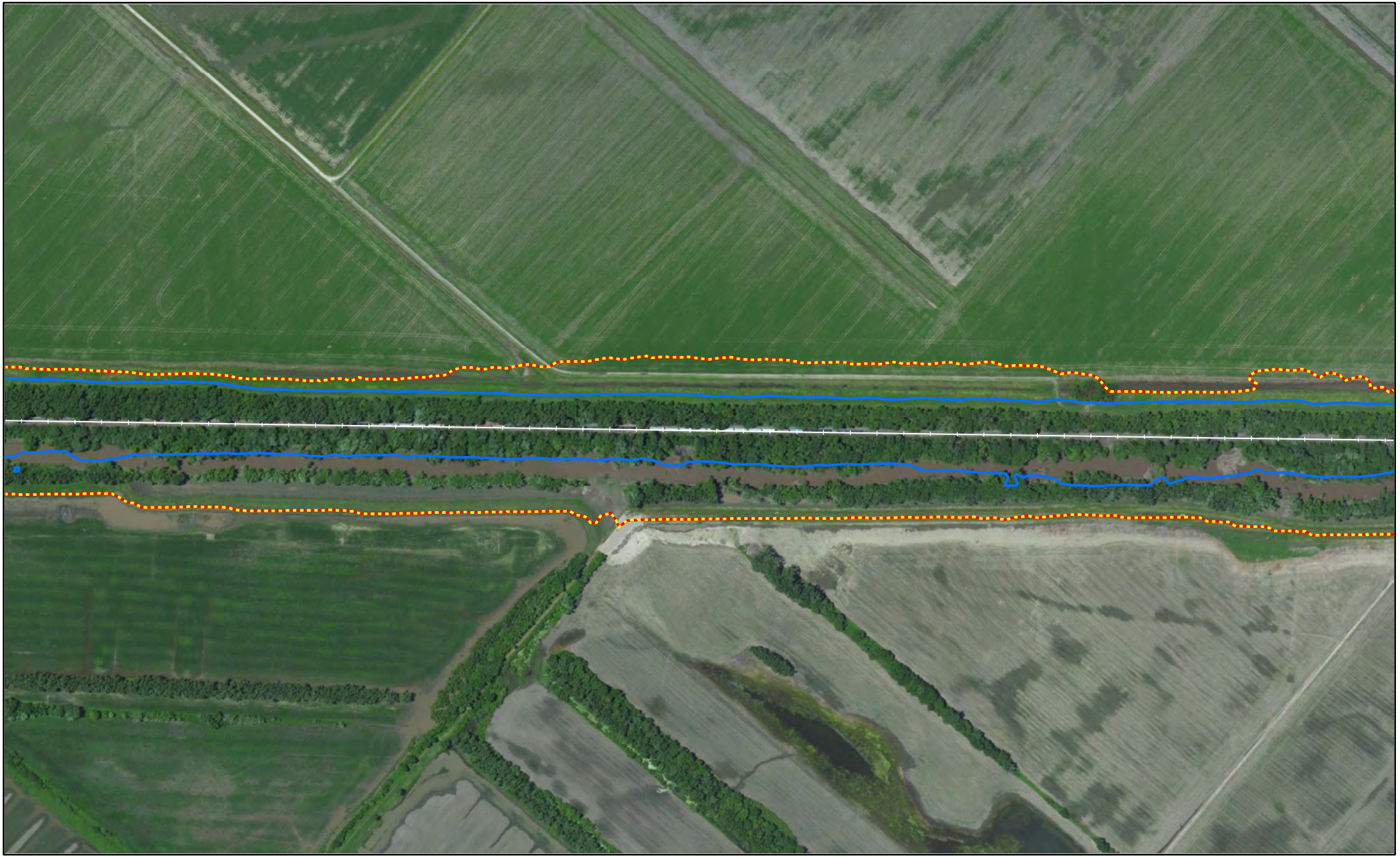
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Noise Contours
Livingston County, MO

Miles
0 0.05 0.1



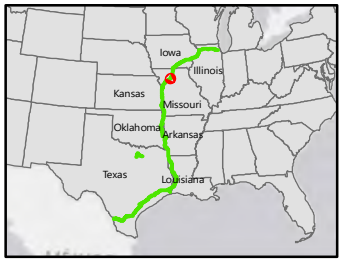
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Tracks

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Noise Contours
Livingston County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



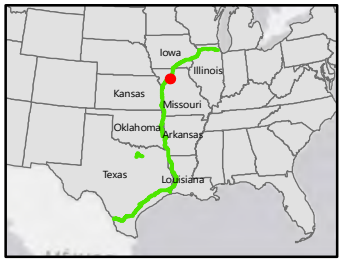
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

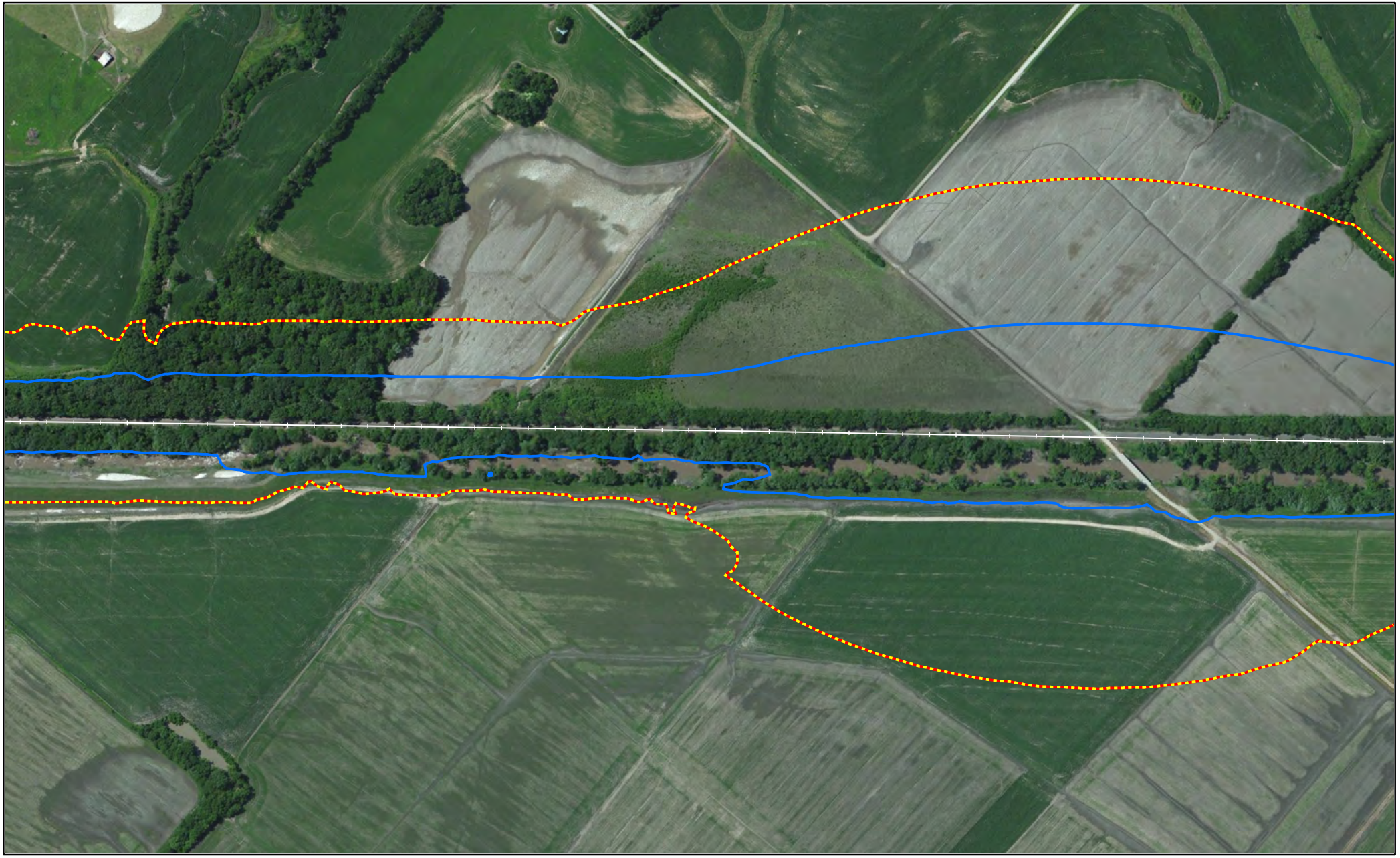
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Noise Contours
Livingston County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



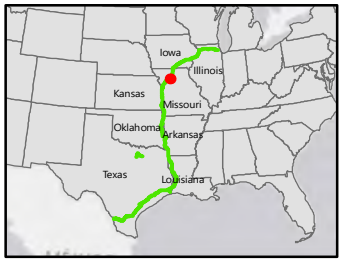
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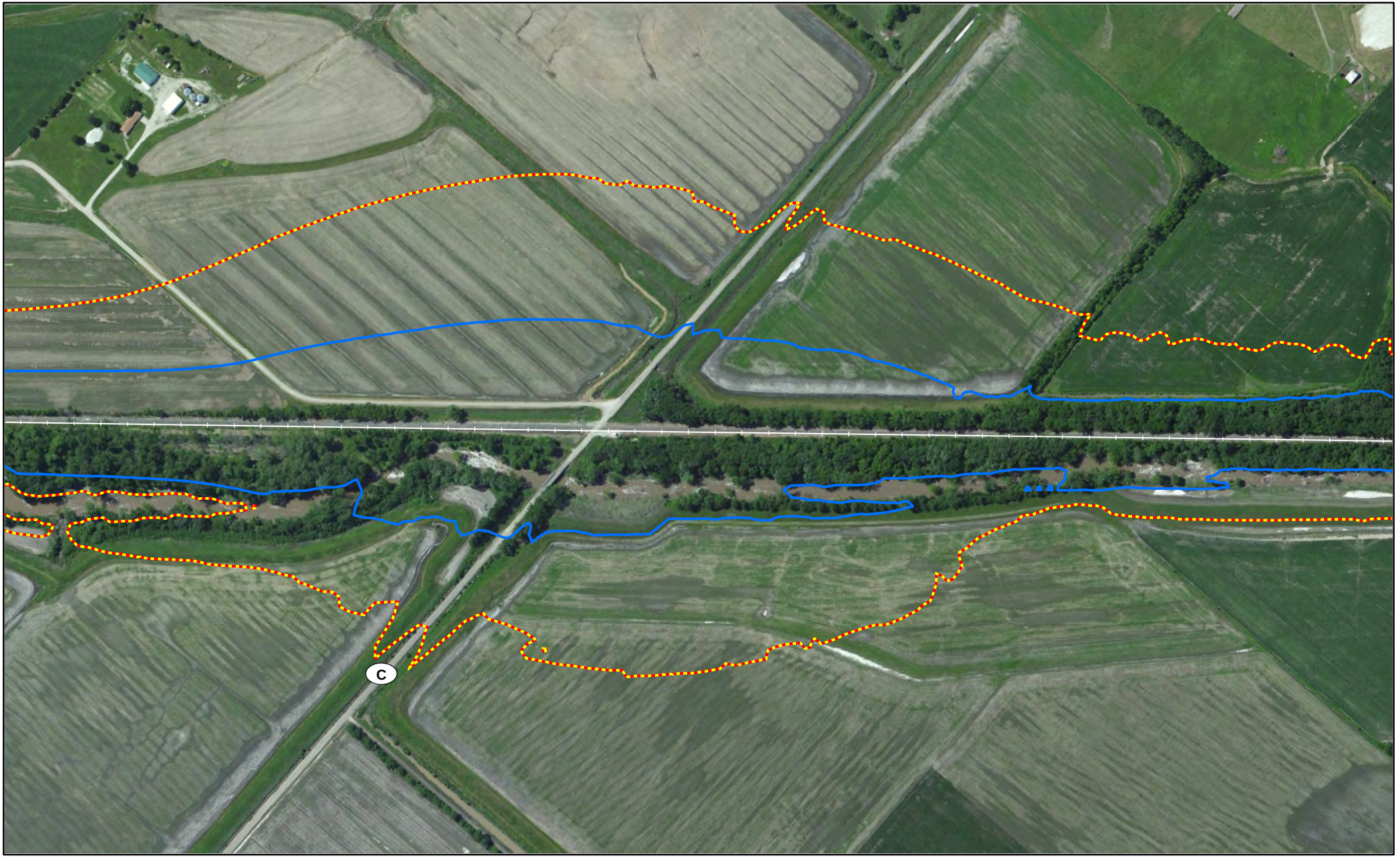
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Noise Contours
Livingston County, MO

Miles
0 0.05 0.1



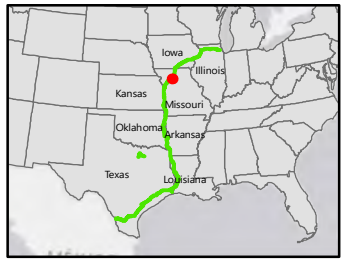
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Noise Contours
Livingston County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



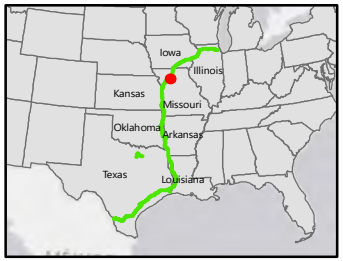
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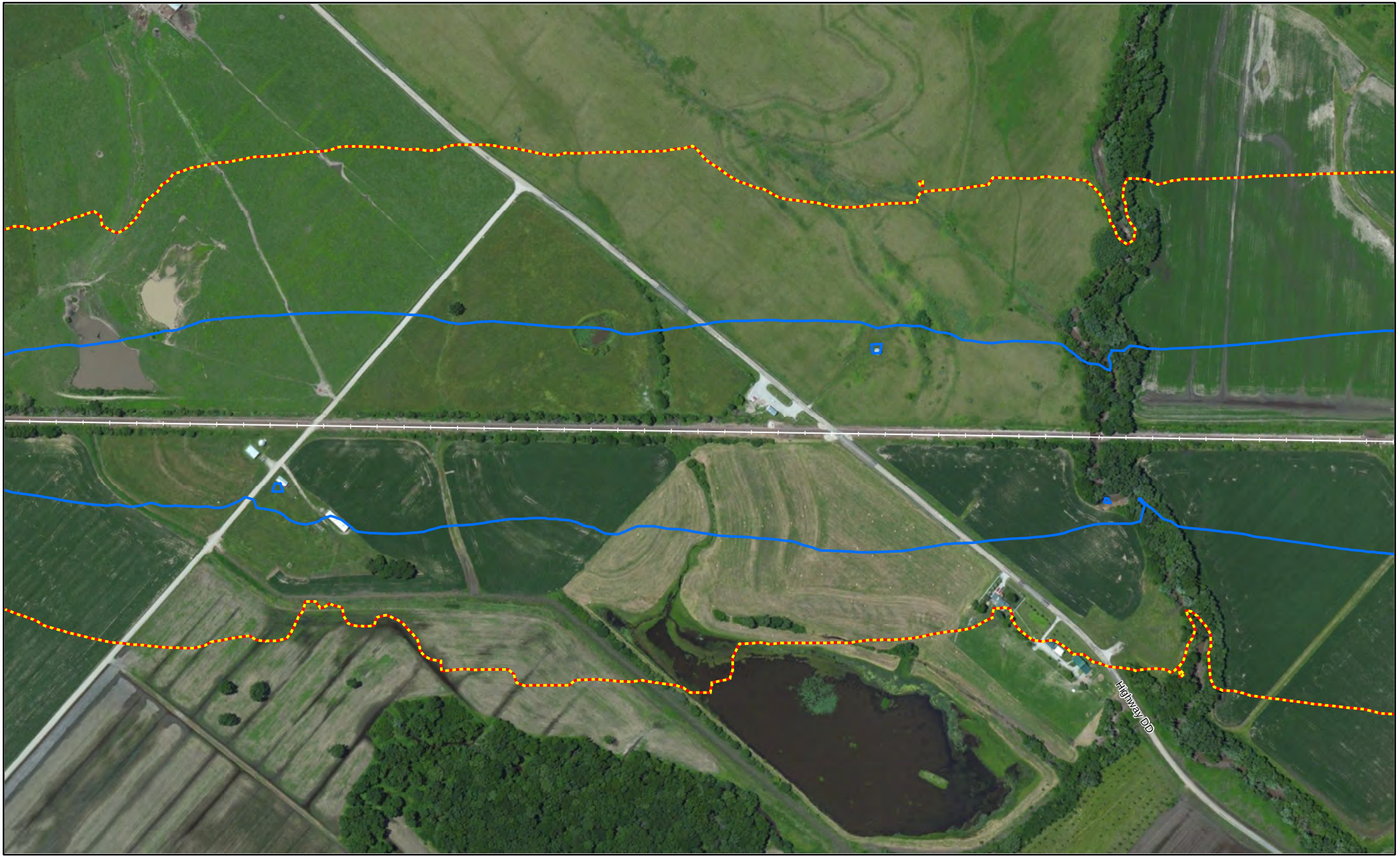
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Noise Contours
Livingston County, MO

Miles
0 0.05 0.1



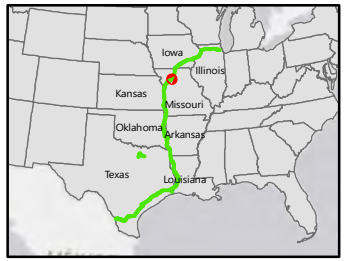
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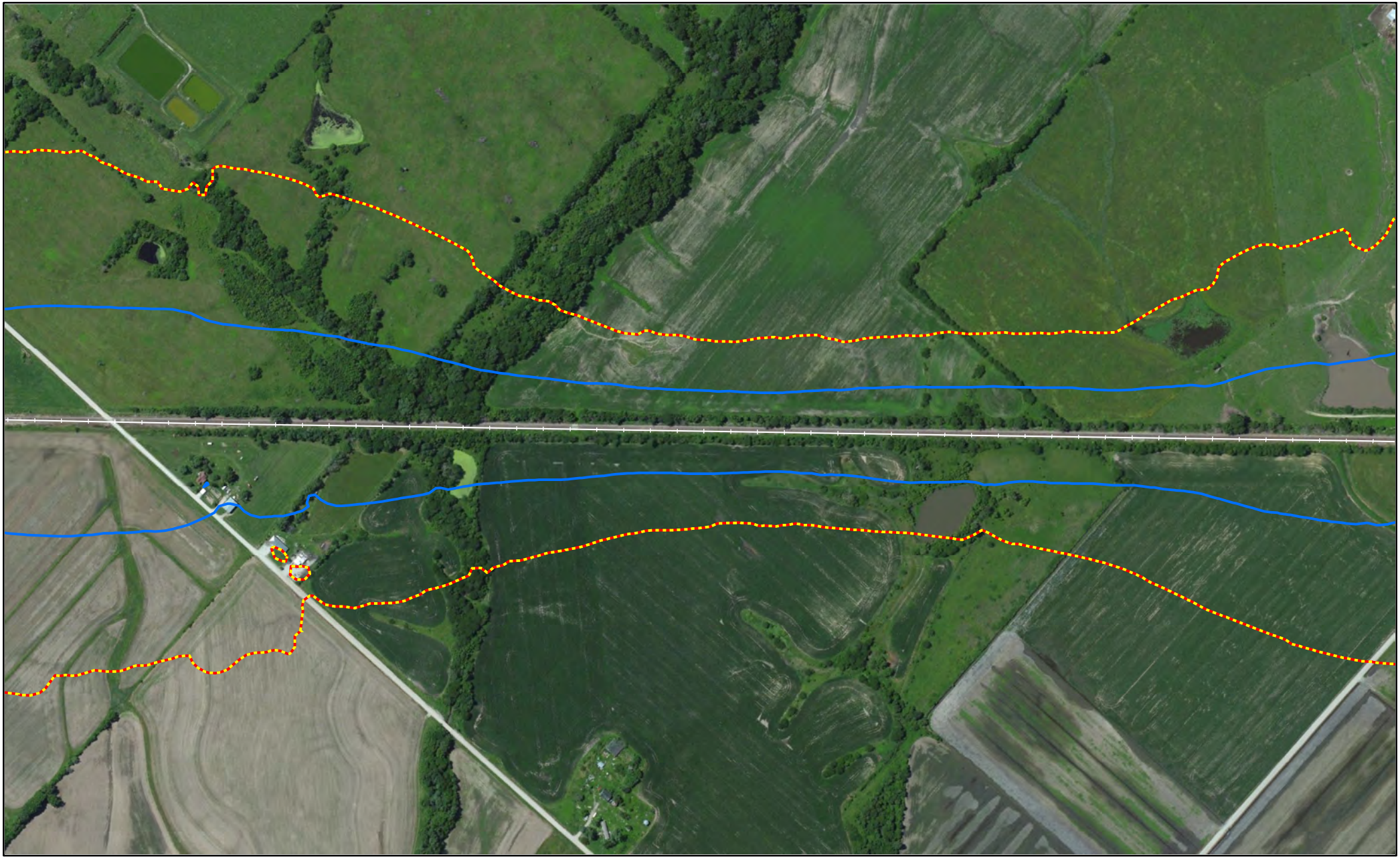
Tracks

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Noise Contours
Livingston County, MO

Miles
0 0.05 0.1



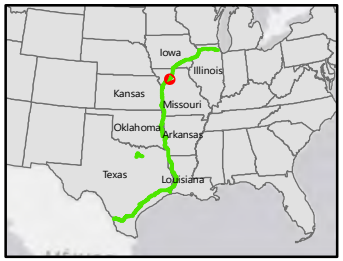
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Noise Contours
Livingston County, MO

Miles
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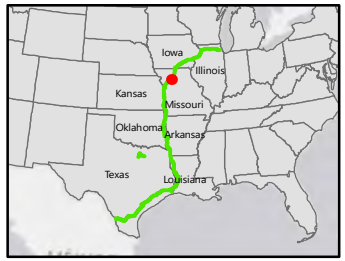
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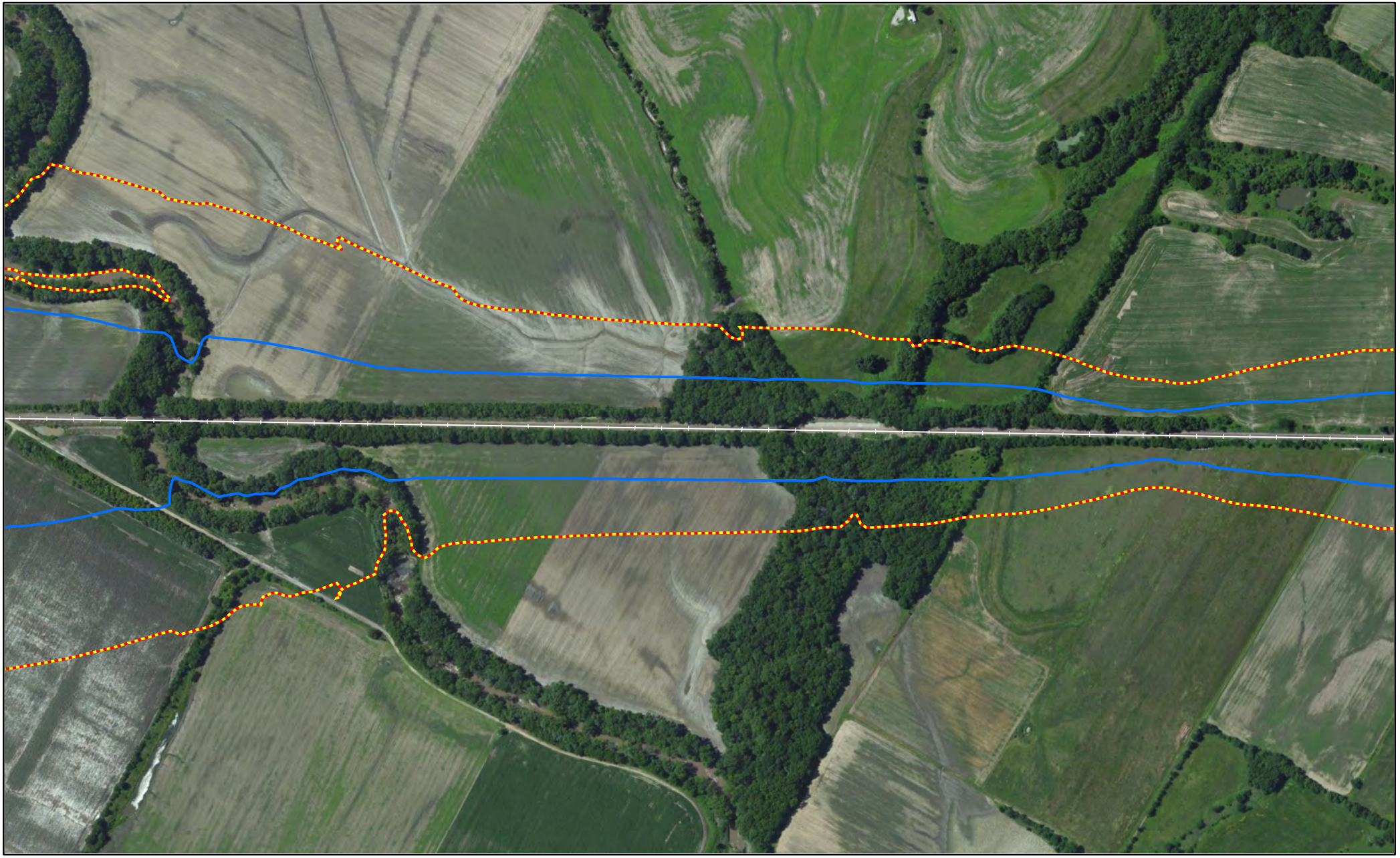
Tracks

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Noise Contours
Livingston County, MO

Miles
0 0.05 0.1



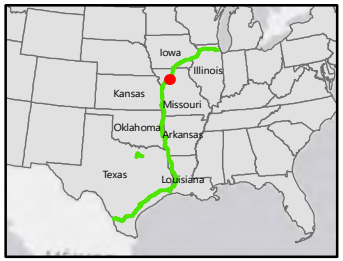
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Noise Contours
Livingston County, MO

Miles
0 0.05 0.1



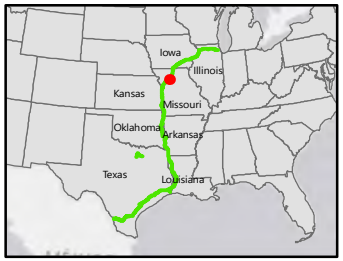
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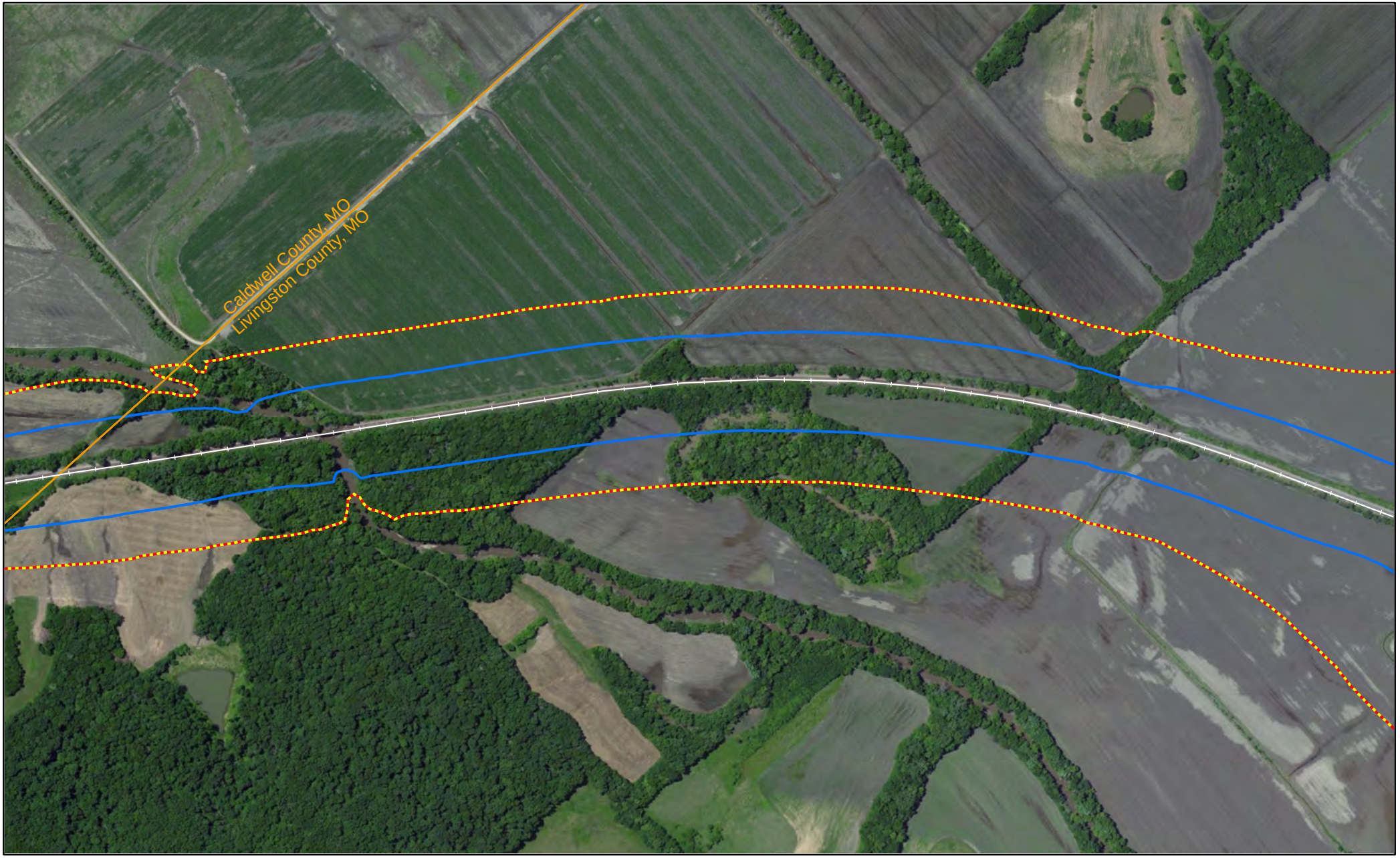
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Noise Contours
Livingston County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



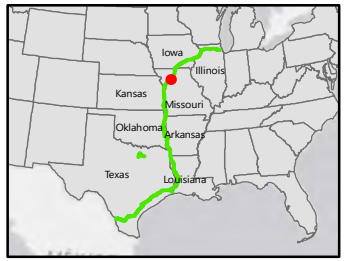
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Tracks

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Noise Contours
Livingston County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



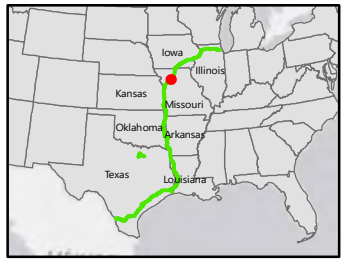
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Noise Contours
Livingston County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



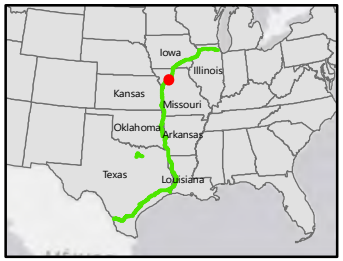
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Noise Contours
Caldwell County, MO

Miles
0 0.05 0.1



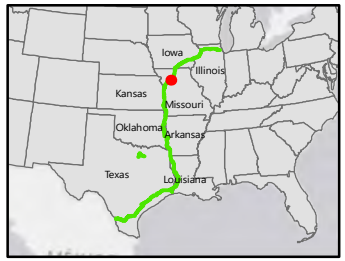
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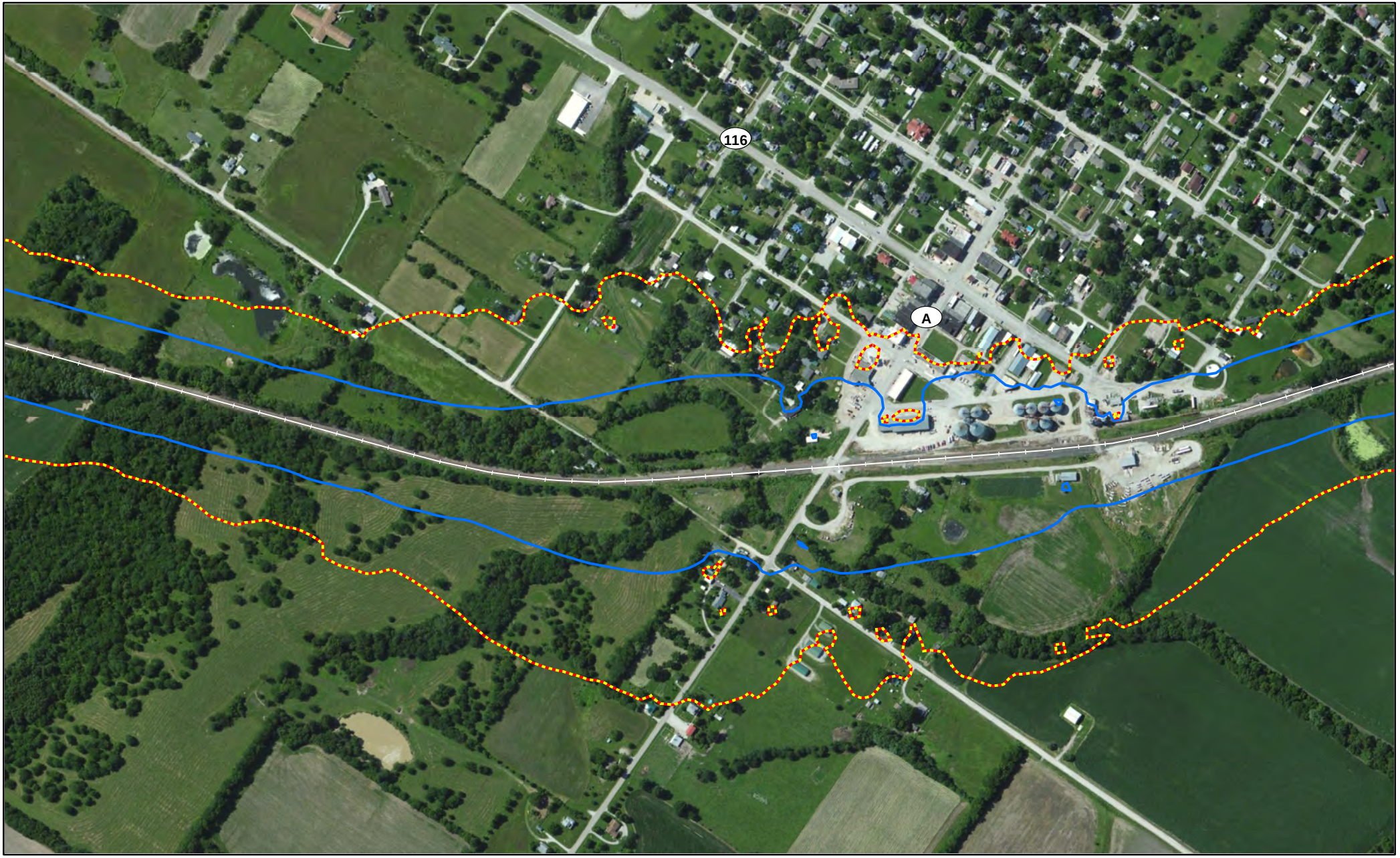
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Noise Contours
Caldwell County, MO

Page 427 of 1588

Miles
0 0.05 0.1



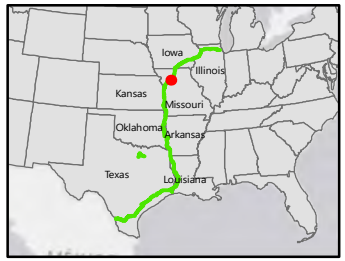
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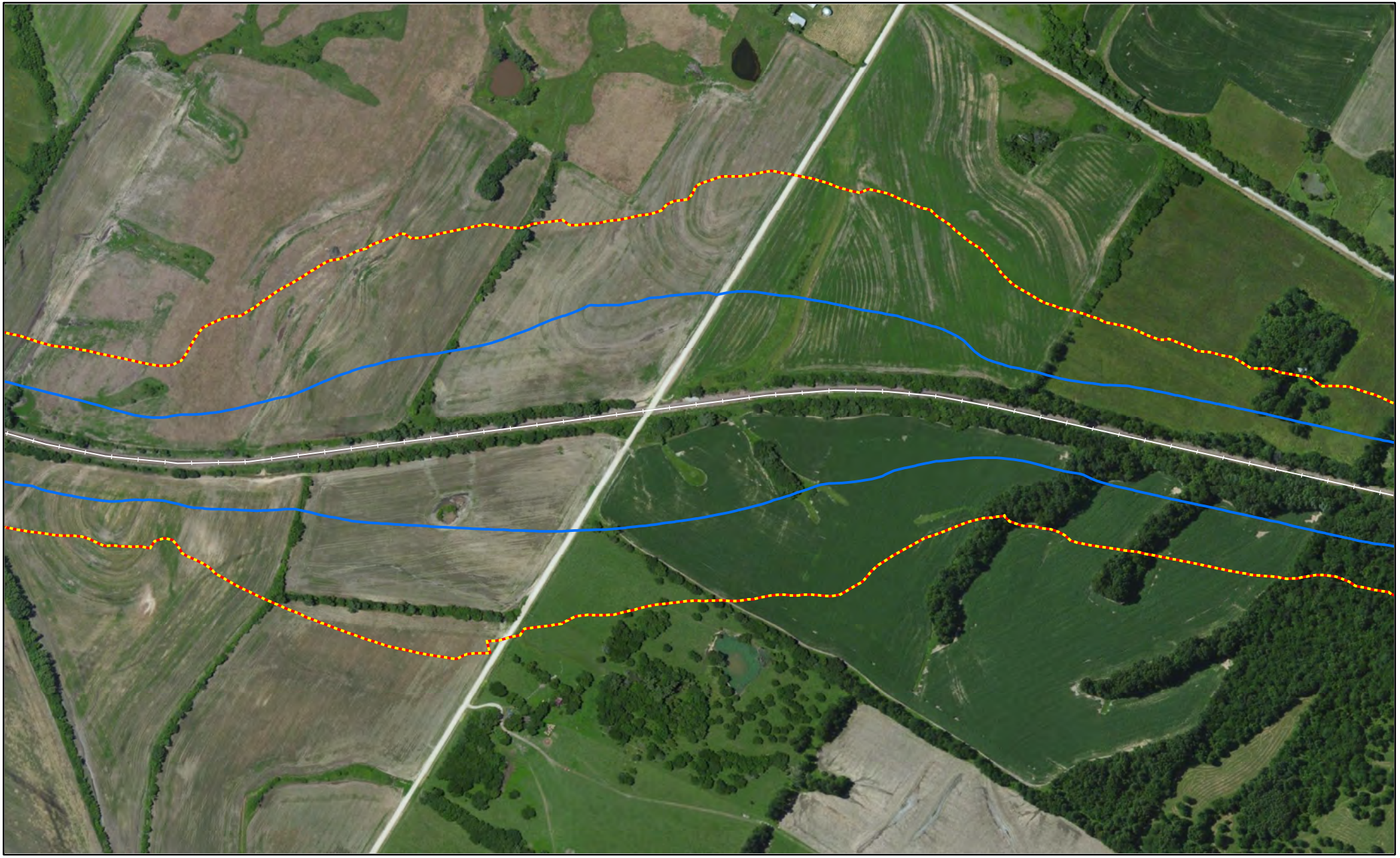
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Noise Contours
Caldwell County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



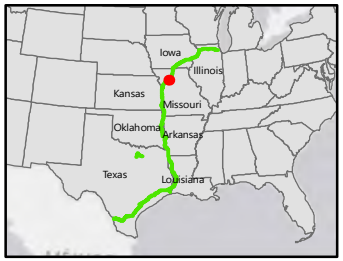
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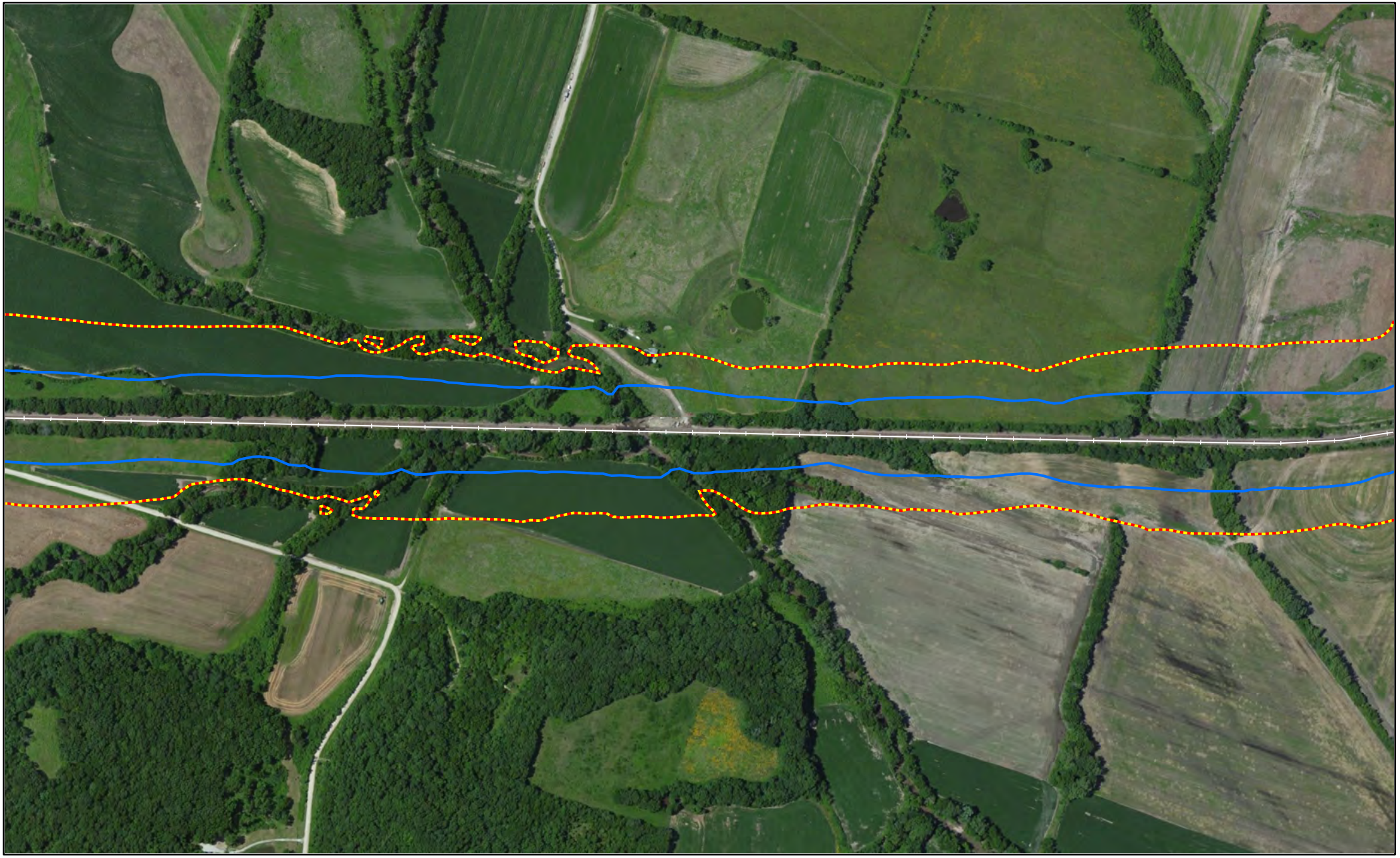
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Noise Contours
Caldwell County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



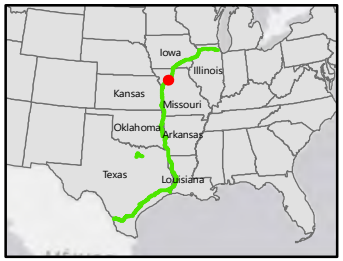
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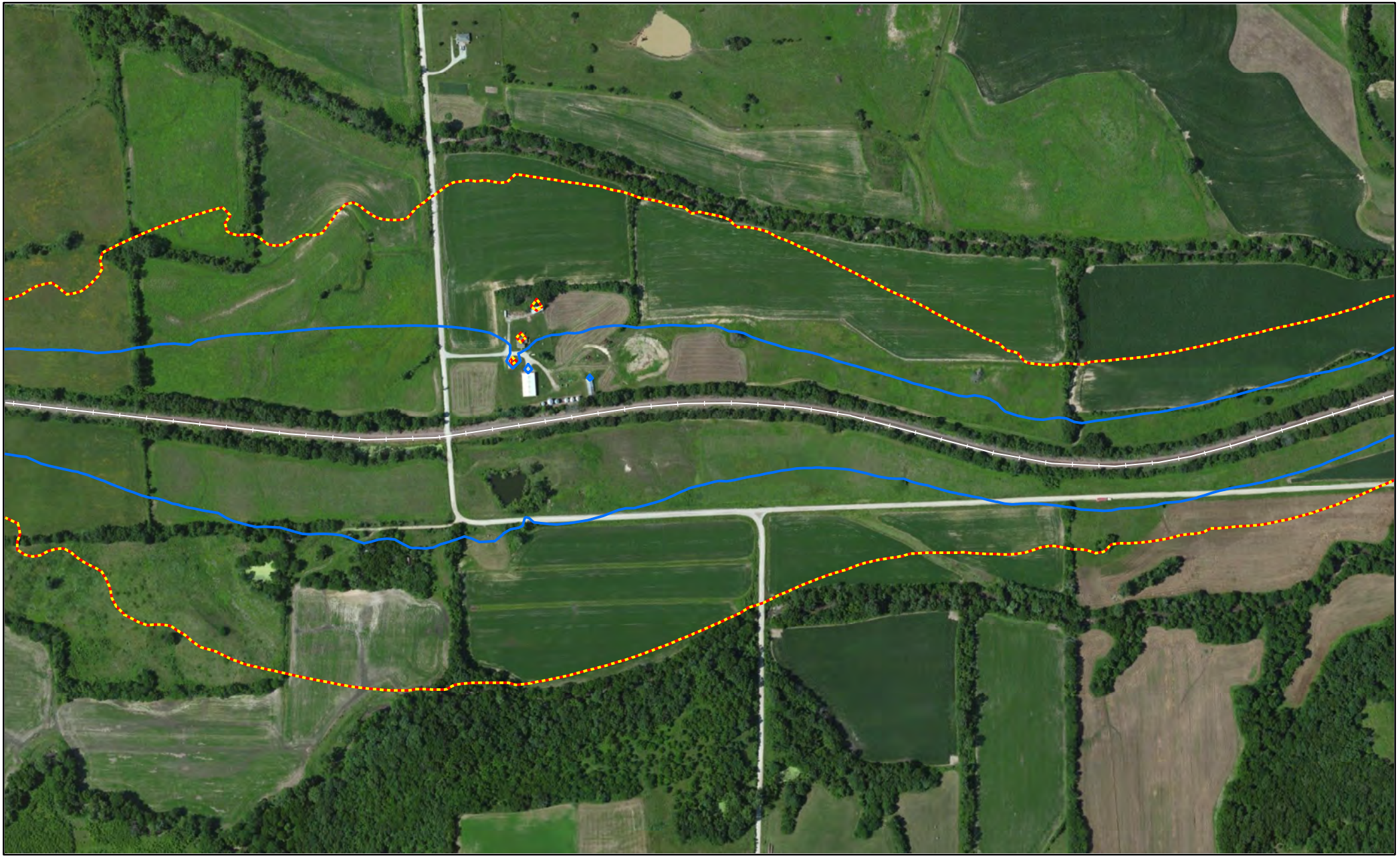
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Noise Contours
Caldwell County, MO

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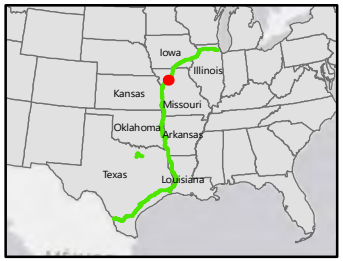
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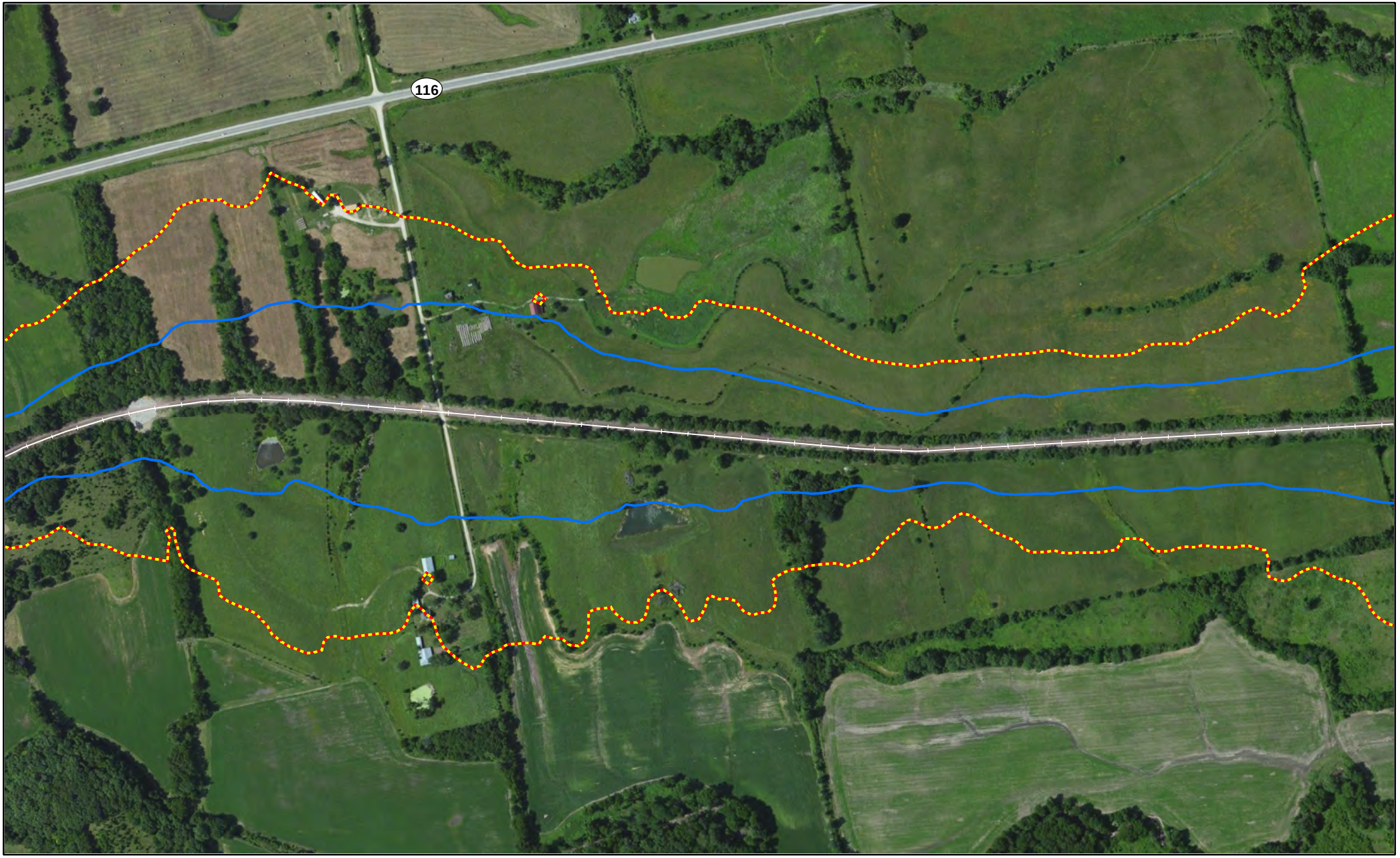
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Noise Contours
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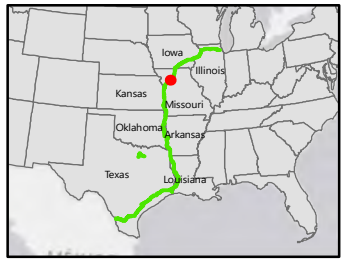
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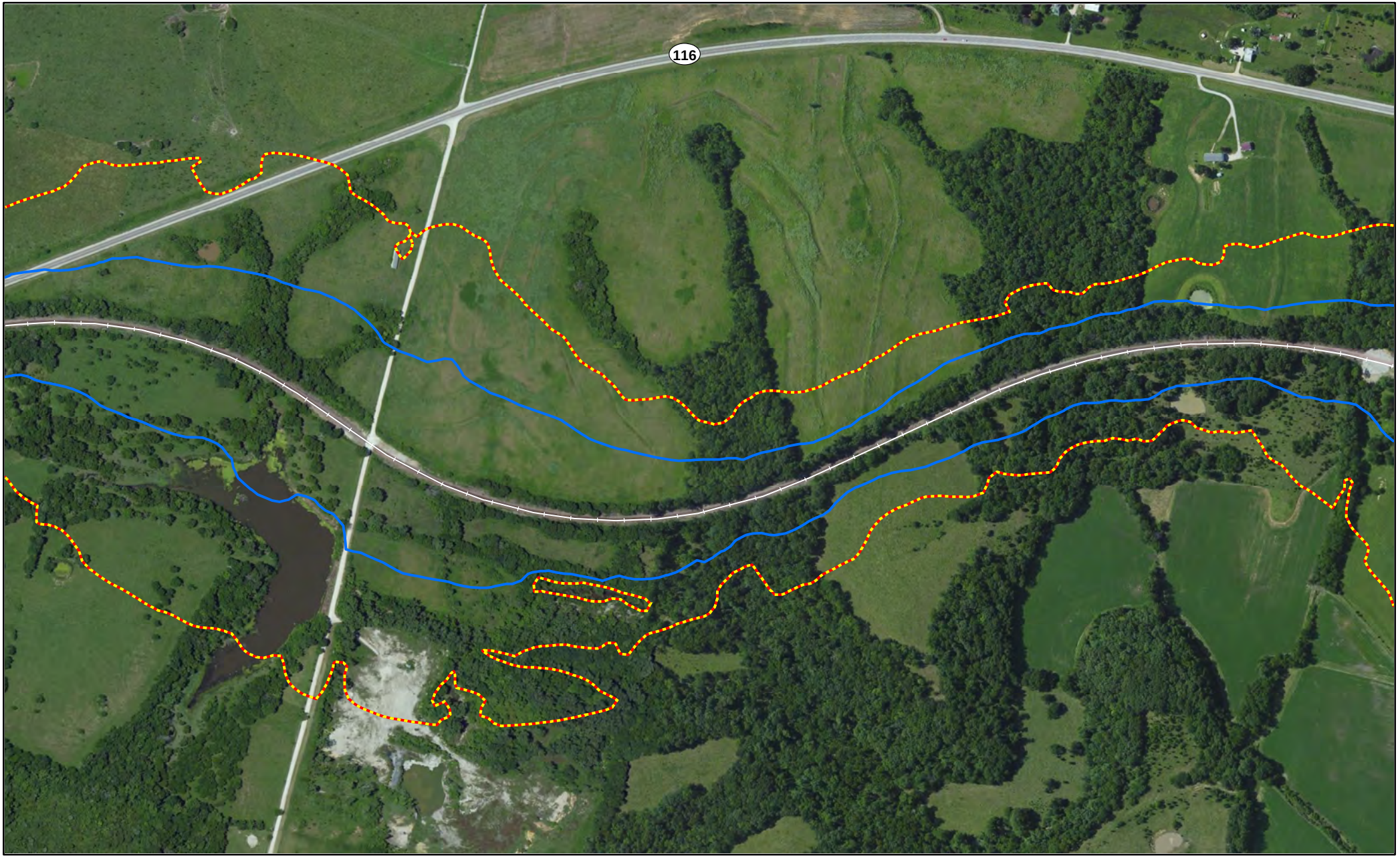
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Noise Contours
Caldwell County, MO

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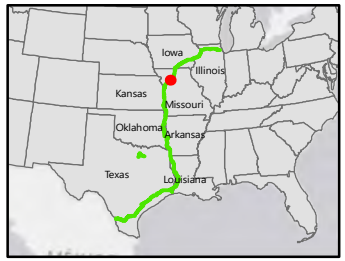
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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

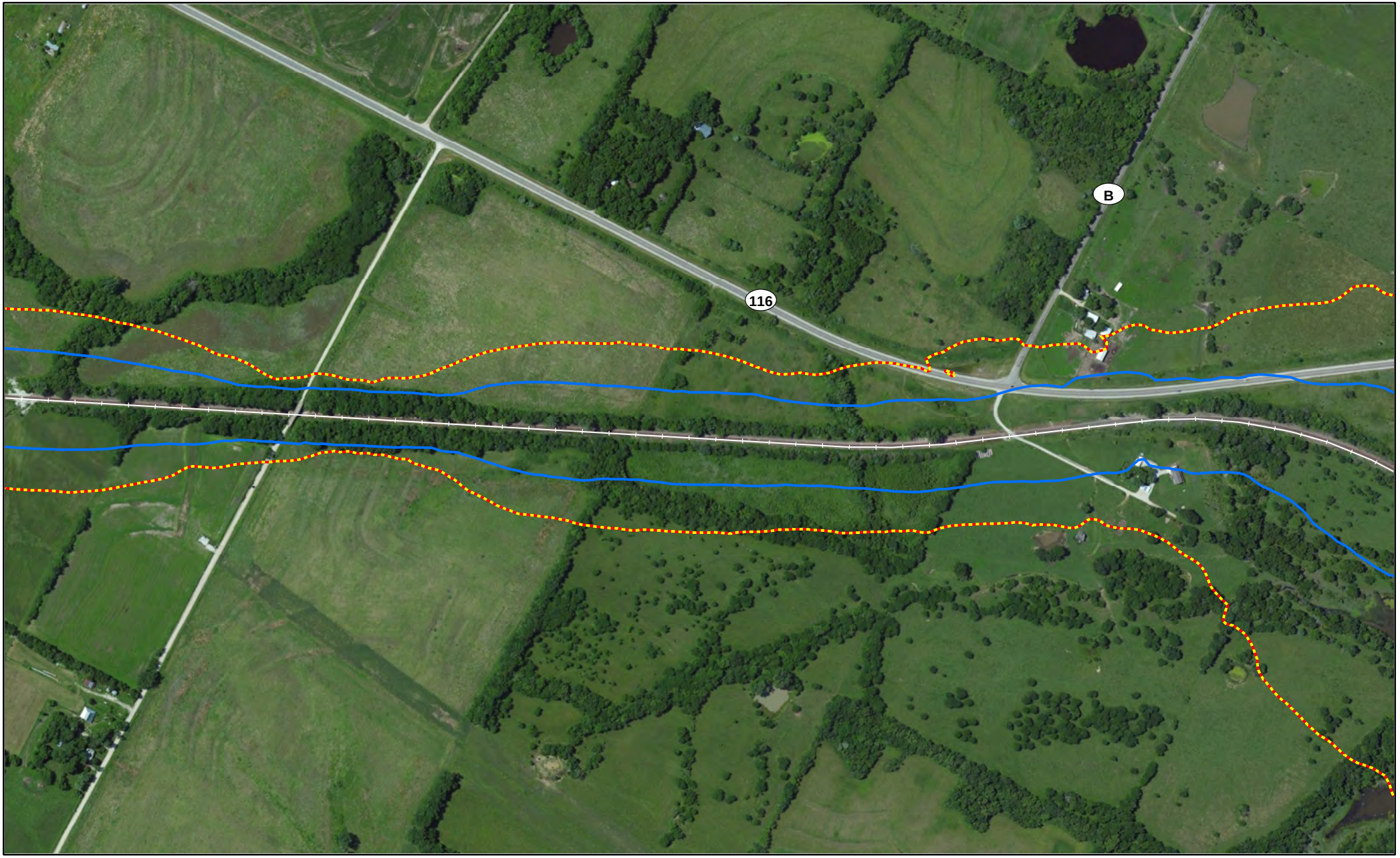
Source: ESRI.



Noise Contours
Caldwell County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



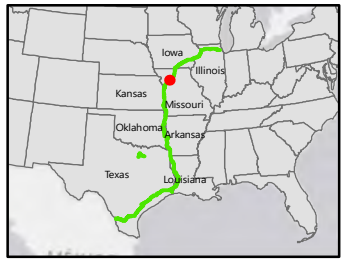
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

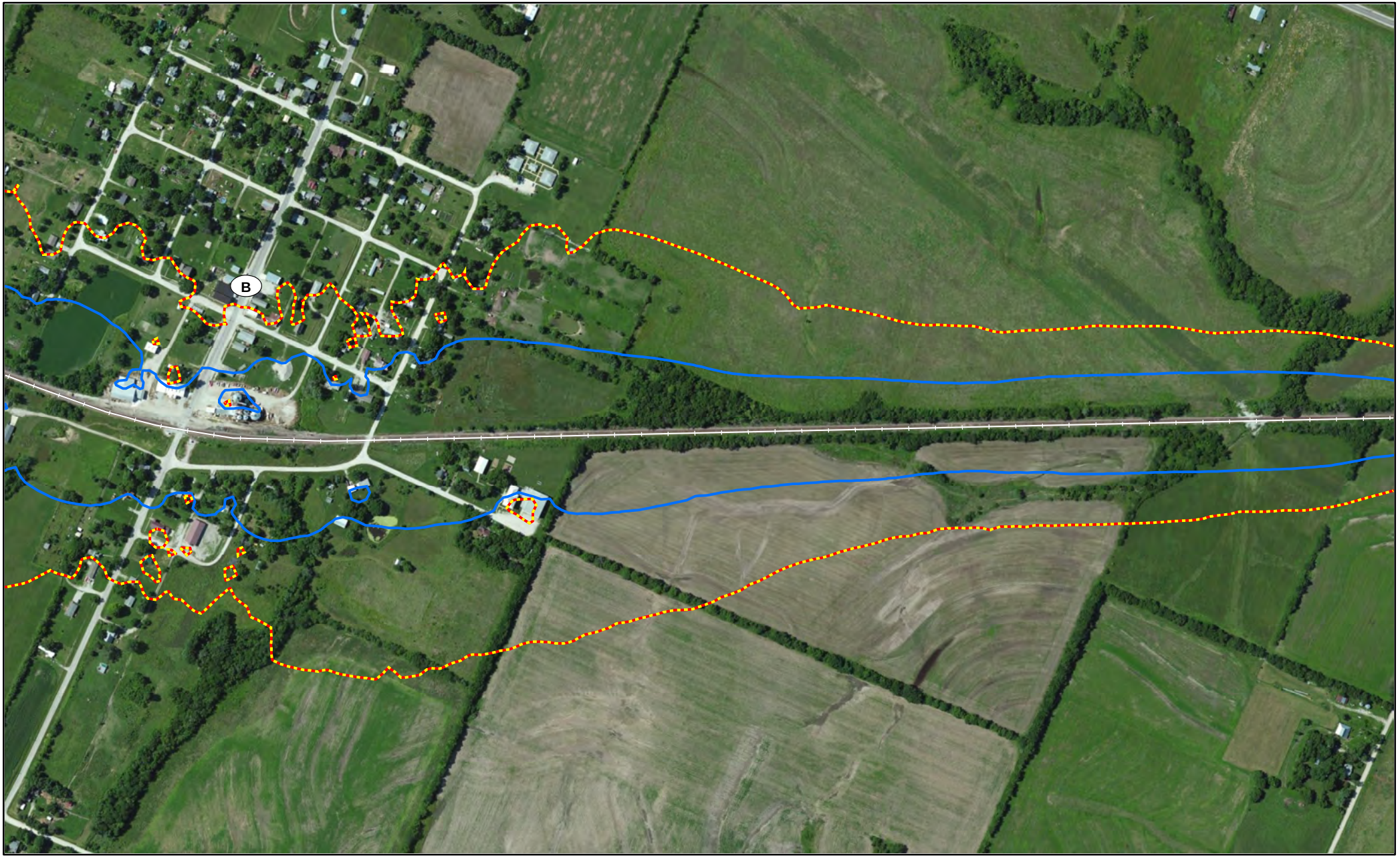
Source: ESRI.



Noise Contours
Caldwell County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



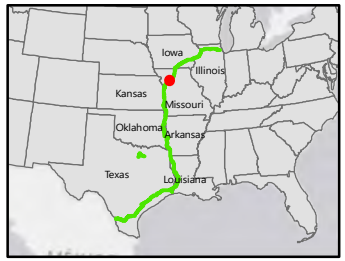
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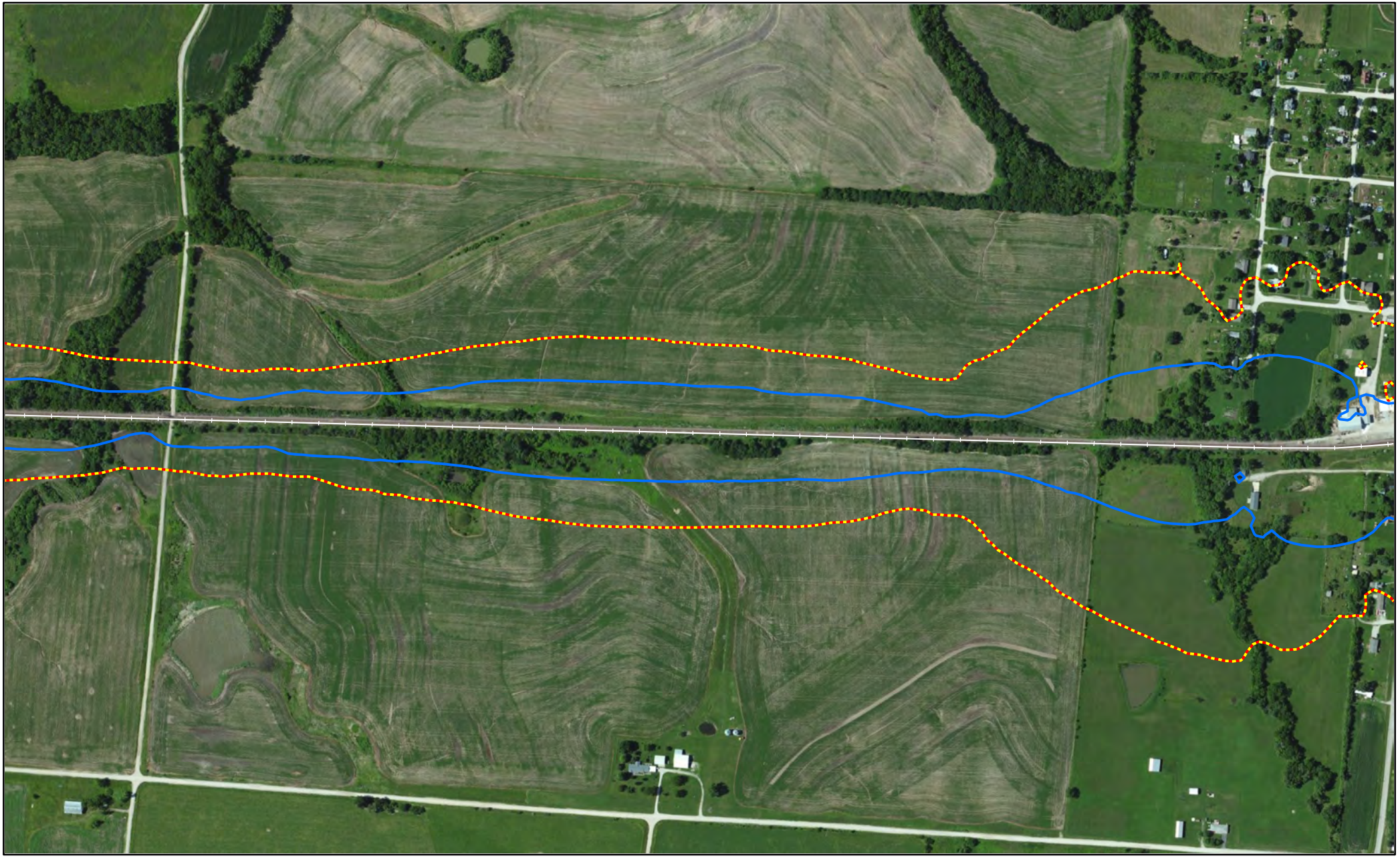
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Noise Contours
Caldwell County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



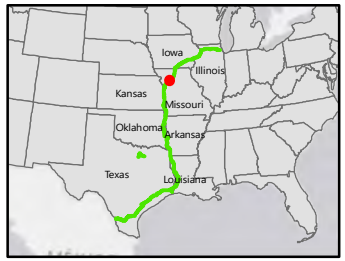
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Noise Contours
Caldwell County, MO

Miles
0 0.05 0.1



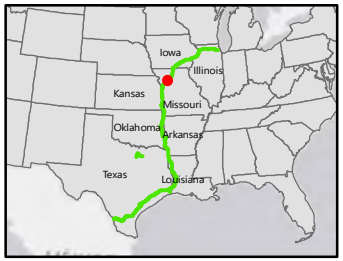
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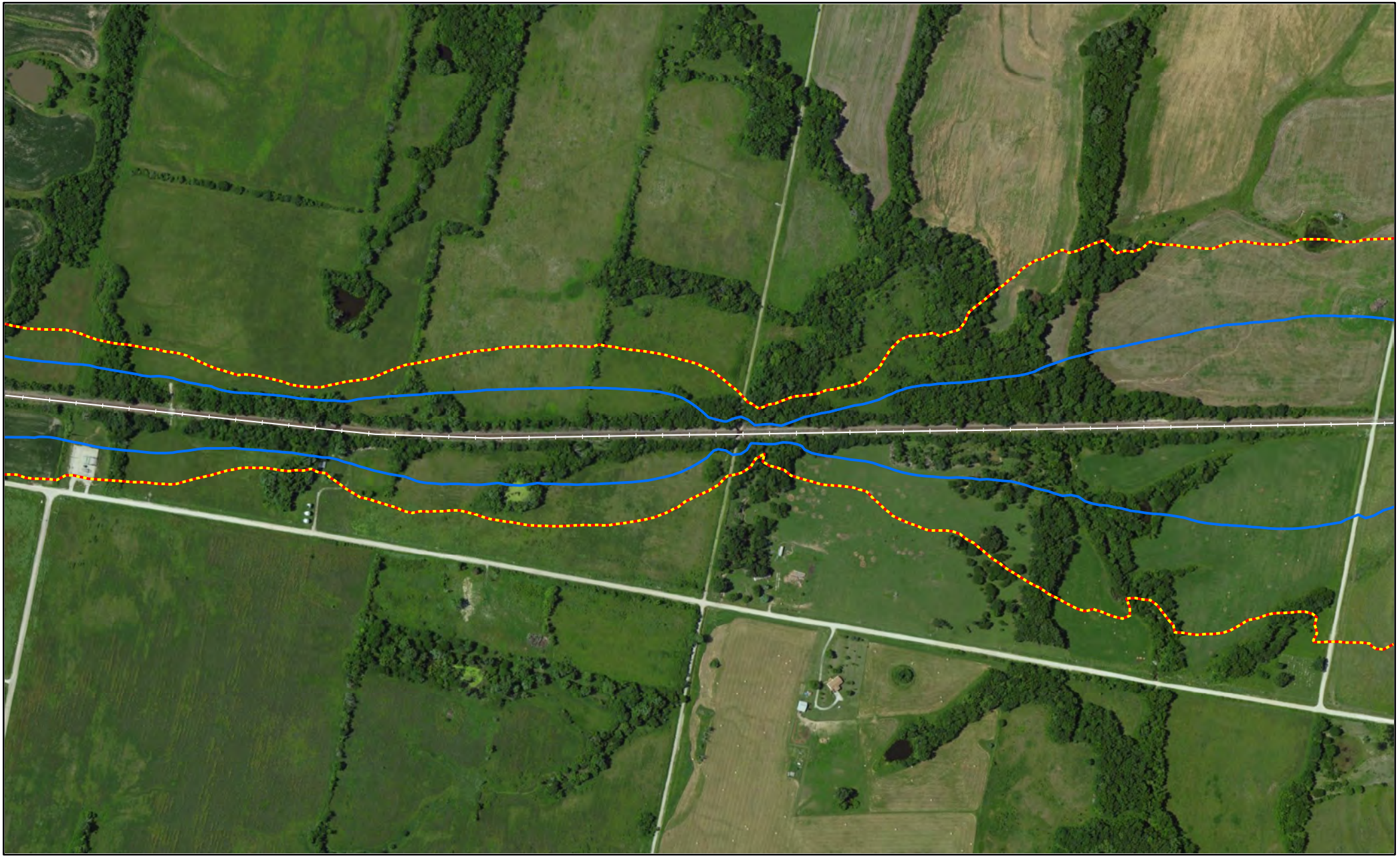
Tracks

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Noise Contours
Caldwell County, MO

Miles
0 0.05 0.1



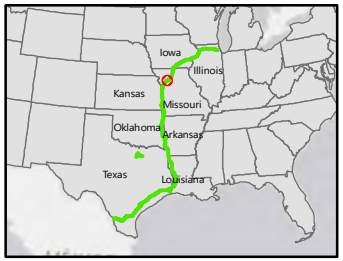
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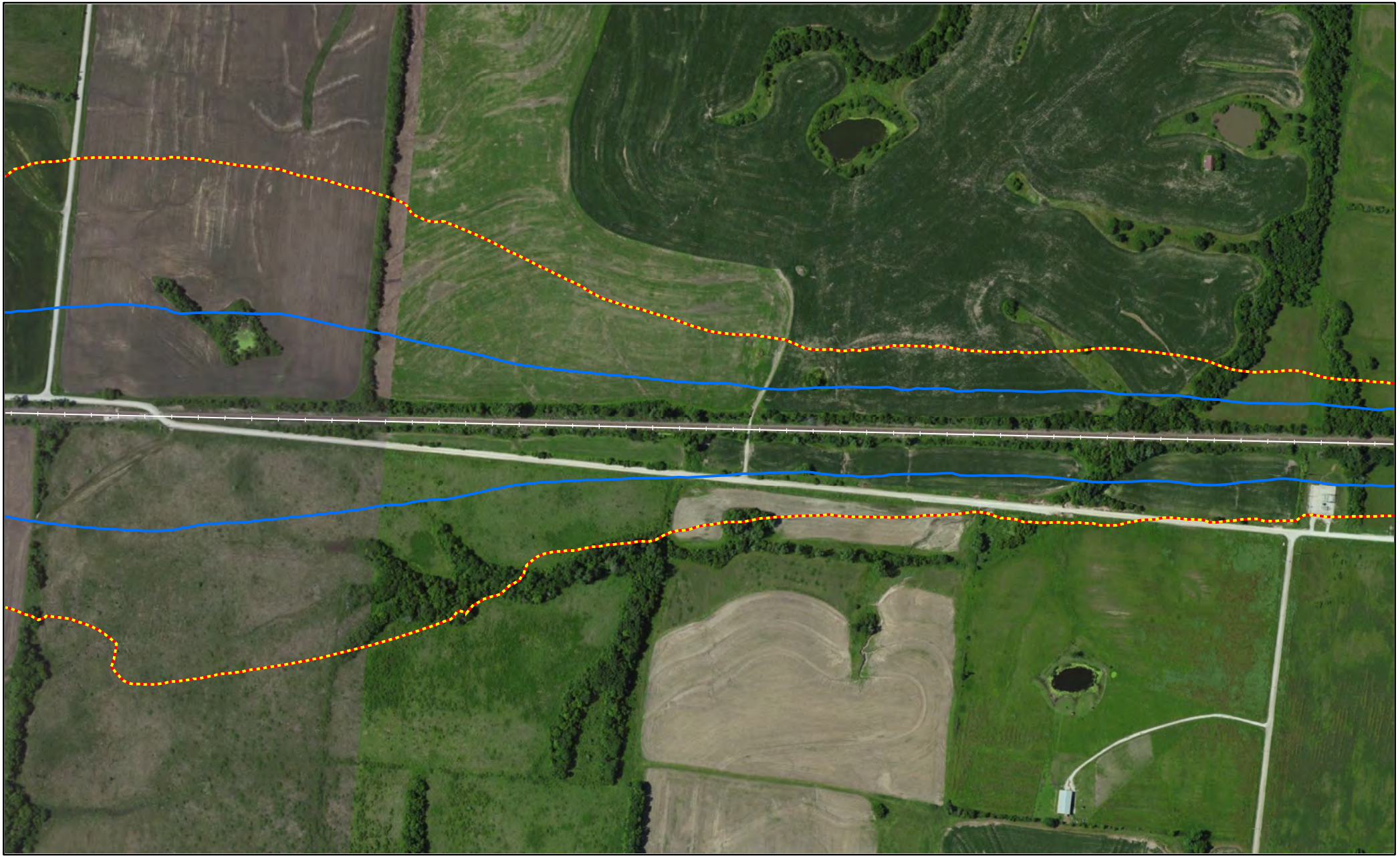
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Noise Contours
Caldwell County, MO

Miles
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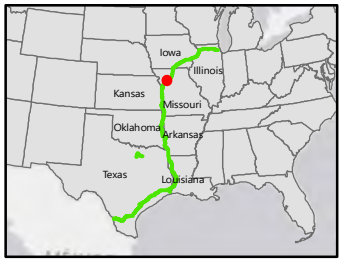
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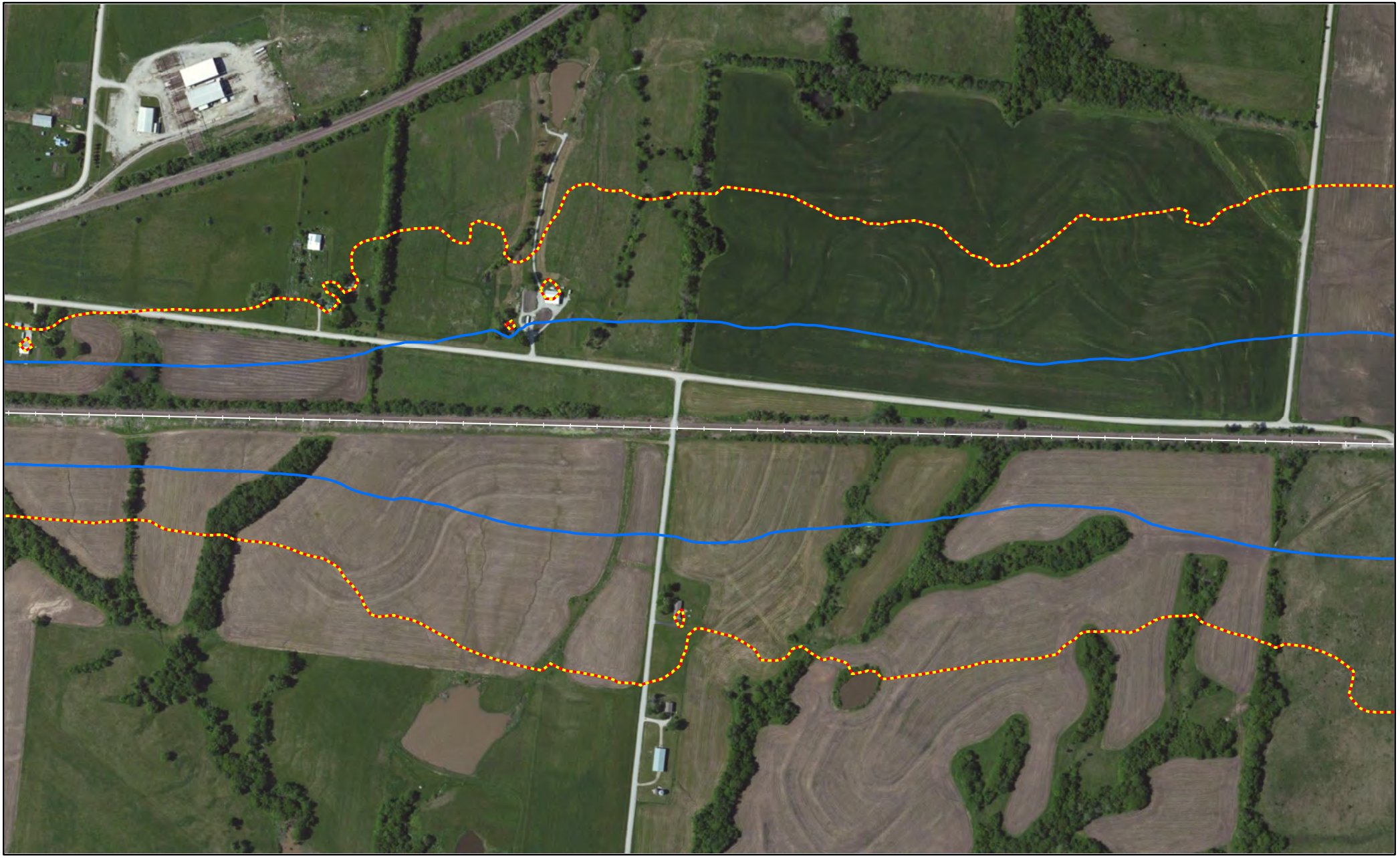
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Noise Contours
Caldwell County, MO

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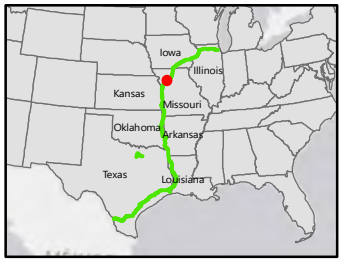
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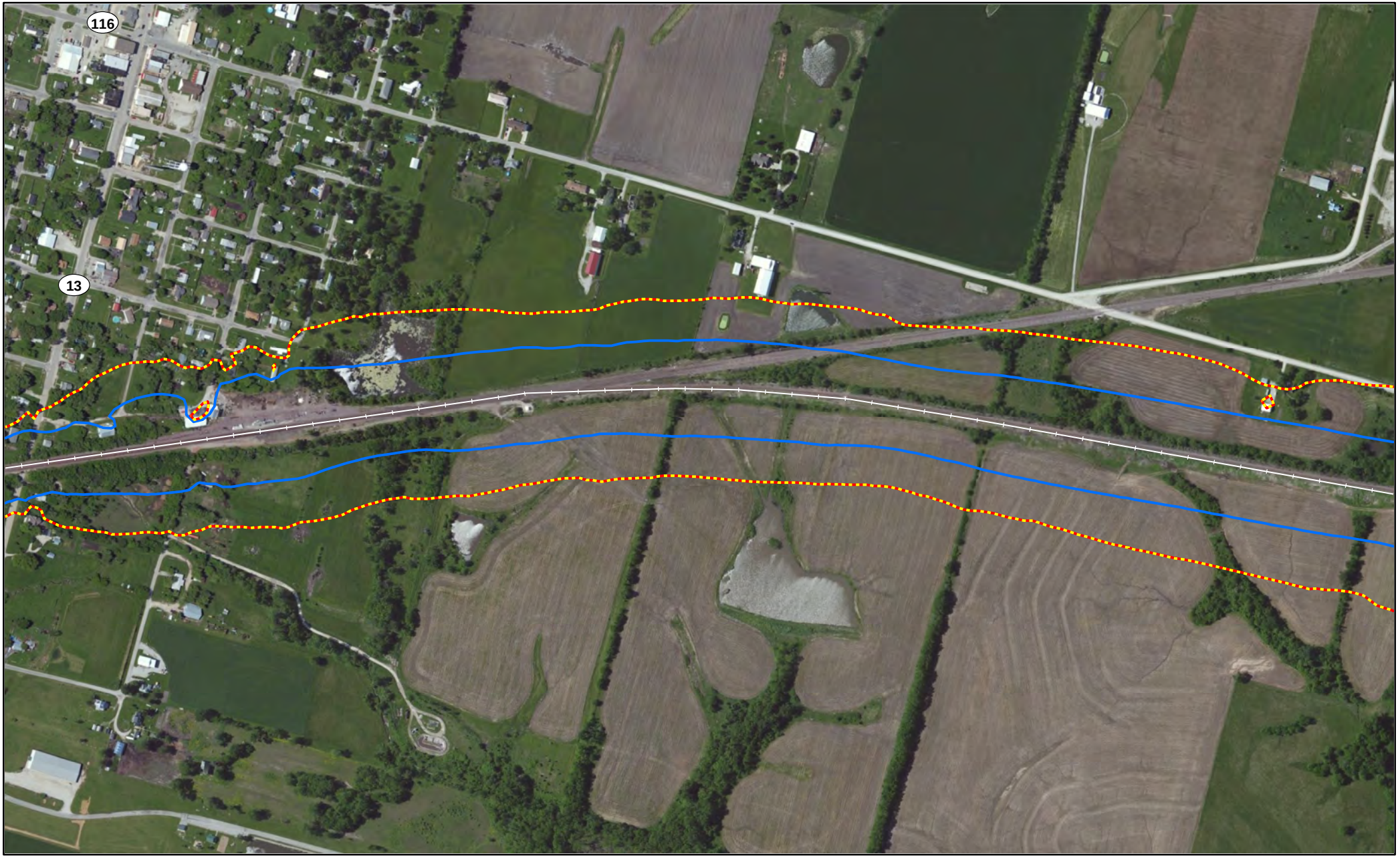
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Noise Contours
Caldwell County, MO

Miles
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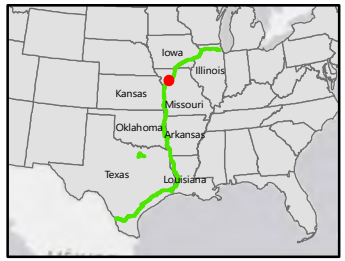
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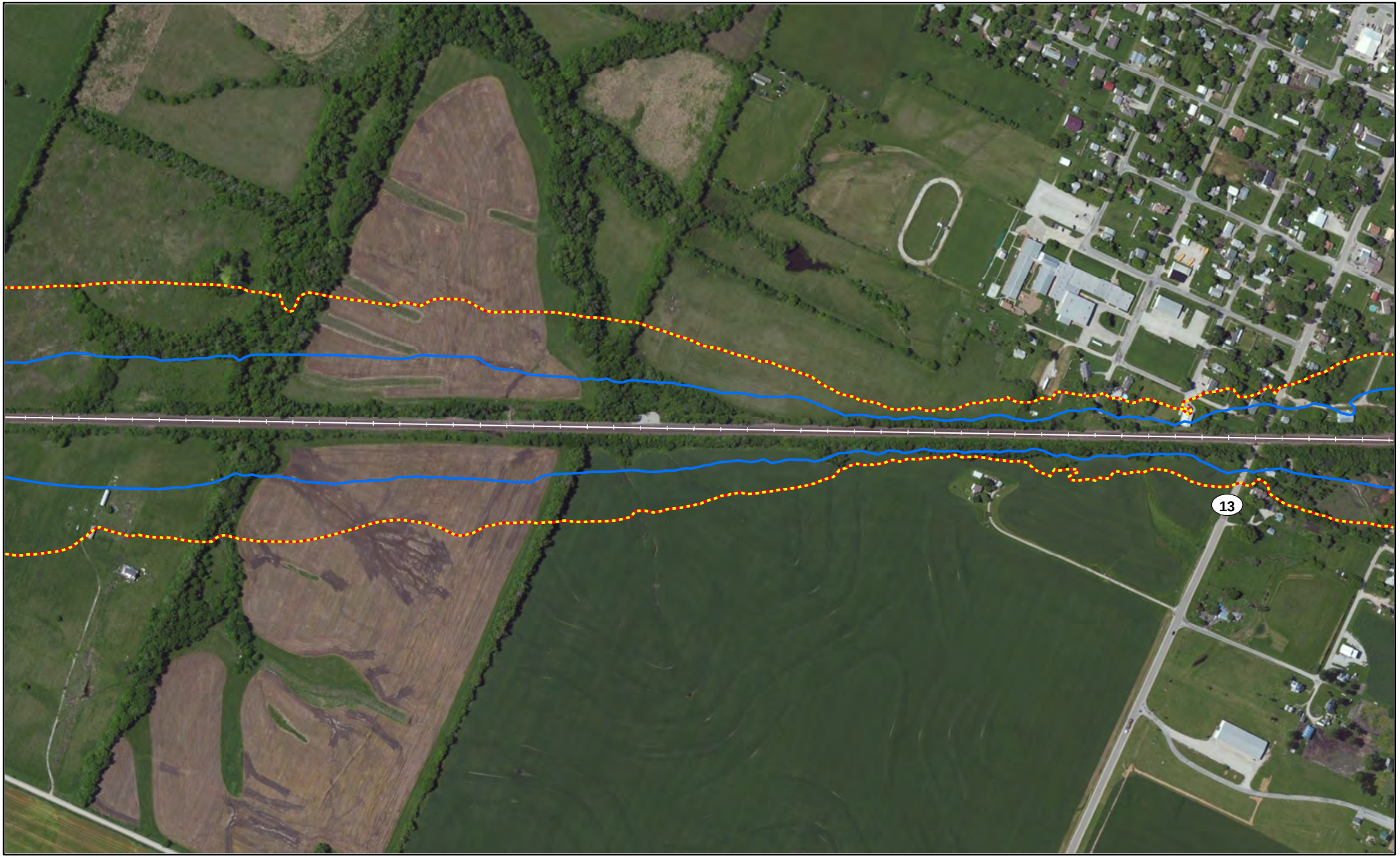
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Noise Contours
Caldwell County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



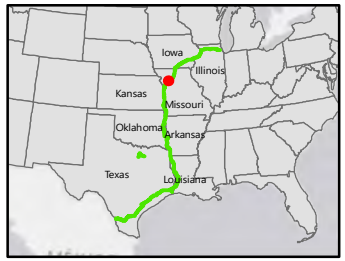
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Tracks

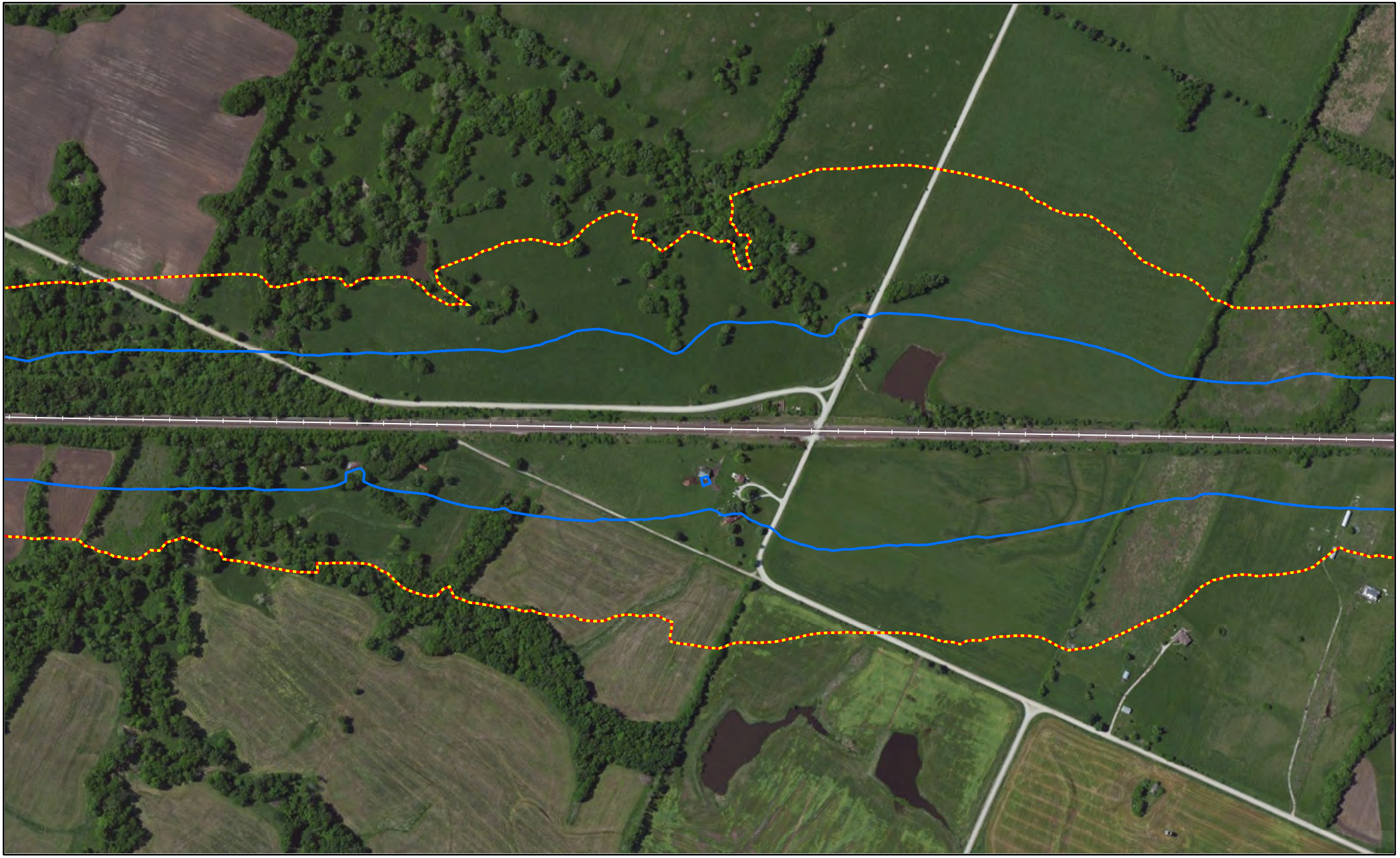
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Noise Contours
Caldwell County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



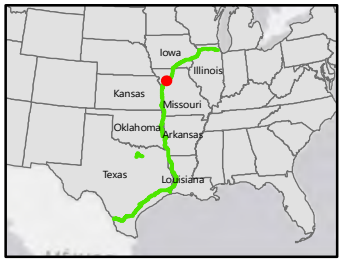
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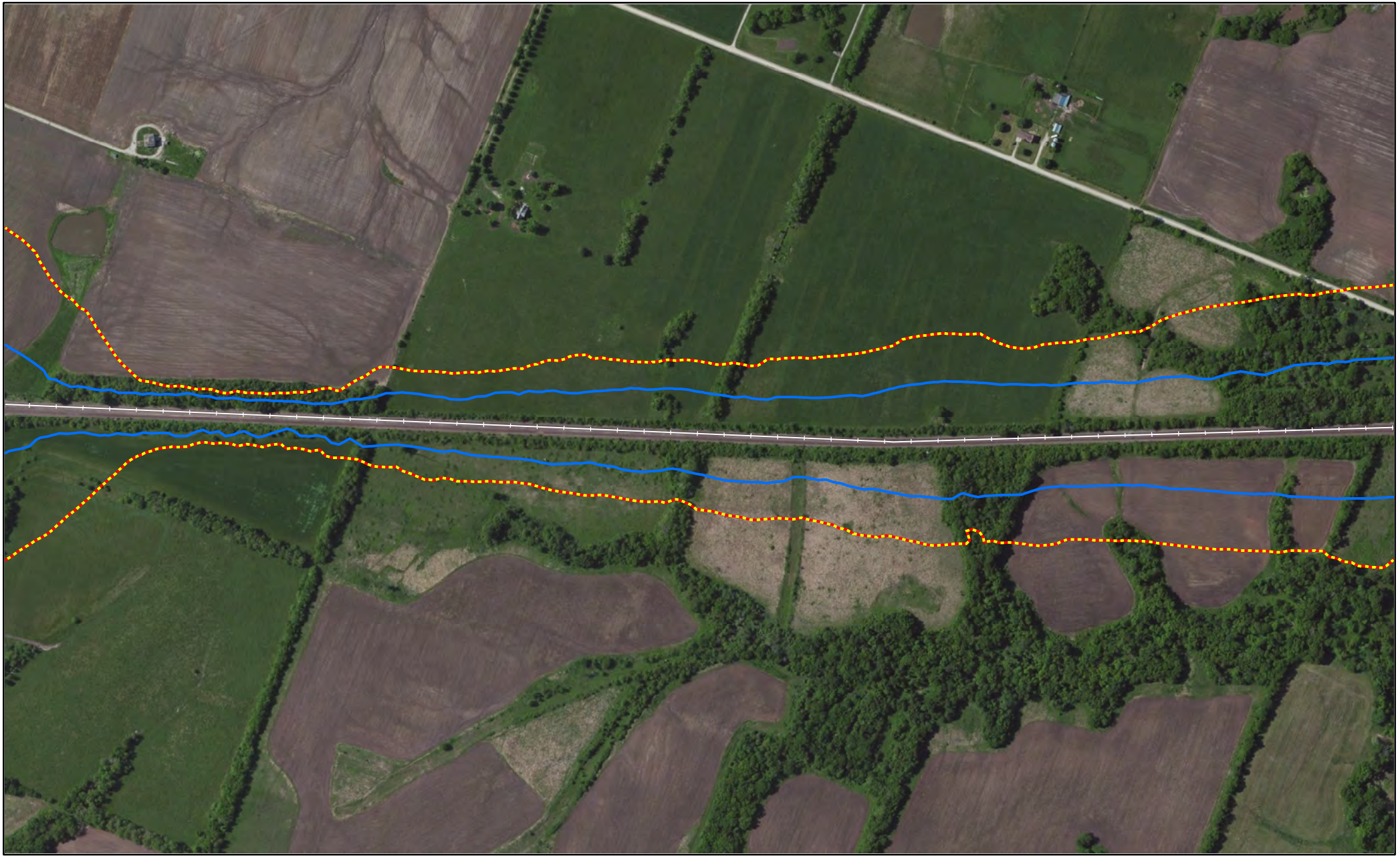
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Noise Contours
Caldwell County, MO

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



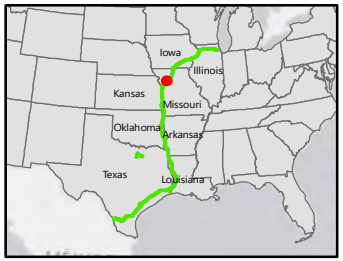
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Noise Contours
Caldwell County, MO

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



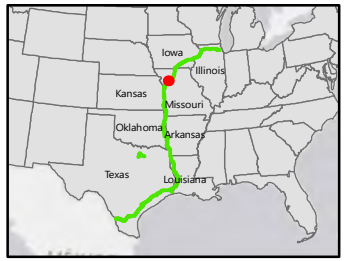
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Noise Contours
Caldwell County, MO

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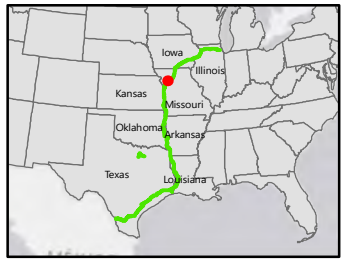
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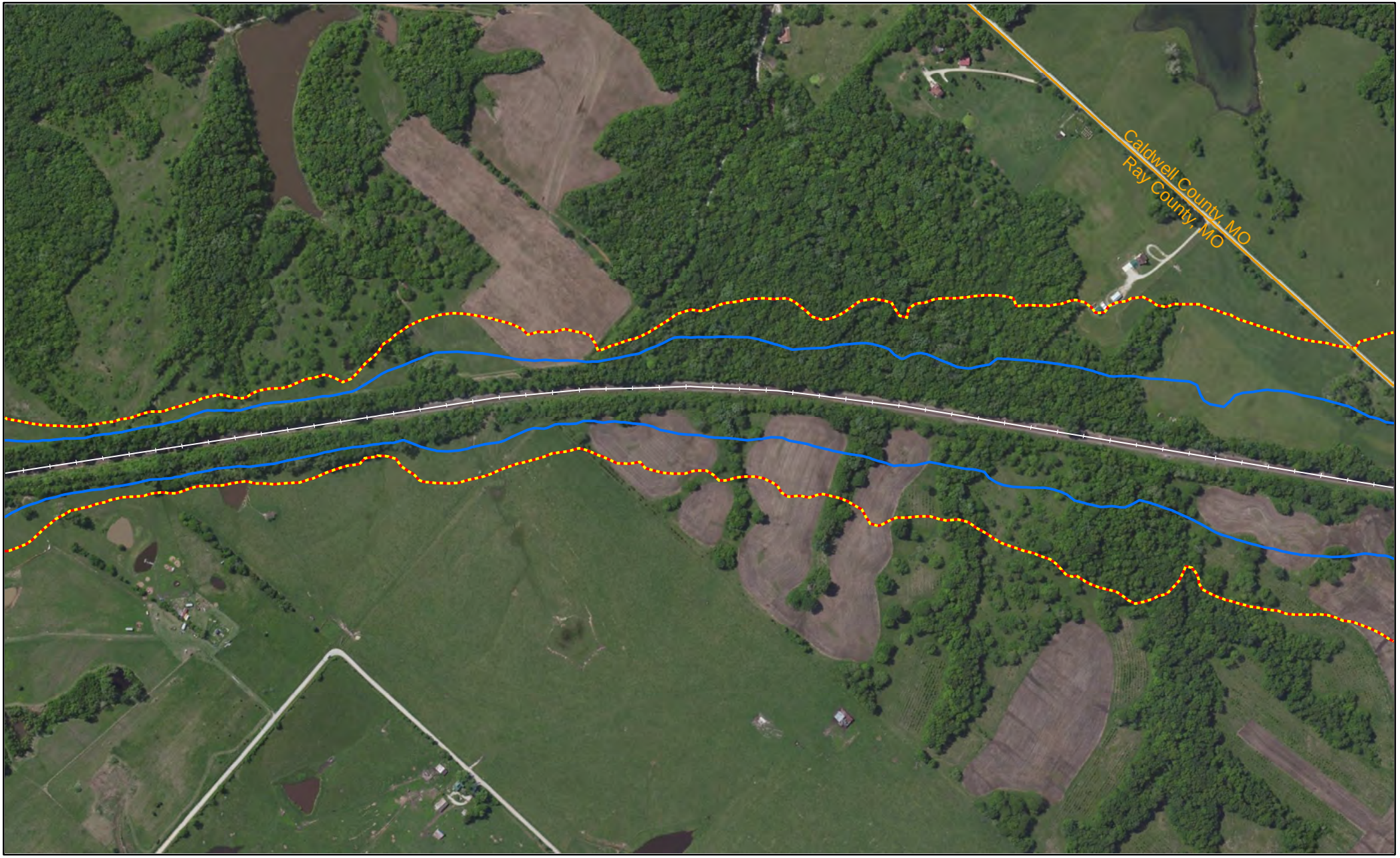
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Noise Contours
Caldwell County, MO

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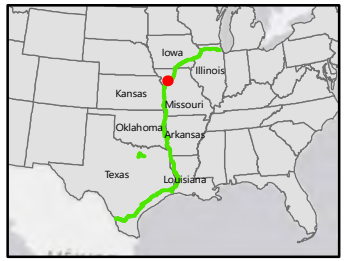
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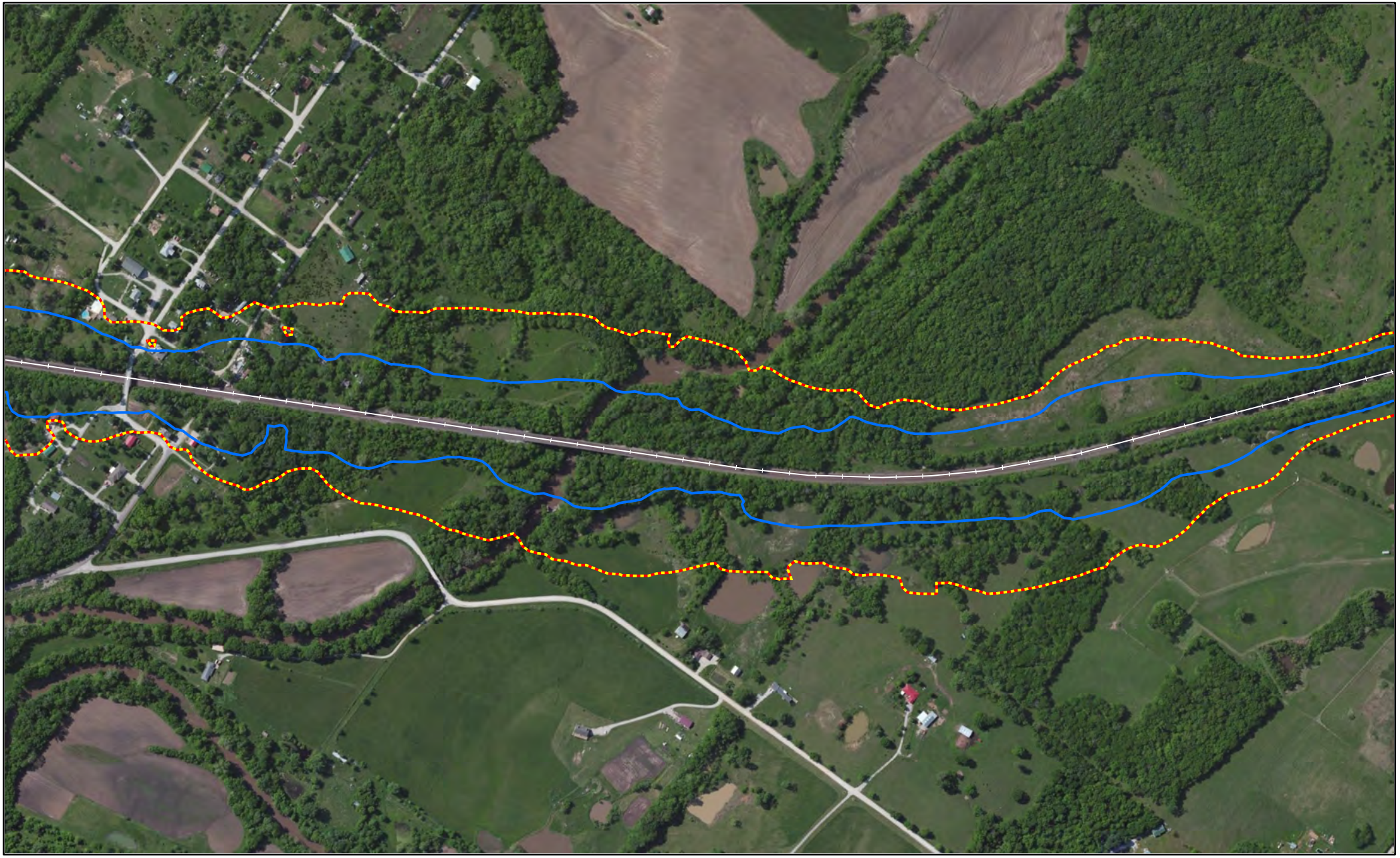
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Noise Contours
Caldwell County, MO

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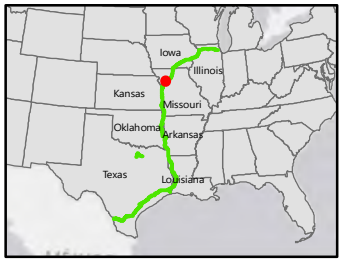
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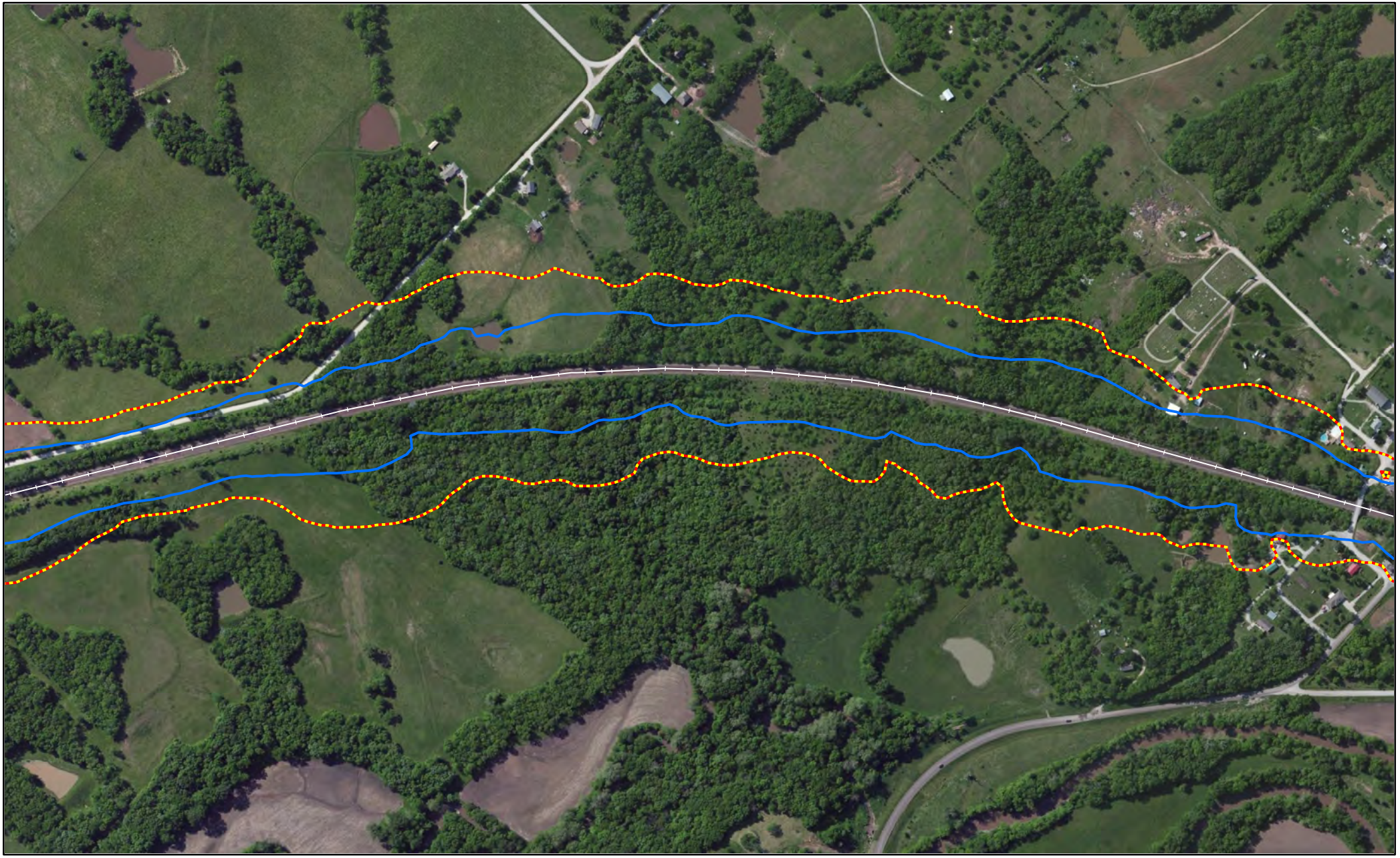
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Noise Contours
Ray County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



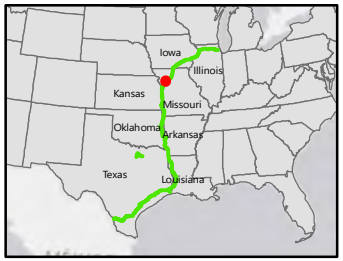
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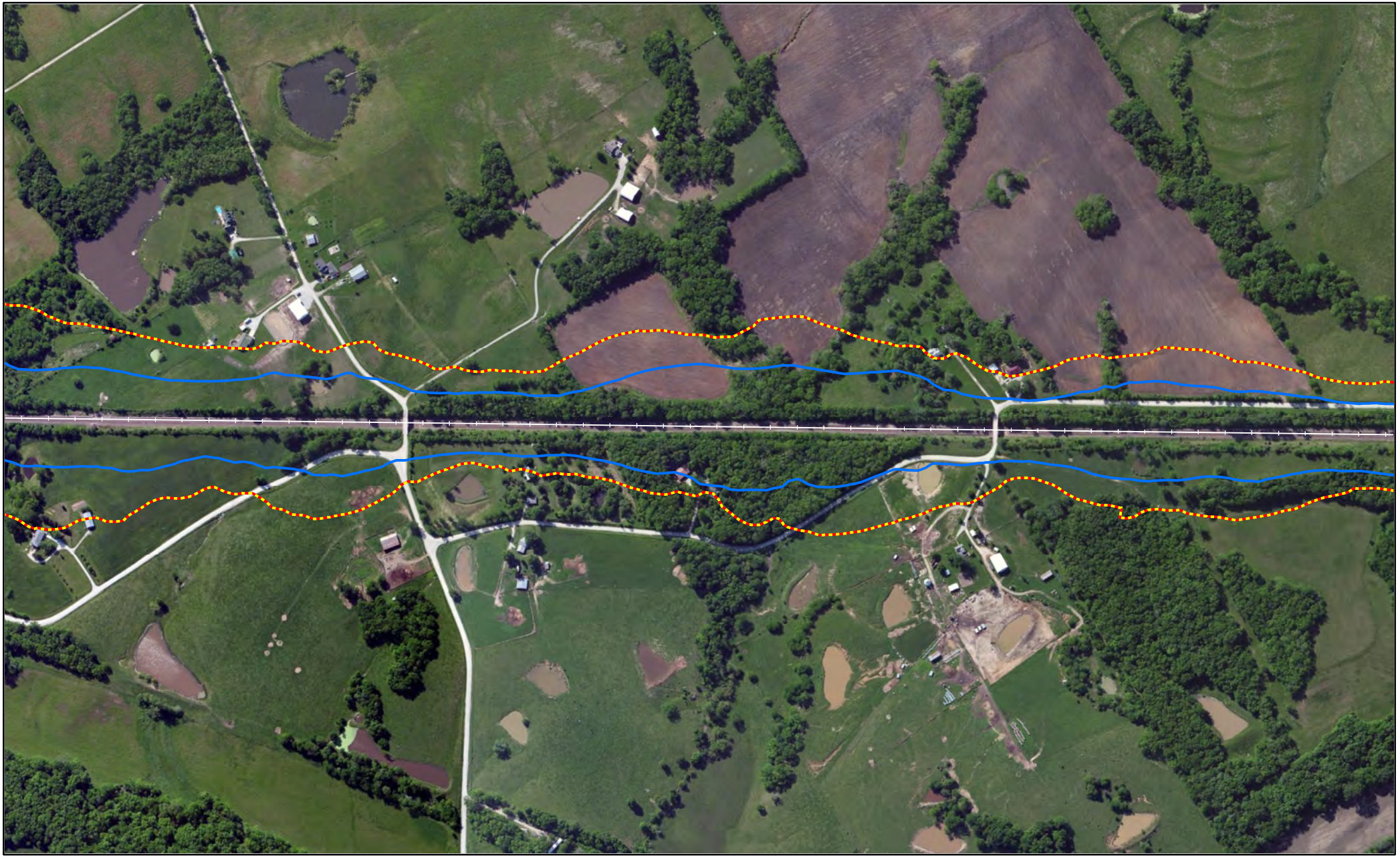
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Noise Contours
Ray County, MO

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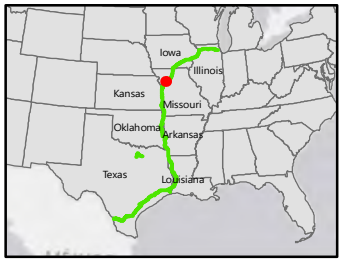
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Noise Contours
Ray County, MO

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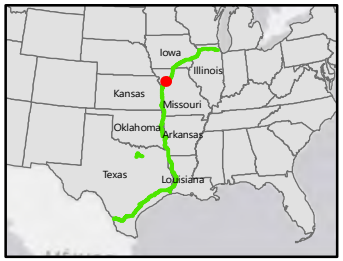
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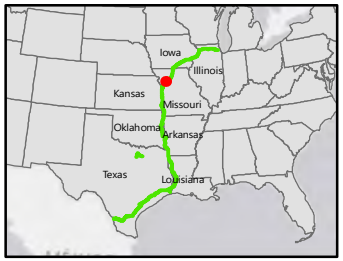
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Noise Contours
Ray County, MO

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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Noise Contours
Ray County, MO

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



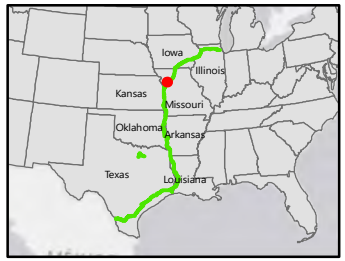
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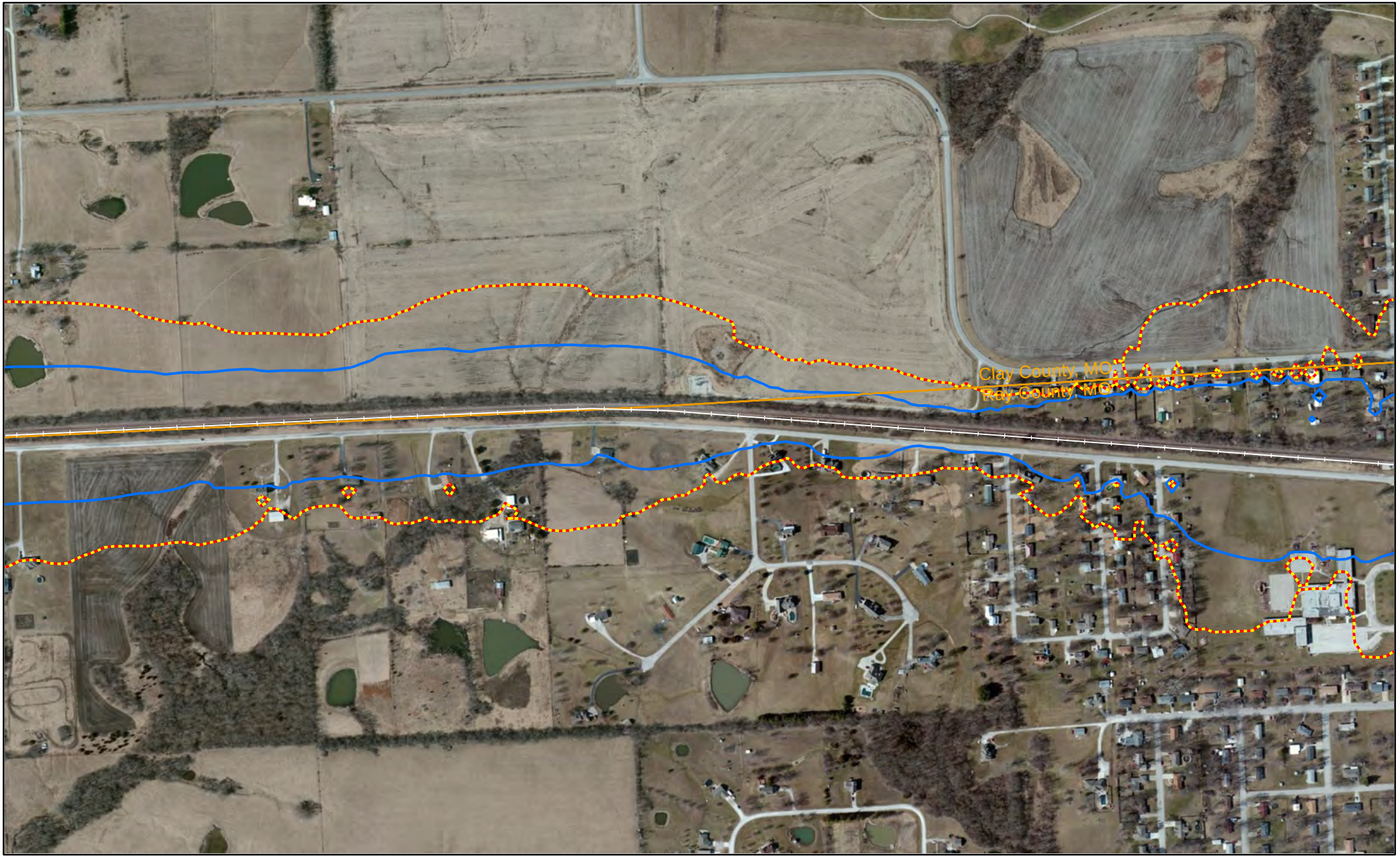
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Noise Contours
Ray County, MO

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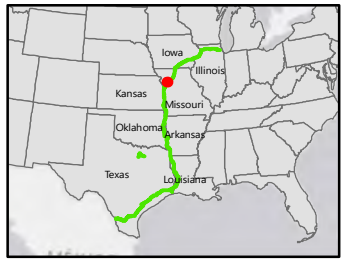
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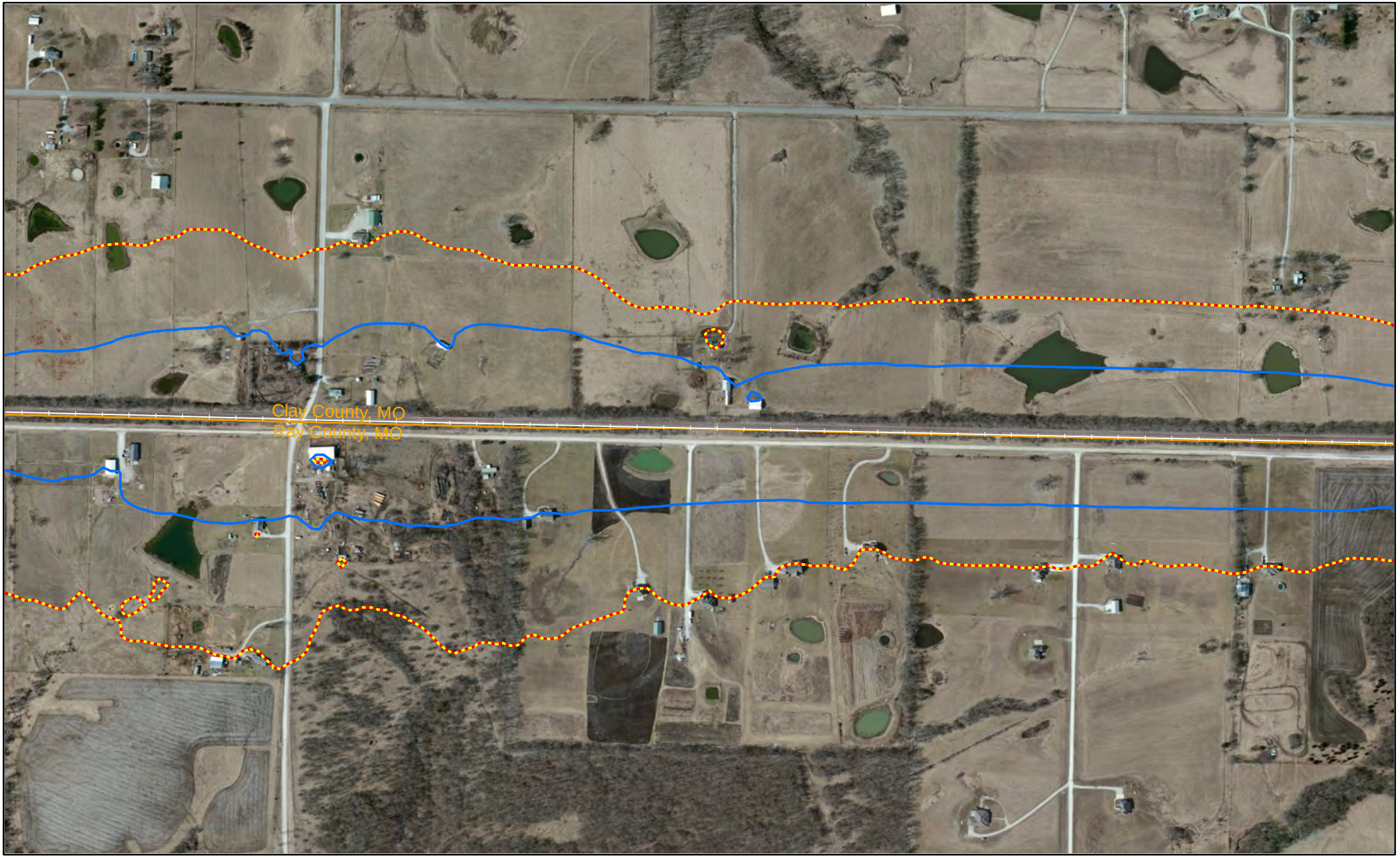


Noise Contours
Ray County, MO

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Miles
0 0.05 0.1

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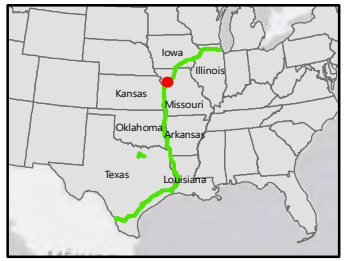
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Noise Contours
Ray County, MO

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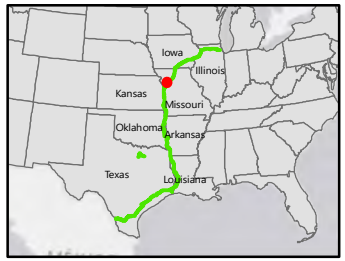
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Noise Contours
Ray County, MO

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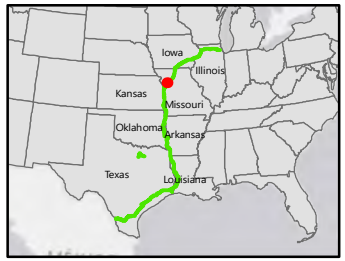
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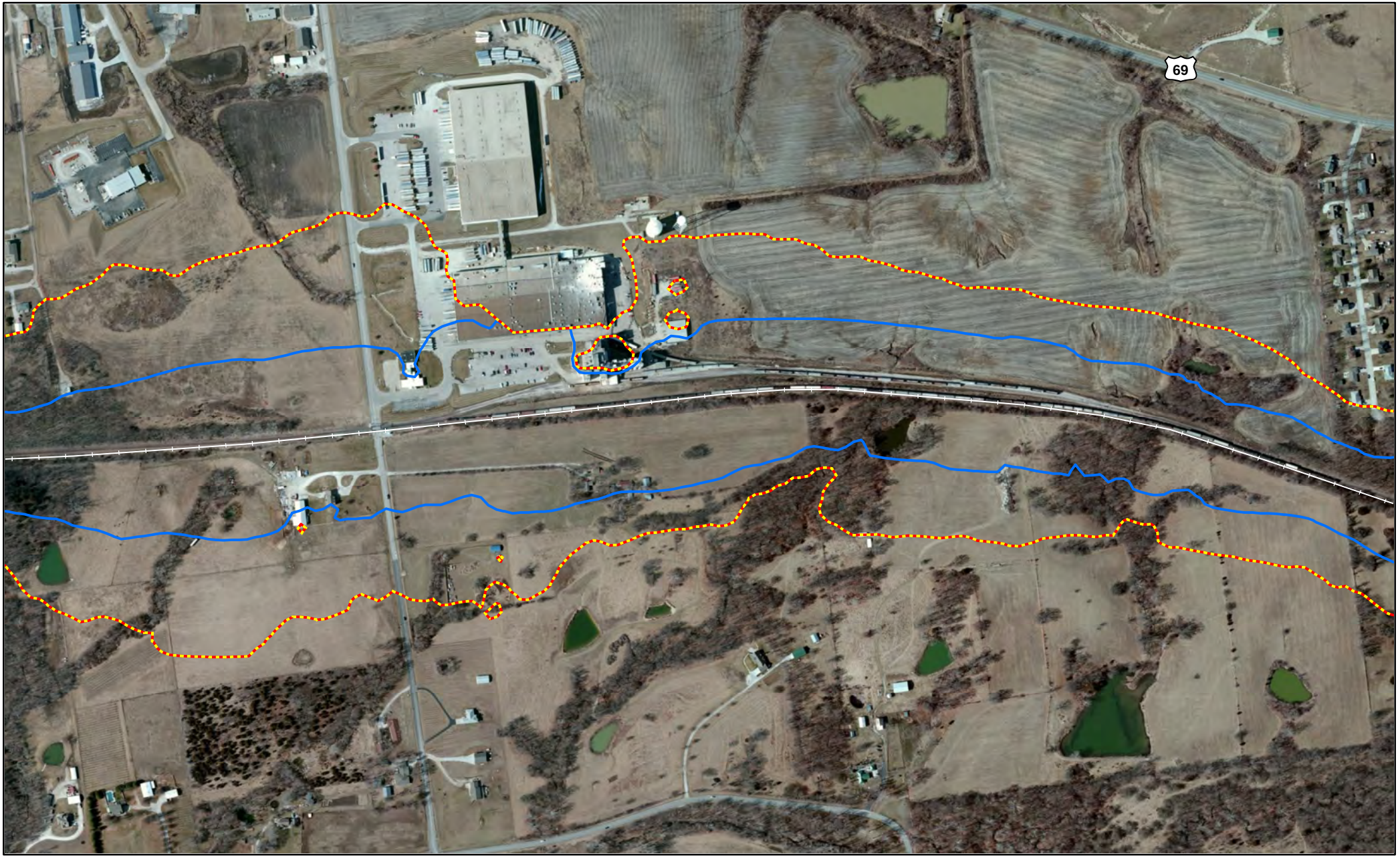
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Noise Contours
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0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



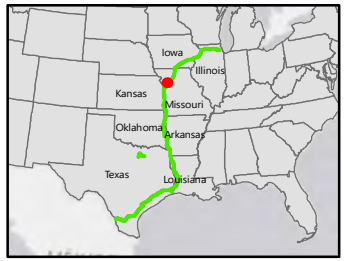
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

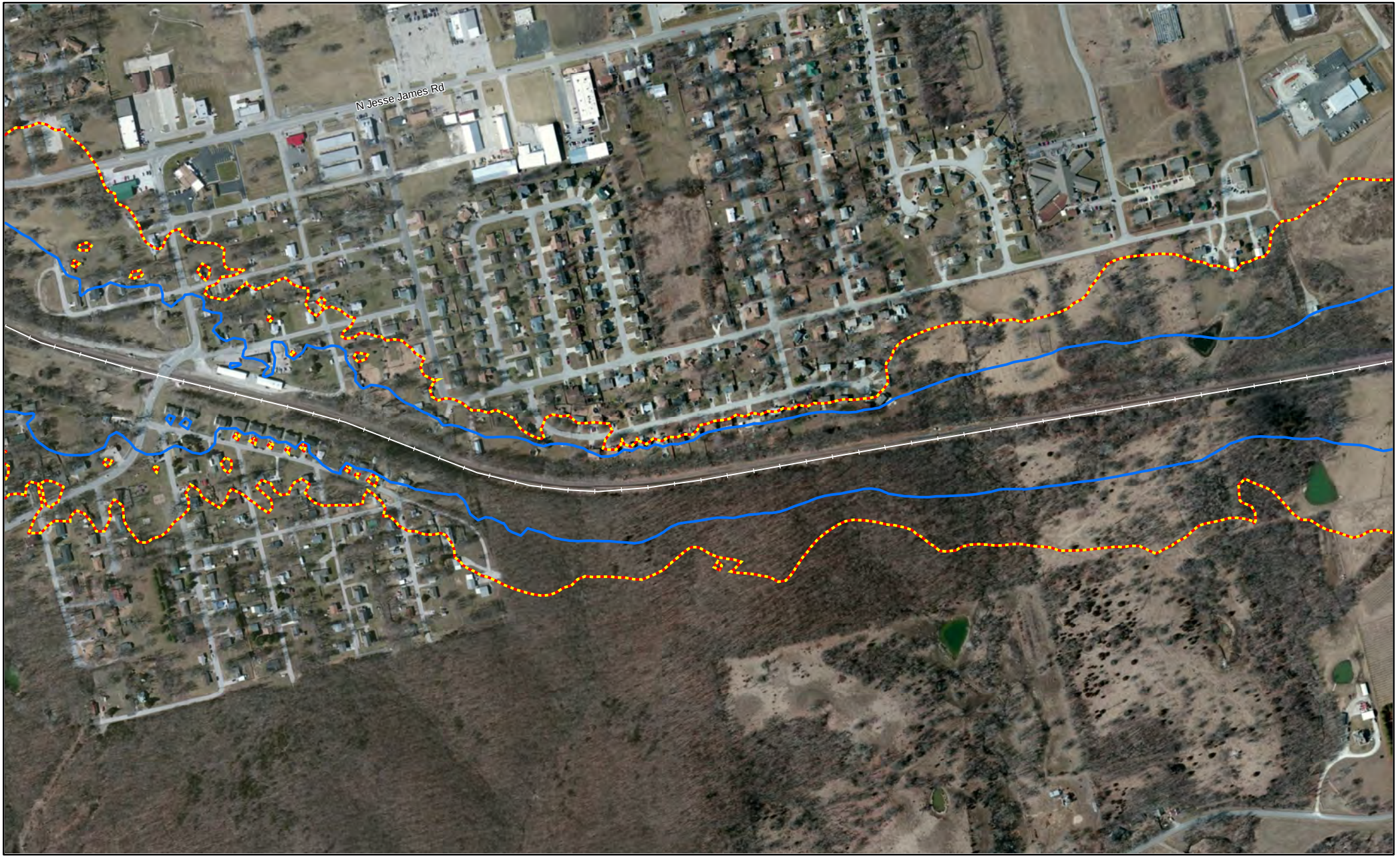
Source: ESRI.



Noise Contours
Clay County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



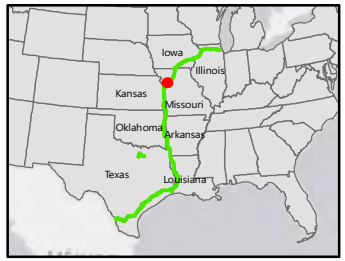
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Noise Contours
Clay County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



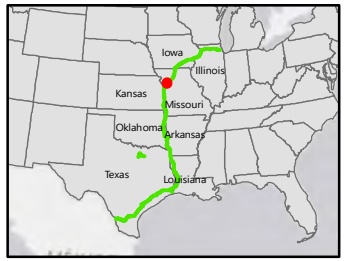
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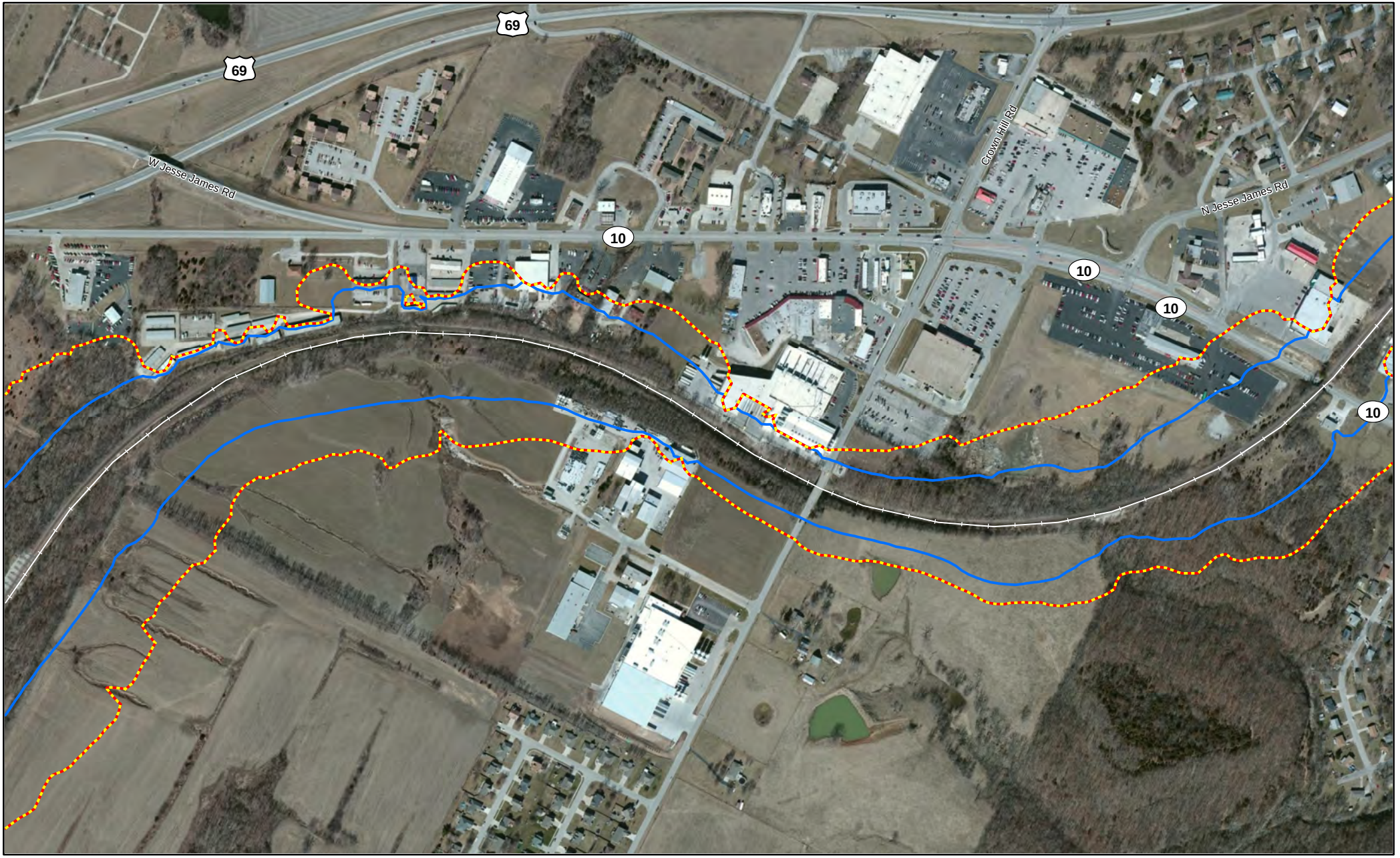
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Noise Contours
Clay County, MO

Miles
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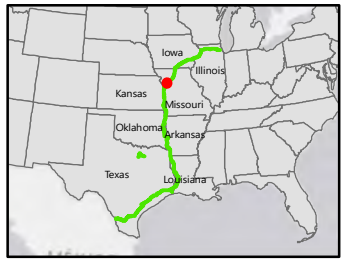
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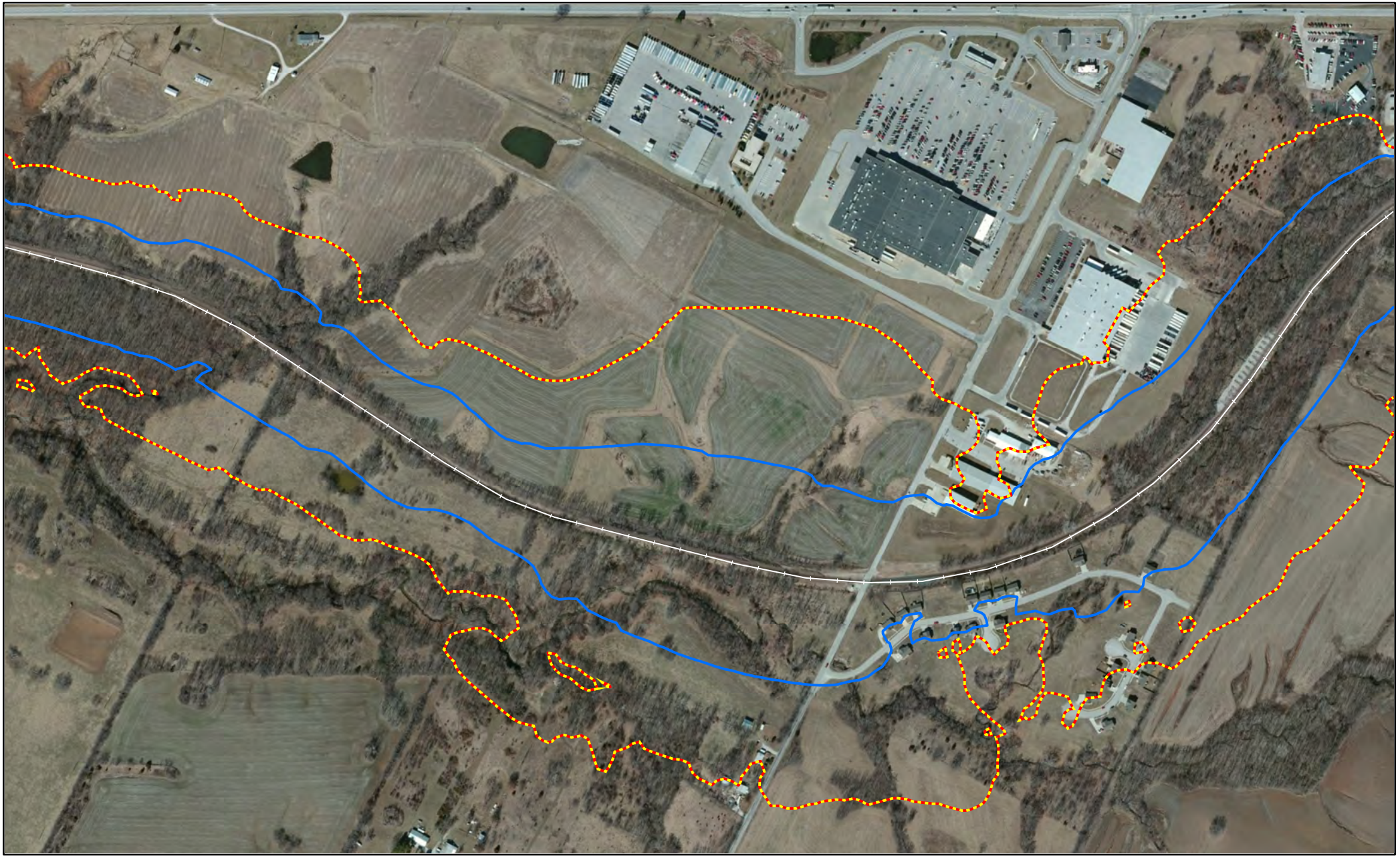
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Noise Contours
Clay County, MO

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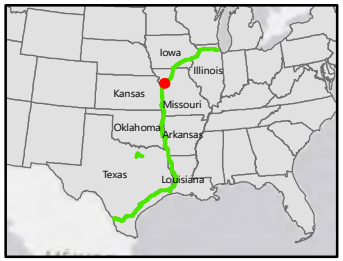
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Noise Contours
Clay County, MO

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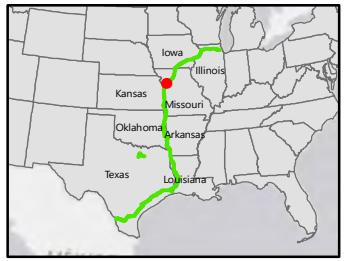
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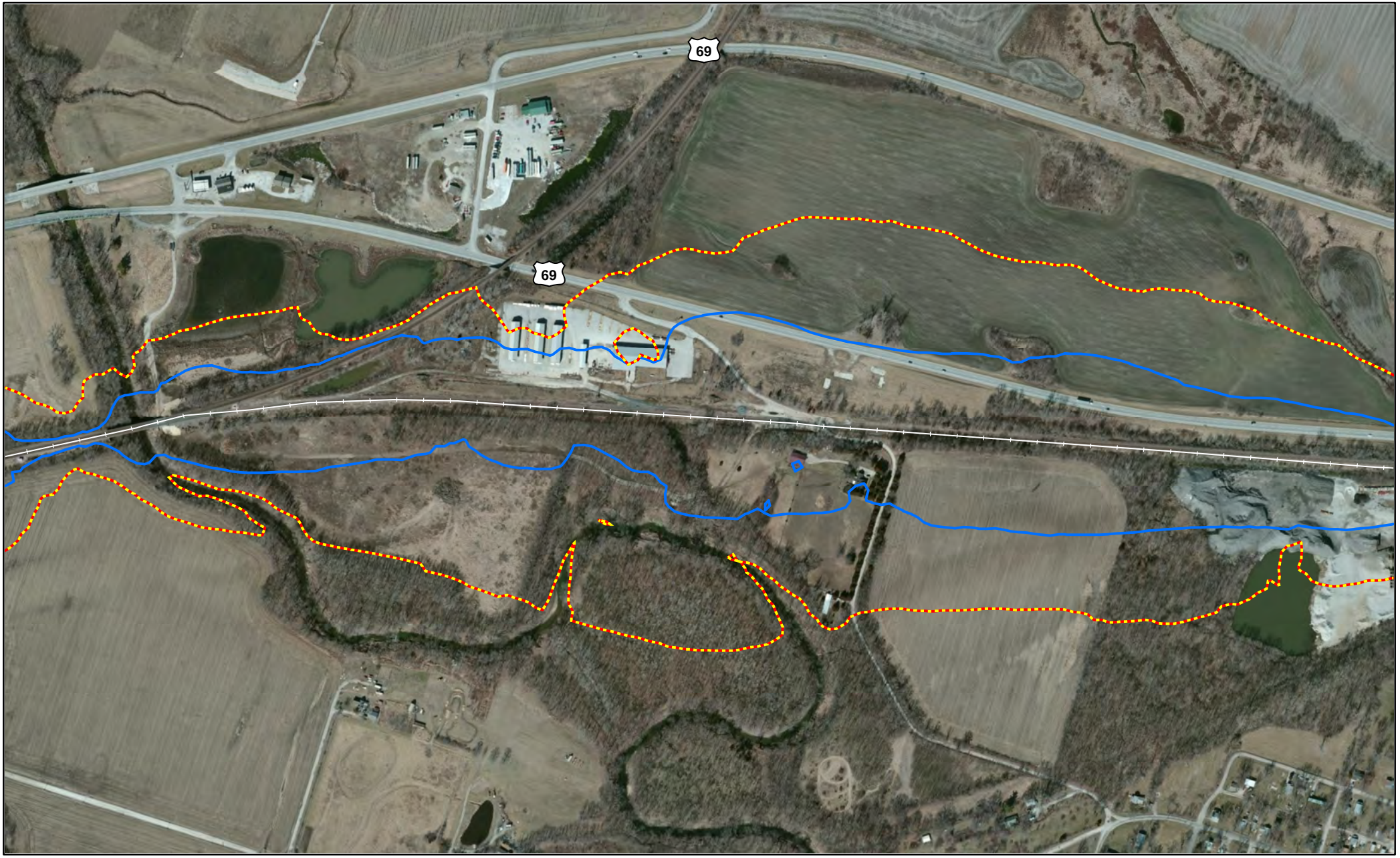
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Noise Contours
Clay County, MO

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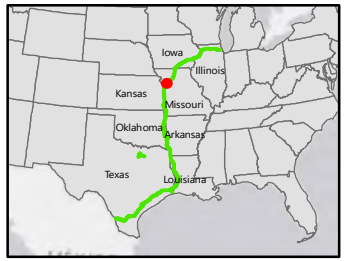
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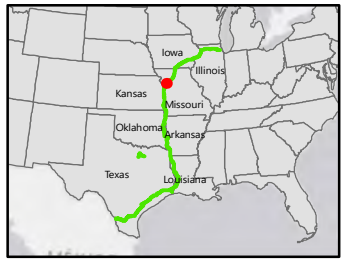
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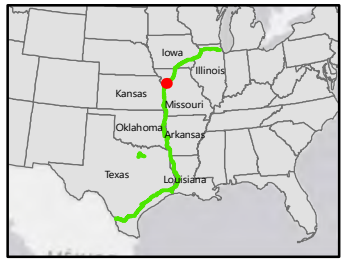
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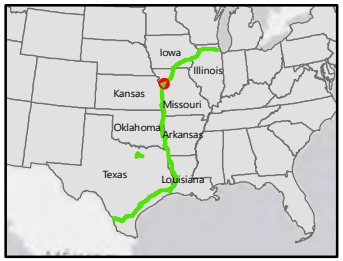
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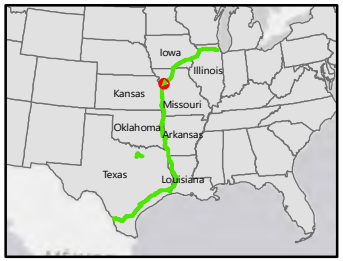
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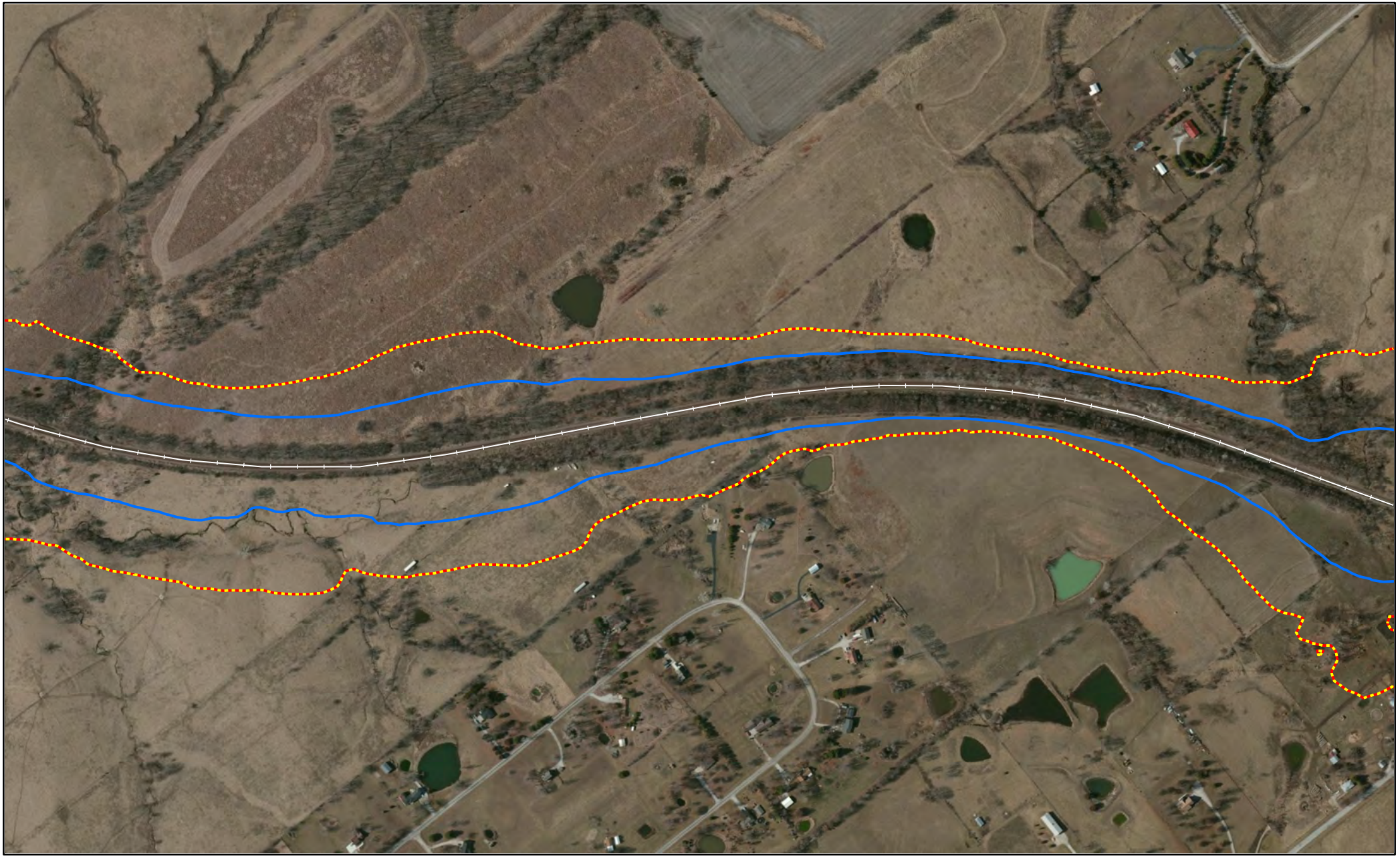
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Noise Contours
Clay County, MO

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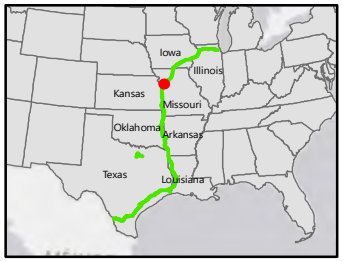
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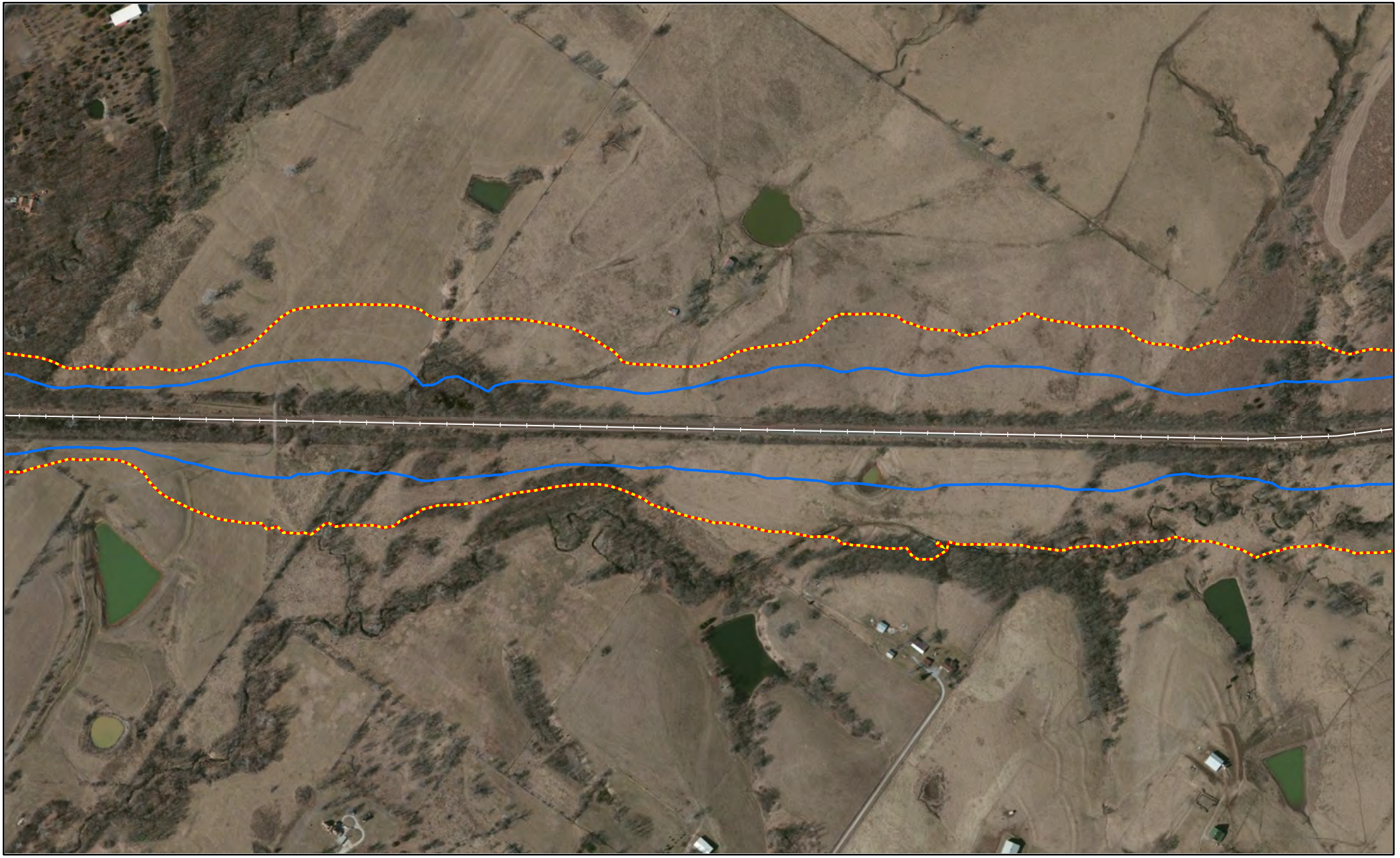
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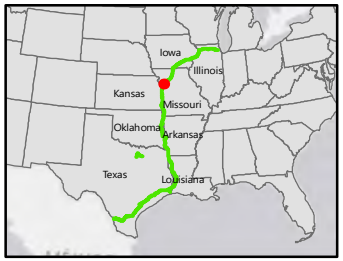
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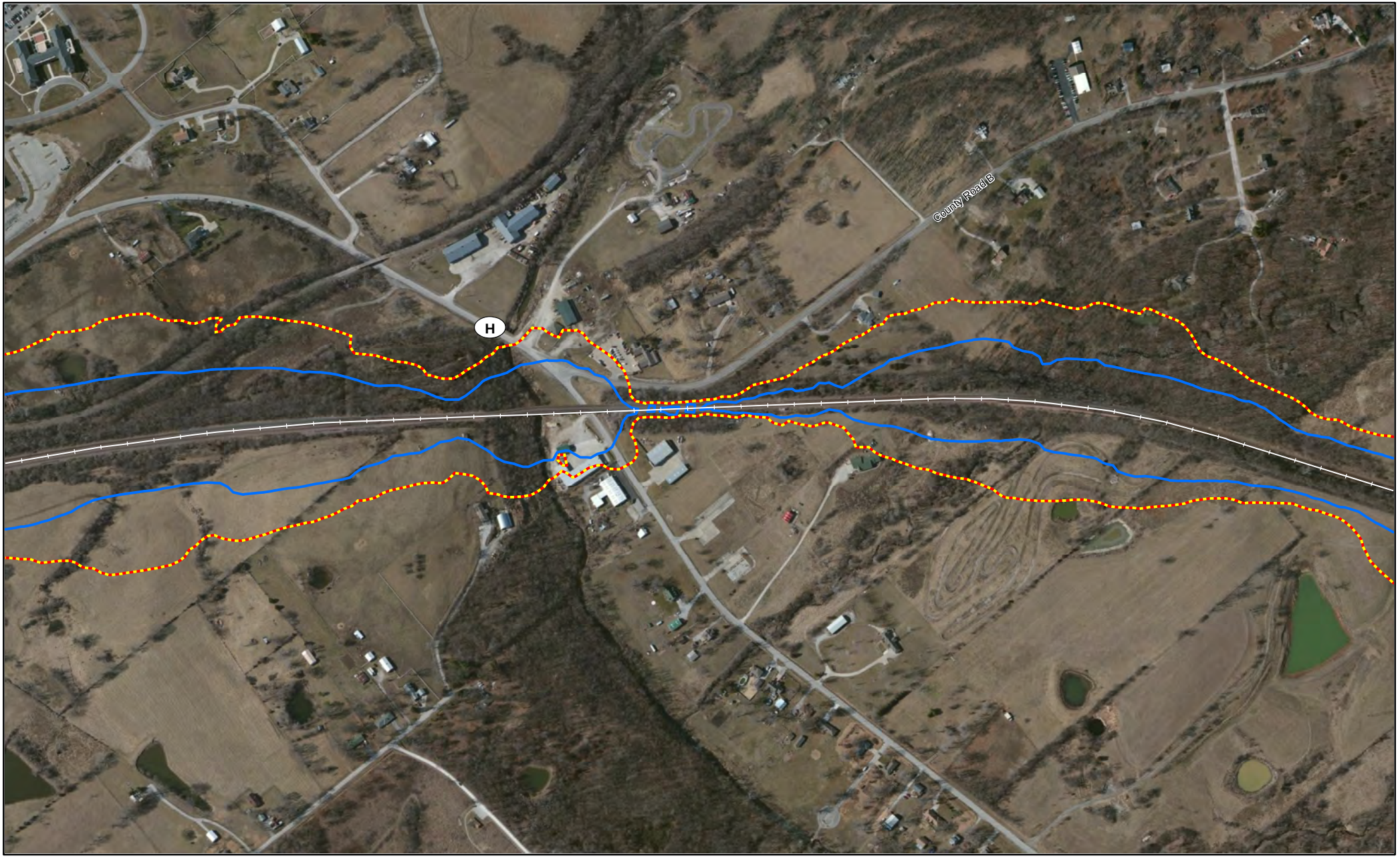
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Noise Contours
Clay County, MO

Miles
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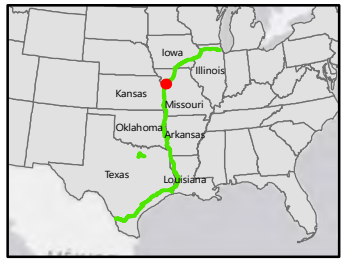
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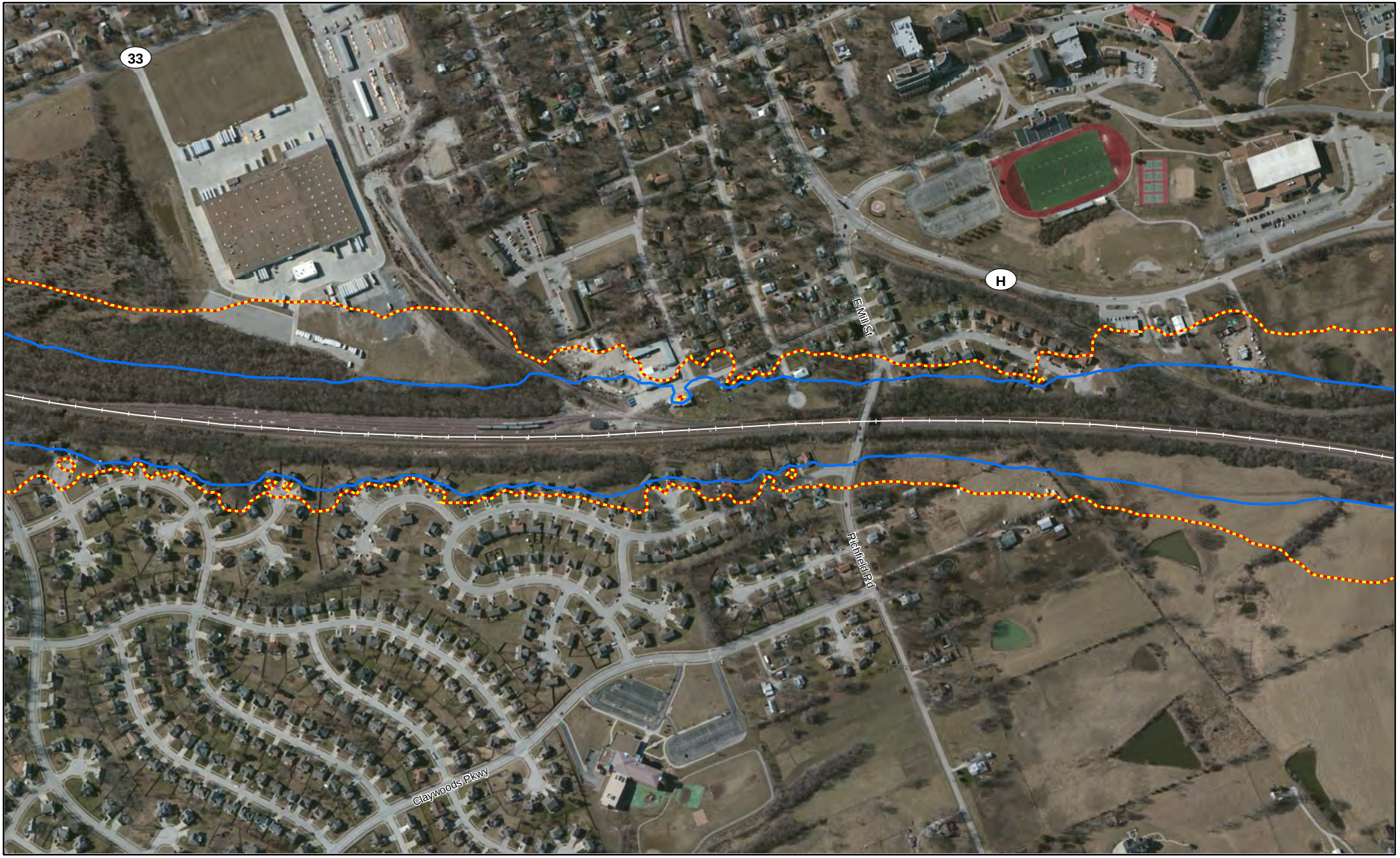
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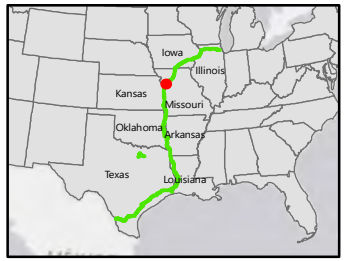
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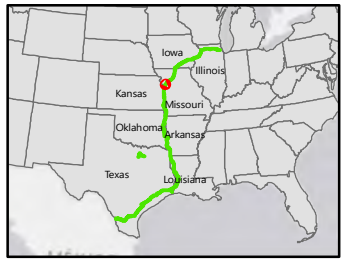
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Noise Contours
Clay County, MO

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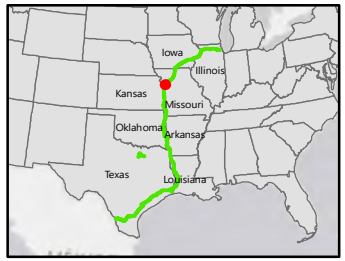
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Noise Contours
Clay County, MO

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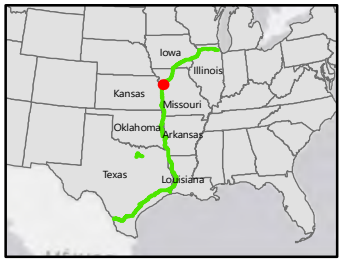
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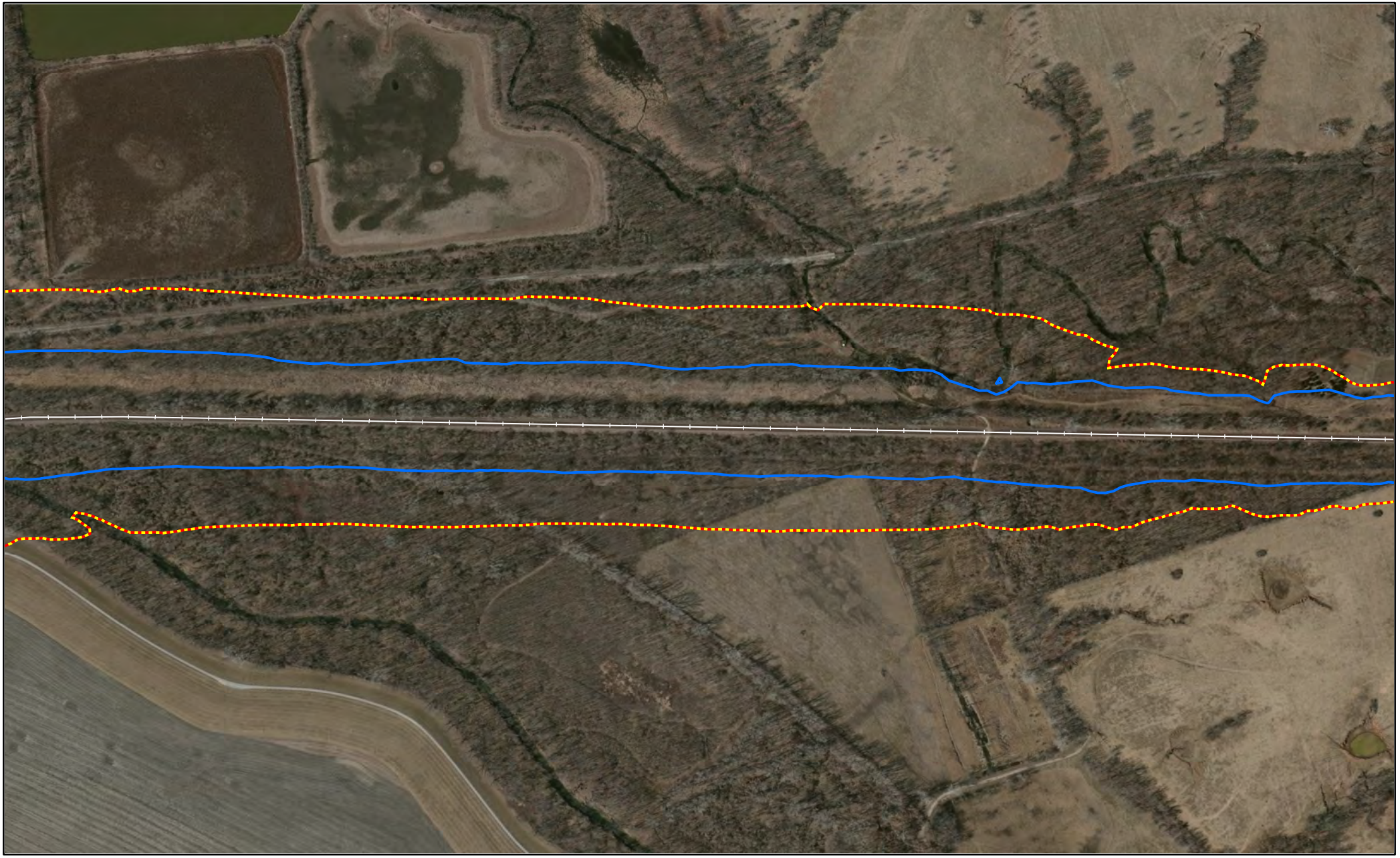
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Noise Contours
Clay County, MO

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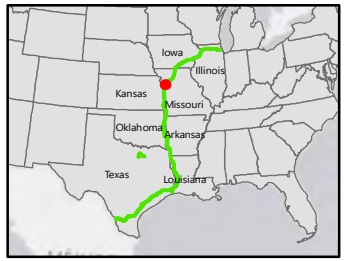
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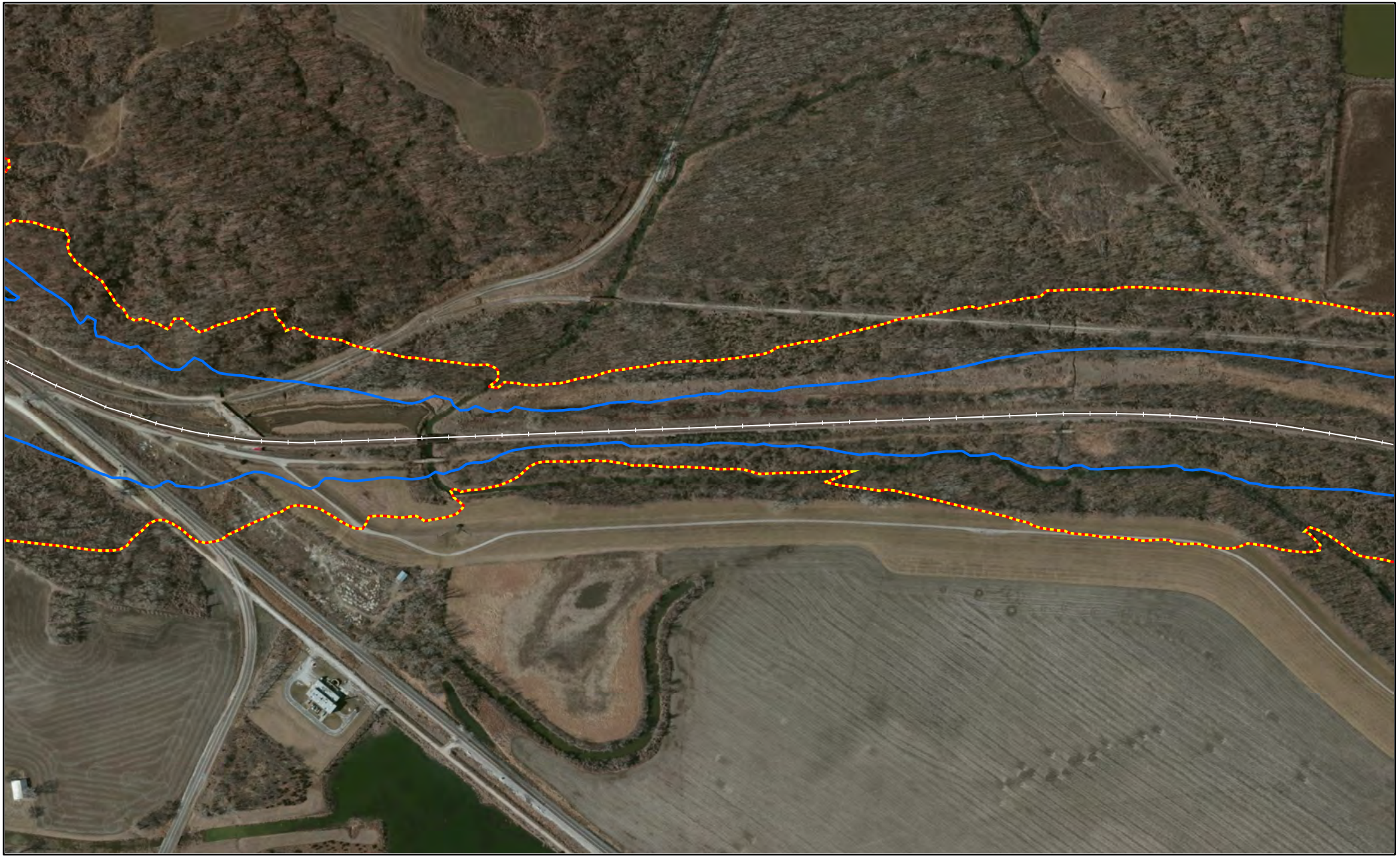
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Noise Contours
Clay County, MO

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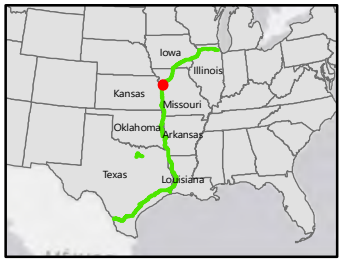
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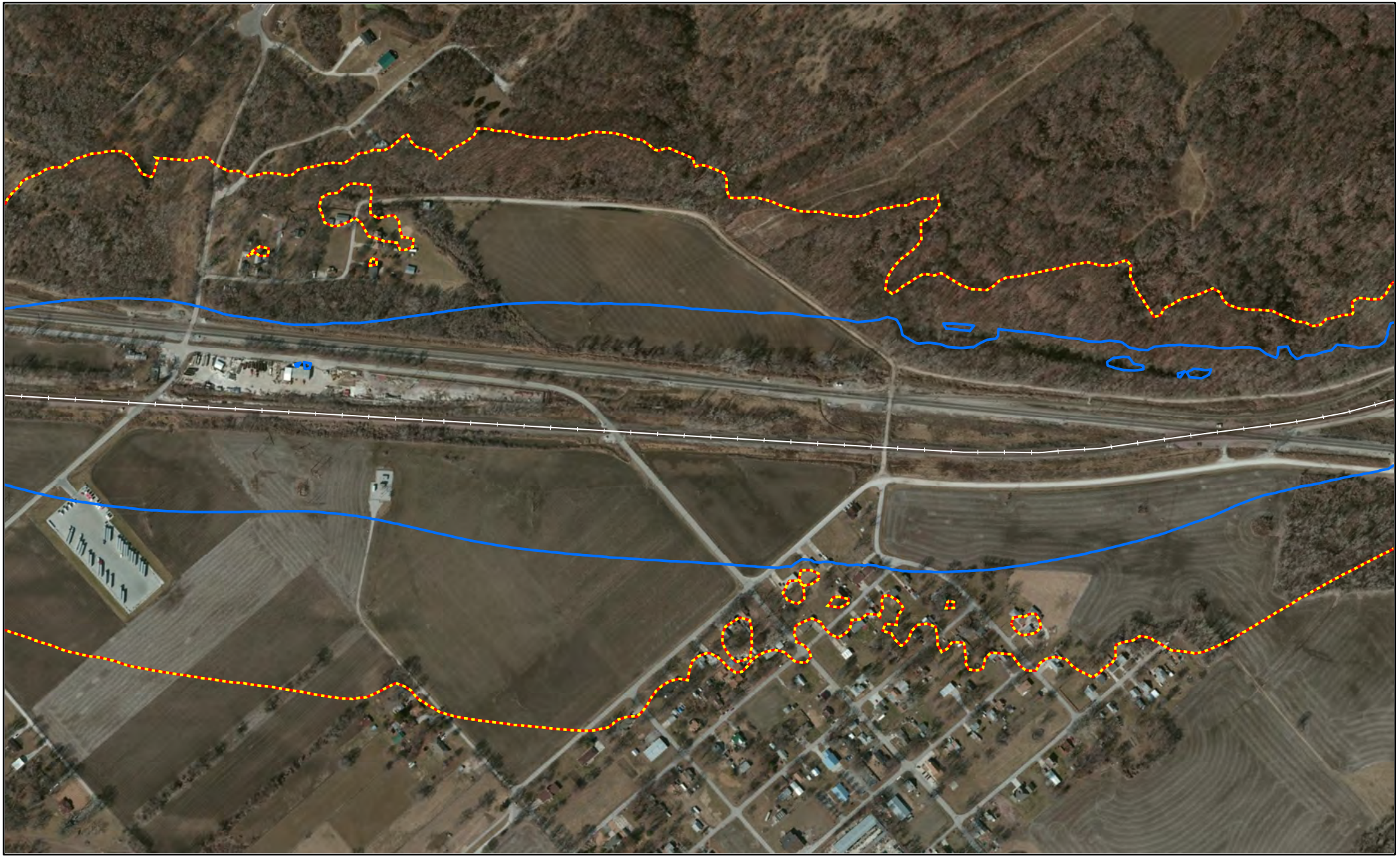
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Noise Contours
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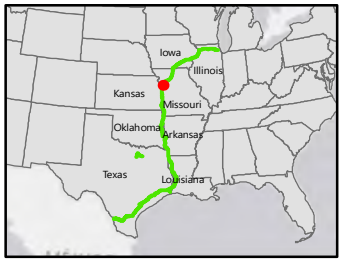
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Noise Contours
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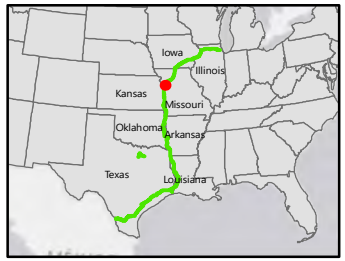
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Noise Contours
Clay County, MO

Page 480 of 1588

Miles
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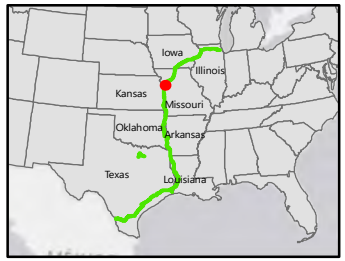
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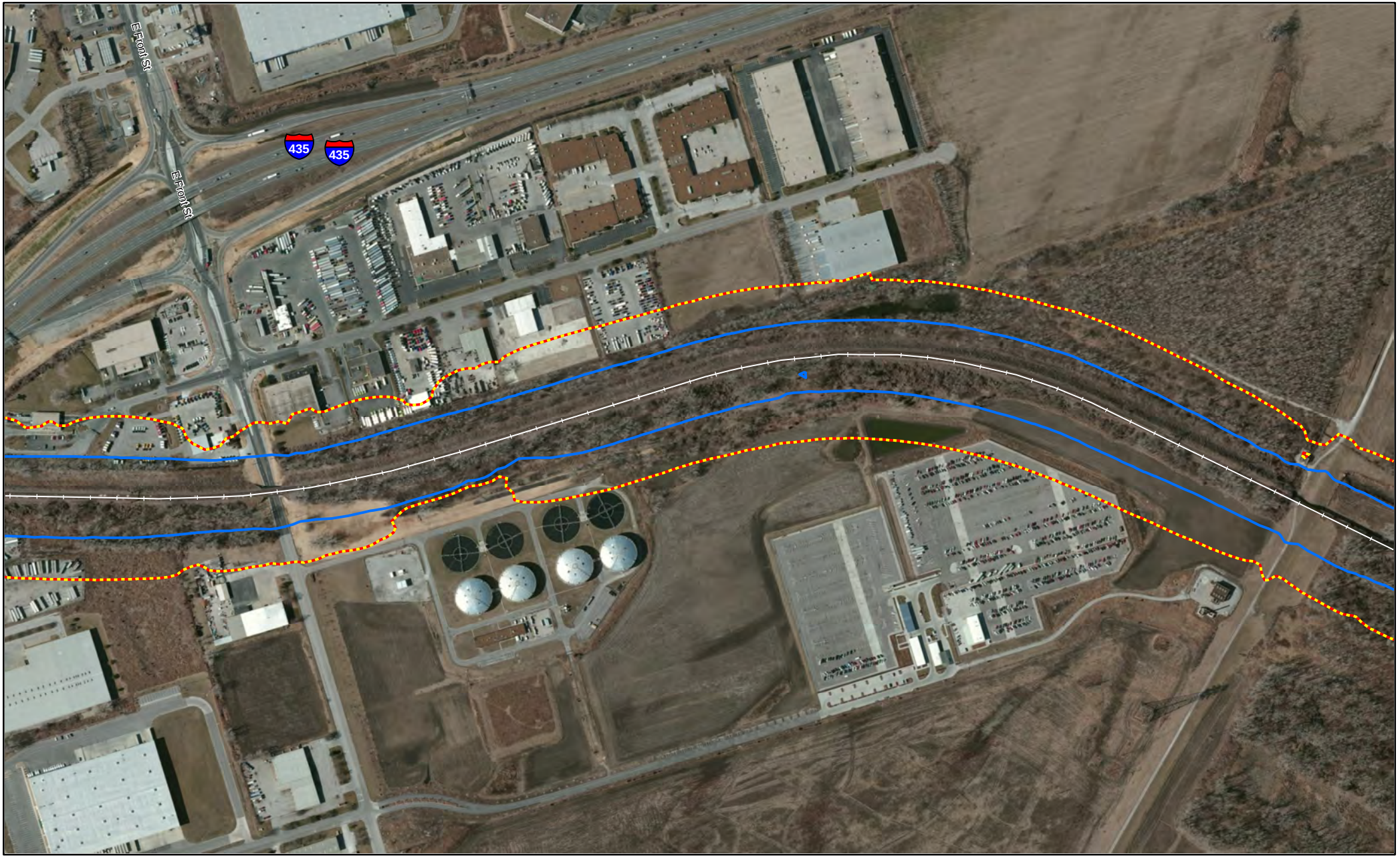
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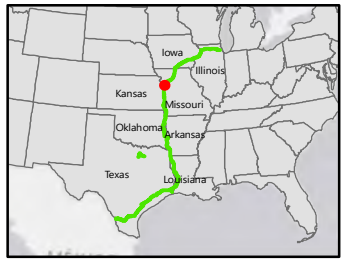
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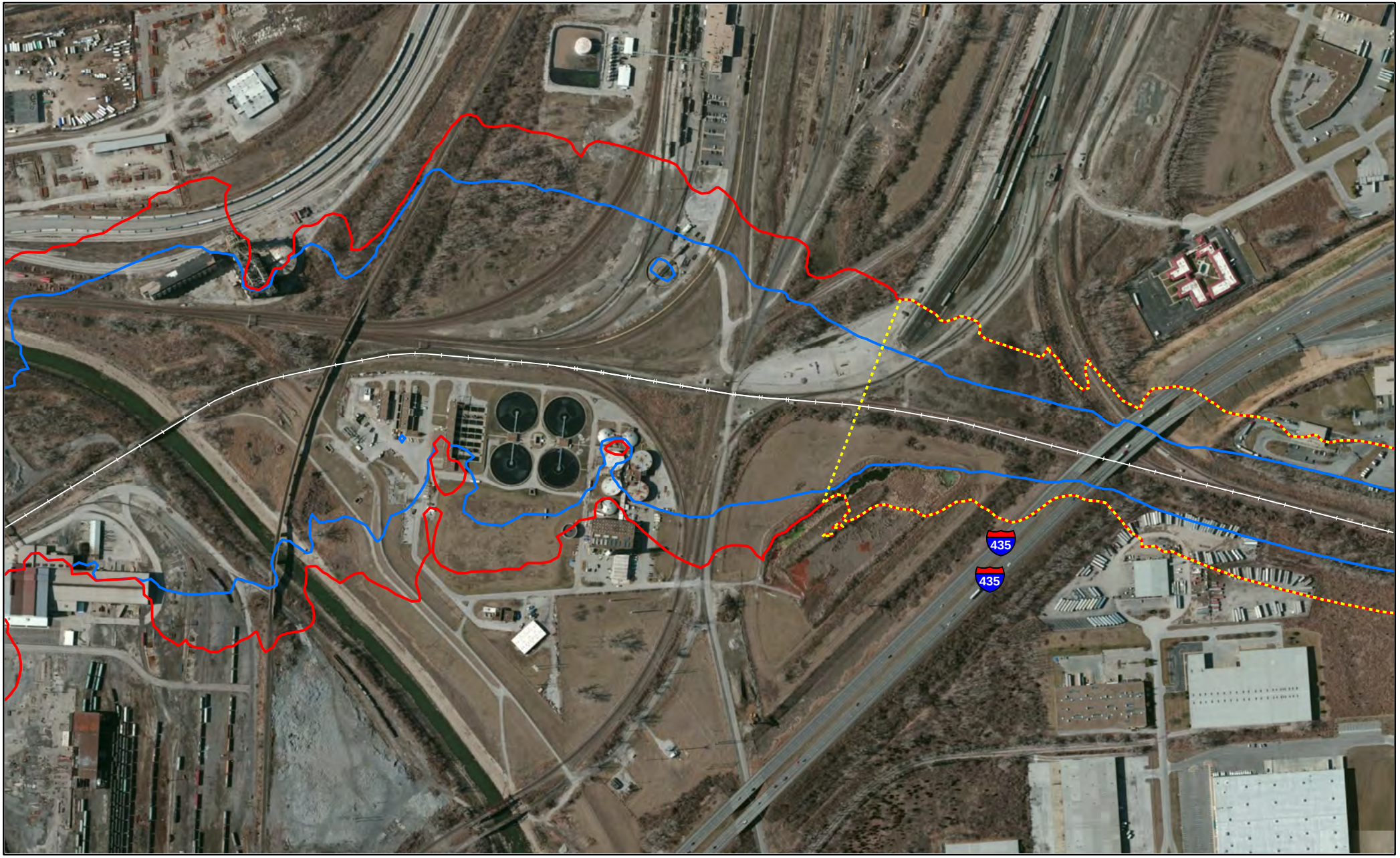
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Noise Contours
Jackson County, MO

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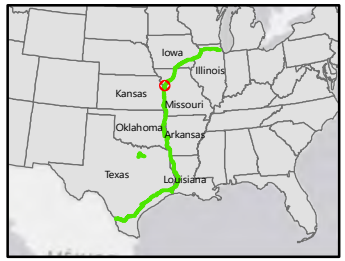
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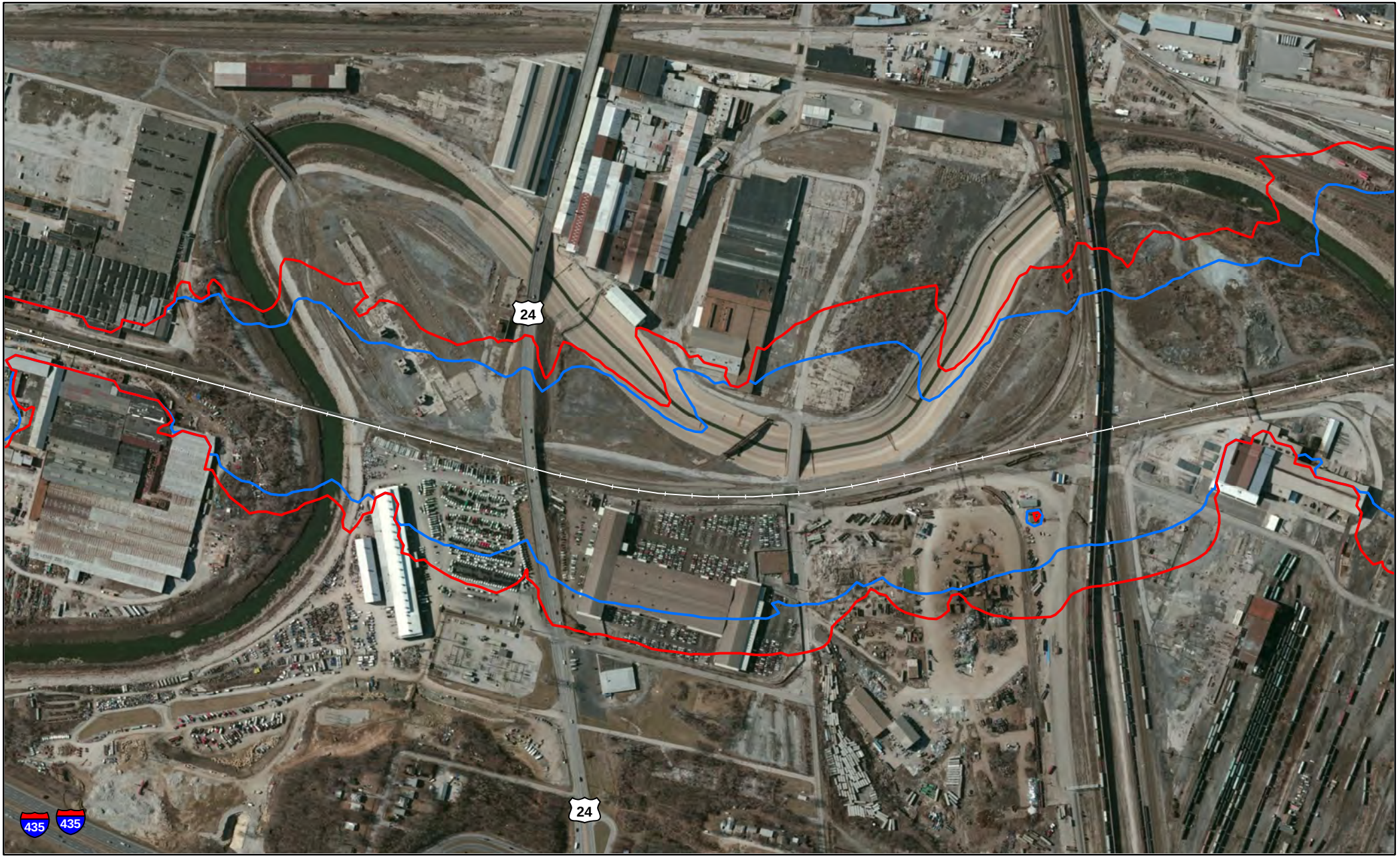
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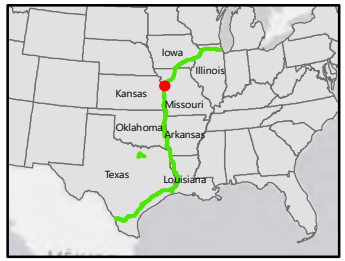
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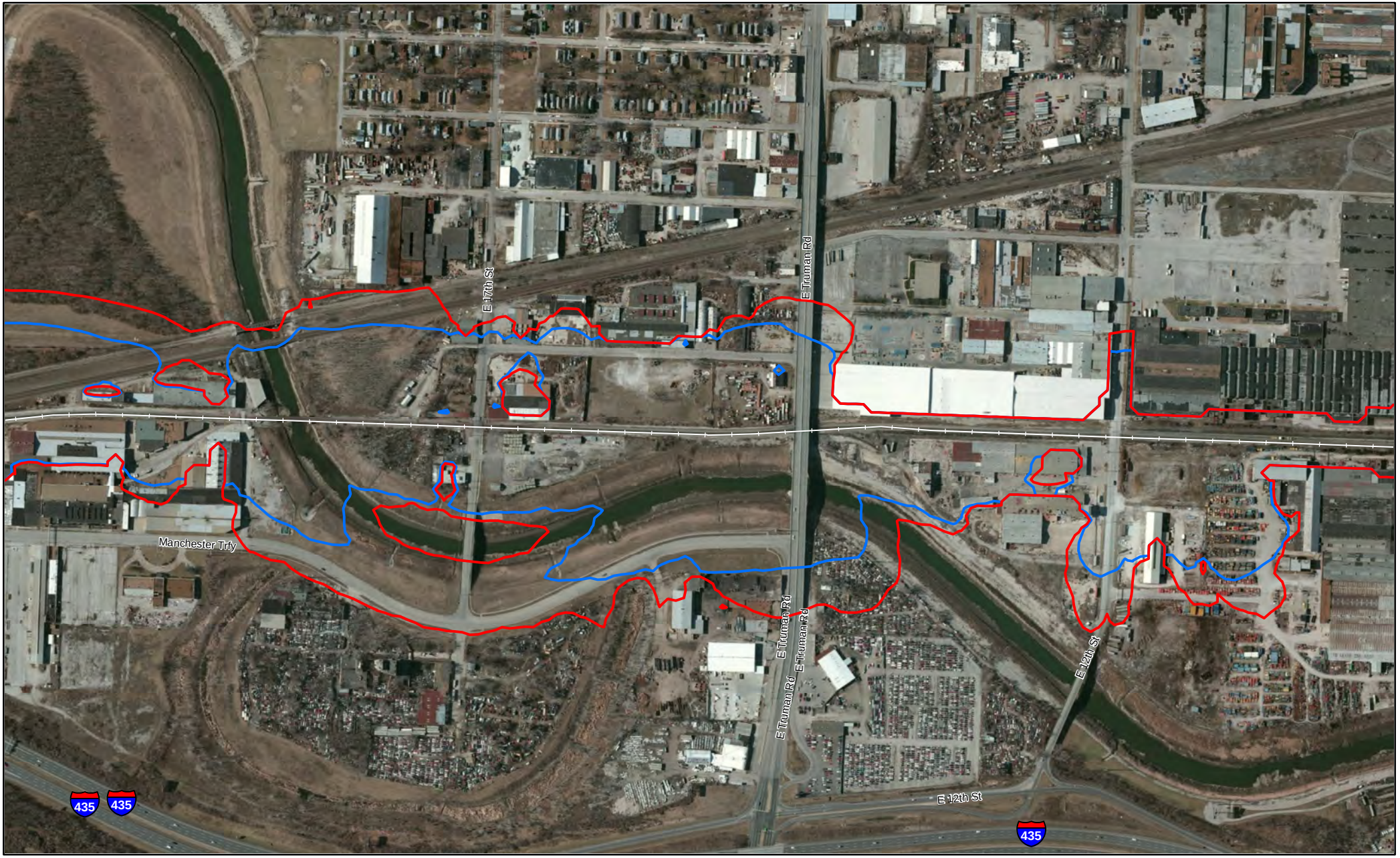
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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



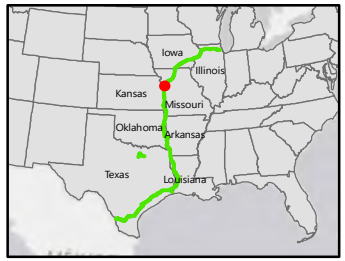
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

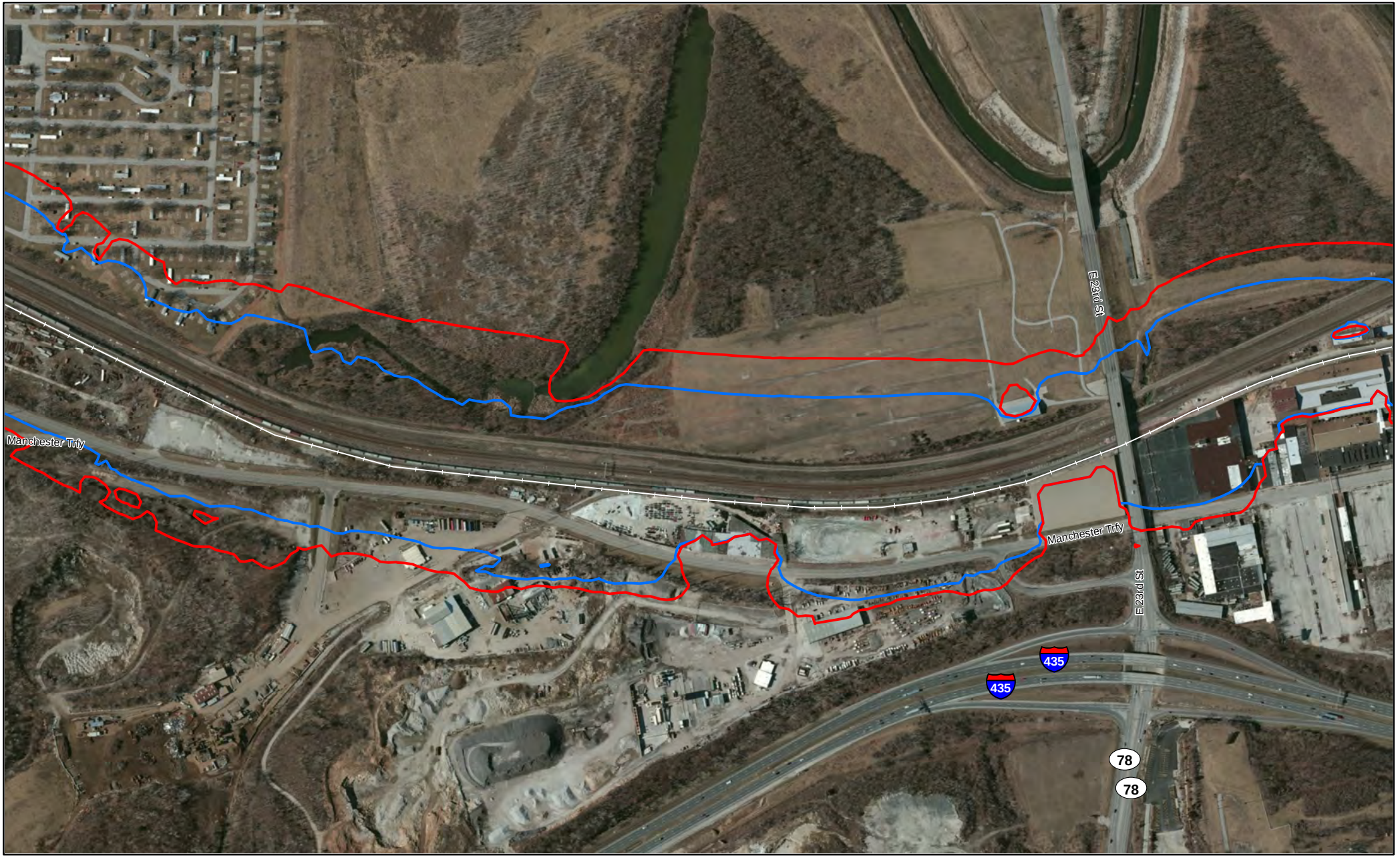
Source: ESRI.



Noise Contours
Jackson County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



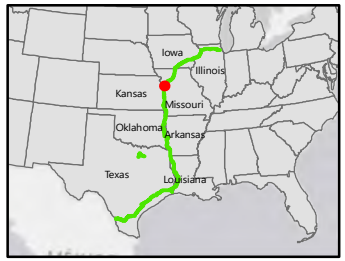
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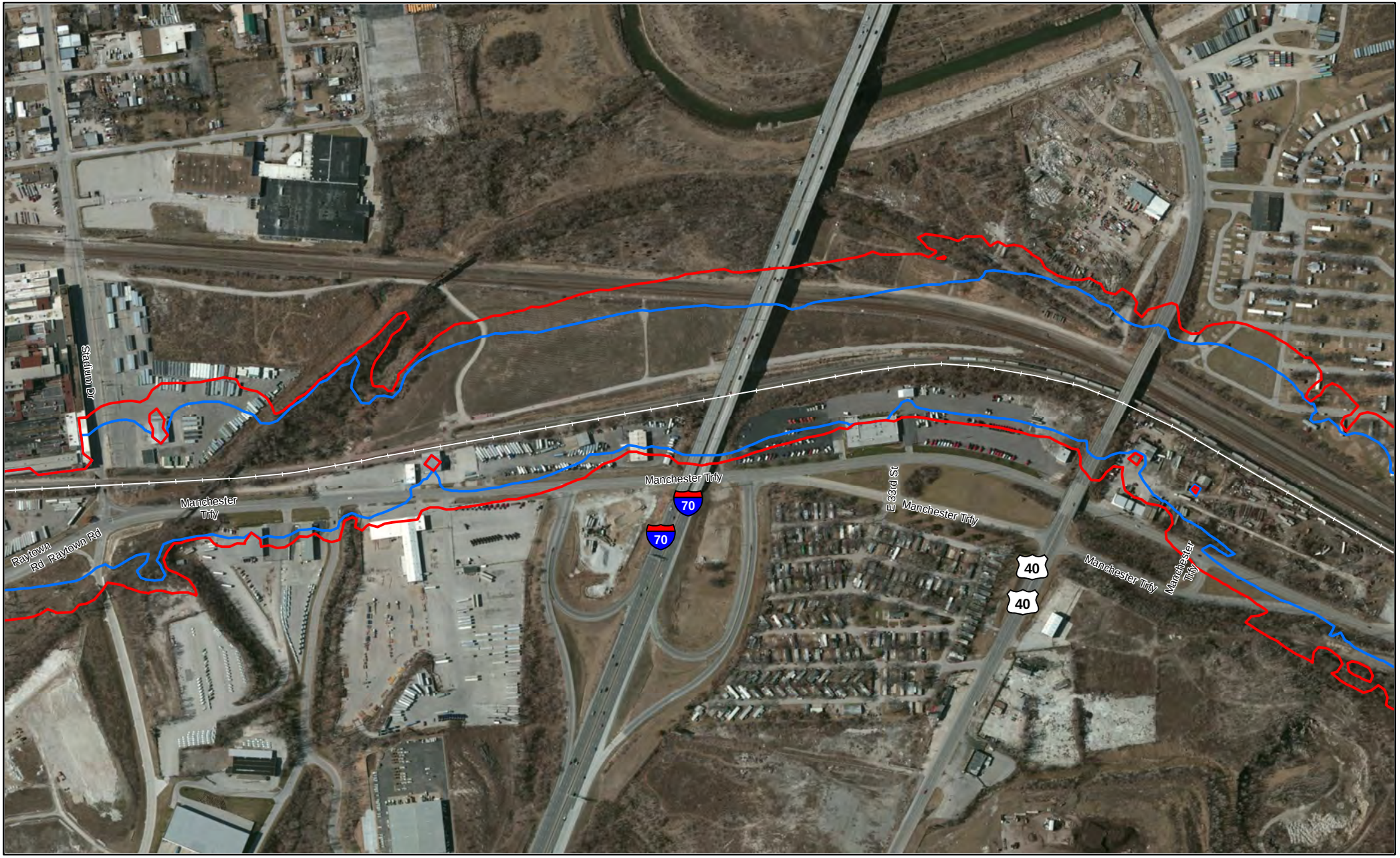
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Noise Contours
Jackson County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



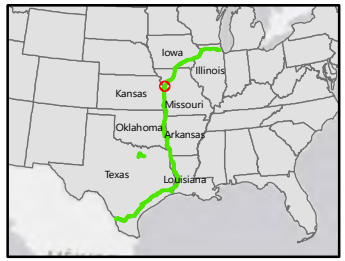
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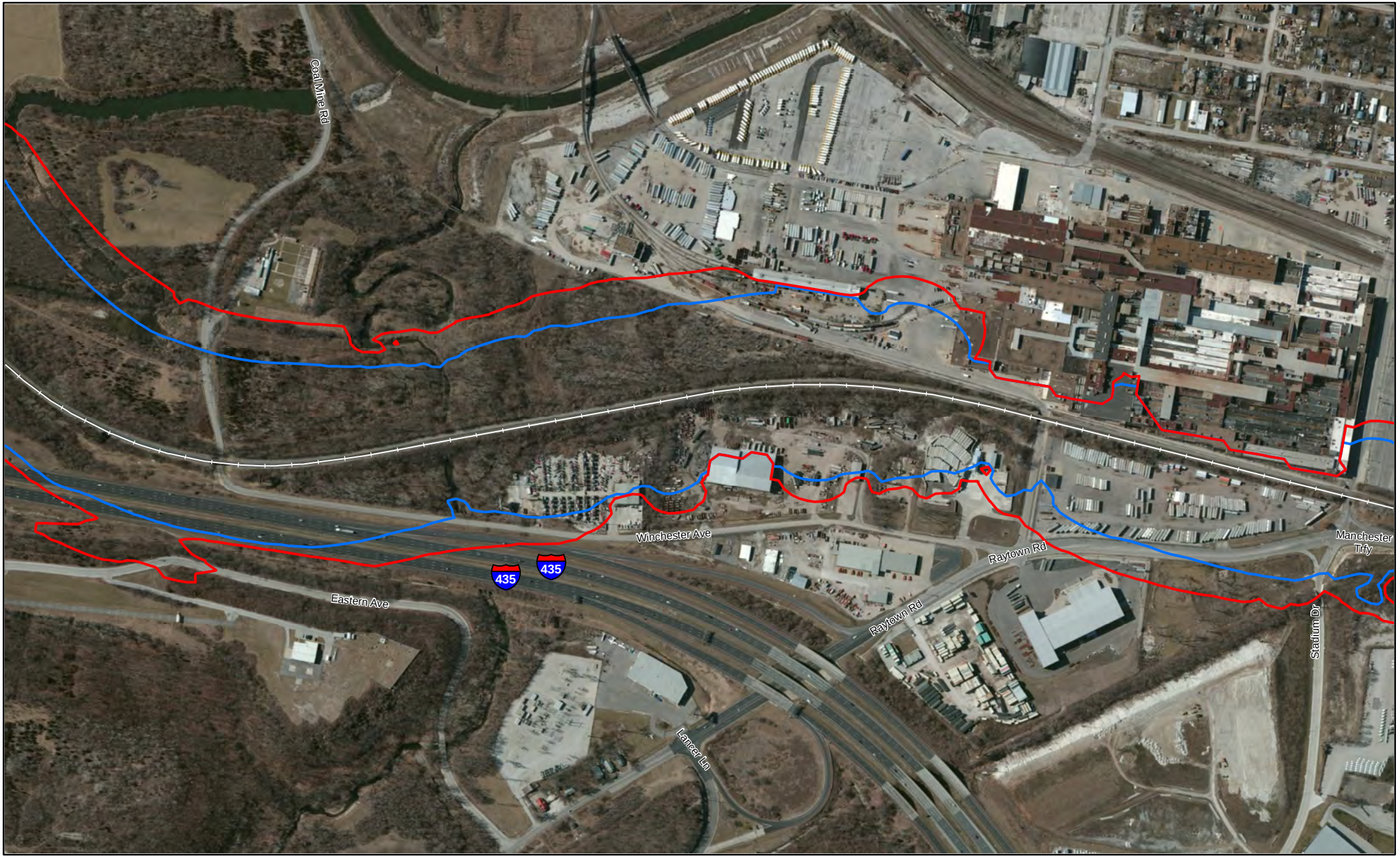
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Noise Contours
Jackson County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



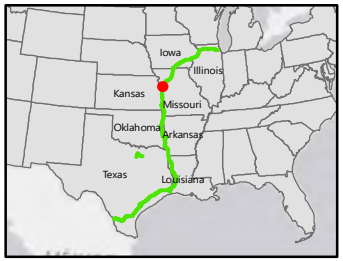
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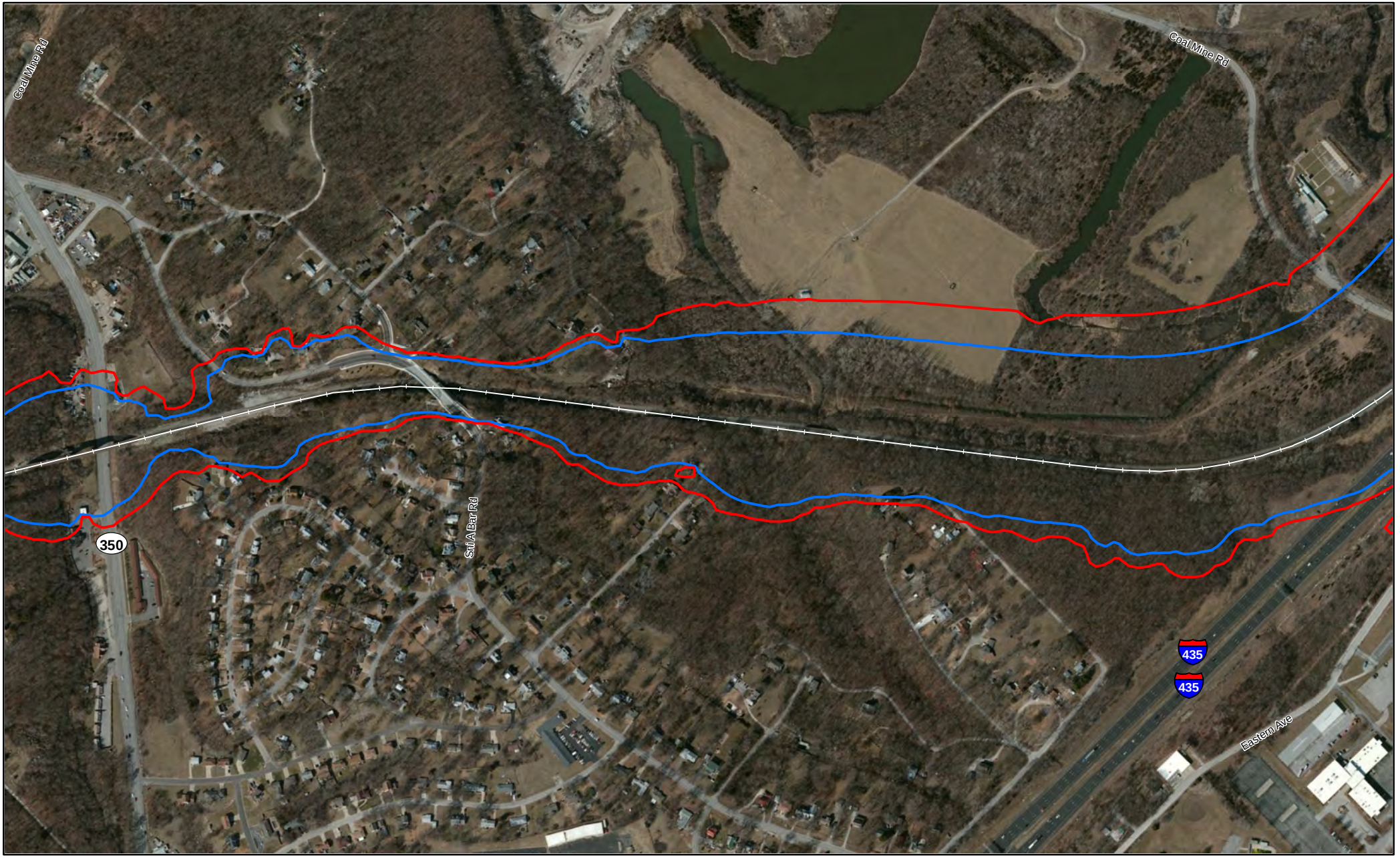
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Noise Contours
Jackson County, MO

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



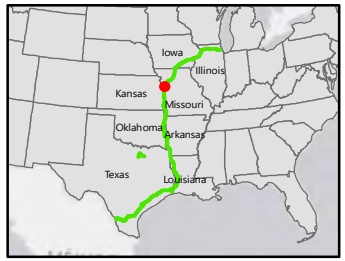
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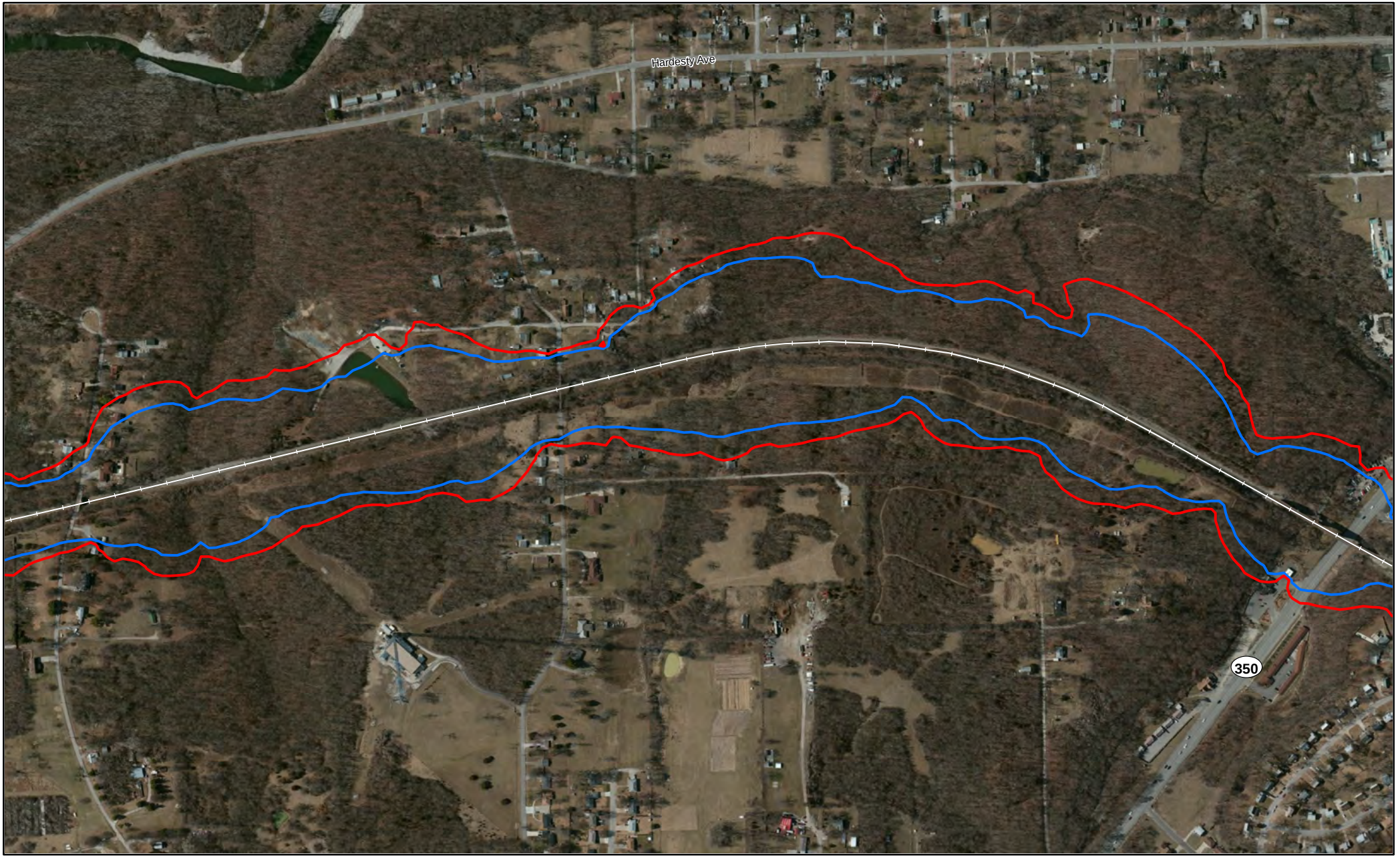
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Noise Contours
Jackson County, MO

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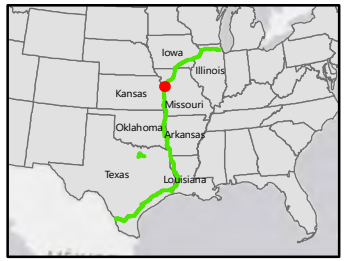
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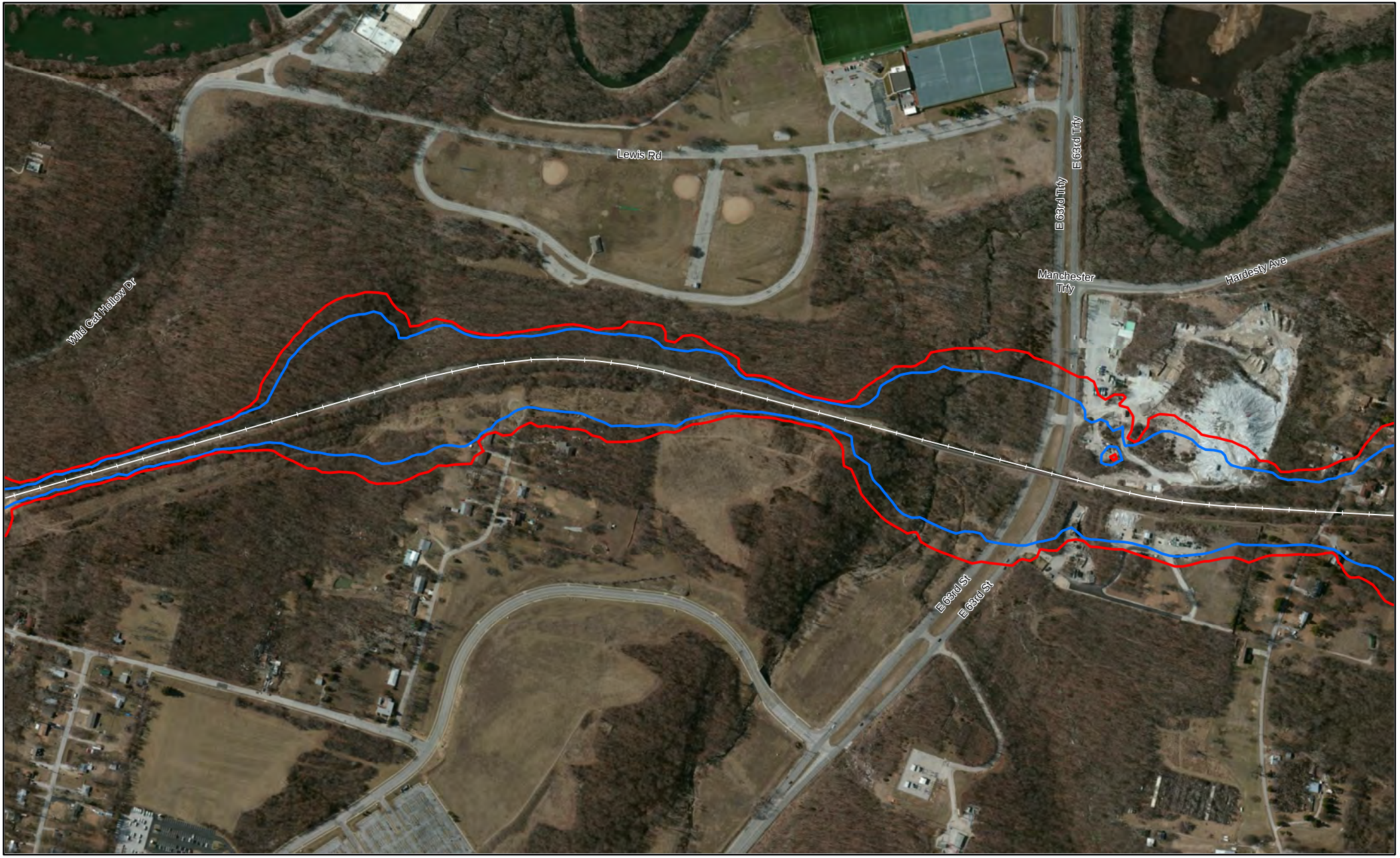
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Noise Contours
Jackson County, MO

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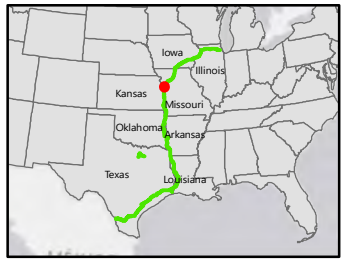
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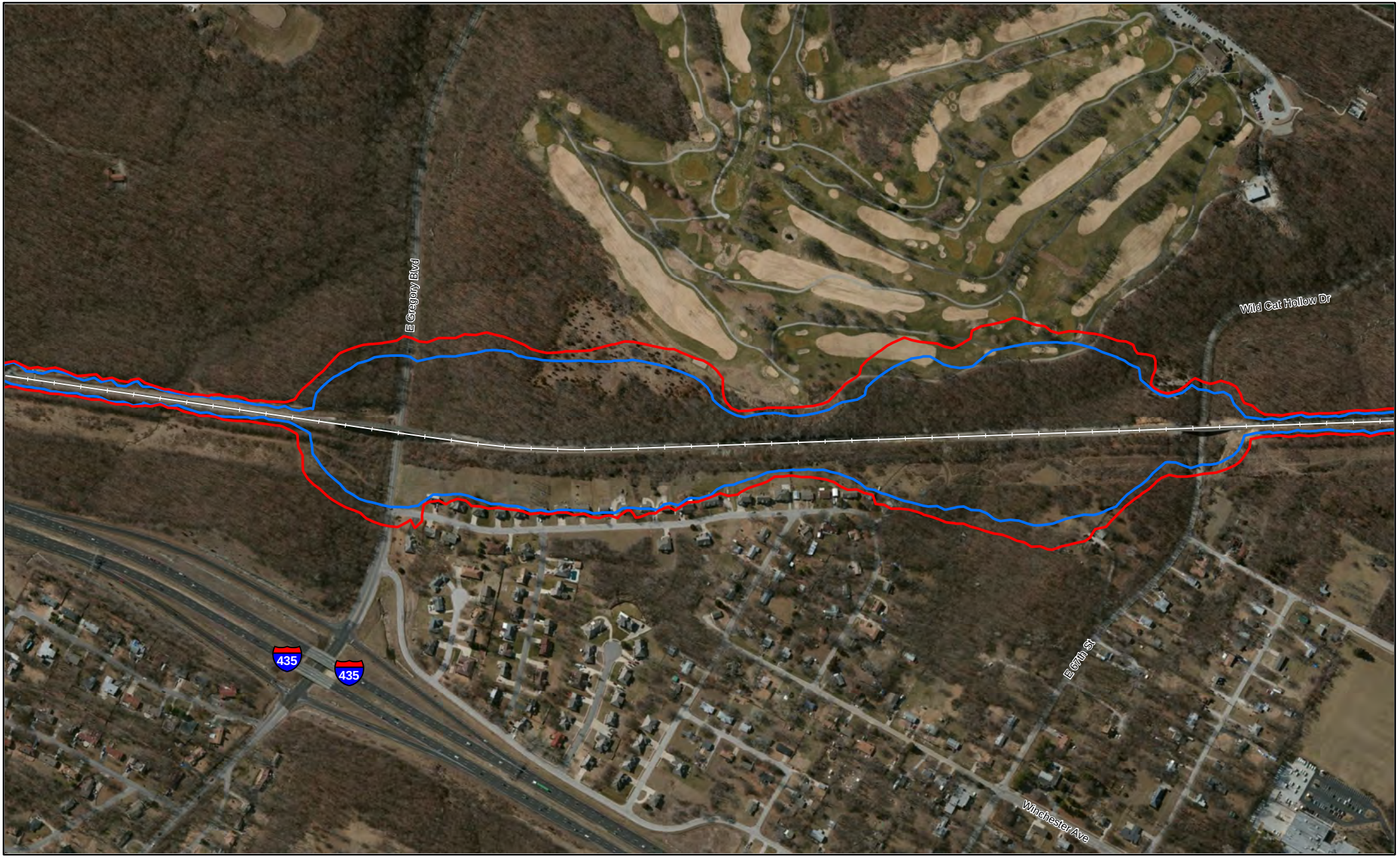
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Jackson County, MO

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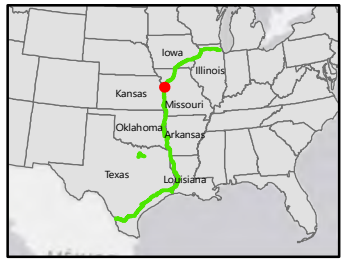
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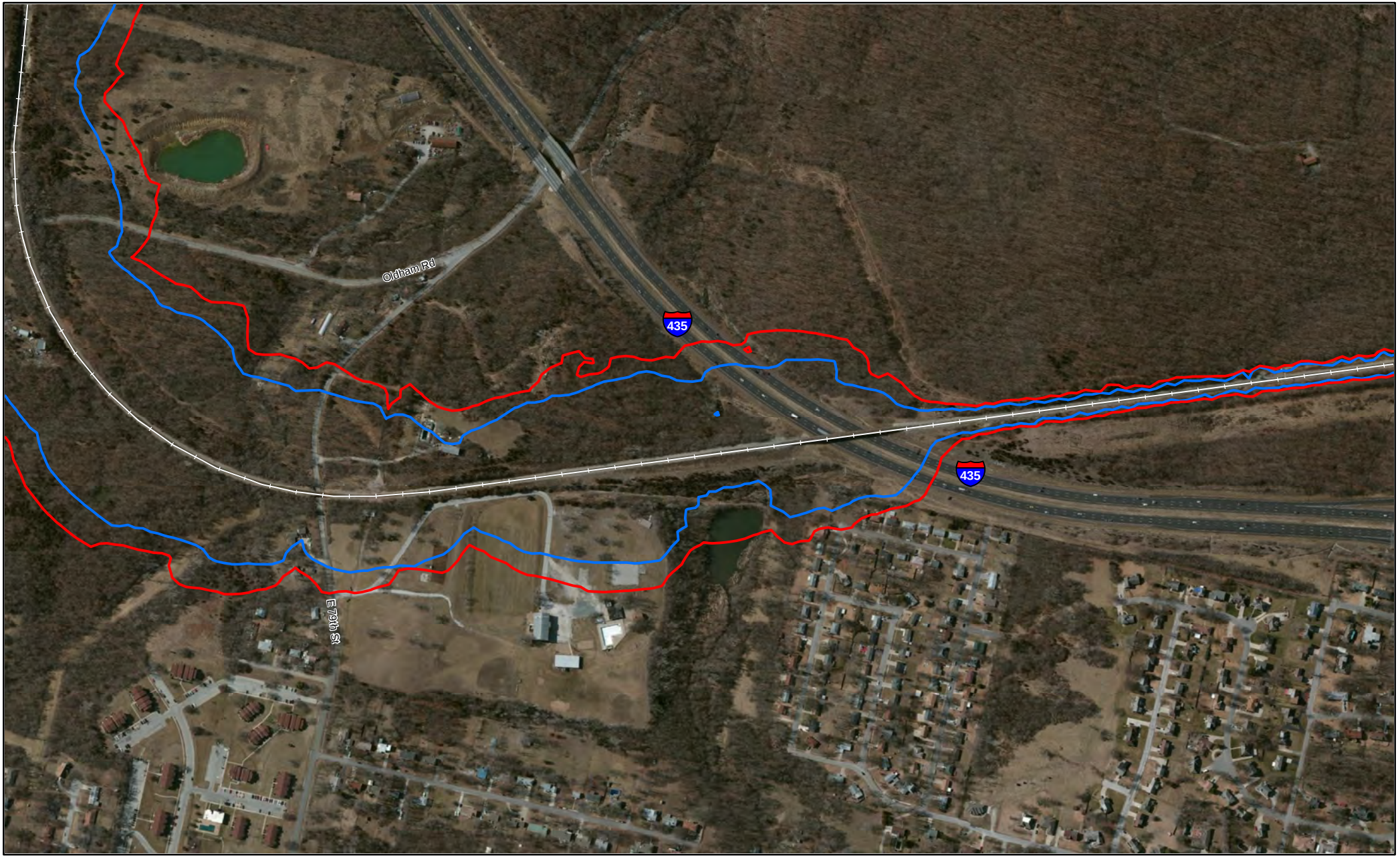
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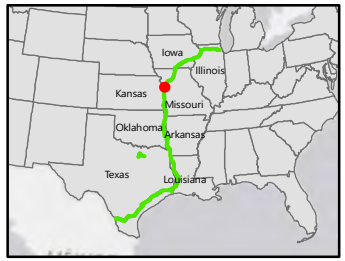
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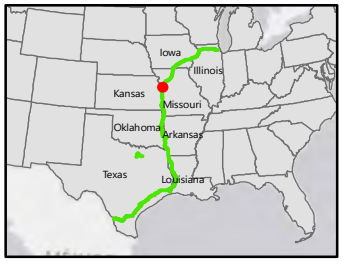
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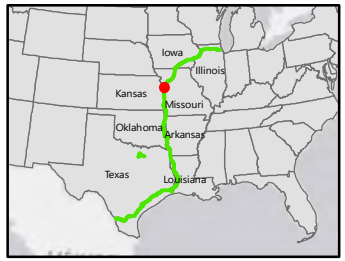
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Jackson County, MO

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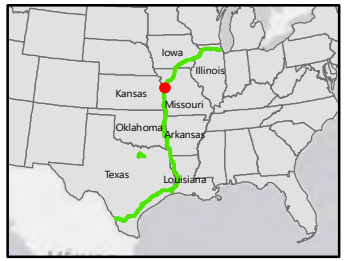
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Jackson County, MO

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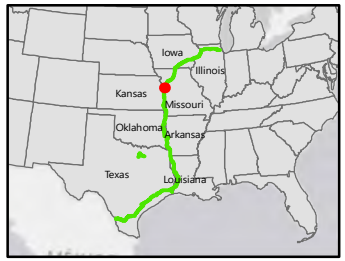
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Noise Contours
Jackson County, MO

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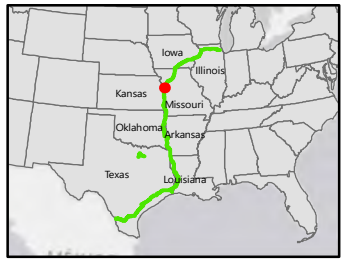
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Jackson County, MO

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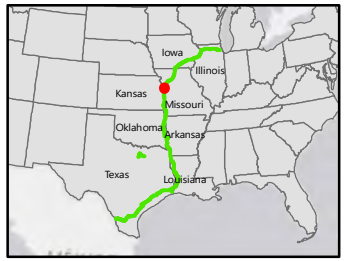
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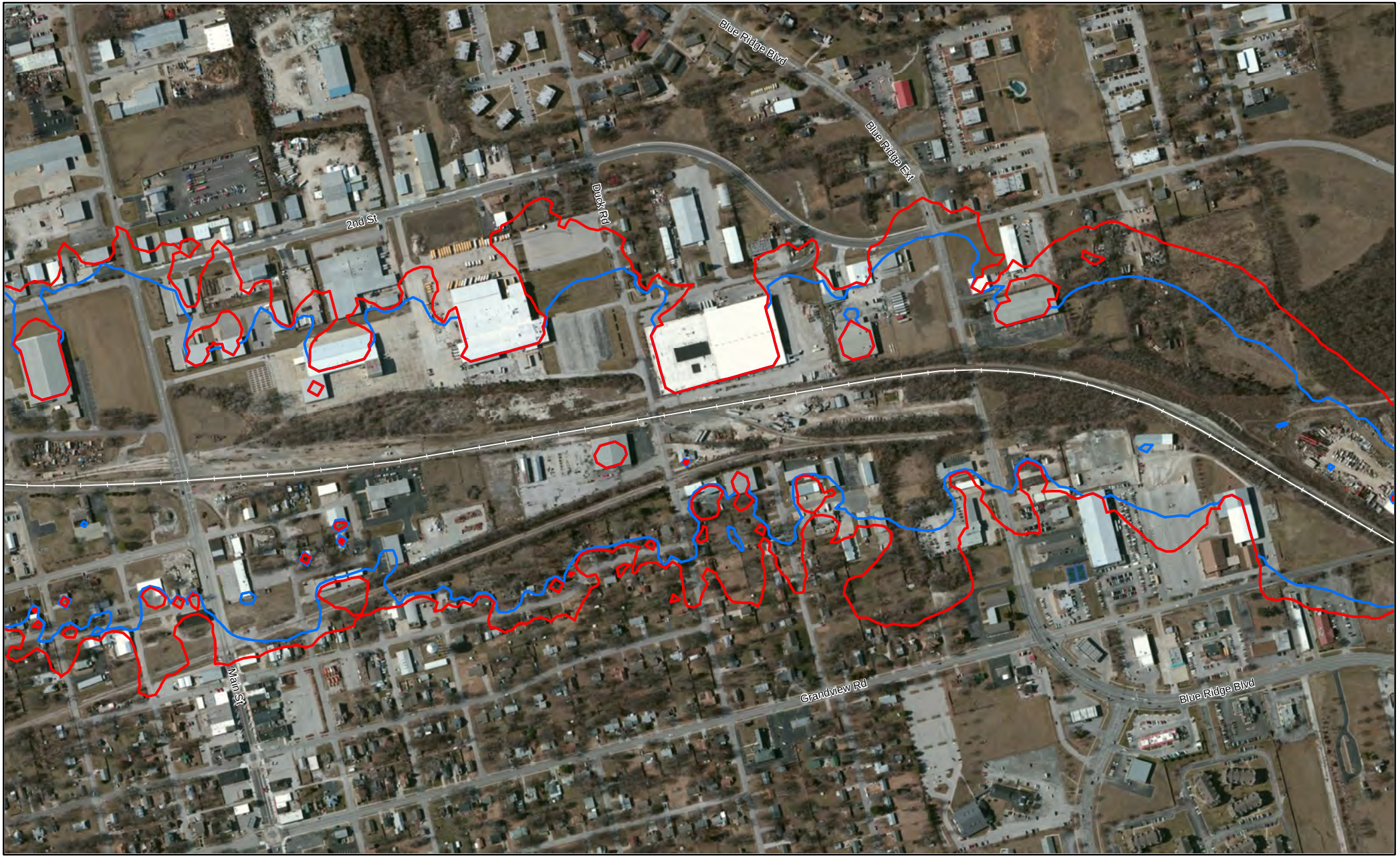
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Noise Contours
Jackson County, MO

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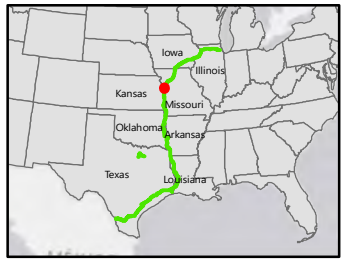
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Noise Contours
Jackson County, MO

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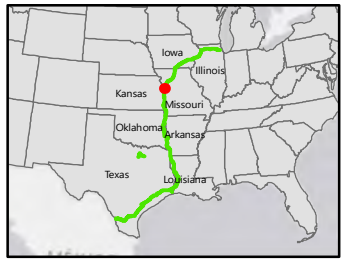
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Noise Contours
Jackson County, MO

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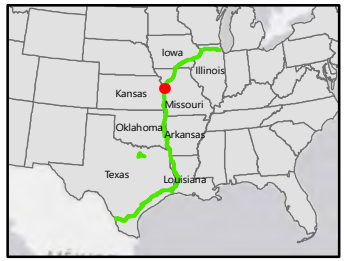
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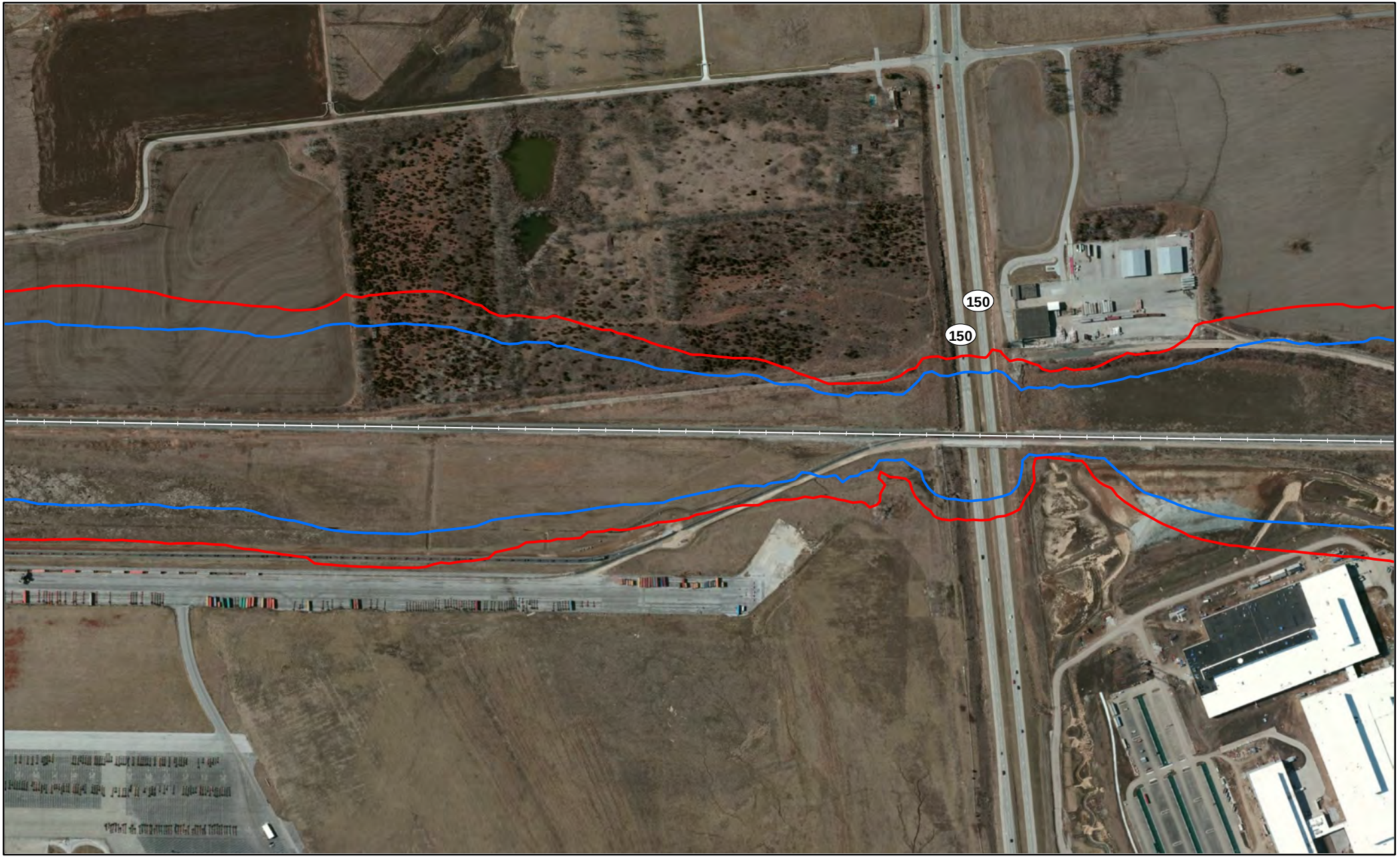
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Noise Contours
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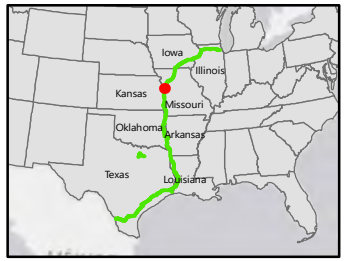
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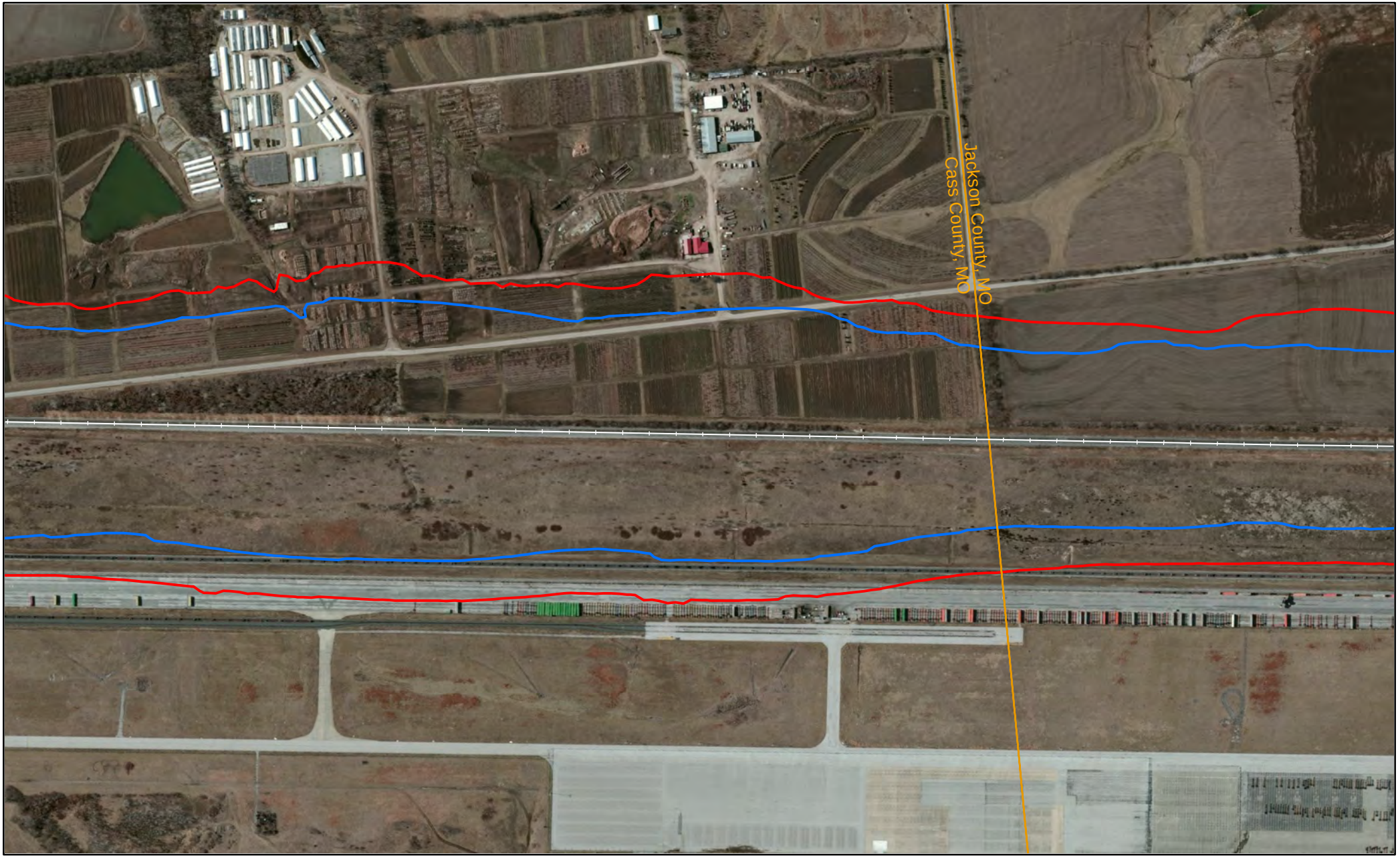
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Noise Contours
Jackson County, MO

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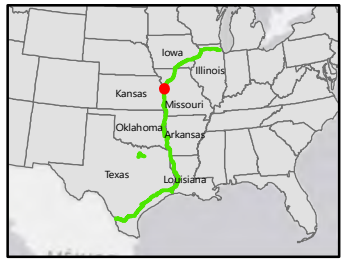
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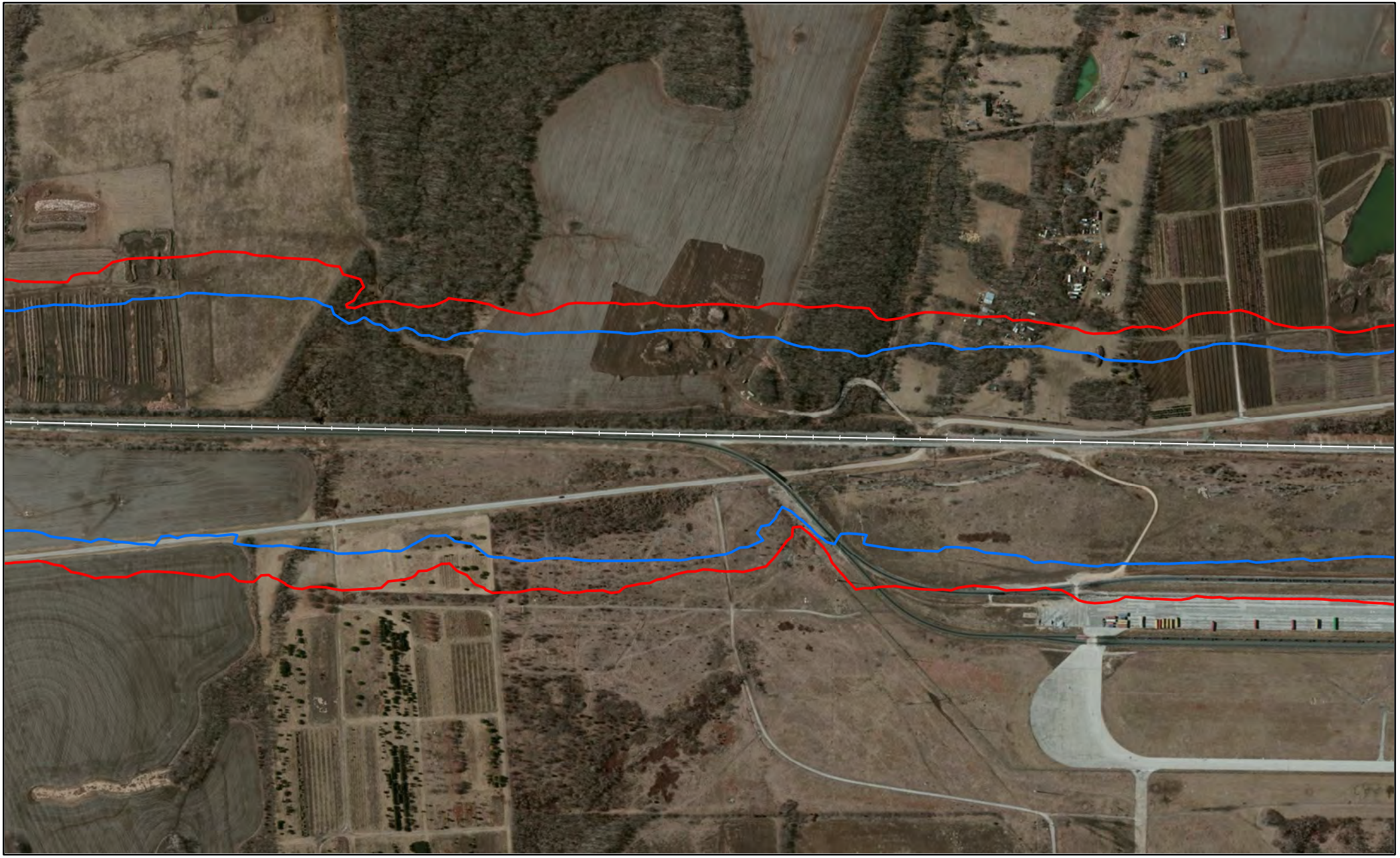
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Jackson County, MO

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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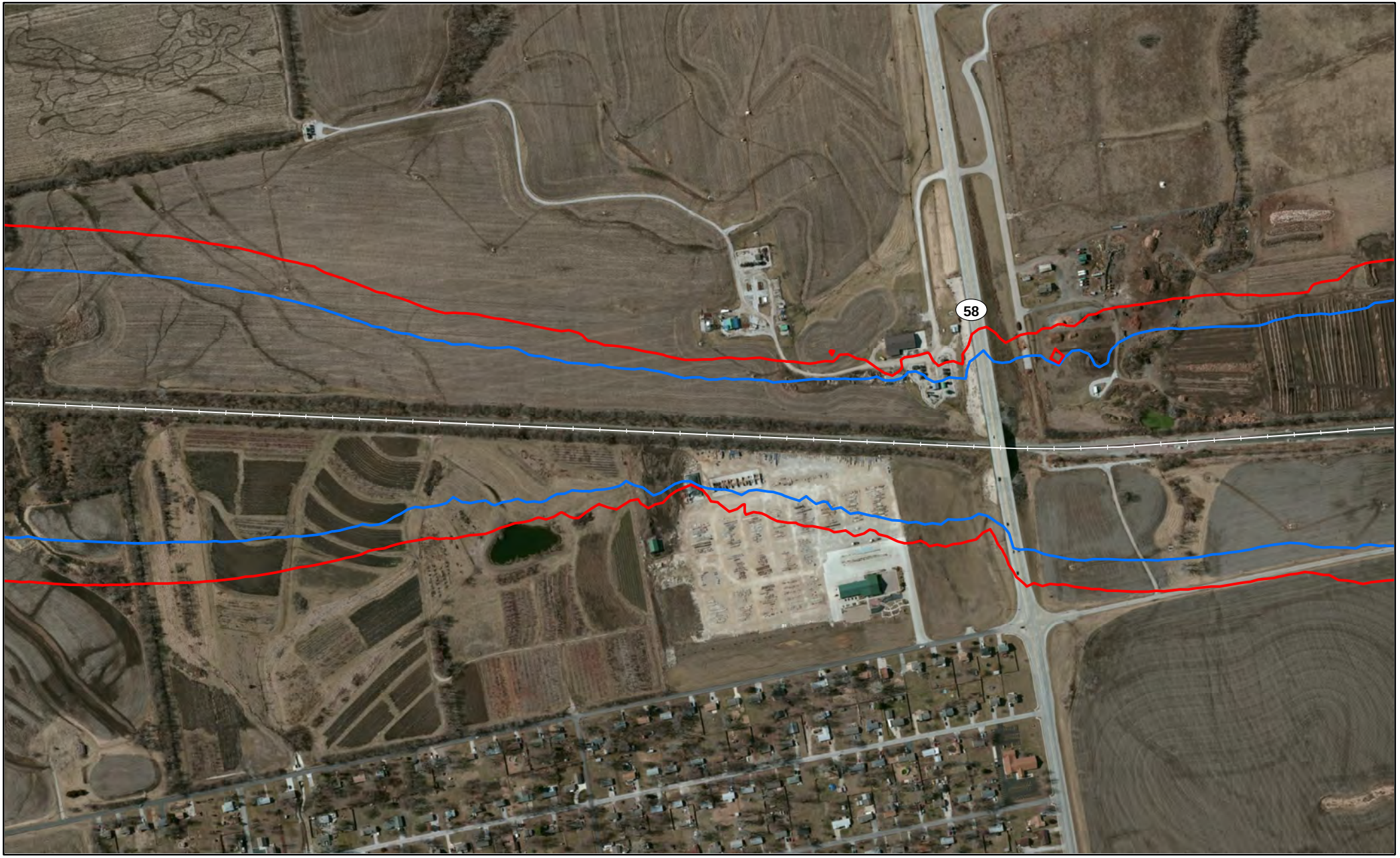
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Noise Contours
Cass County, MO

Miles
0 0.05 0.1



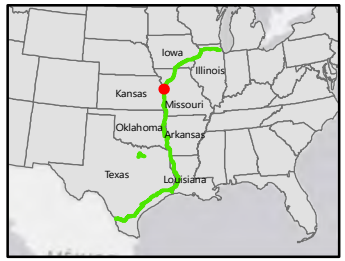
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Noise Contours
Cass County, MO

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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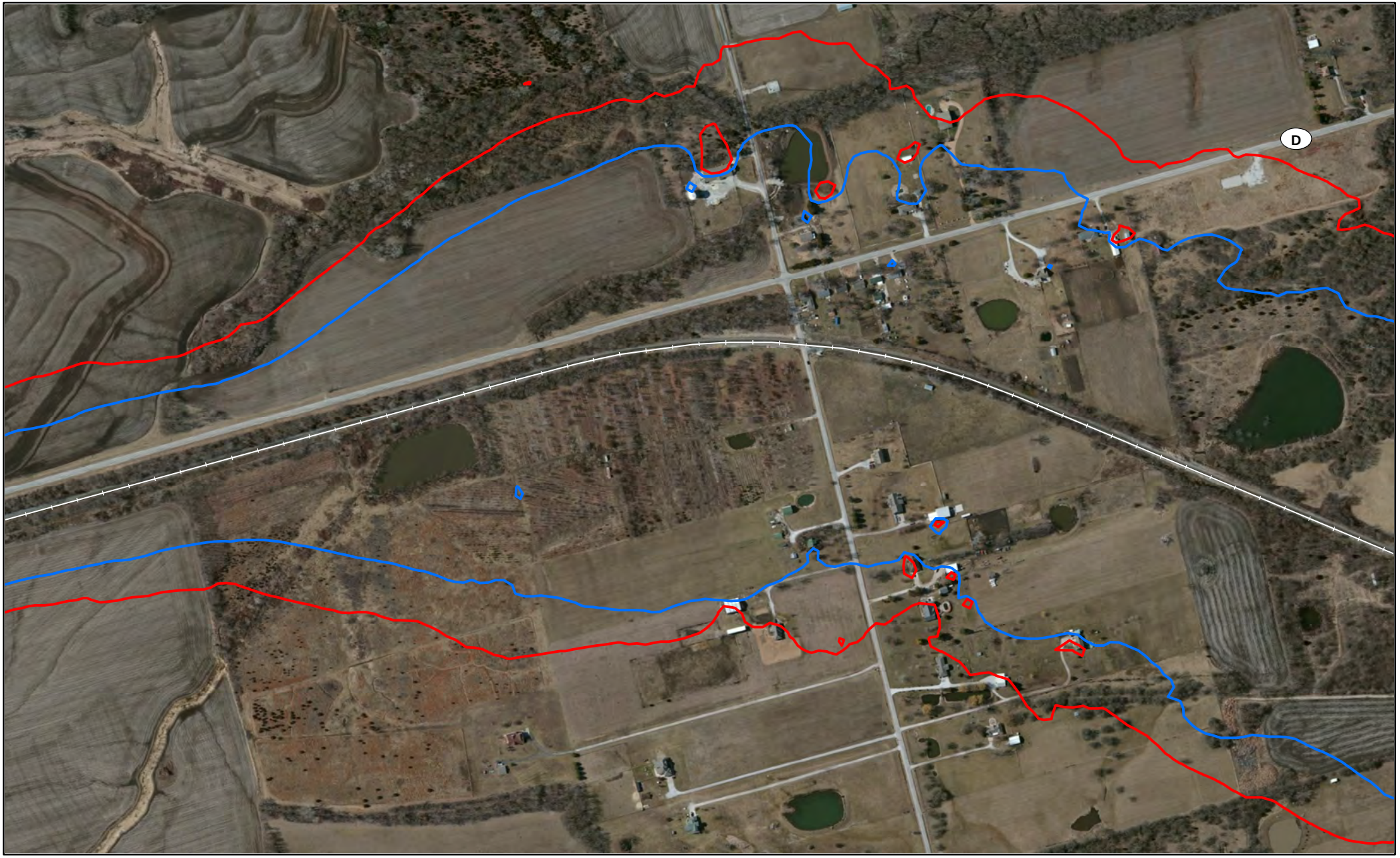
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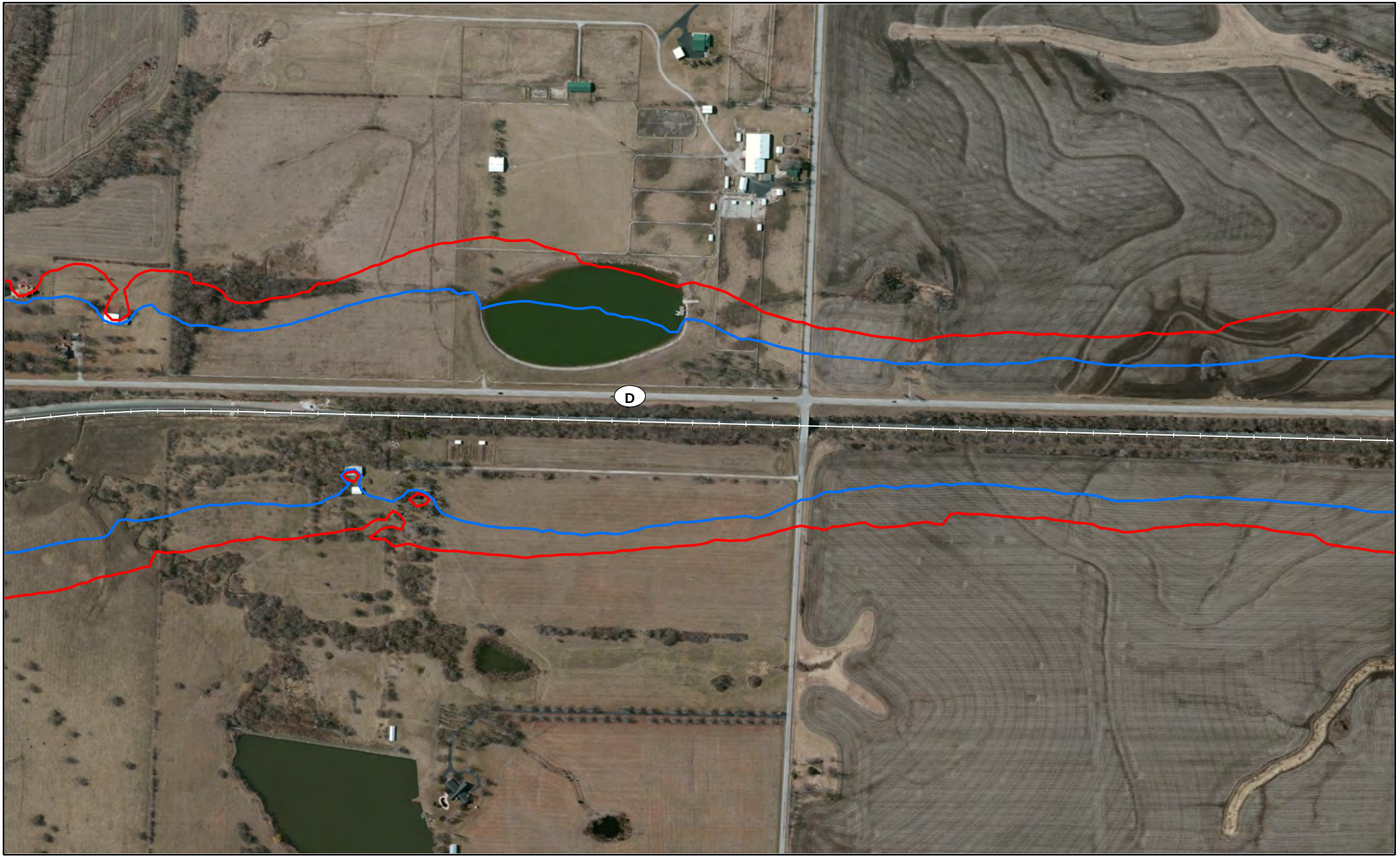
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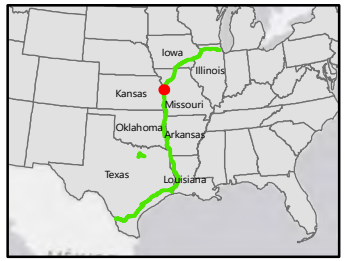
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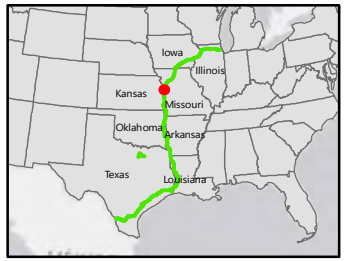
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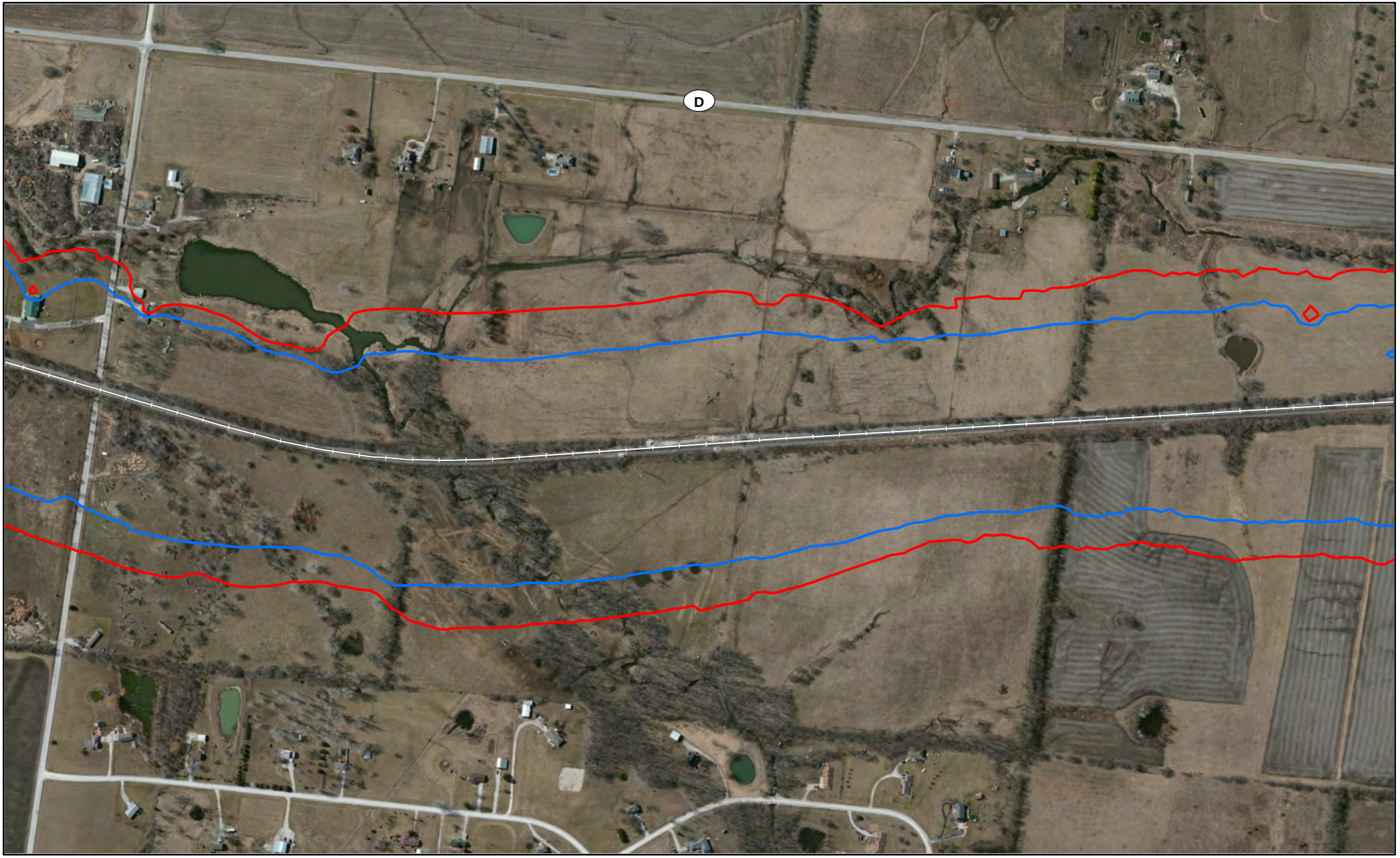
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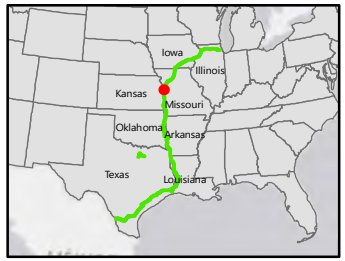
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0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



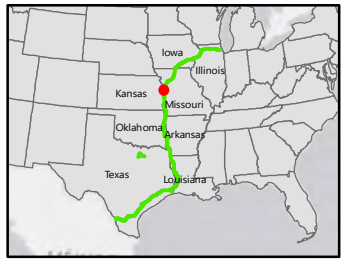
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

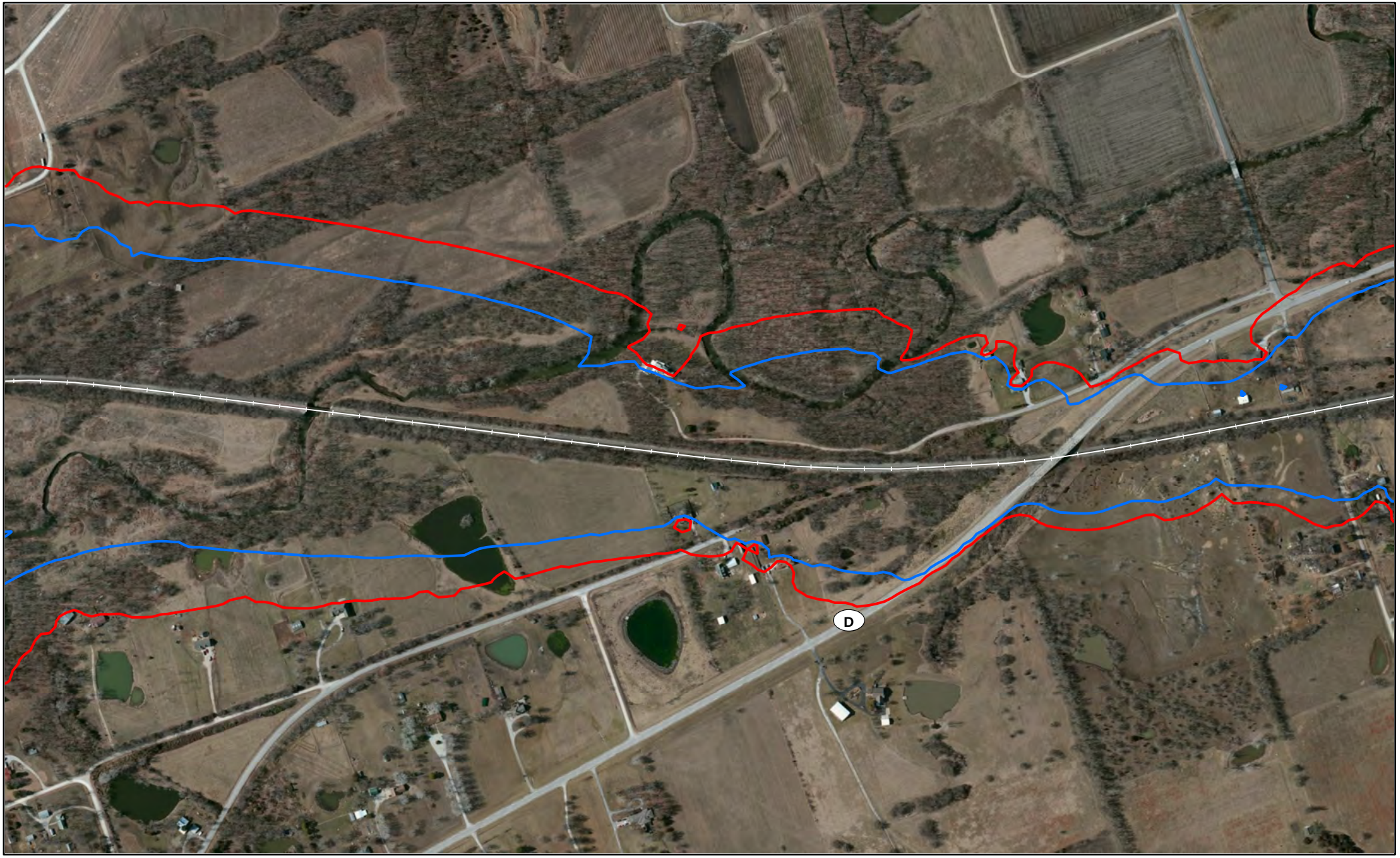
Source: ESRI.



Noise Contours
Cass County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



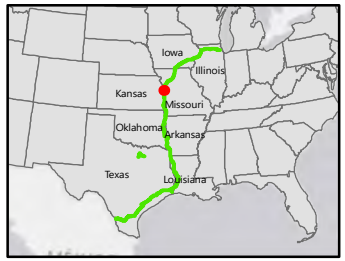
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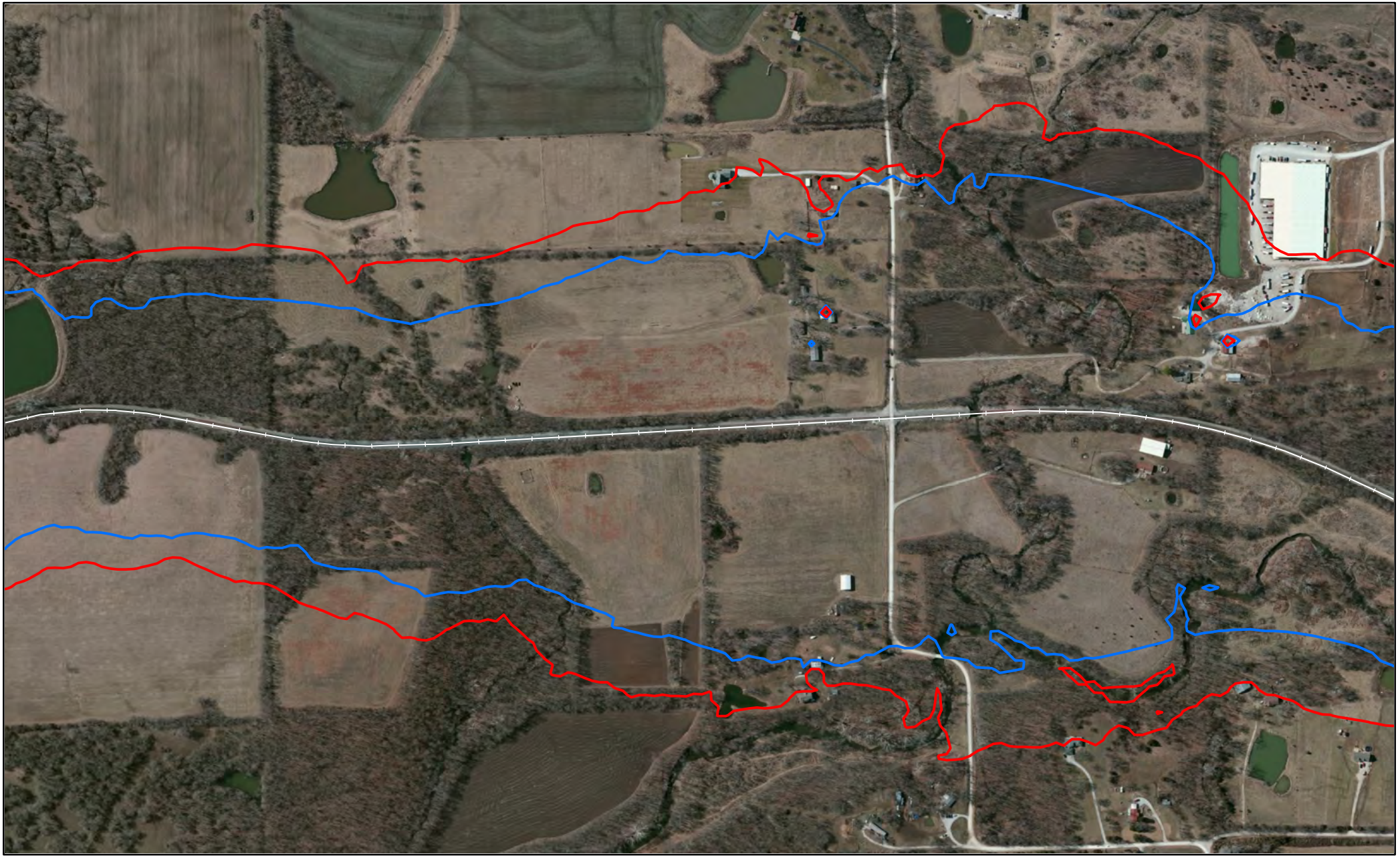
Source: ESRI.



Noise Contours
Cass County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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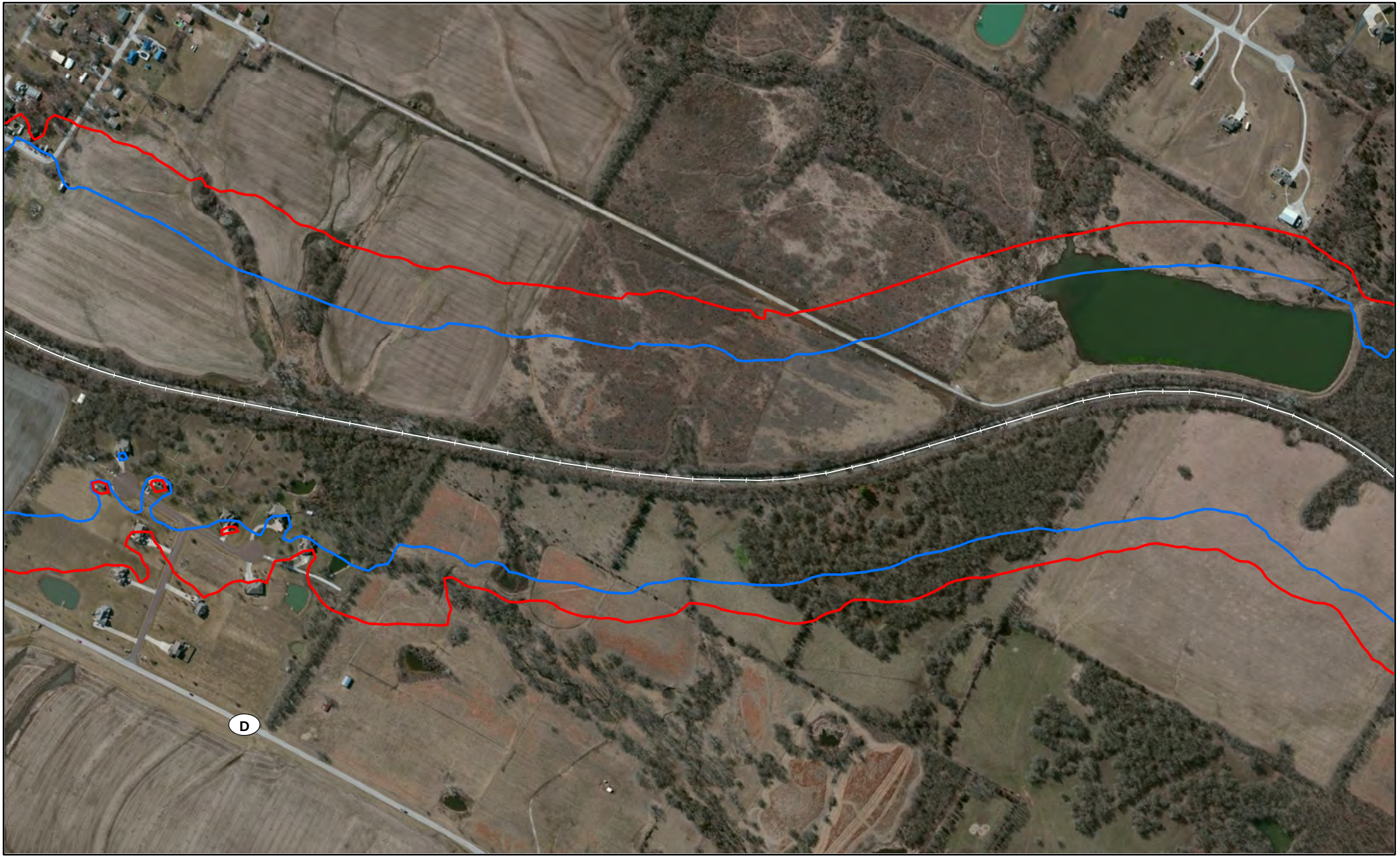
Tracks

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Noise Contours
Cass County, MO

Miles
0 0.05 0.1



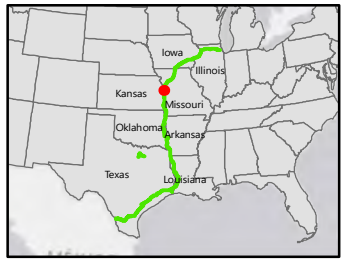
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Noise Contours
Cass County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



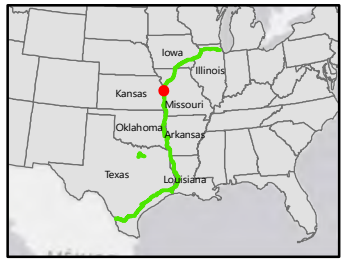
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Noise Contours
Cass County, MO

Miles
0 0.05 0.1



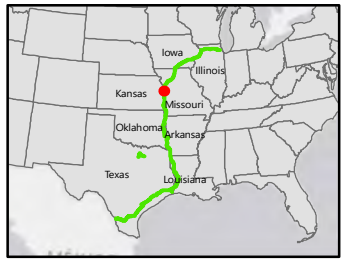
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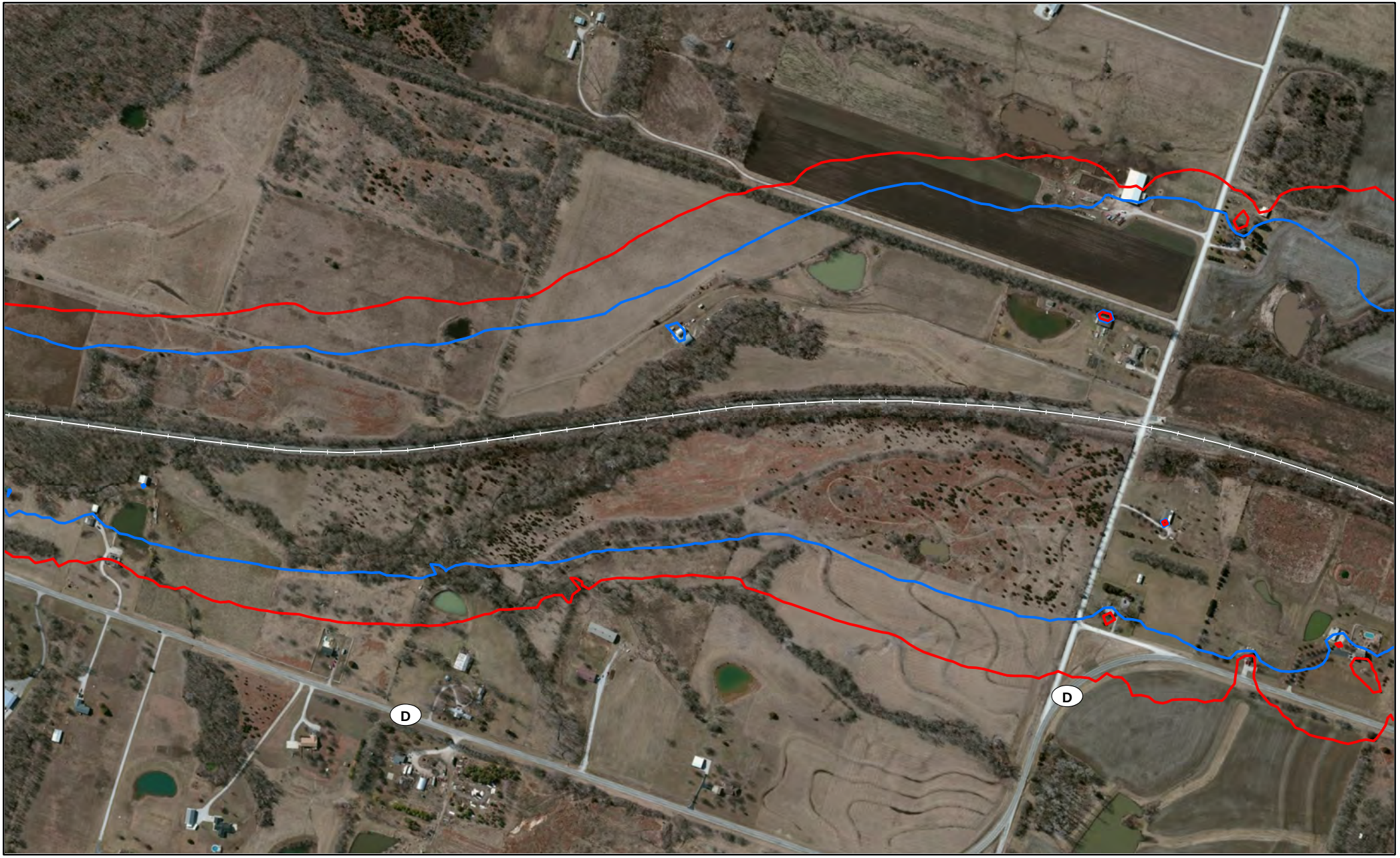
Tracks

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Noise Contours
Cass County, MO

Miles
0 0.05 0.1



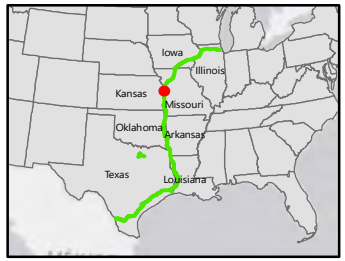
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Noise Contours
Cass County, MO

Miles
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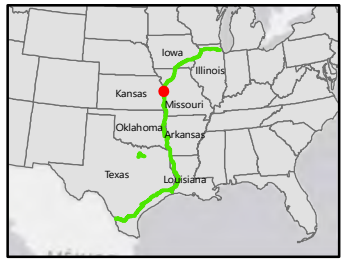
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Noise Contours
Cass County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



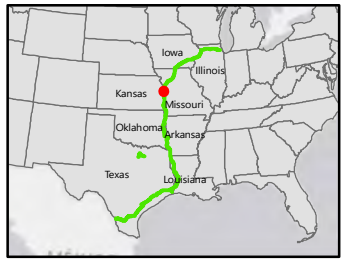
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Noise Contours
Cass County, MO

Miles
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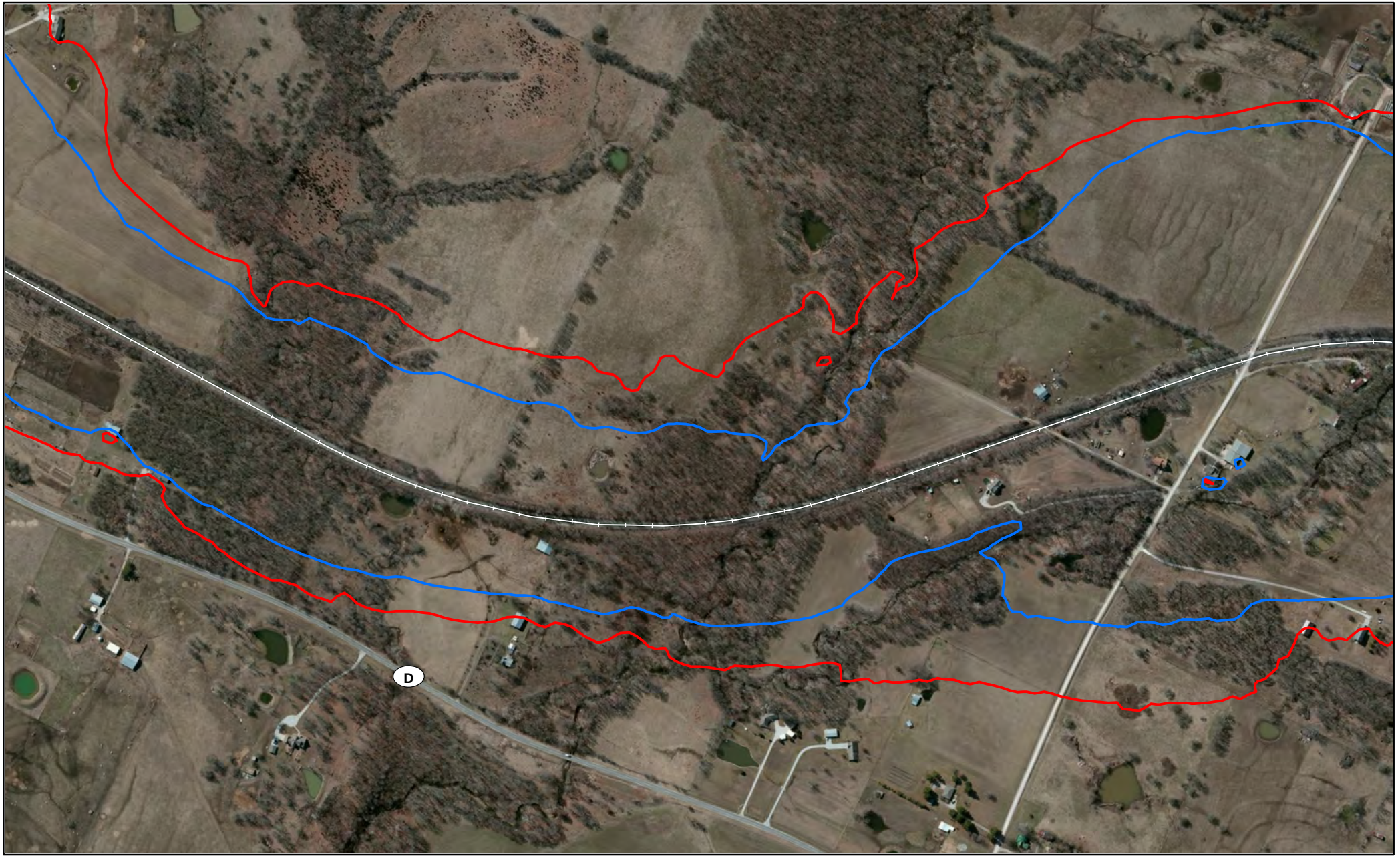
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Noise Contours
Cass County, MO

Miles
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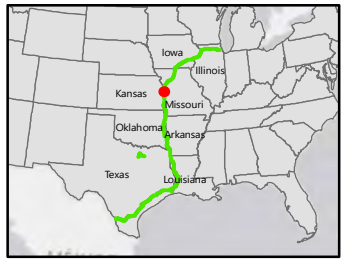
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Cass County, MO

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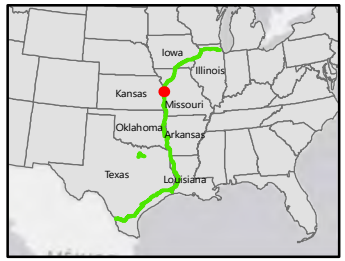
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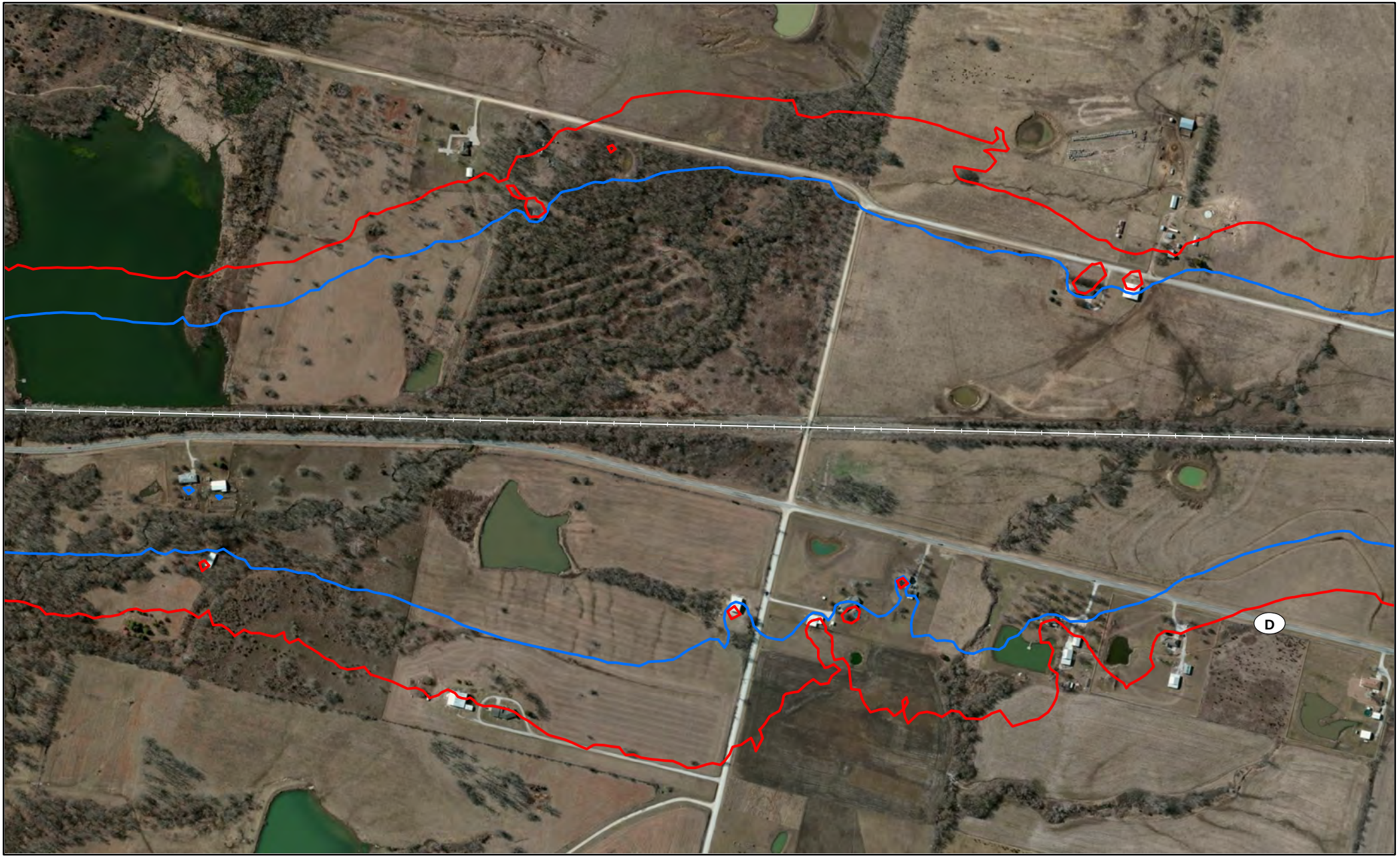
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Noise Contours
Cass County, MO

Miles
0 0.05 0.1

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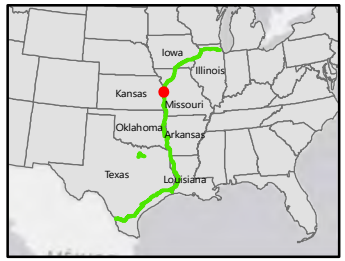
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Noise Contours
Cass County, MO

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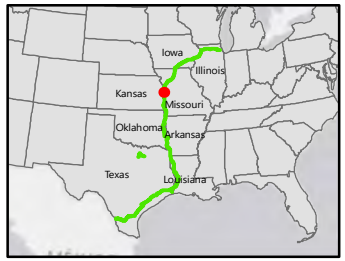
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Noise Contours
Cass County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



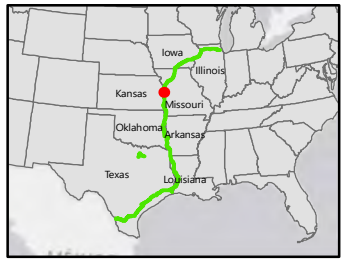
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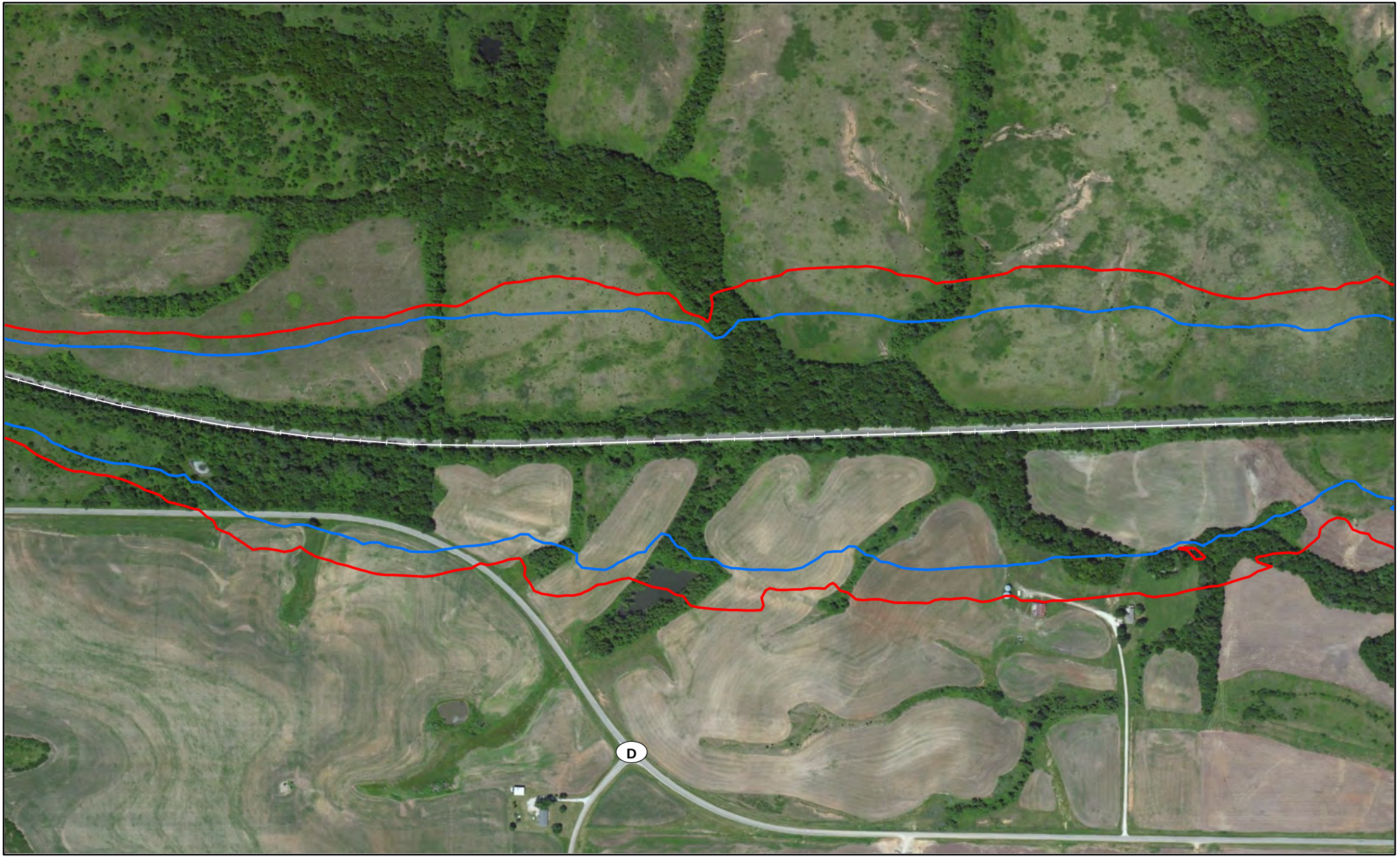
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Noise Contours
Cass County, MO

Miles
0 0.05 0.1



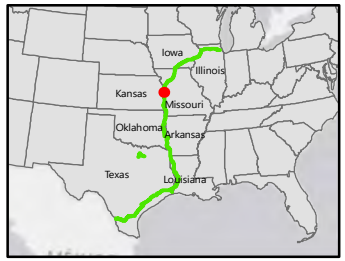
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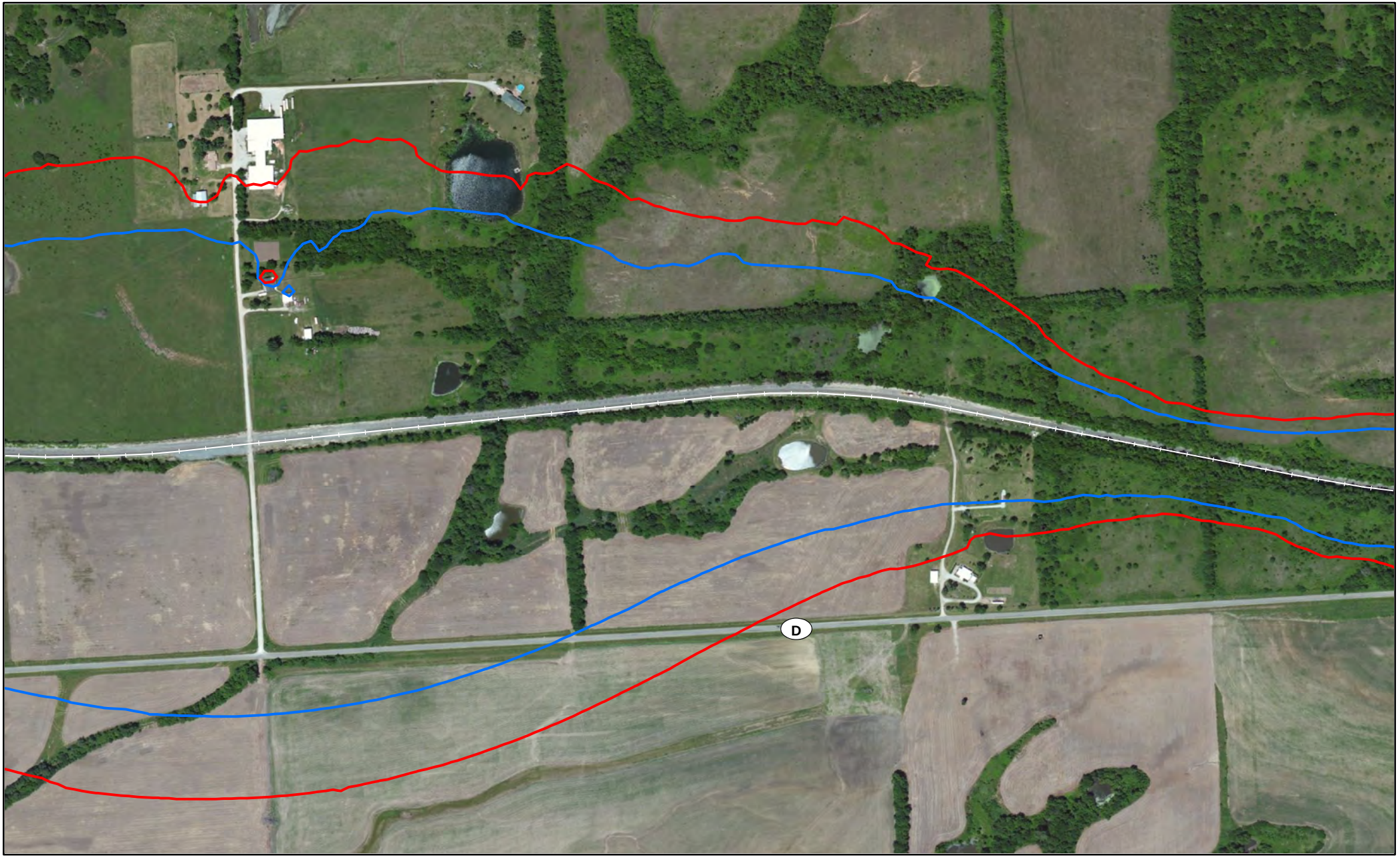
Tracks

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Noise Contours
Cass County, MO

Miles
0 0.05 0.1



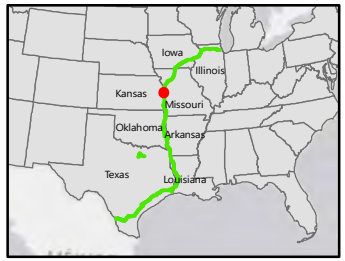
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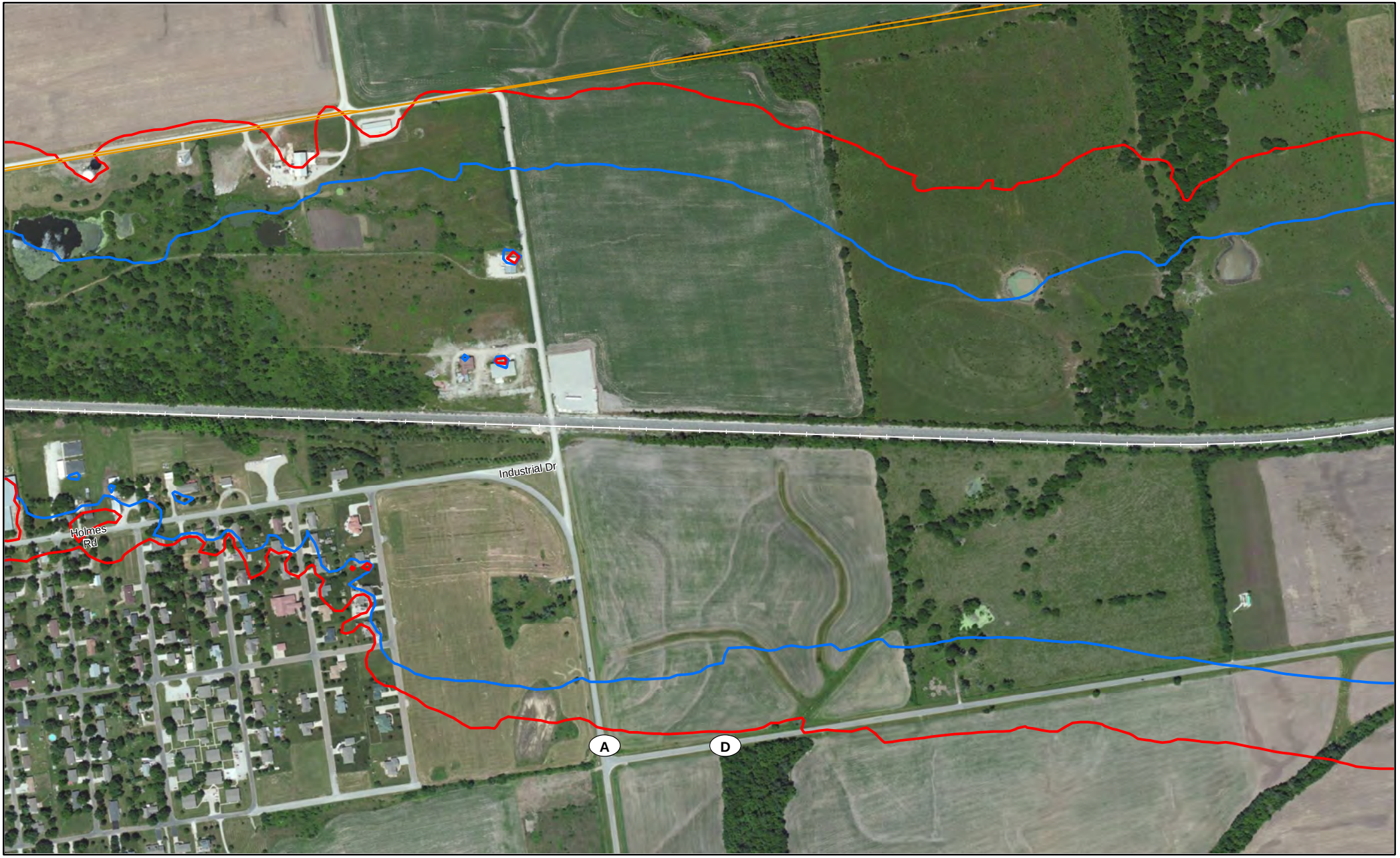
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Noise Contours
Cass County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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Tracks

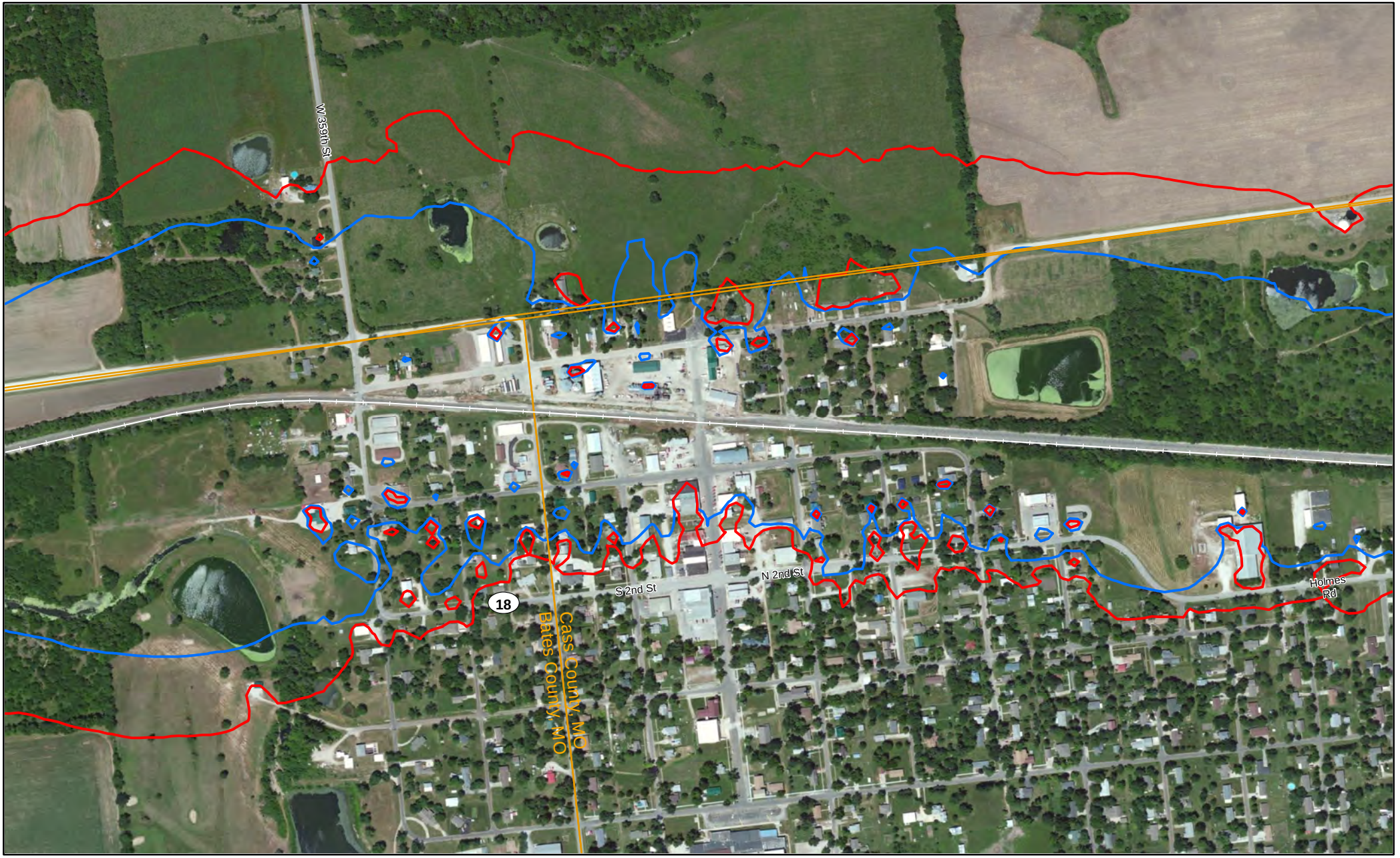
Source: ESRI.



Noise Contours
Miami County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



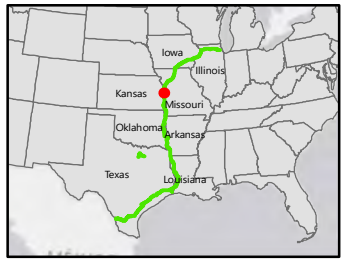
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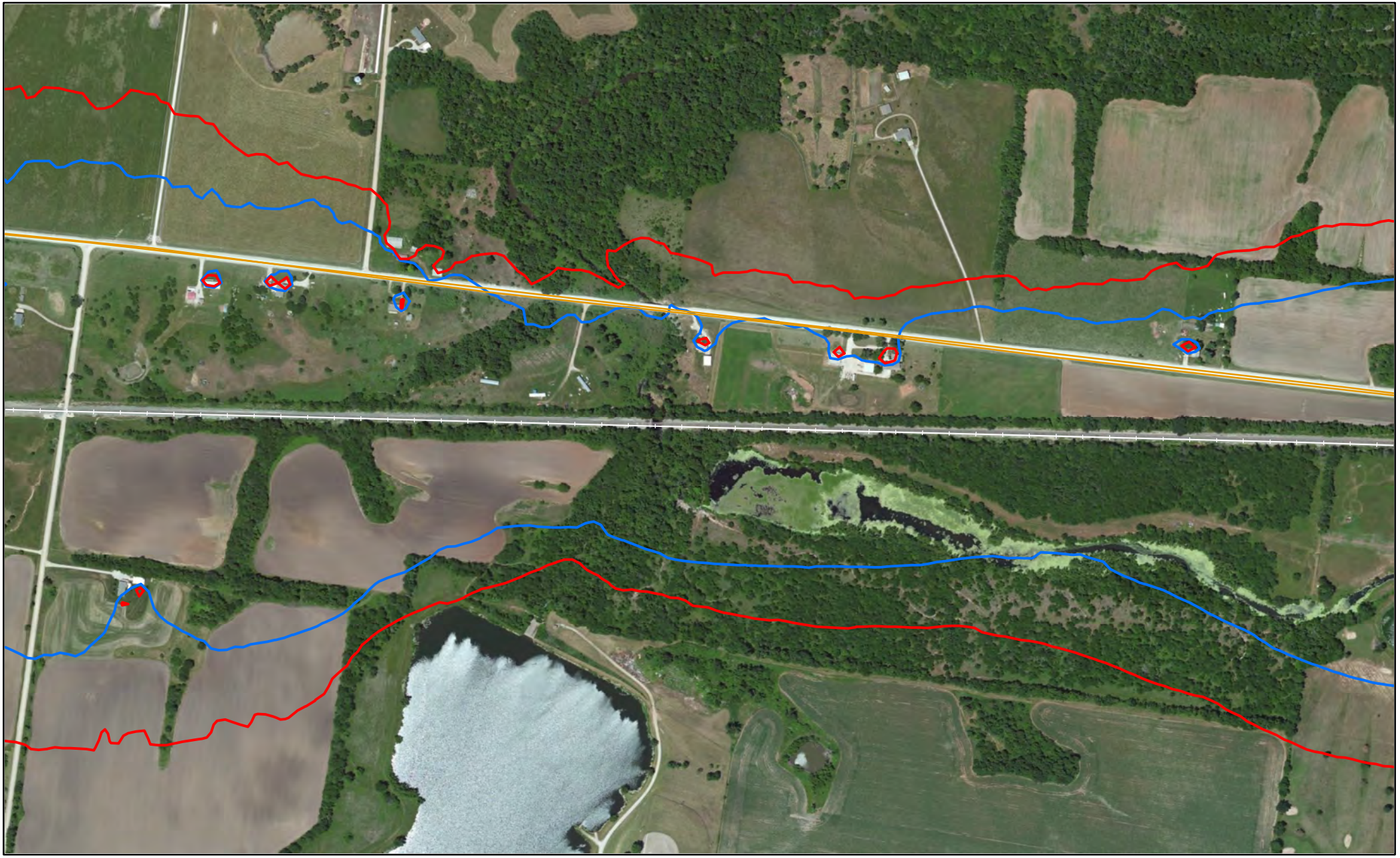
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Noise Contours
Miami County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Miami County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

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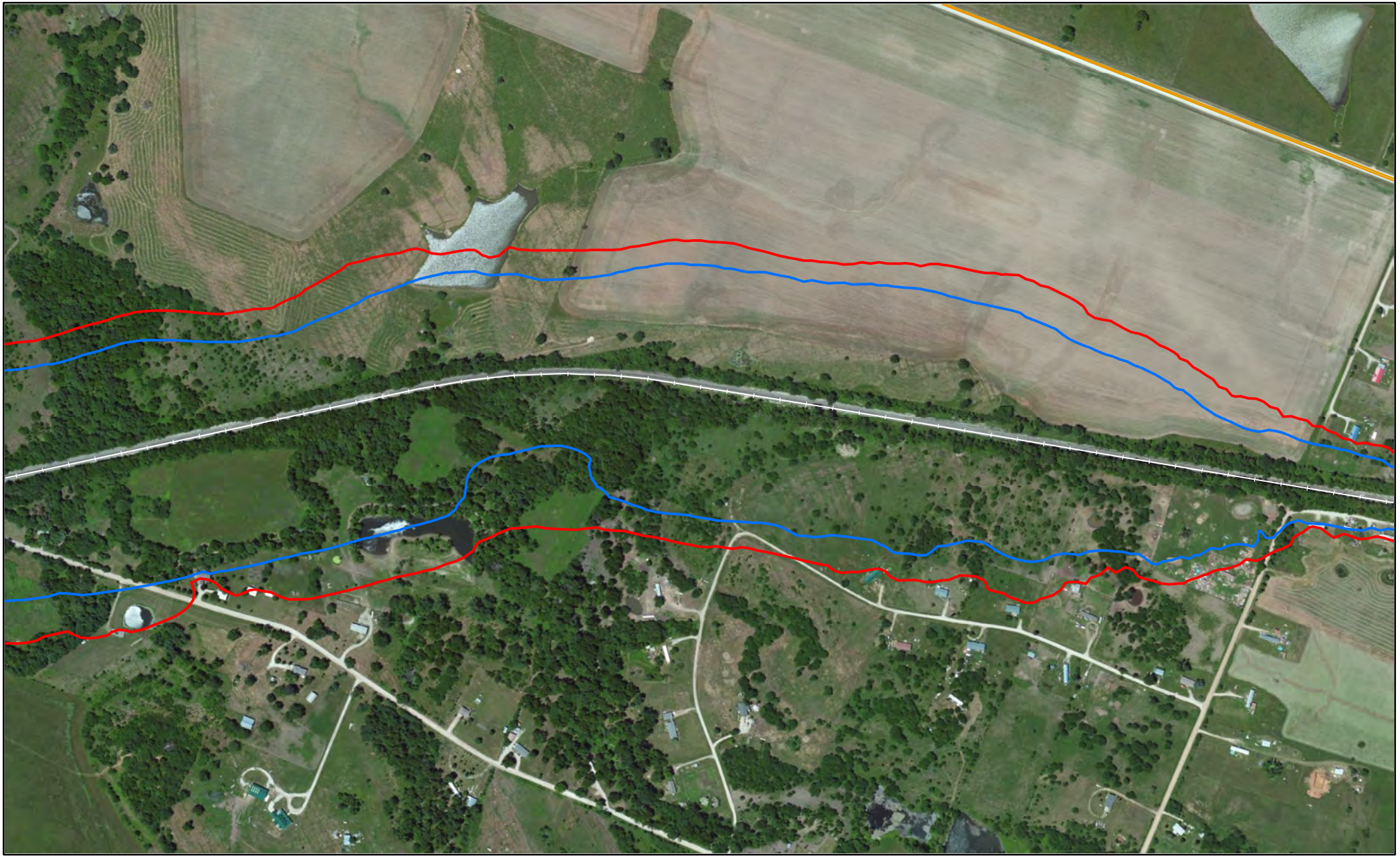


Noise Contours
Miami County, KS

Page 532 of 1588

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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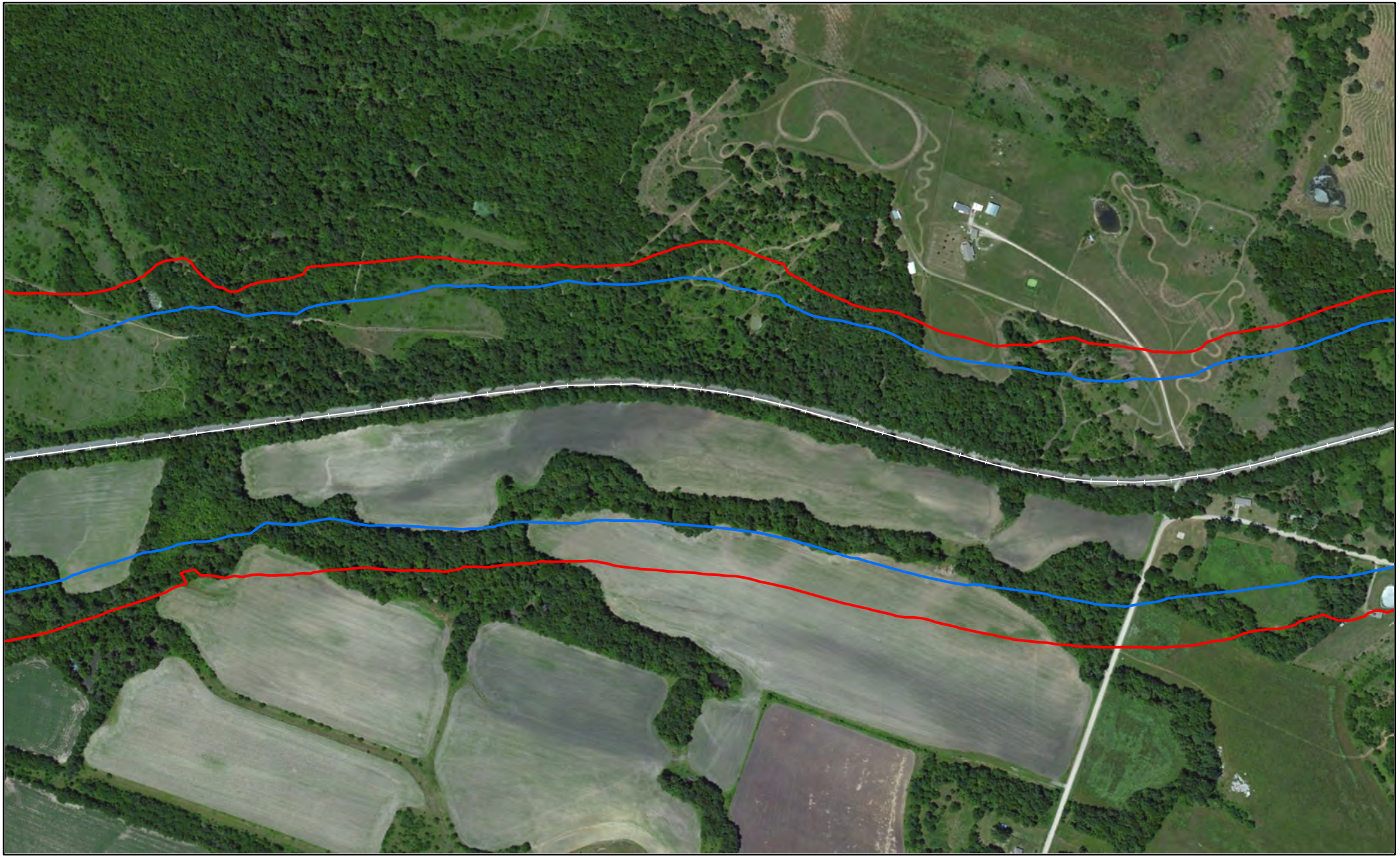
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Noise Contours
Miami County, KS

Miles
0 0.05 0.1



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Noise Contours
Bates County, MO

Miles
0 0.05 0.1



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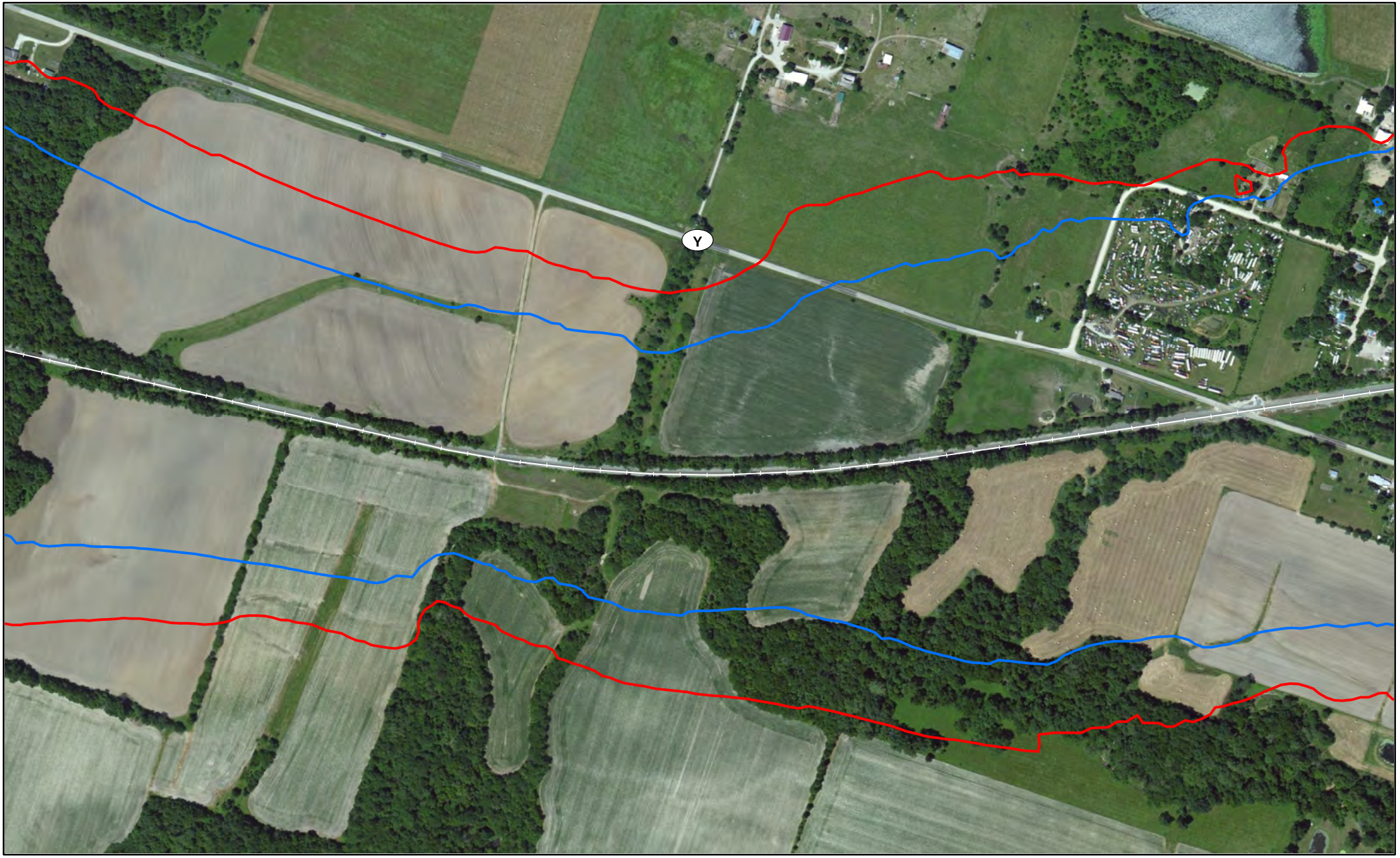
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Noise Contours
Bates County, MO

Miles
0 0.05 0.1



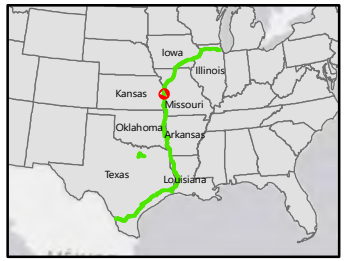
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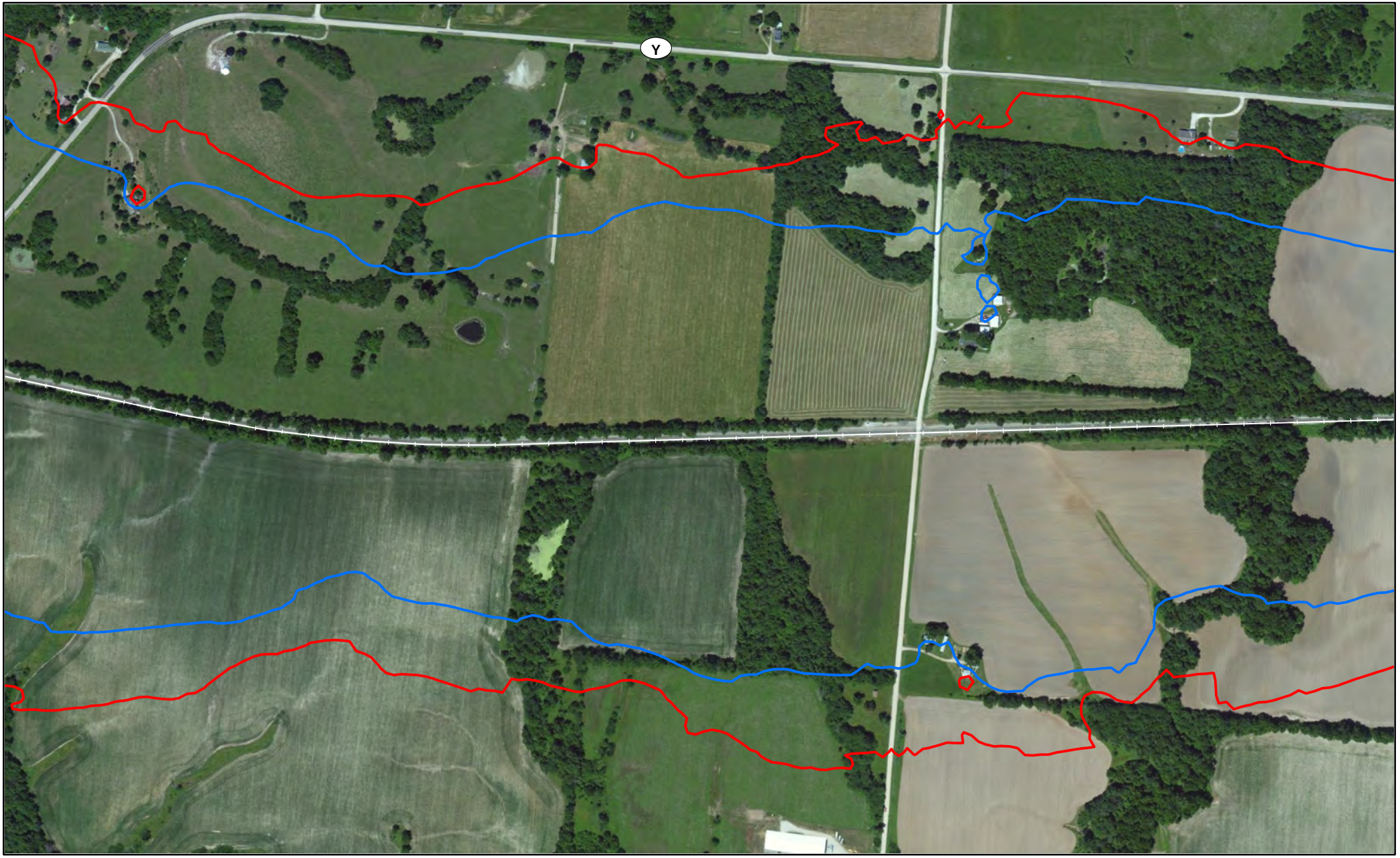
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Noise Contours
Bates County, MO

Miles
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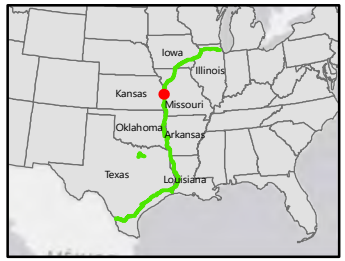
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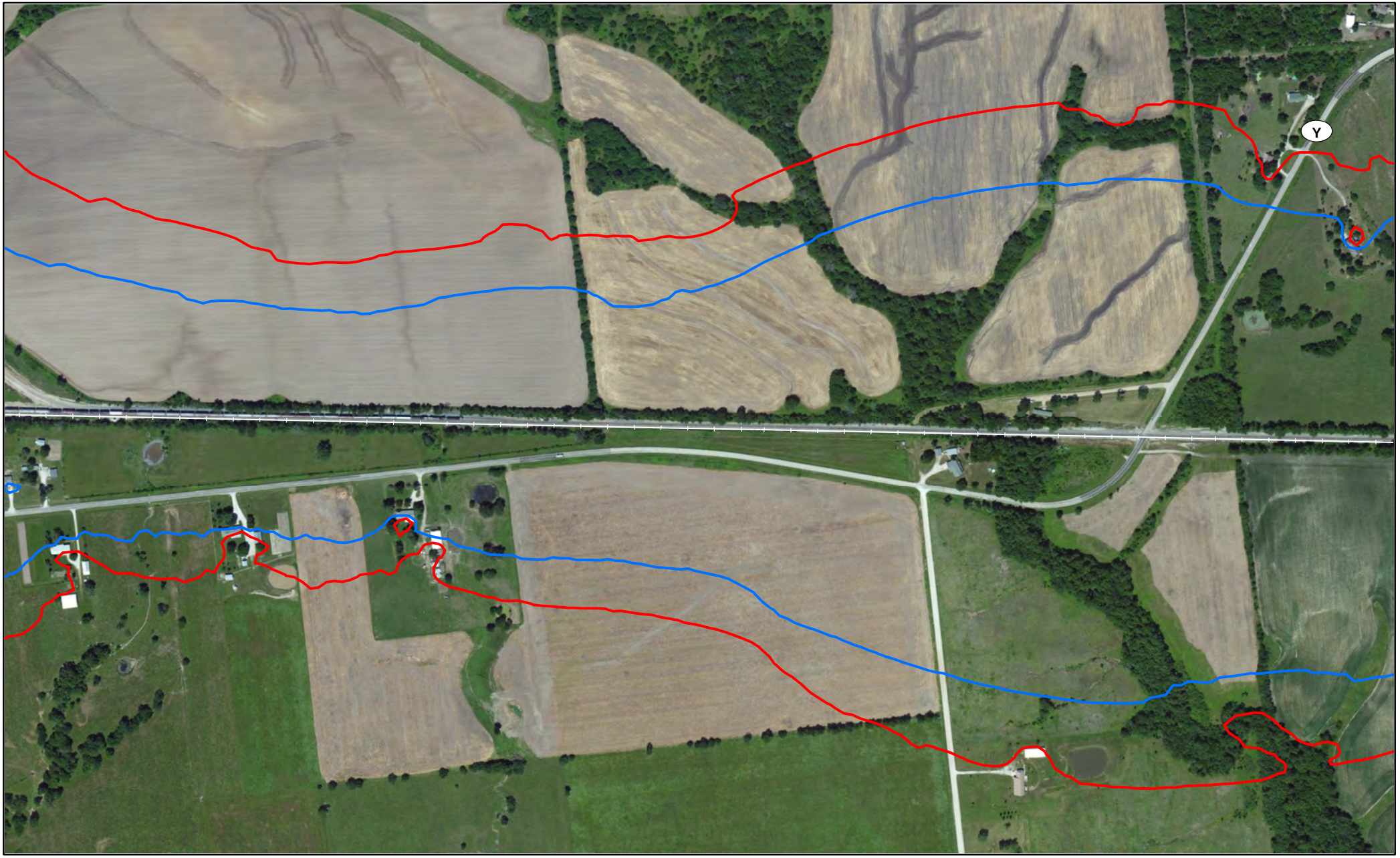
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Noise Contours
Bates County, MO

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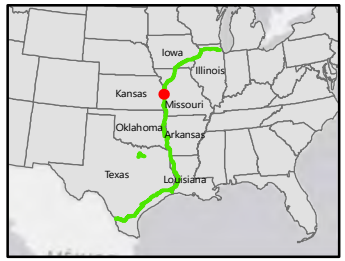
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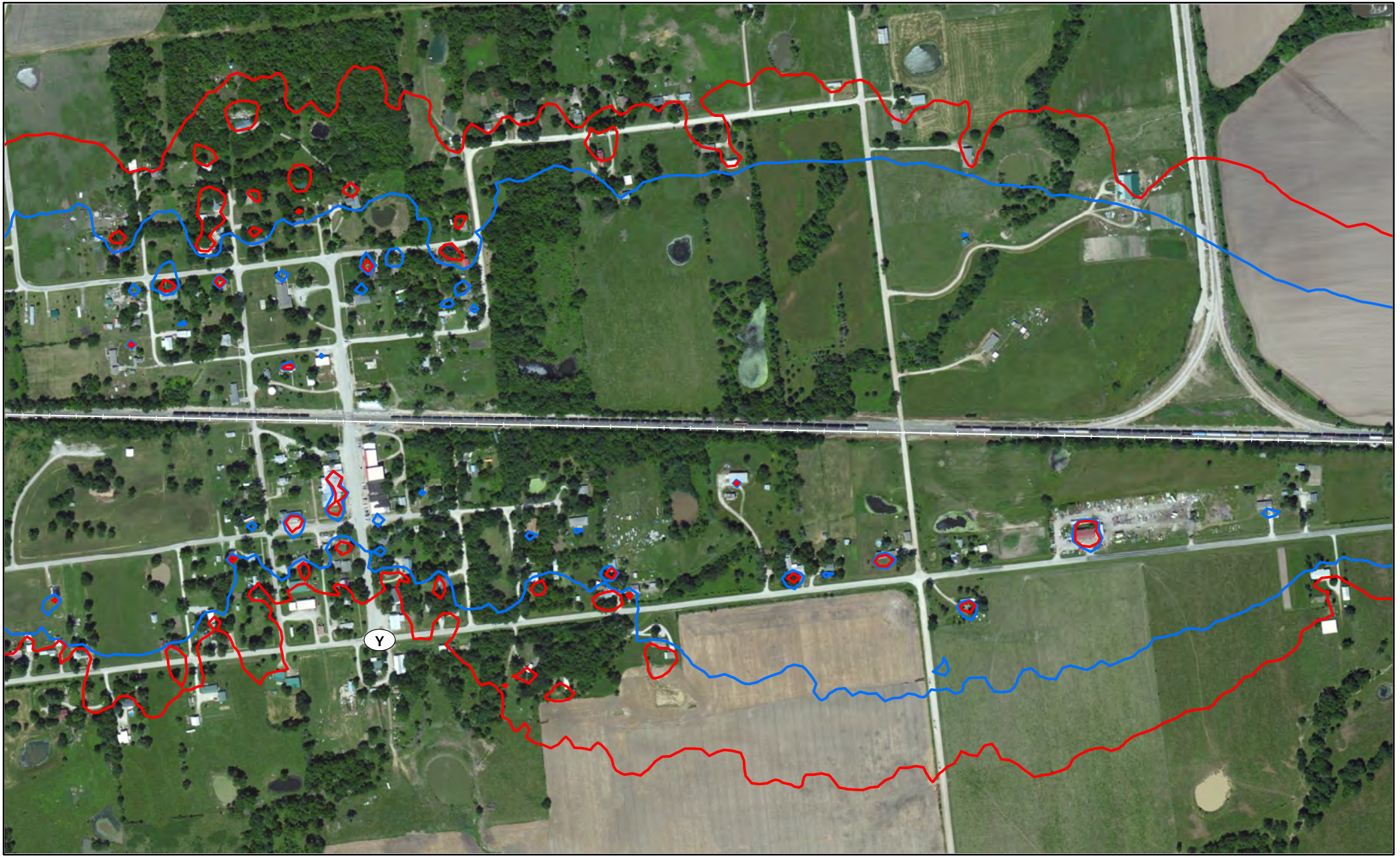
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Noise Contours
Bates County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



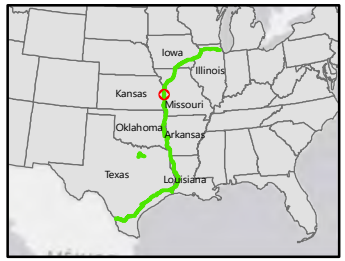
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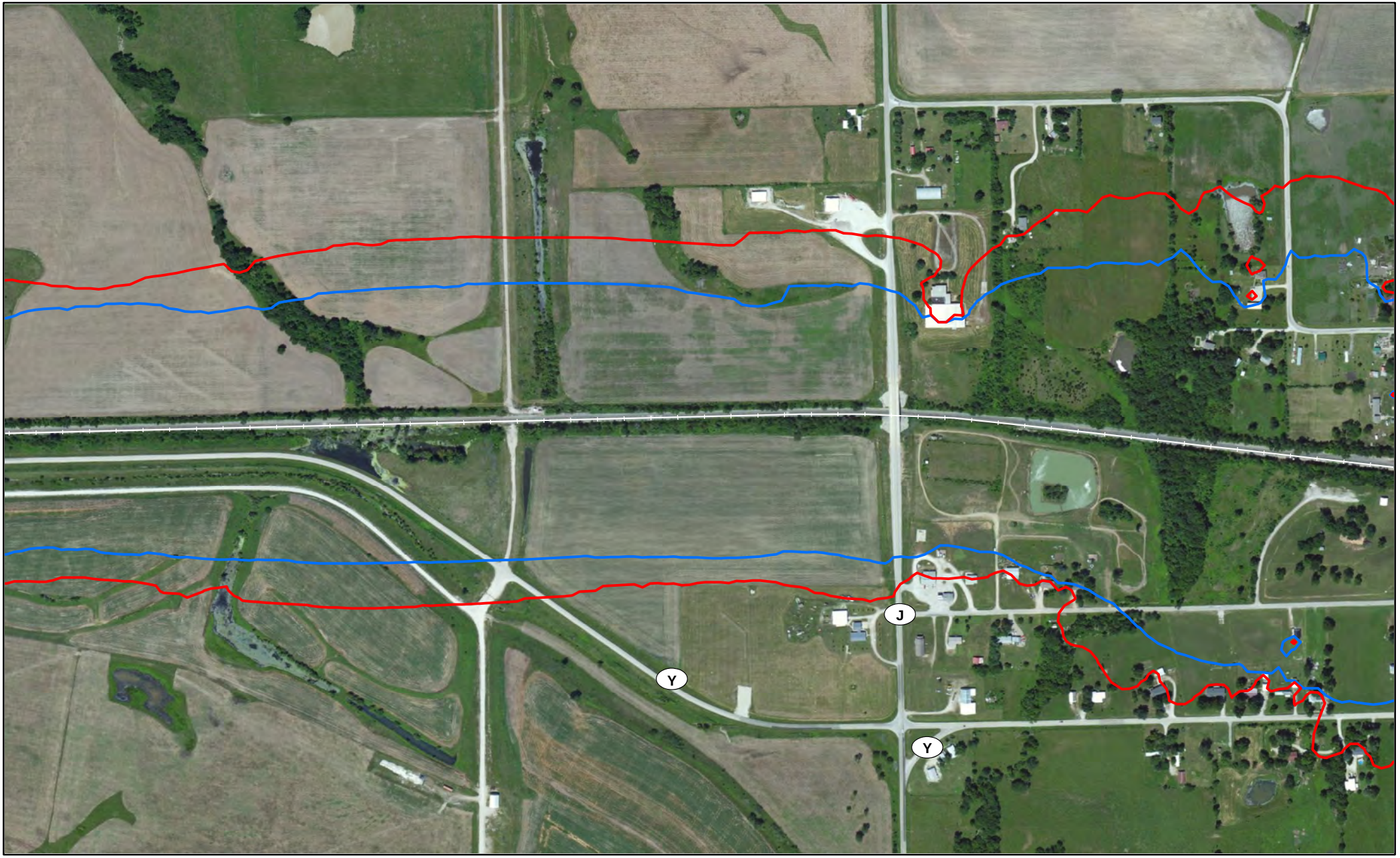
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Noise Contours
Bates County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



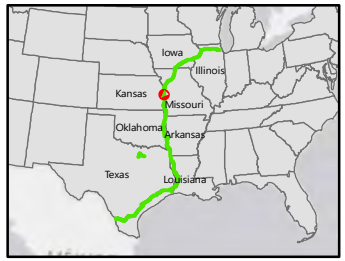
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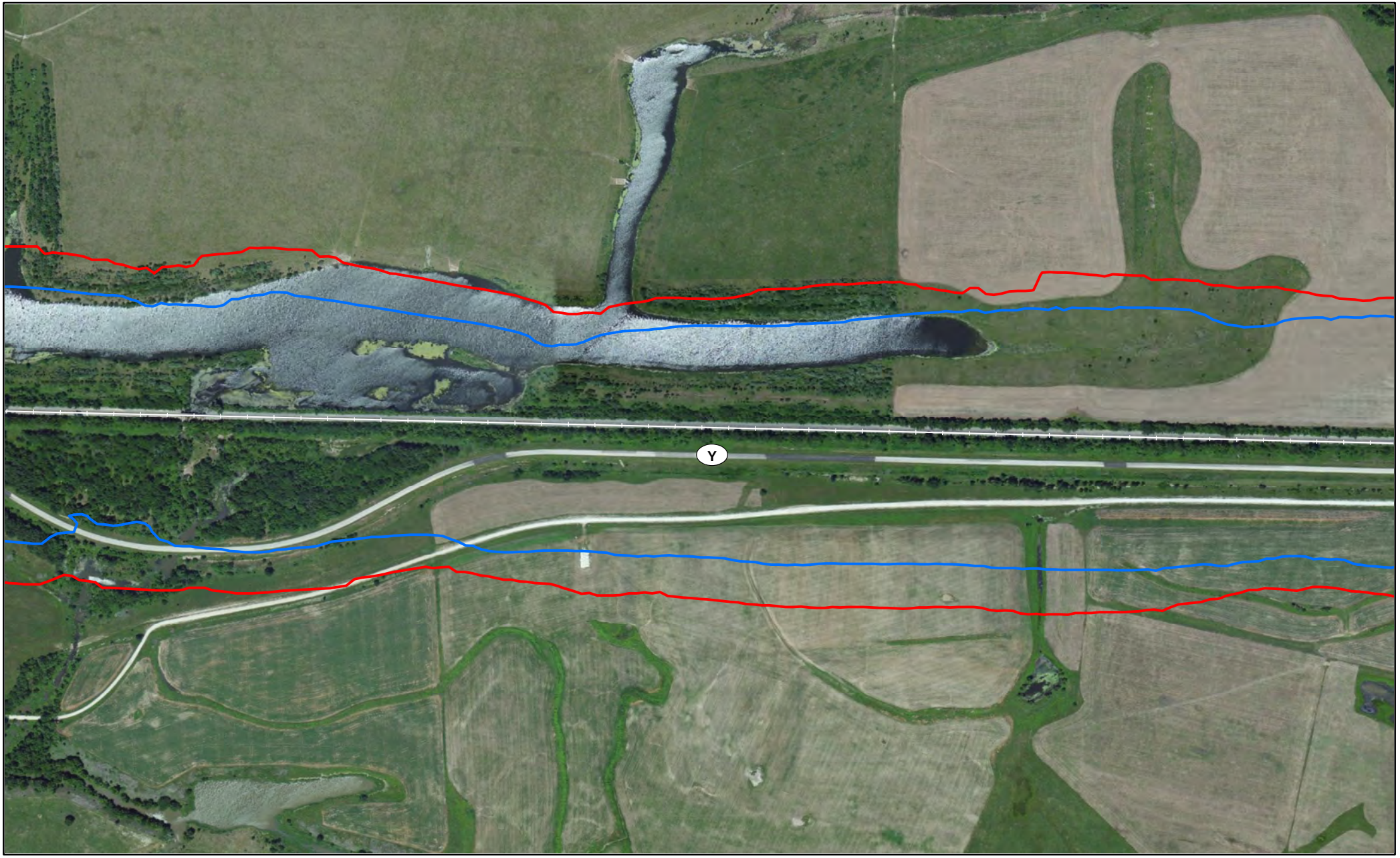
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Noise Contours
Bates County, MO

Miles
0 0.05 0.1



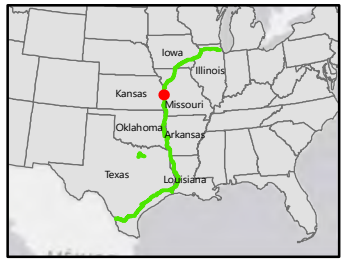
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

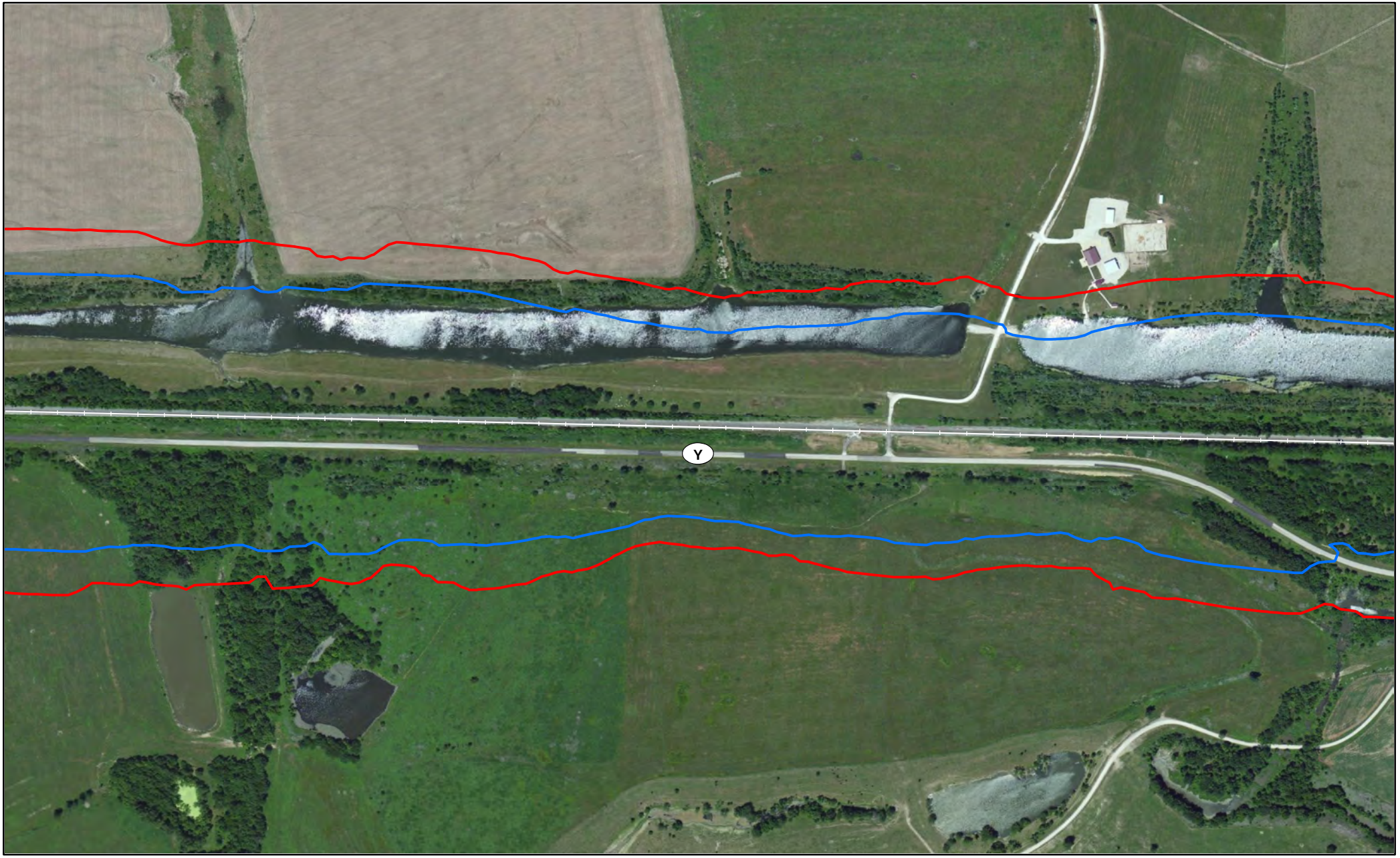
Tracks

Source: ESRI.



Noise Contours
Bates County, MO

Miles
0 0.05 0.1



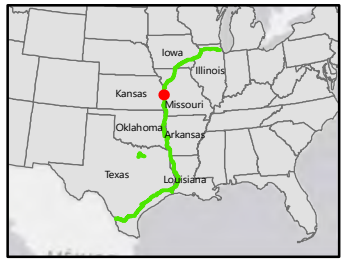
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Tracks

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Noise Contours
Bates County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



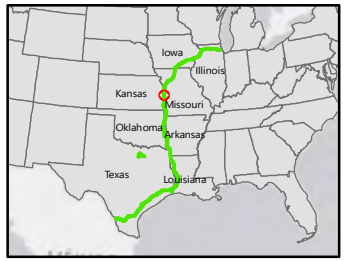
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

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Tracks

Source: ESRI.



Noise Contours
Bates County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



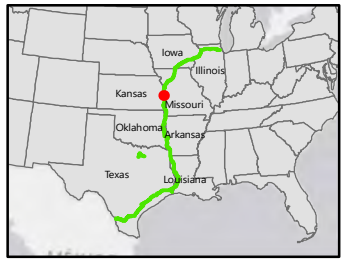
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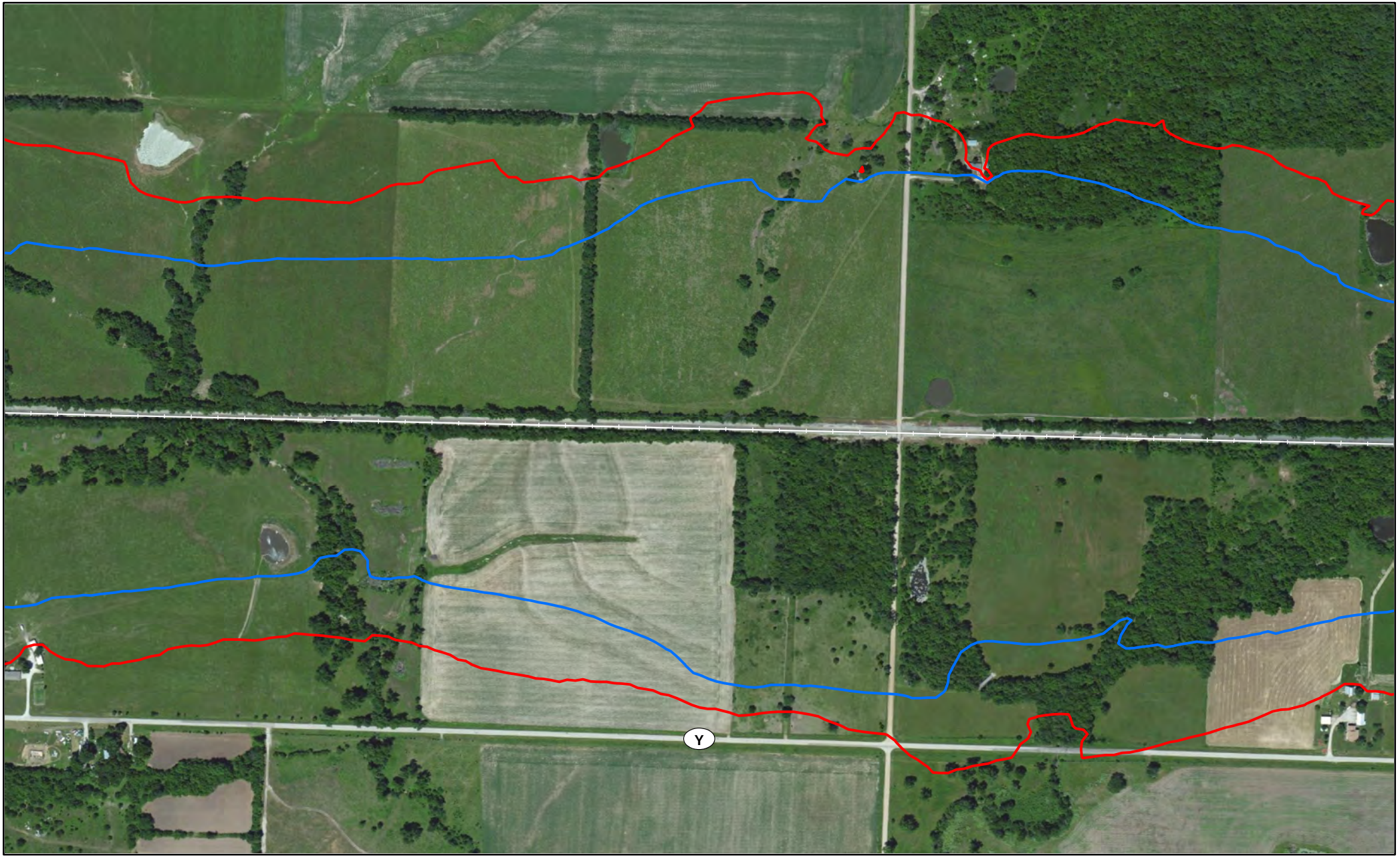
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Noise Contours
Bates County, MO

Miles
0 0.05 0.1



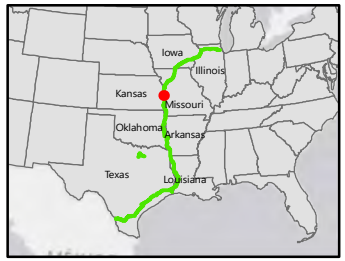
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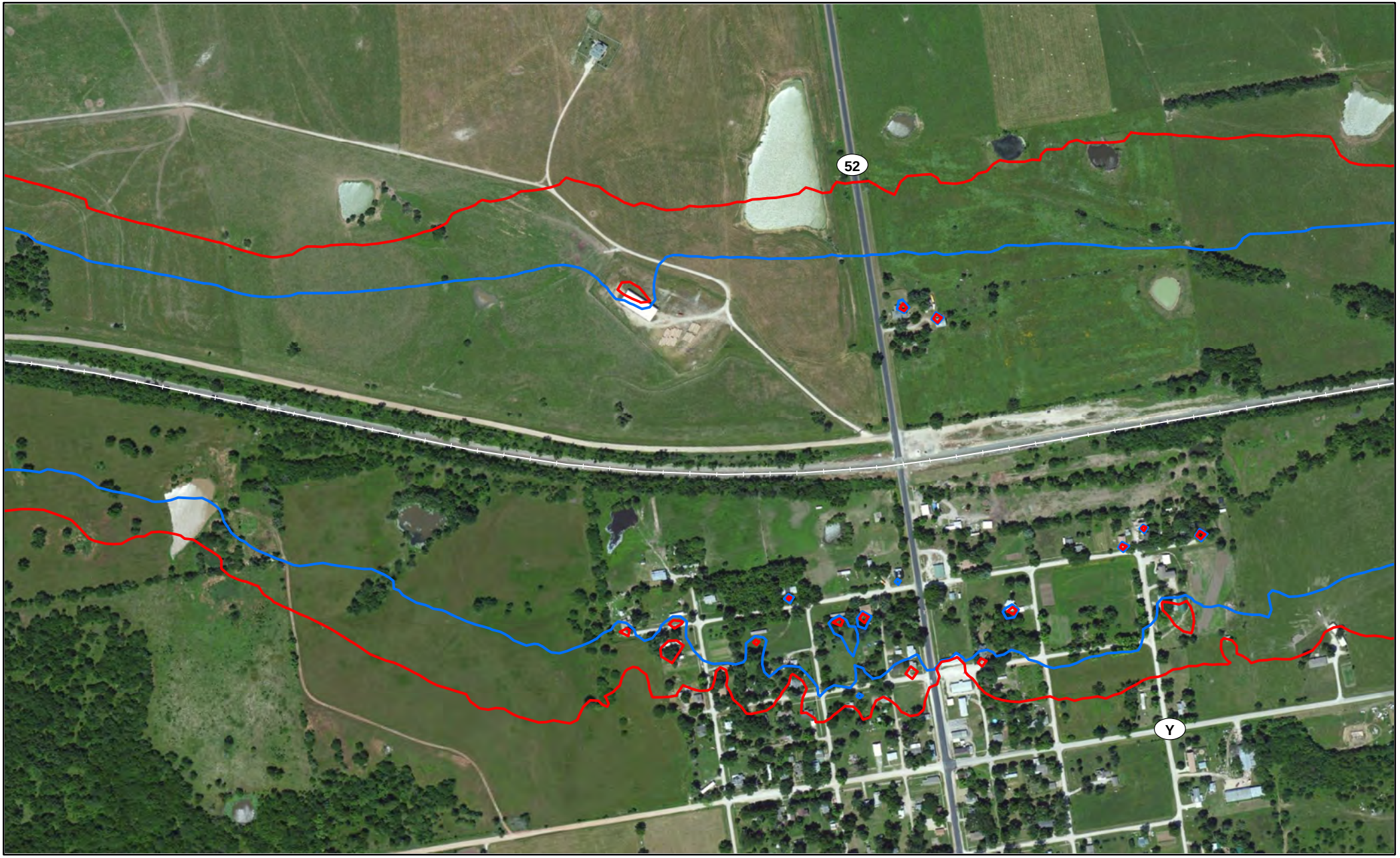
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Noise Contours
Bates County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



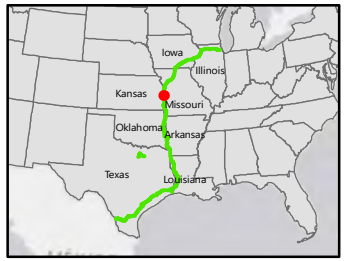
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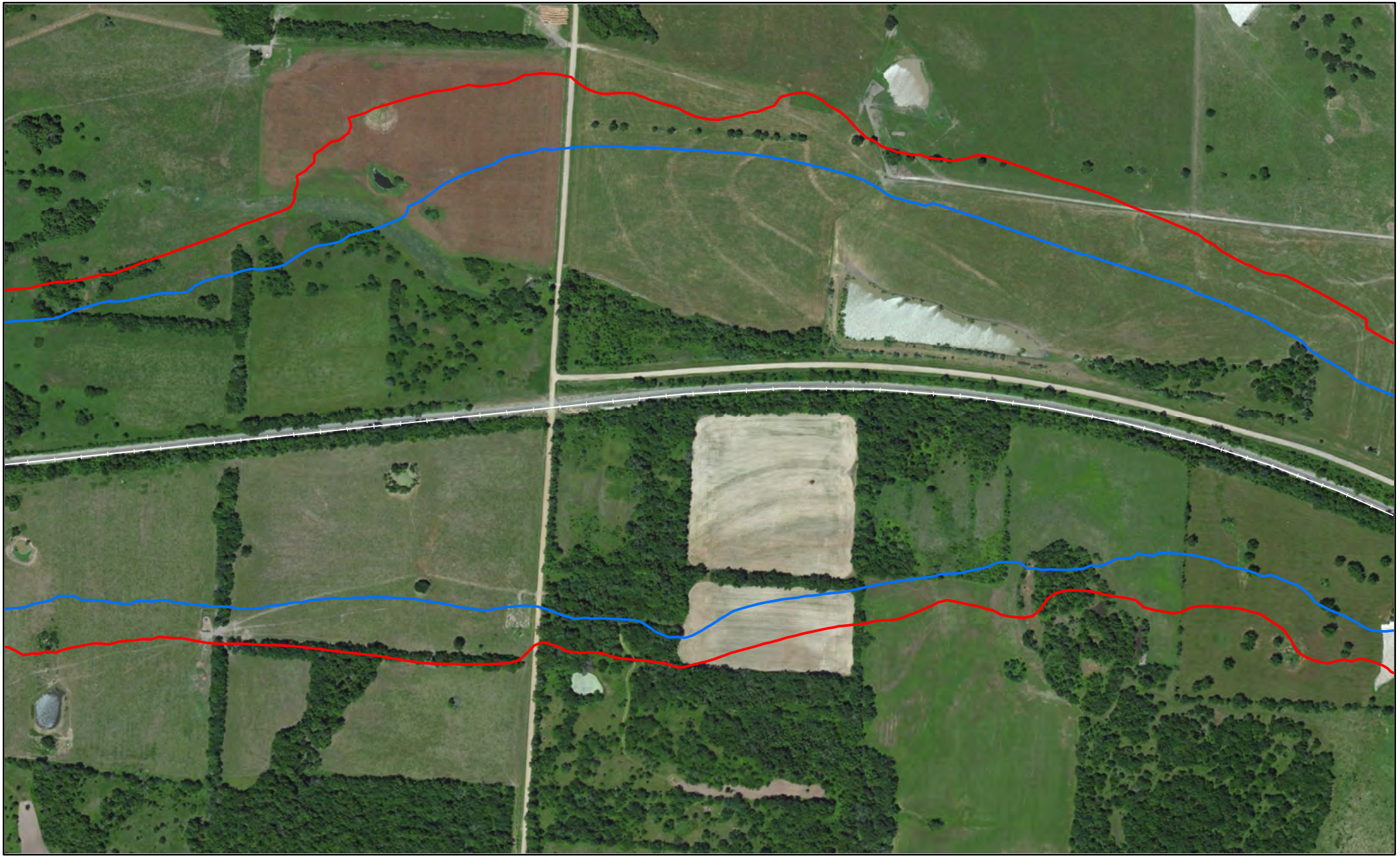
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Noise Contours
Bates County, MO

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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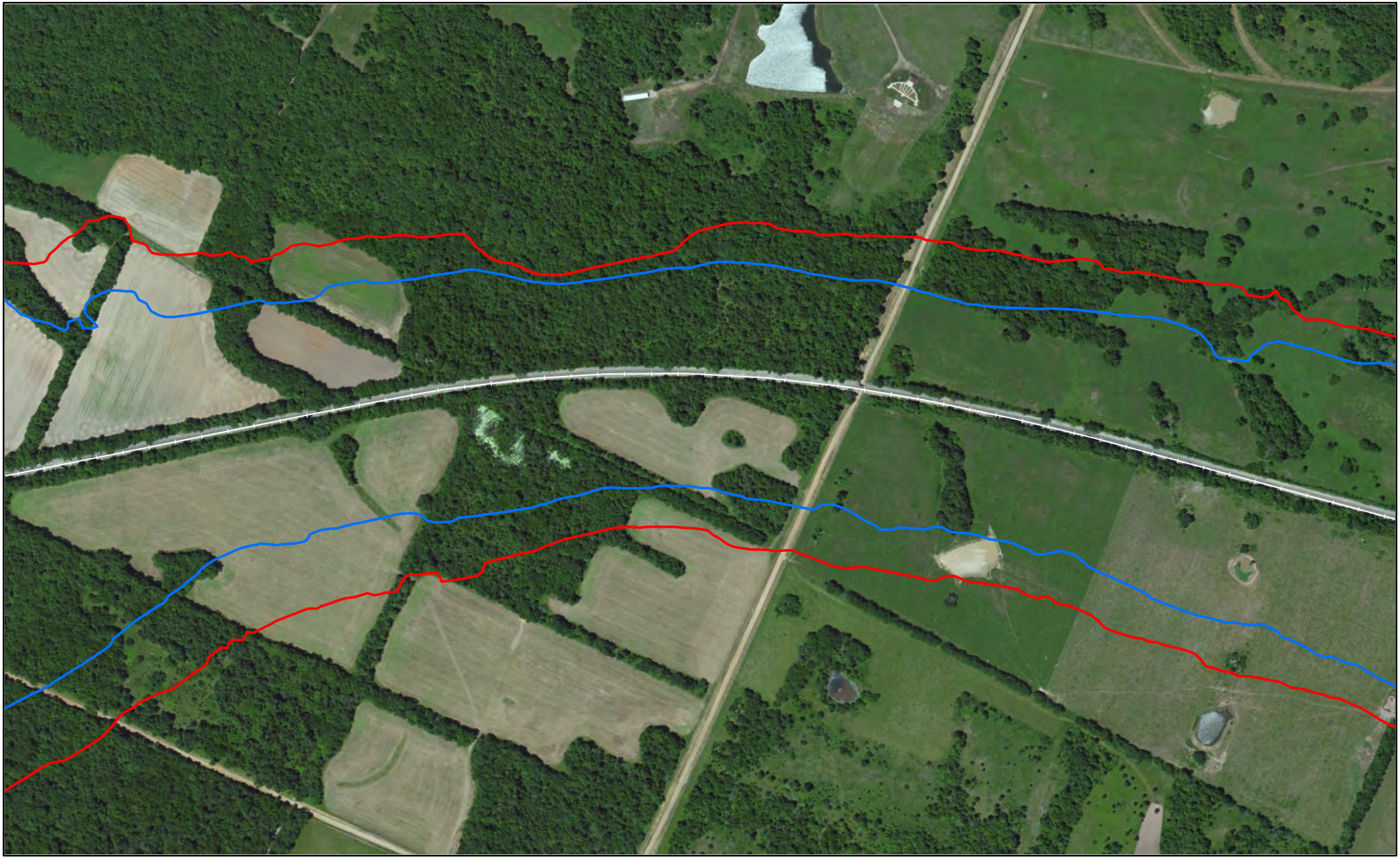
Tracks

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Noise Contours
Bates County, MO

Miles
0 0.05 0.1



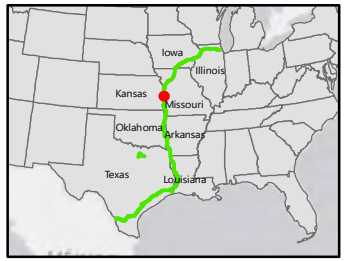
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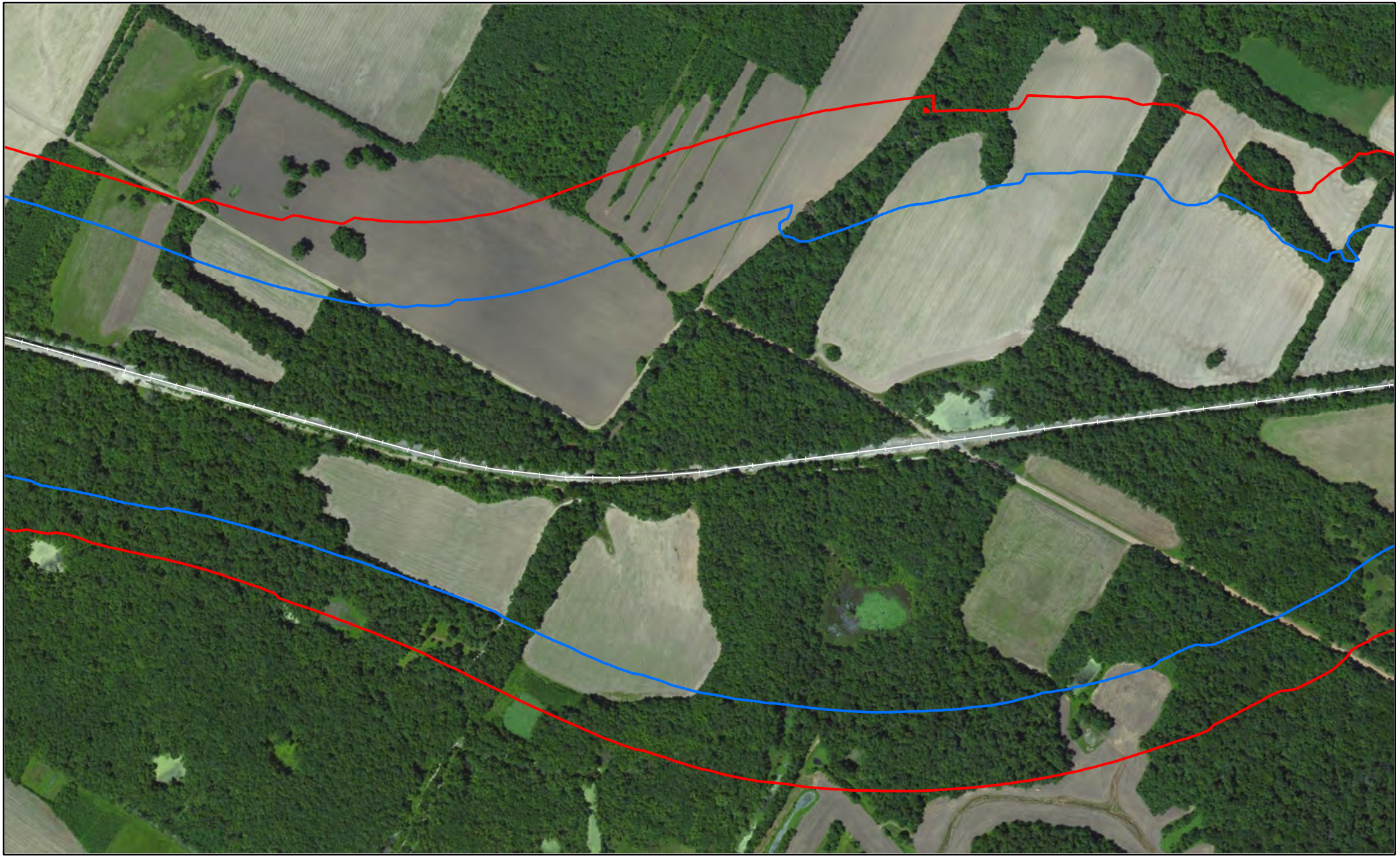
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Noise Contours
Bates County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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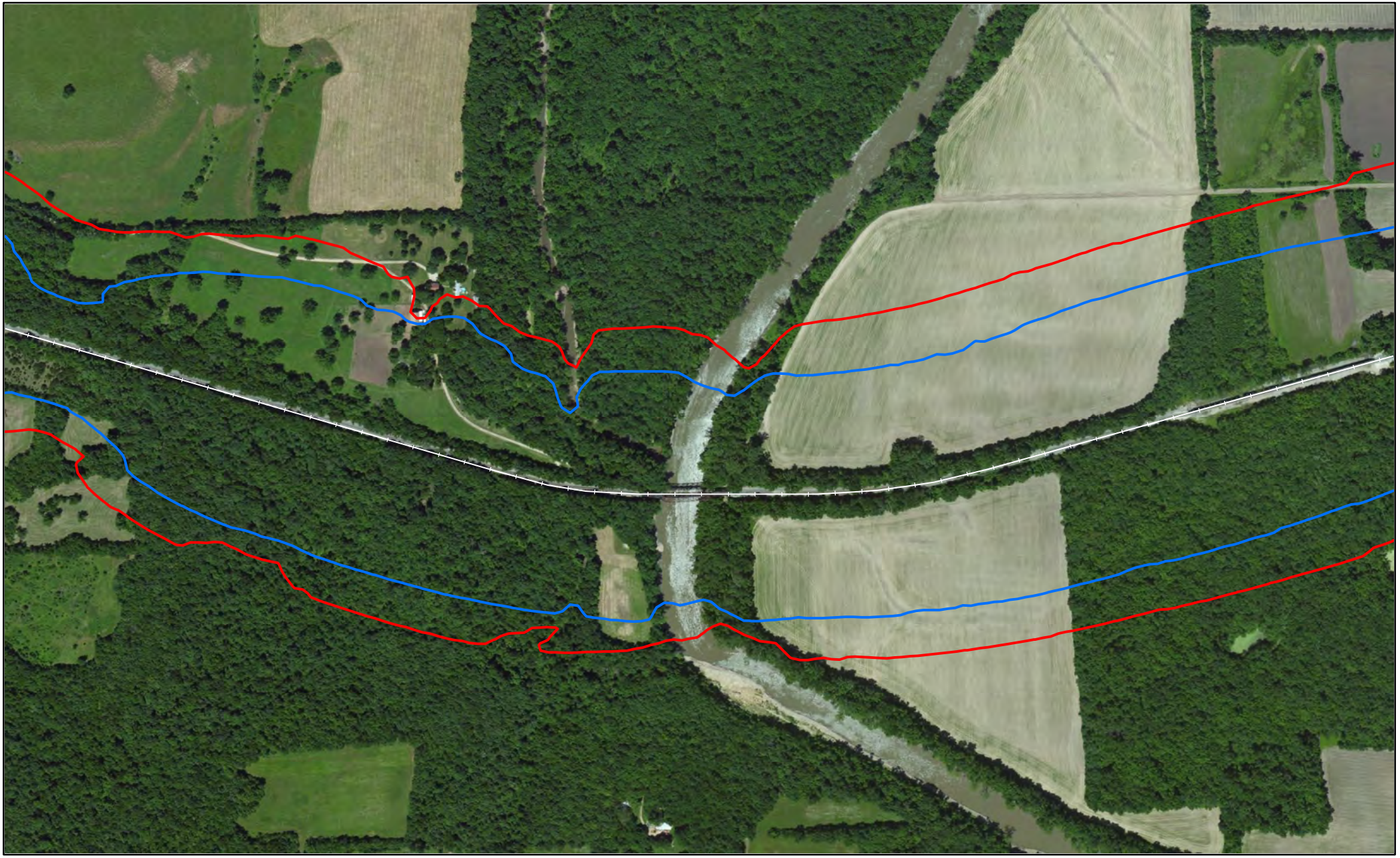
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Noise Contours
Bates County, MO

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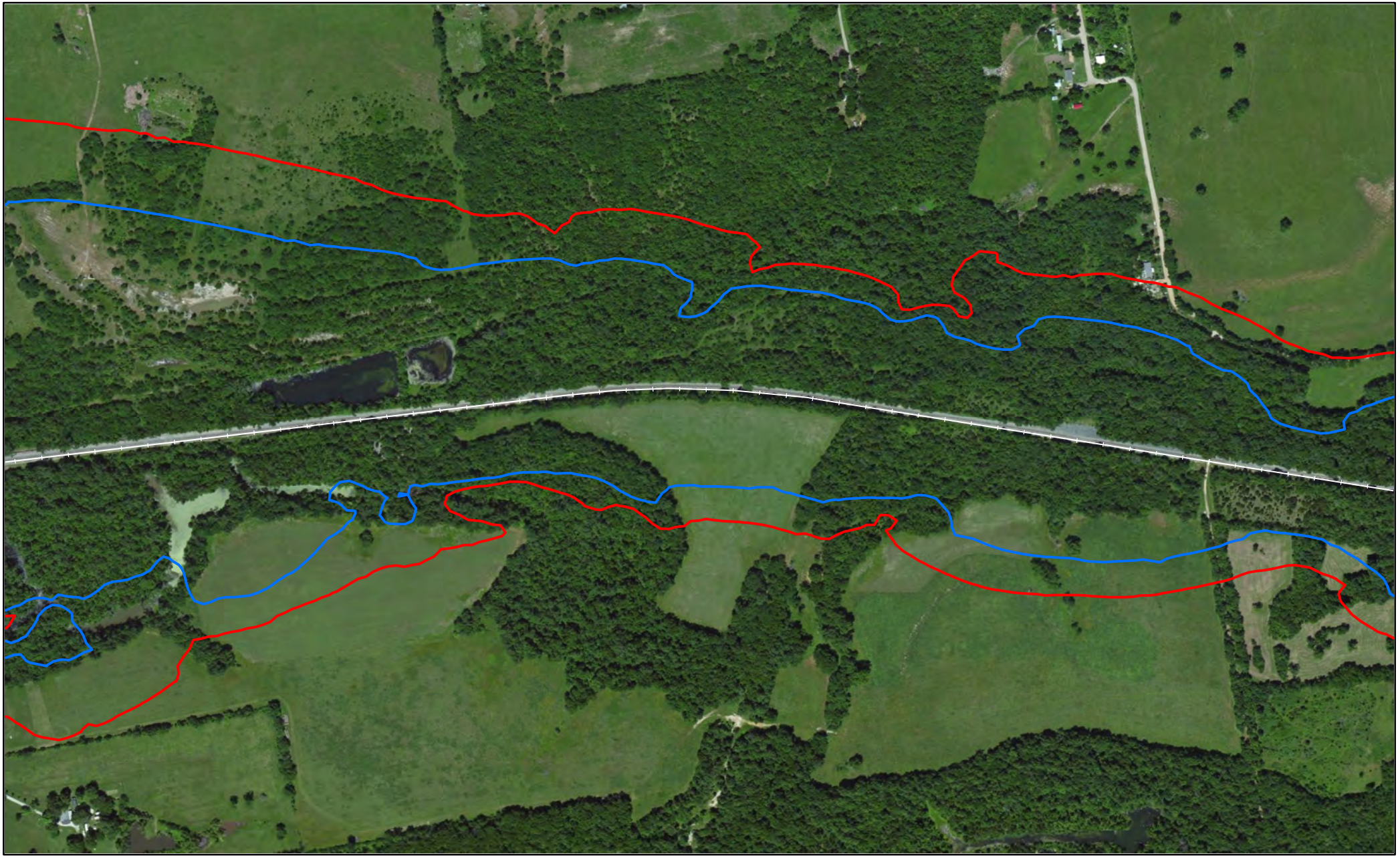
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Noise Contours
Bates County, MO

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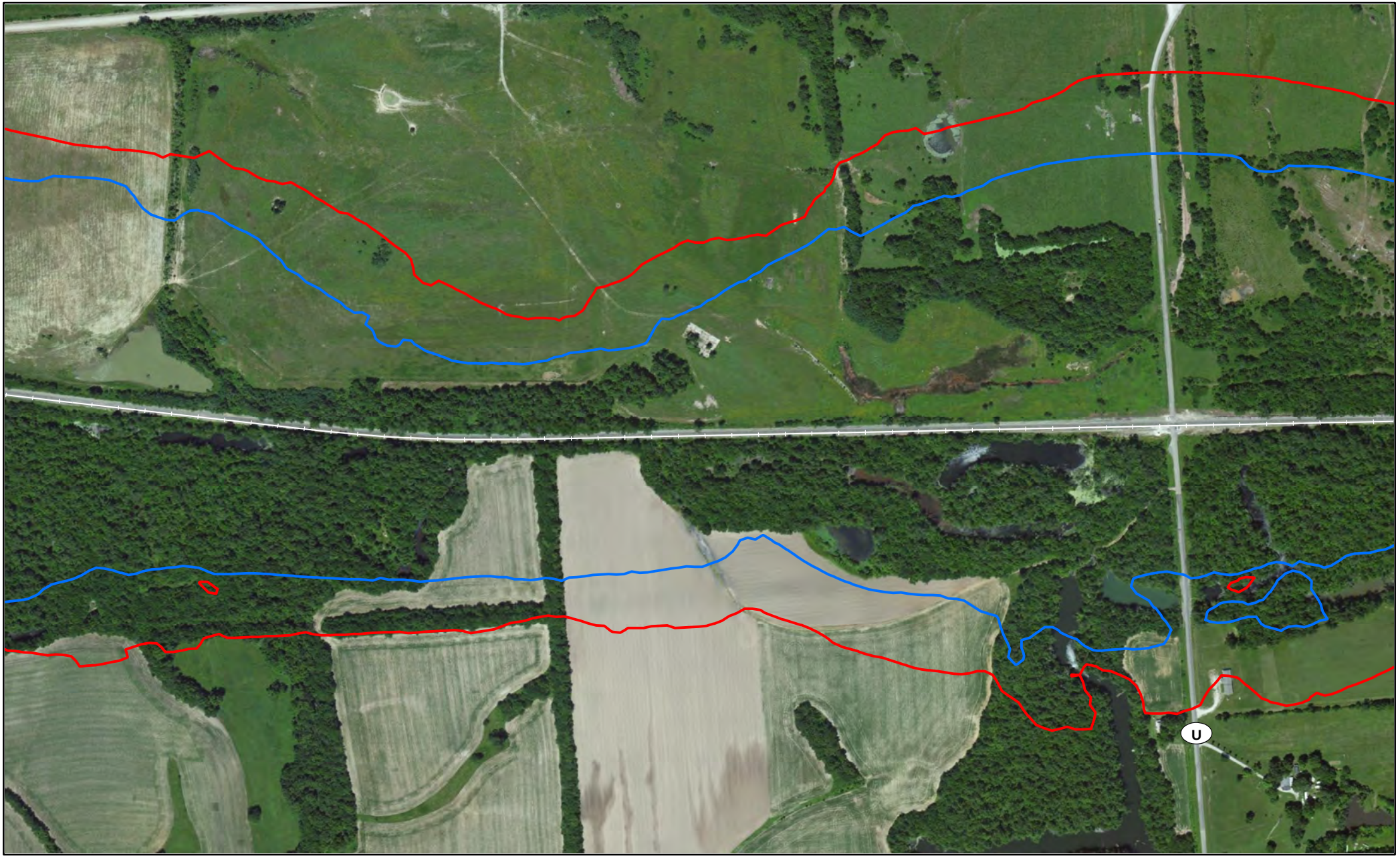
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Noise Contours
Bates County, MO

Miles
0 0.05 0.1



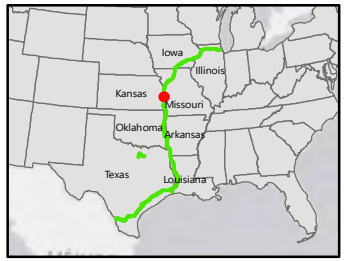
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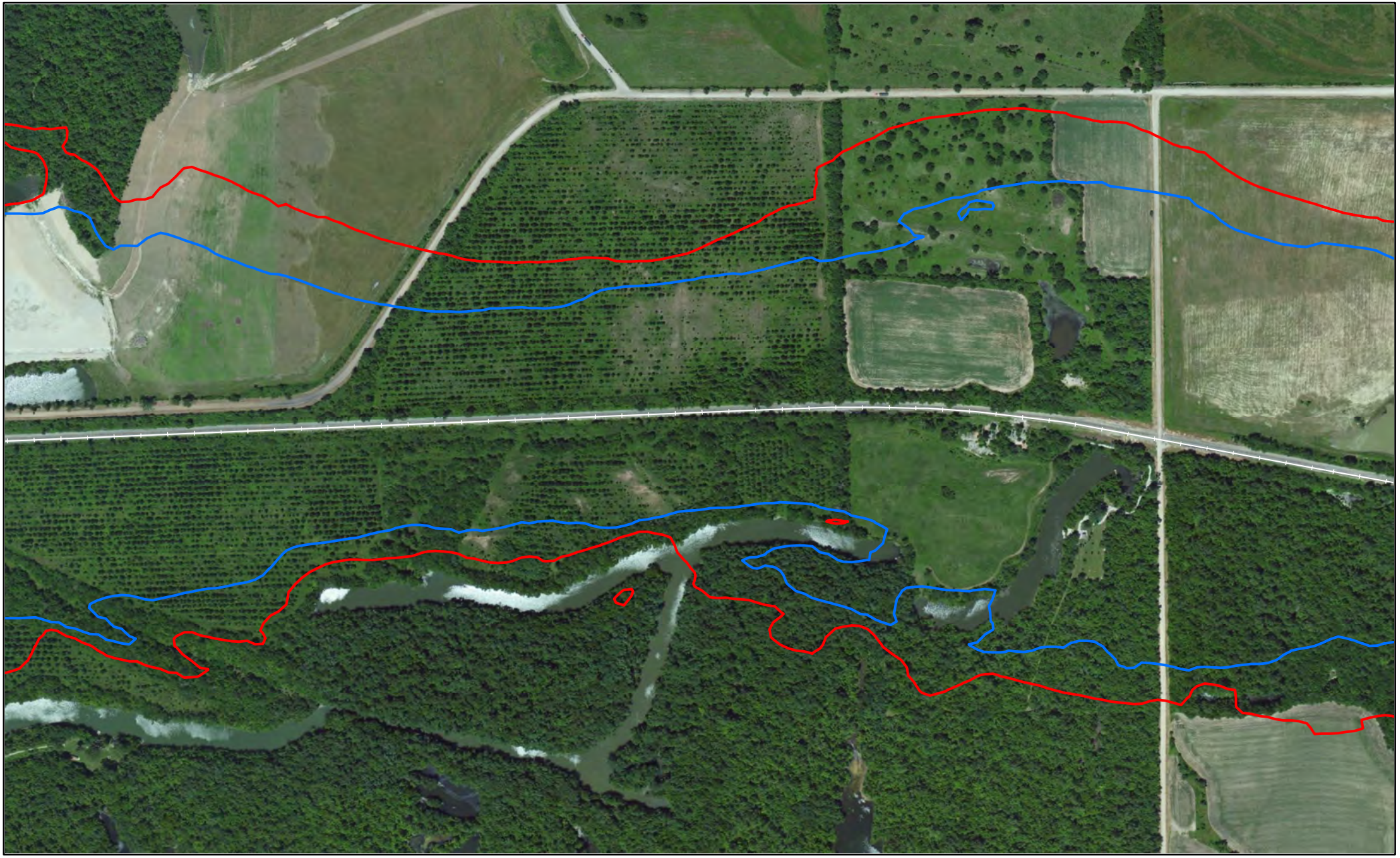
Source: ESRI.



Noise Contours
Bates County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

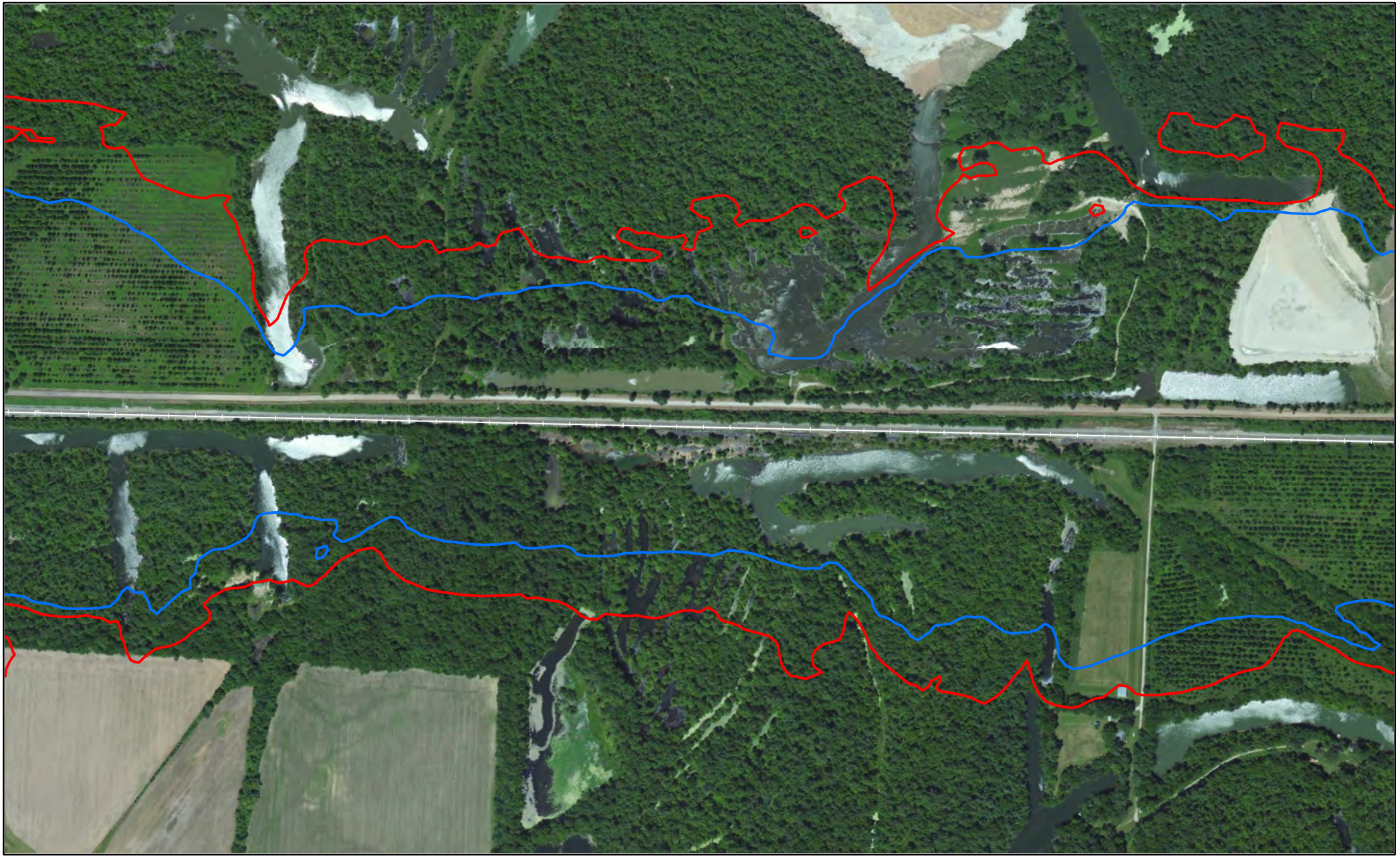
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Noise Contours
Bates County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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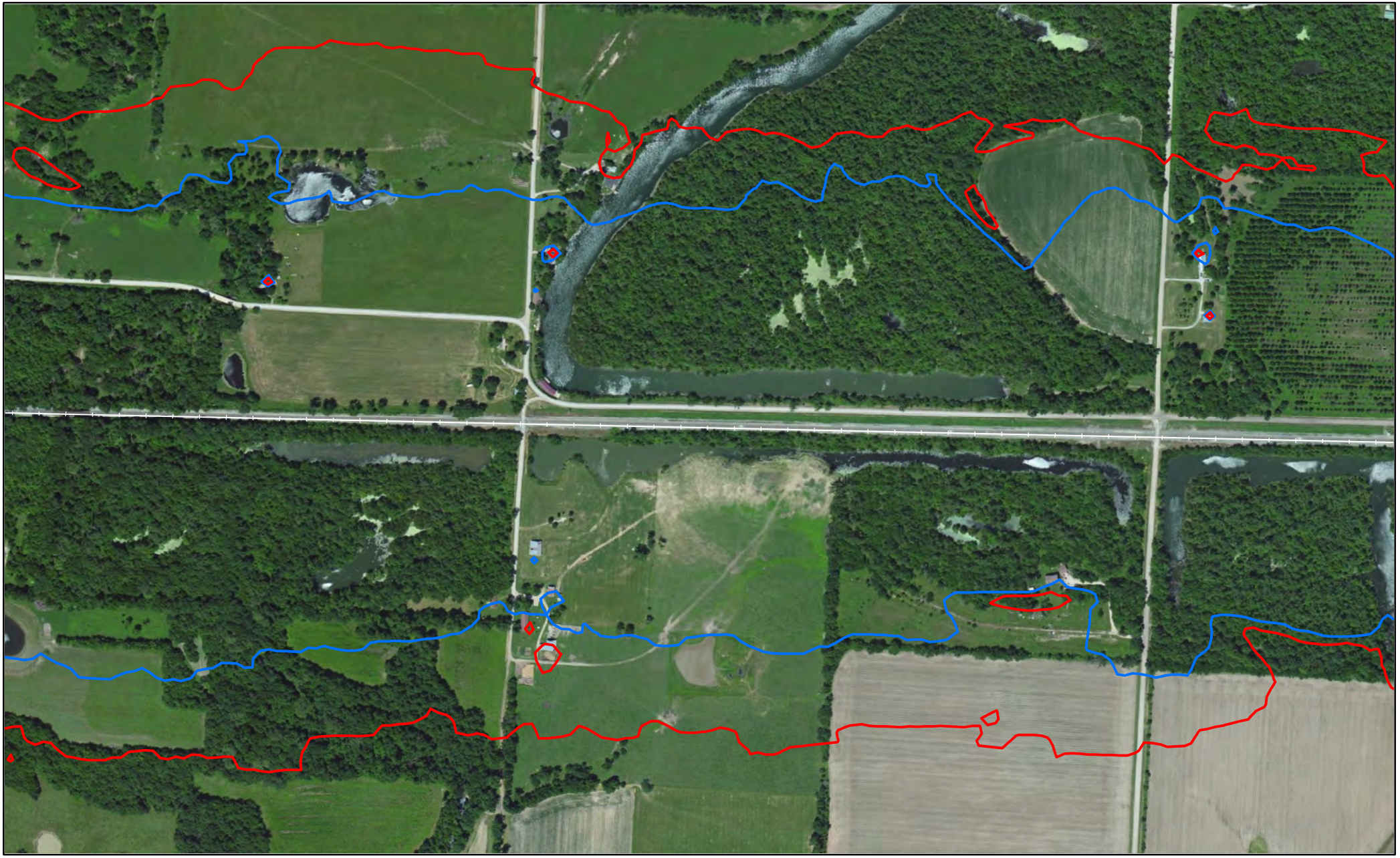
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Noise Contours
Bates County, MO

Miles
0 0.05 0.1



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Tracks

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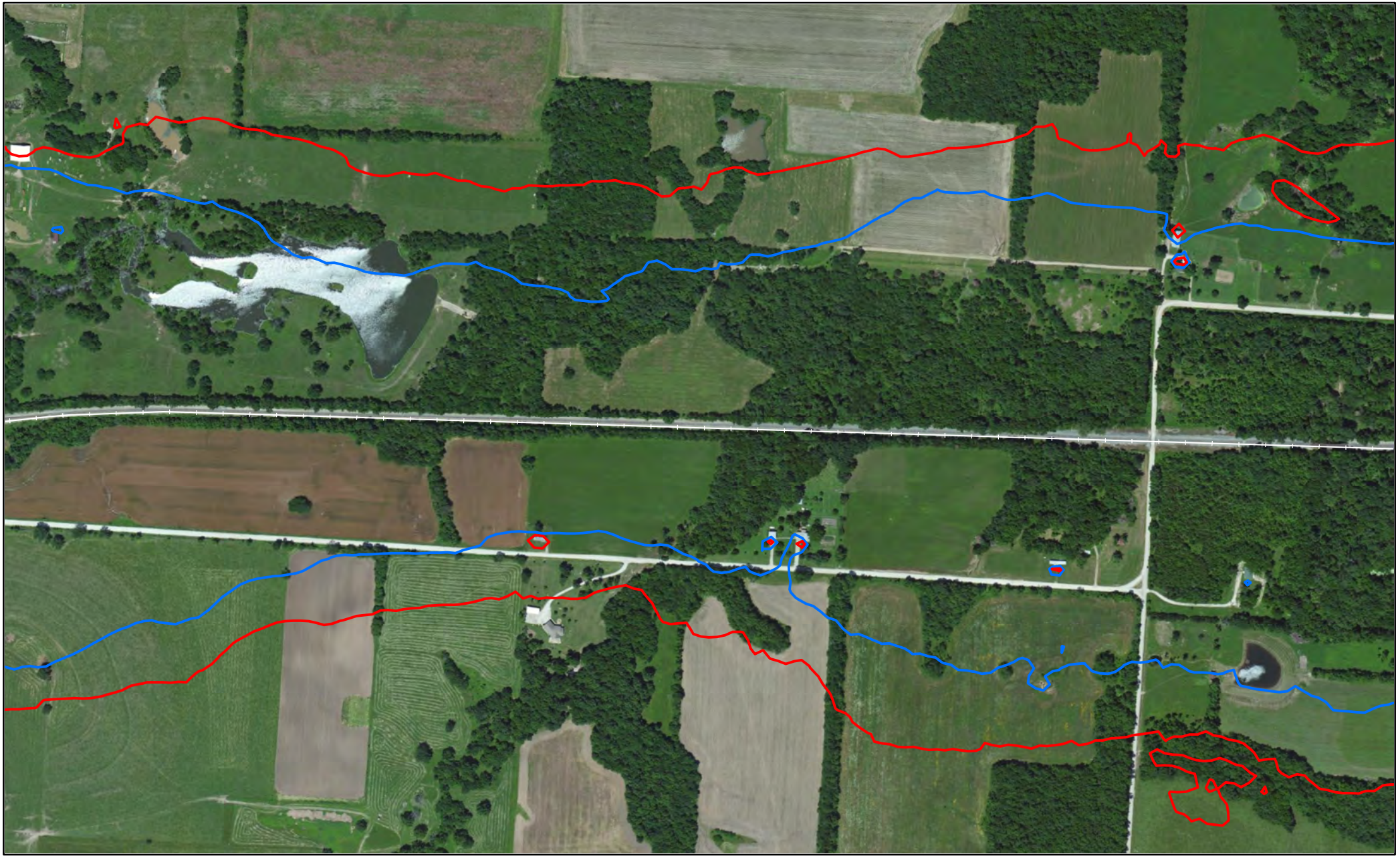


Noise Contours
Bates County, MO

Page 555 of 1588

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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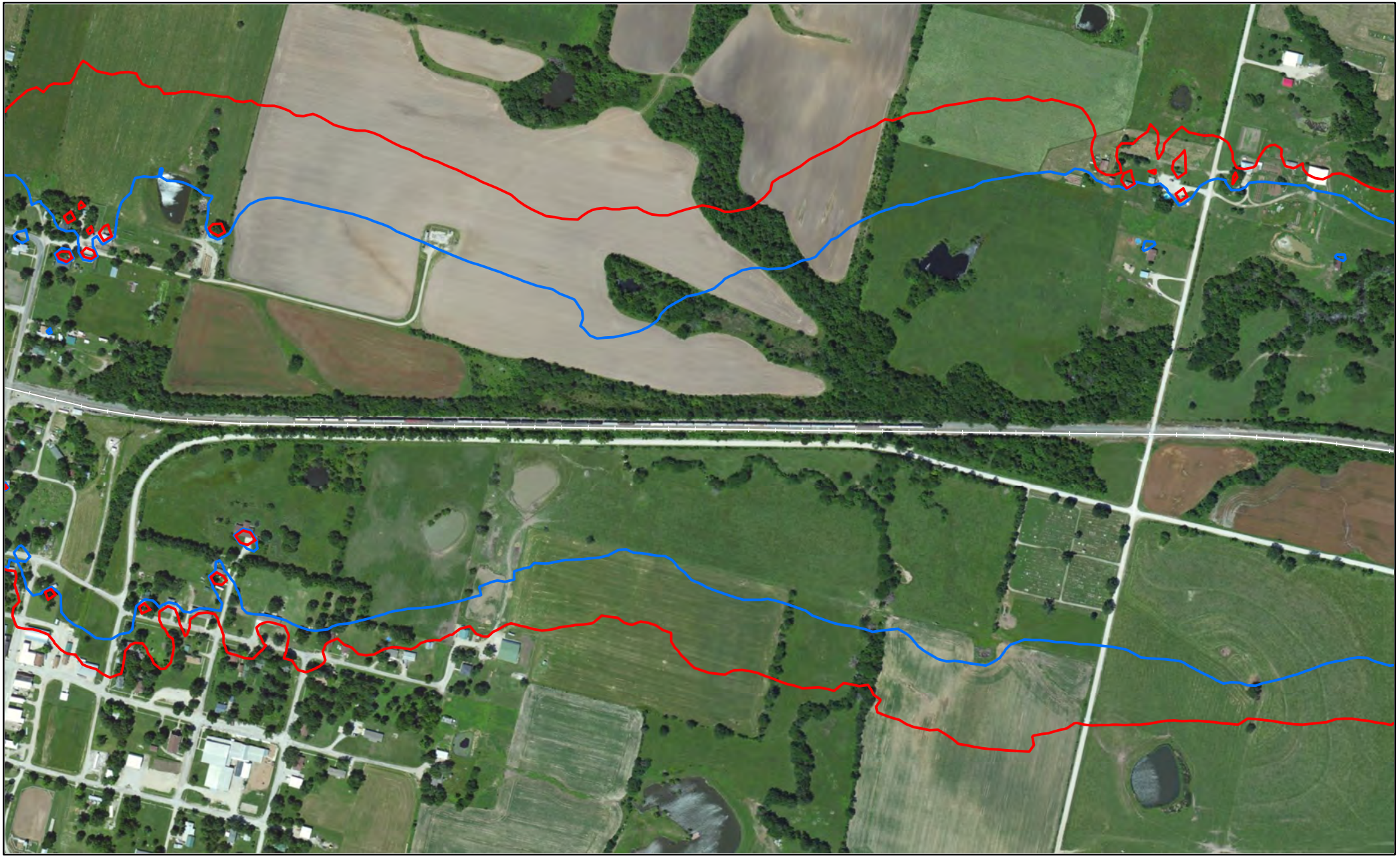
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Noise Contours
Bates County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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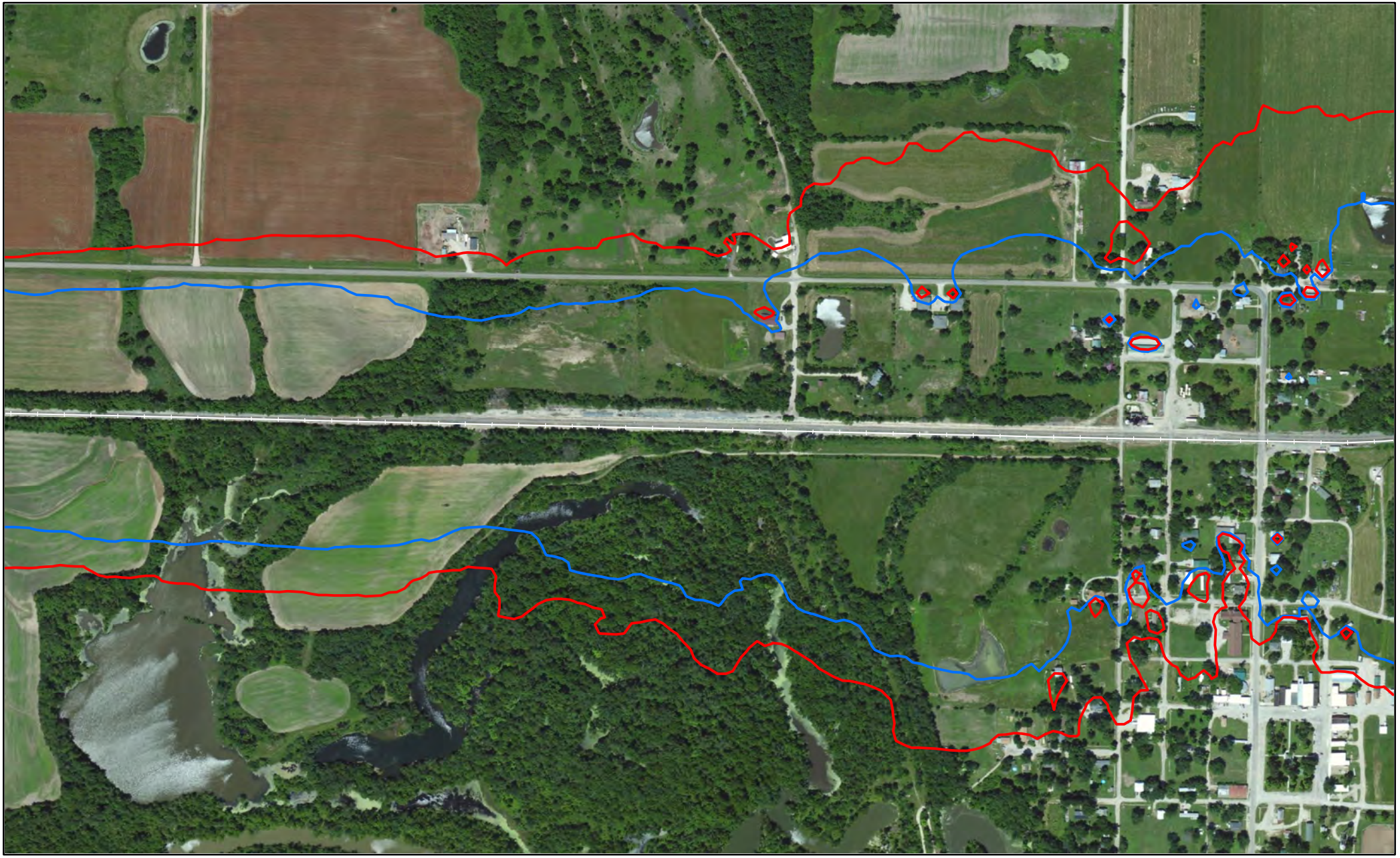
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Noise Contours
Bates County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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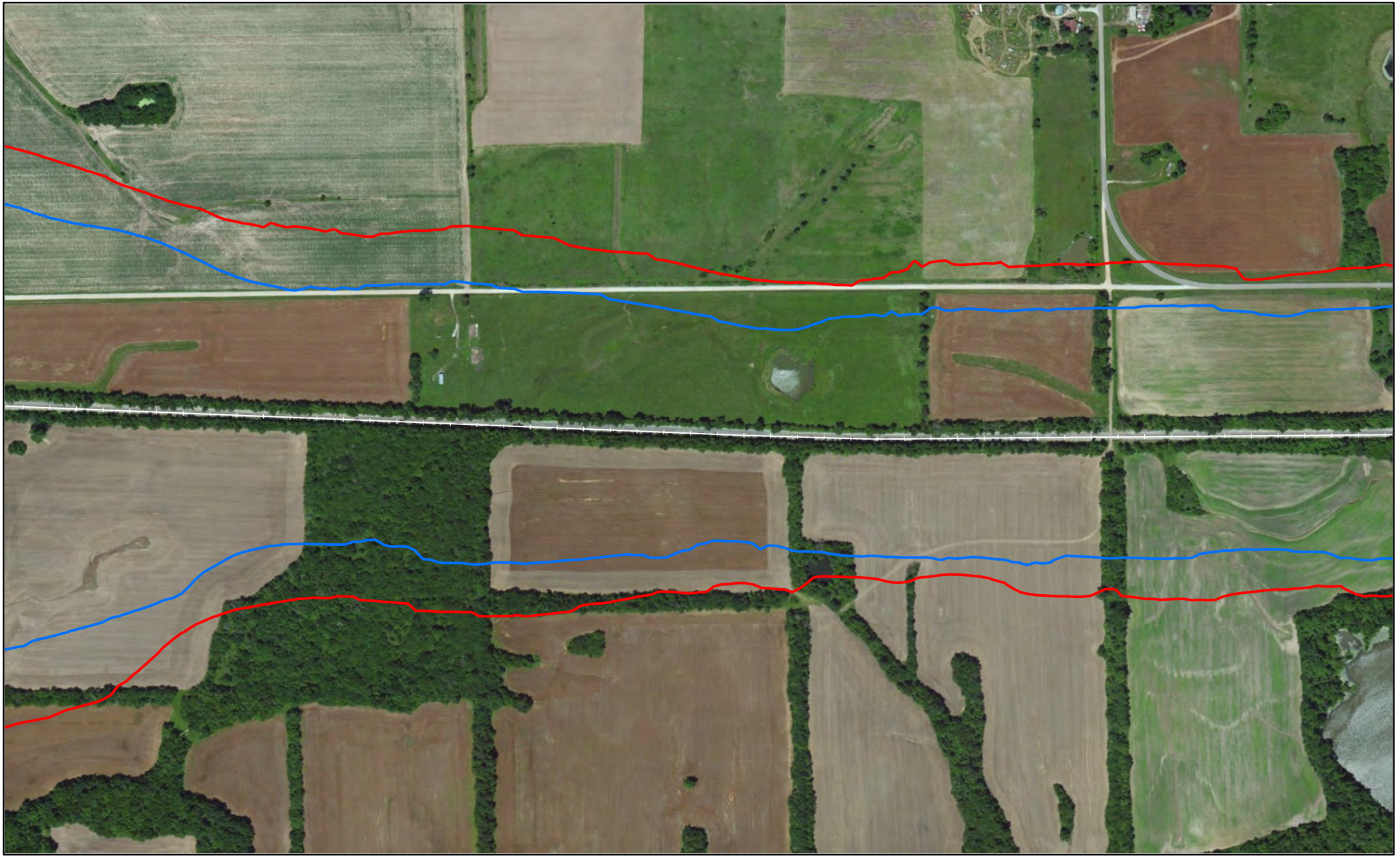
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Noise Contours
Bates County, MO

Miles
0 0.05 0.1



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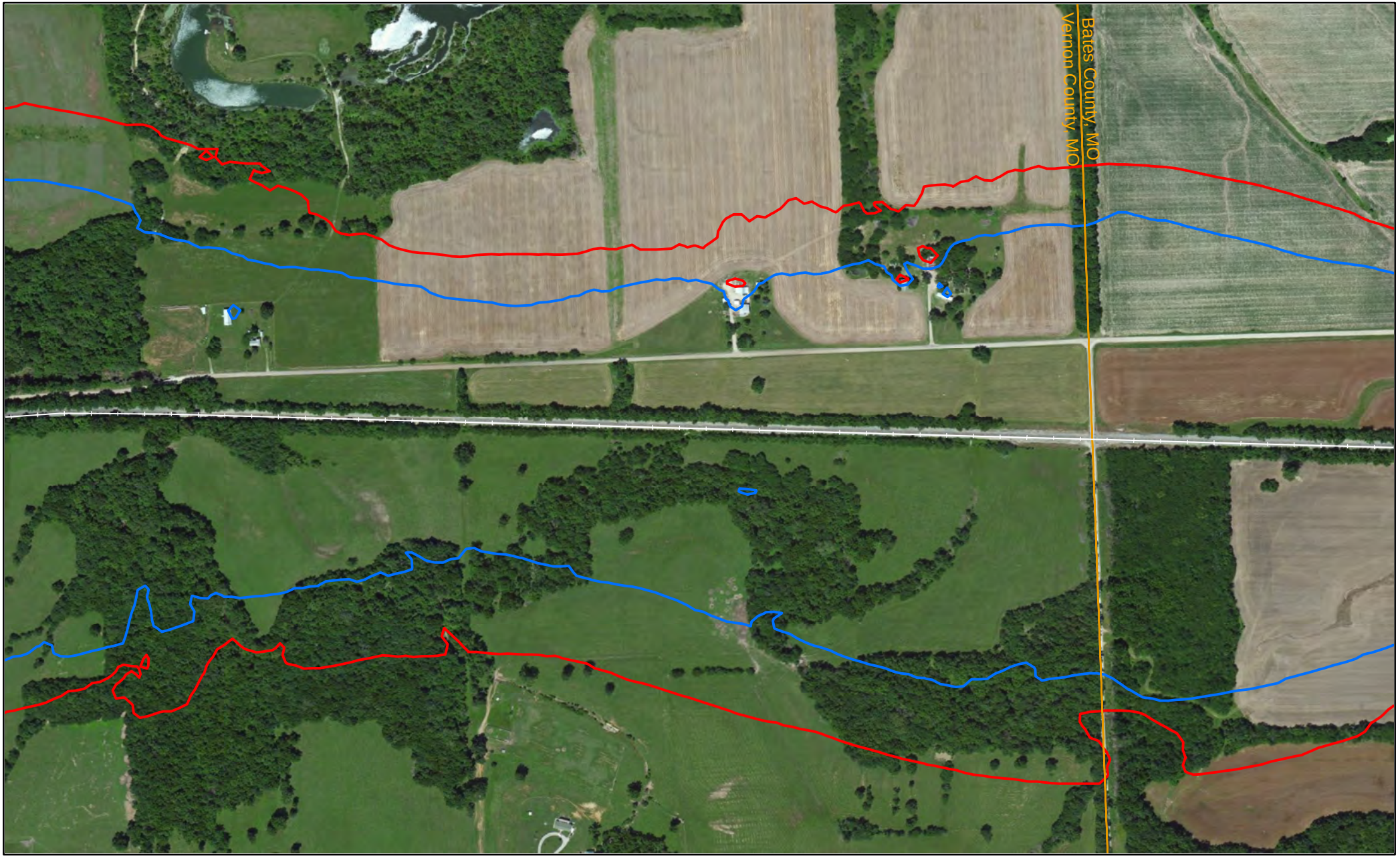
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Noise Contours
Bates County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



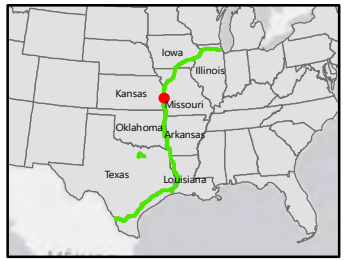
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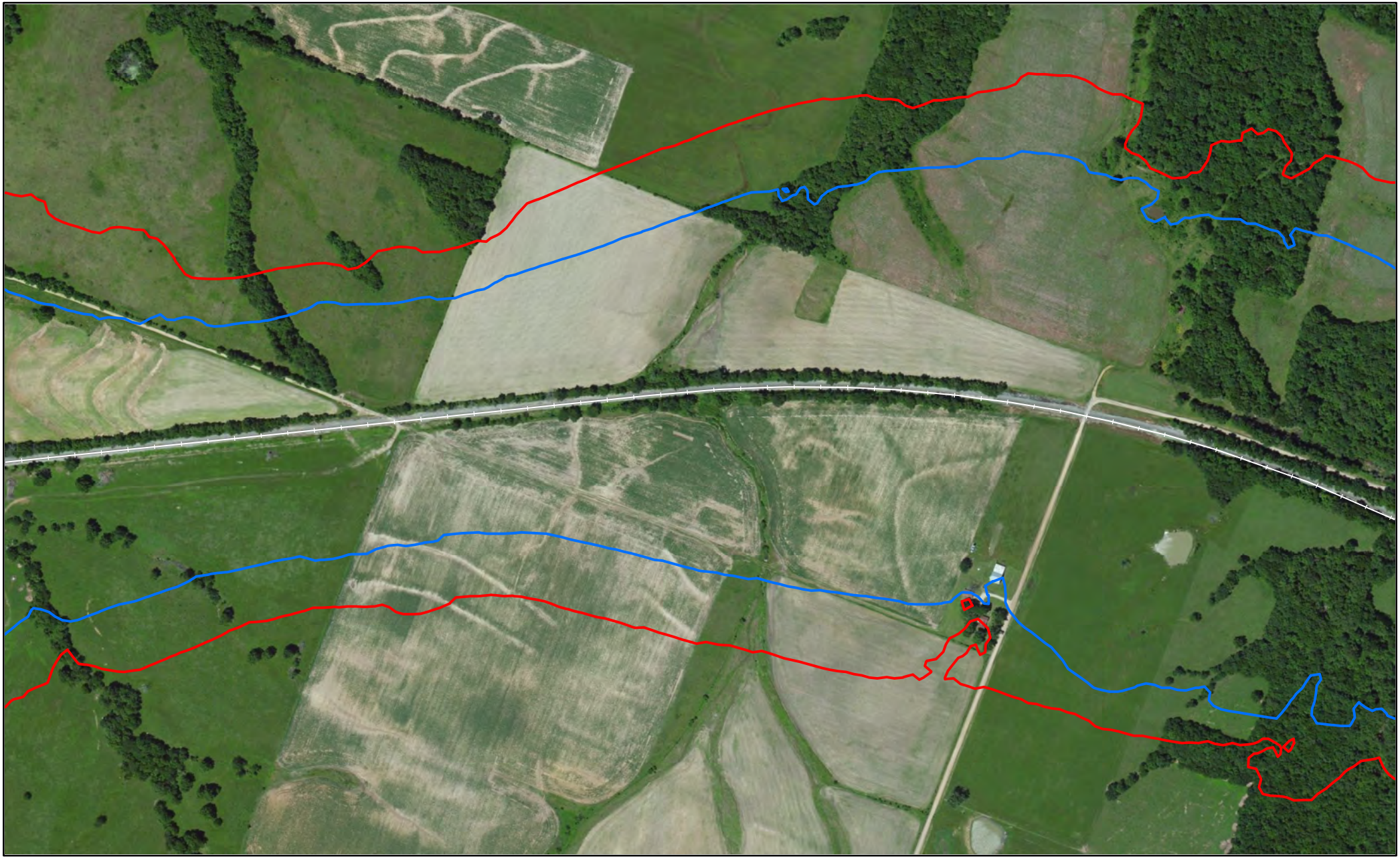
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Noise Contours
Bates County, MO

Miles
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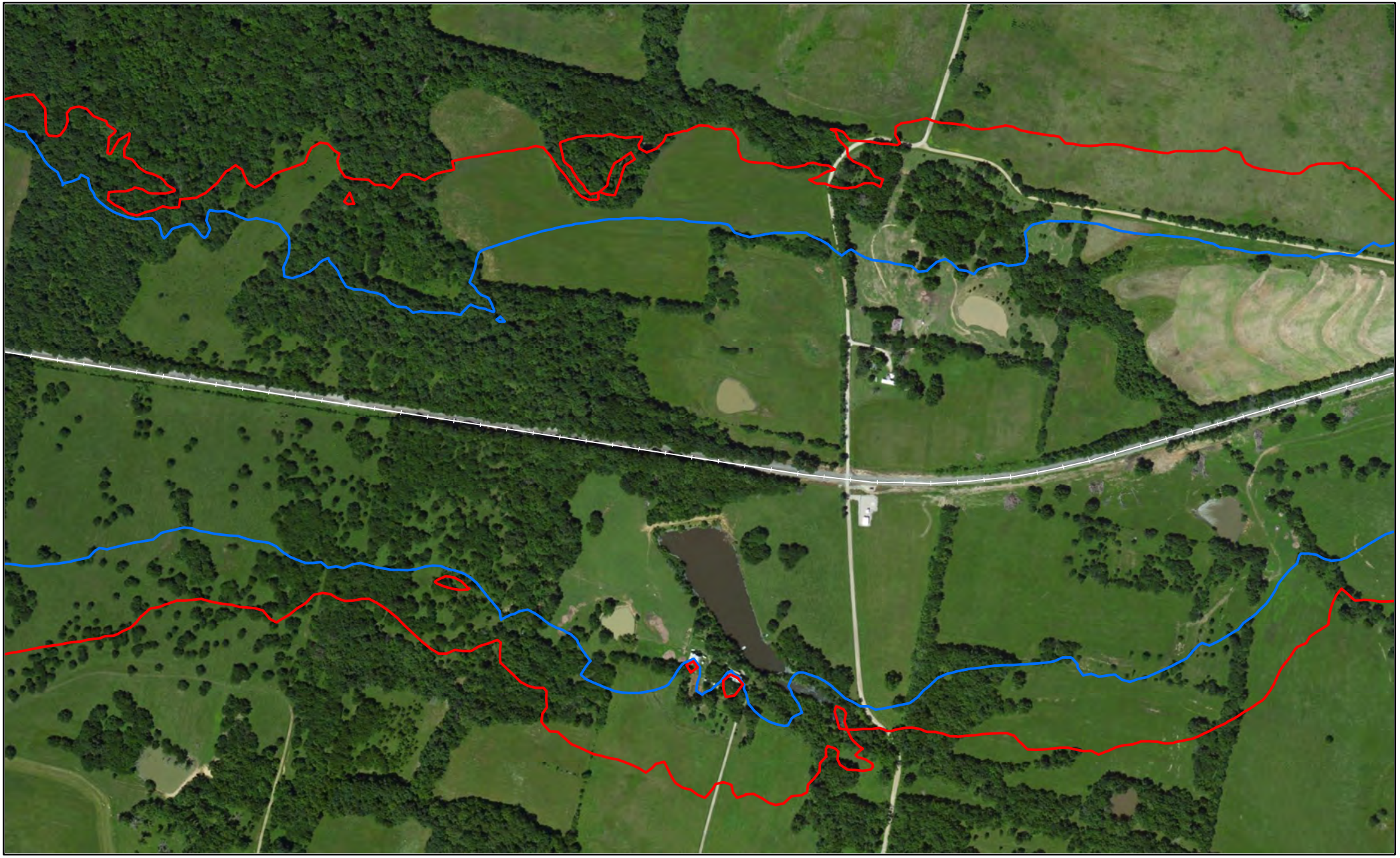
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Noise Contours
Vernon County, MO

Miles
0 0.05 0.1



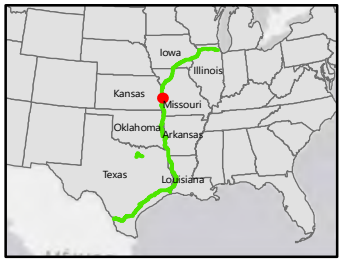
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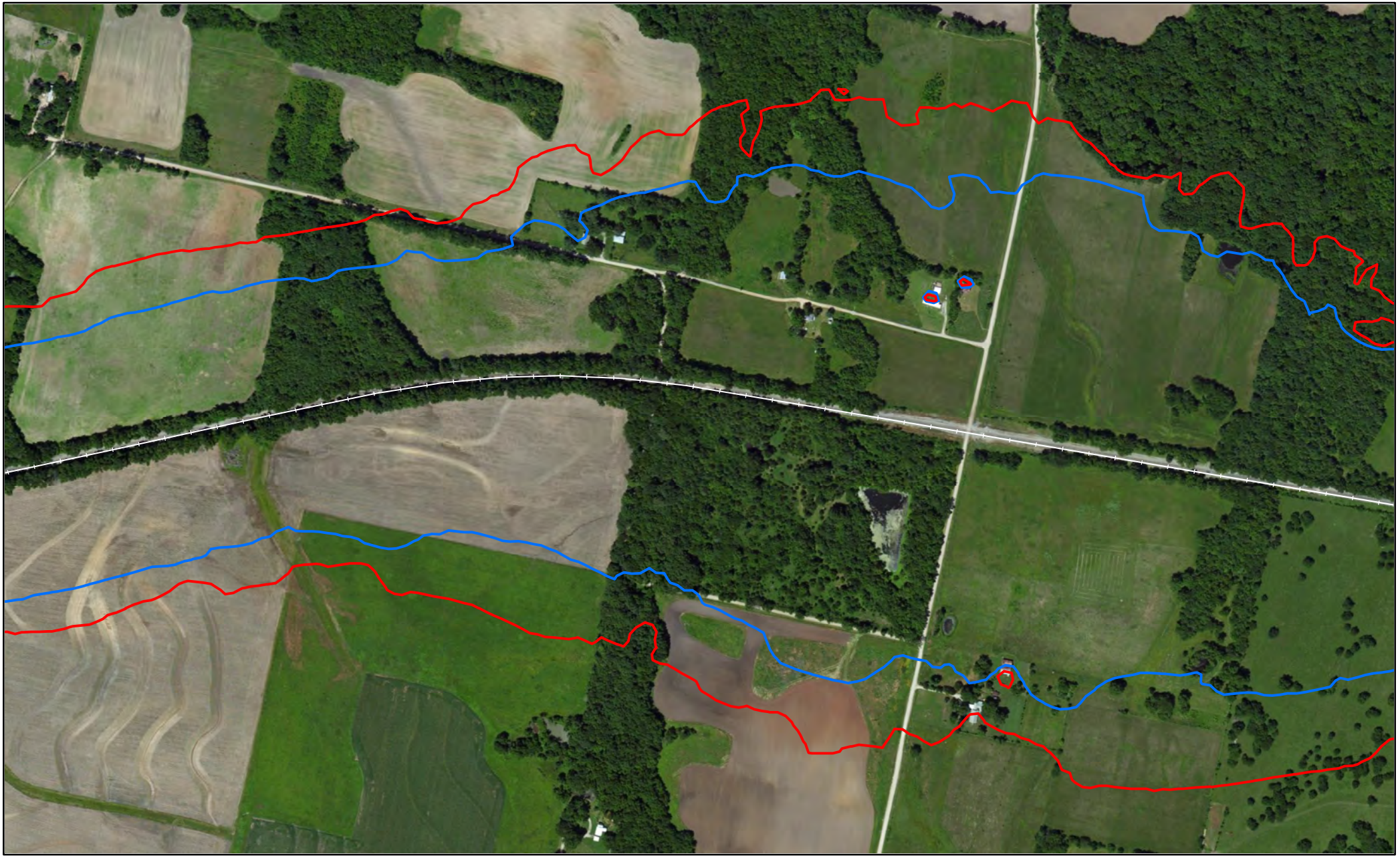
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Noise Contours
Vernon County, MO

Miles
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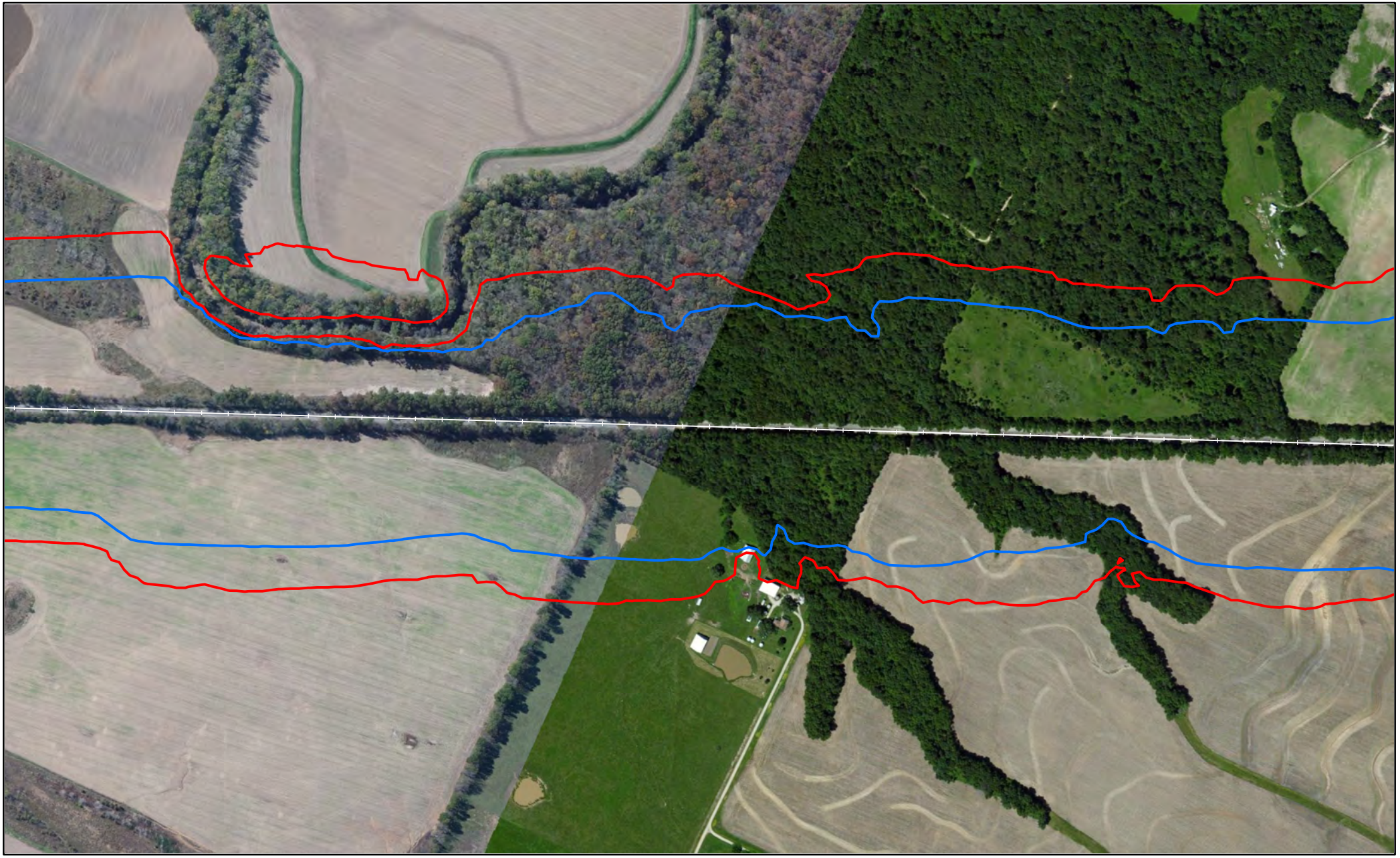
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Noise Contours
Vernon County, MO

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



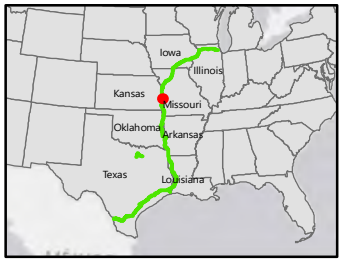
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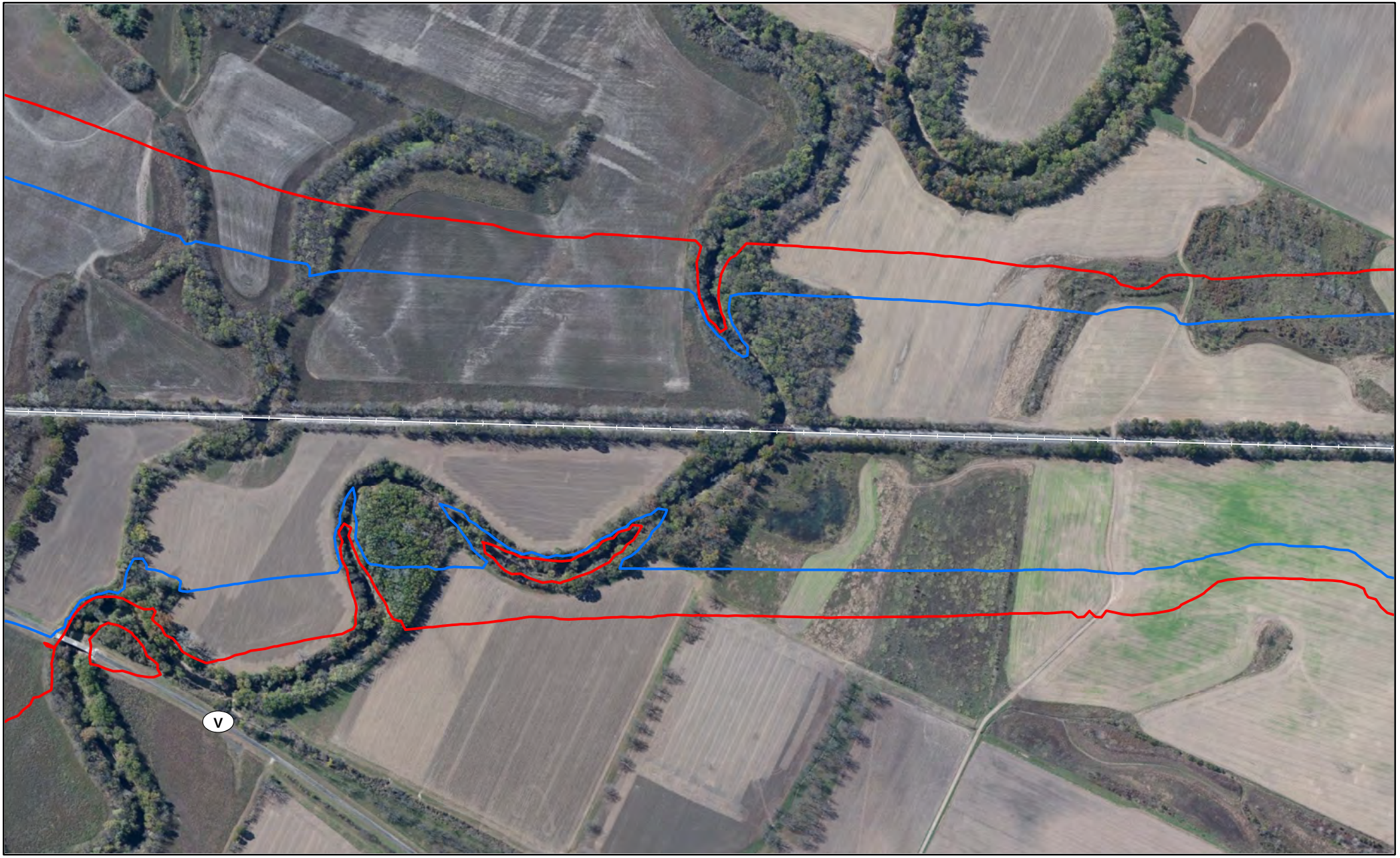
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Noise Contours
Vernon County, MO

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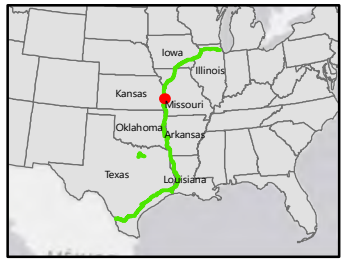
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Noise Contours
Vernon County, MO

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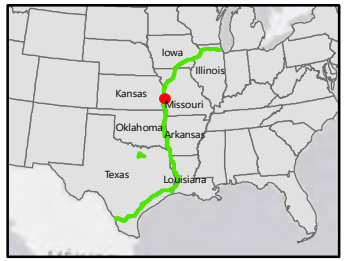
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Noise Contours
Vernon County, MO

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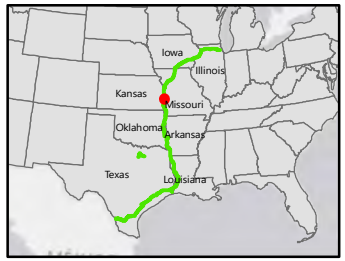
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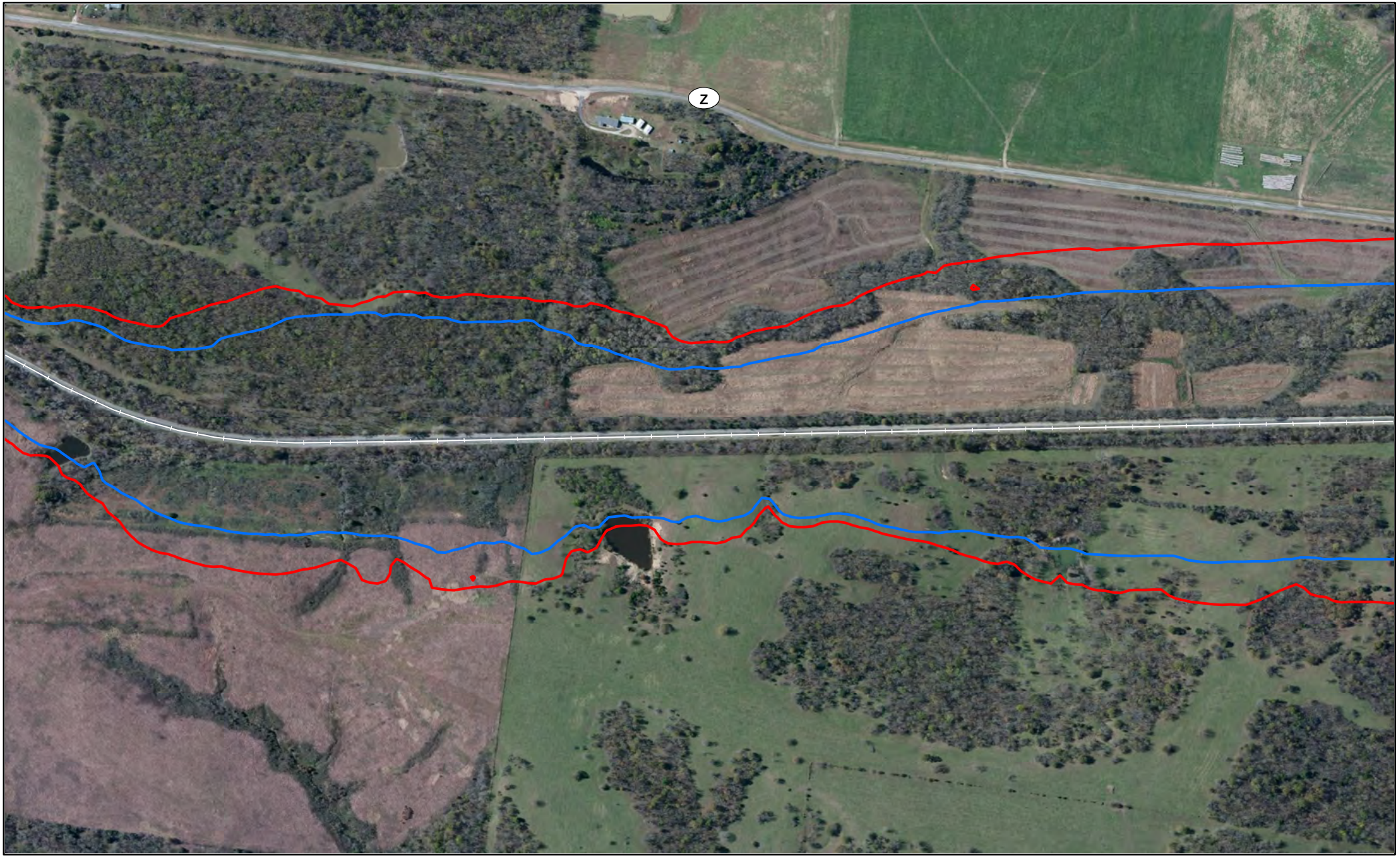
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Noise Contours
Vernon County, MO

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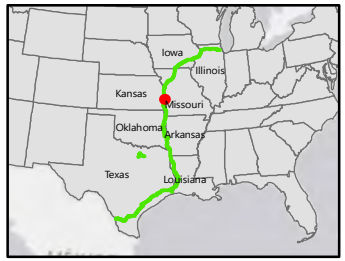
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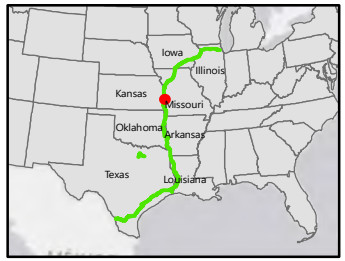
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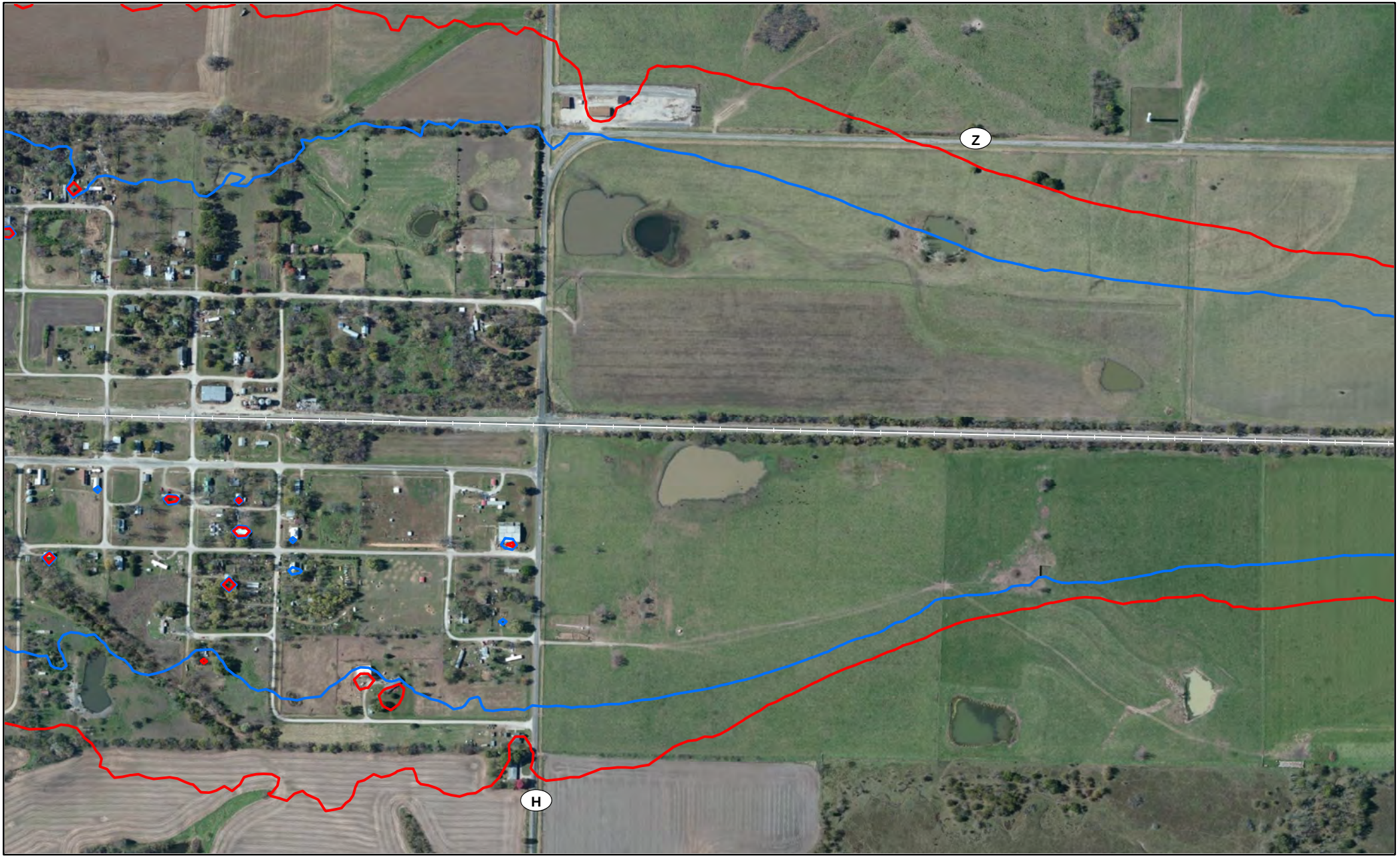
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Noise Contours
Vernon County, MO

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0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



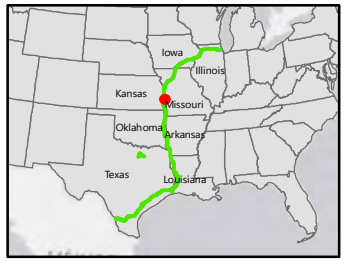
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

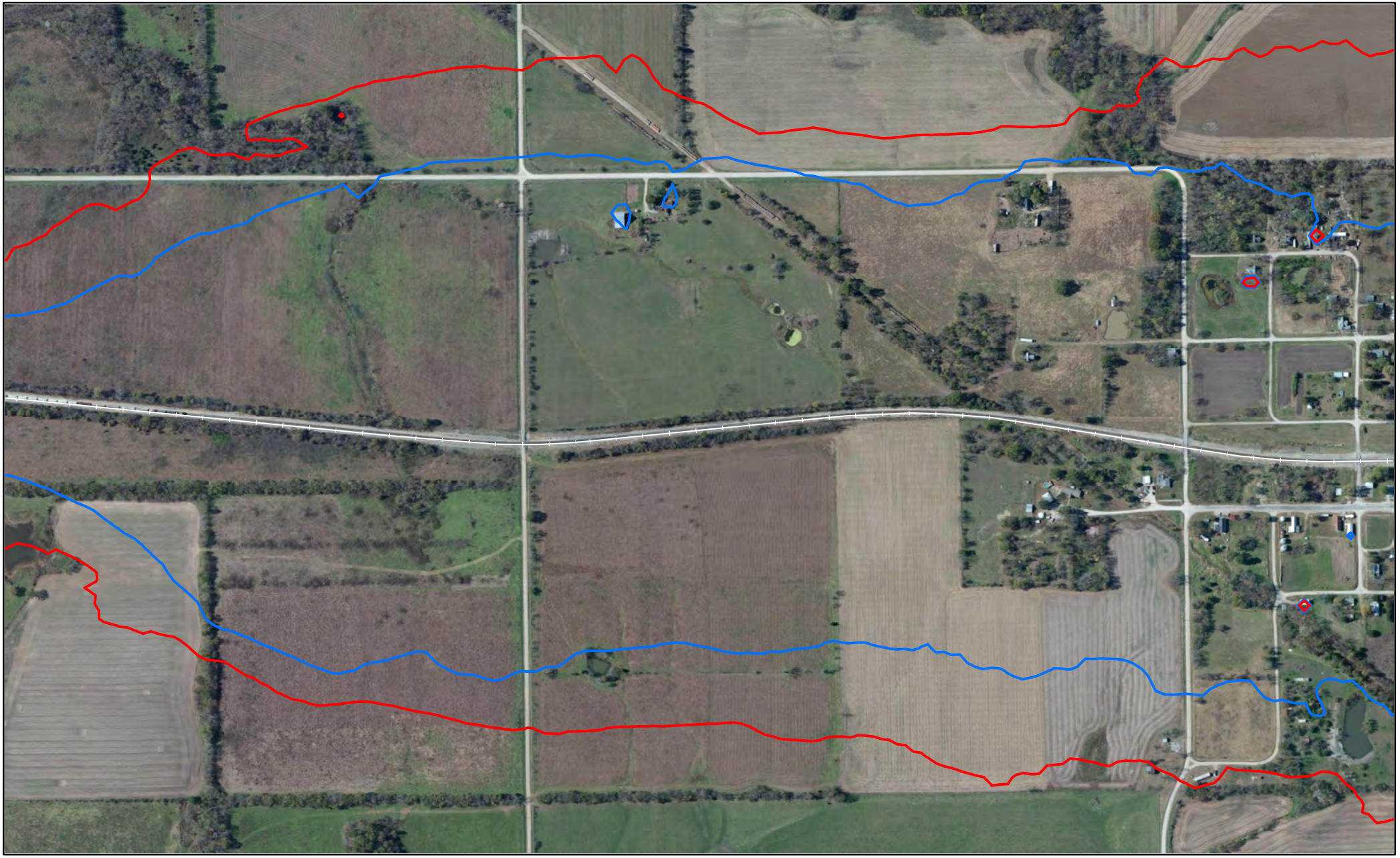
Source: ESRI.



Noise Contours
Vernon County, MO

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Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

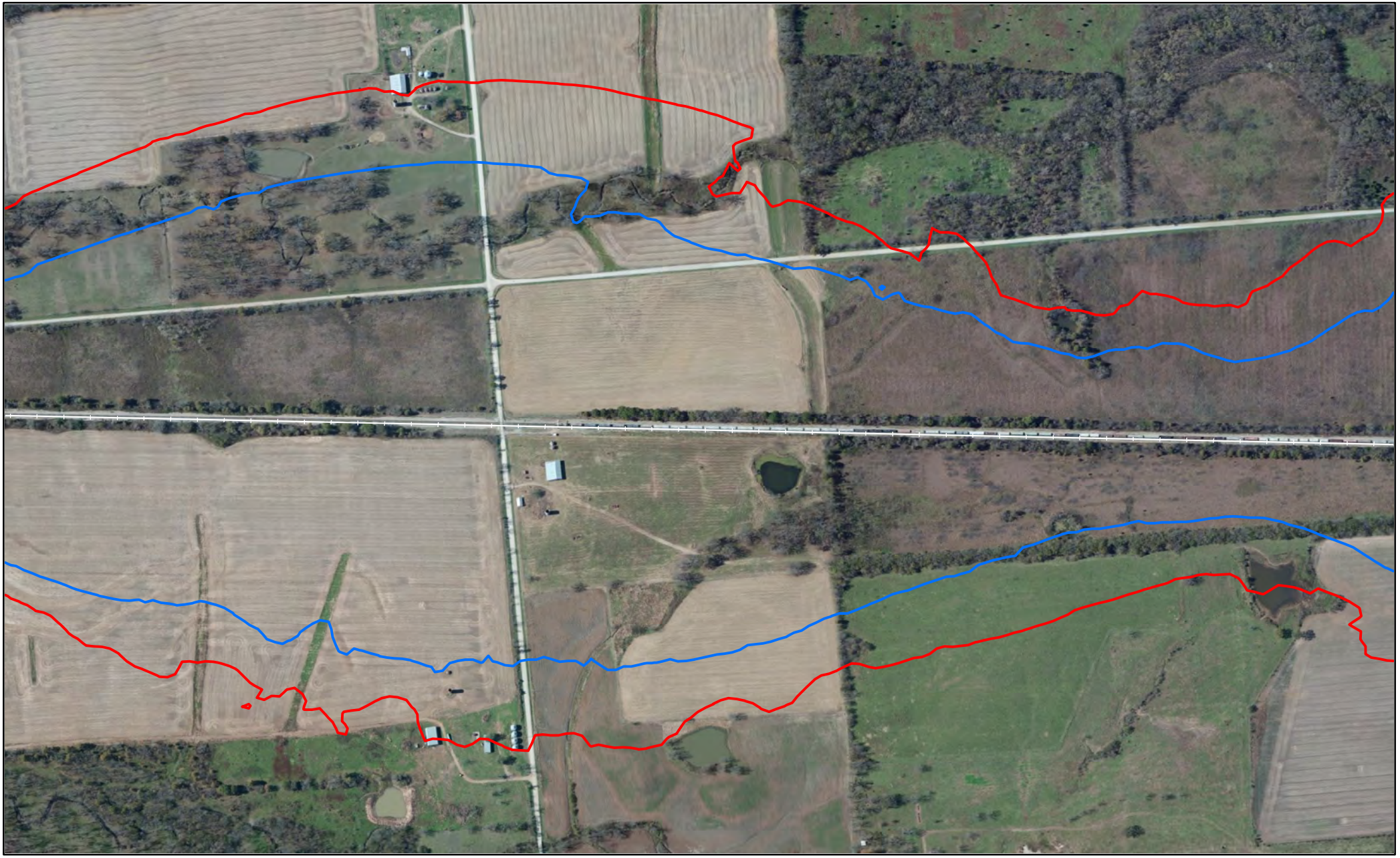
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Noise Contours
Vernon County, MO

Miles
0 0.05 0.1



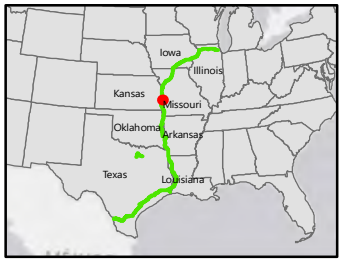
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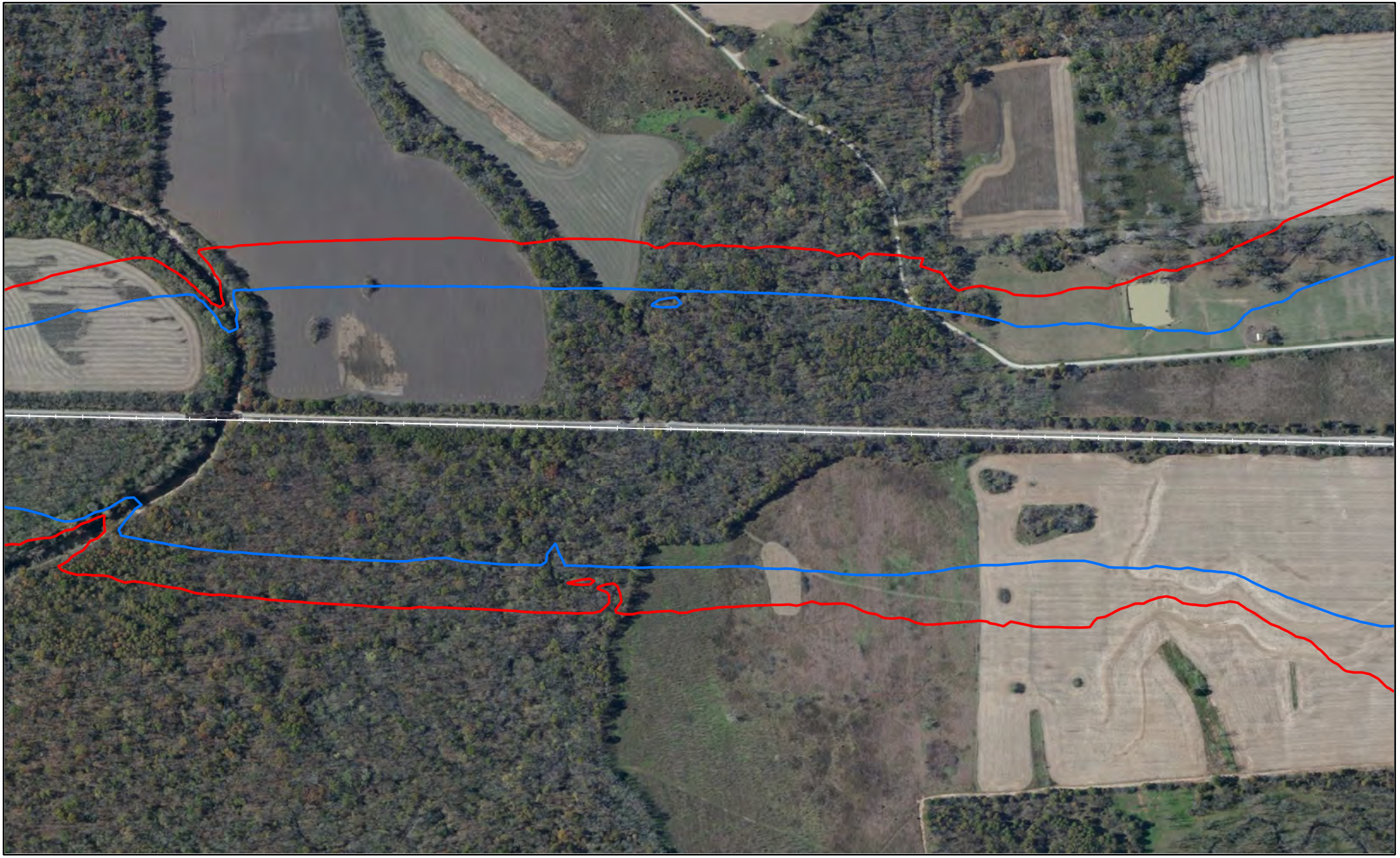
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Noise Contours
Vernon County, MO

Miles
0 0.05 0.1



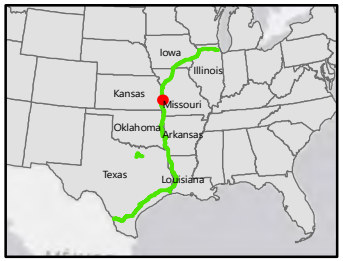
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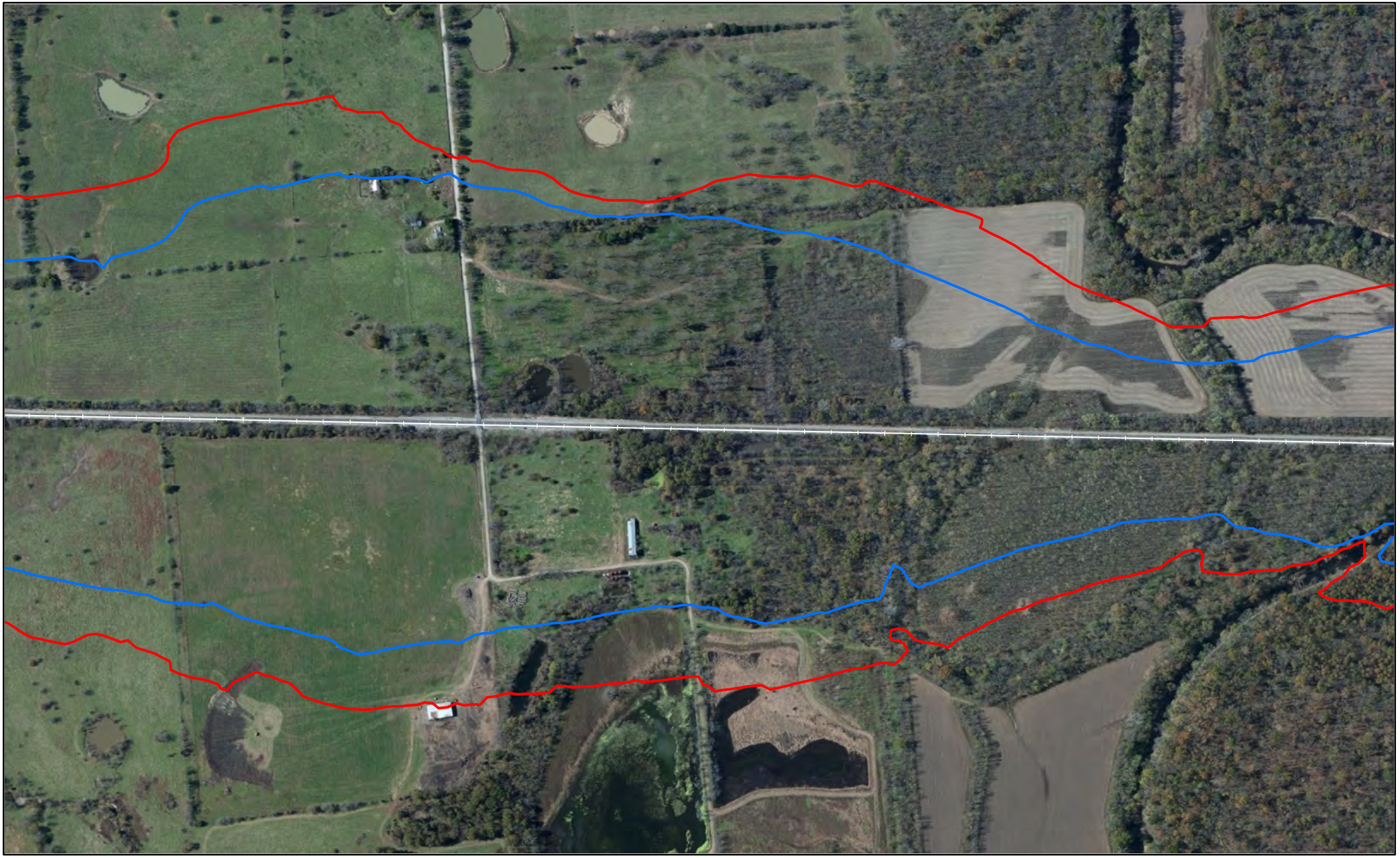
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Noise Contours
Vernon County, MO

Miles
0 0.05 0.1



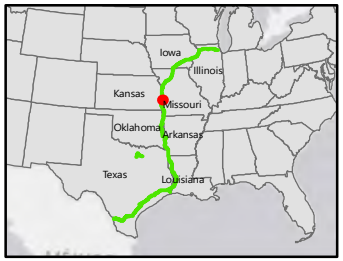
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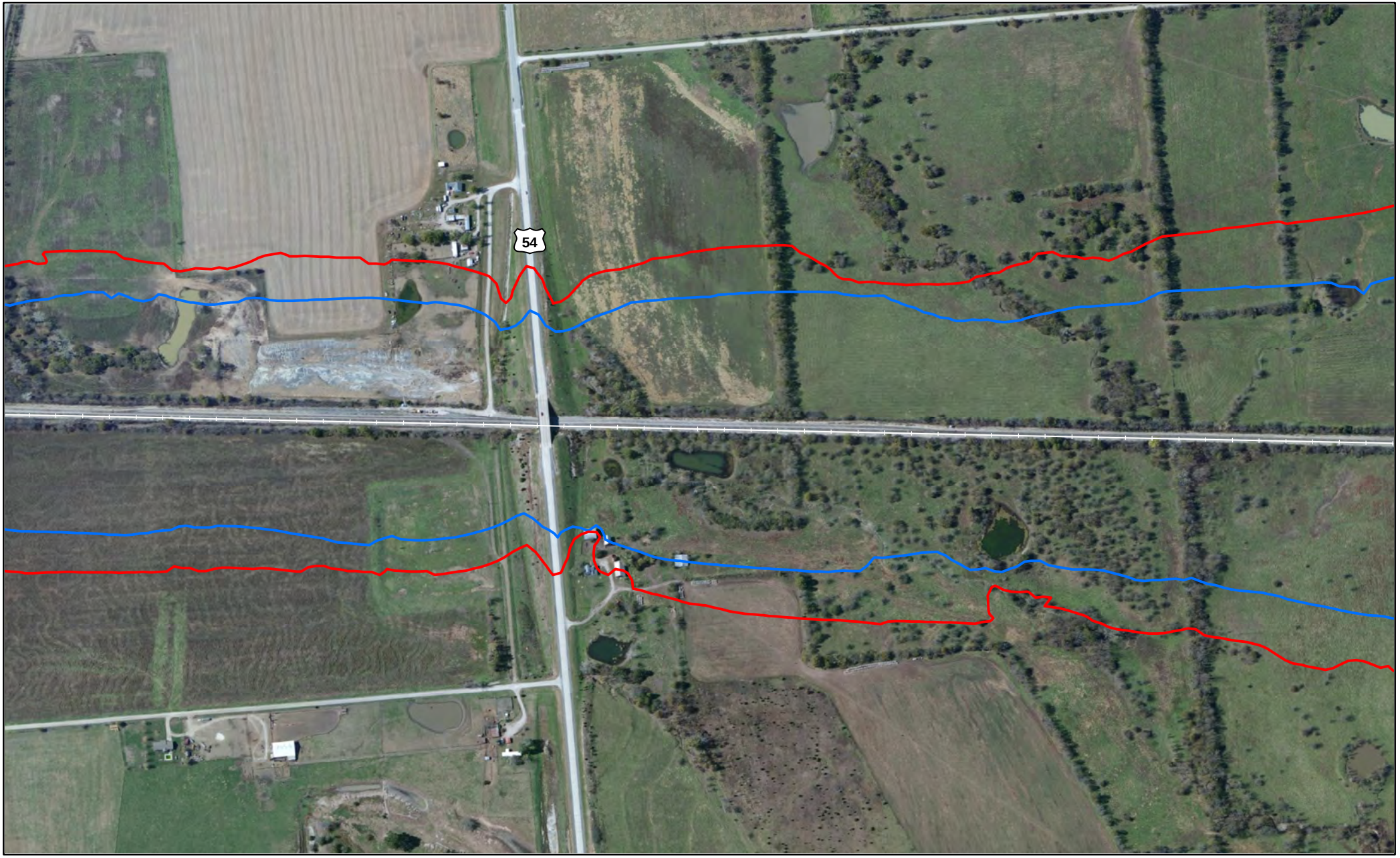
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Noise Contours
Vernon County, MO

Miles
0 0.05 0.1



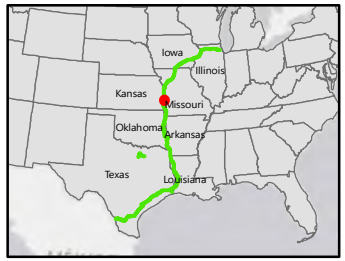
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Noise Contours
Vernon County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



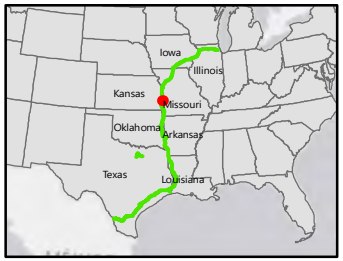
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Noise Contours
Vernon County, MO

Miles
0 0.05 0.1



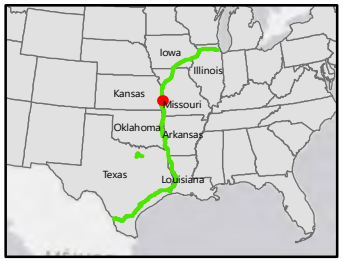
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Noise Contours
Vernon County, MO

Miles
0 0.05 0.1



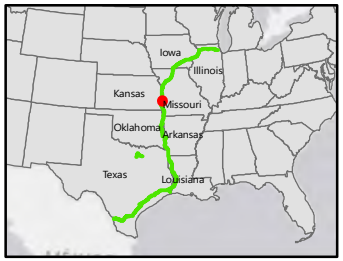
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Noise Contours
Vernon County, MO

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



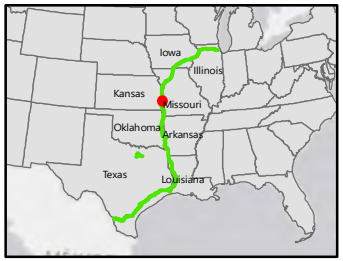
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Noise Contours
Vernon County, MO

Miles
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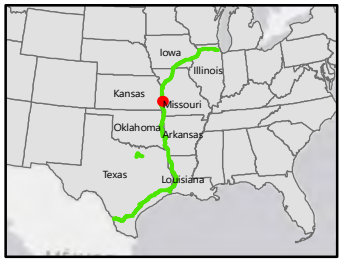
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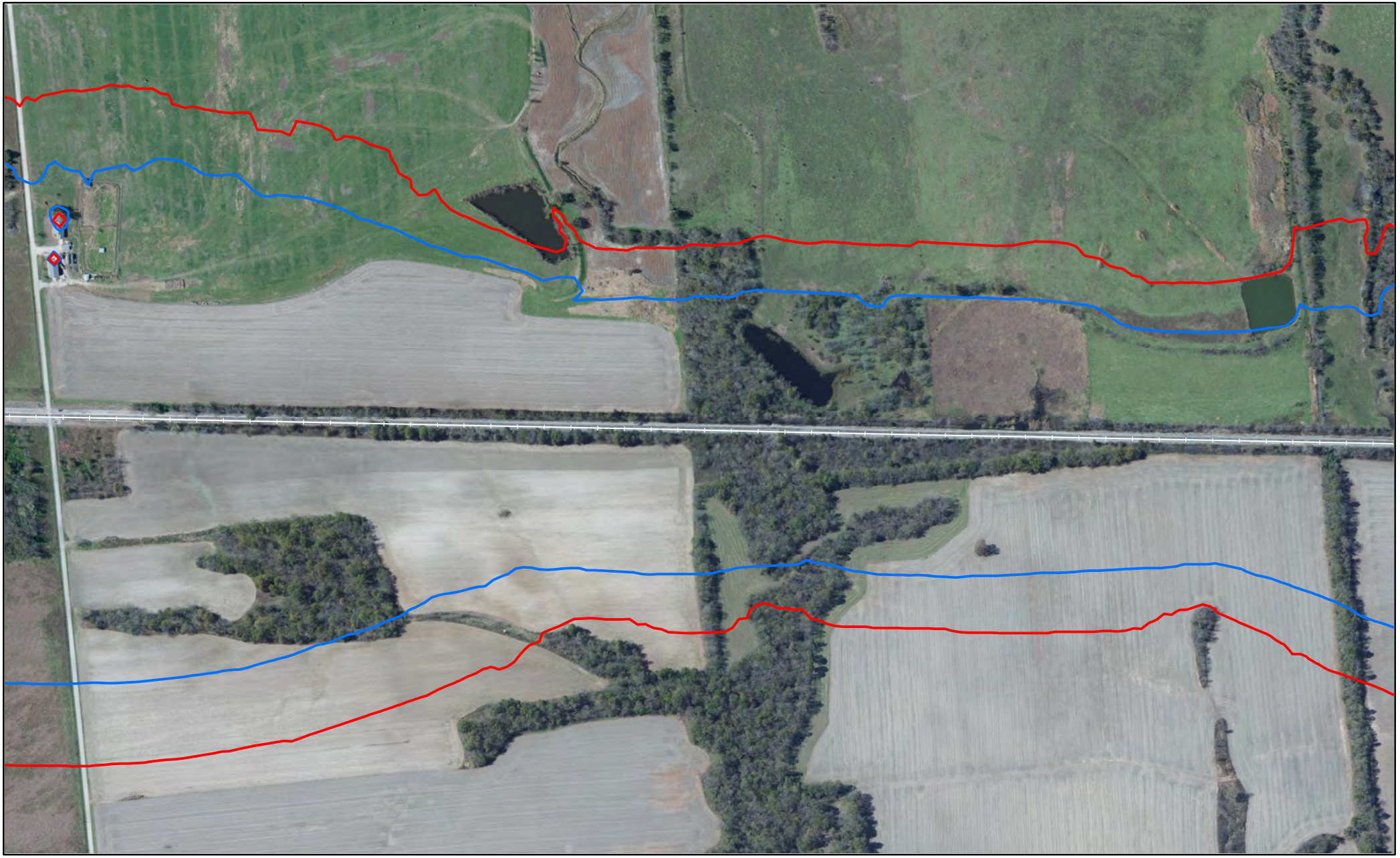
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Noise Contours
Vernon County, MO

Miles
0 0.05 0.1



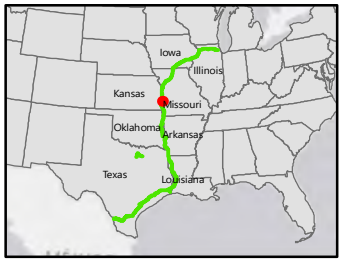
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Noise Contours
Vernon County, MO

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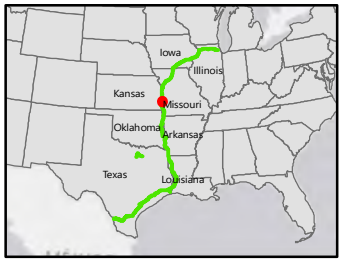
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Noise Contours
Vernon County, MO

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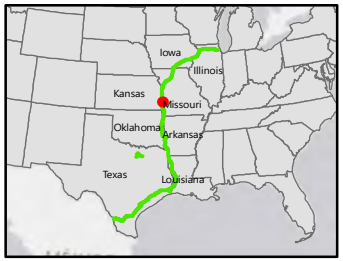
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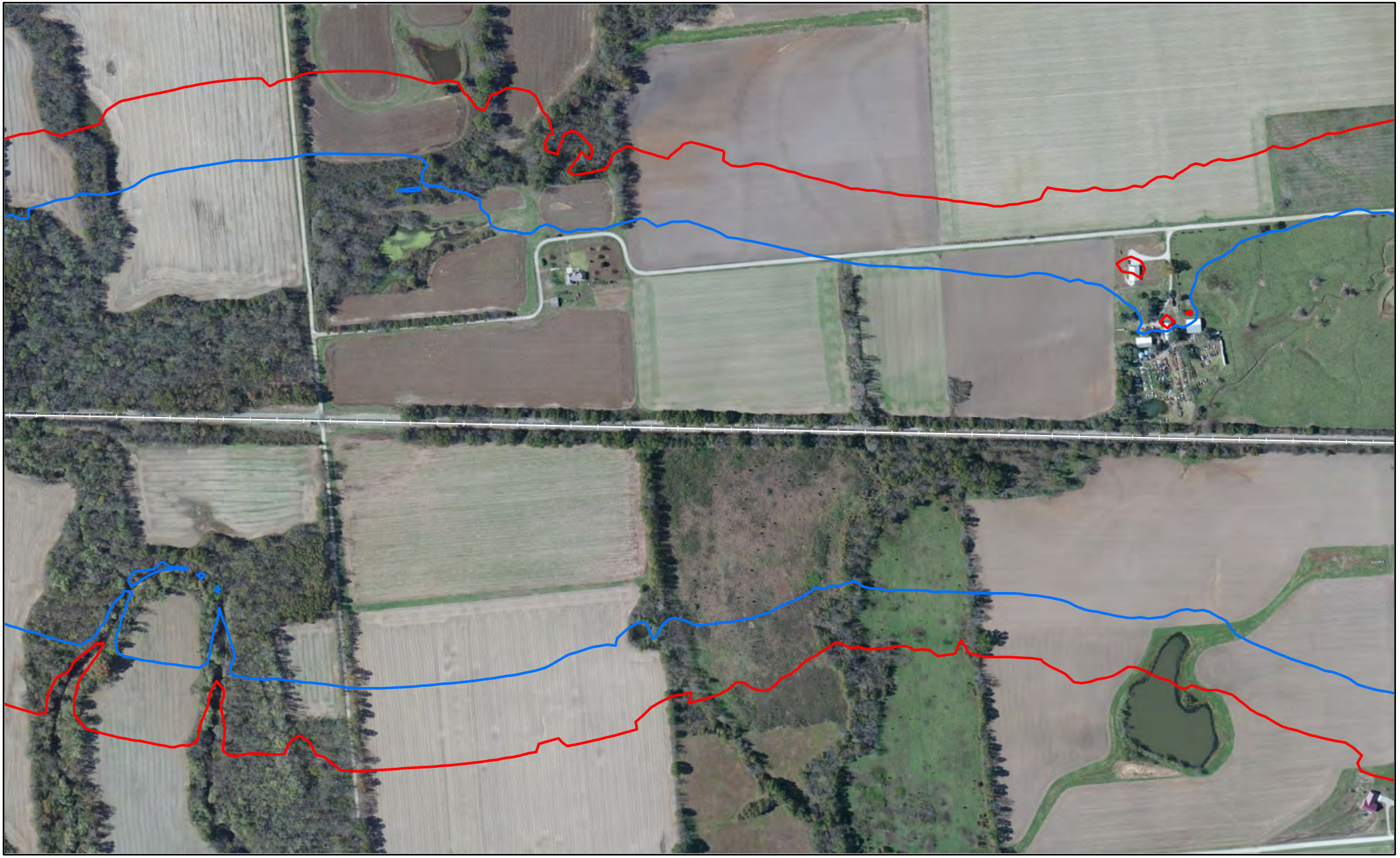
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Noise Contours
Vernon County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



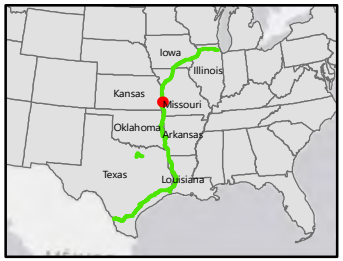
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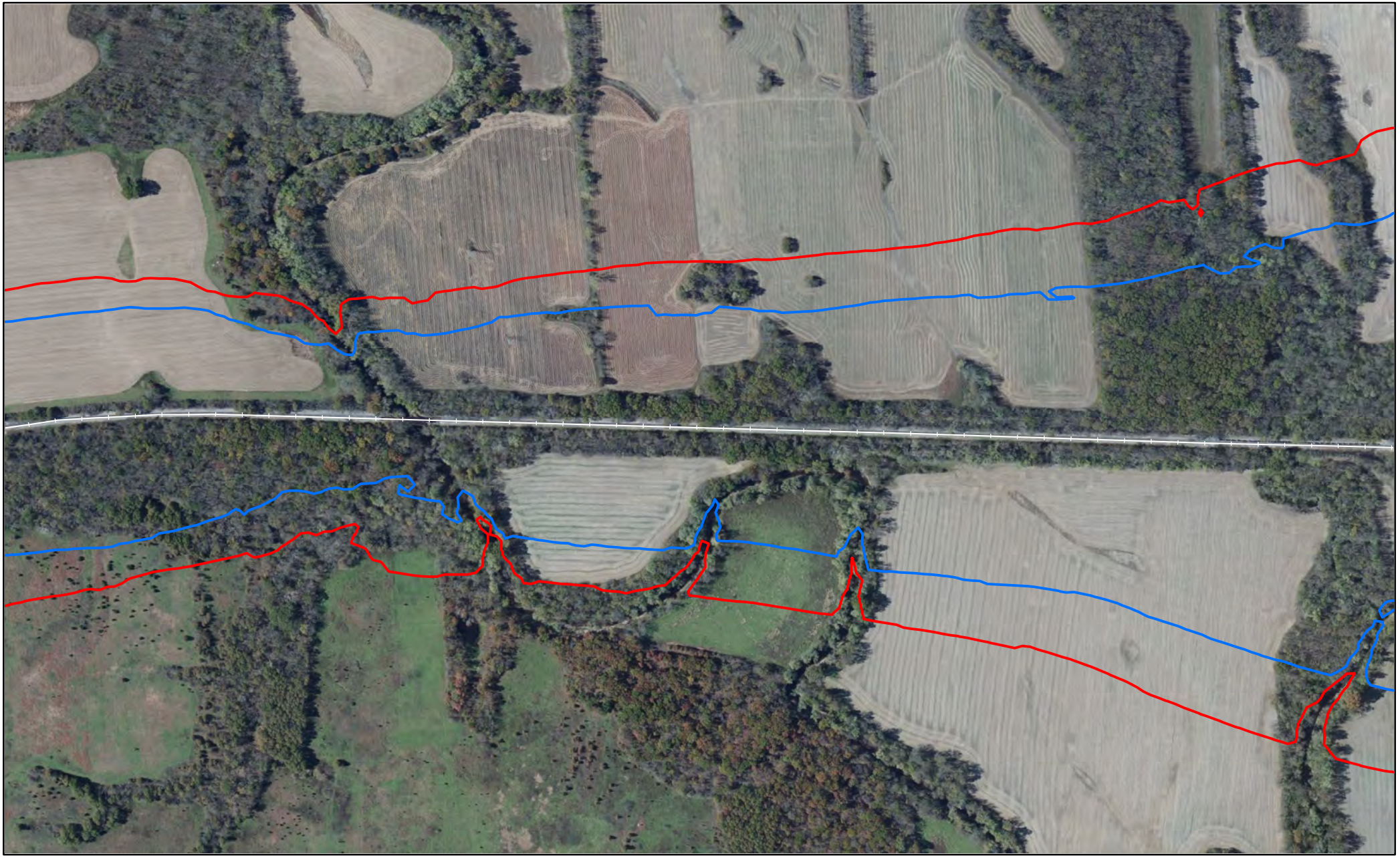
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Noise Contours
Vernon County, MO

Miles
0 0.05 0.1



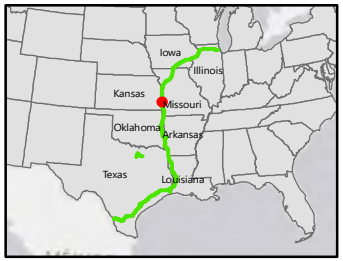
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Noise Contours
Vernon County, MO

Miles
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Noise Contours
Vernon County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



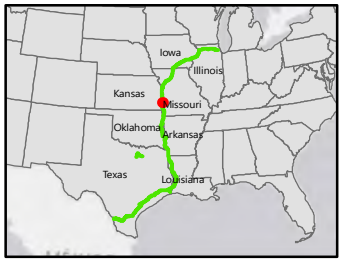
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Noise Contours
Vernon County, MO

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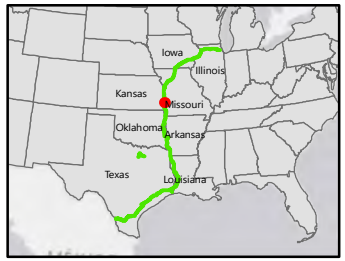
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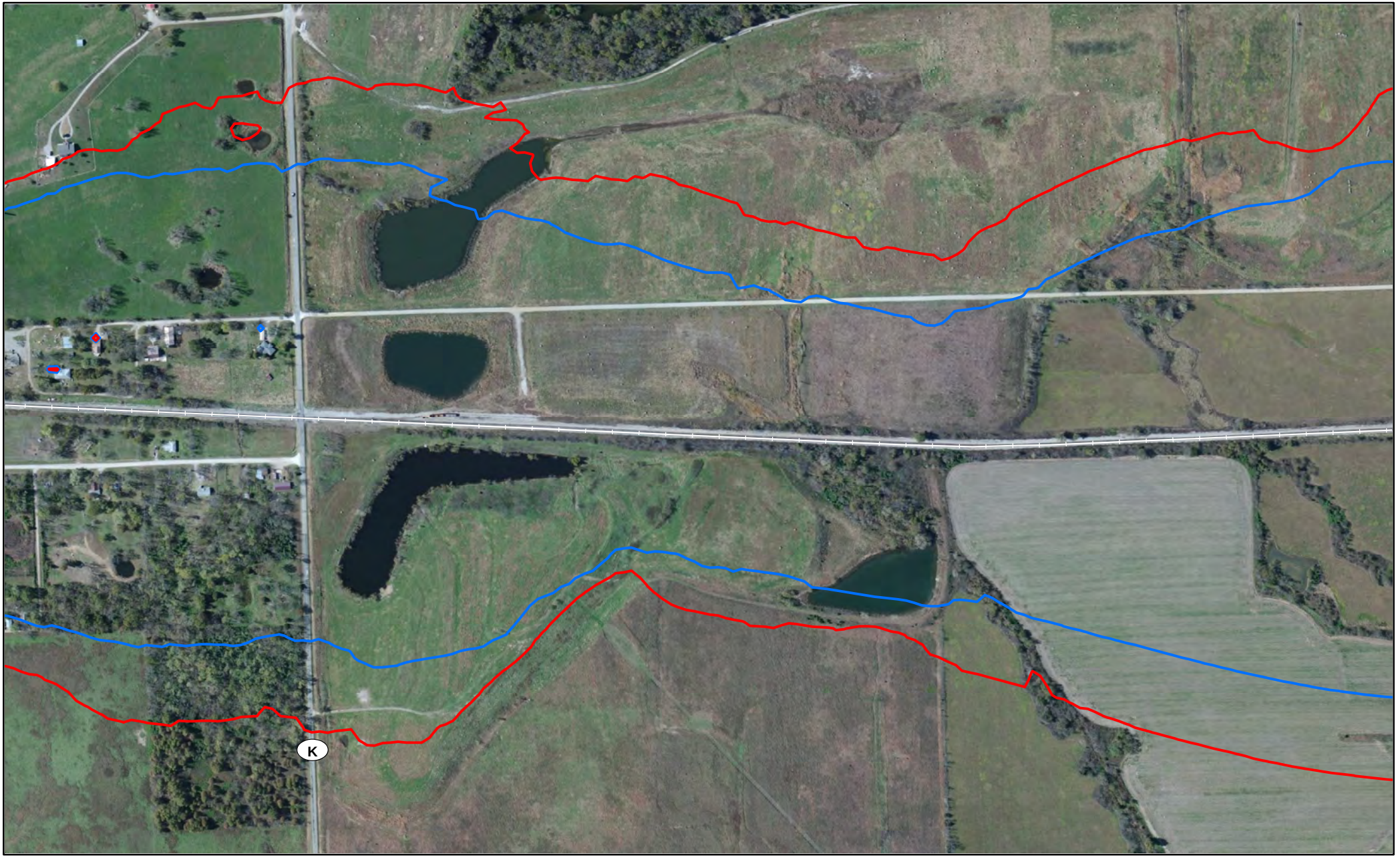
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Noise Contours
Vernon County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



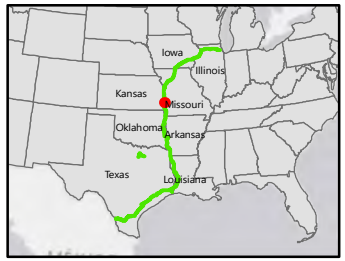
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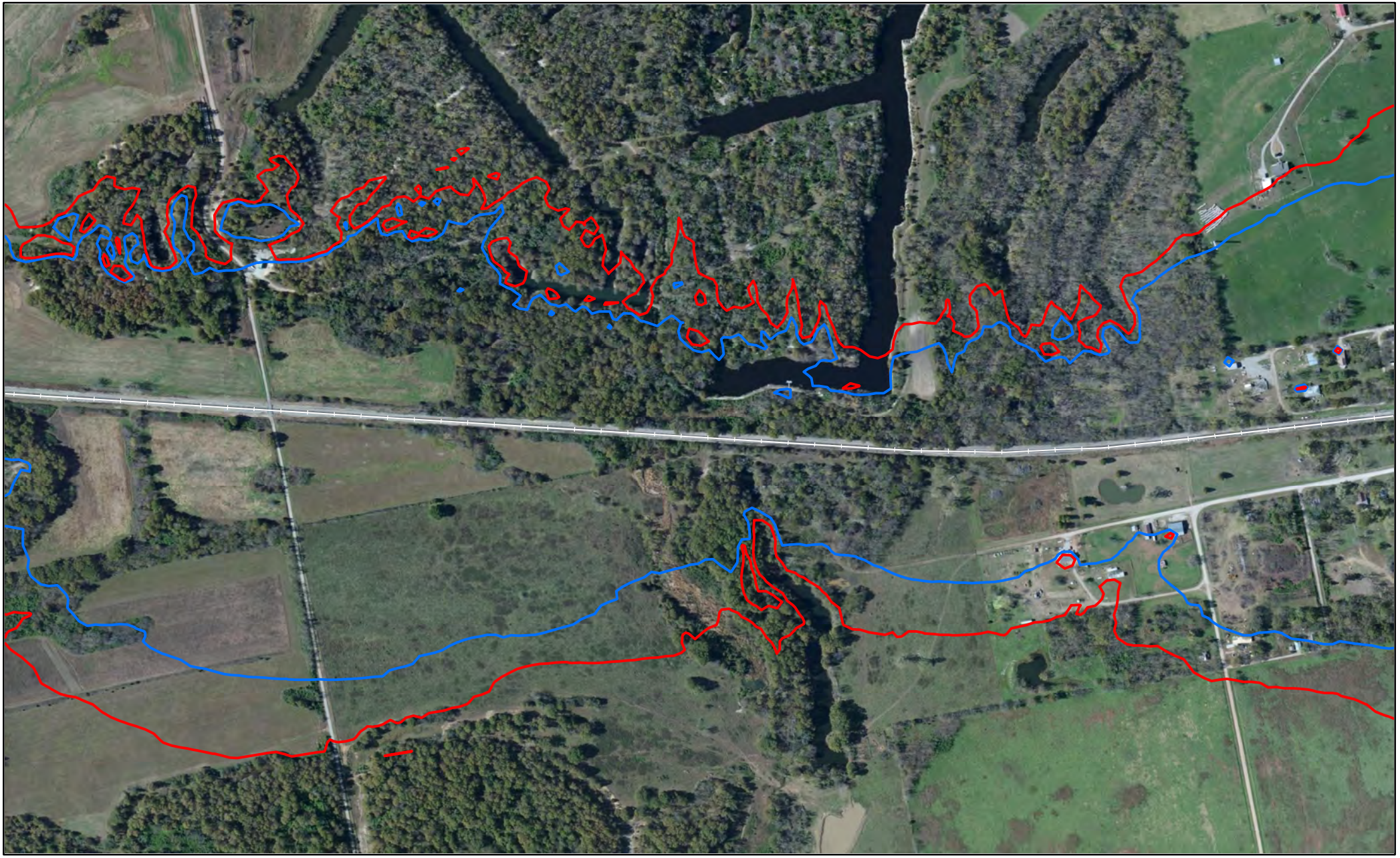
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Noise Contours
Barton County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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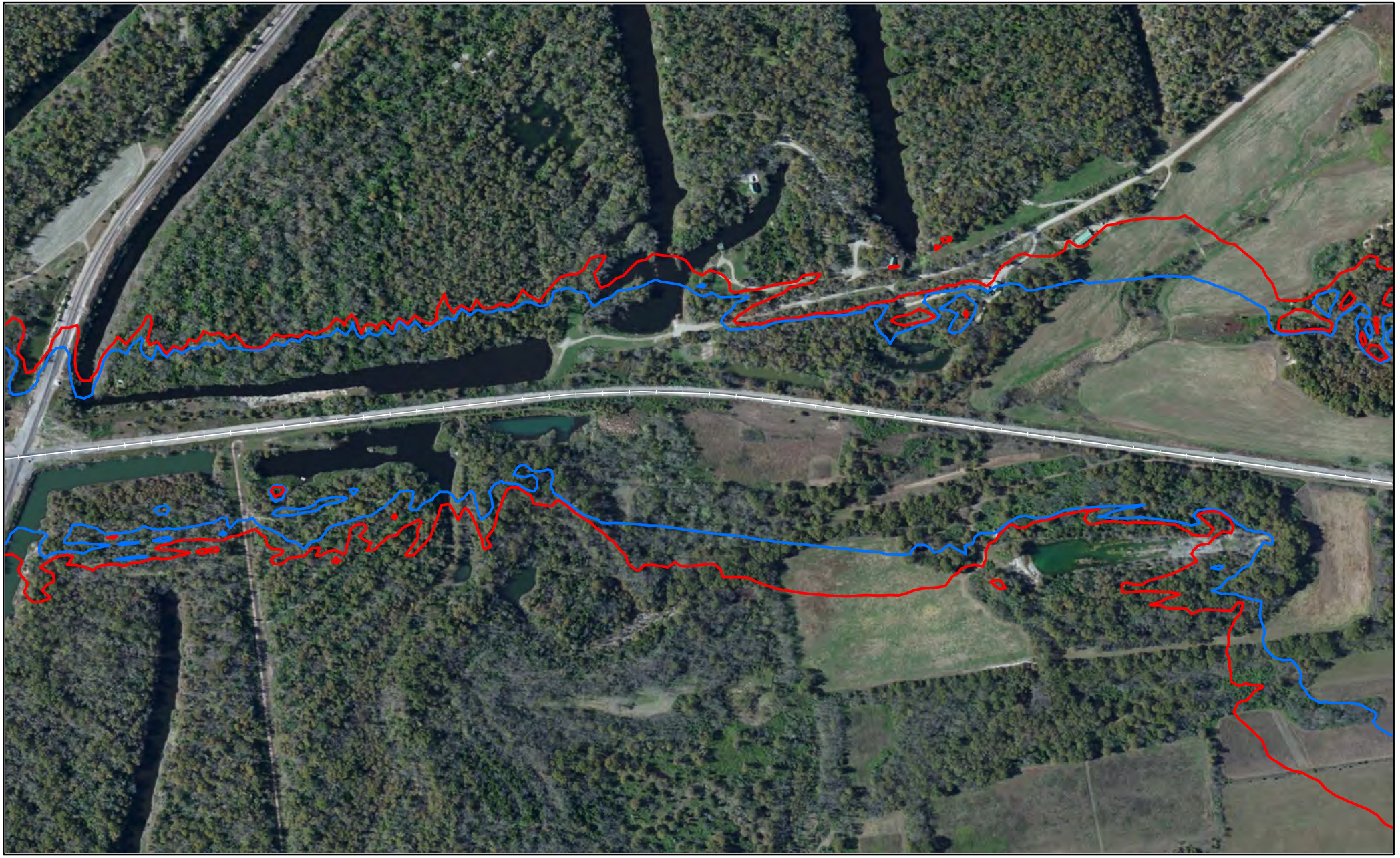
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Noise Contours
Barton County, MO

Miles
0 0.05 0.1



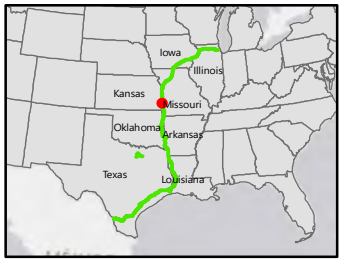
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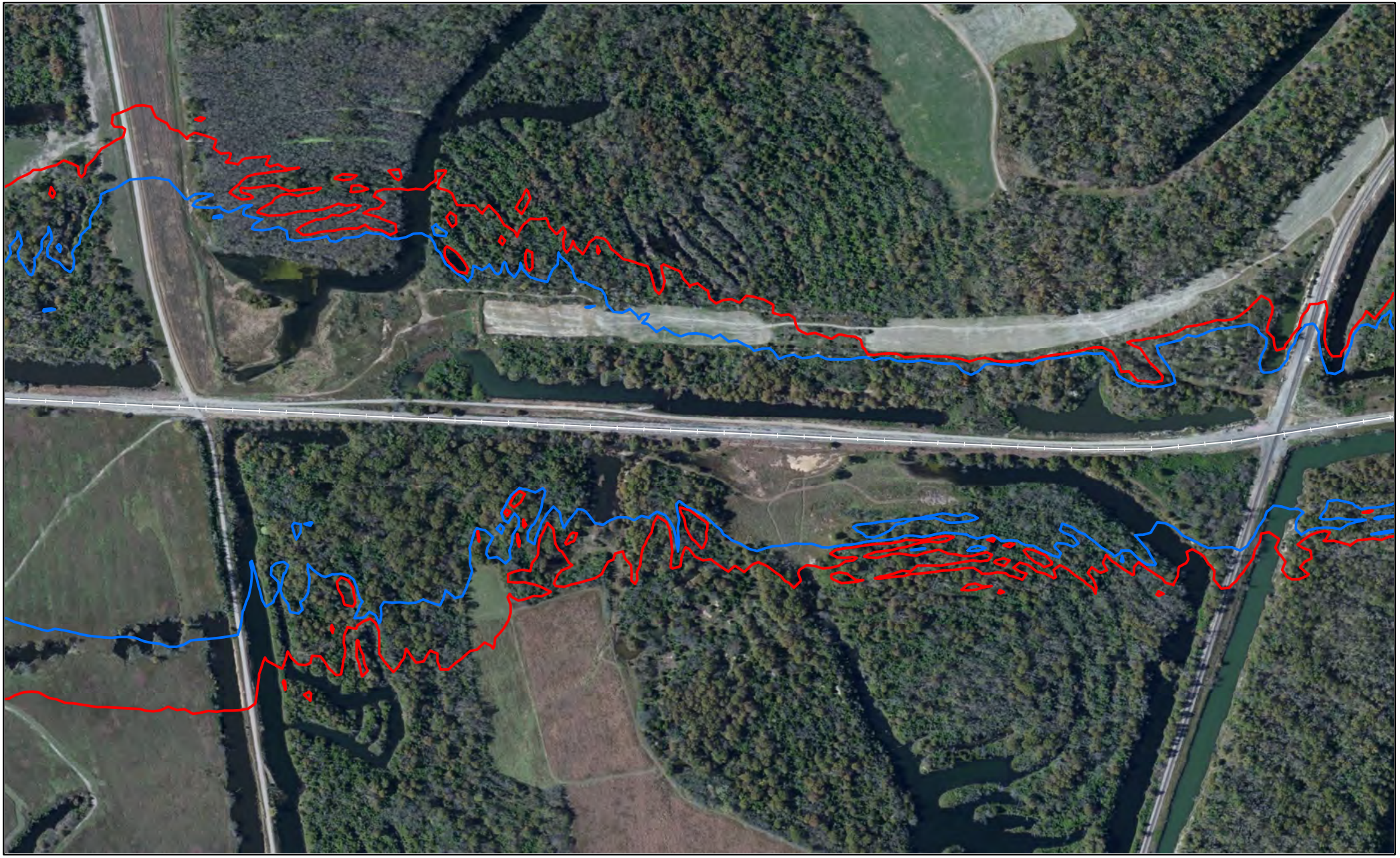


Noise Contours
Barton County, MO

Page 591 of 1588

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



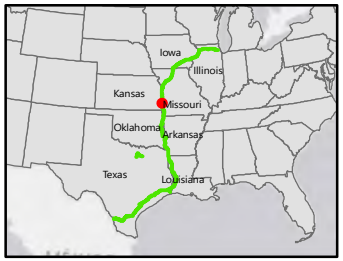
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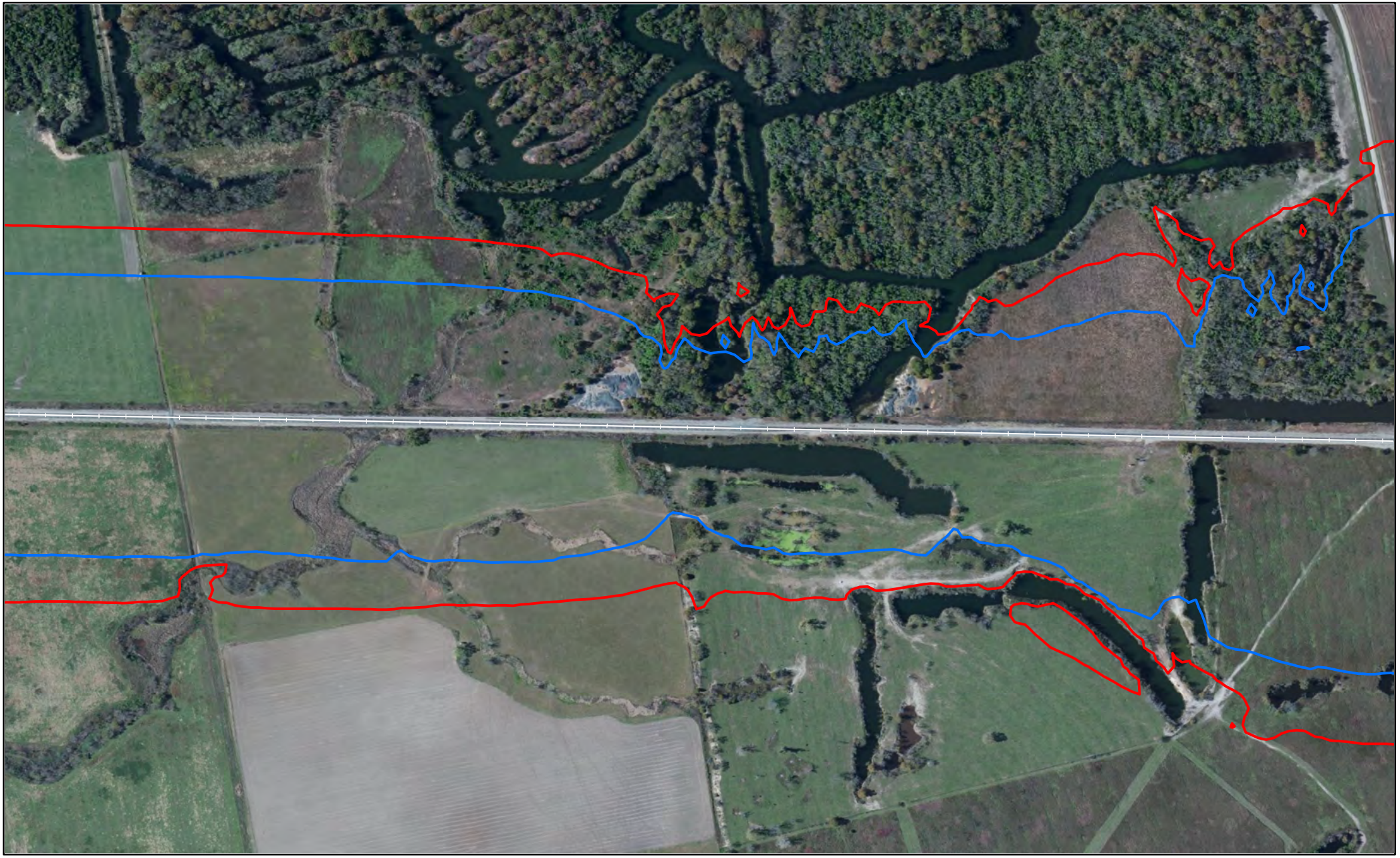
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Noise Contours
Barton County, MO

Miles
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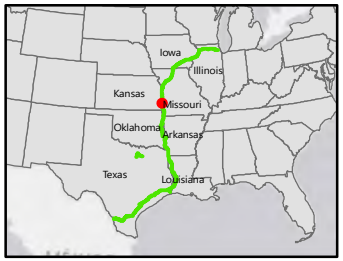
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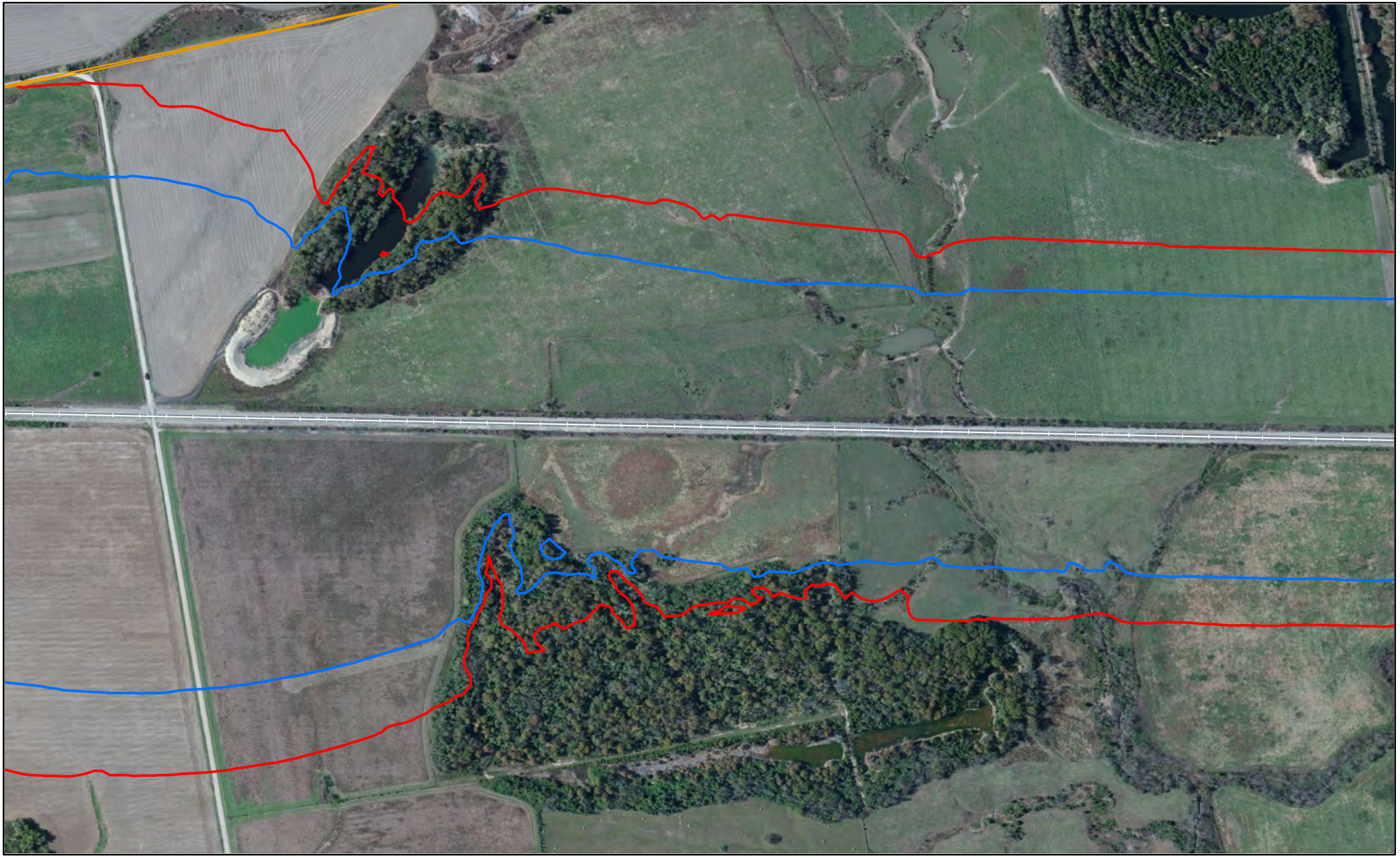
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Noise Contours
Barton County, MO

Miles
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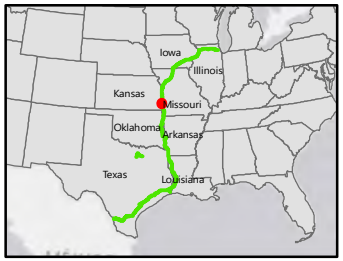
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Noise Contours
Crawford County, KS

Miles
0 0.05 0.1



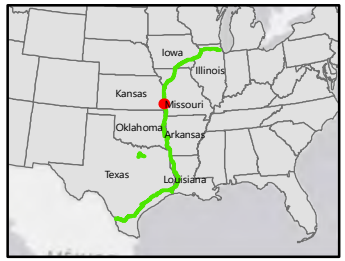
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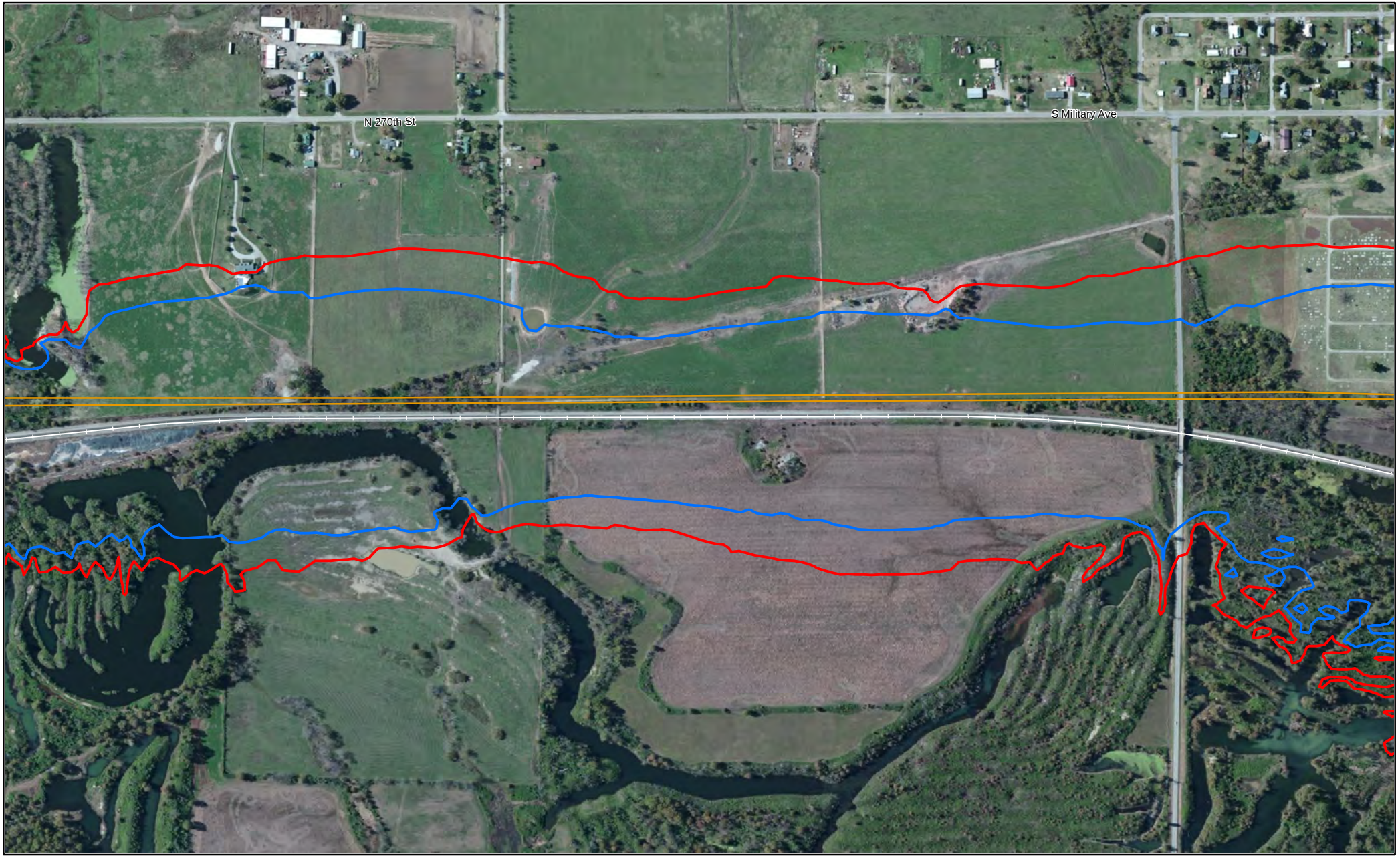
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Noise Contours
Crawford County, KS

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



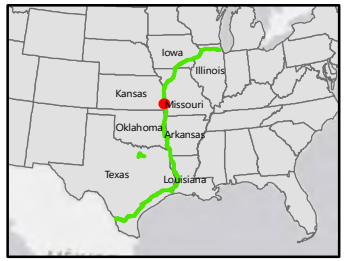
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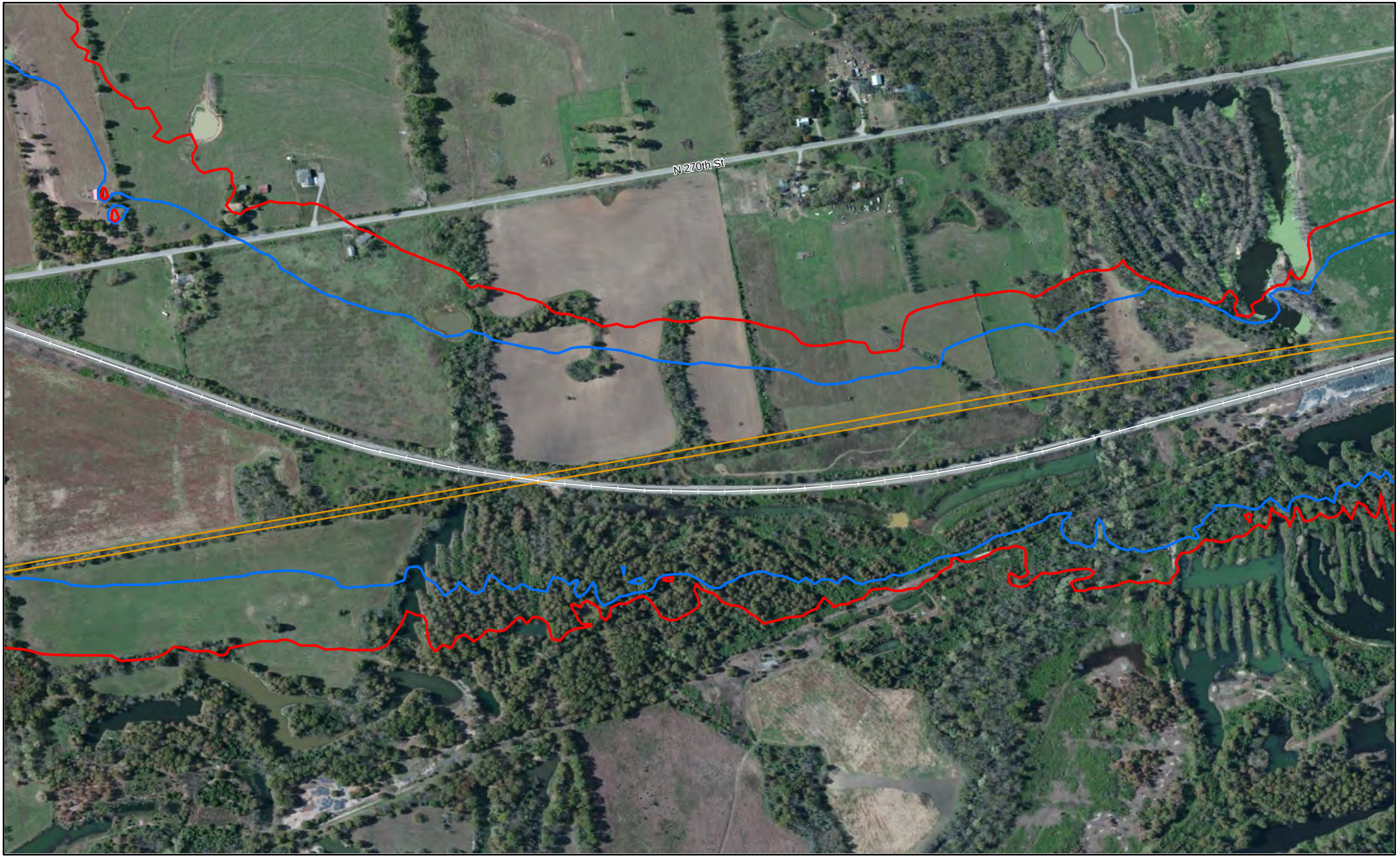
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Noise Contours
Crawford County, KS

Miles
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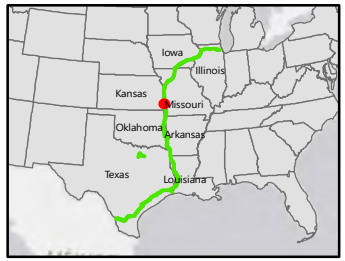
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Noise Contours
Crawford County, KS

Miles
0 0.05 0.1



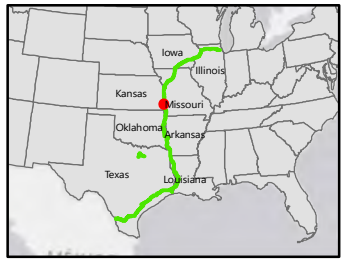
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Crawford County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Cherokee County, KS

Miles
0 0.05 0.1



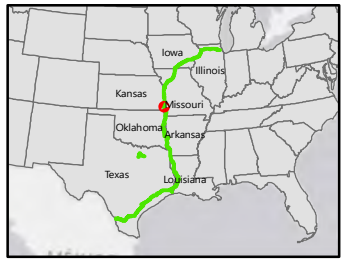
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

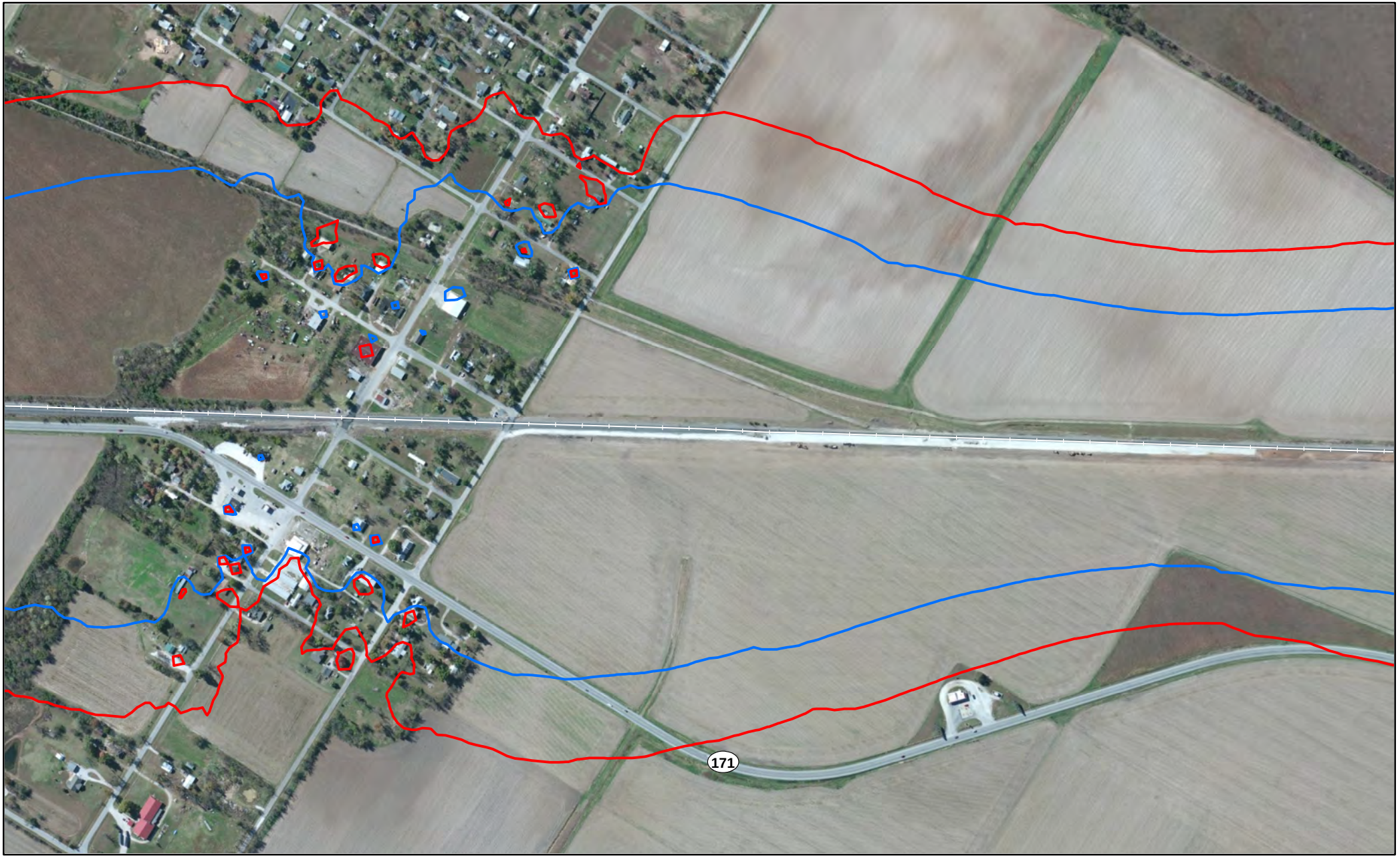
Tracks

Source: ESRI.



Noise Contours
Cherokee County, KS

Miles
0 0.05 0.1



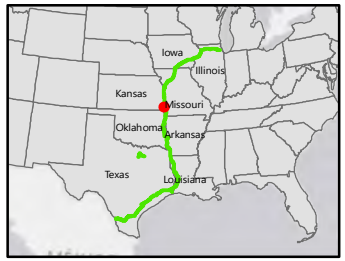
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jasper County, MO

Miles
0 0.05 0.1



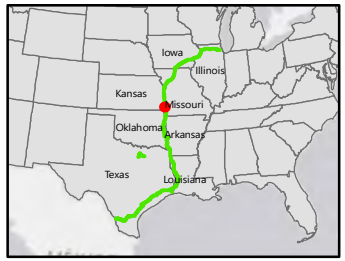
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Tracks

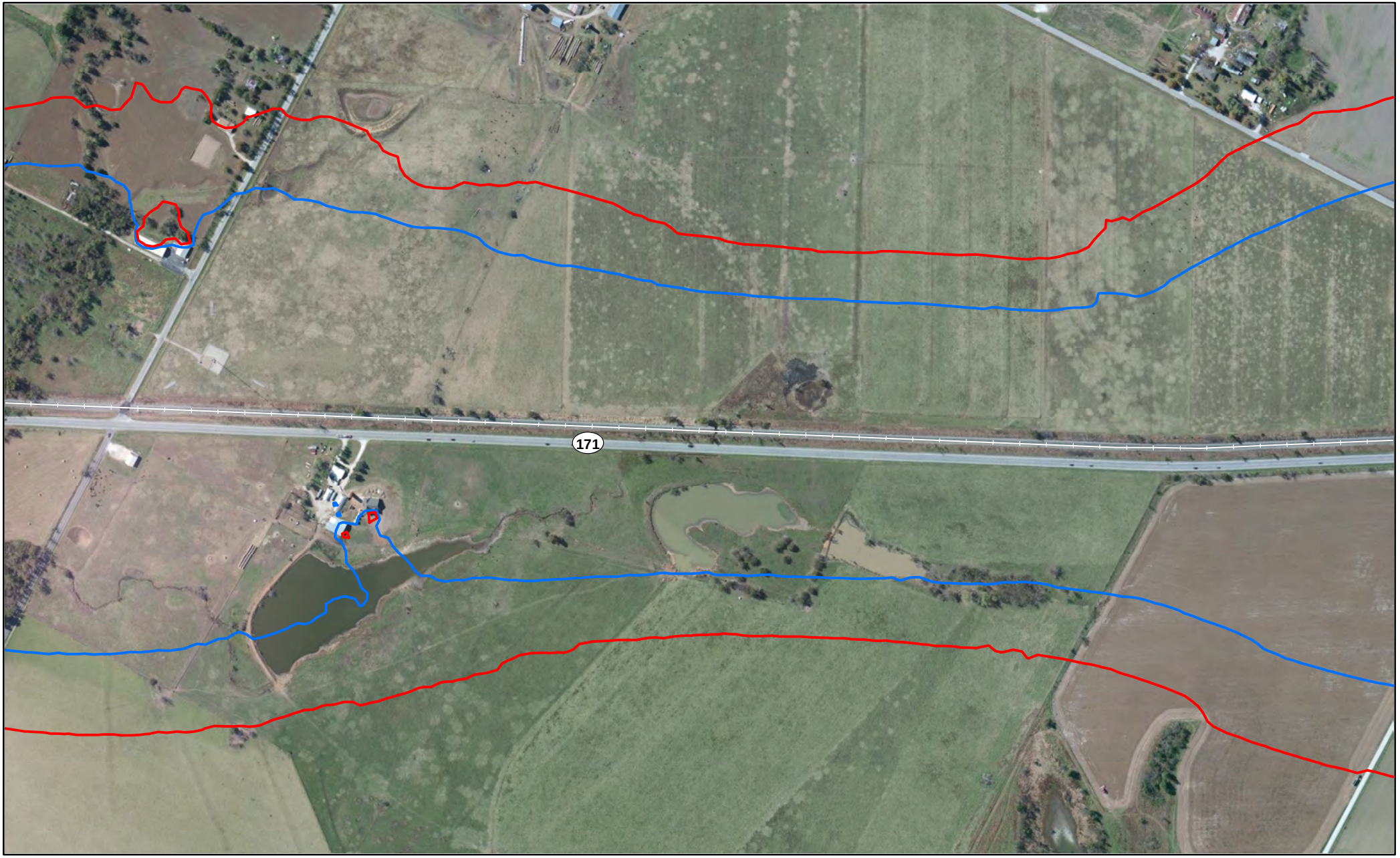
Source: ESRI.



Noise Contours
Jasper County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



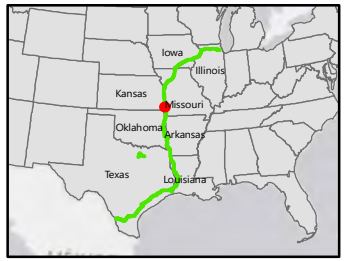
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

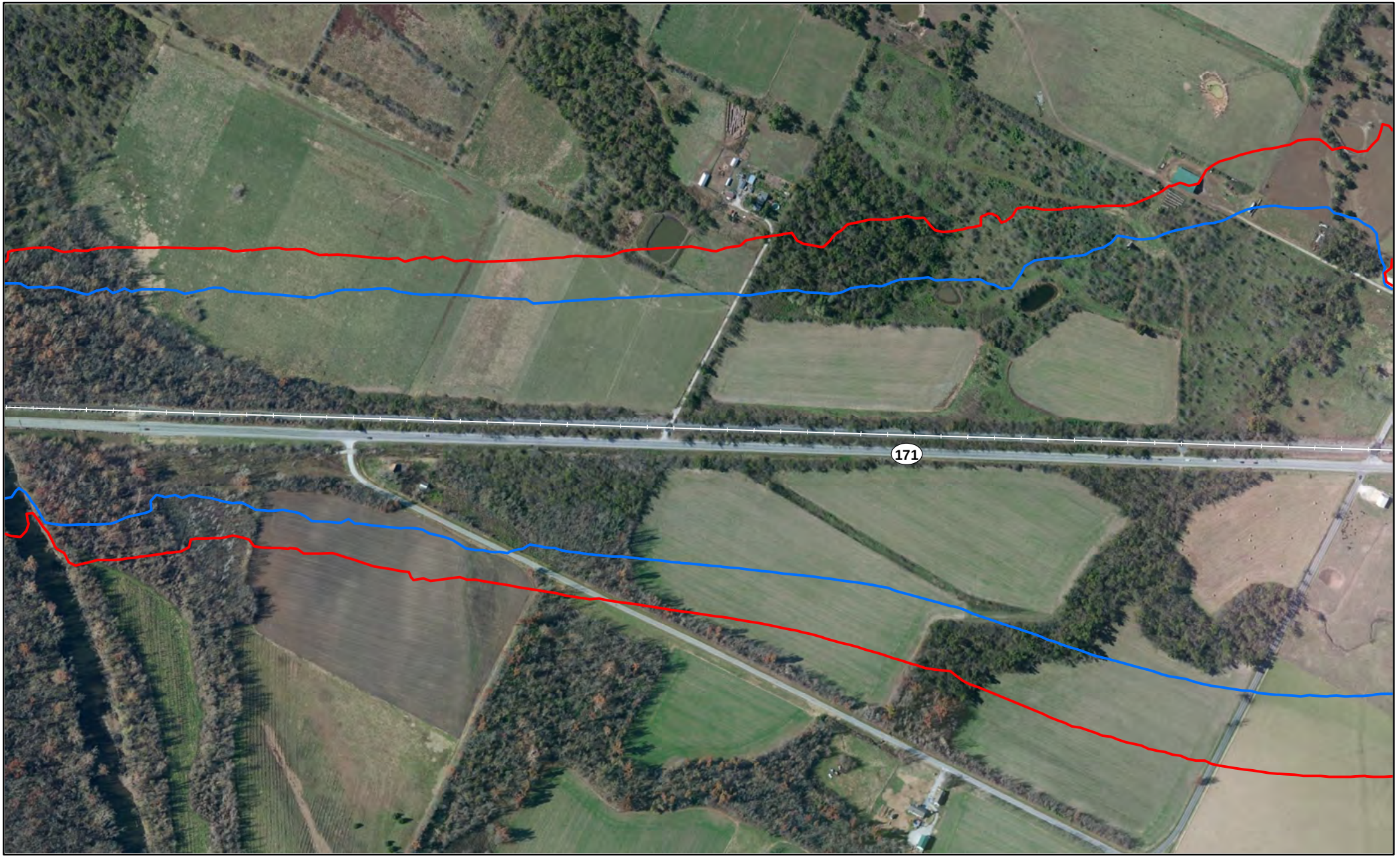
Source: ESRI.



Noise Contours
Jasper County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



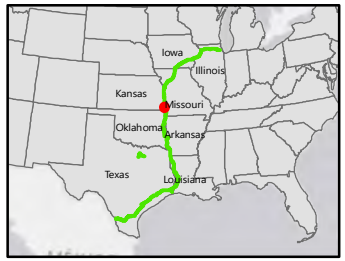
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Tracks

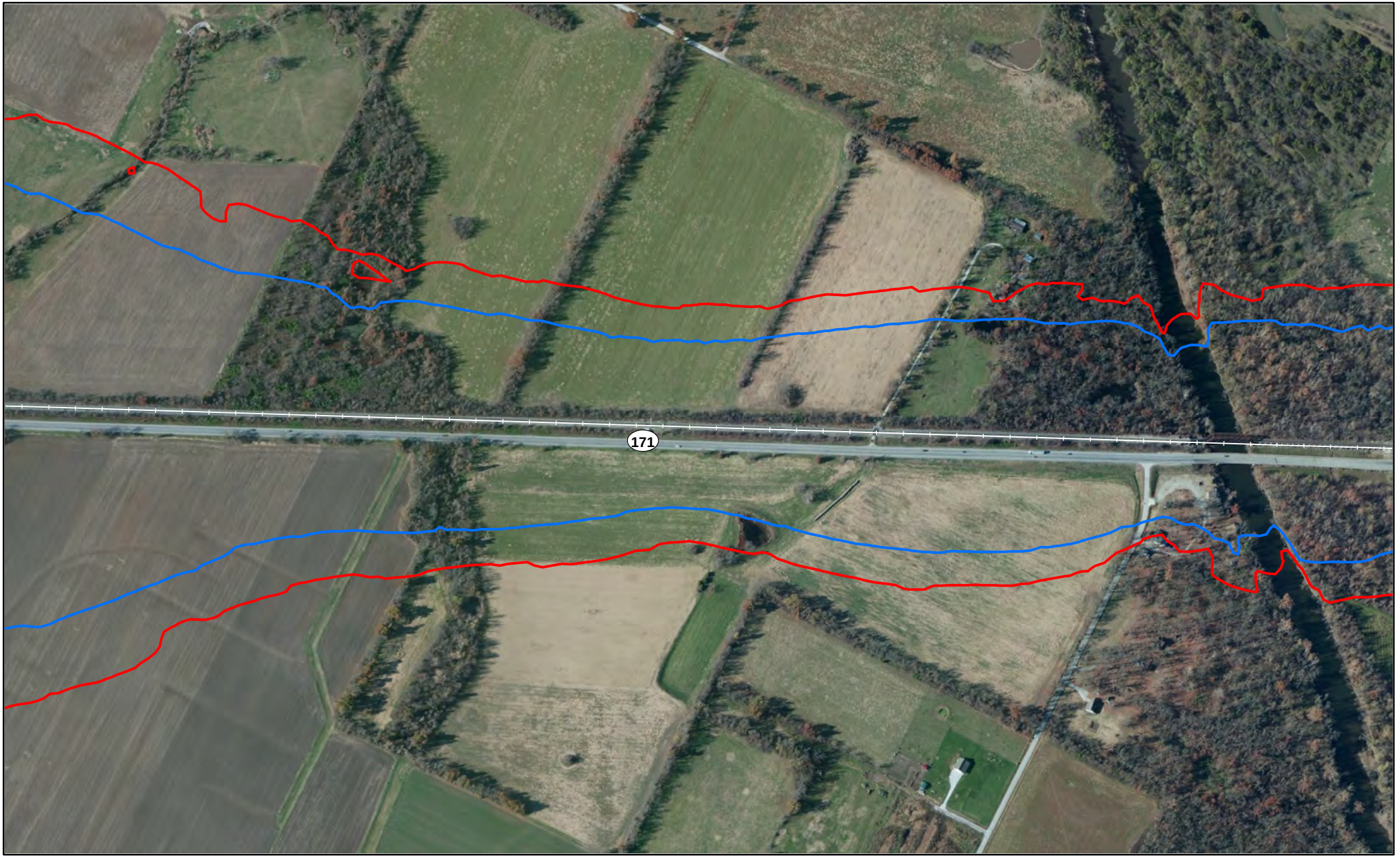
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Noise Contours
Jasper County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



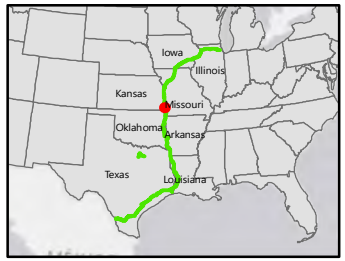
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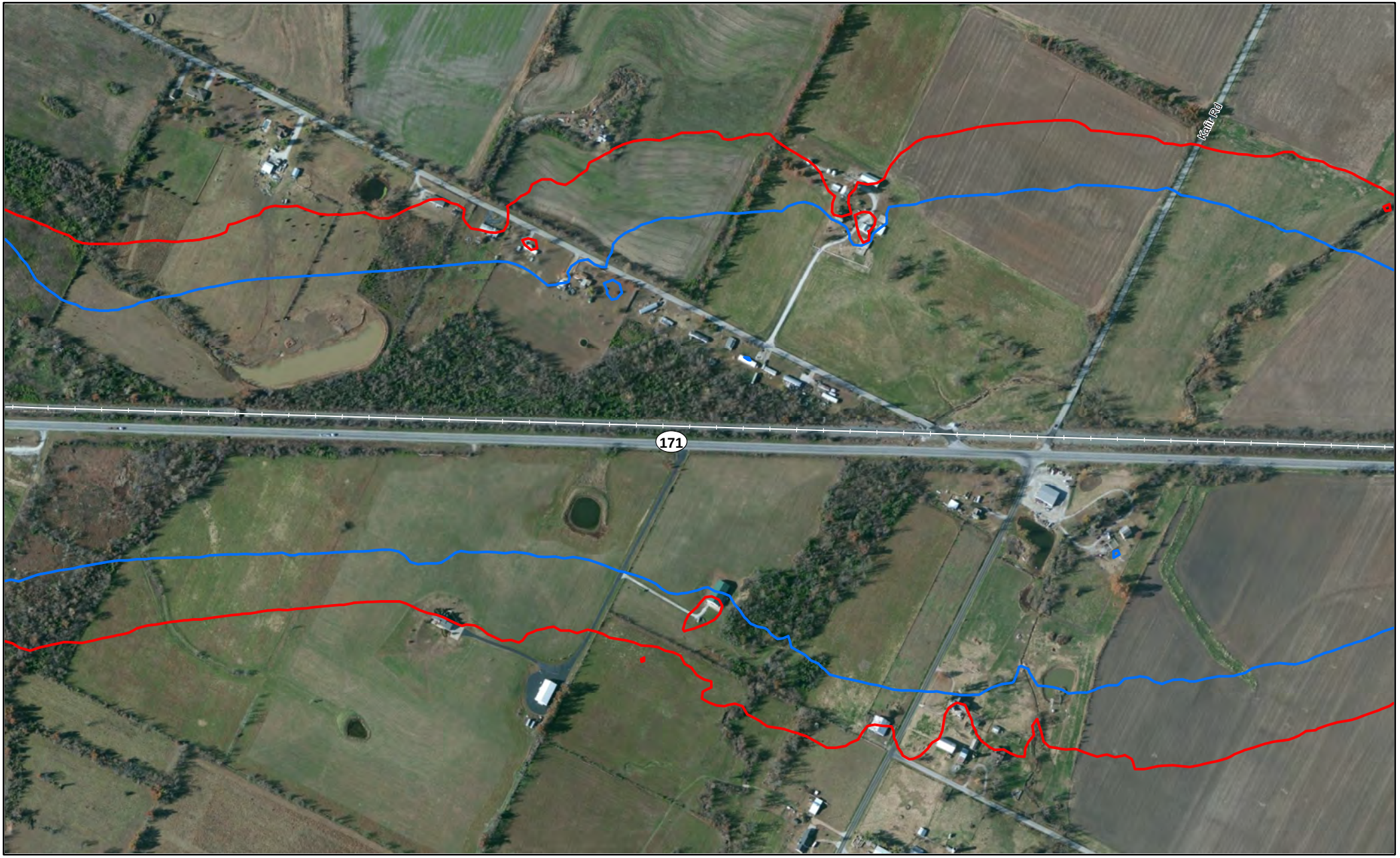
Tracks

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Noise Contours
Jasper County, MO

Miles
0 0.05 0.1



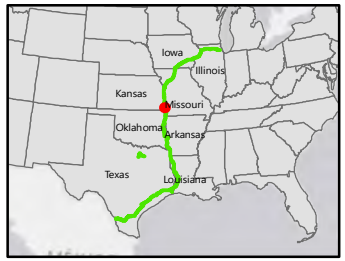
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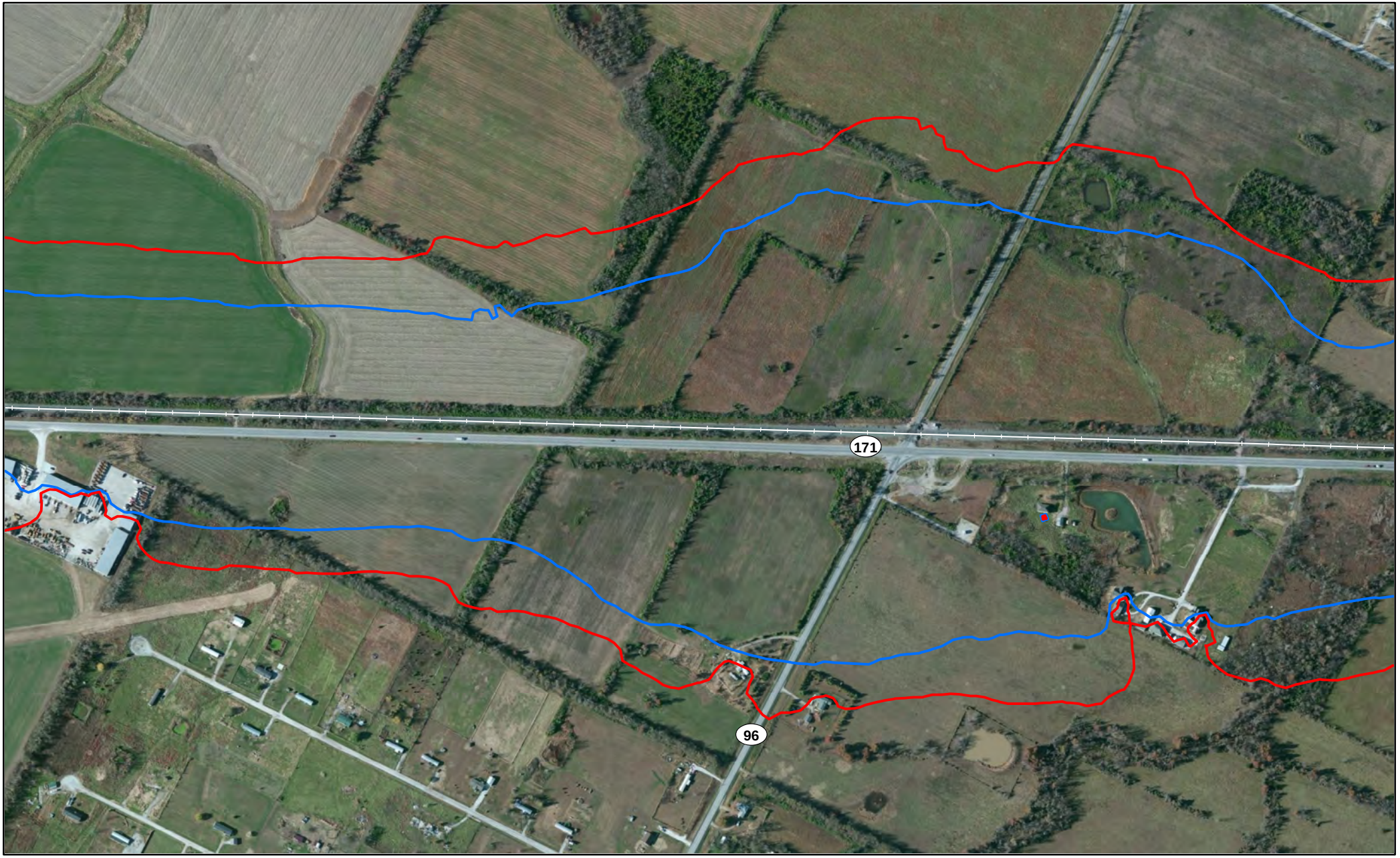
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Noise Contours
Jasper County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



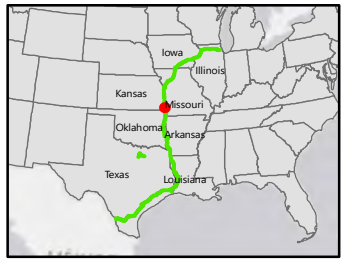
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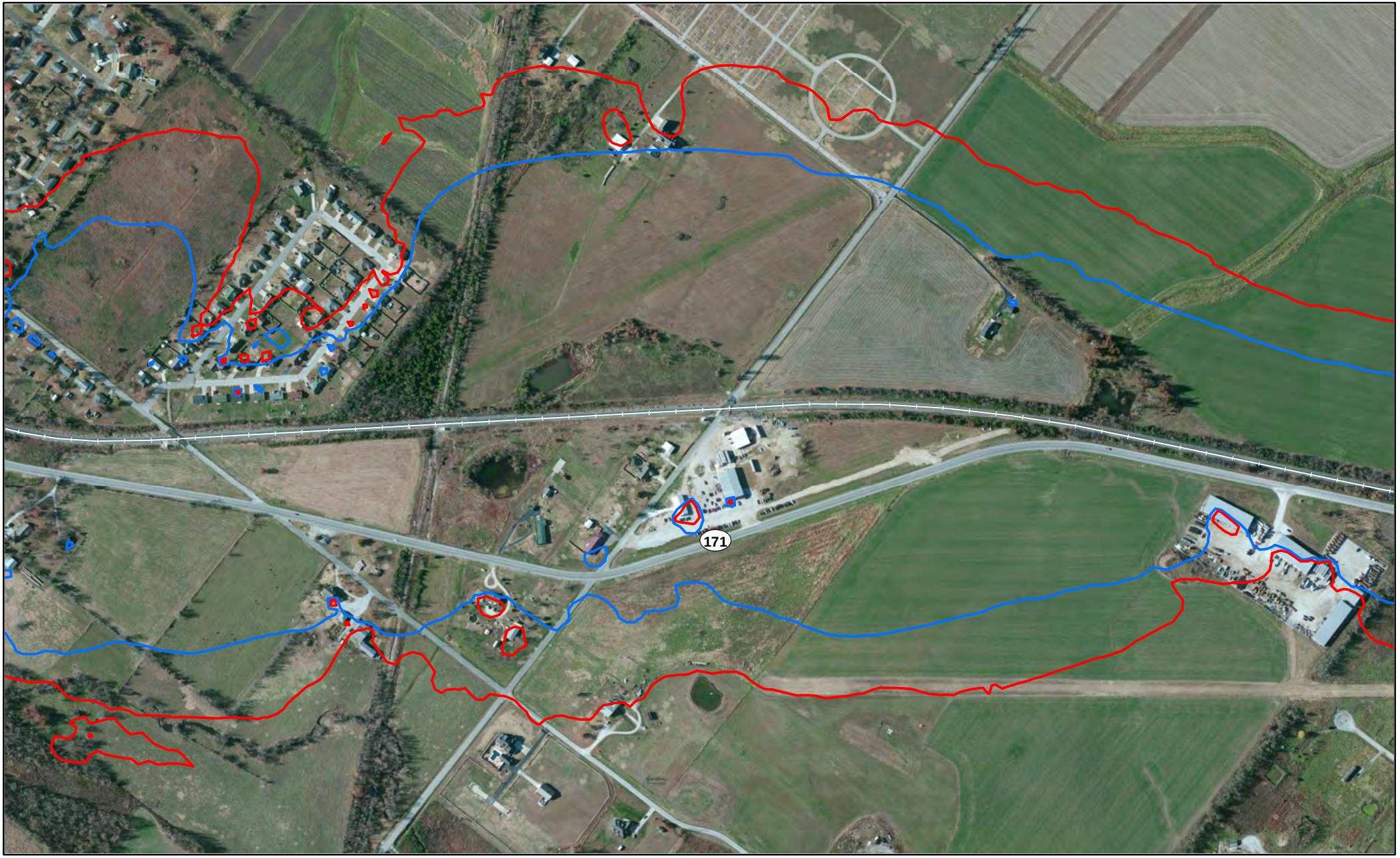
Source: ESRI.



Noise Contours
Jasper County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



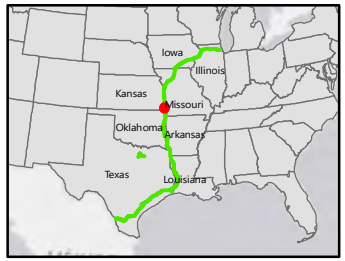
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Noise Contours
Jasper County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



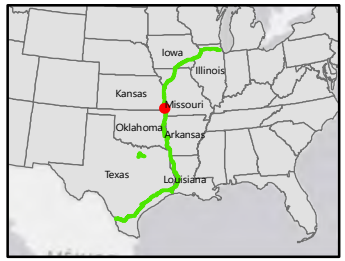
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Noise Contours
Jasper County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



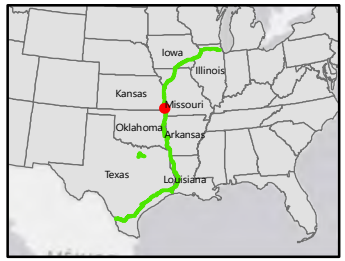
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Noise Contours
Jasper County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



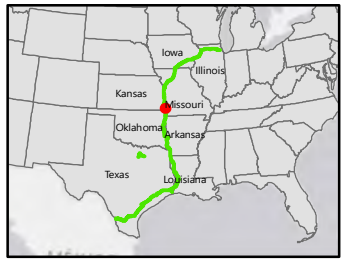
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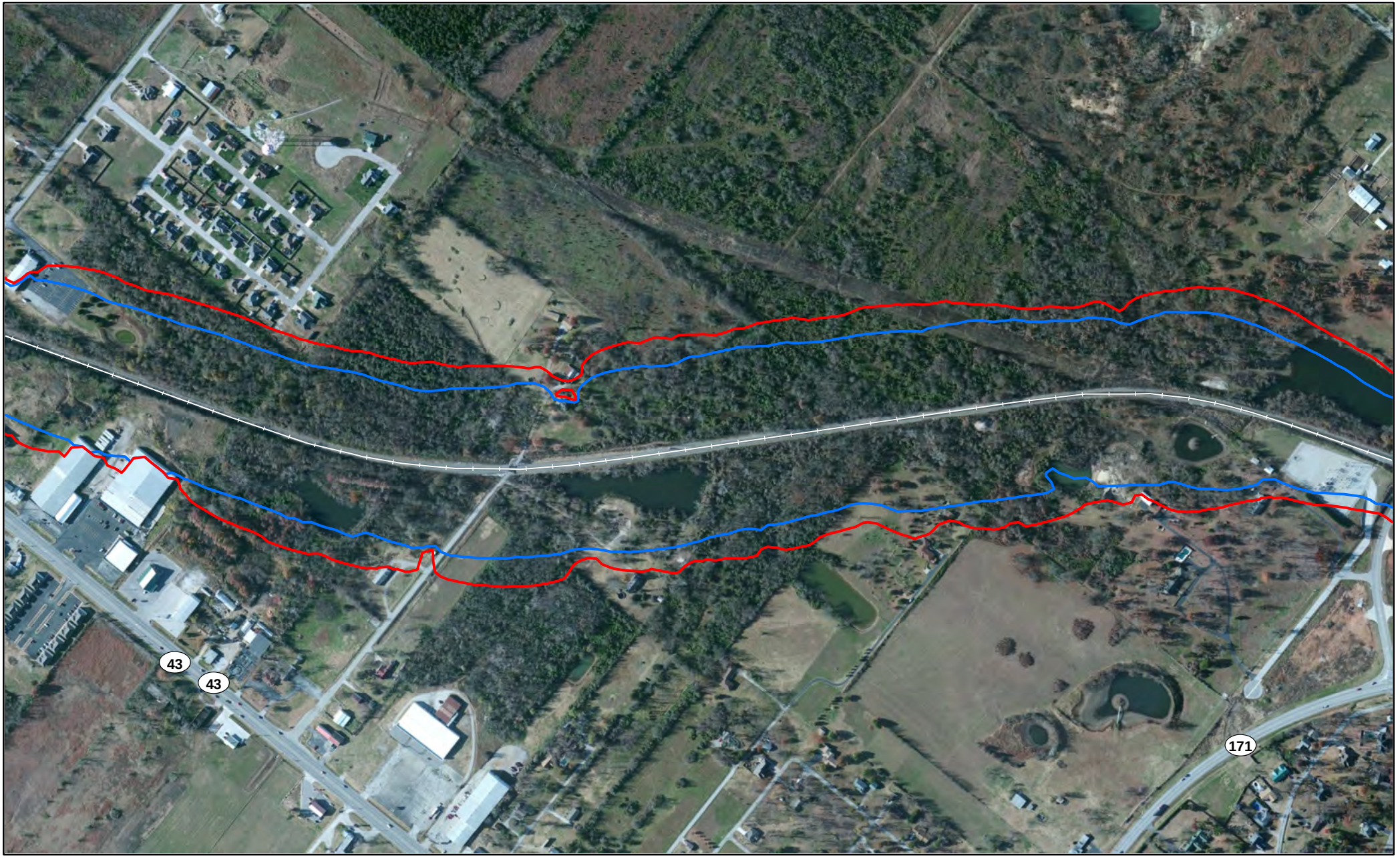
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Noise Contours
Jasper County, MO

Miles
0 0.05 0.1

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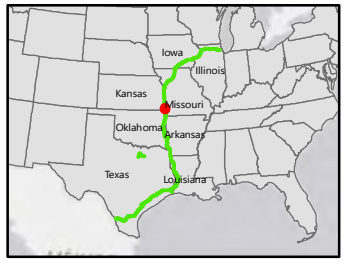
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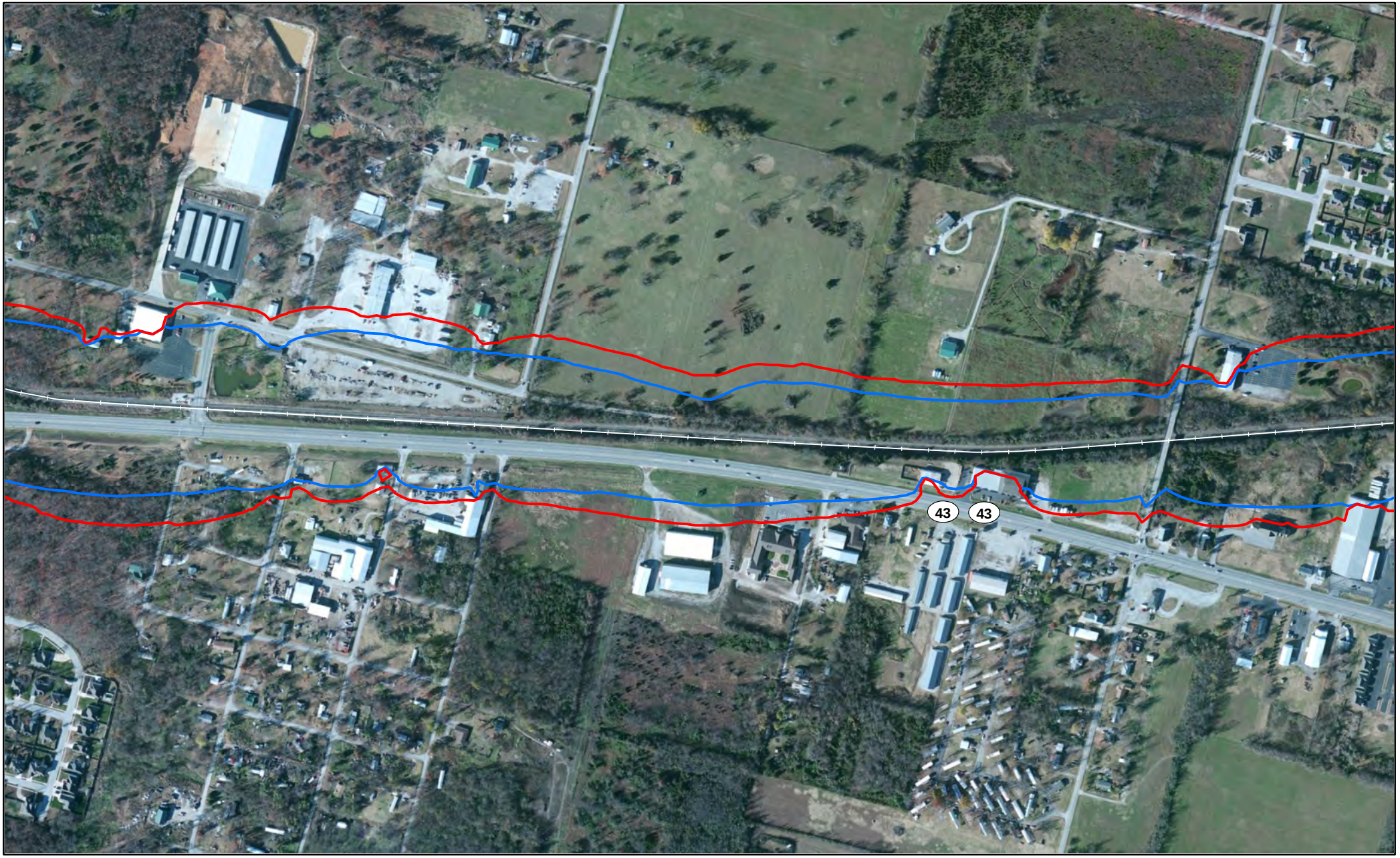
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Noise Contours
Jasper County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



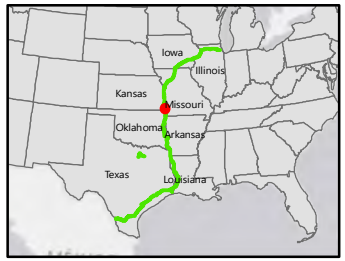
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Noise Contours
Jasper County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



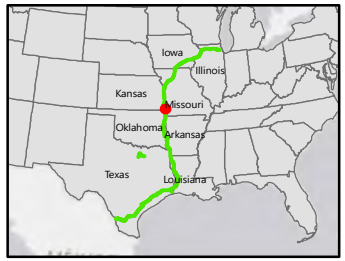
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Noise Contours
Jasper County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



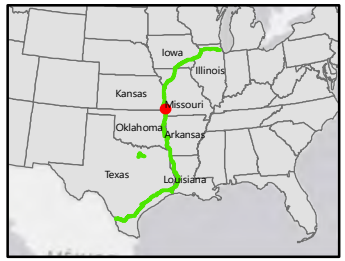
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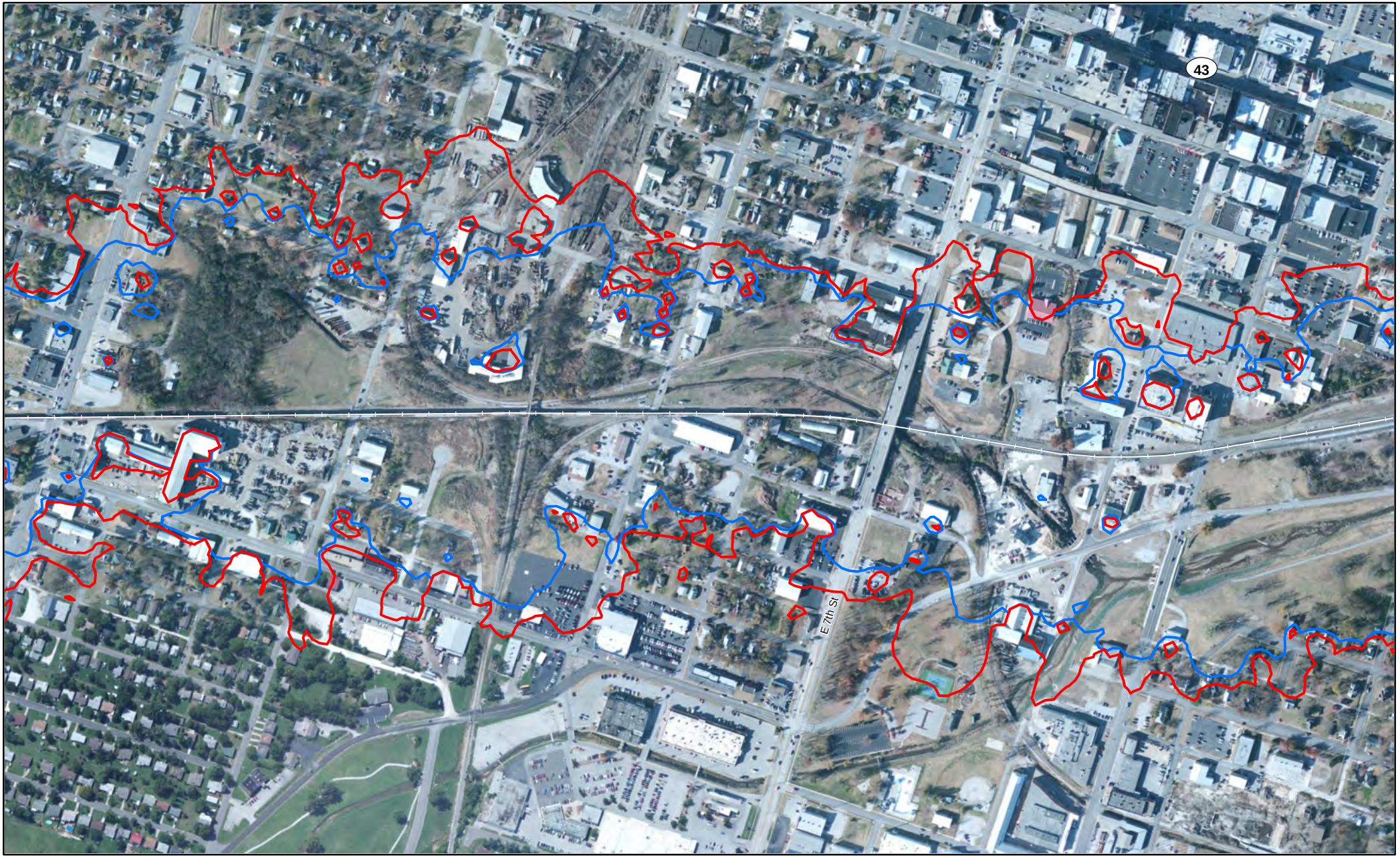
Source: ESRI.



Noise Contours
Jasper County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



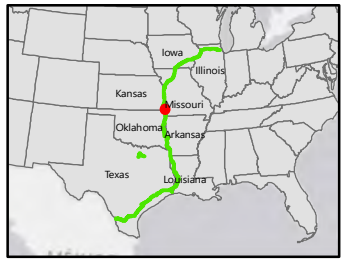
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Noise Contours
Jasper County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



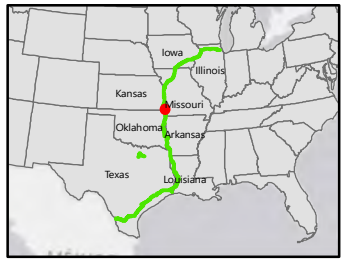
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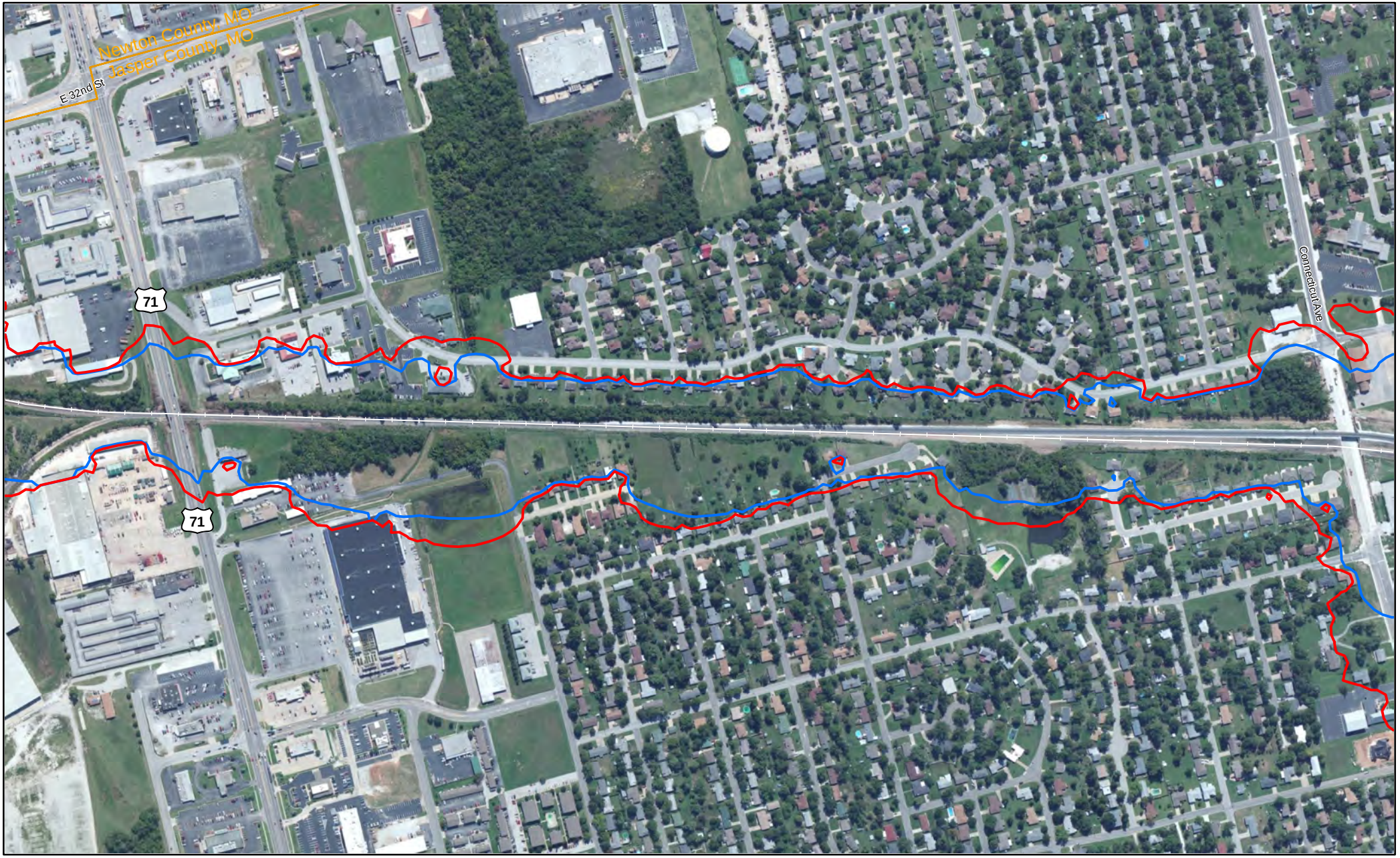
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Noise Contours
Jasper County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



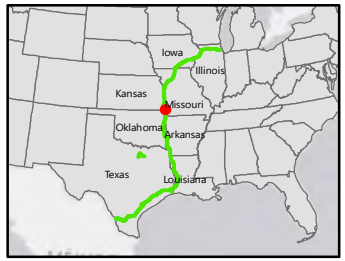
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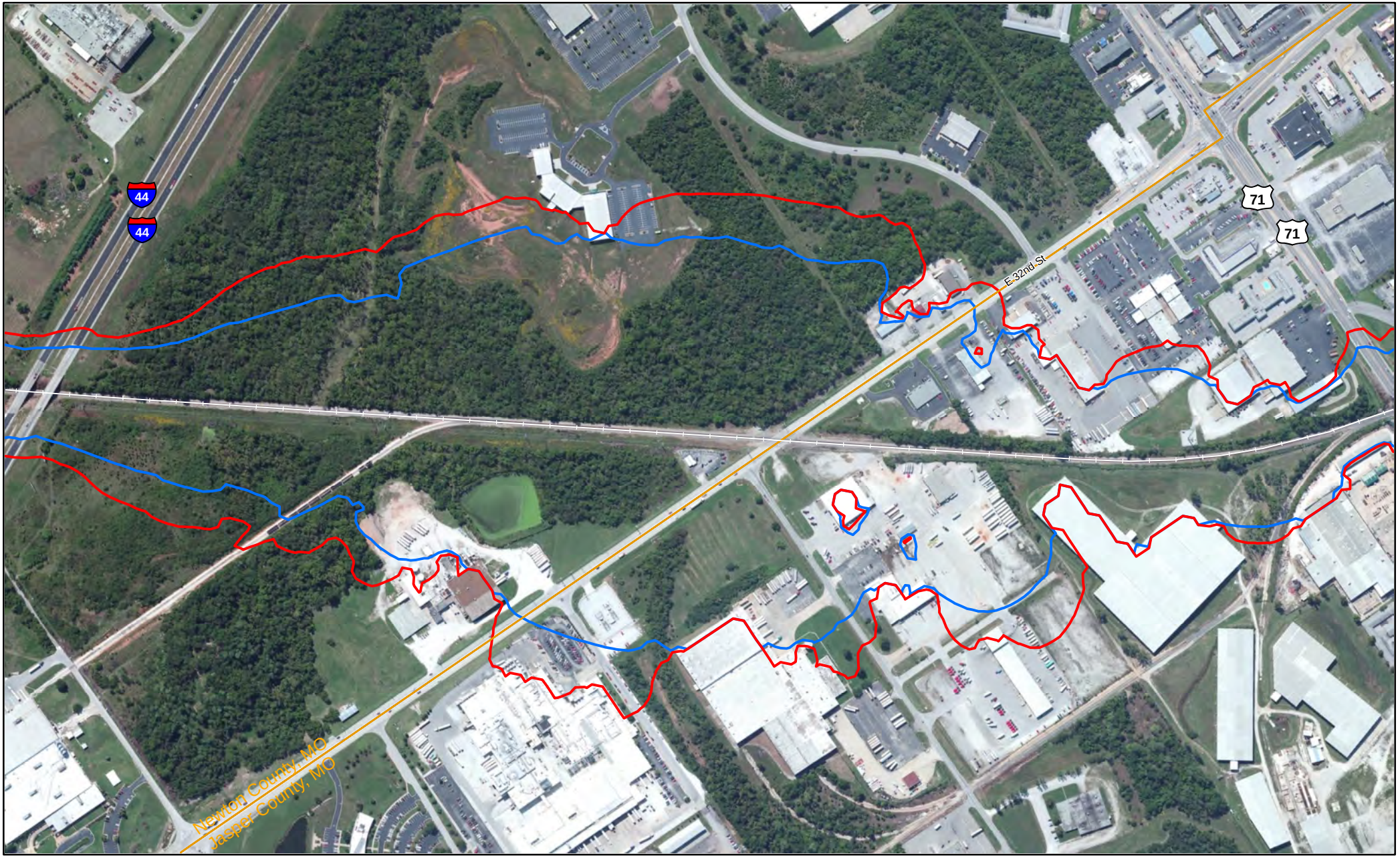
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Noise Contours
Jasper County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



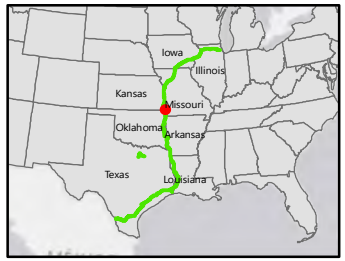
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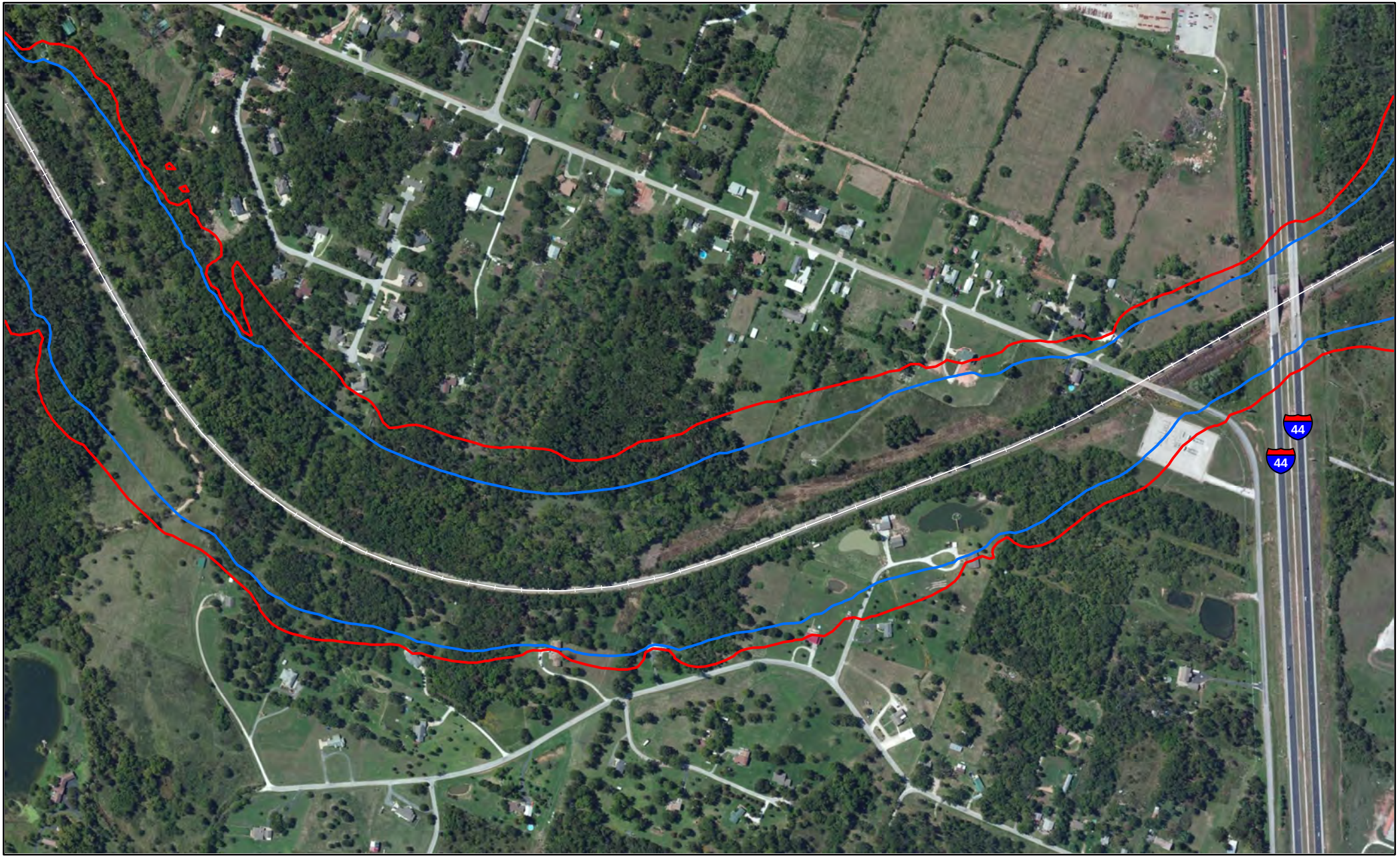
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Noise Contours
Jasper County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



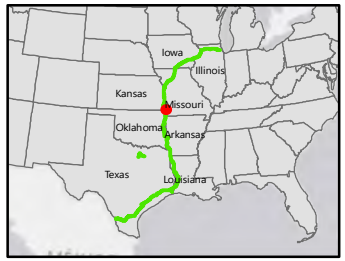
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Tracks

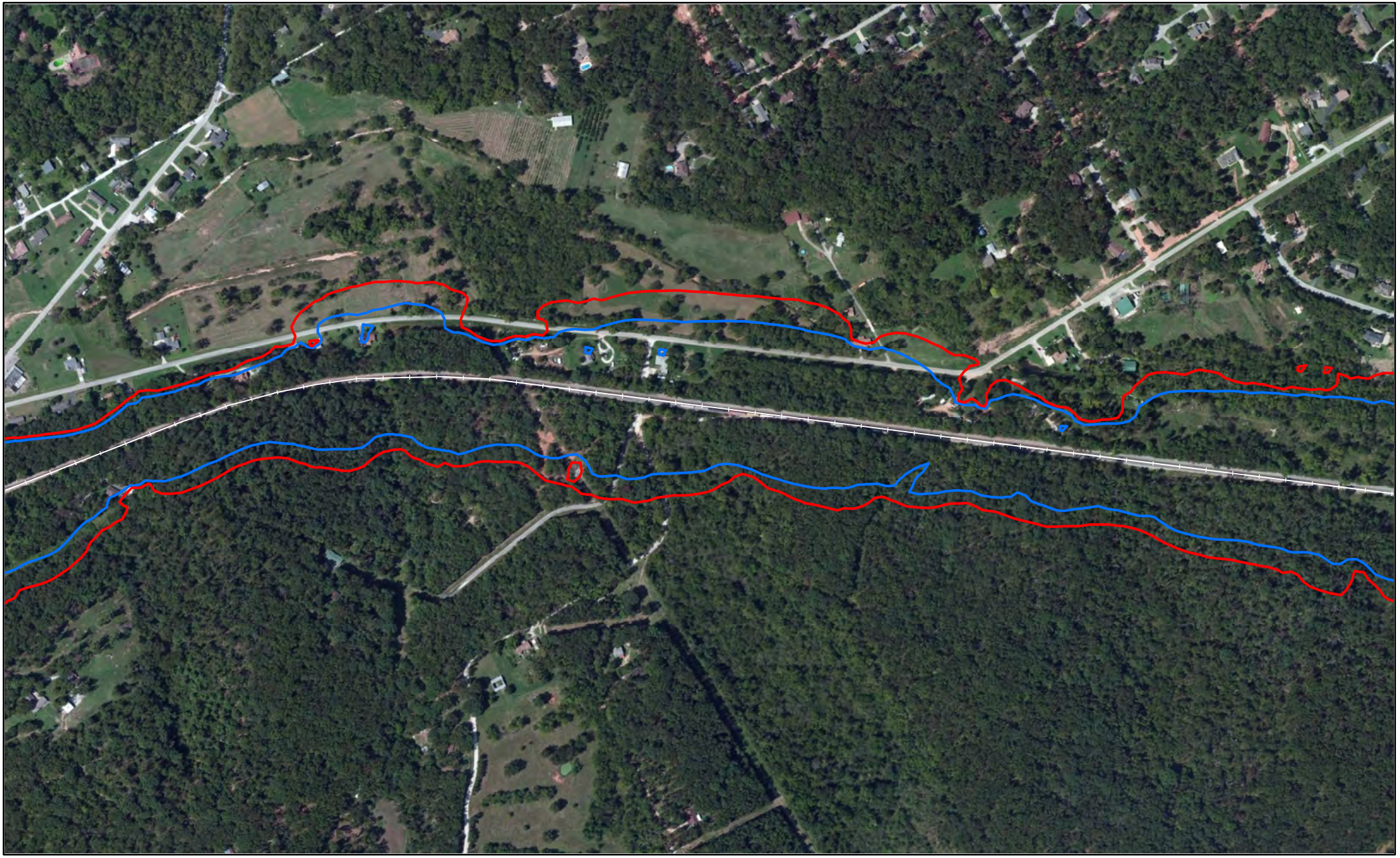
Source: ESRI.



Noise Contours
Newton County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

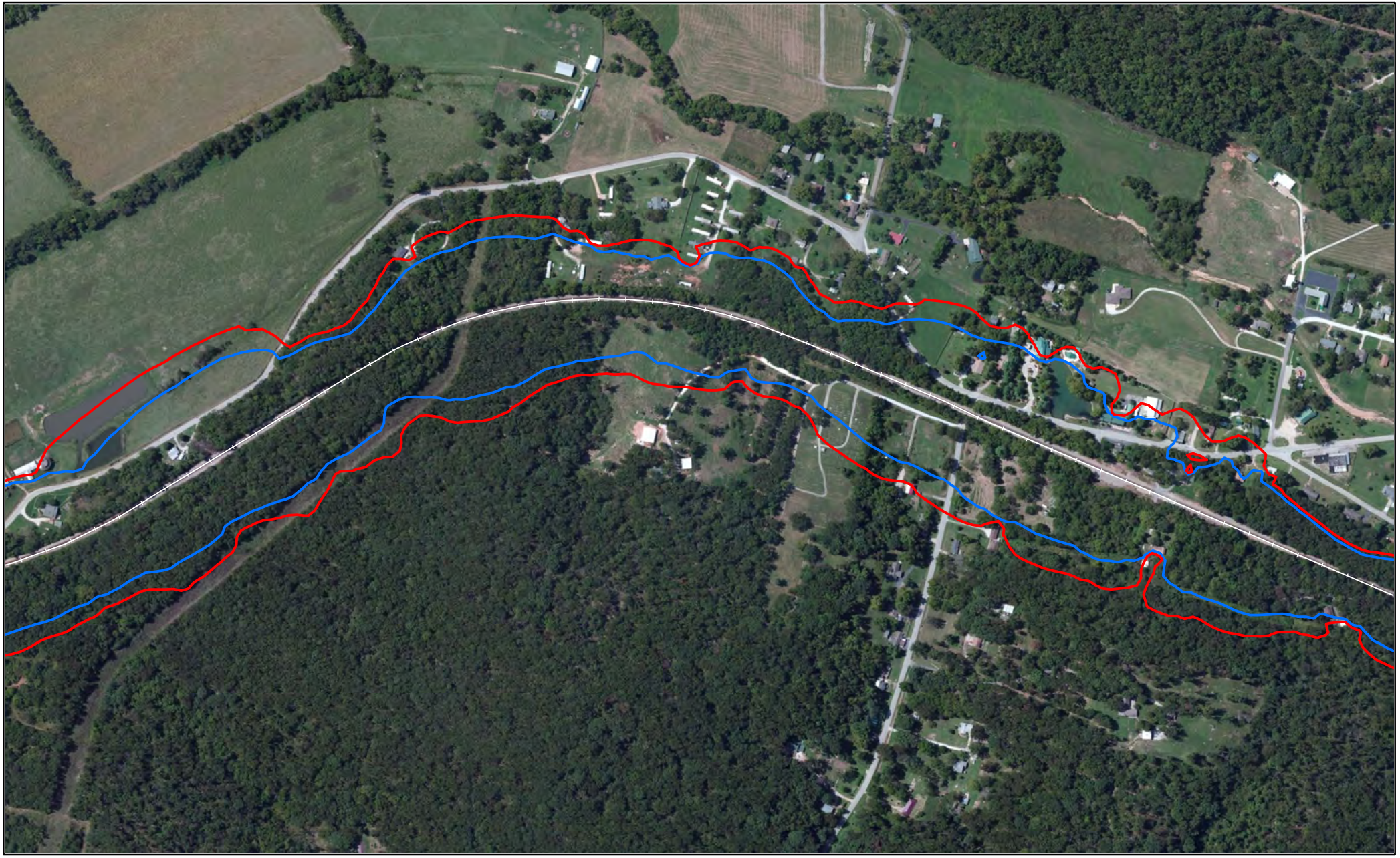
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Noise Contours
Newton County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



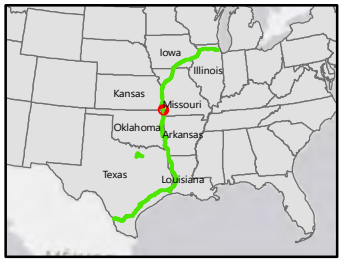
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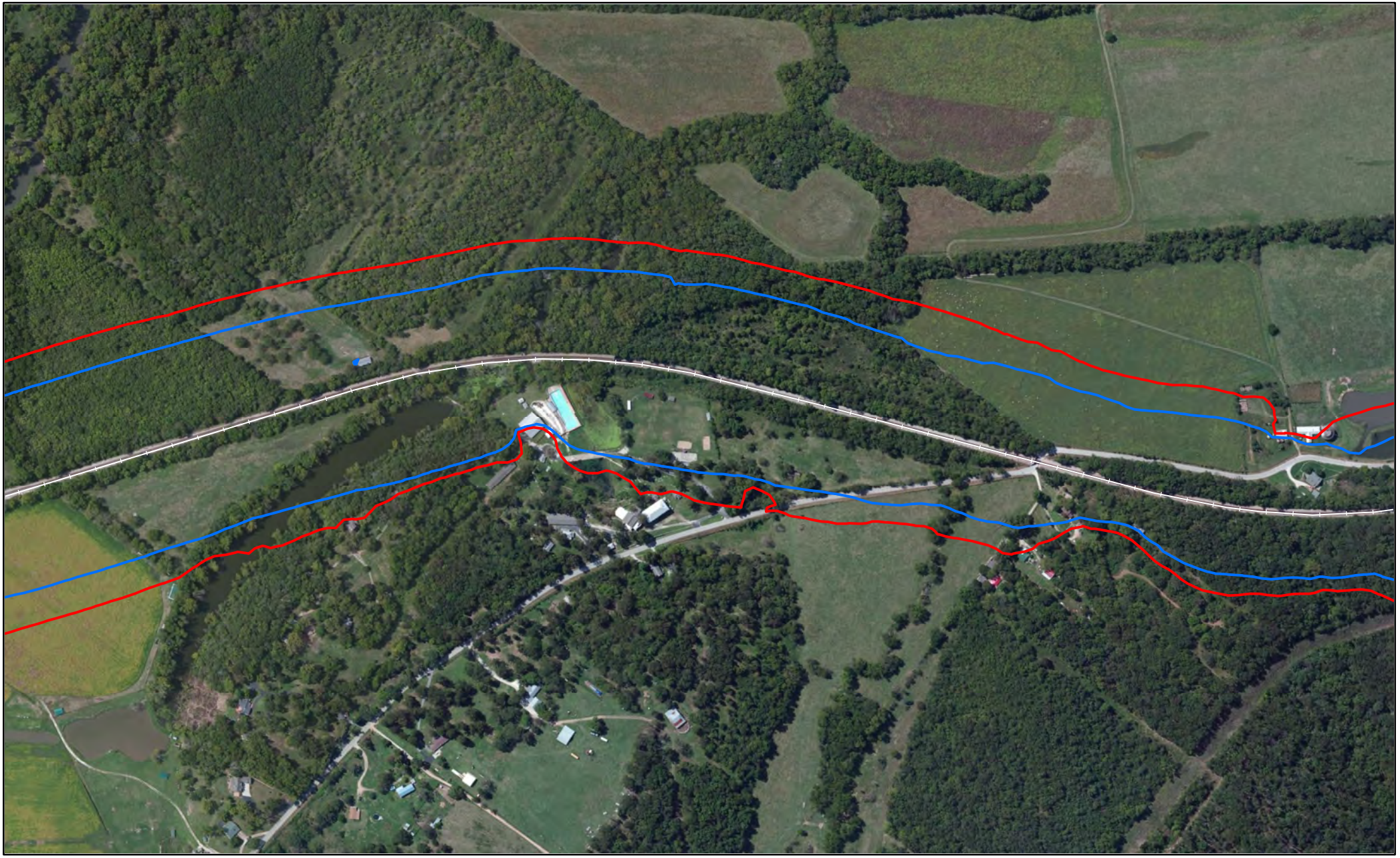
Tracks

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Noise Contours
Newton County, MO

Miles
0 0.05 0.1



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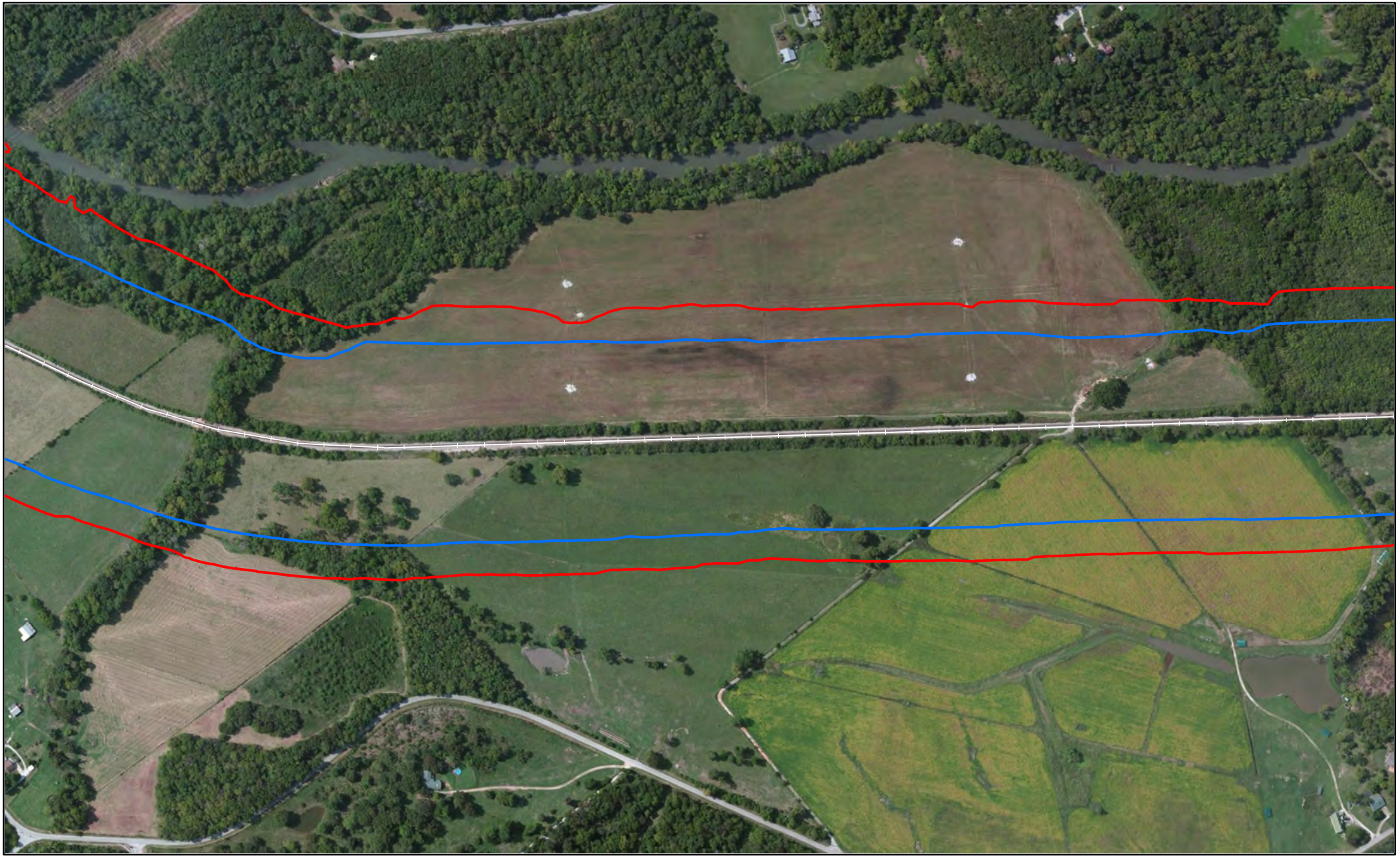
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Noise Contours
Newton County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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Noise Impact (65 Ldn and 3 dBA Increase)

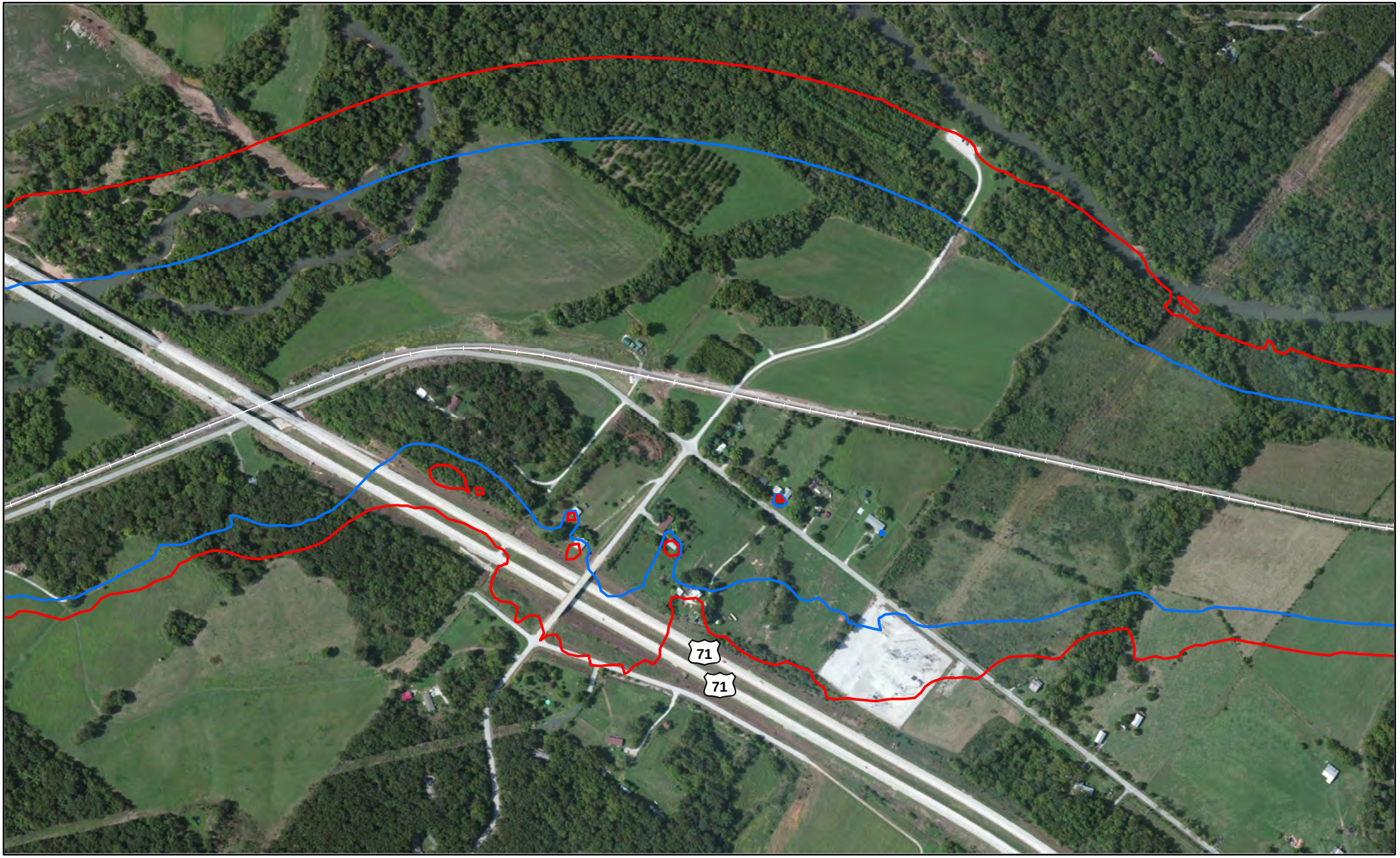
Tracks

Source: ESRI.



Noise Contours
Newton County, MO

Miles
0 0.05 0.1



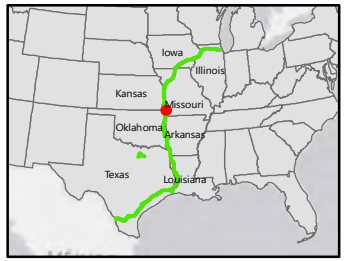
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

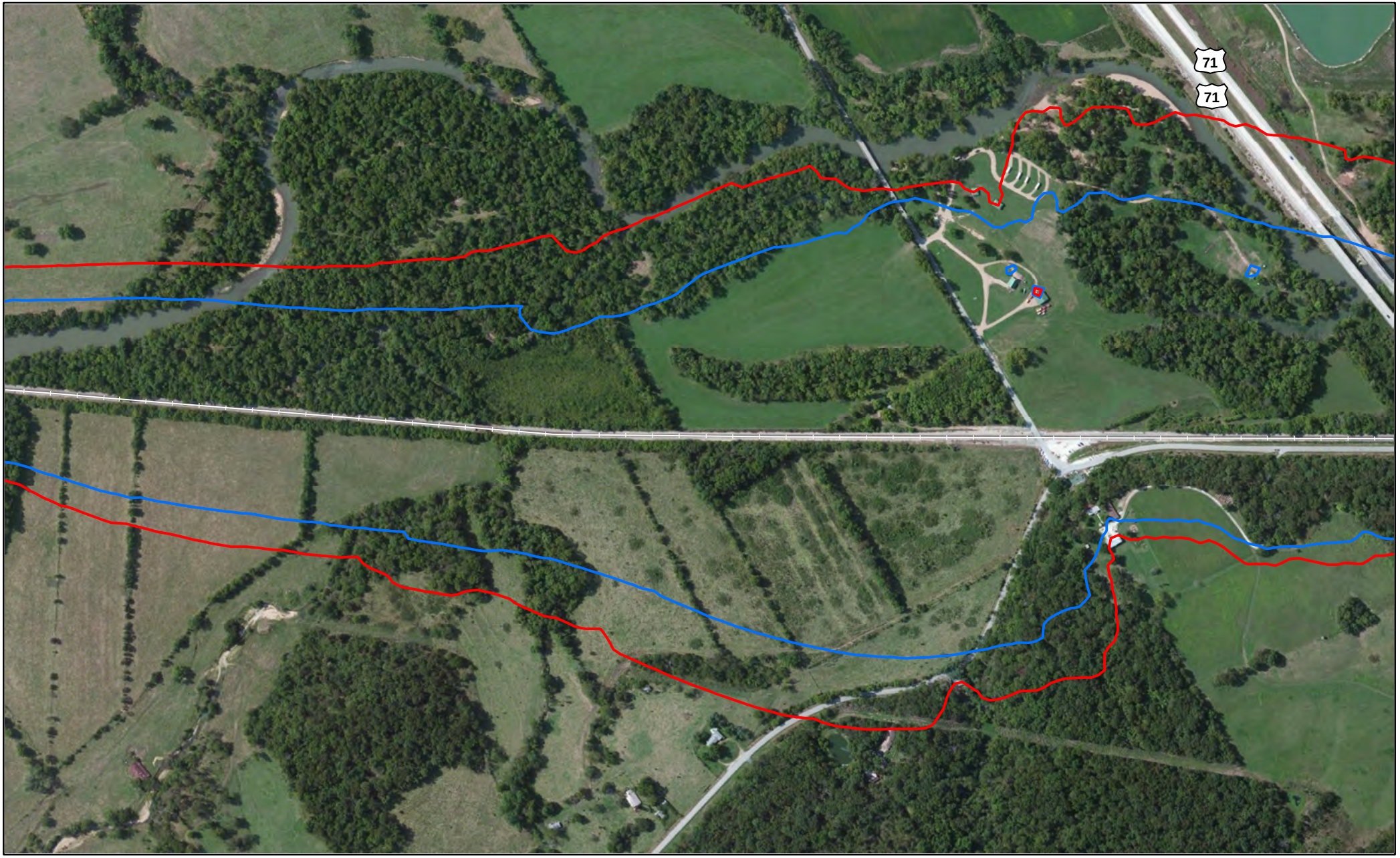
Source: ESRI.



Noise Contours
Newton County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



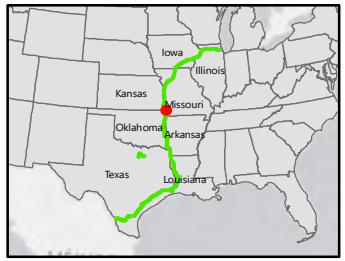
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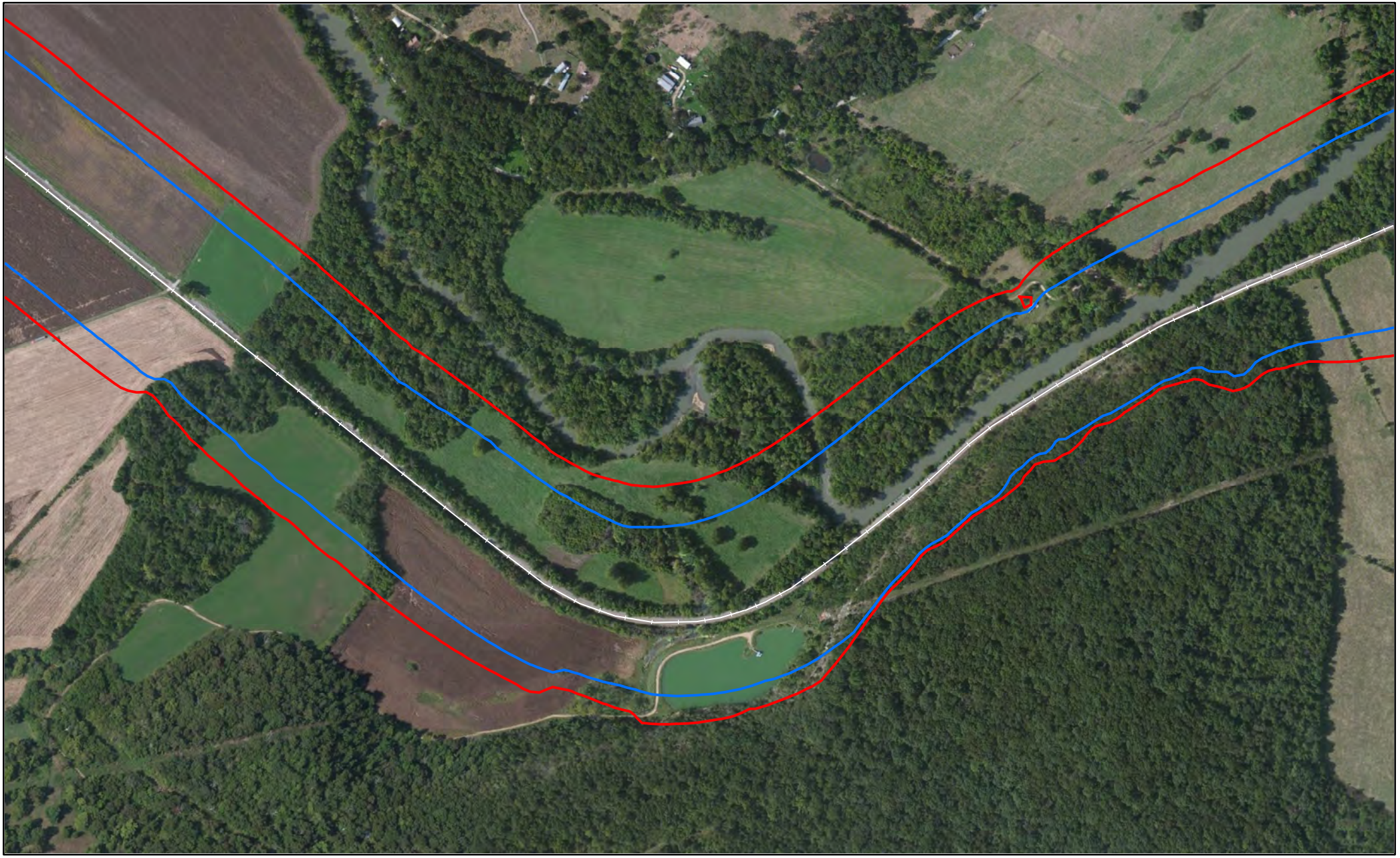
Tracks

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Noise Contours
Newton County, MO

Miles
0 0.05 0.1



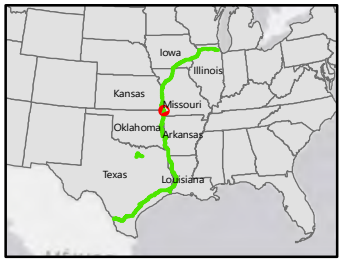
No-Action Alternative Noise (65 Ldn)

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Tracks

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Noise Contours
Newton County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



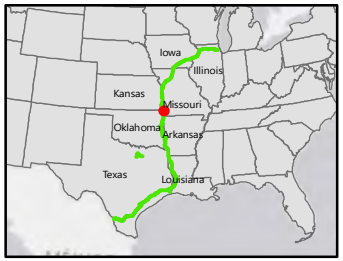
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Noise Contours
Newton County, MO

Miles
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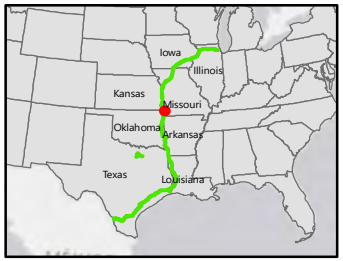
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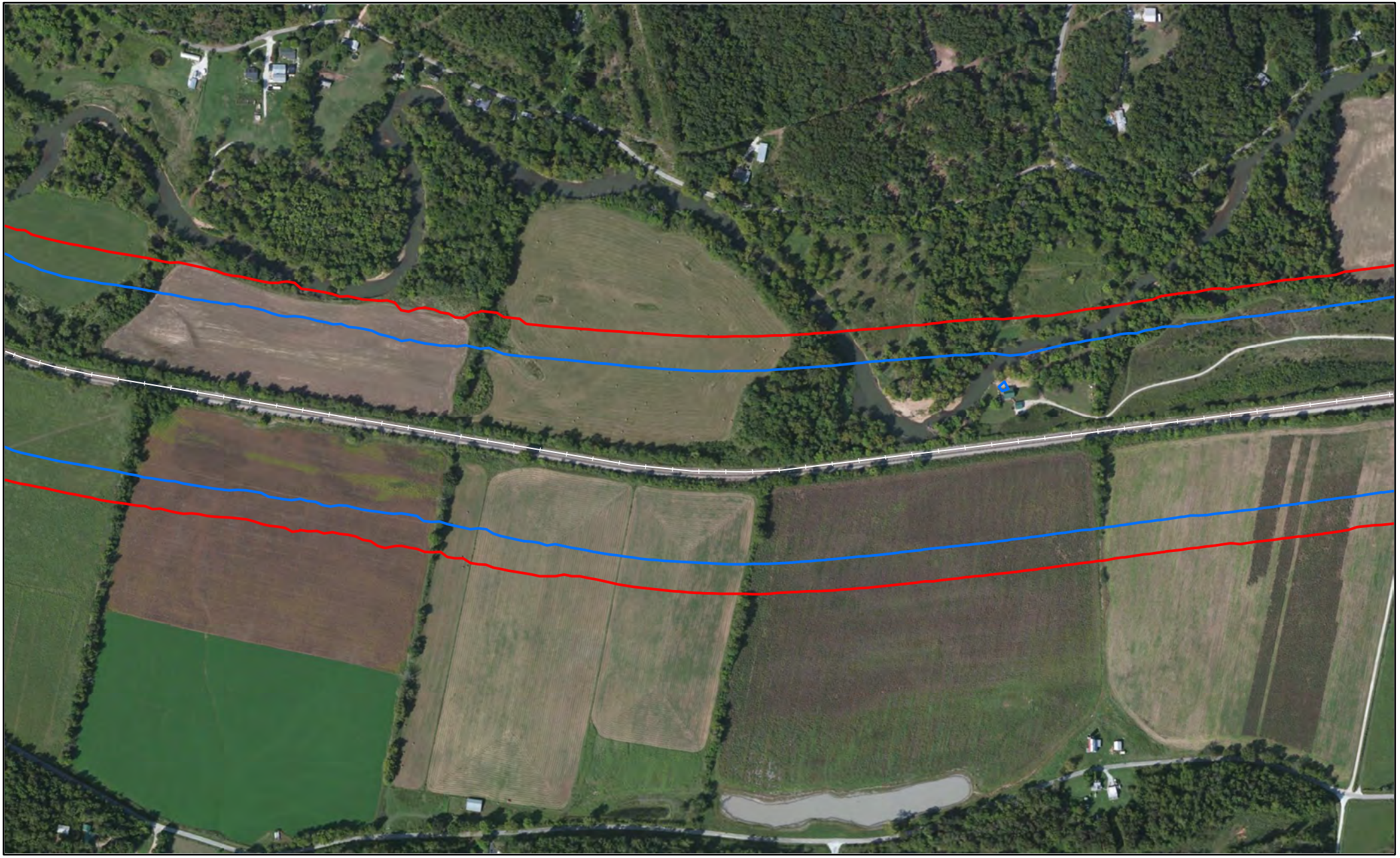
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Noise Contours
Newton County, MO

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



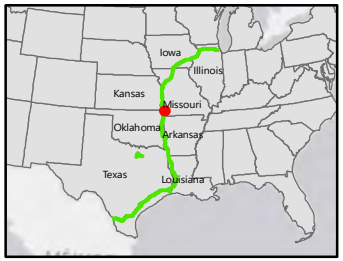
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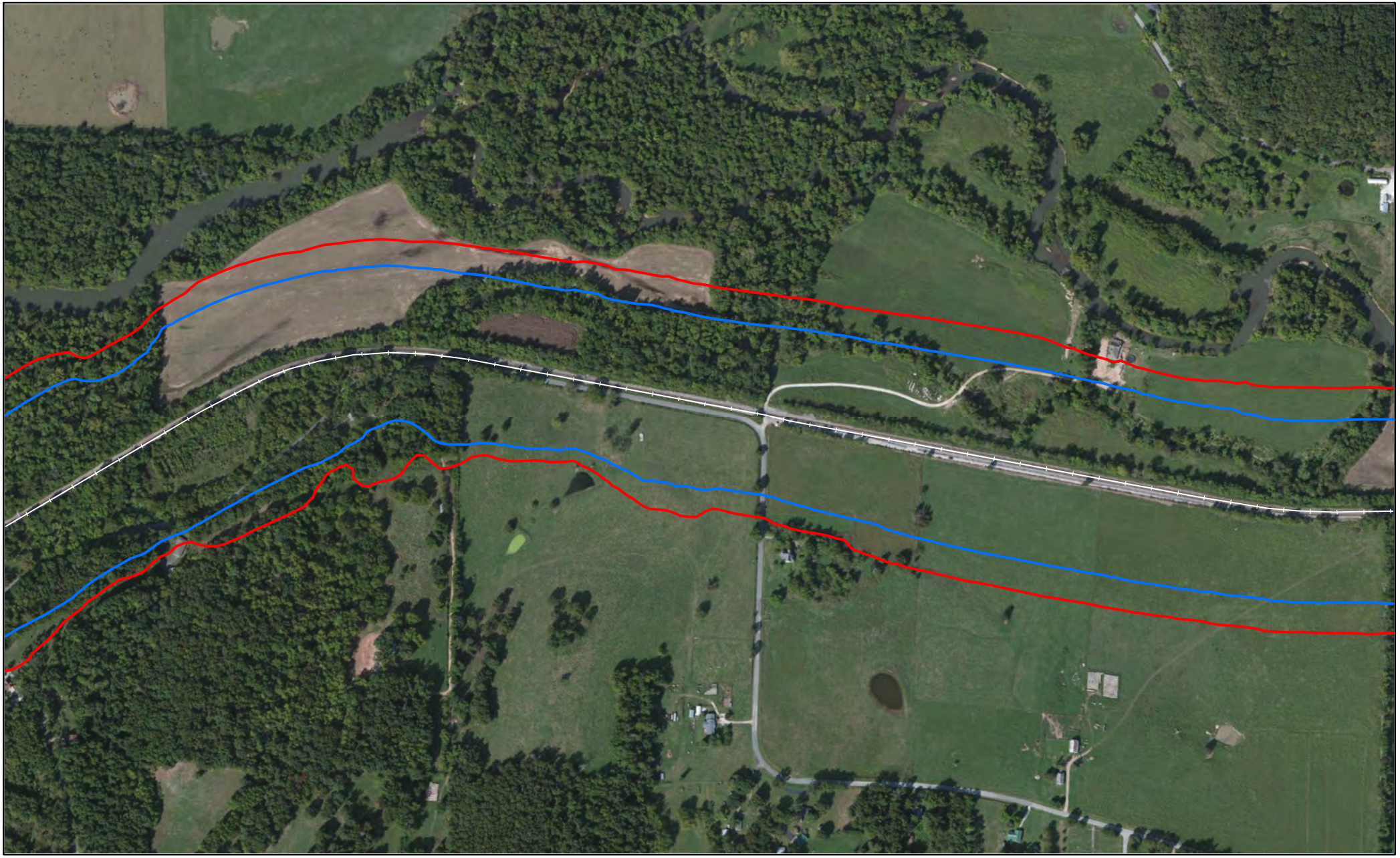
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Noise Contours
Newton County, MO

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



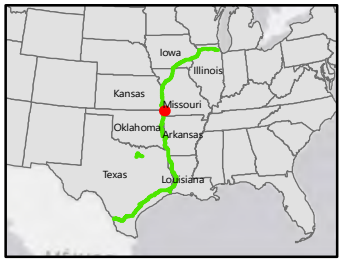
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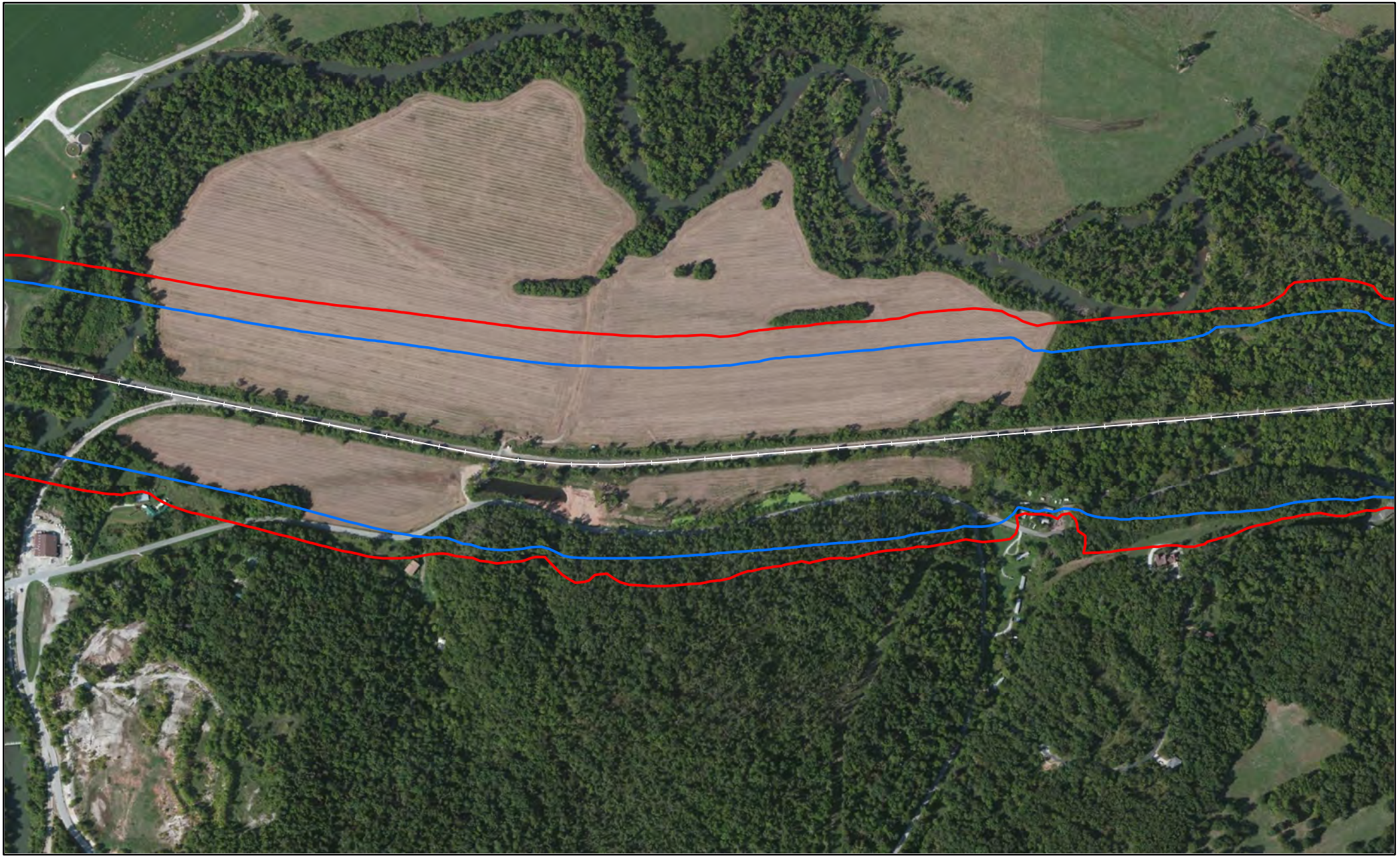
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Noise Contours
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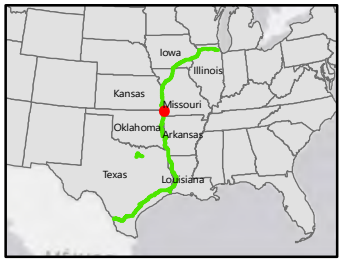
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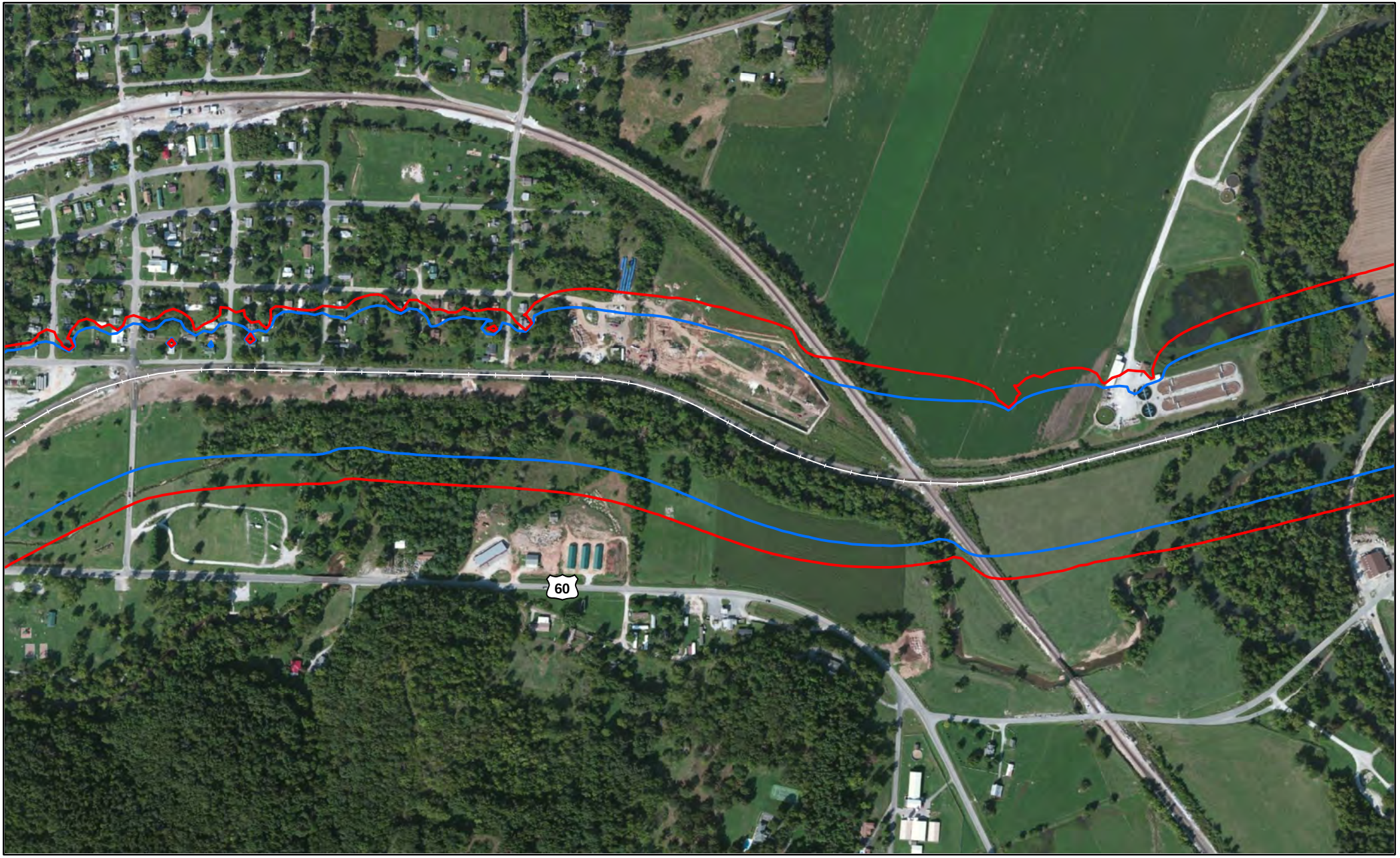
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Noise Contours
Newton County, MO

Miles
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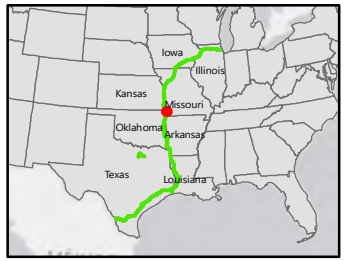
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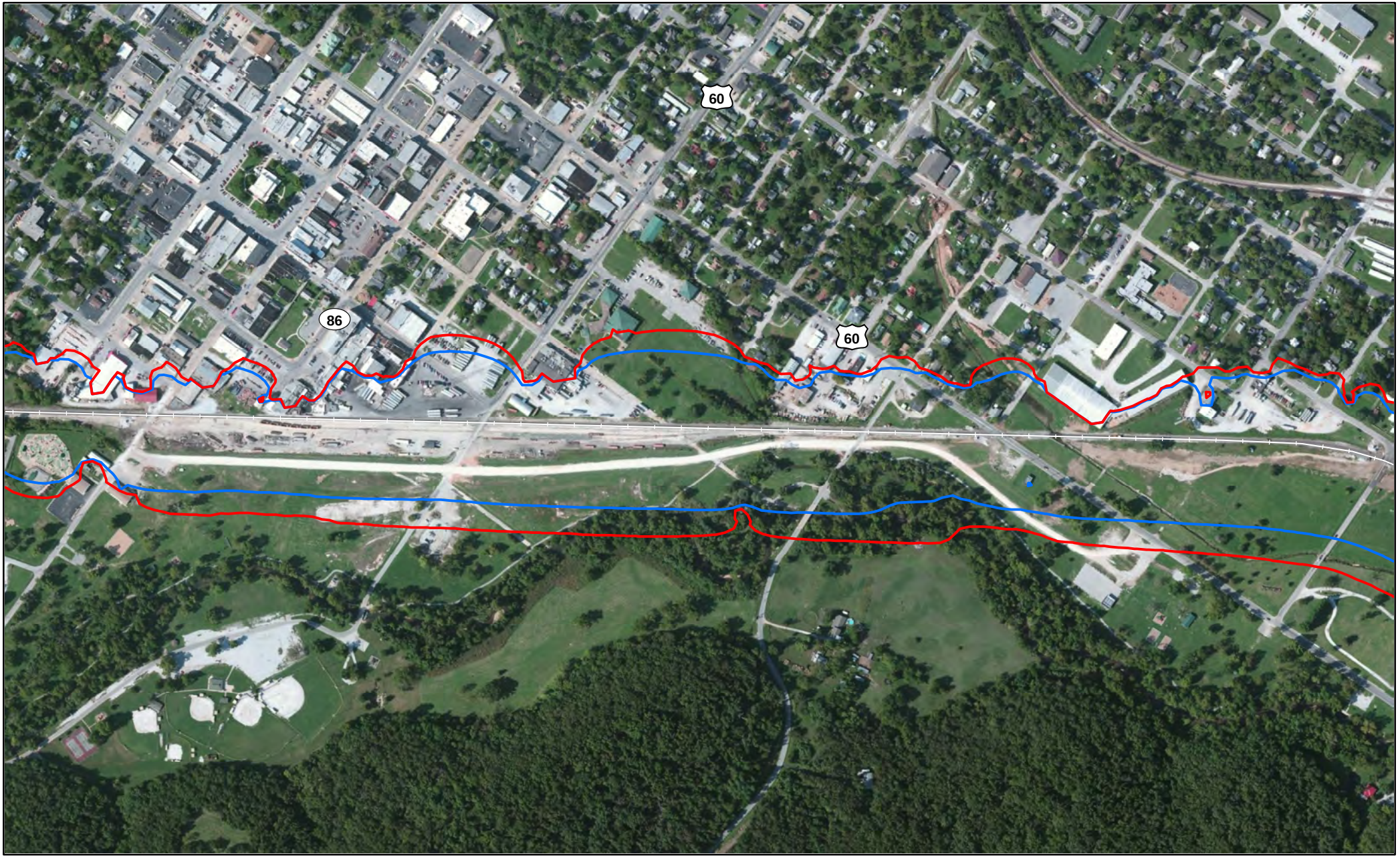
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Noise Contours
Newton County, MO

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



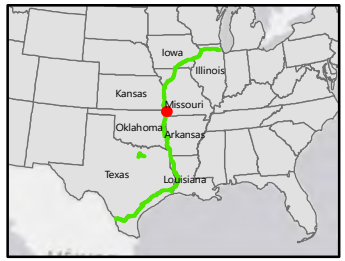
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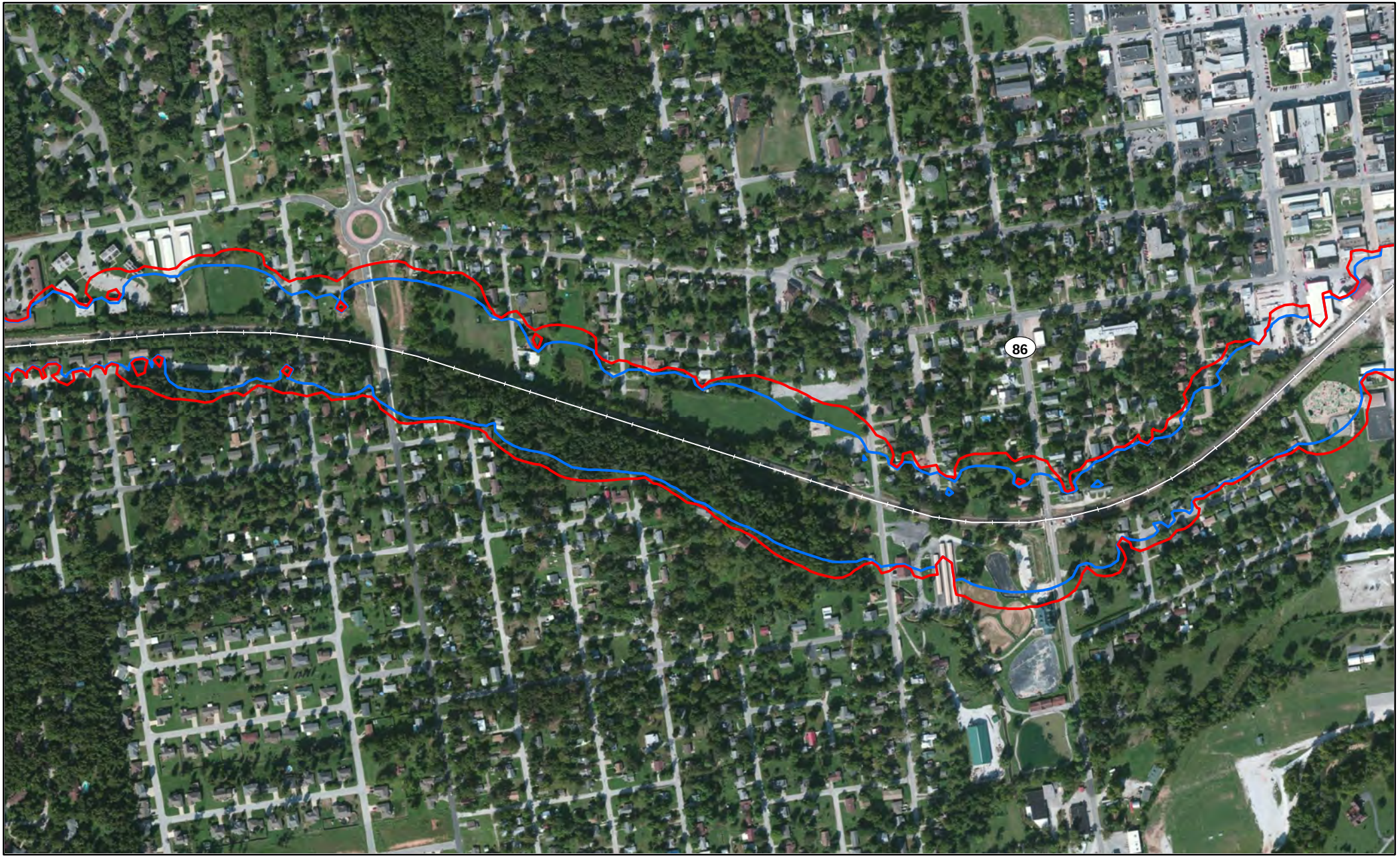
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Noise Contours
Newton County, MO

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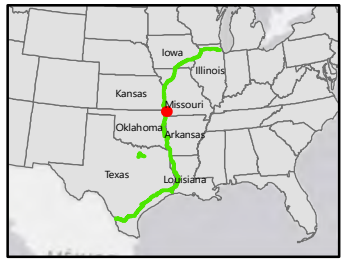
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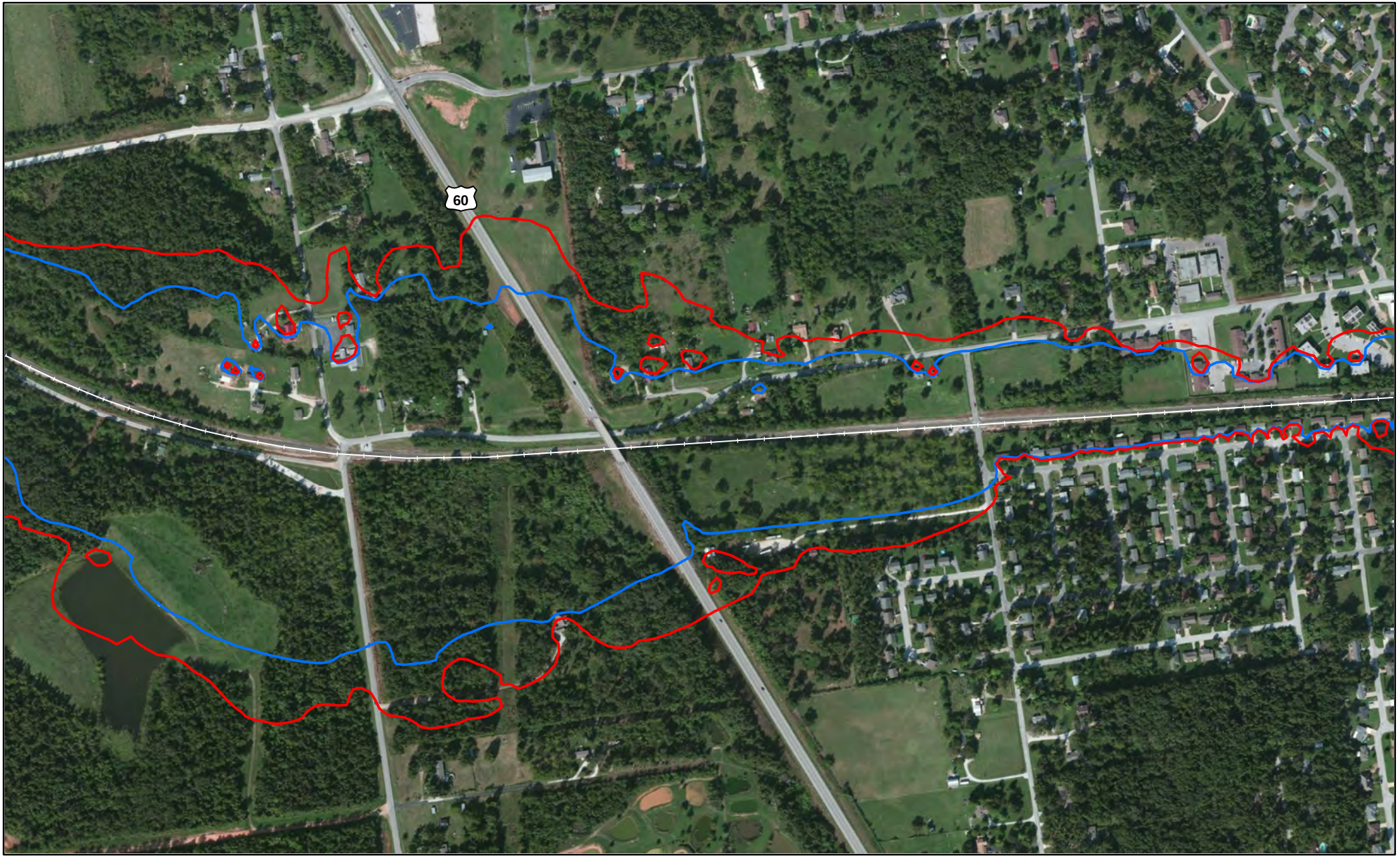
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Noise Contours
Newton County, MO

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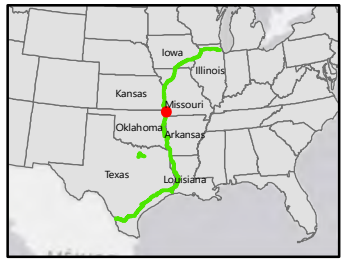
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Noise Contours
Newton County, MO

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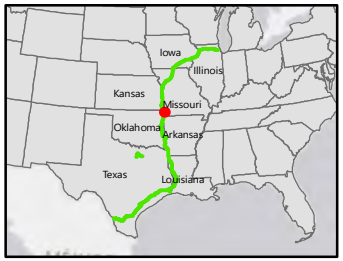
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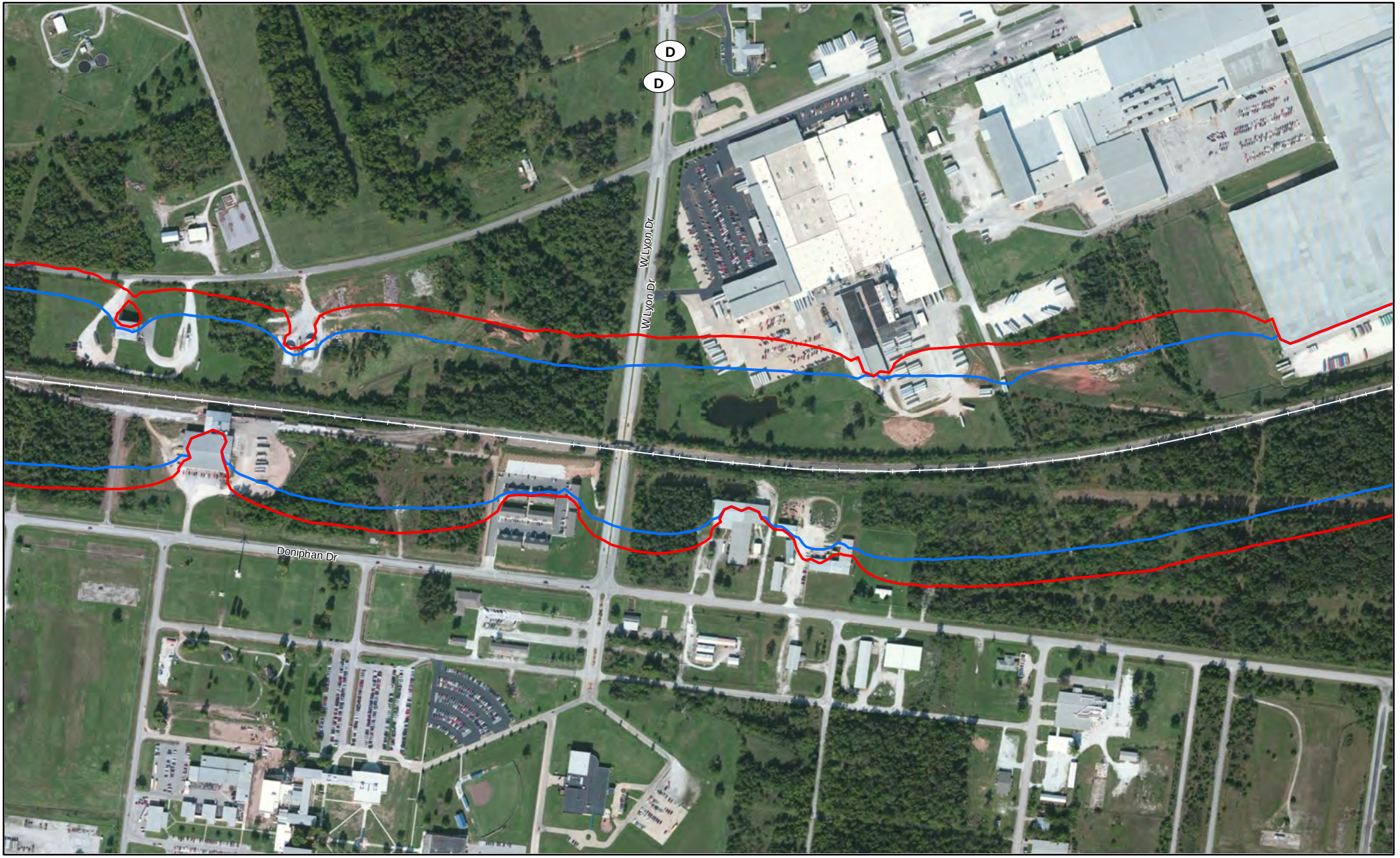
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Noise Contours
Newton County, MO

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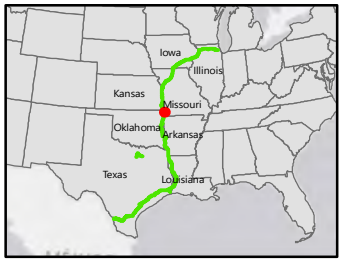
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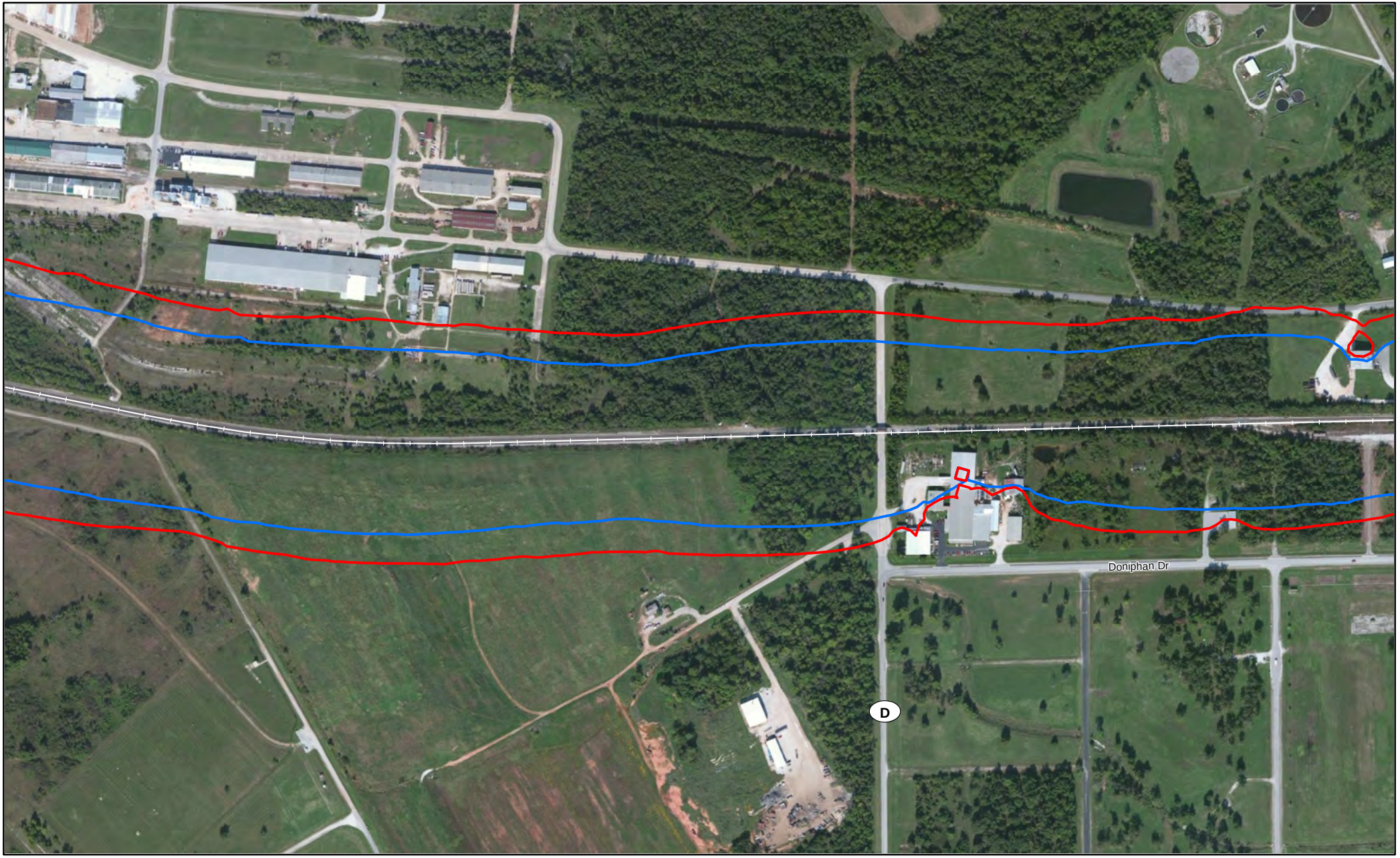
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Noise Contours
Newton County, MO

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



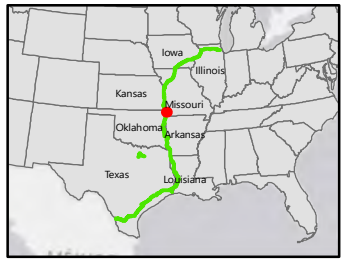
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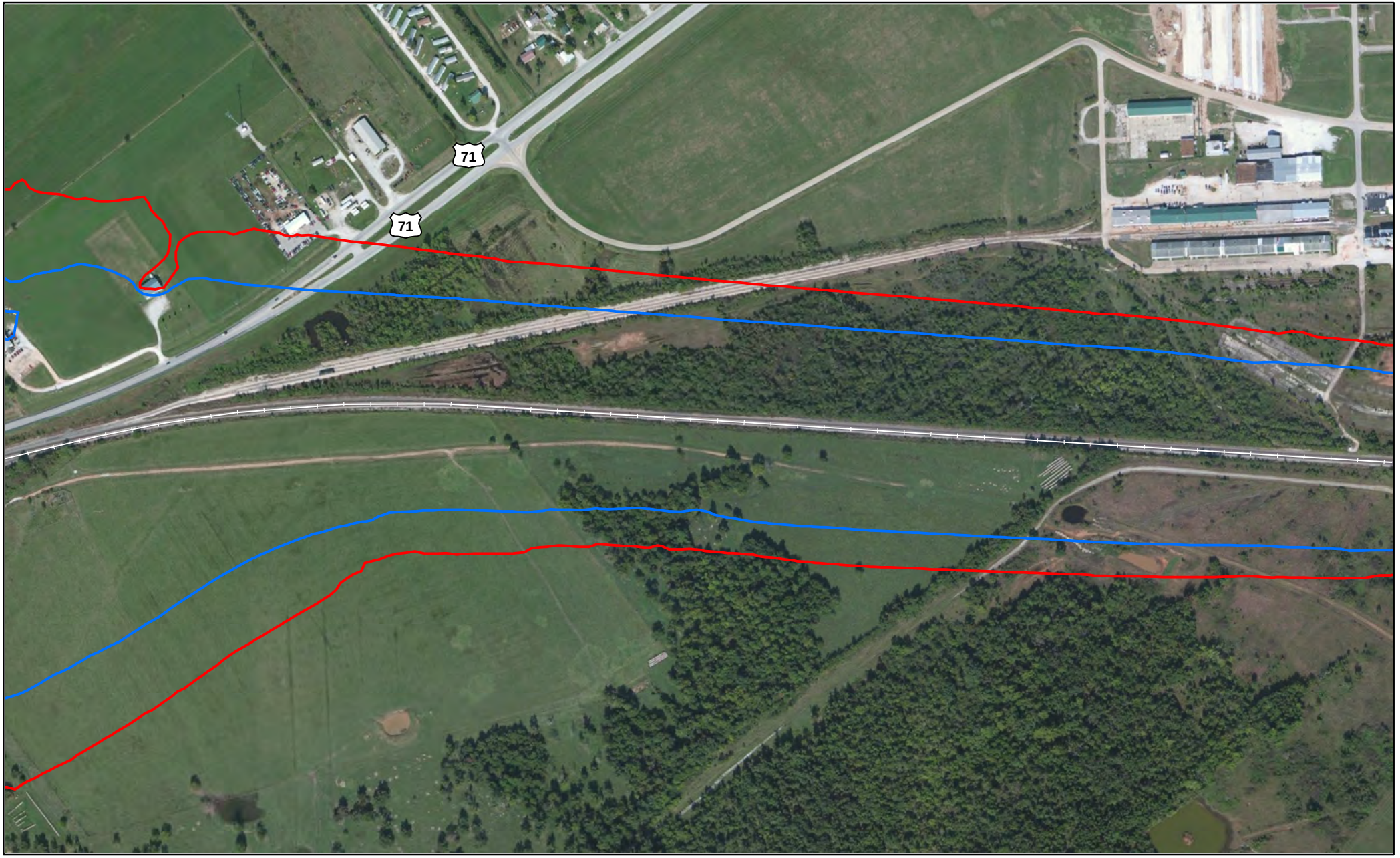
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Noise Contours
Newton County, MO

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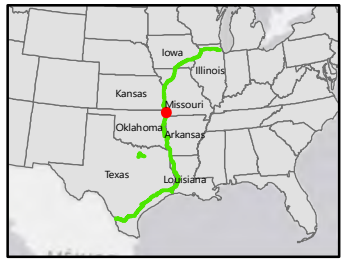
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Noise Contours
Newton County, MO

Miles
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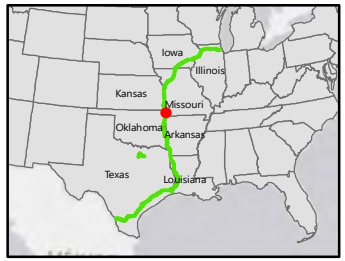
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Noise Contours
Newton County, MO

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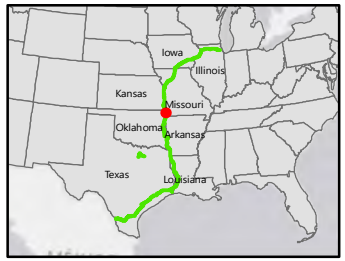
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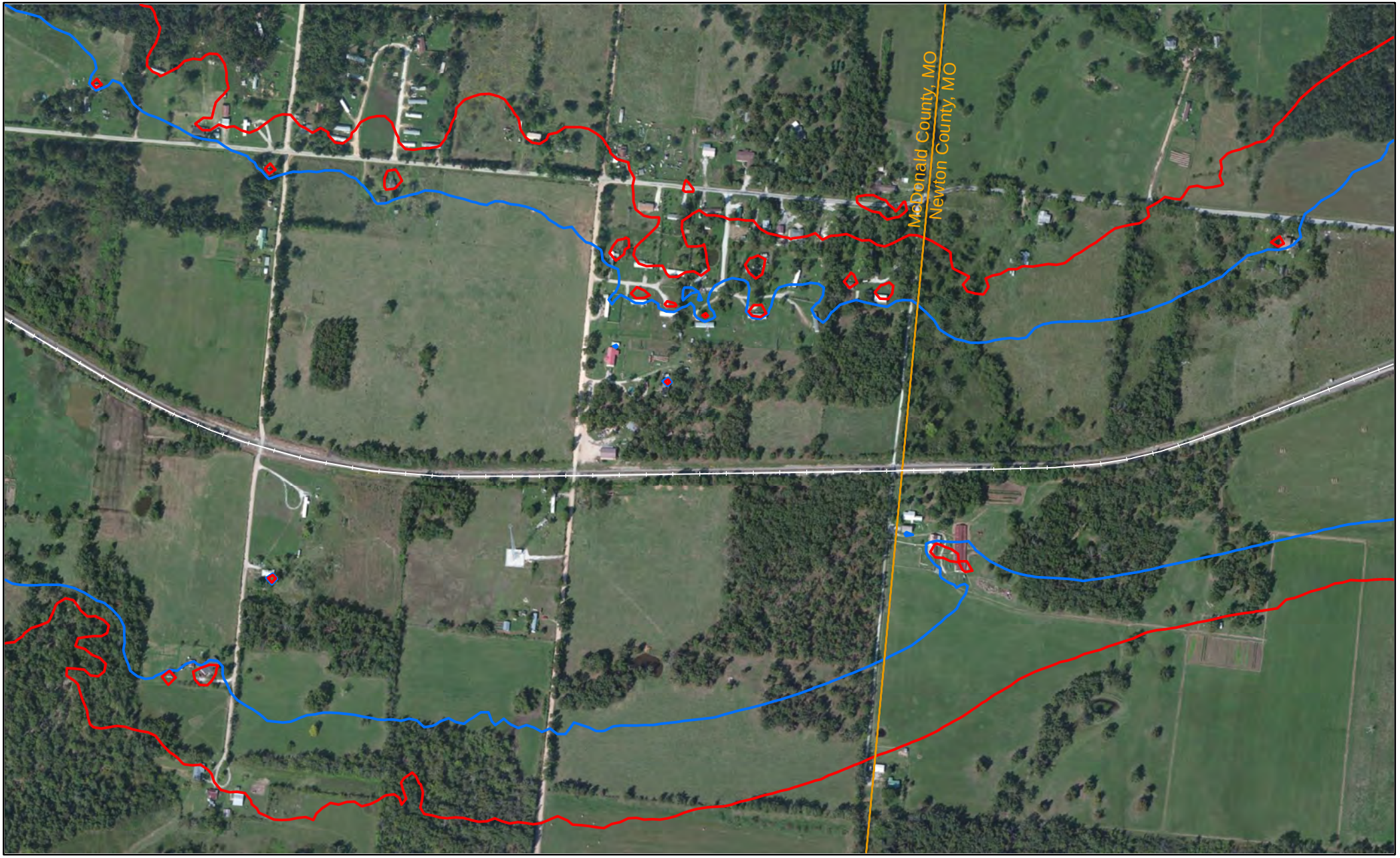
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Noise Contours
Newton County, MO

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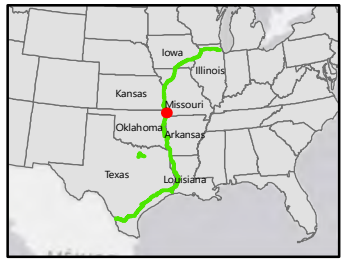
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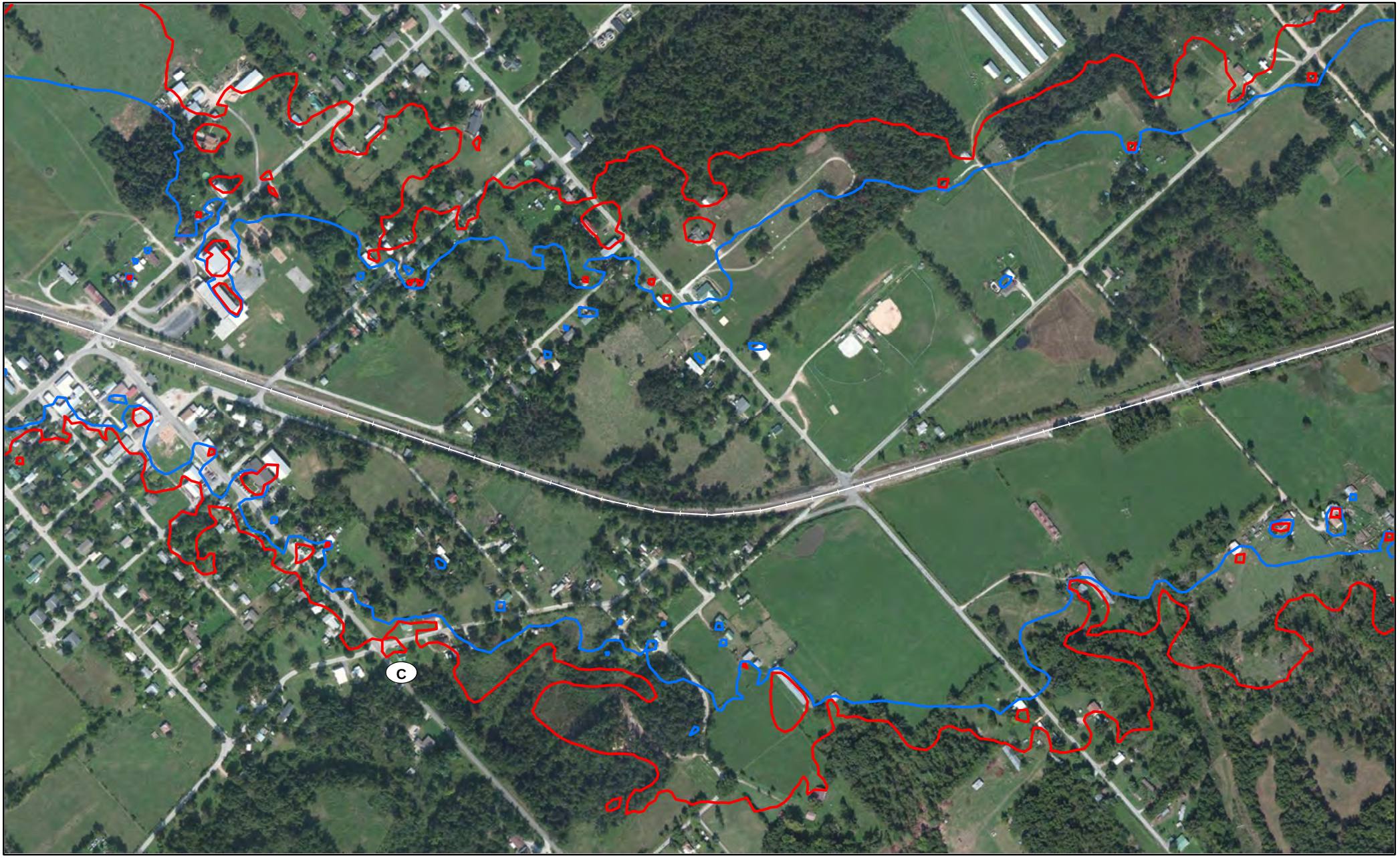
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Noise Contours
Newton County, MO

Miles
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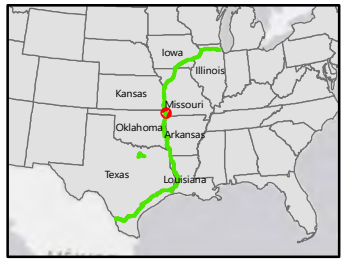
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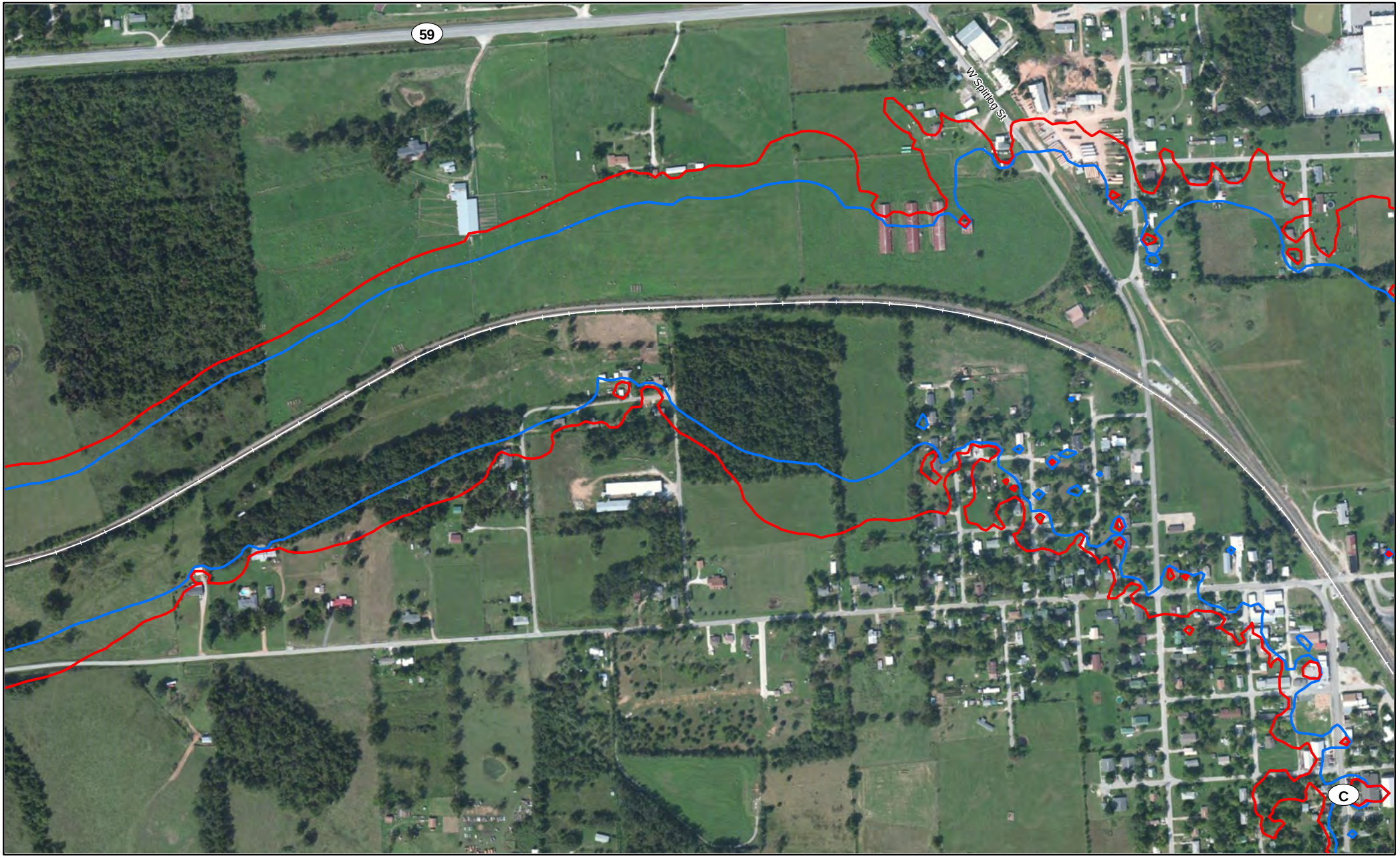
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Noise Contours
McDonald County, MO

Miles
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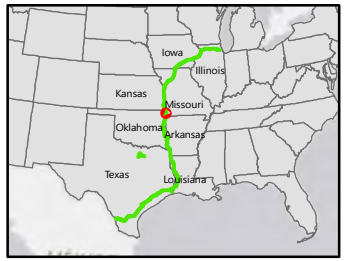
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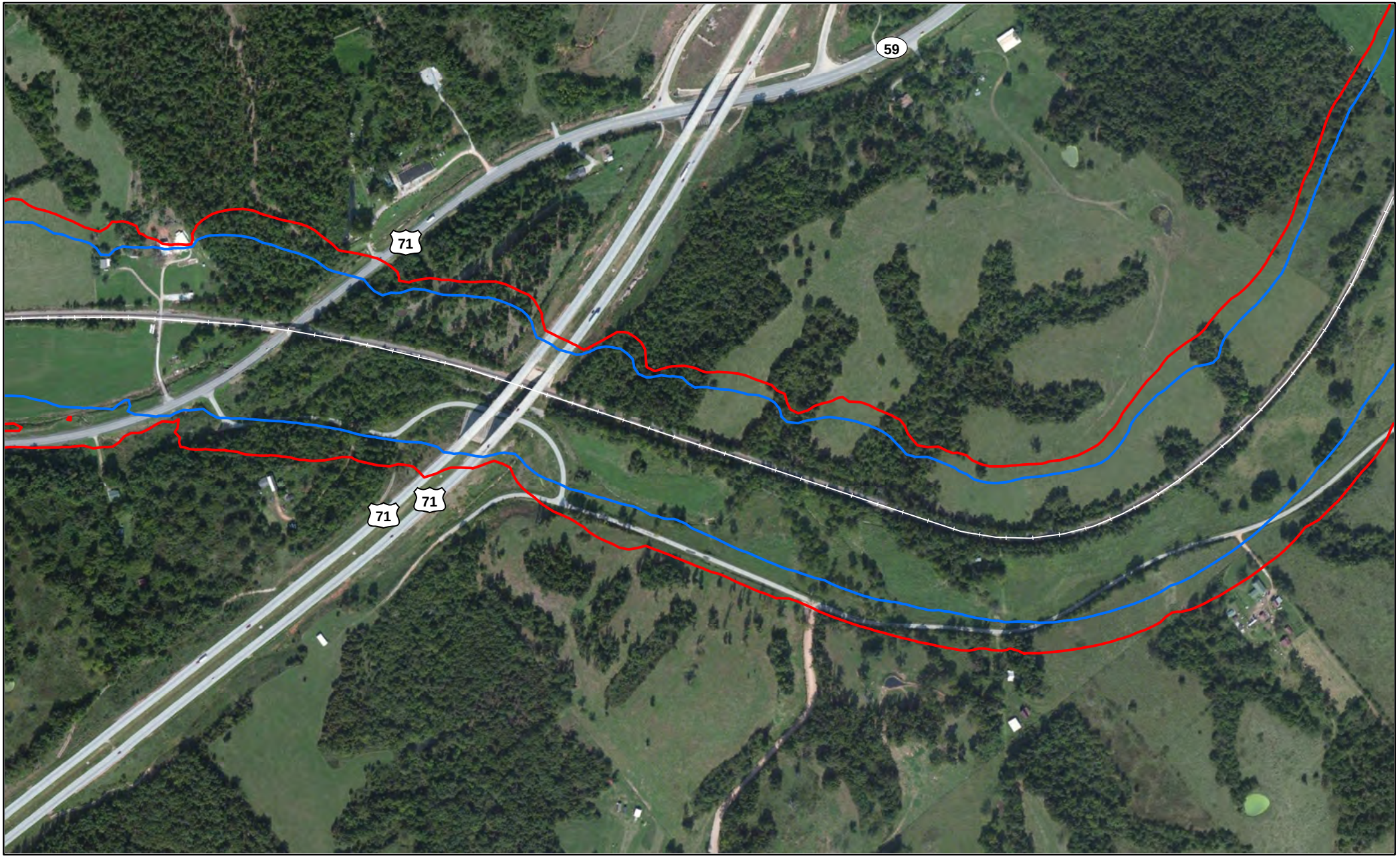
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Noise Contours
McDonald County, MO

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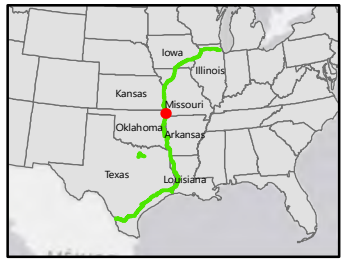
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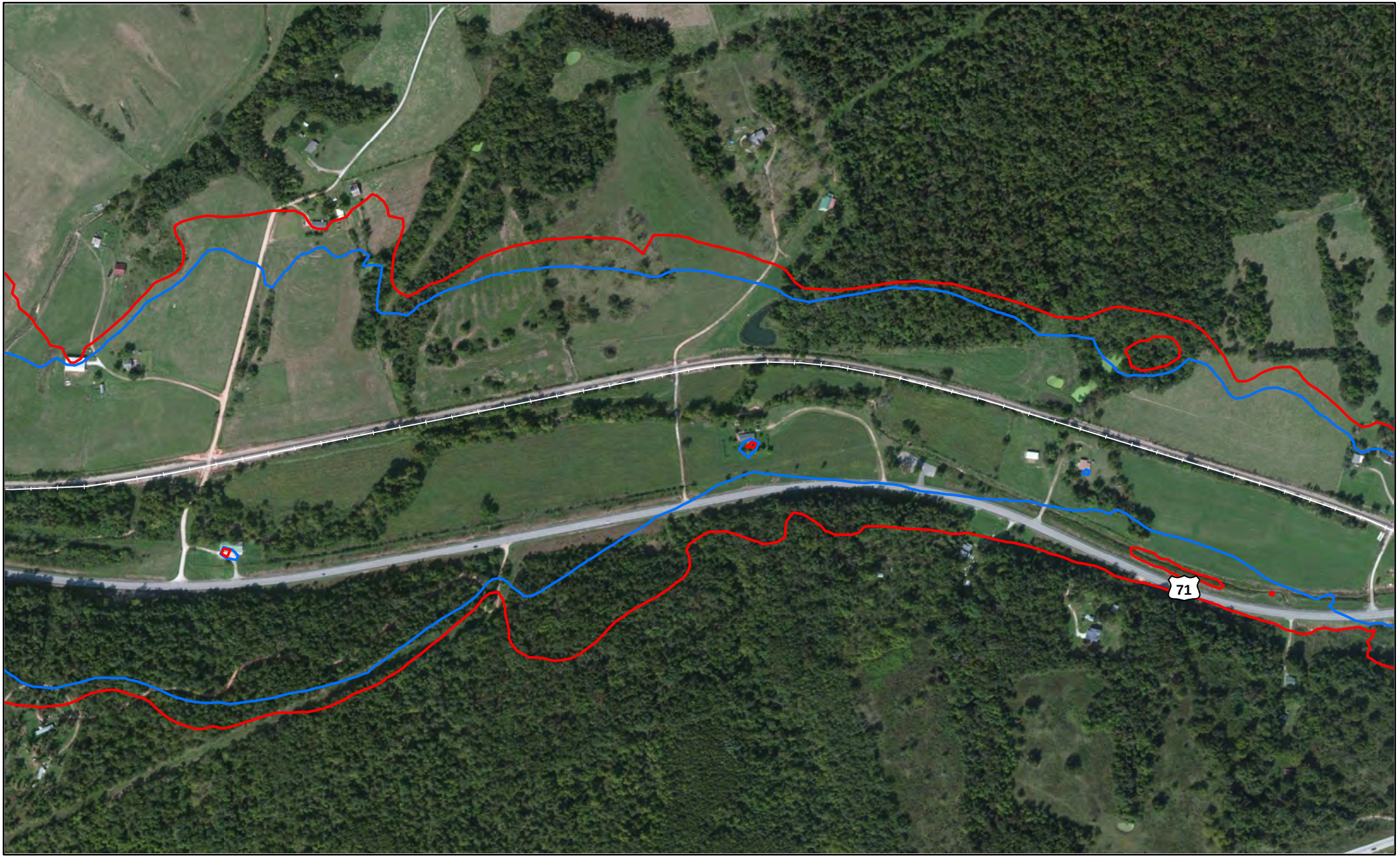
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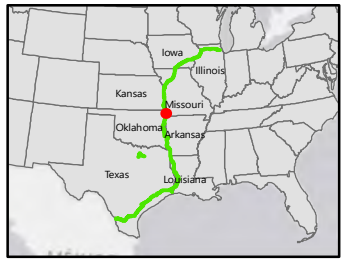
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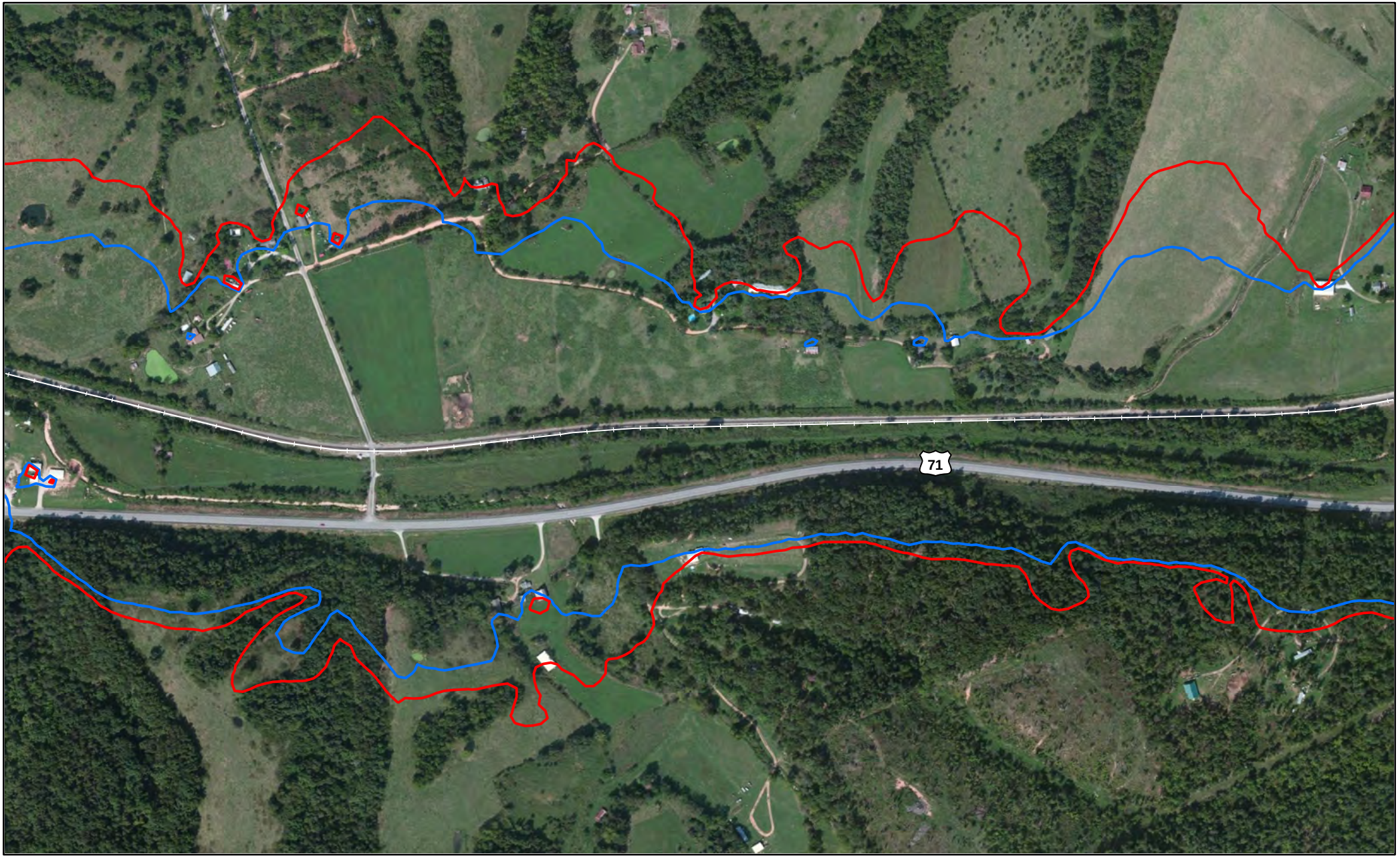
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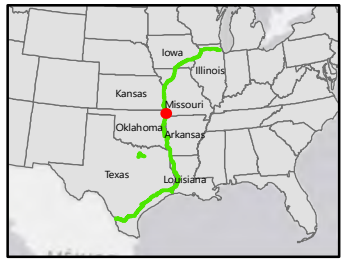
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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

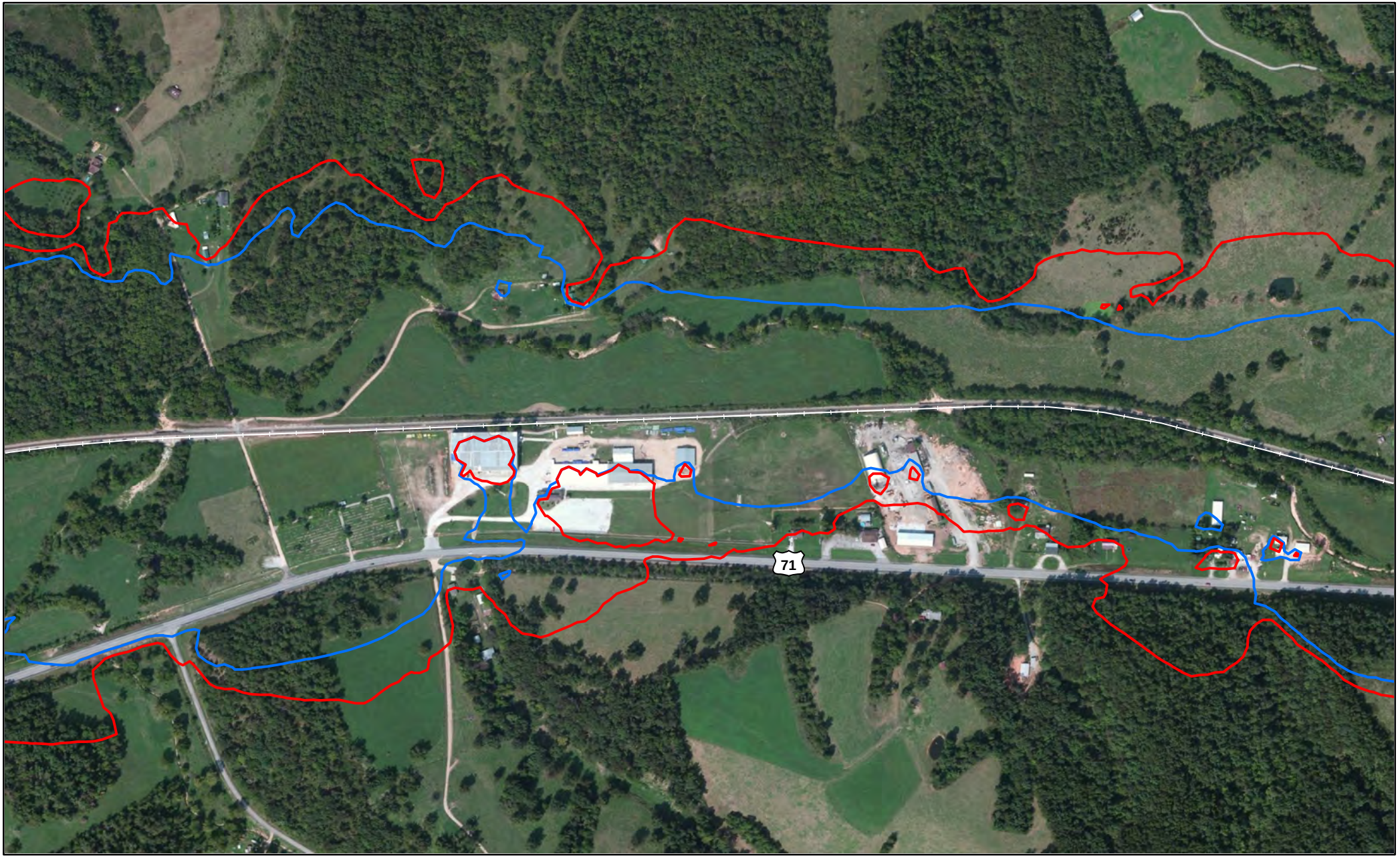
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



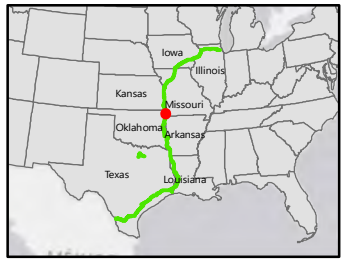
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

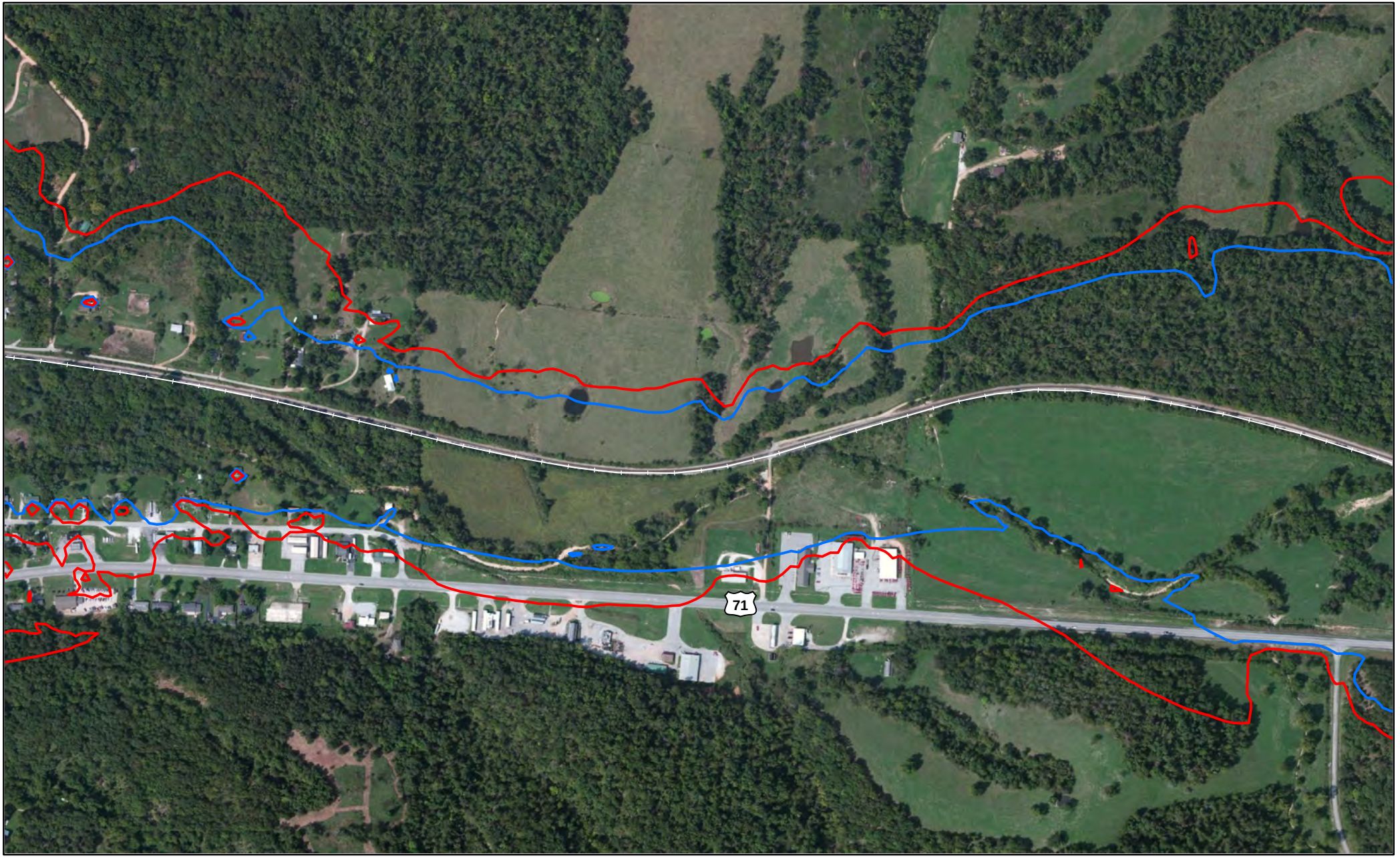
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



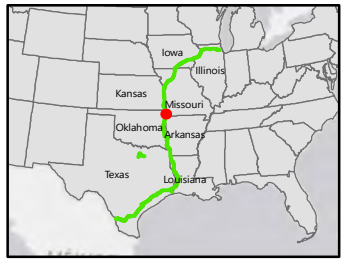
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

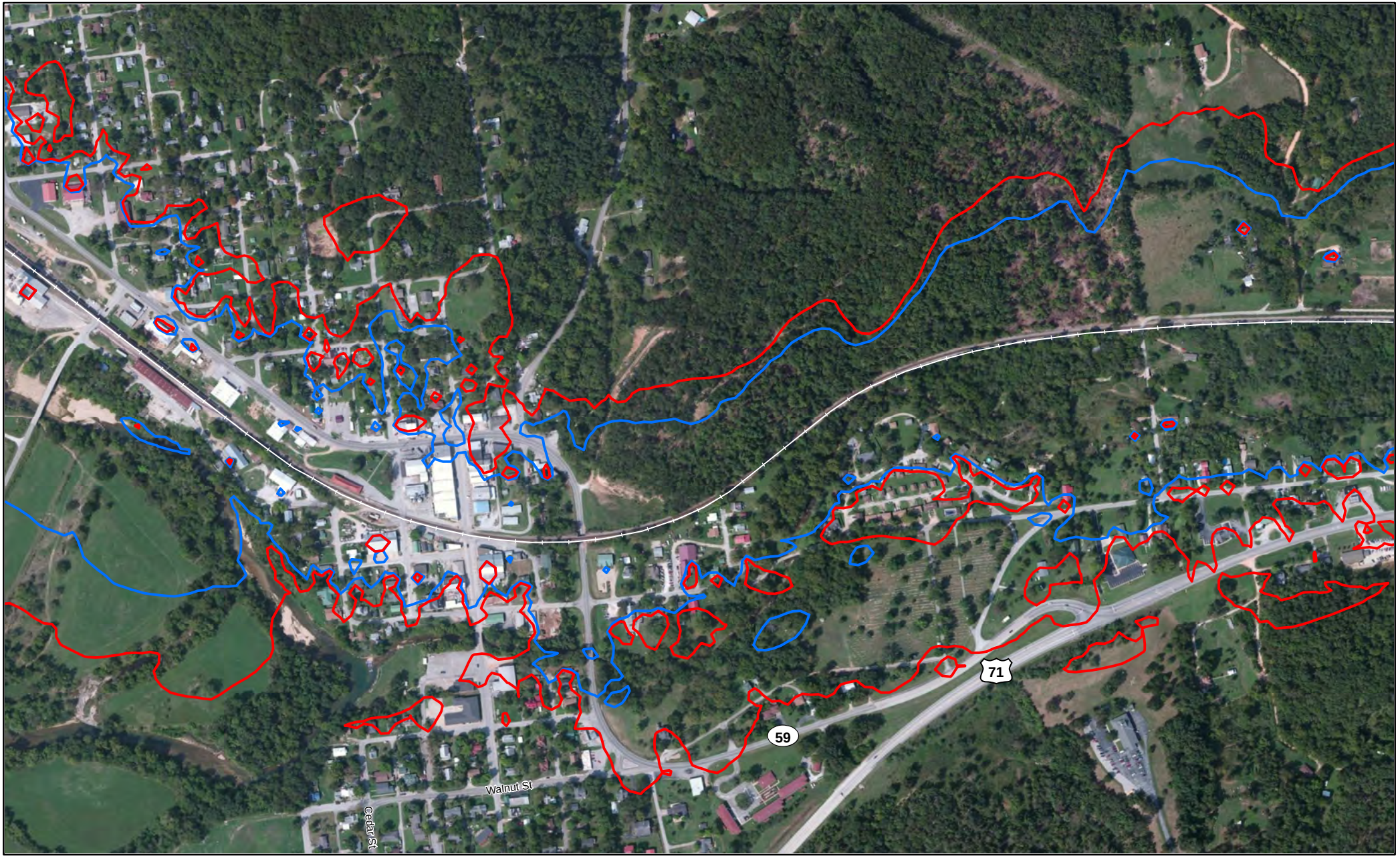
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



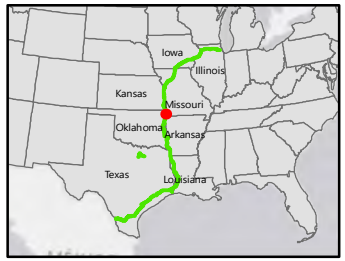
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

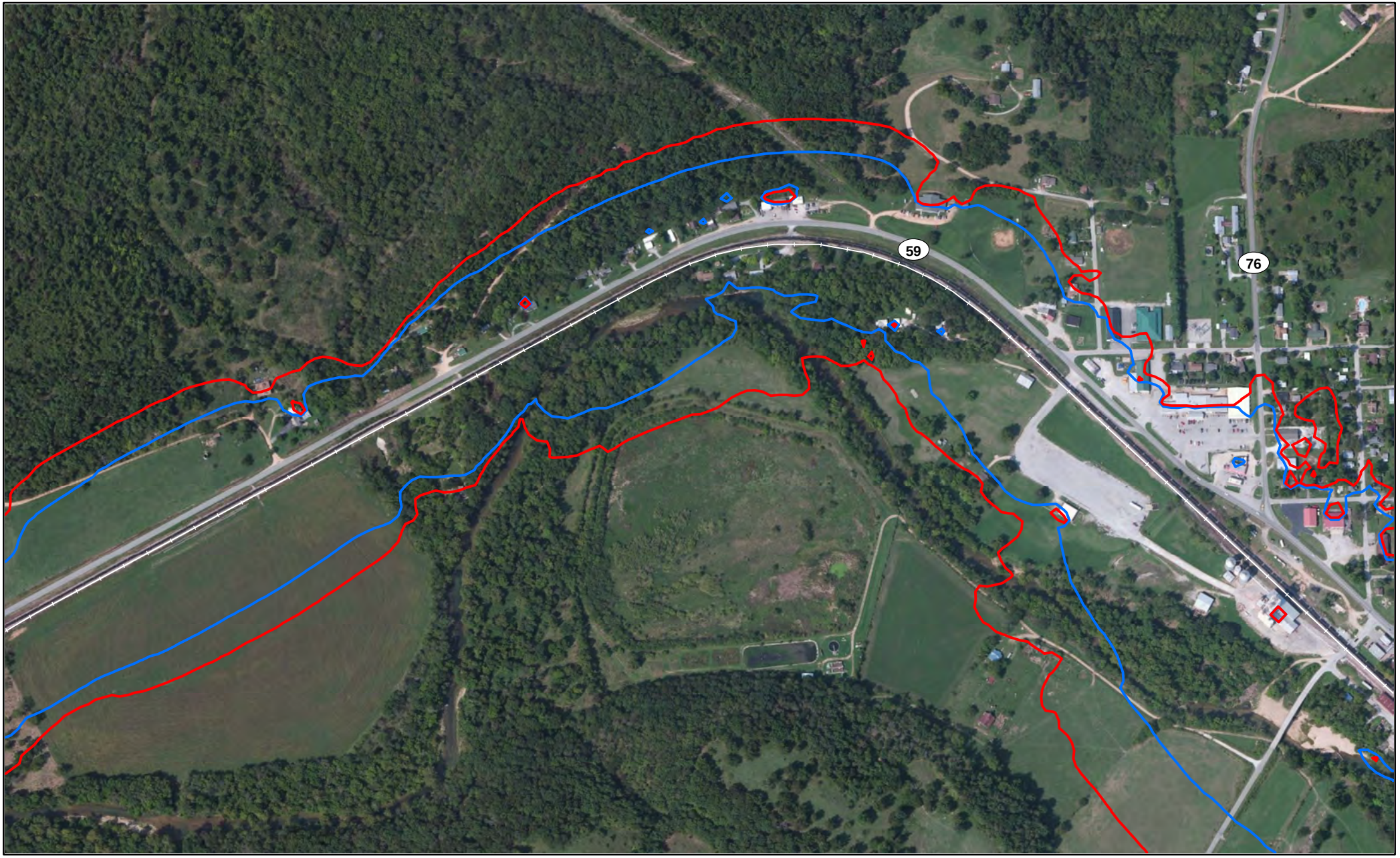
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



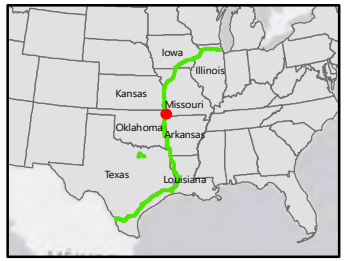
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

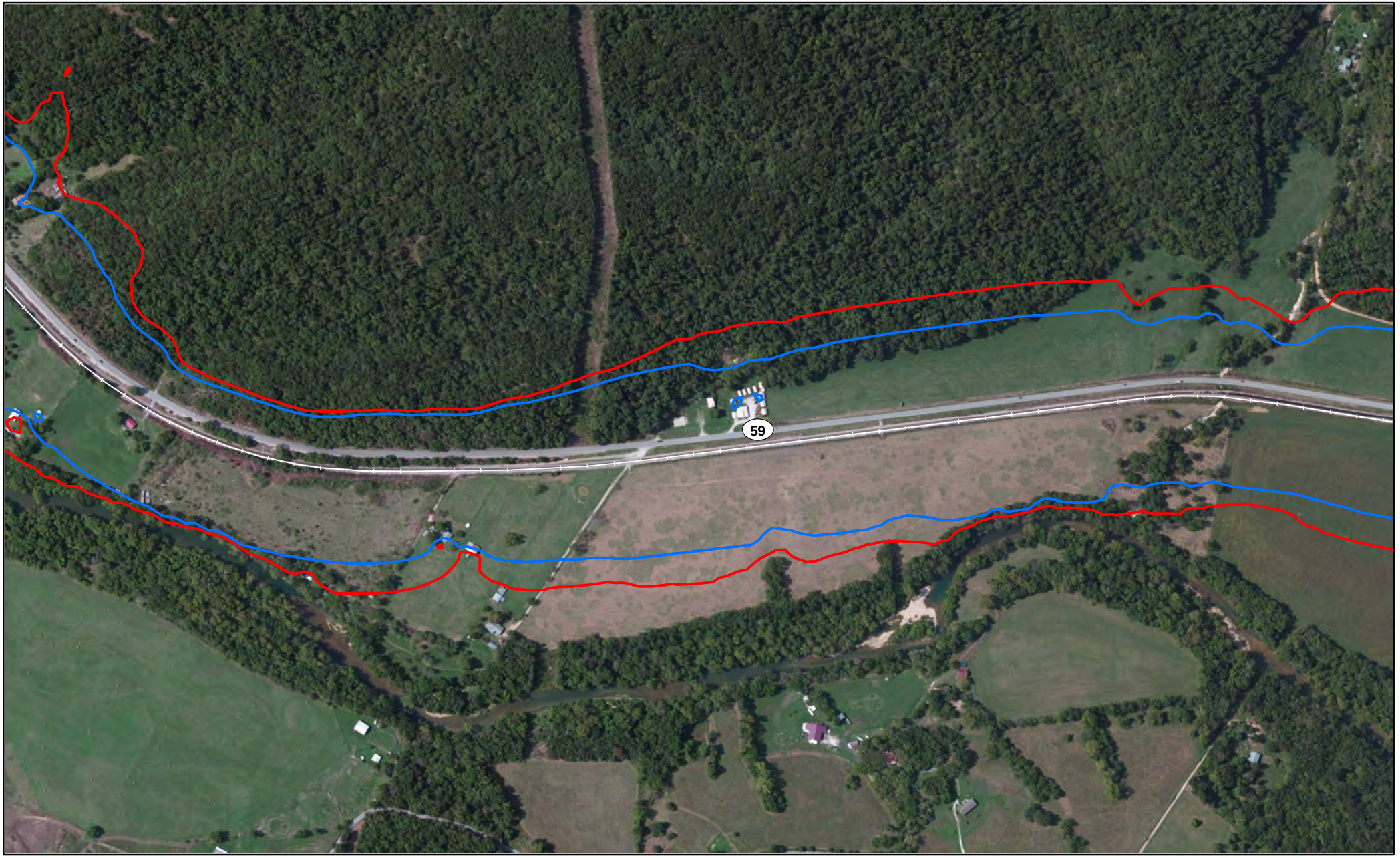
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



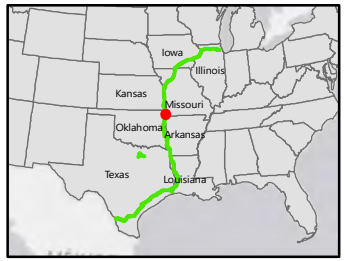
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

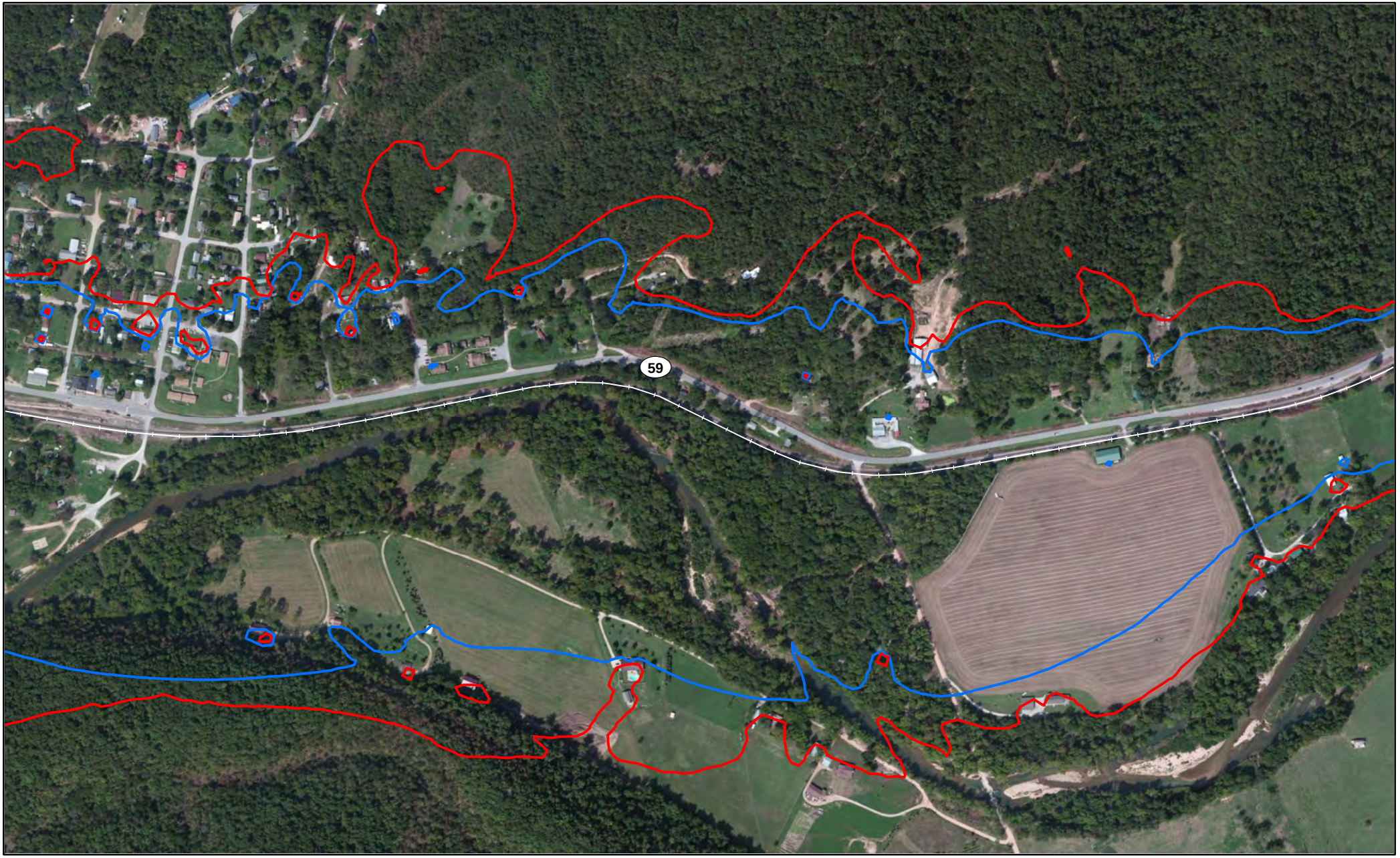
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



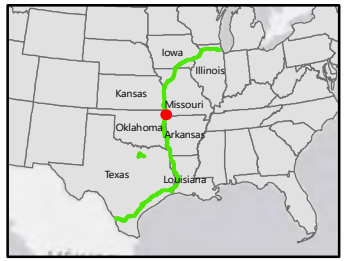
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

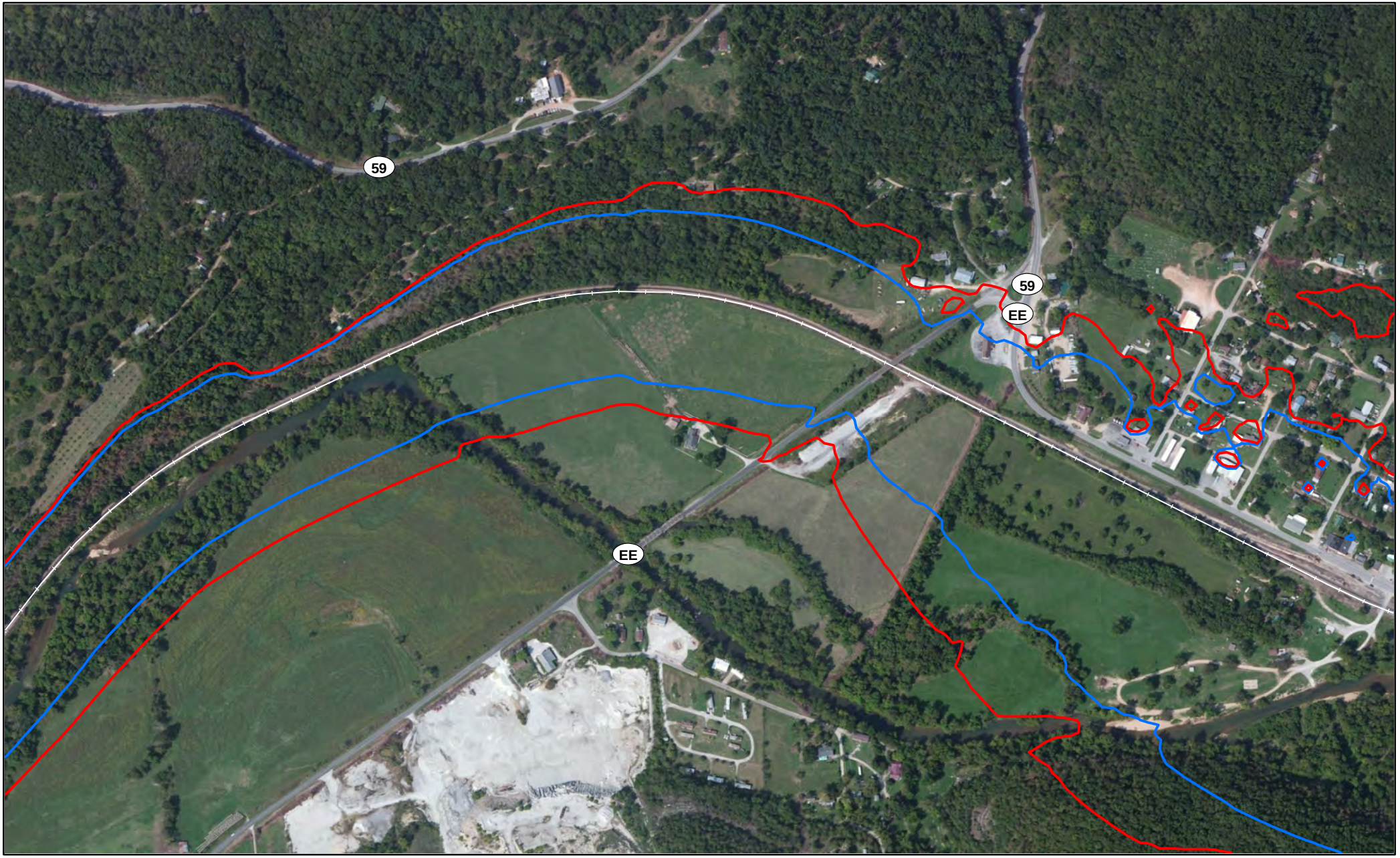
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



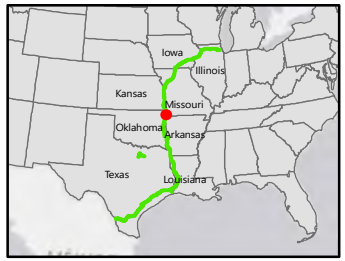
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

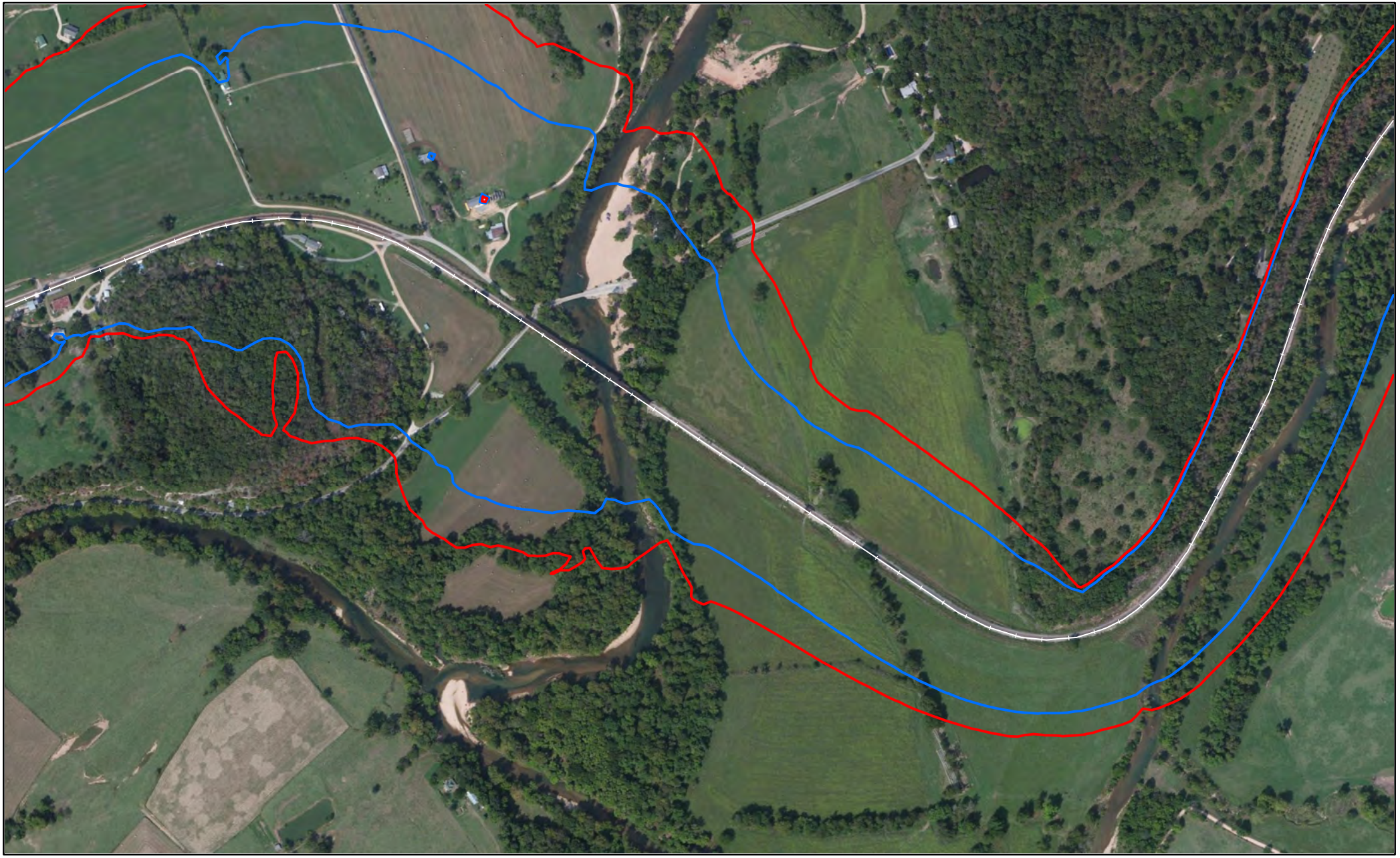
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



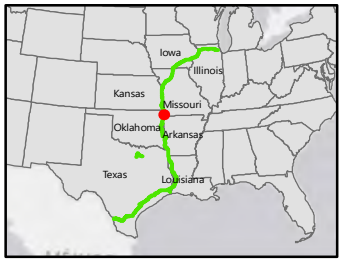
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

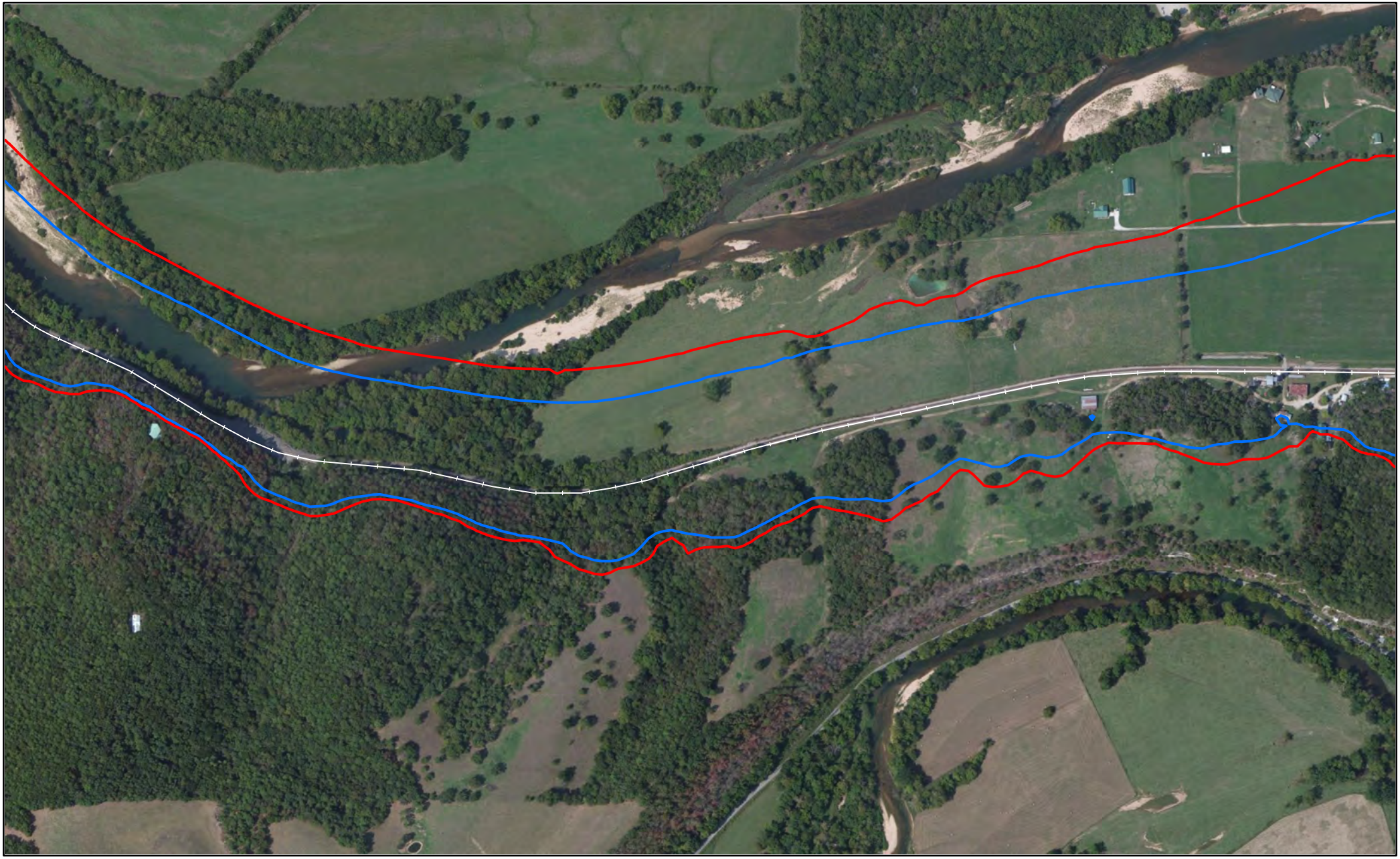
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



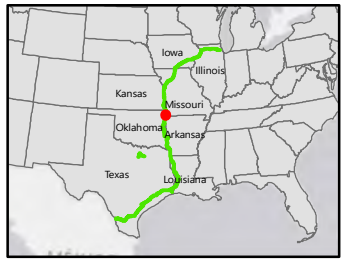
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

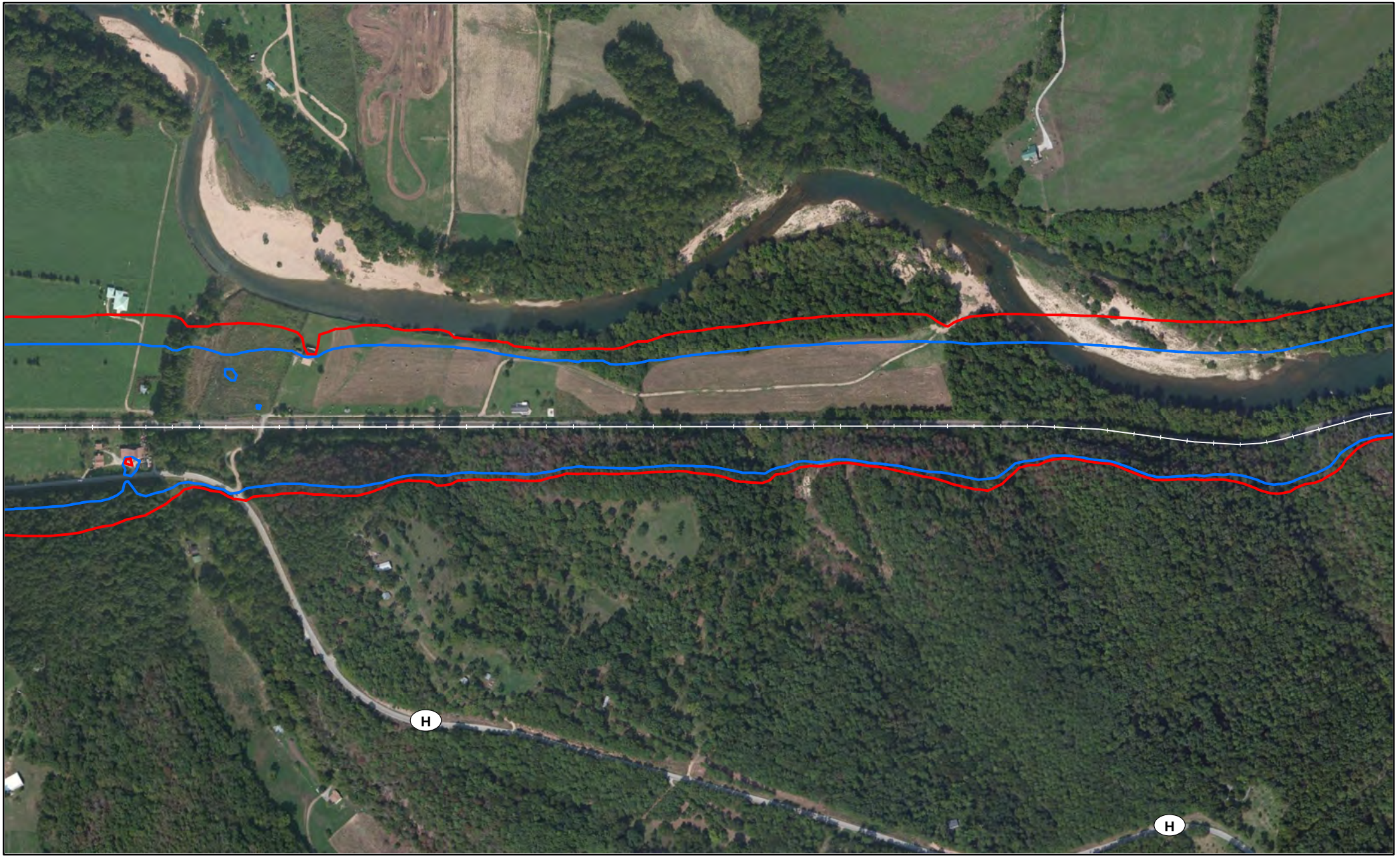
Tracks

Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1



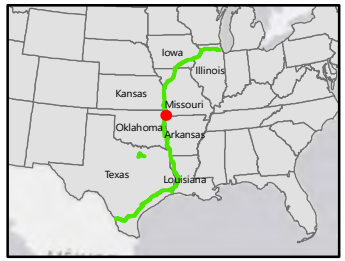
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

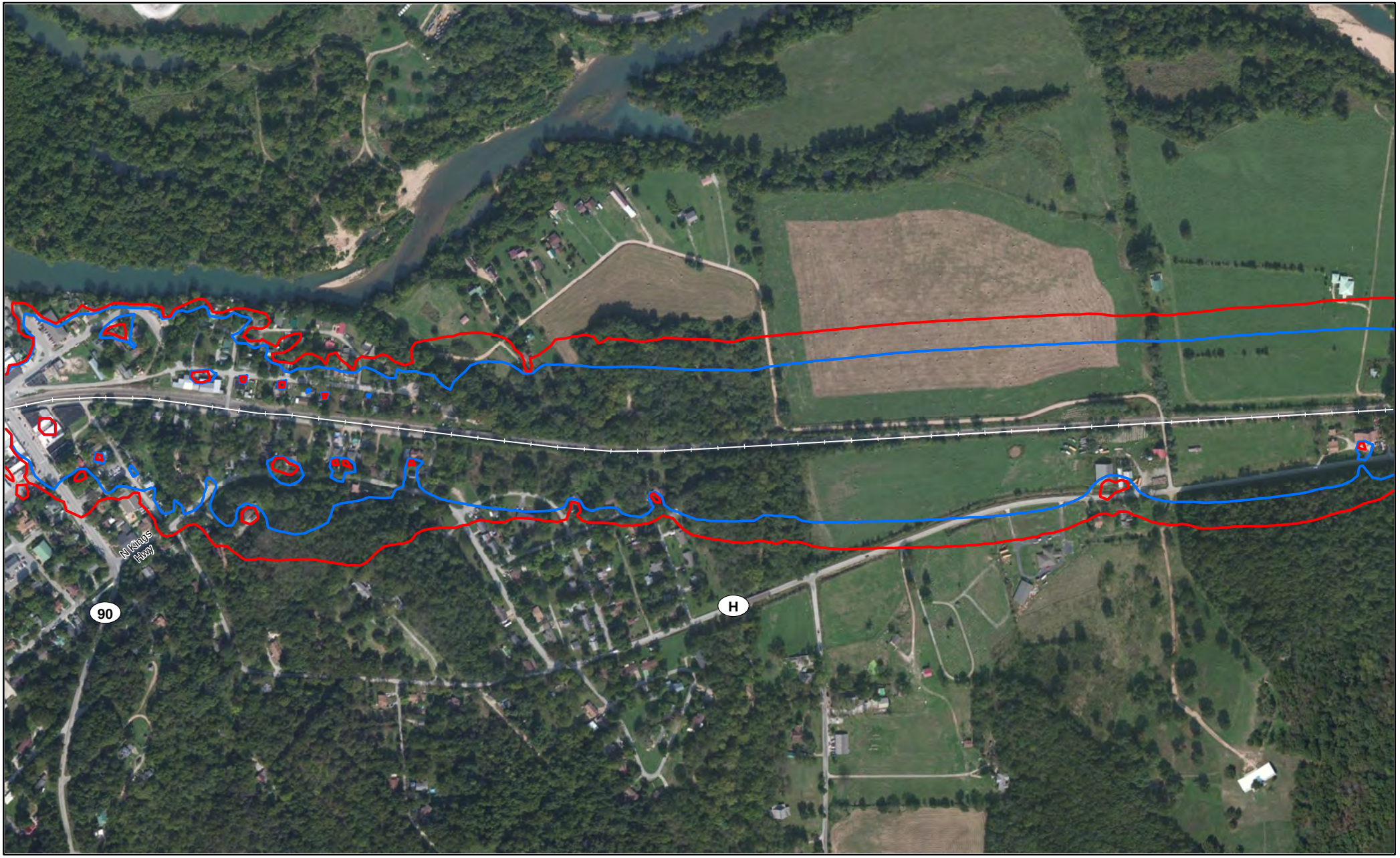
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



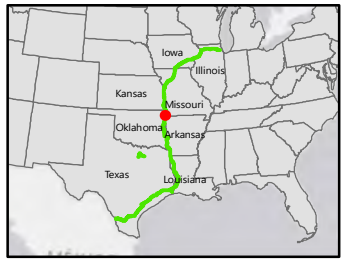
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

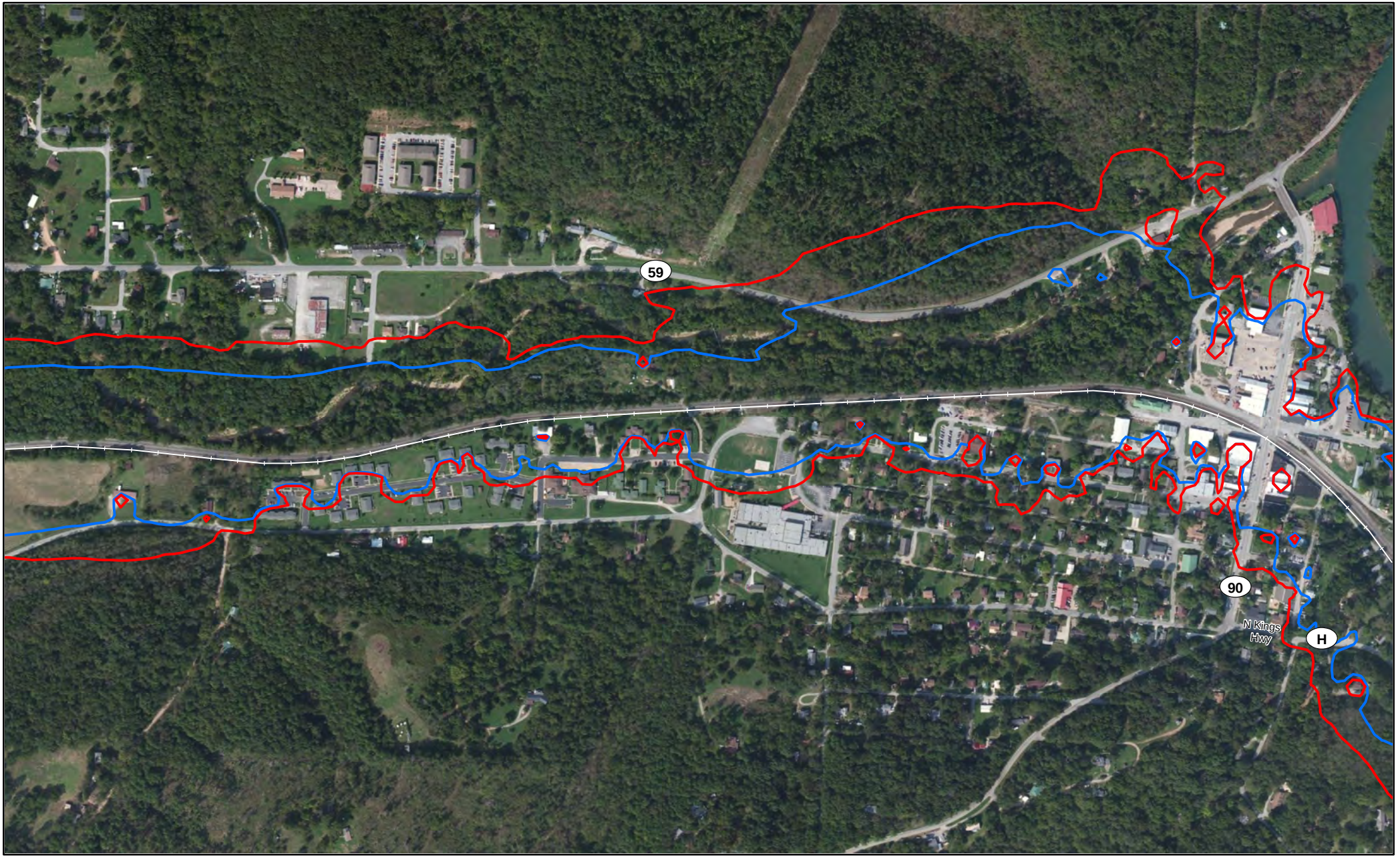
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



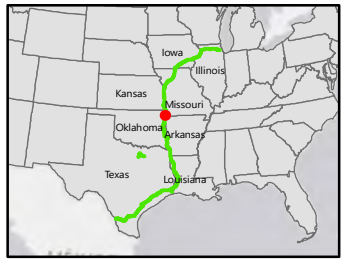
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

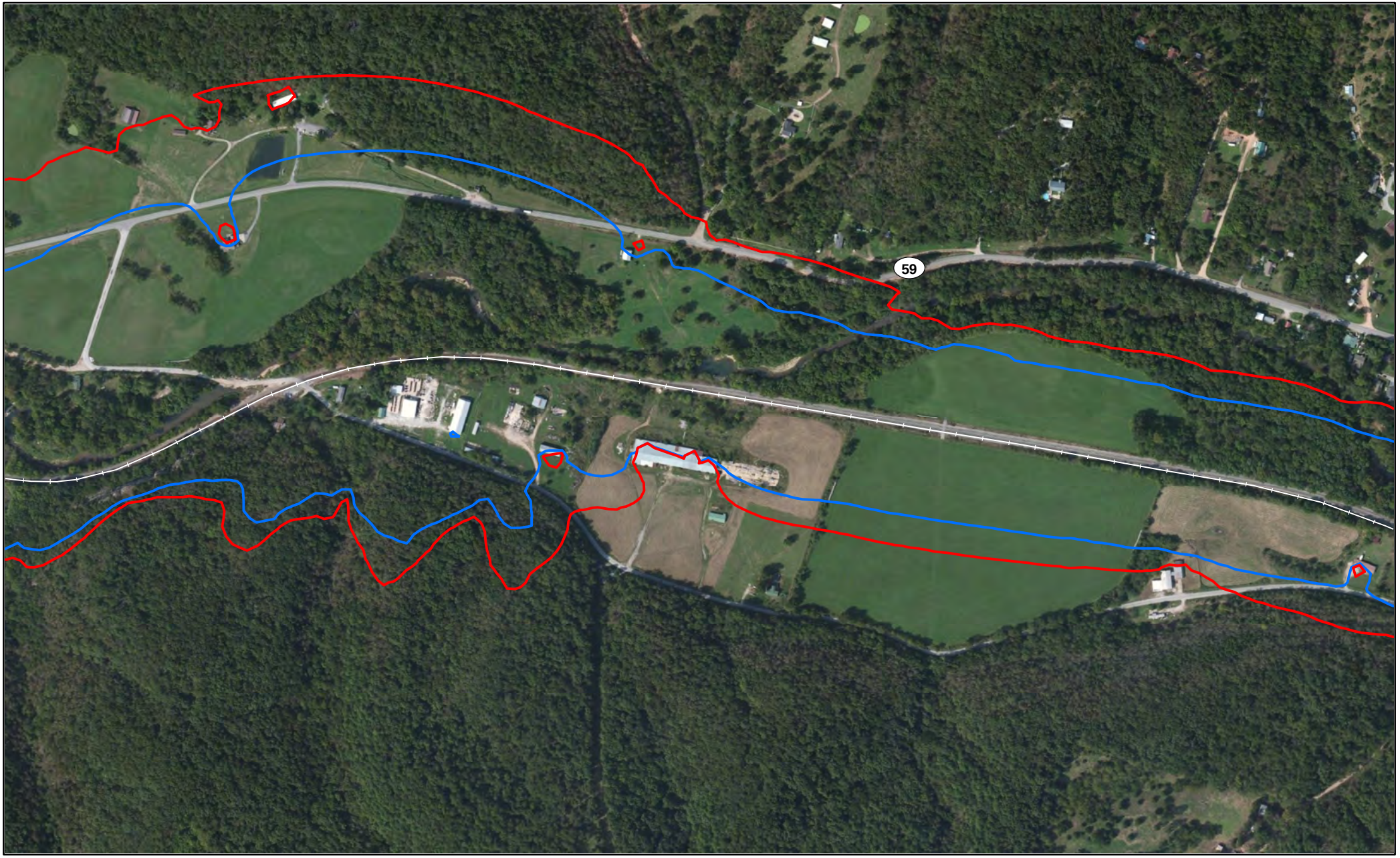
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



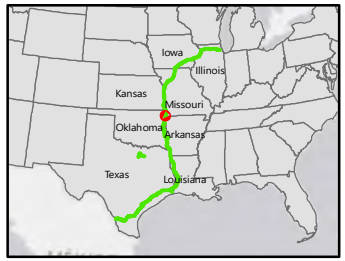
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

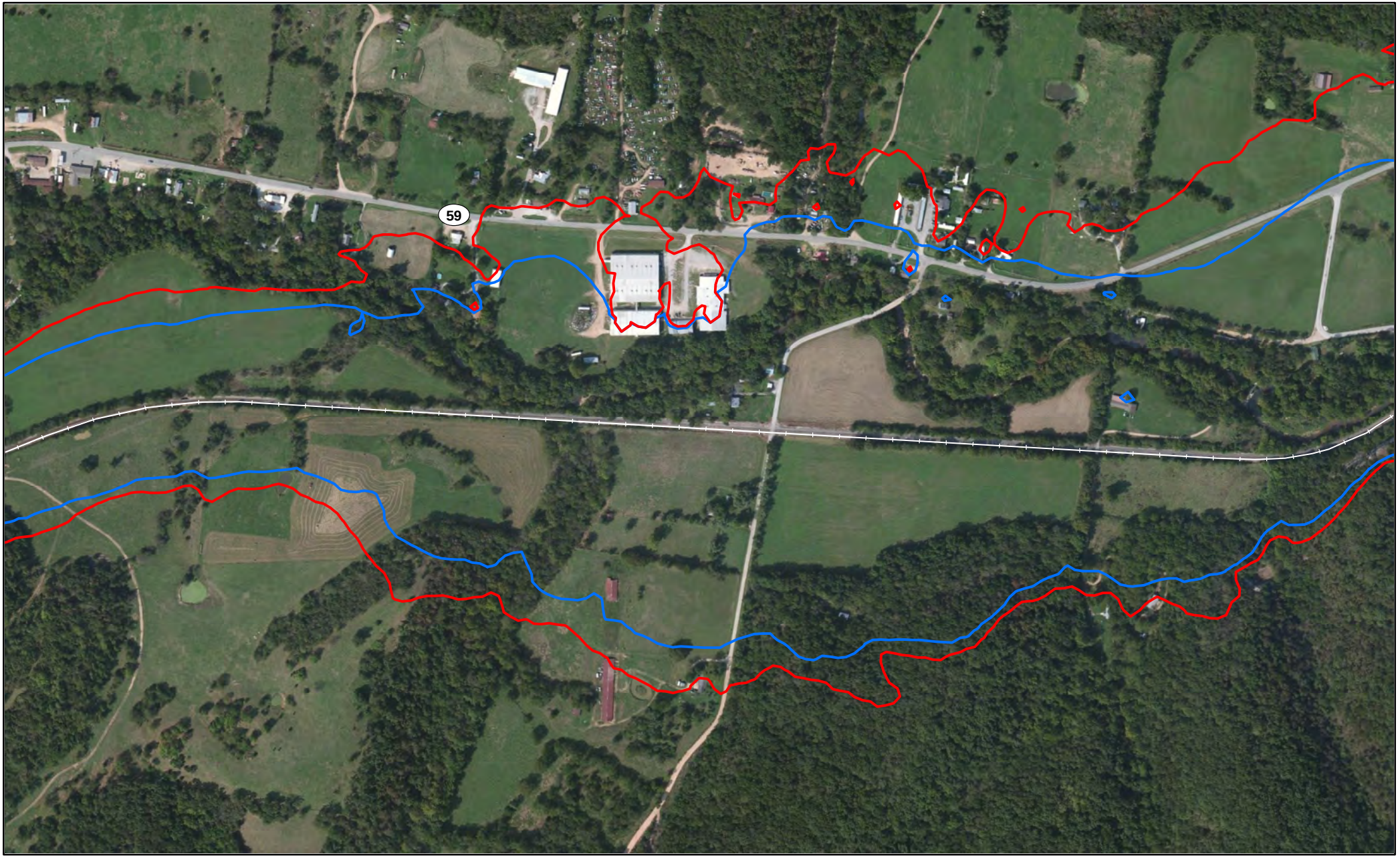
Tracks

Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1



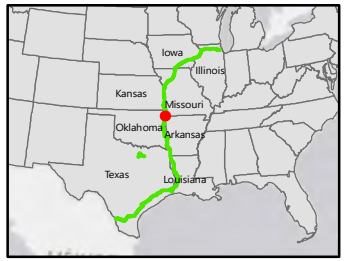
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

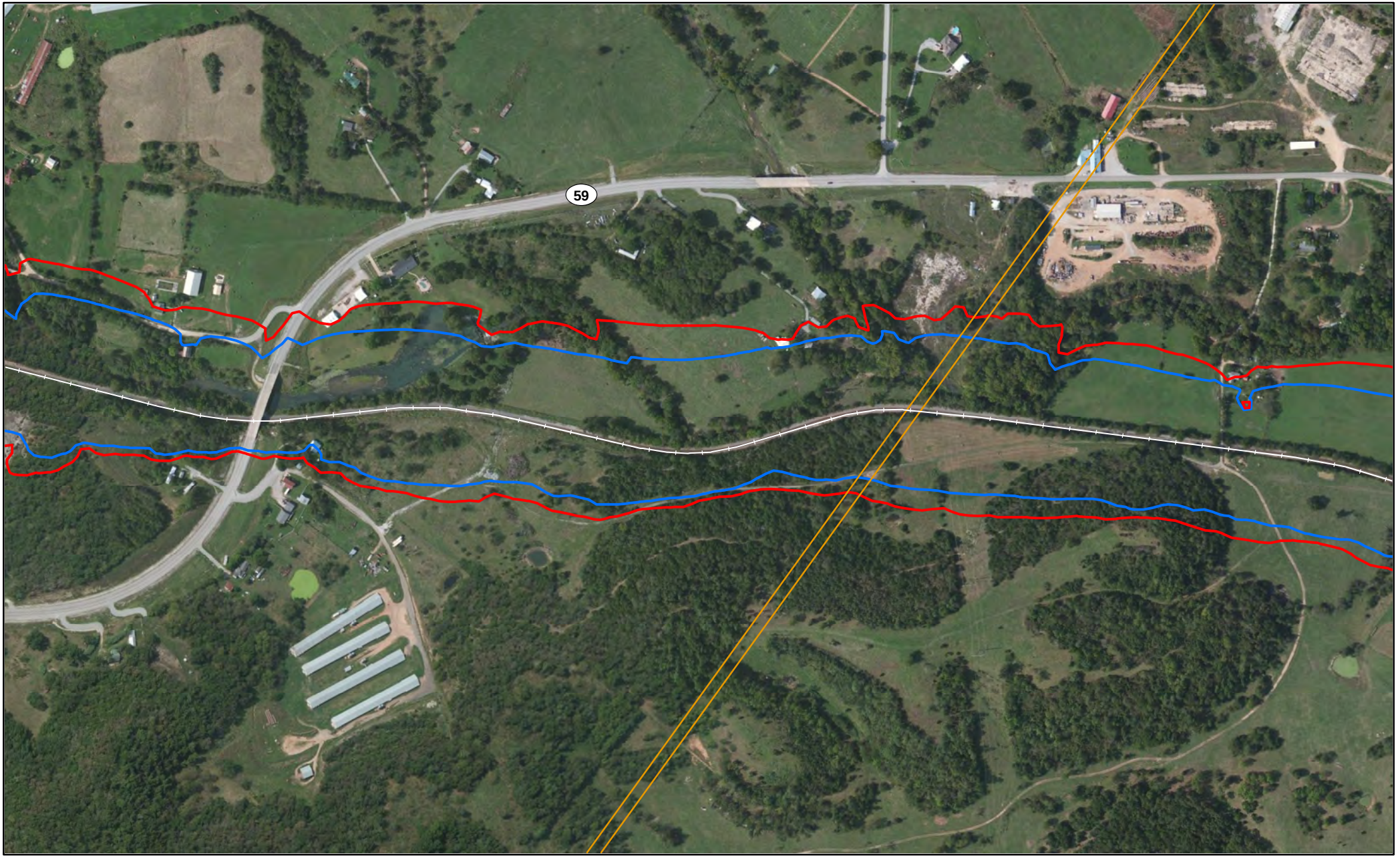
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



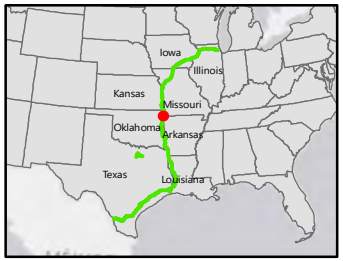
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Benton County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



Noise Receptors

0 0.225 0.45 Miles

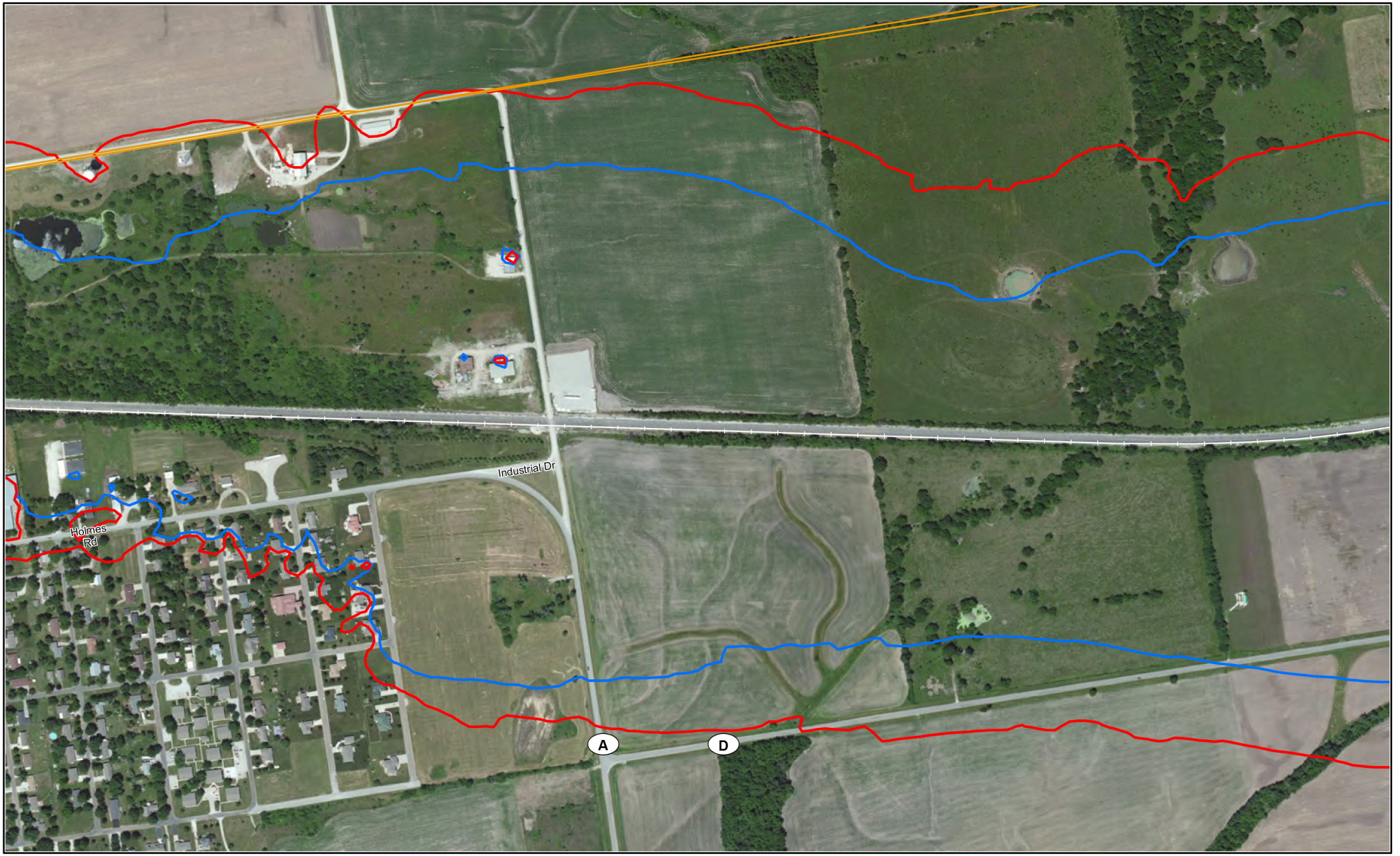
Source: ESRI, VHB.



Noise at Rail Yards and Intermodal Facilities
International Freight Gateway
Kansas City, MO

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN

Appendix M – Attachment 4: Kansas



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Miami County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

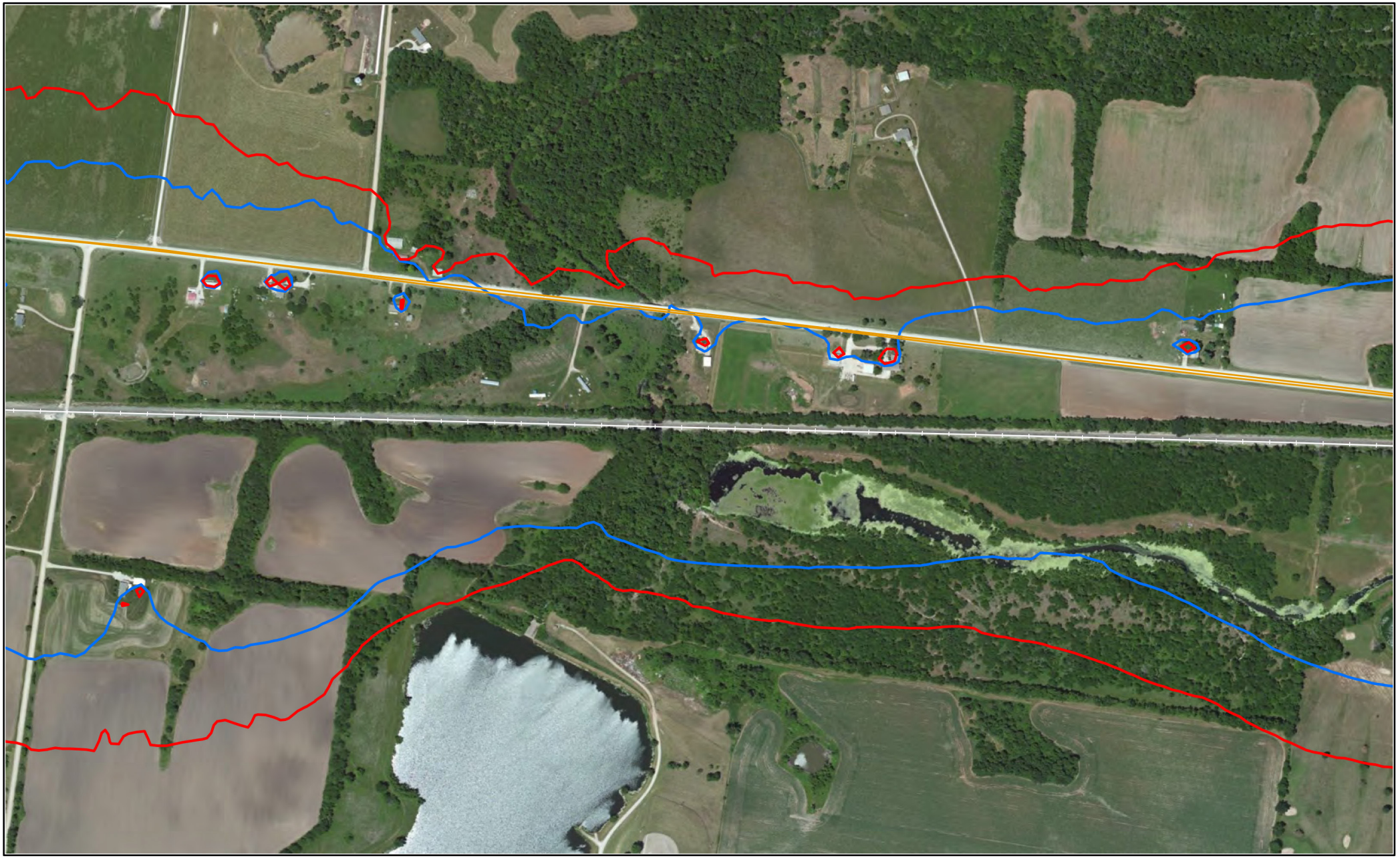
Source: ESRI.



Noise Contours
Miami County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Miami County, KS

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

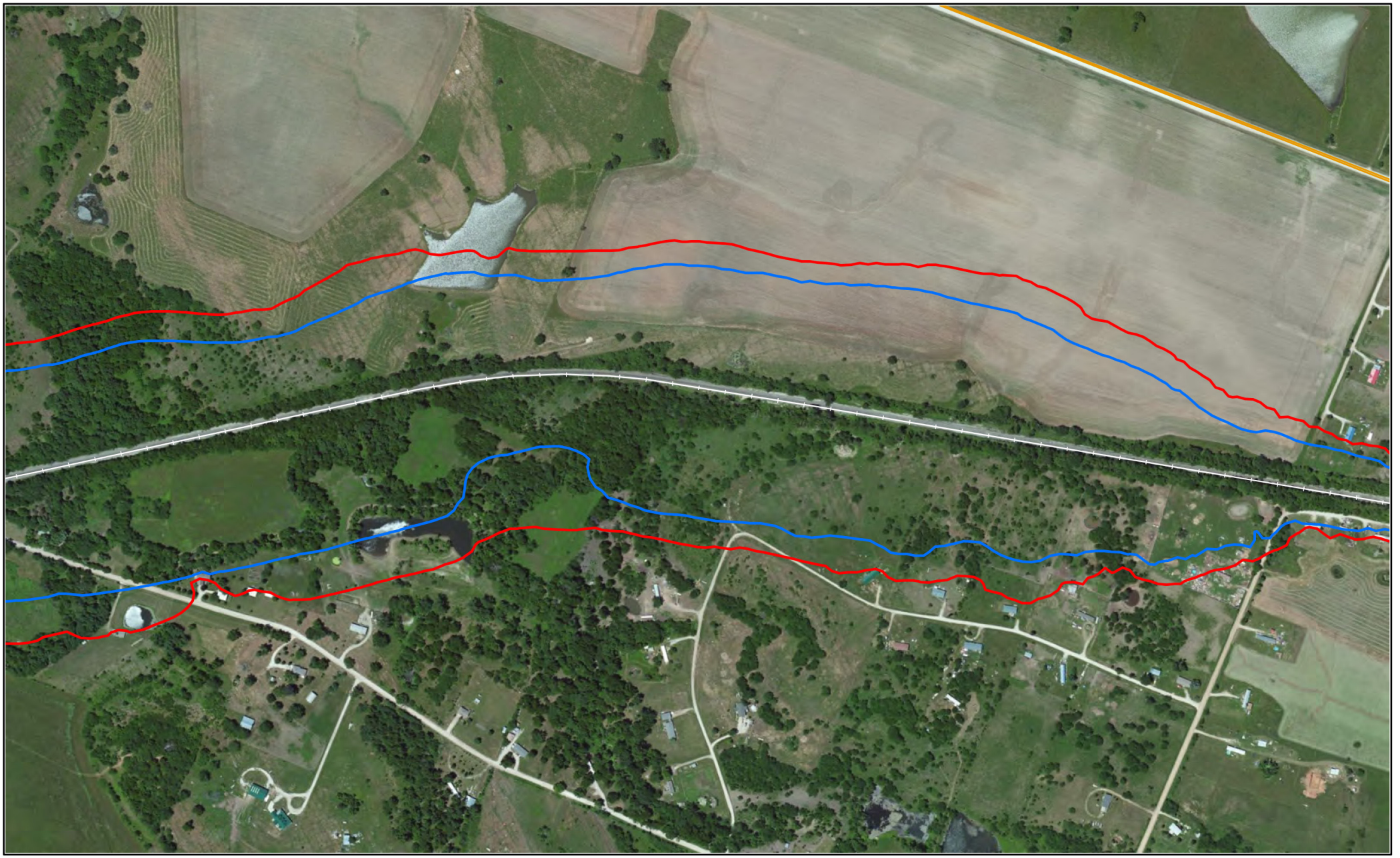
Source: ESRI.



Noise Contours
Miami County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

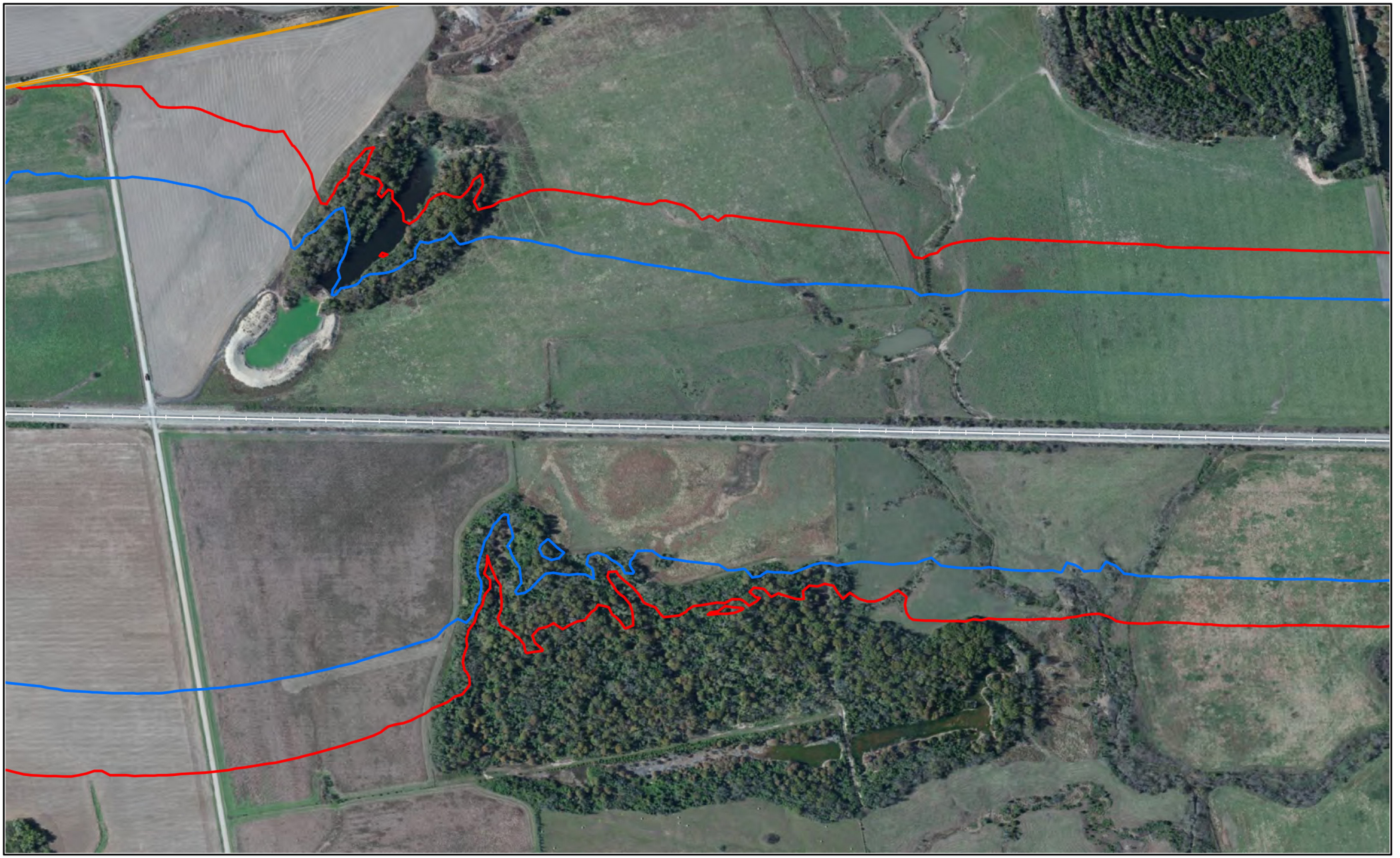
Source: ESRI.



Noise Contours
Miami County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

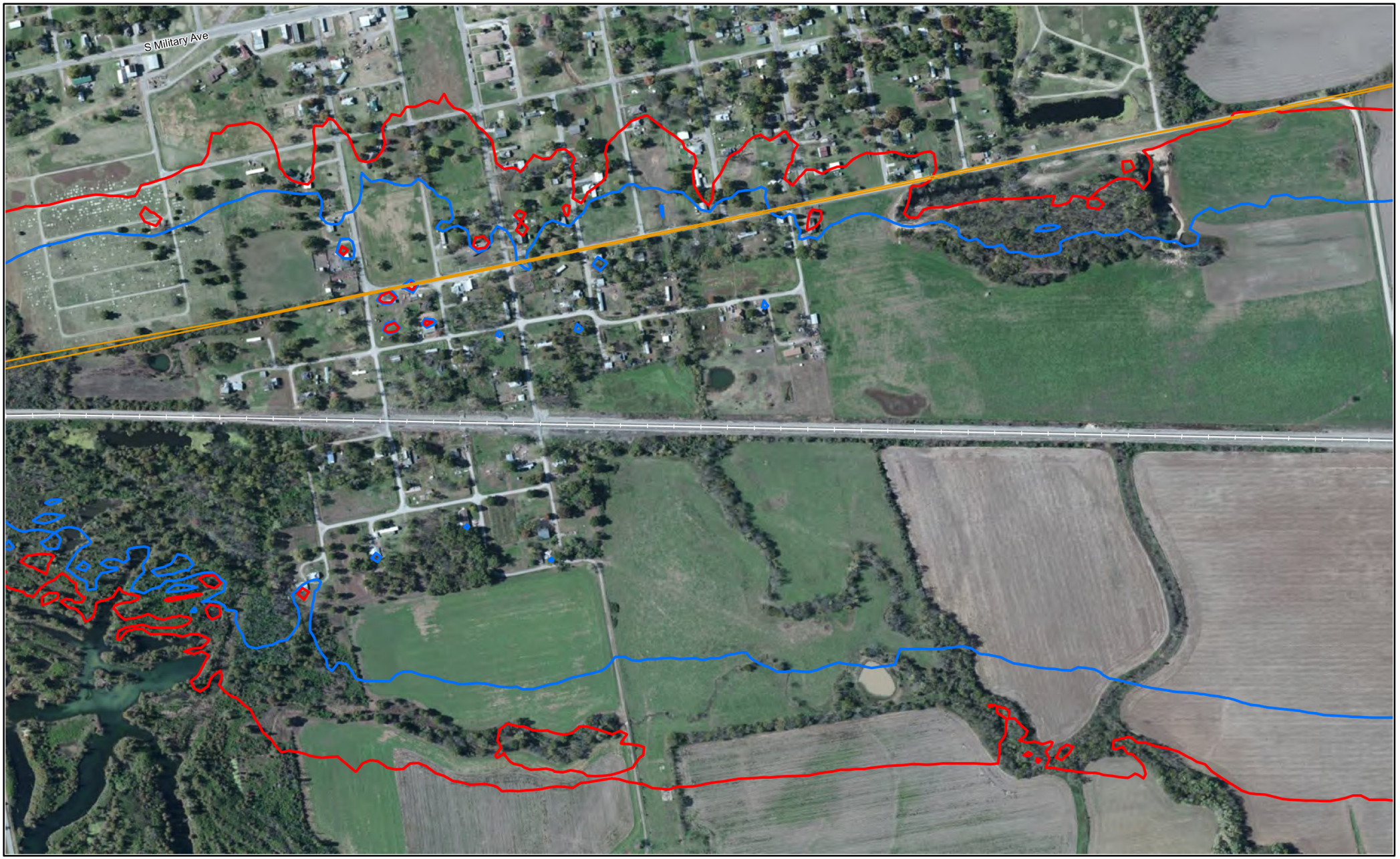
Tracks

Source: ESRI.



Noise Contours
Crawford County, KS

Miles
0 0.05 0.1



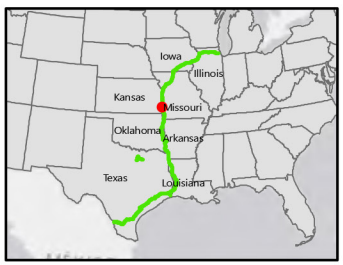
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Crawford County, KS

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

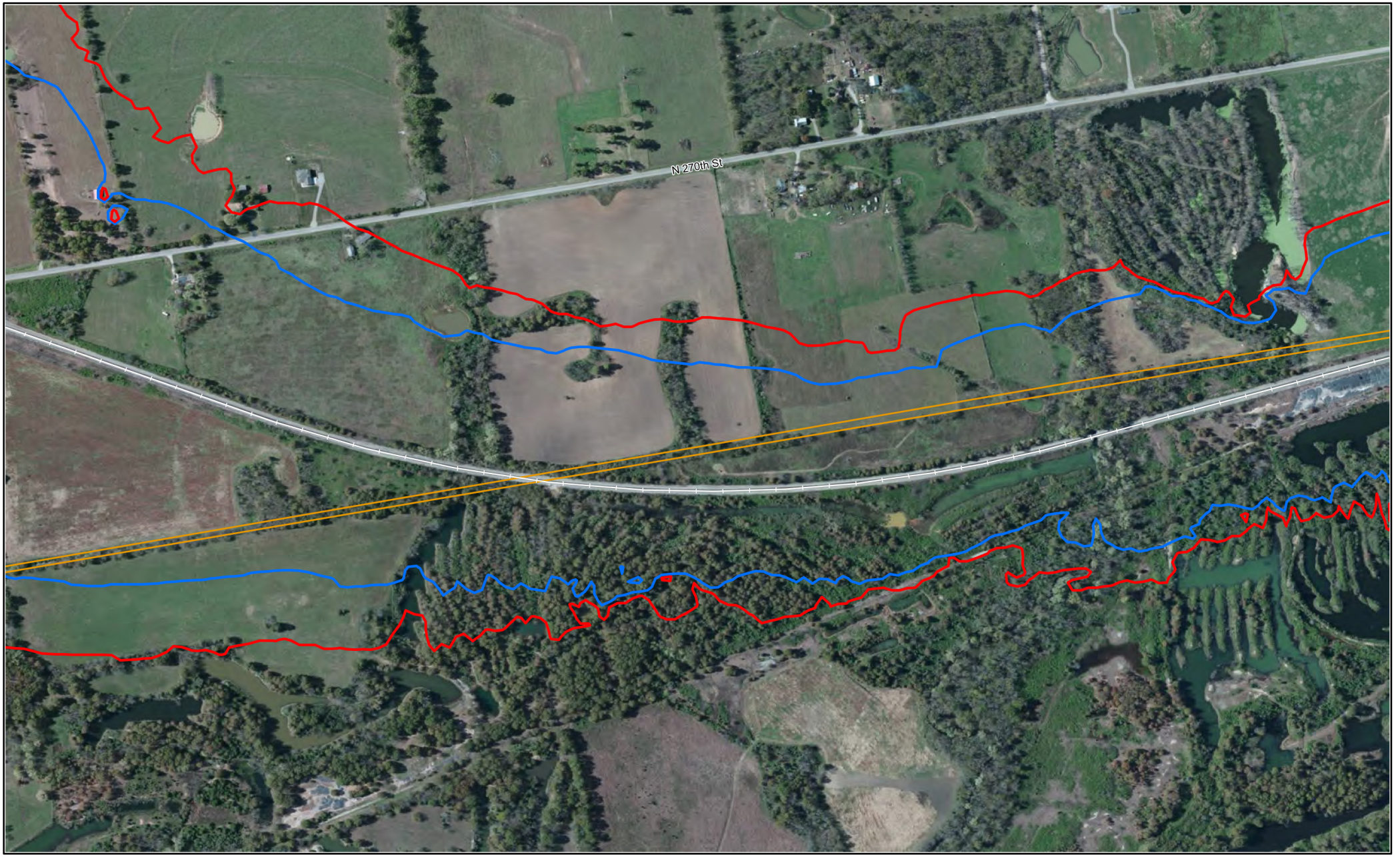
Source: ESRI.



Noise Contours
Crawford County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Crawford County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

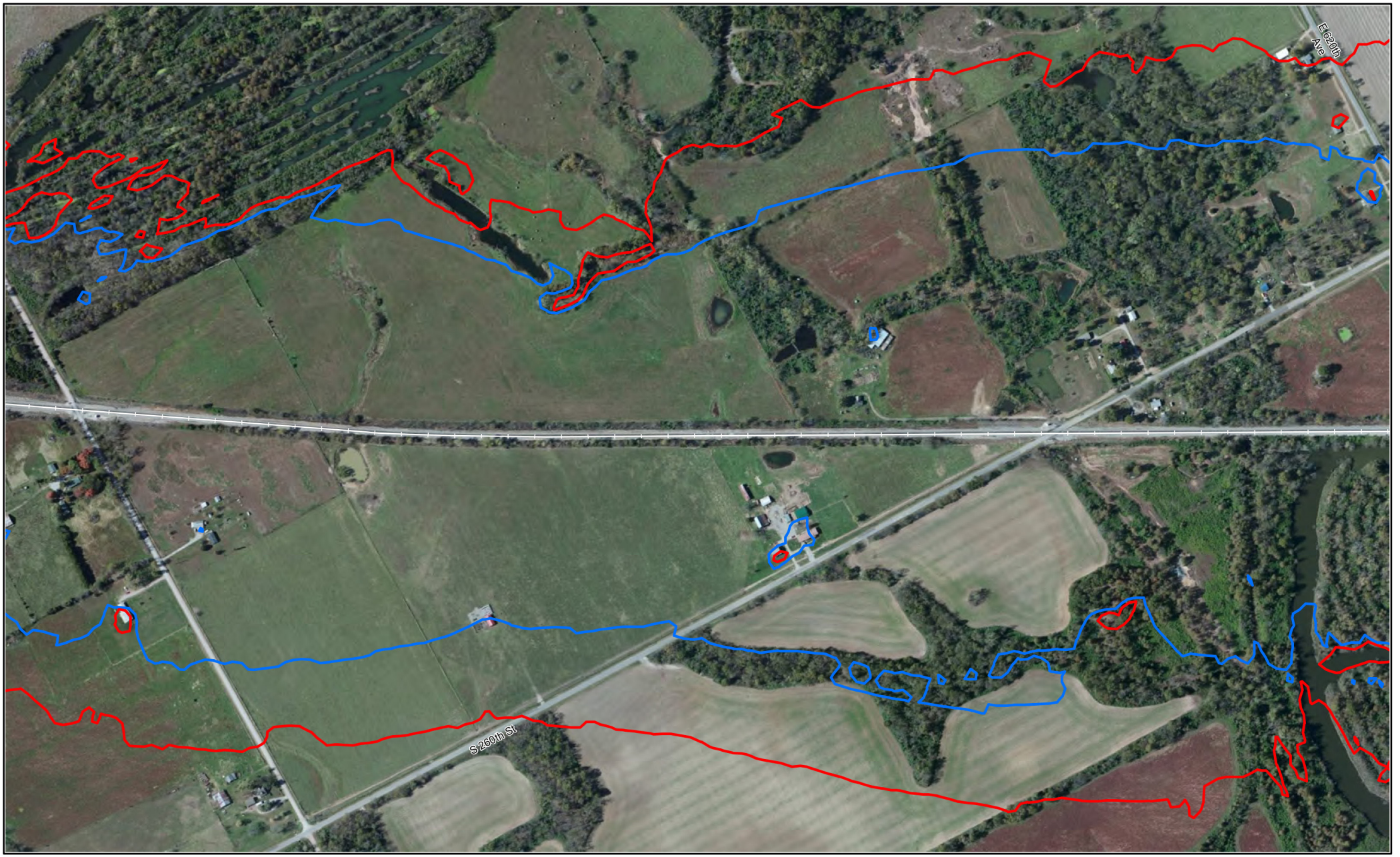
Source: ESRI.



Noise Contours
Crawford County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

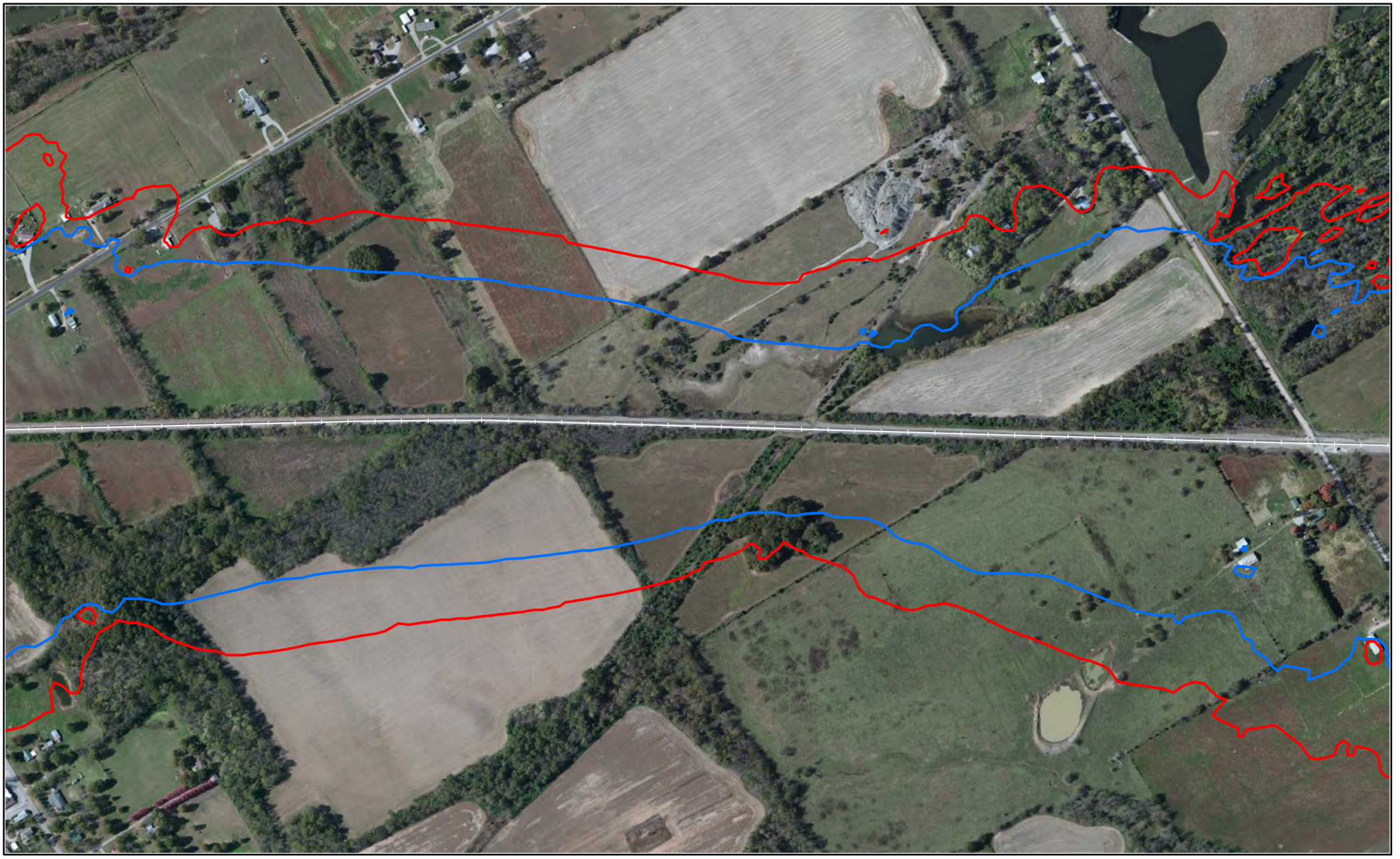
Source: ESRI.



Noise Contours
Crawford County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



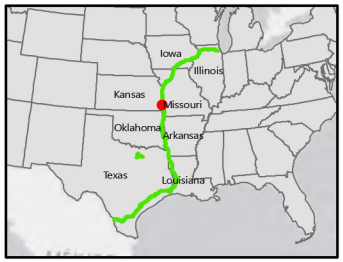
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

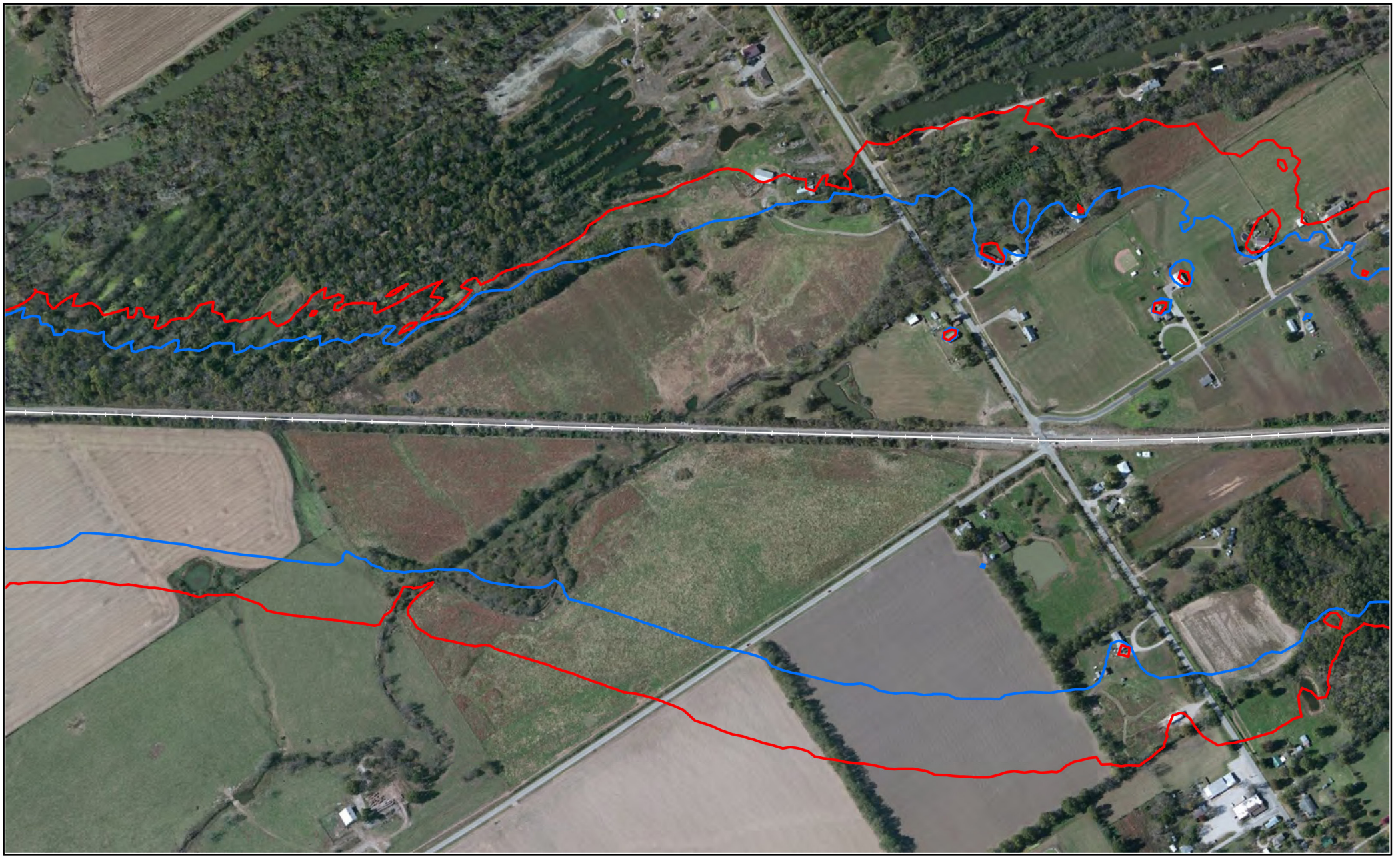
Source: ESRI.



Noise Contours
Crawford County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



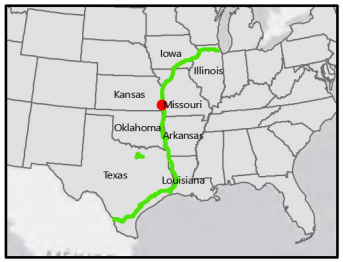
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

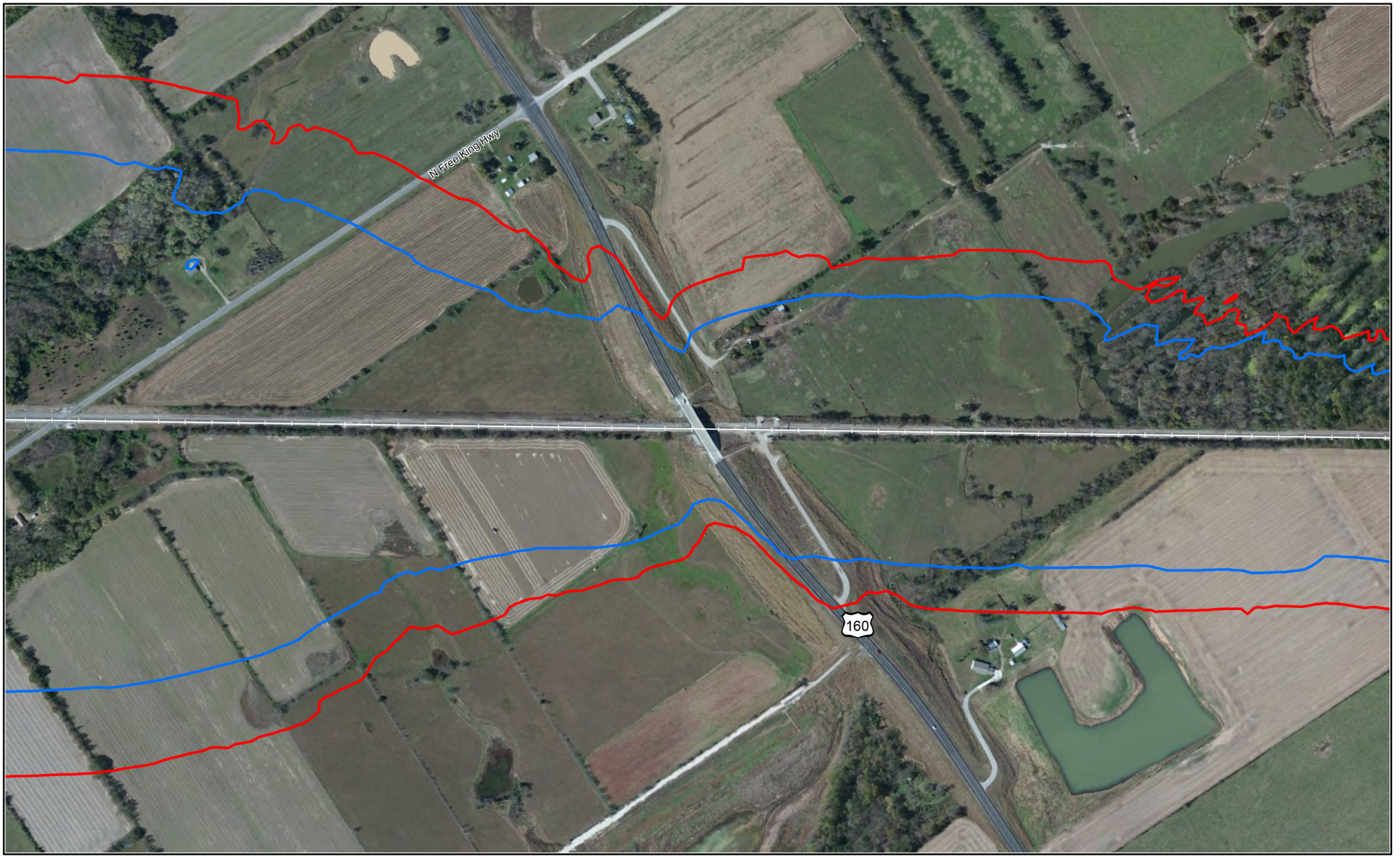
Source: ESRI.



Noise Contours
Crawford County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



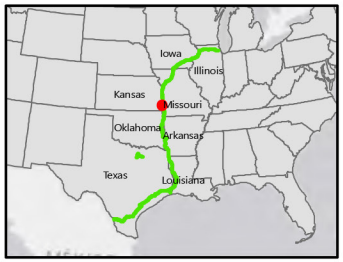
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

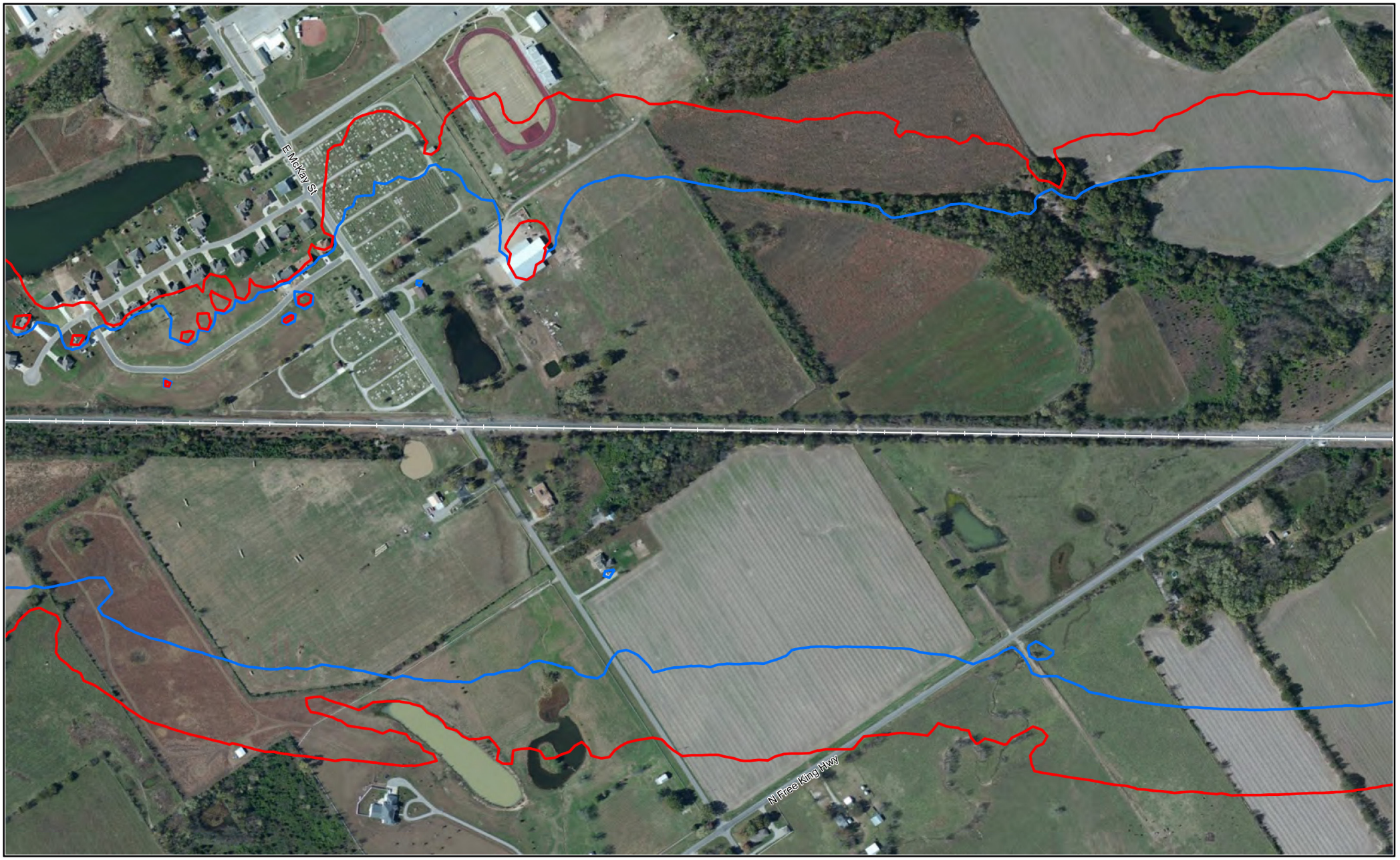
Source: ESRI.



Noise Contours
Crawford County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



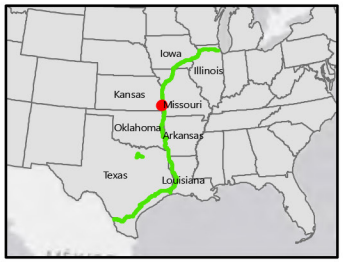
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

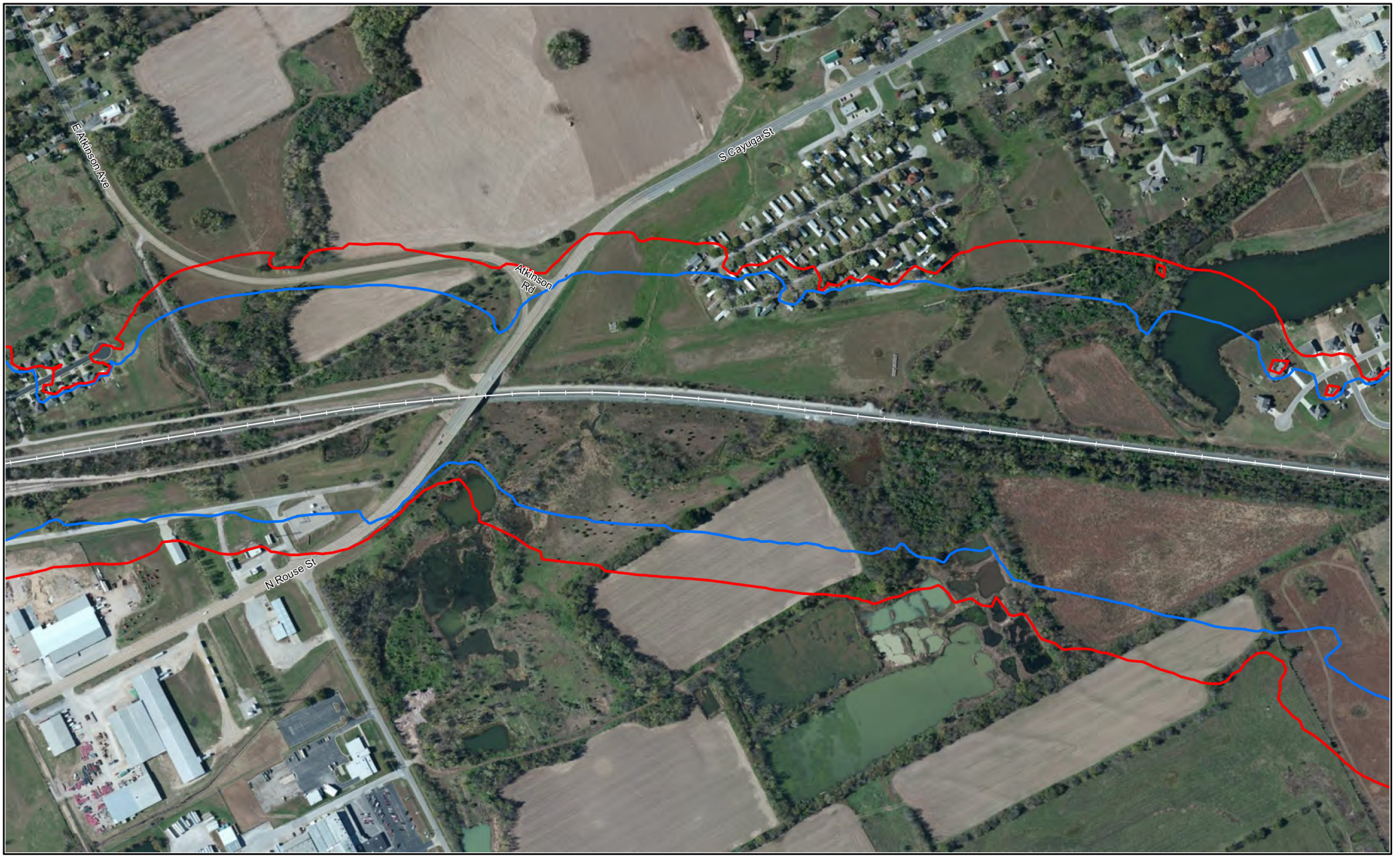
Source: ESRI.



Noise Contours
Crawford County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

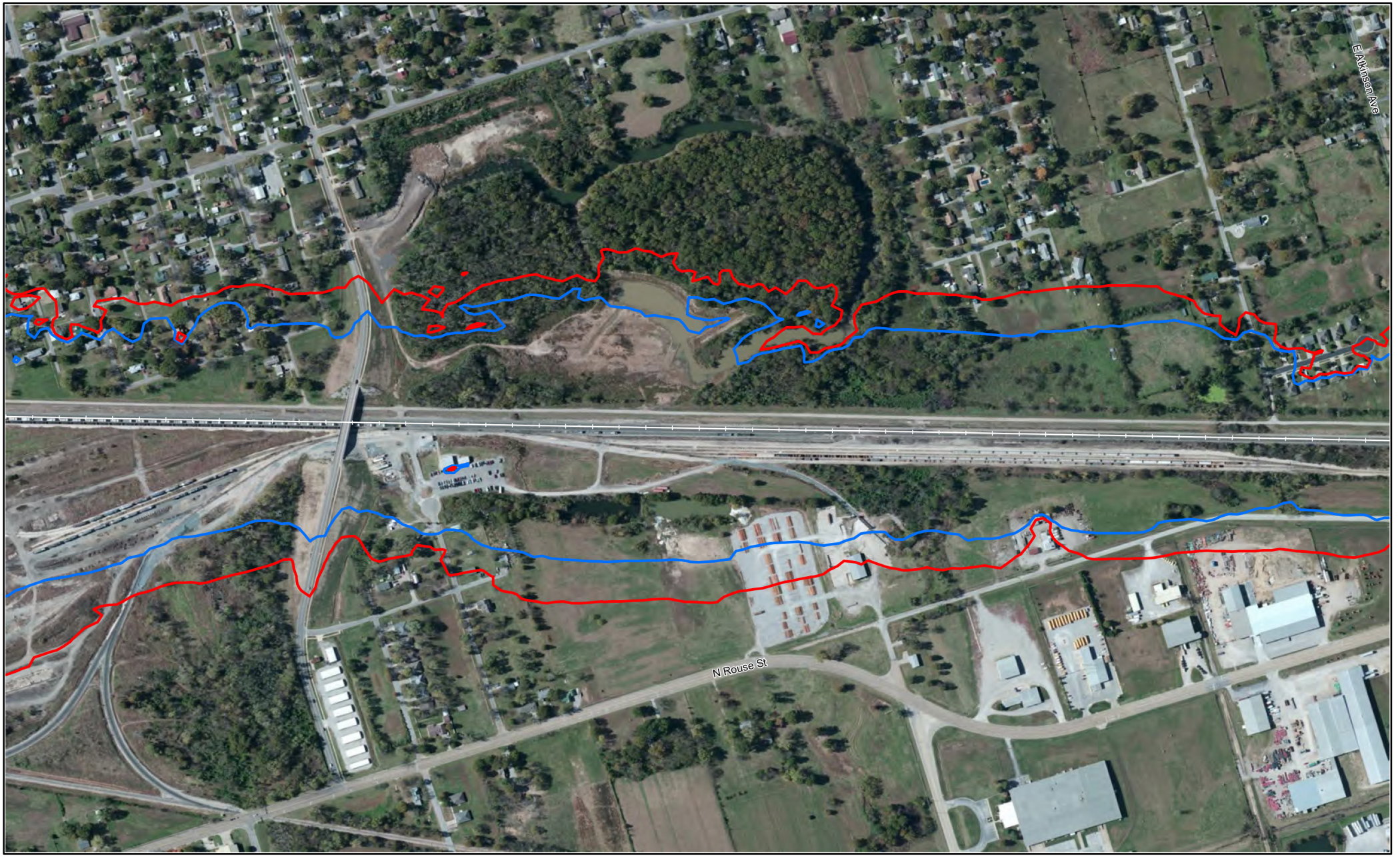
Source: ESRI.



Noise Contours
Crawford County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



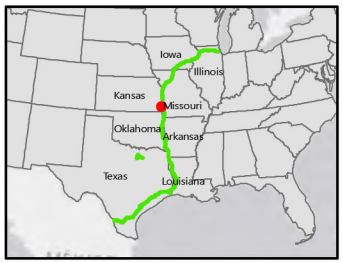
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

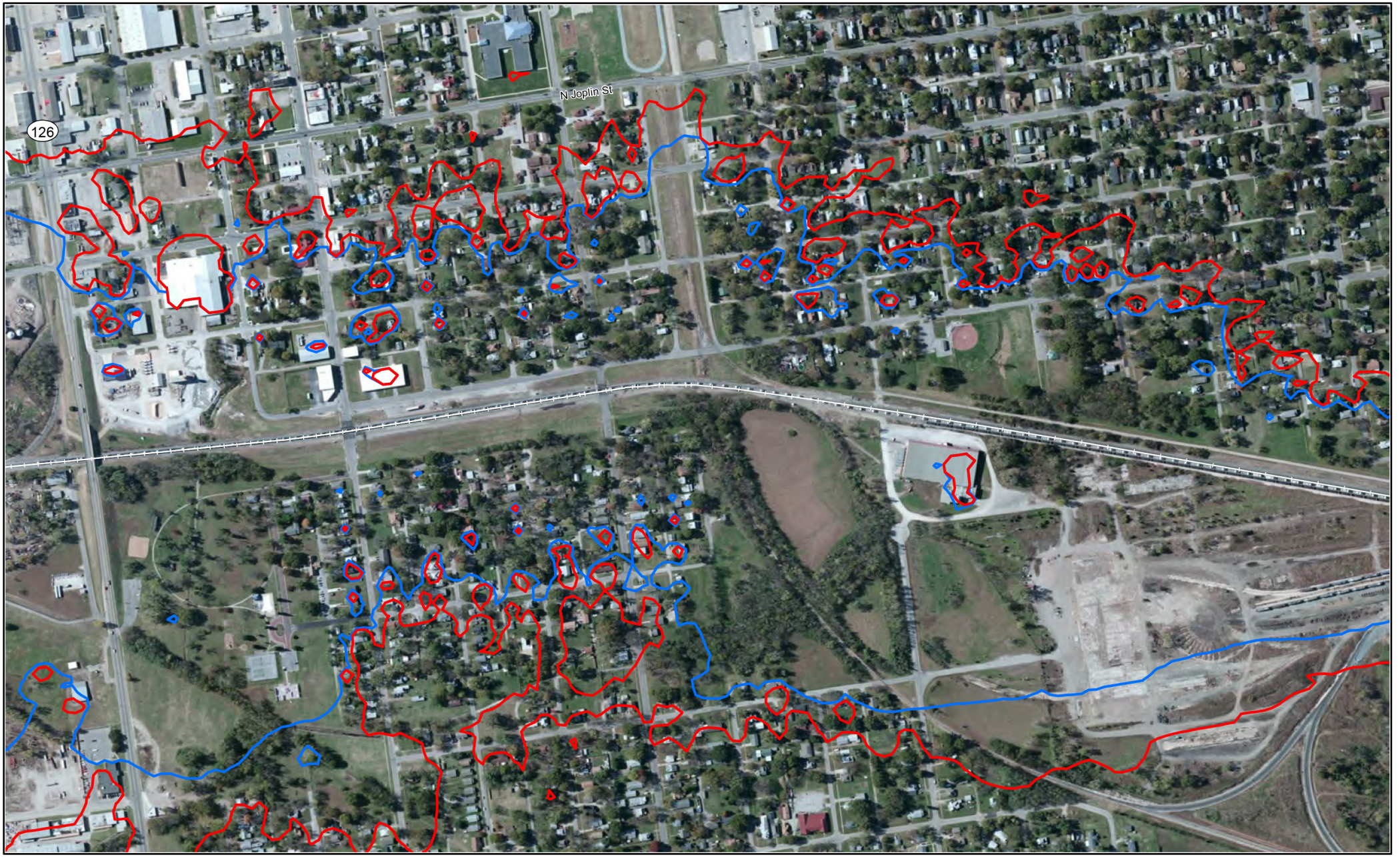
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Noise Contours
Crawford County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



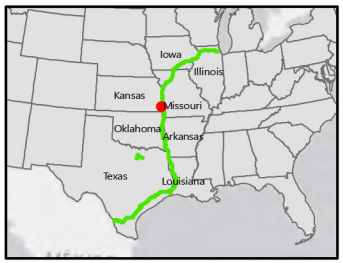
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

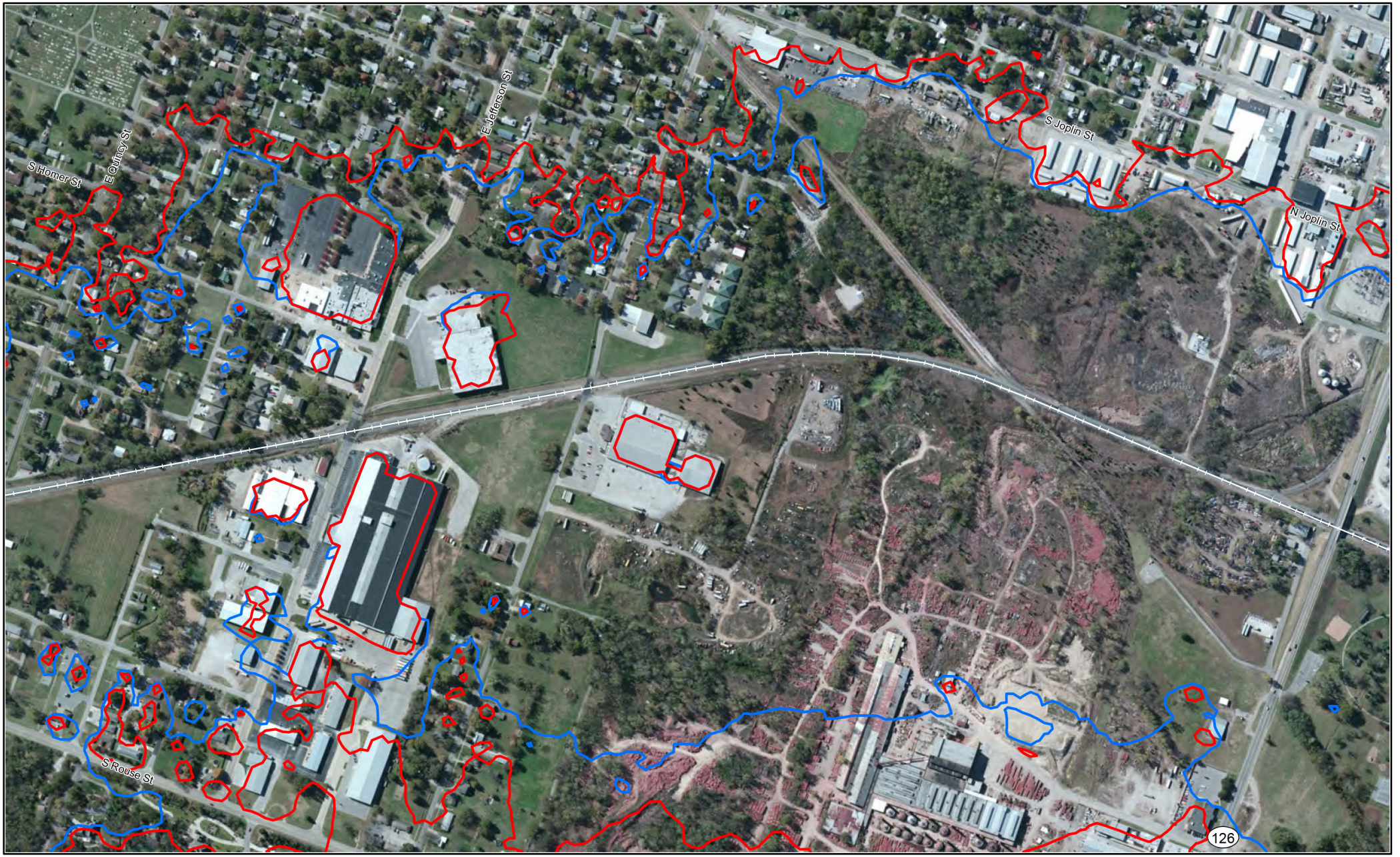
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Noise Contours
Crawford County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



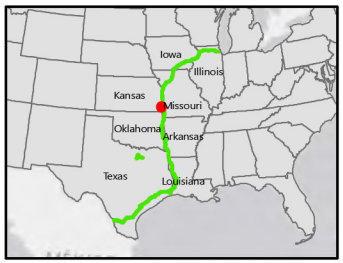
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

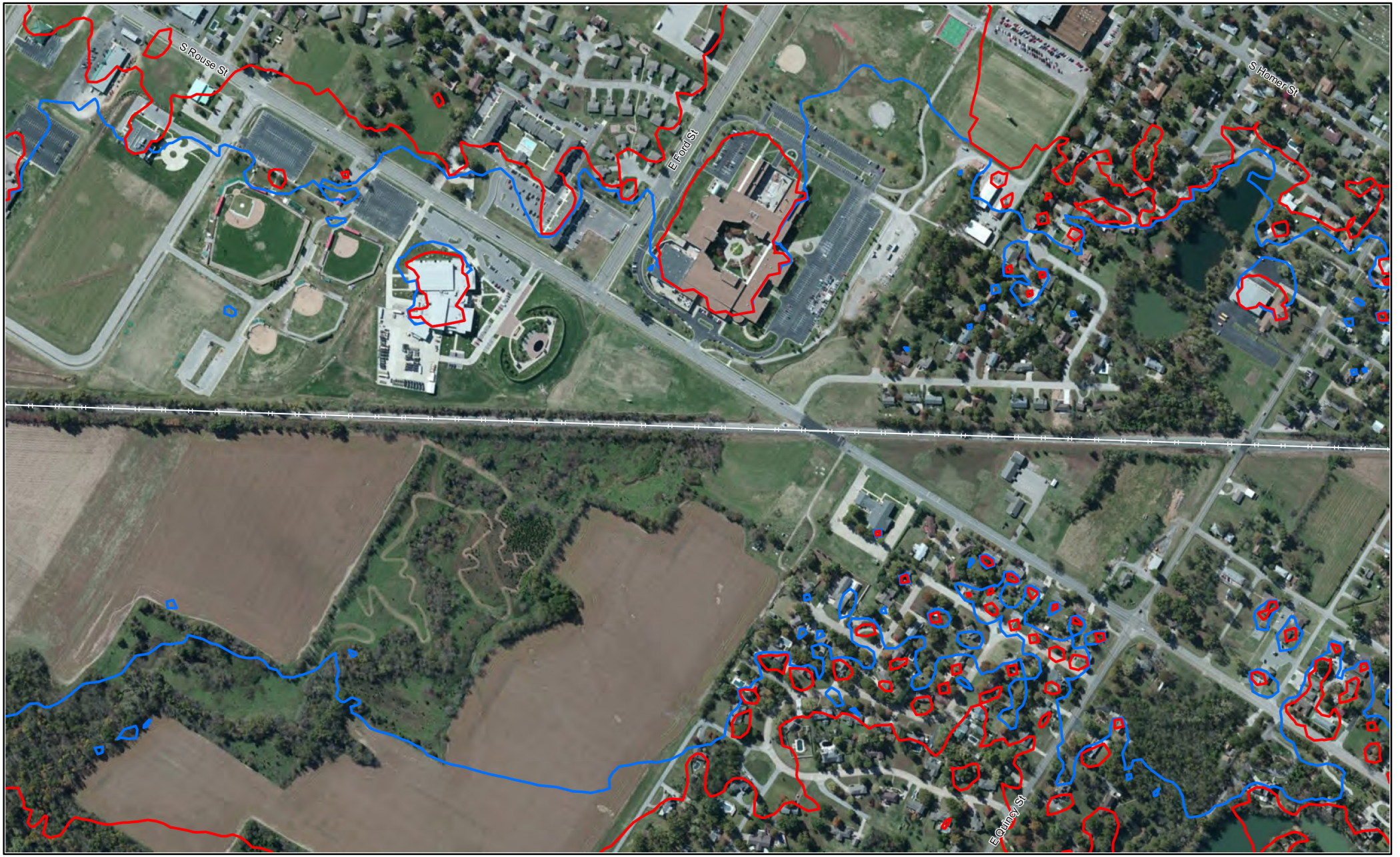
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Noise Contours
Crawford County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



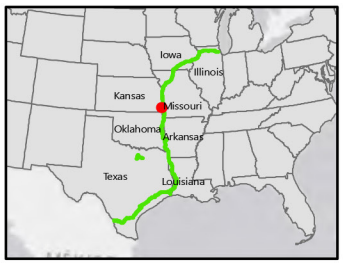
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Crawford County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



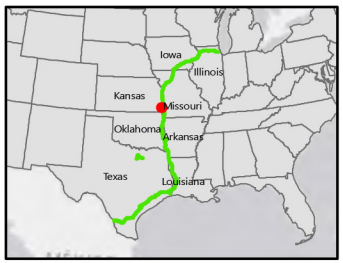
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

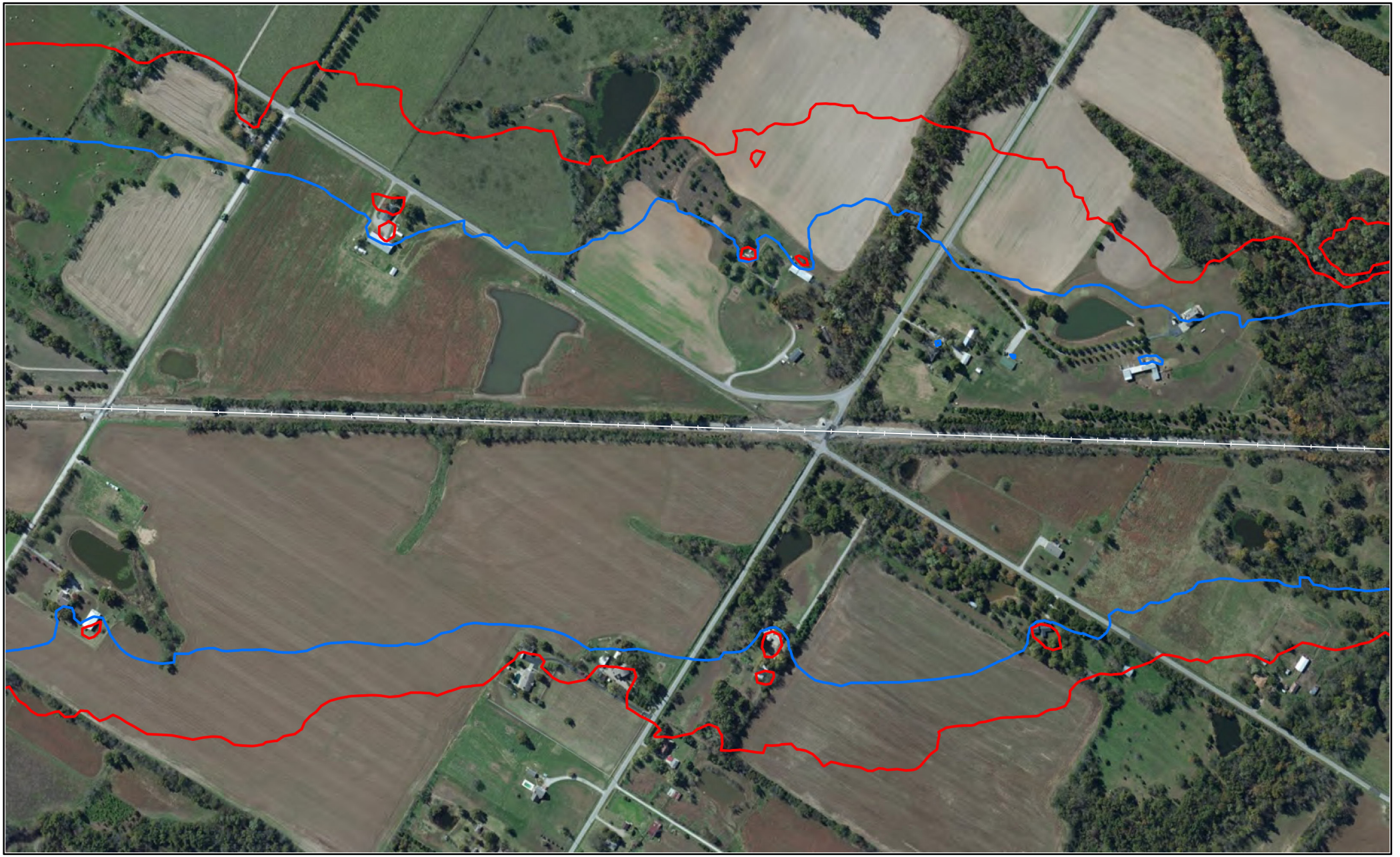
Tracks

Source: ESRI.



Noise Contours
Crawford County, KS

Miles
0 0.05 0.1



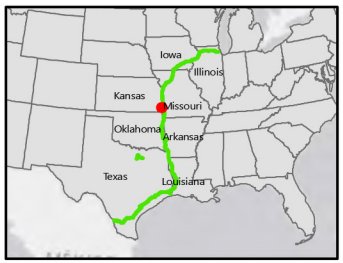
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

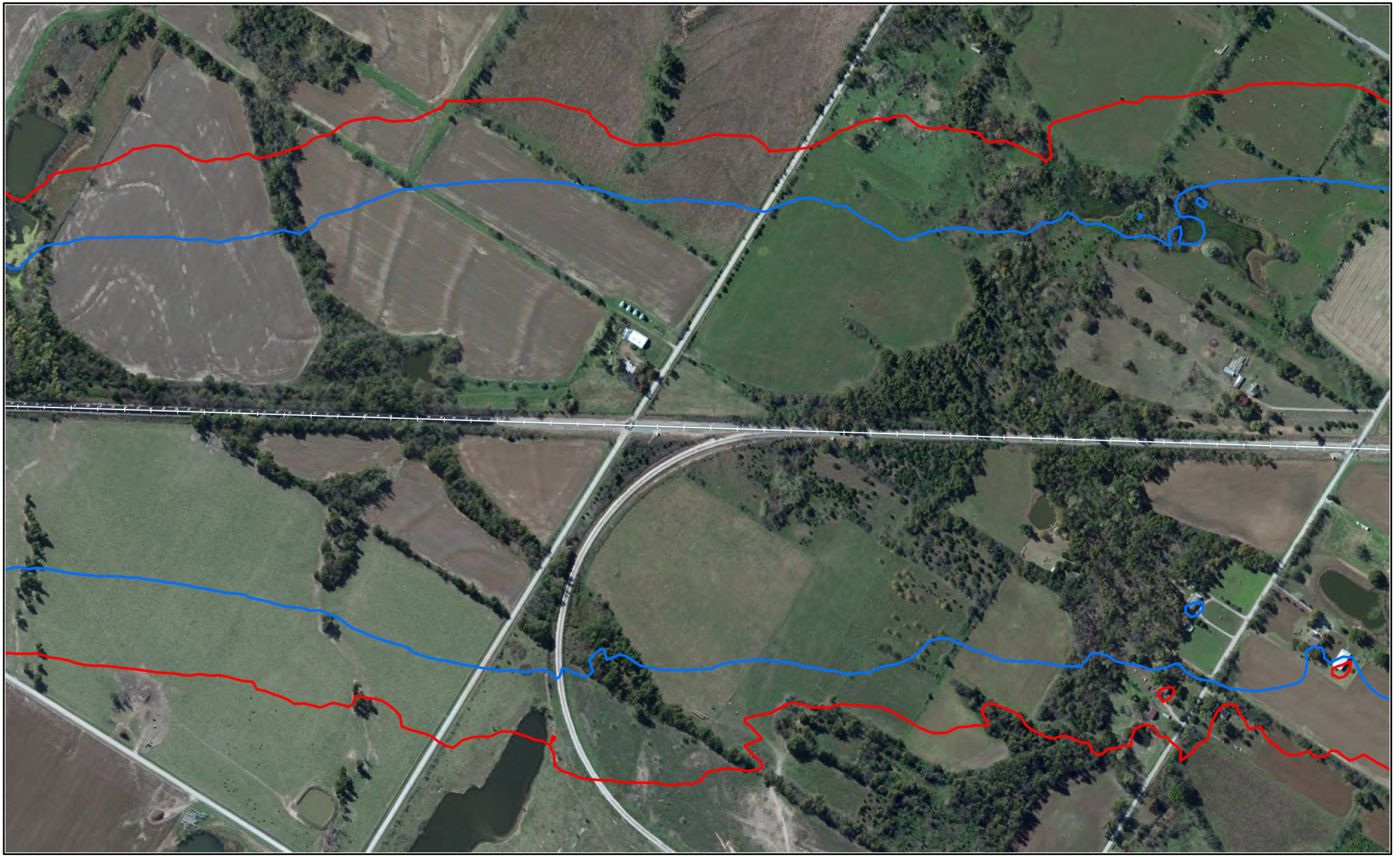
Source: ESRI.



Noise Contours
Crawford County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



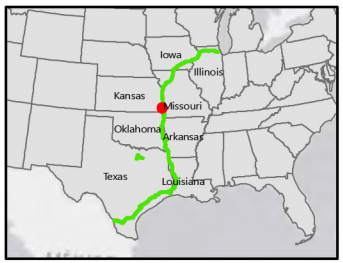
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Crawford County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Crawford County, KS

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Cherokee County, KS

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Cherokee County, KS

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Cherokee County, KS

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

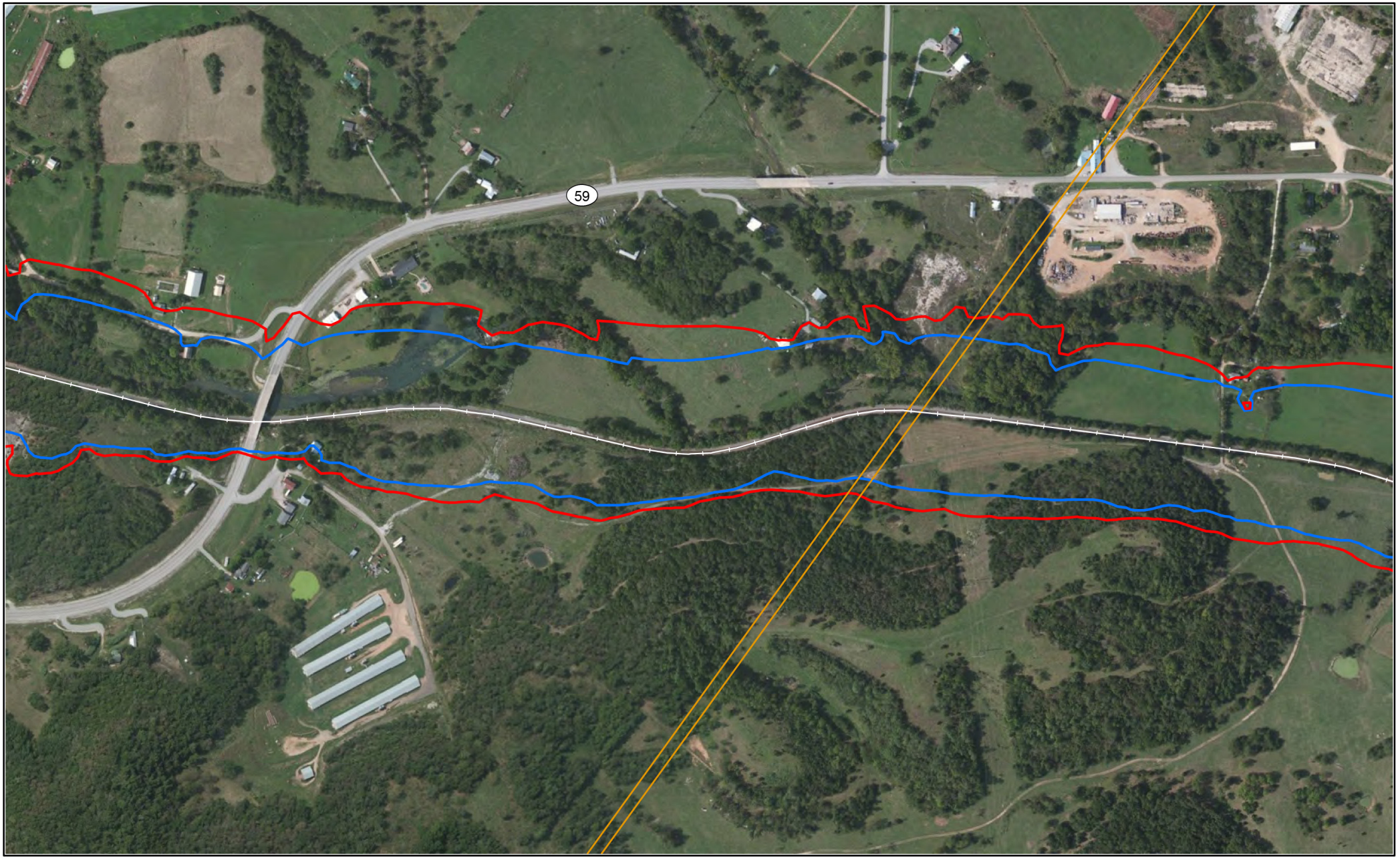


Noise Contours
Cherokee County, KS

Page 616 of 1588

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



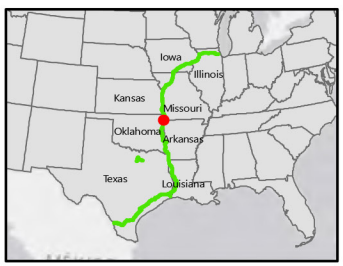
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

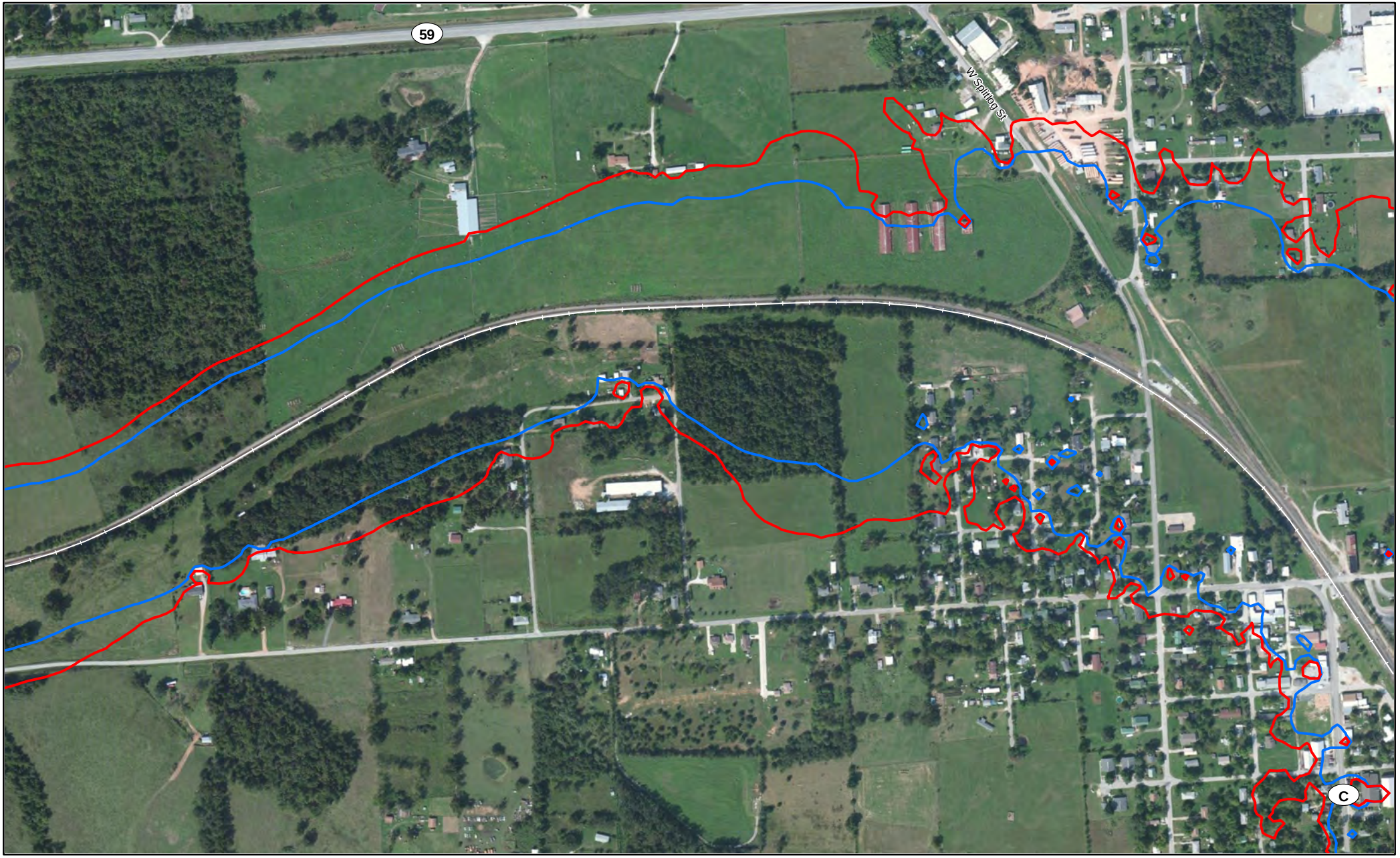


Noise Contours
Benton County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN

Appendix M – Attachment 5: Oklahoma-Arkansas



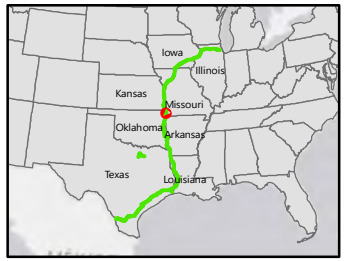
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

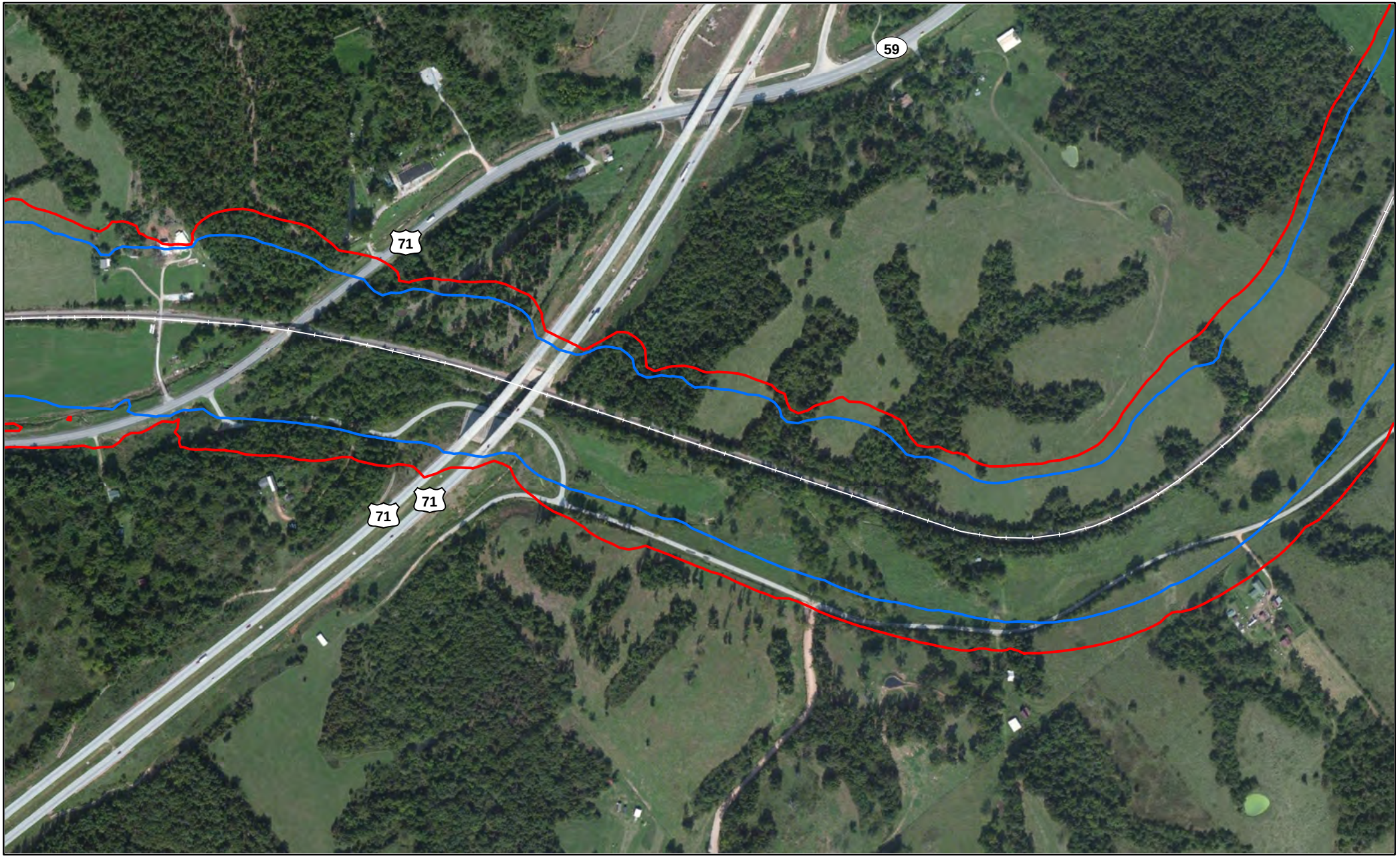
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



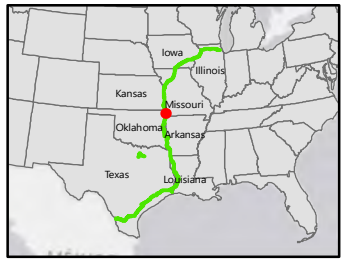
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

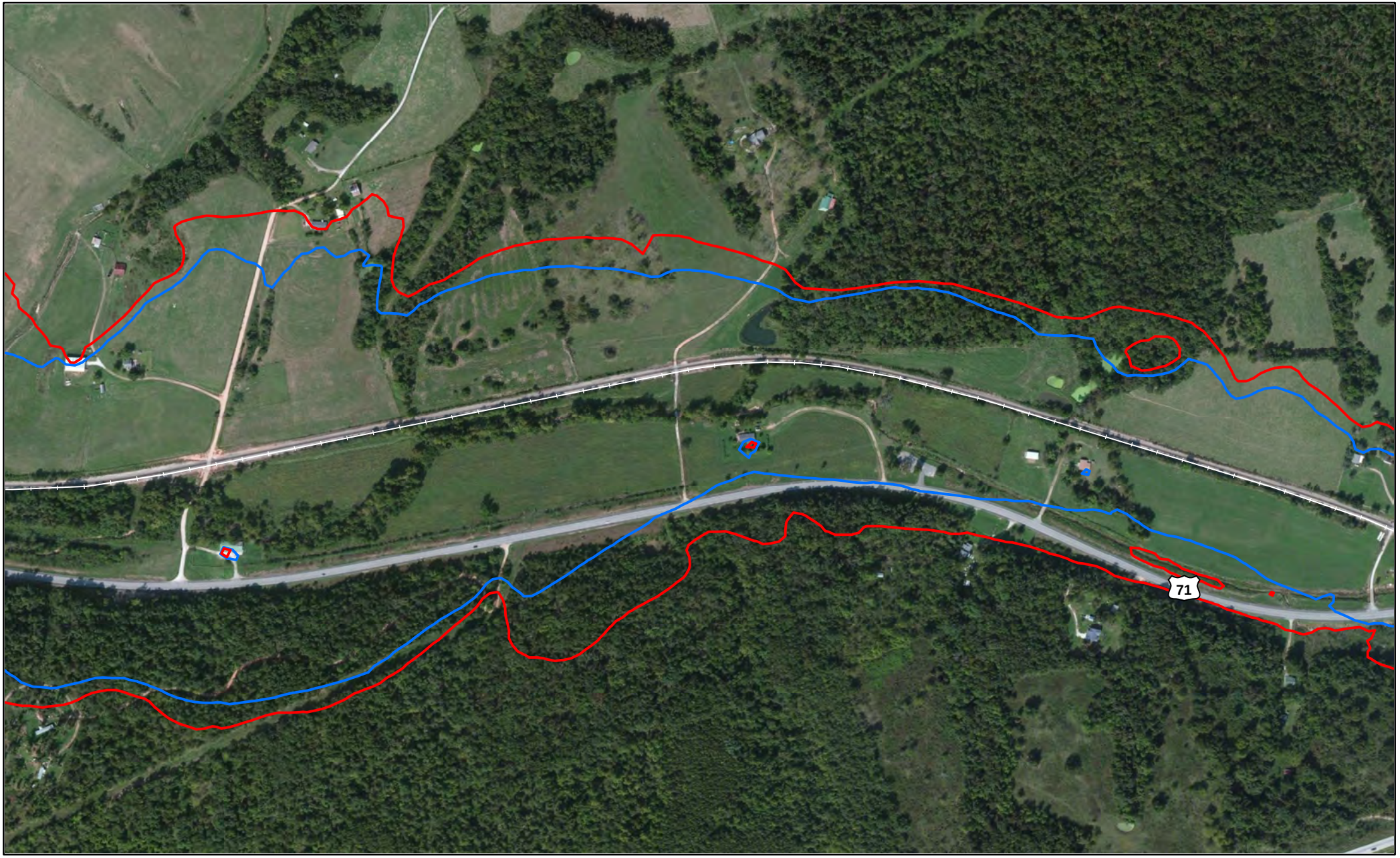
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



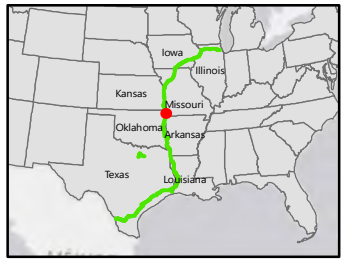
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

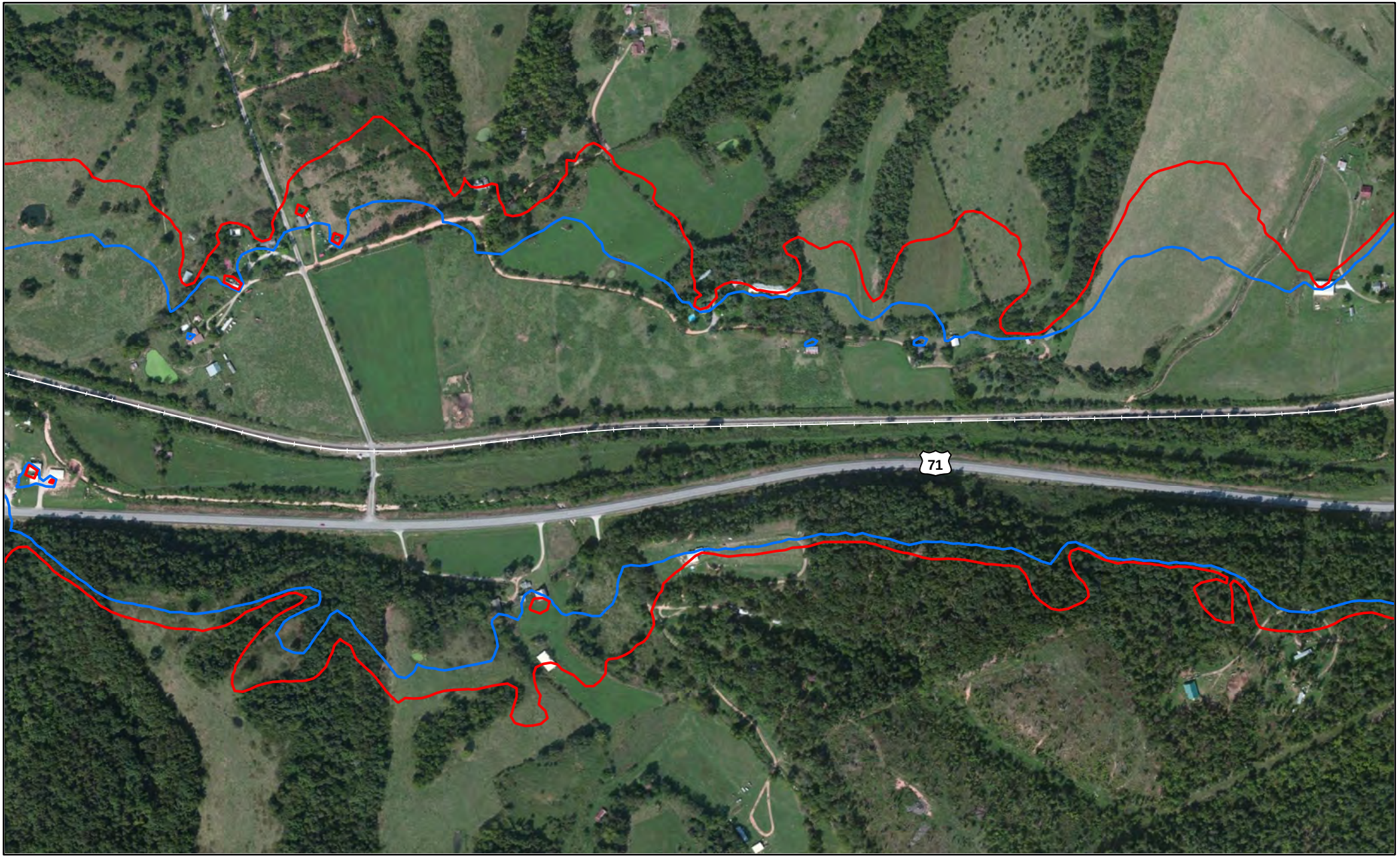
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



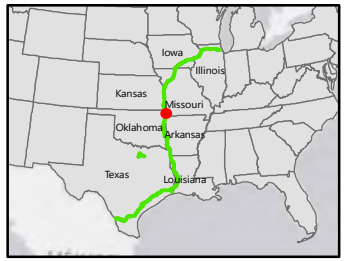
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

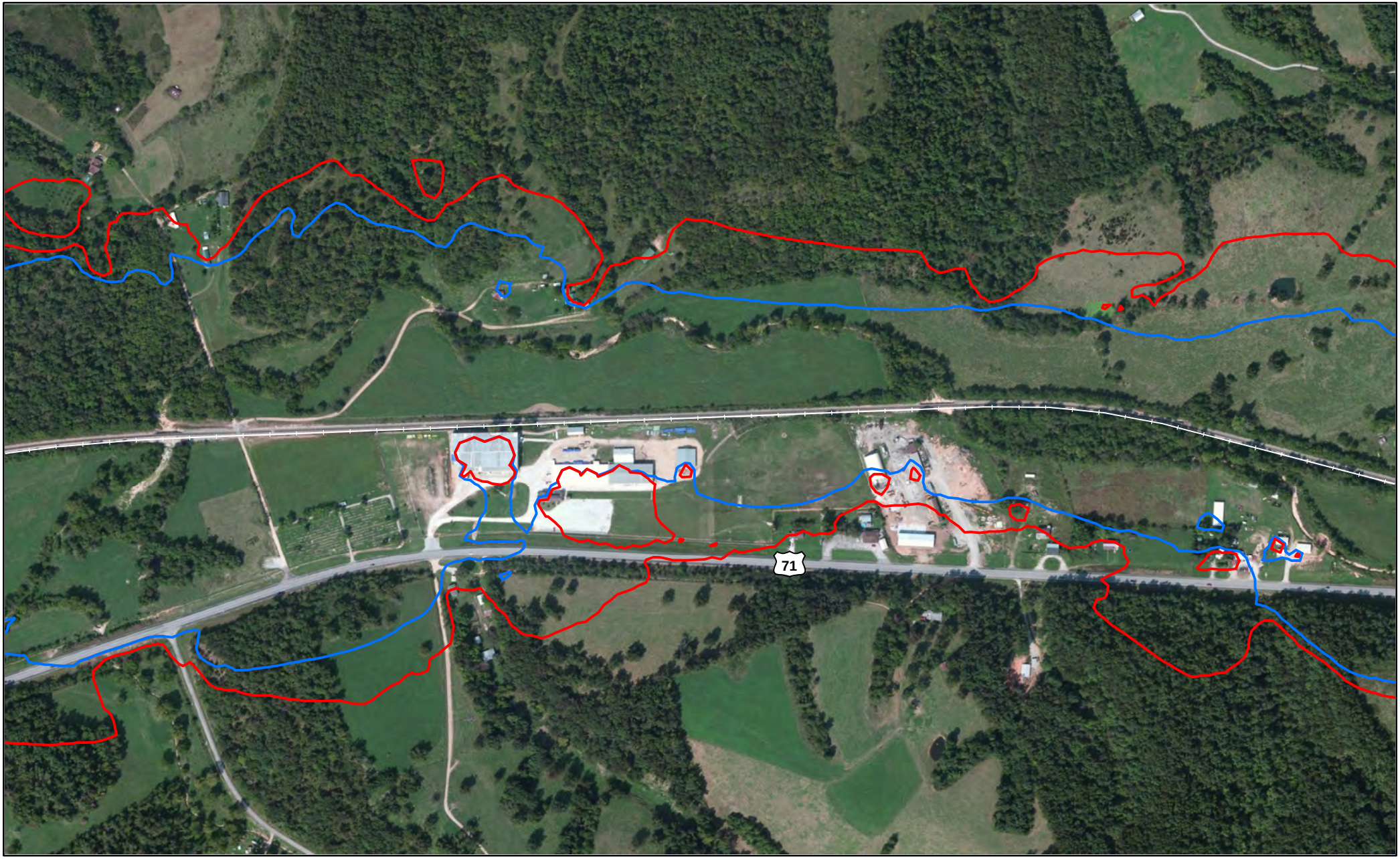
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



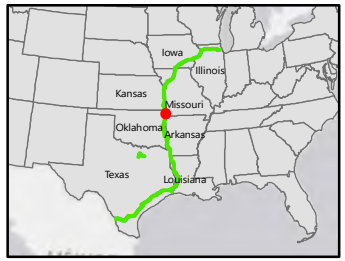
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

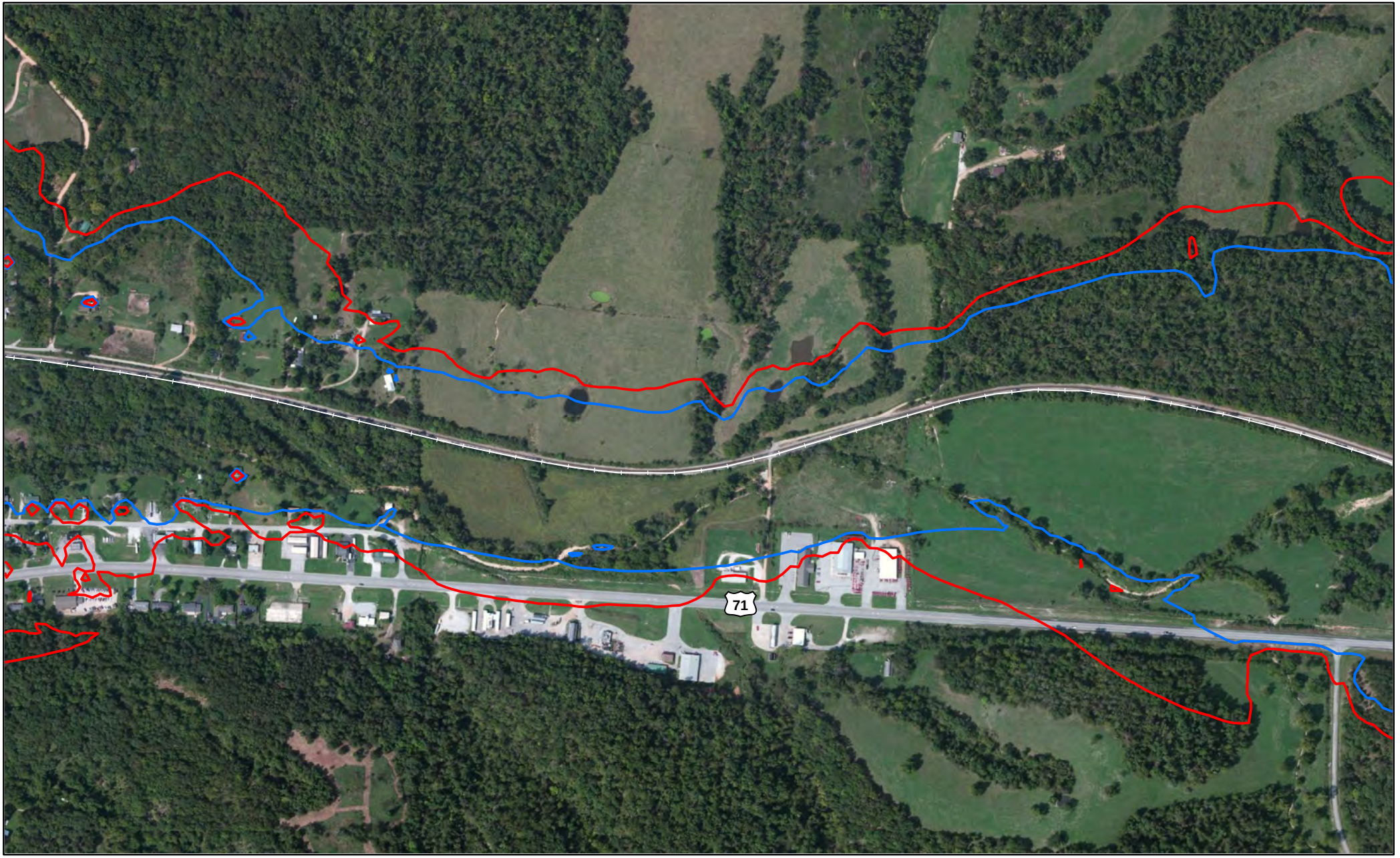
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



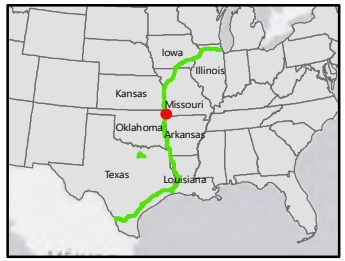
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

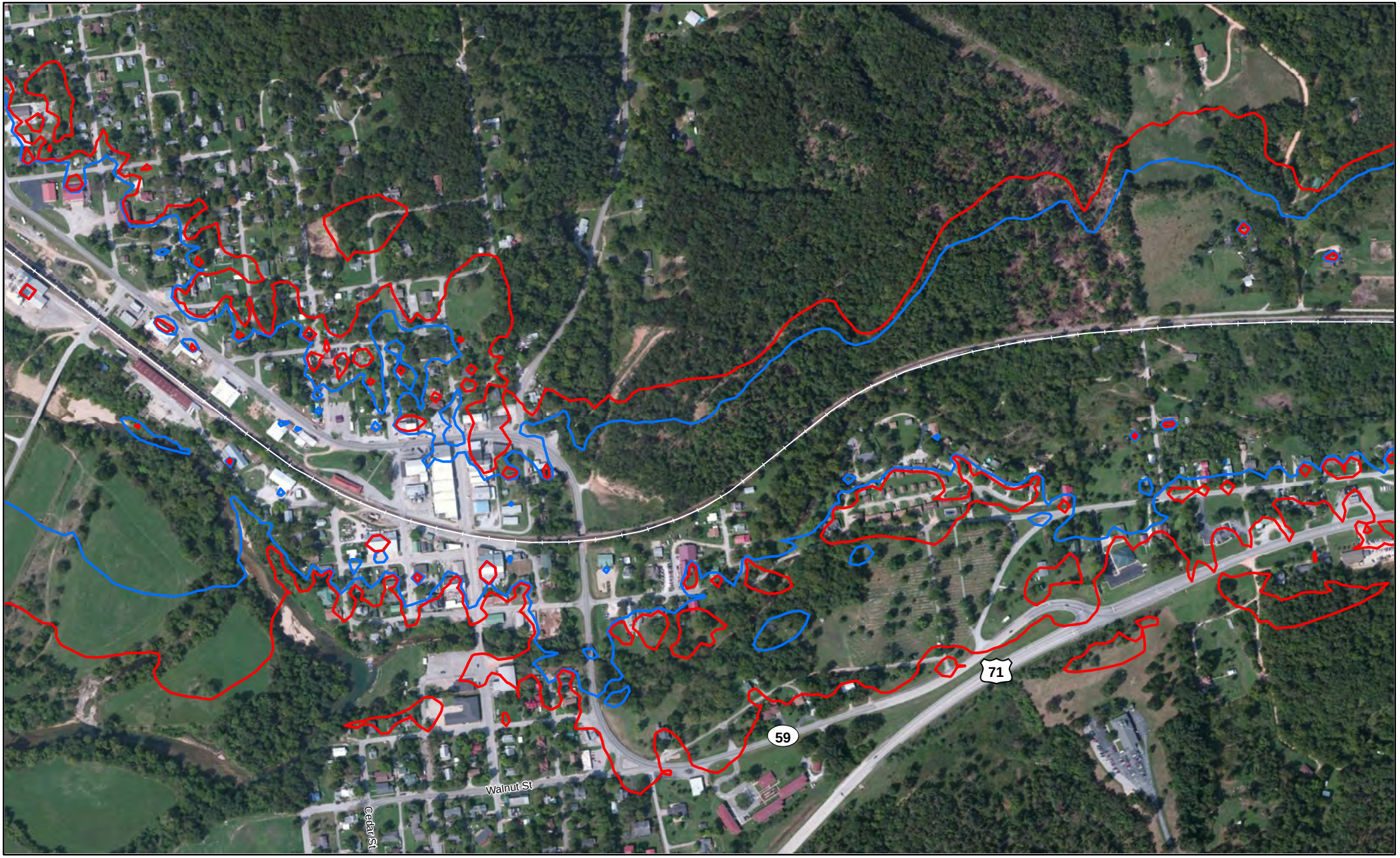
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



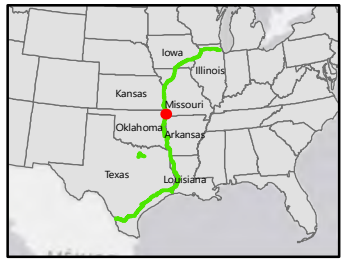
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

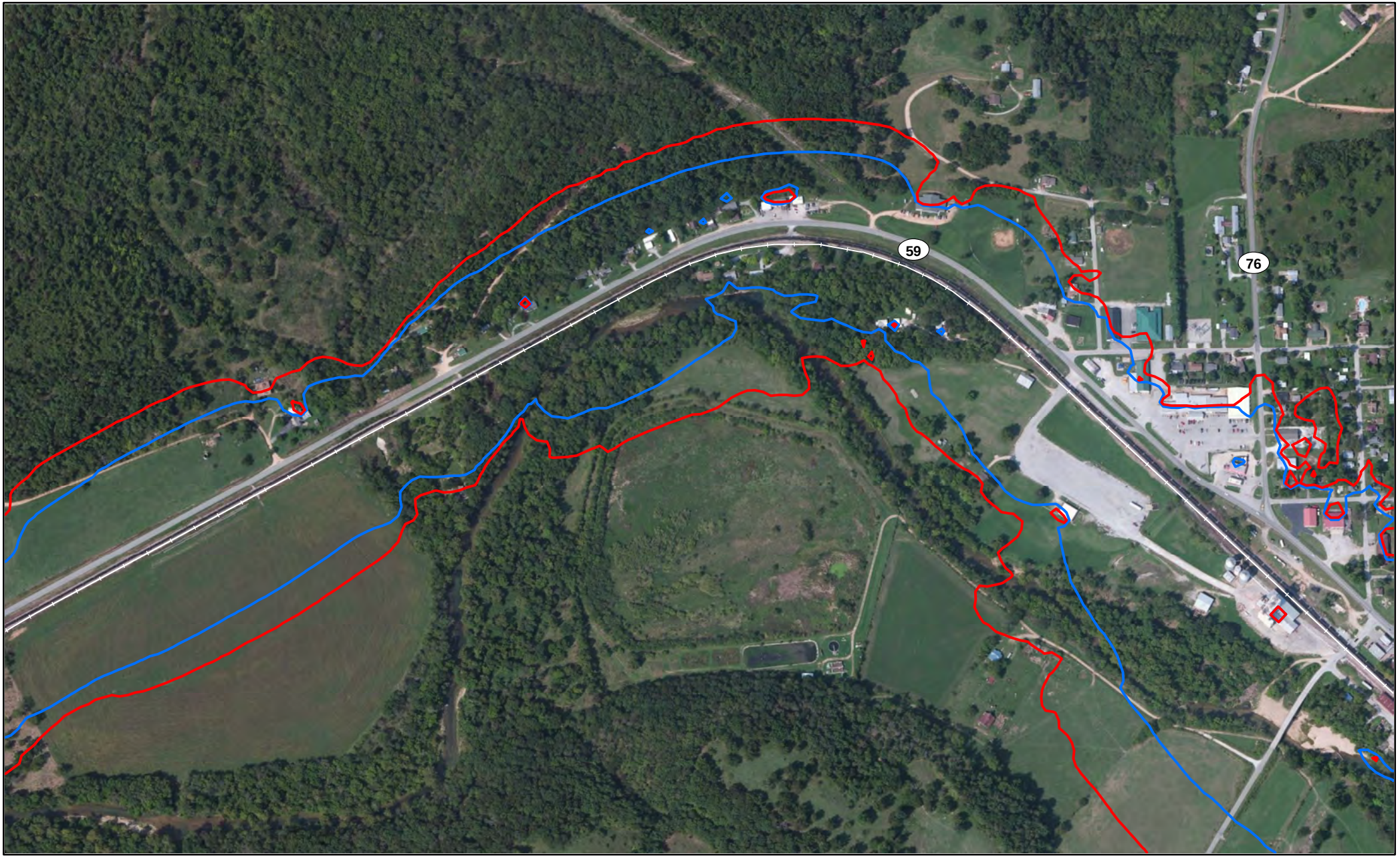
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



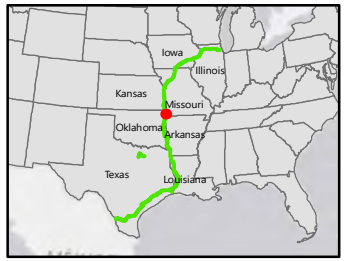
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

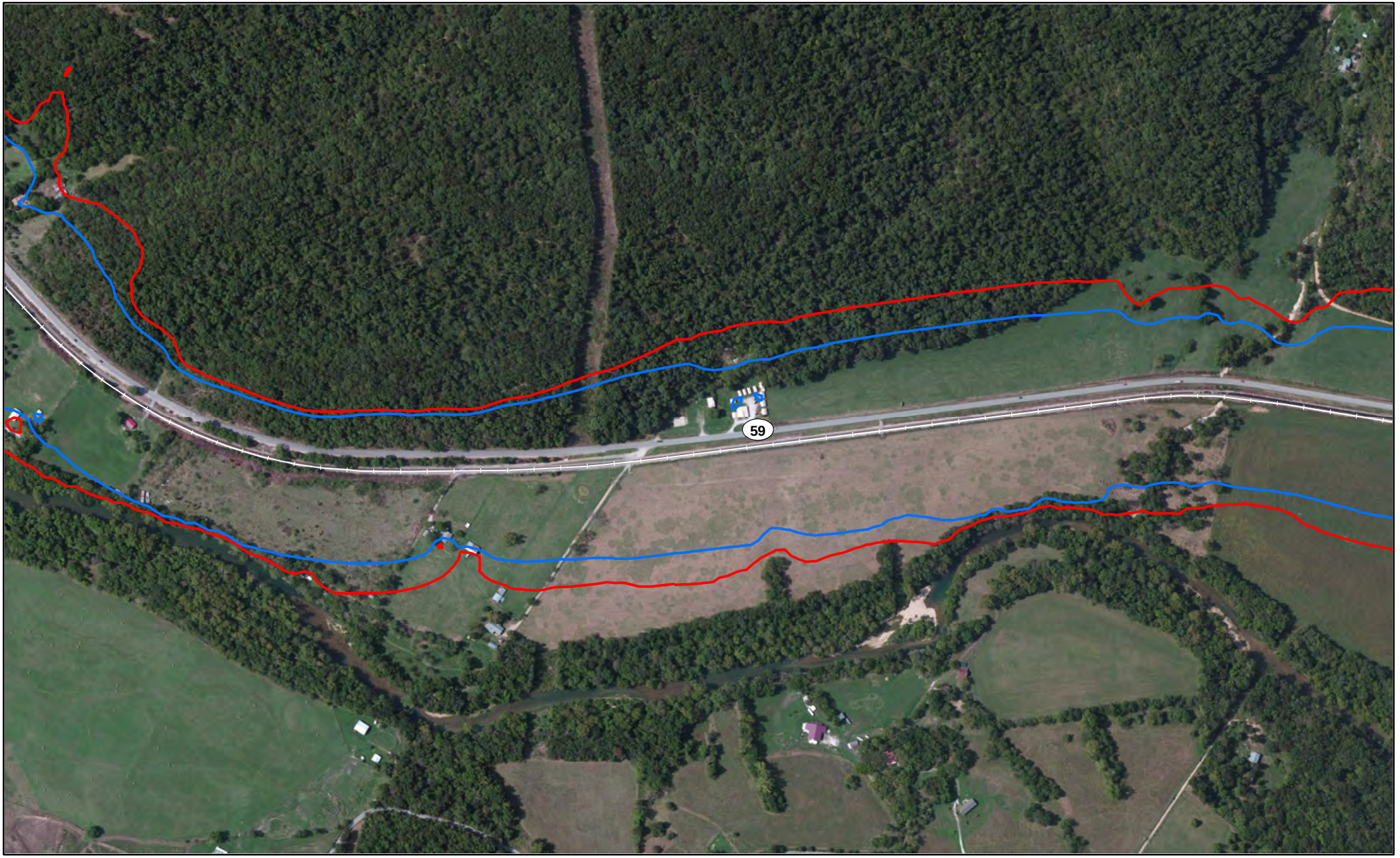
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



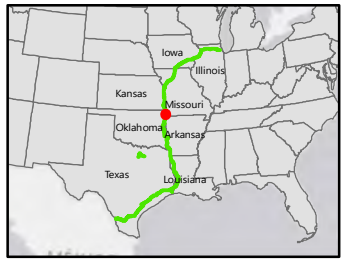
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

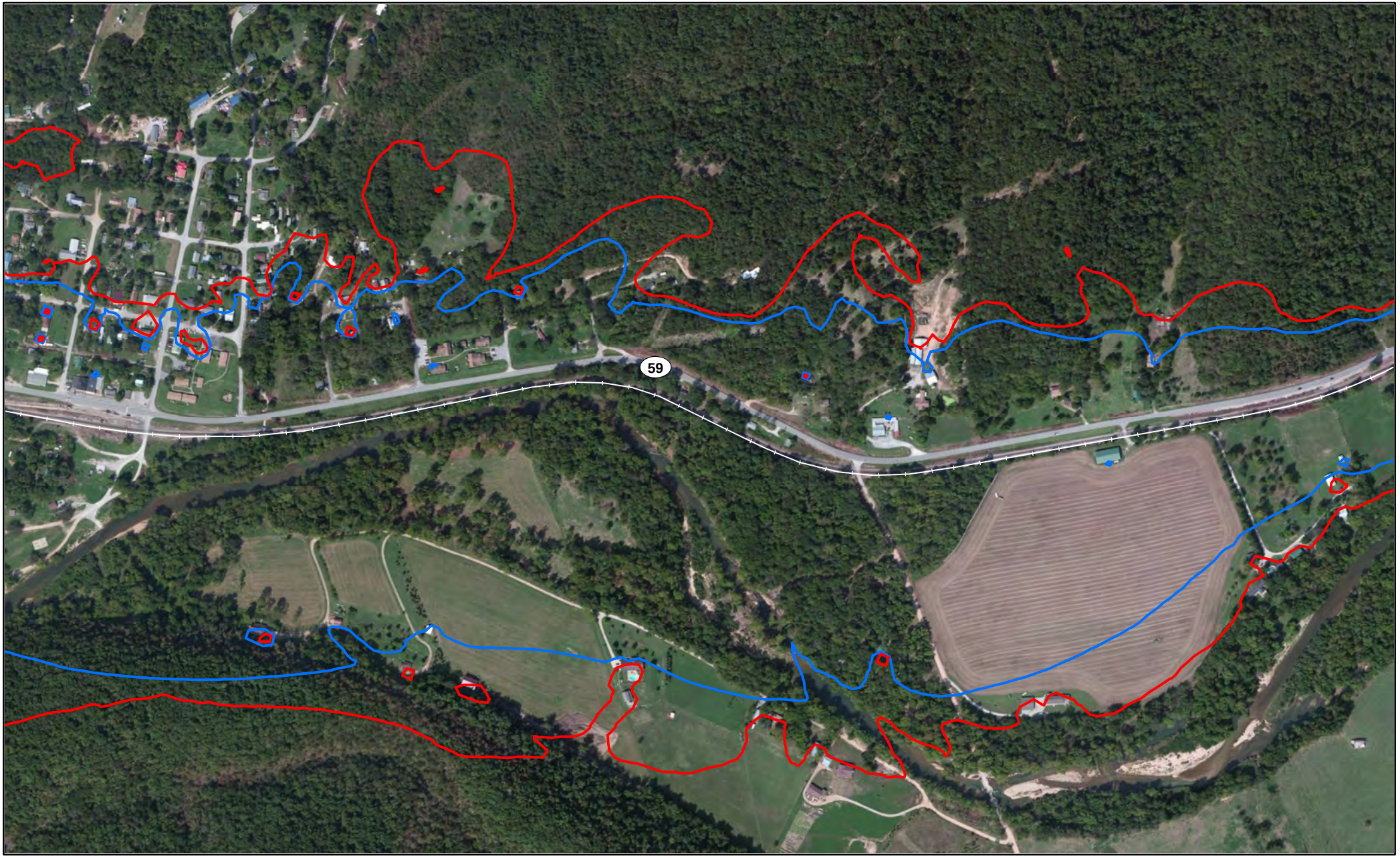
Source: ESRI.



Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



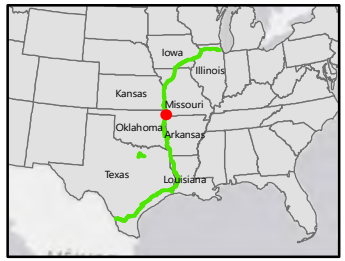
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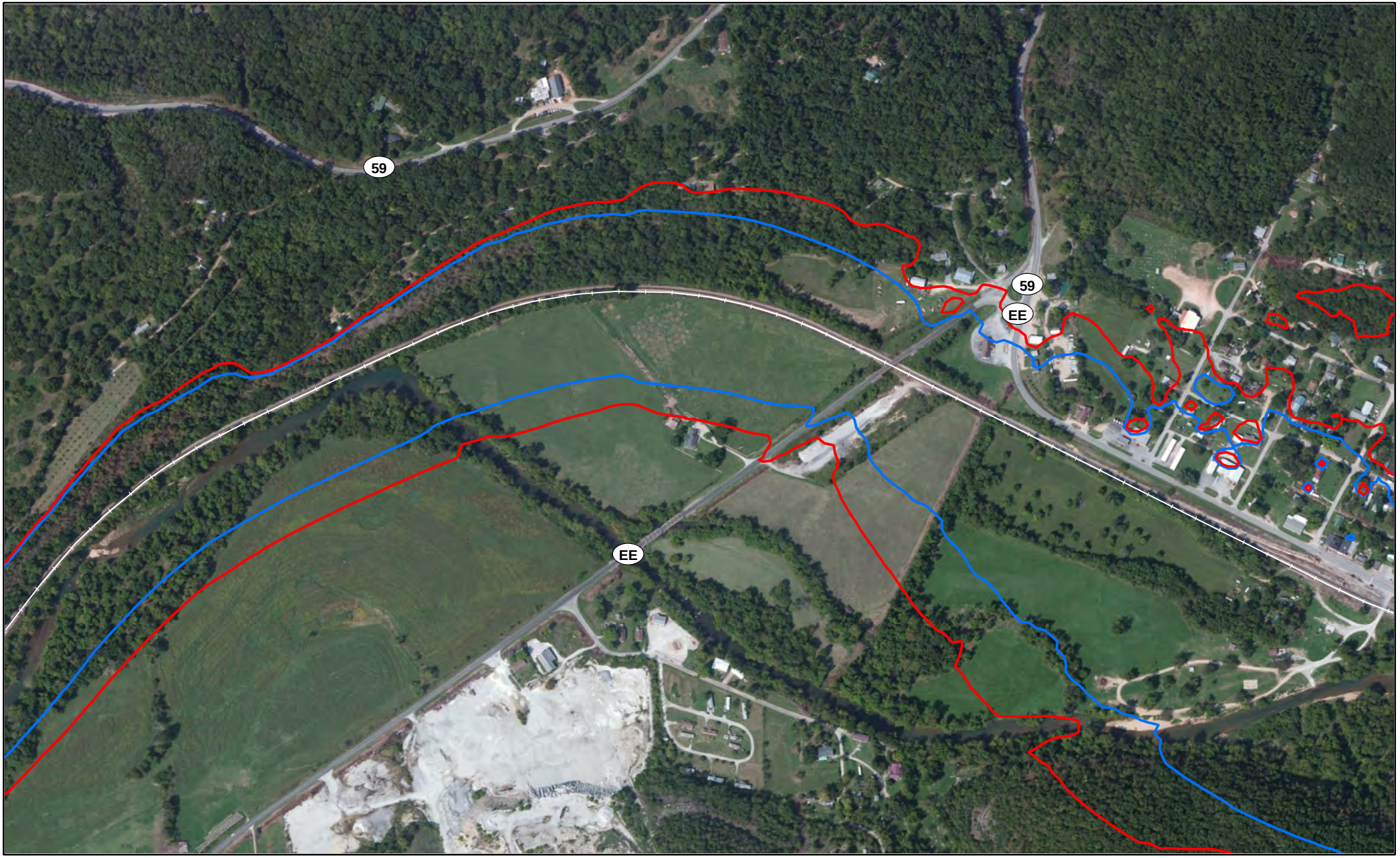
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Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



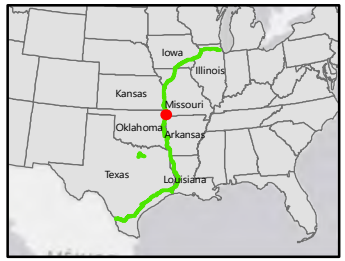
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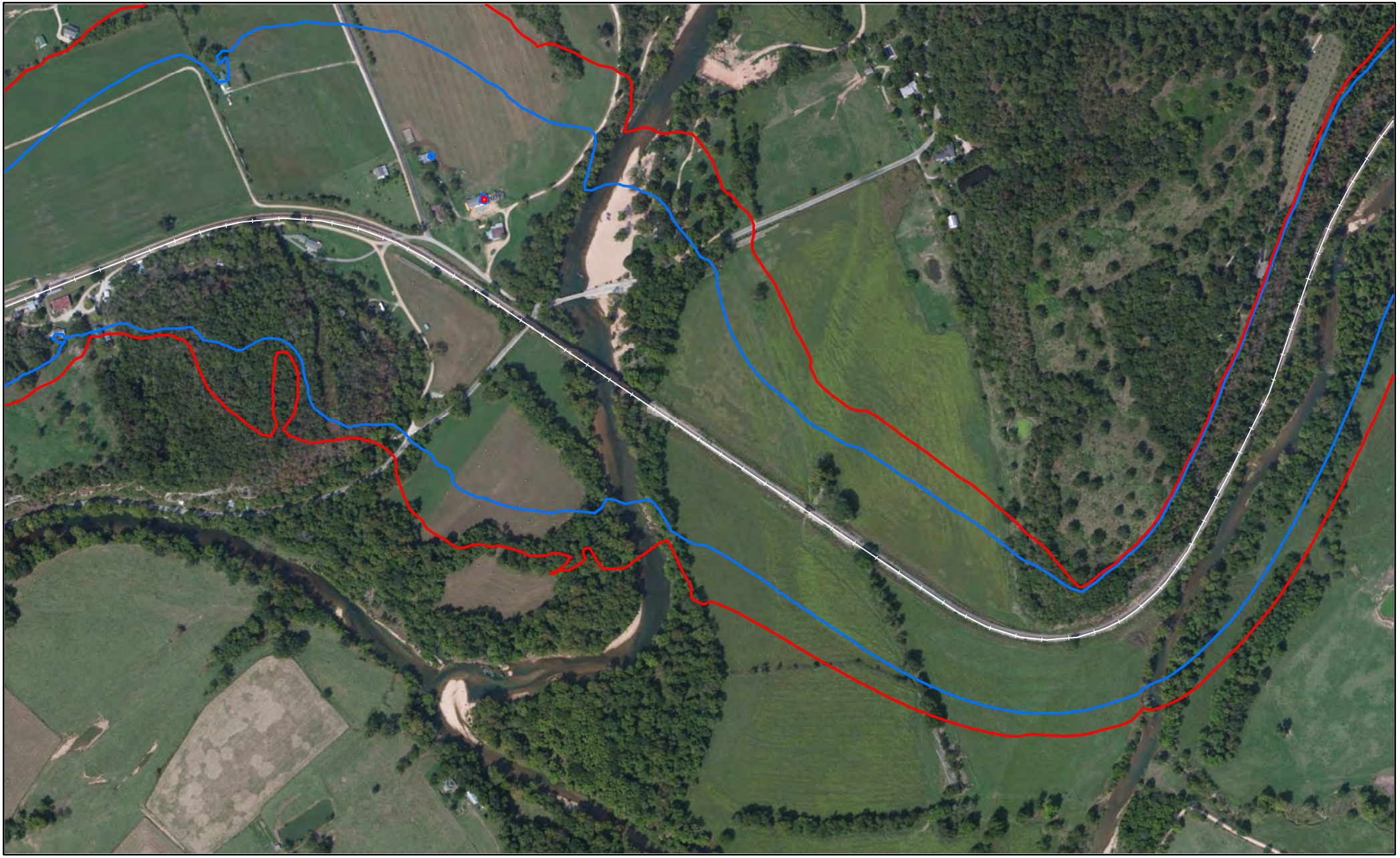
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Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



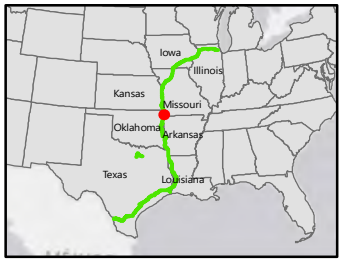
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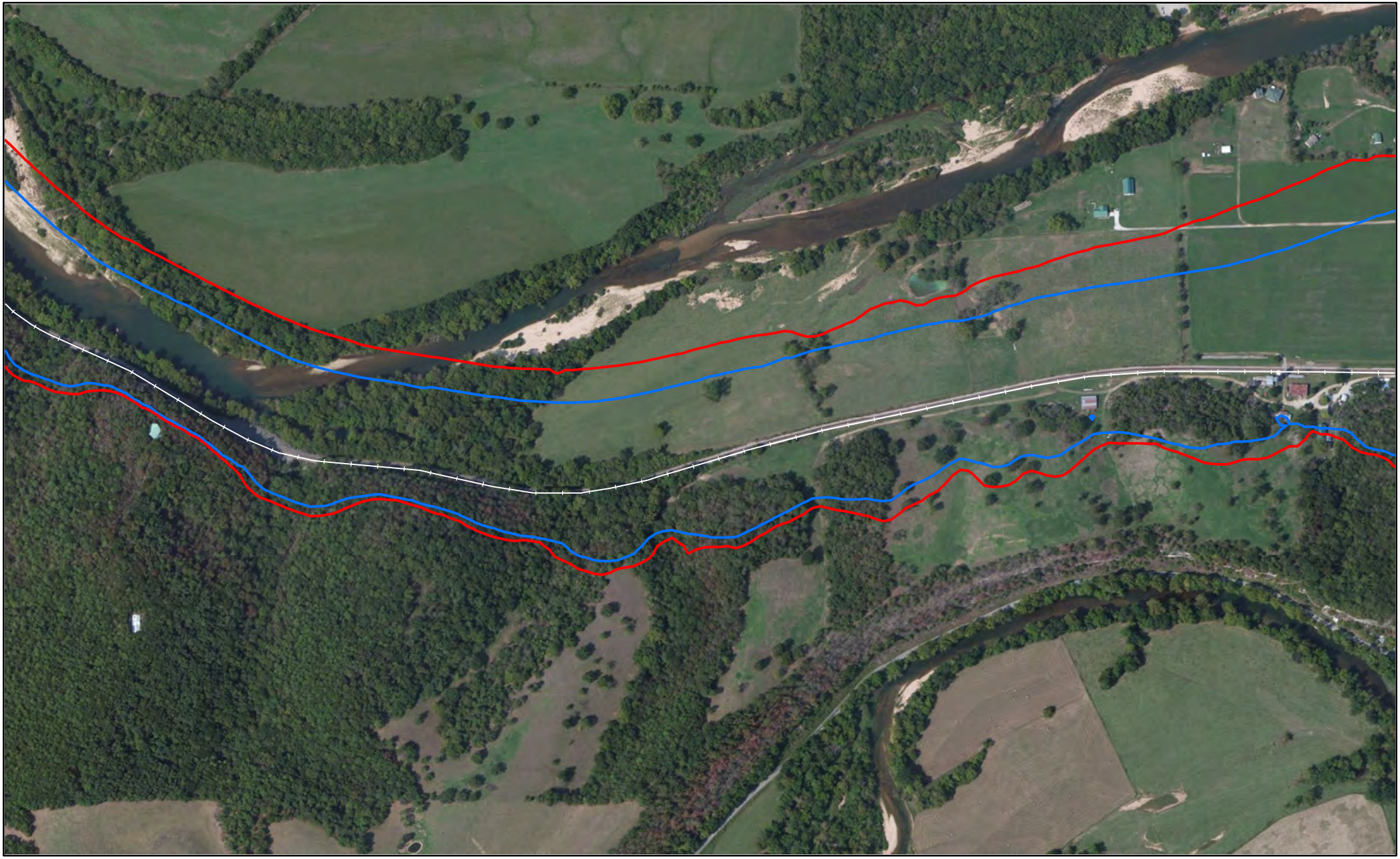
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Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



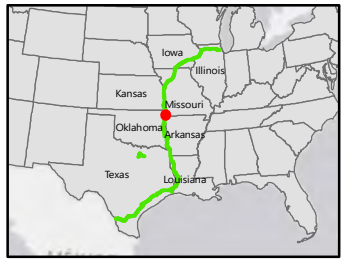
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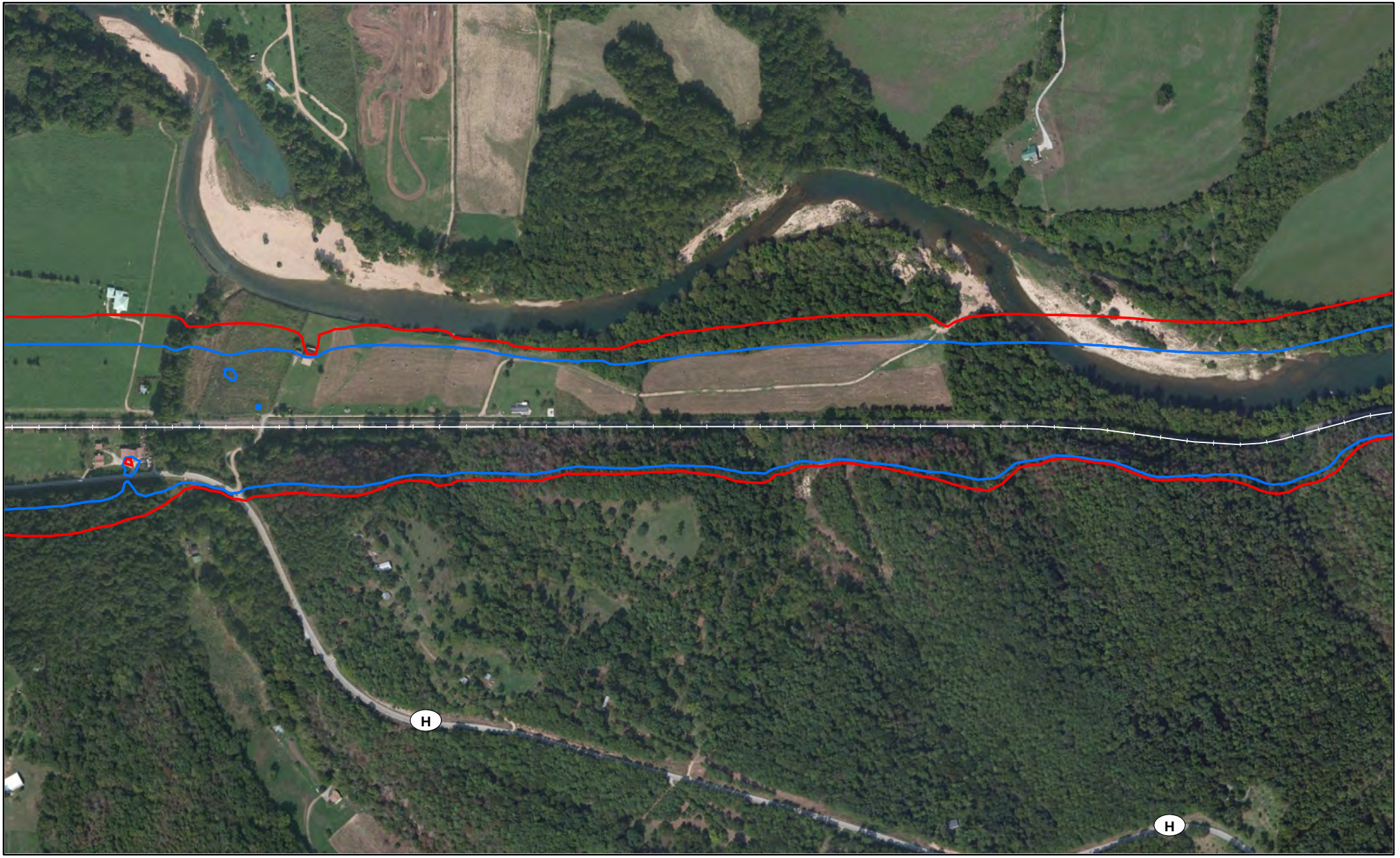
Tracks

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Noise Contours
McDonald County, MO

Miles
0 0.05 0.1



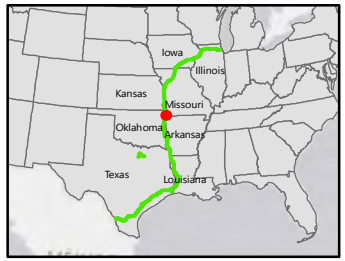
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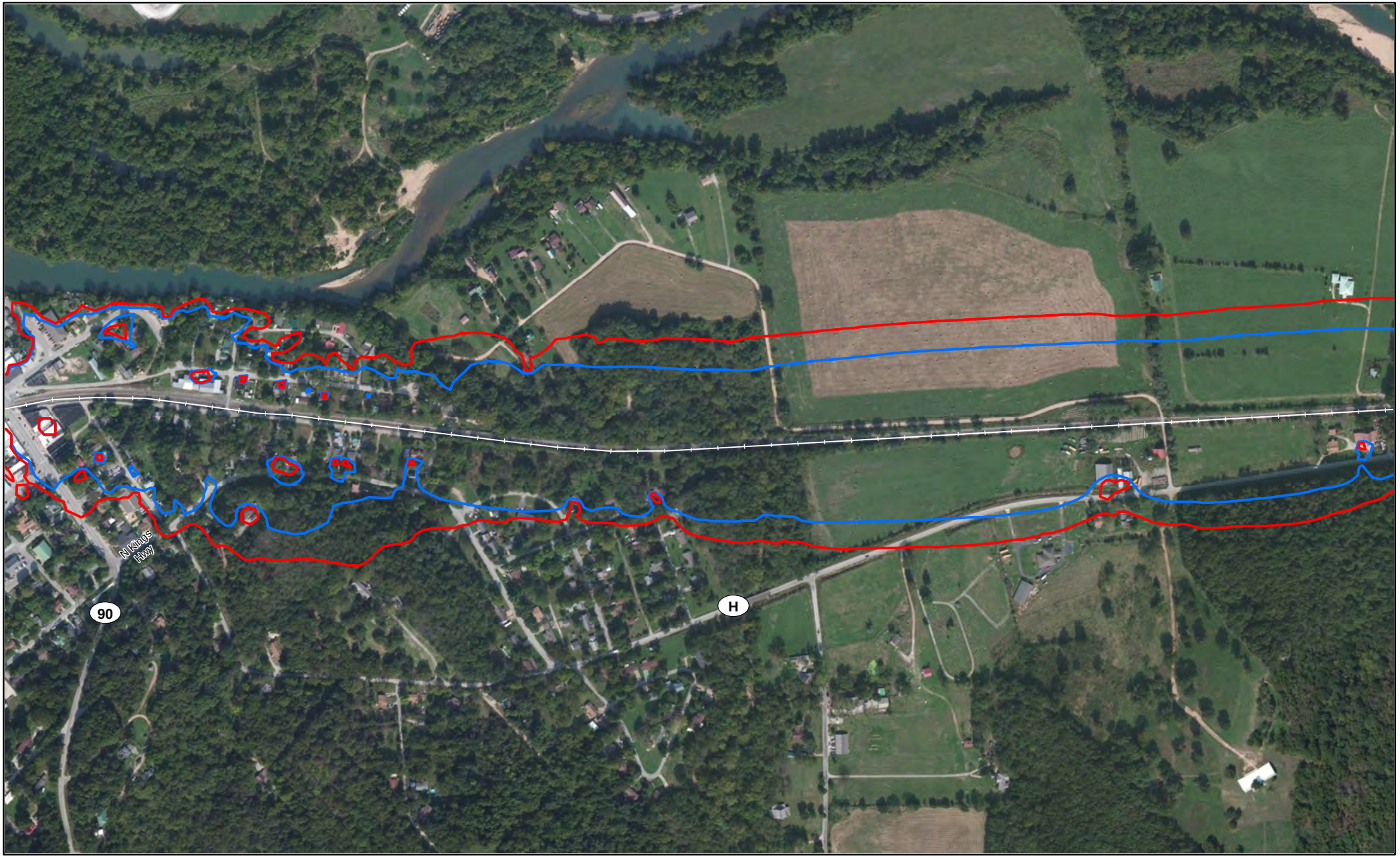
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Noise Contours
McDonald County, MO

Miles
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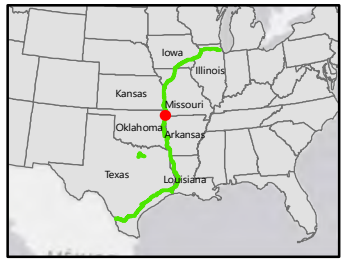
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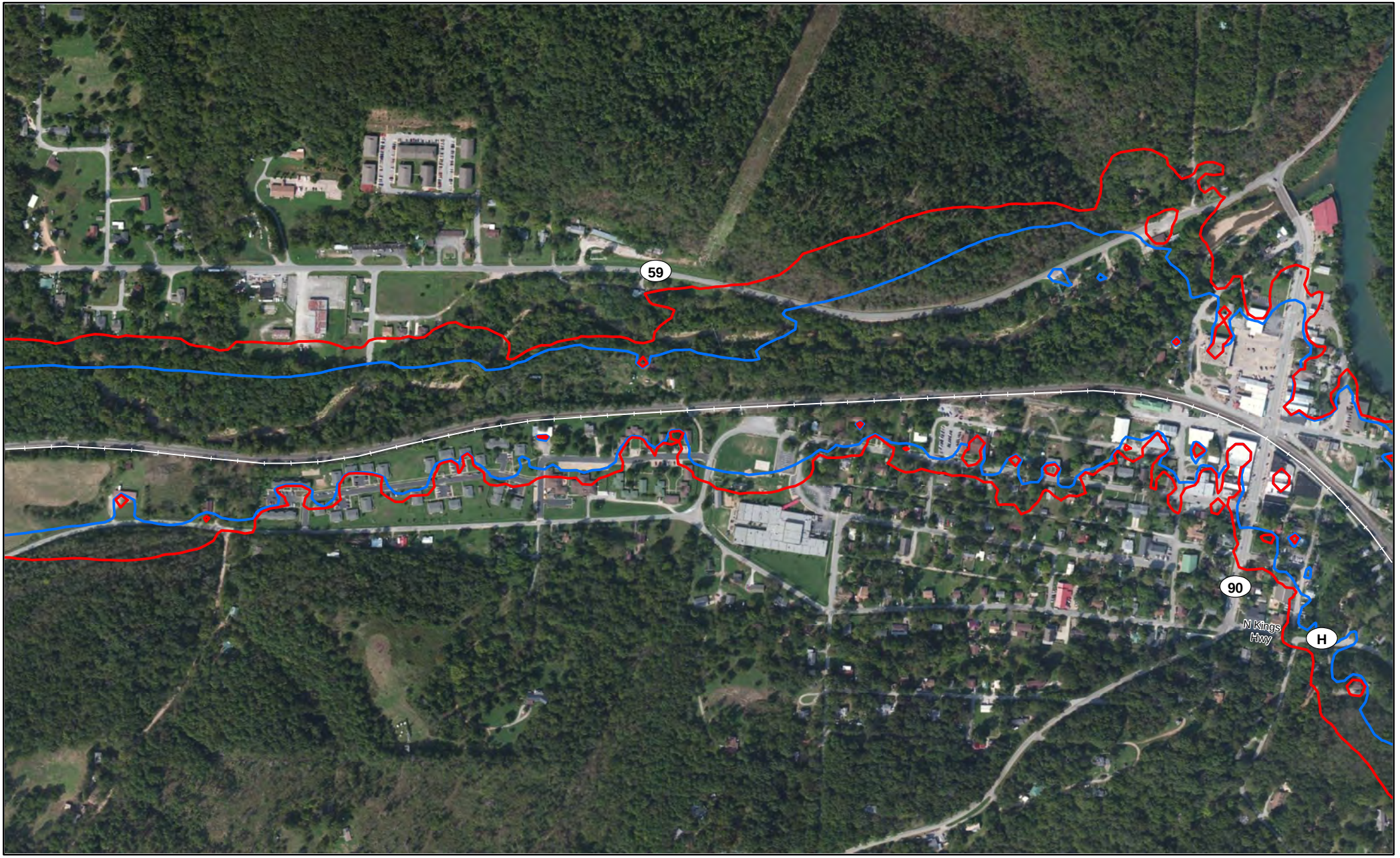
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Noise Contours
McDonald County, MO

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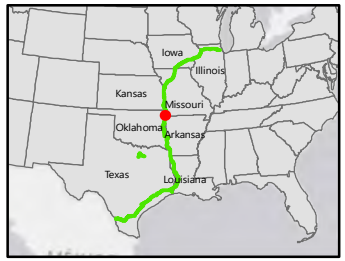
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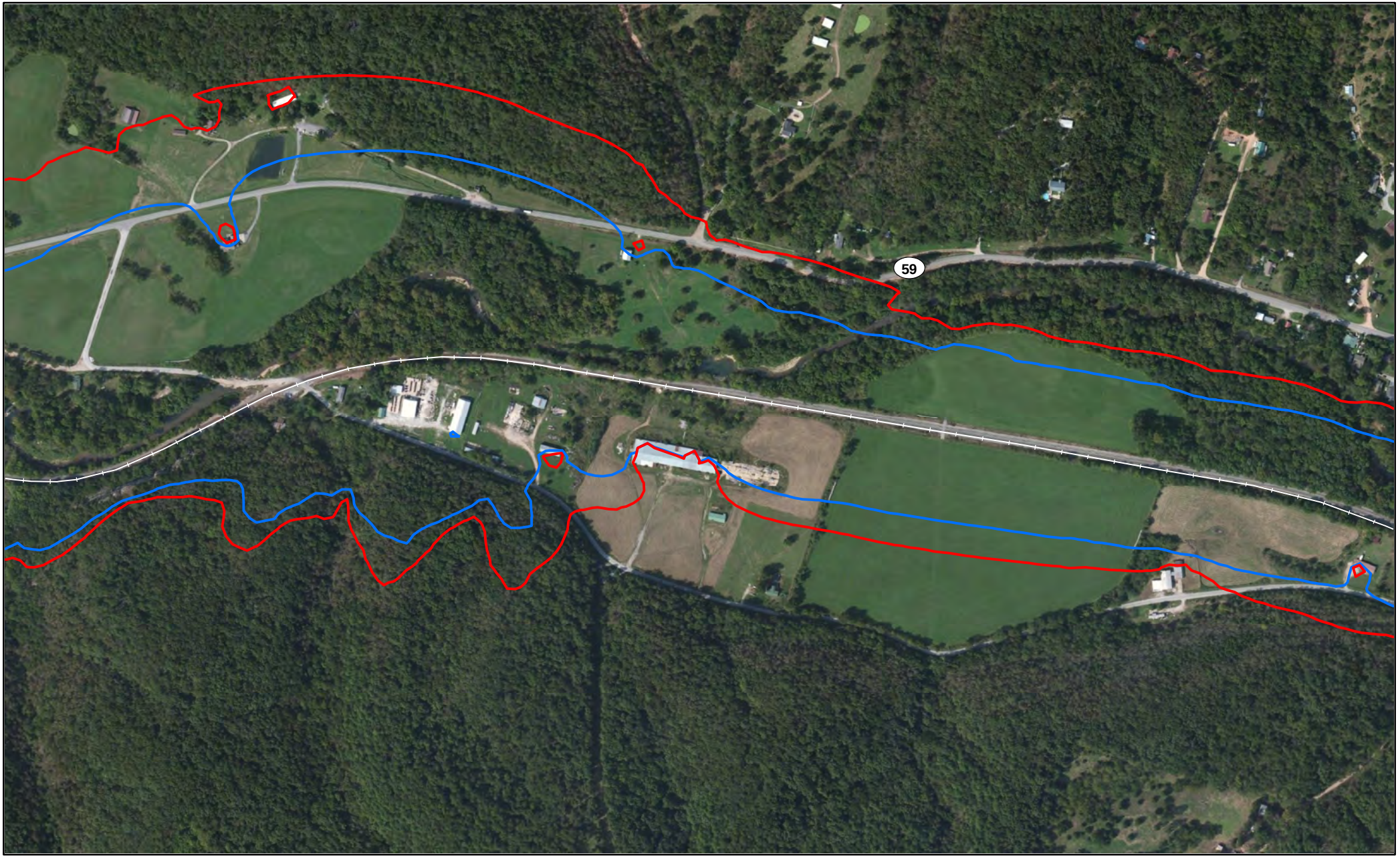
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Noise Contours
McDonald County, MO

Miles
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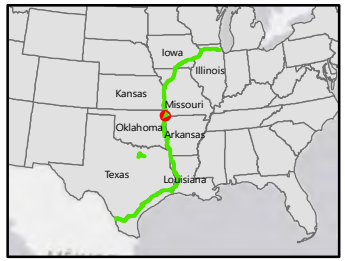
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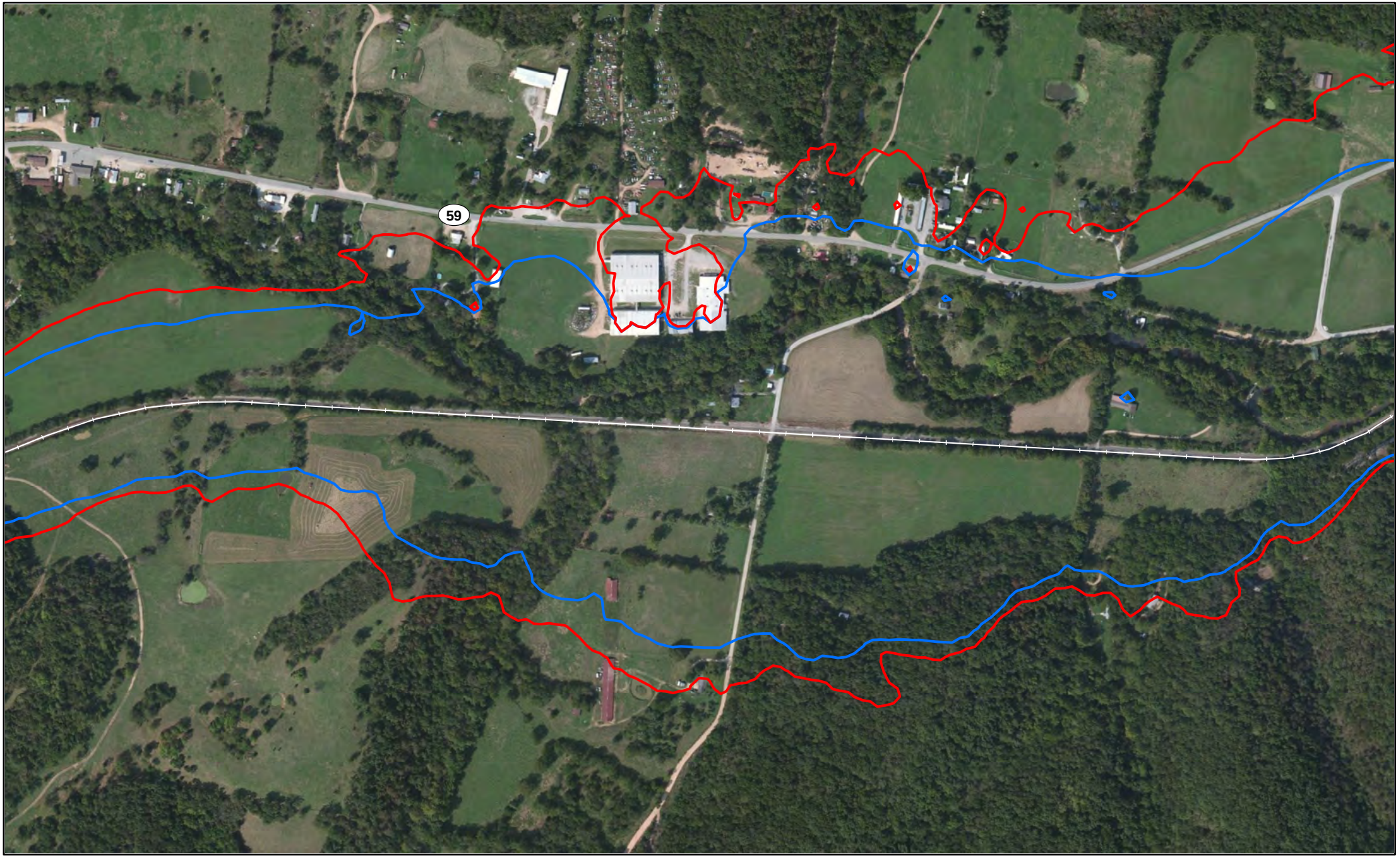
Tracks

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Noise Contours
McDonald County, MO

Miles
0 0.05 0.1



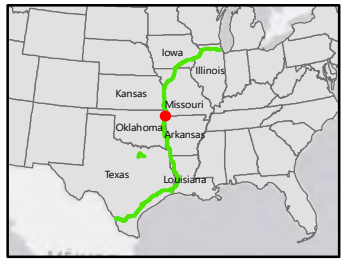
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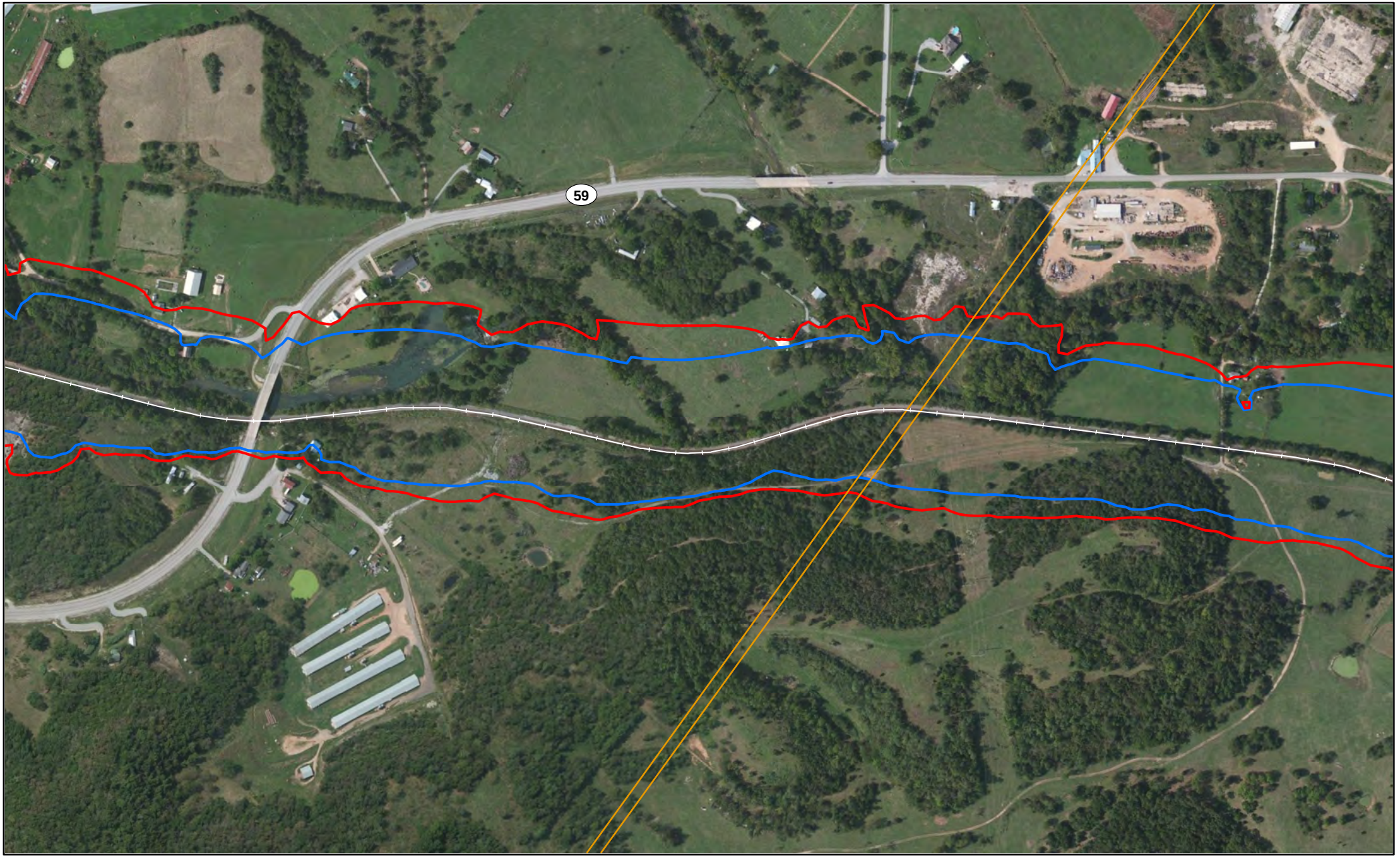
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Noise Contours
McDonald County, MO

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



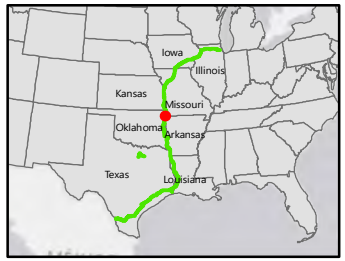
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Noise Contours
Benton County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN

59

59

No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

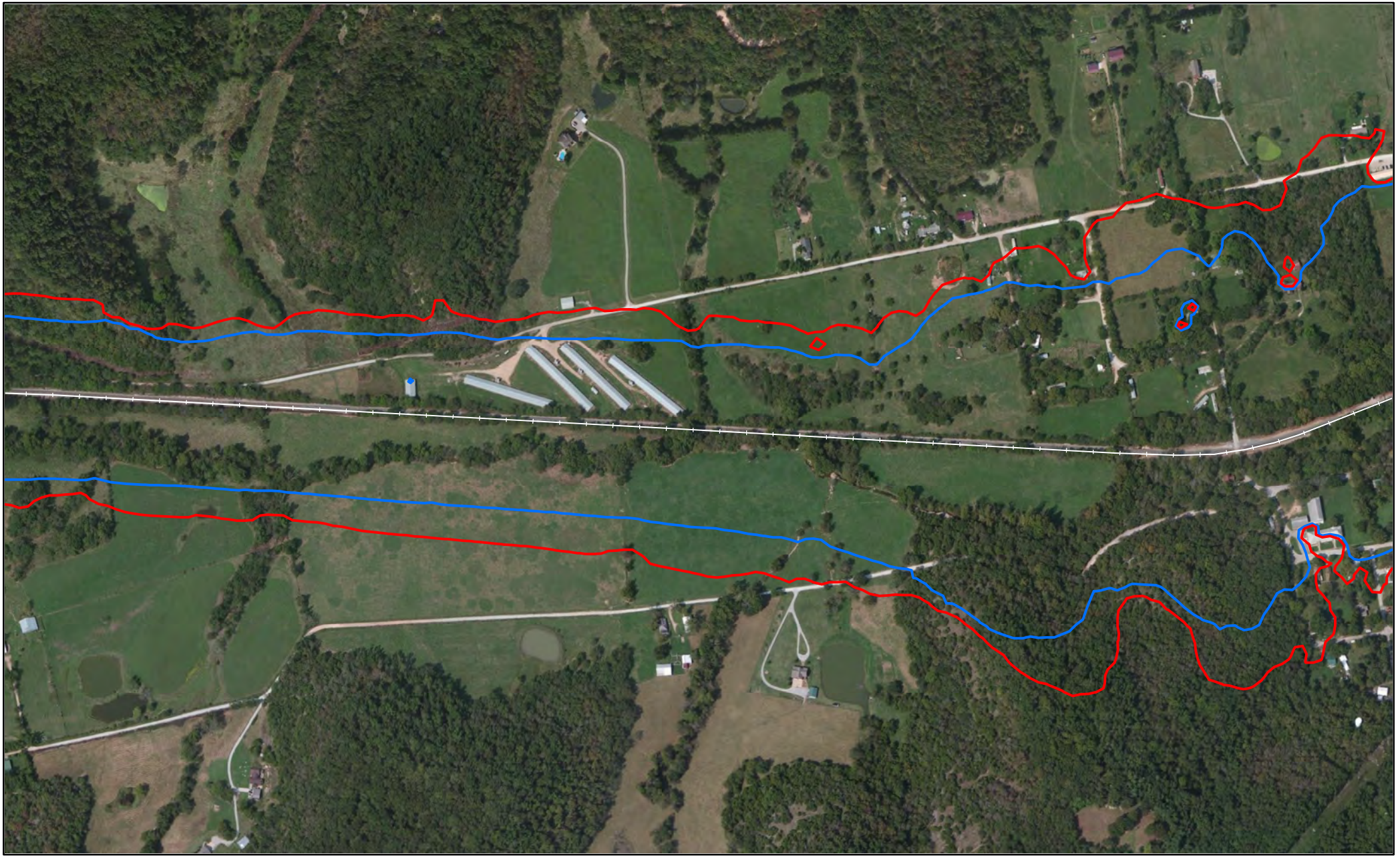
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Noise Contours
Benton County, AR

0 0.05 0.1 Miles

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



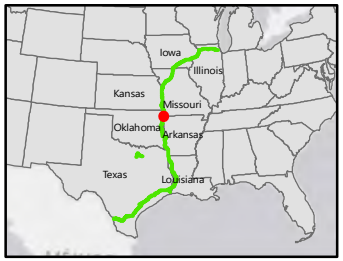
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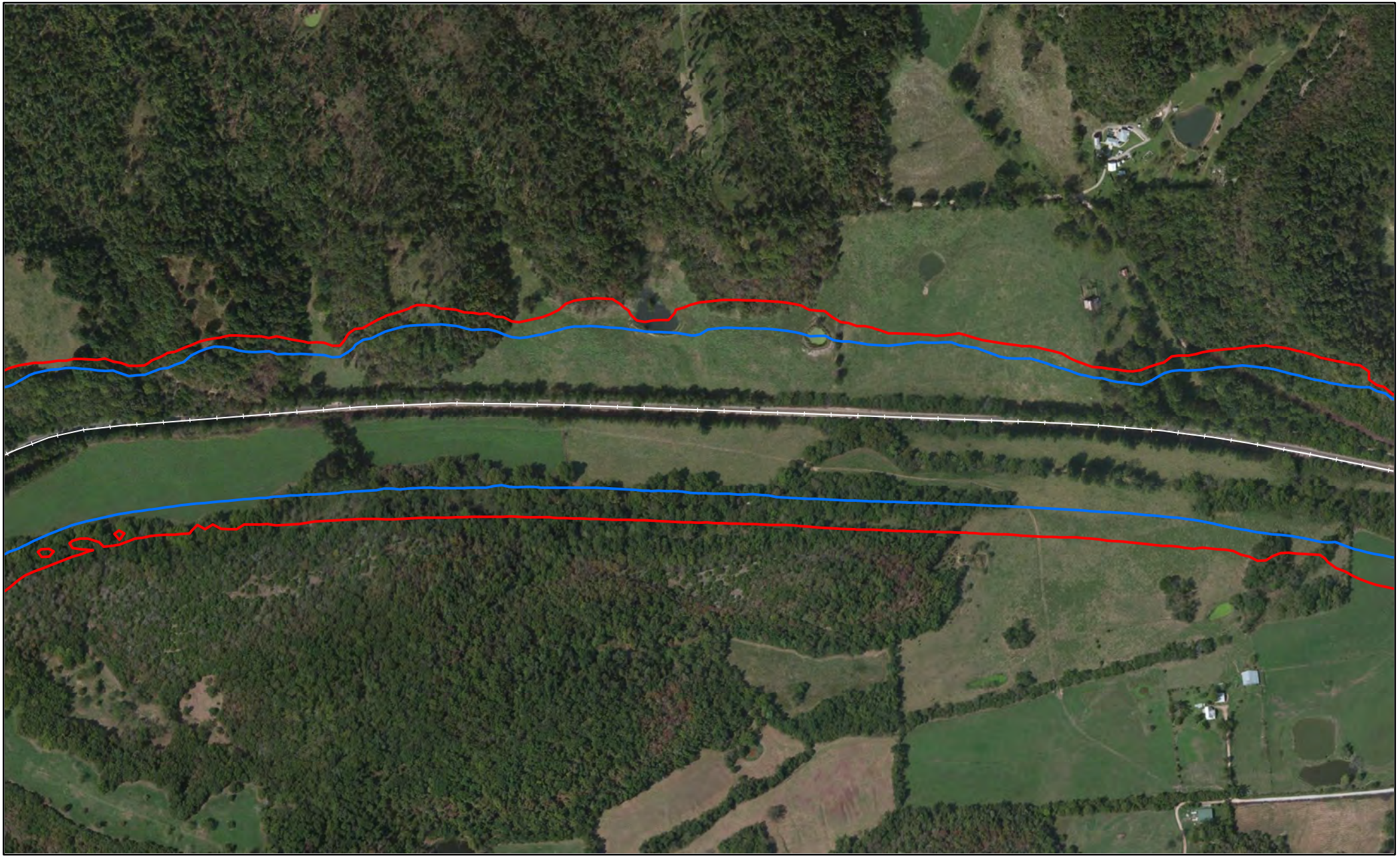
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Noise Contours
Benton County, AR

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



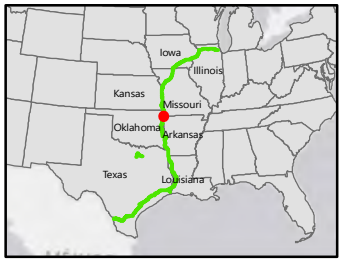
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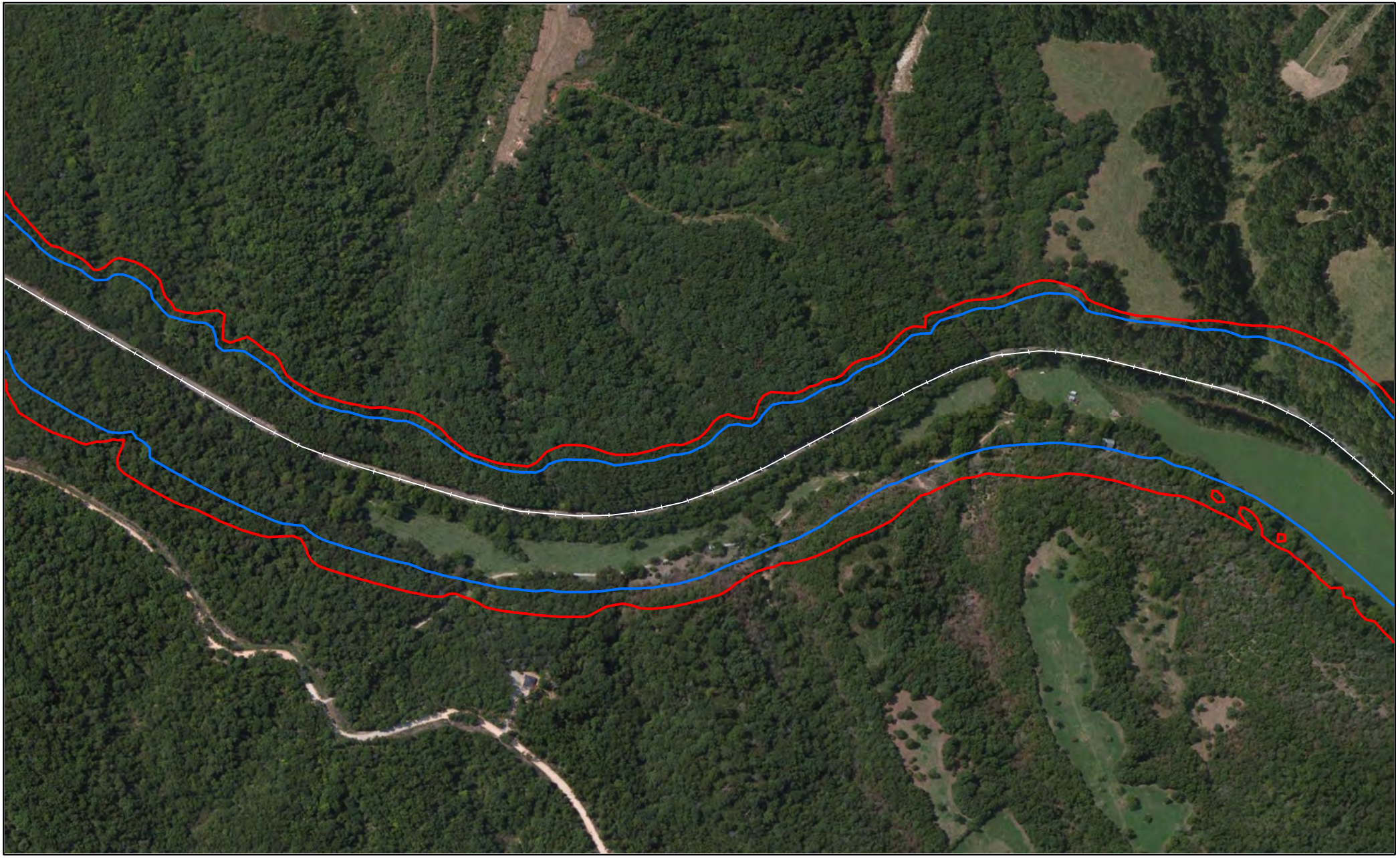
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Noise Contours
Benton County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



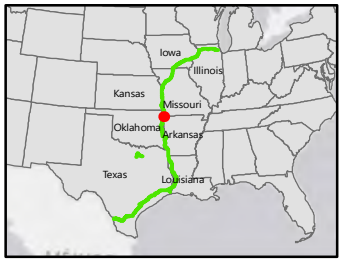
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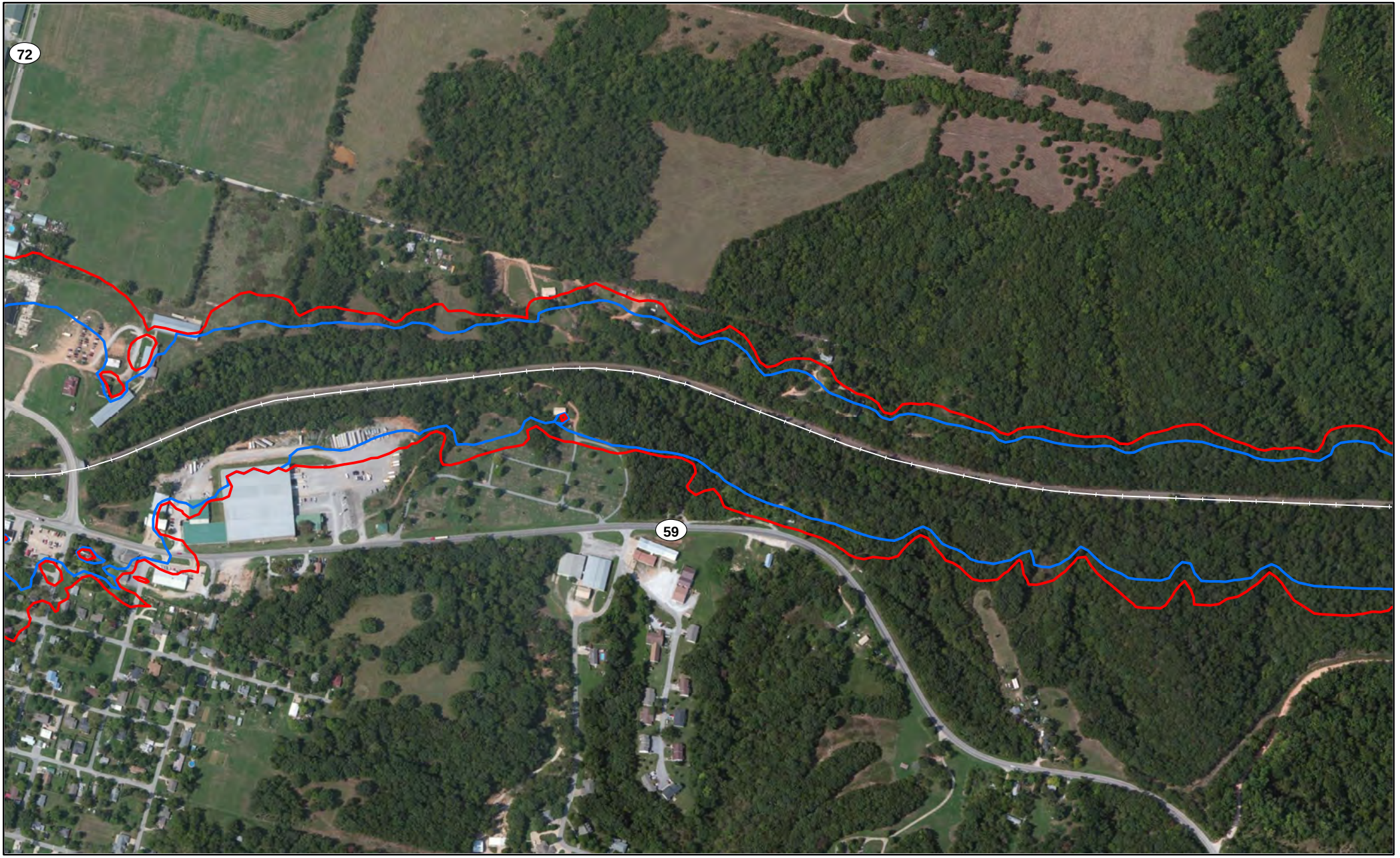
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Noise Contours
Benton County, AR

Miles
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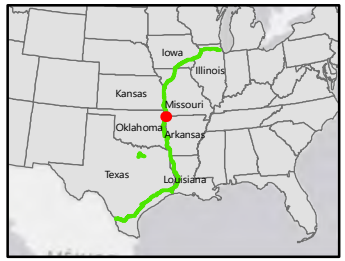
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Noise Contours
Benton County, AR

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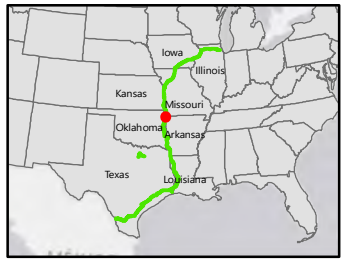
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Noise Contours
Benton County, AR

Miles
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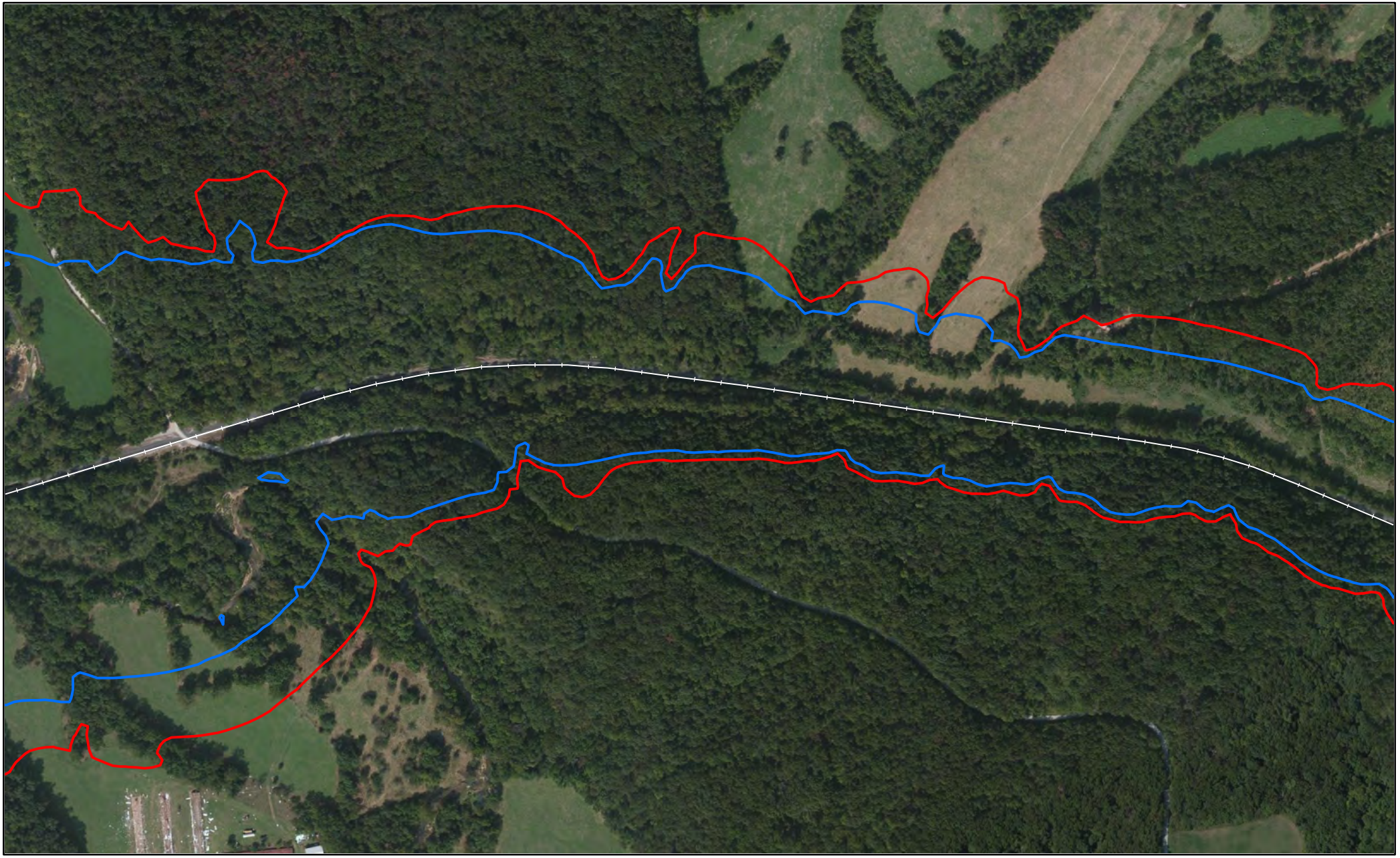
Tracks

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Noise Contours
Benton County, AR

Miles
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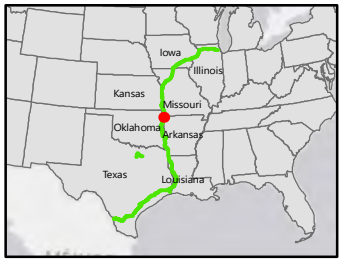
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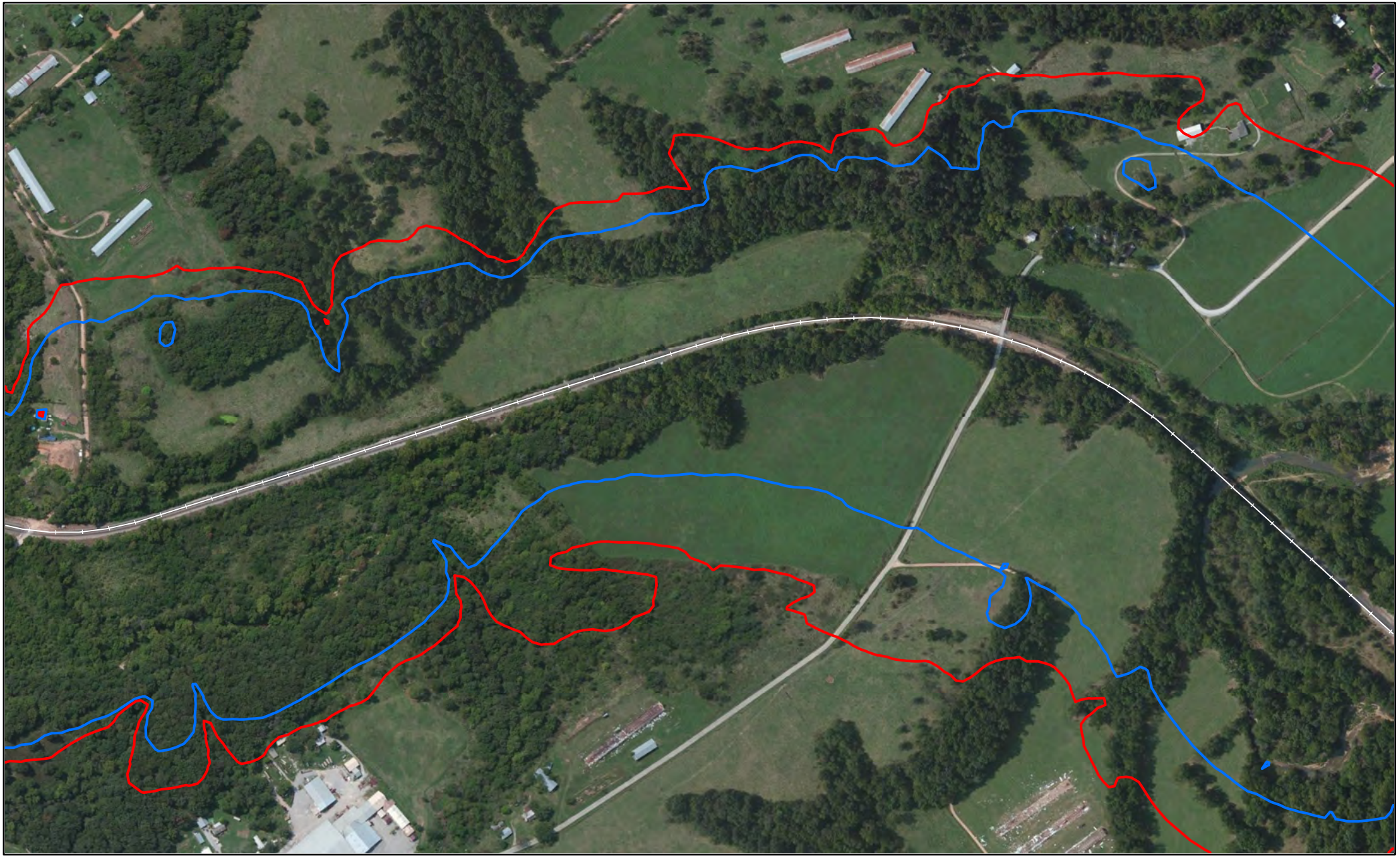
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Noise Contours
Benton County, AR

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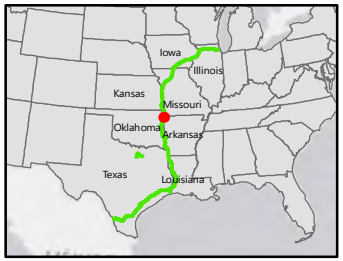
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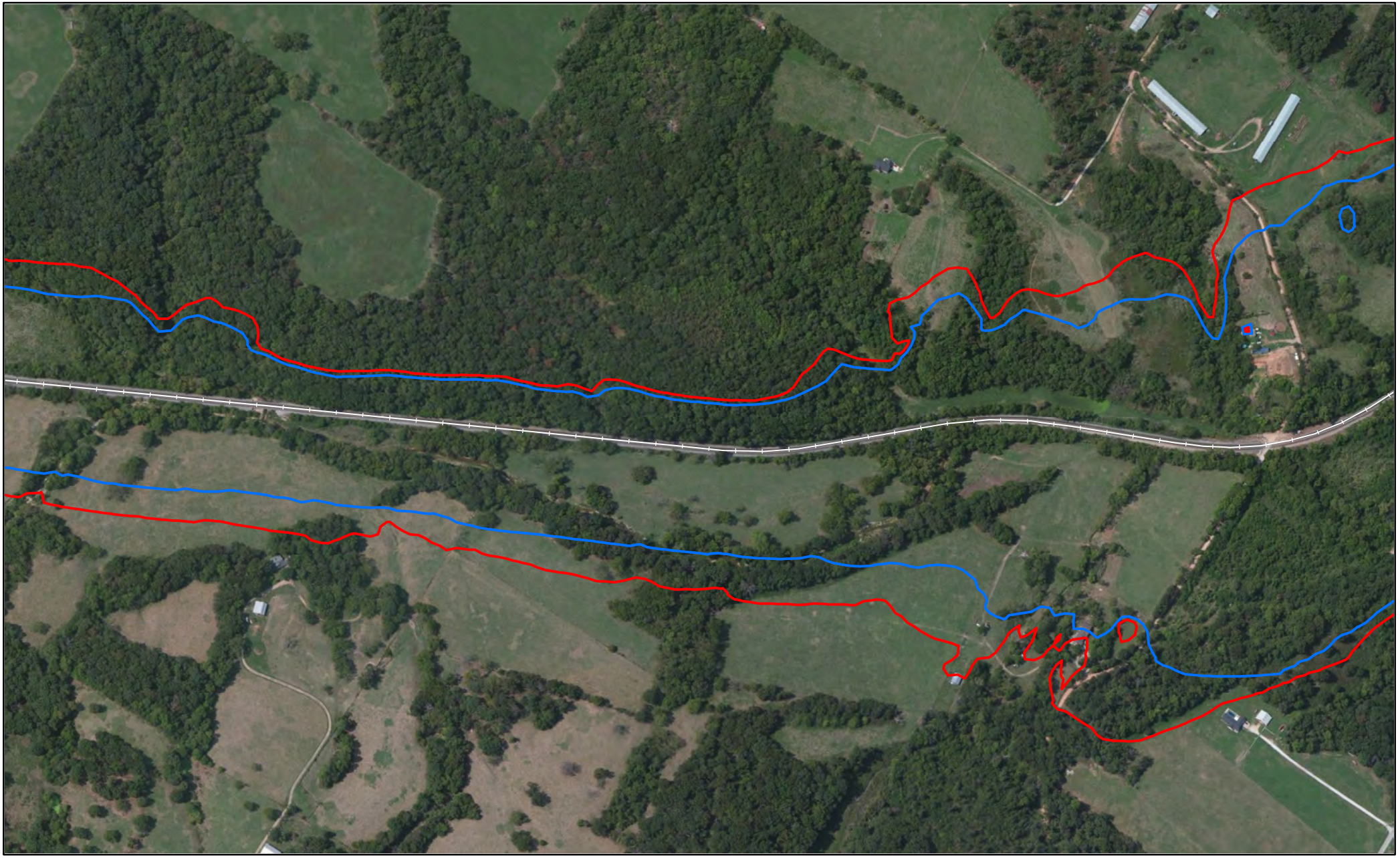


Noise Contours
Benton County, AR

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Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



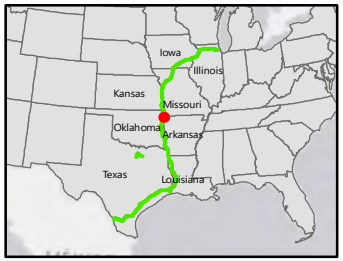
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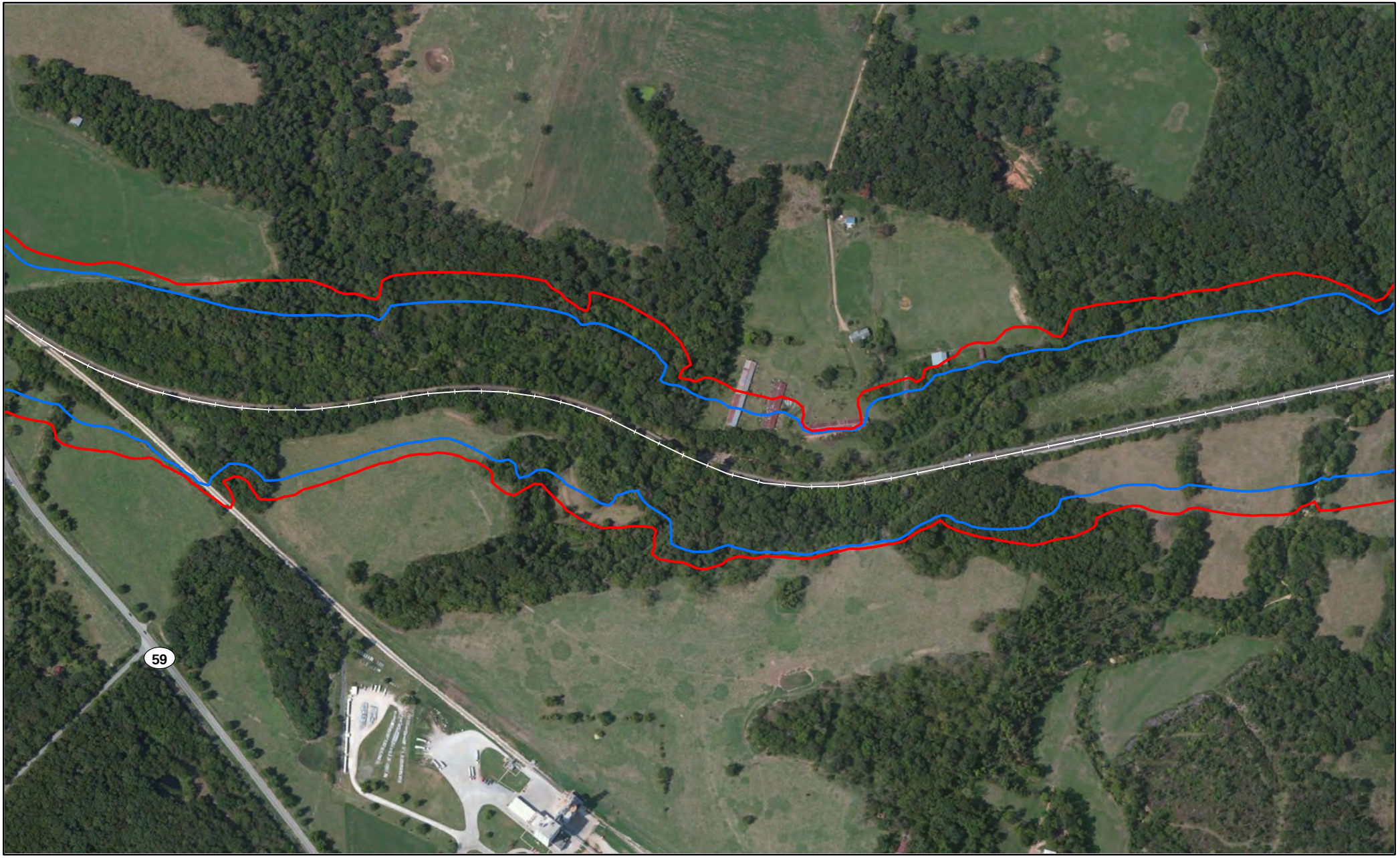
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Noise Contours
Benton County, AR

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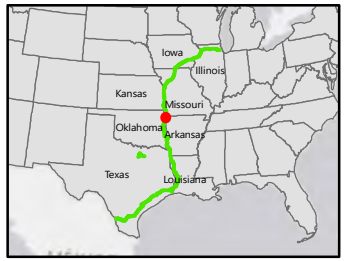
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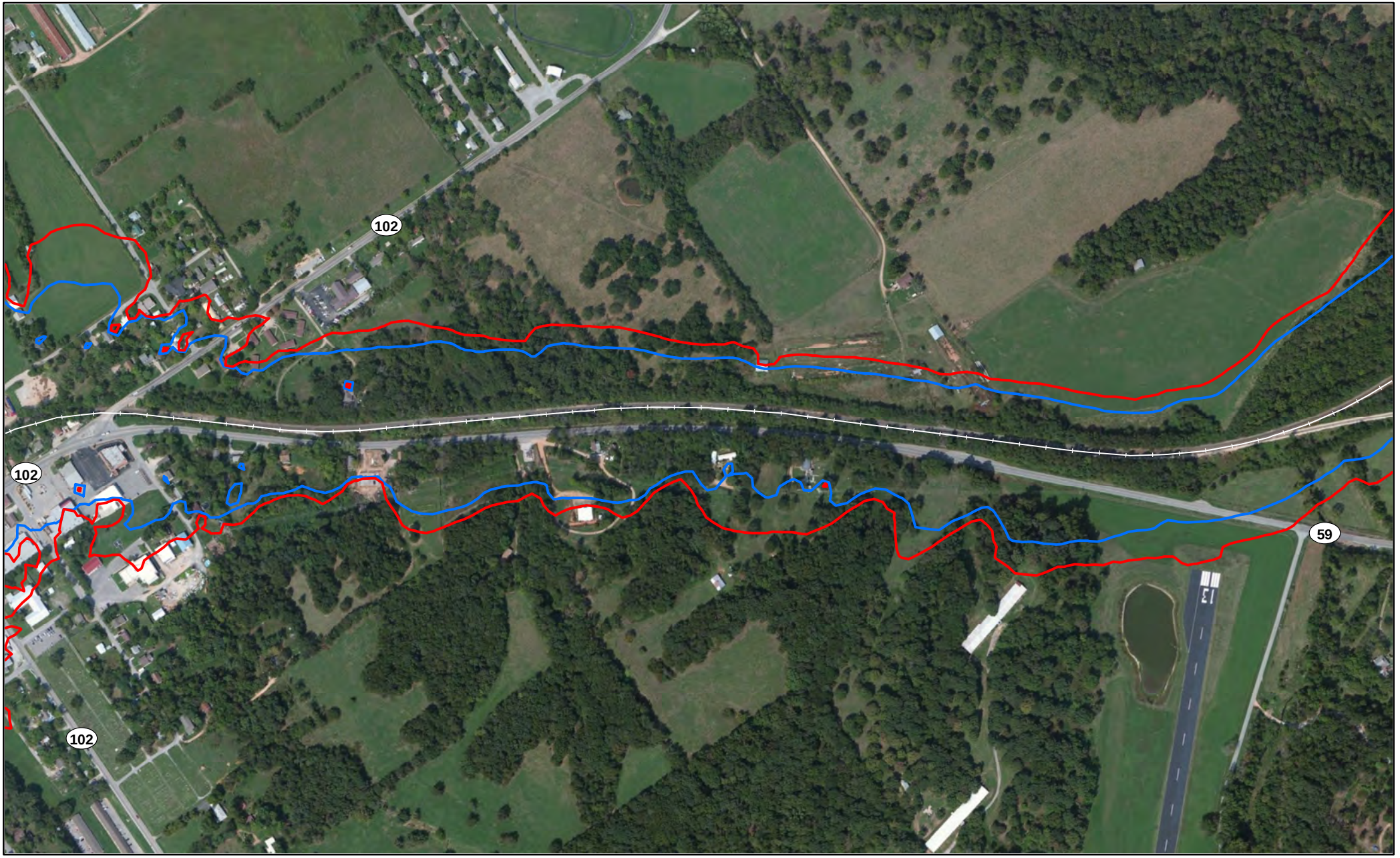


Noise Contours
Benton County, AR

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Miles
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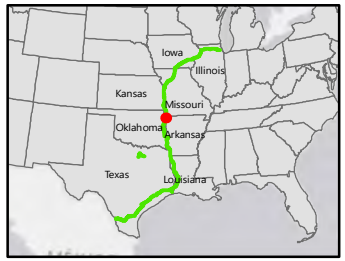
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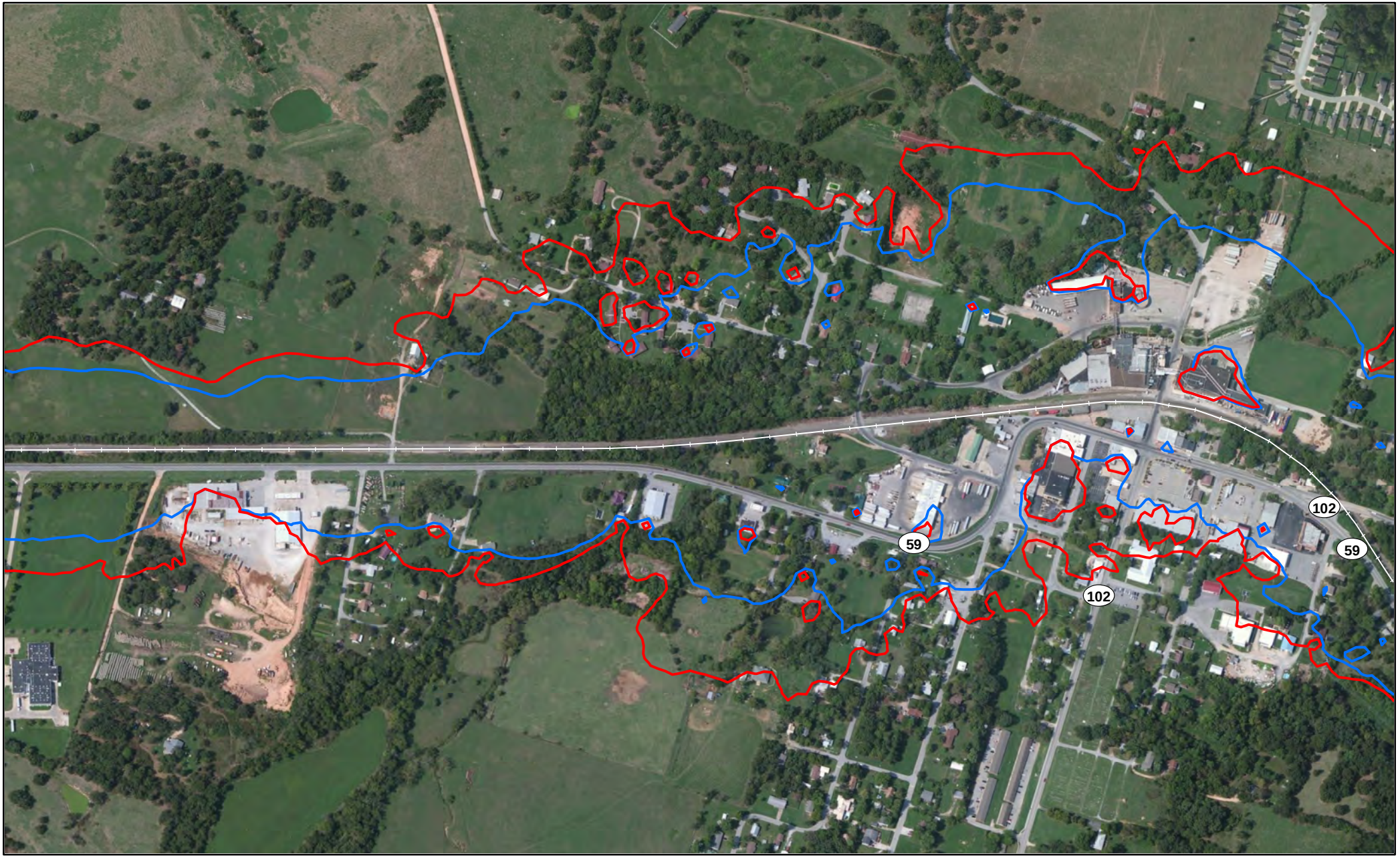
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Noise Contours
Benton County, AR

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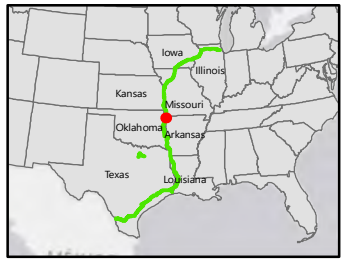
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

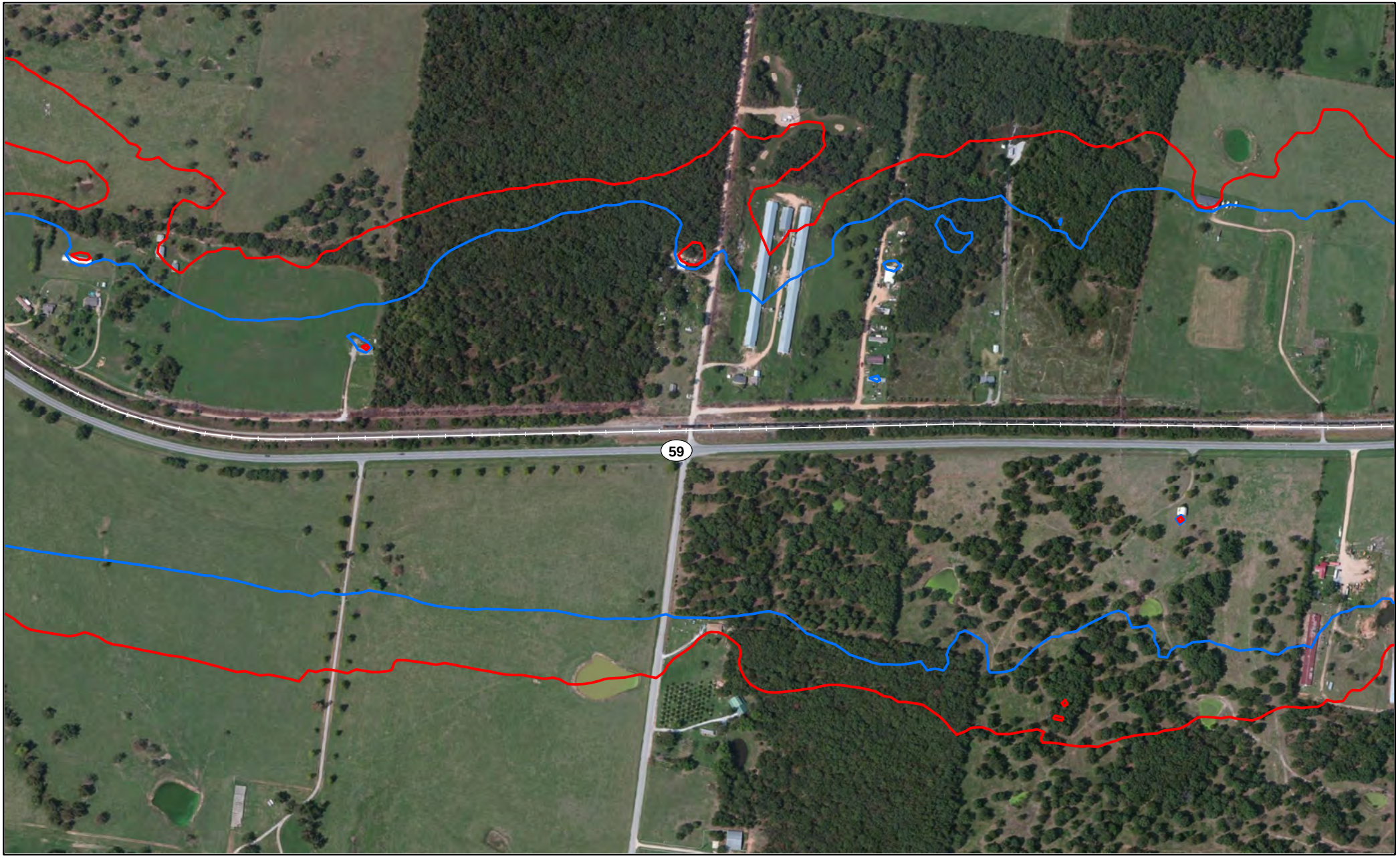
Tracks

Source: ESRI.



Noise Contours
Benton County, AR

0 0.05 0.1 Miles



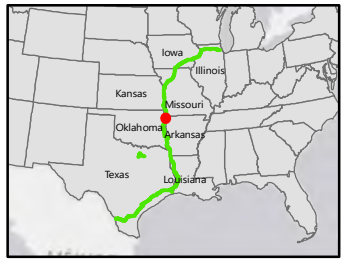
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

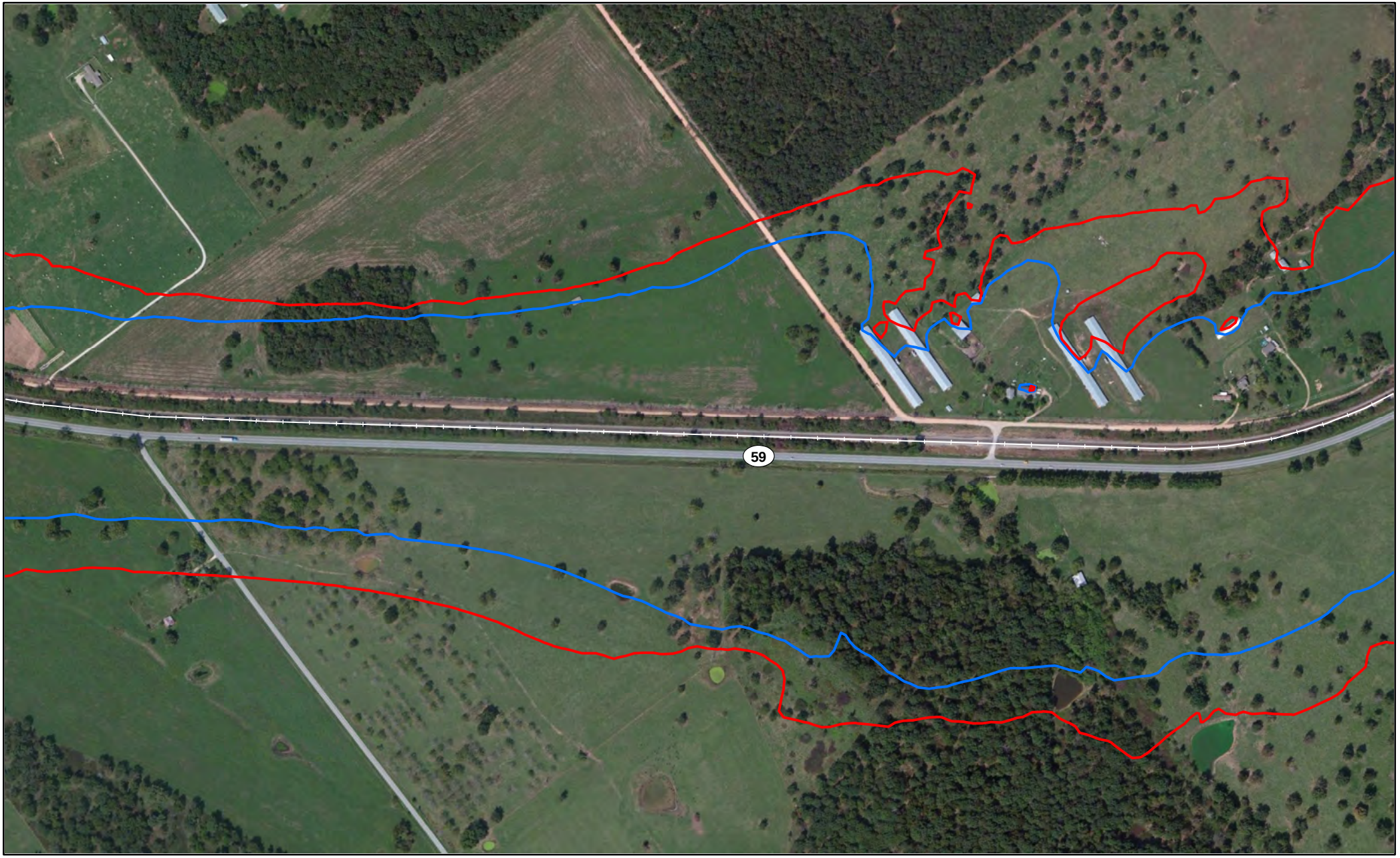
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Noise Contours
Benton County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



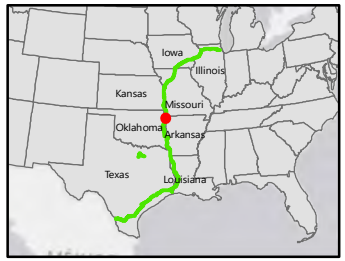
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

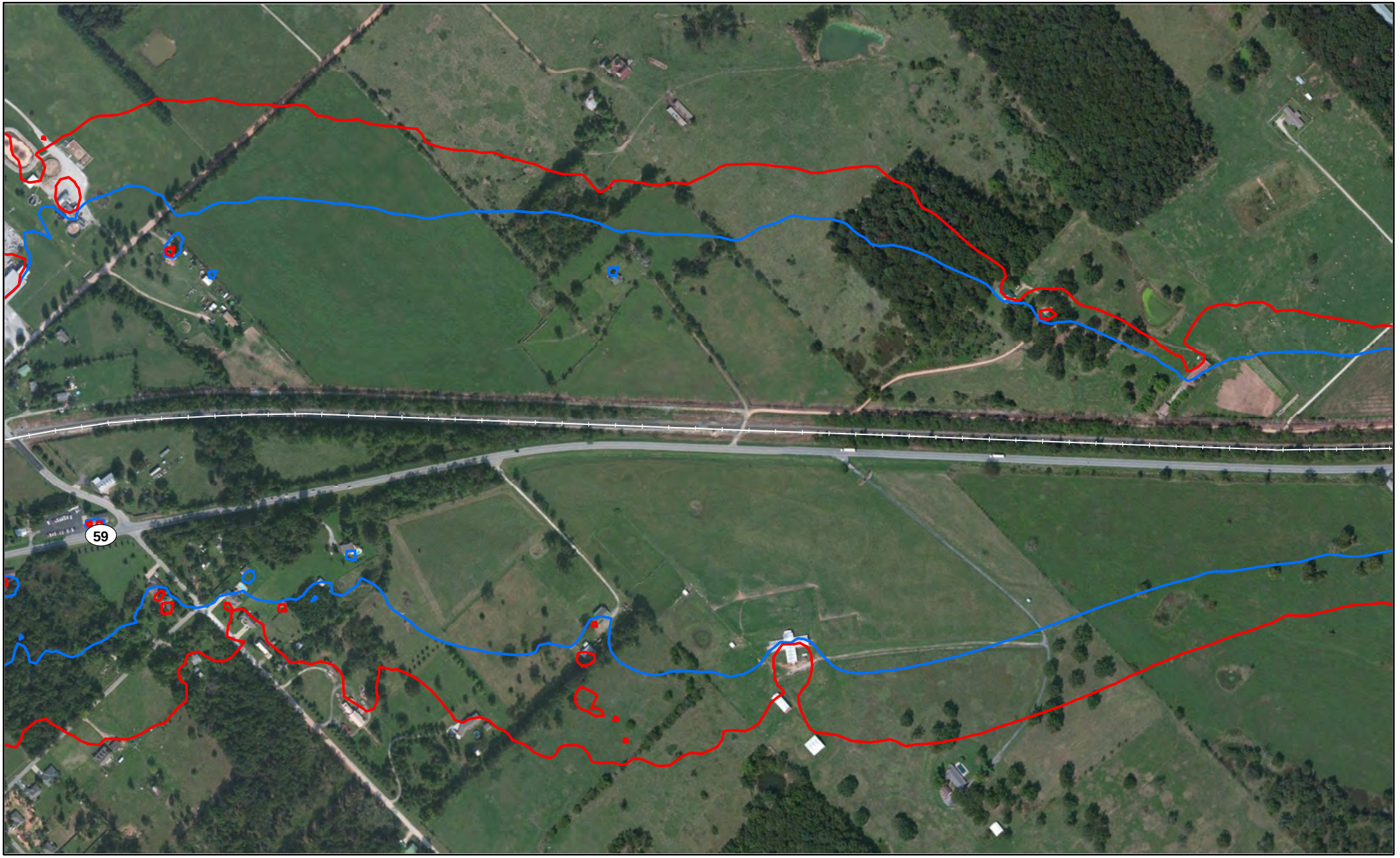
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Noise Contours
Benton County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



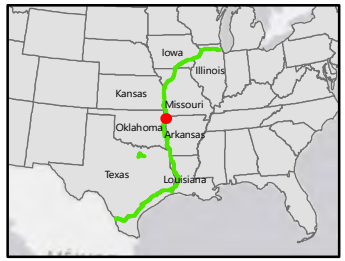
No-Action Alternative Noise (65 Ldn)

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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

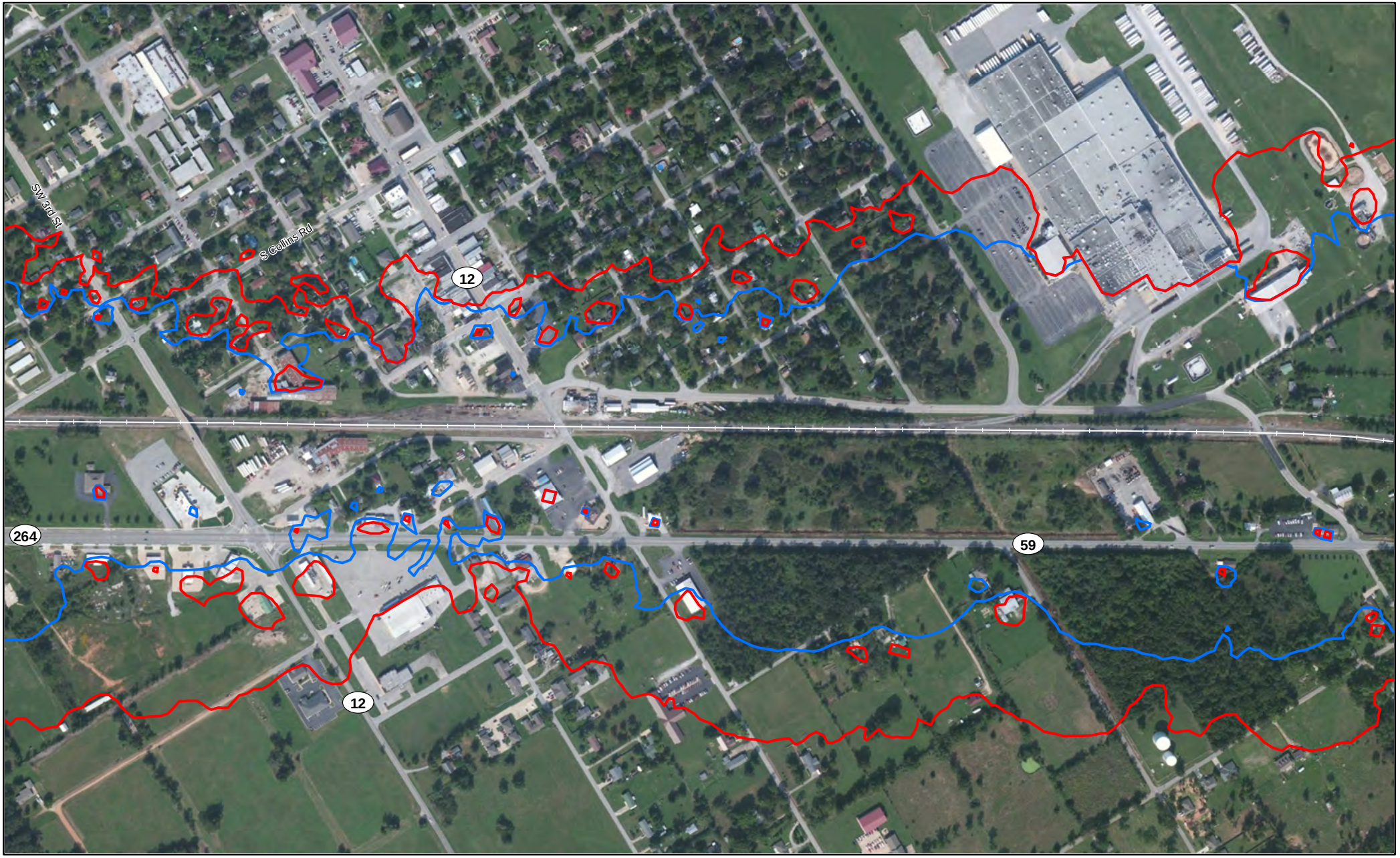
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Noise Contours
Benton County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



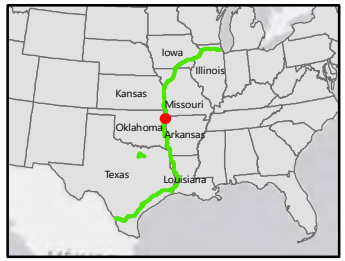
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Tracks

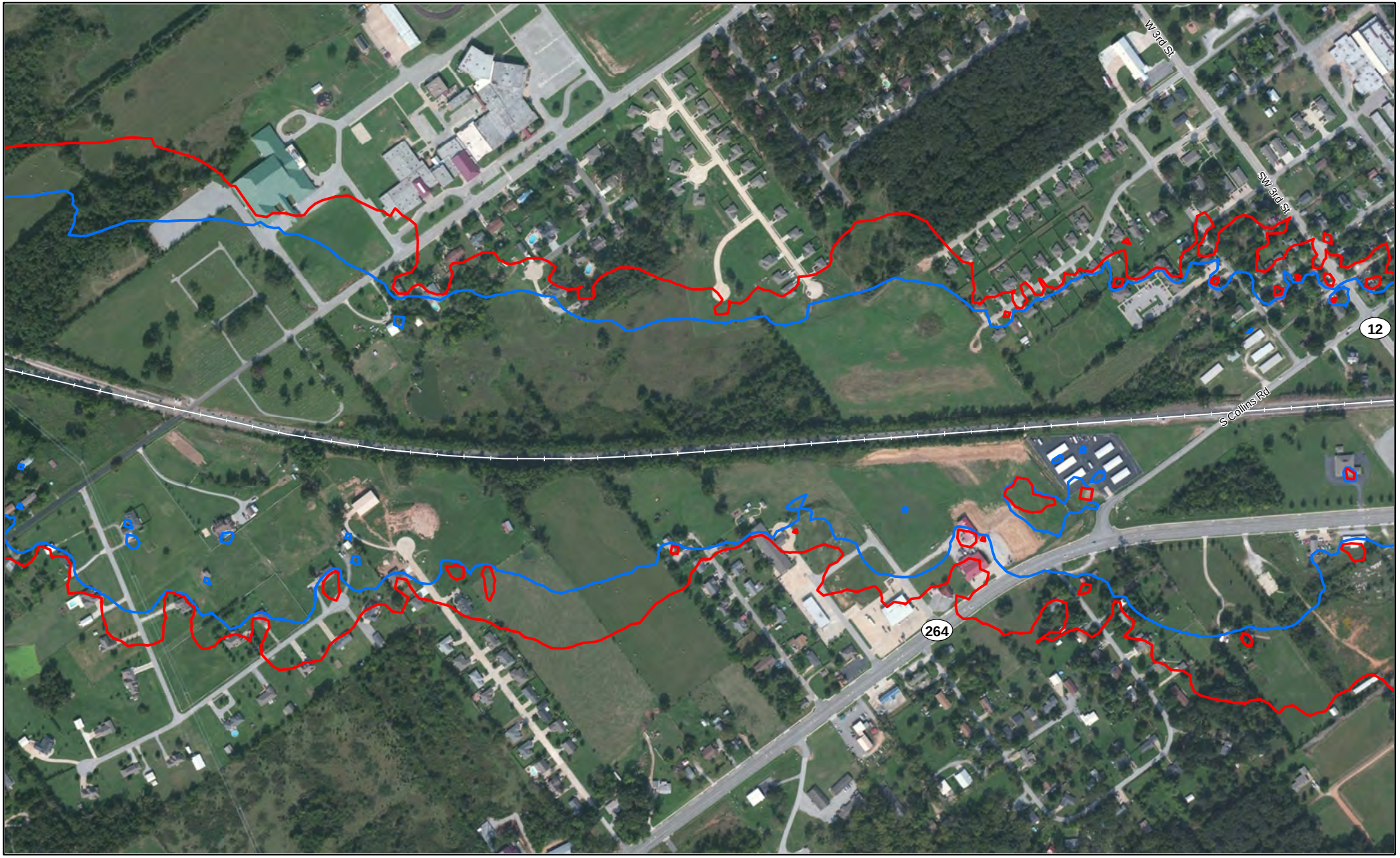
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Noise Contours
Benton County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



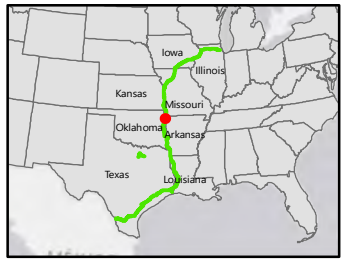
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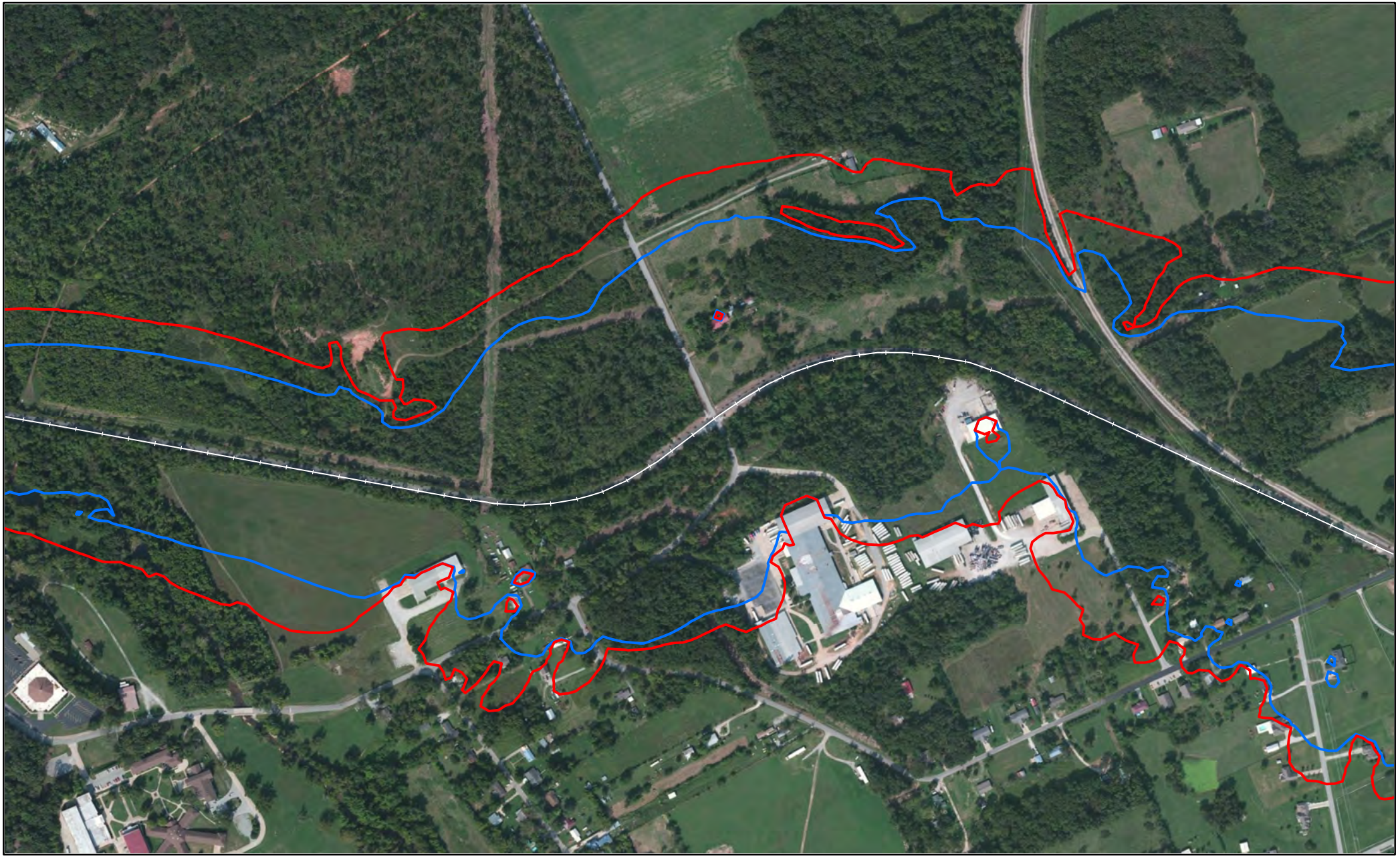
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Noise Contours
Benton County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



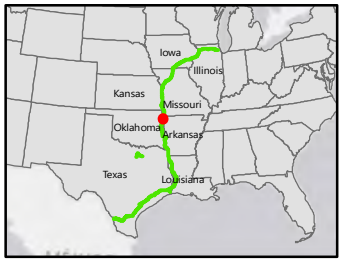
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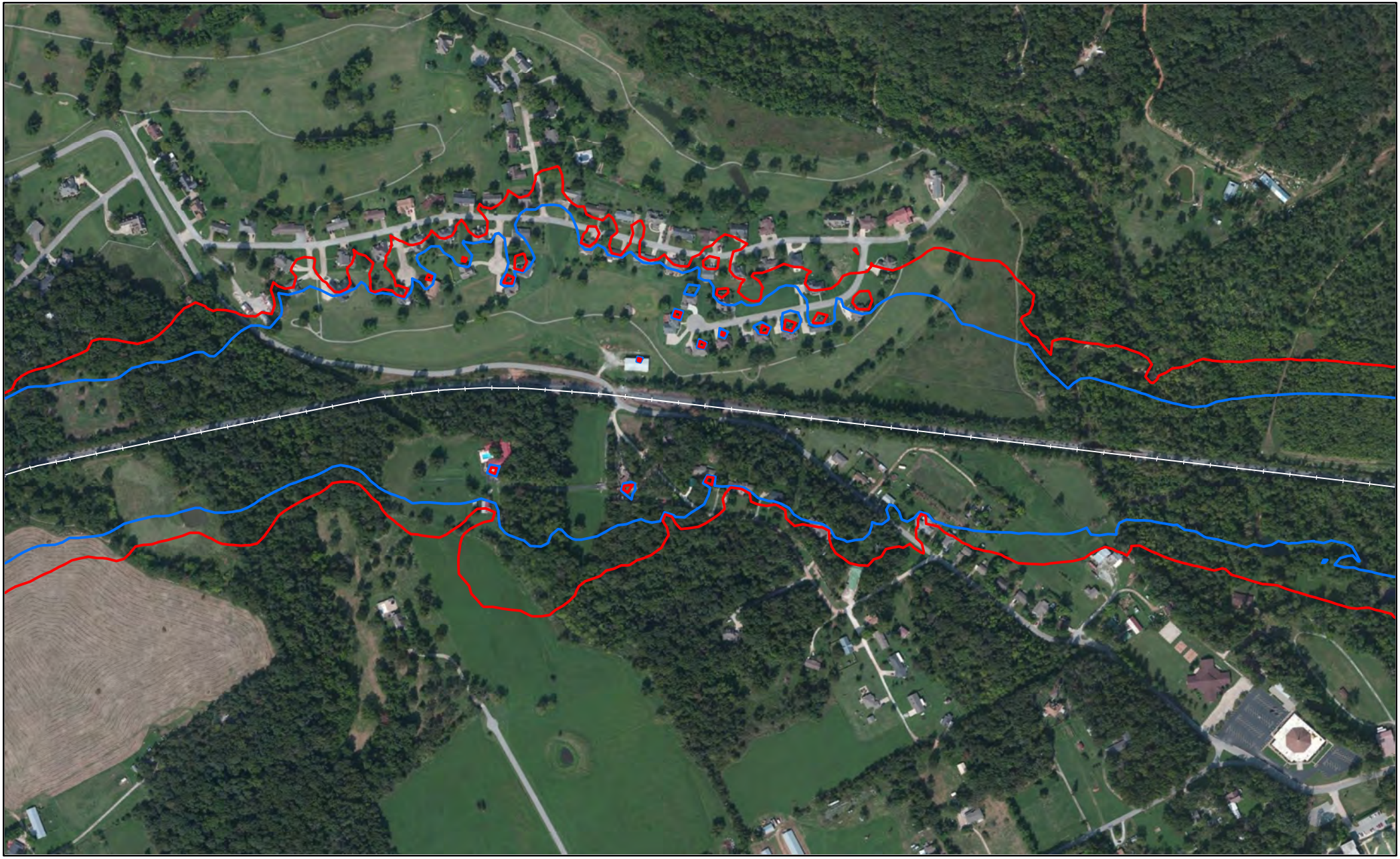
Tracks

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Noise Contours
Benton County, AR

Miles
0 0.05 0.1



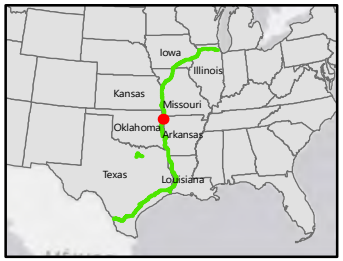
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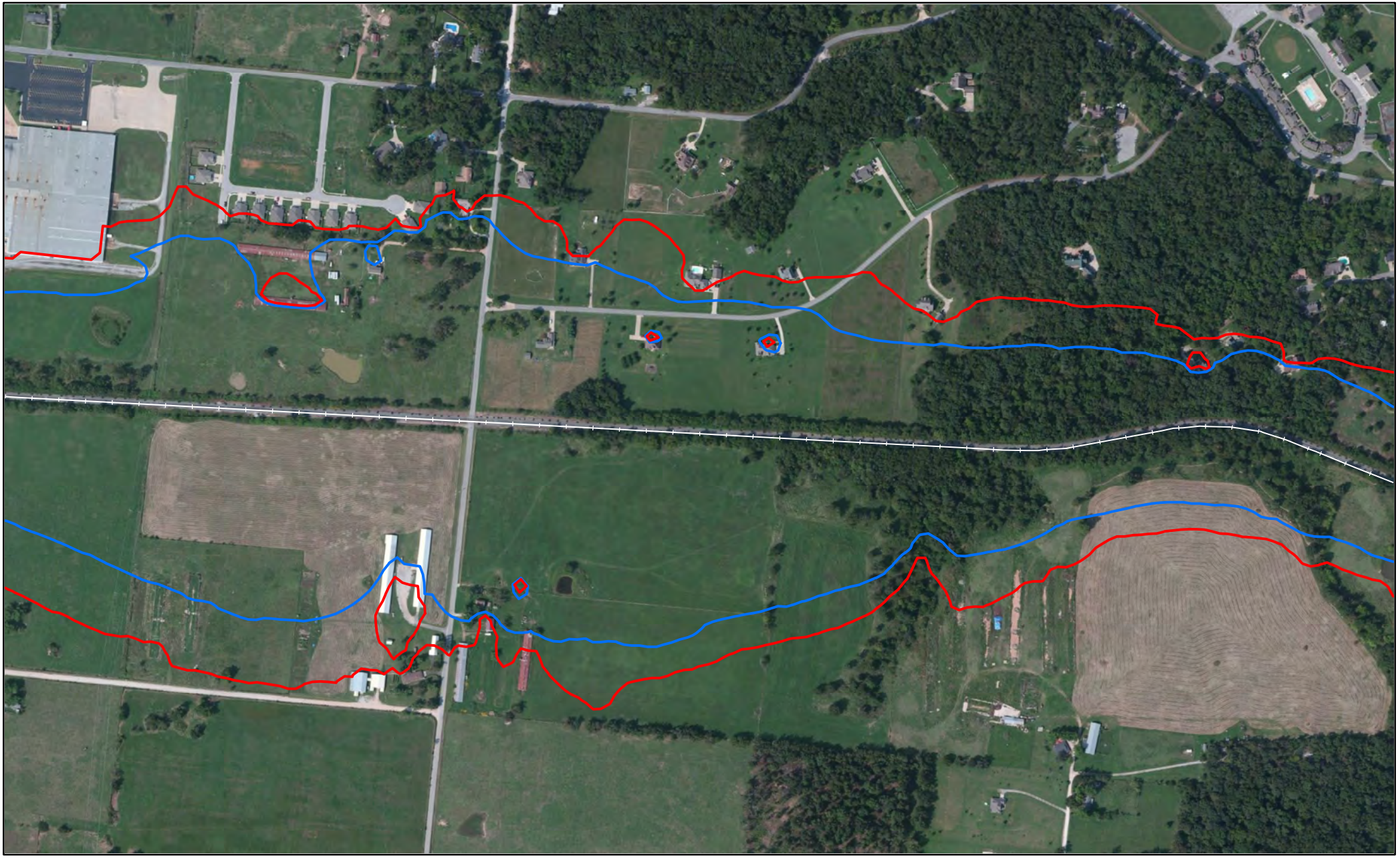


Noise Contours
Benton County, AR

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



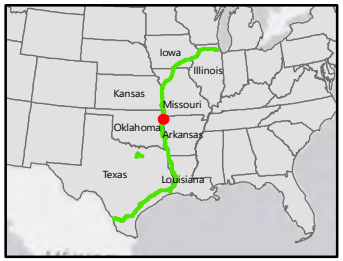
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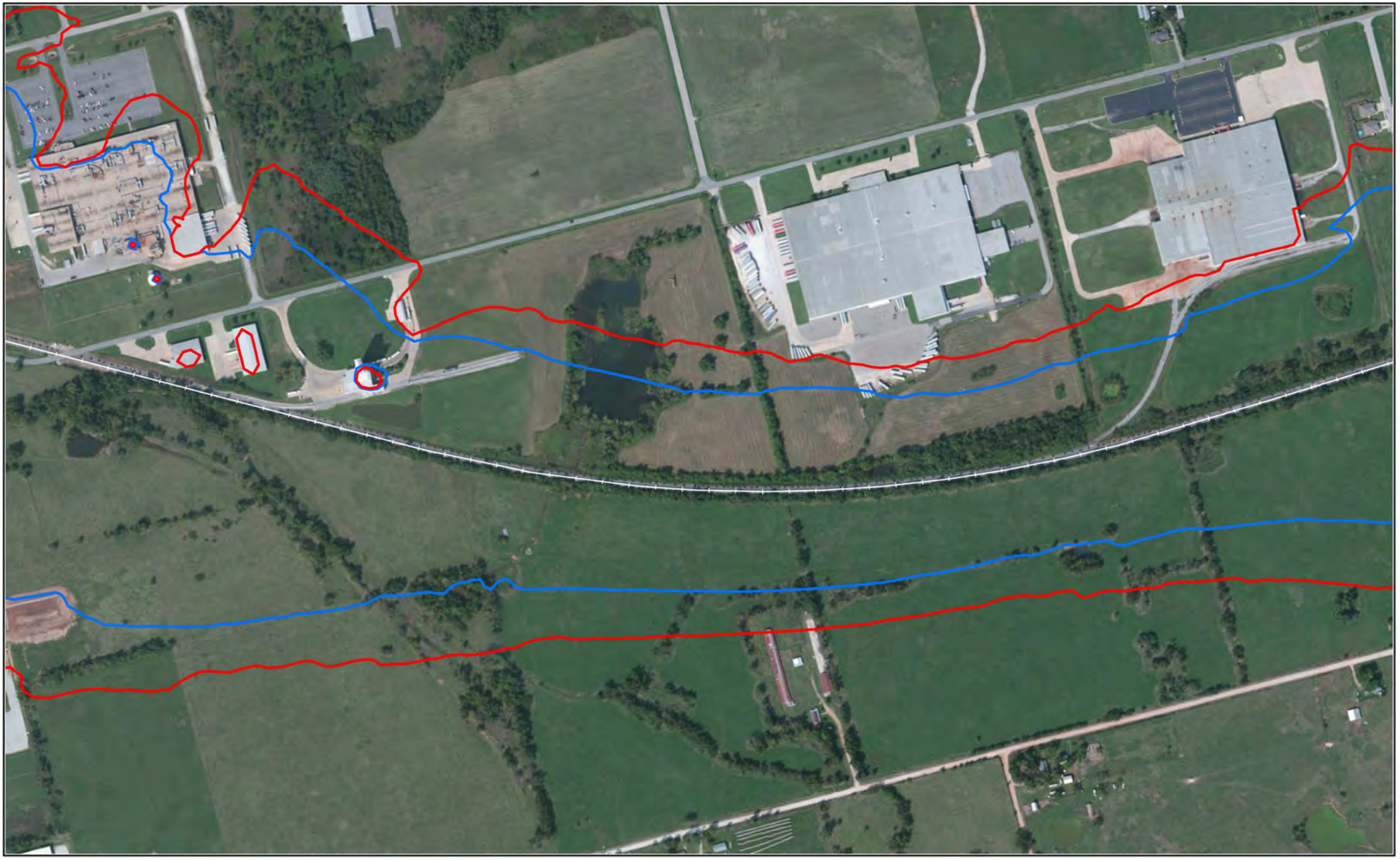
Source: ESRI.



Noise Contours
Benton County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

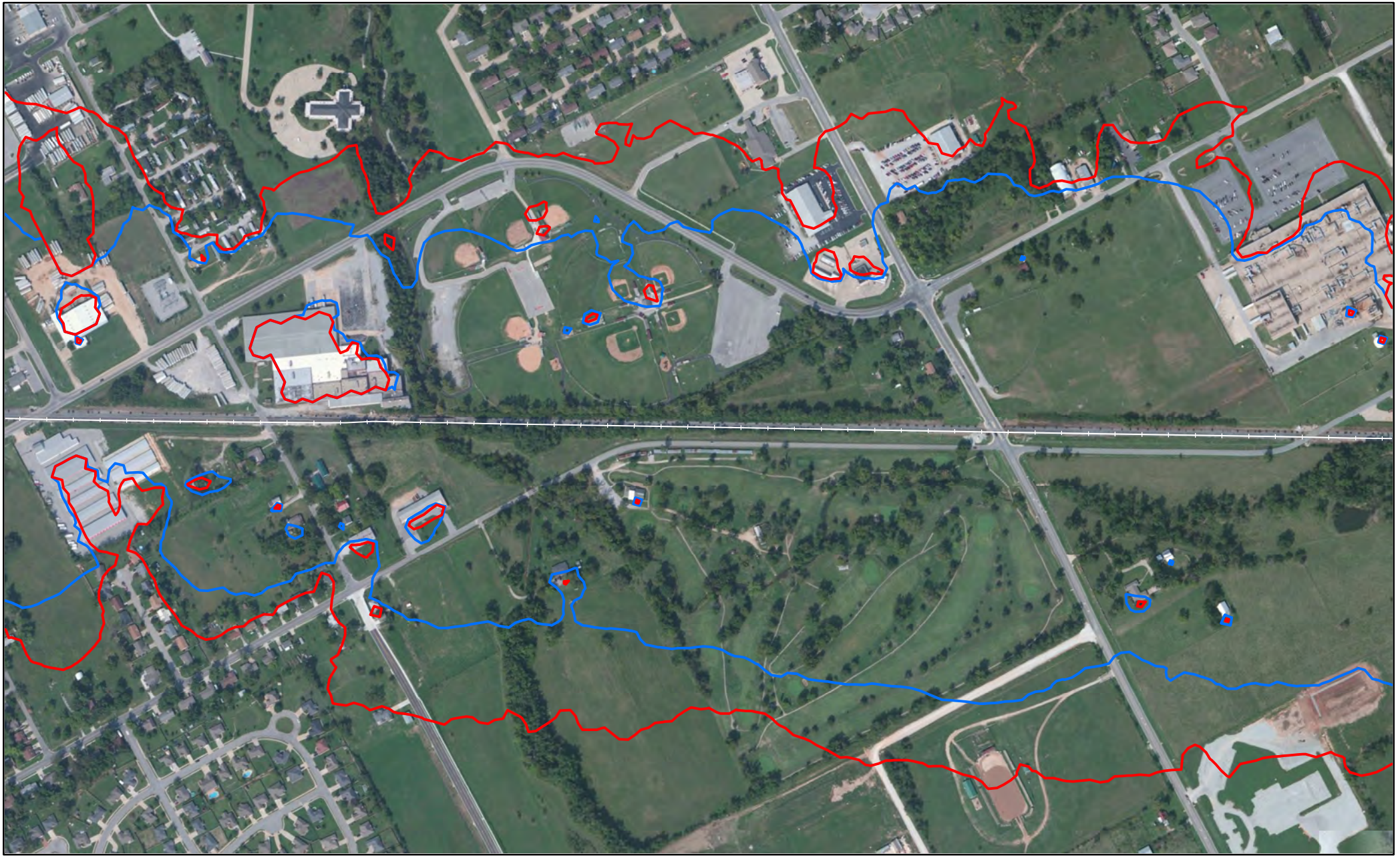
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Noise Contours
Benton County, AR

Miles
0 0.05 0.1



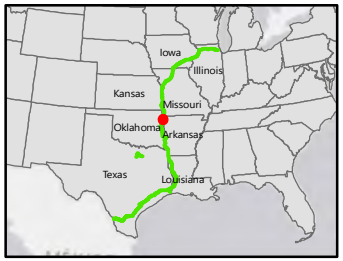
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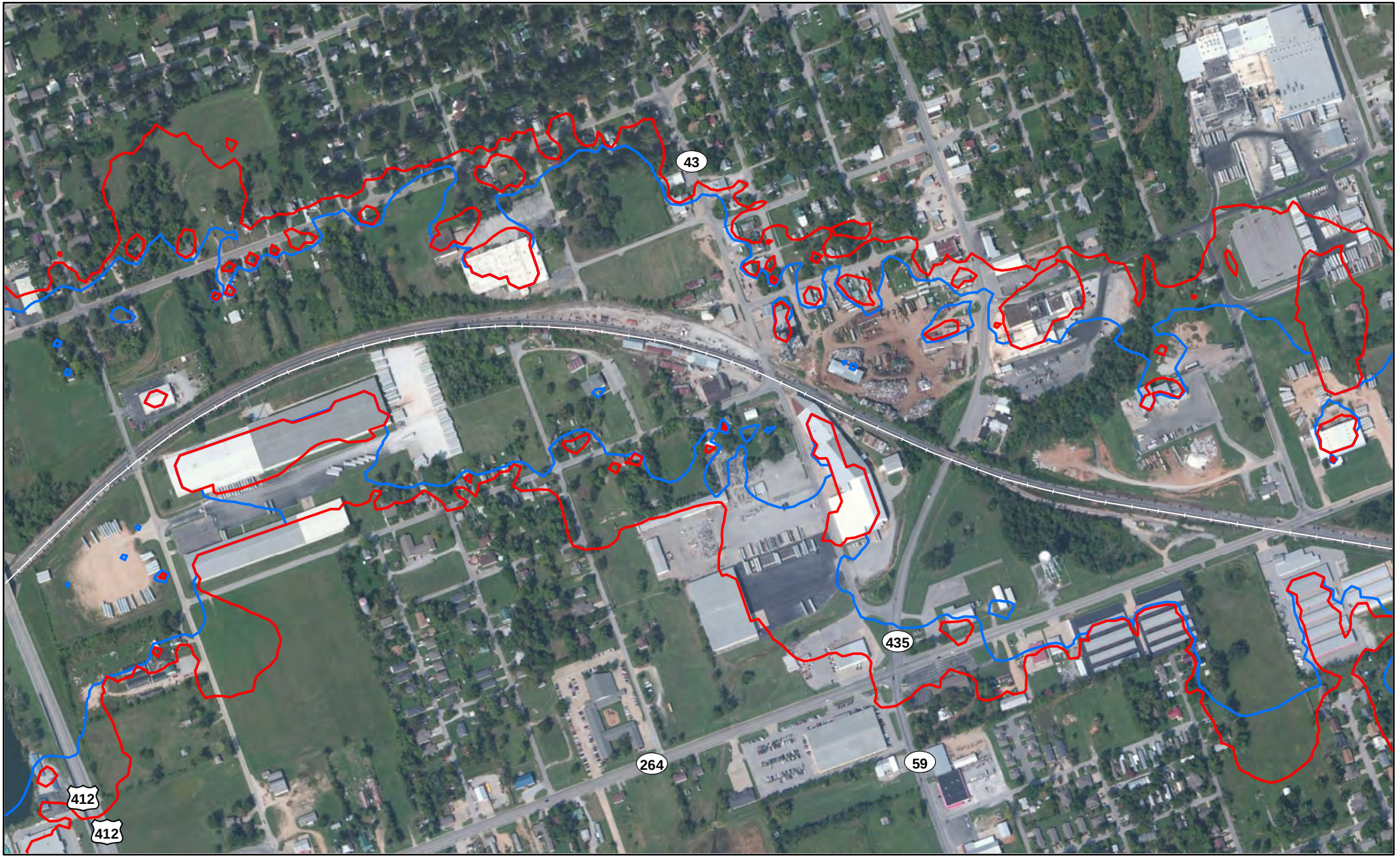
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Noise Contours
Benton County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



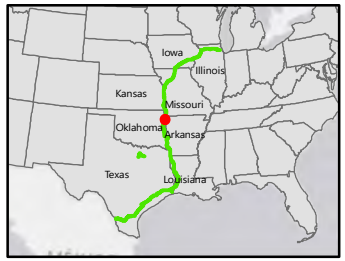
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Noise Contours
Benton County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



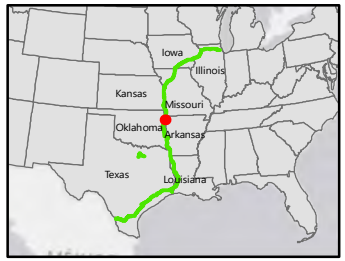
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

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Noise Contours
Benton County, AR

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Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

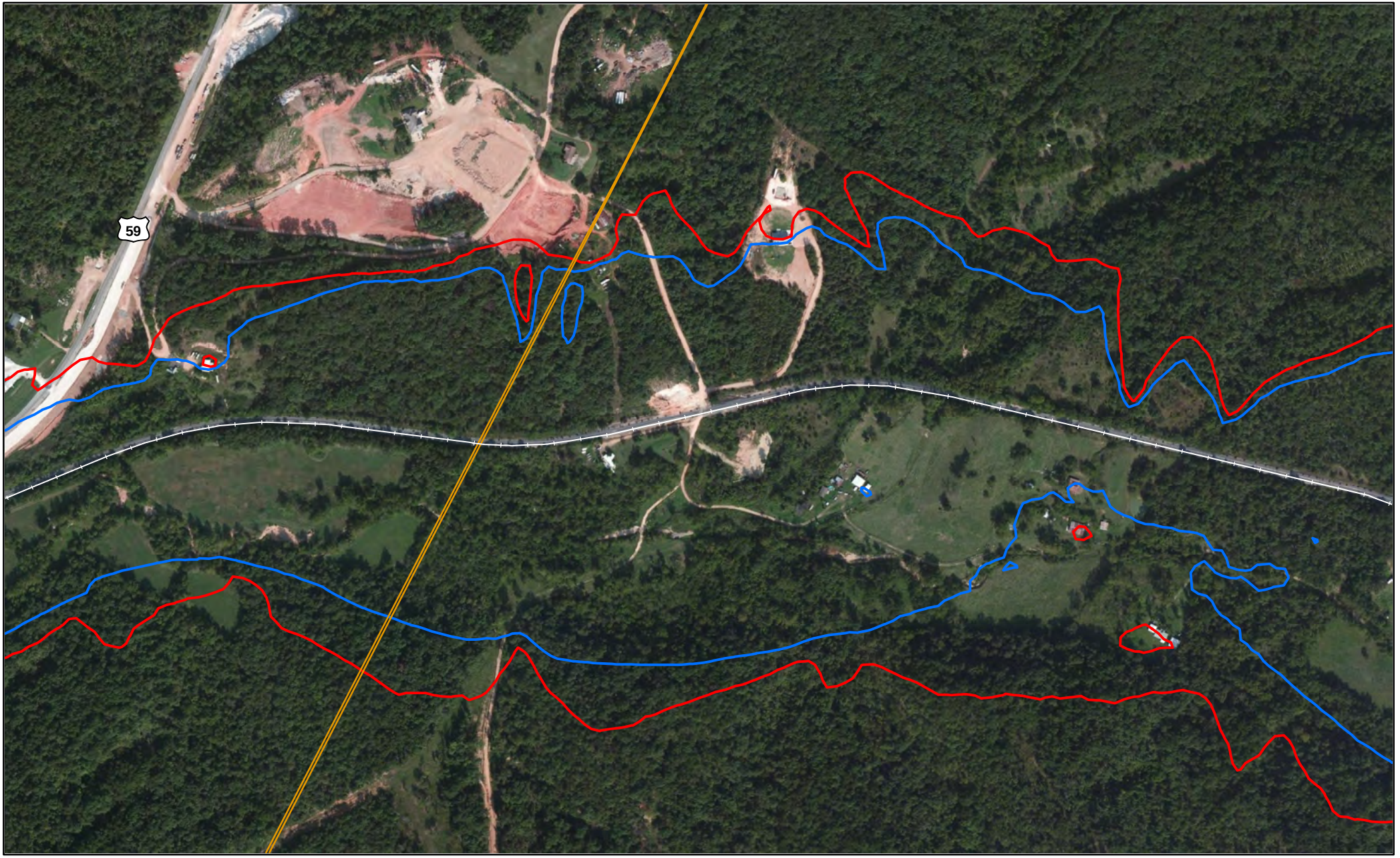
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Noise Contours
Benton County, AR

Miles
0 0.05 0.1



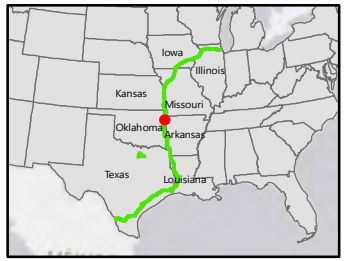
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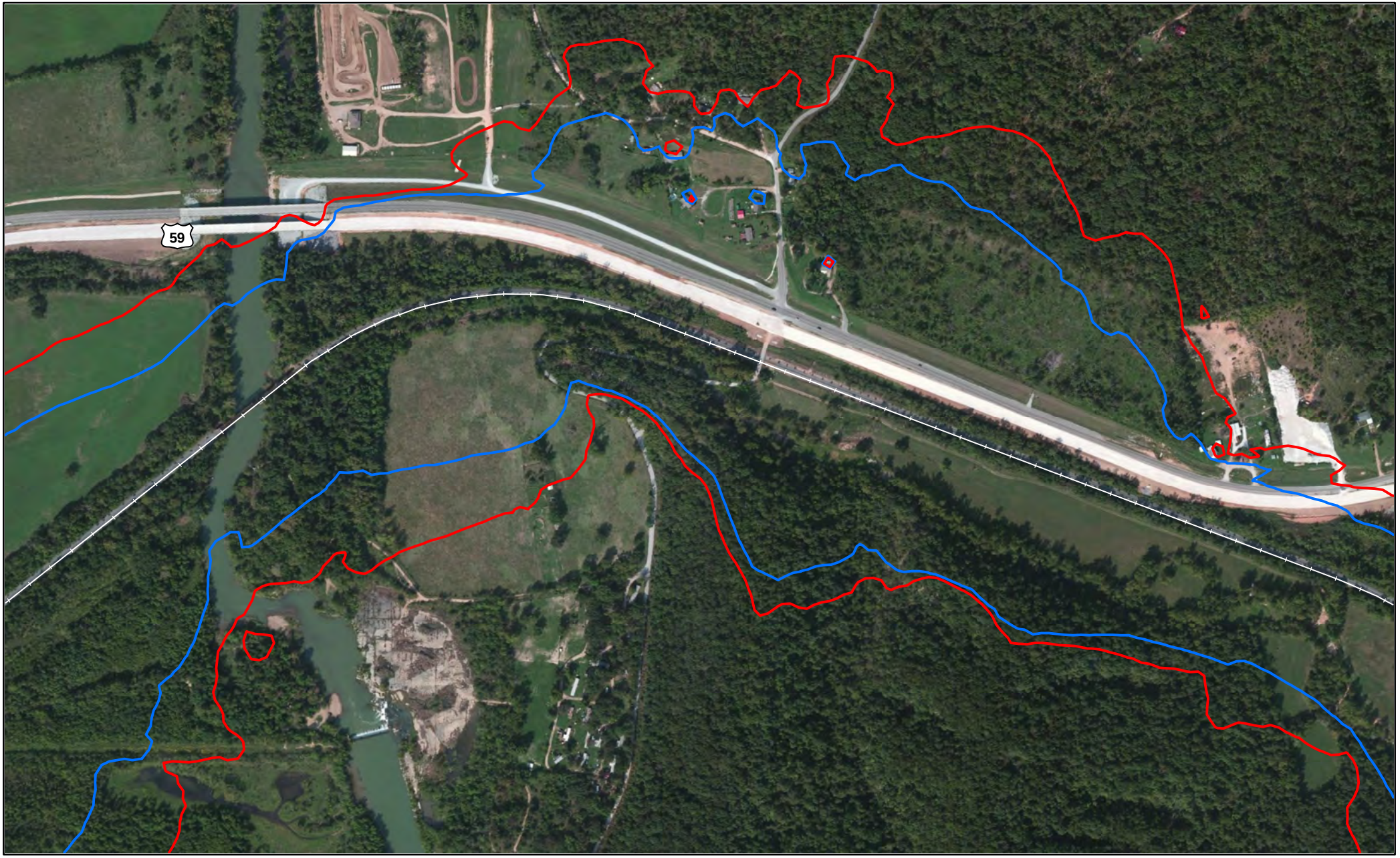
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Noise Contours
Benton County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



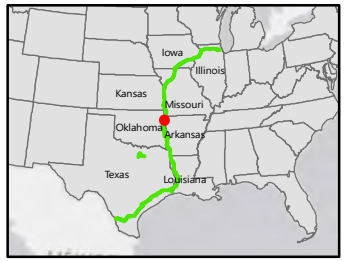
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Tracks

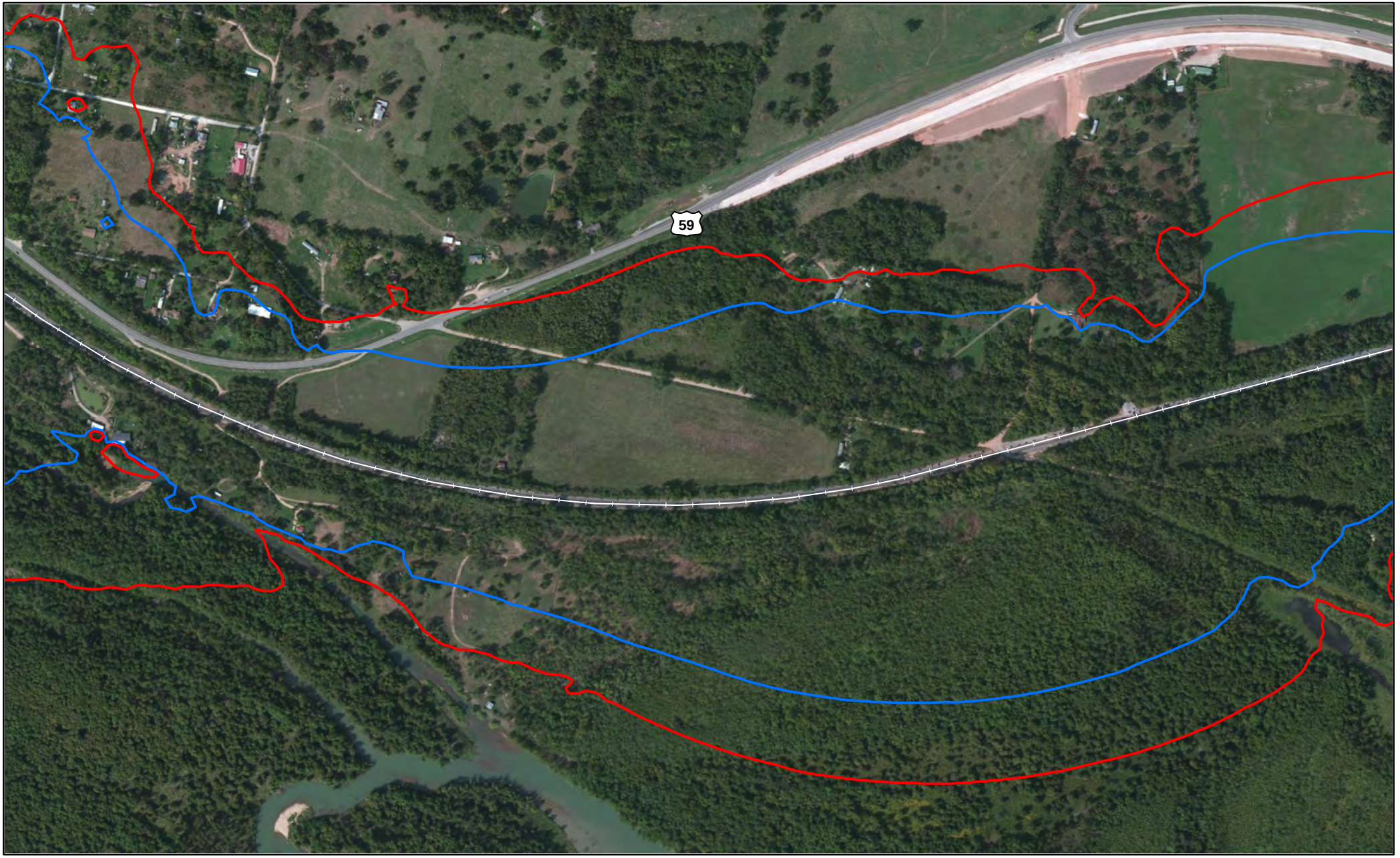
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Noise Contours
Adair County, OK

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Miles
0 0.05 0.1



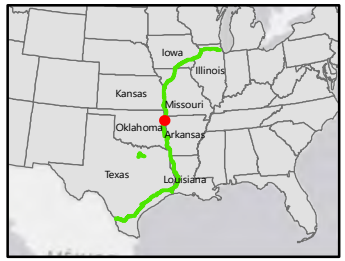
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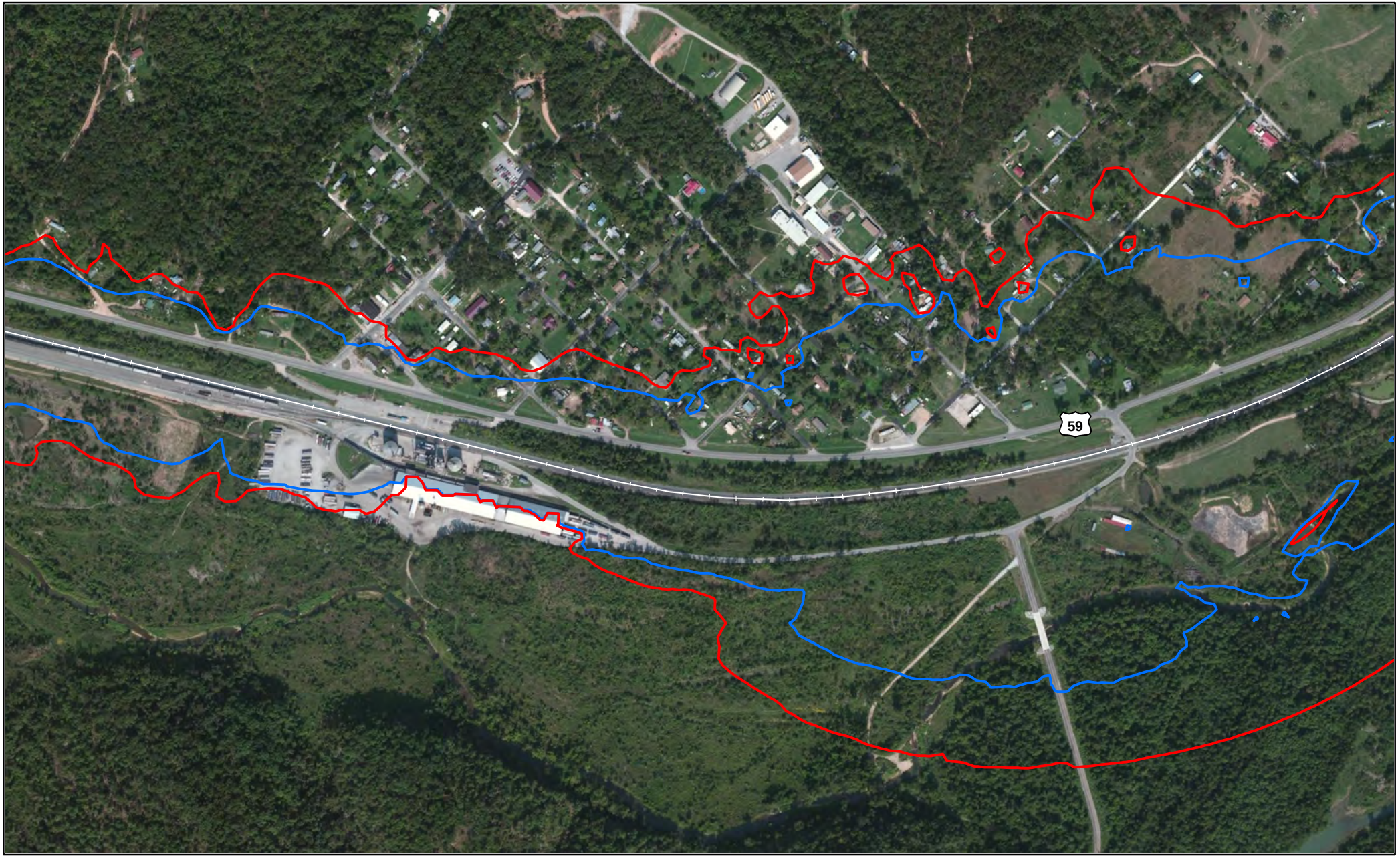
Tracks

Source: ESRI.



Noise Contours
Adair County, OK

Miles
0 0.05 0.1



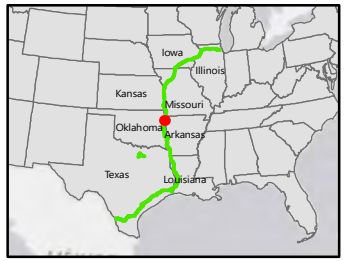
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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

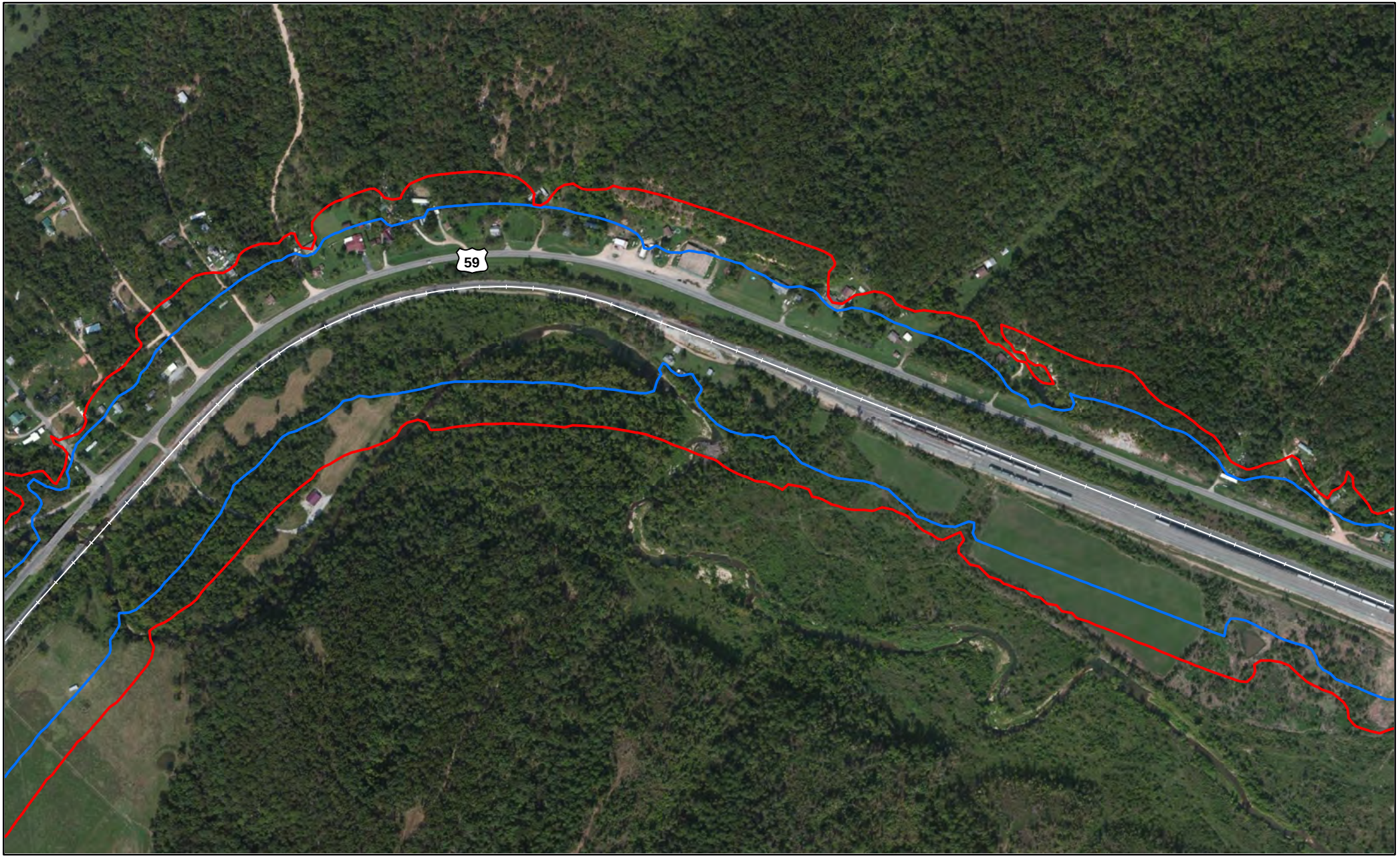
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Noise Contours
Adair County, OK

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



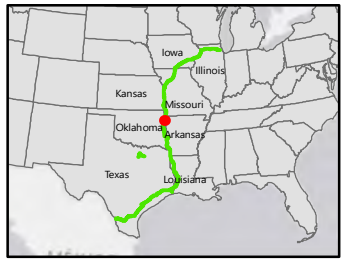
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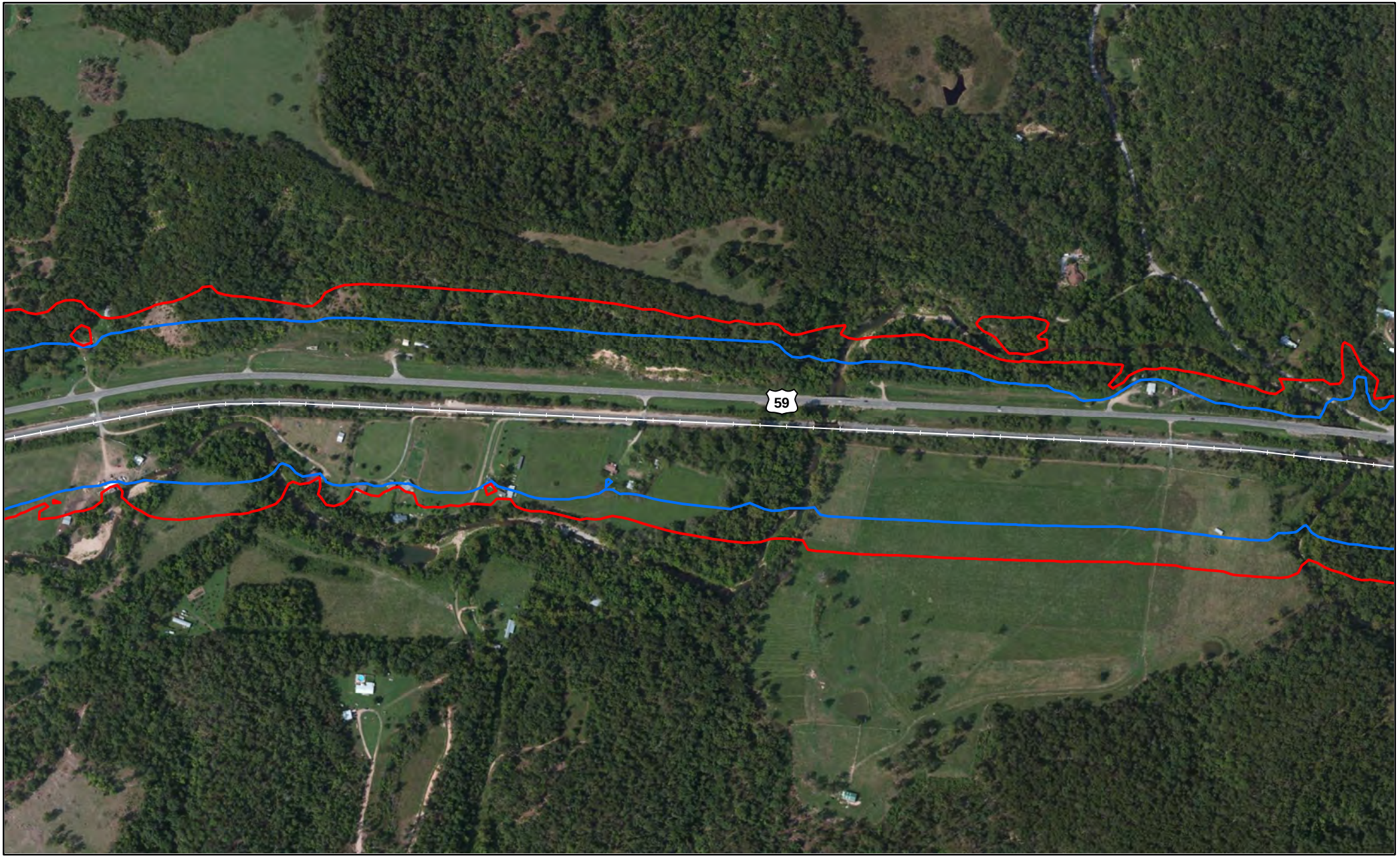
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Noise Contours
Adair County, OK

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



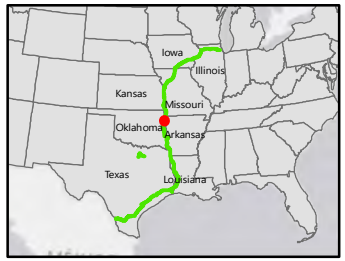
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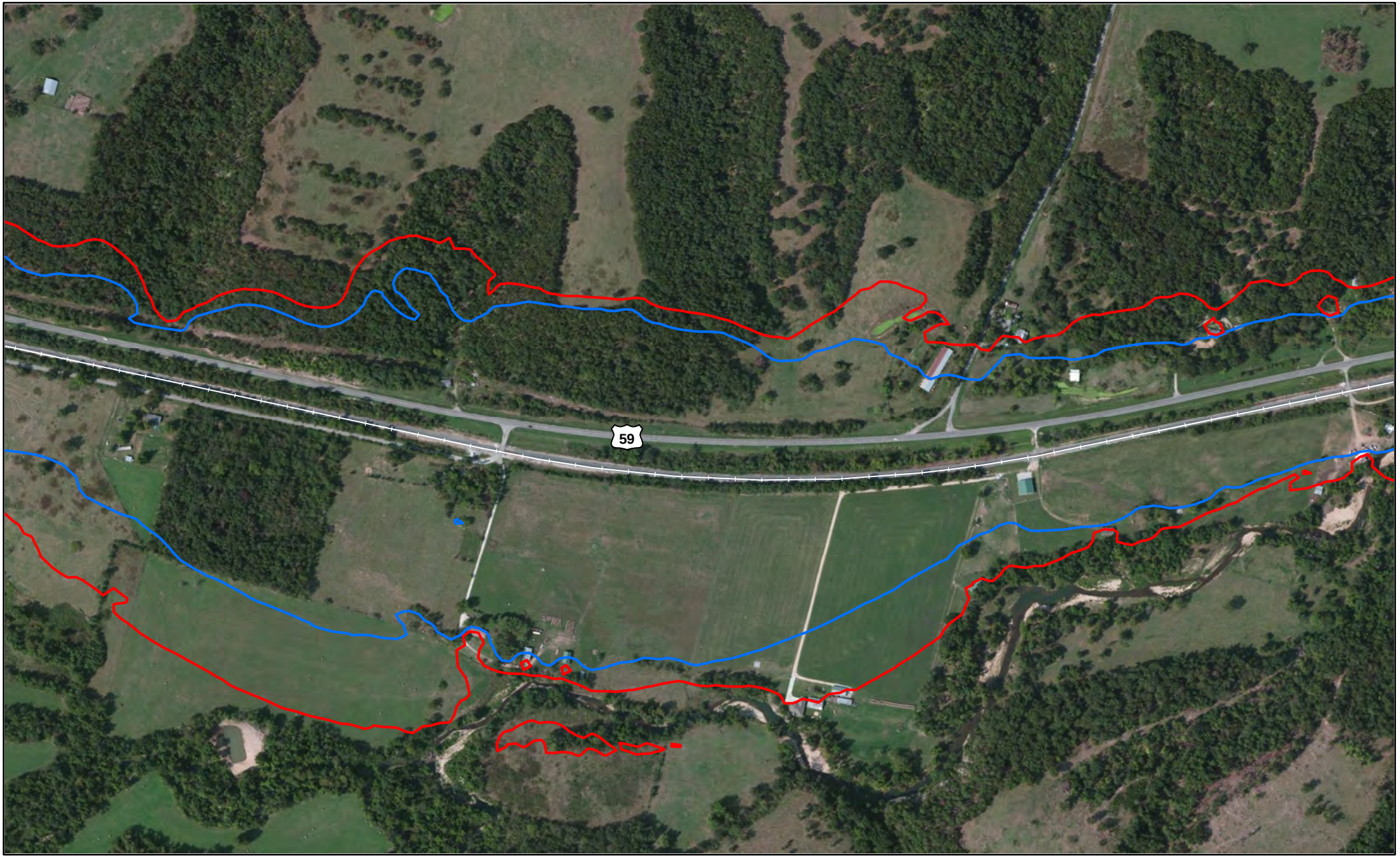


Noise Contours
Adair County, OK

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



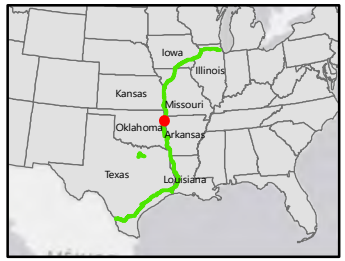
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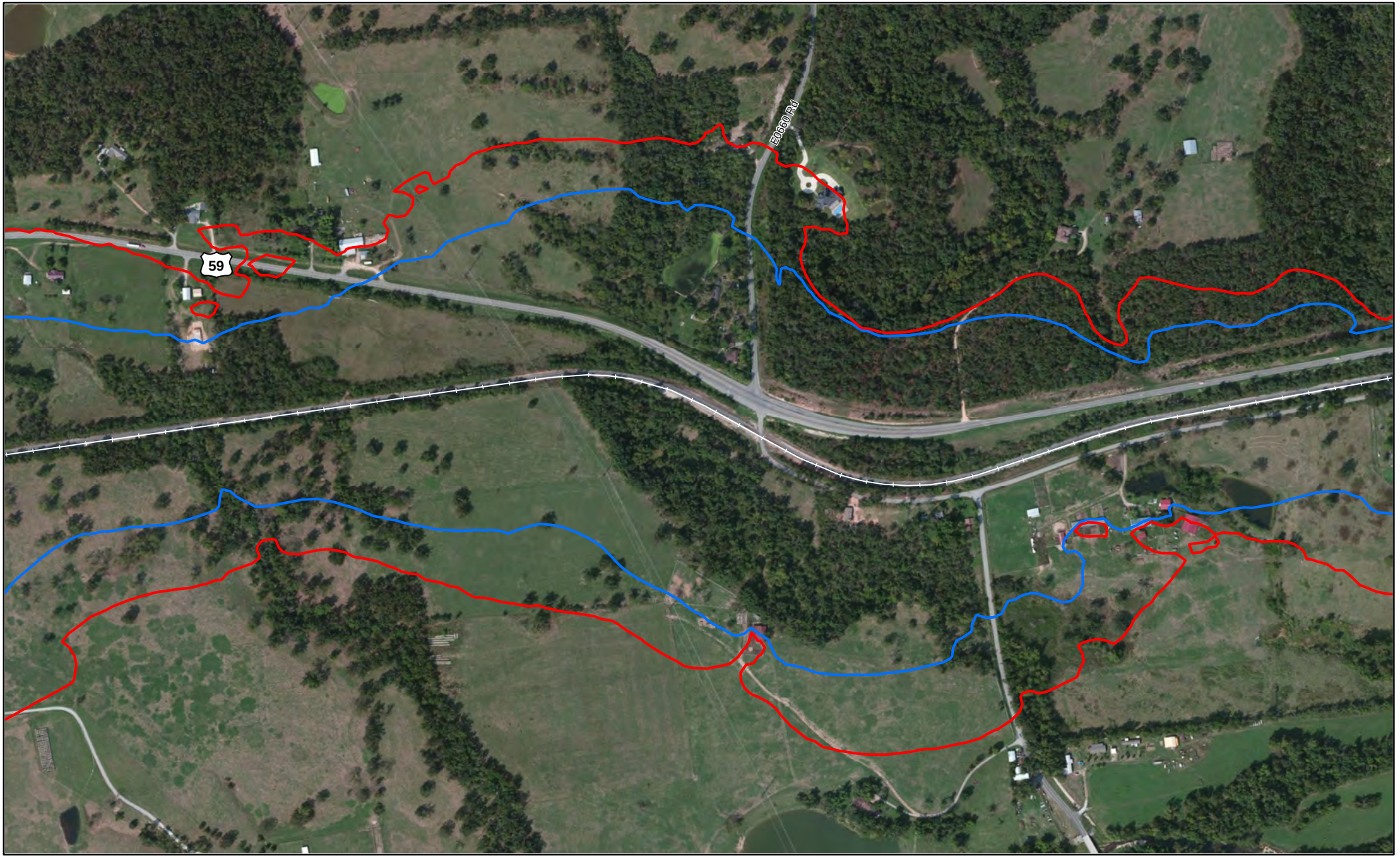


Noise Contours
Adair County, OK

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



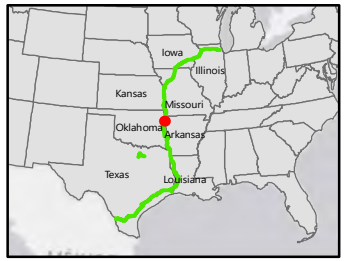
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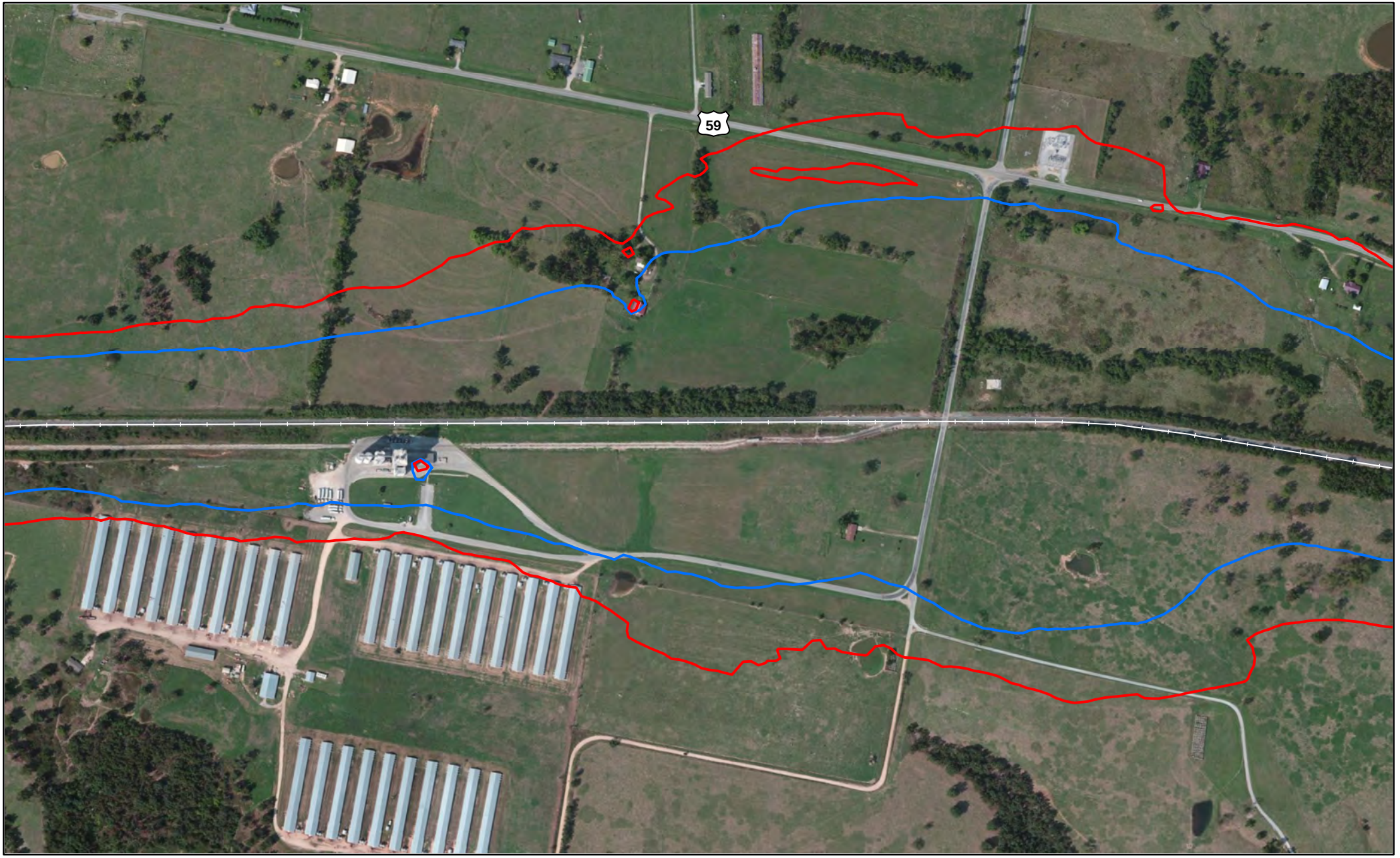
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Noise Contours
Adair County, OK

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



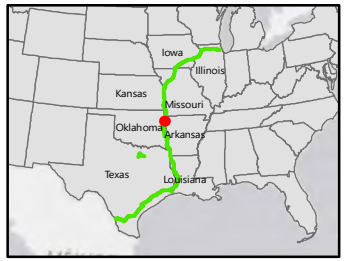
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Adair County, OK

Page 715 of 1588

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



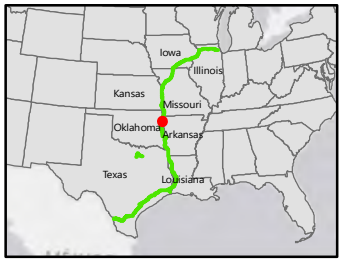
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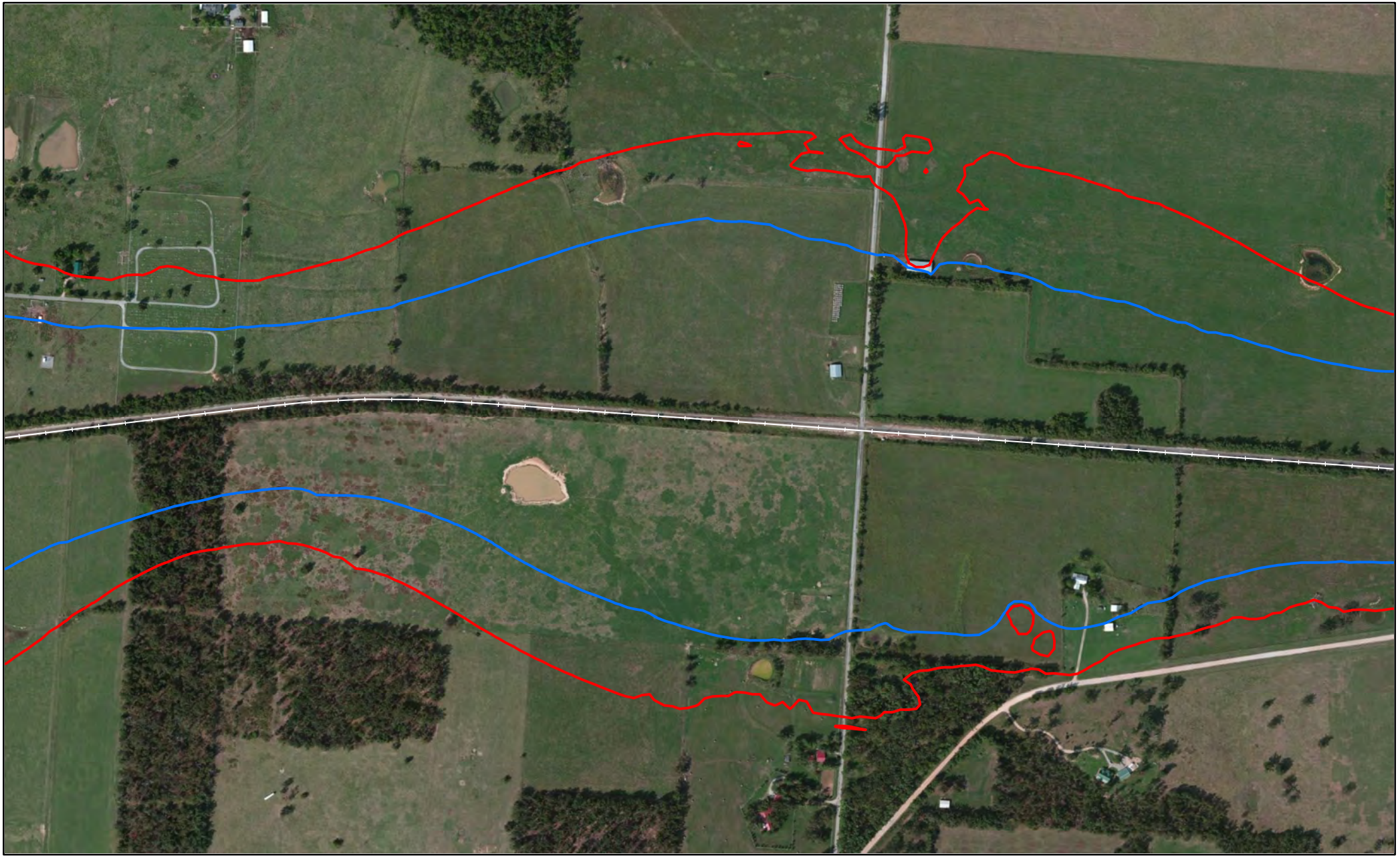


Noise Contours
Adair County, OK

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



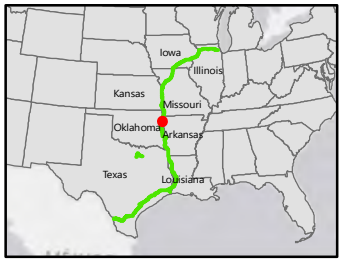
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

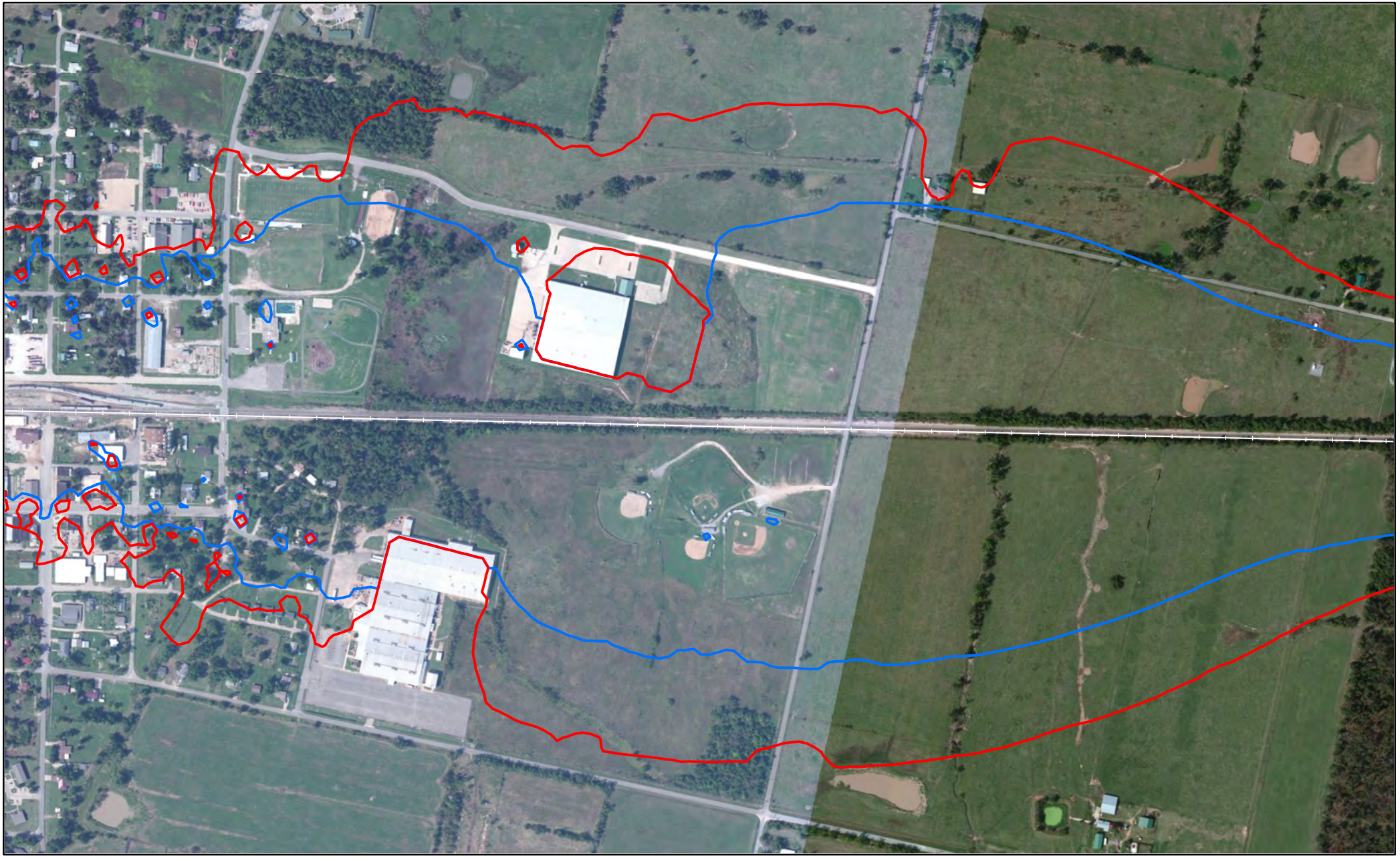


Noise Contours
Adair County, OK

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



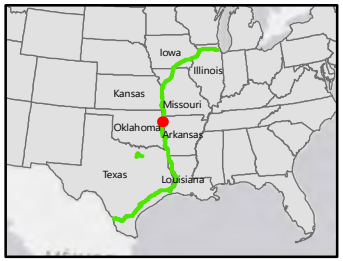
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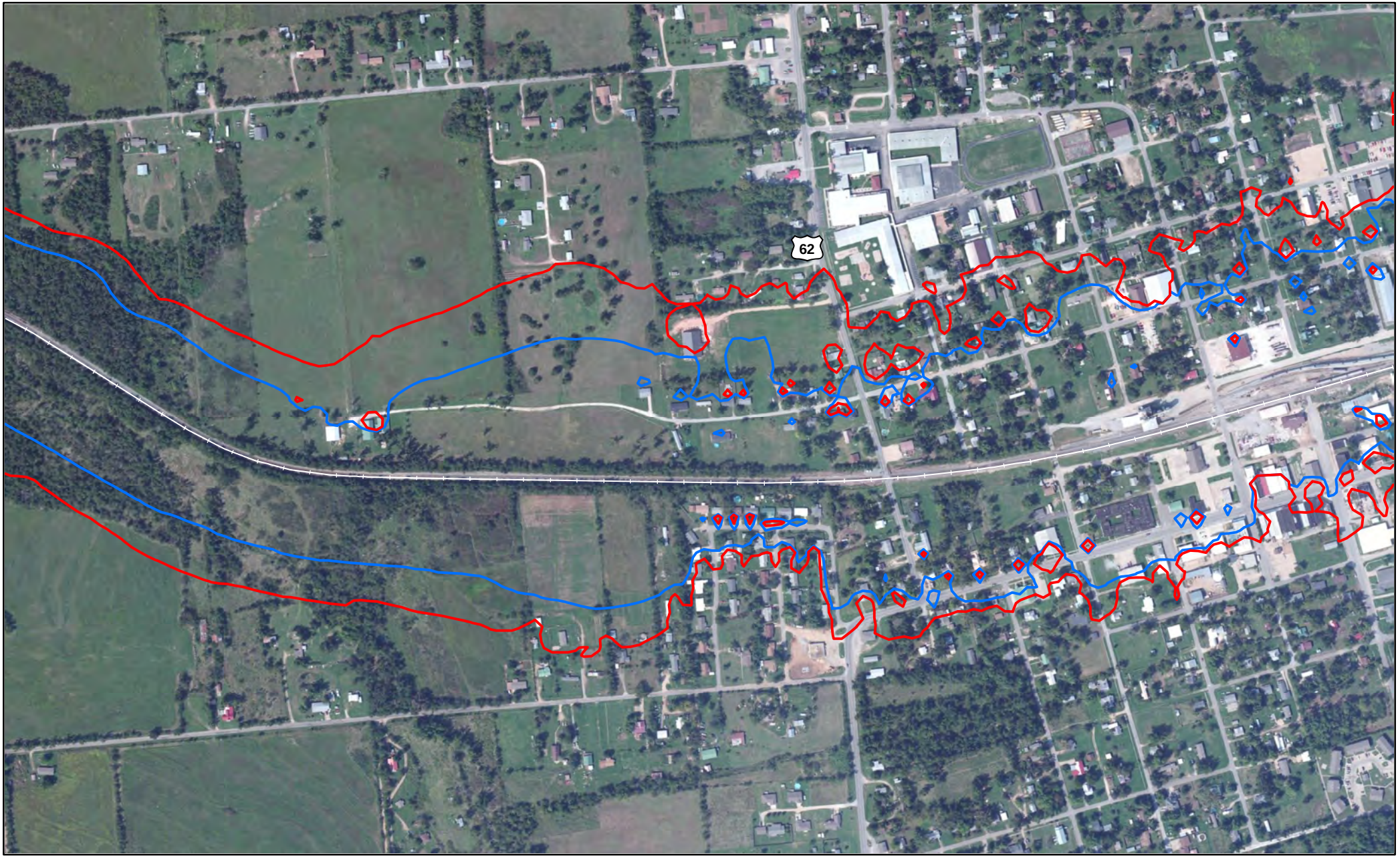
Tracks

Source: ESRI.



Noise Contours
Adair County, OK

Miles
0 0.05 0.1



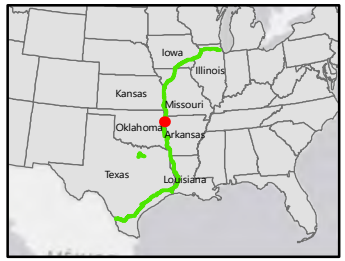
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Adair County, OK

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Miles
0 0.05 0.1

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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

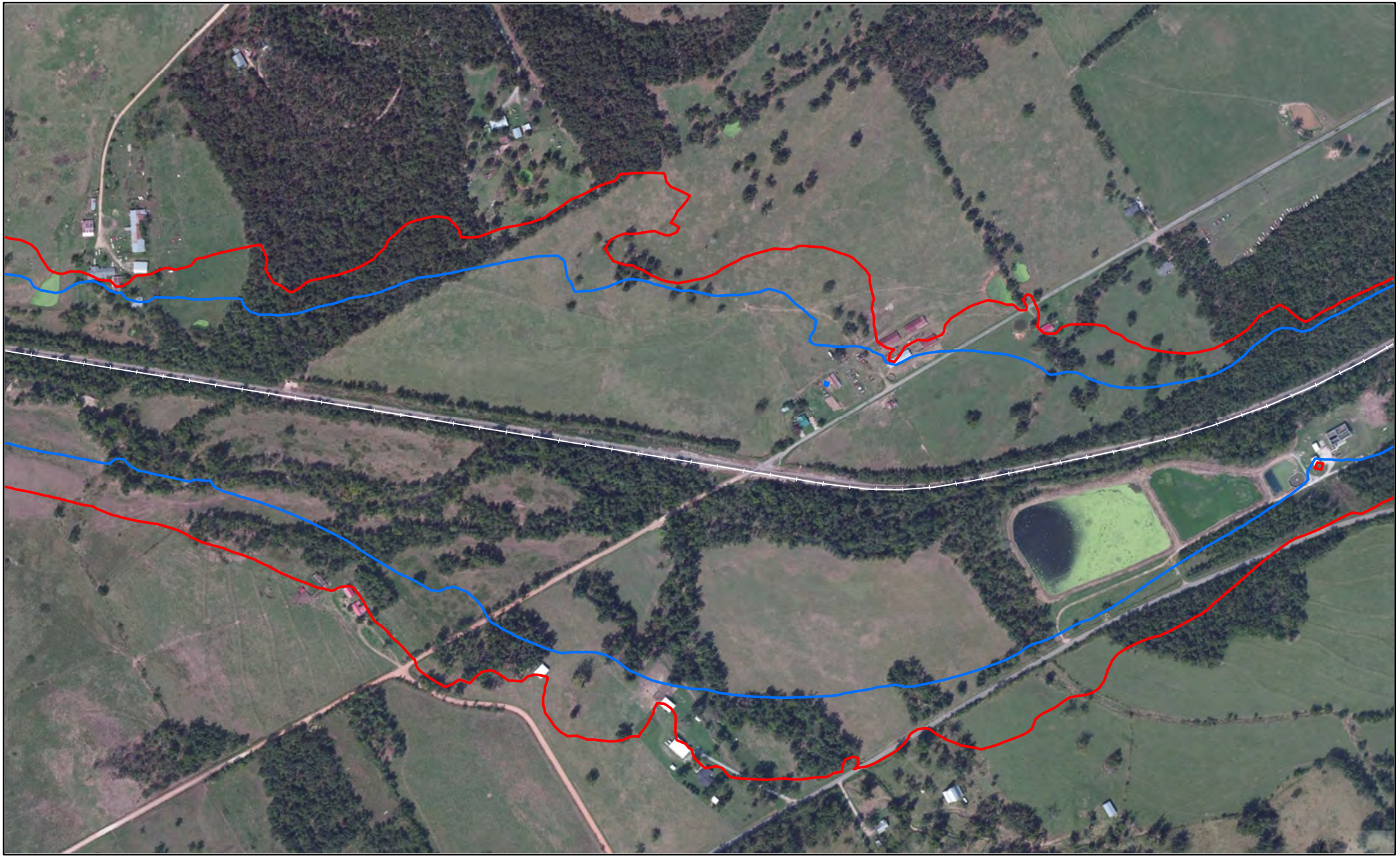
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Noise Contours
Adair County, OK

0 0.05 0.1 Miles



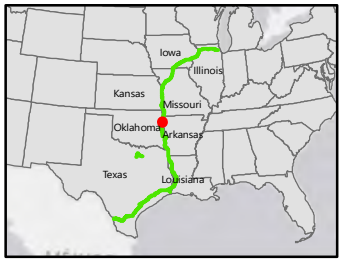
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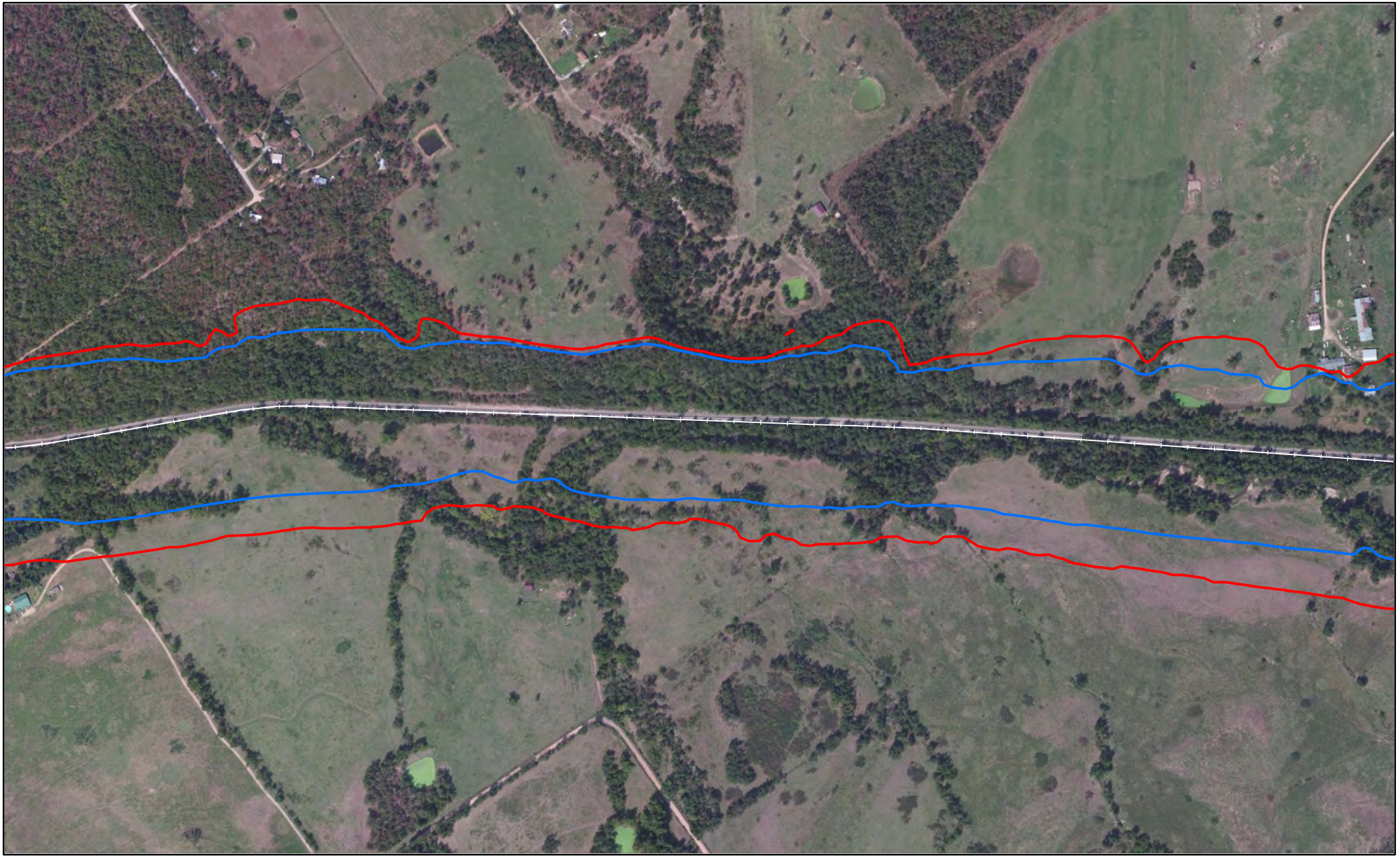


Noise Contours
Adair County, OK

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



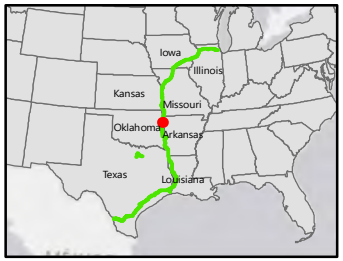
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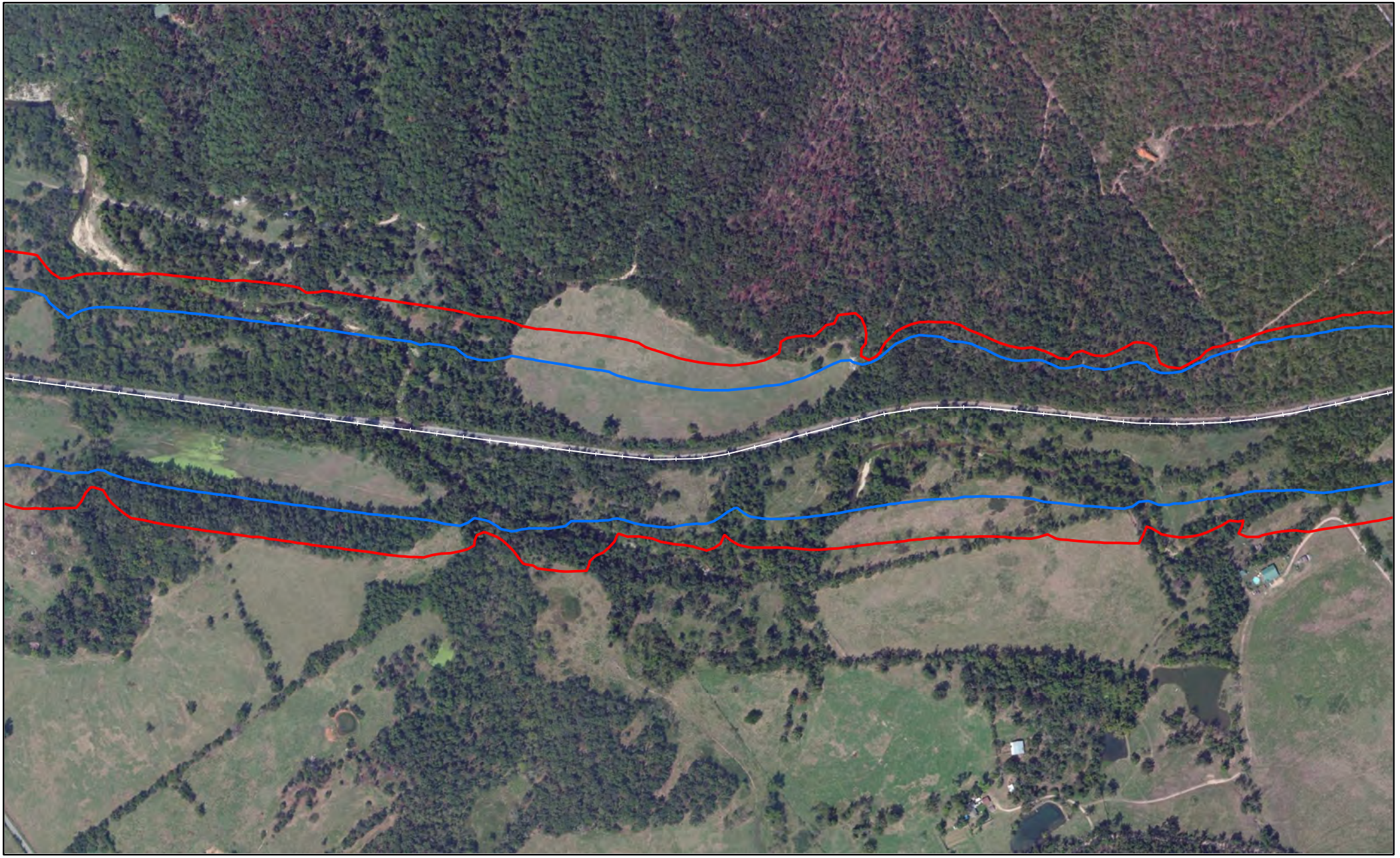
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Source: ESRI.



Noise Contours
Adair County, OK

Miles
0 0.05 0.1



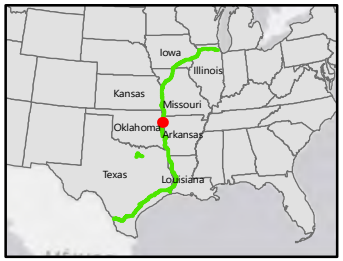
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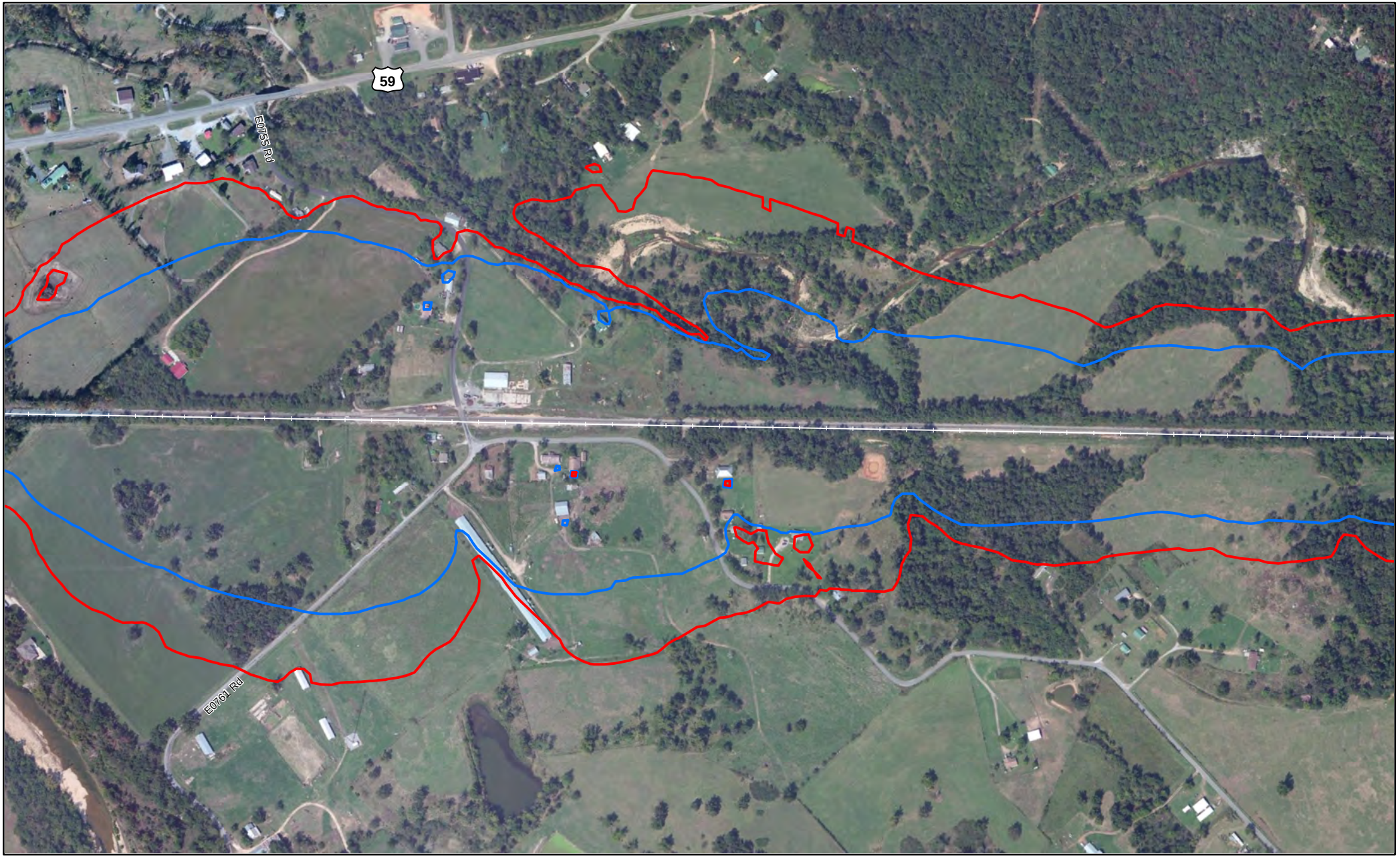
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Noise Contours
Adair County, OK

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



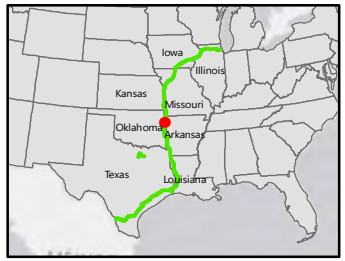
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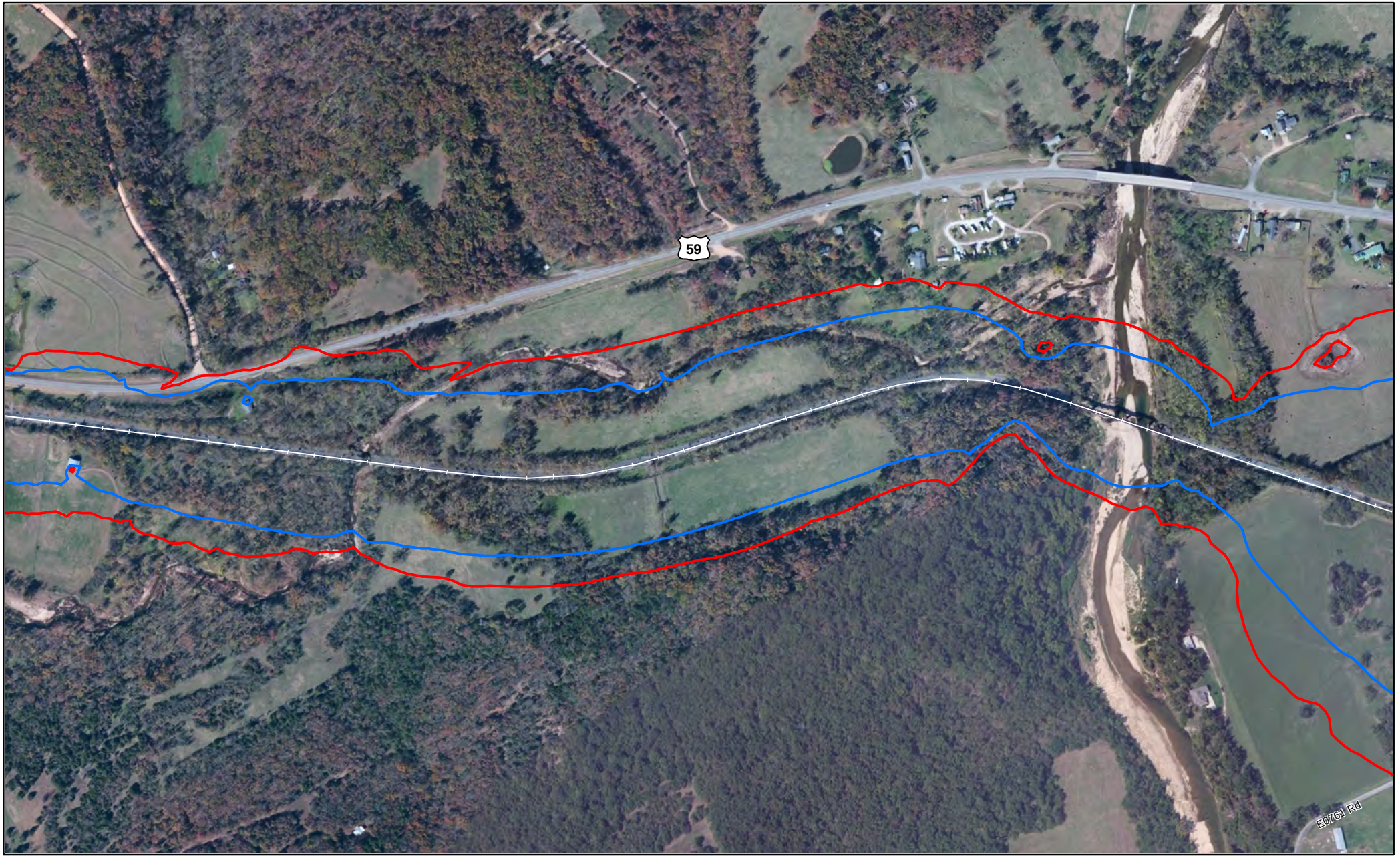
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Noise Contours
Adair County, OK

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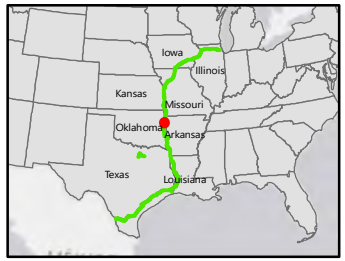
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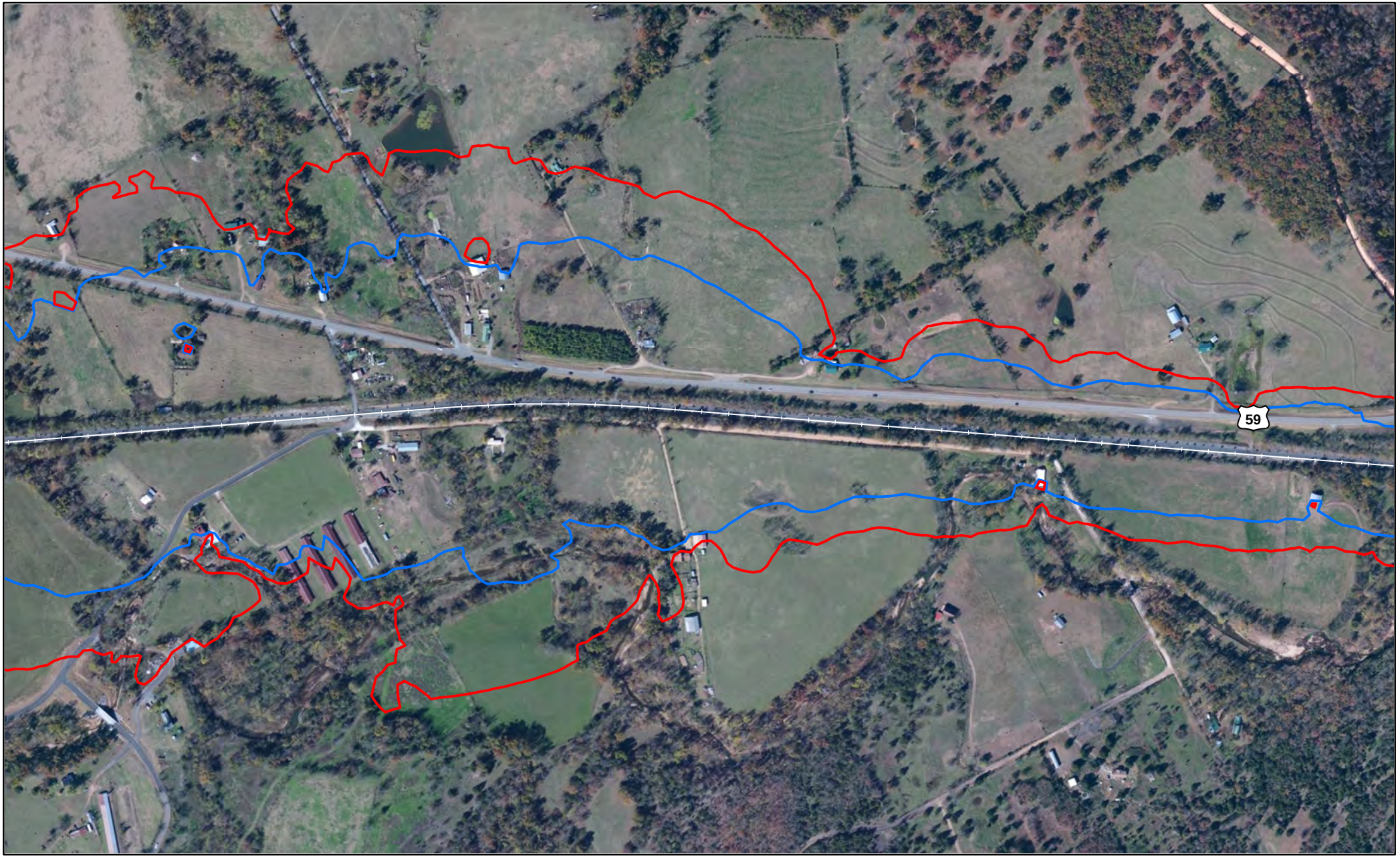
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Noise Contours
Adair County, OK

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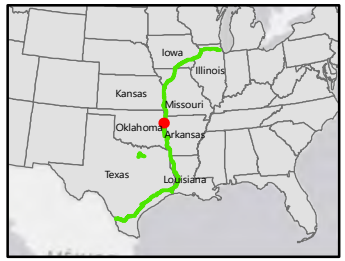
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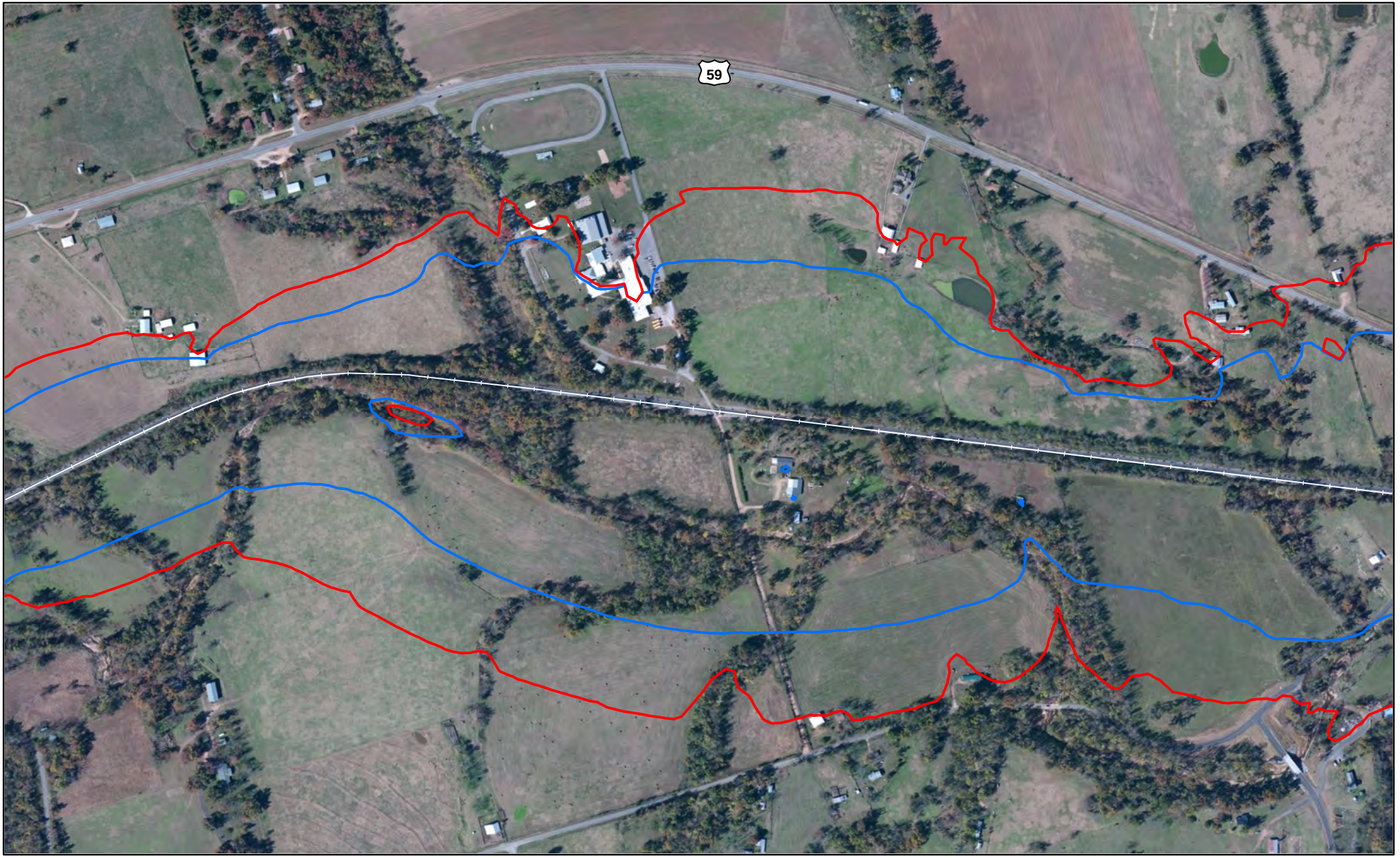
Tracks

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Noise Contours
Adair County, OK

Miles
0 0.05 0.1



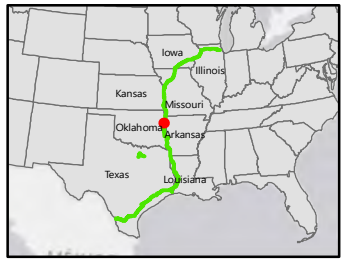
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Noise Contours
Adair County, OK

Miles
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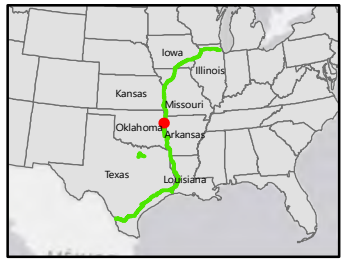
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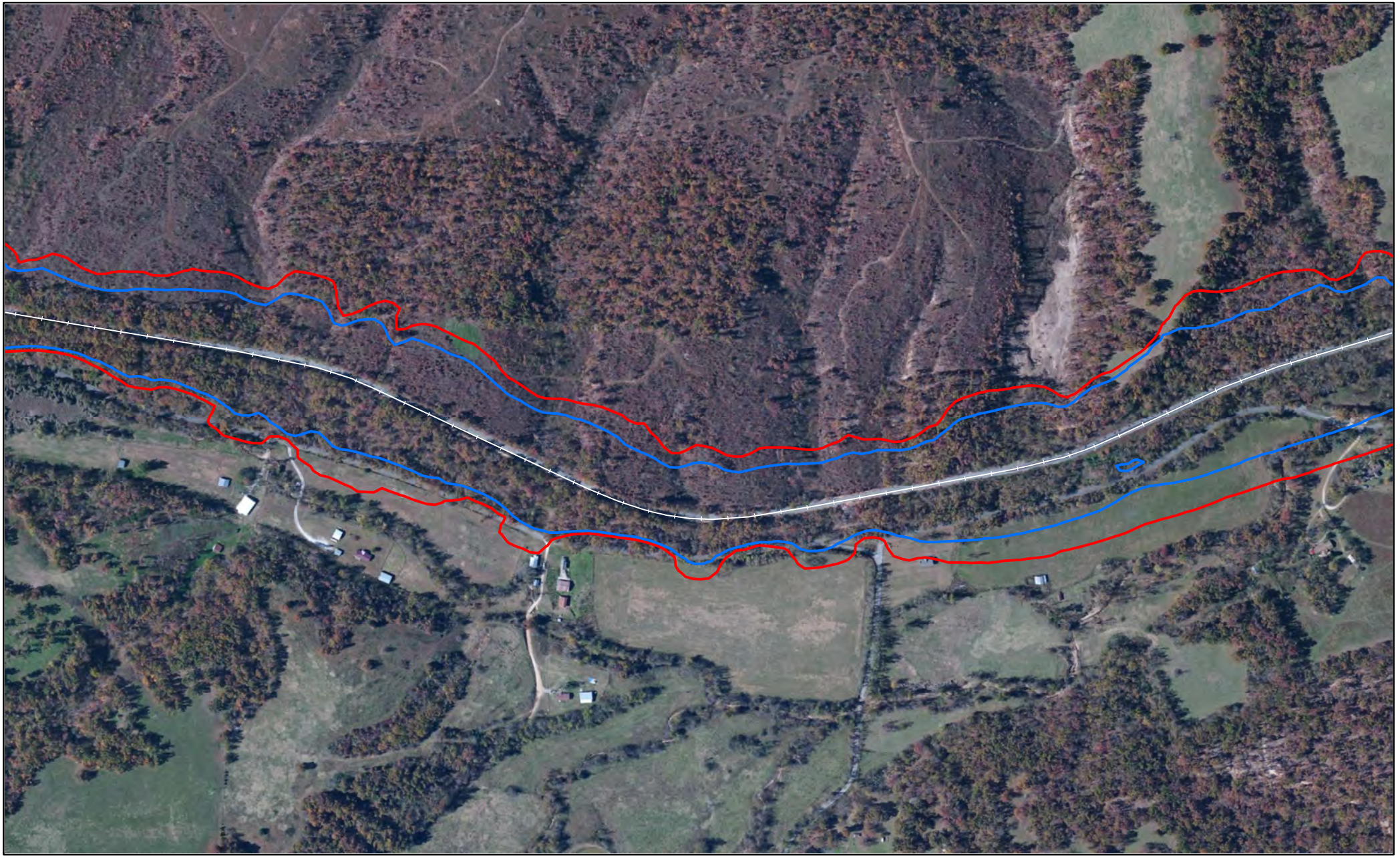
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Noise Contours
Adair County, OK

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



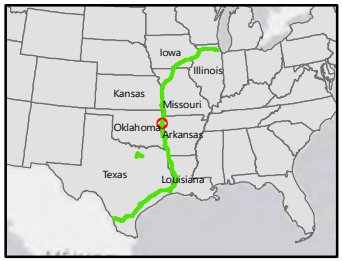
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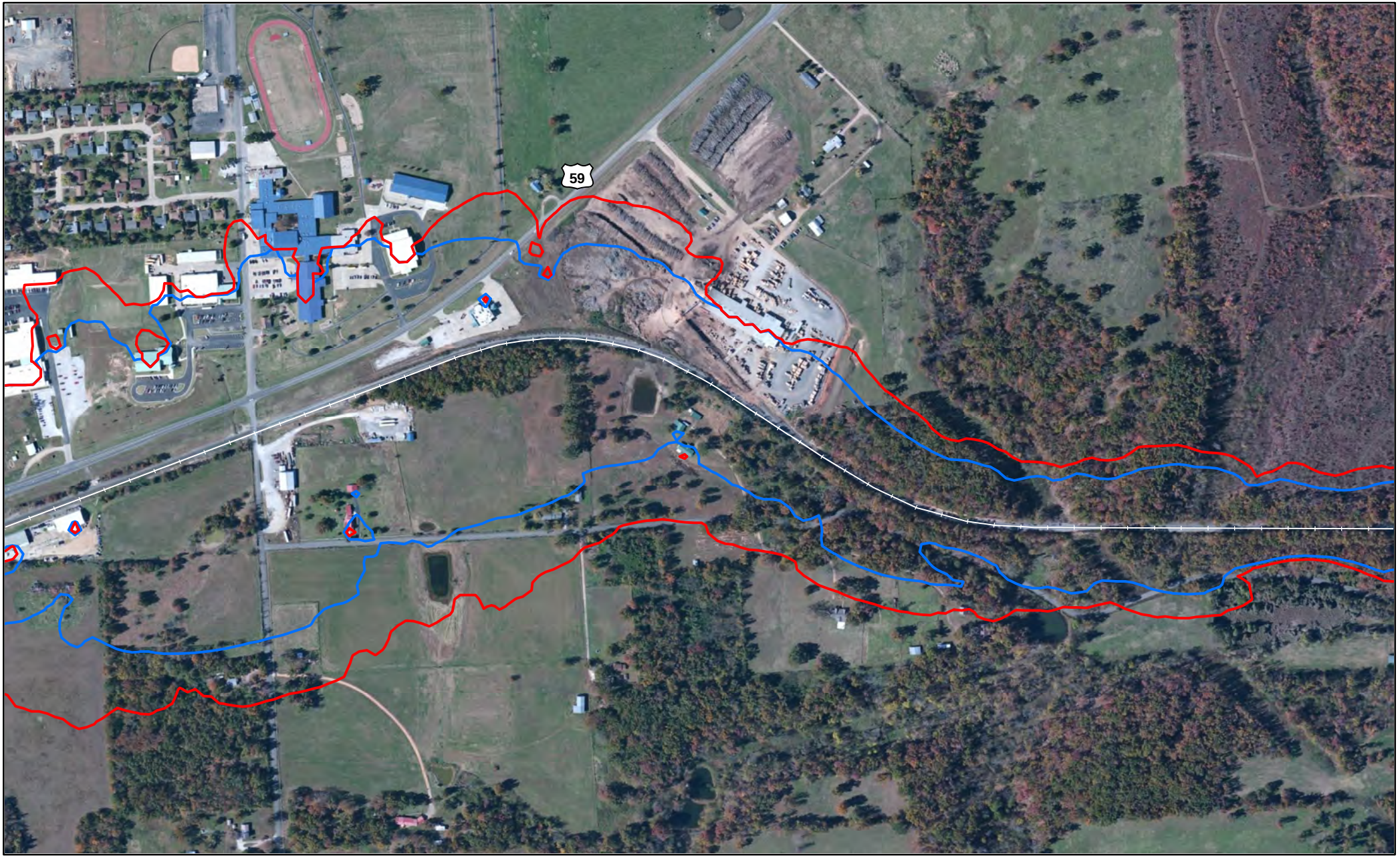
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Noise Contours
Adair County, OK

Miles
0 0.05 0.1



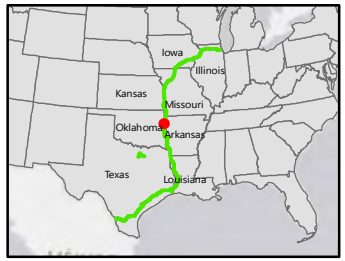
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Adair County, OK

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



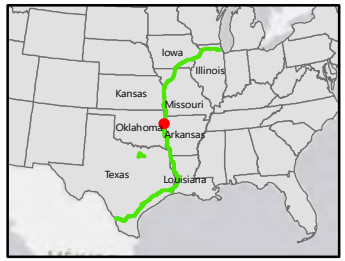
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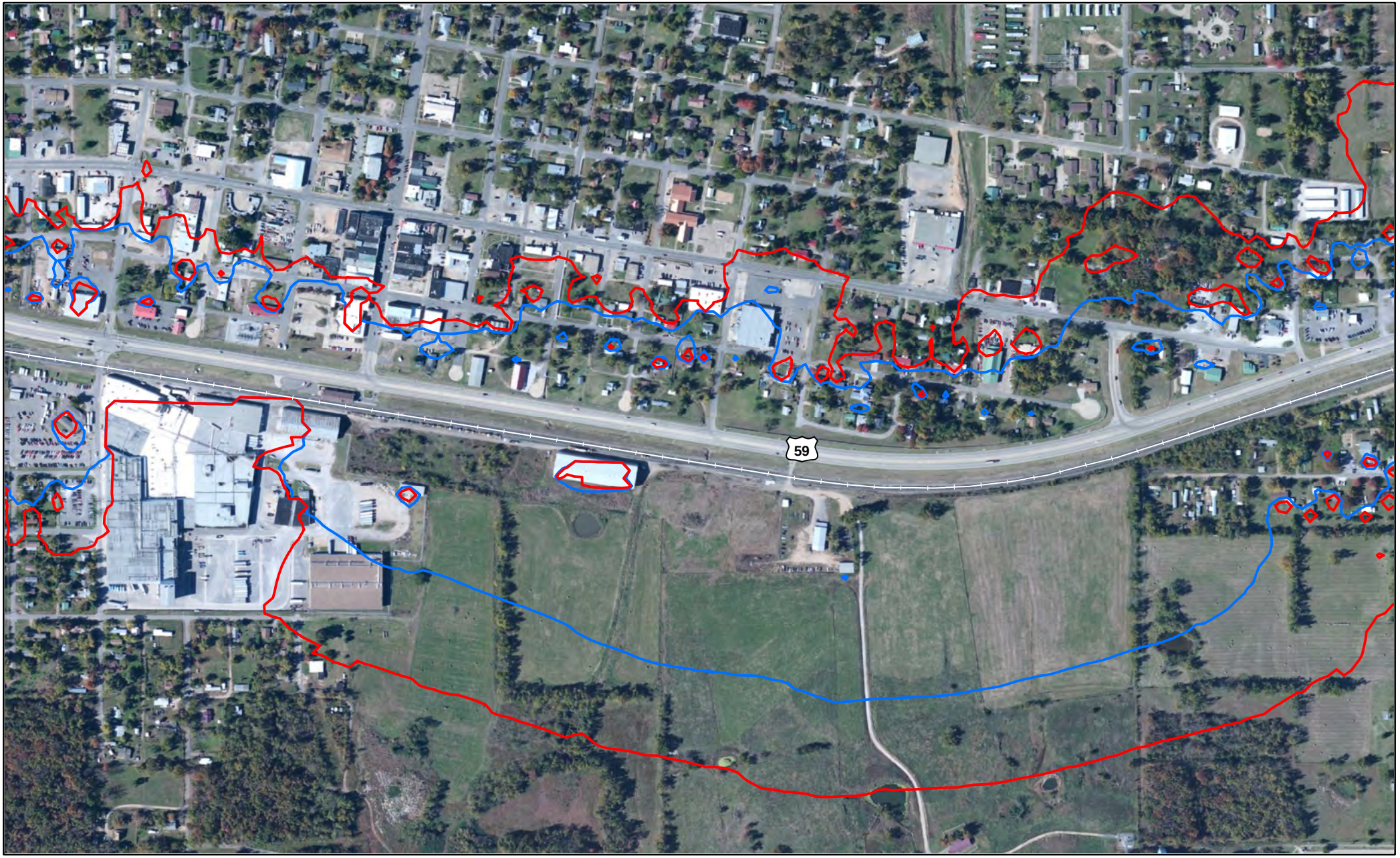
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Noise Contours
Adair County, OK

Miles
0 0.05 0.1



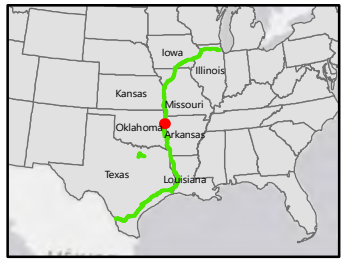
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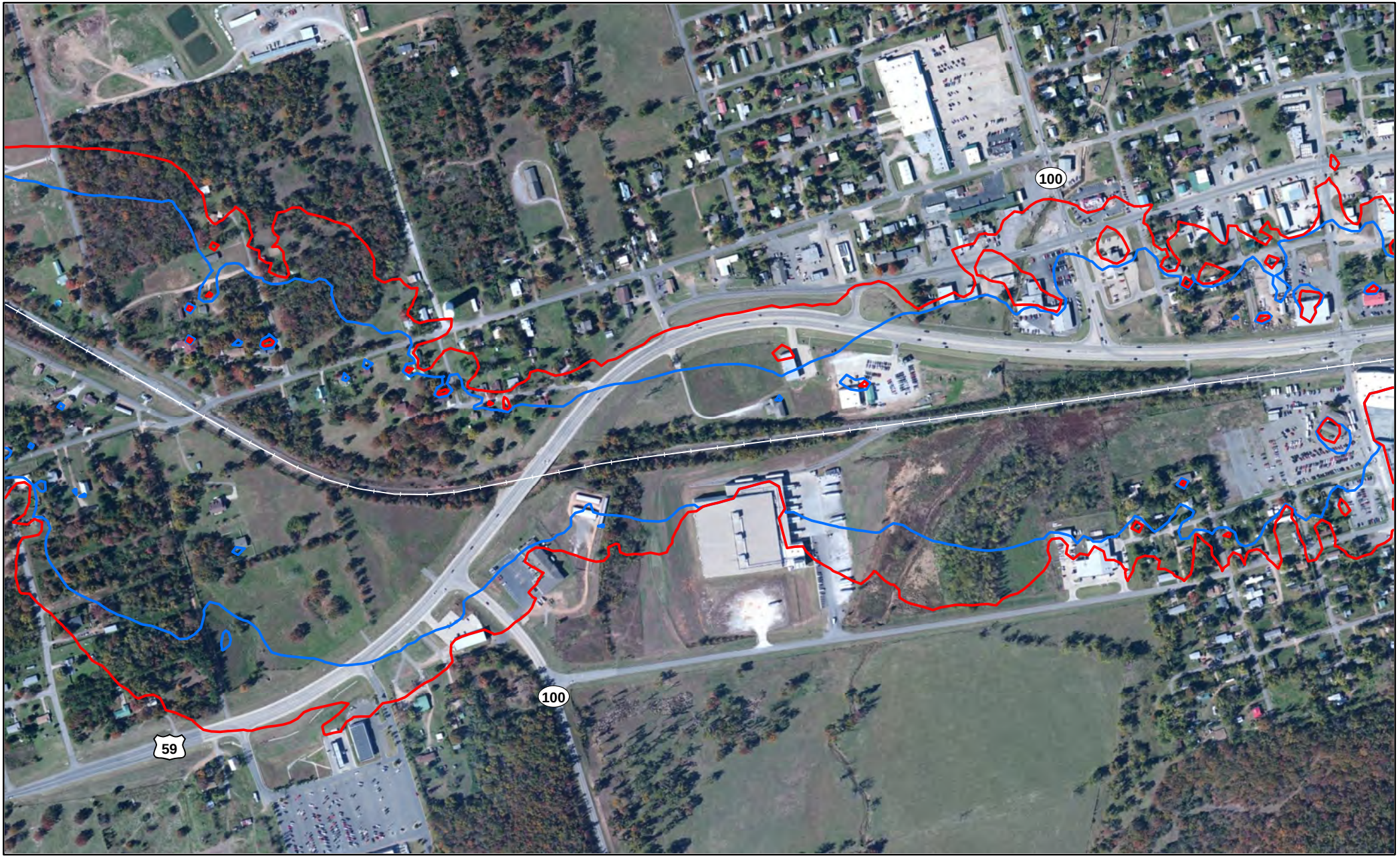
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Noise Contours
Adair County, OK

Miles
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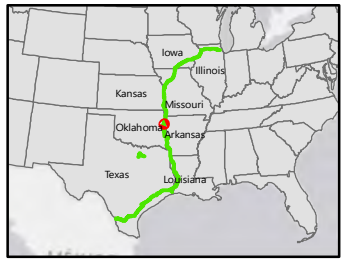
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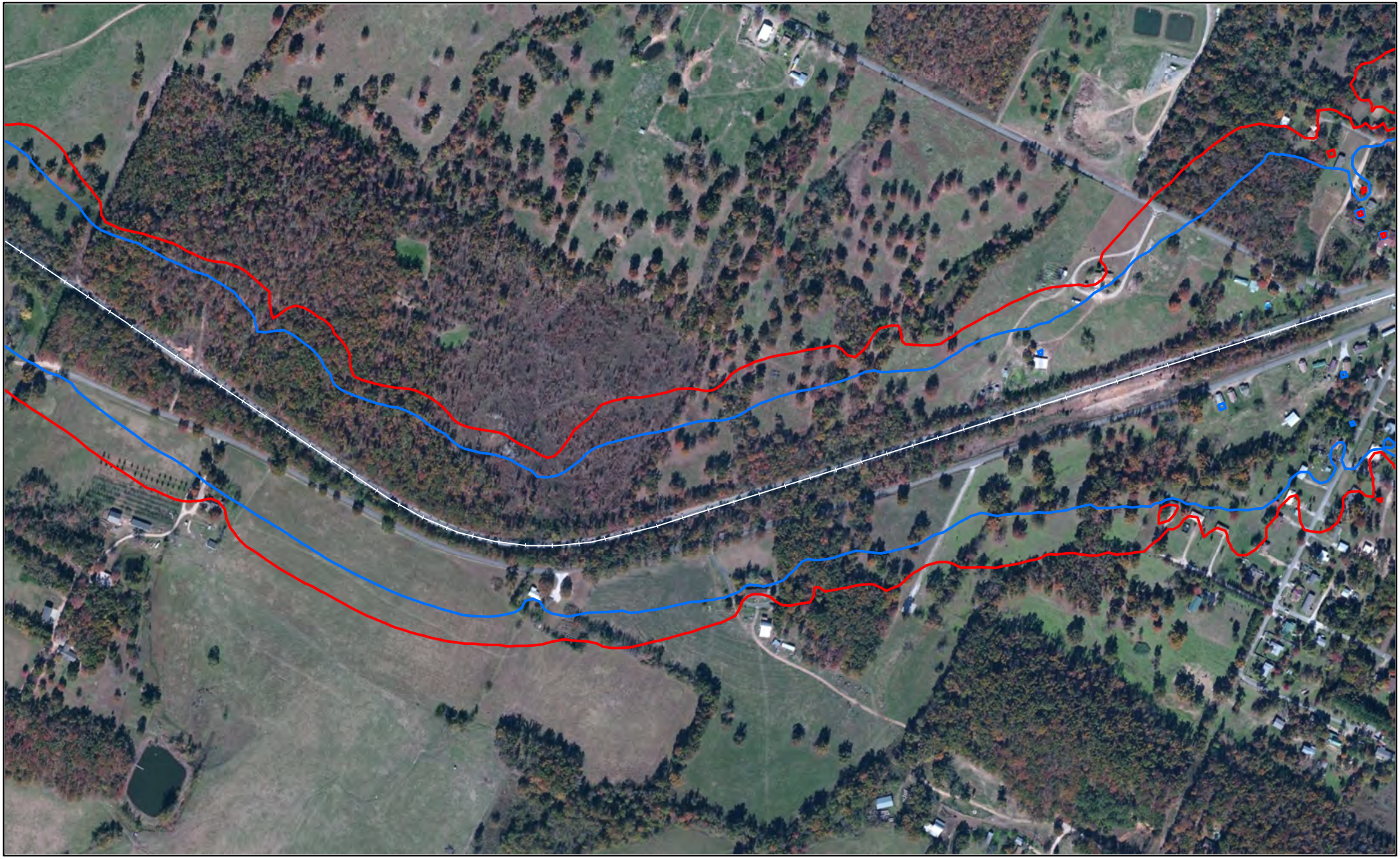
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Noise Contours
Adair County, OK

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



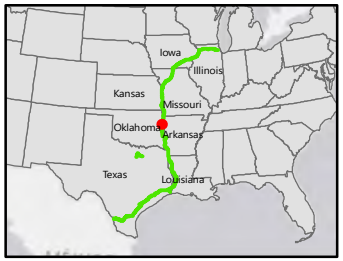
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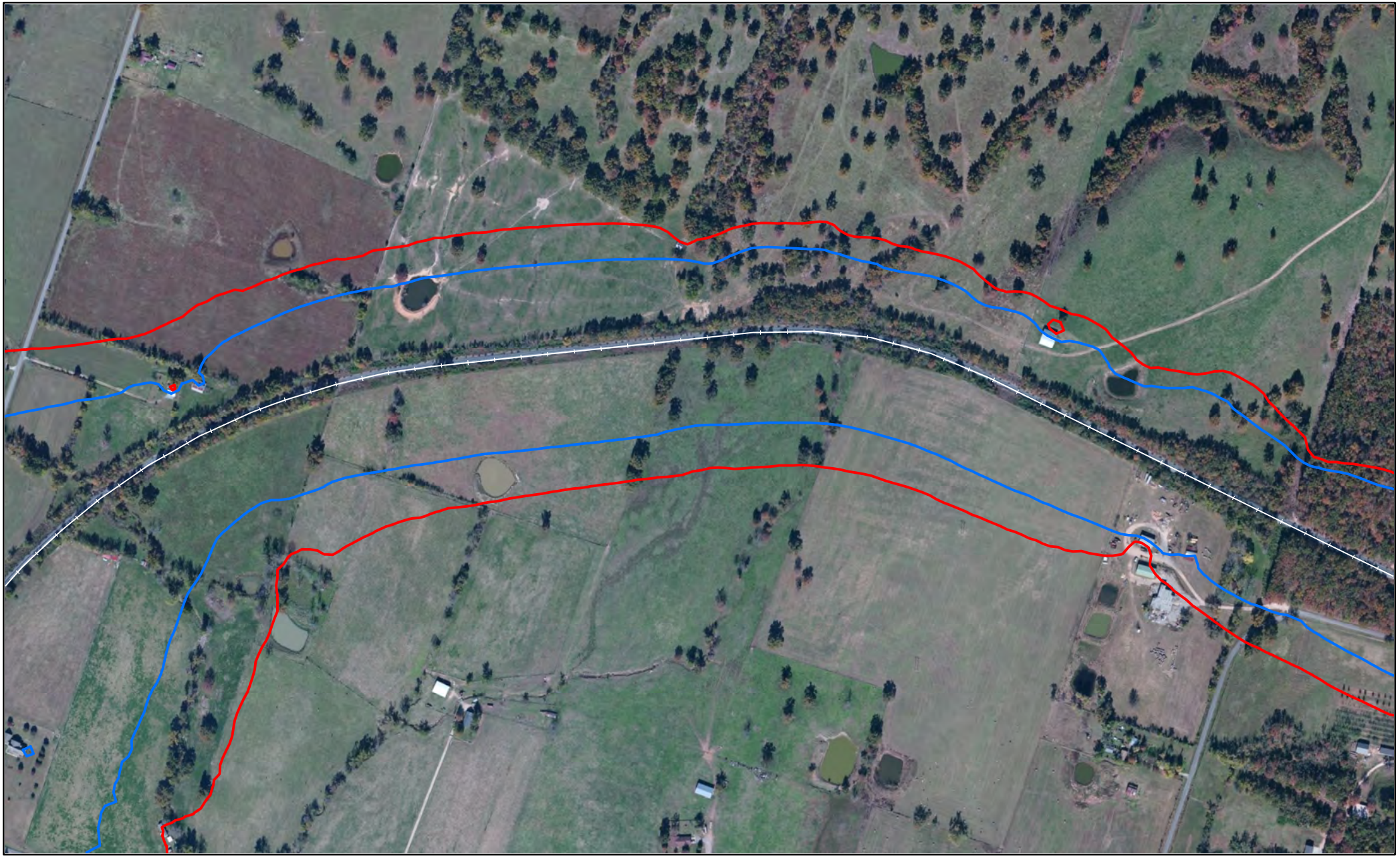
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Noise Contours
Adair County, OK

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Miles
0 0.05 0.1



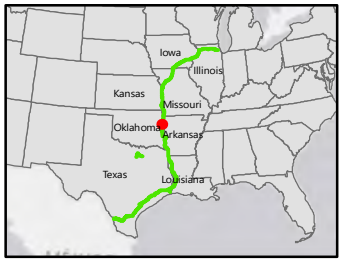
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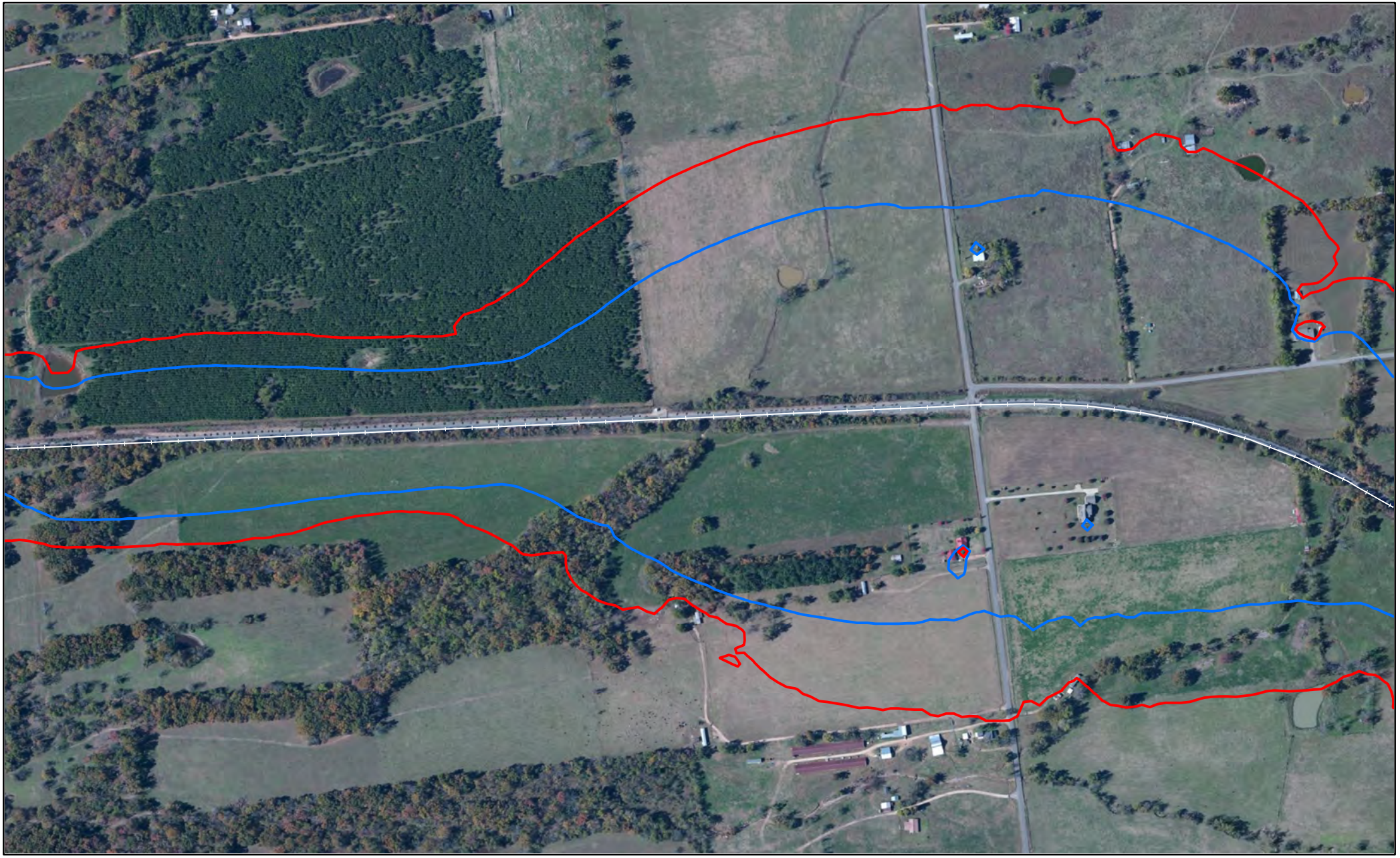
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Noise Contours
Adair County, OK

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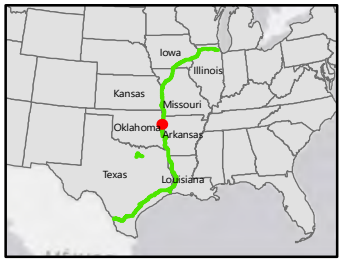
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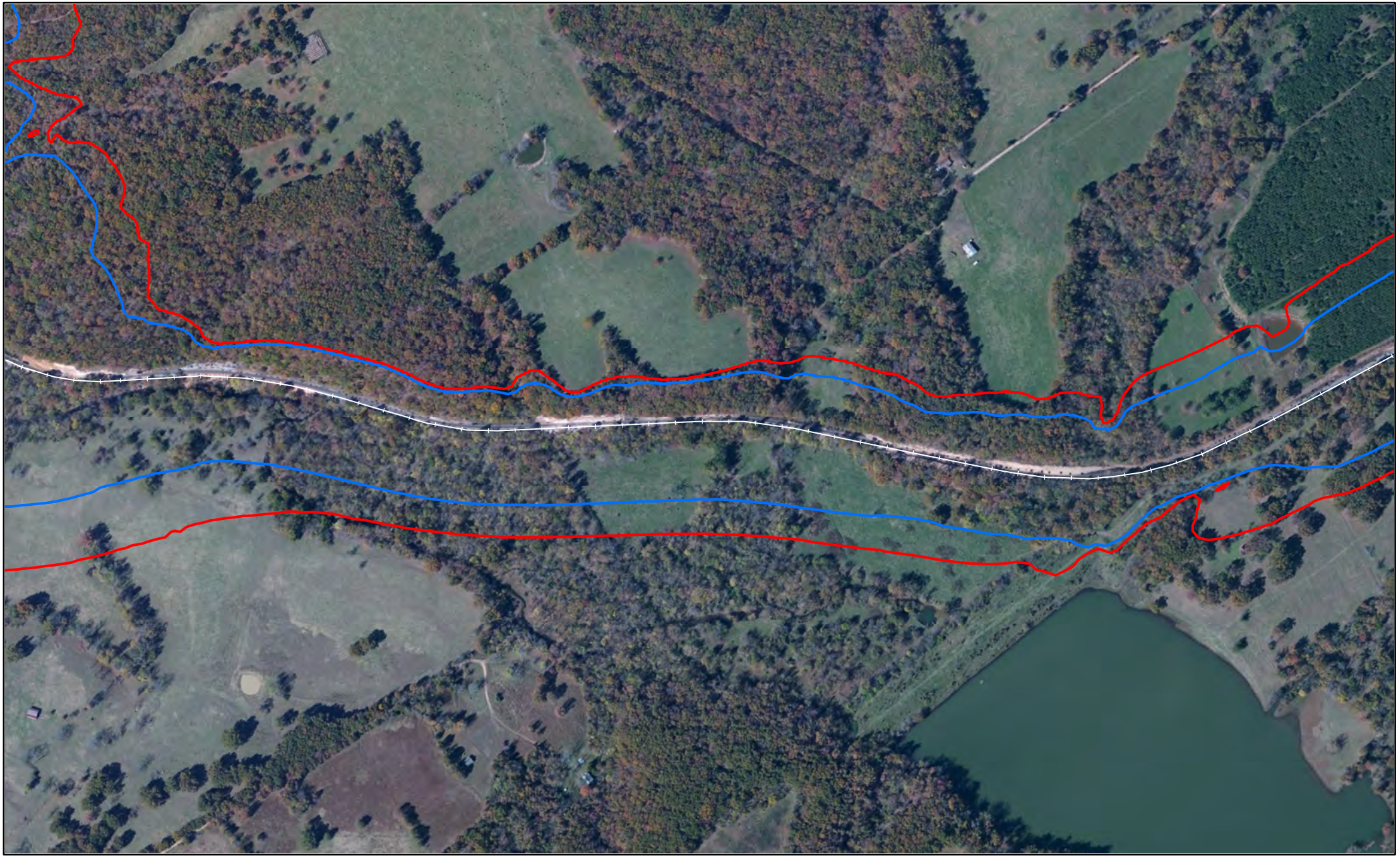


Noise Contours
Adair County, OK

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Miles
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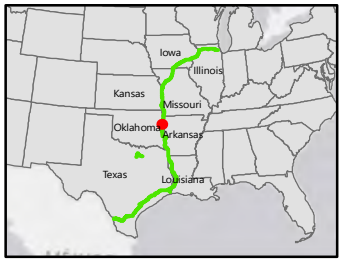
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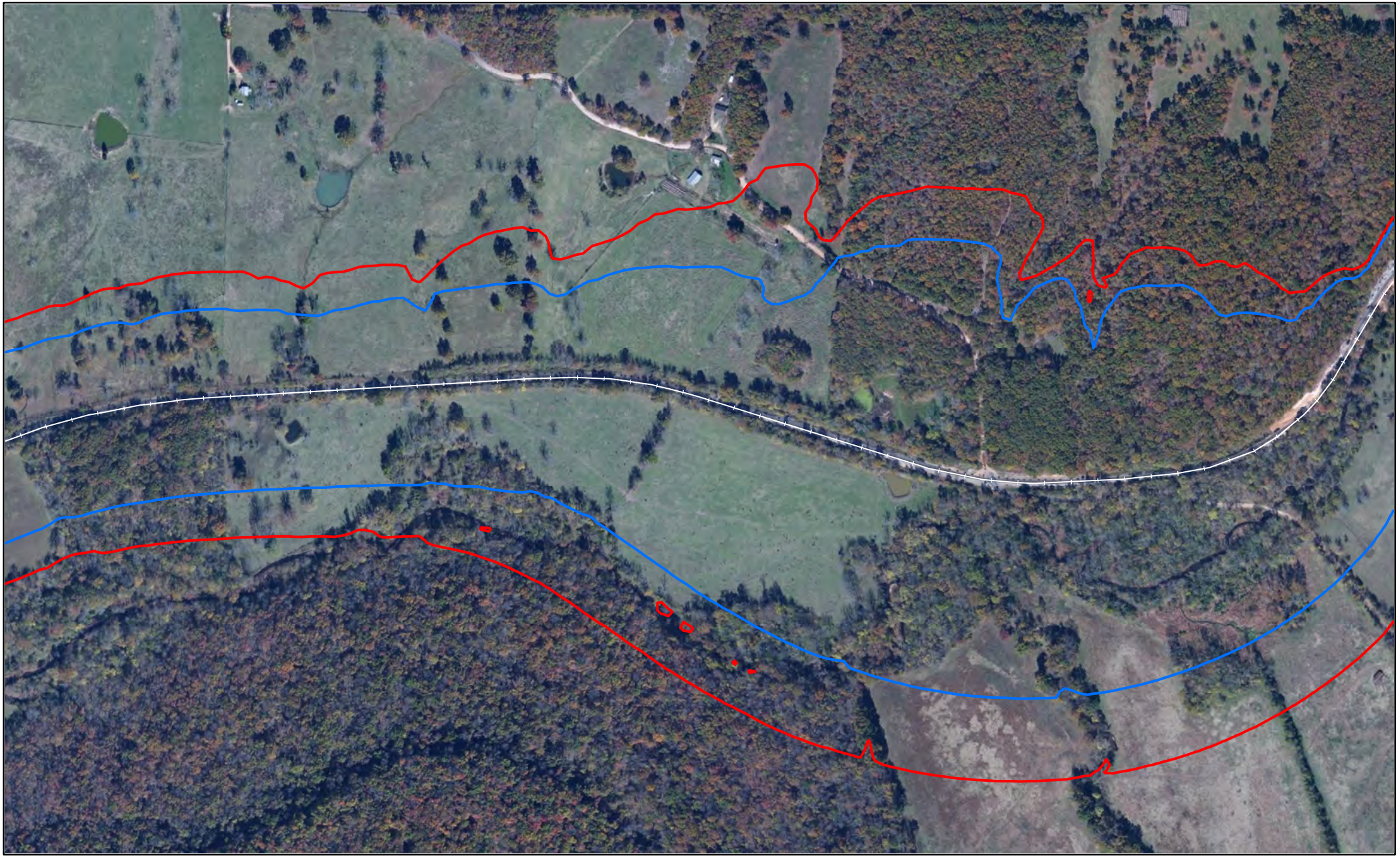
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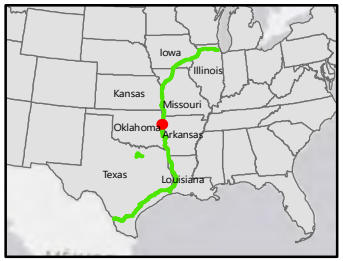
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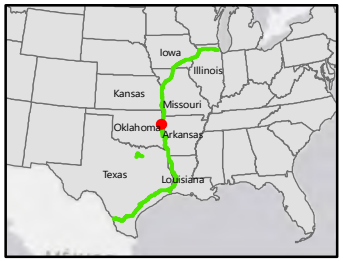
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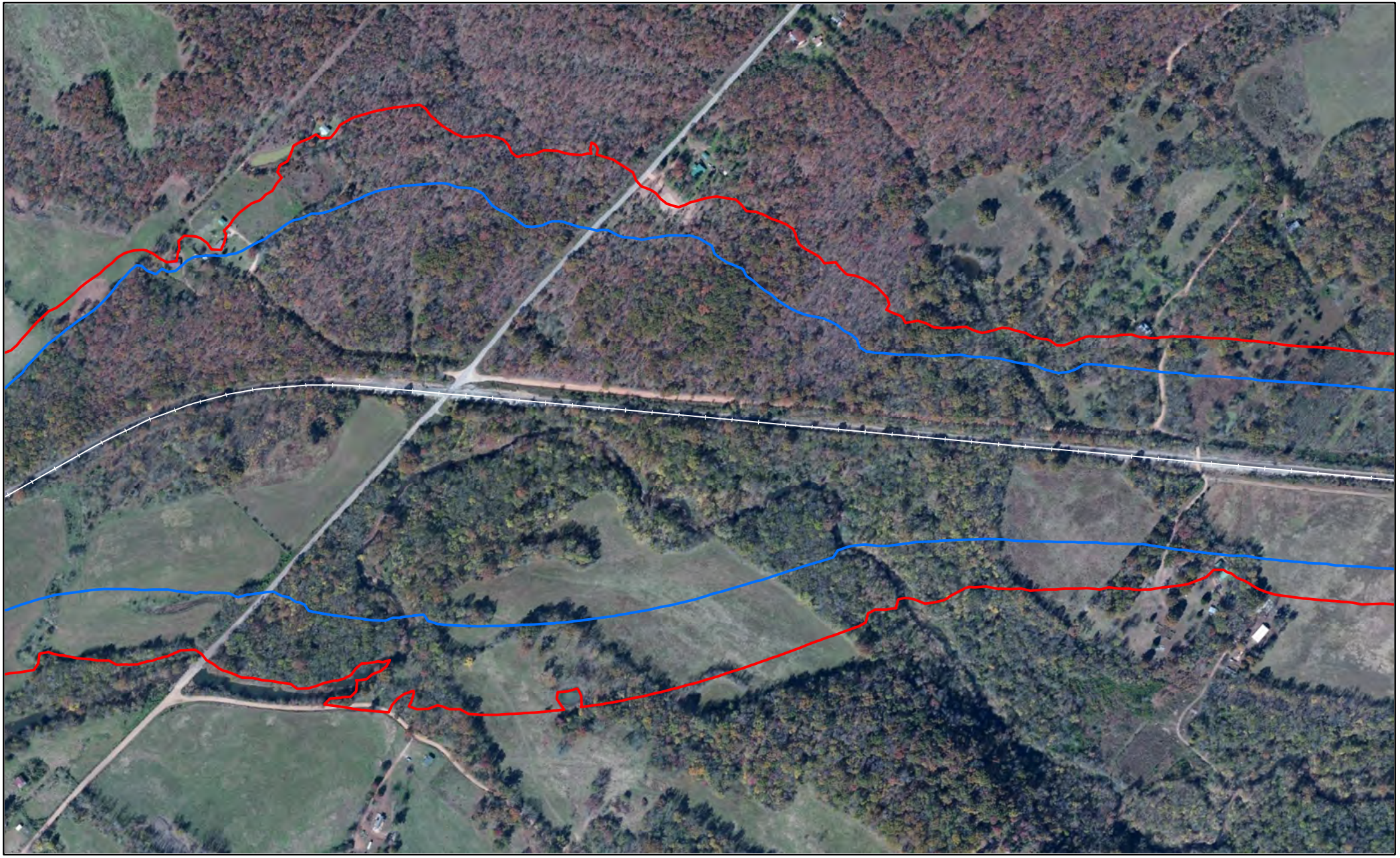
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Adair County, OK

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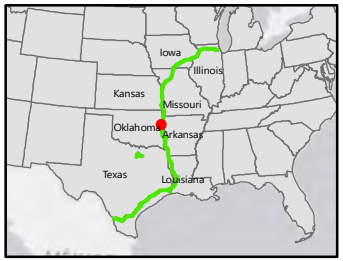
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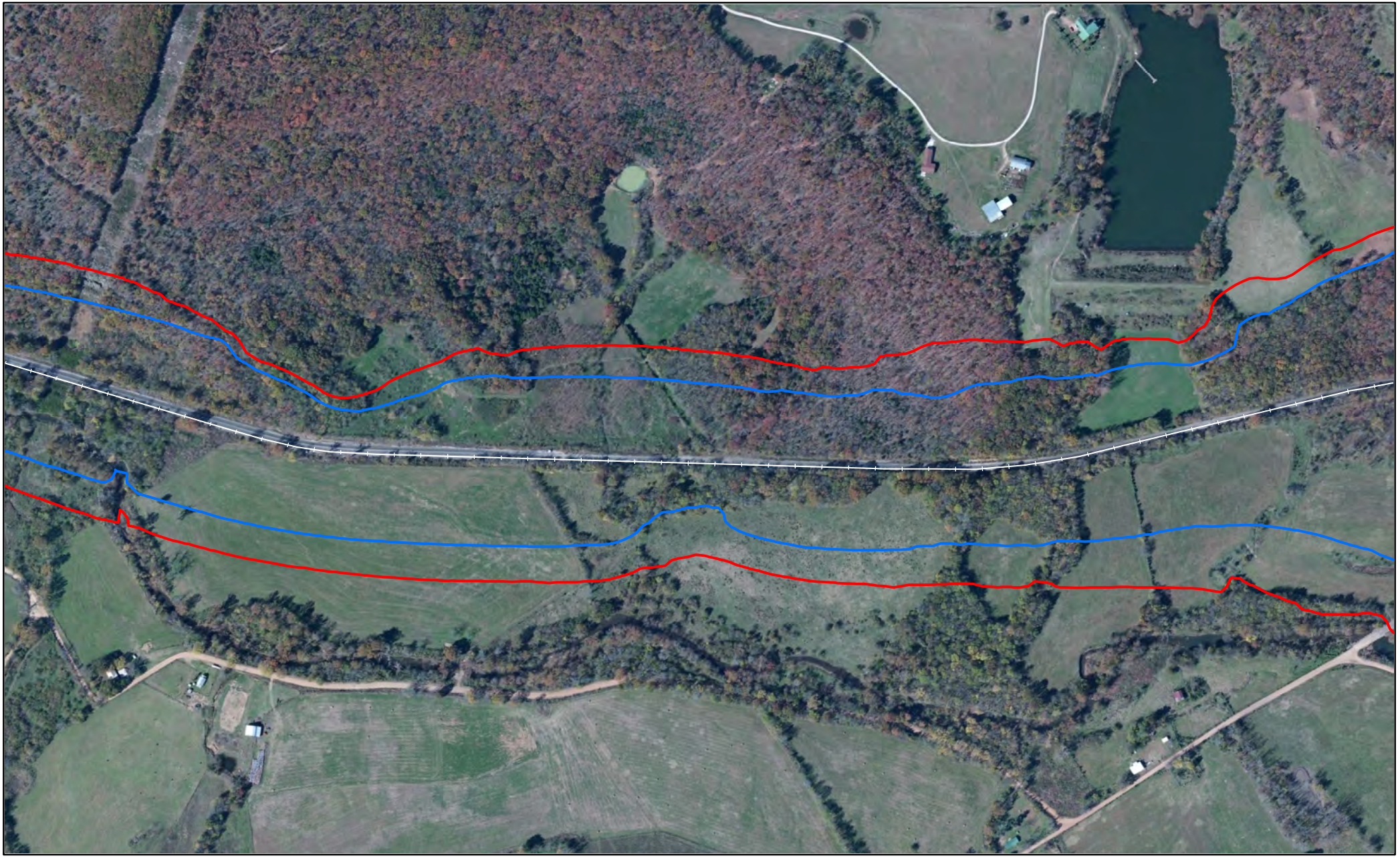
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0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



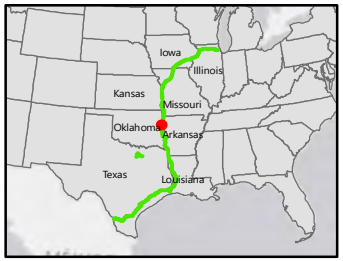
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

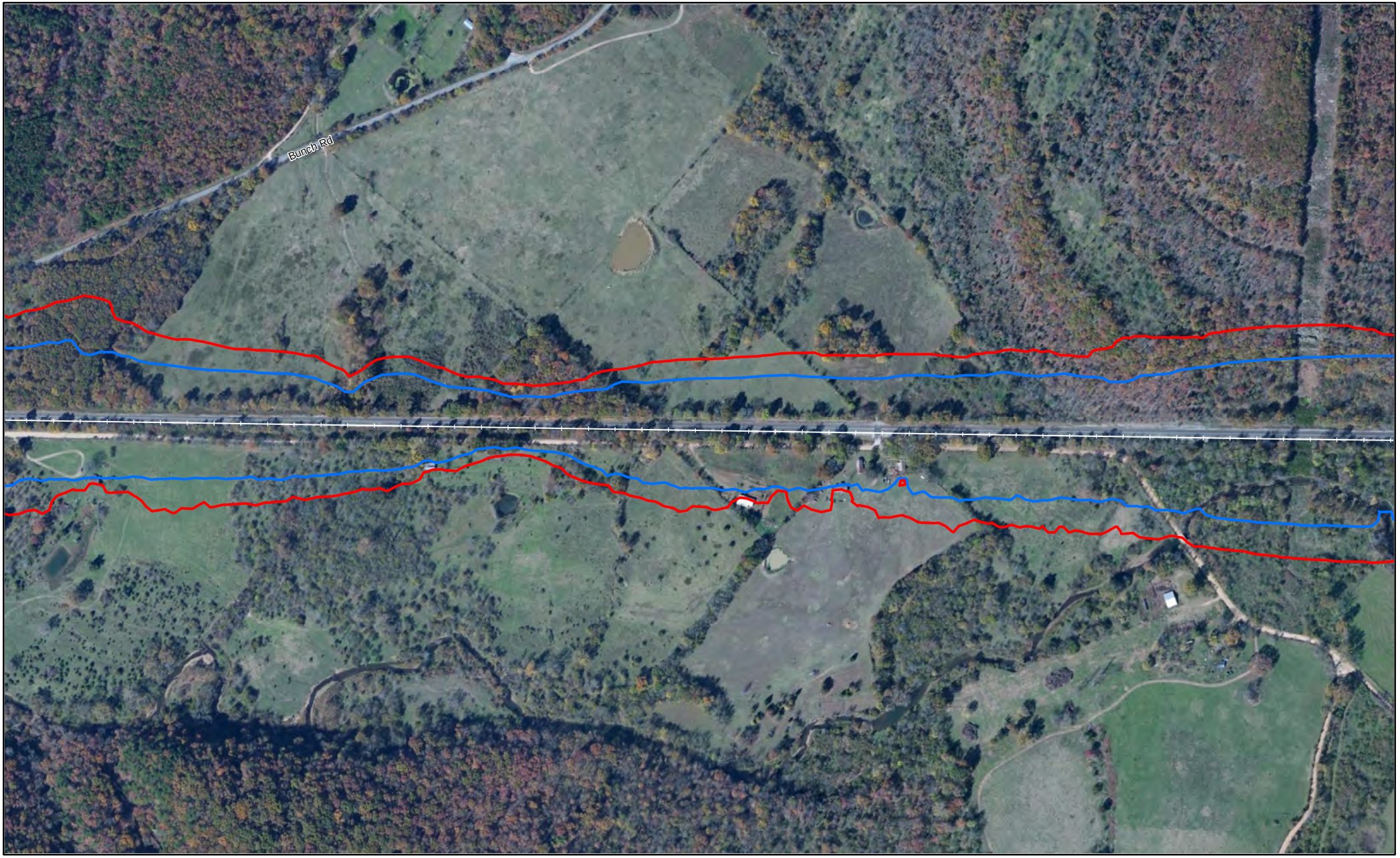
Tracks

Source: ESRI.



Noise Contours
Adair County, OK

Miles
0 0.05 0.1



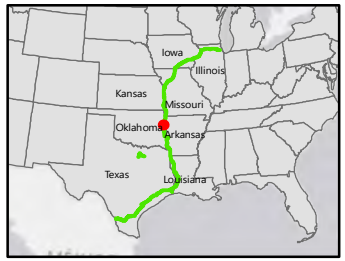
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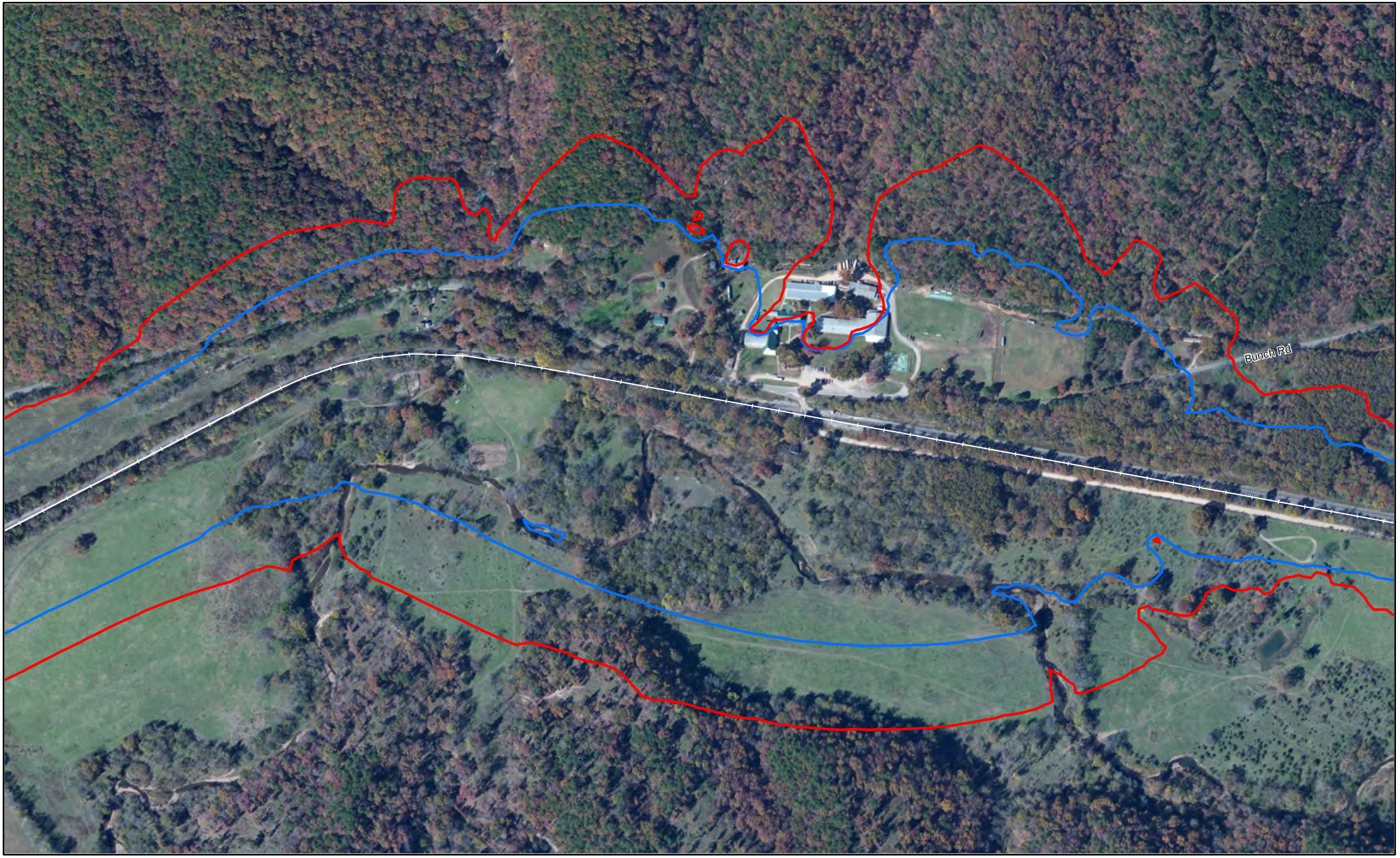
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Noise Contours
Adair County, OK

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



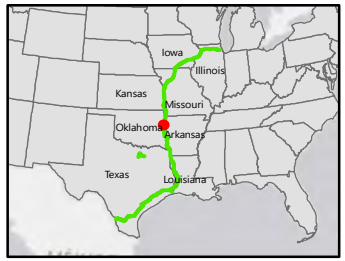
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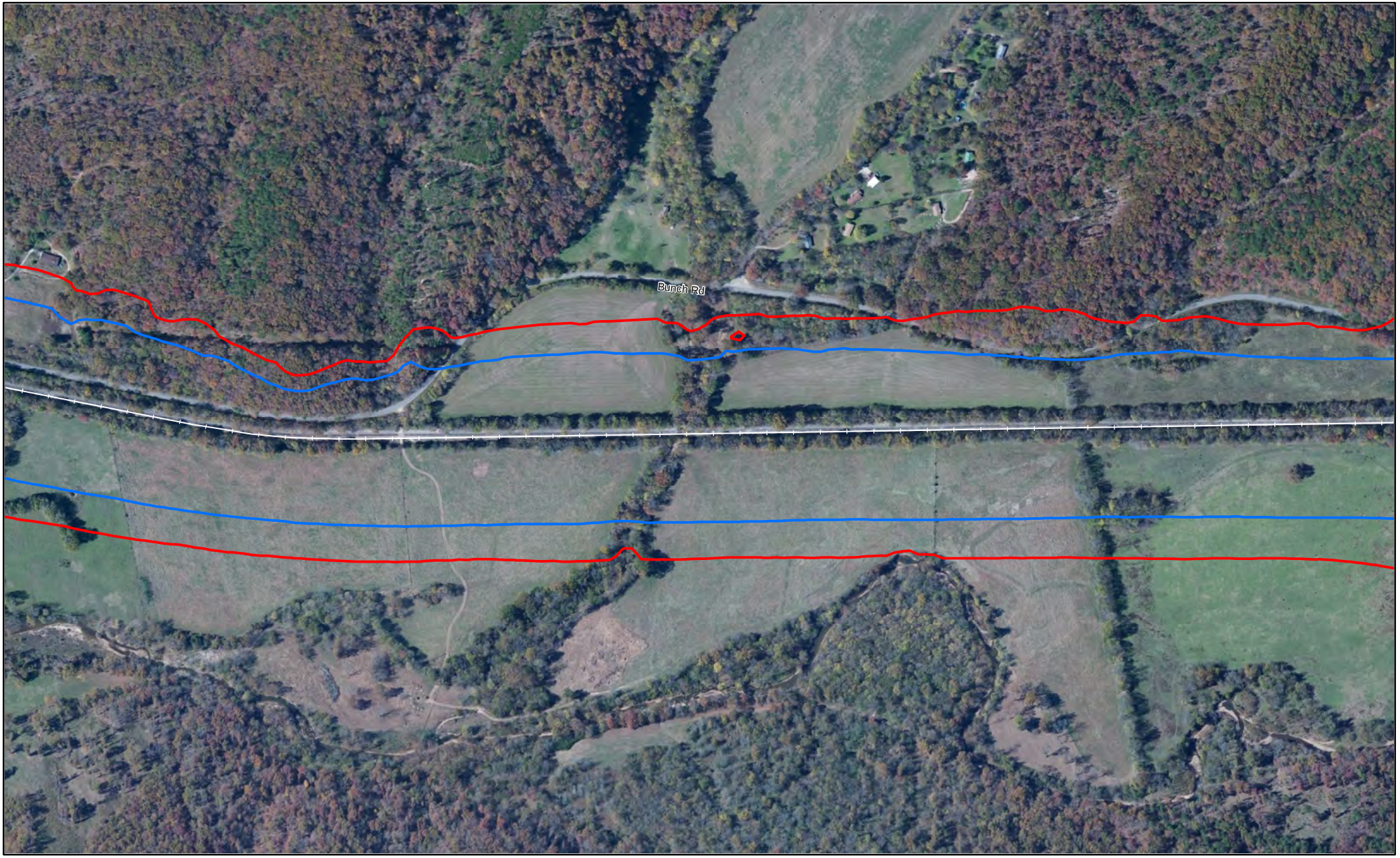
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Noise Contours
Adair County, OK

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



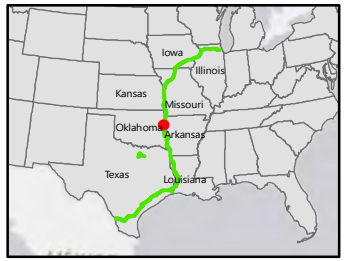
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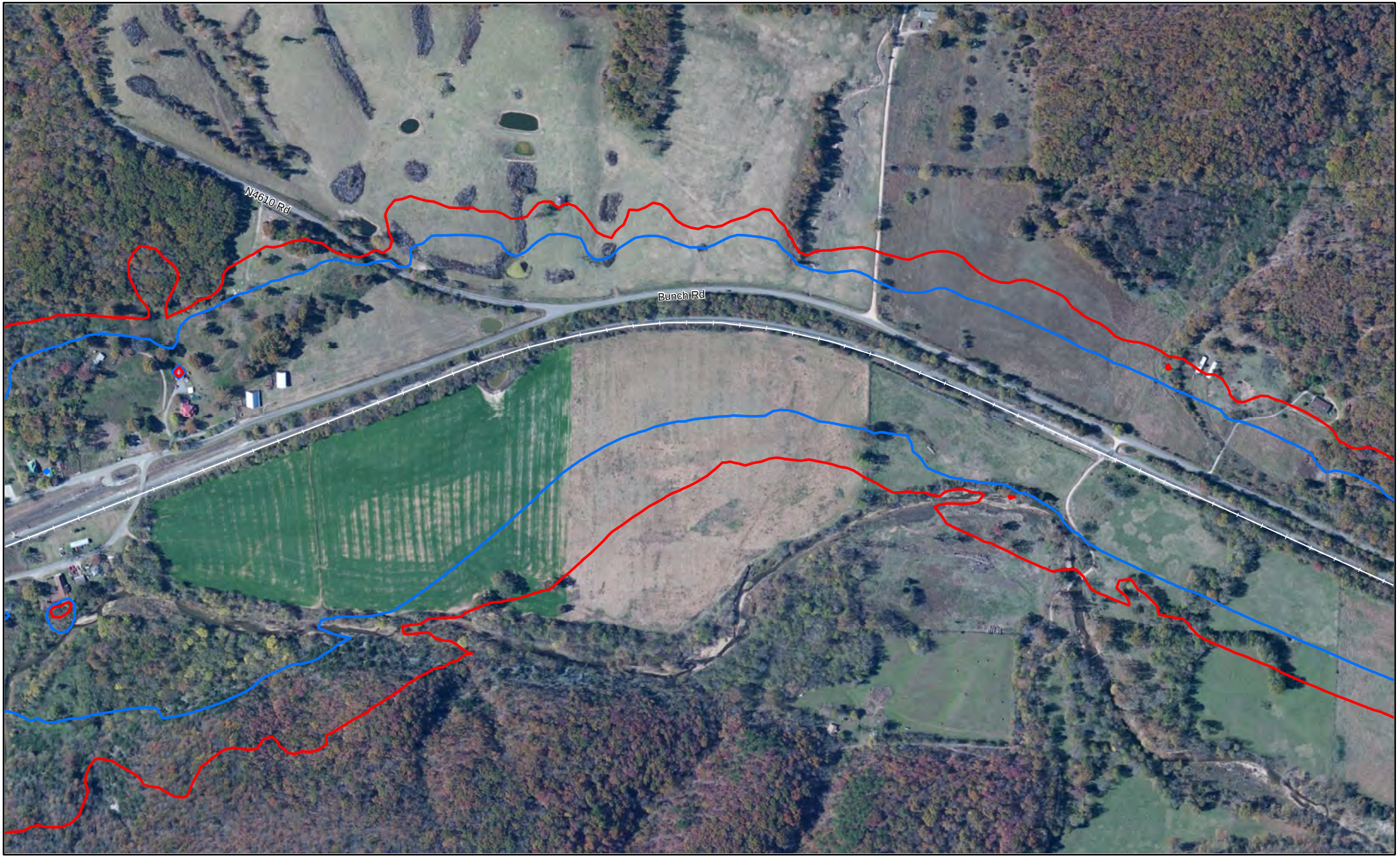
Tracks

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Noise Contours
Adair County, OK

Miles
0 0.05 0.1



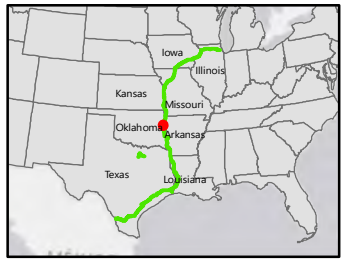
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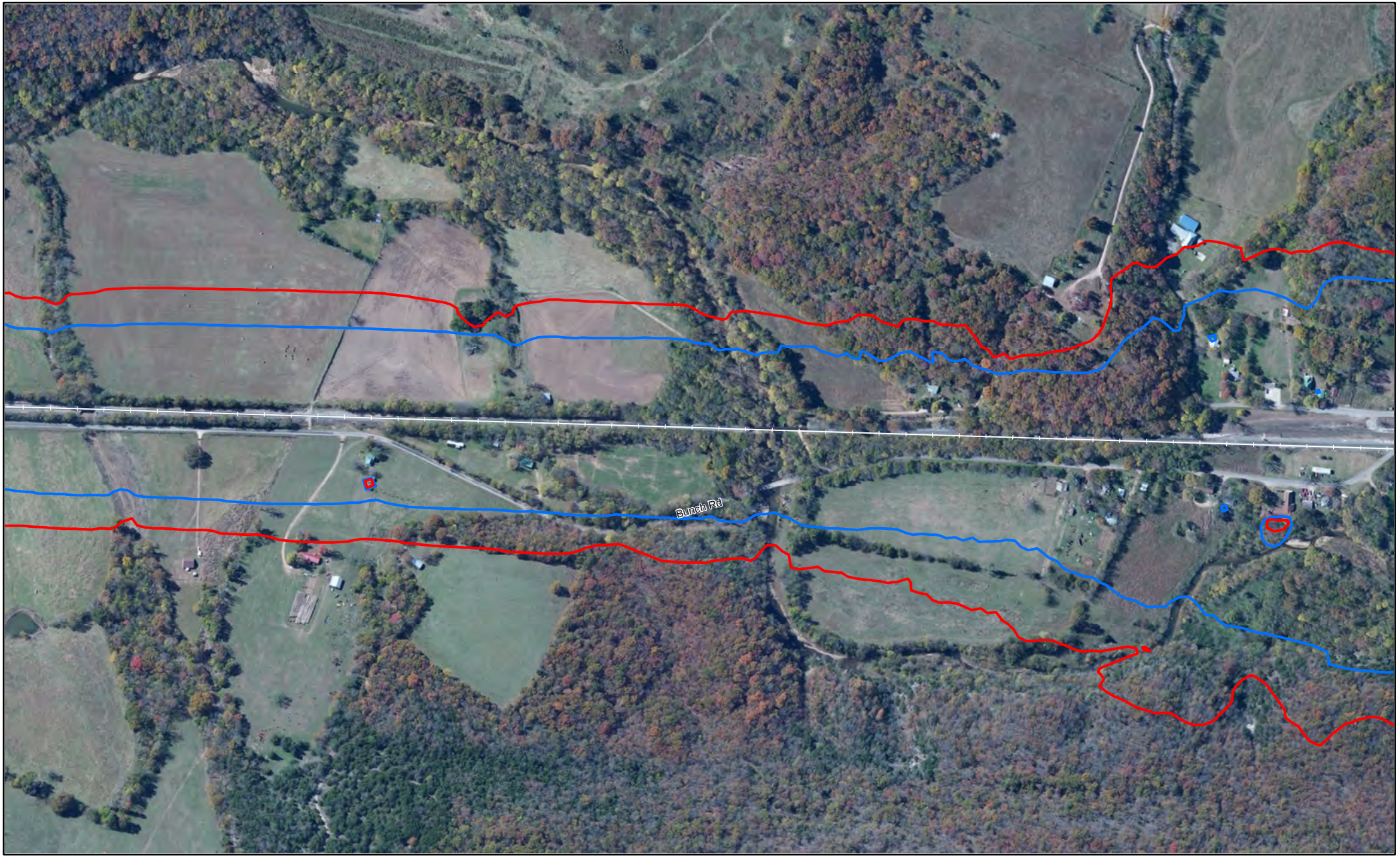
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Noise Contours
Adair County, OK

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Miles
0 0.05 0.1



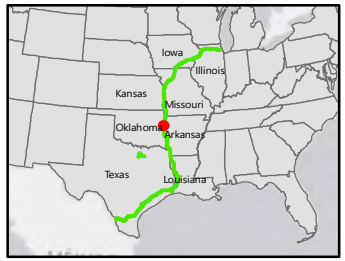
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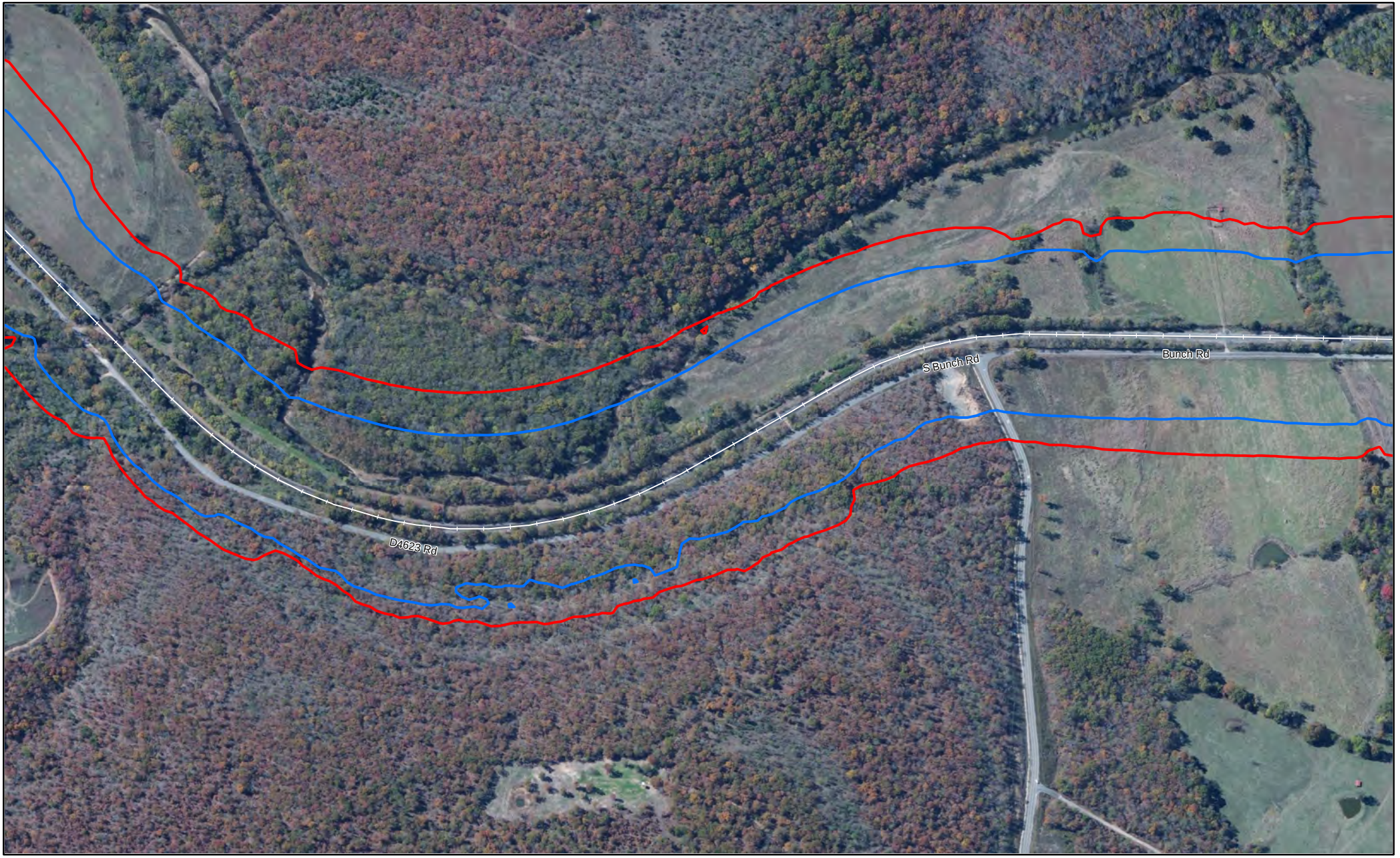
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Noise Contours
Adair County, OK

Miles
0 0.05 0.1



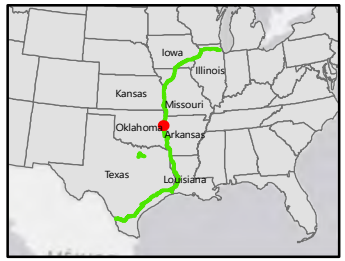
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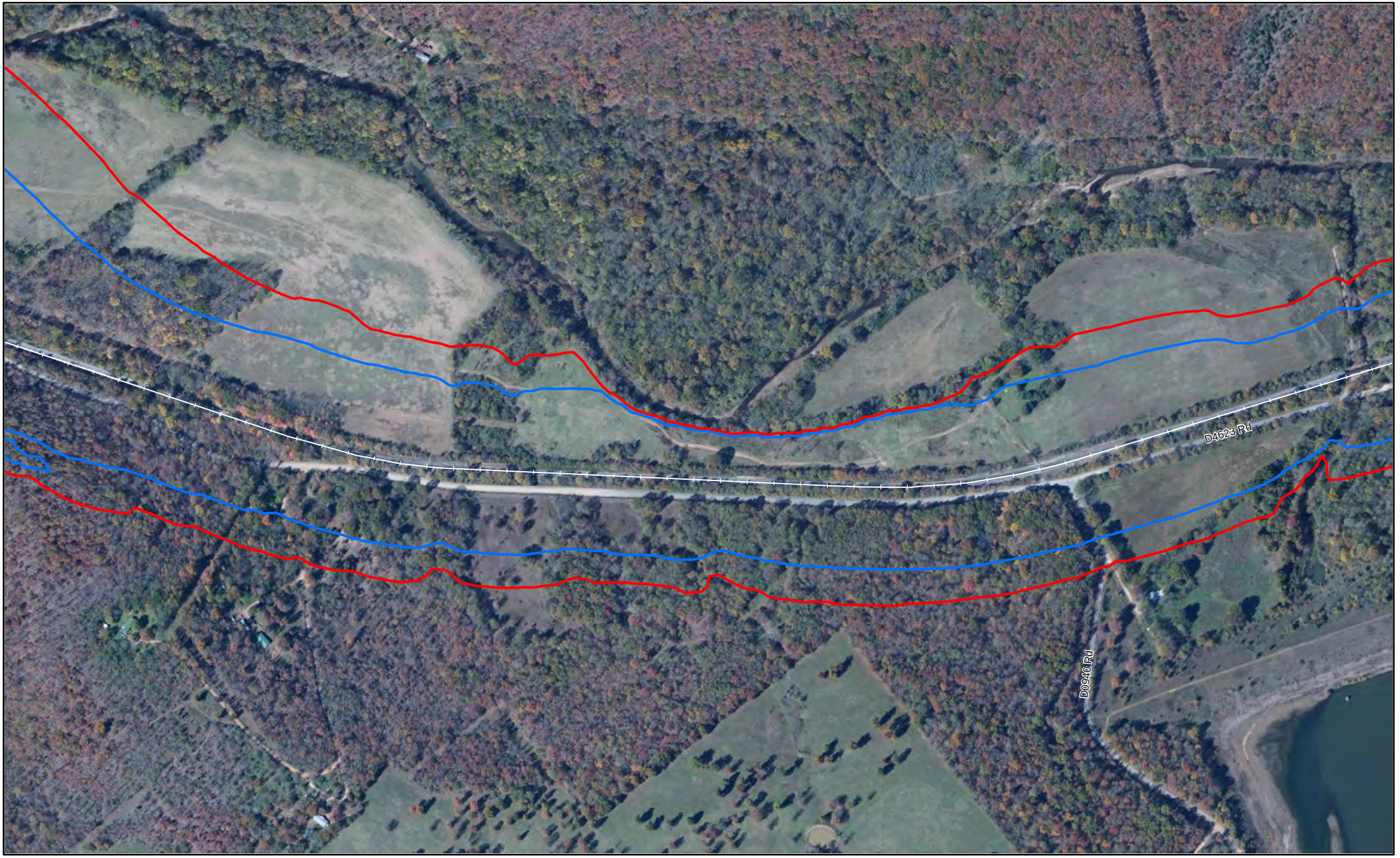
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Noise Contours
Adair County, OK

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Miles
0 0.05 0.1



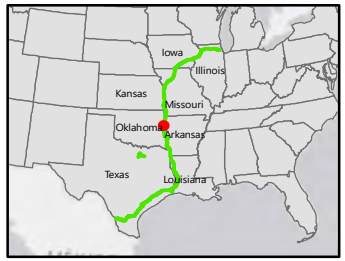
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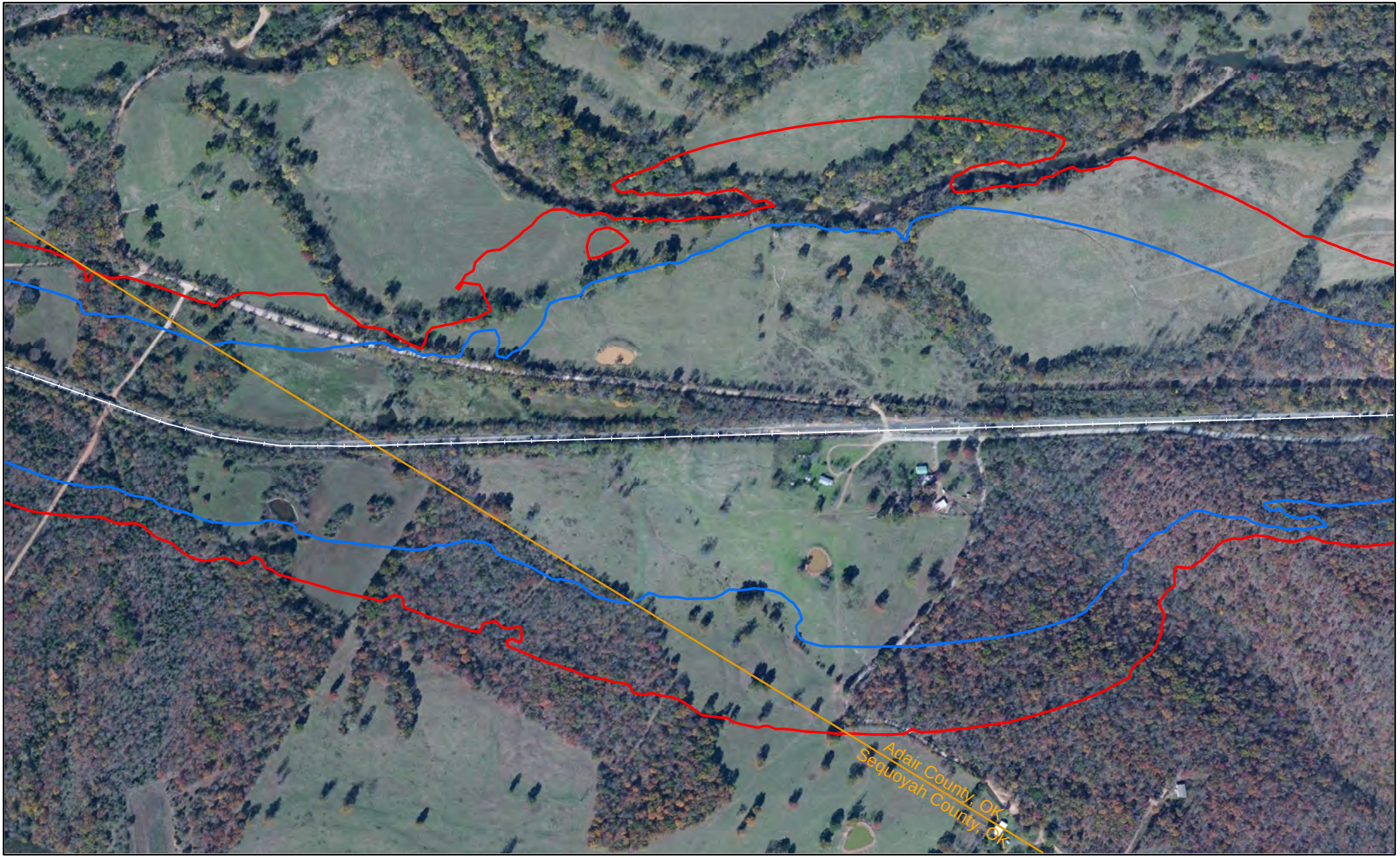
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Noise Contours
Adair County, OK

Miles
0 0.05 0.1



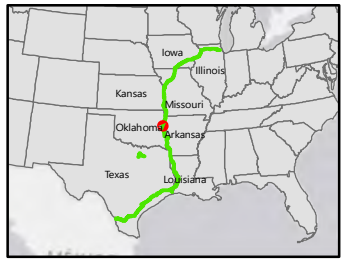
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Noise Contours
Adair County, OK

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



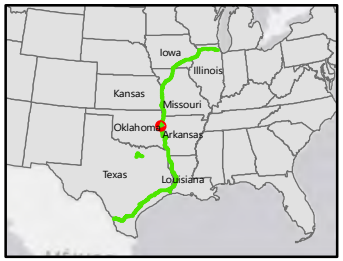
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Tracks

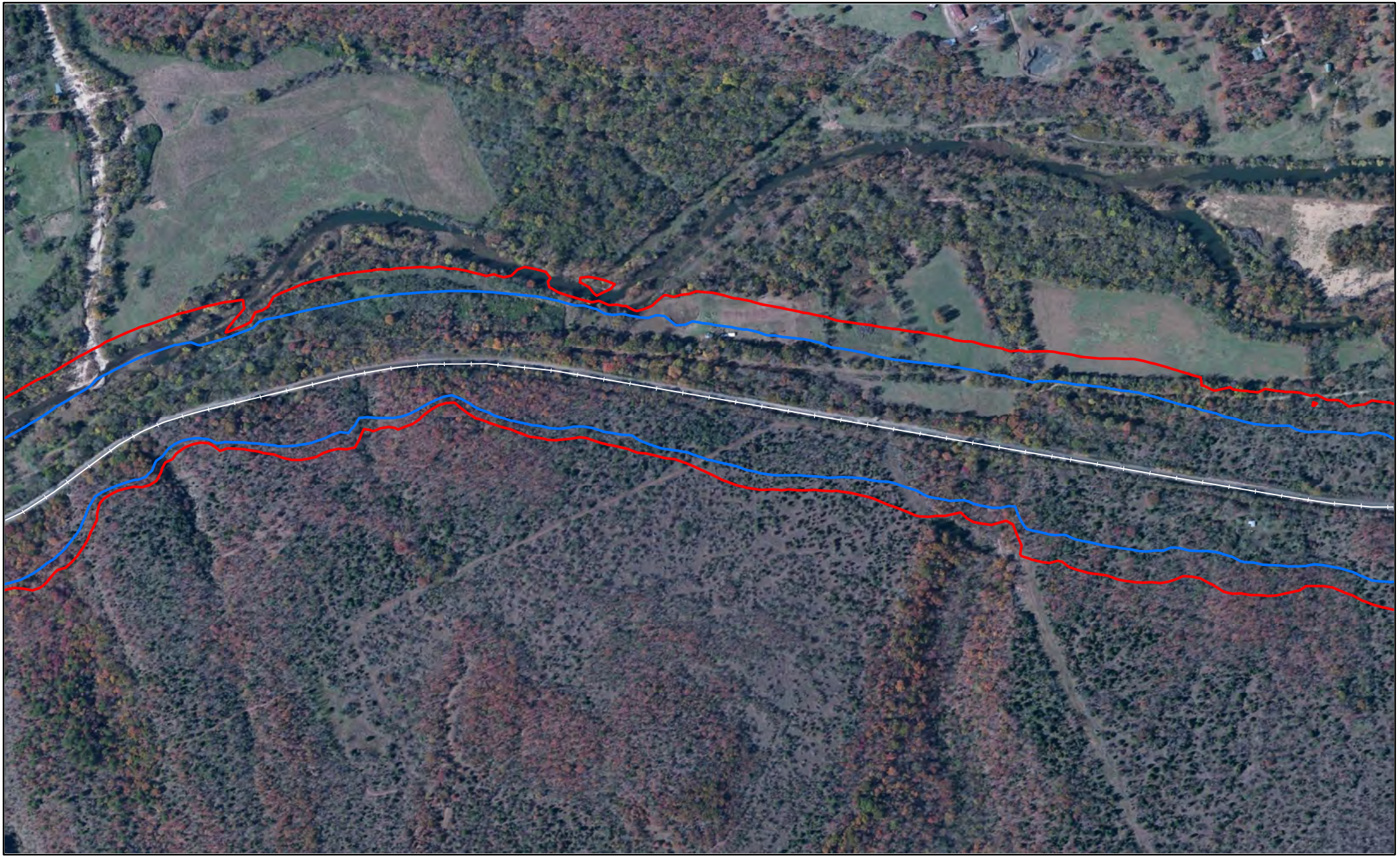
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Noise Contours
Adair County, OK

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



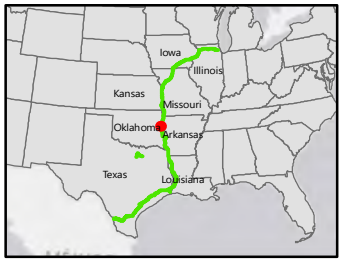
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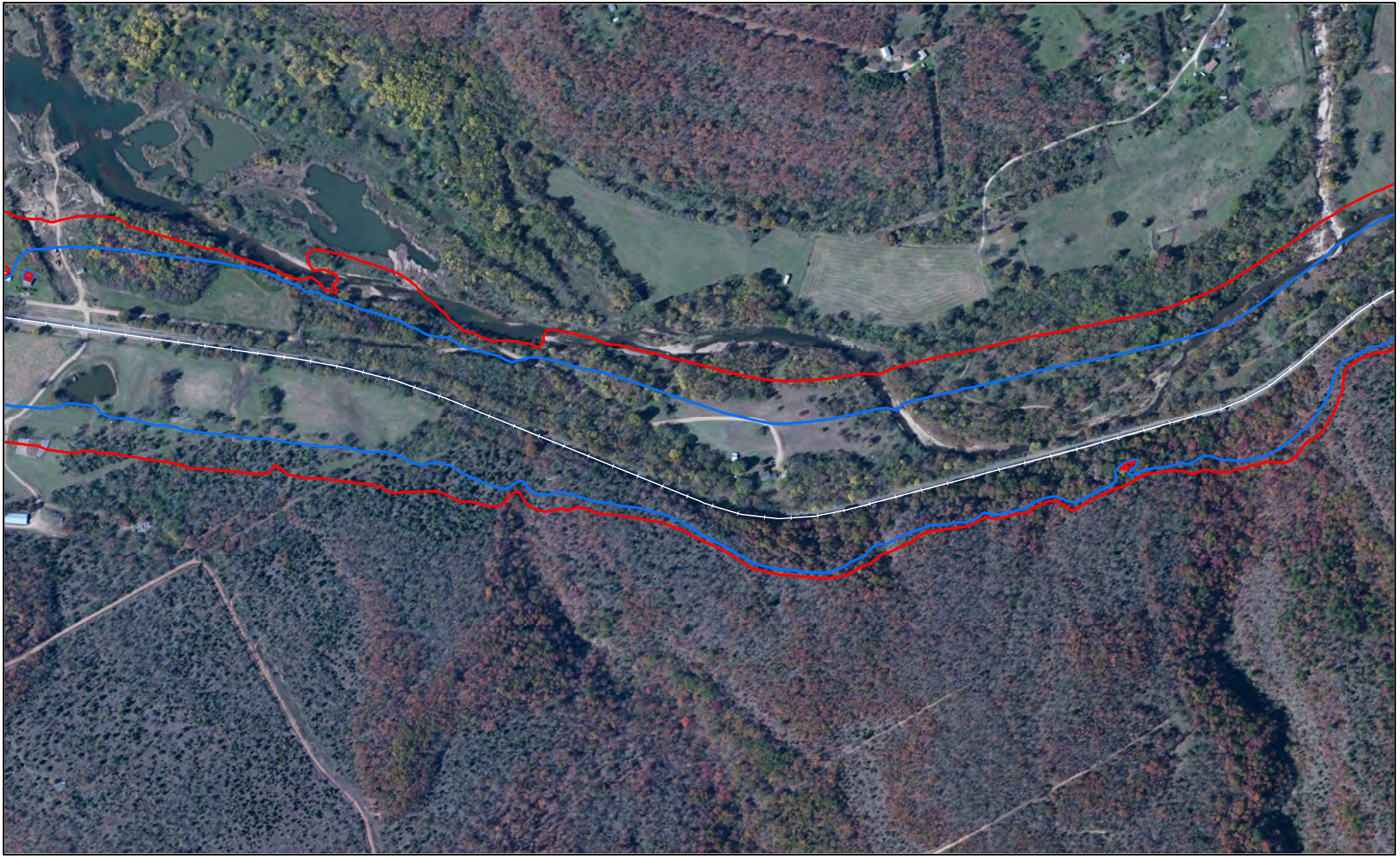
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Noise Contours
Sequoyah County, OK

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



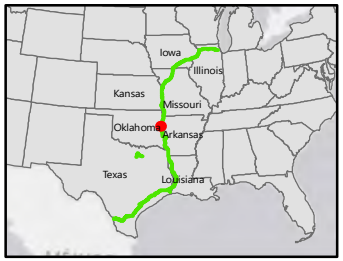
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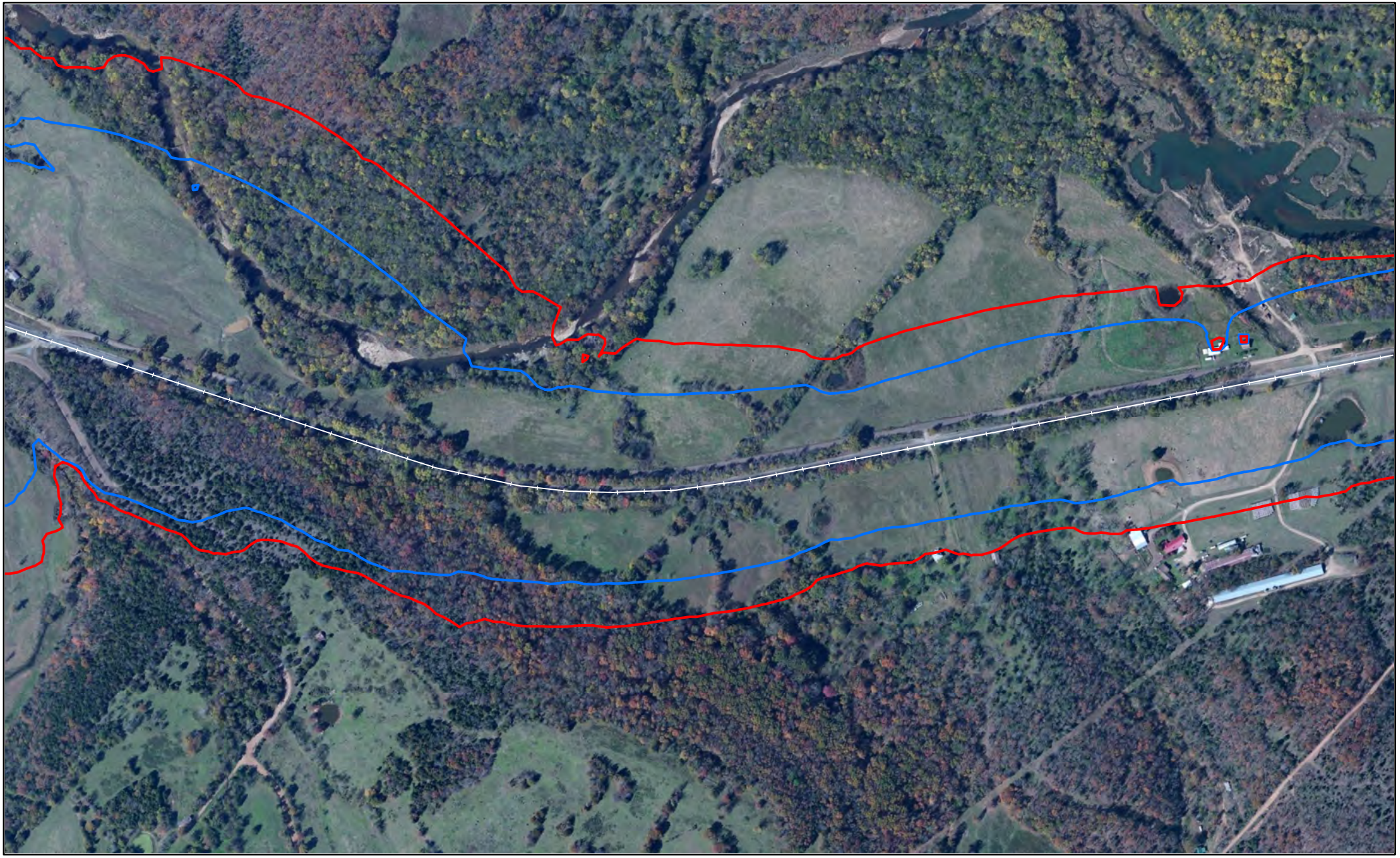
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Noise Contours
Sequoyah County, OK

Miles
0 0.05 0.1



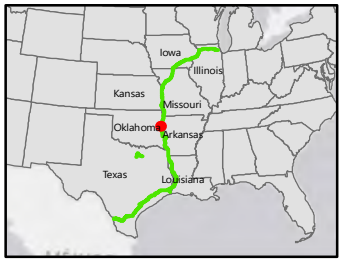
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Noise Contours
Sequoyah County, OK

Miles
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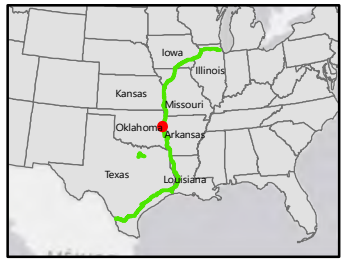
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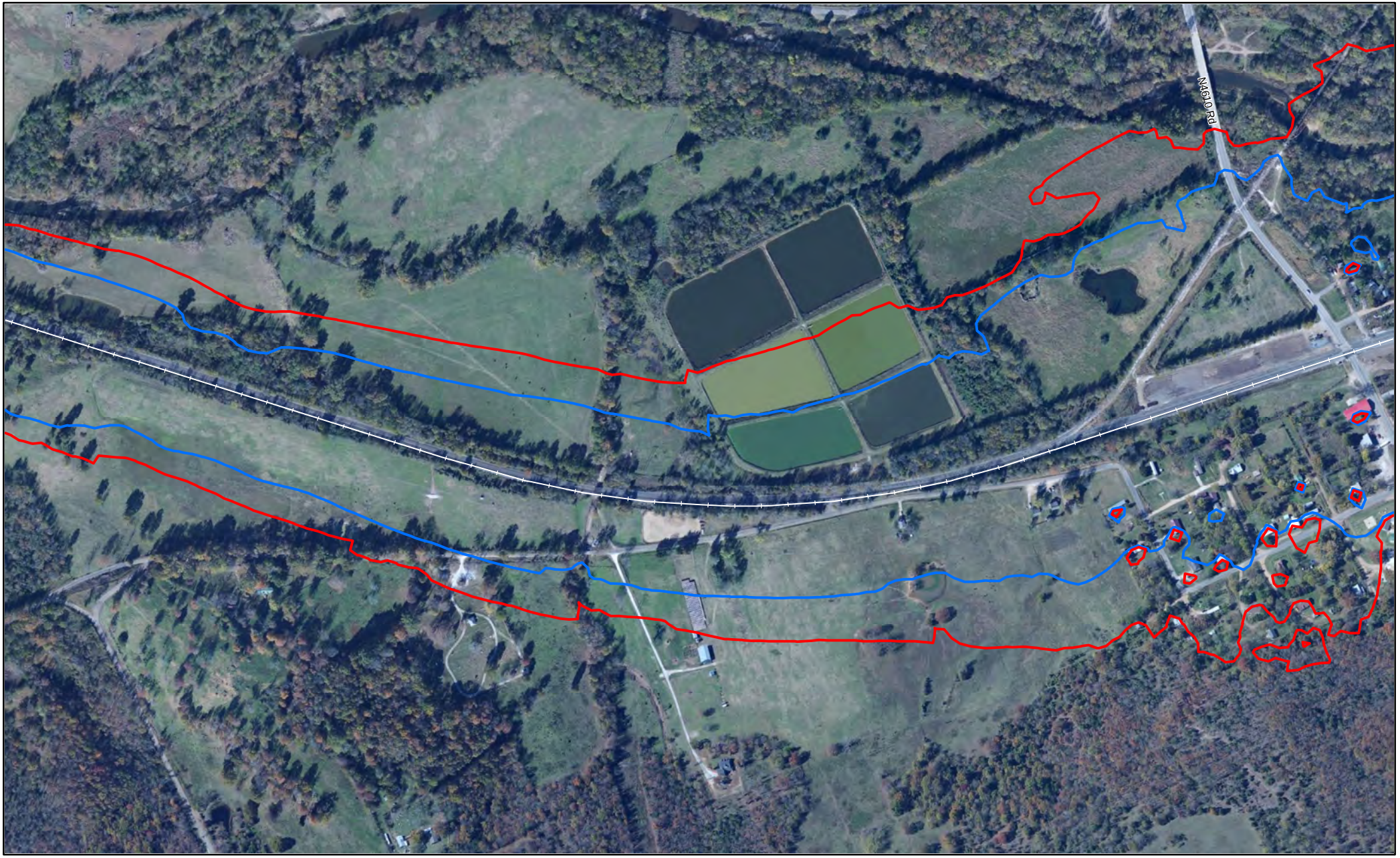
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Noise Contours
Sequoyah County, OK

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



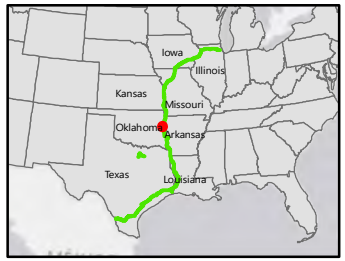
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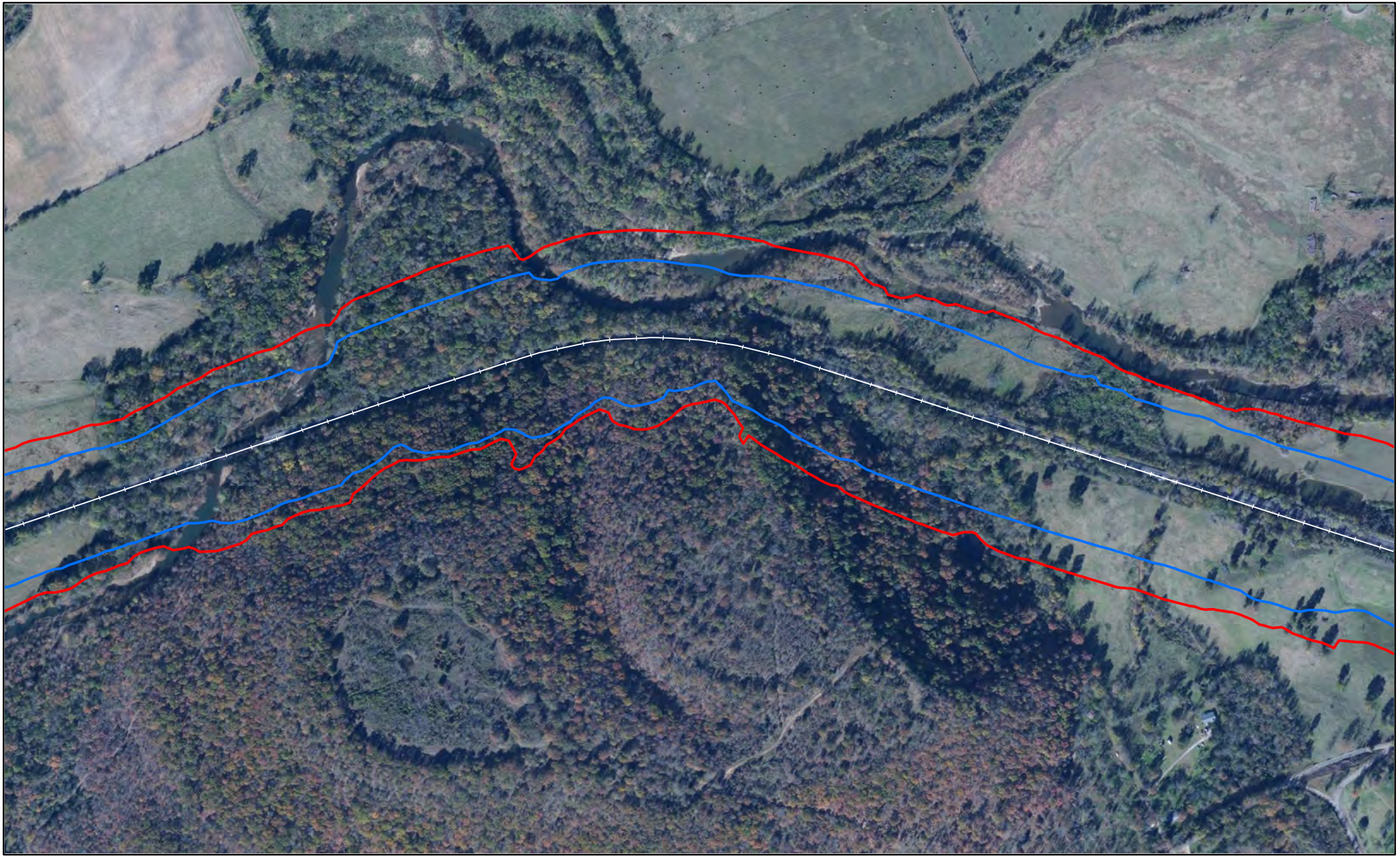
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Noise Contours
Sequoyah County, OK

Miles
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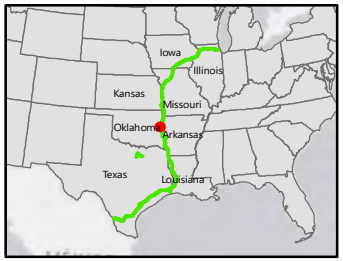
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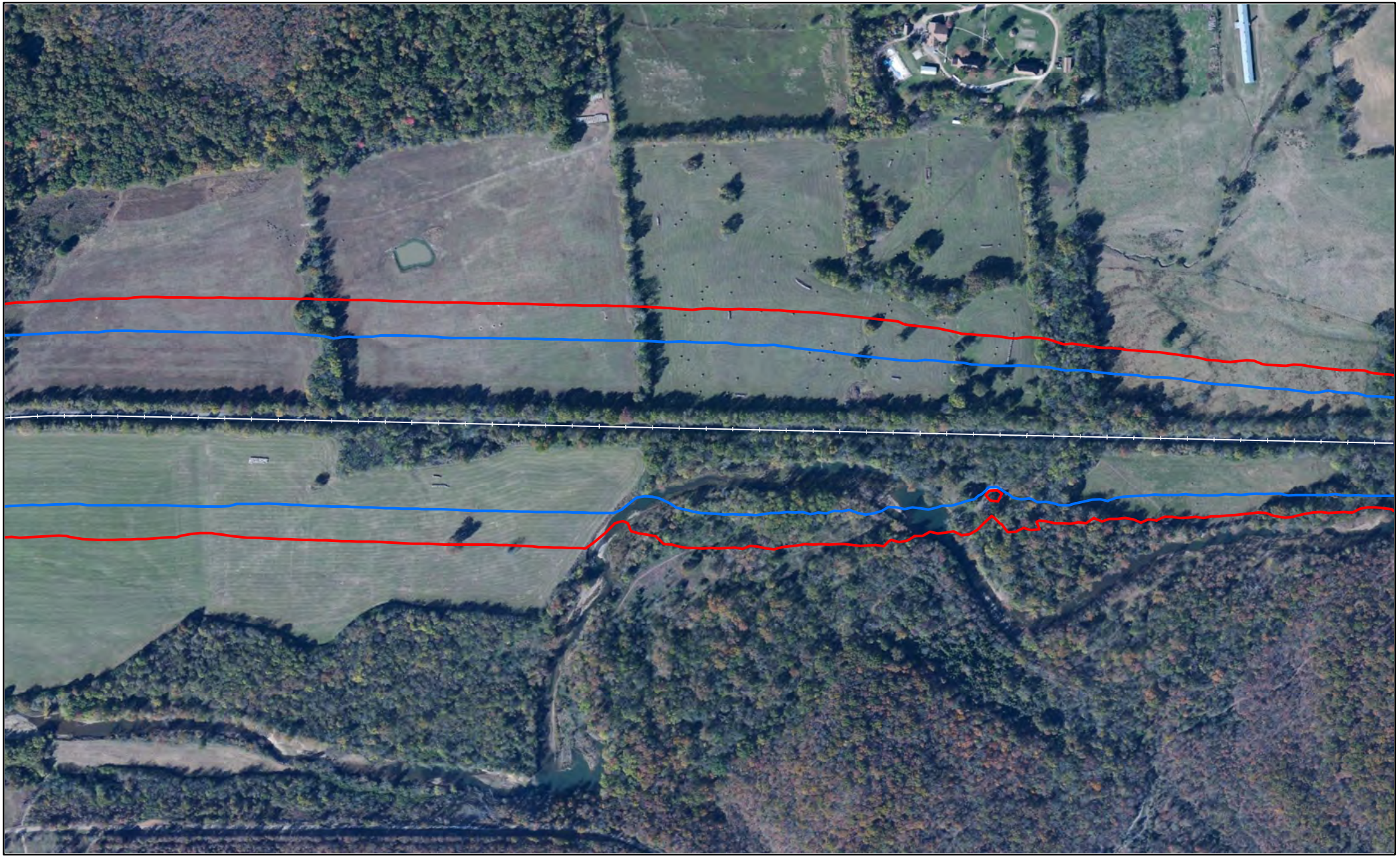
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Noise Contours
Sequoyah County, OK

Miles
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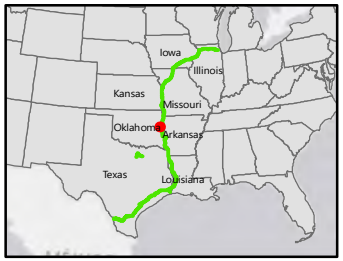
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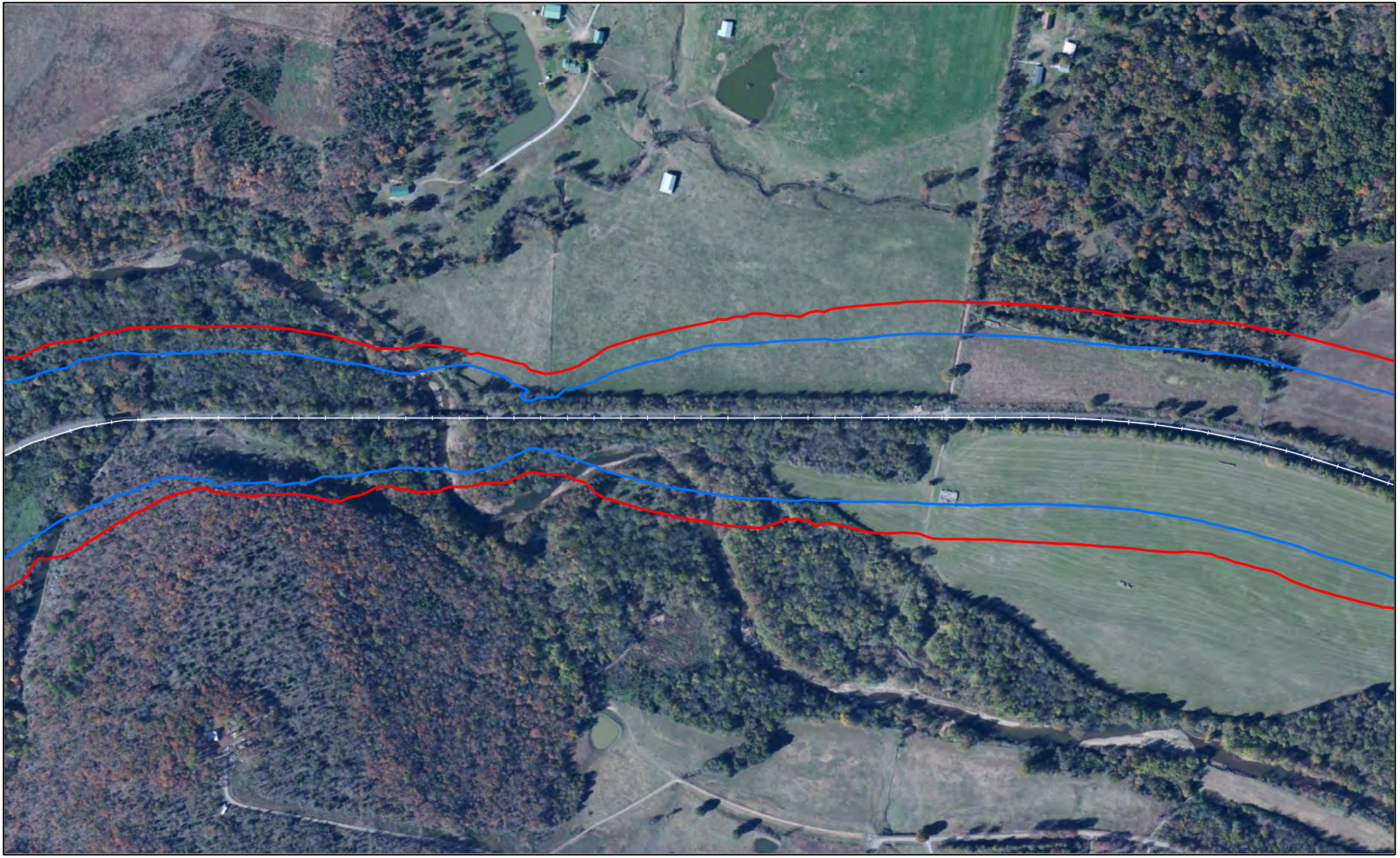
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Noise Contours
Sequoyah County, OK

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



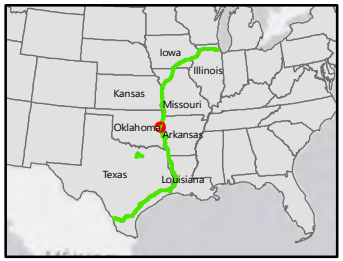
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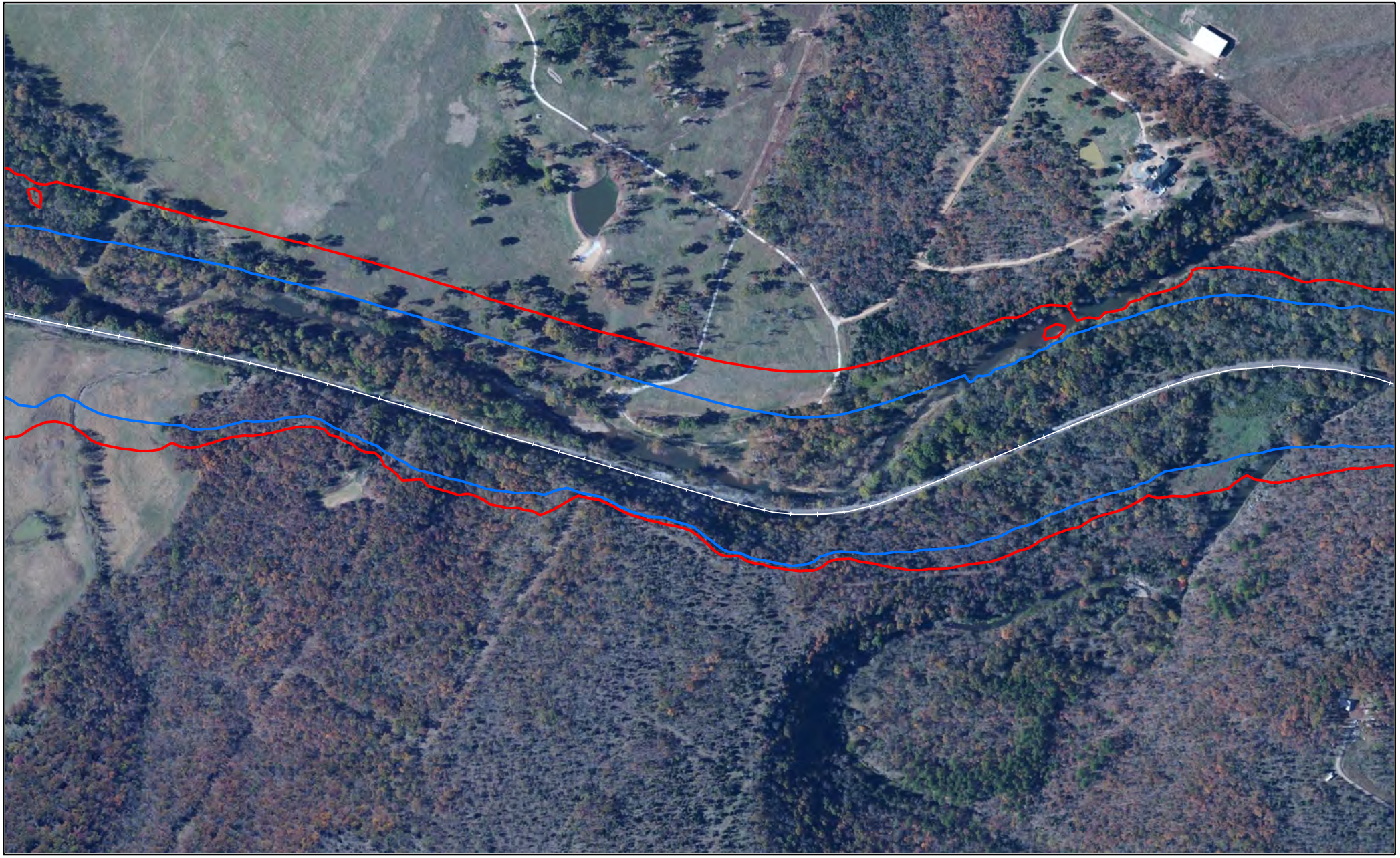
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Noise Contours
Sequoyah County, OK

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



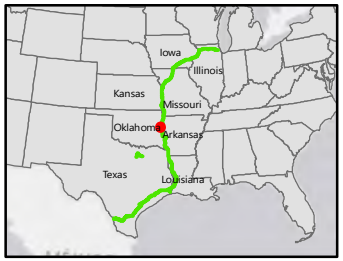
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Noise Contours
Sequoyah County, OK

Miles
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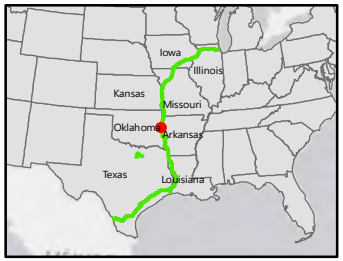
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Noise Contours
Sequoyah County, OK

Miles
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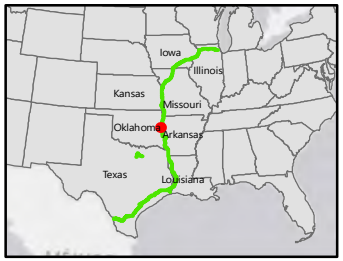
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Noise Contours
Sequoyah County, OK

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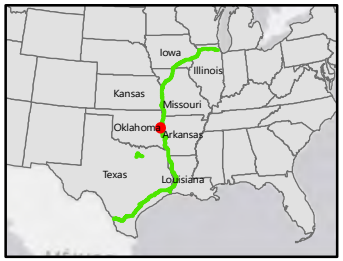
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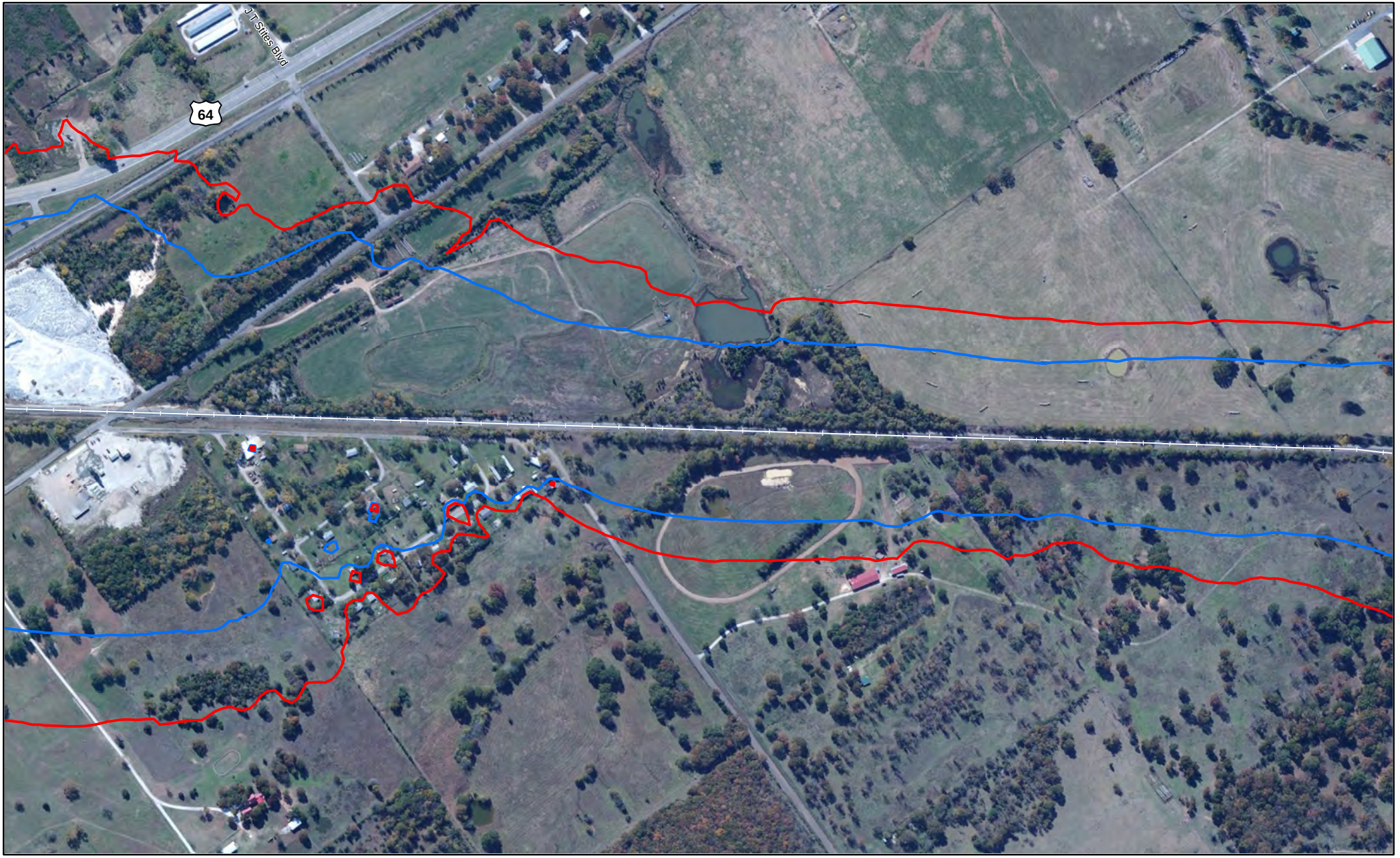
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Noise Contours
Sequoyah County, OK

Miles
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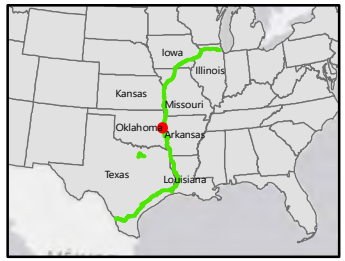
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Noise Contours
Sequoyah County, OK

0 0.05 0.1 Miles

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



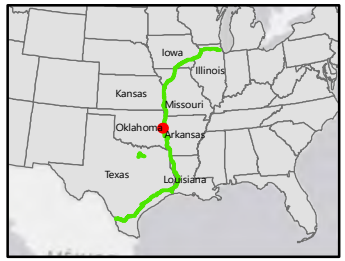
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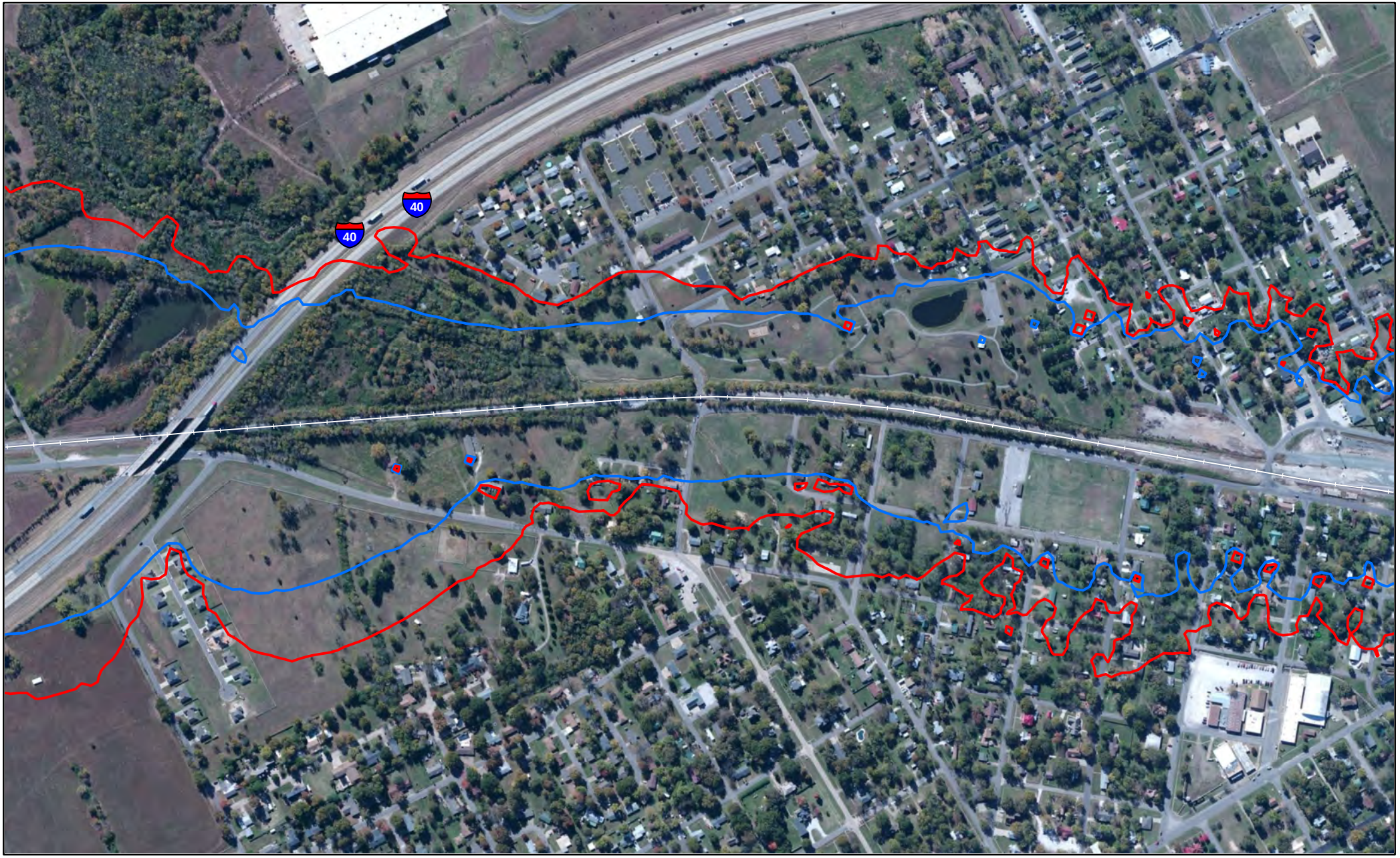
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Noise Contours
Sequoyah County, OK

Miles
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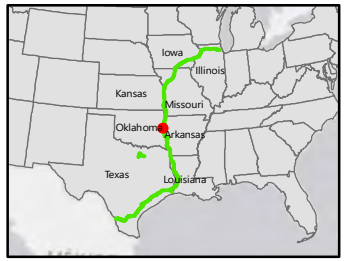
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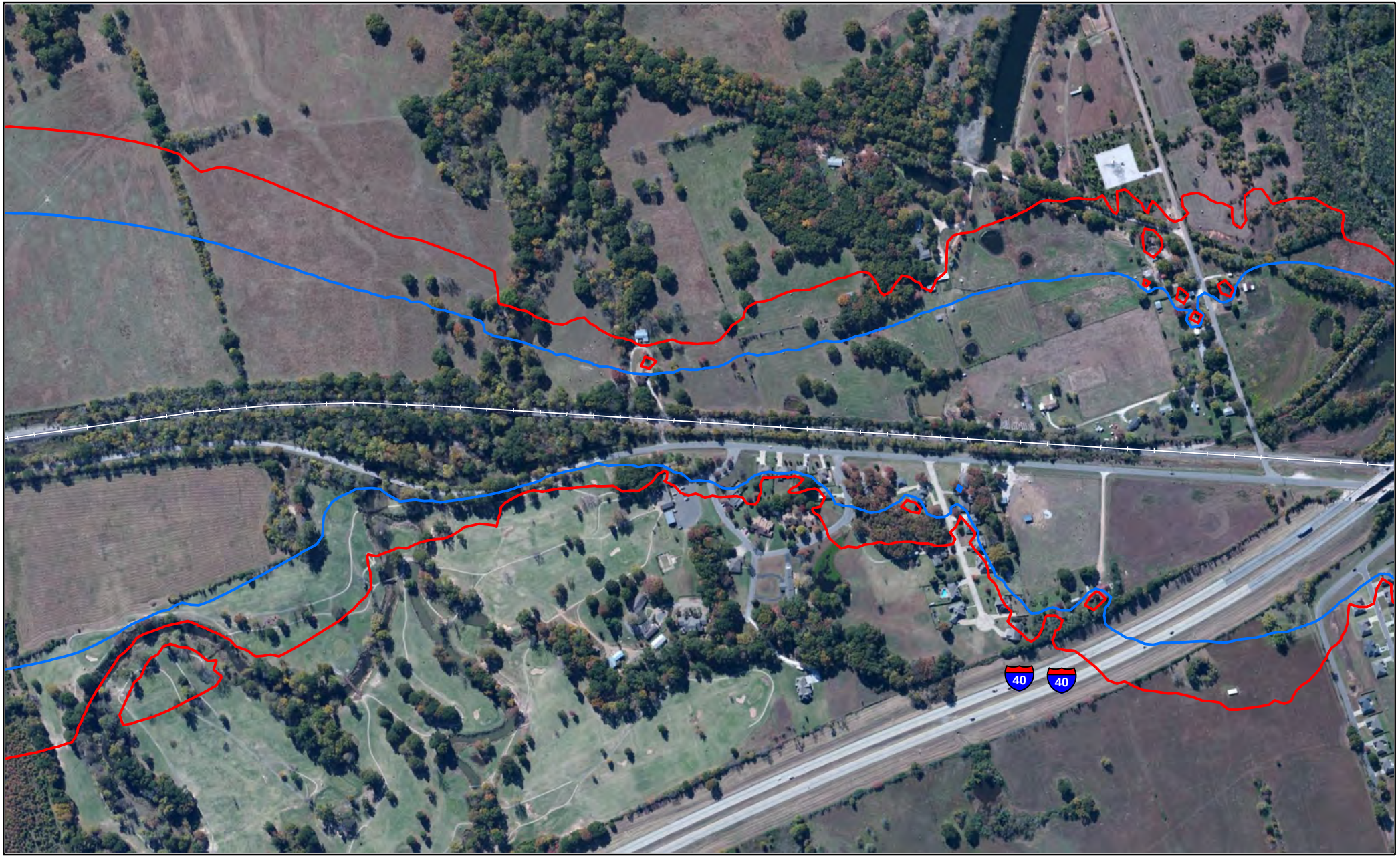
Tracks

Source: ESRI.



Noise Contours
Sequoyah County, OK

Miles
0 0.05 0.1



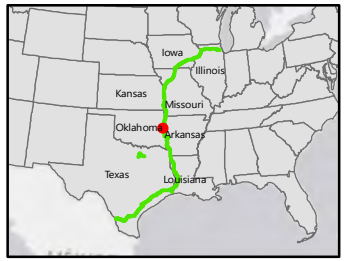
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

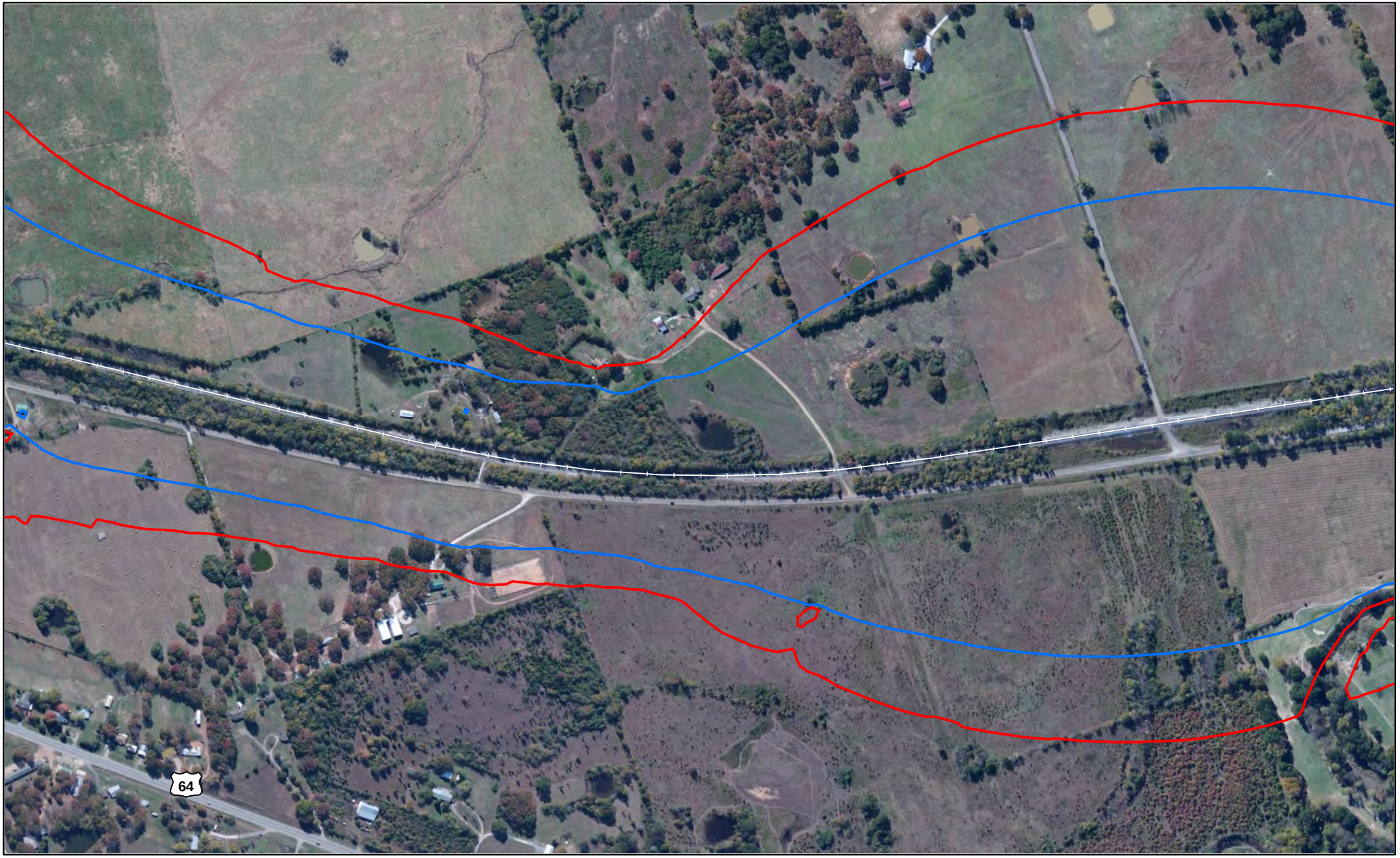
Tracks

Source: ESRI.



Noise Contours
Sequoyah County, OK

Miles
0 0.05 0.1



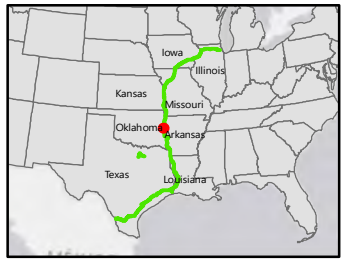
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

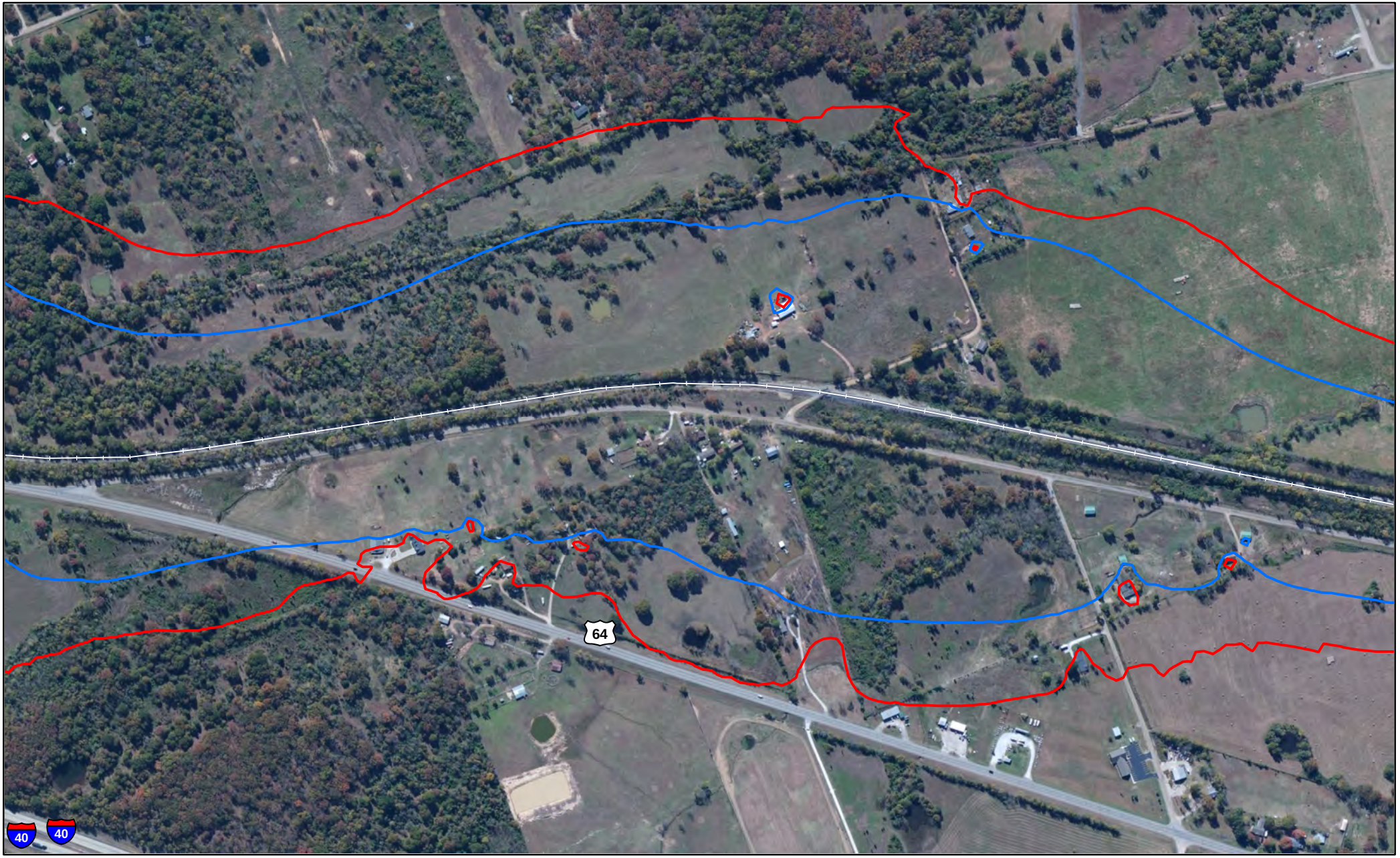
Source: ESRI.



Noise Contours
Sequoyah County, OK

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



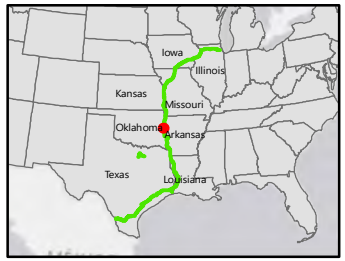
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

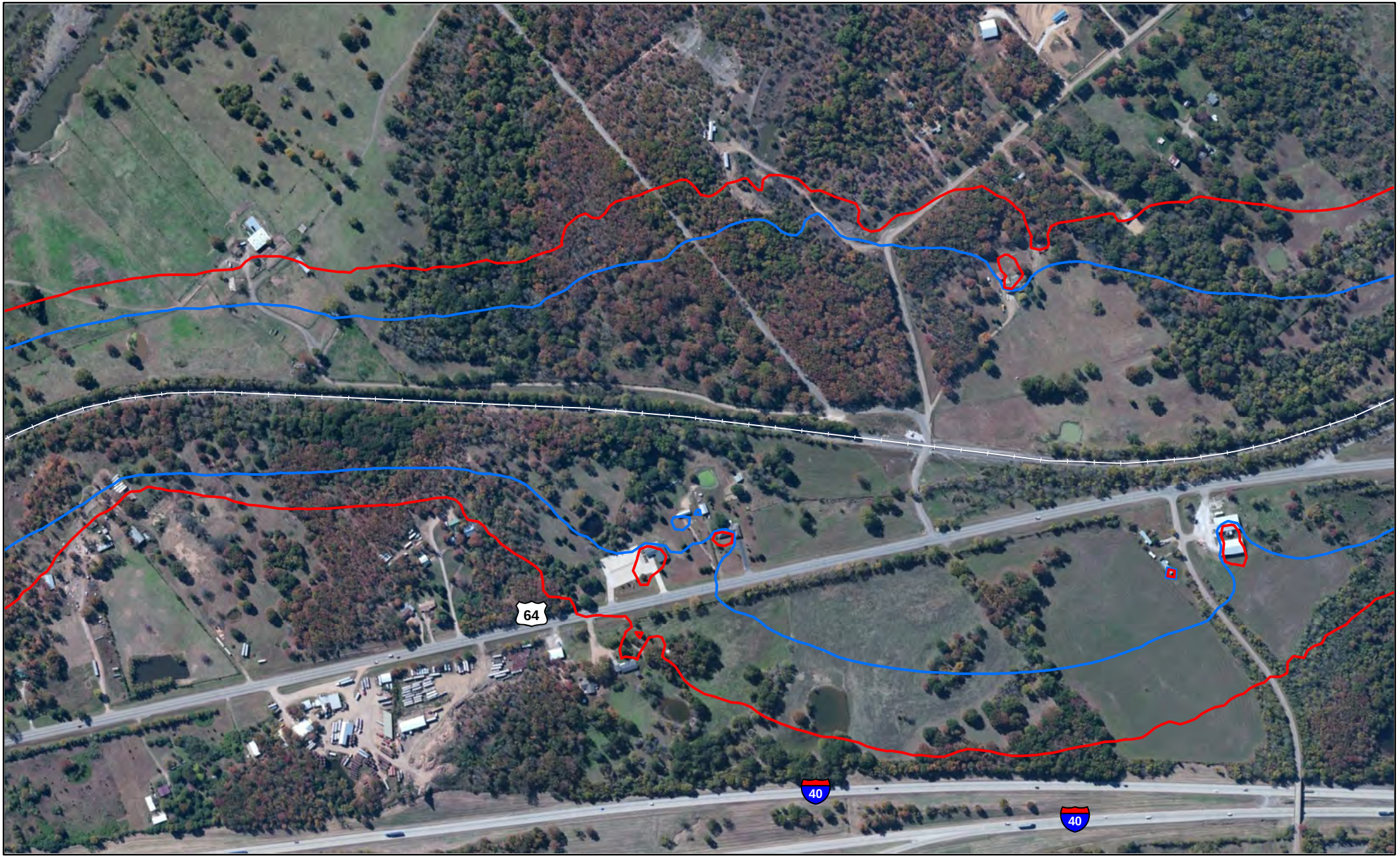
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Noise Contours
Sequoyah County, OK

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



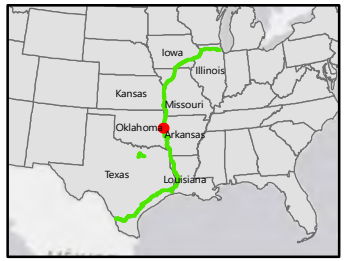
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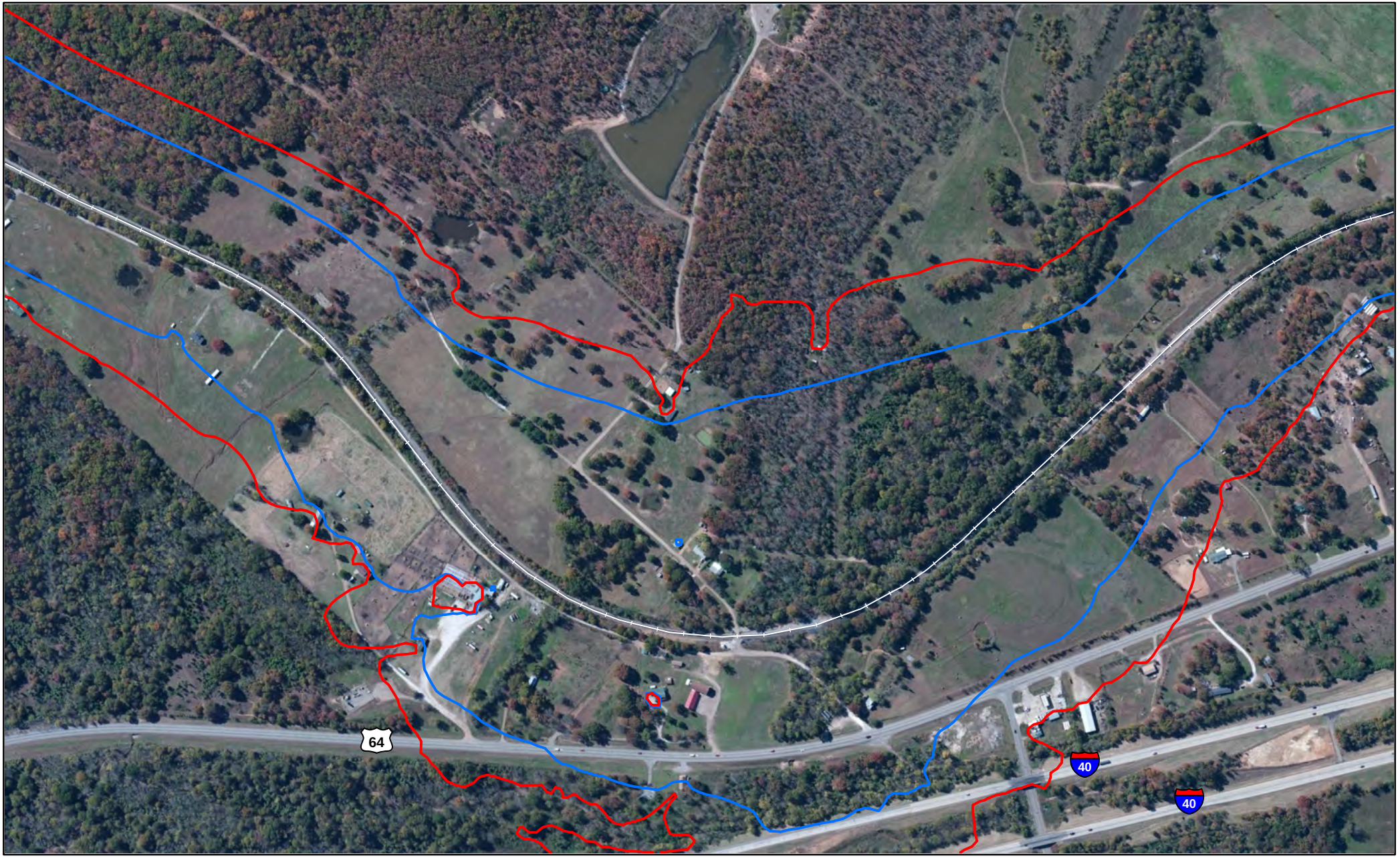
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Noise Contours
Sequoyah County, OK

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



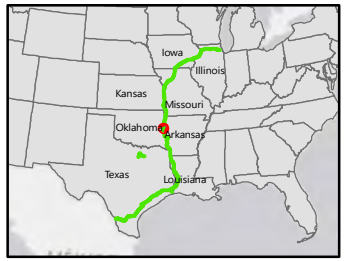
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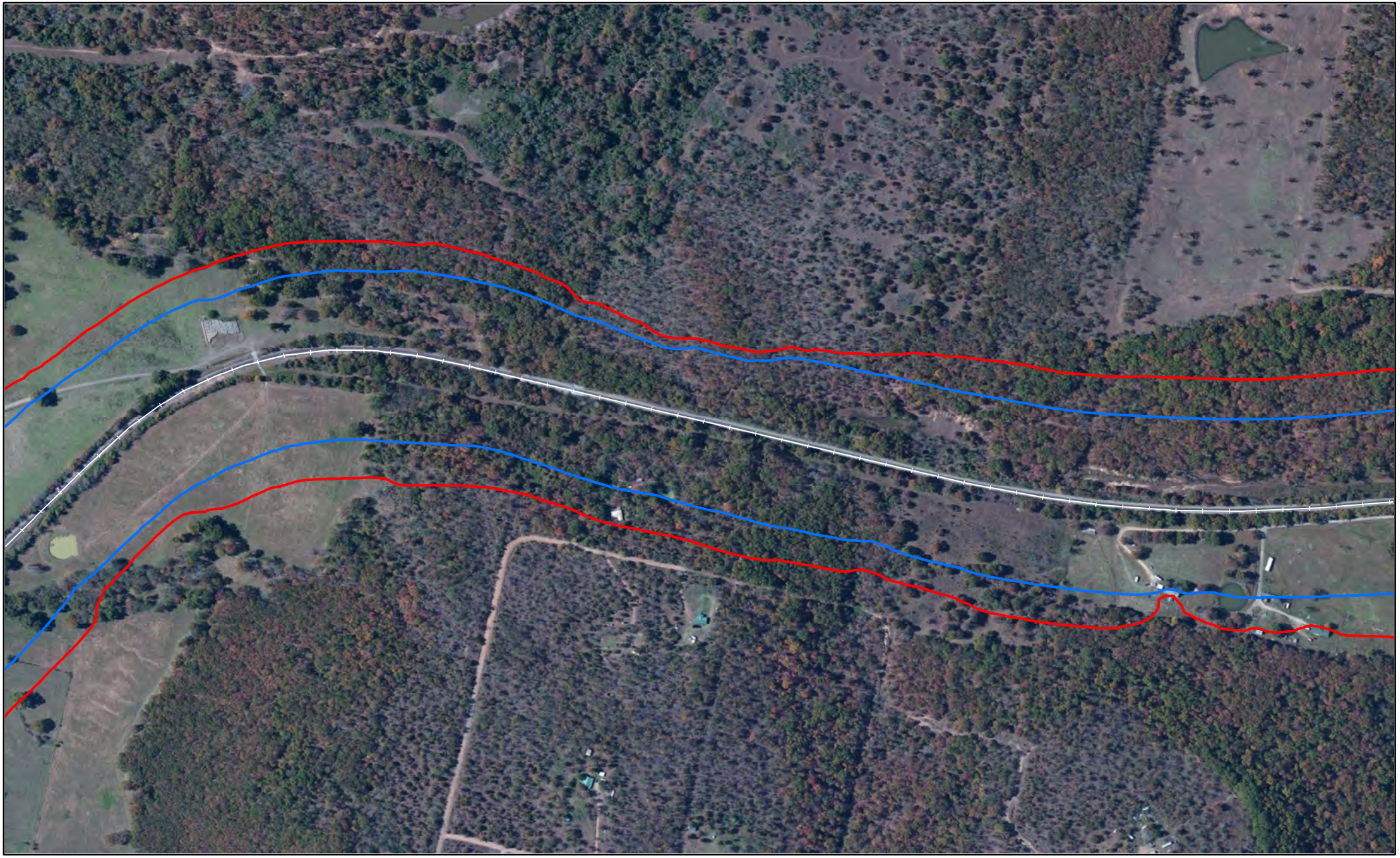
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Noise Contours
Sequoyah County, OK

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



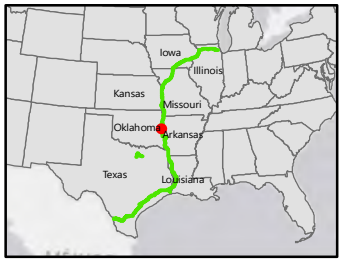
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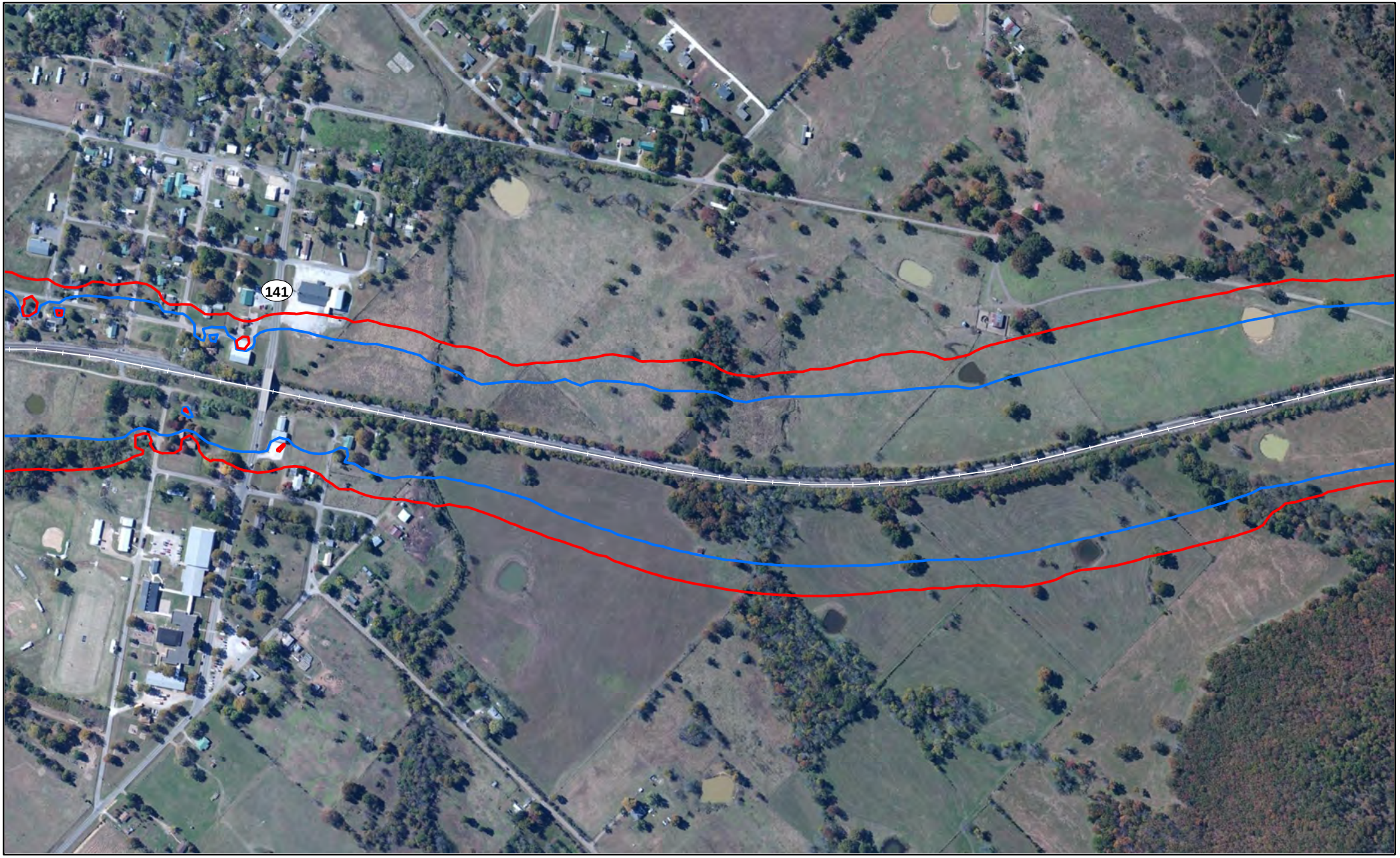
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Noise Contours
Sequoyah County, OK

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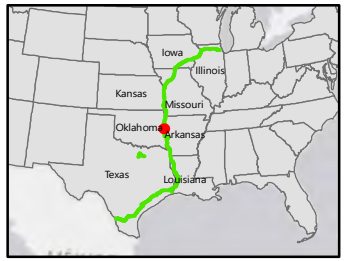
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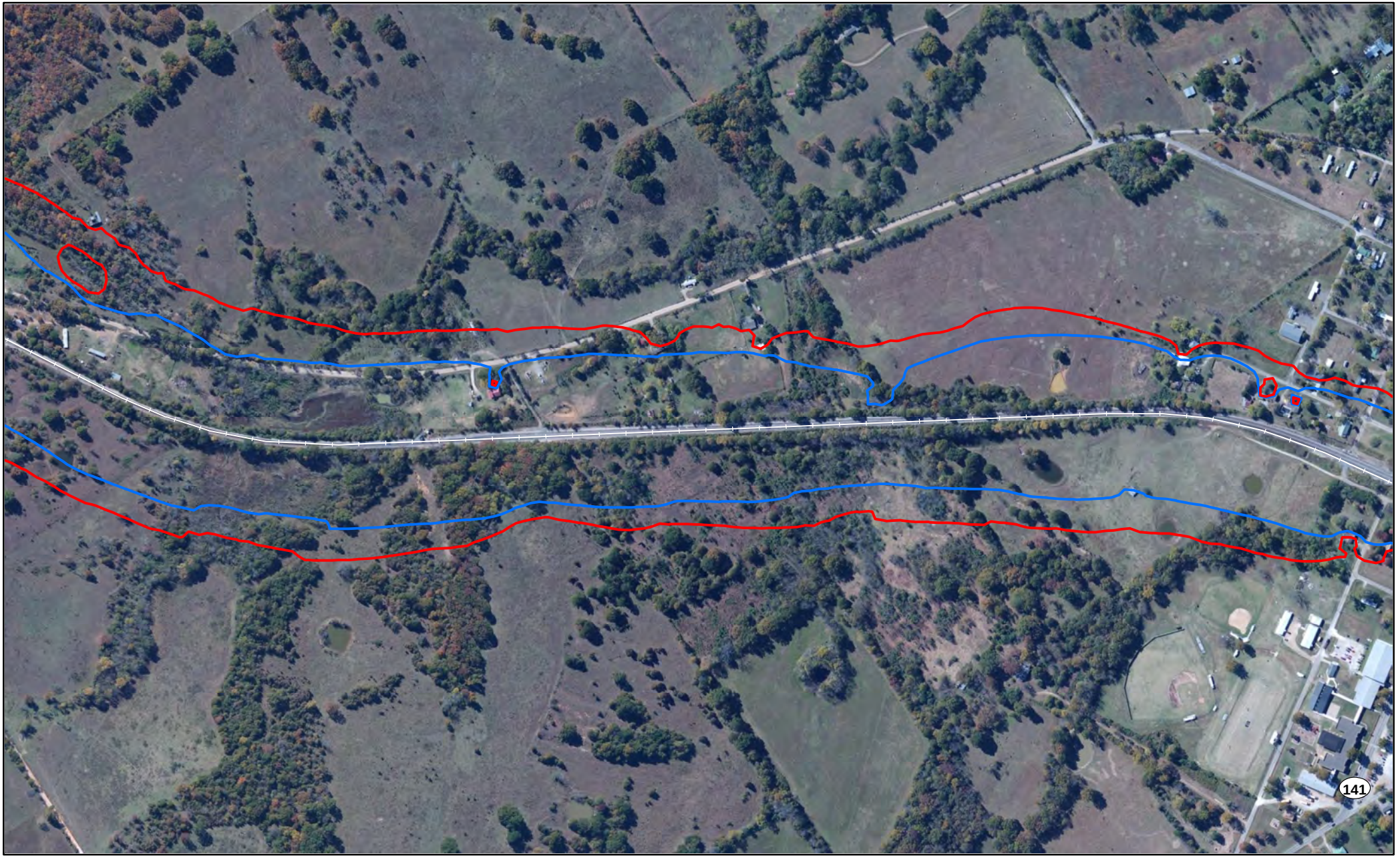
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Noise Contours
Sequoyah County, OK

Miles
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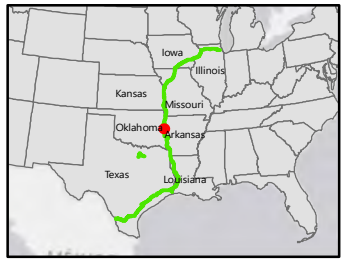
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Noise Contours
Sequoyah County, OK

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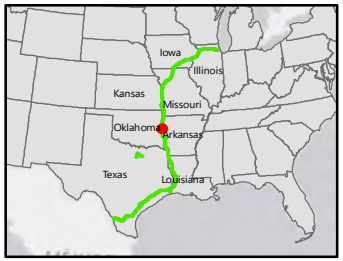
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Noise Contours
Sequoyah County, OK

Miles
0 0.05 0.1



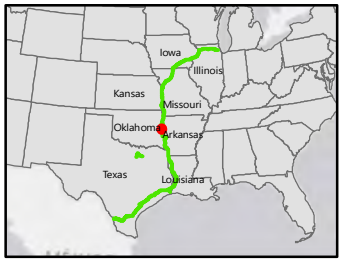
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Noise Contours
Sequoyah County, OK

Miles
0 0.05 0.1



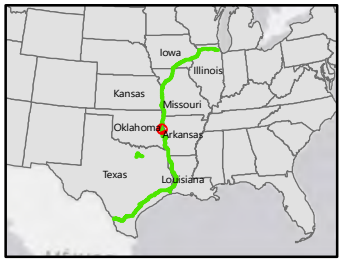
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Noise Contours
Sequoyah County, OK

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



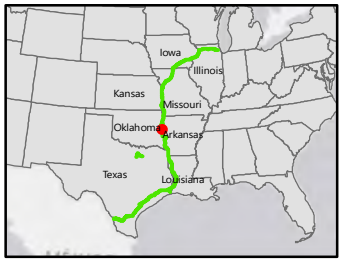
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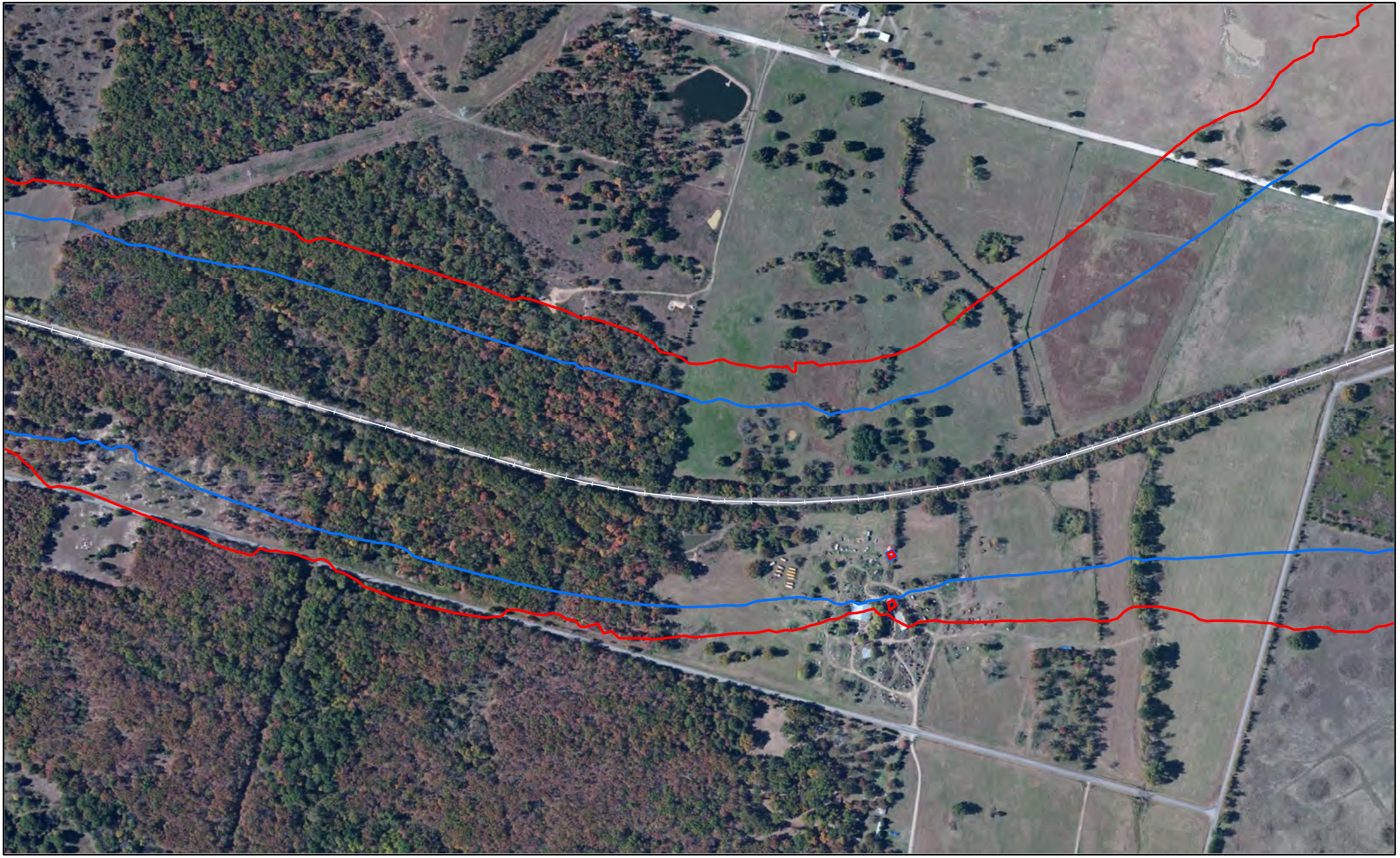
Tracks

Source: ESRI.



Noise Contours
Sequoyah County, OK

Miles
0 0.05 0.1



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Noise Contours
Sequoyah County, OK

Miles
0 0.05 0.1



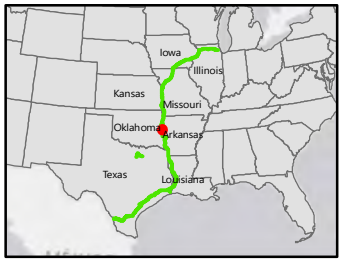
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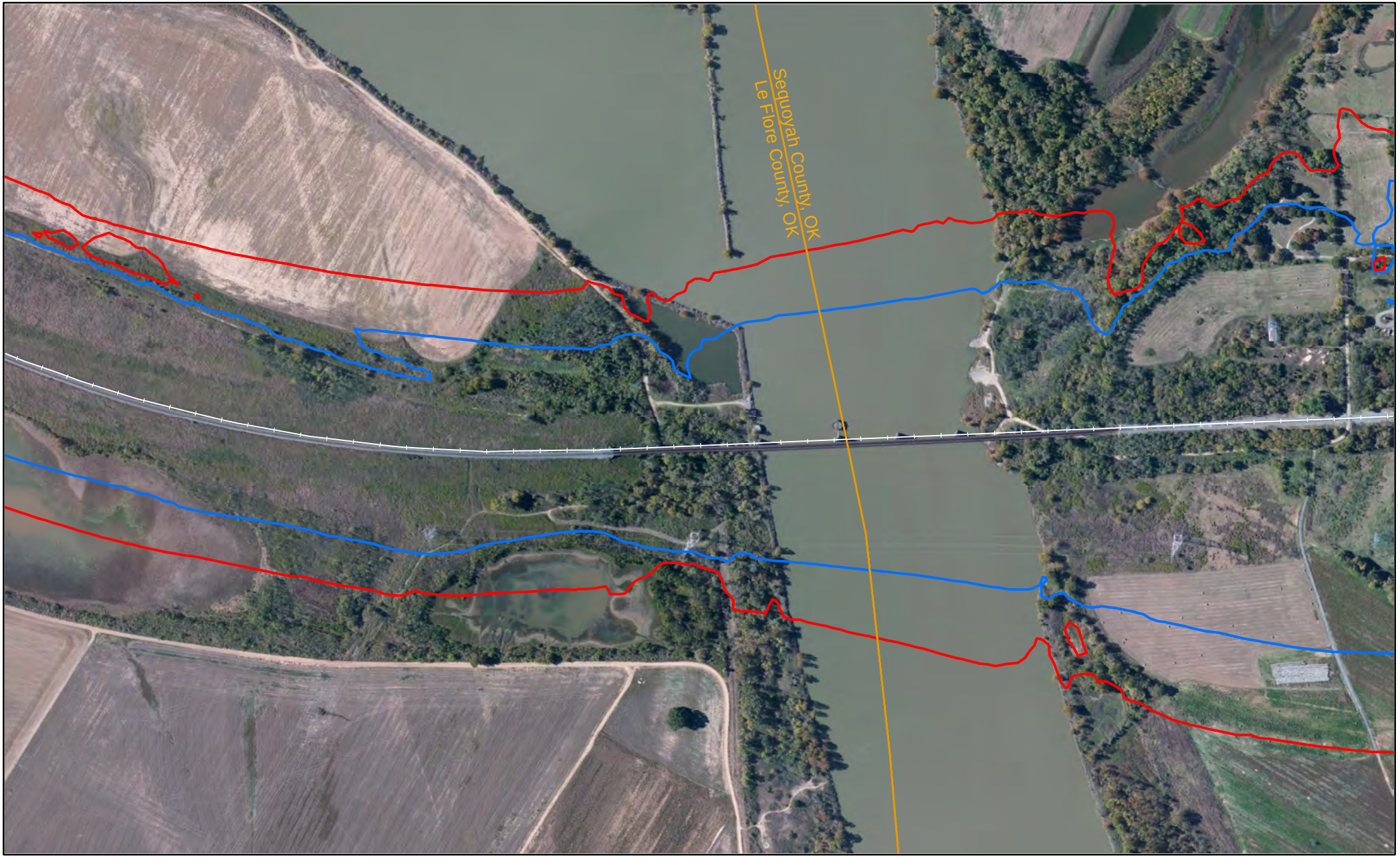
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Noise Contours
Sequoyah County, OK

Miles
0 0.05 0.1



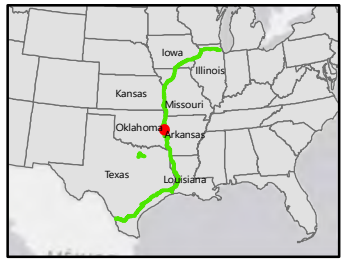
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Tracks

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Noise Contours
Le Flore County, OK

Page 780 of 1588

Miles
0 0.05 0.1



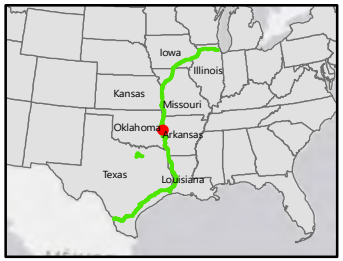
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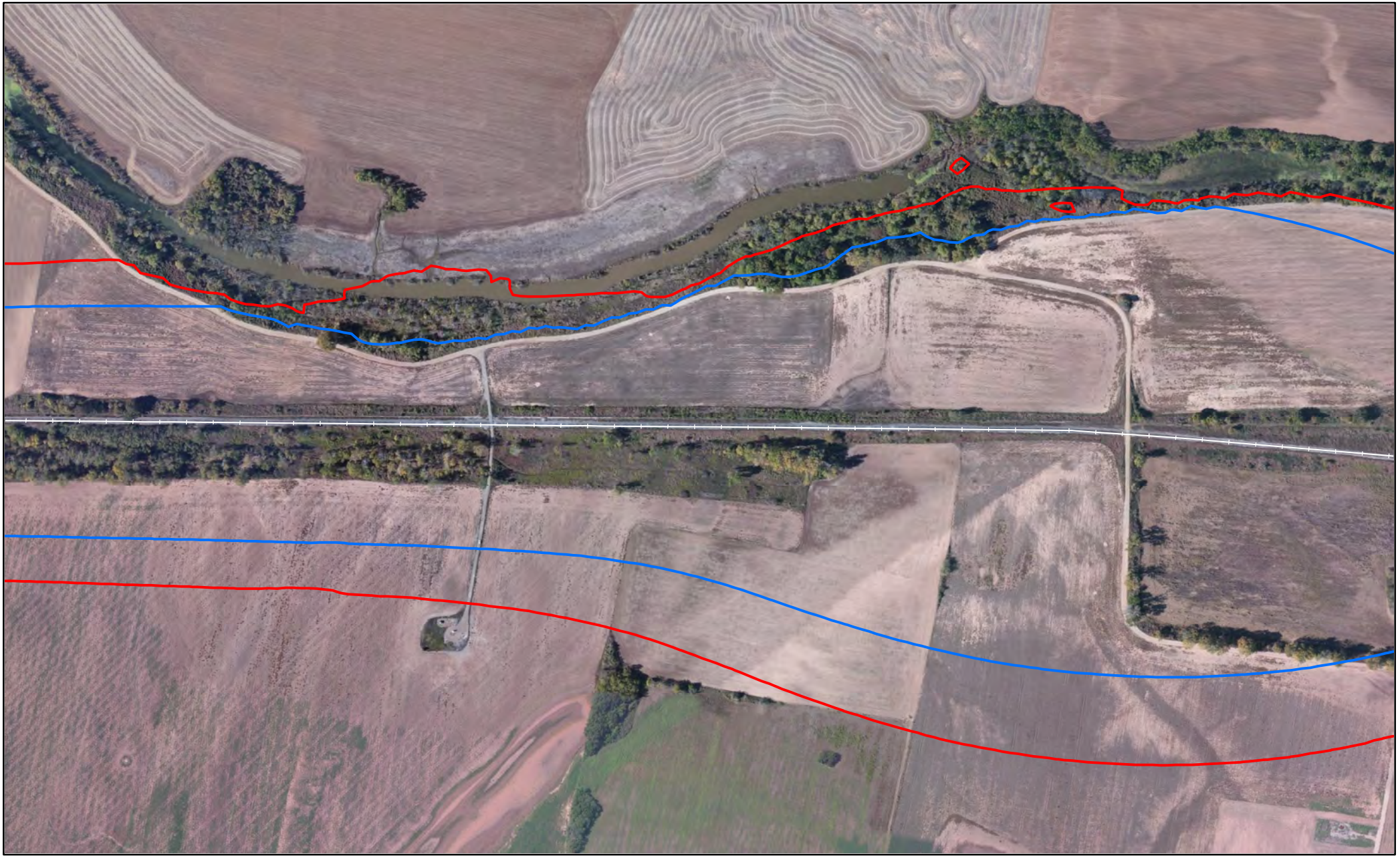
Tracks

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Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



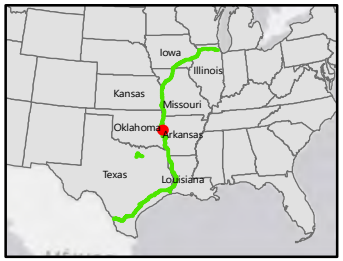
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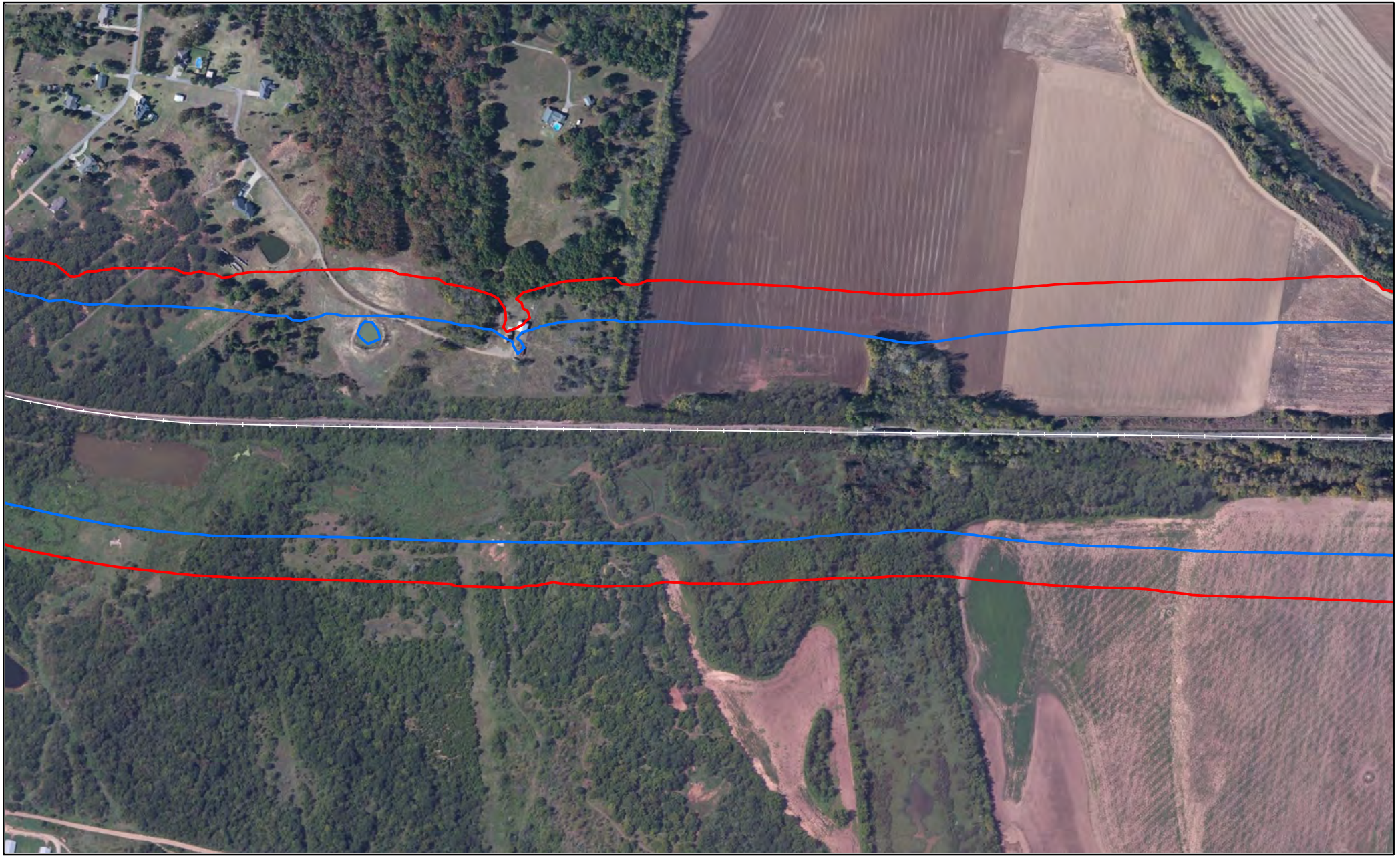
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Noise Contours
Le Flore County, OK

Miles
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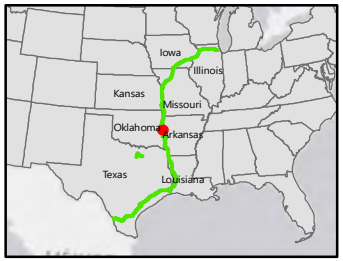
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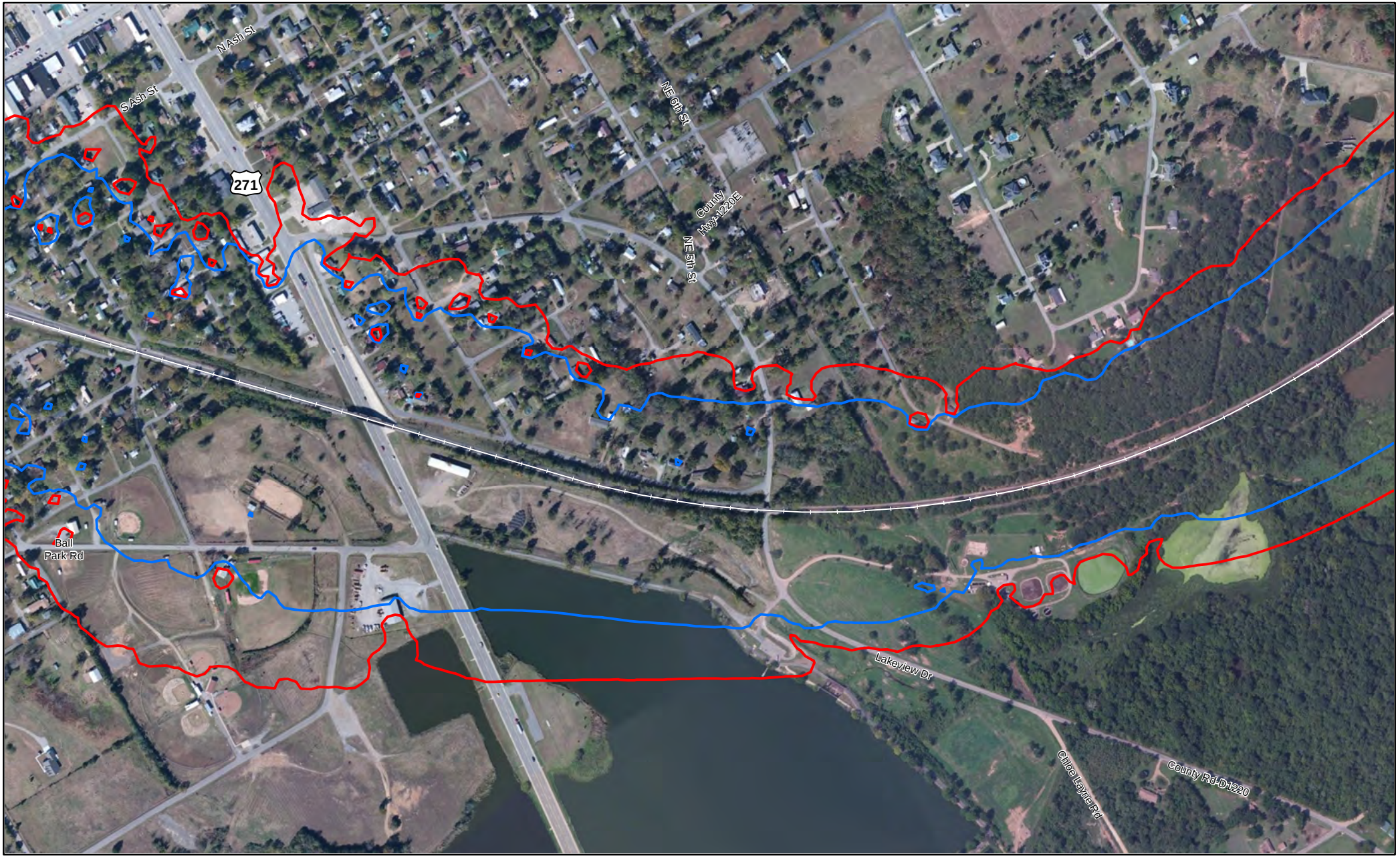
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Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



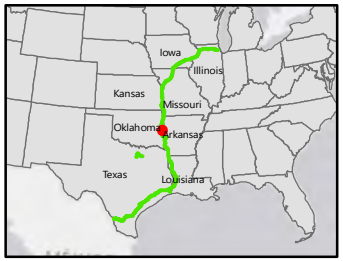
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Noise Contours
Le Flore County, OK

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



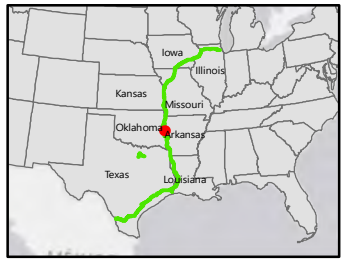
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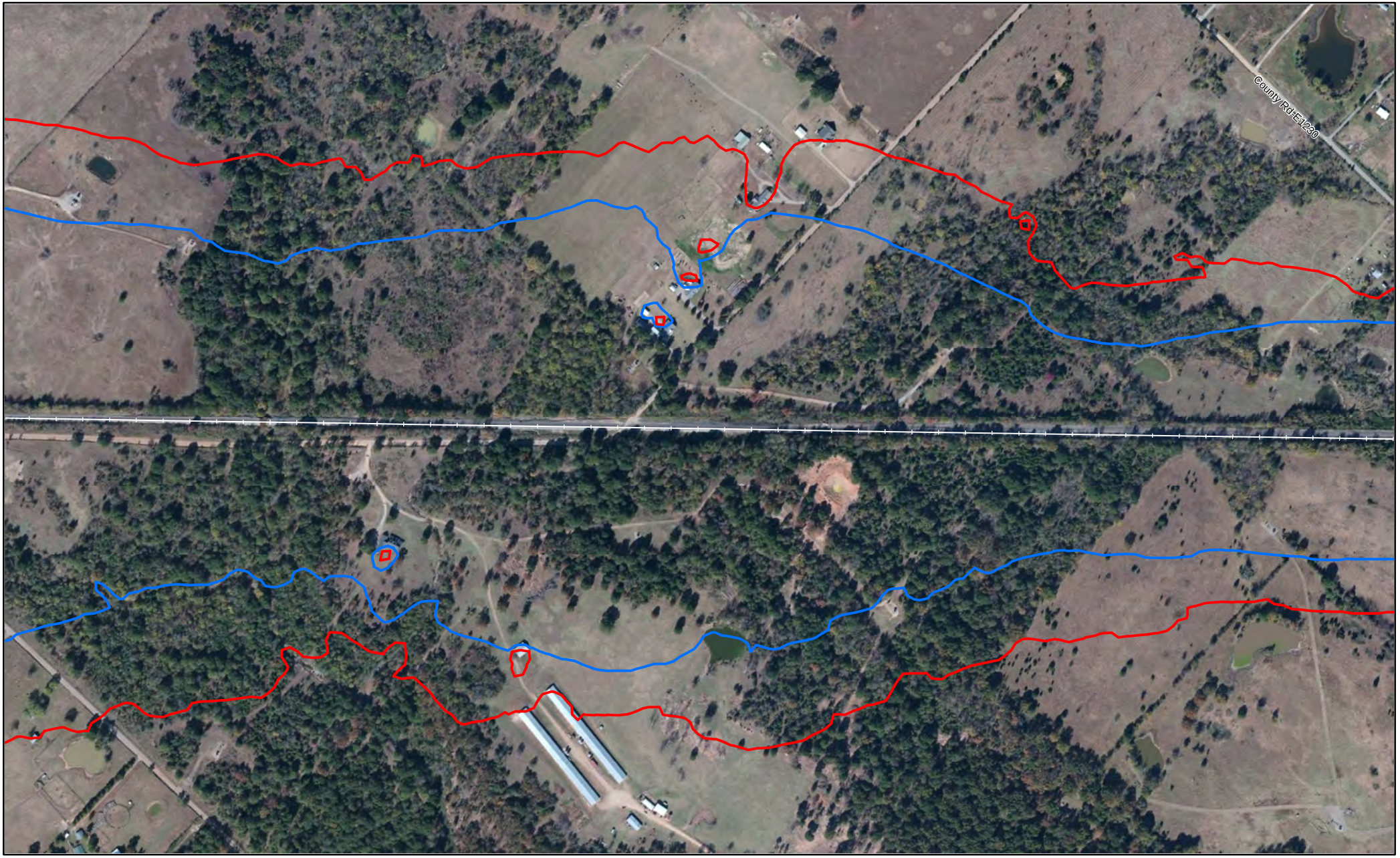
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Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



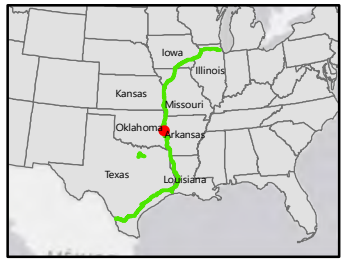
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Noise Contours
Le Flore County, OK

Miles
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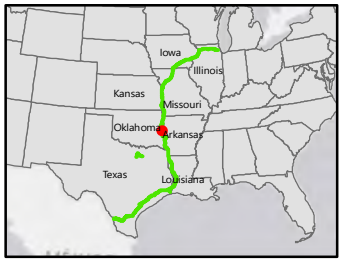
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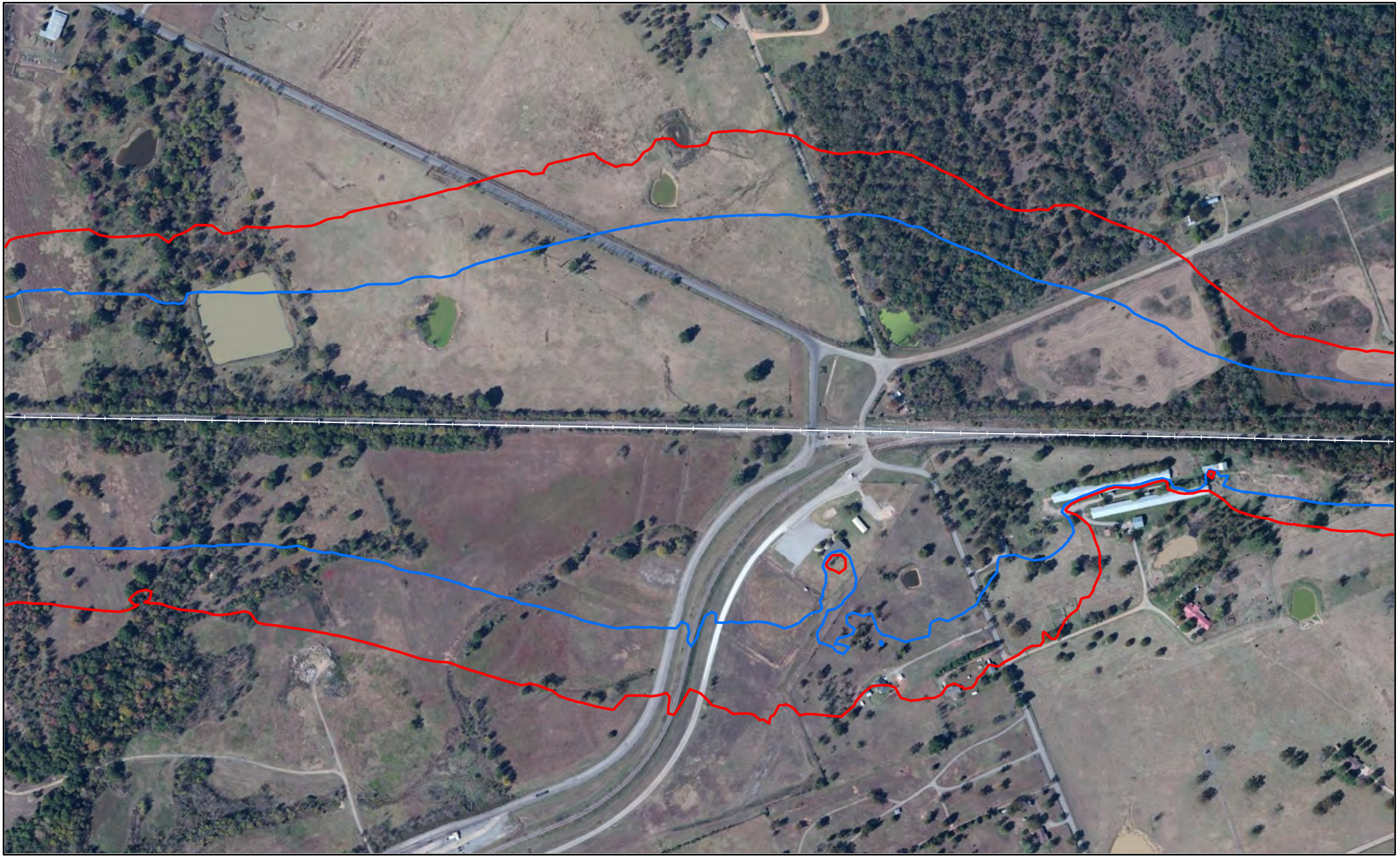
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Noise Contours
Le Flore County, OK

Miles
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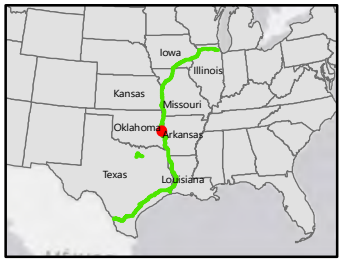
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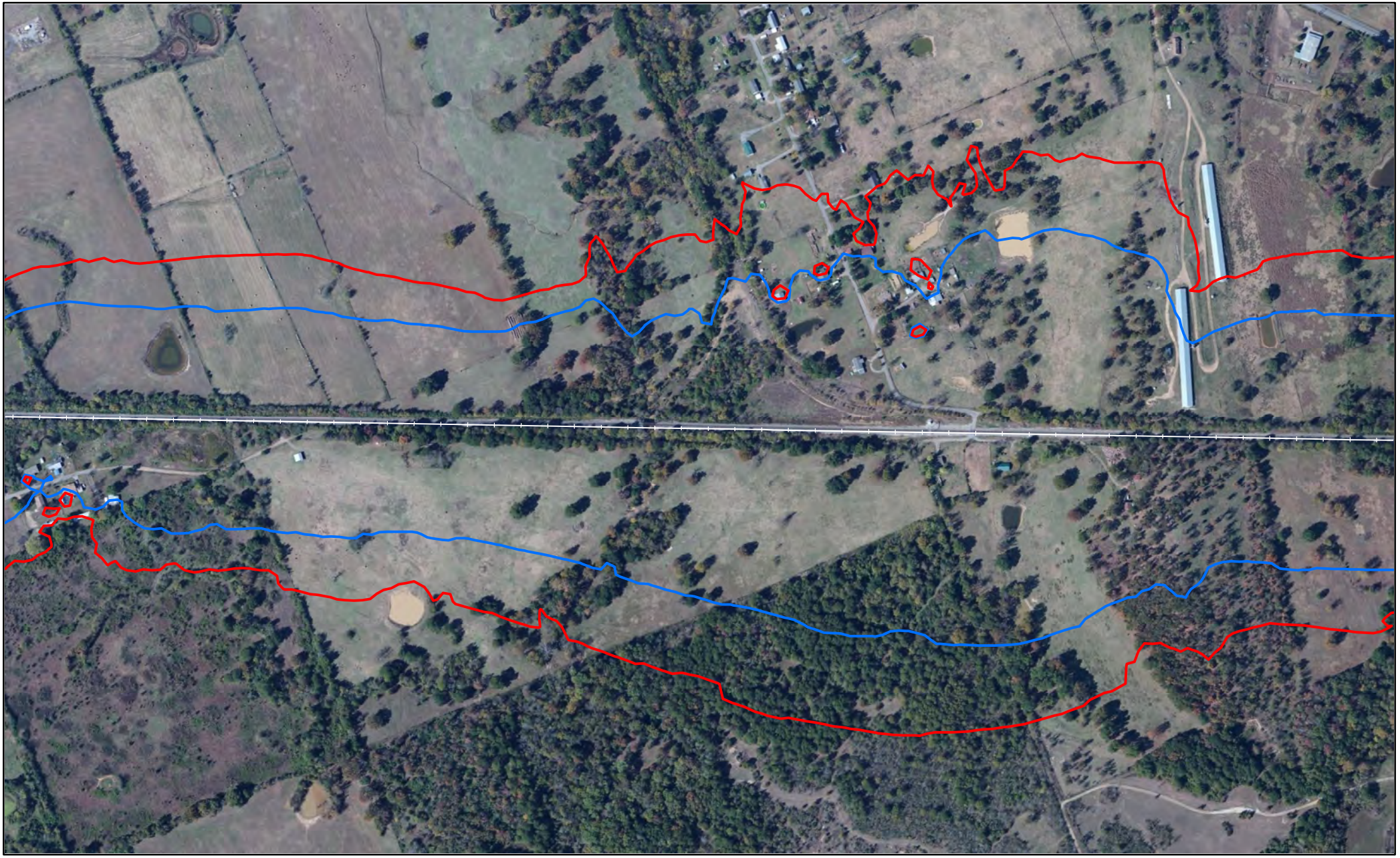
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Noise Contours
Le Flore County, OK

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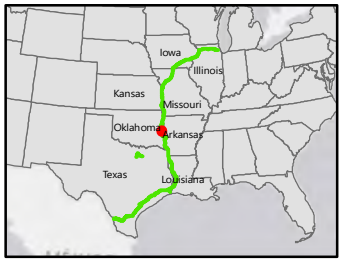
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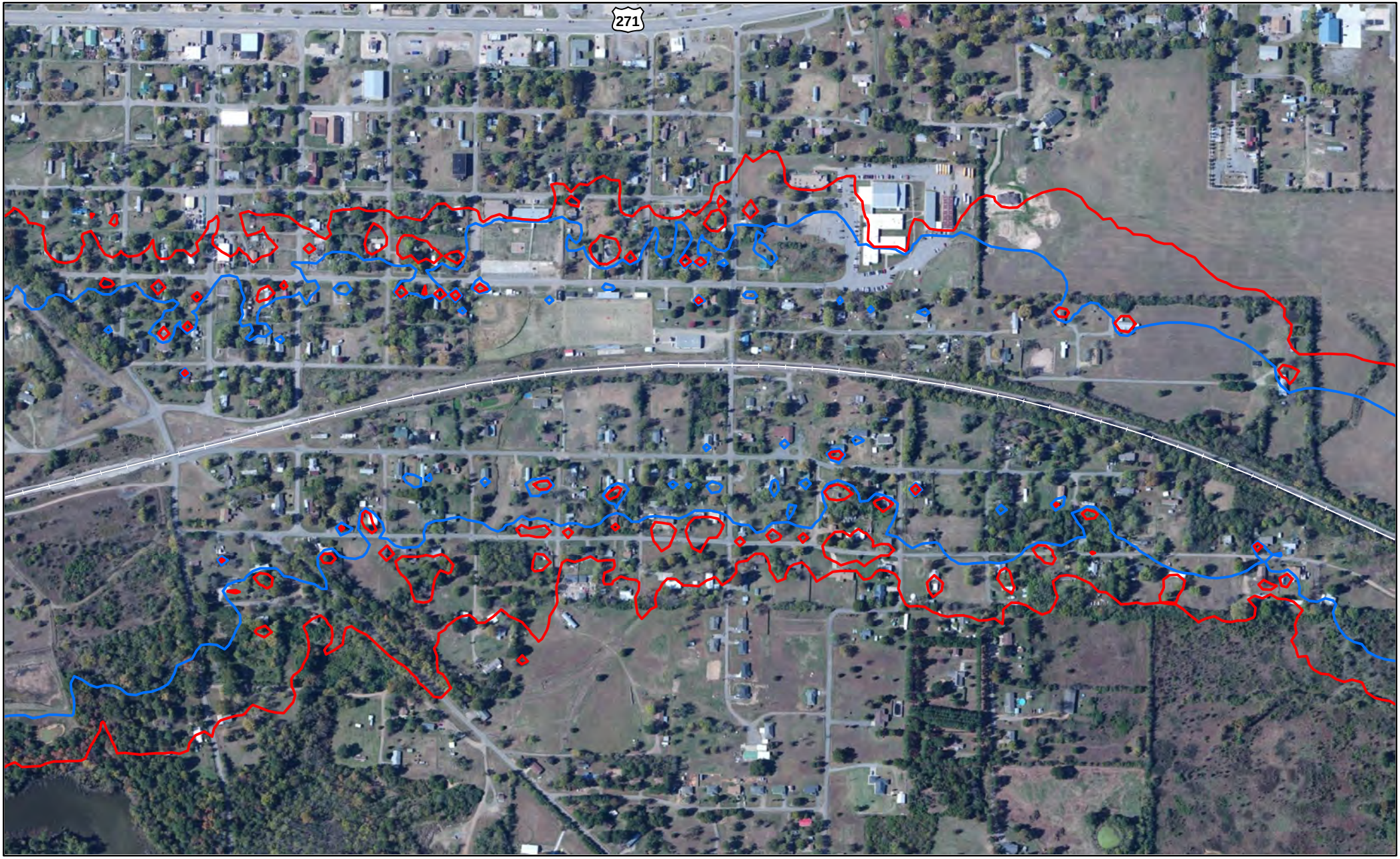
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Noise Contours
Le Flore County, OK

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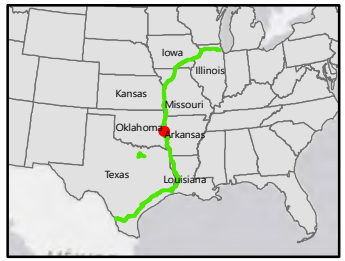
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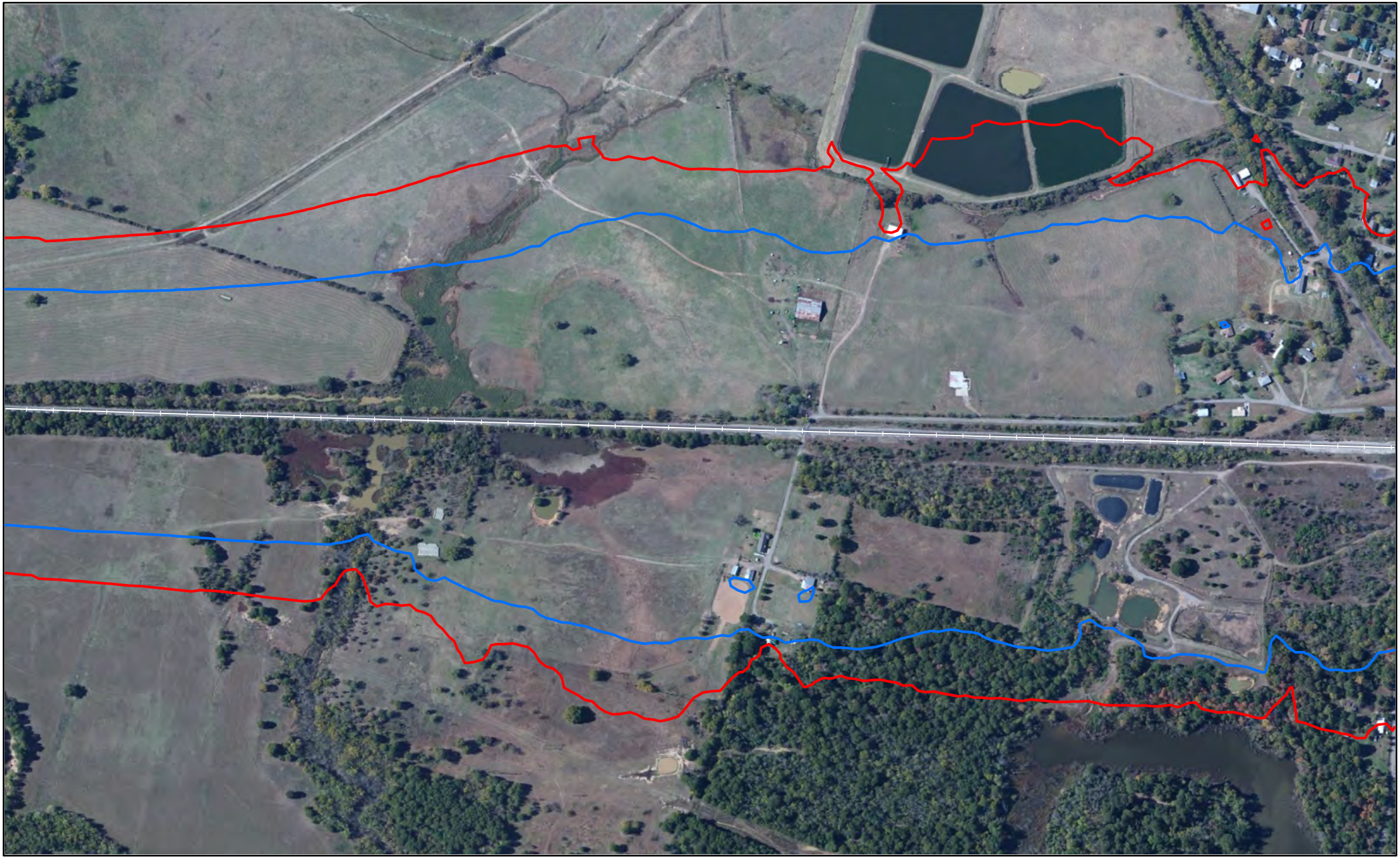
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Le Flore County, OK

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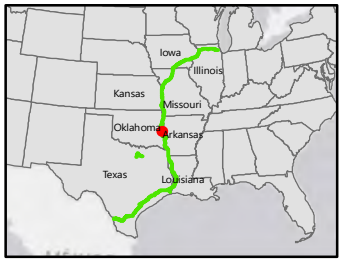
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



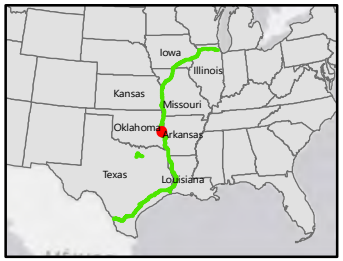
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

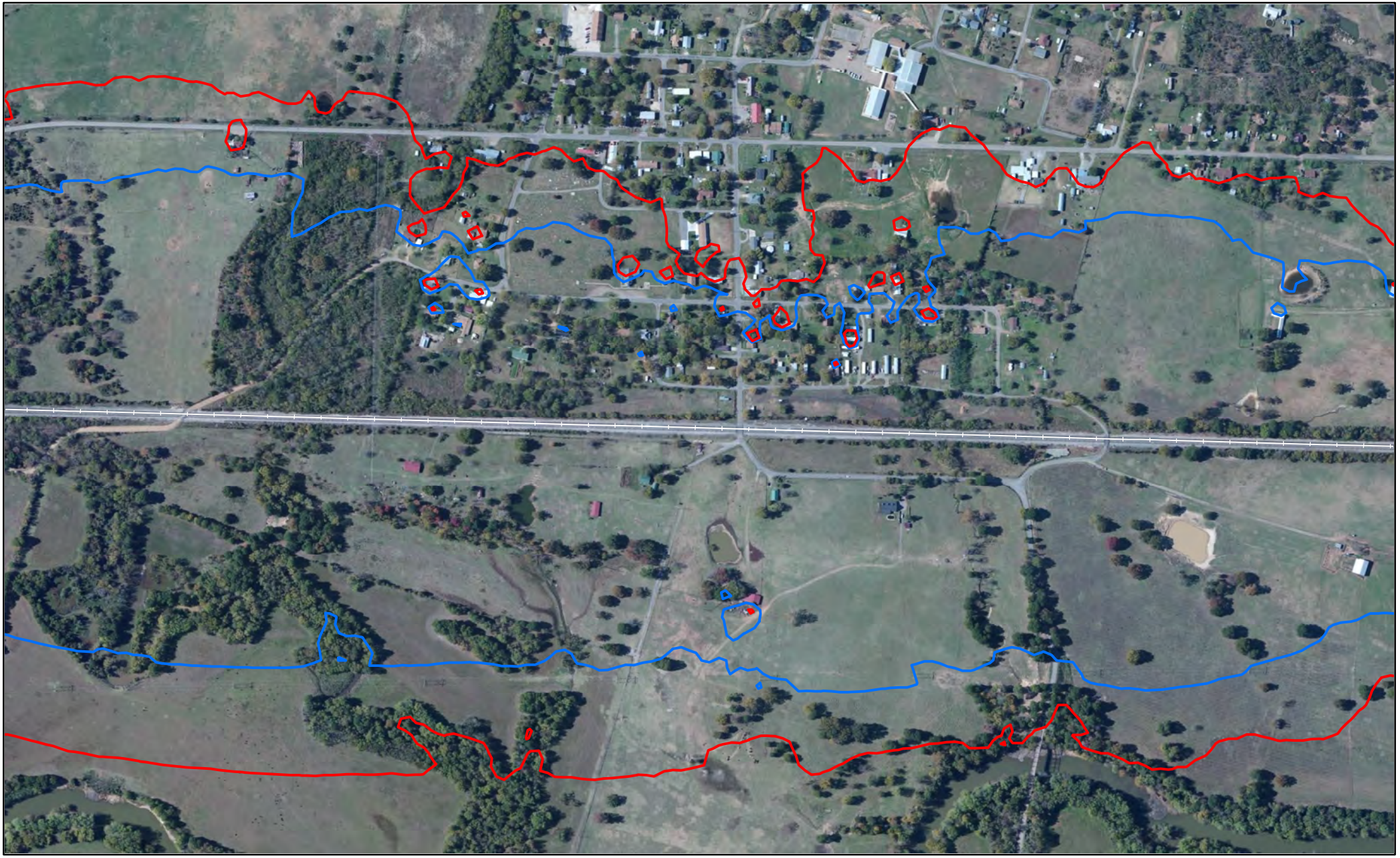
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



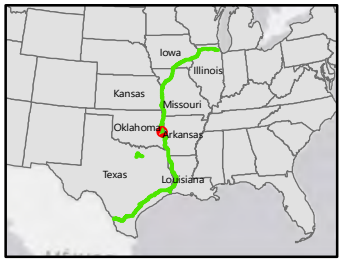
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



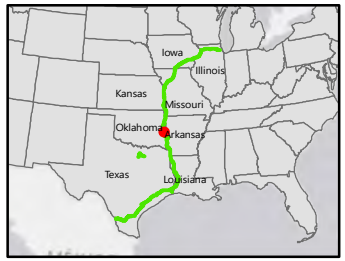
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

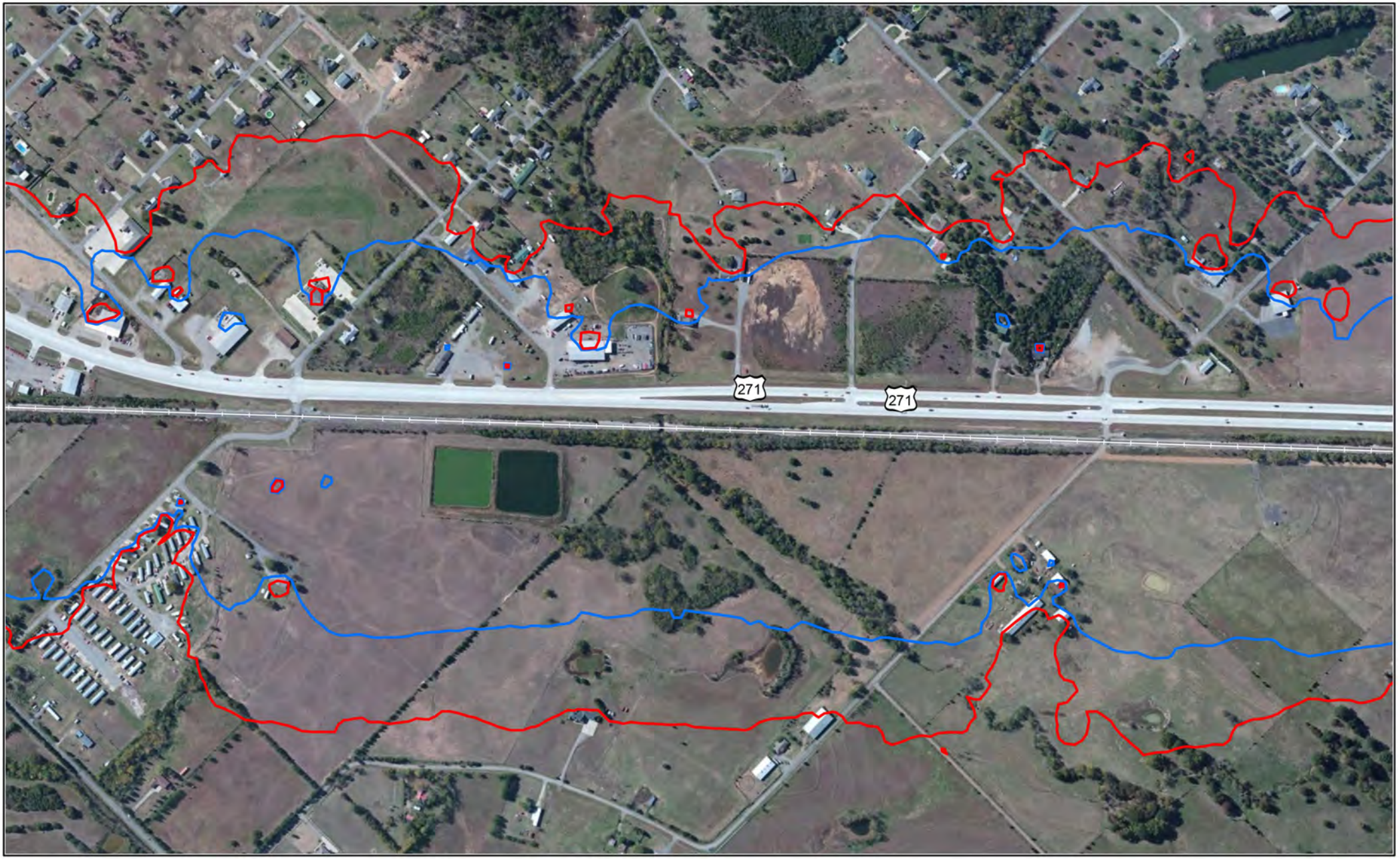
Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

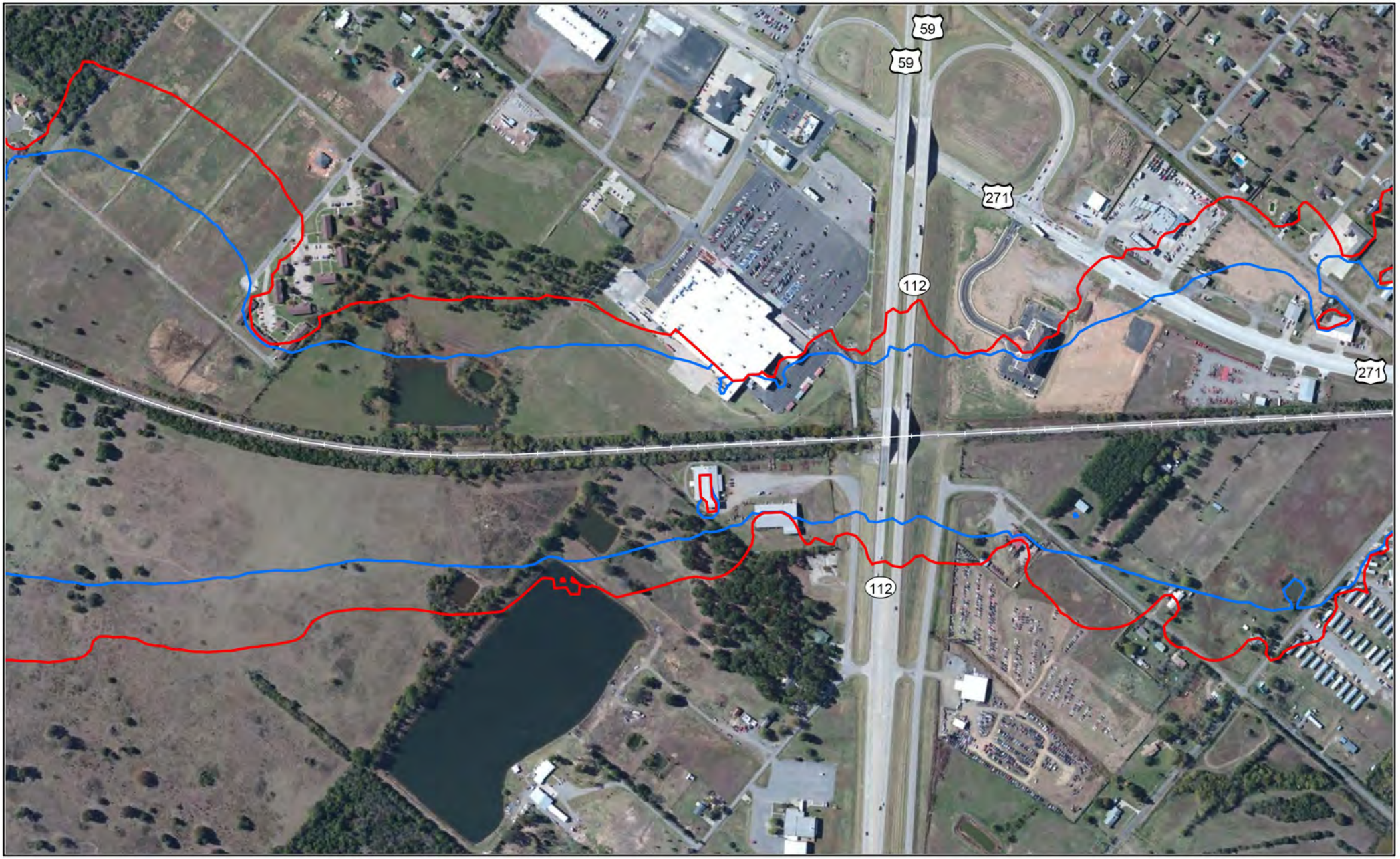
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

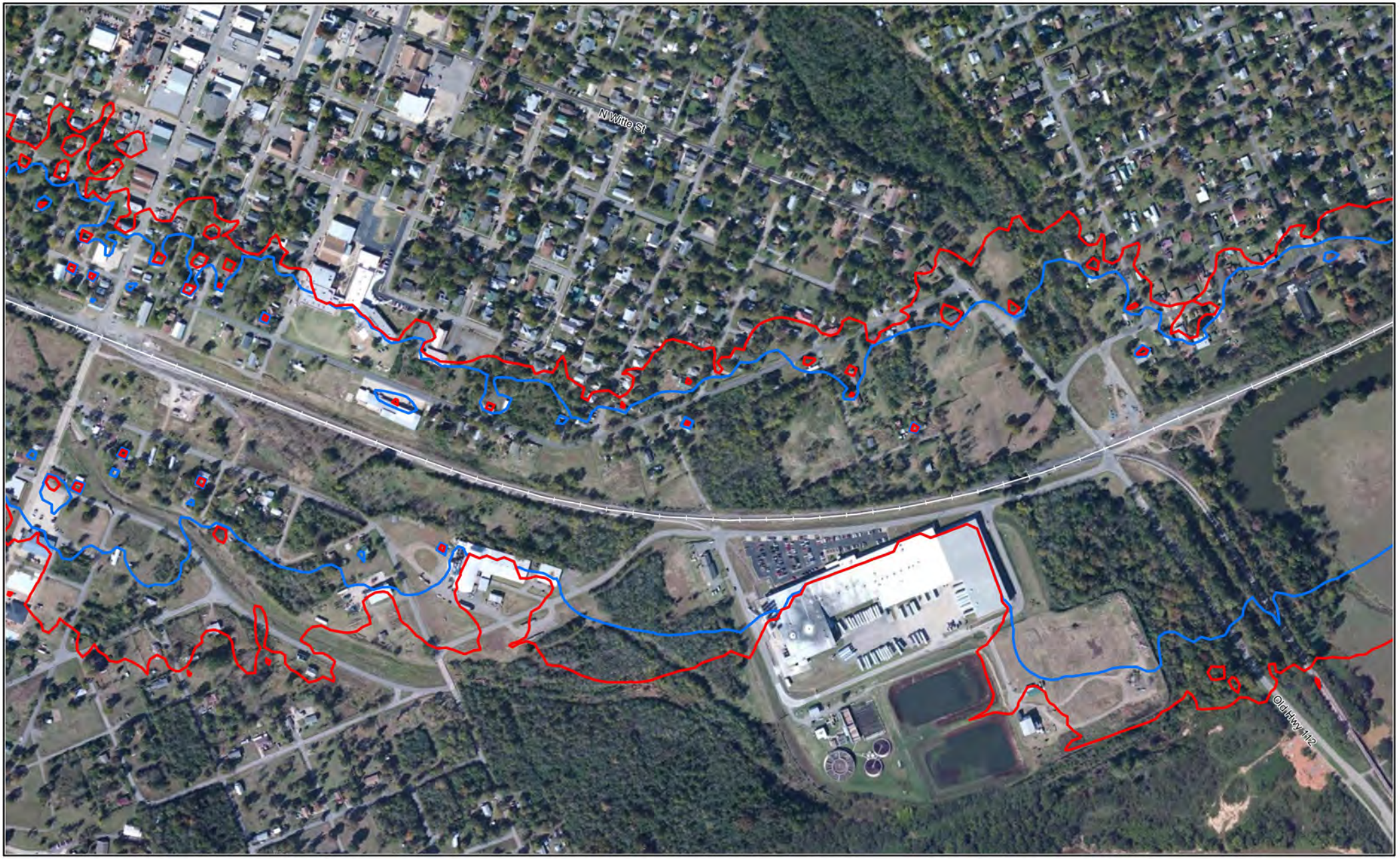
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

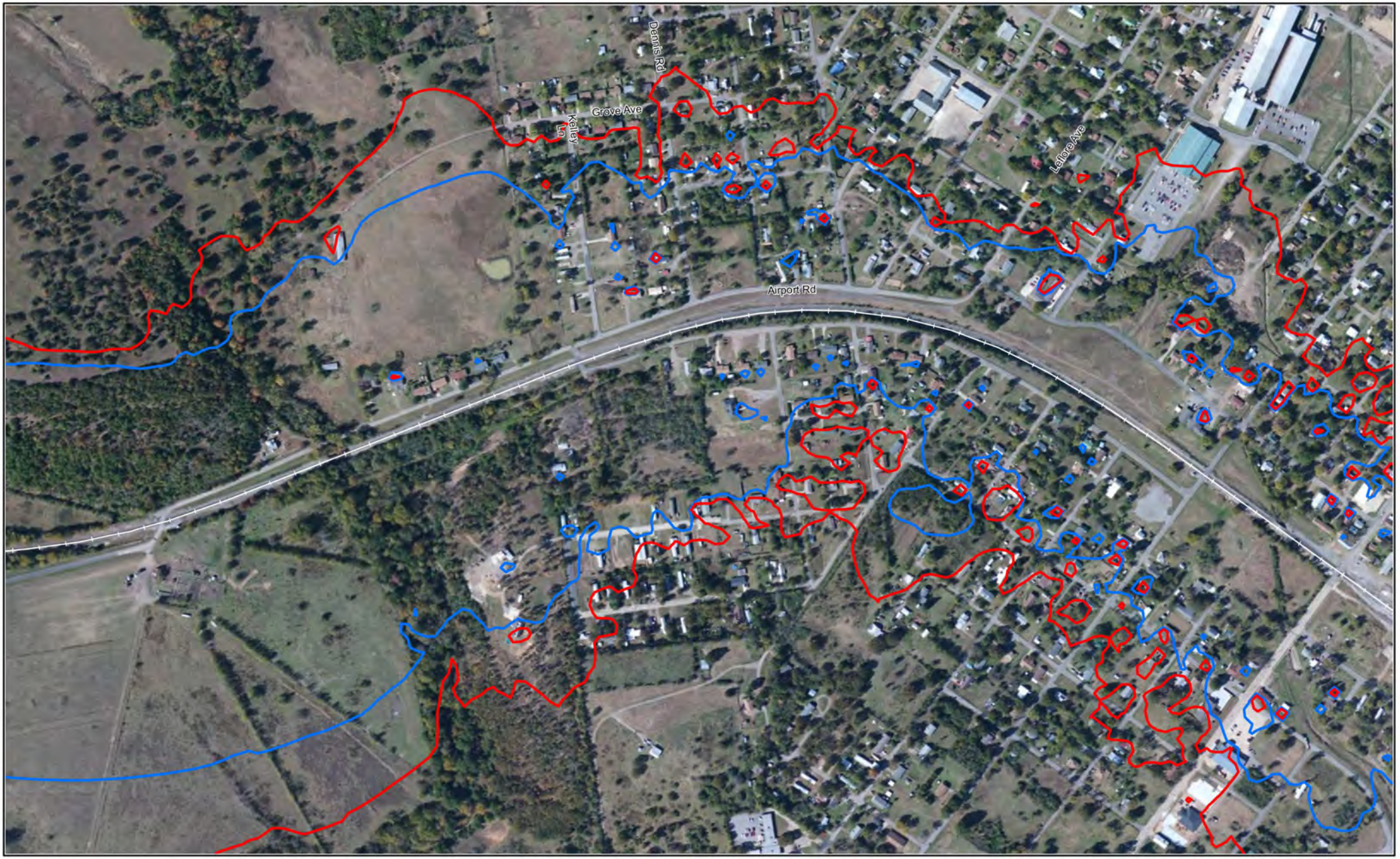
Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

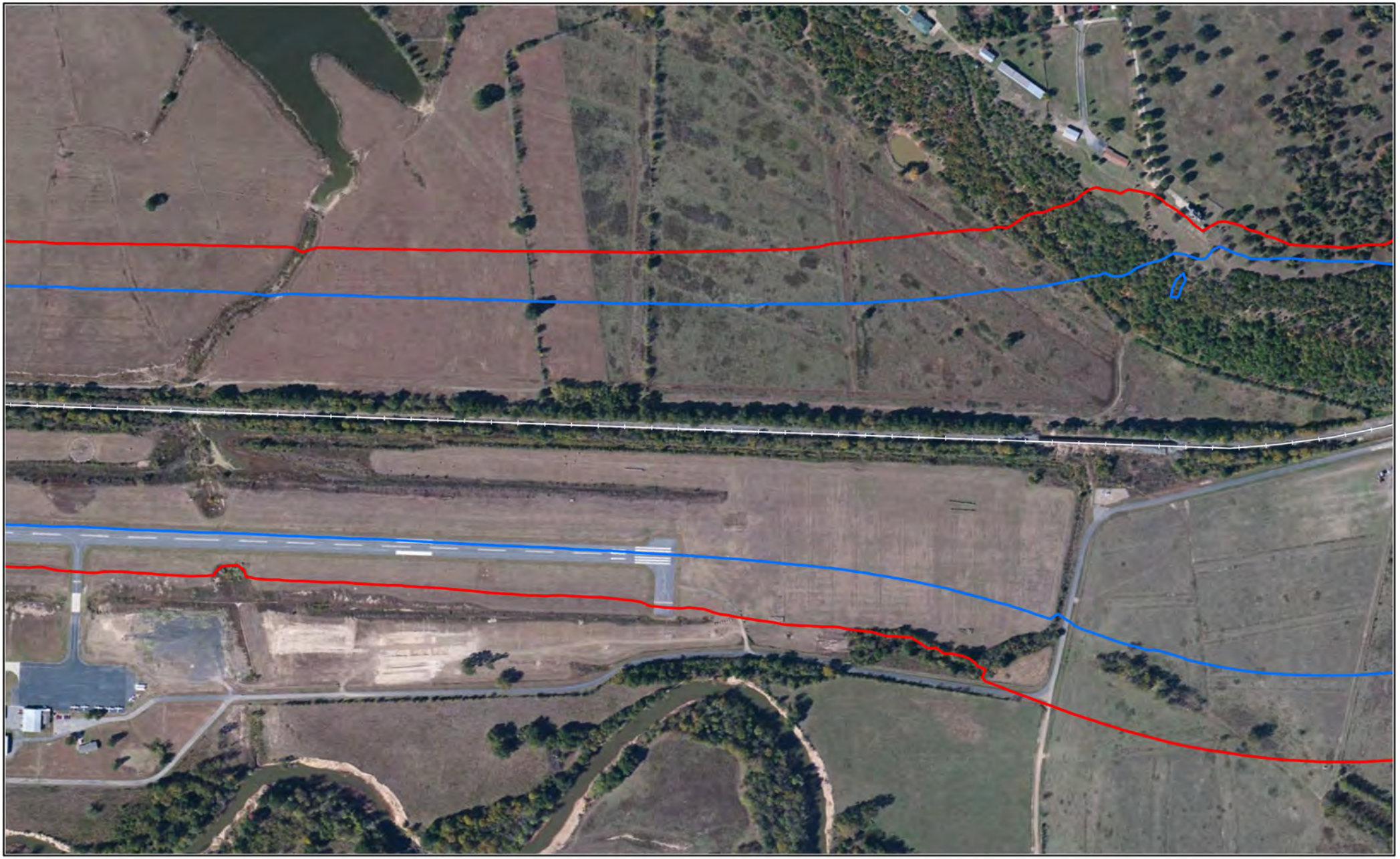
Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

0 0.05 0.1 Miles



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

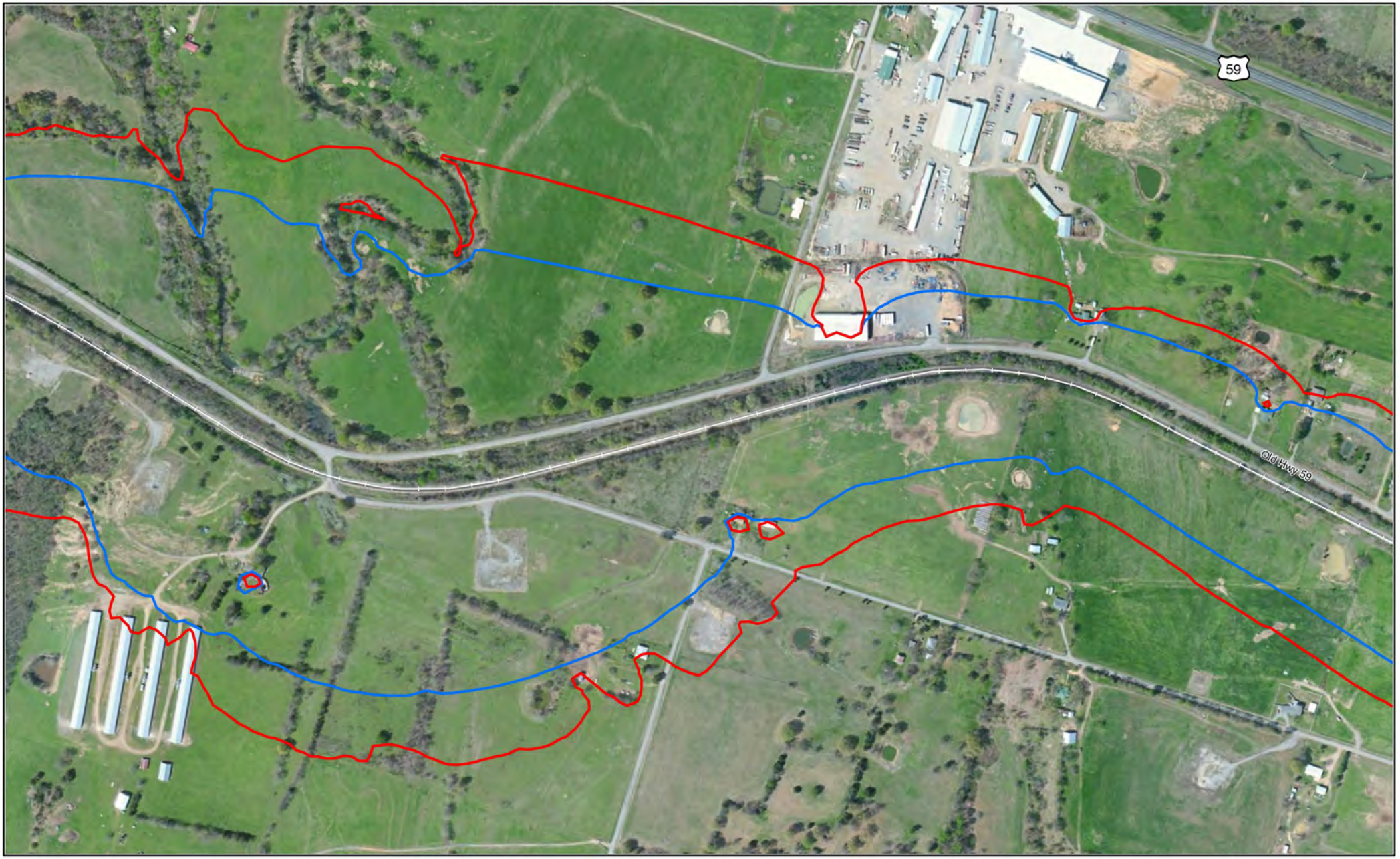
Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

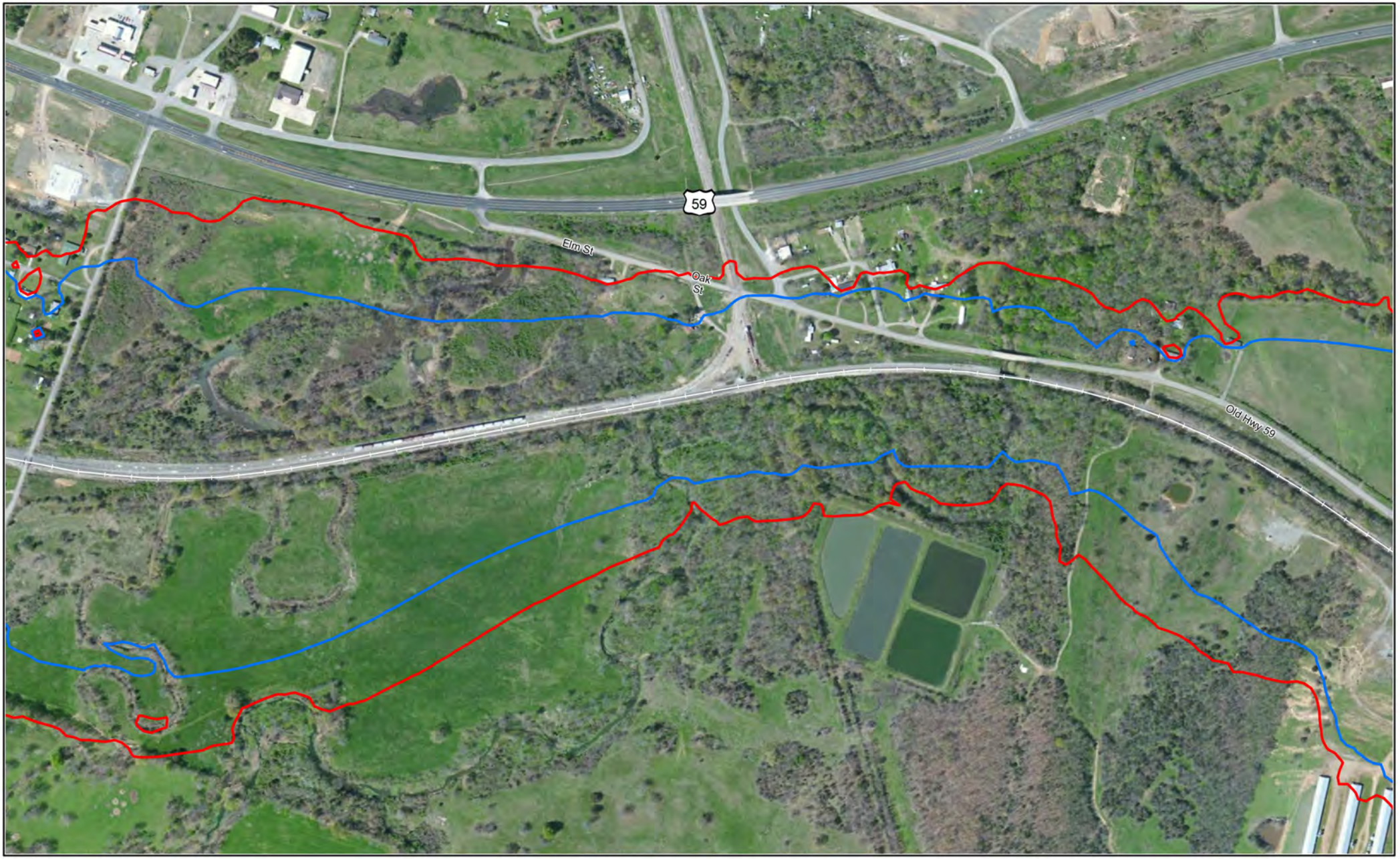
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

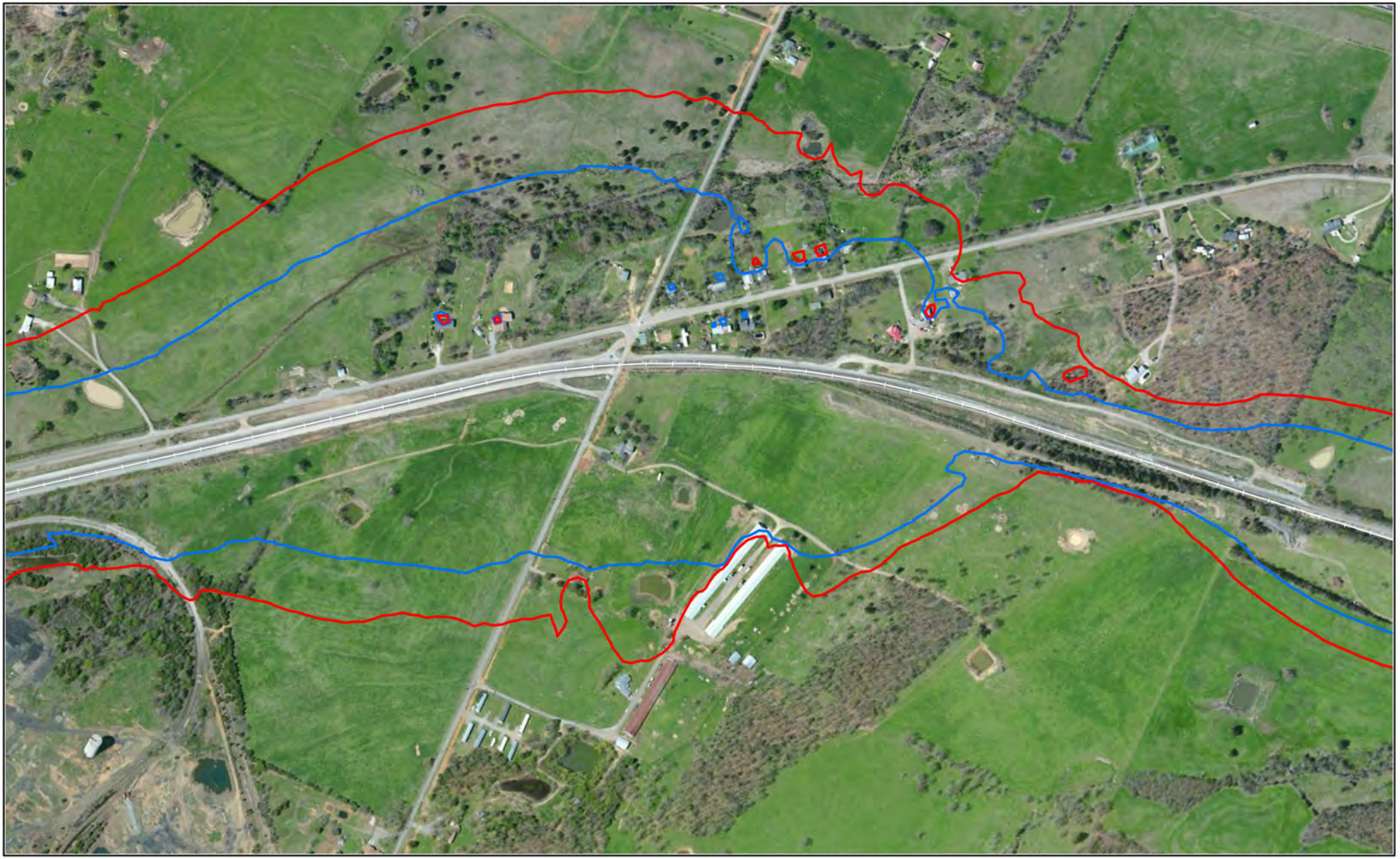
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

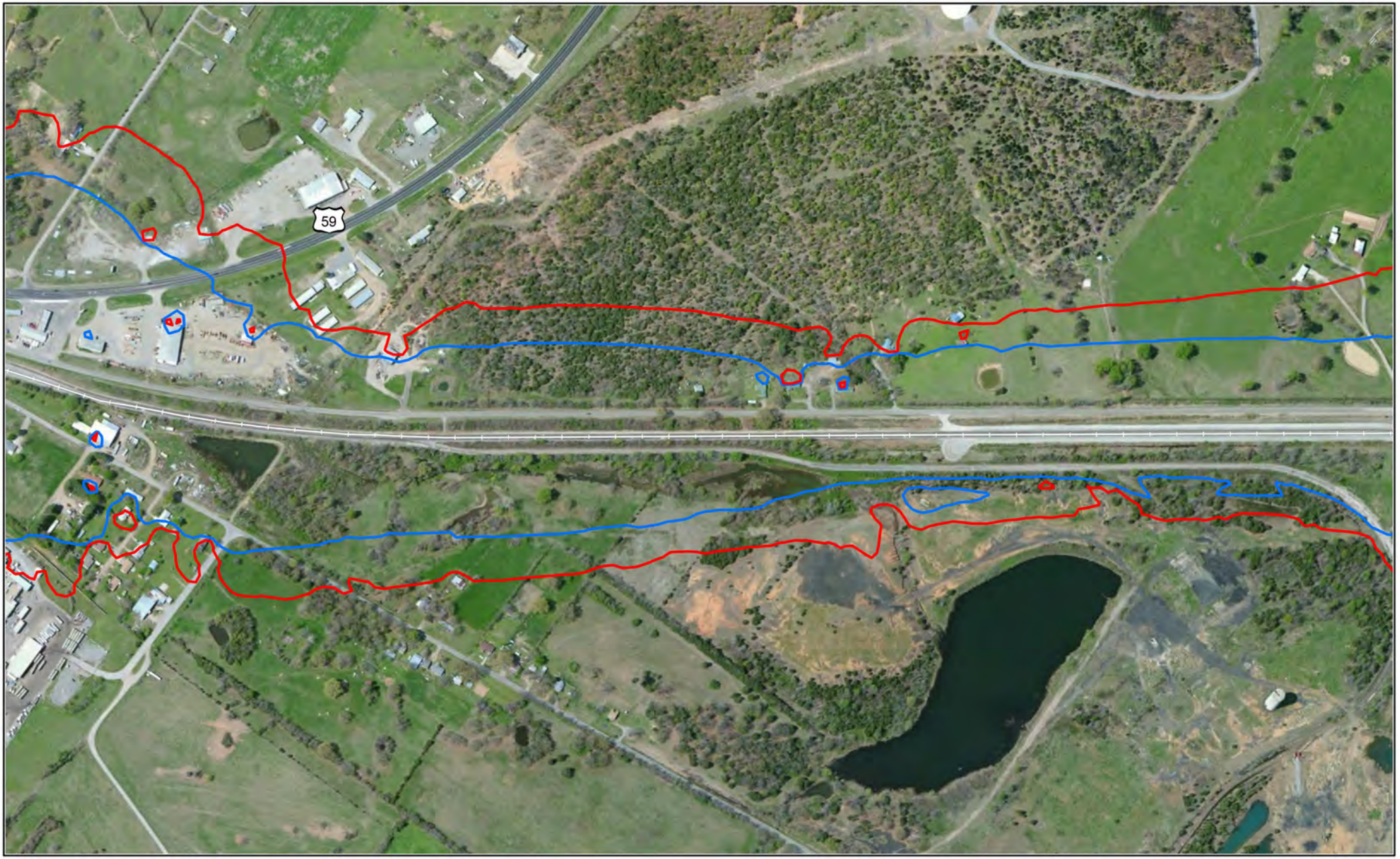
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

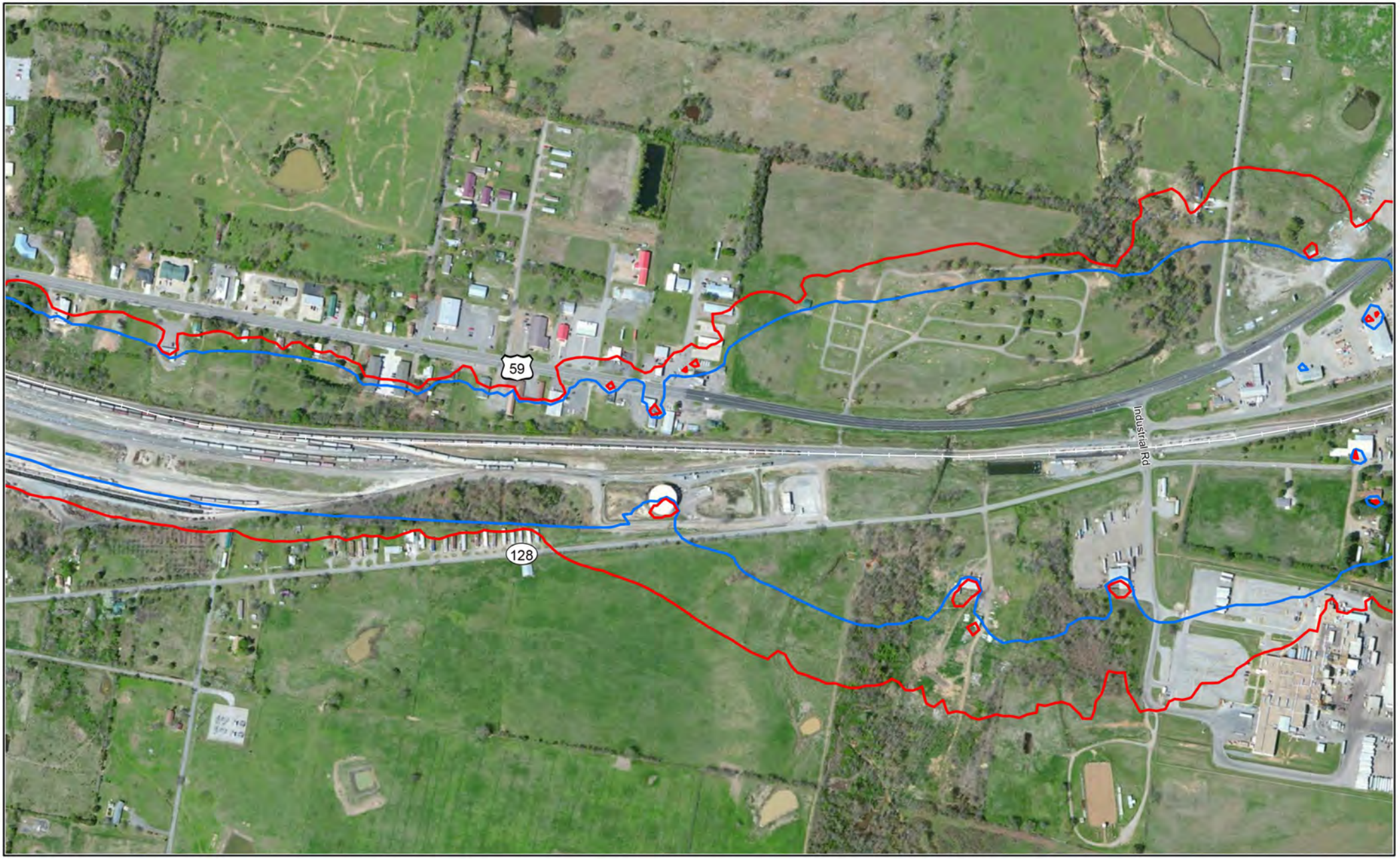
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

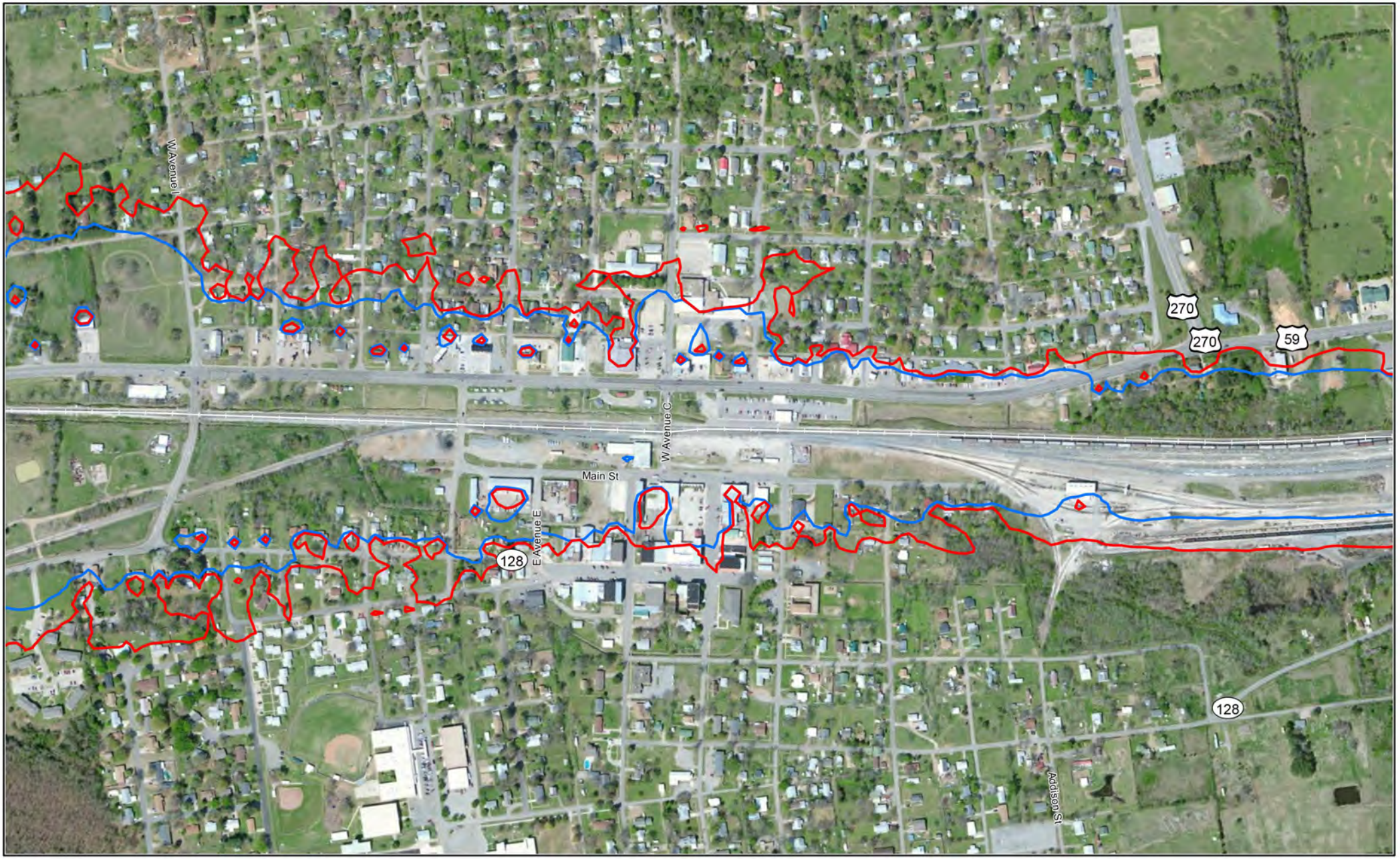
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

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Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

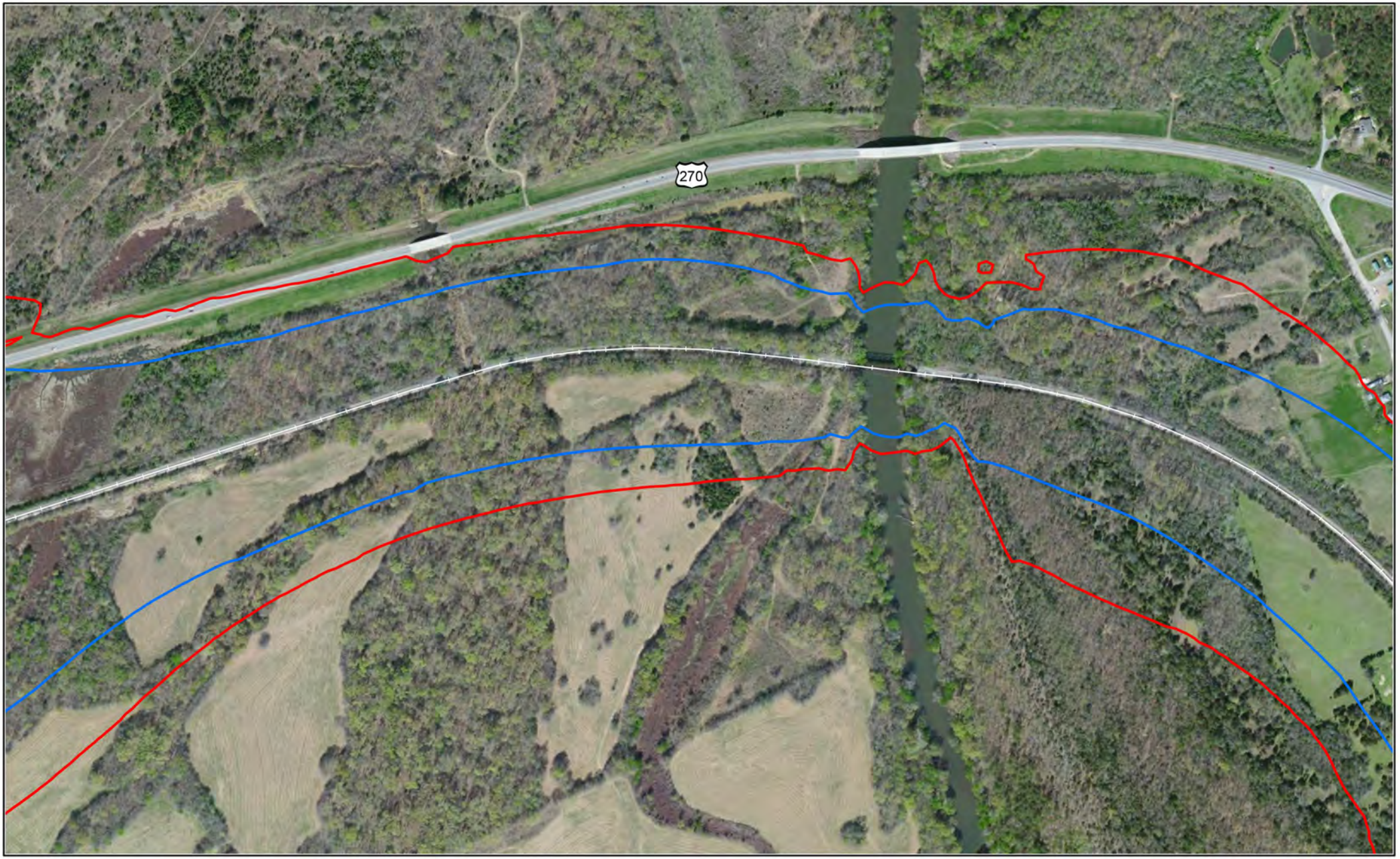
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

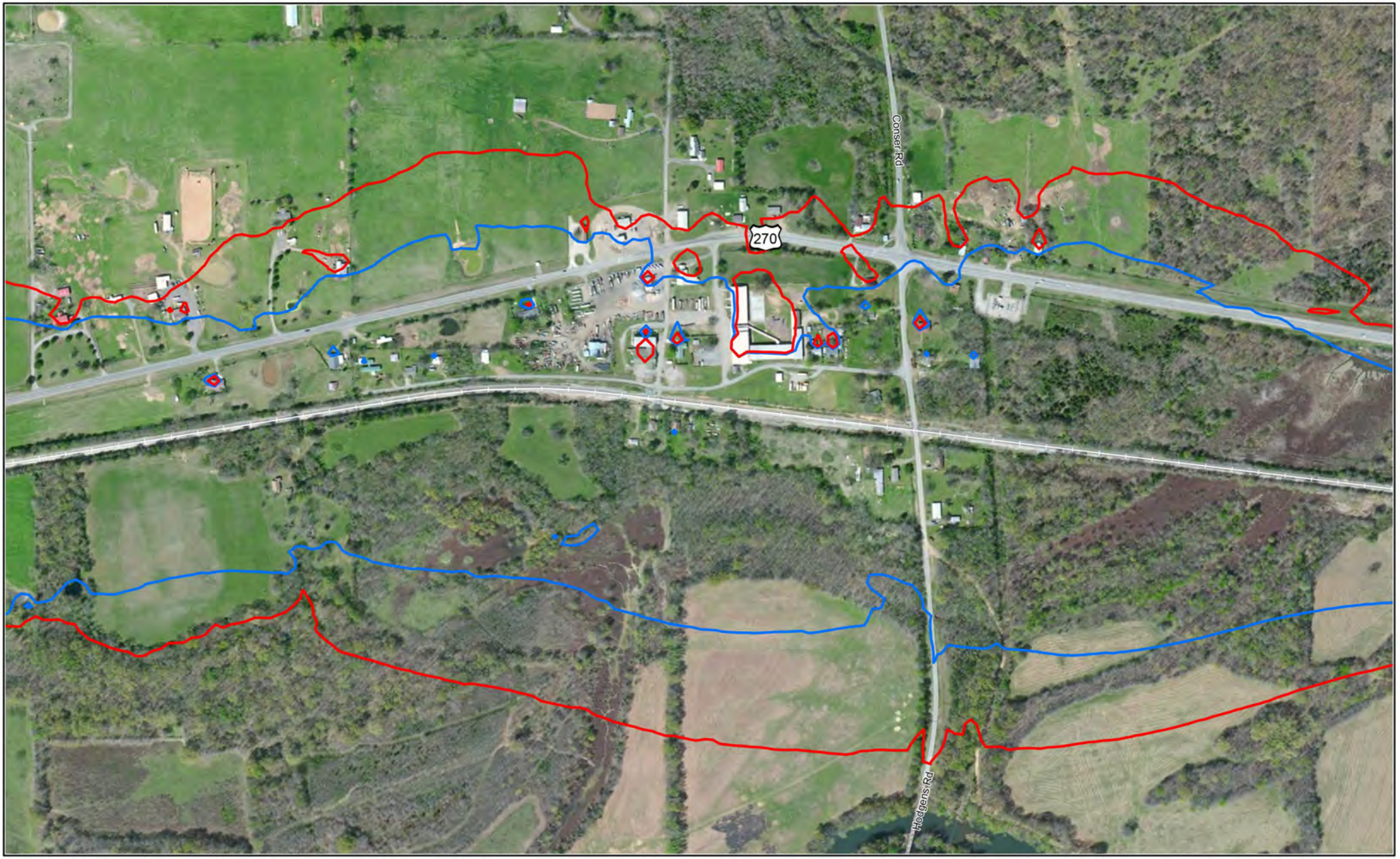
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

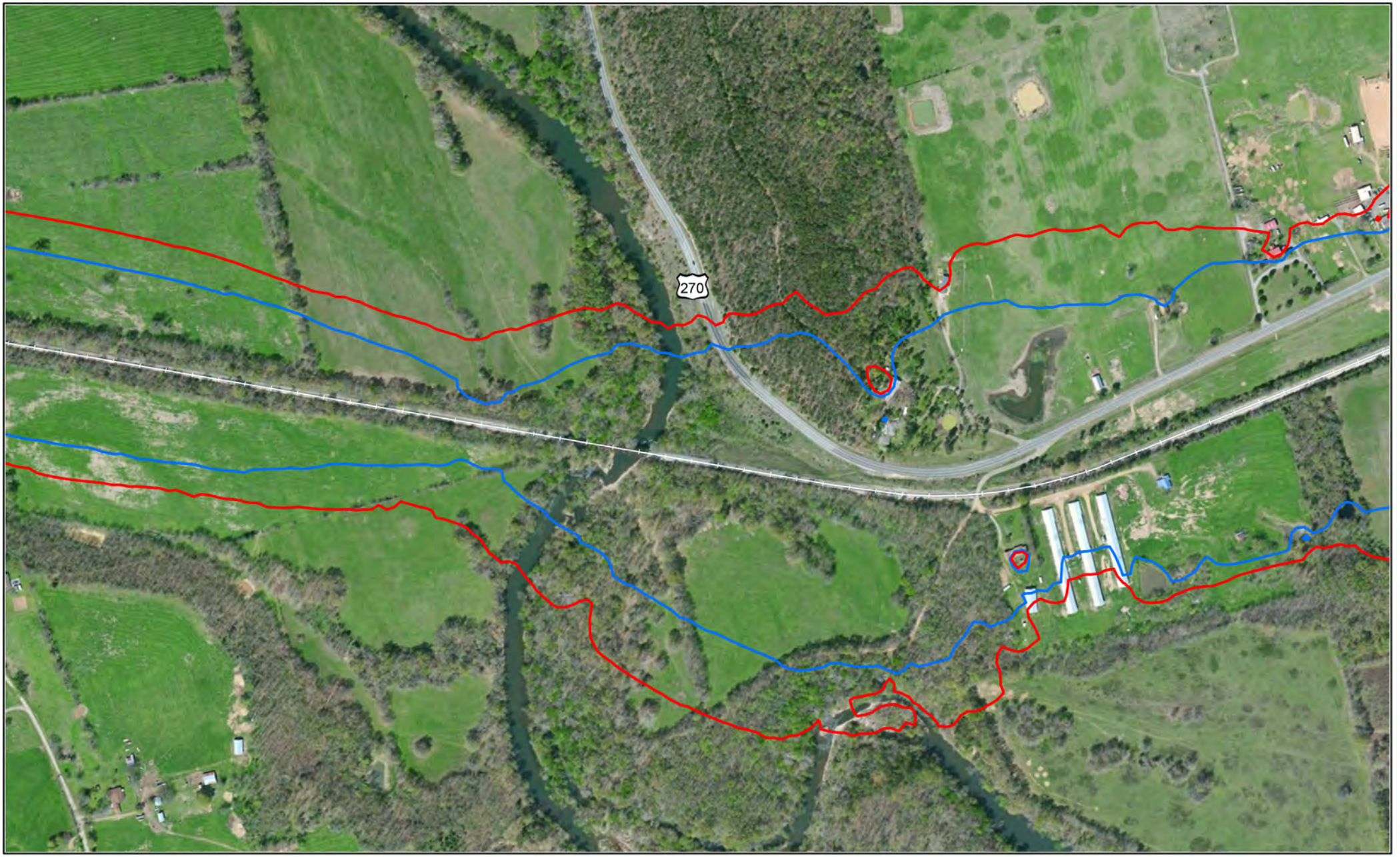
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

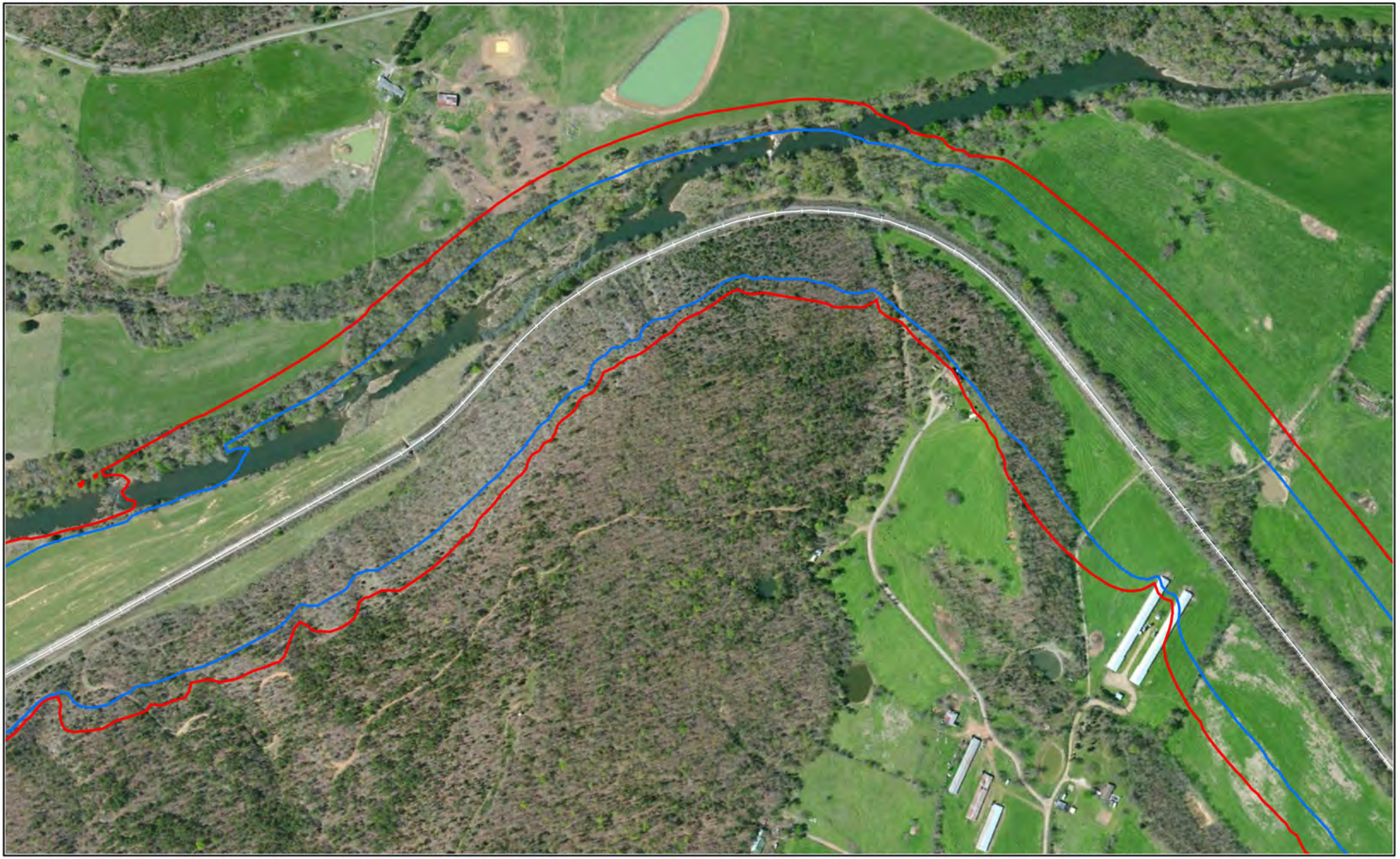
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

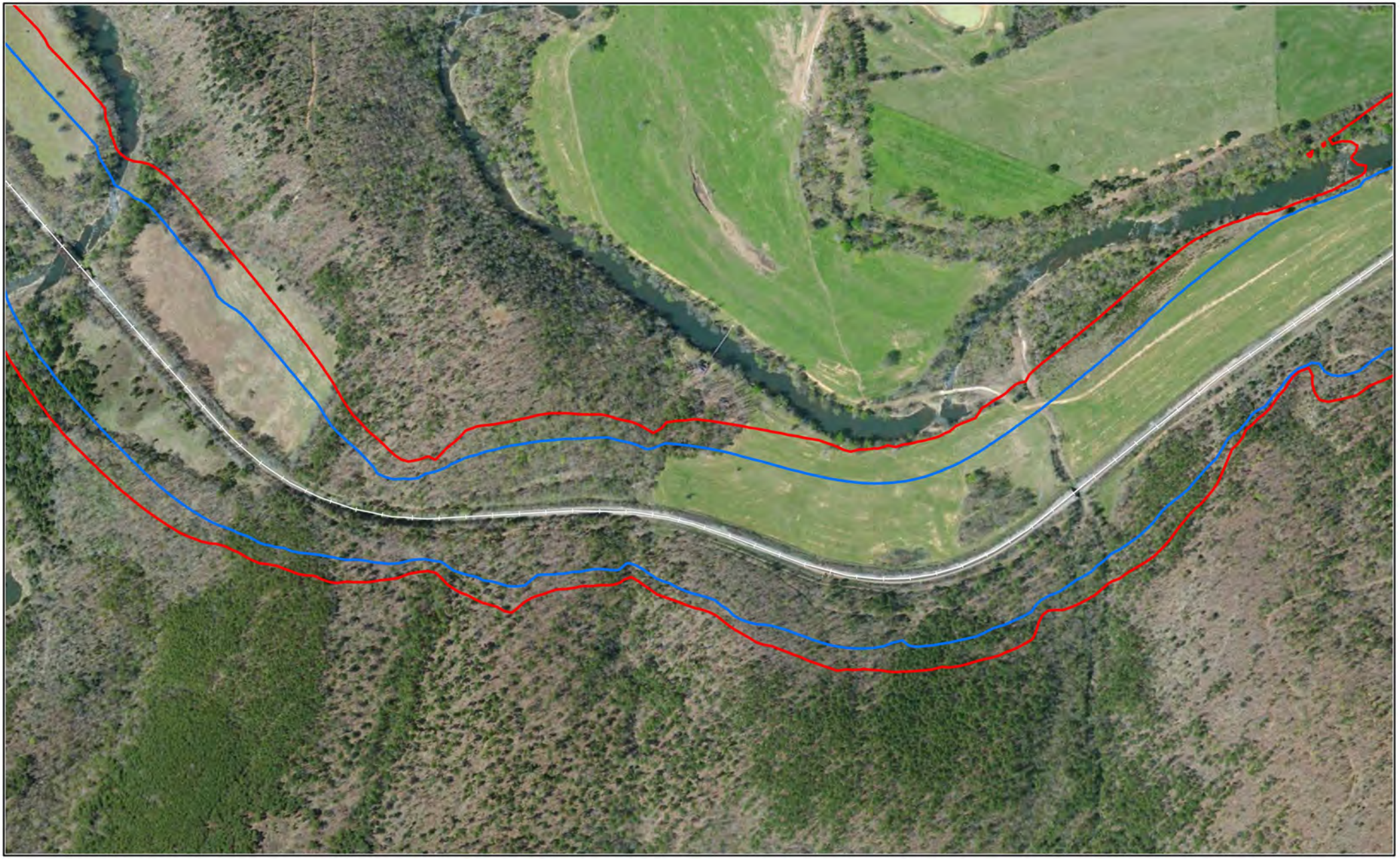
Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

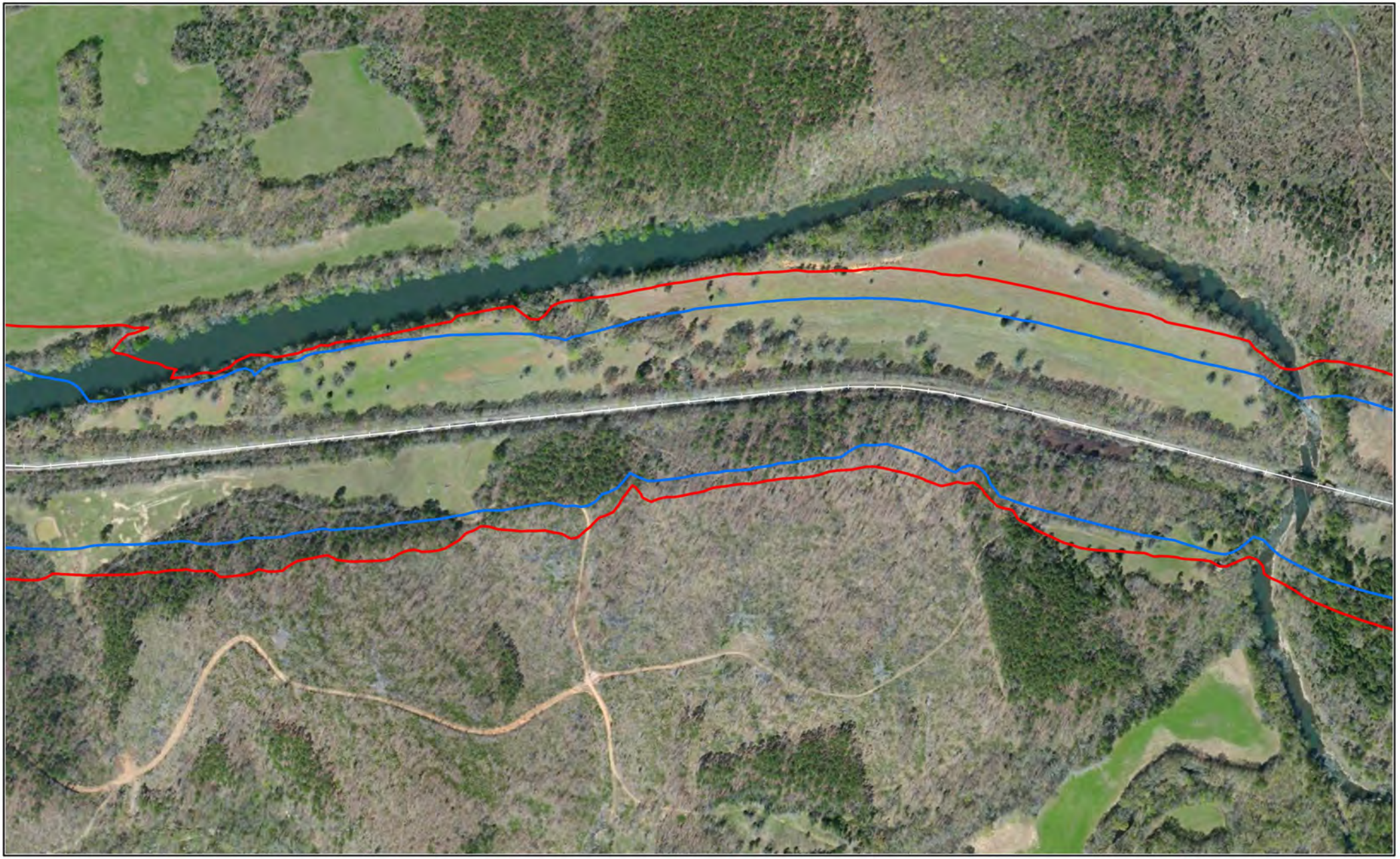
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

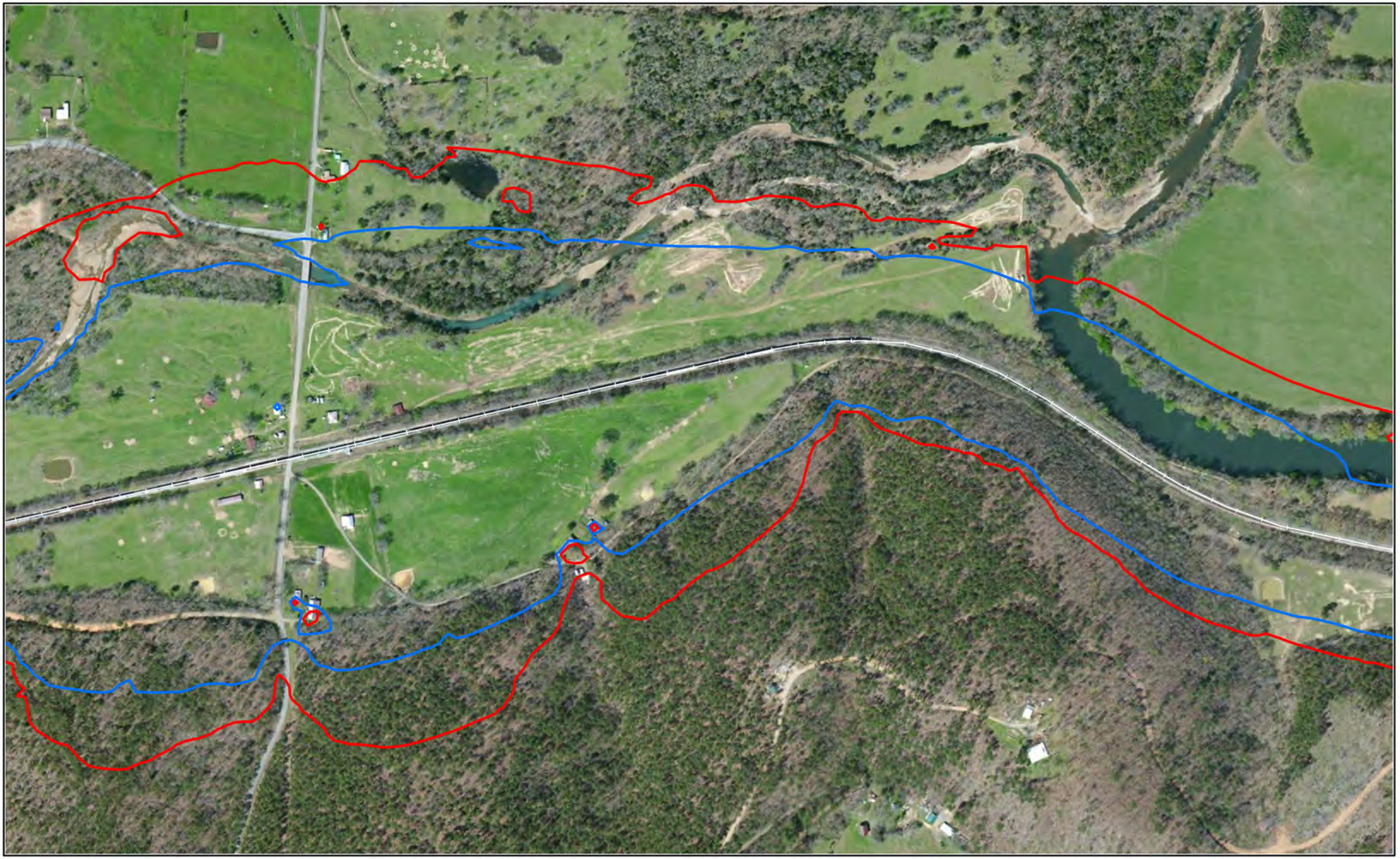
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

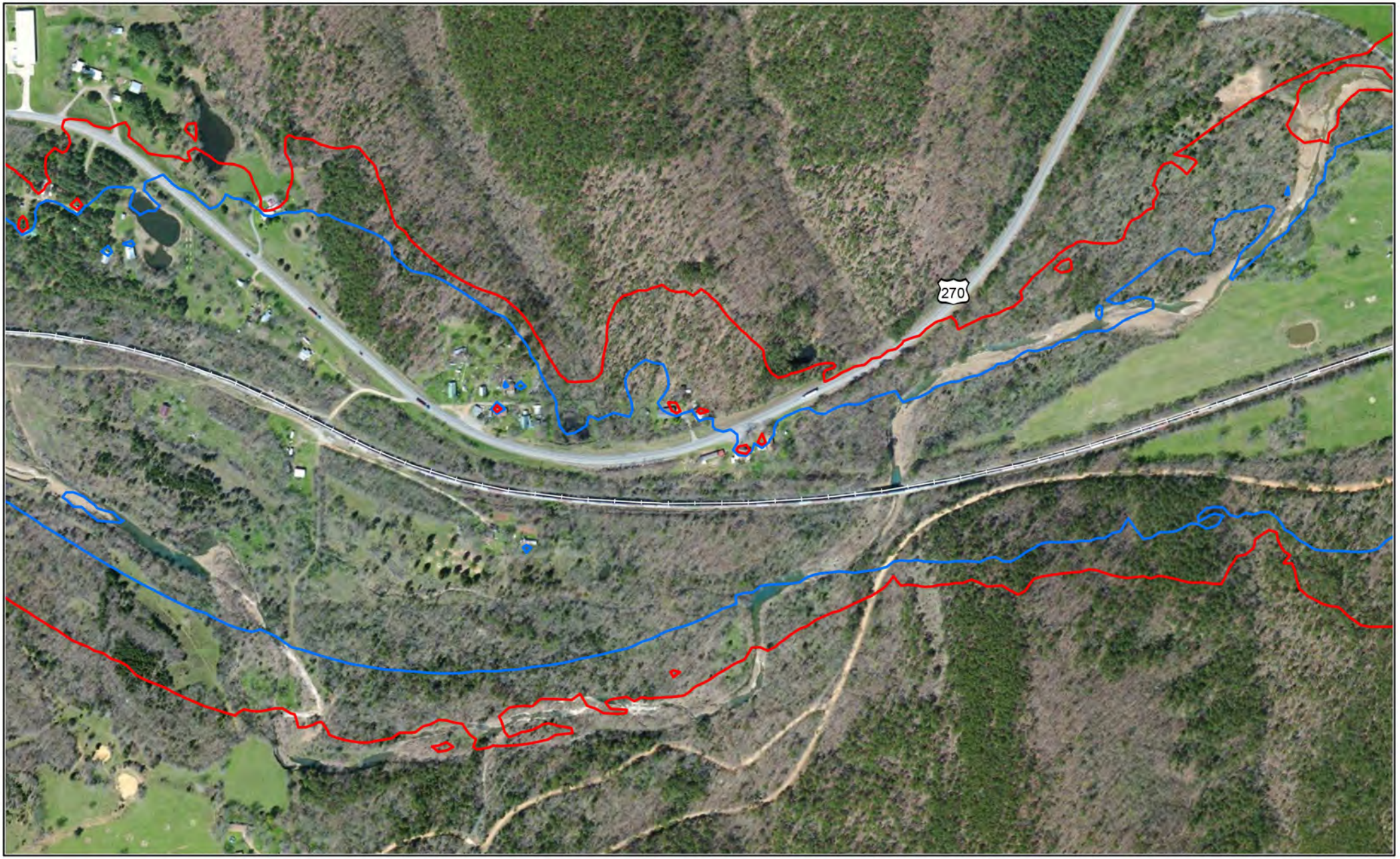
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

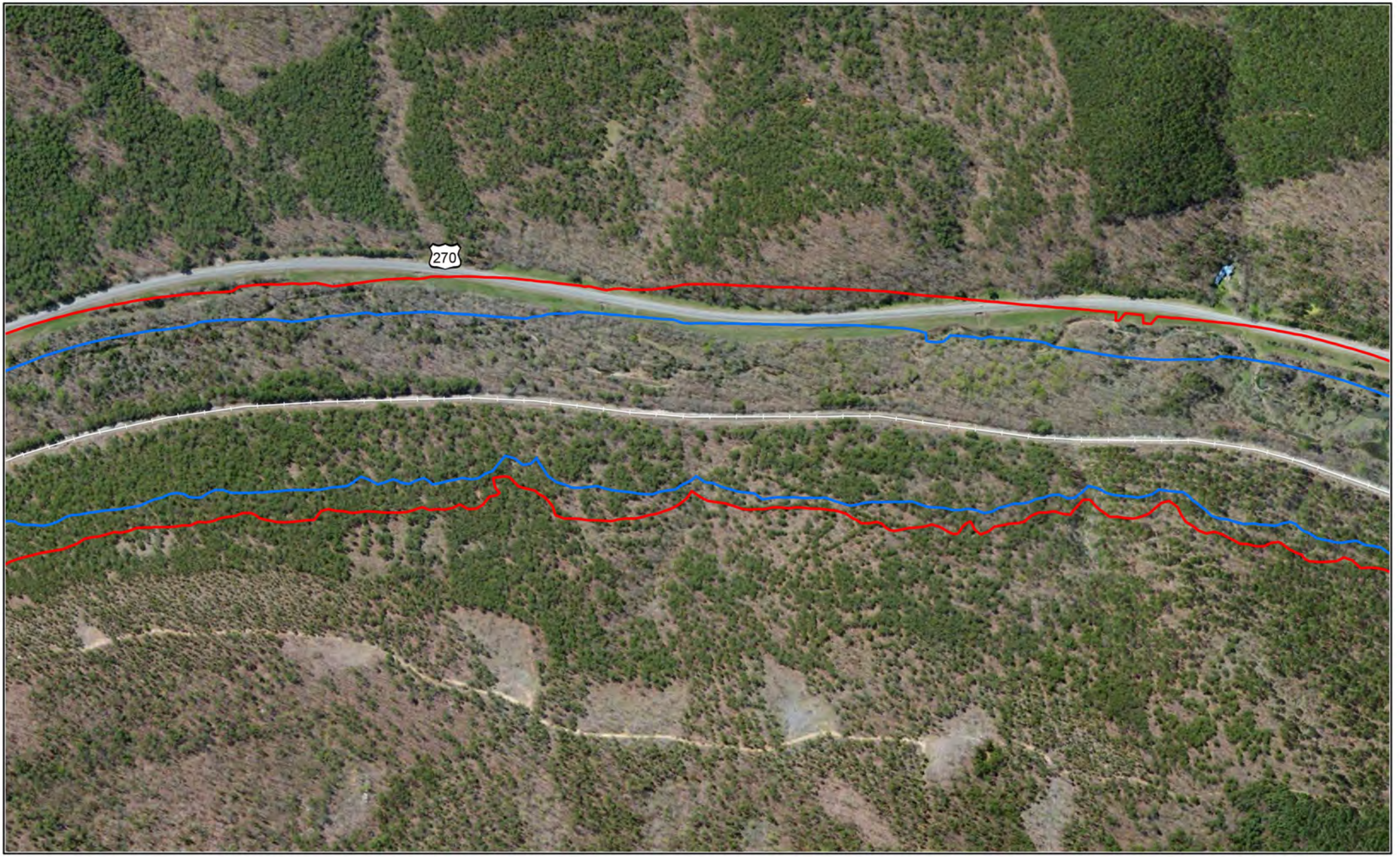
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

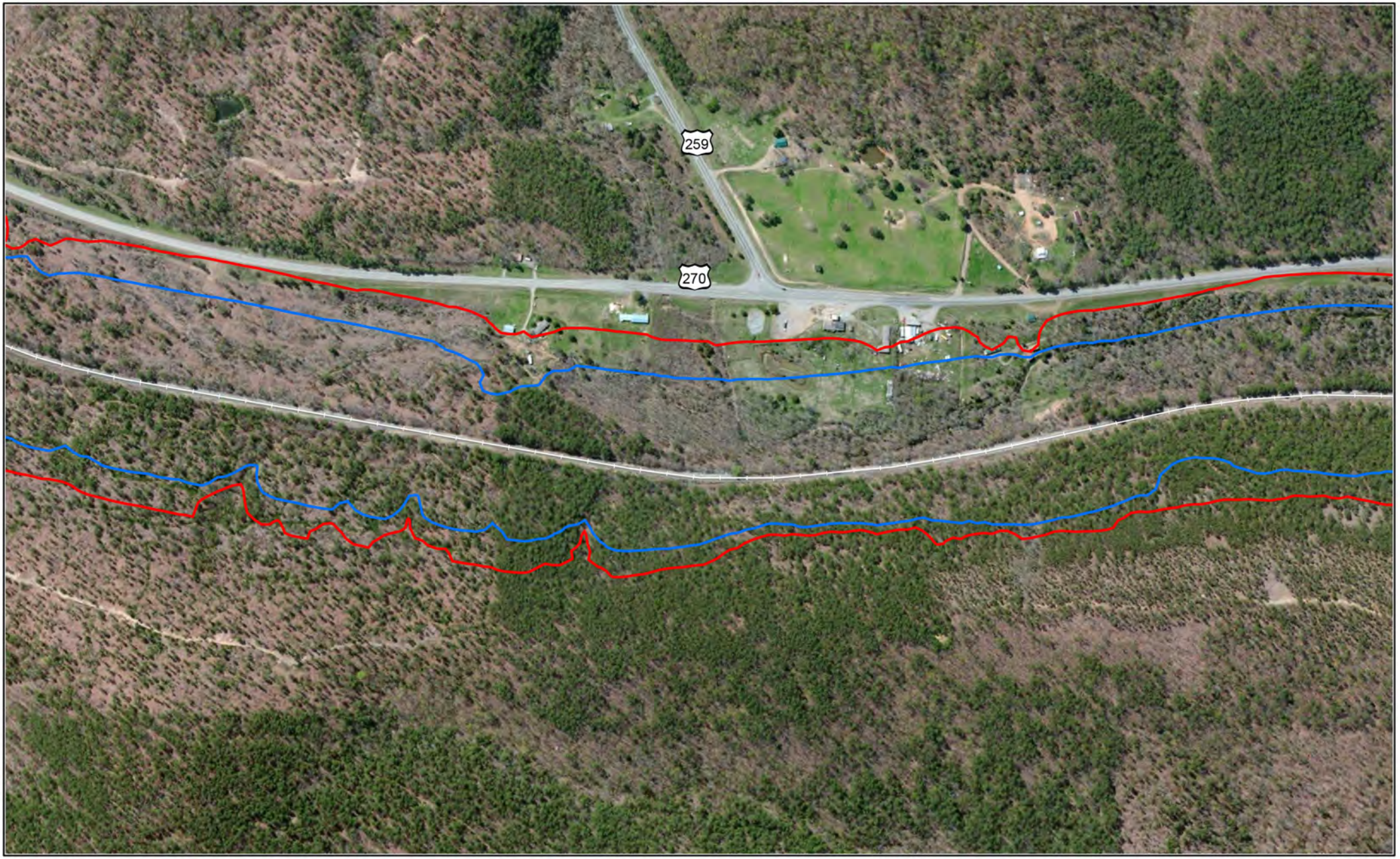
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

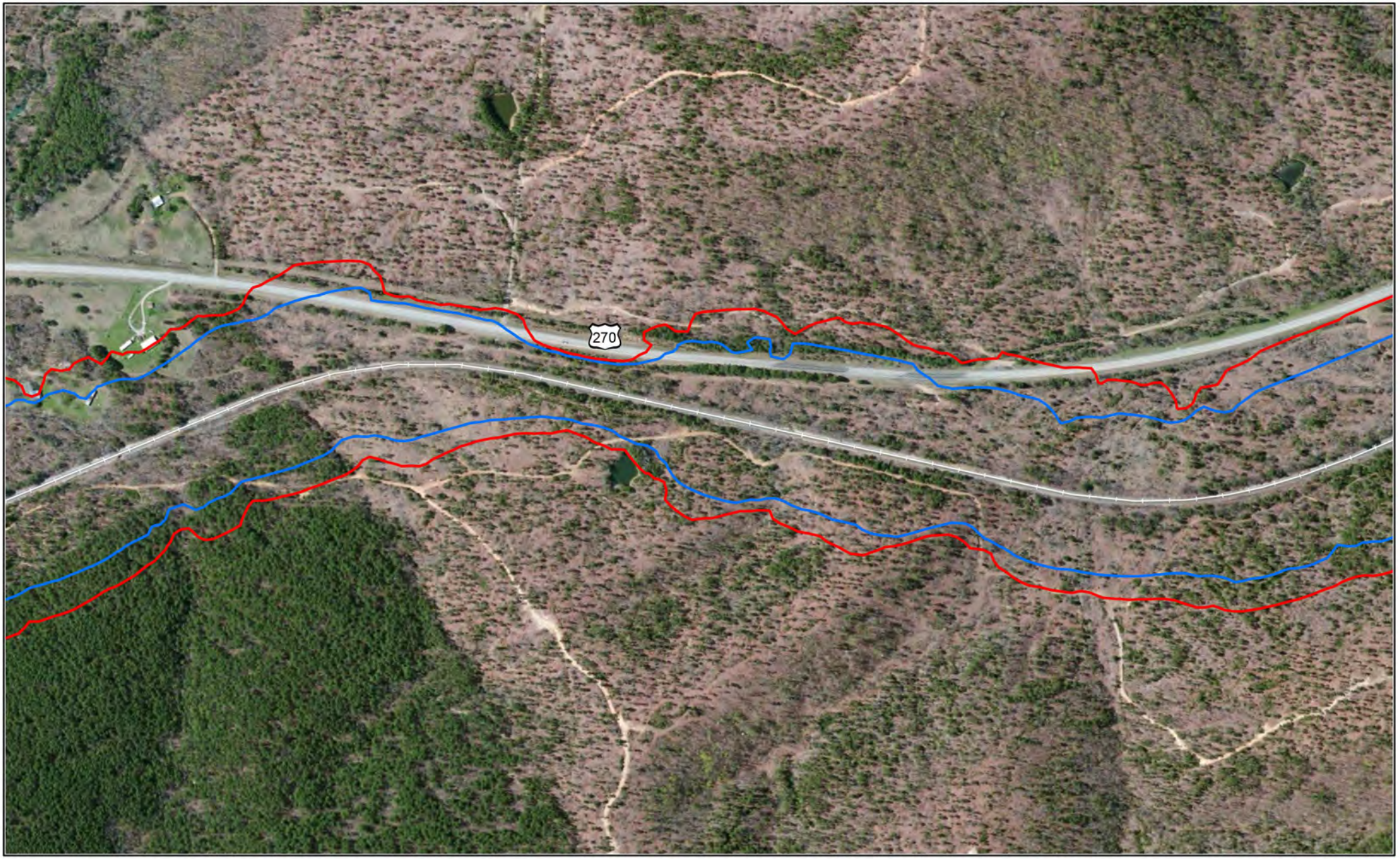
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

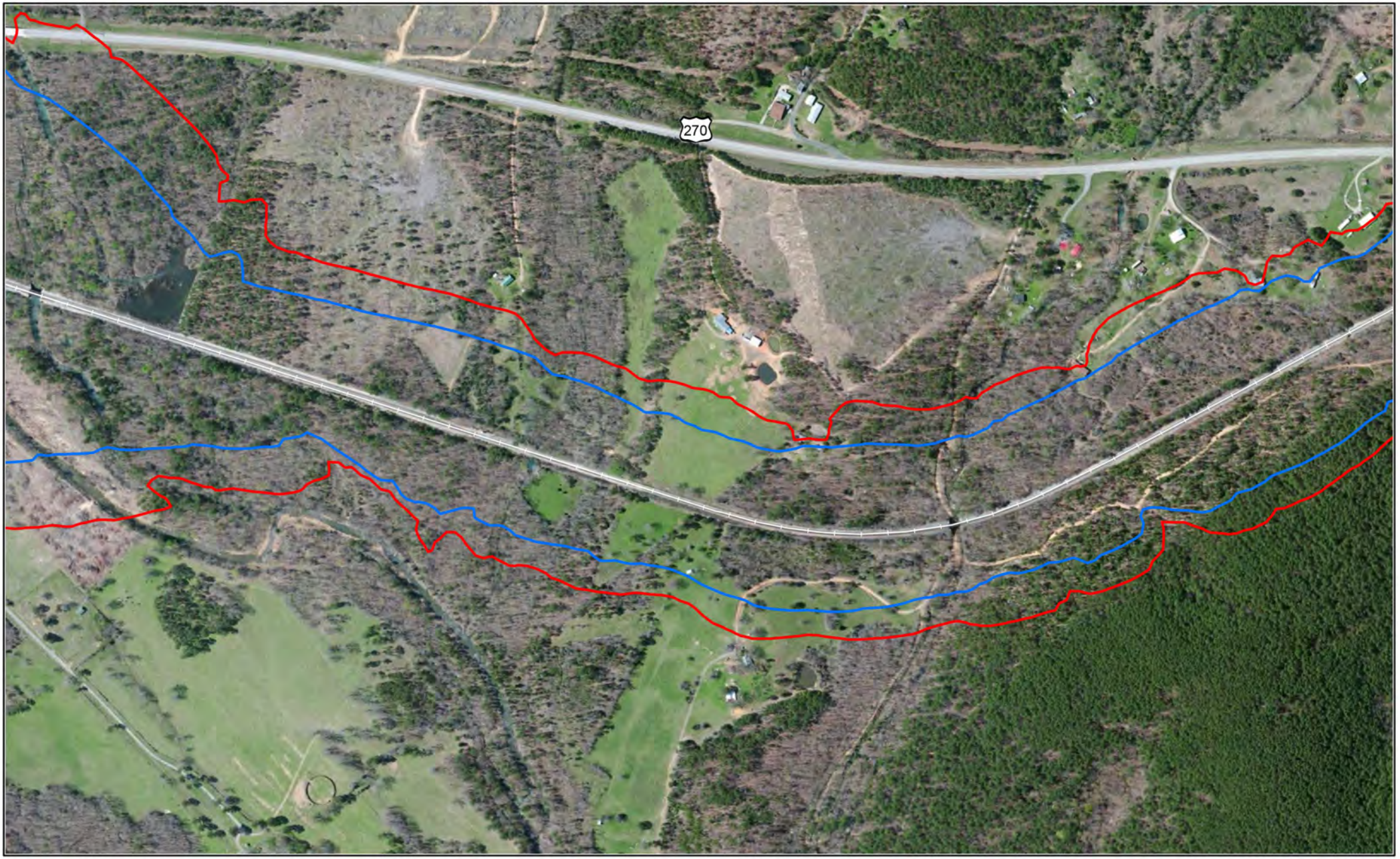
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

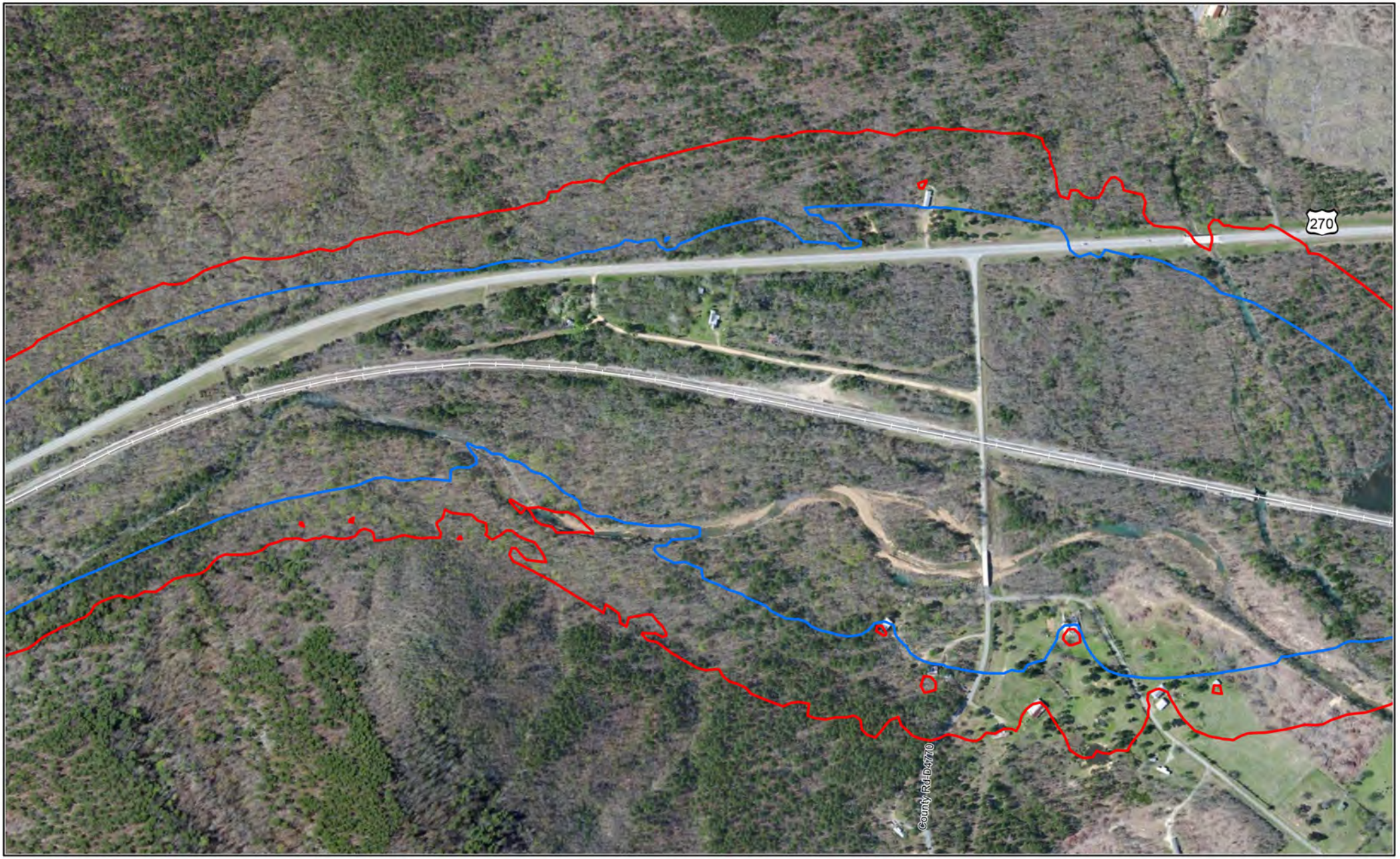
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

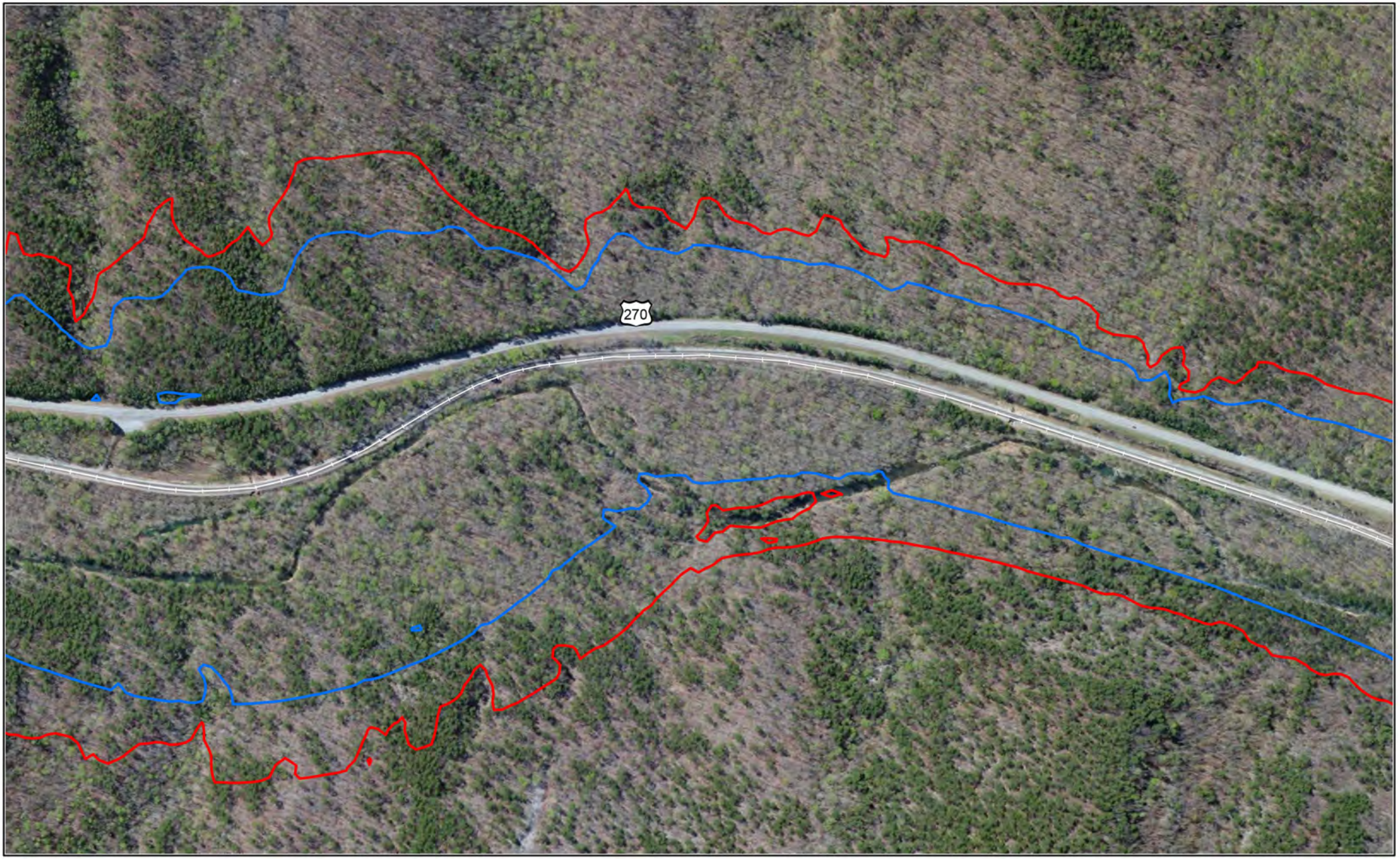
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

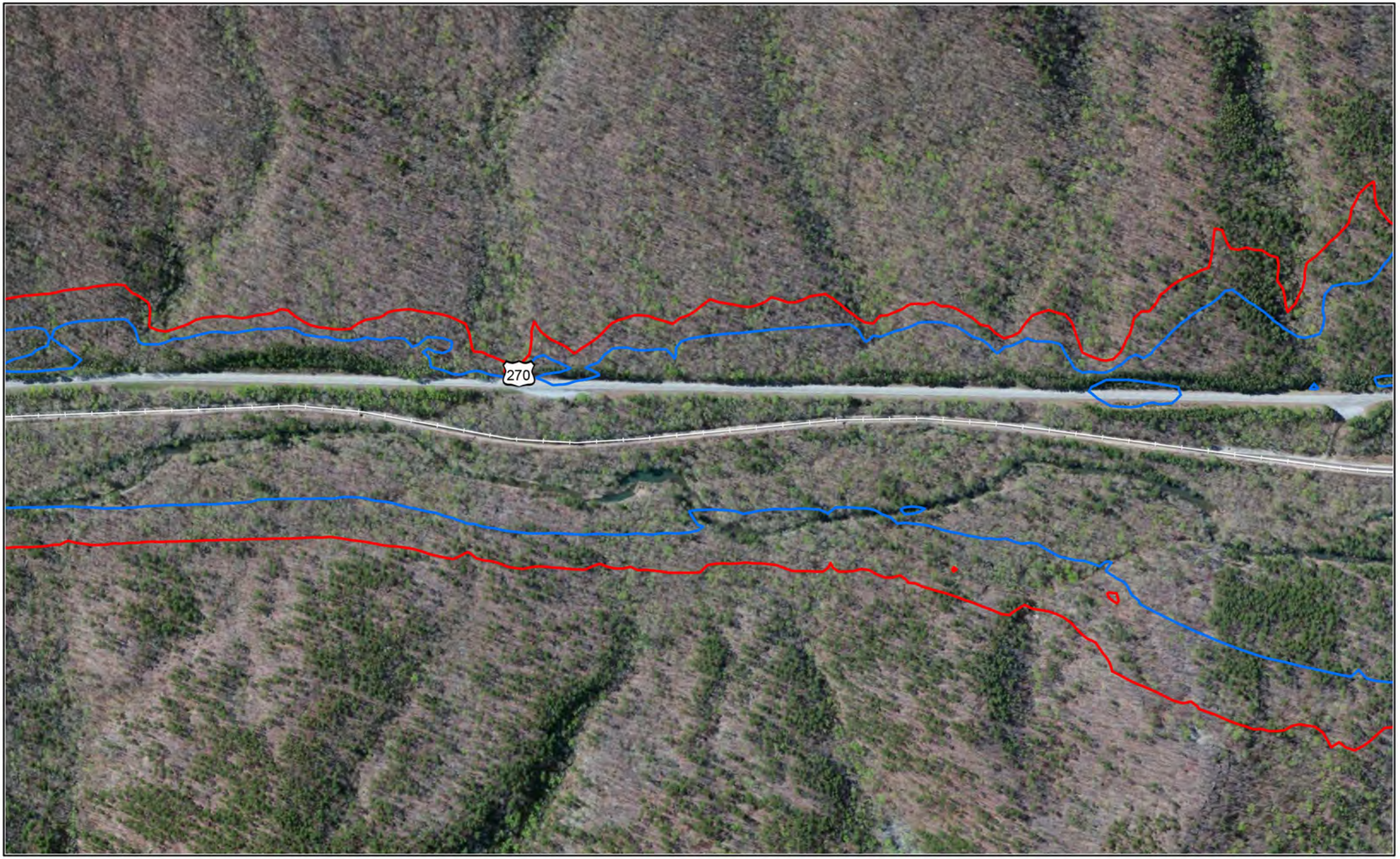
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

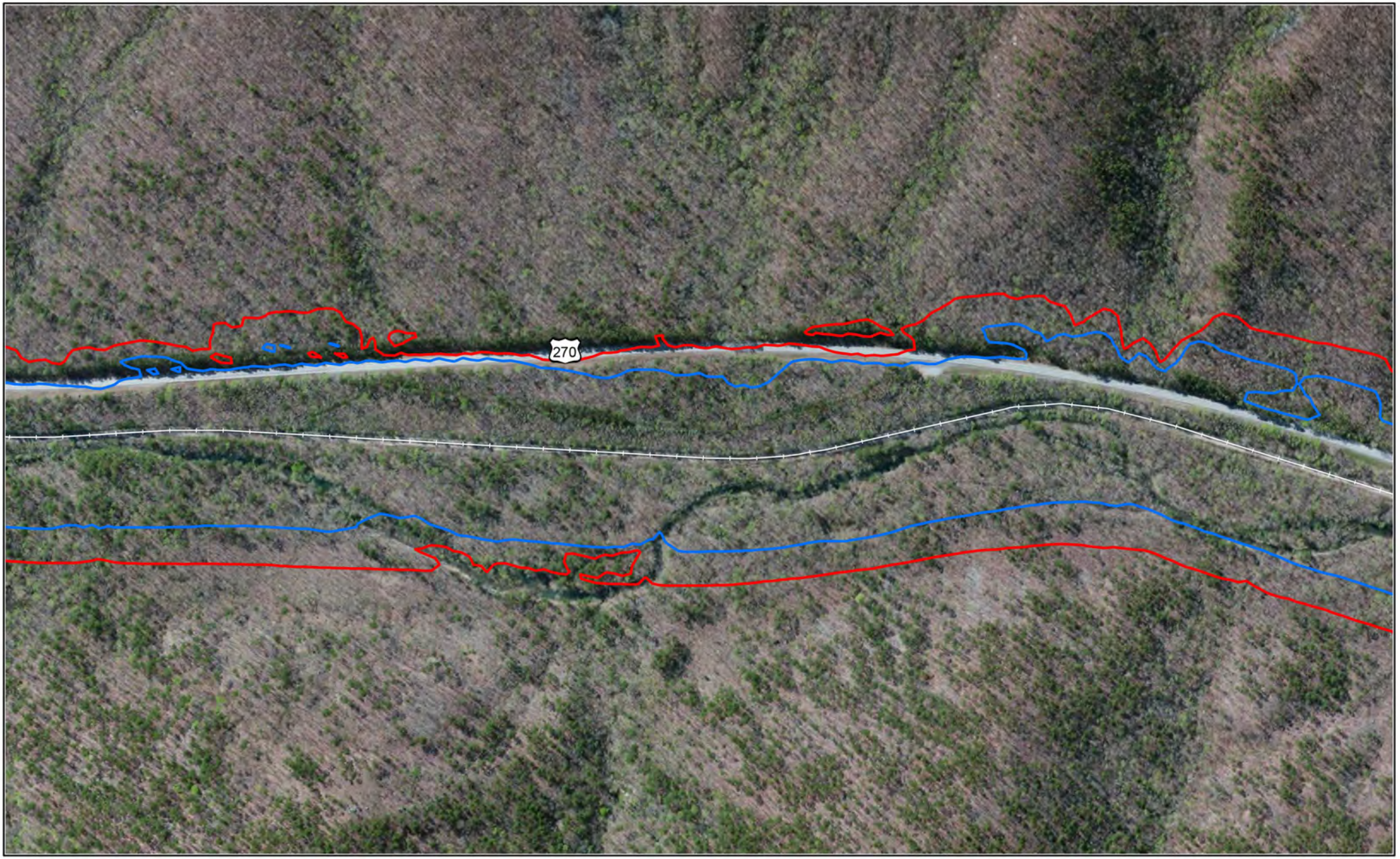
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

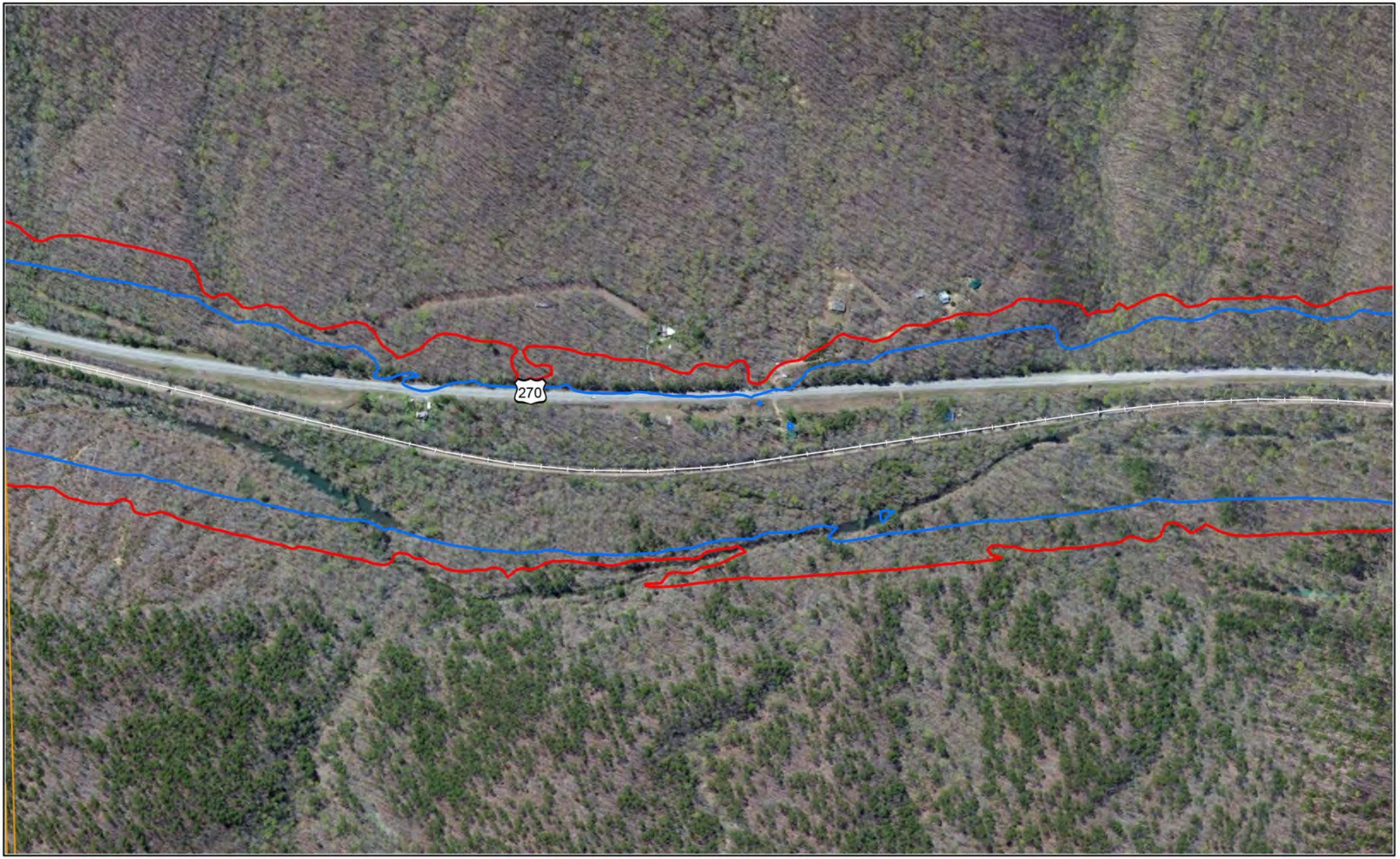
Tracks

Source: ESRI.



Noise Contours
Le Flore County, OK

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Polk County, AR

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Polk County, AR

0 0.05 0.1 Miles

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Polk County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Polk County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

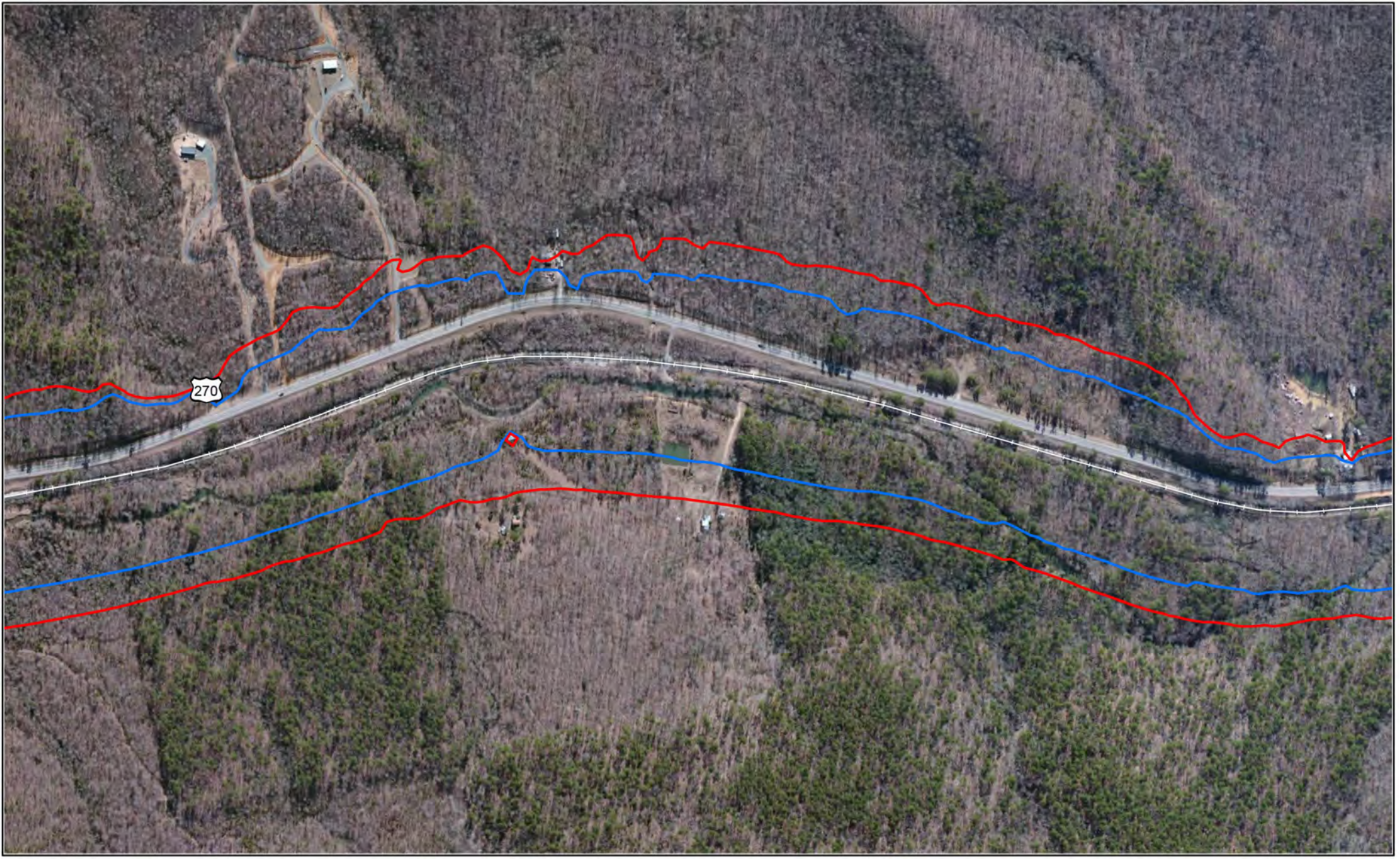


Noise Contours
Polk County, AR

Miles

0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

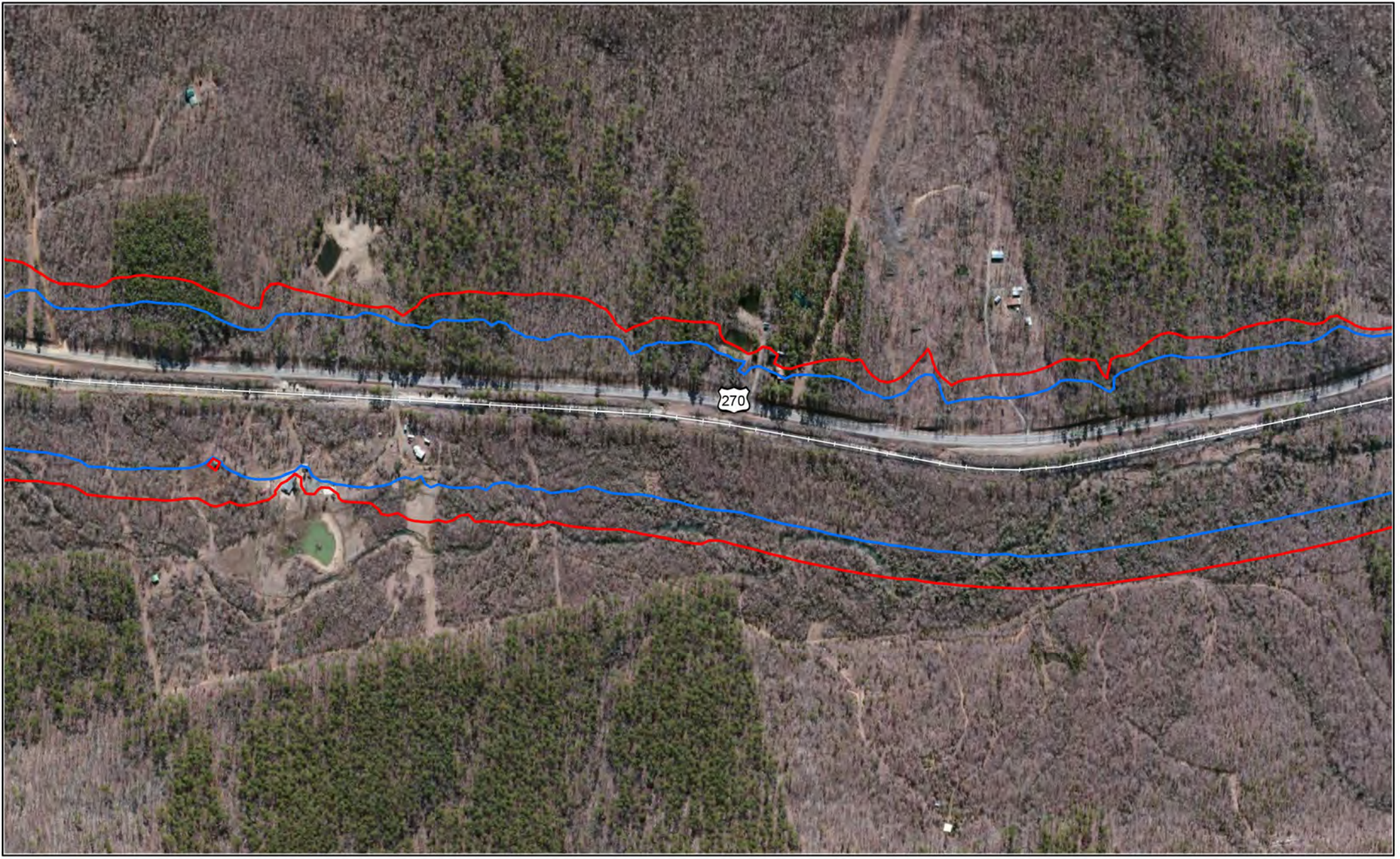
Source: ESRI.



Noise Contours
Polk County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

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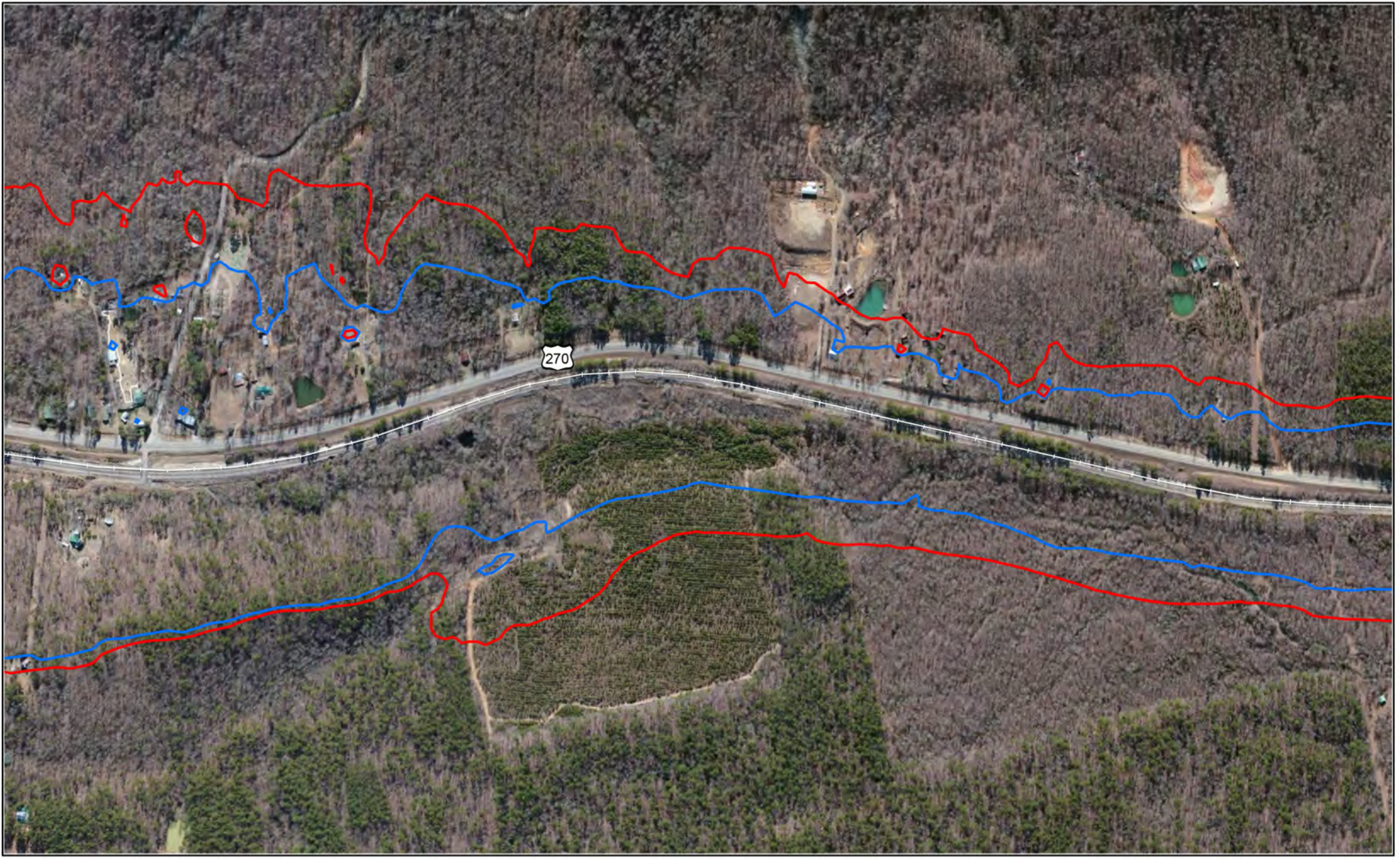
Source: ESRI.



Noise Contours
Polk County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

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Noise Impact (65 Ldn and 3 dBA Increase)

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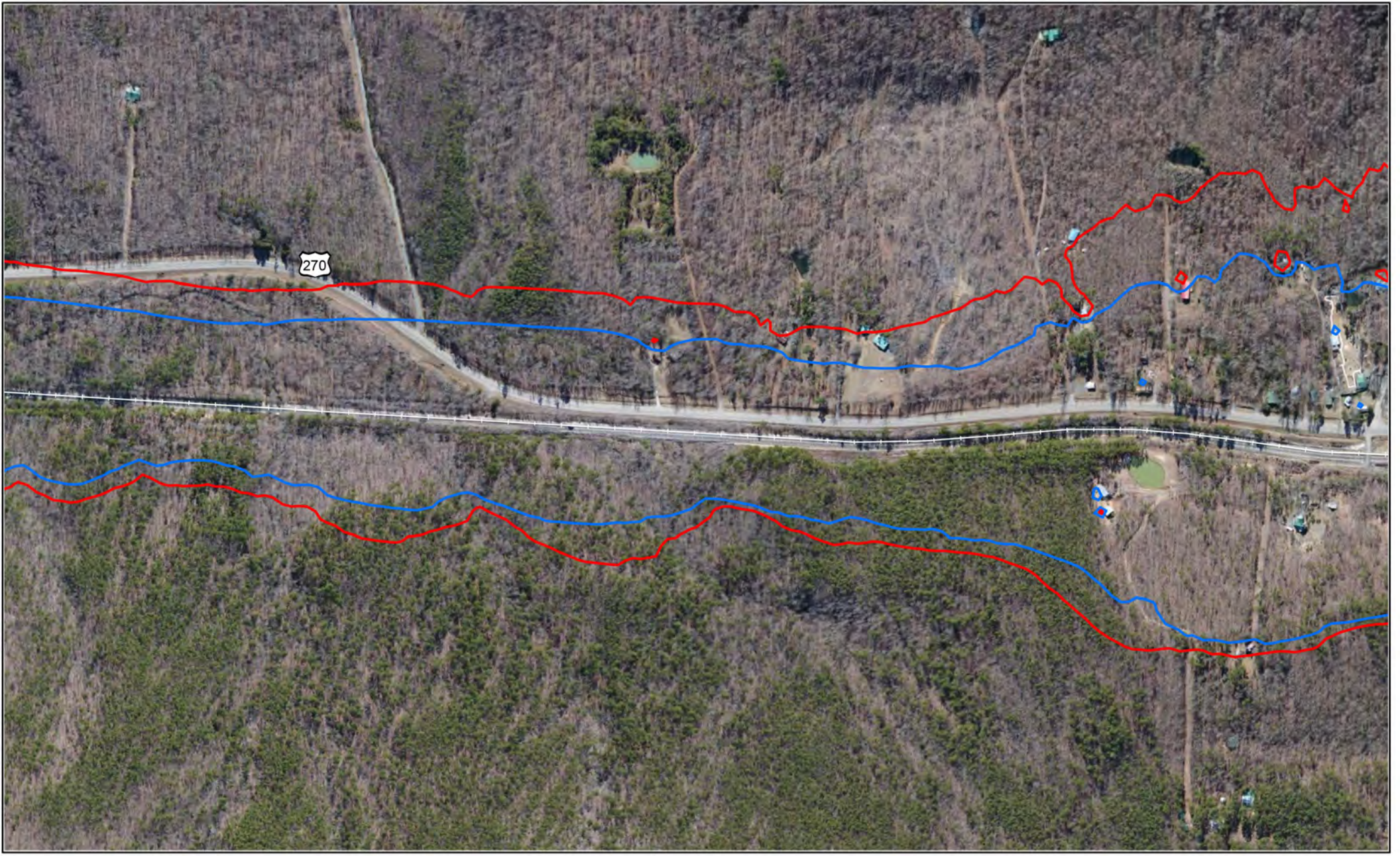
Source: ESRI.



Noise Contours
Polk County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

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Noise Contours
Polk County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

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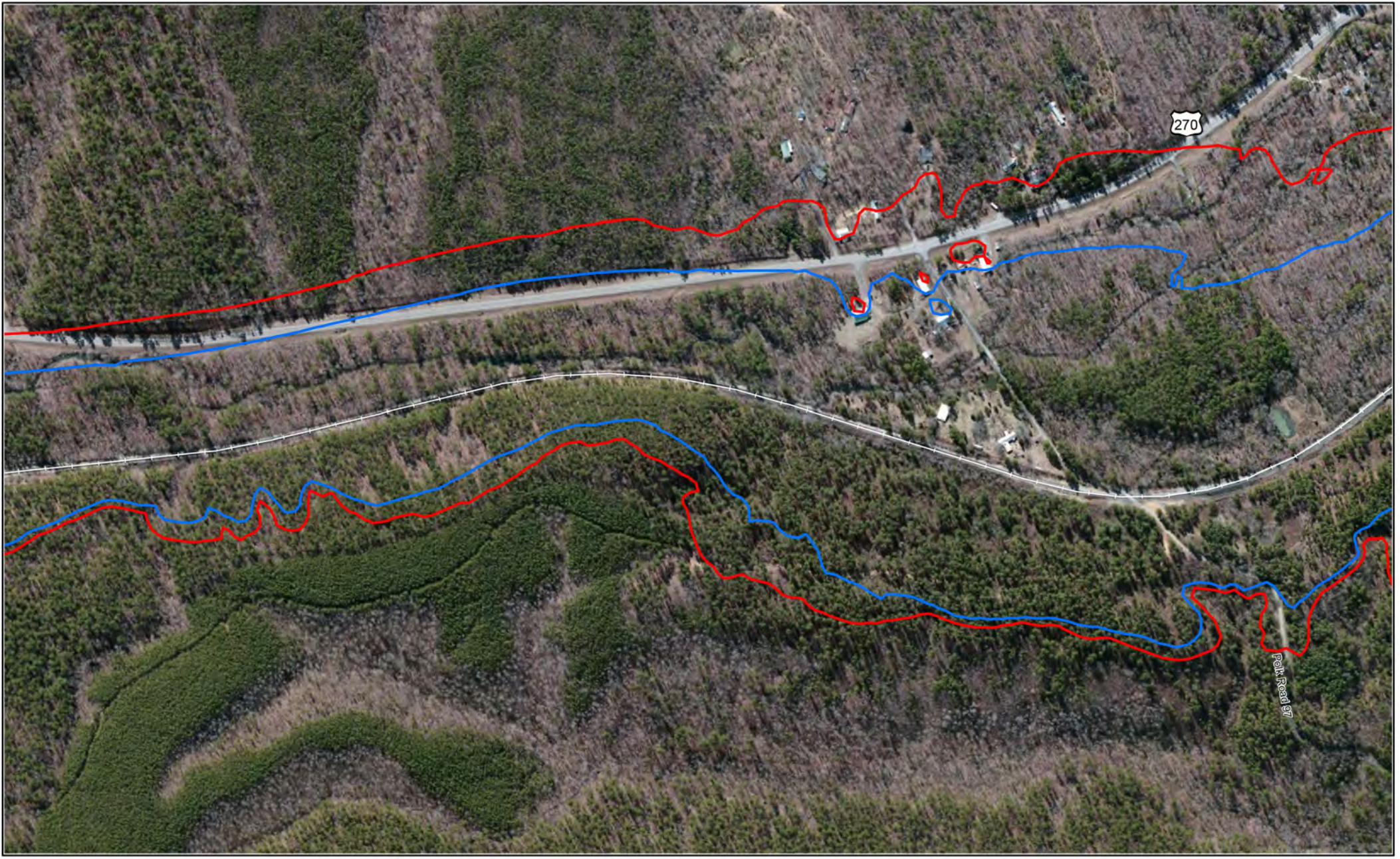
Source: ESRI.



Noise Contours
Polk County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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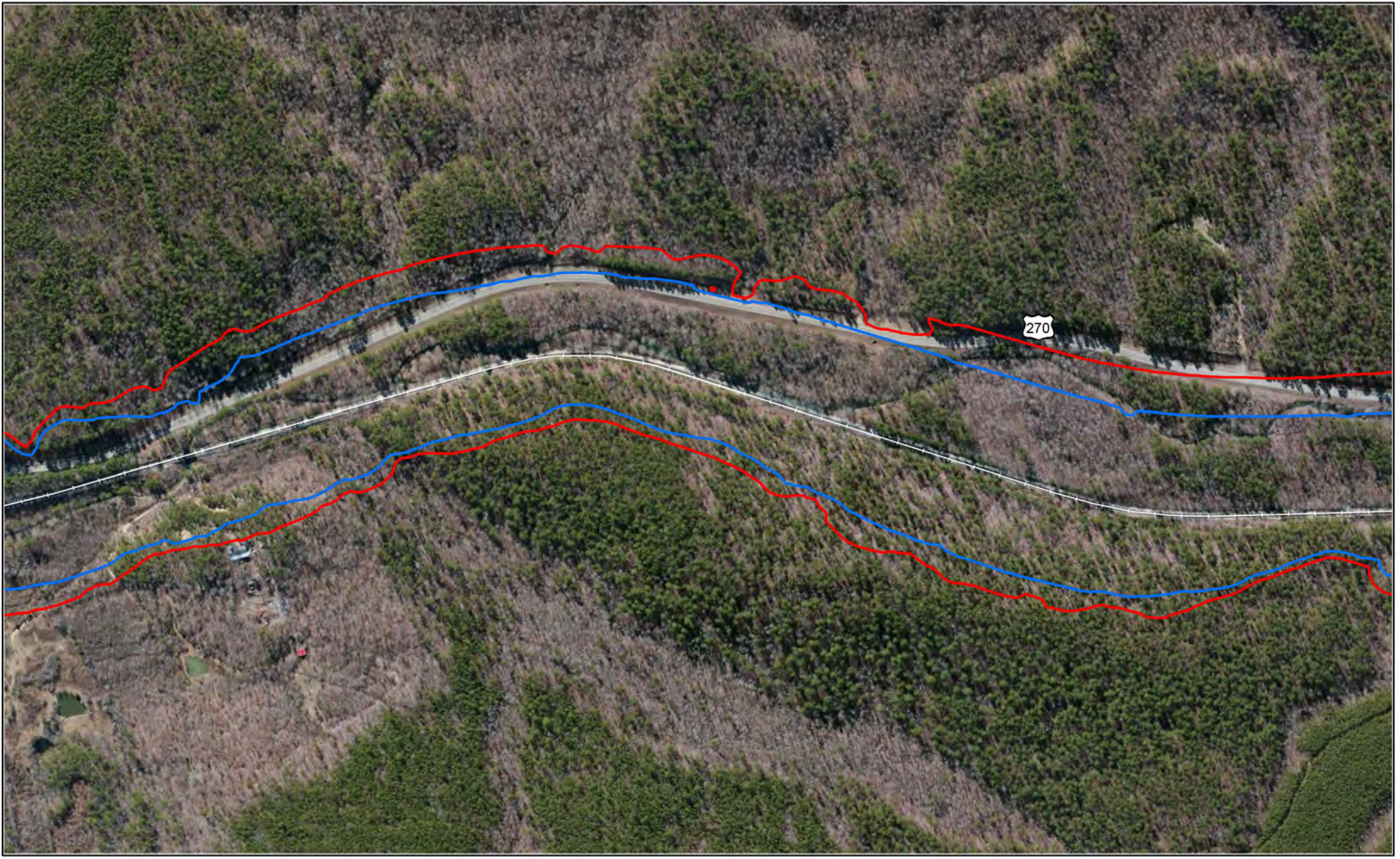
Source: ESRI.



Noise Contours
Polk County, AR

0 0.05 0.1 Miles

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

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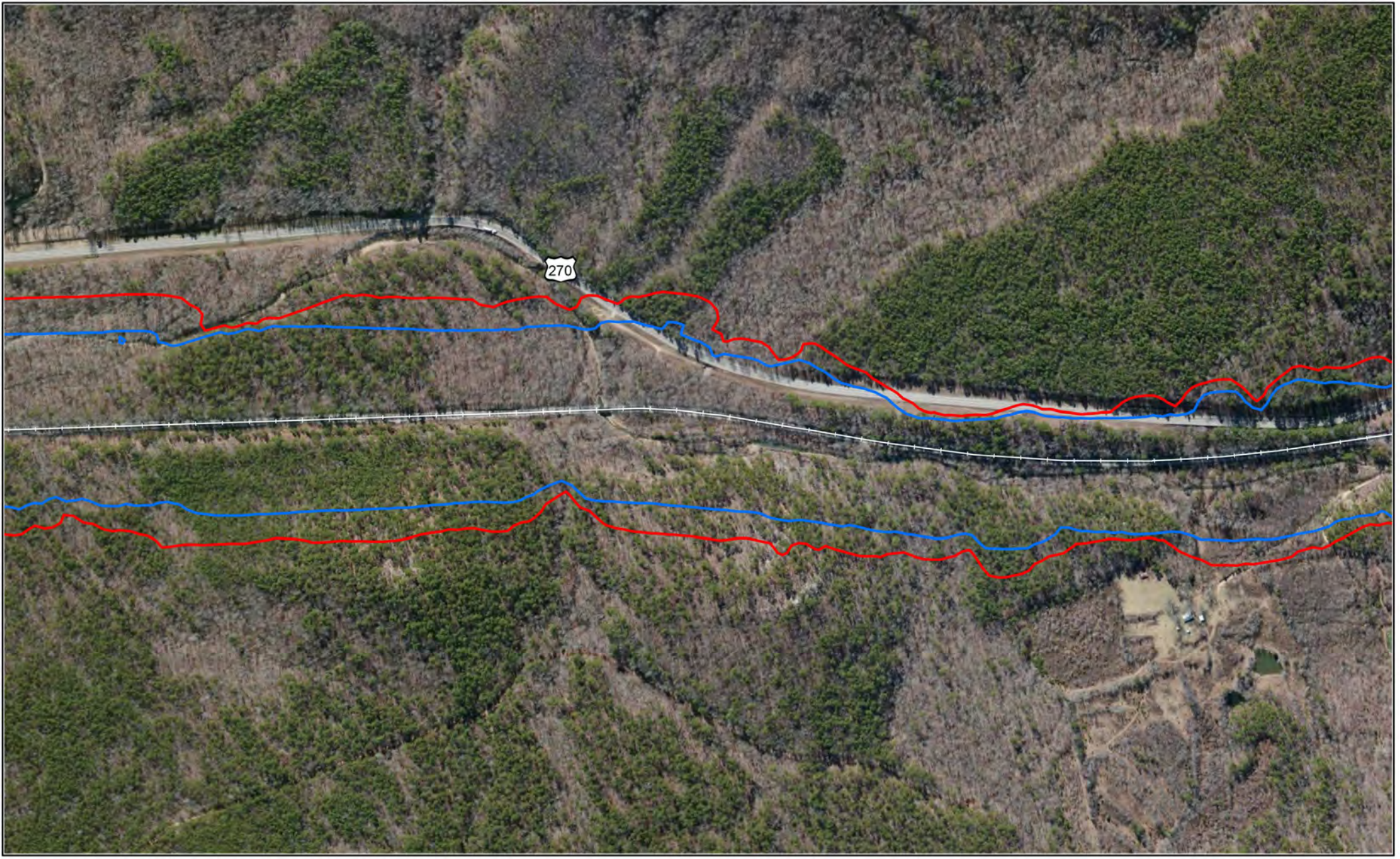
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Noise Contours
Polk County, AR

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

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Noise Contours
Polk County, AR

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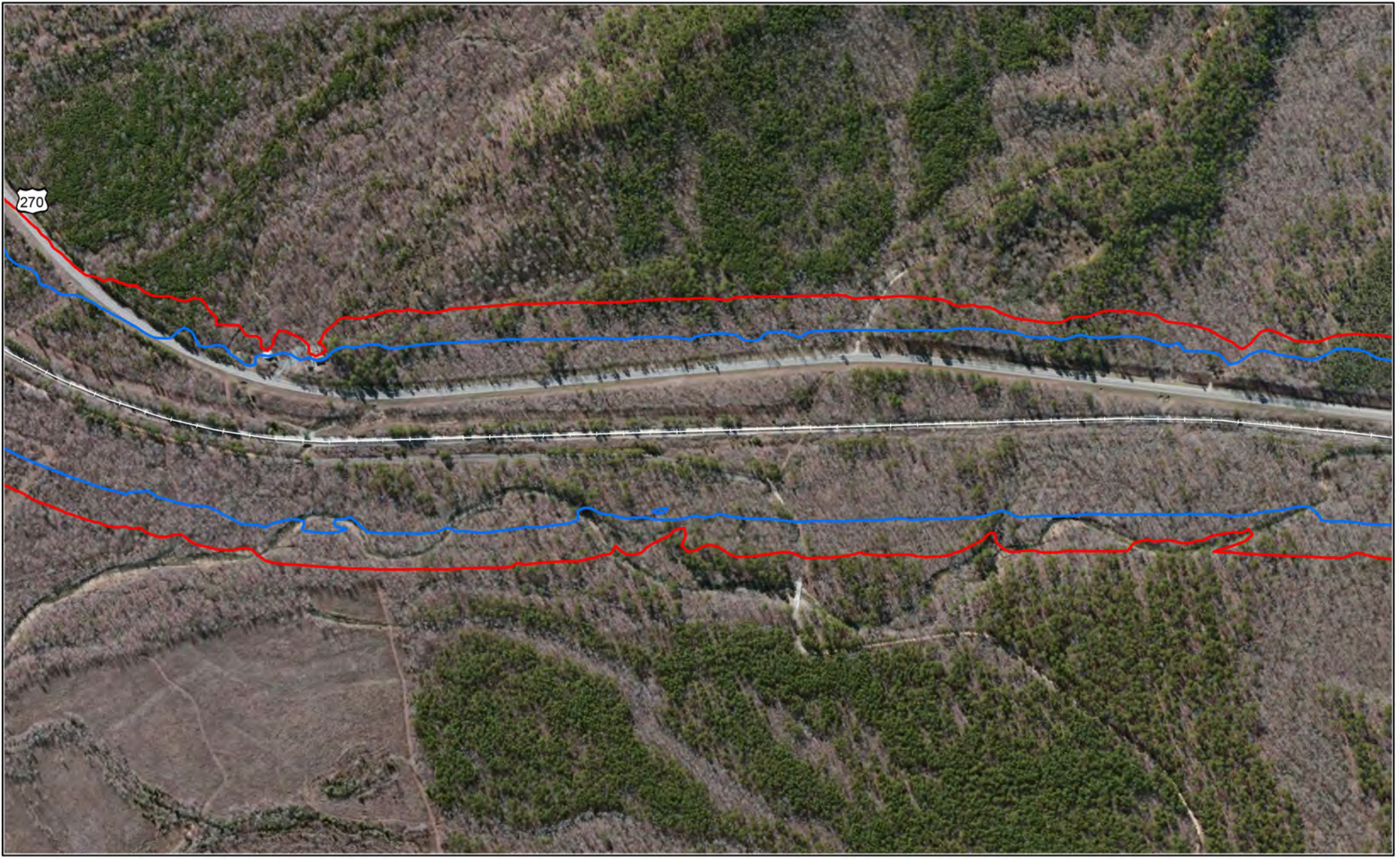
Source: ESRI.



Noise Contours
Polk County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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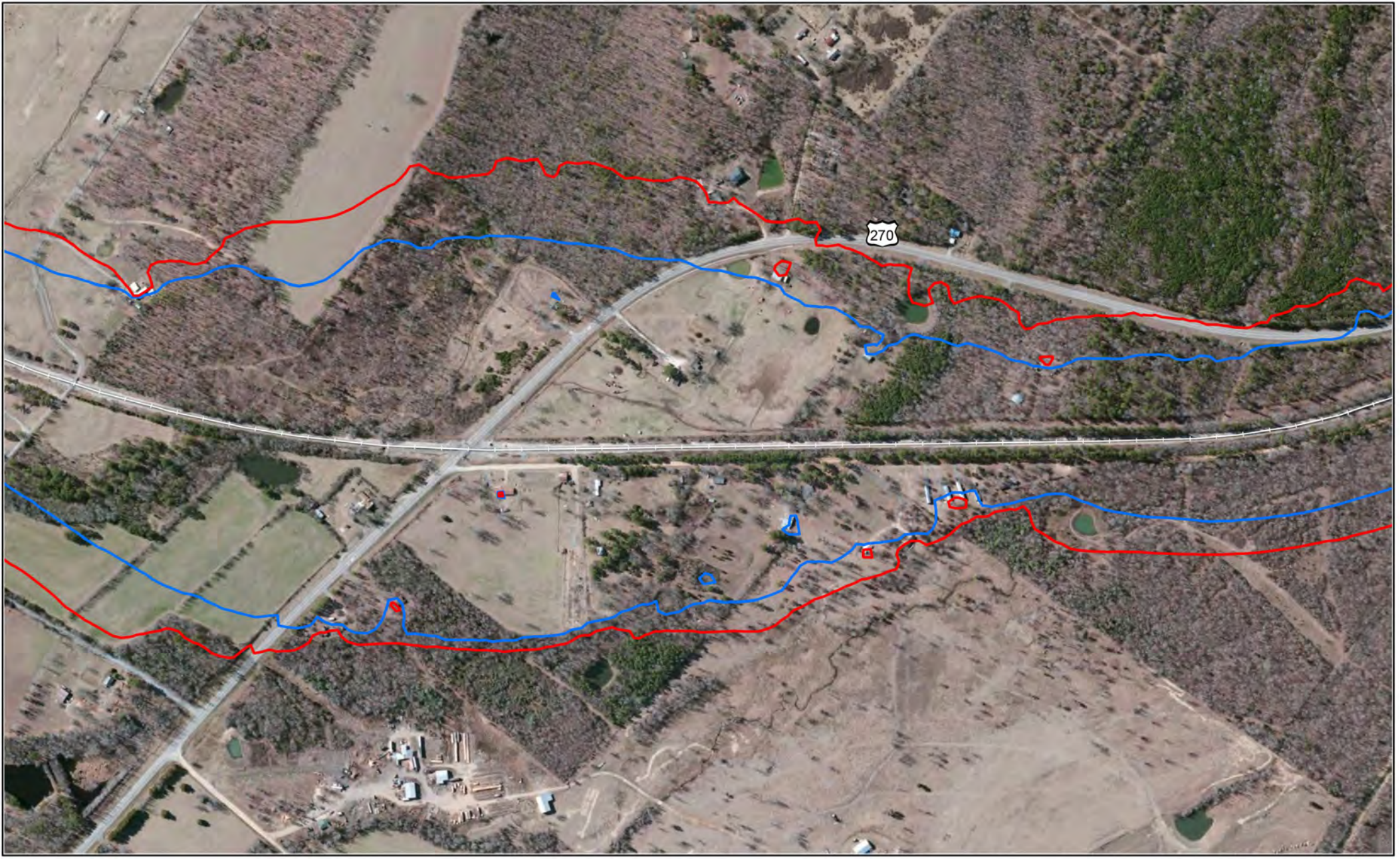
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Polk County, AR

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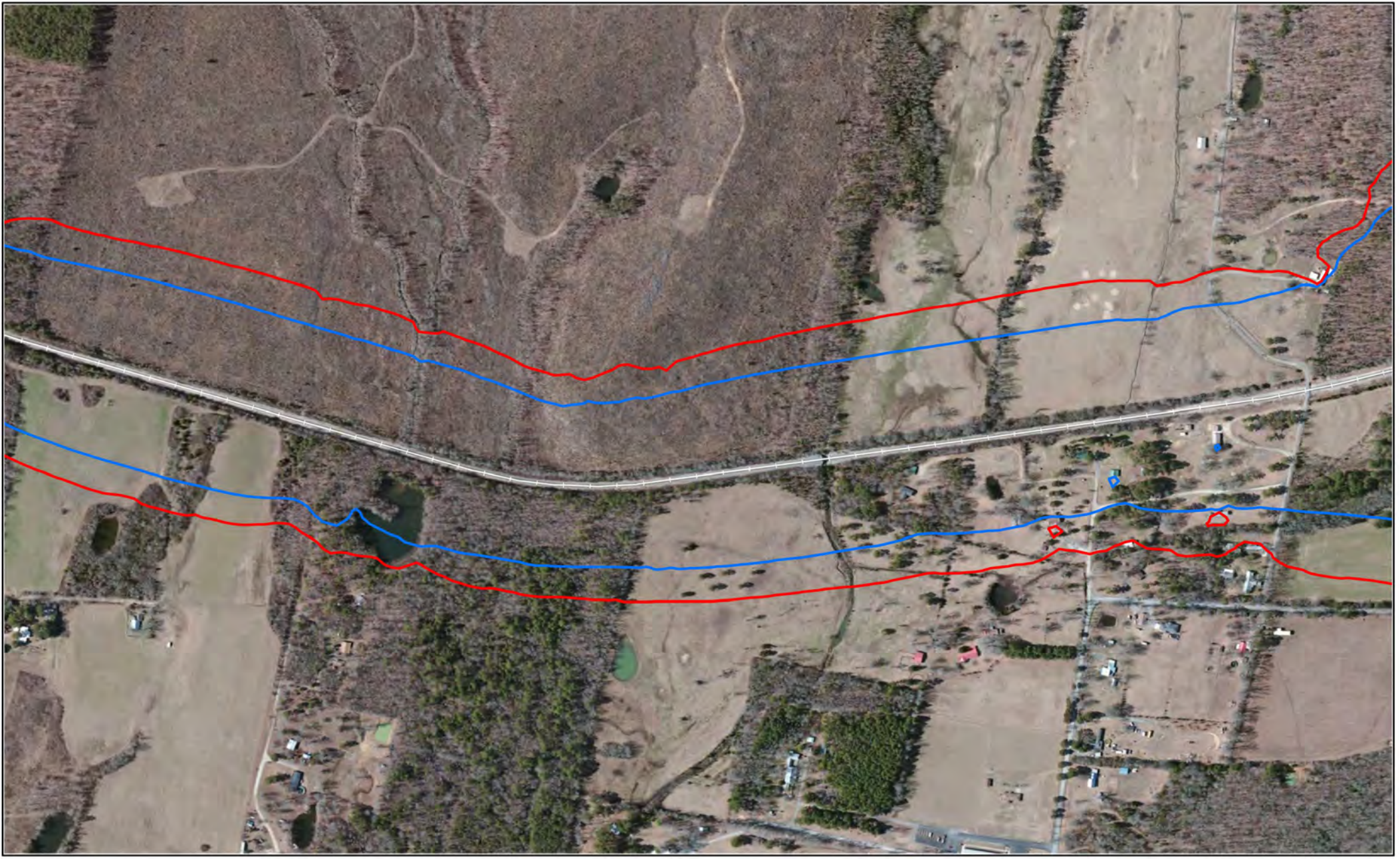
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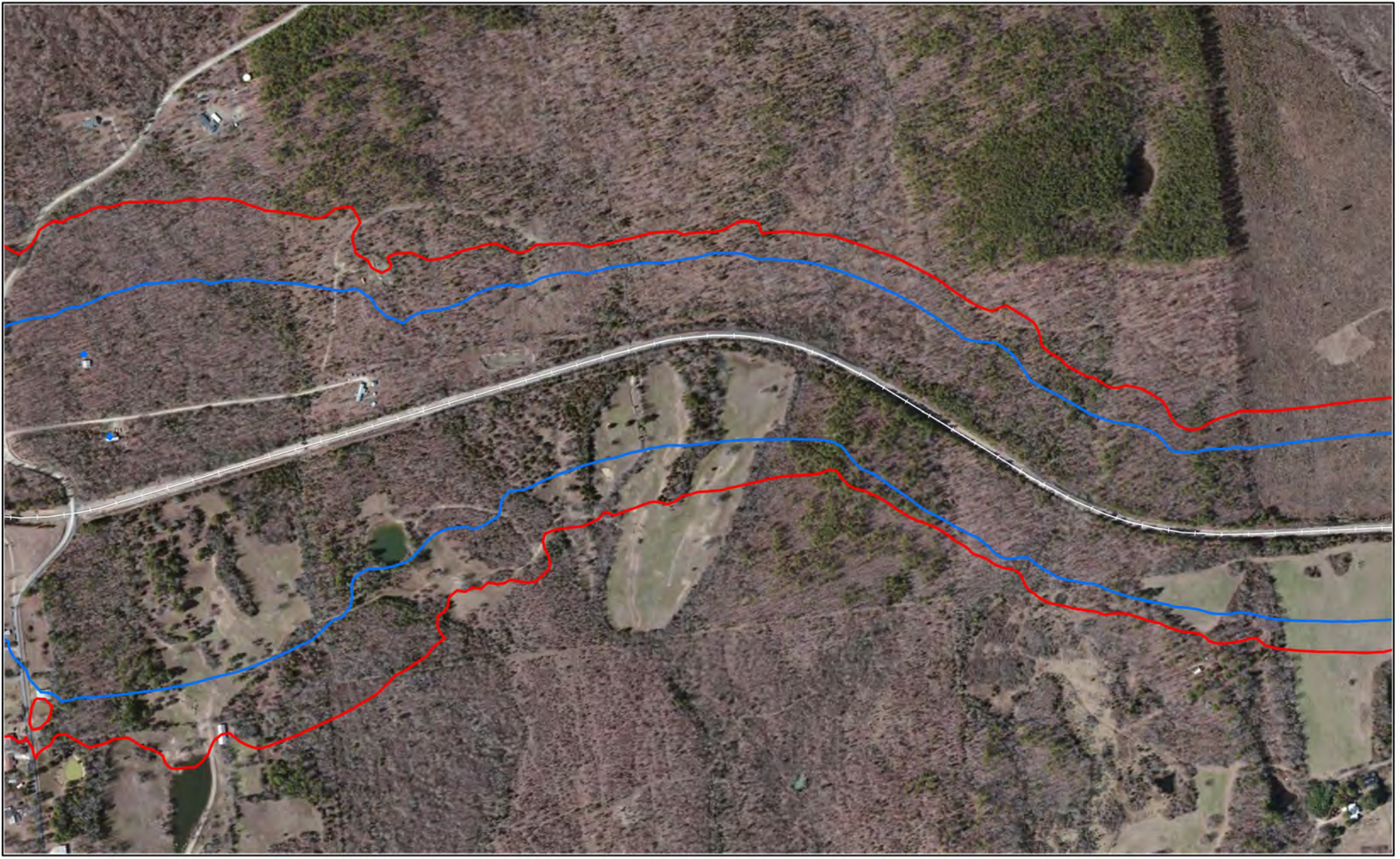
Tracks

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Noise Contours
Polk County, AR

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0 0.05 0.1



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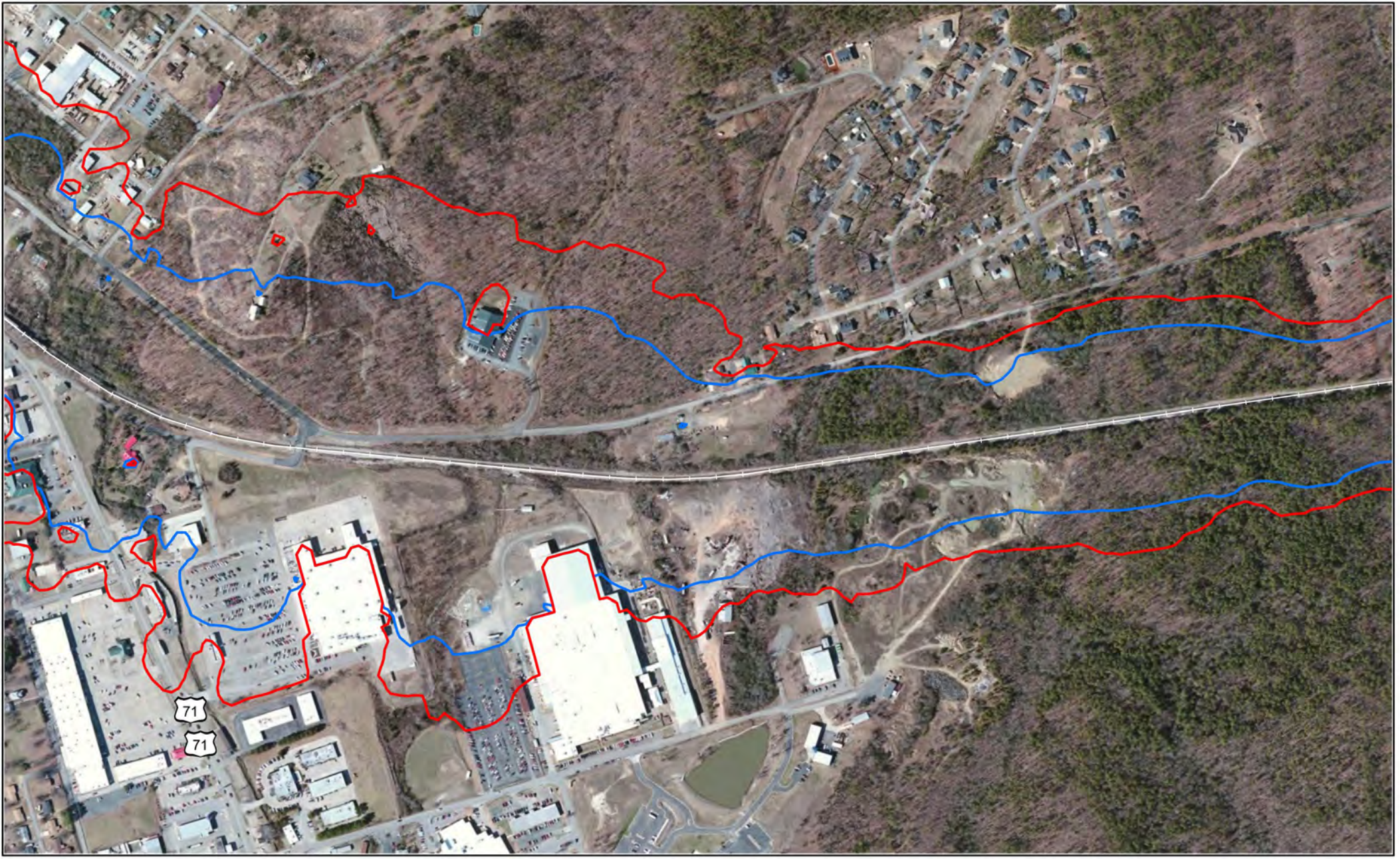
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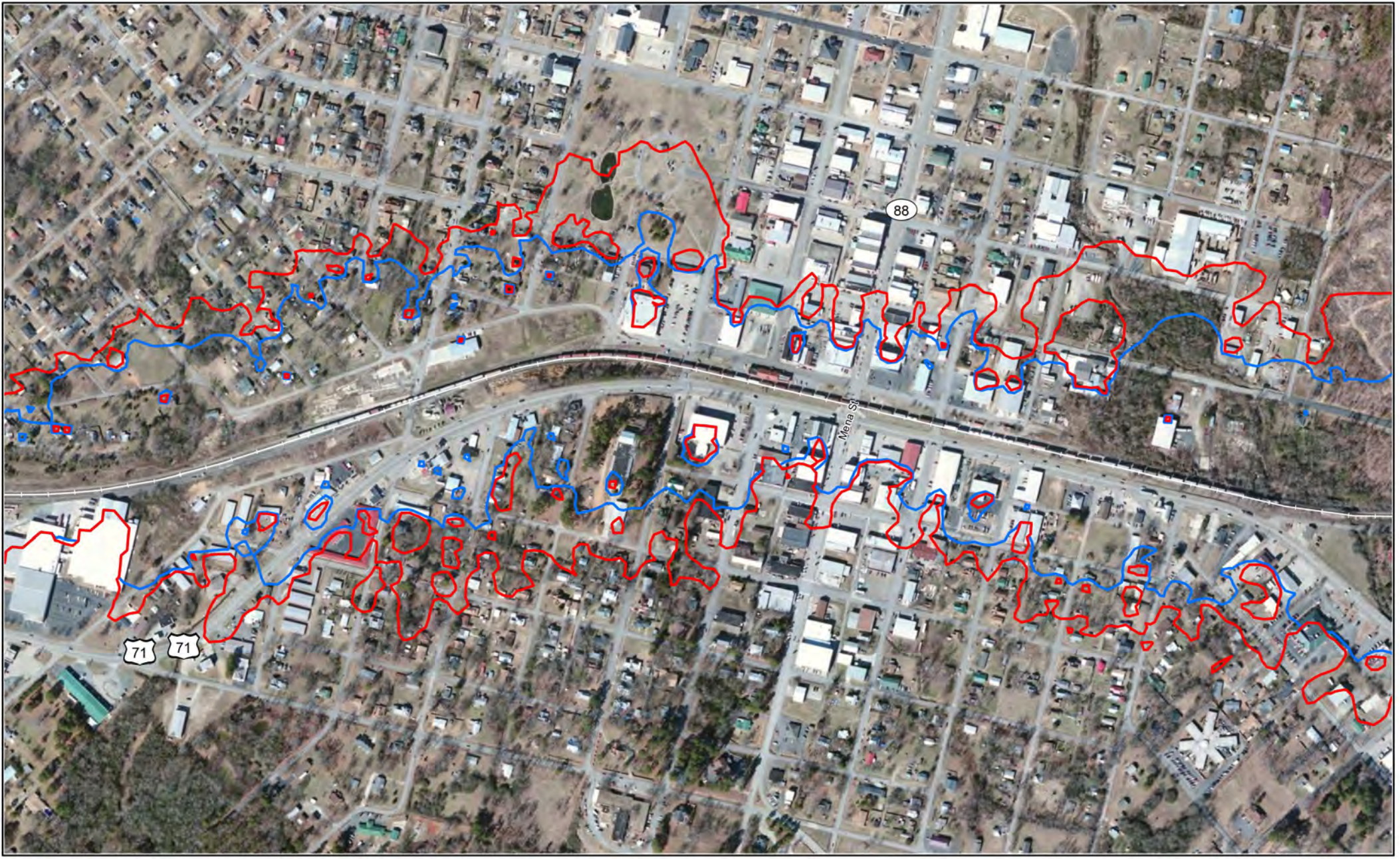
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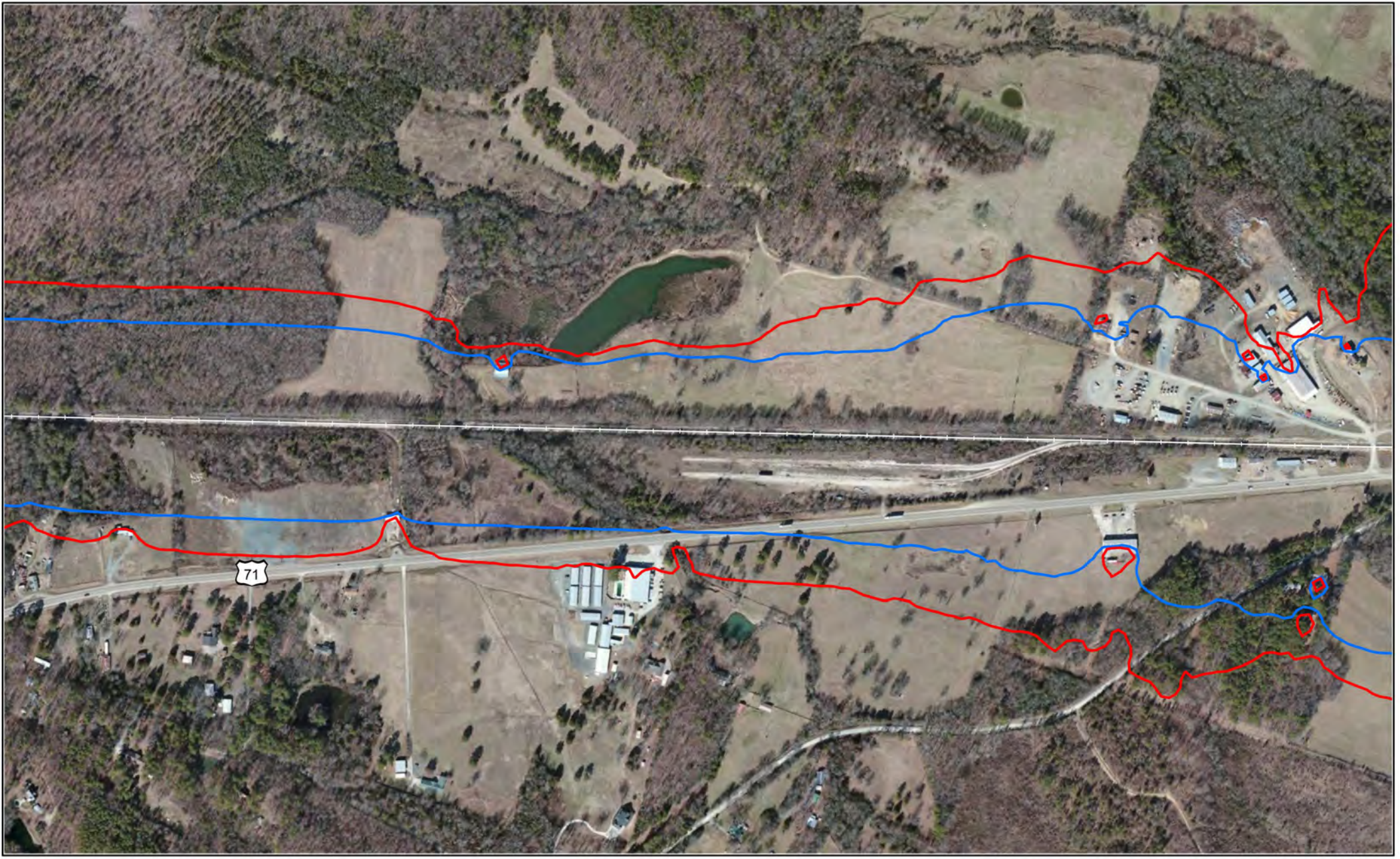
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Noise Contours
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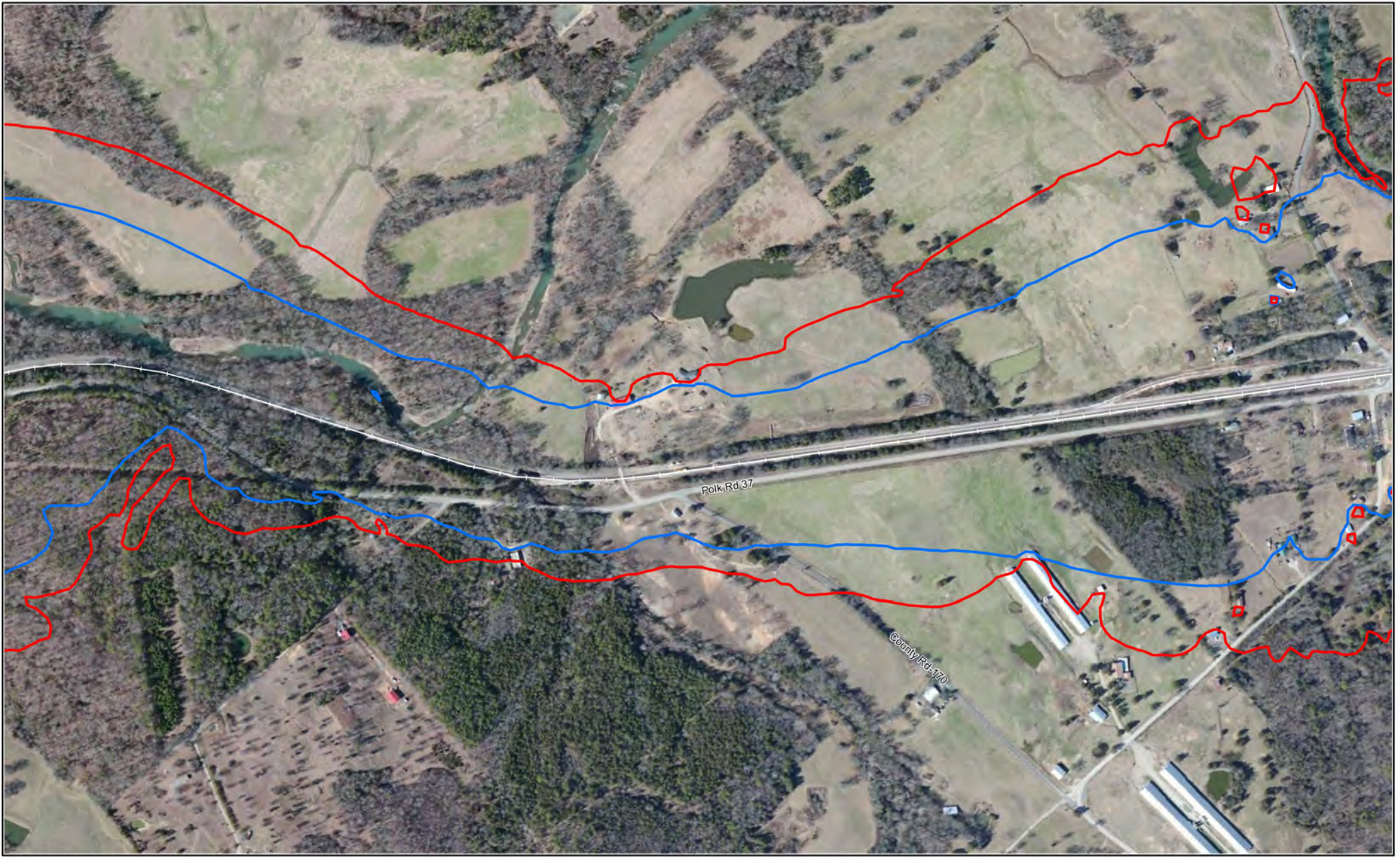
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Noise Contours
Polk County, AR

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0 0.05 0.1

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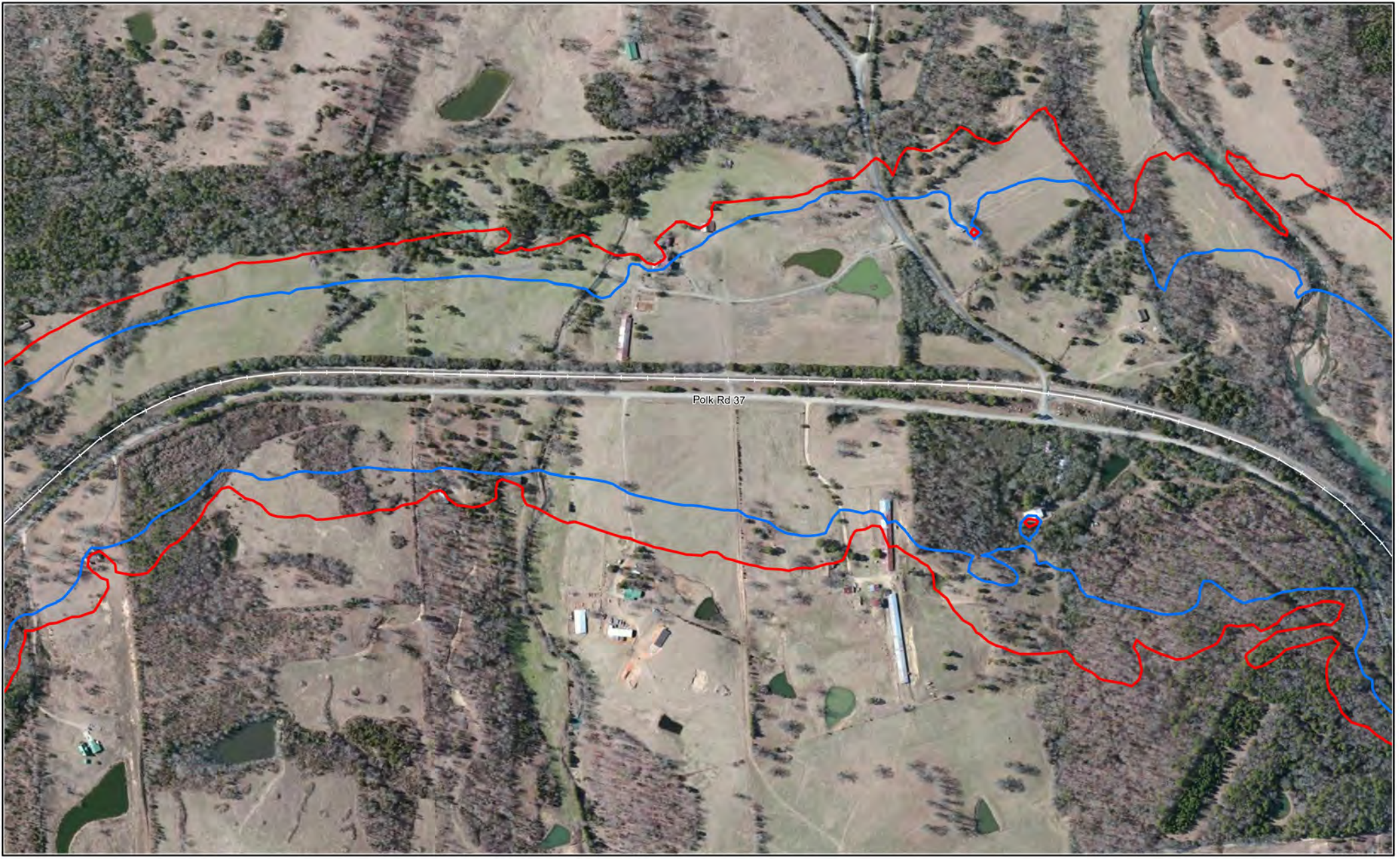
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Noise Contours
Polk County, AR

Miles
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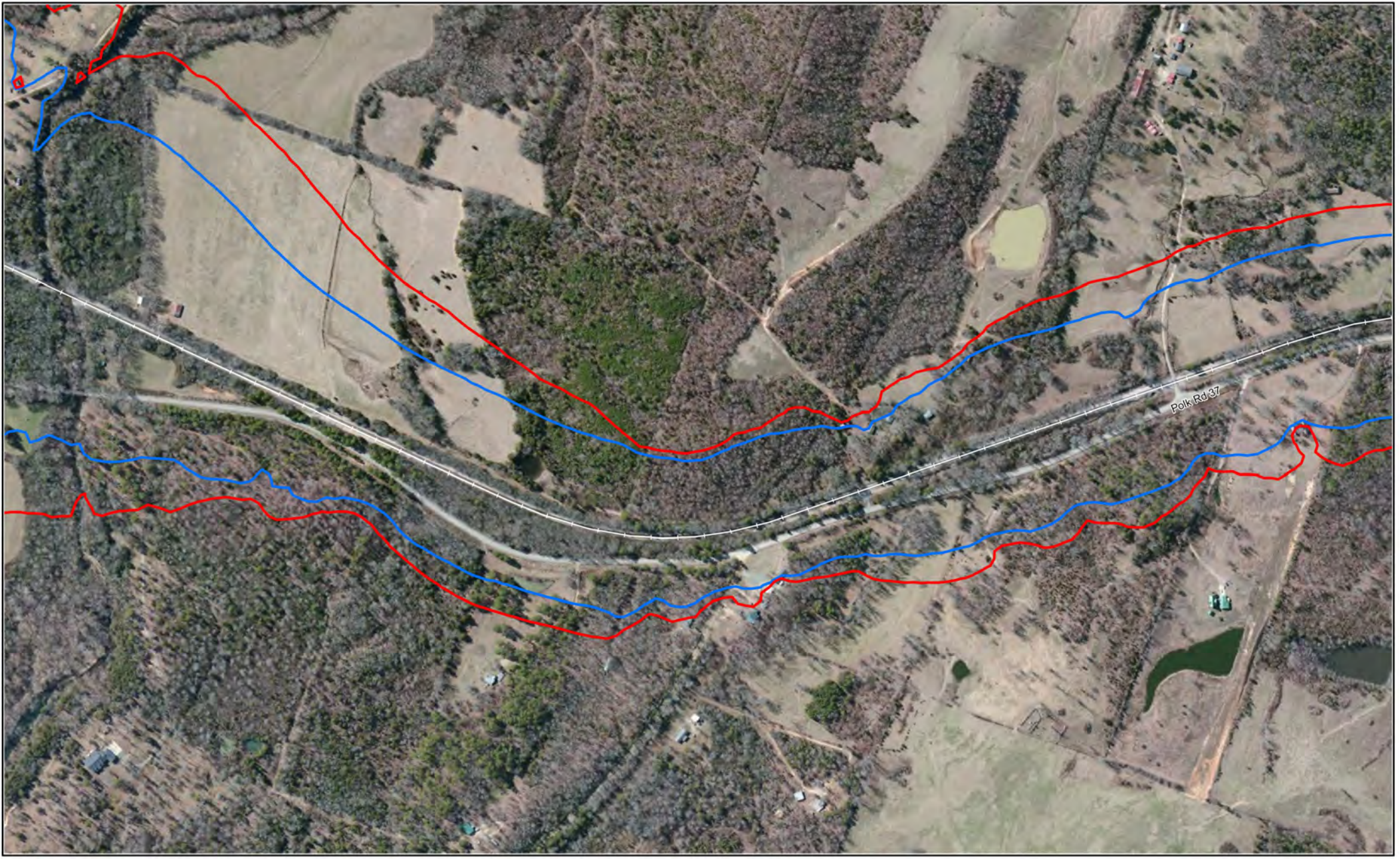
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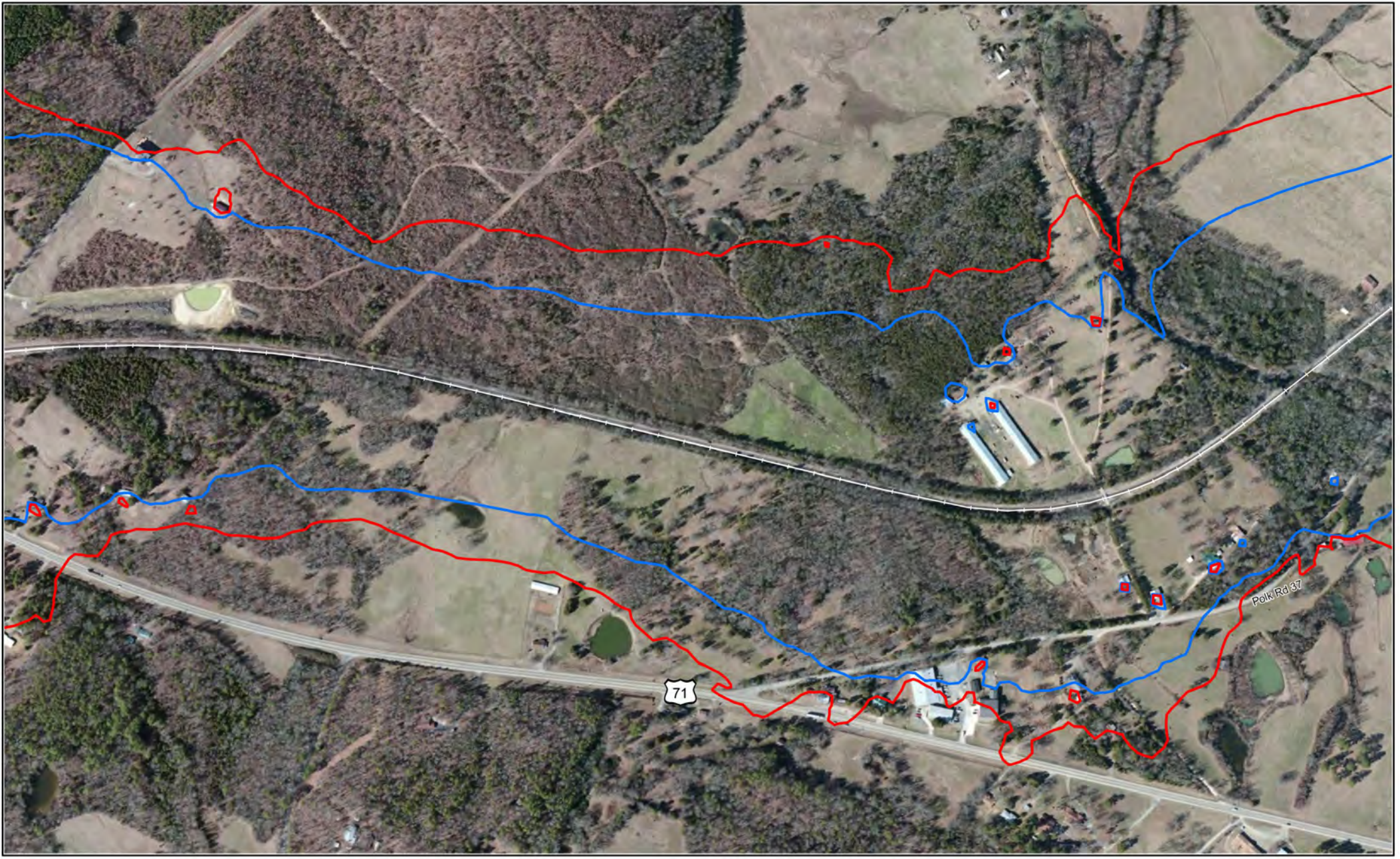
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Noise Contours
Polk County, AR

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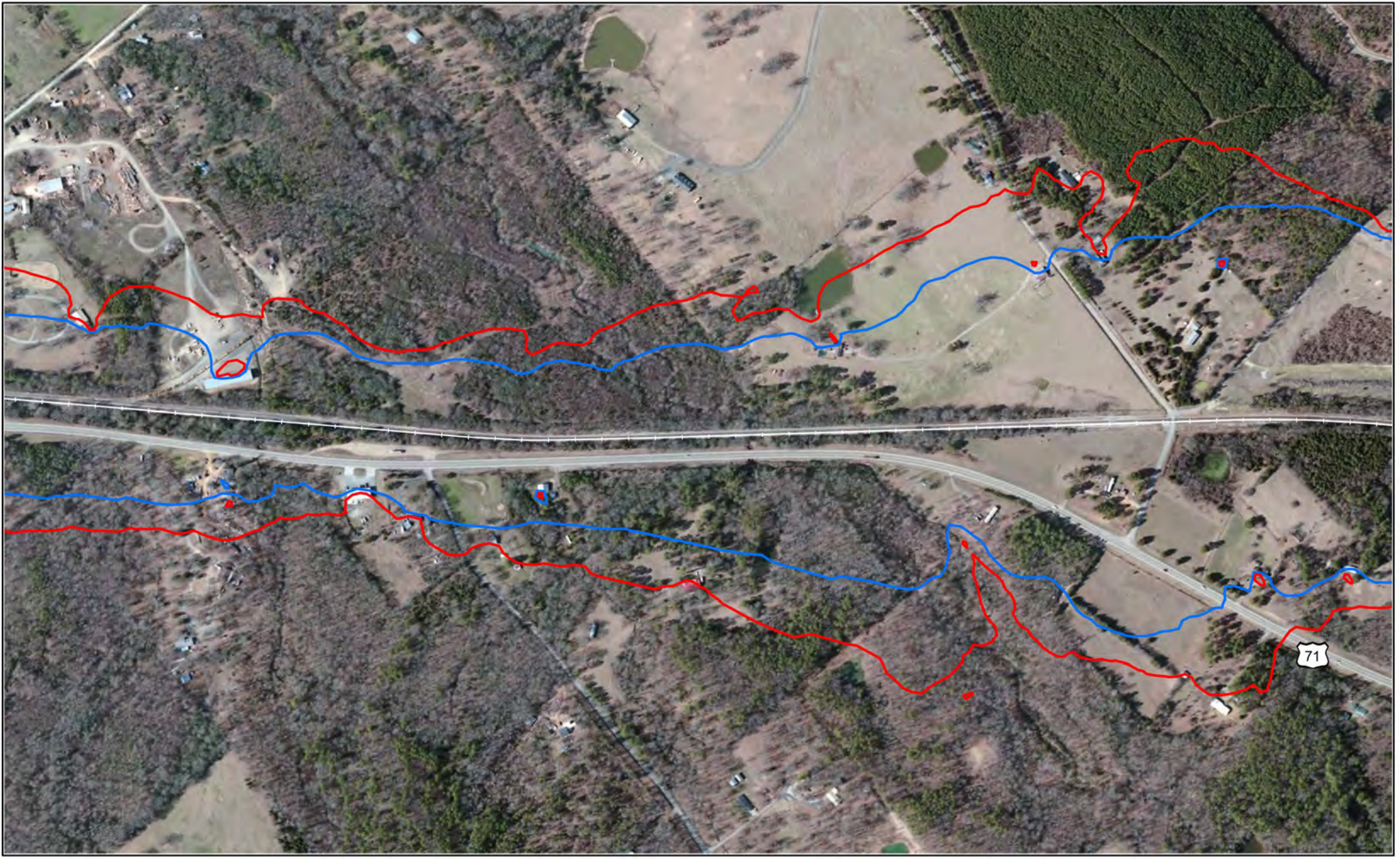
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Noise Contours
Polk County, AR

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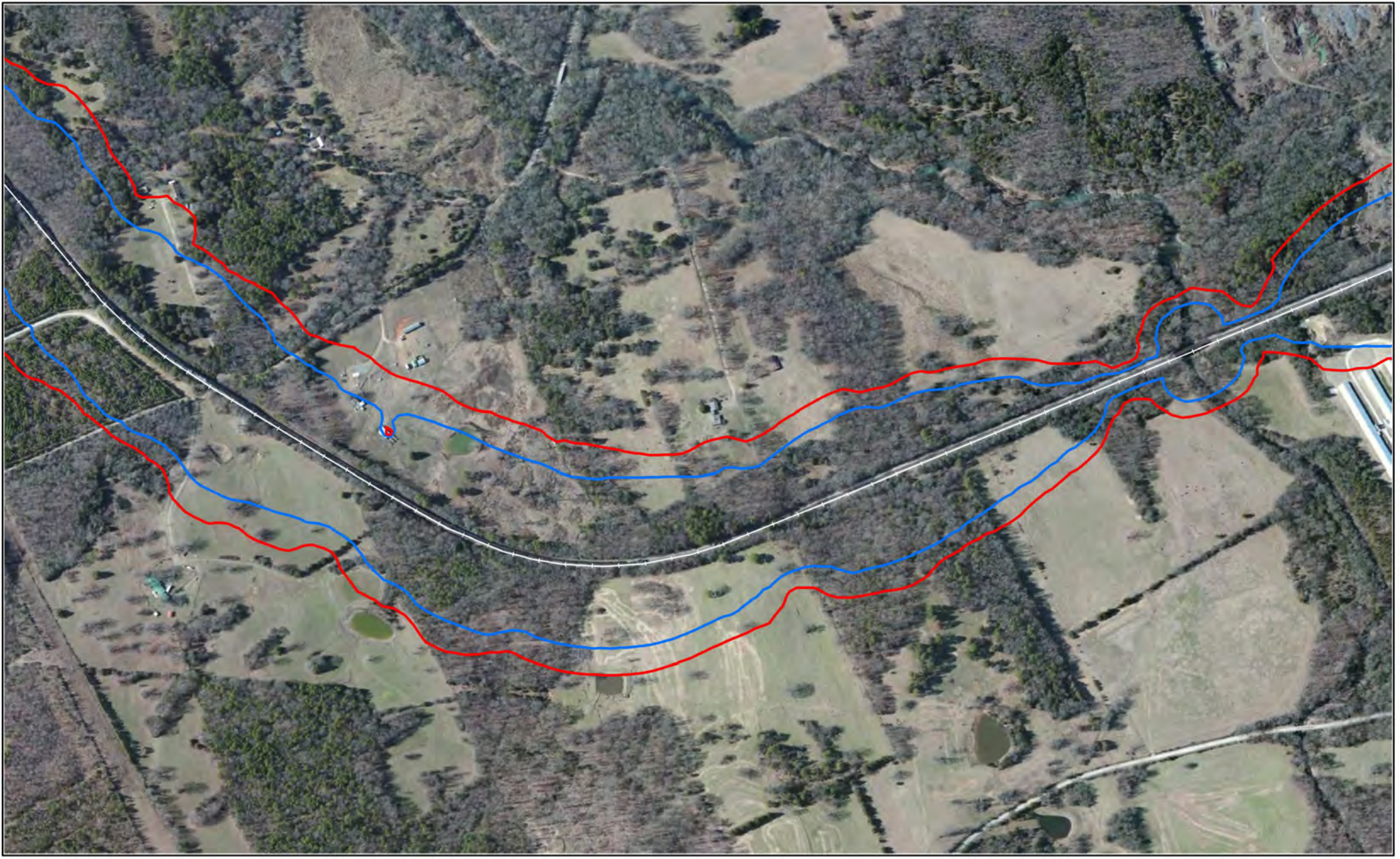
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Noise Contours
Polk County, AR

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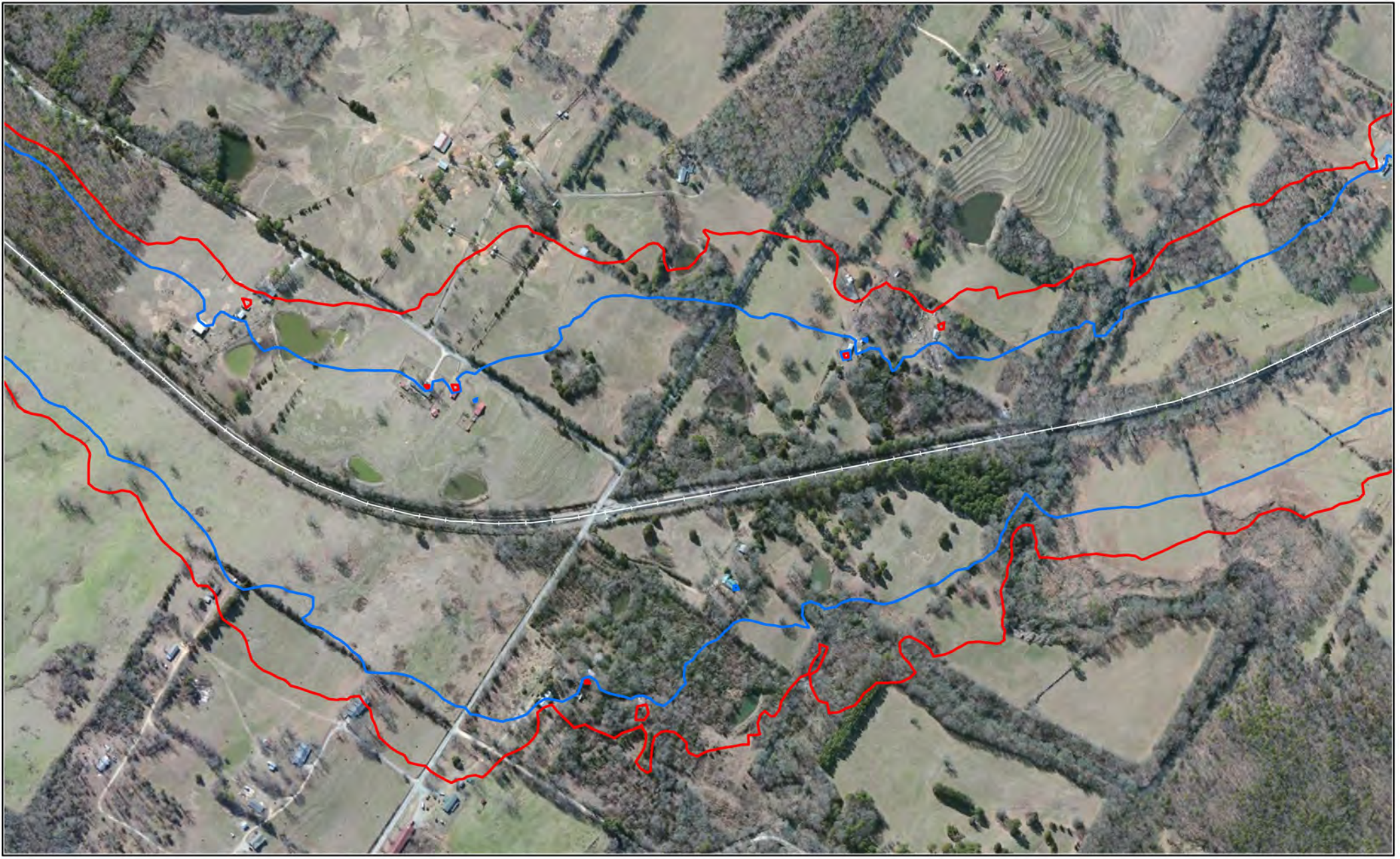
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Noise Contours
Polk County, AR

Miles
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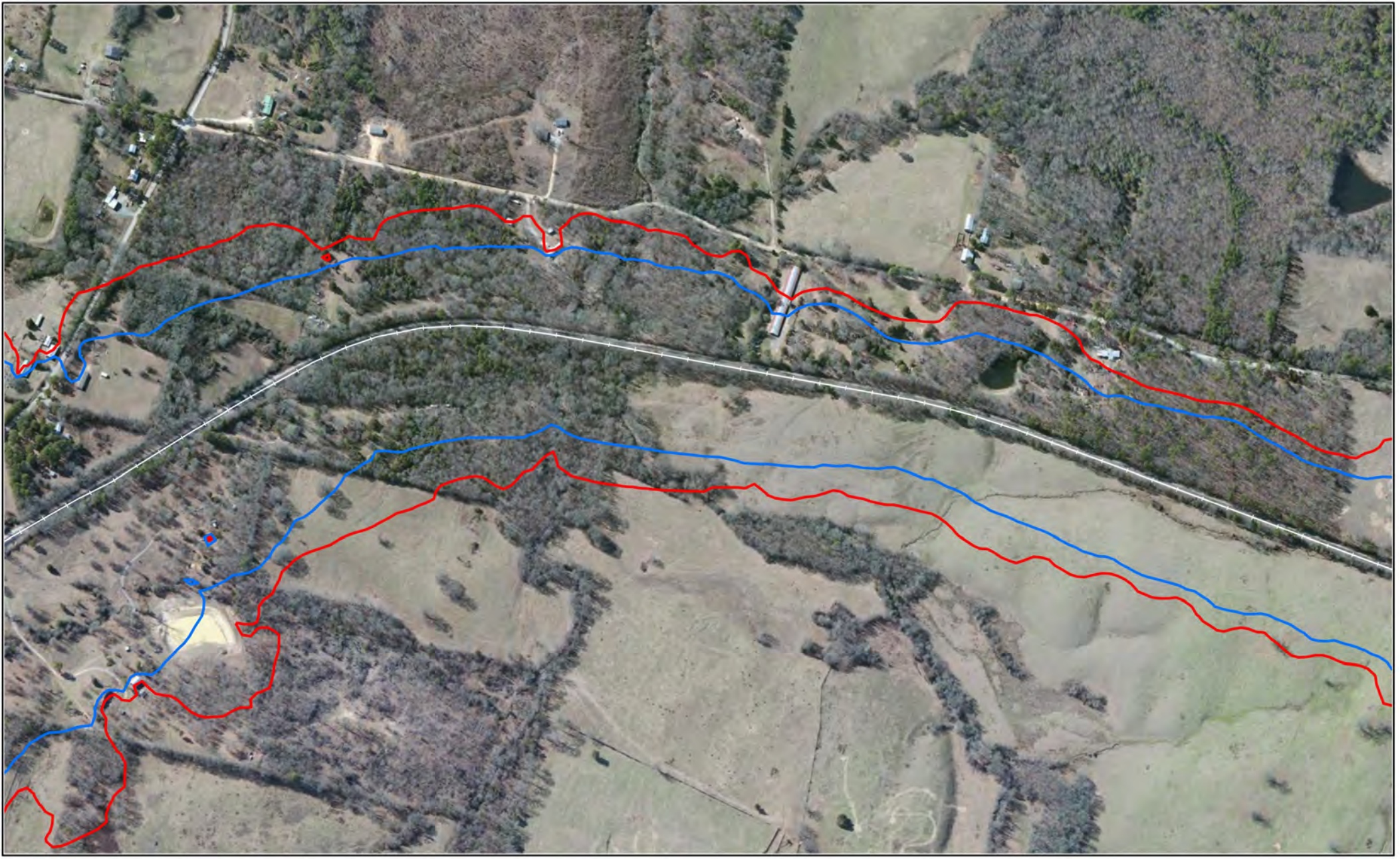
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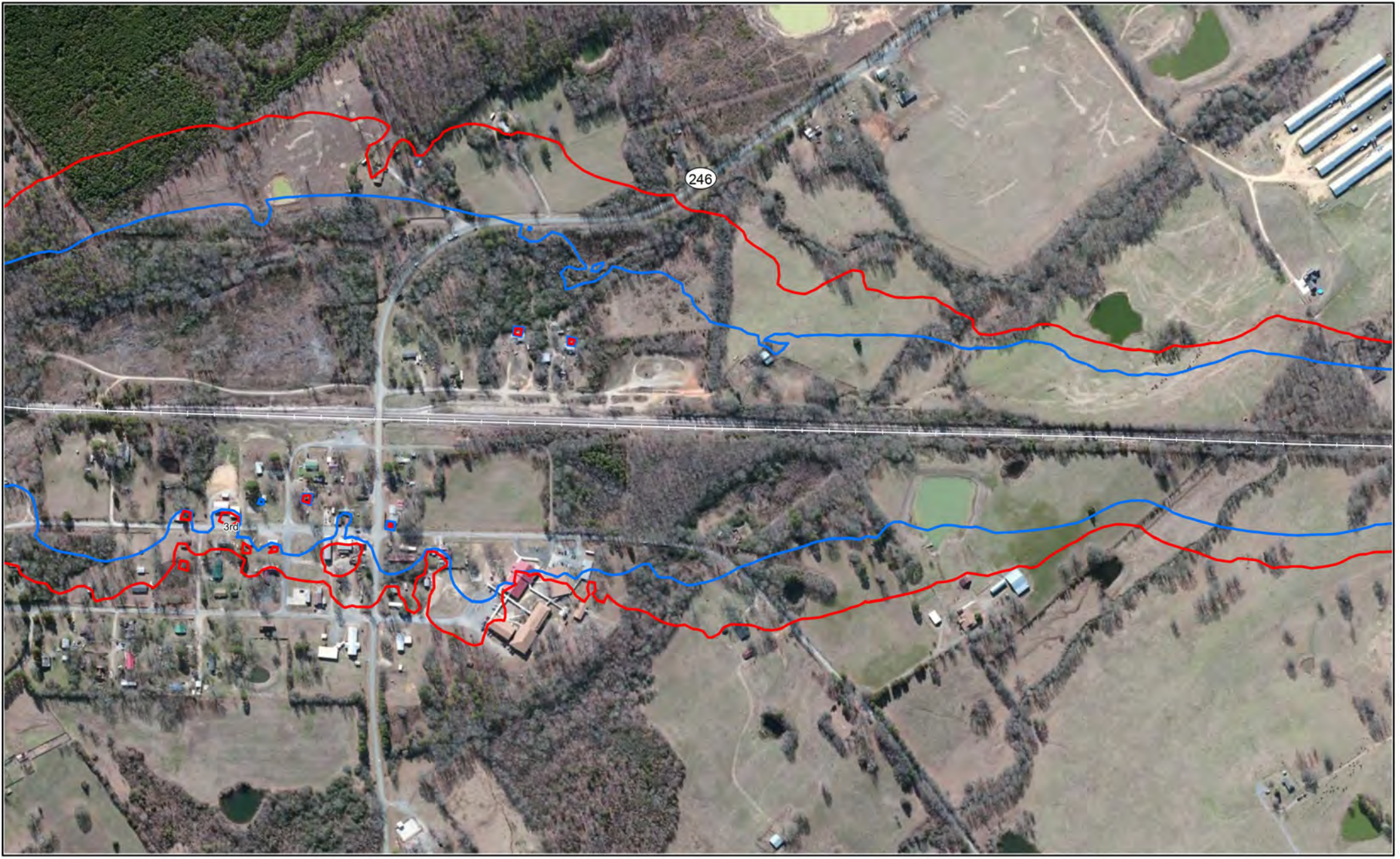
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Noise Contours
Polk County, AR

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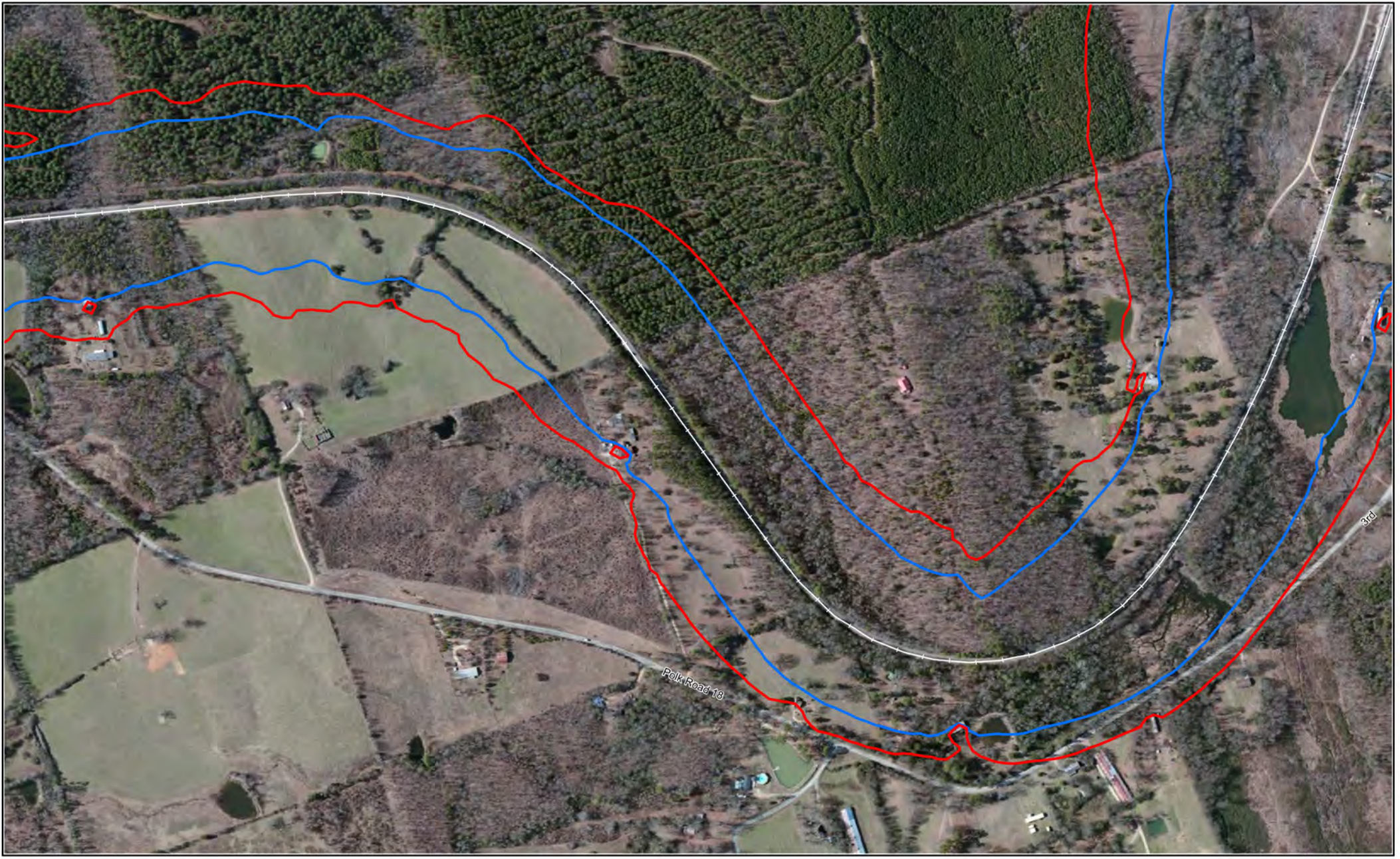
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Noise Contours
Polk County, AR

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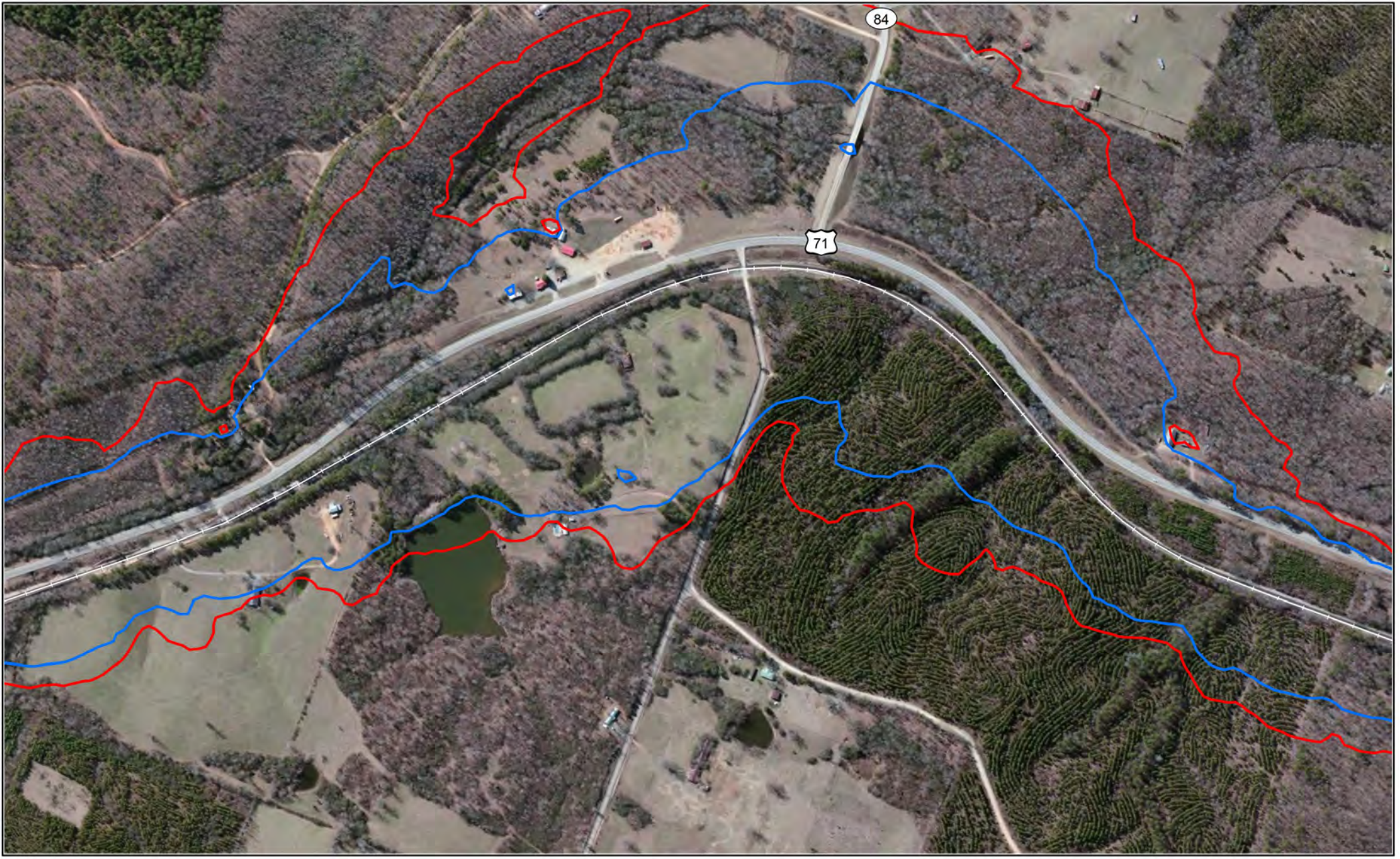
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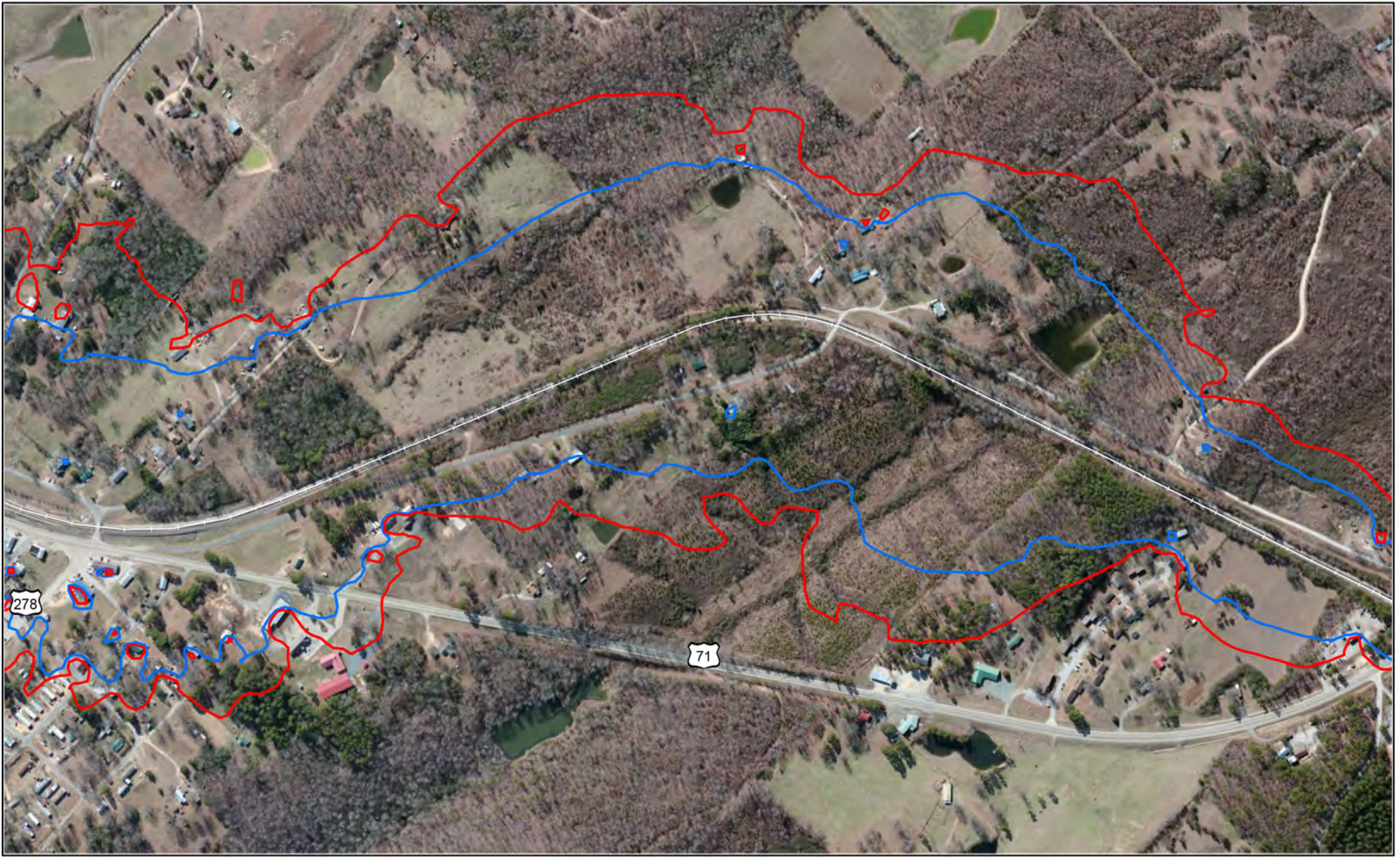
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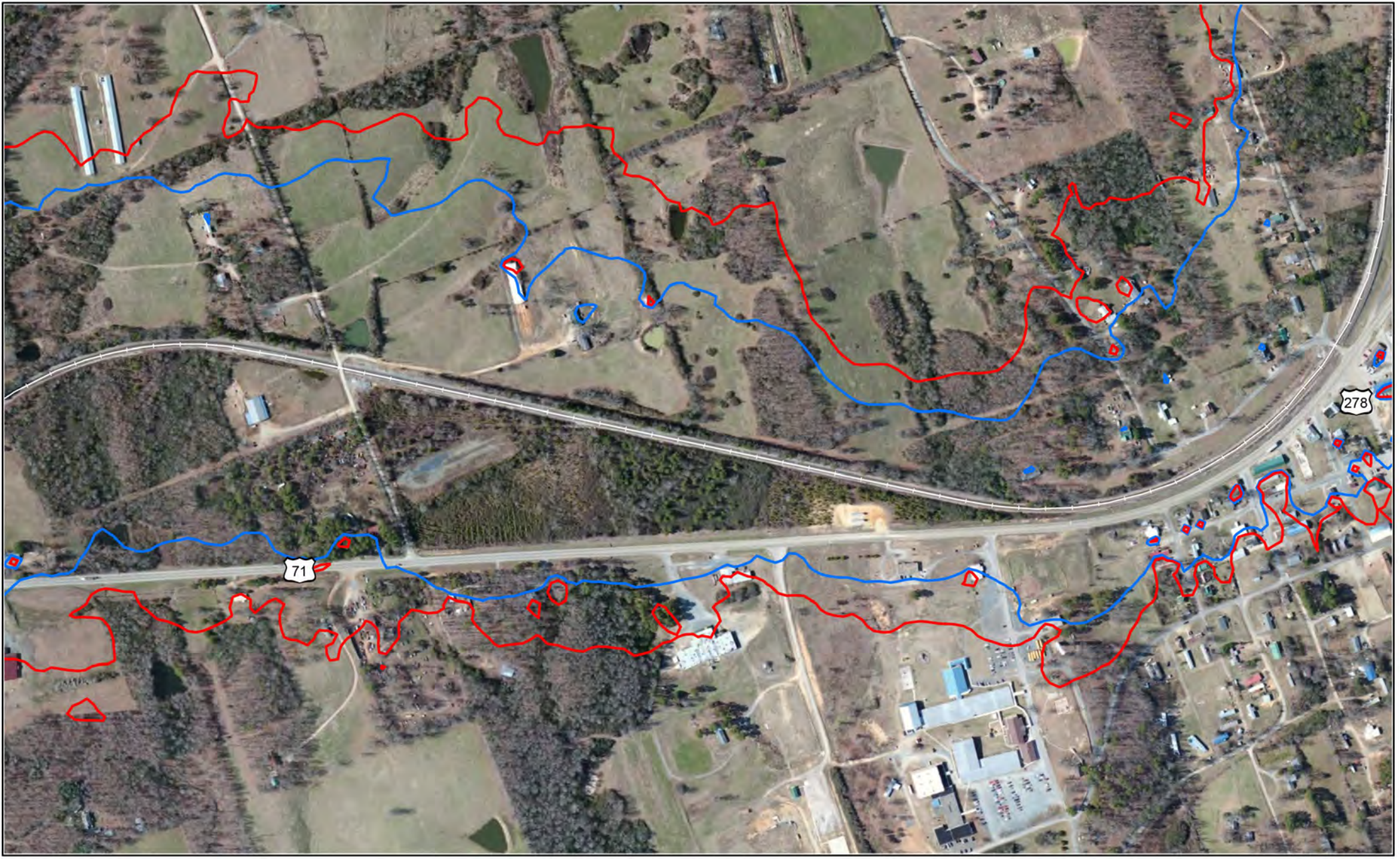
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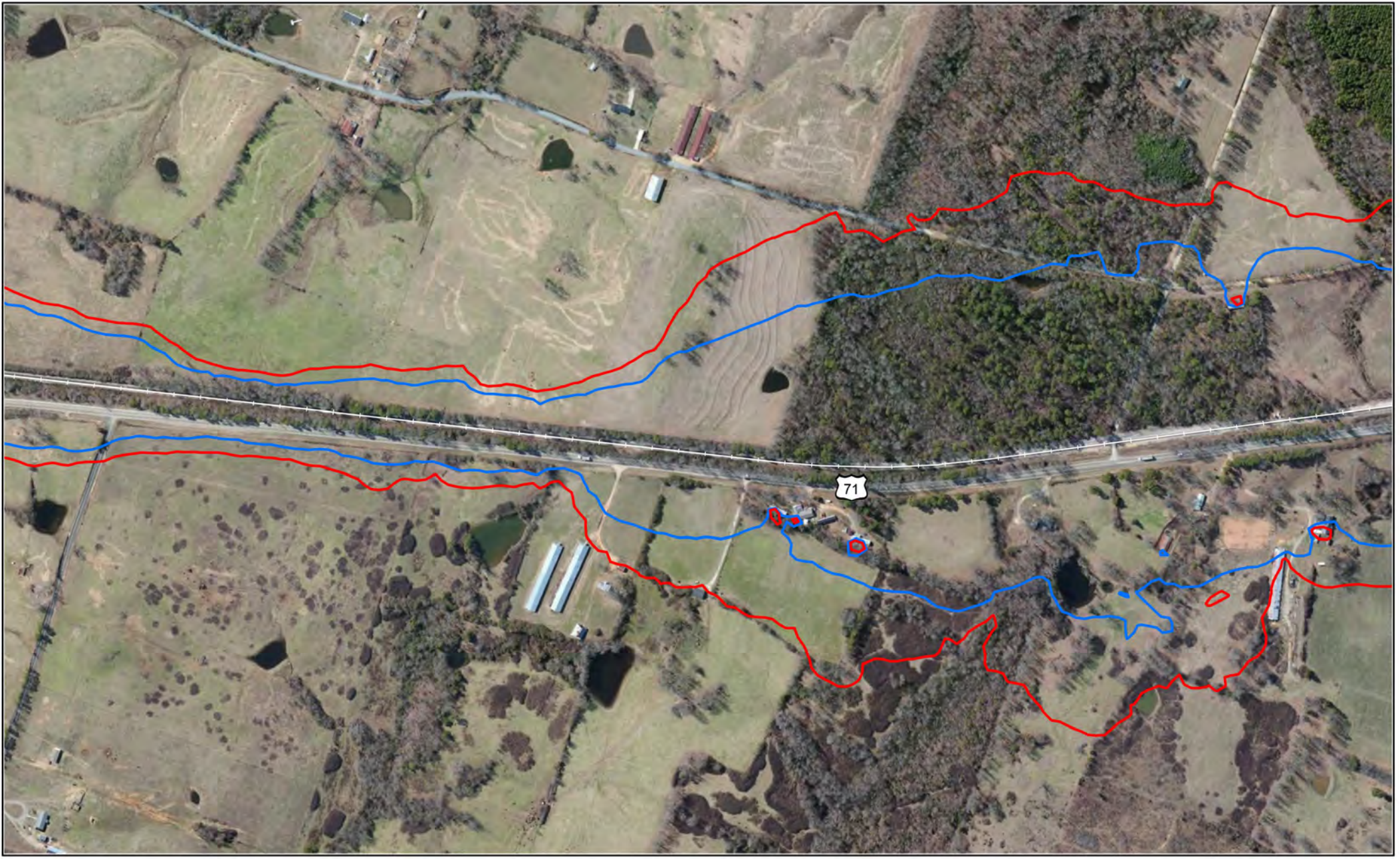
Source: ESRI.



Noise Contours
Polk County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

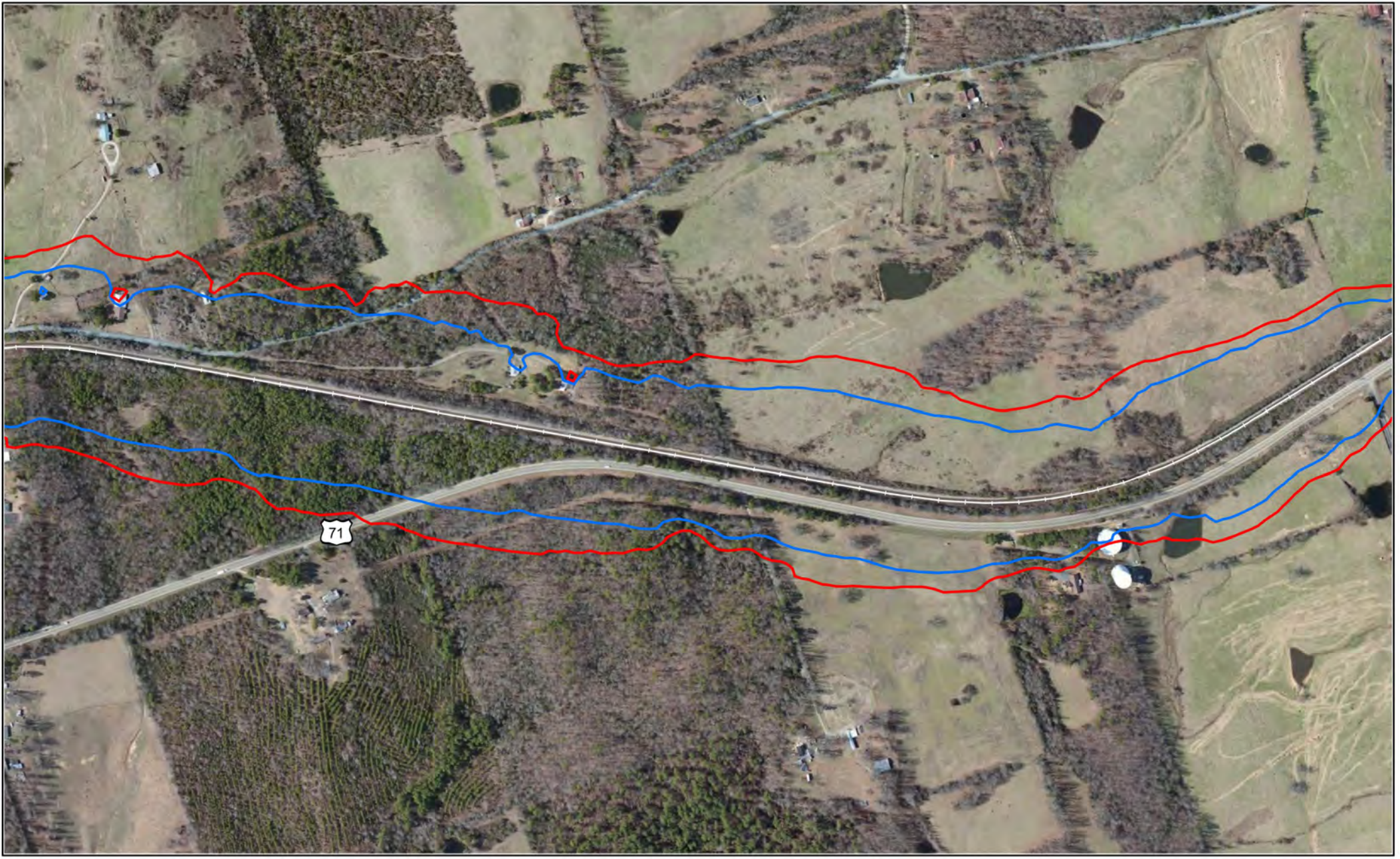
Source: ESRI.



Noise Contours
Polk County, AR

0 0.05 0.1 Miles

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

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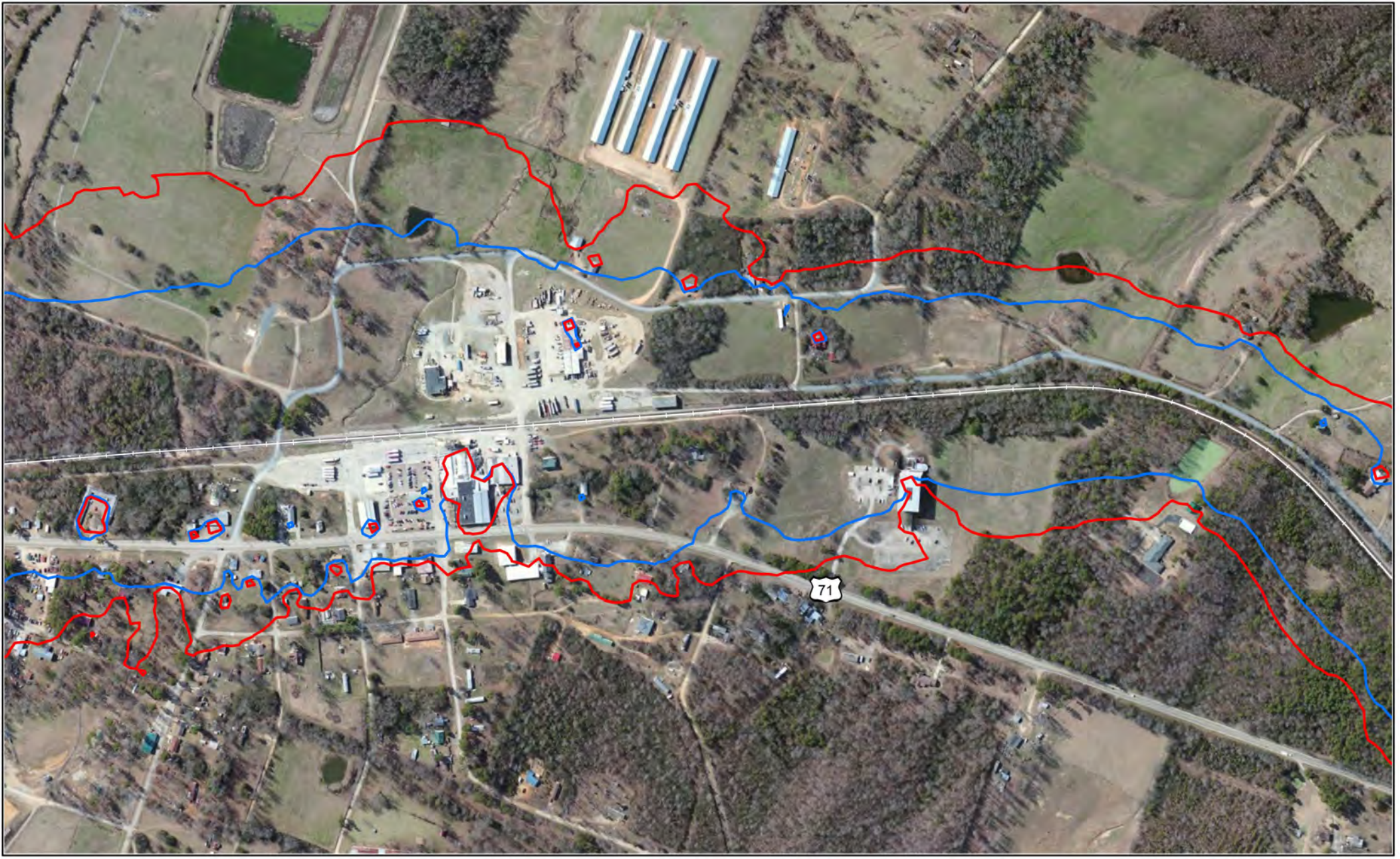
Source: ESRI.



Noise Contours
Polk County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

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Noise Impact (65 Ldn and 3 dBA Increase)

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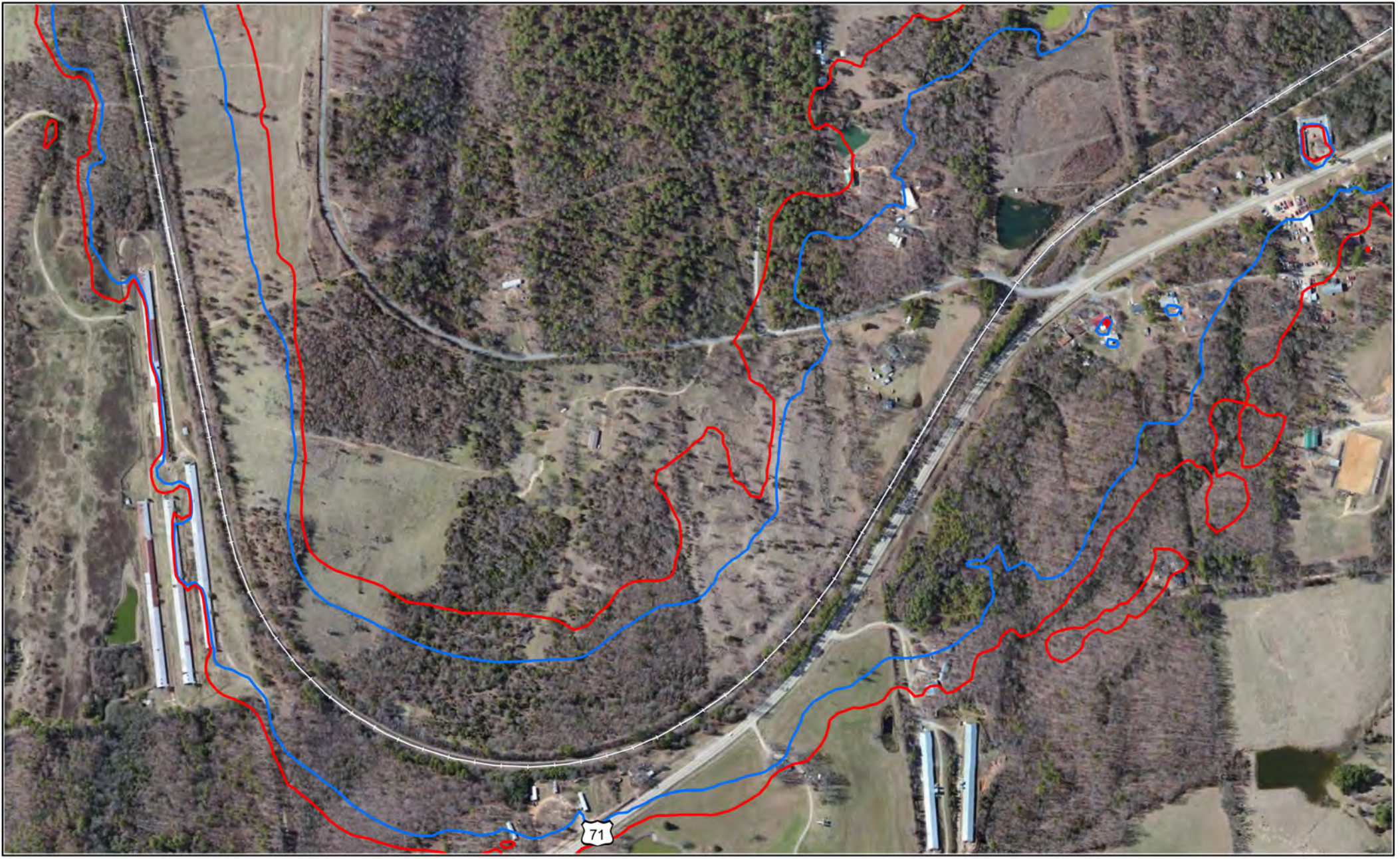
Source: ESRI.



Noise Contours
Polk County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

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Tracks

Source: ESRI.



Noise Contours
Polk County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

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Tracks

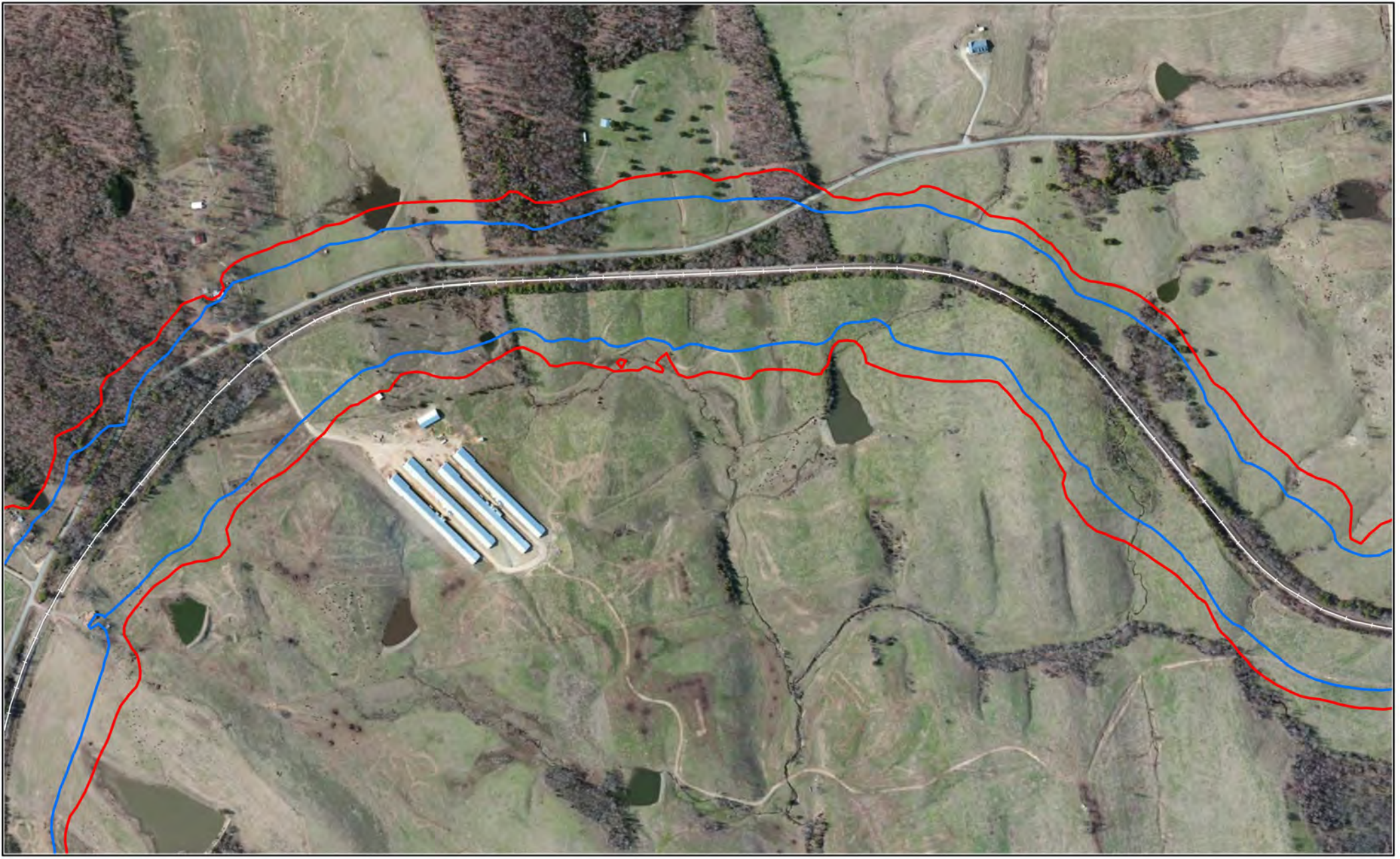
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Noise Contours
Polk County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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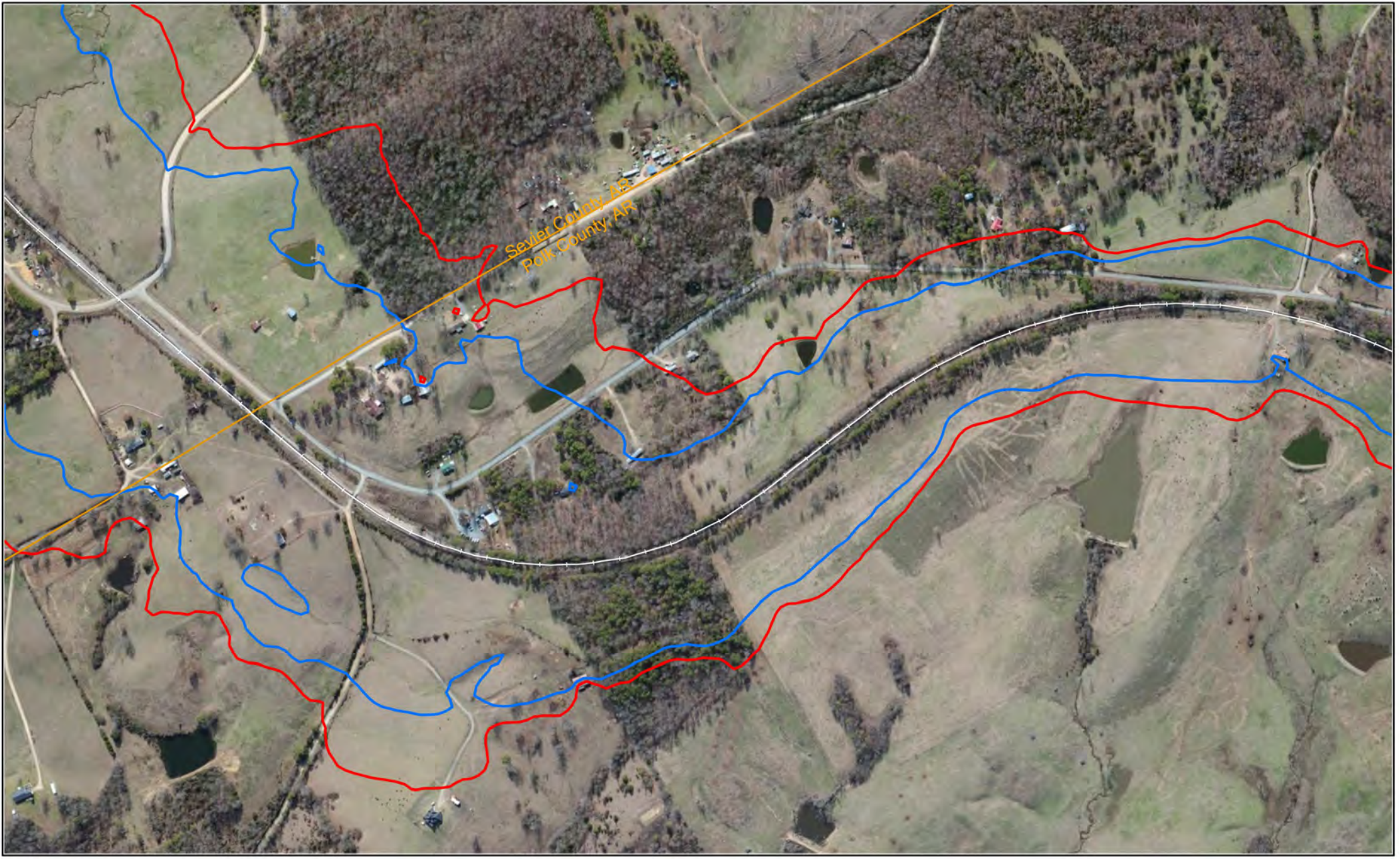
Tracks

Source: ESRI.



Noise Contours
Polk County, AR

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Sevier County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

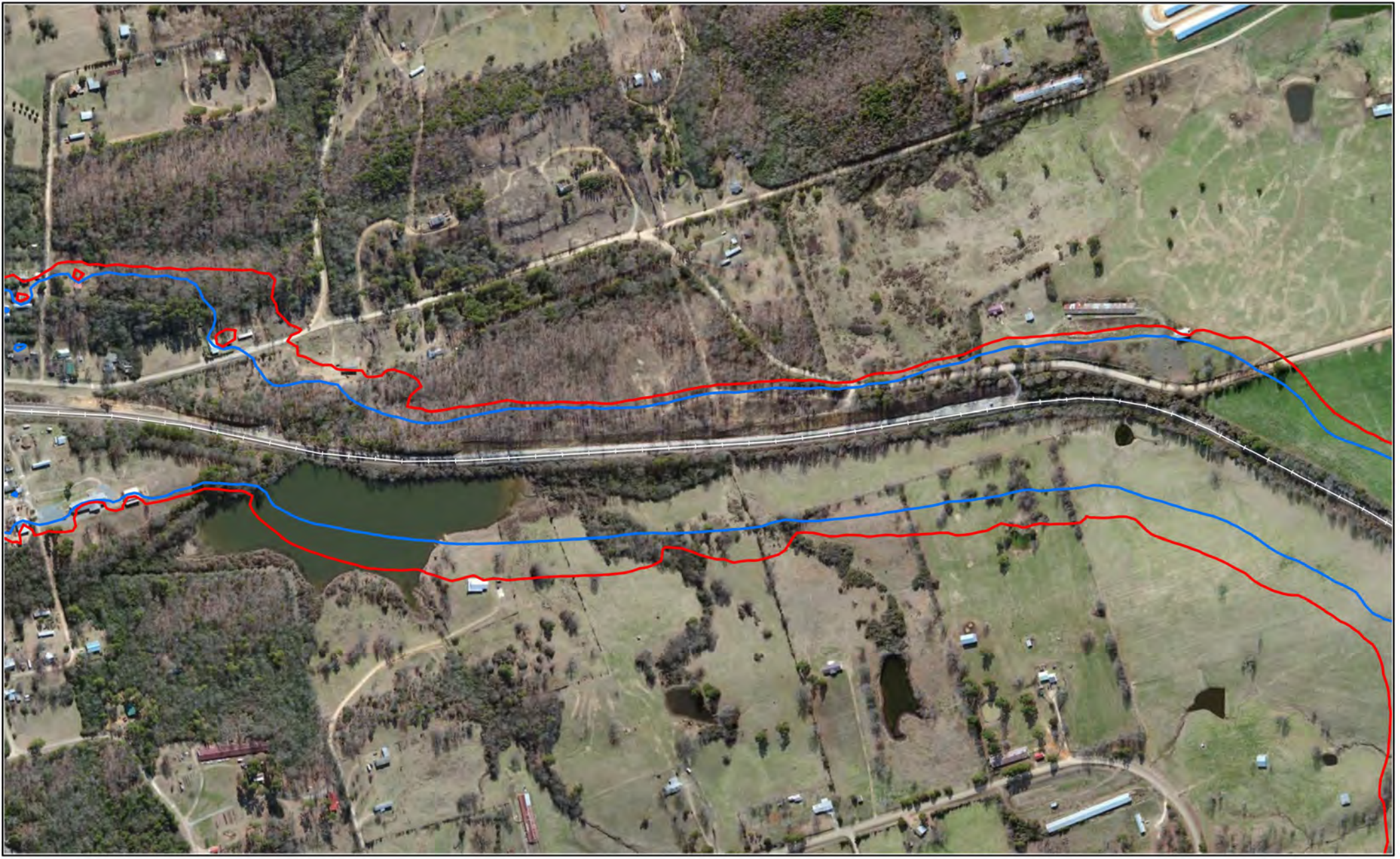
Source: ESRI.



Noise Contours
Sevier County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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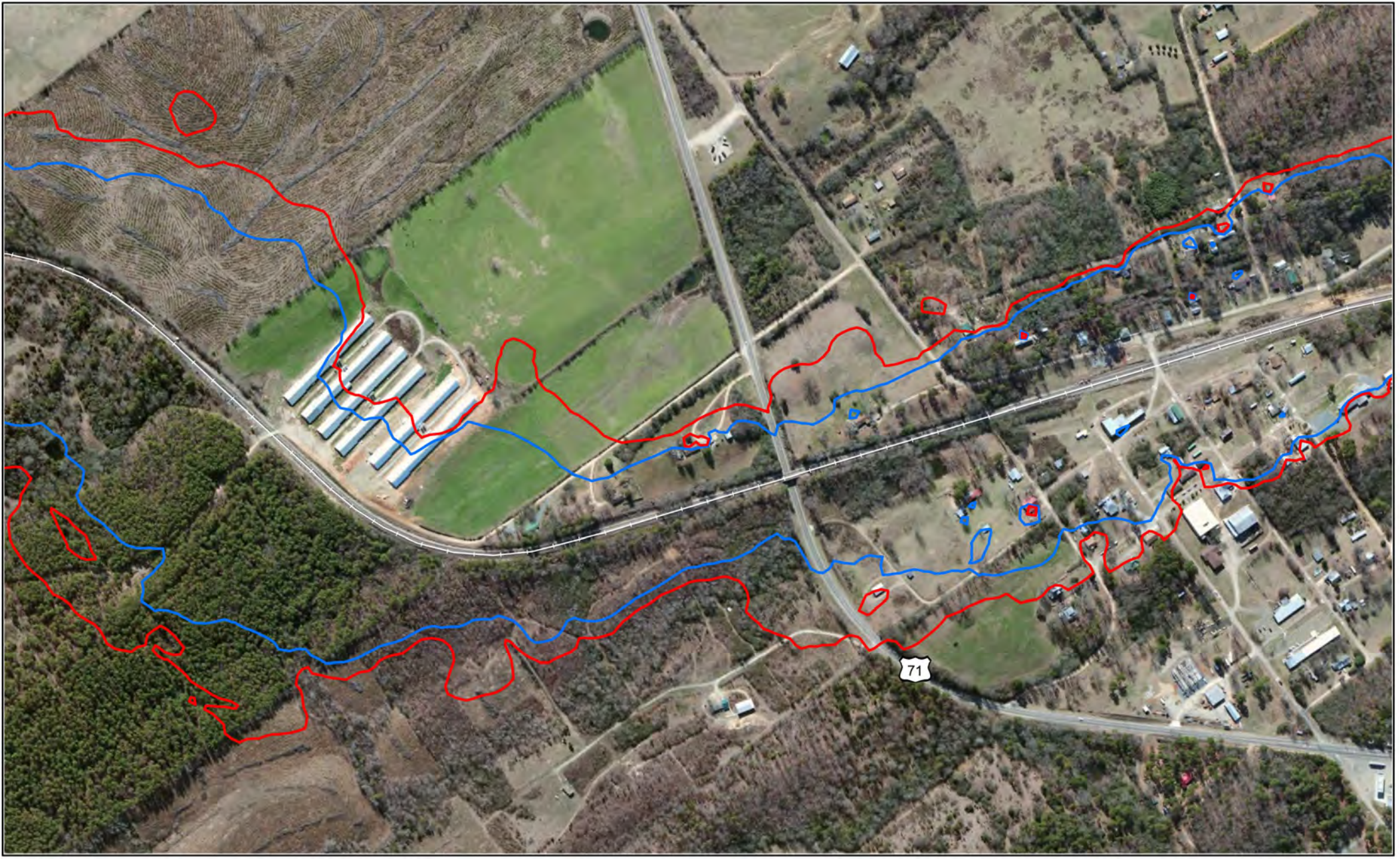
Source: ESRI.



Noise Contours
Sevier County, AR

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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Sevier County, AR

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Sevier County, AR

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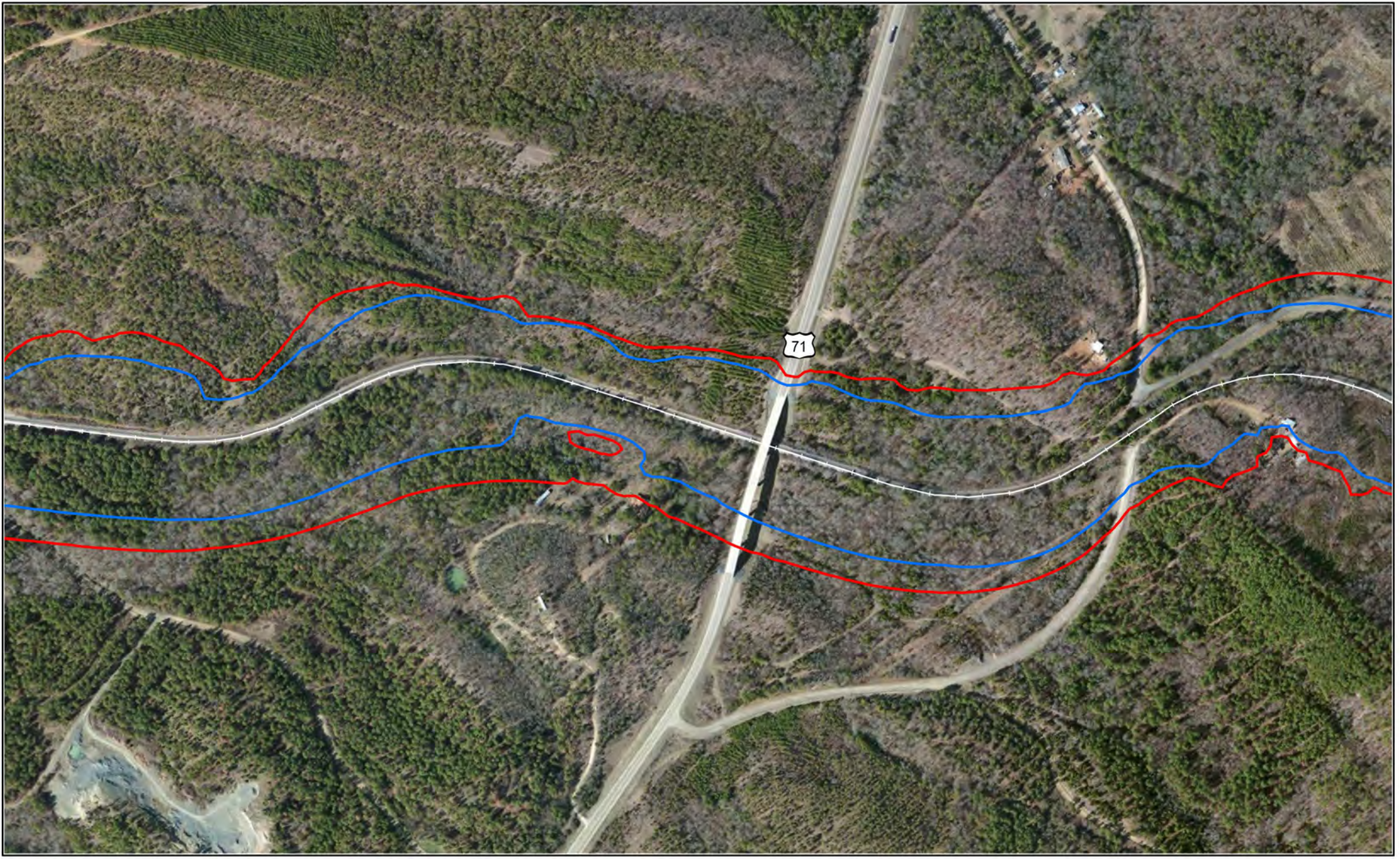
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Noise Contours
Sevier County, AR

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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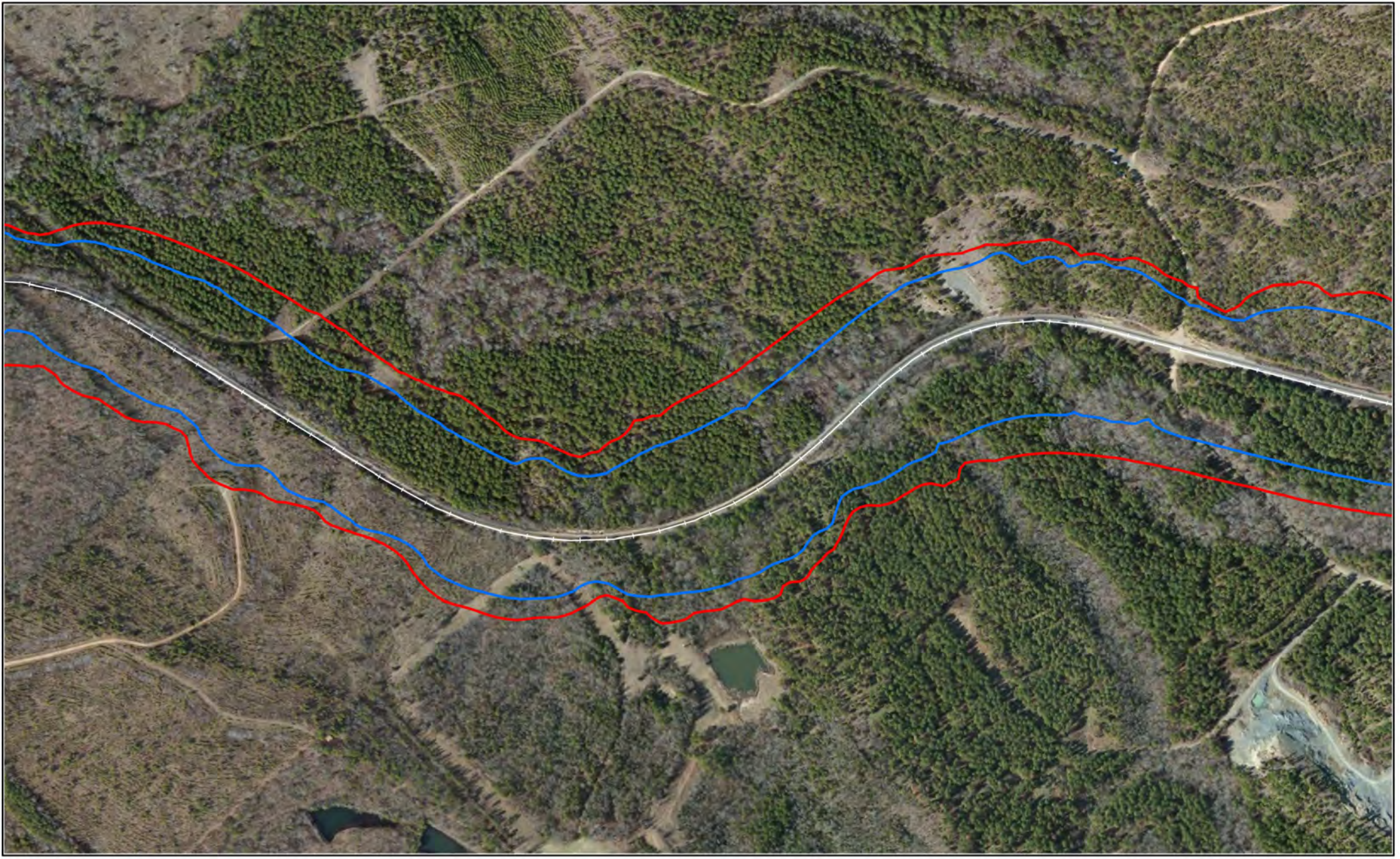
Tracks

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Noise Contours
Sevier County, AR

0 0.05 0.1 Miles



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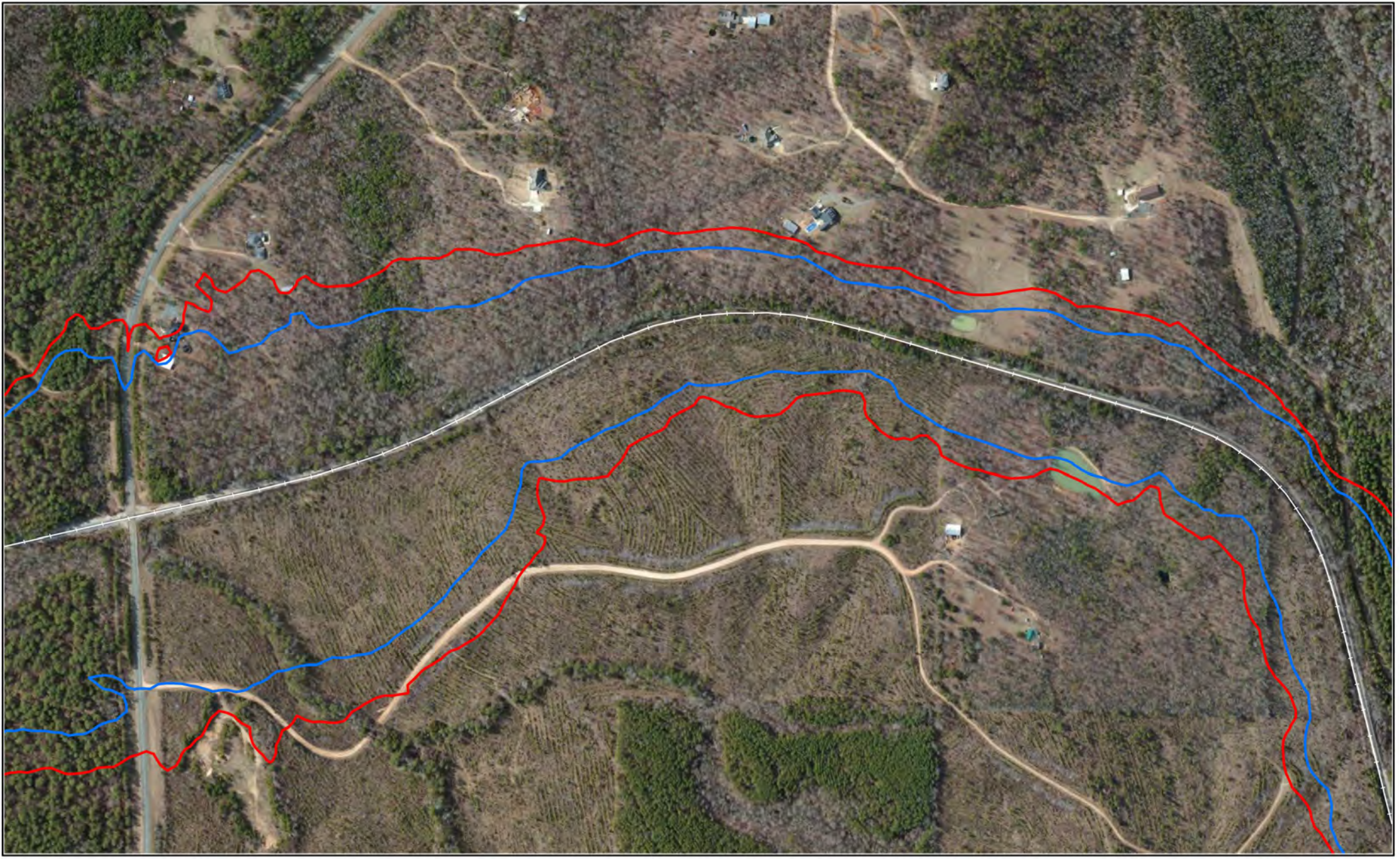
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Noise Contours
Sevier County, AR

Miles
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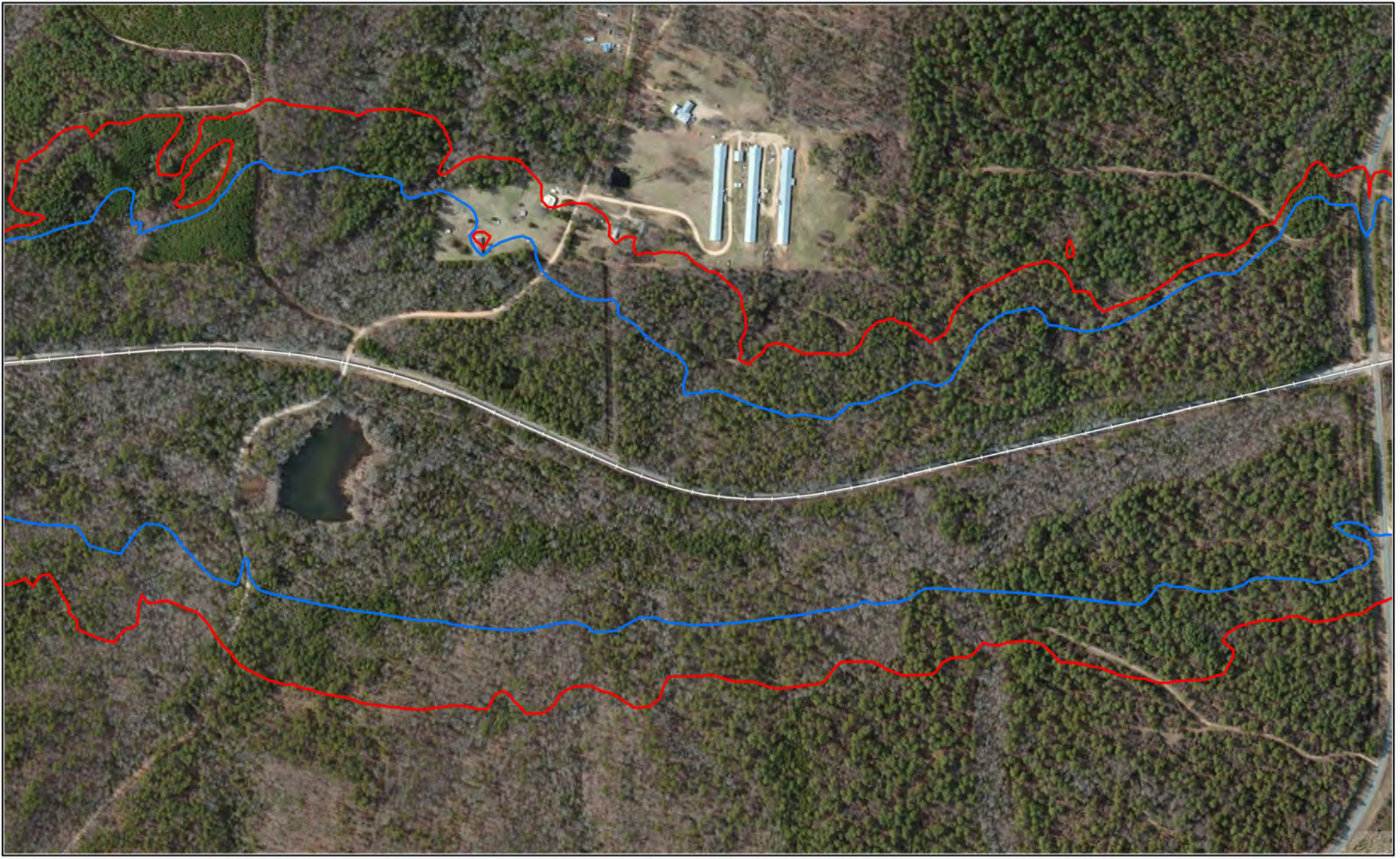
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Noise Contours
Sevier County, AR

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0 0.05 0.1

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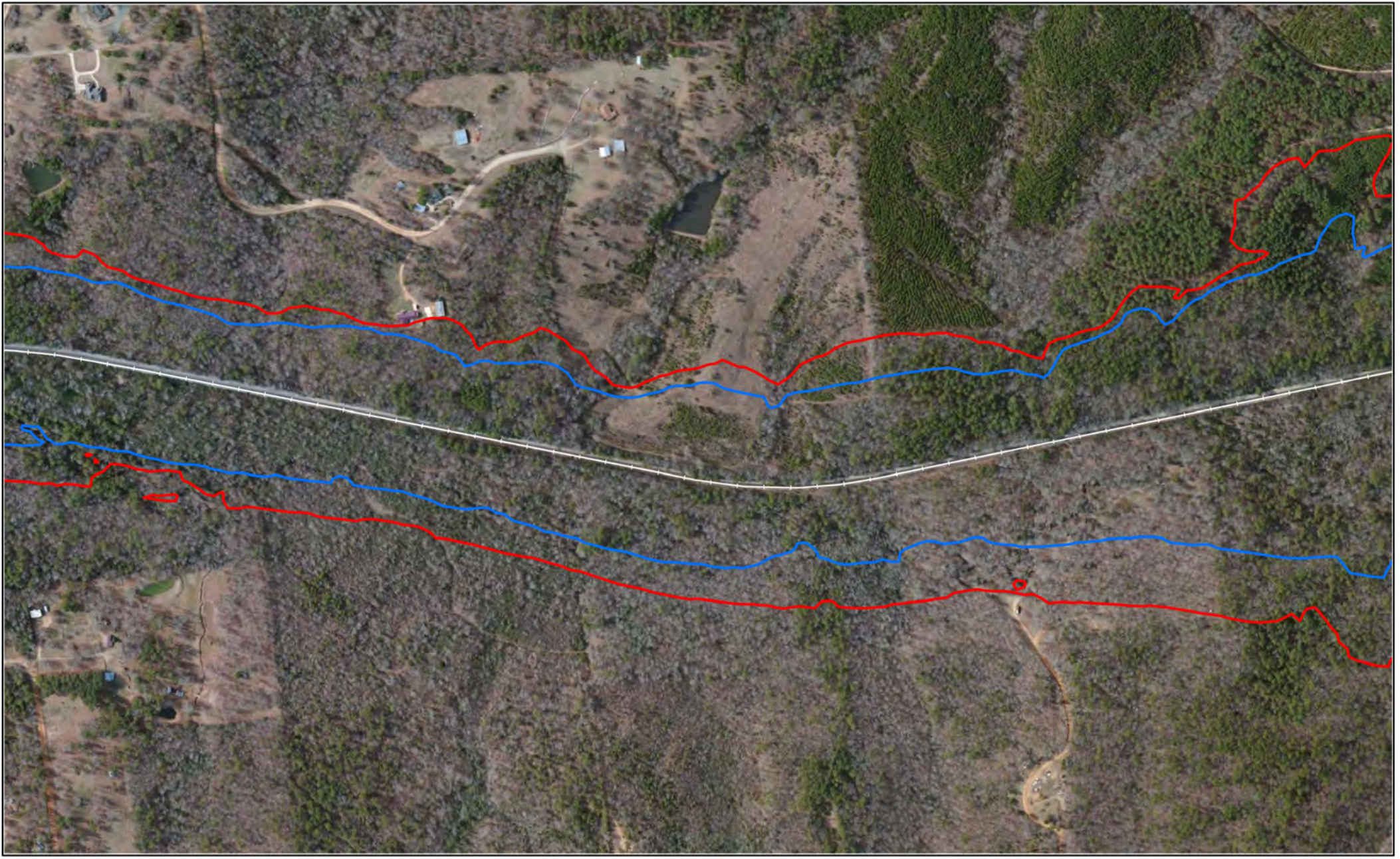
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Sevier County, AR

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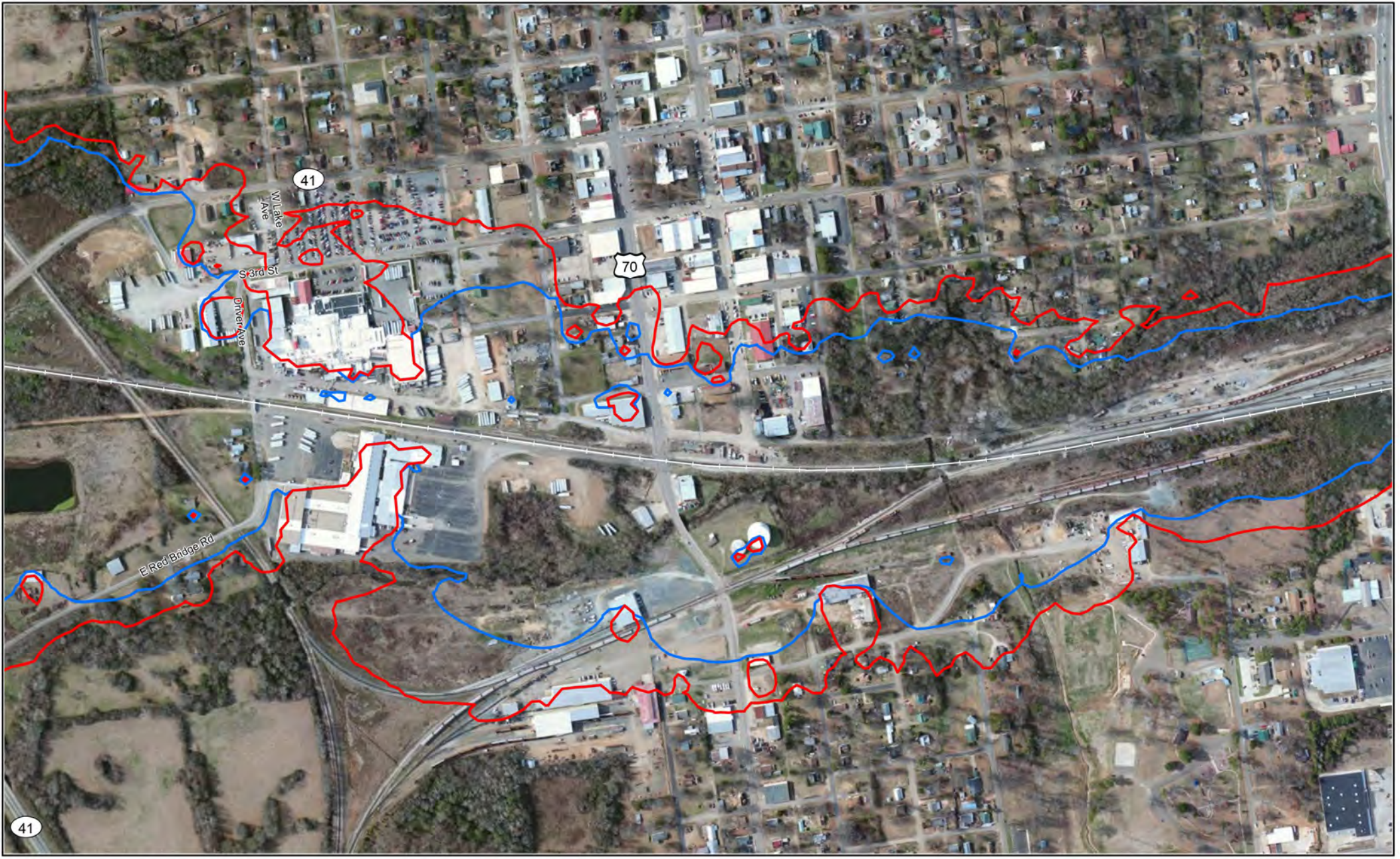
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Noise Contours
Sevier County, AR

Miles
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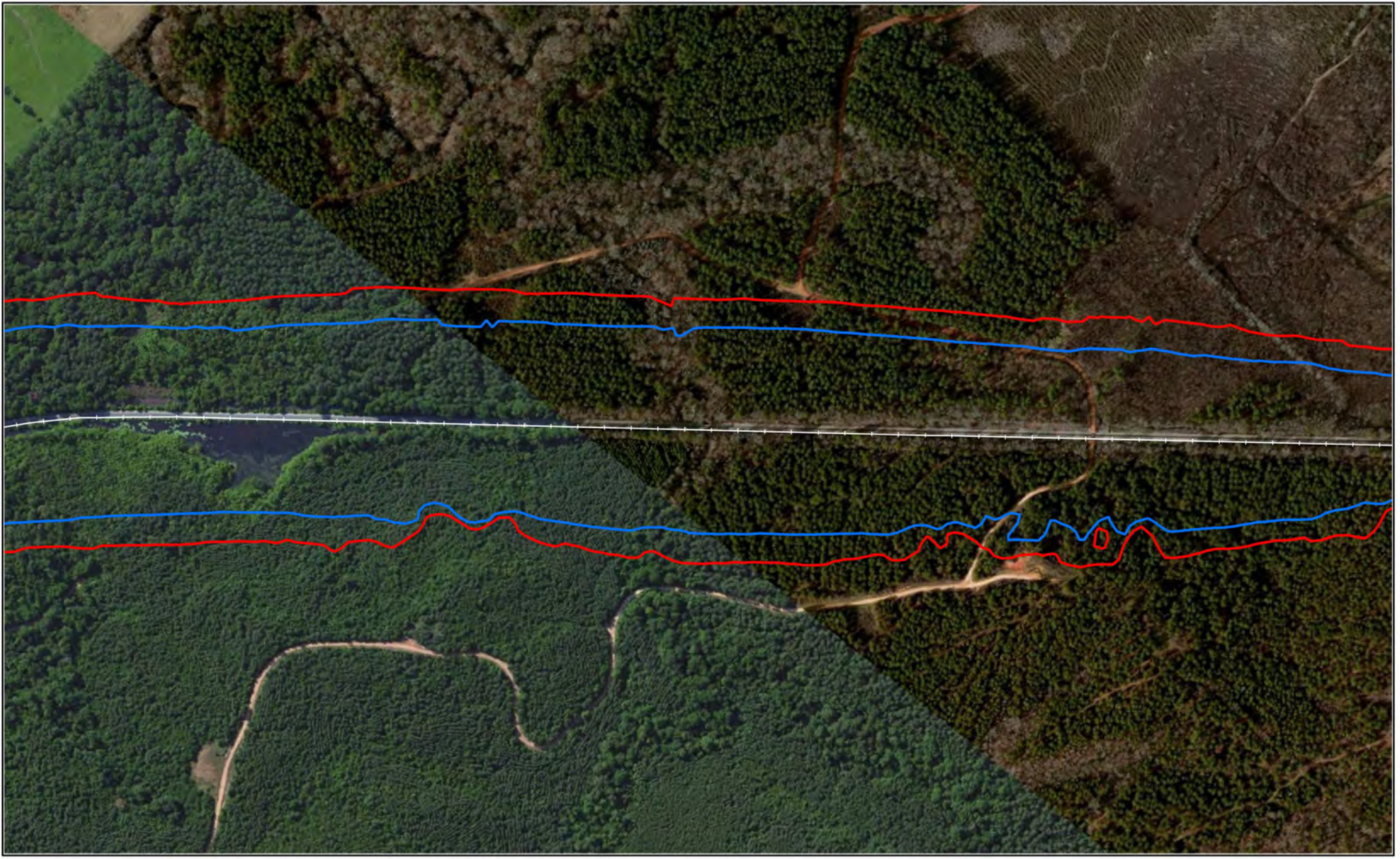
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Noise Contours
Sevier County, AR

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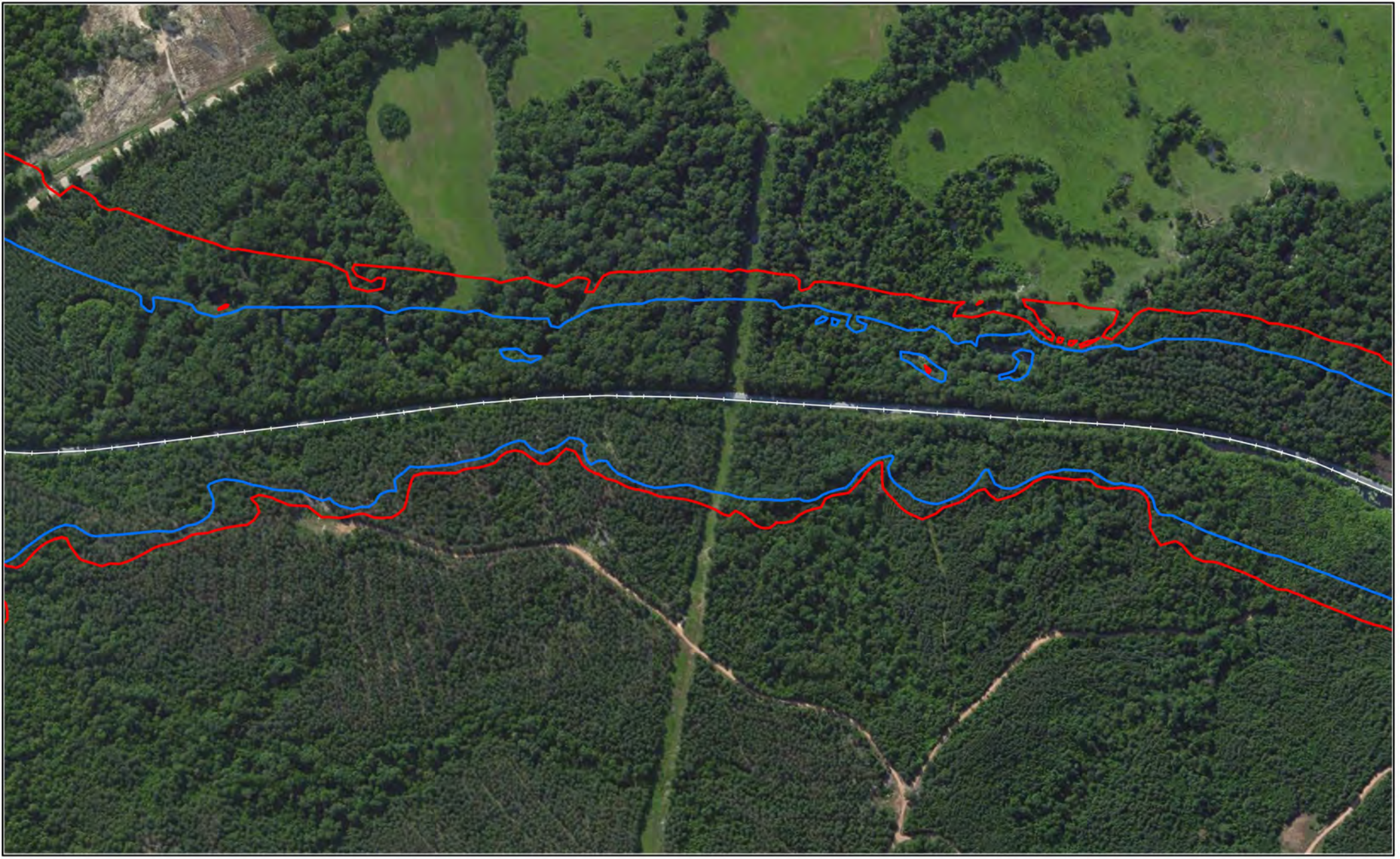
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Noise Contours
Sevier County, AR

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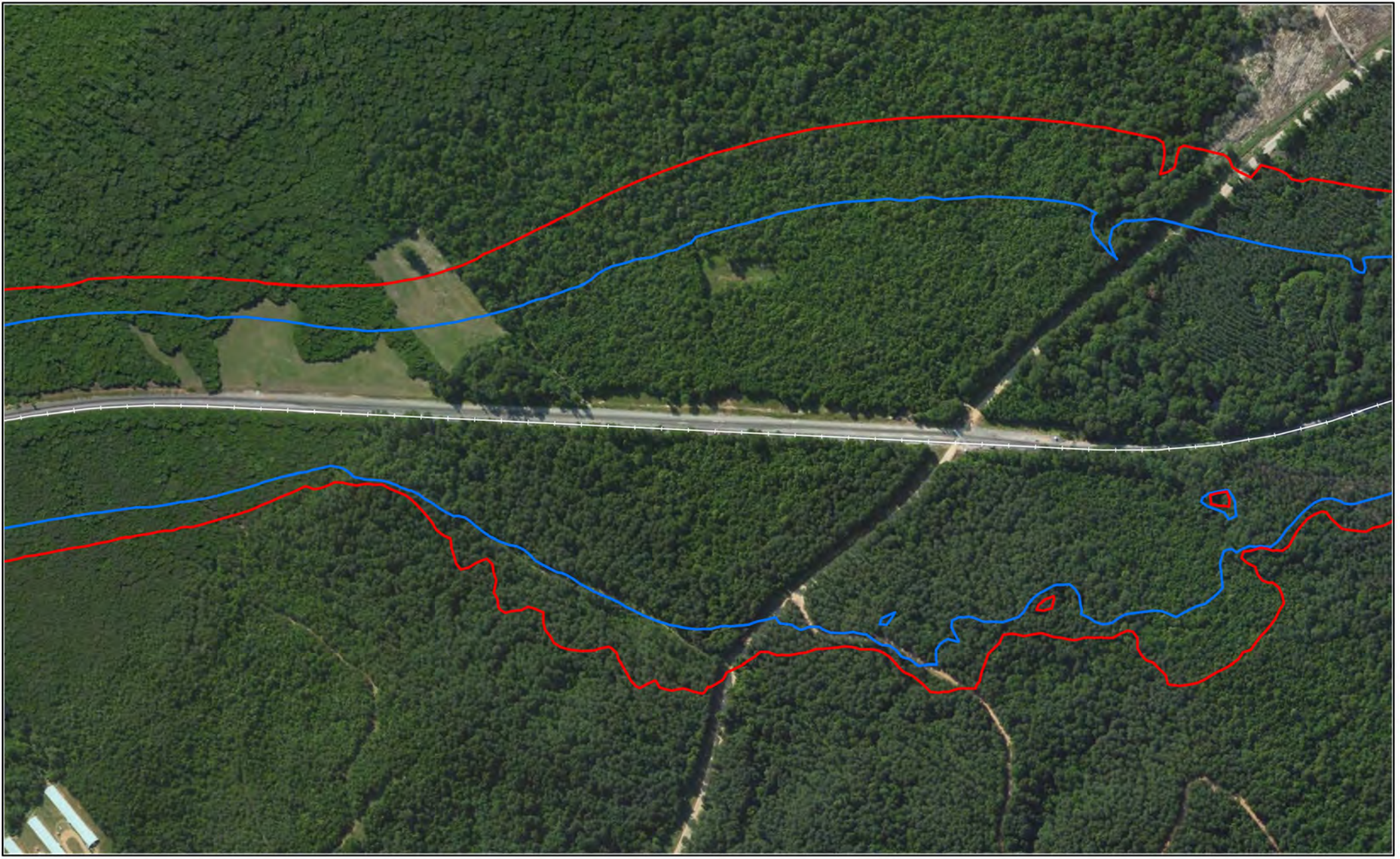
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Noise Contours
Sevier County, AR

Miles
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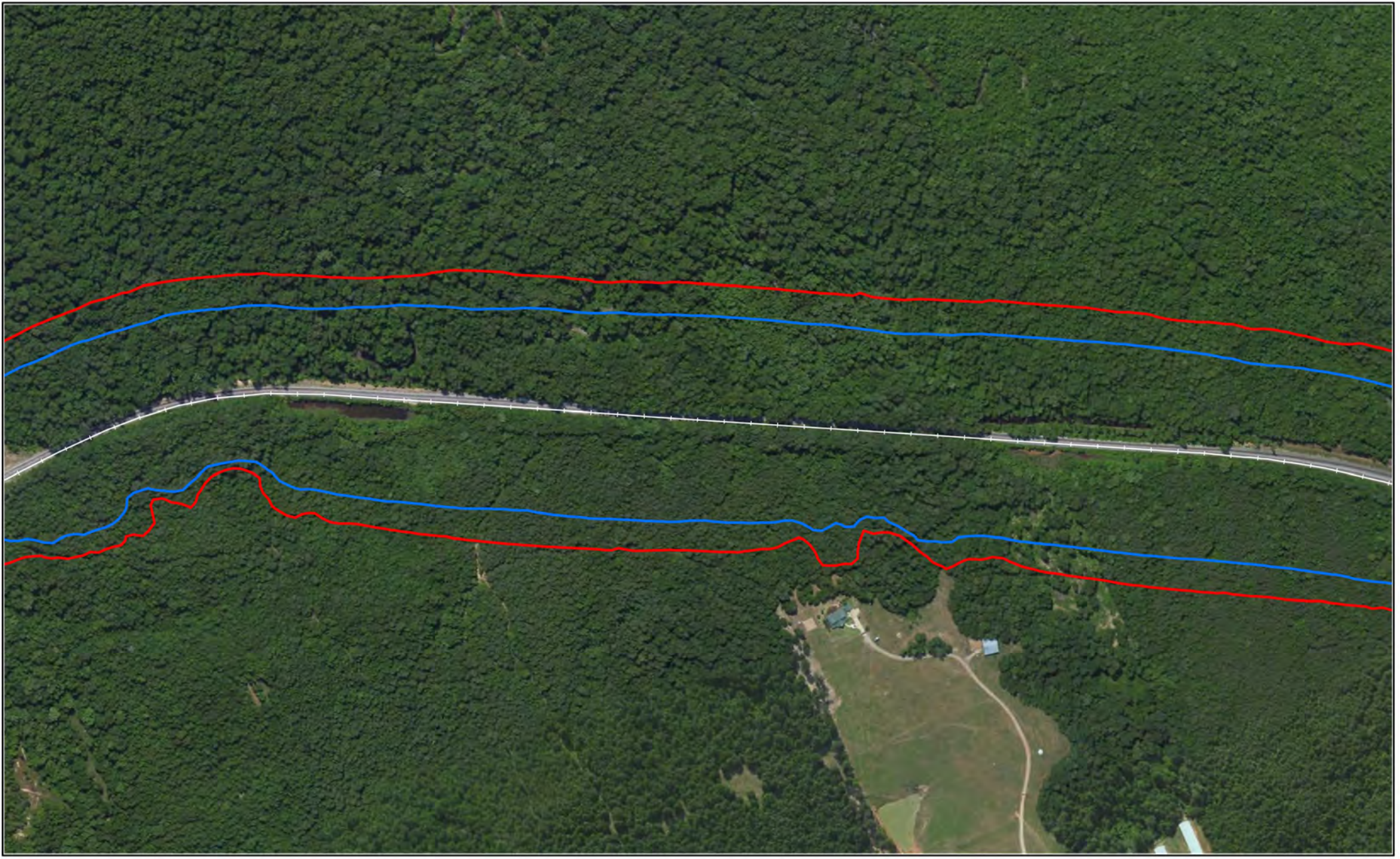
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Noise Contours
Sevier County, AR

Miles
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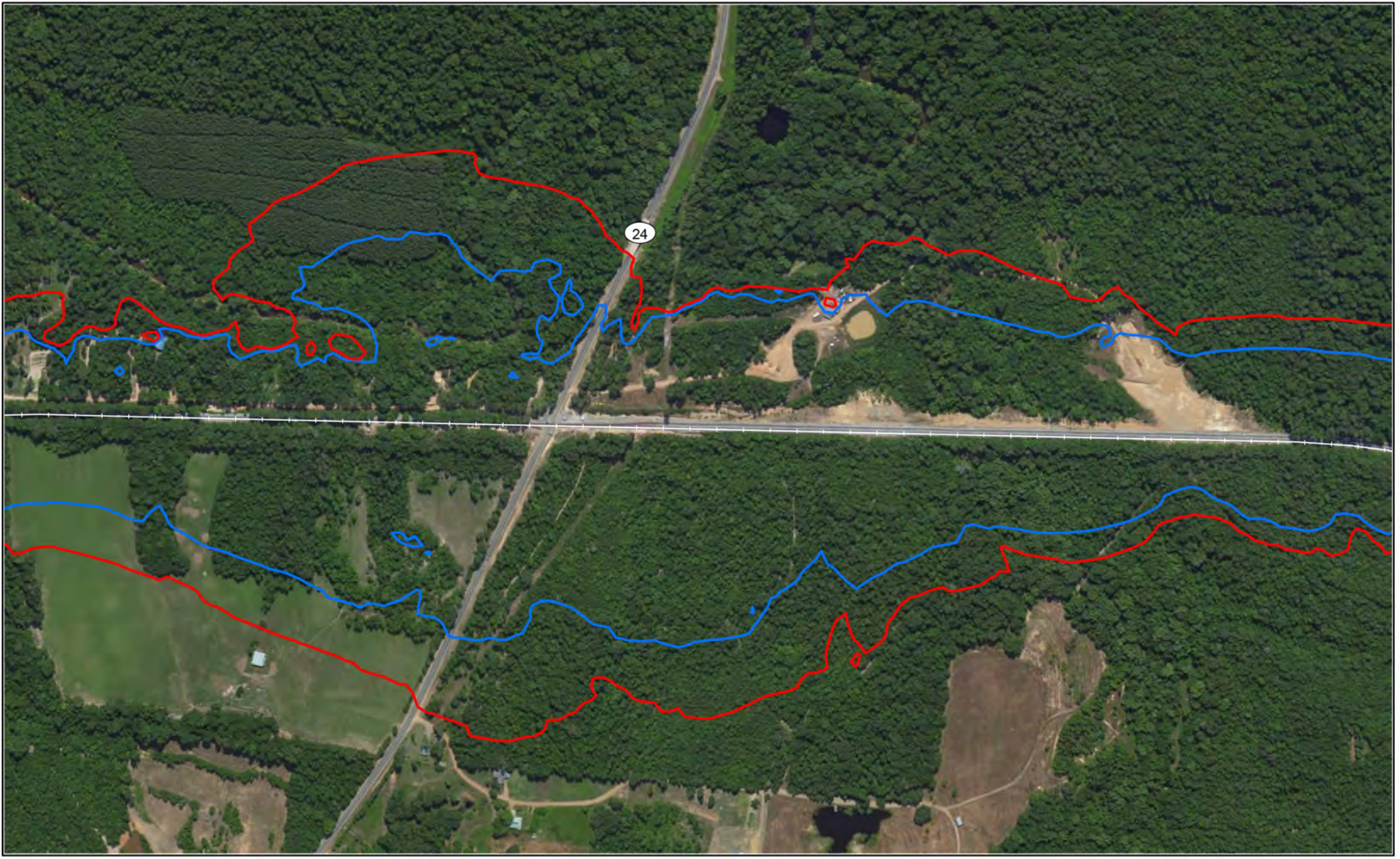
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Noise Contours
Sevier County, AR

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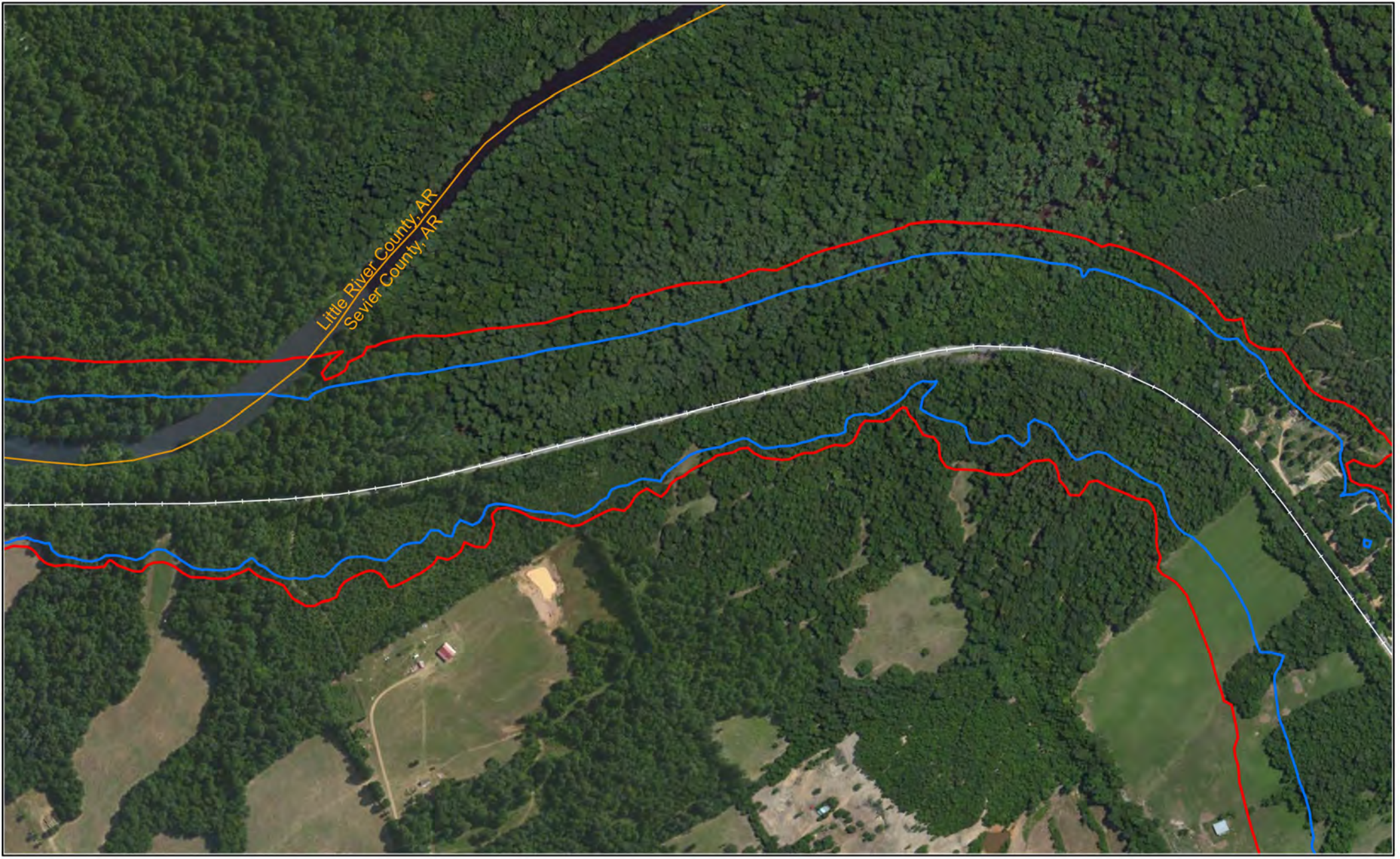
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Noise Contours
Sevier County, AR

Miles
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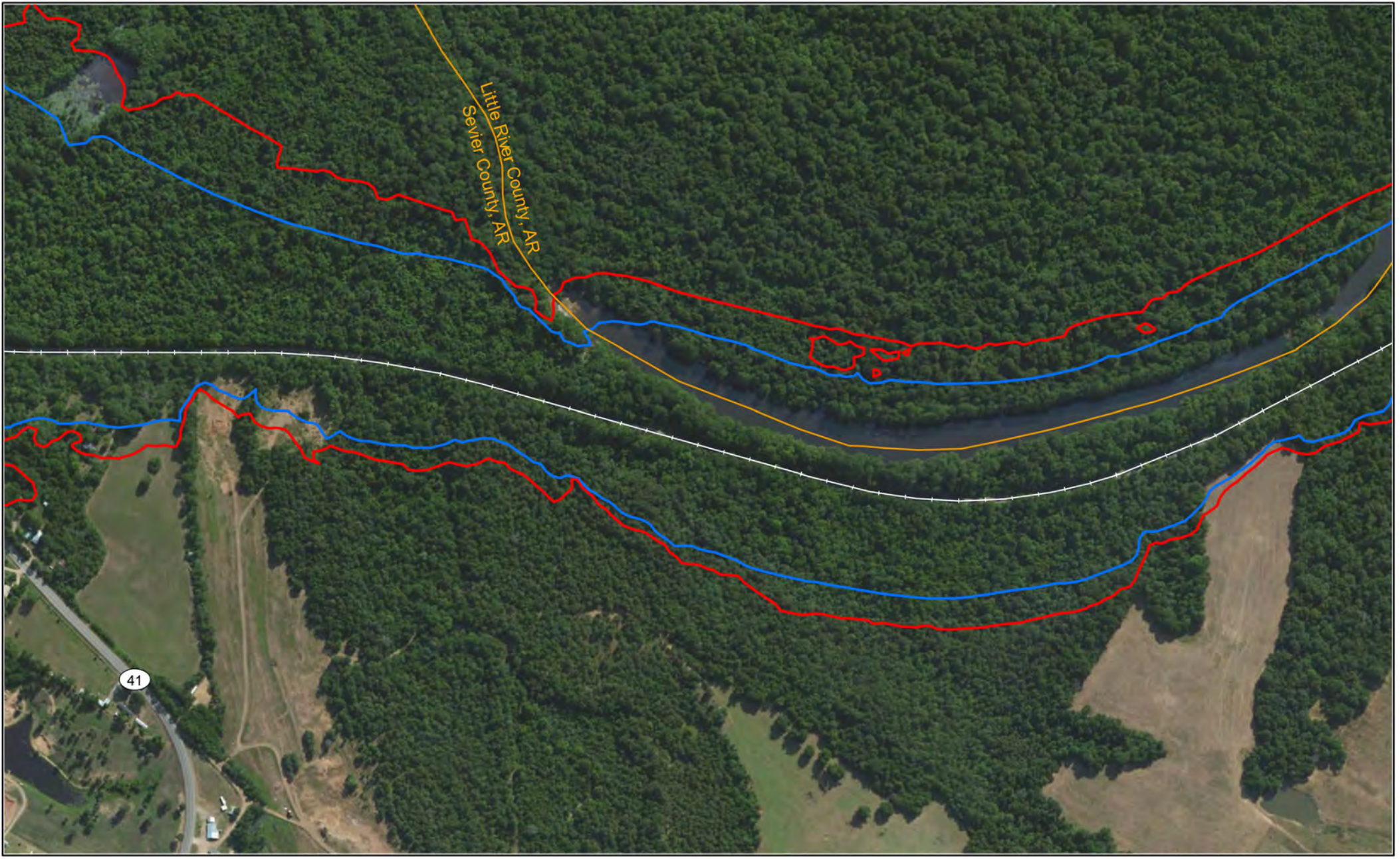
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Noise Contours
Sevier County, AR

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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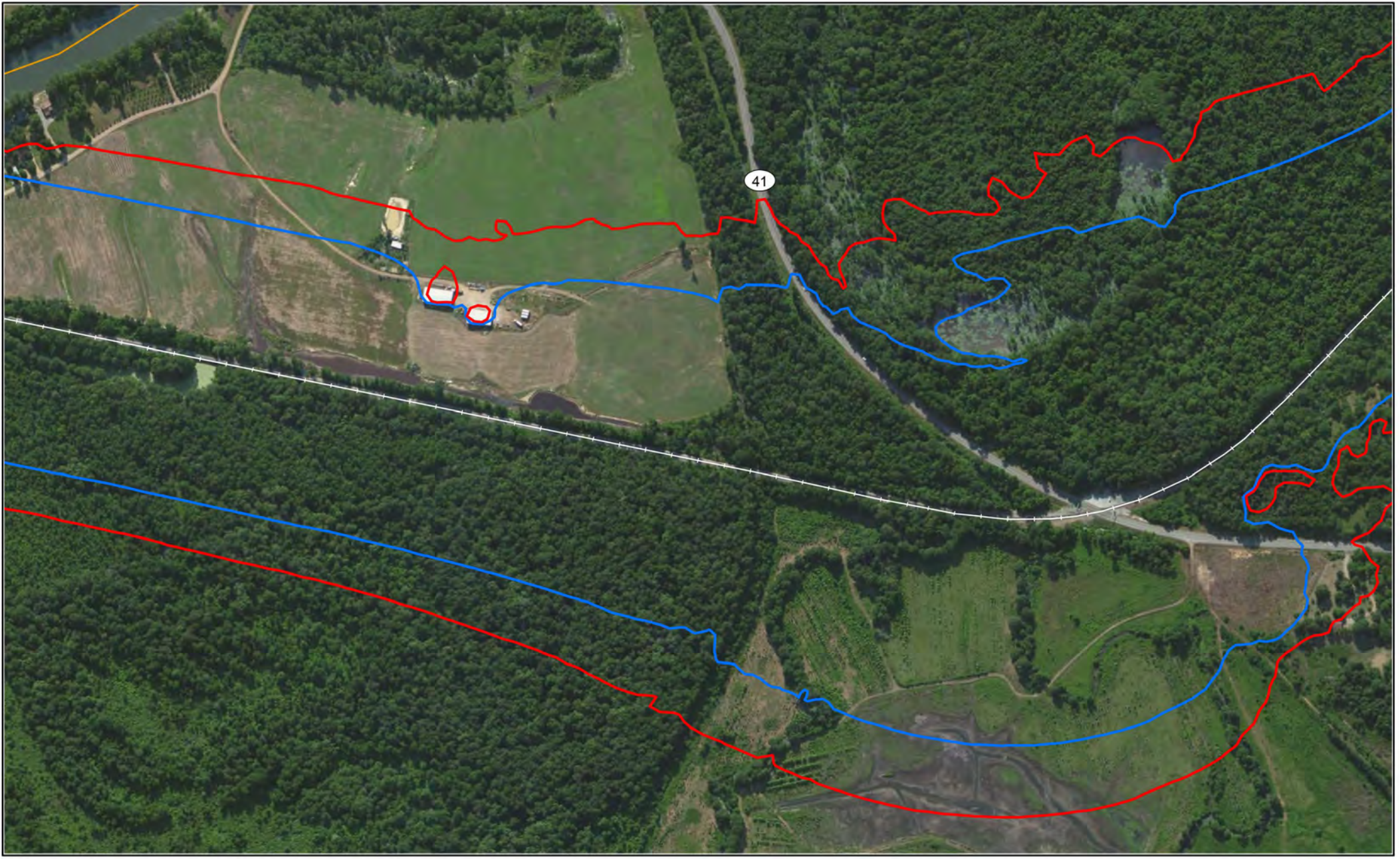
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Noise Contours
Sevier County, AR

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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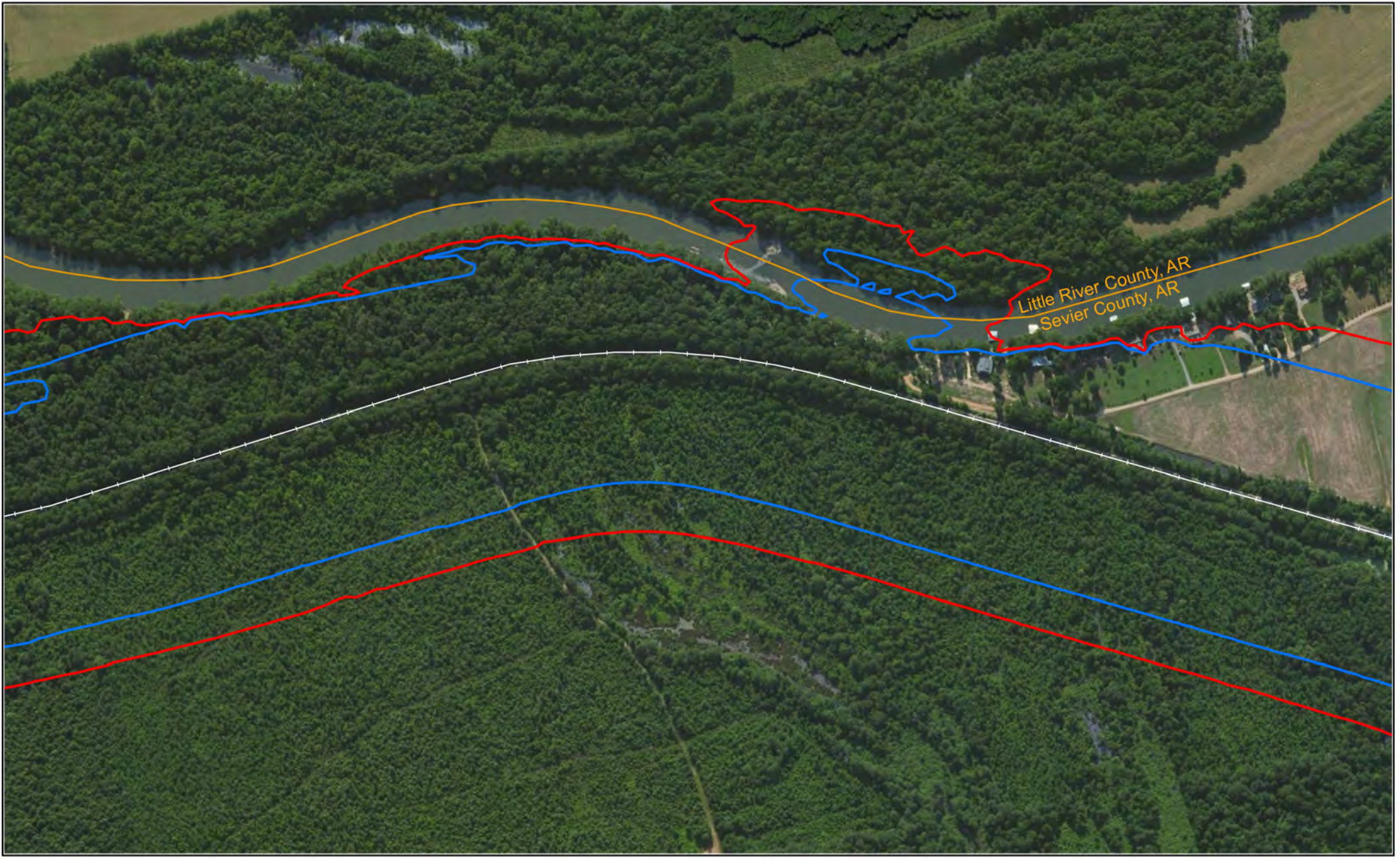
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Noise Contours
Sevier County, AR

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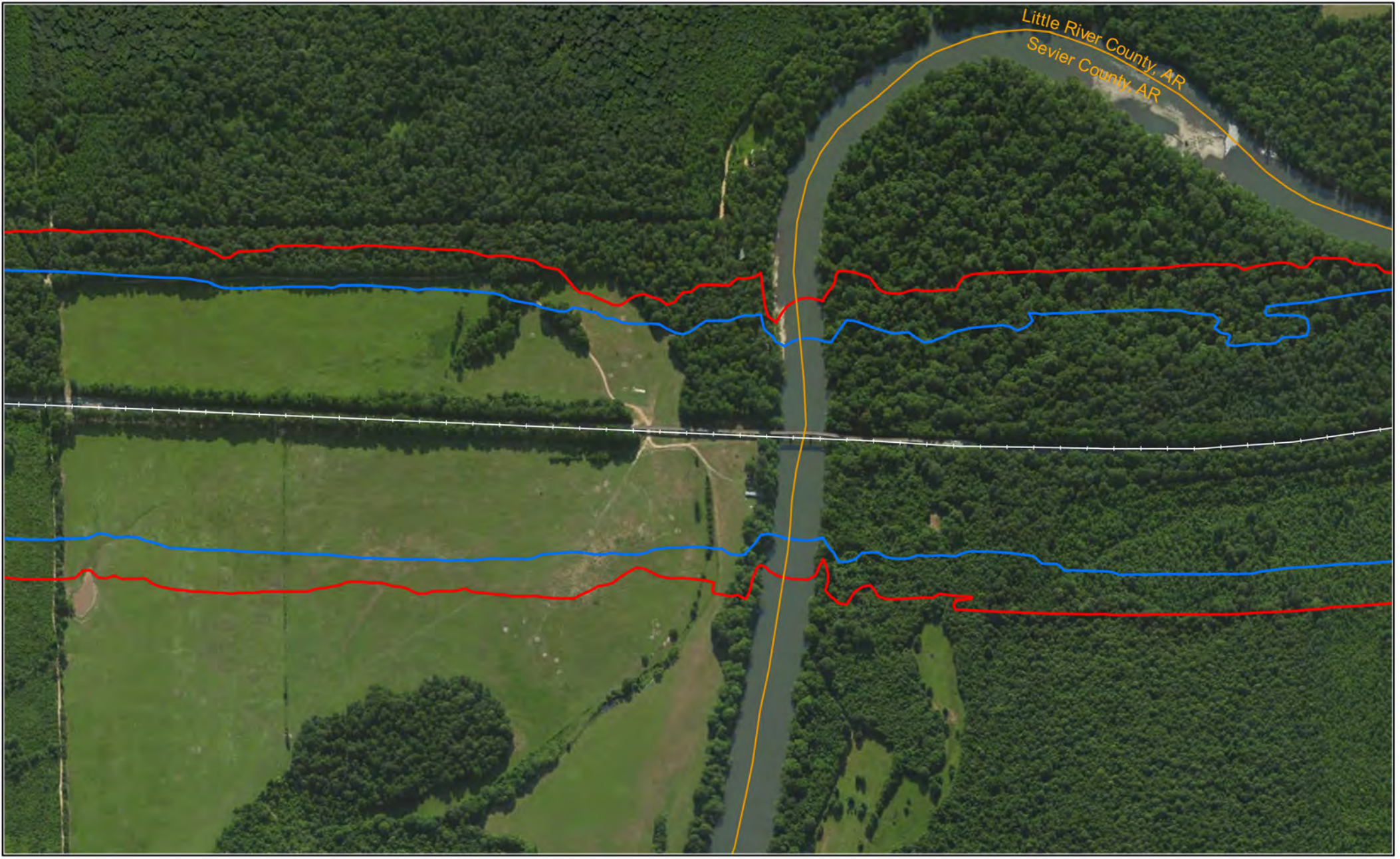
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Noise Contours
Sevier County, AR

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Noise Contours
Sevier County, AR

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

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Tracks

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Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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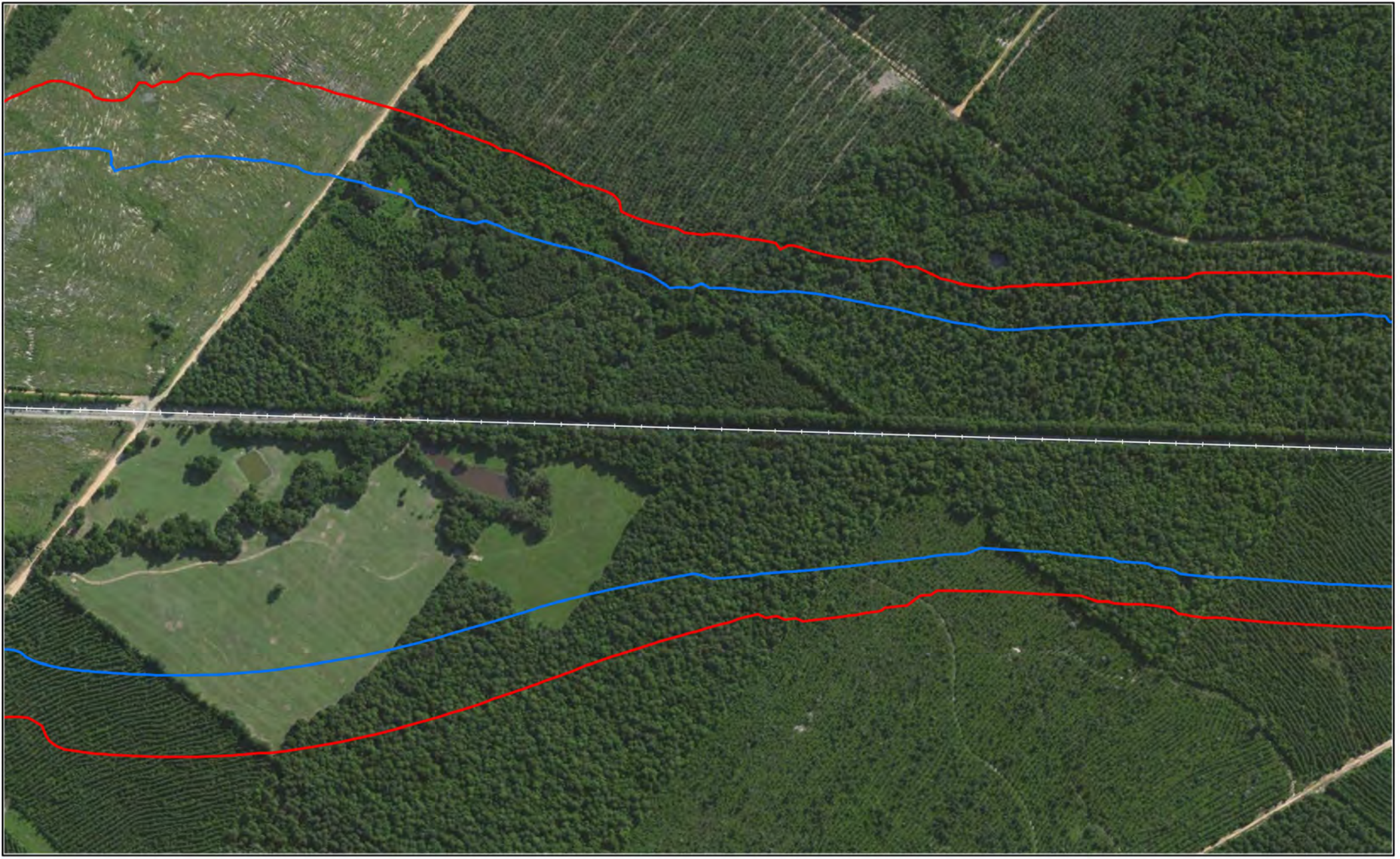
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Noise Contours
Little River County, AR

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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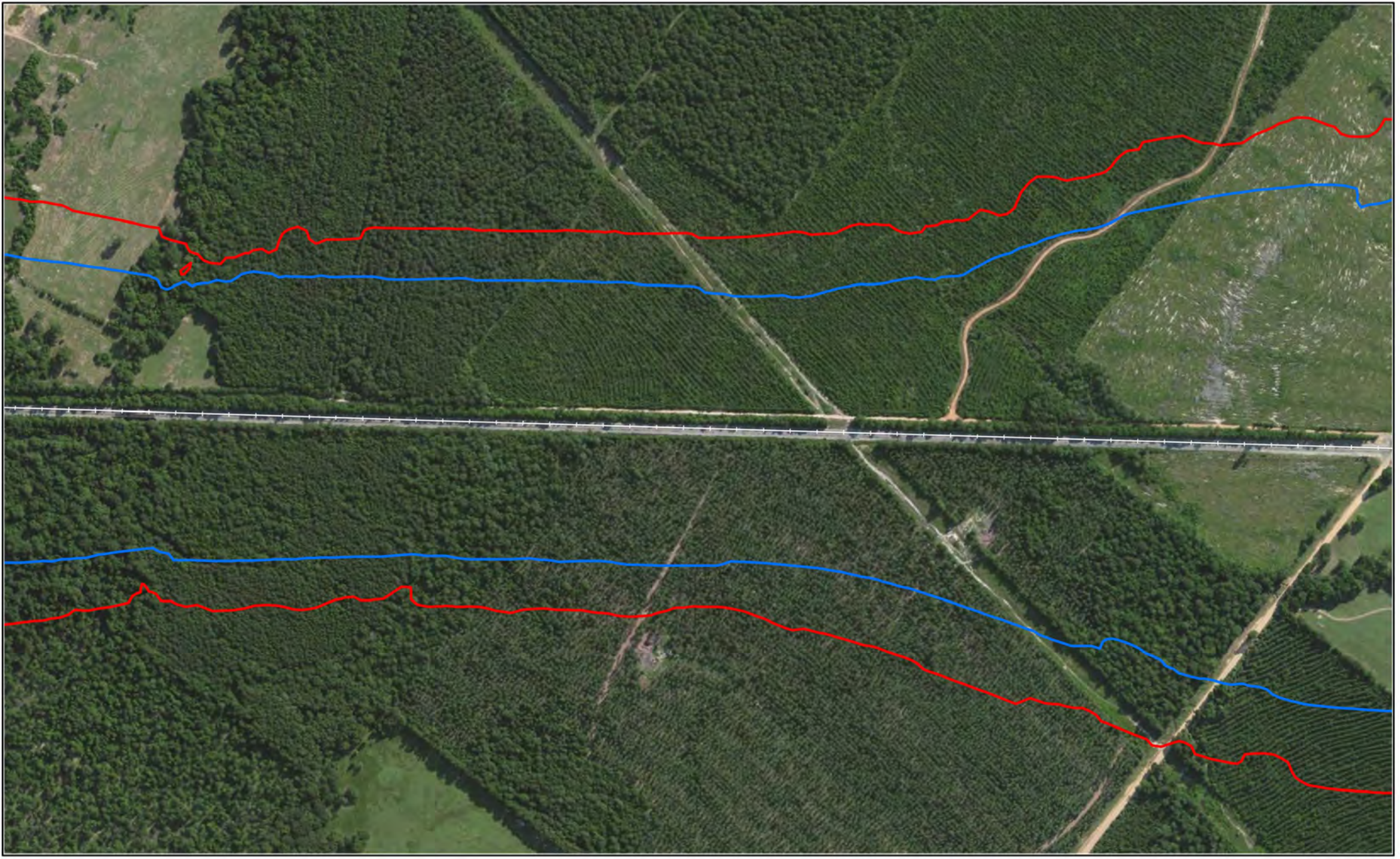
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Noise Contours
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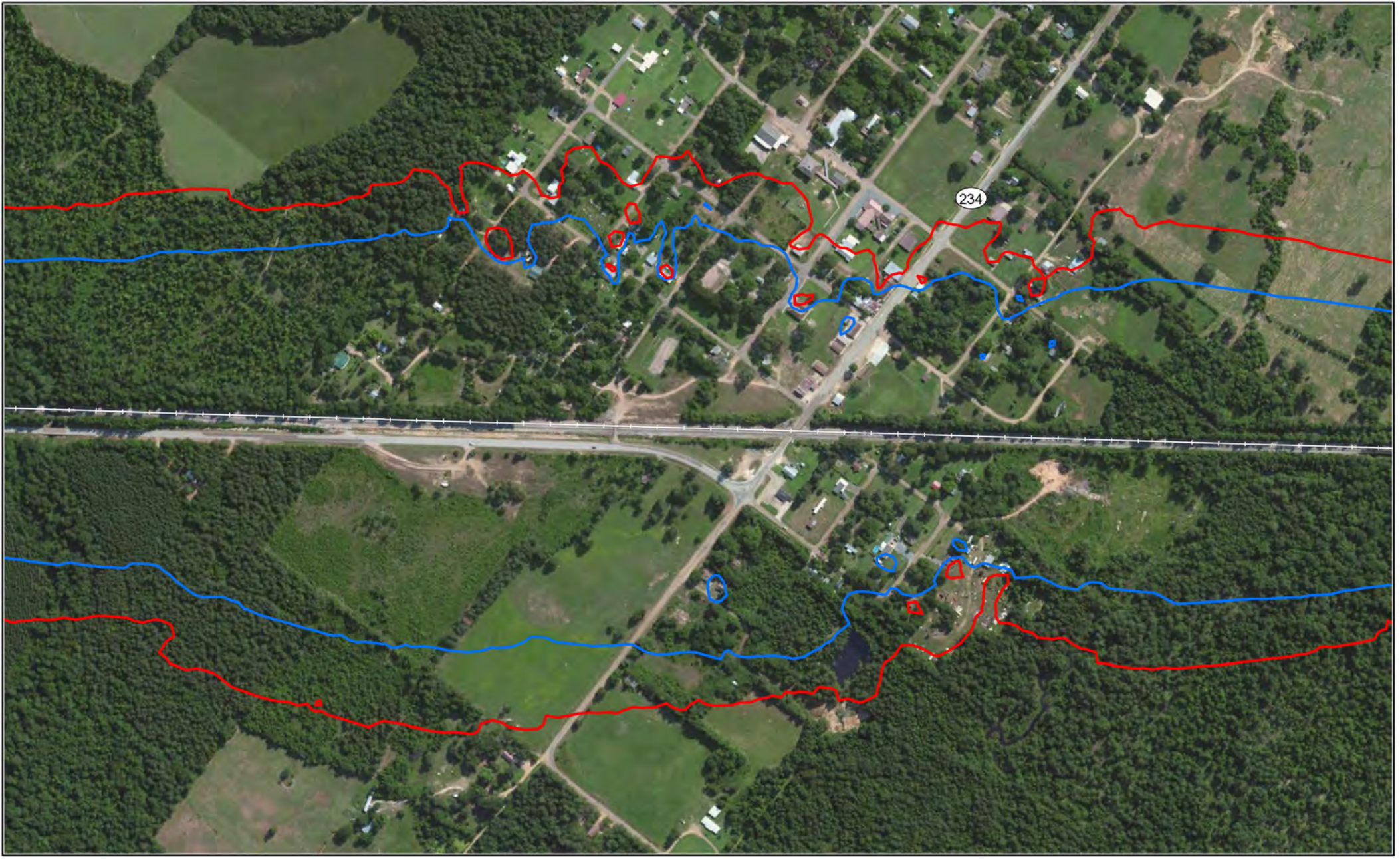
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Noise Contours
Little River County, AR

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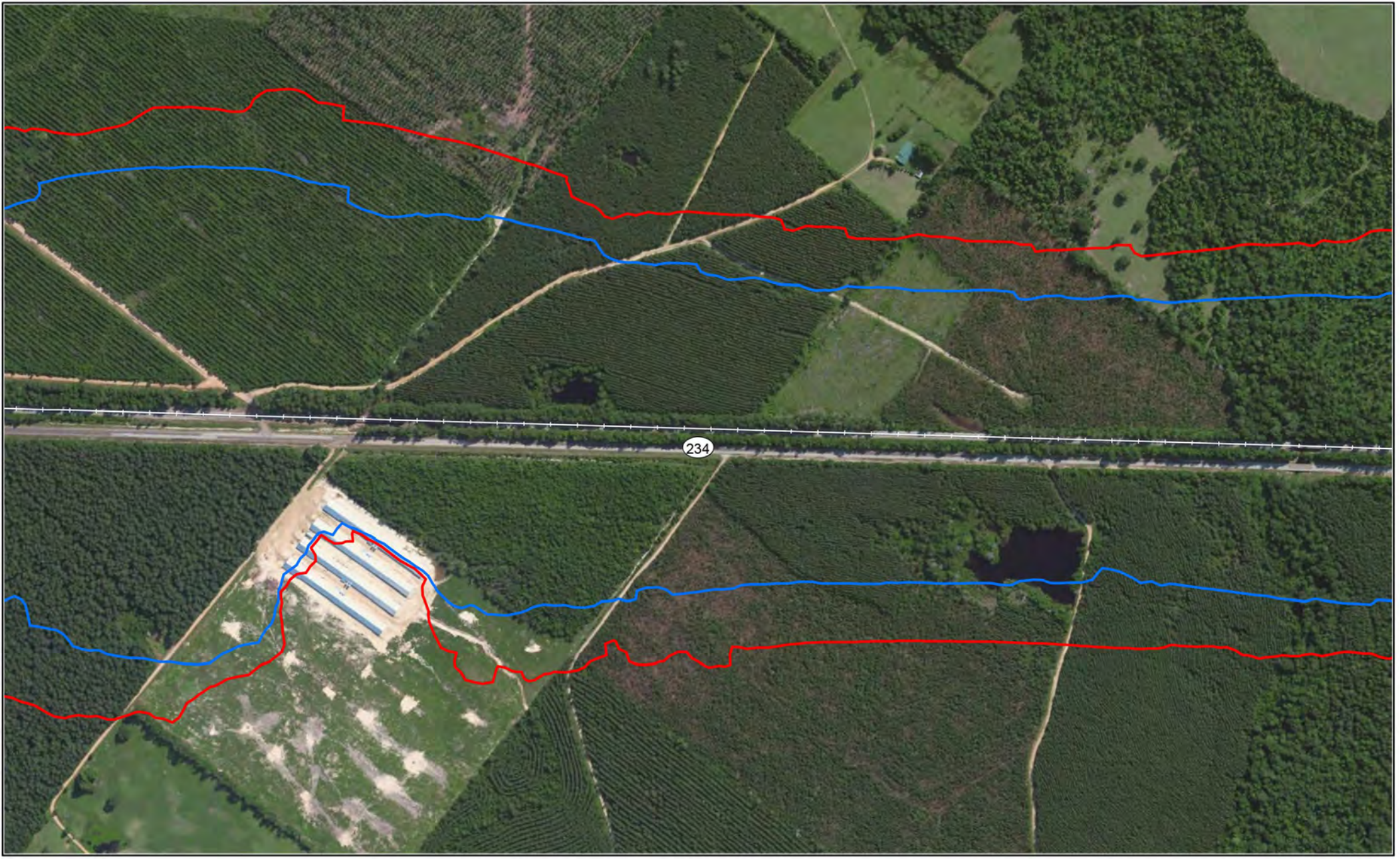
Tracks

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Noise Contours
Little River County, AR

Miles
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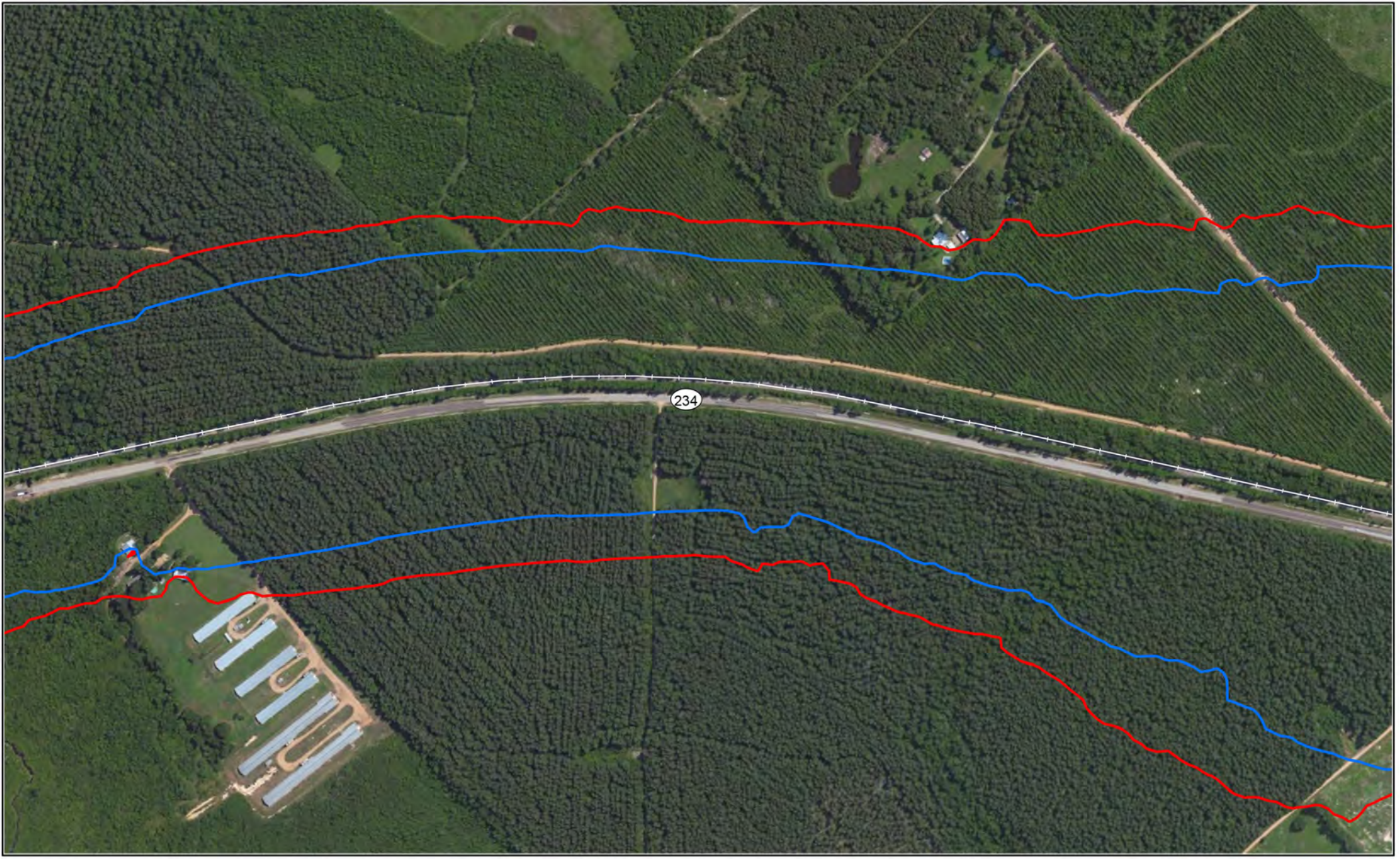
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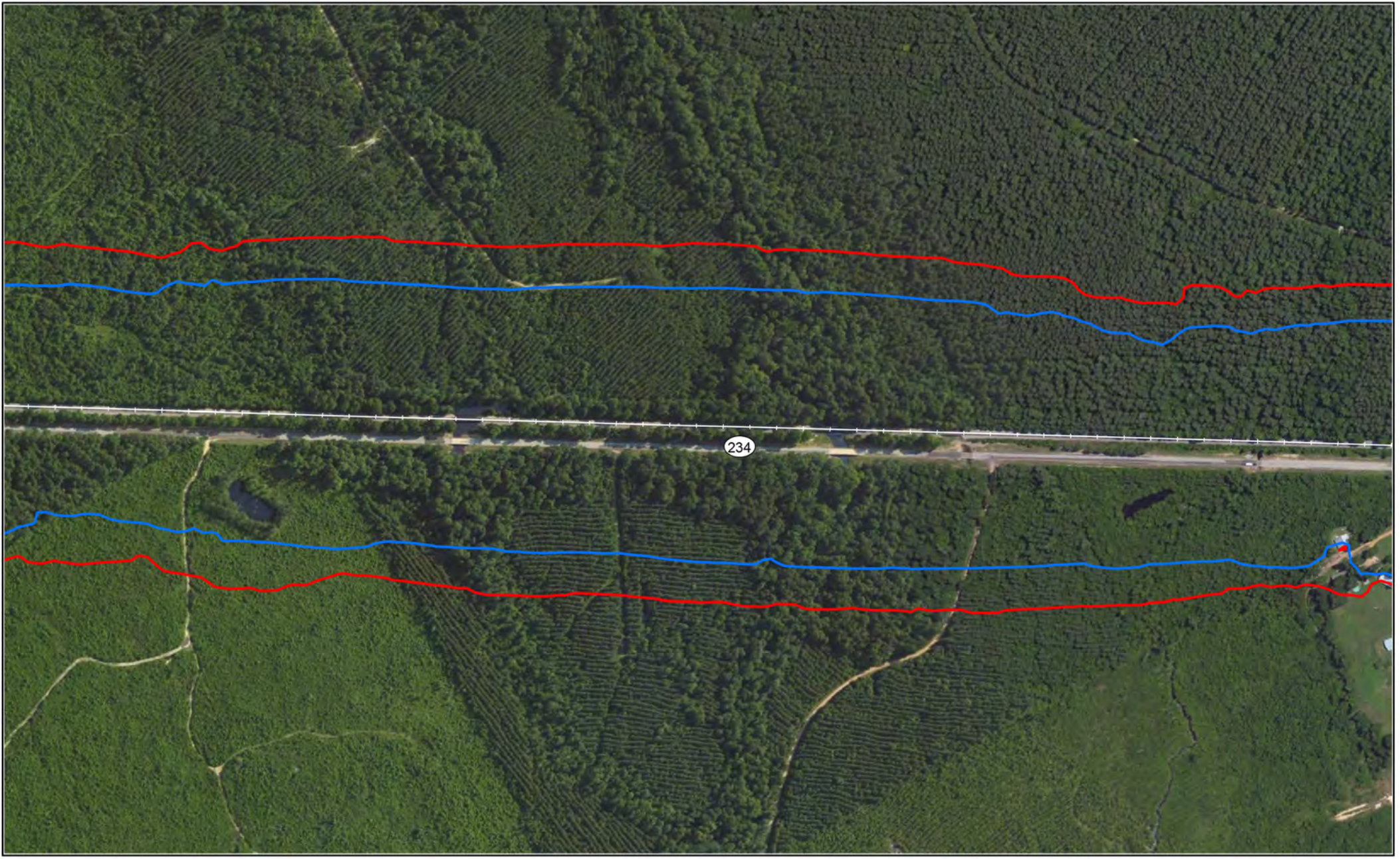
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

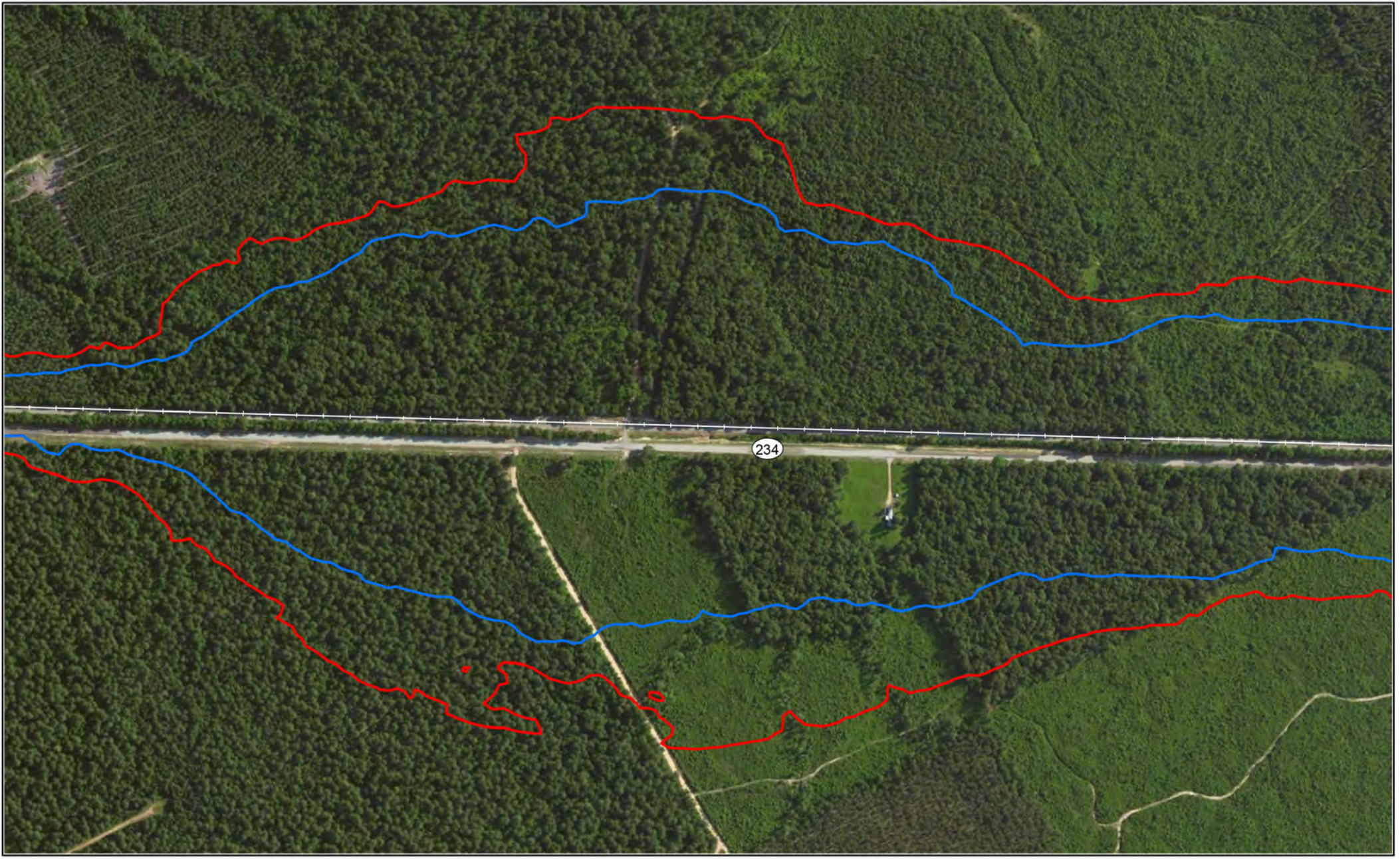
Tracks

Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

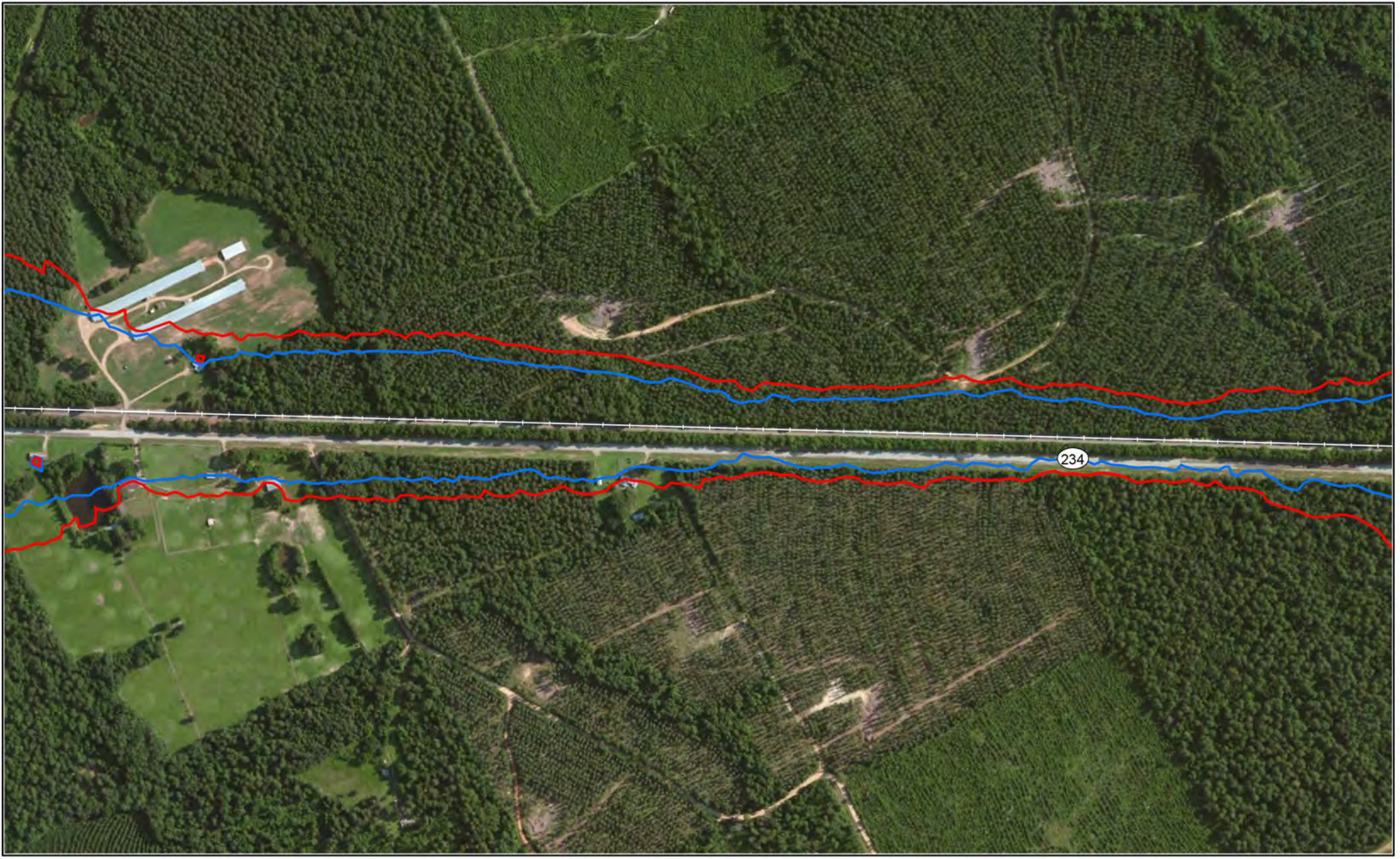
Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

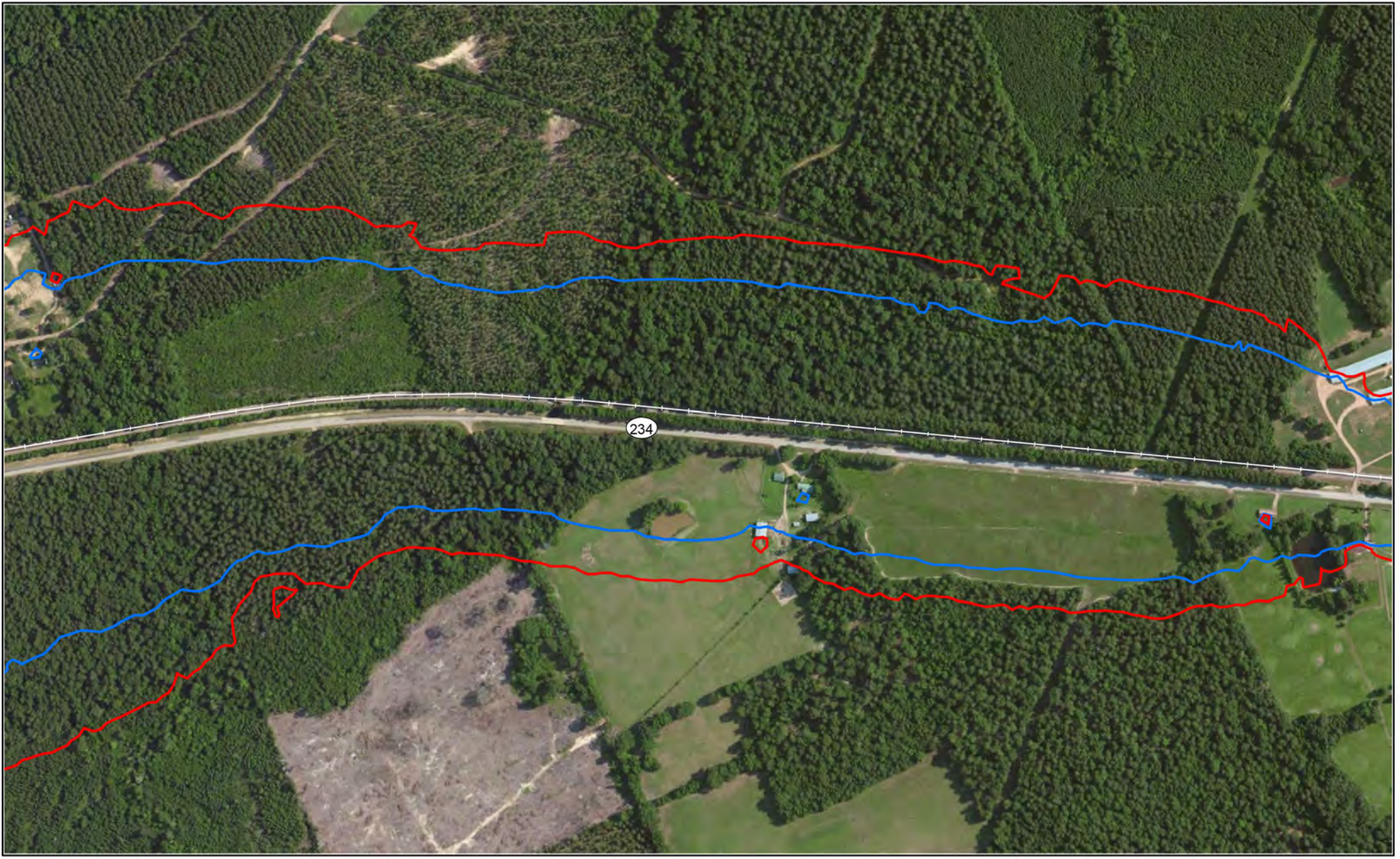
Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

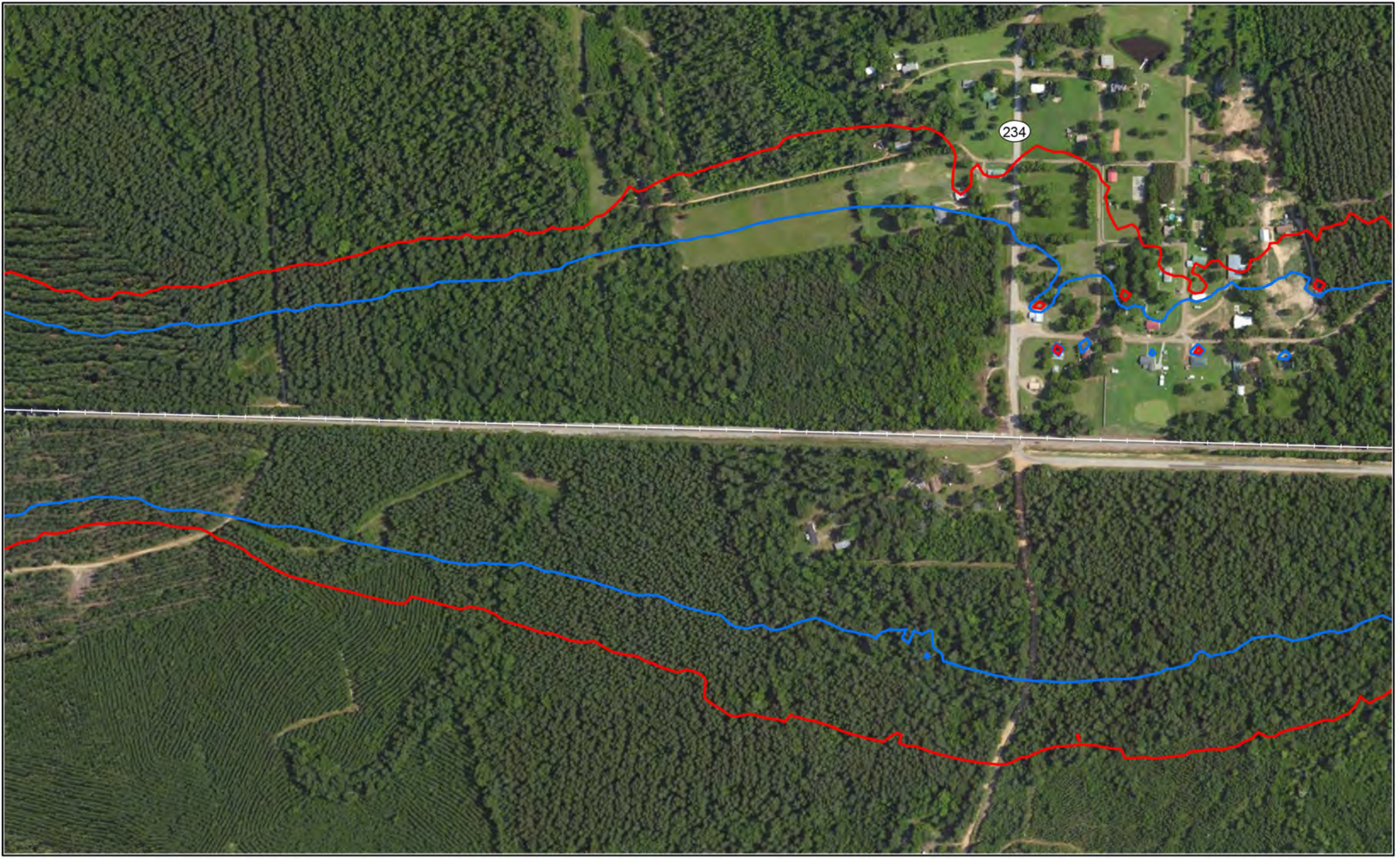
Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

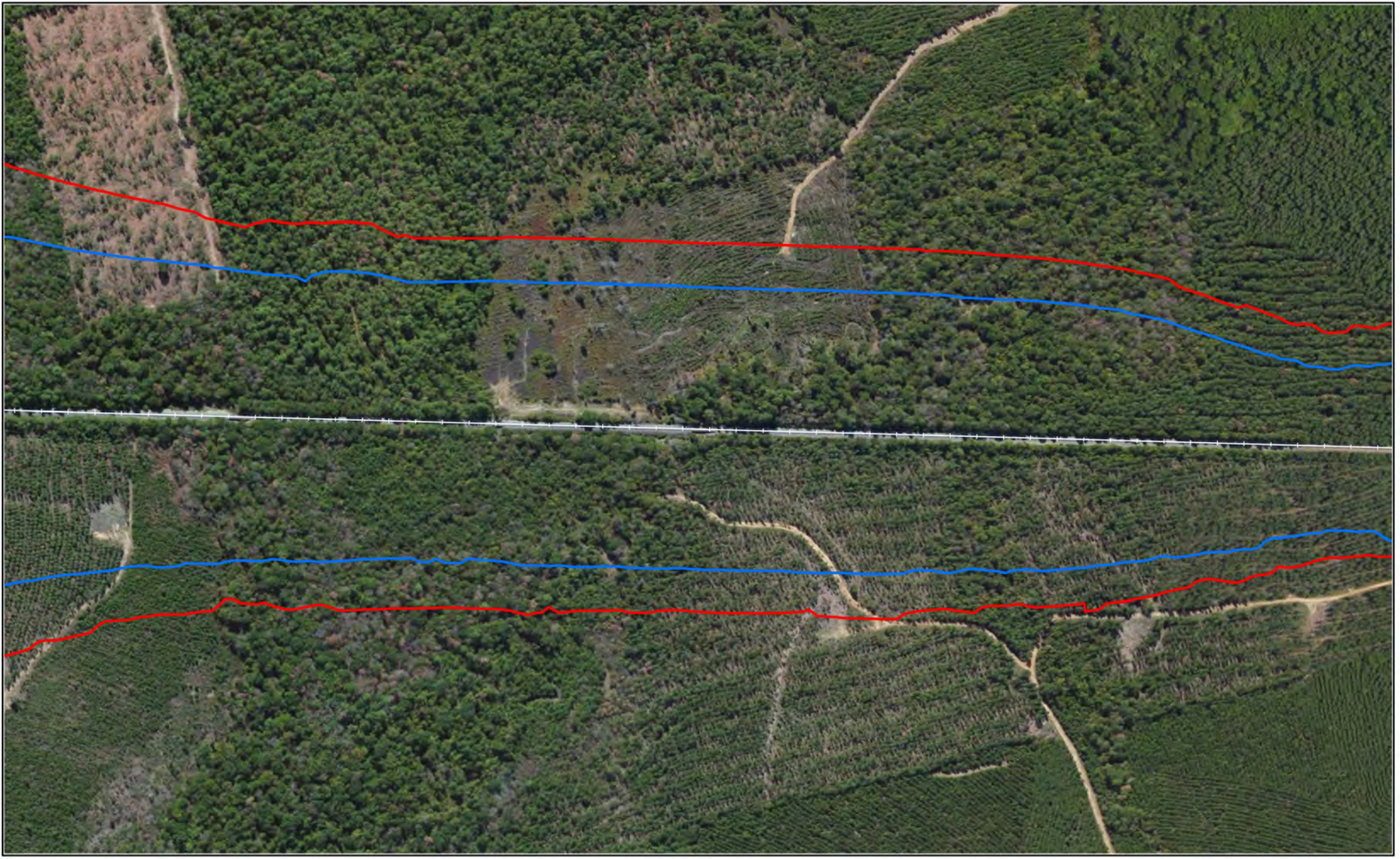
Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

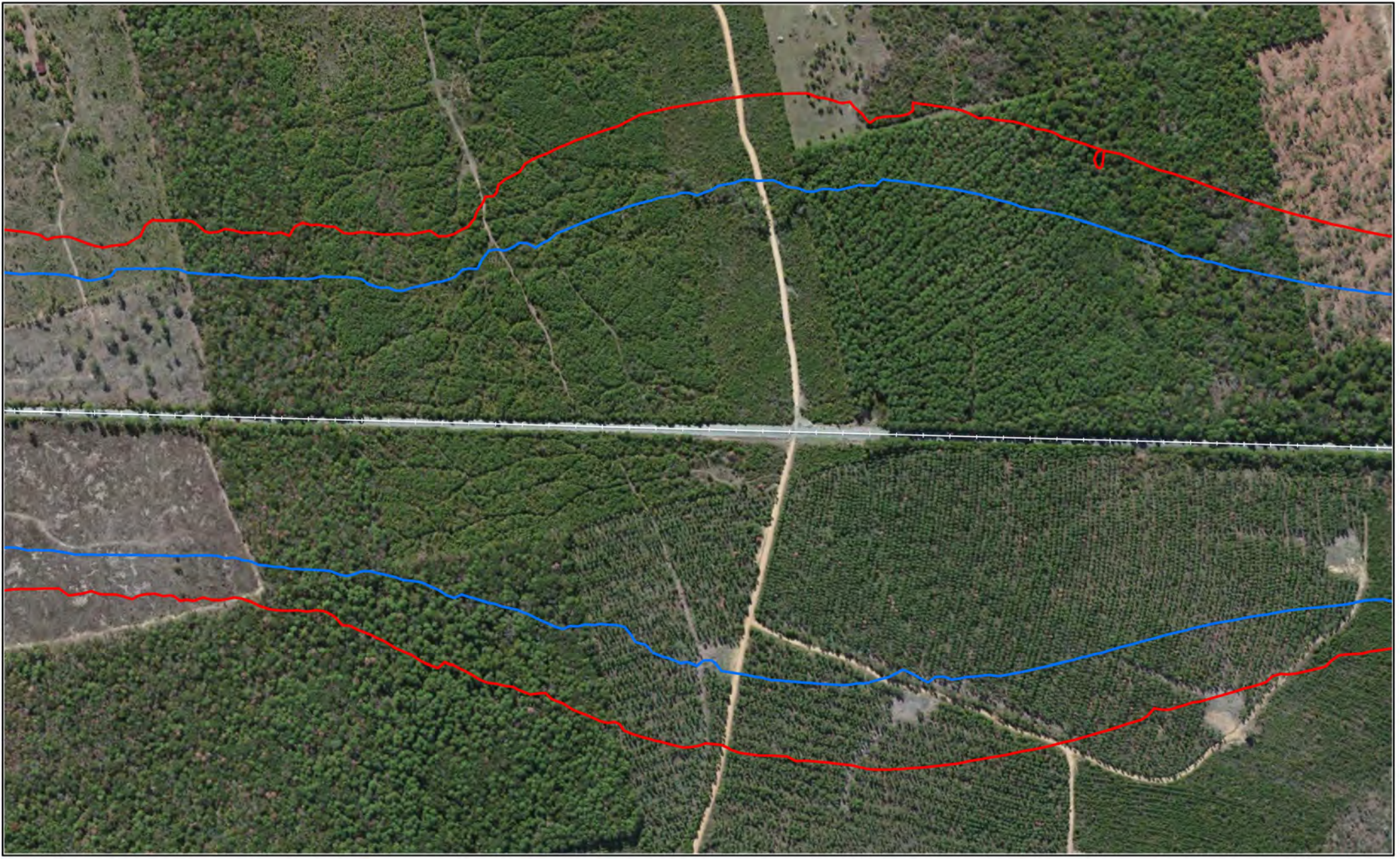
Tracks

Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

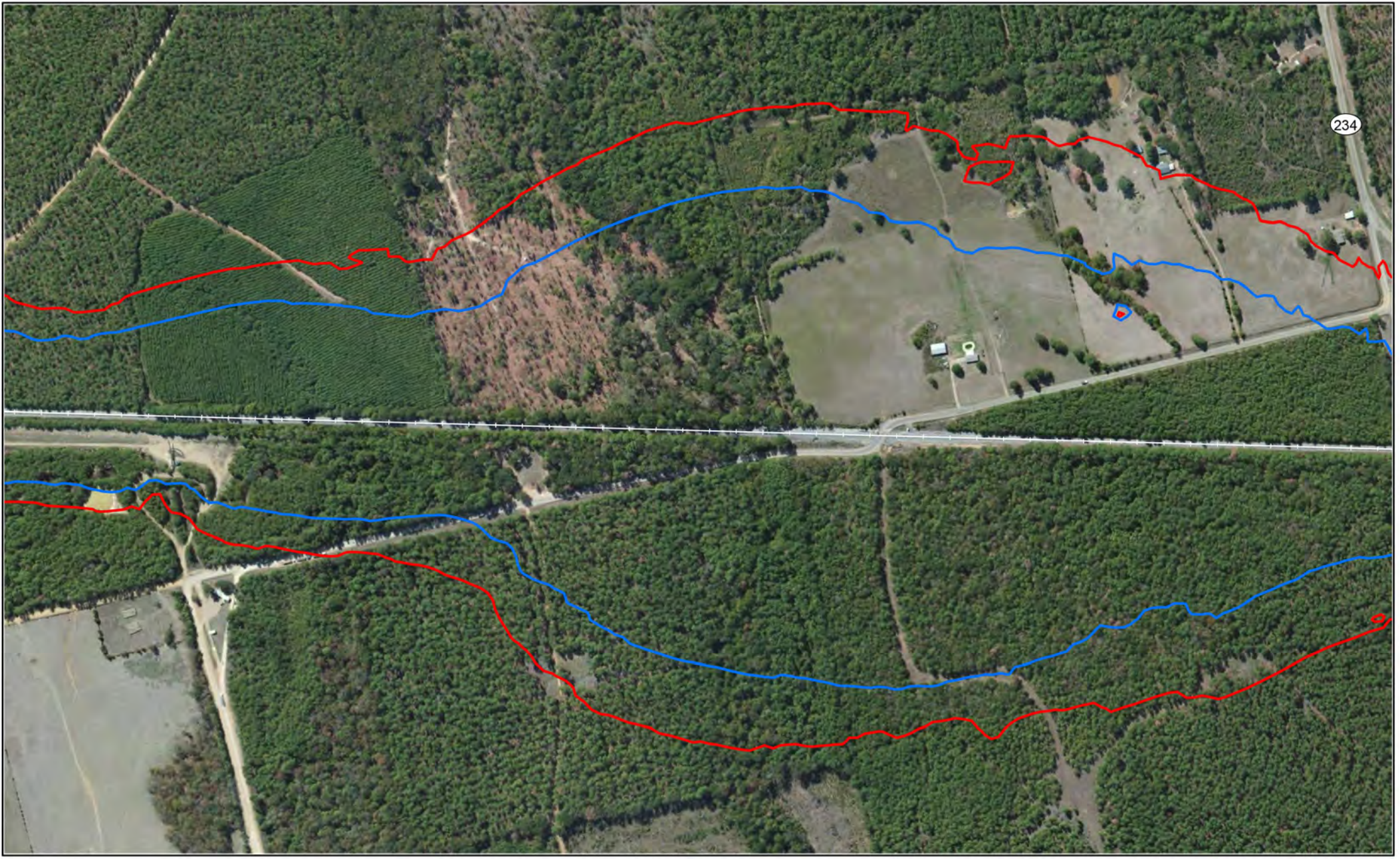
Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

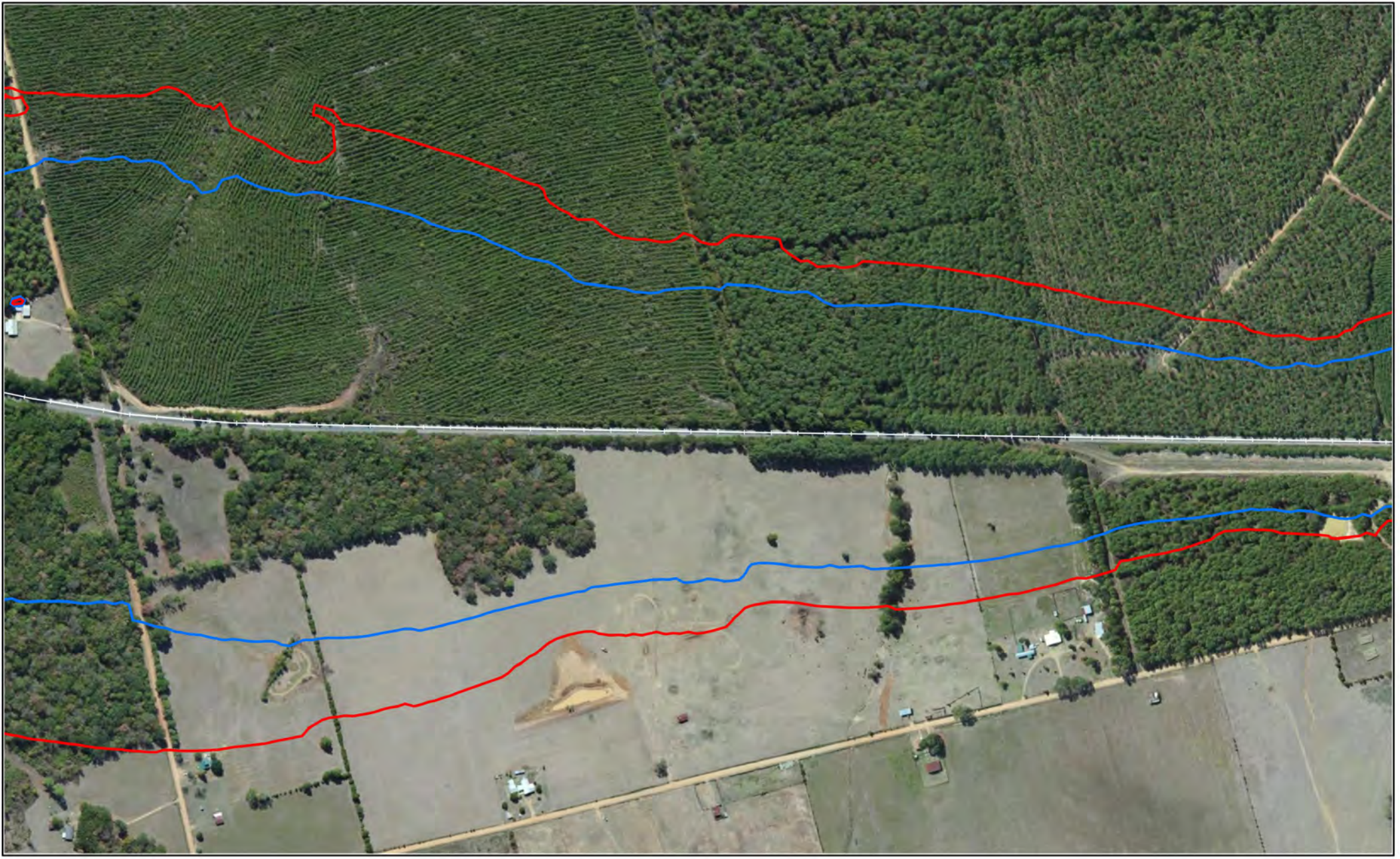
Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

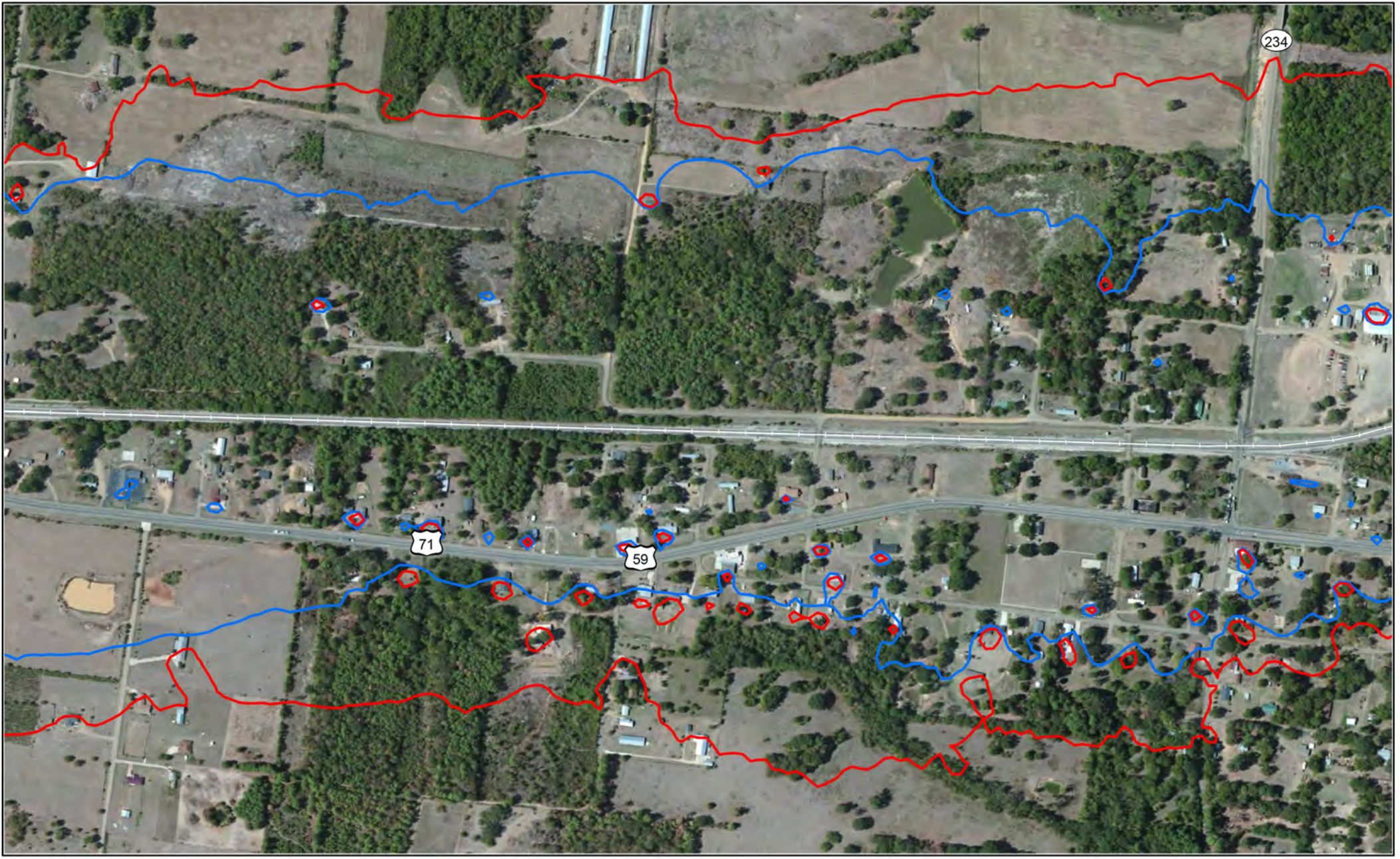
Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

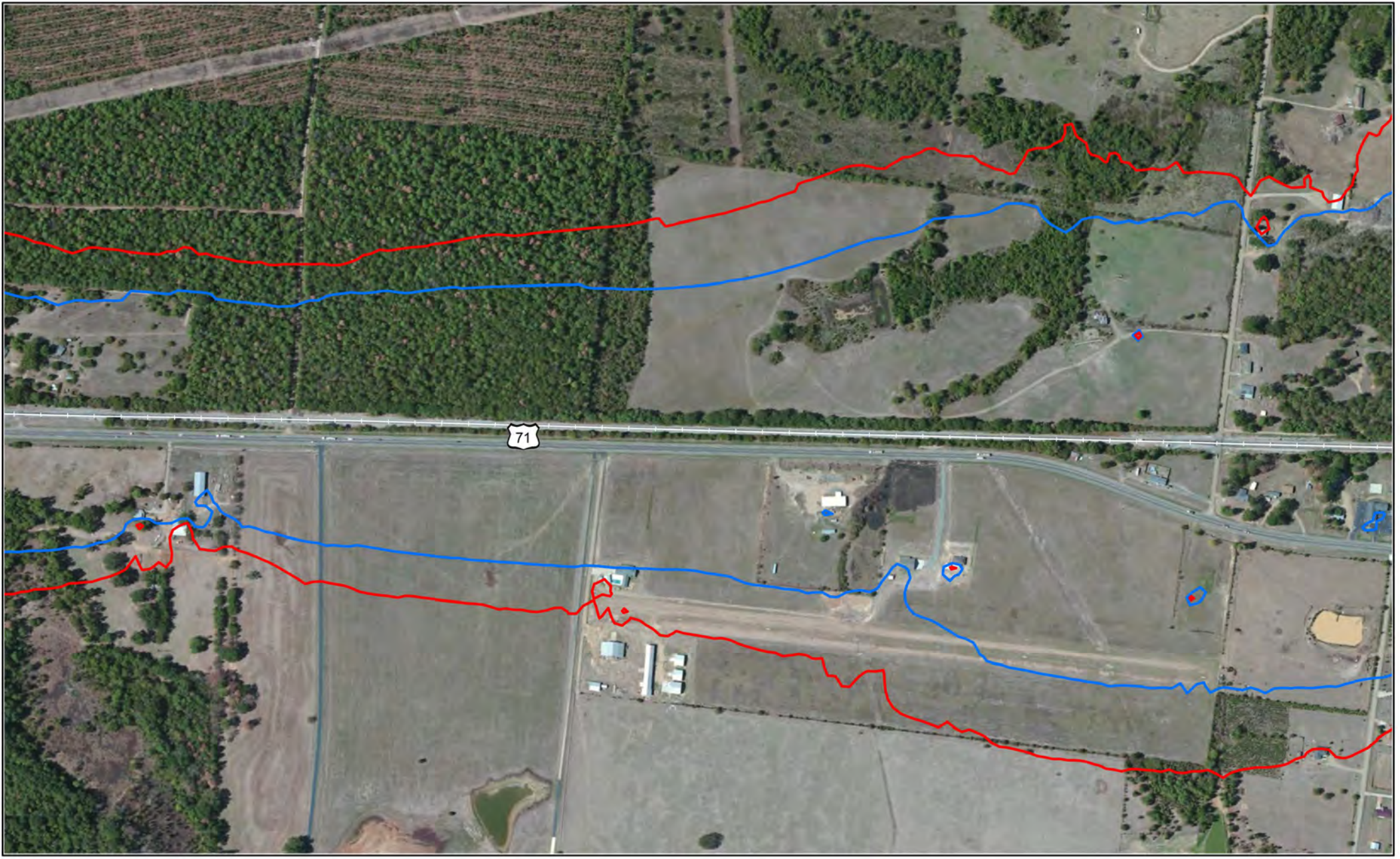
Tracks

Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

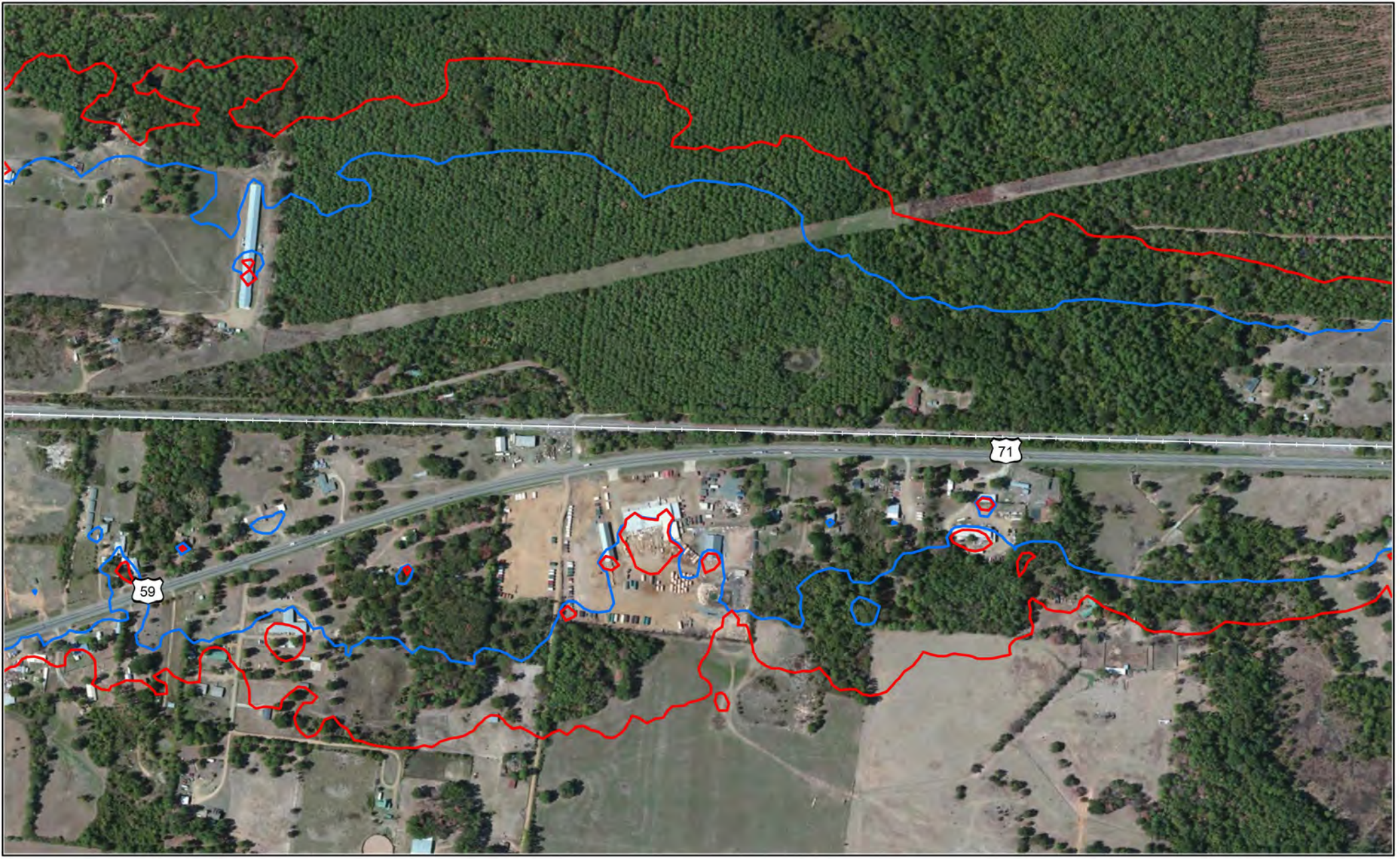
Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

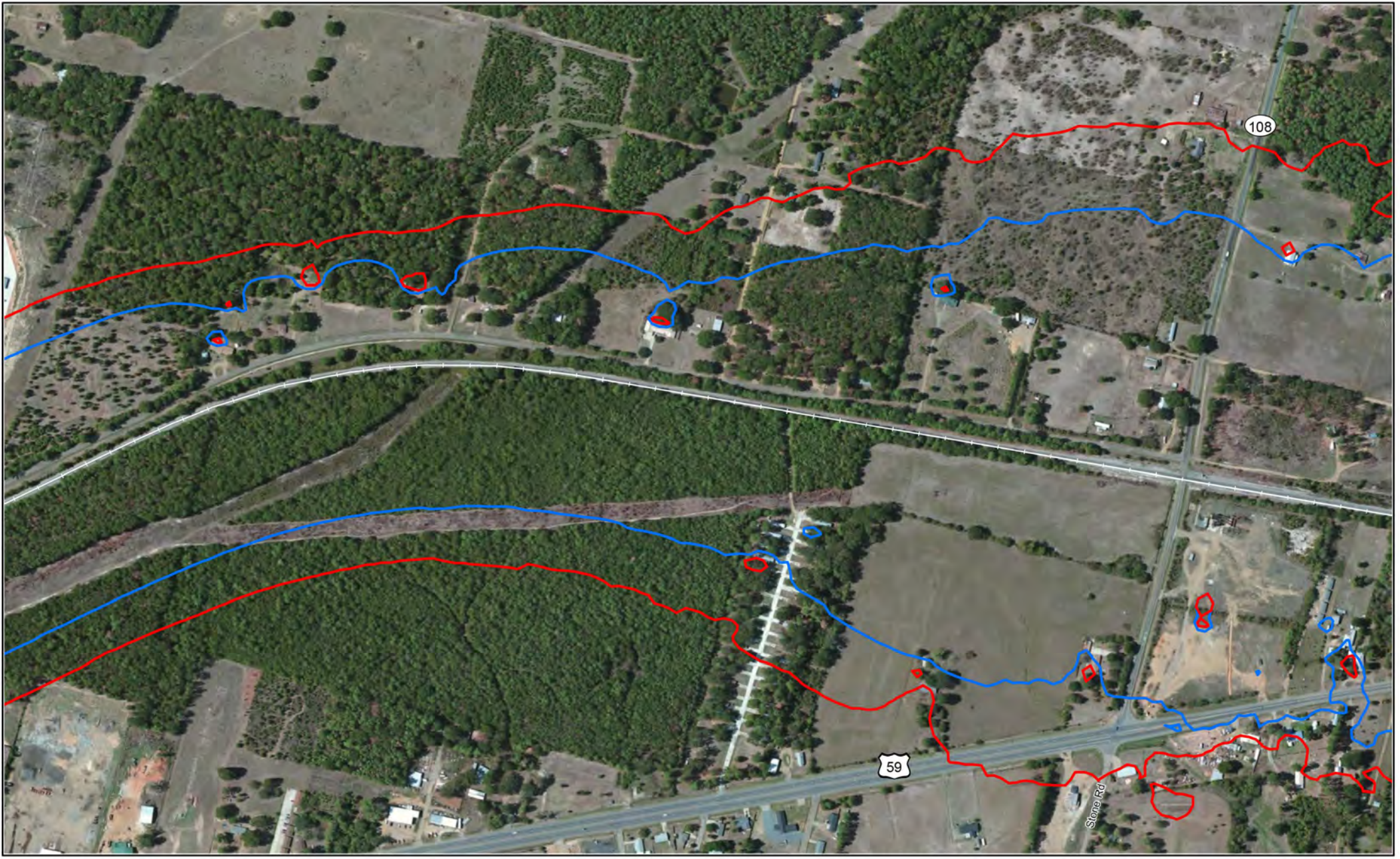
Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

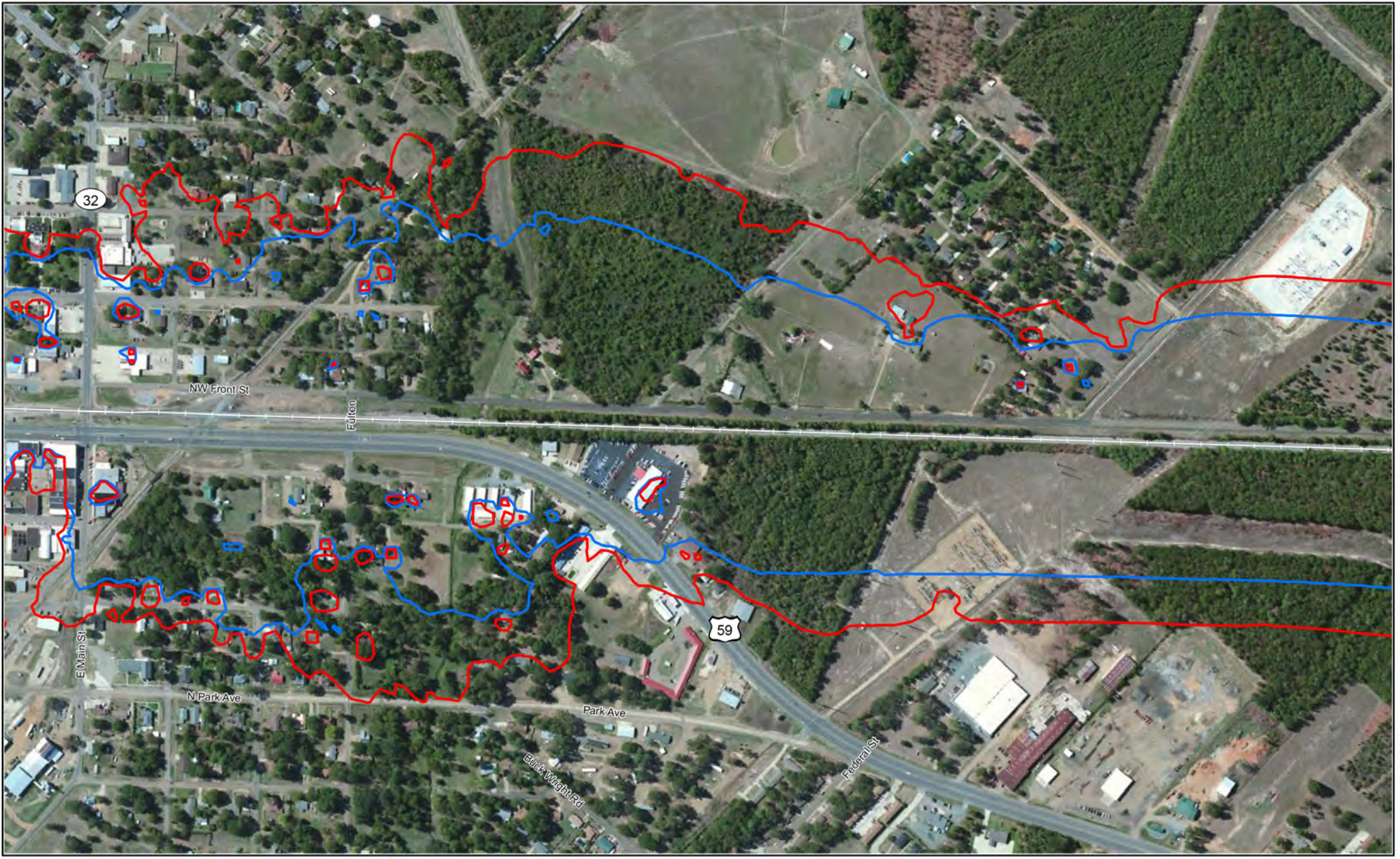
Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

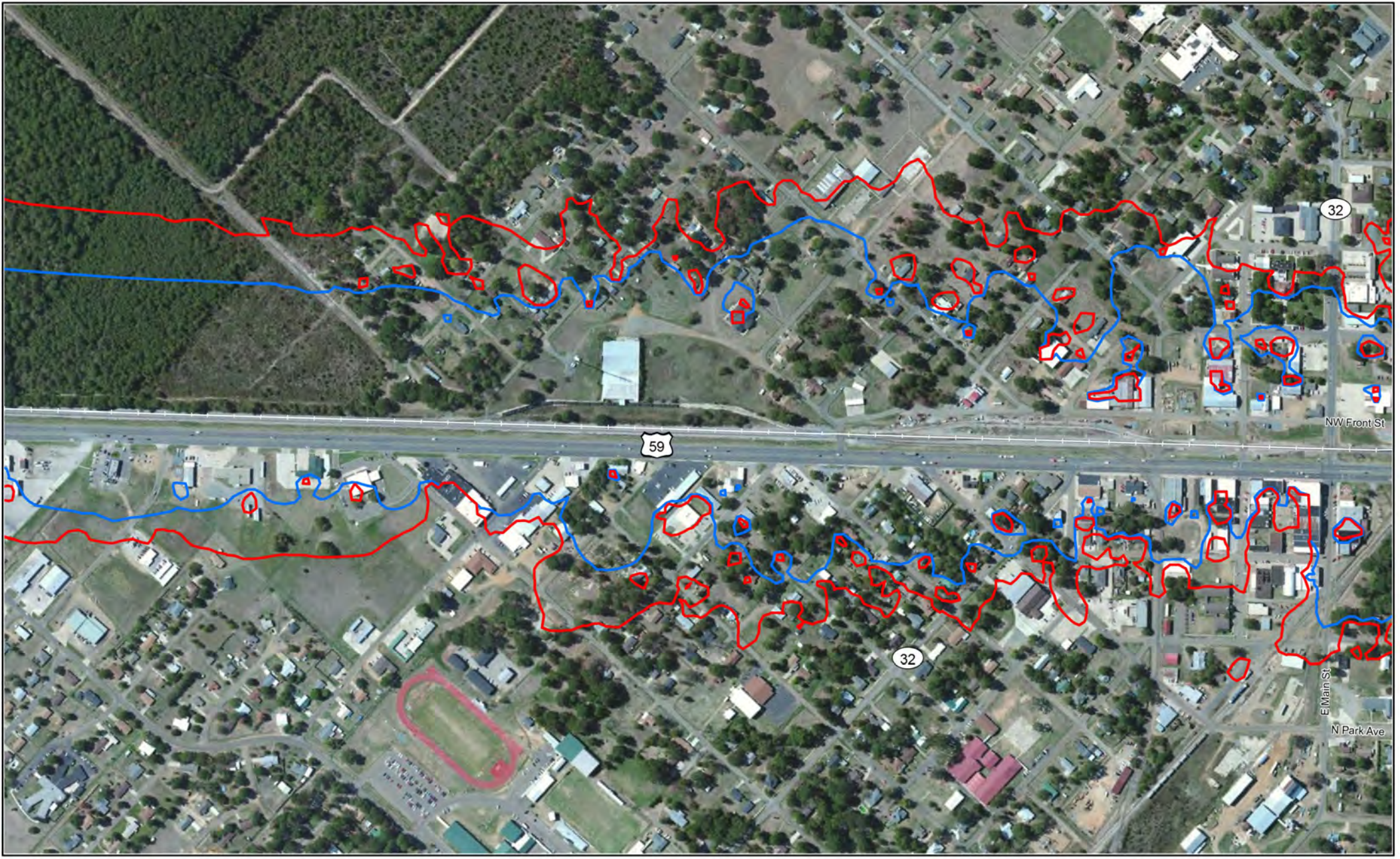
Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

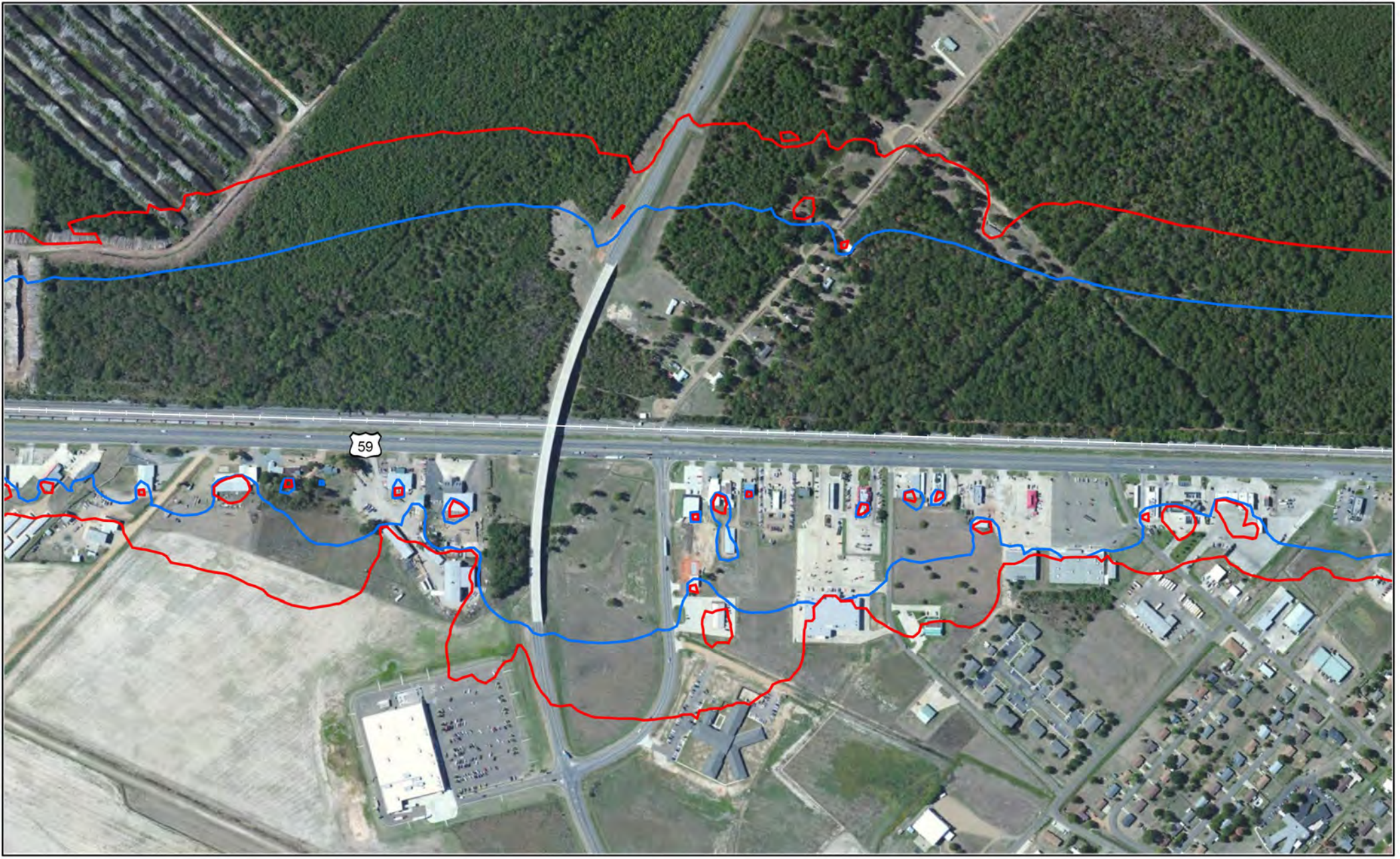
Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

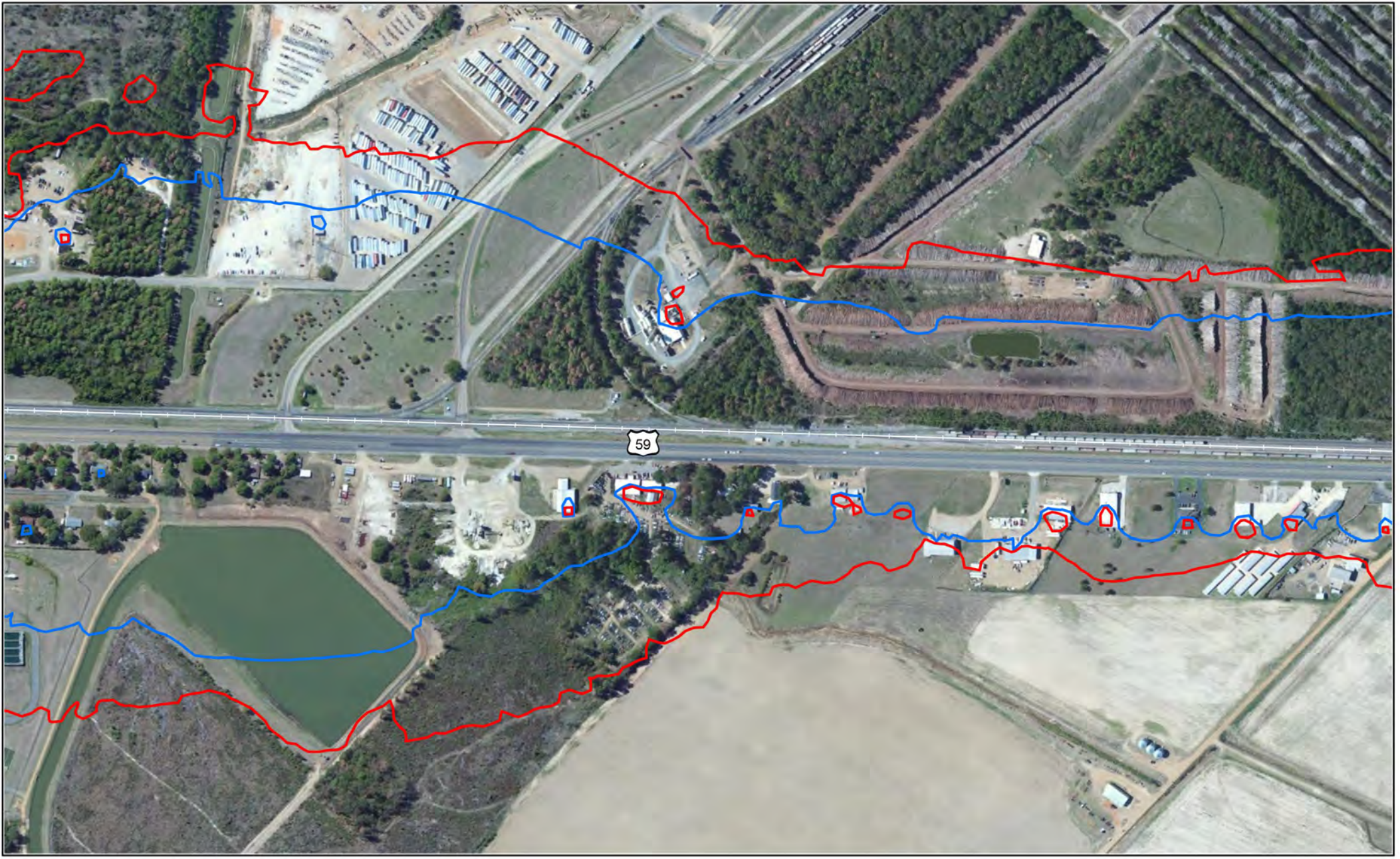
Tracks

Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

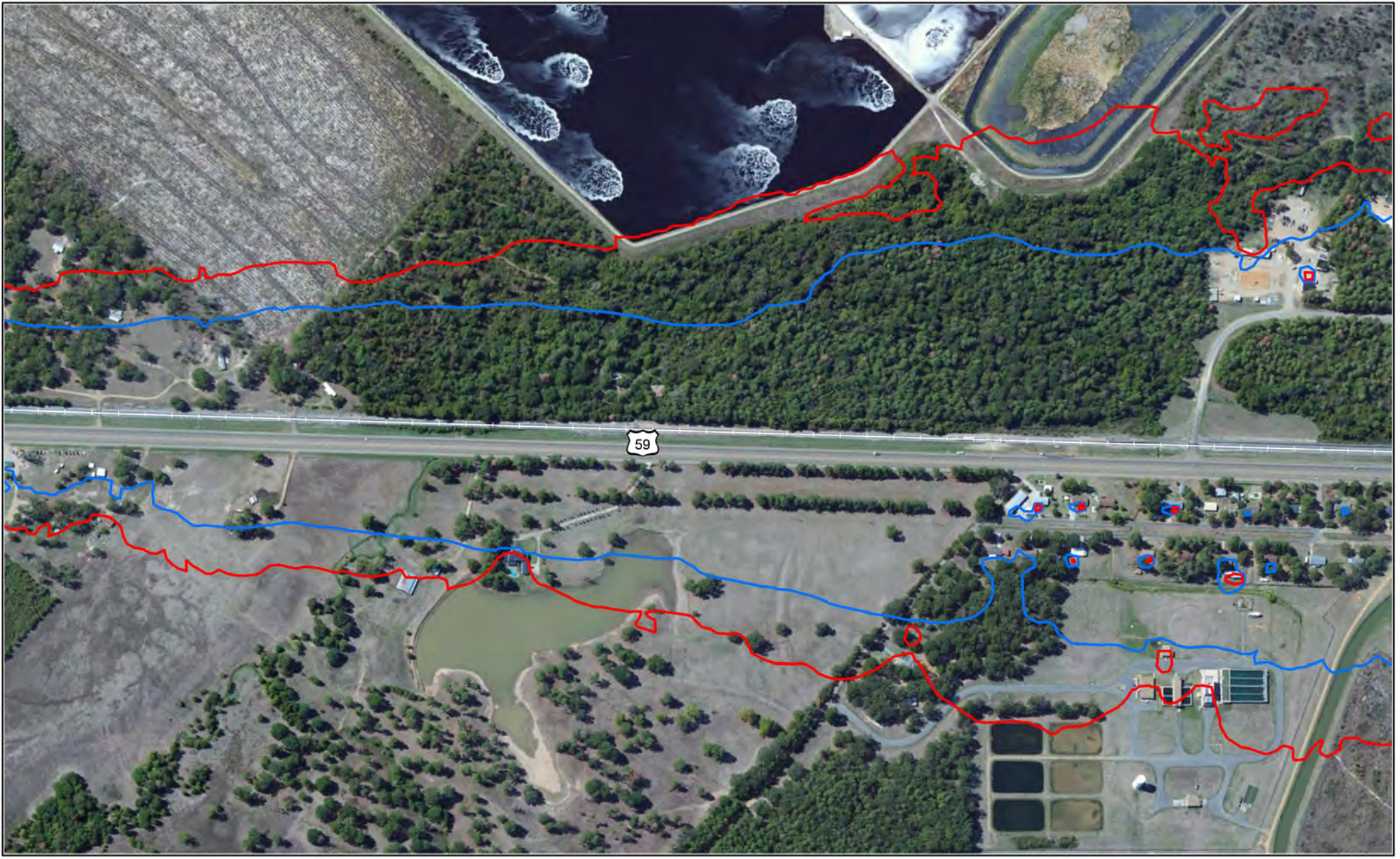
Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

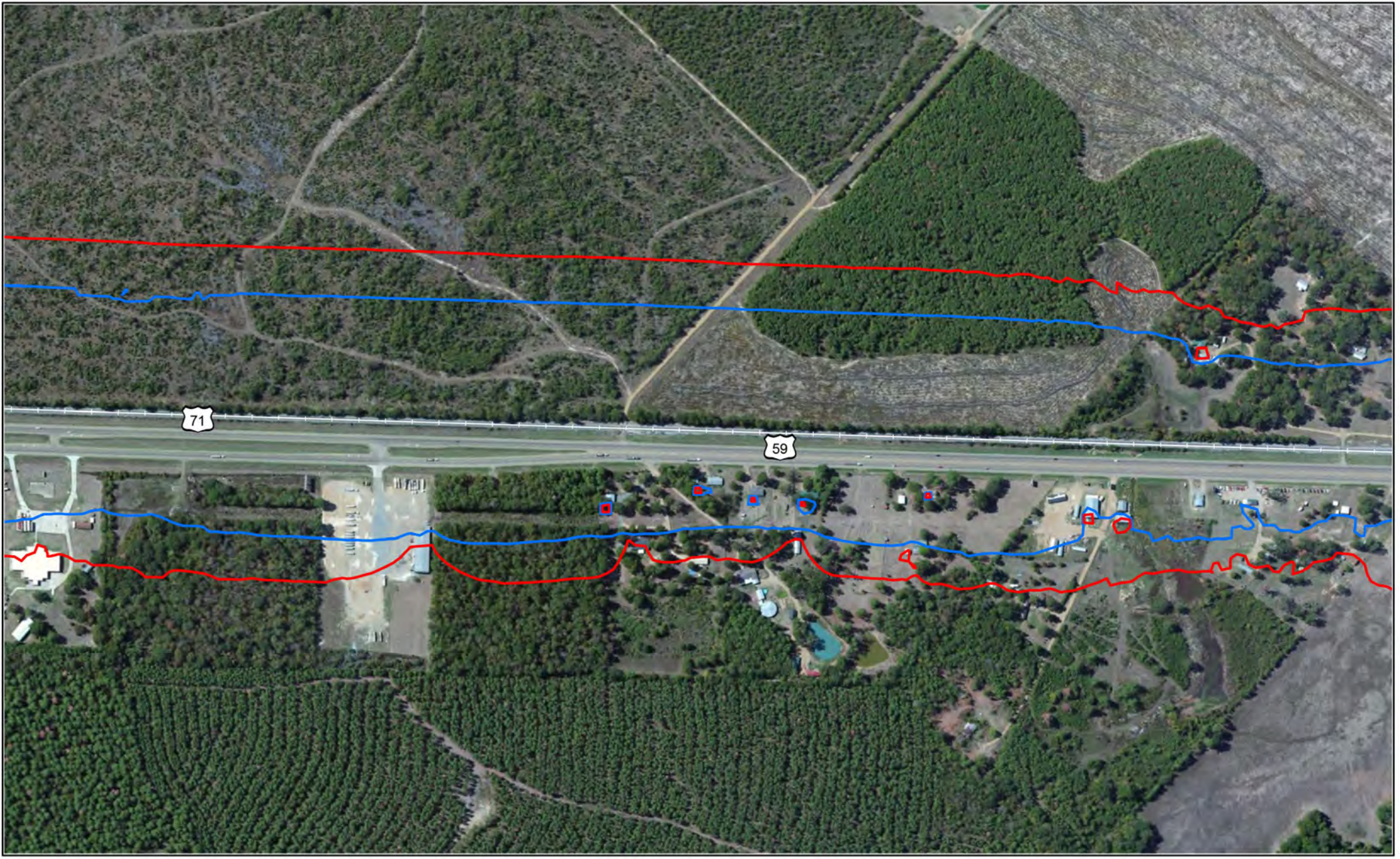
Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

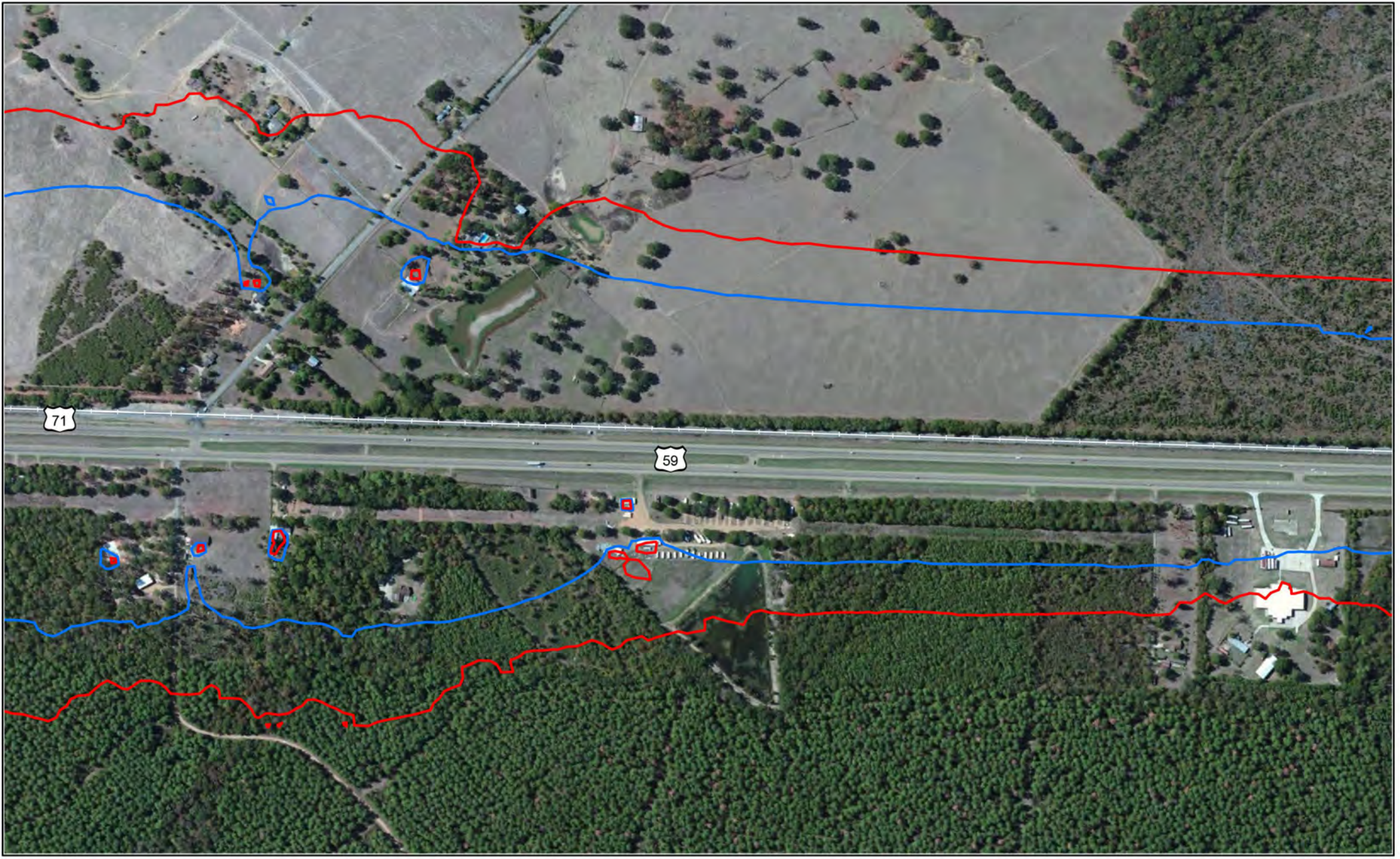
Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

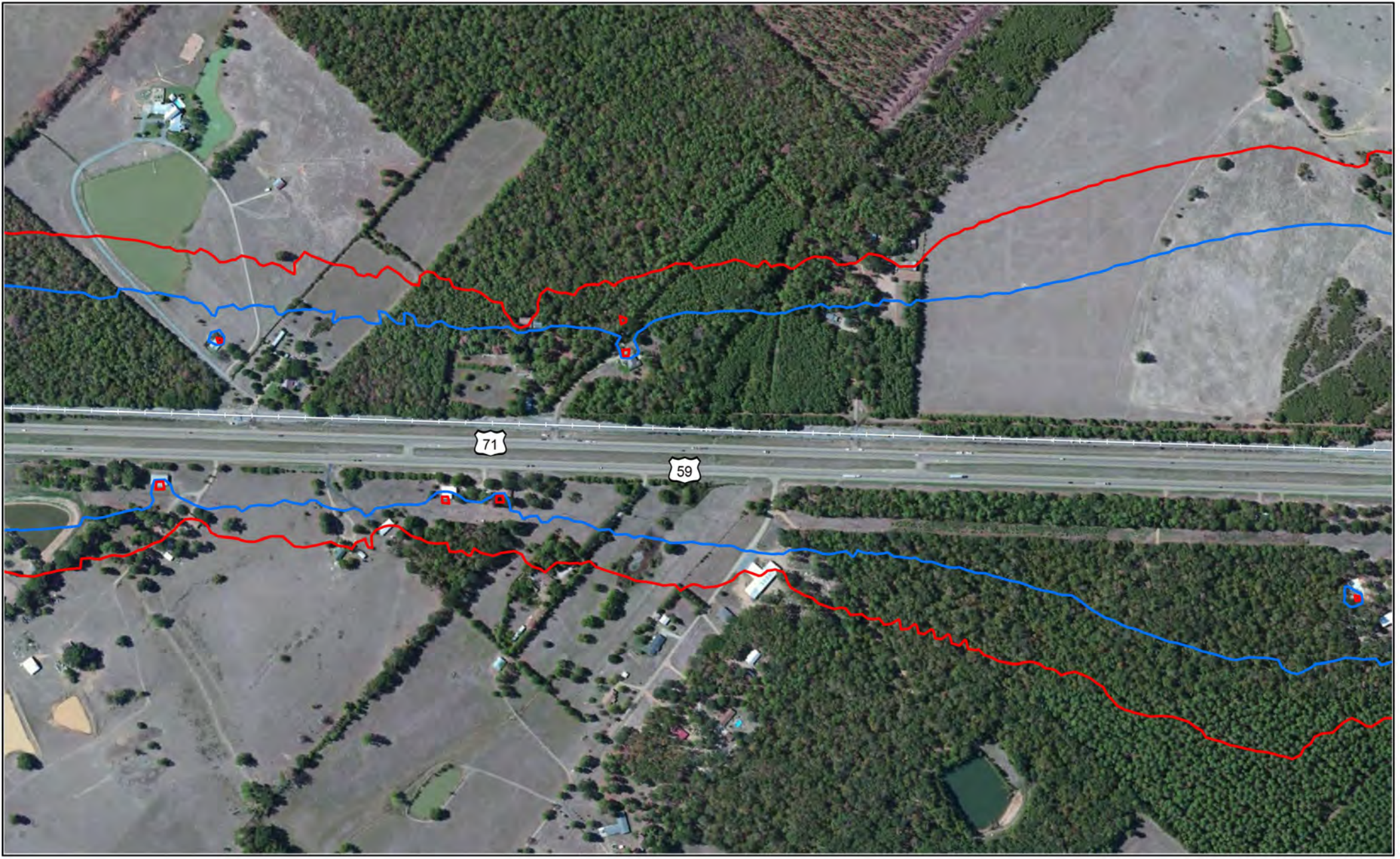
Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

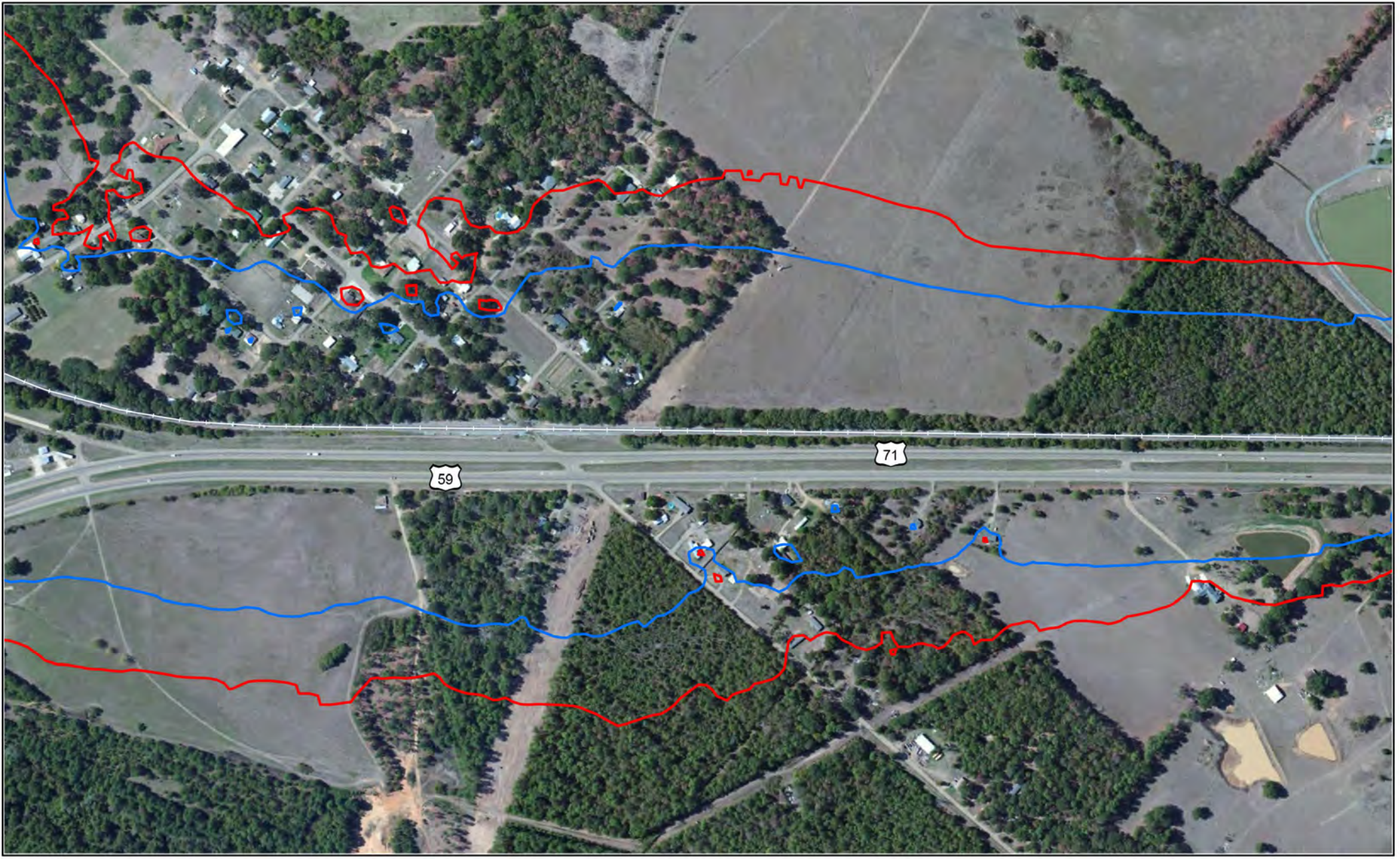
Tracks

Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

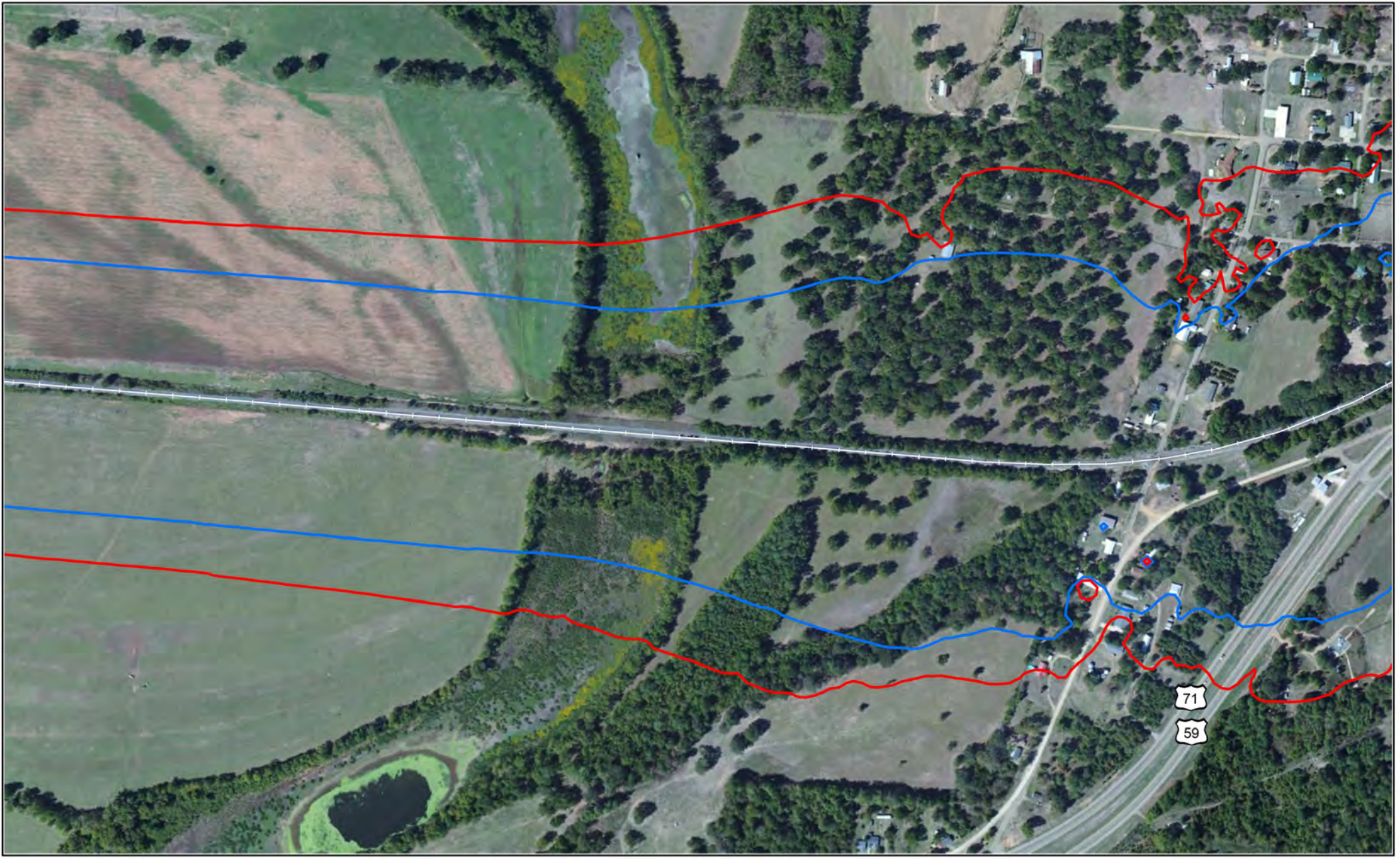
Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

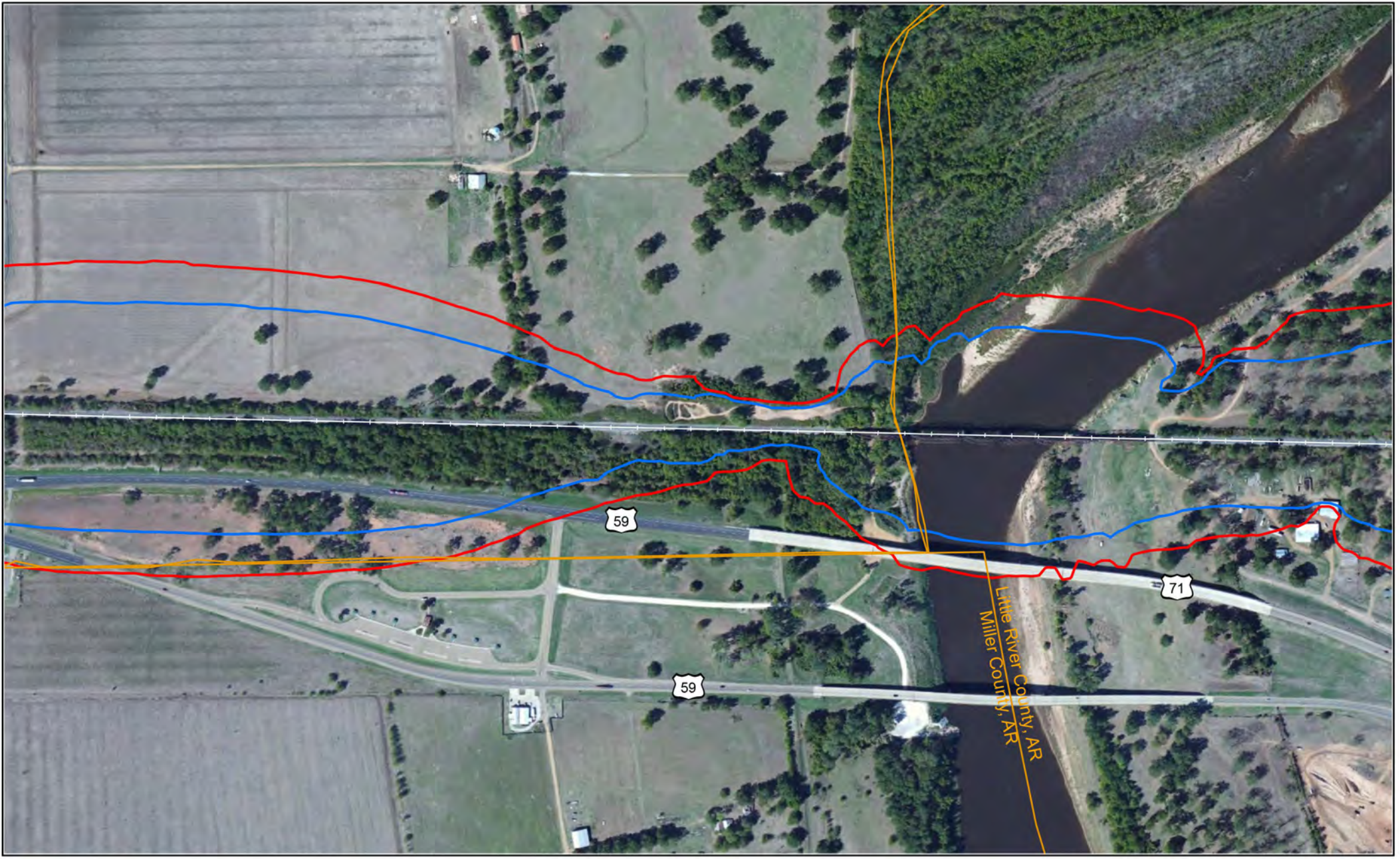
Source: ESRI.



Noise Contours
Little River County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Miller County, AR

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Miller County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

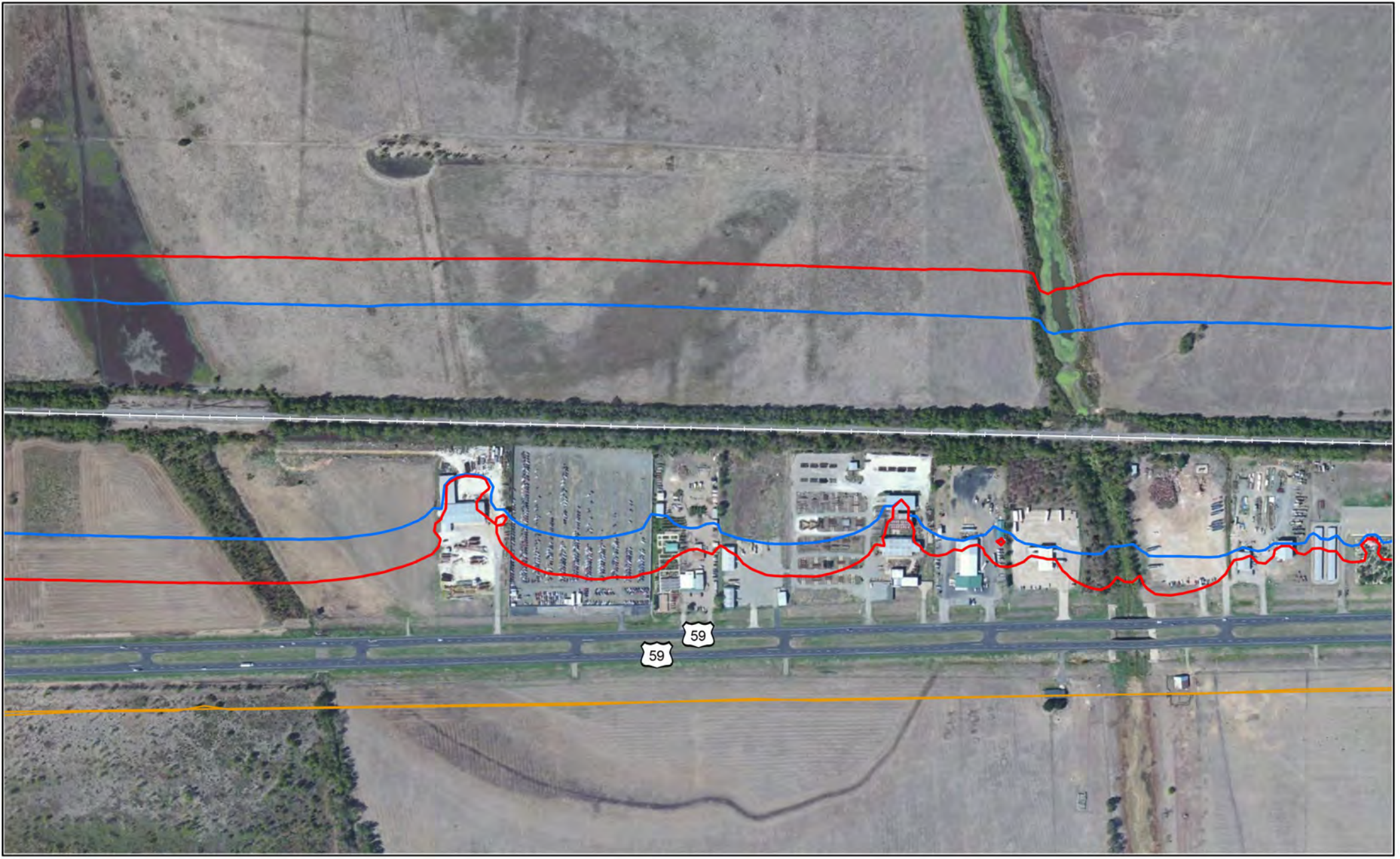
Source: ESRI.



Noise Contours
Miller County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Miller County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

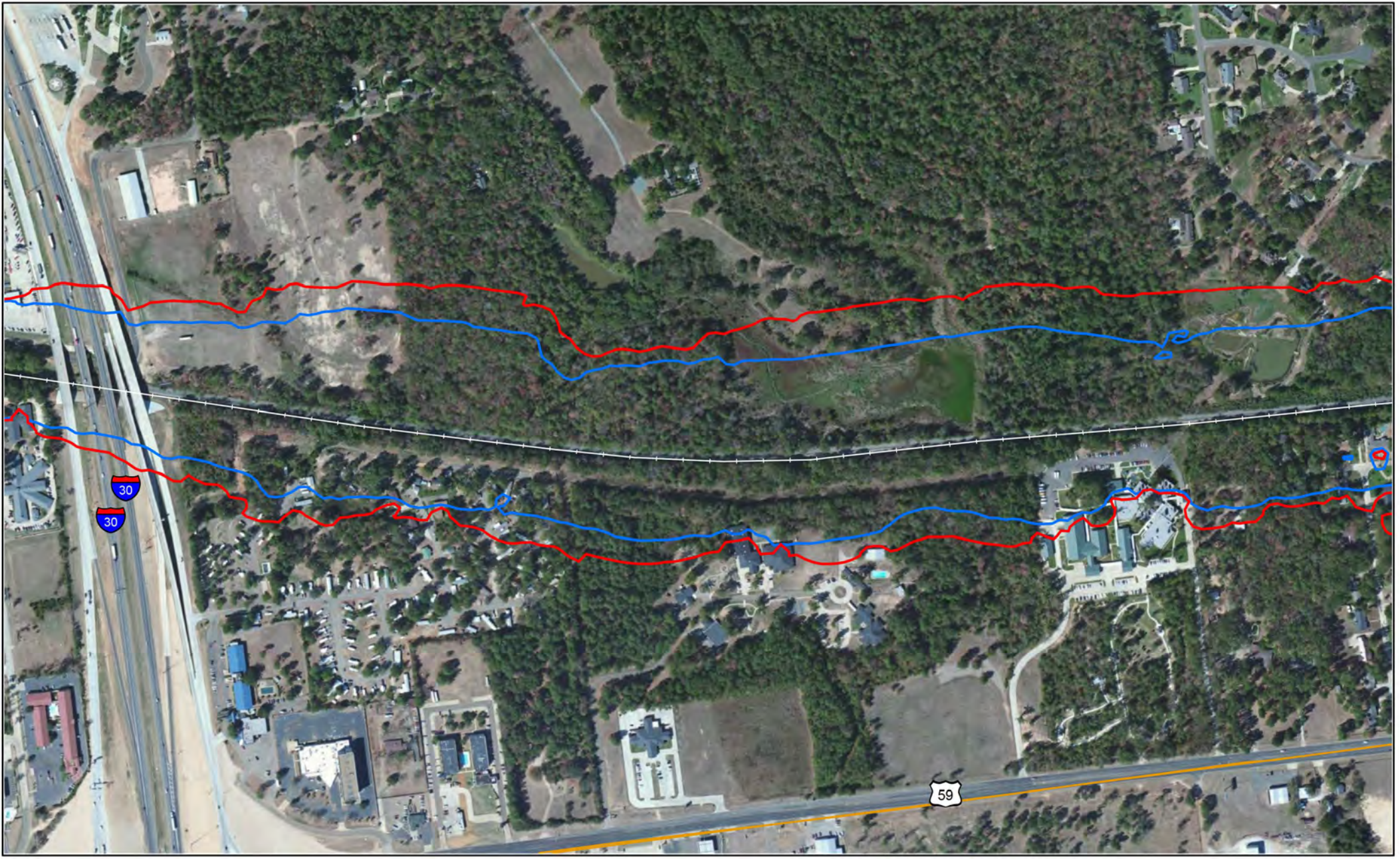
Source: ESRI.



Noise Contours
Miller County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

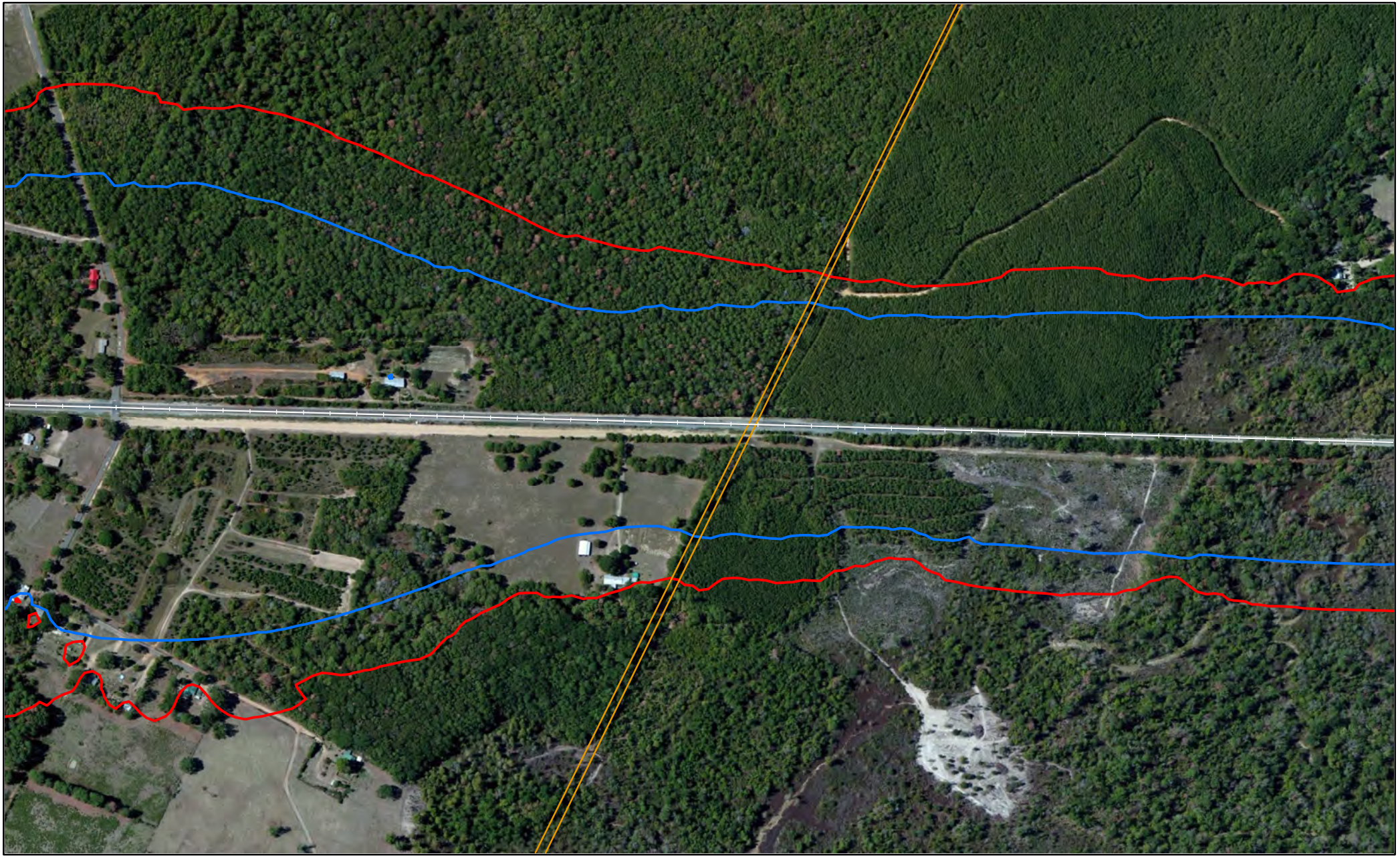


Noise Contours
Miller County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN

Appendix M – Attachment 6: Louisiana



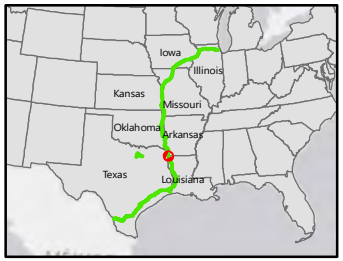
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

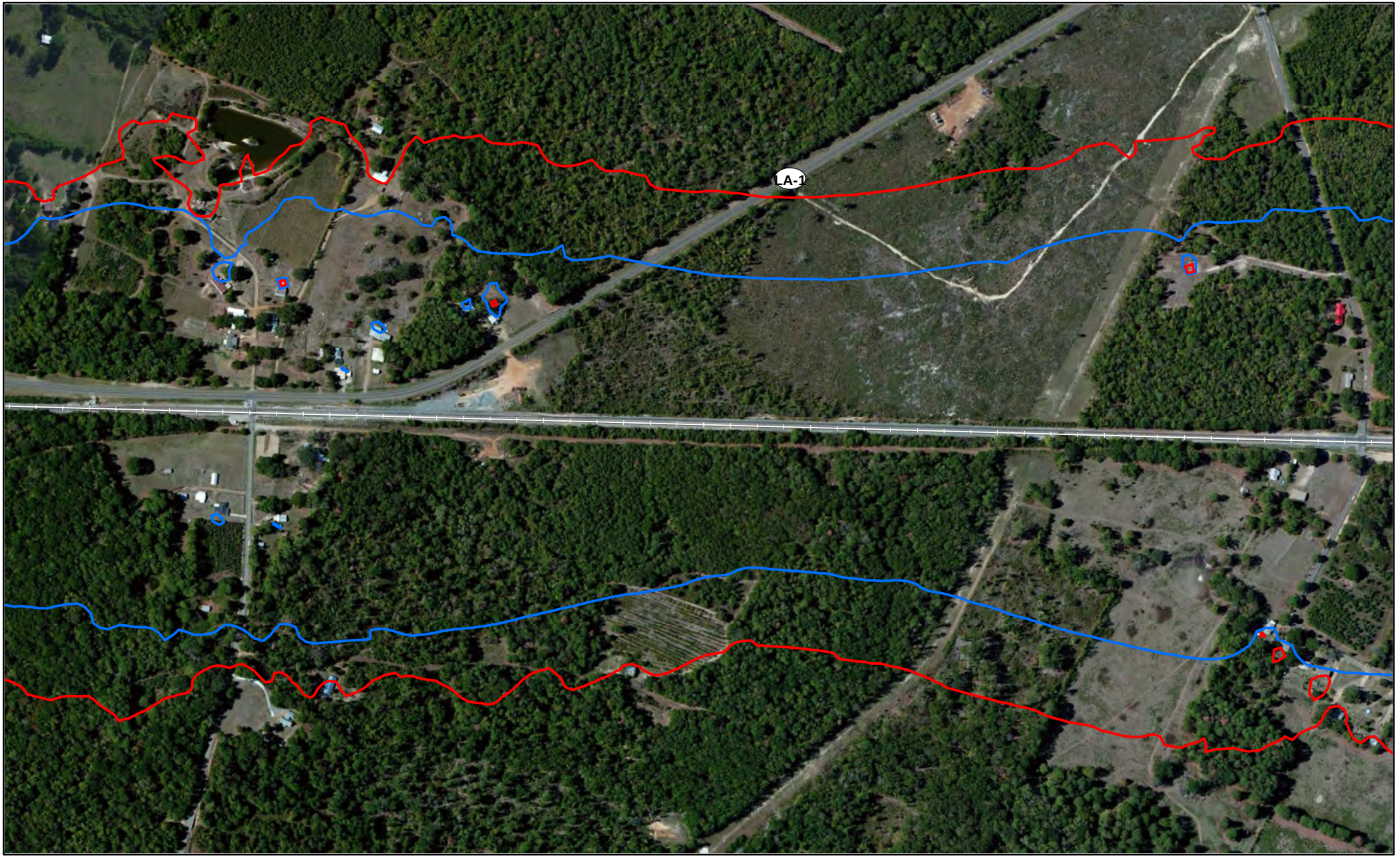
Source: ESRI.



Noise Contours
Miller County, AR

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



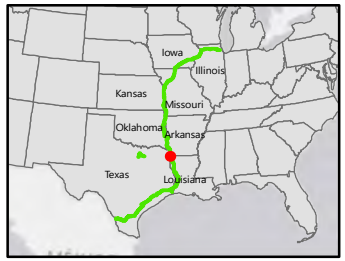
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

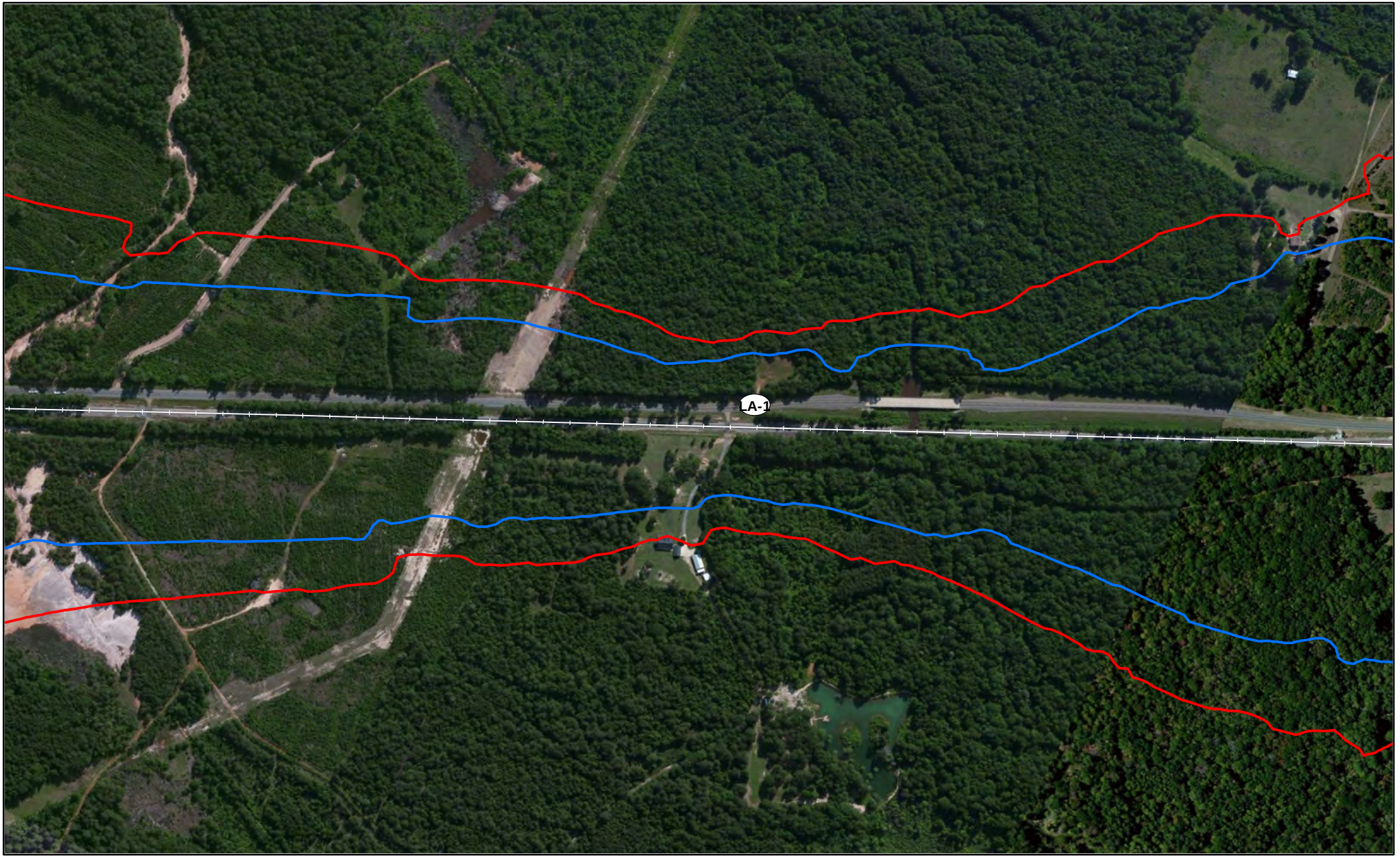
Tracks

Source: ESRI.



Noise Contours
Caddo Parish, LA

Miles
0 0.05 0.1



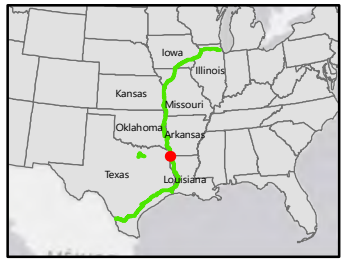
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

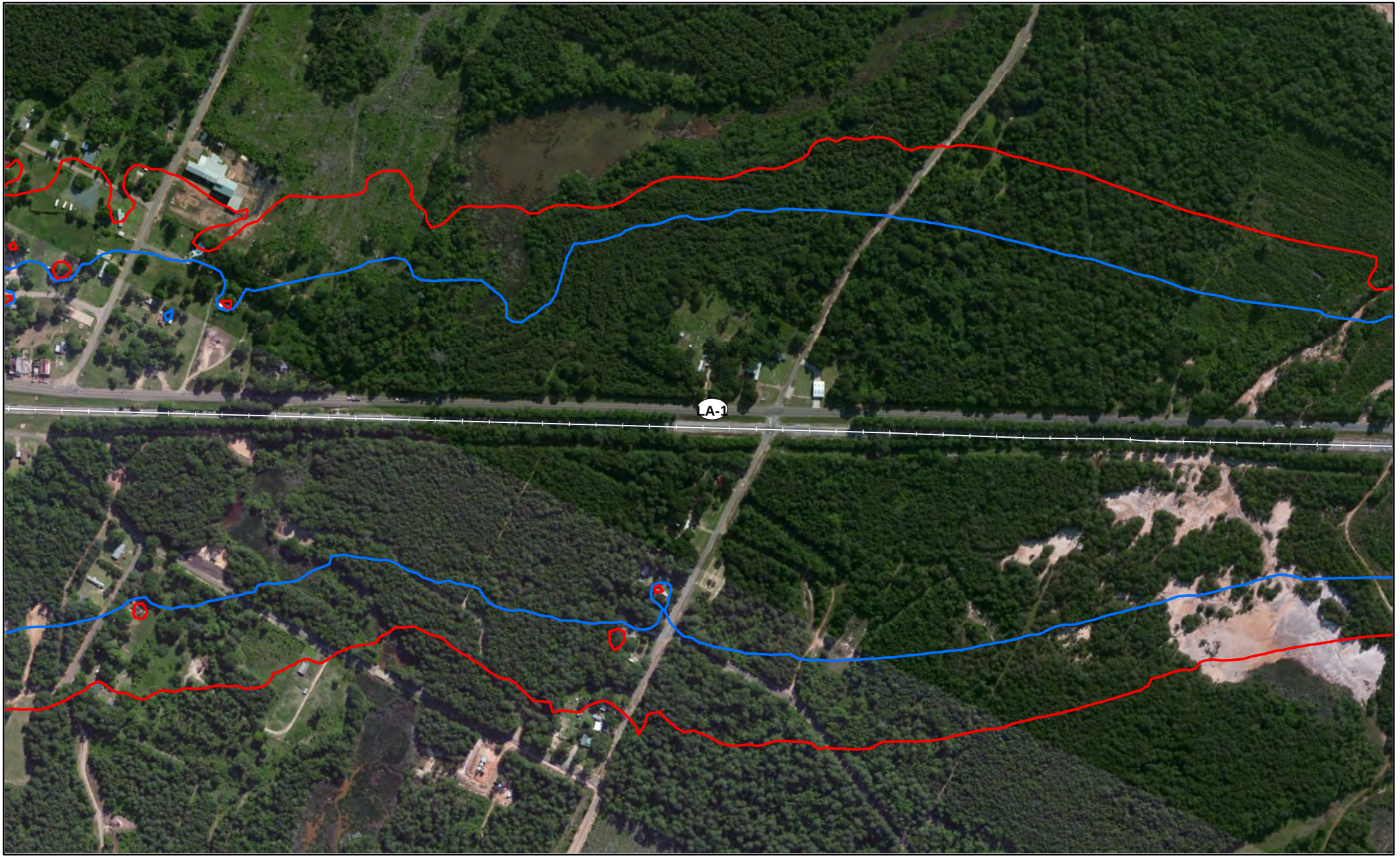
Source: ESRI.



Noise Contours
Caddo Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



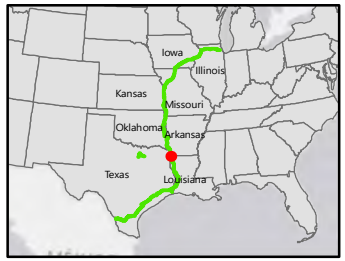
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

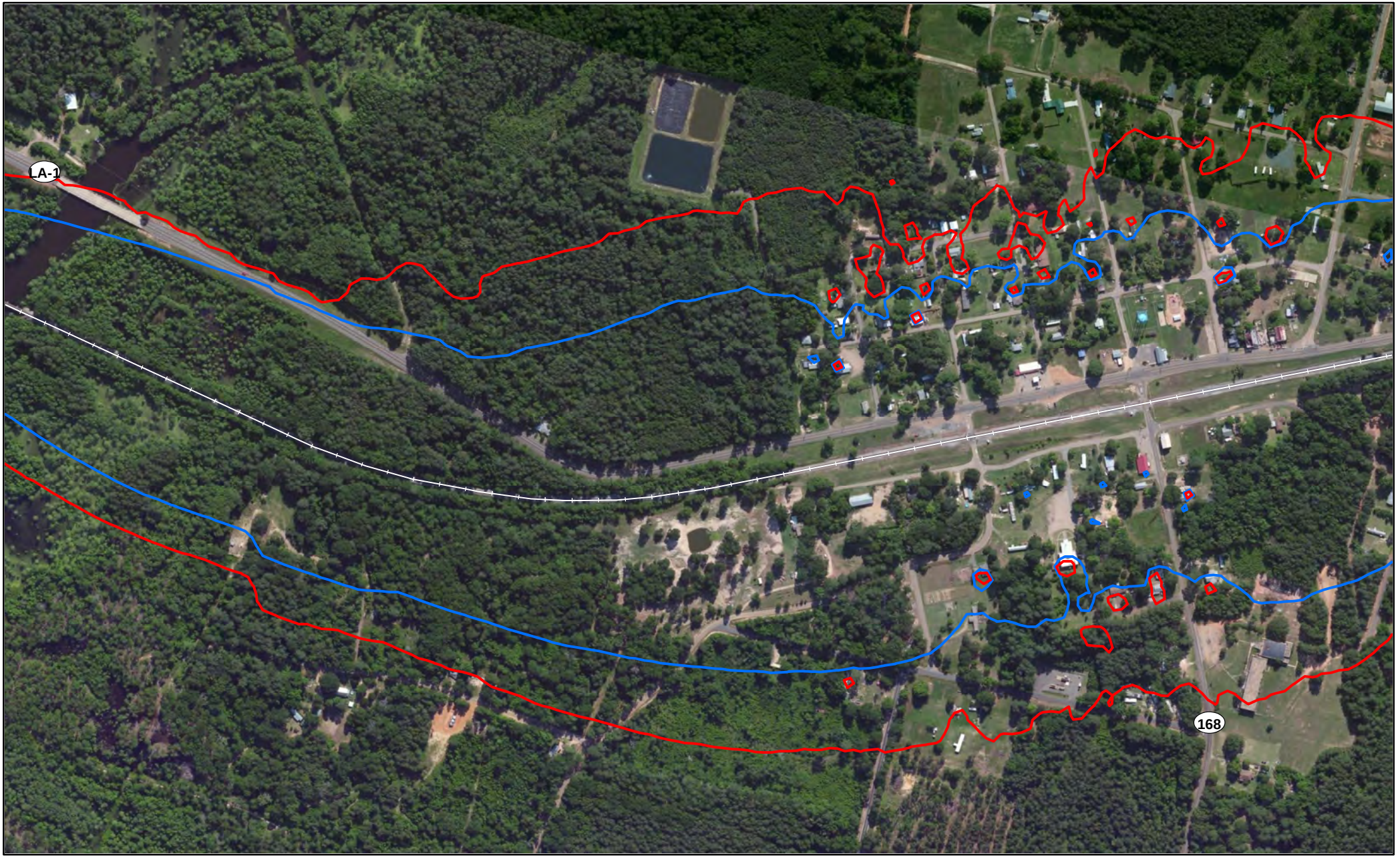
Source: ESRI.



Noise Contours
Caddo Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



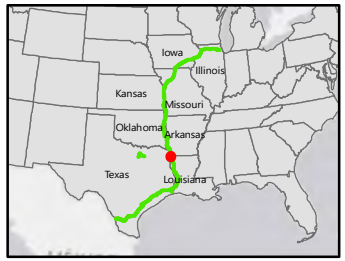
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

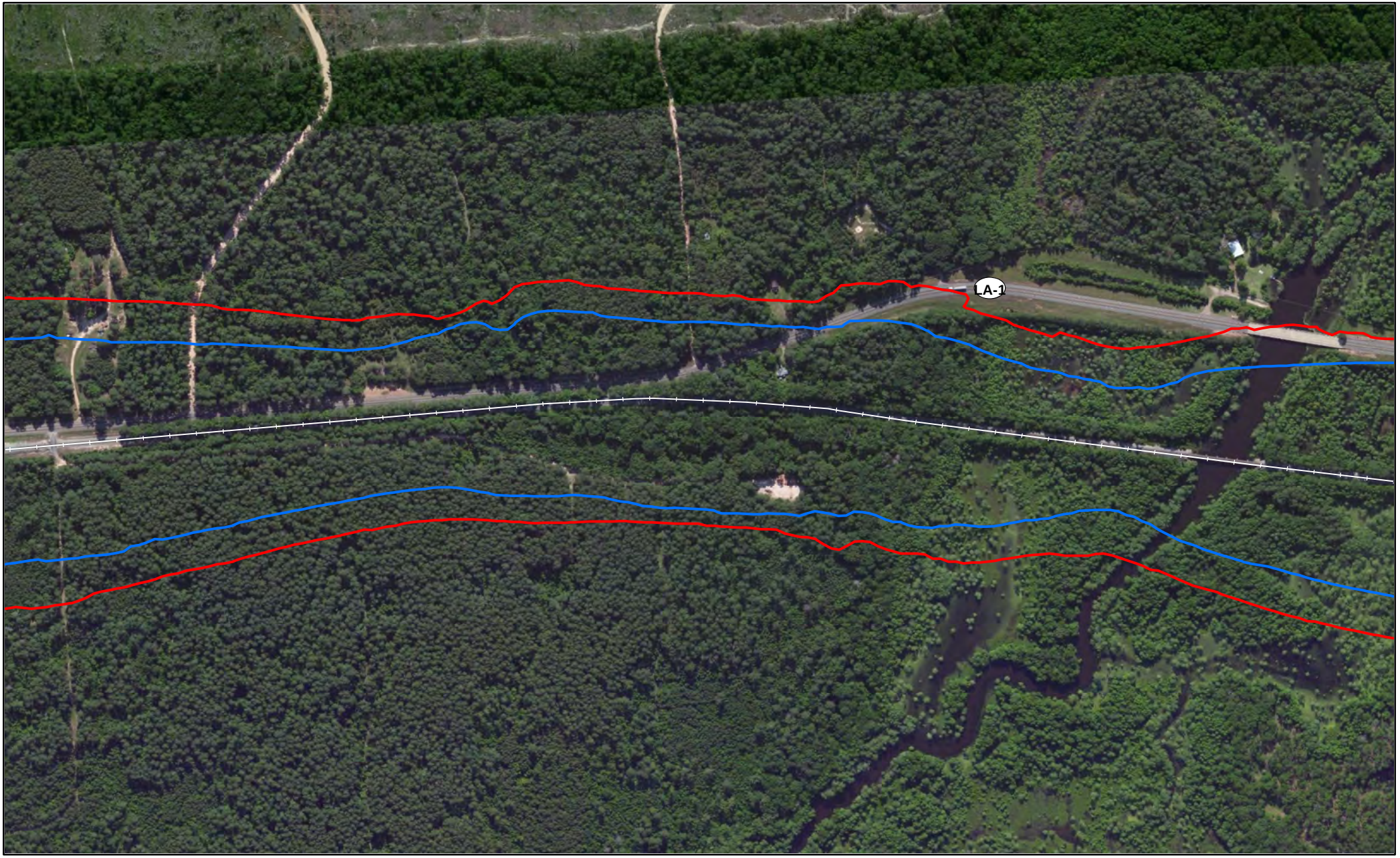
Tracks

Source: ESRI.



Noise Contours
Caddo Parish, LA

Miles
0 0.05 0.1



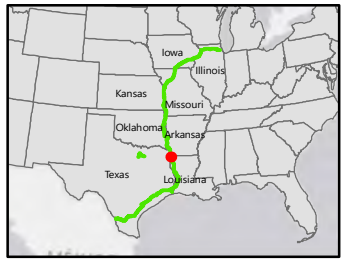
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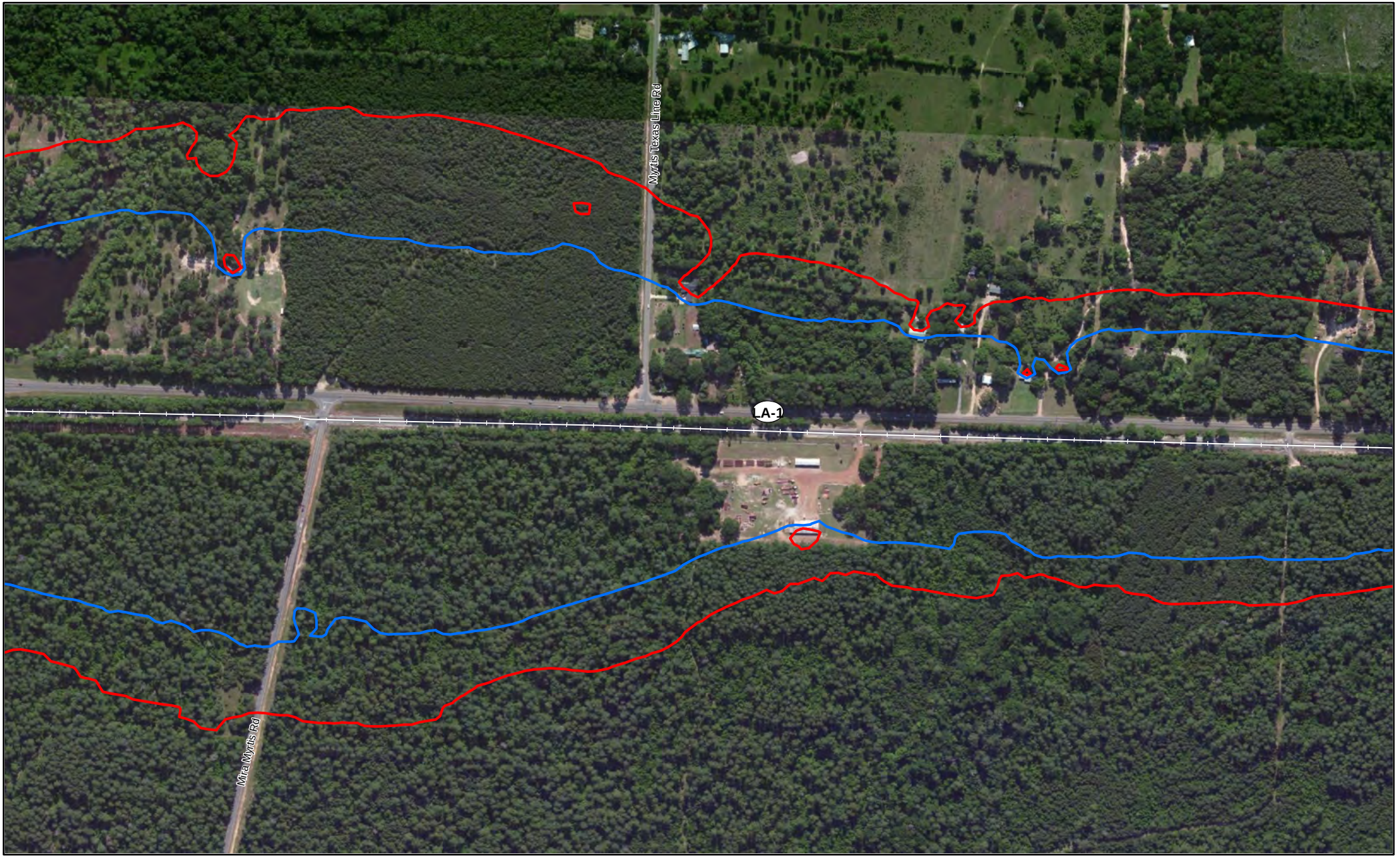
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Noise Contours
Caddo Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



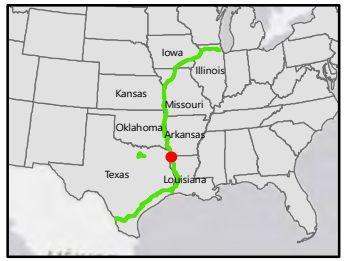
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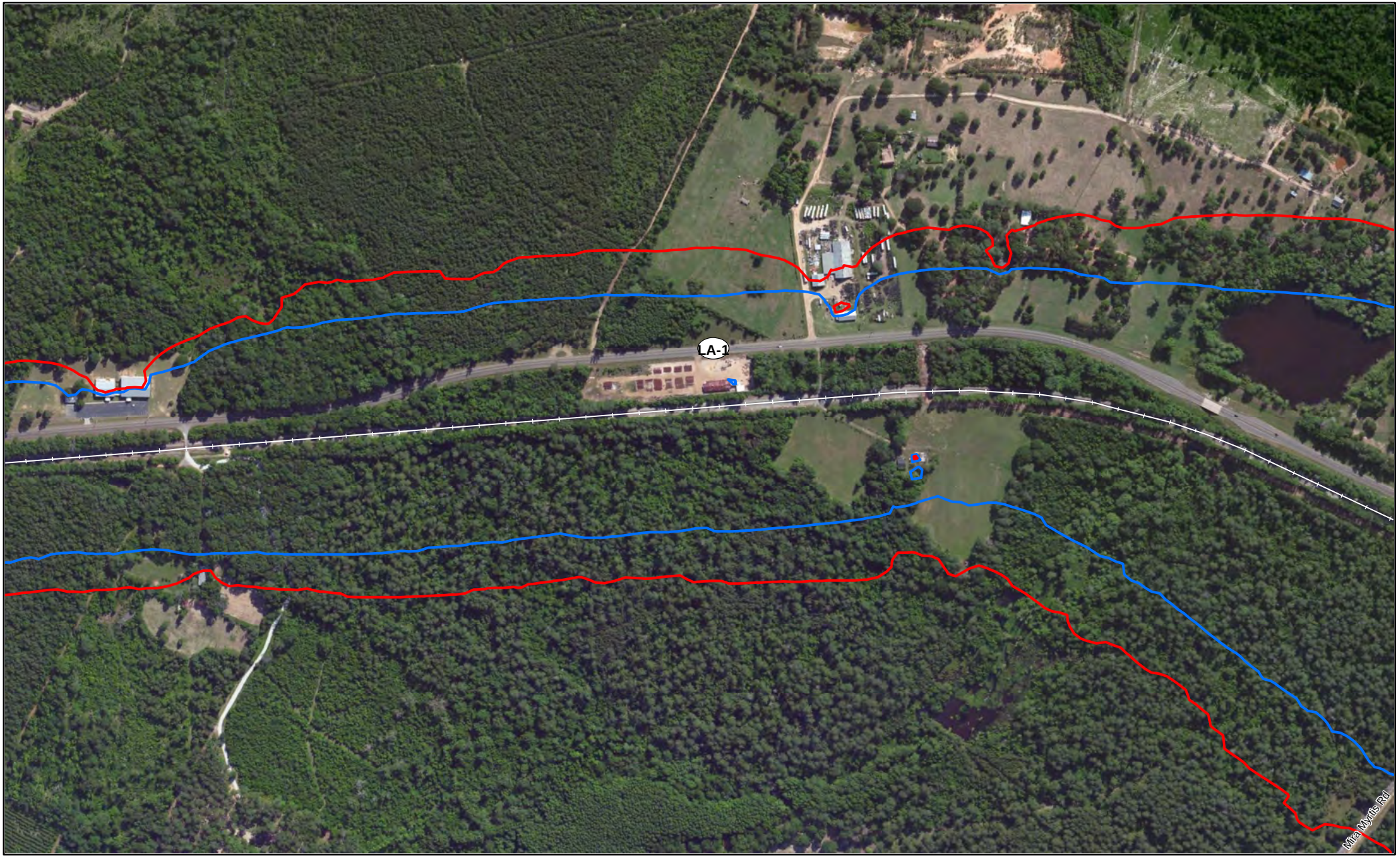


Noise Contours
Caddo Parish, LA

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



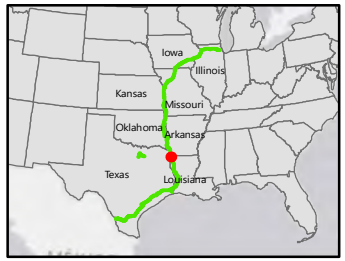
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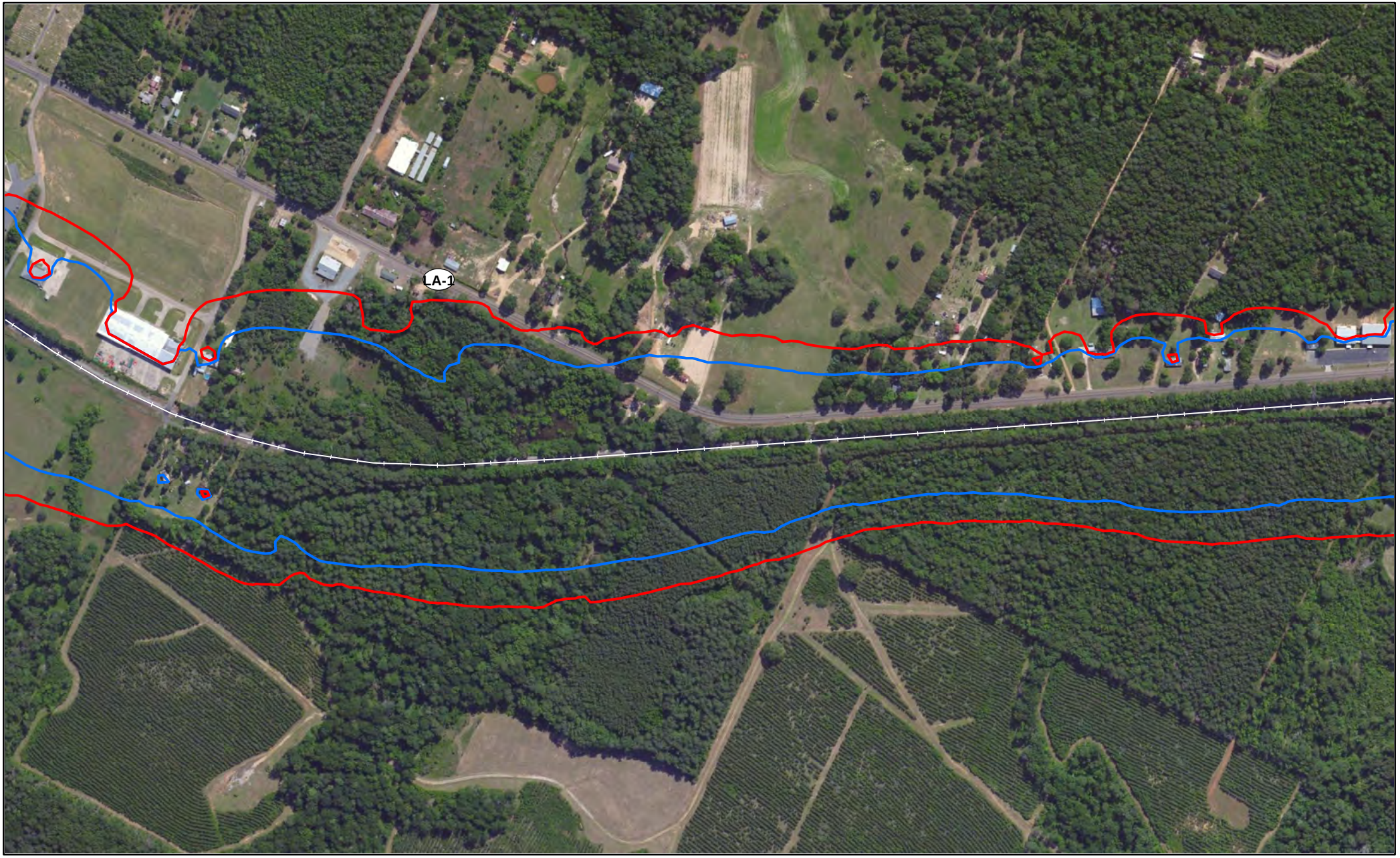
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Noise Contours
Caddo Parish, LA

Miles
0 0.05 0.1



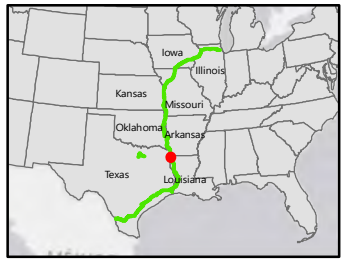
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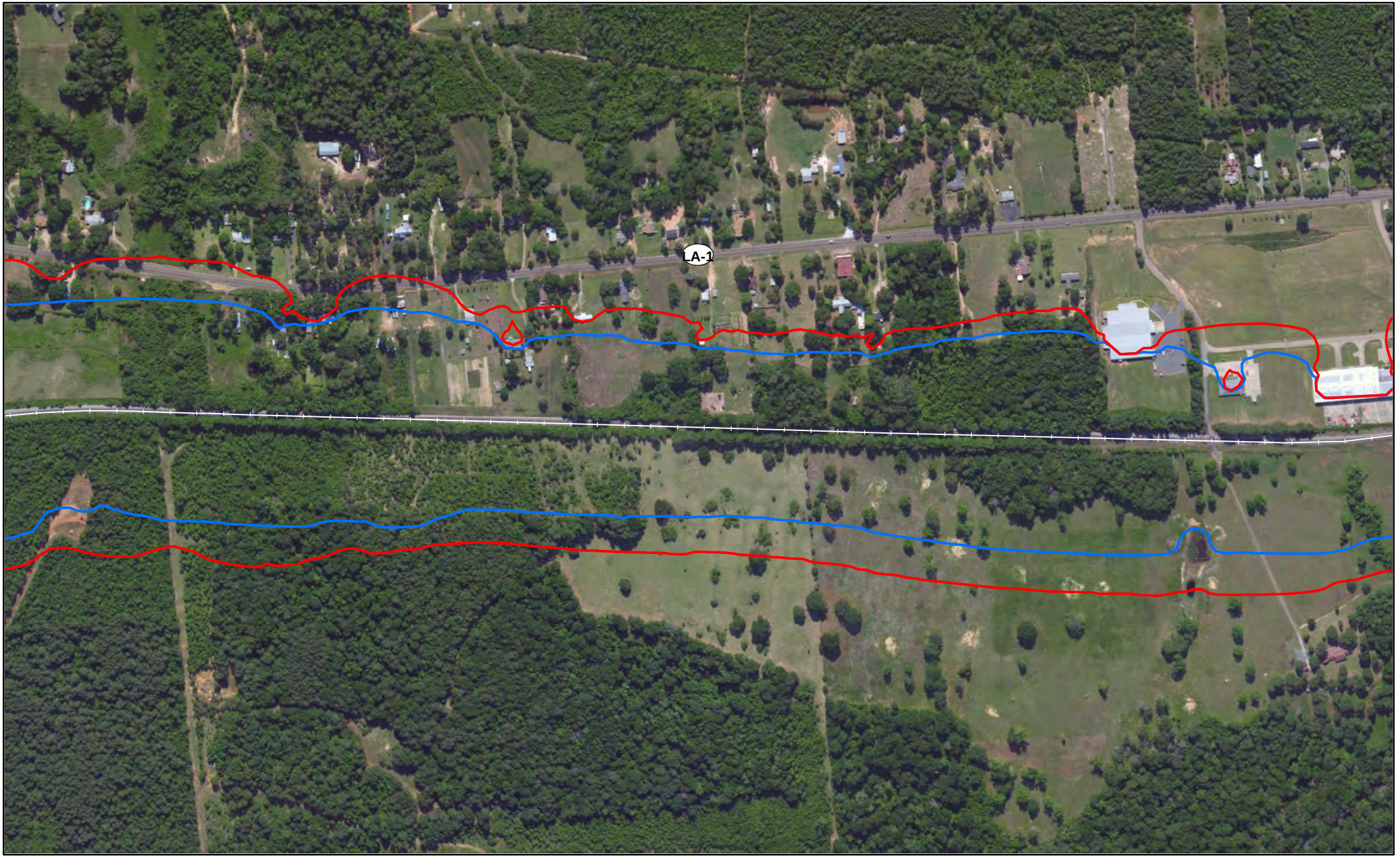
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Noise Contours
Caddo Parish, LA

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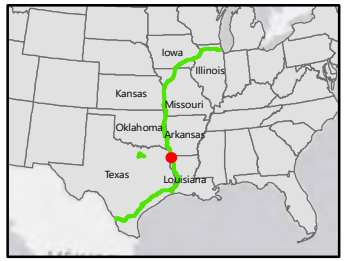
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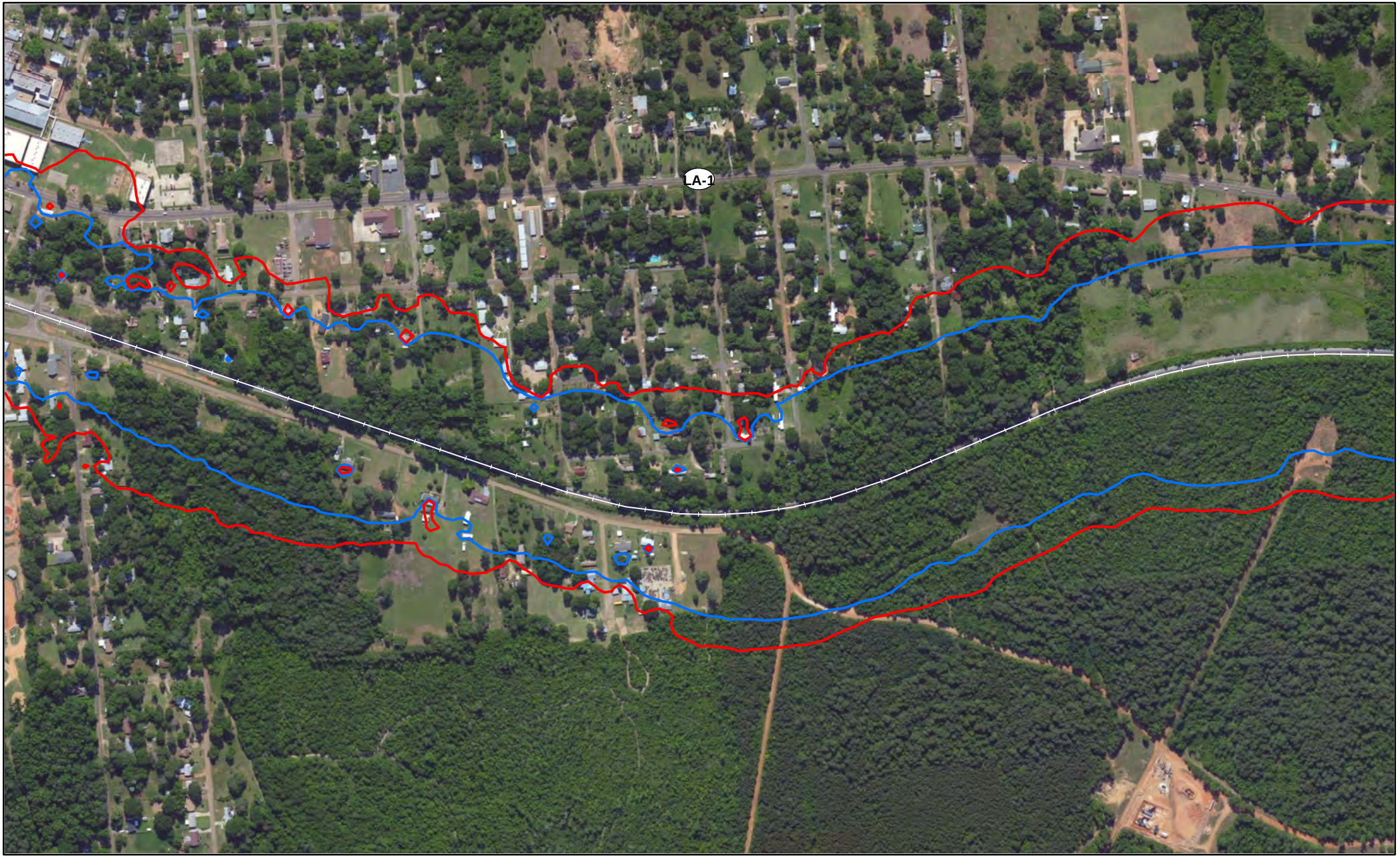
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Noise Contours
Caddo Parish, LA

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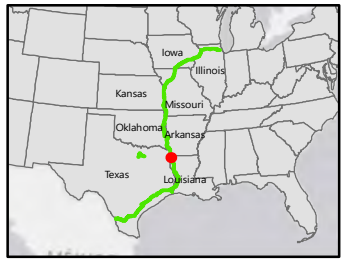
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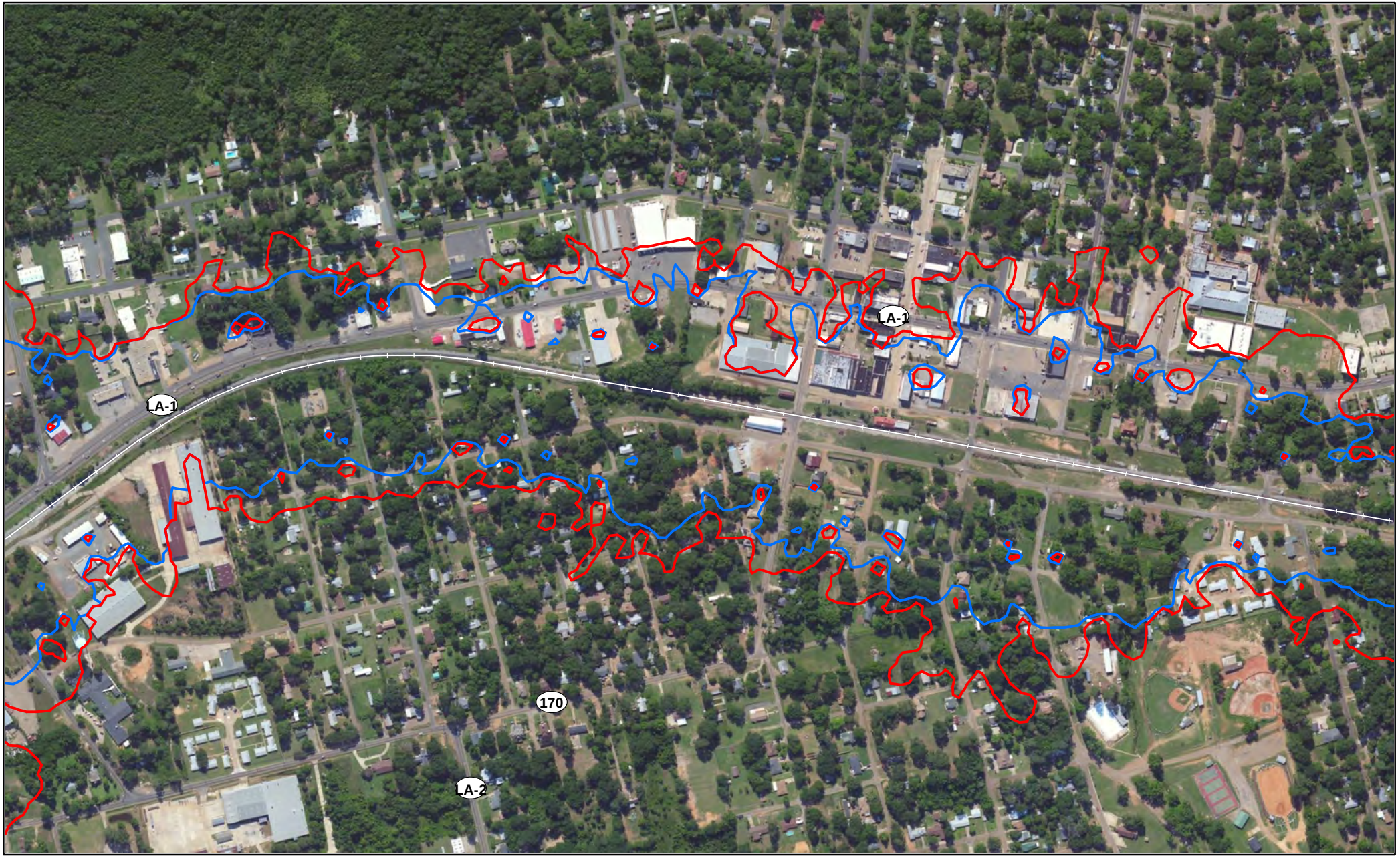
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Noise Contours
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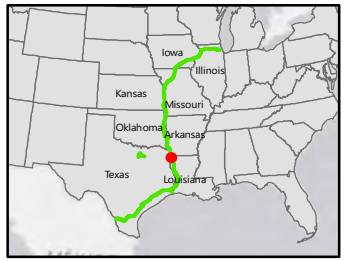
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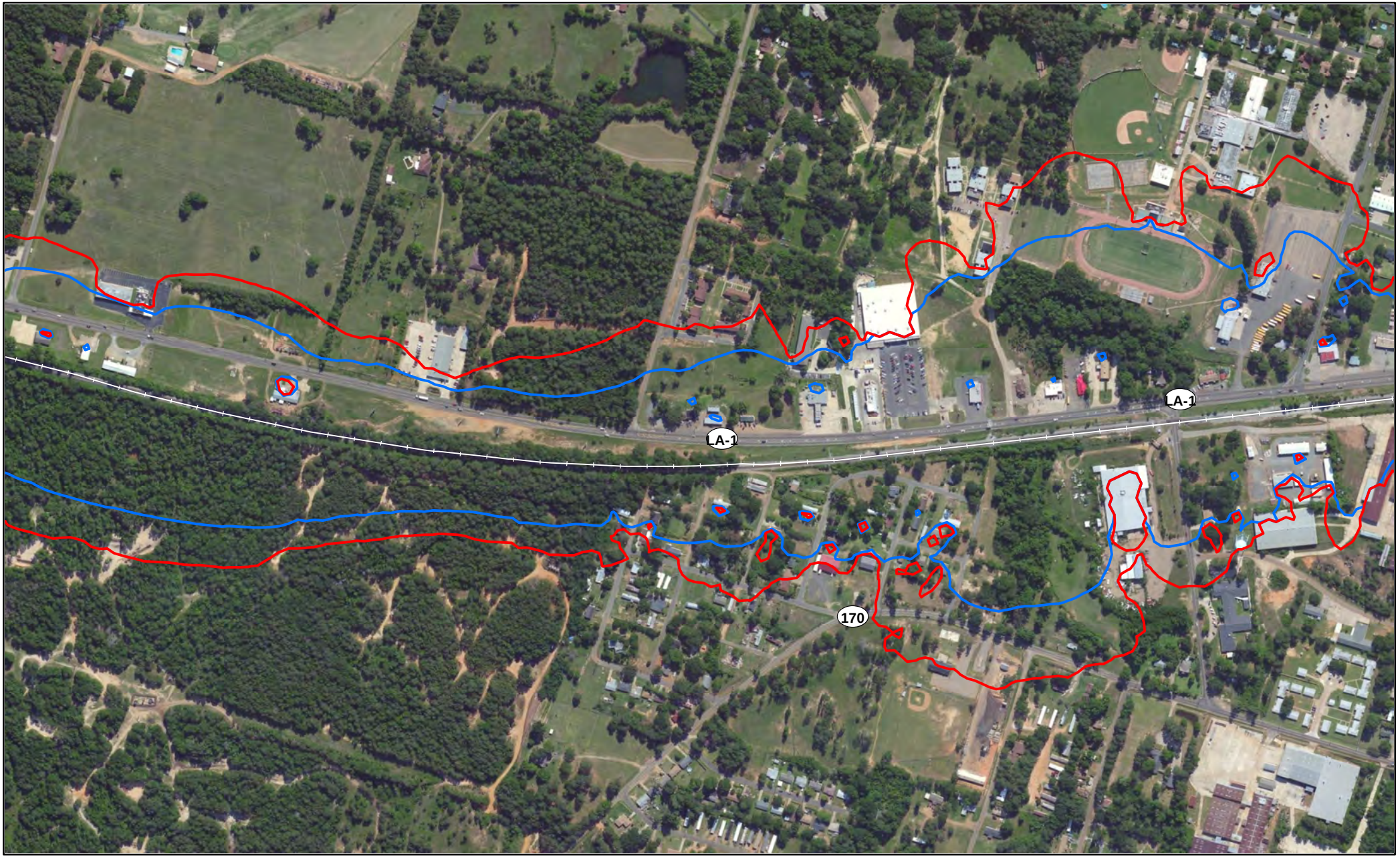
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Noise Contours
Caddo Parish, LA

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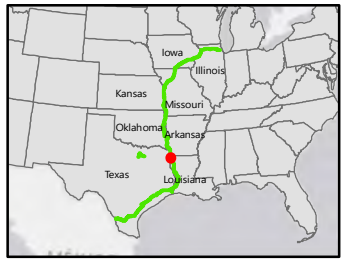
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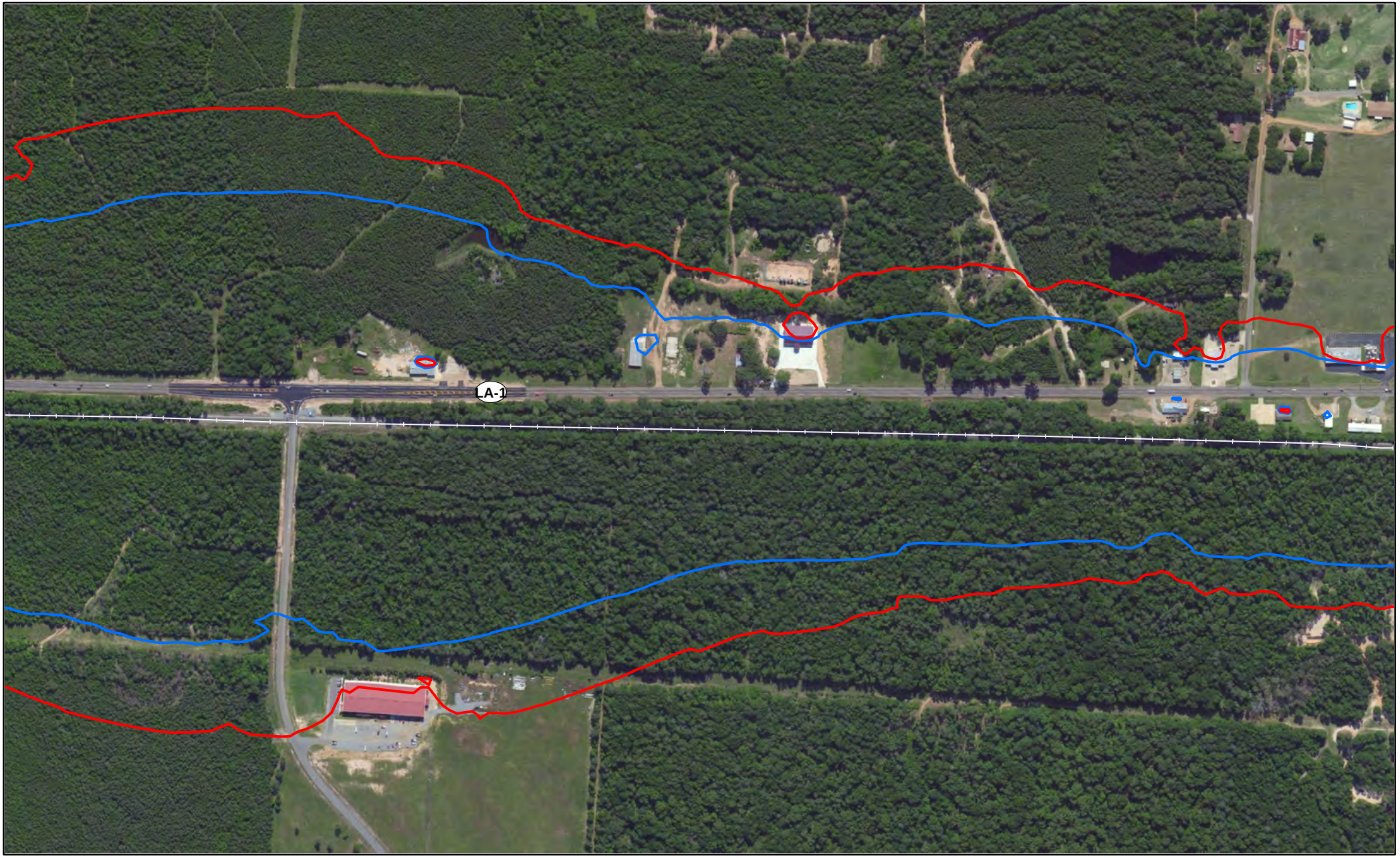
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Noise Contours
Caddo Parish, LA

Miles
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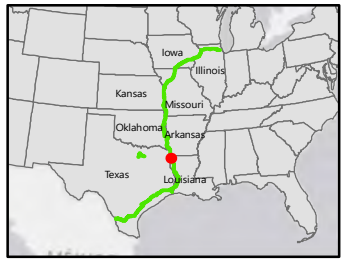
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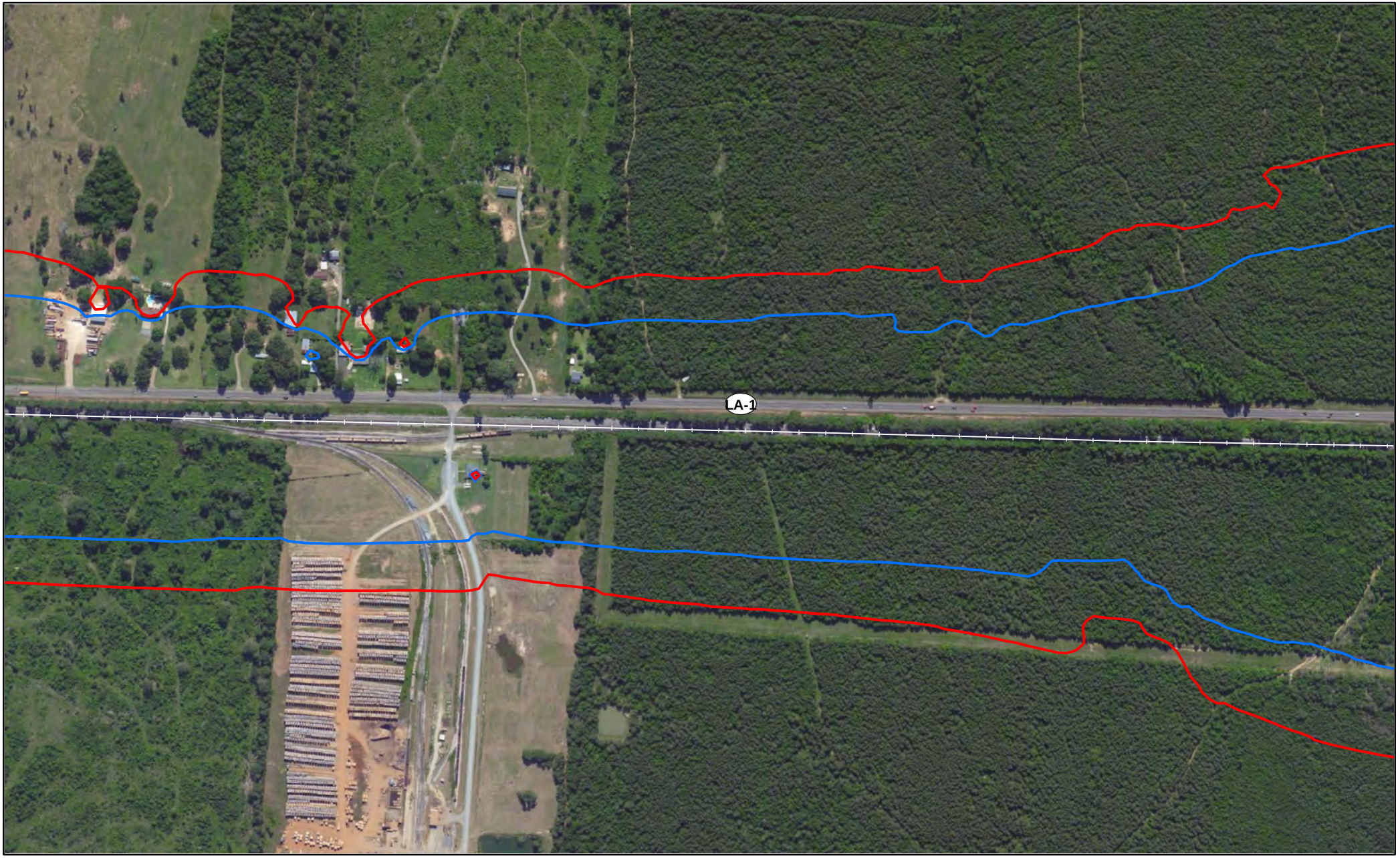


Noise Contours
Caddo Parish, LA

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



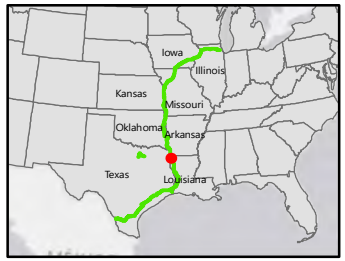
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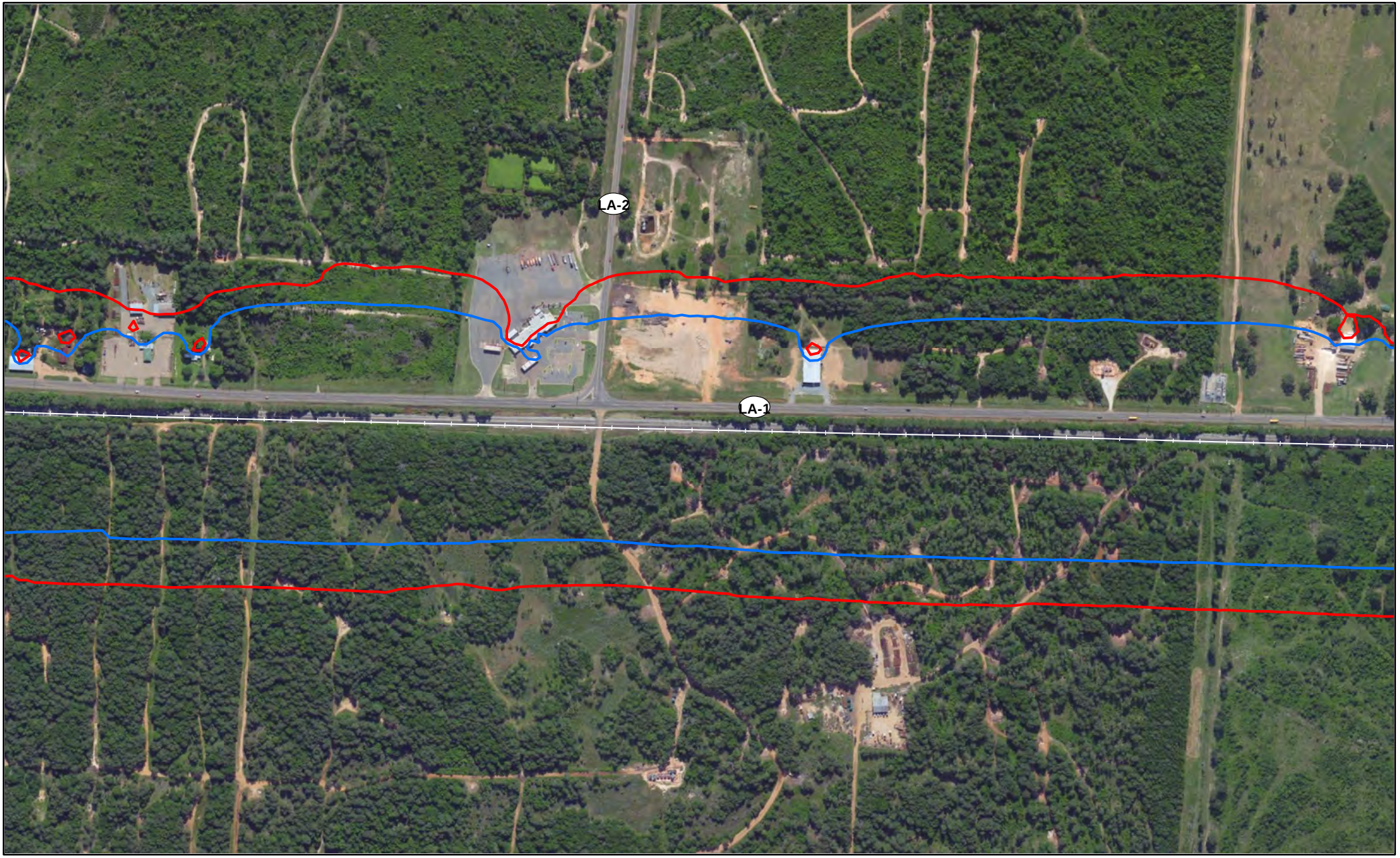
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Noise Contours
Caddo Parish, LA

Miles
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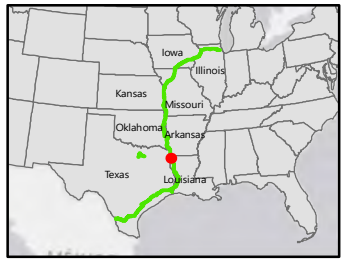
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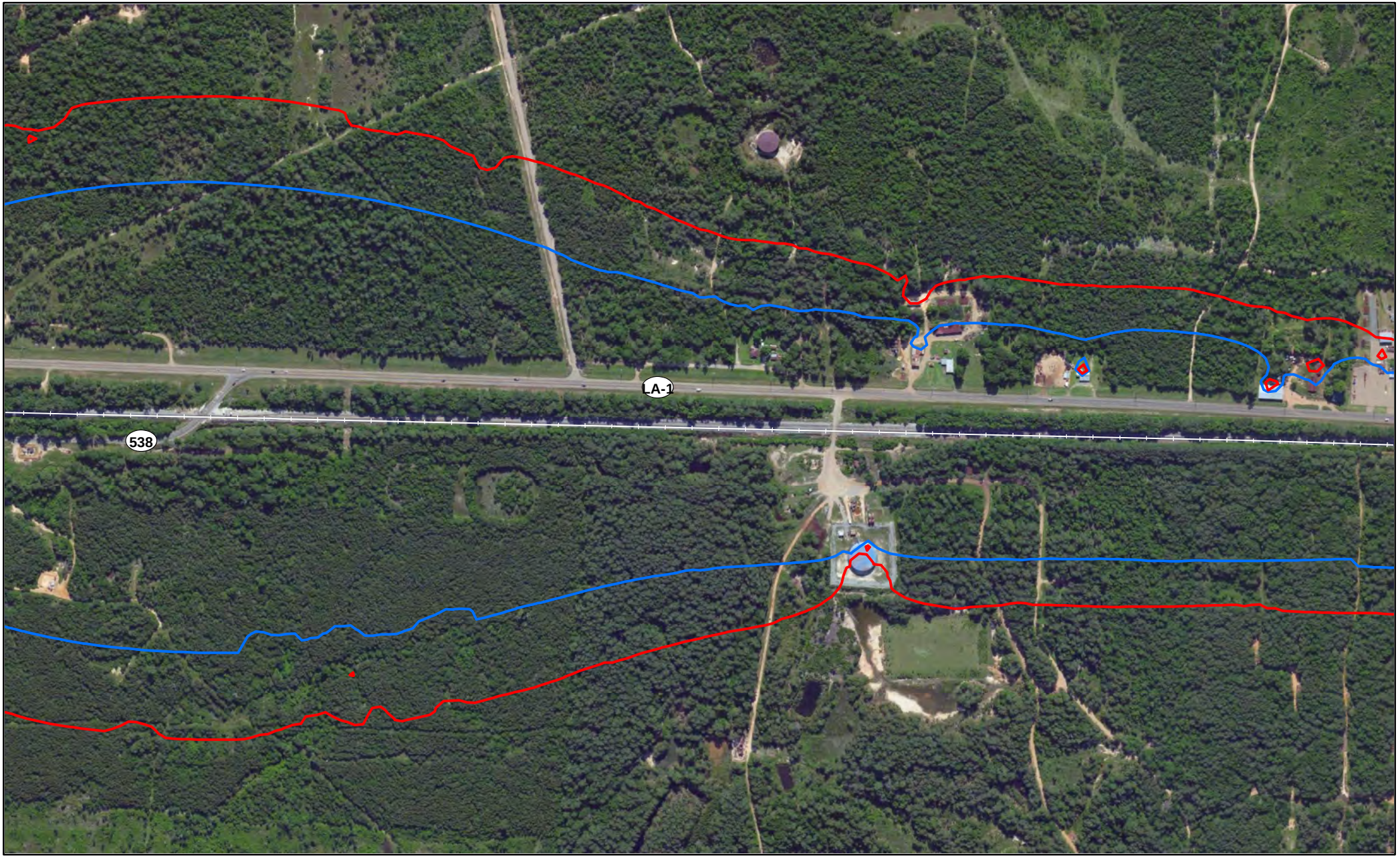
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Noise Contours
Caddo Parish, LA

Miles
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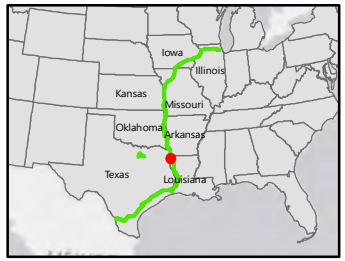
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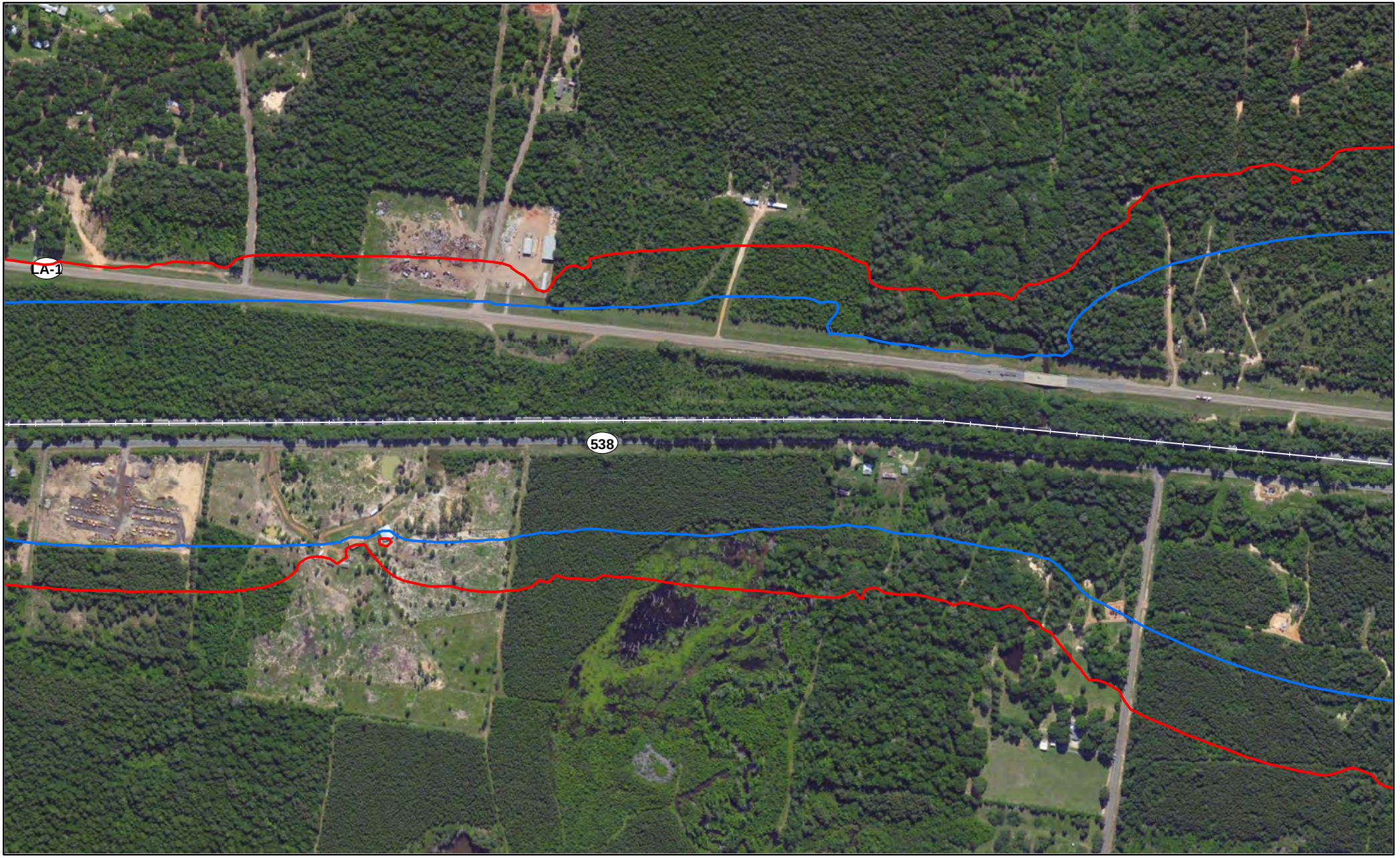
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Noise Contours
Caddo Parish, LA

Miles
0 0.05 0.1



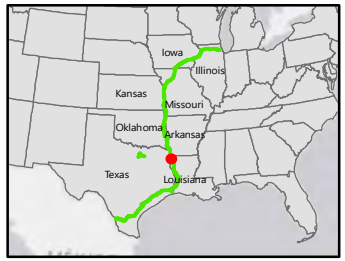
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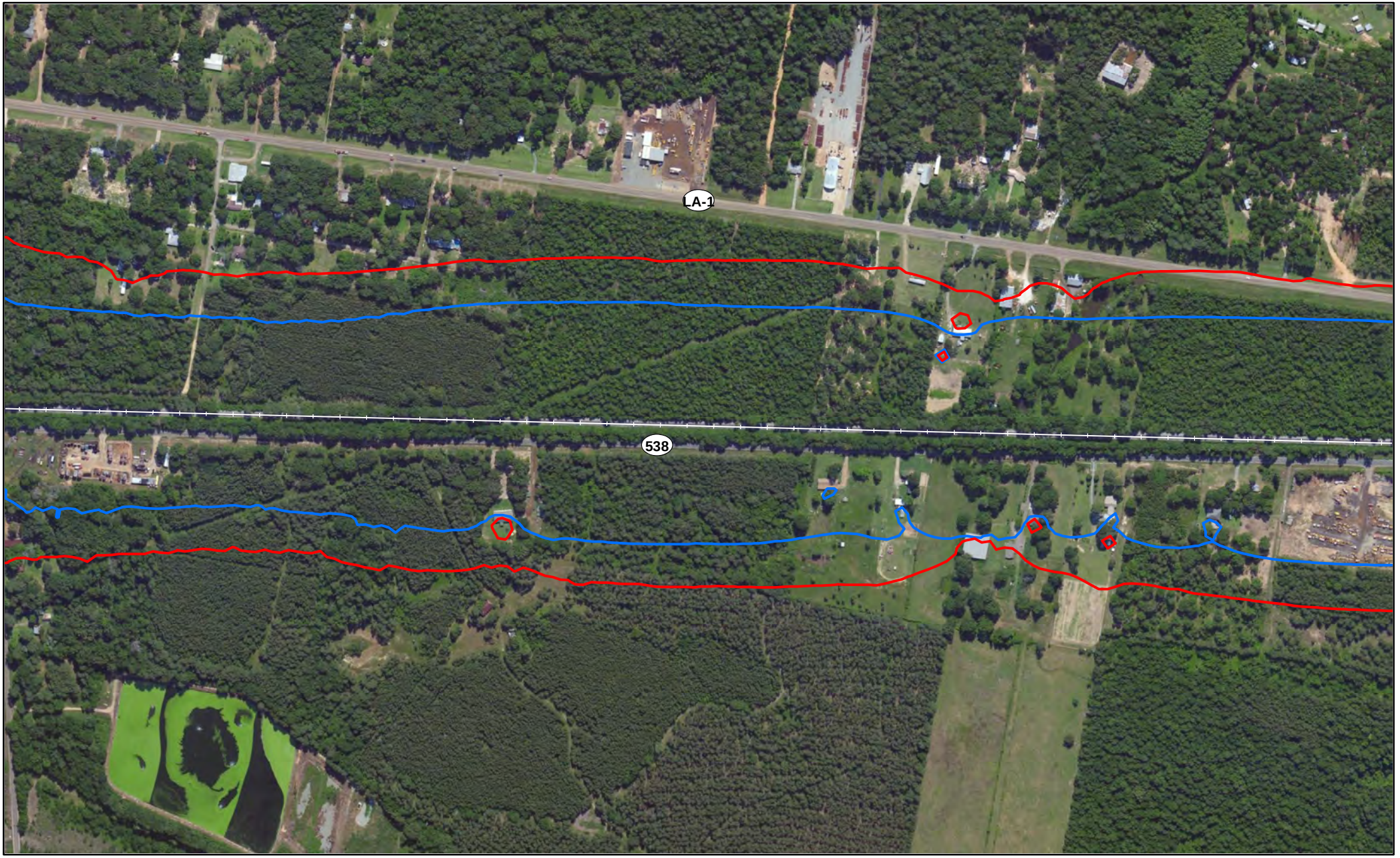
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Noise Contours
Caddo Parish, LA

Miles
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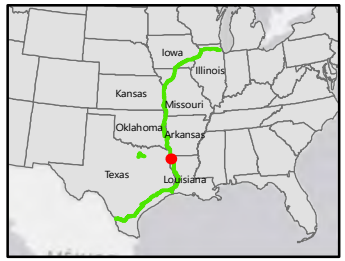
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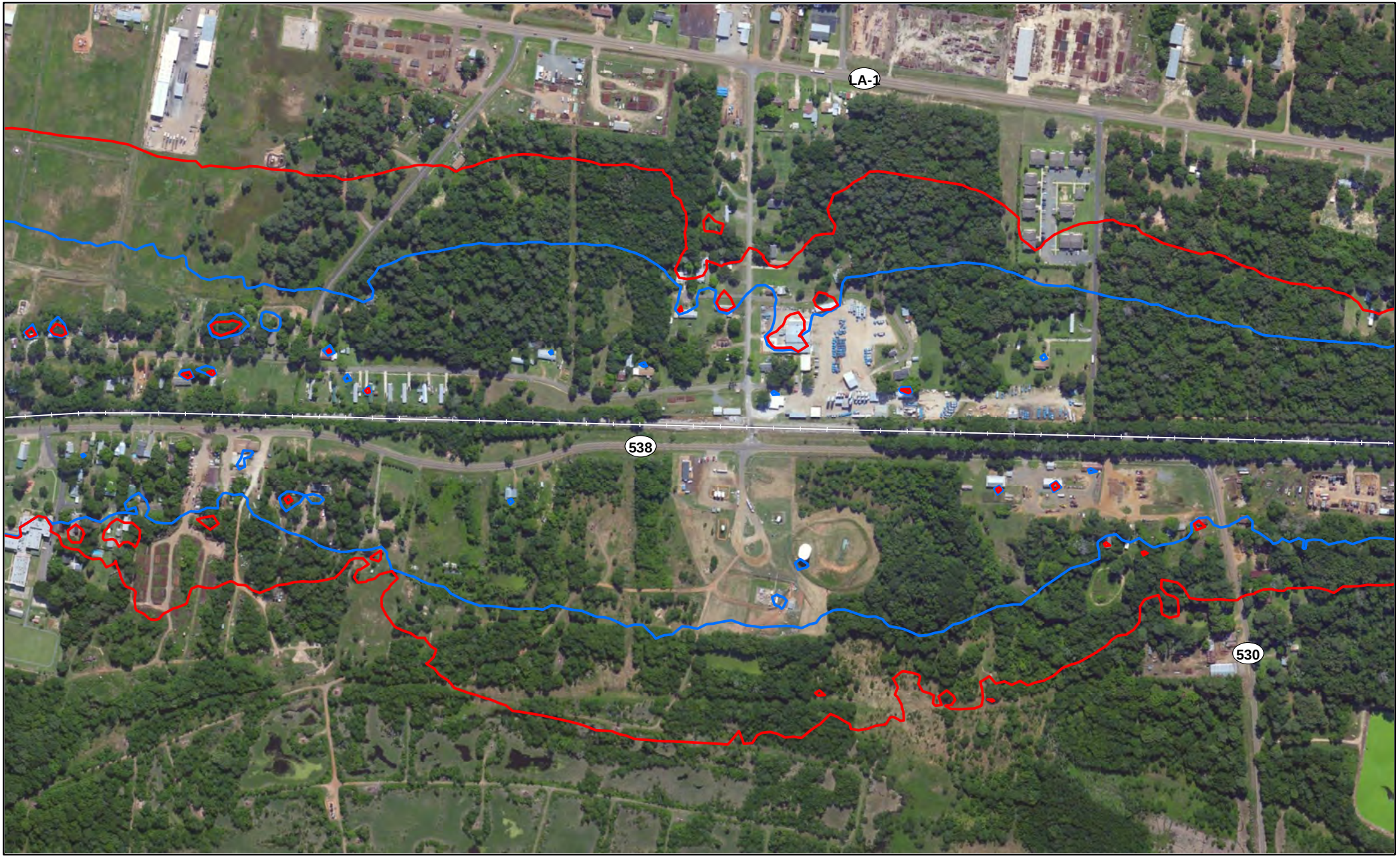
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Noise Contours
Caddo Parish, LA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



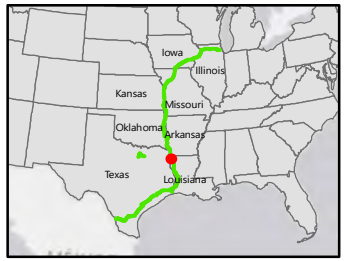
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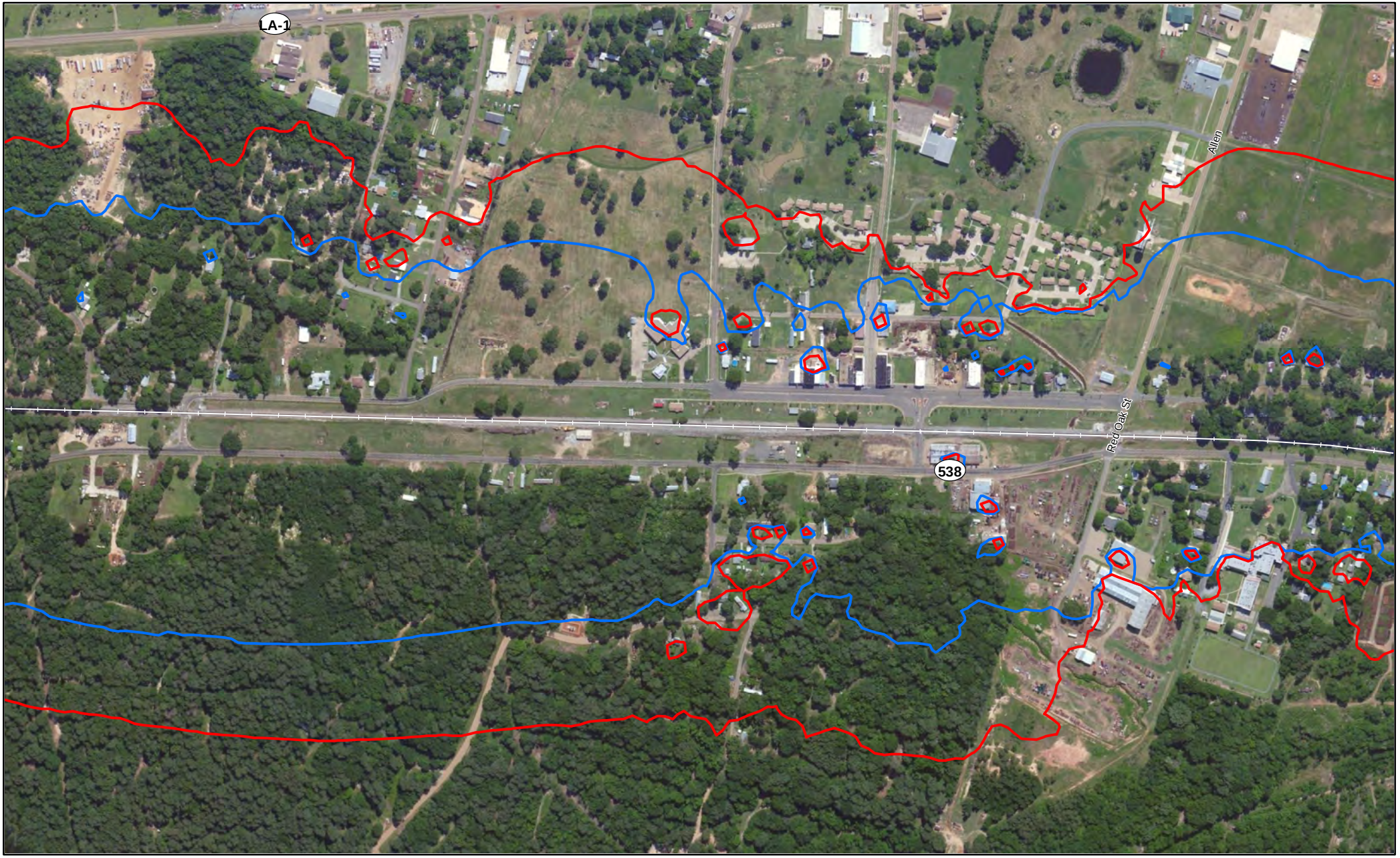
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Noise Contours
Caddo Parish, LA

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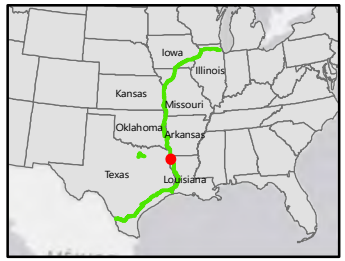
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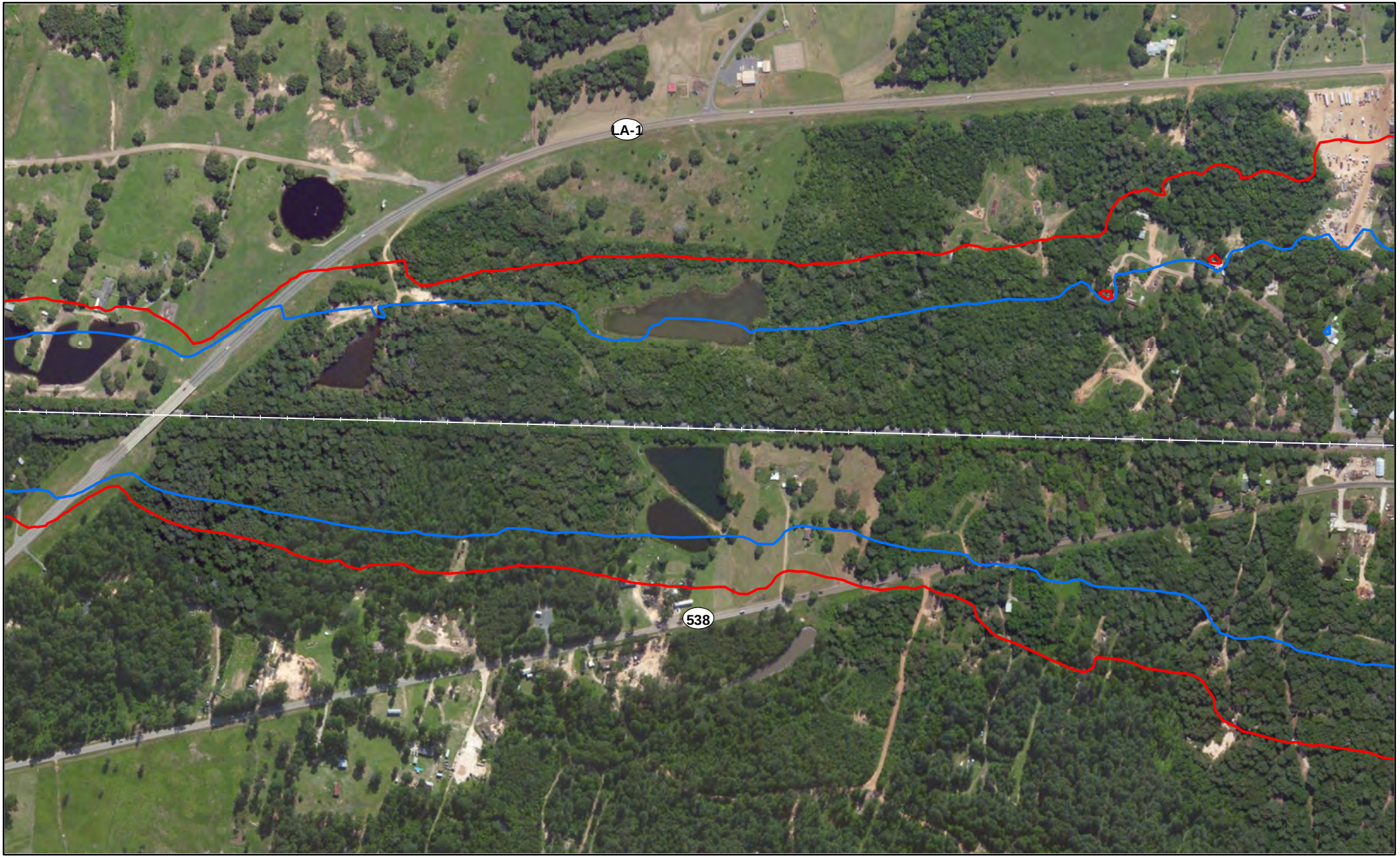
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Caddo Parish, LA

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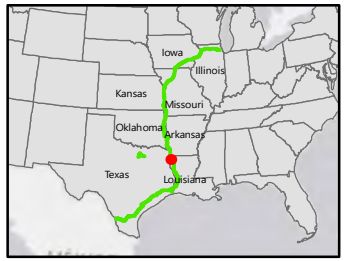
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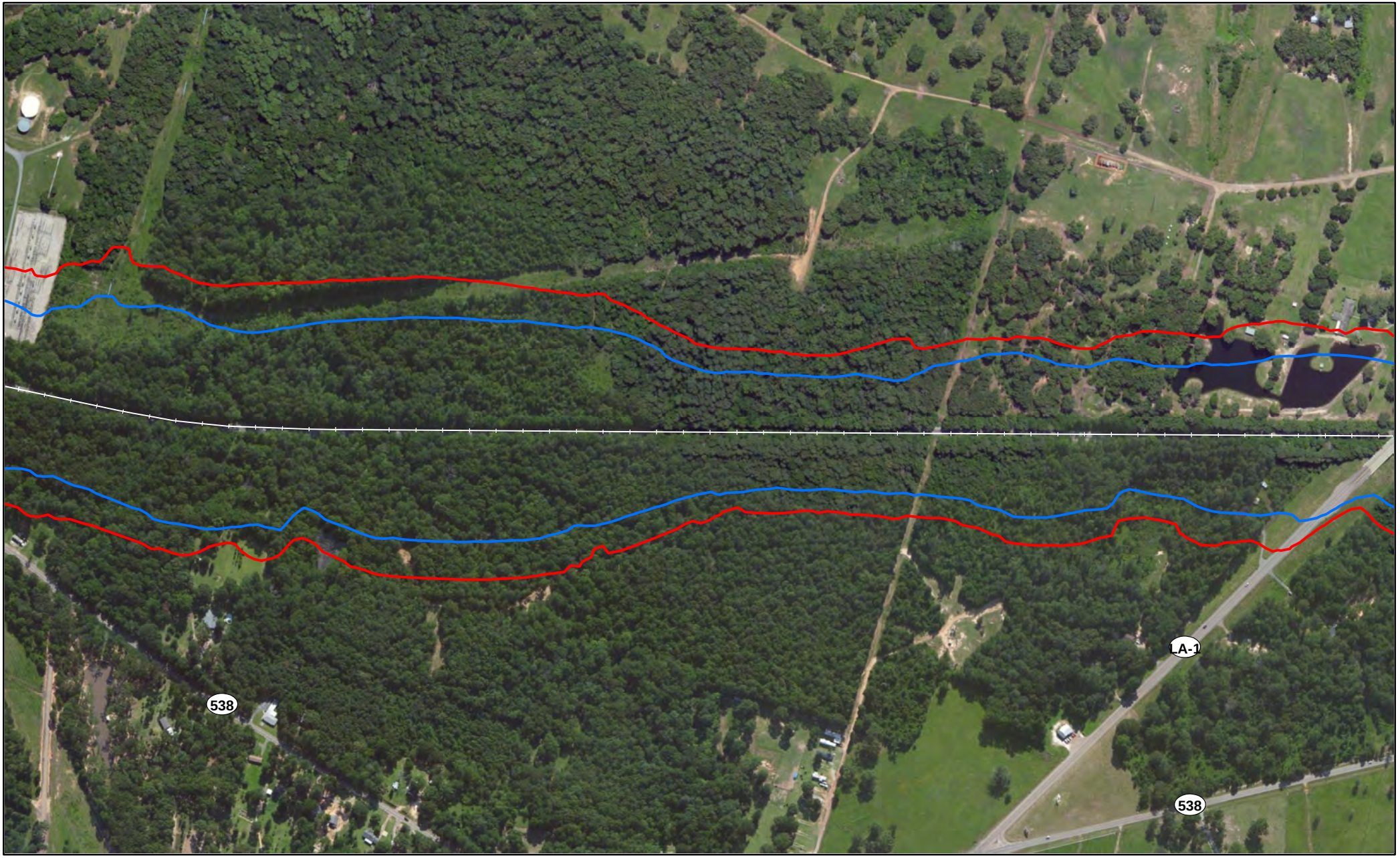
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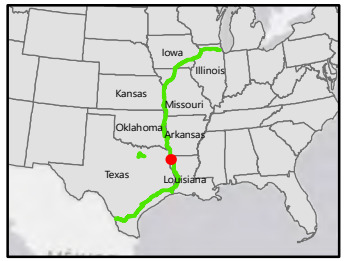
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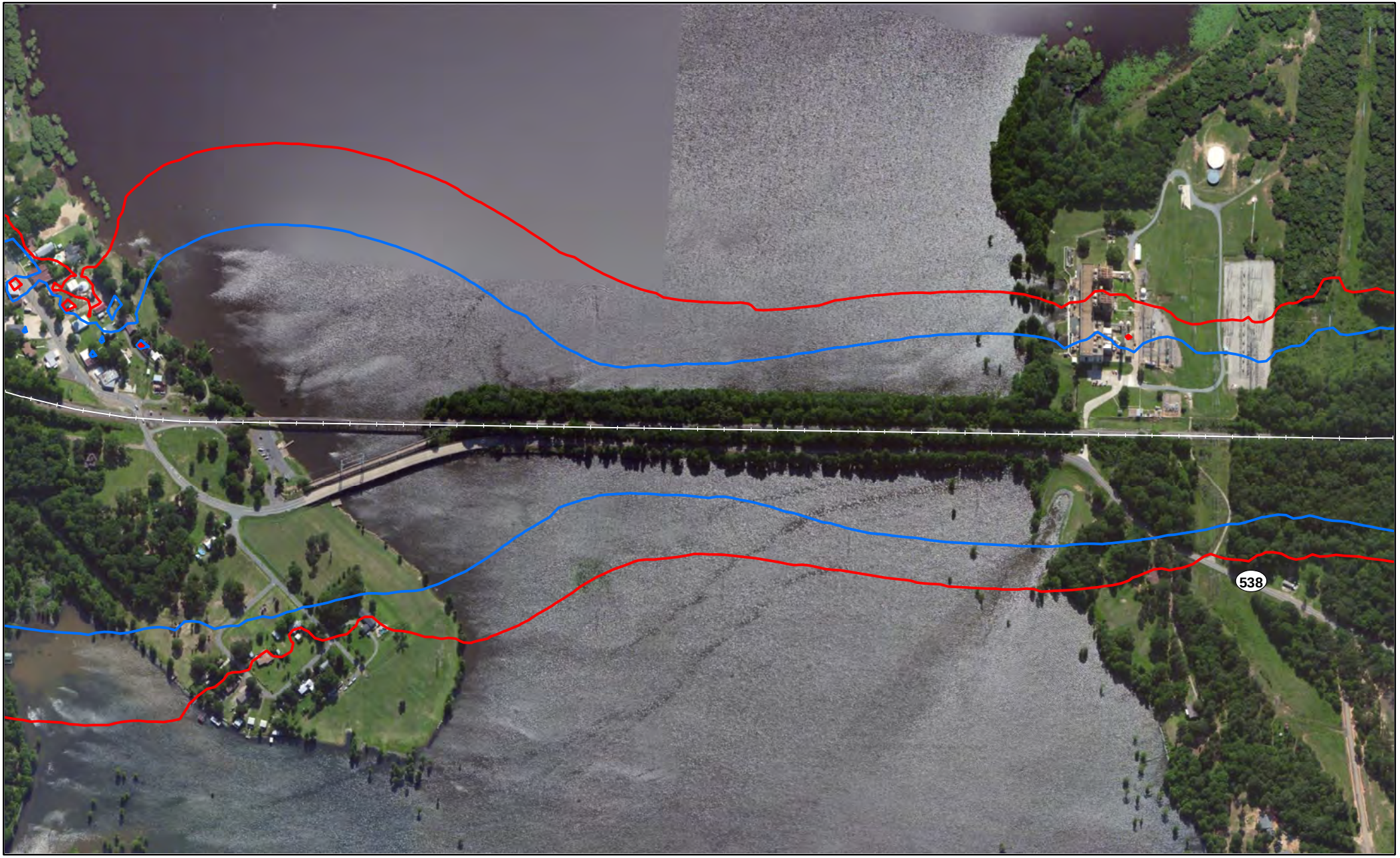
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Noise Contours
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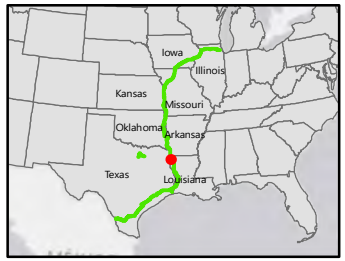
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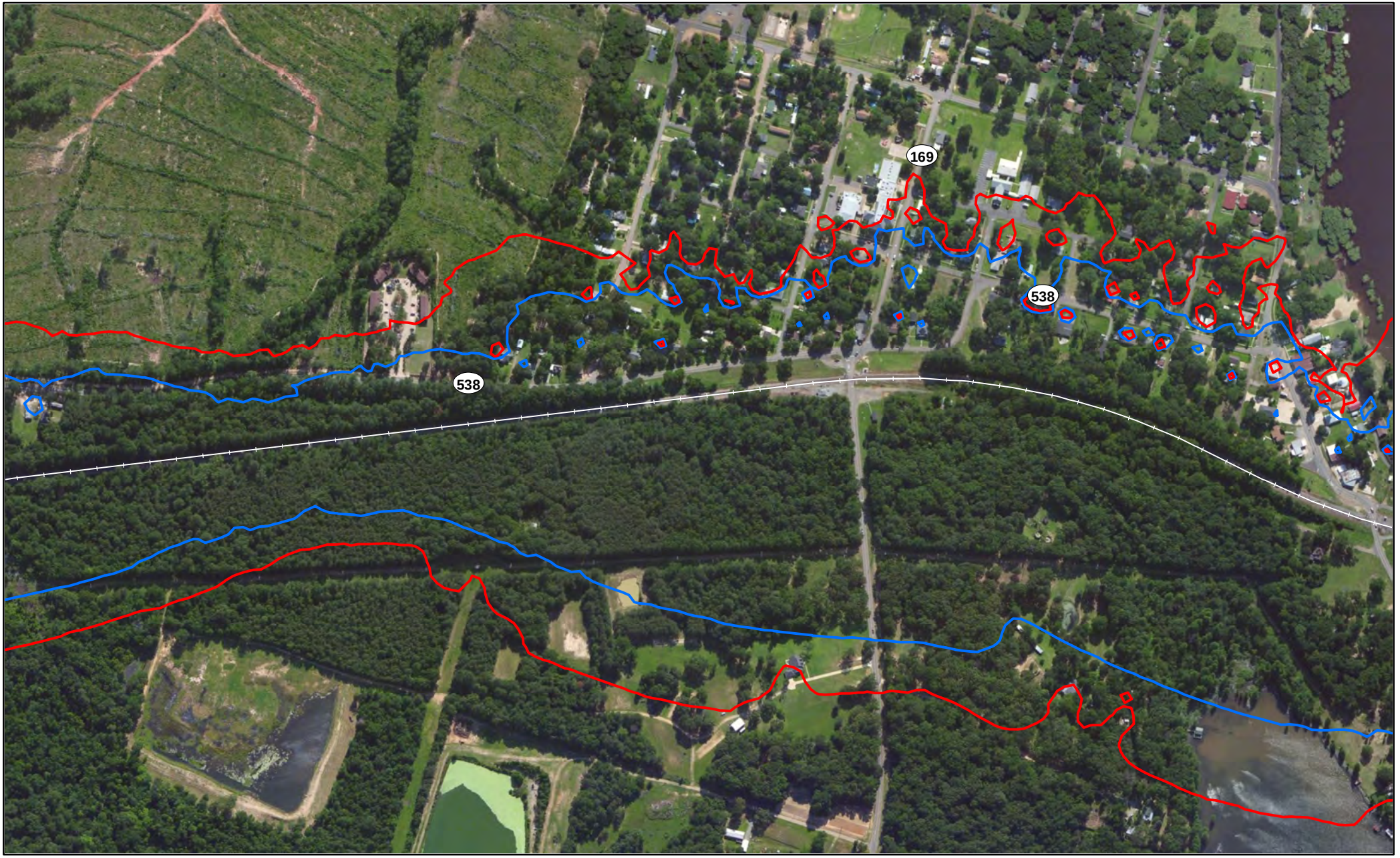
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Noise Contours
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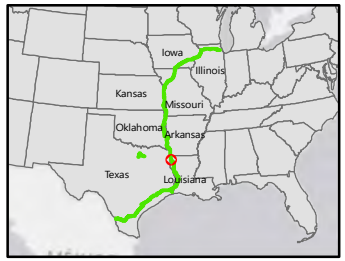
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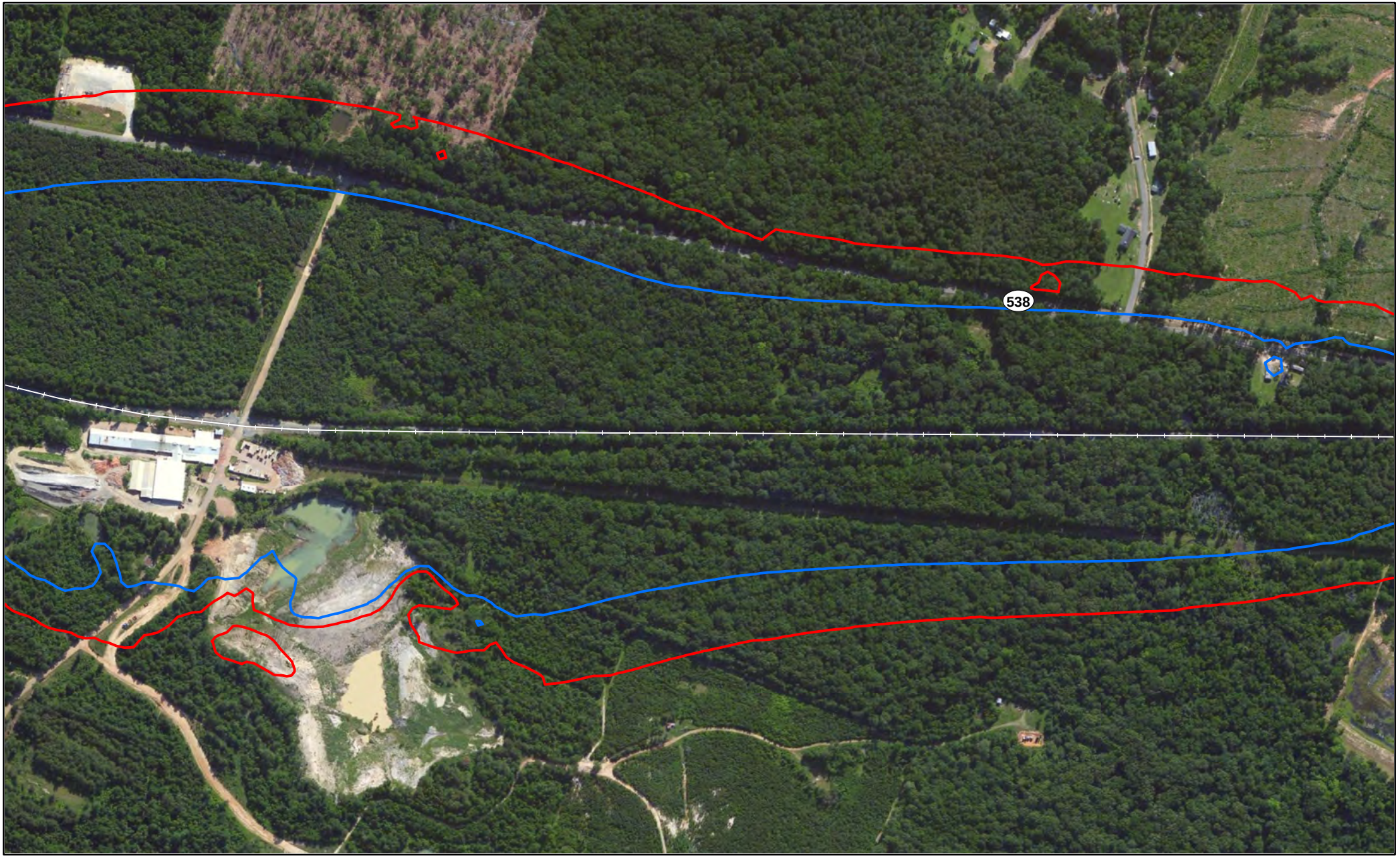
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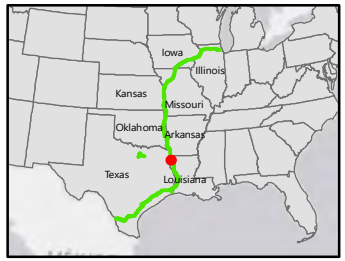
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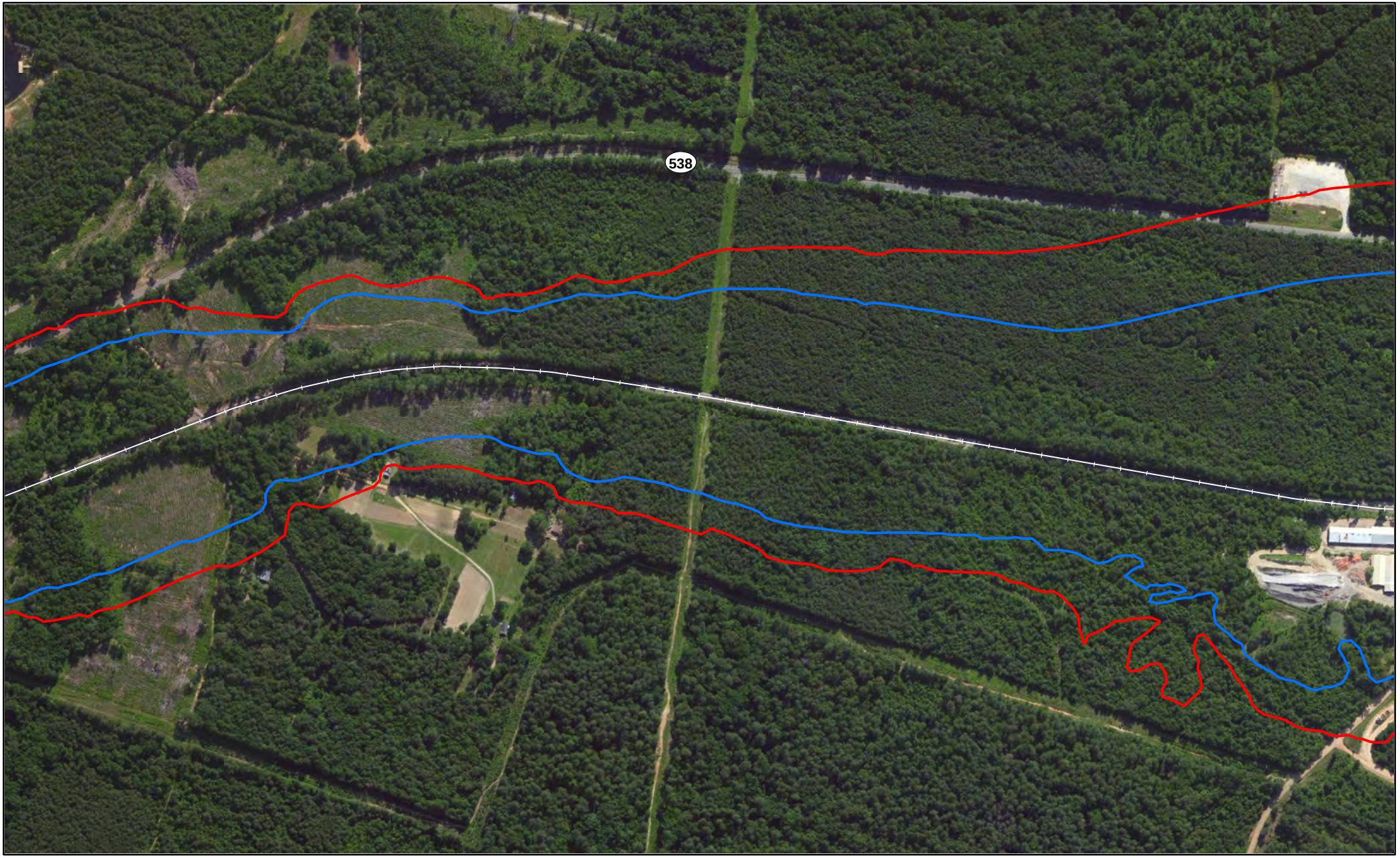
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



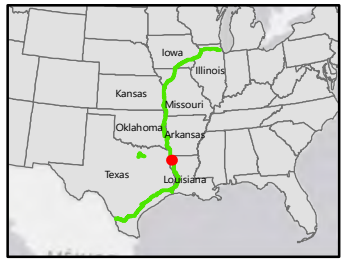
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

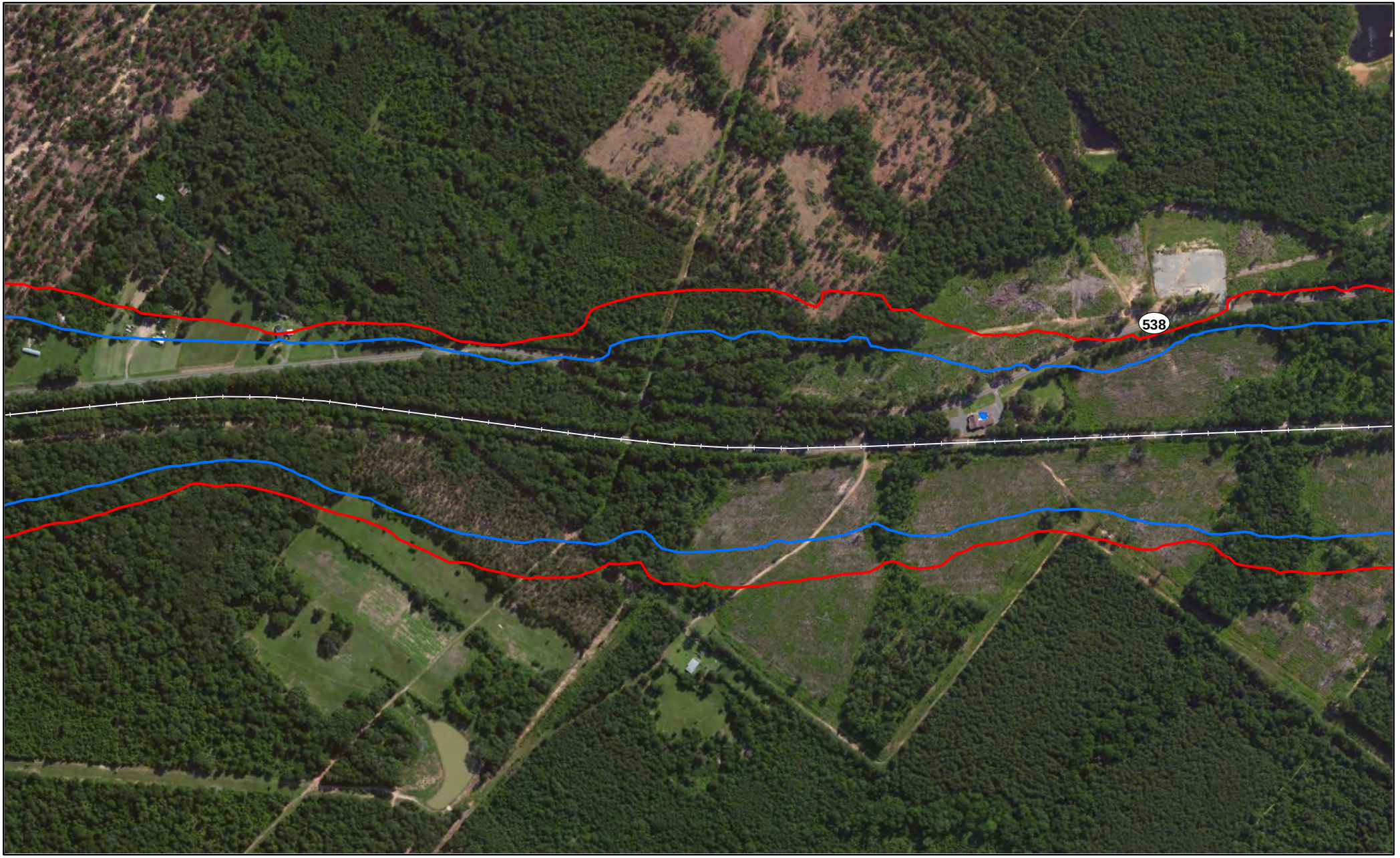
Tracks

Source: ESRI.



Noise Contours
Caddo Parish, LA

Miles
0 0.05 0.1



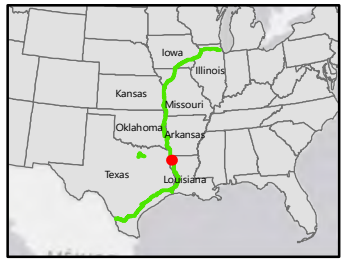
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Noise Contours
Caddo Parish, LA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



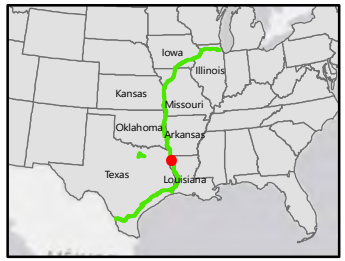
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Noise Contours
Caddo Parish, LA

Miles
0 0.05 0.1



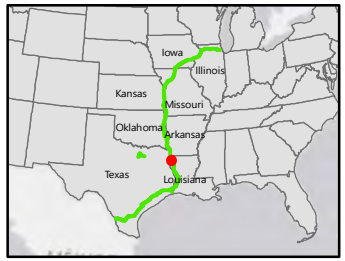
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Noise Contours
Caddo Parish, LA

Miles
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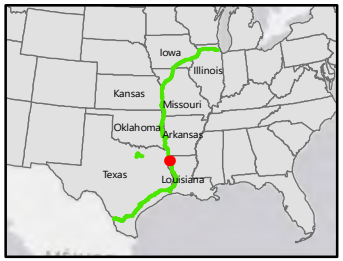
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Noise Contours
Caddo Parish, LA

Miles
0 0.05 0.1



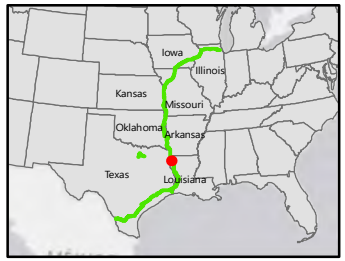
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Noise Contours
Caddo Parish, LA

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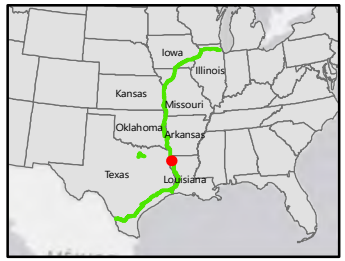
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Noise Contours
Caddo Parish, LA

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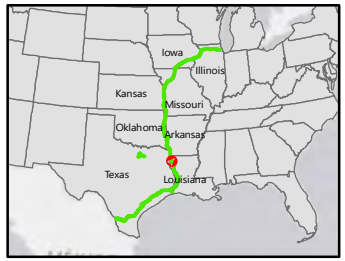
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Noise Contours
Caddo Parish, LA

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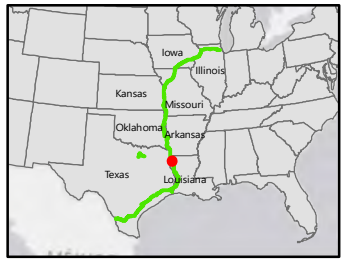
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Caddo Parish, LA

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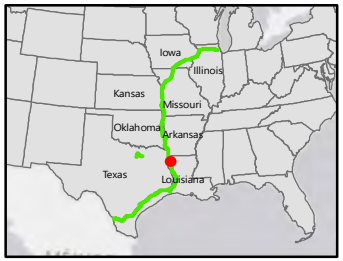
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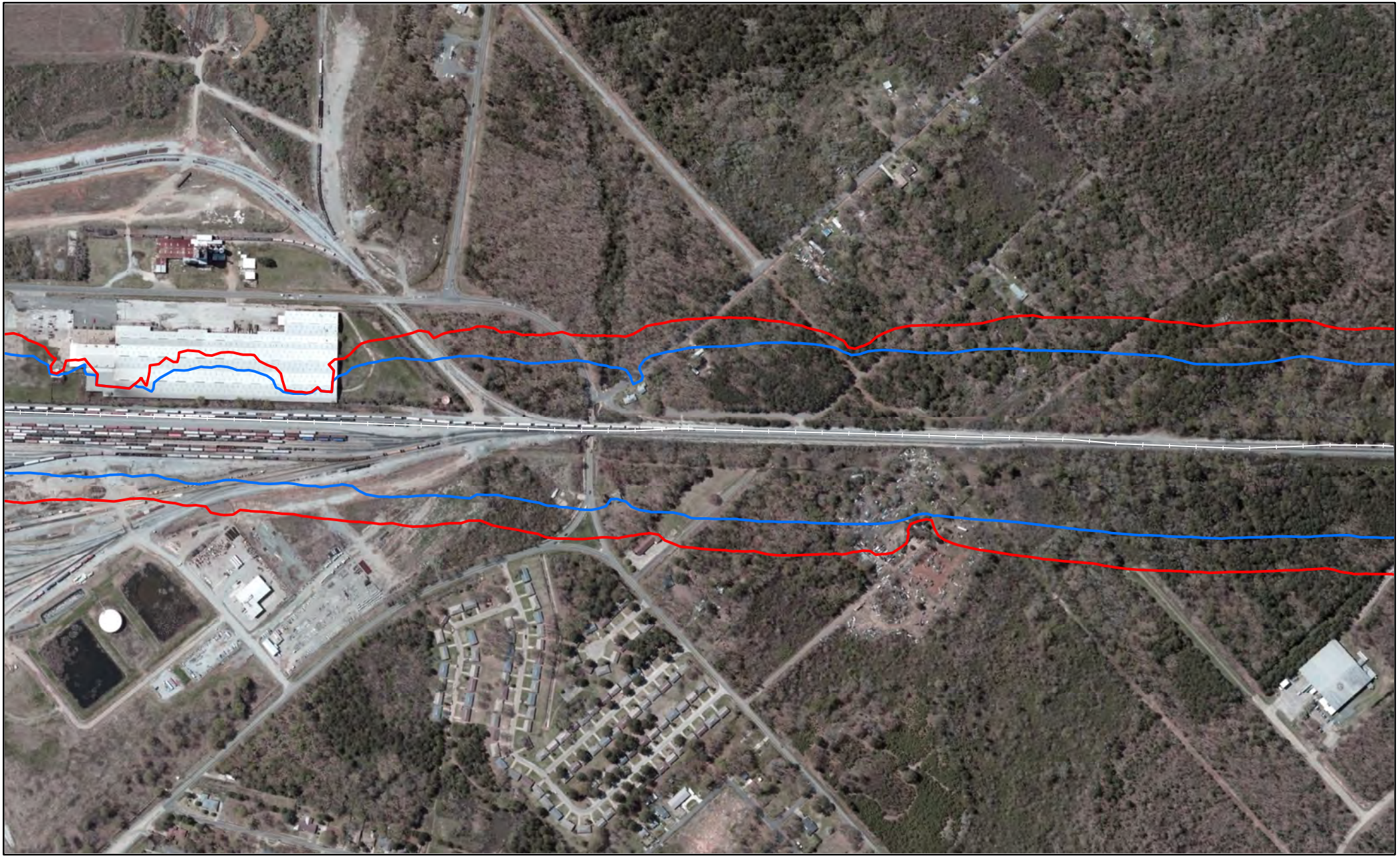
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Noise Contours
Caddo Parish, LA

Miles
0 0.05 0.1



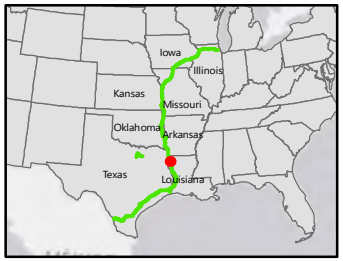
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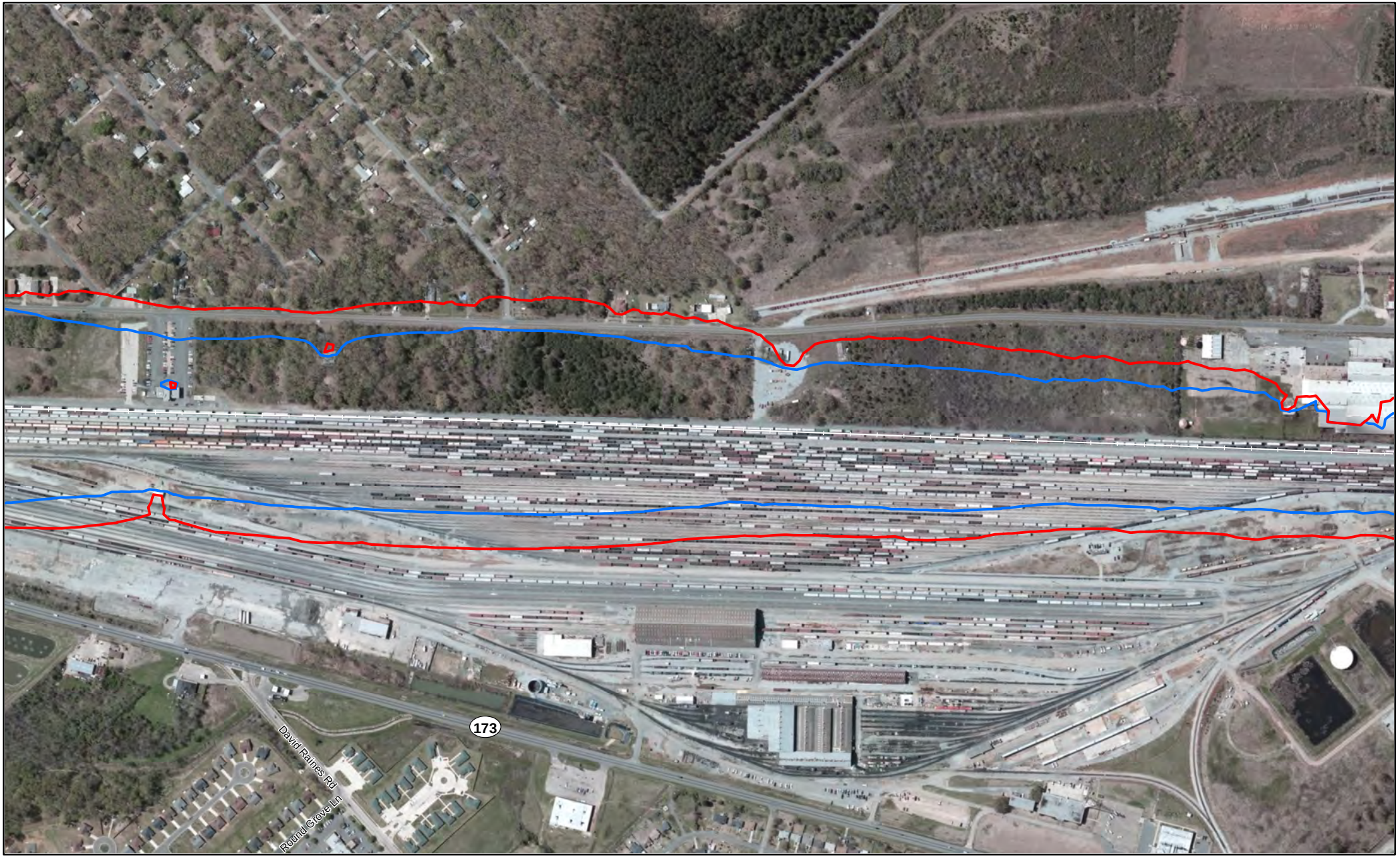
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Noise Contours
Caddo Parish, LA

Miles
0 0.05 0.1

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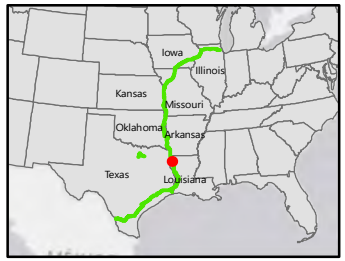
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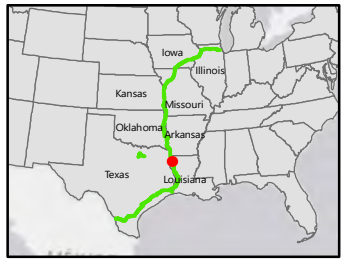
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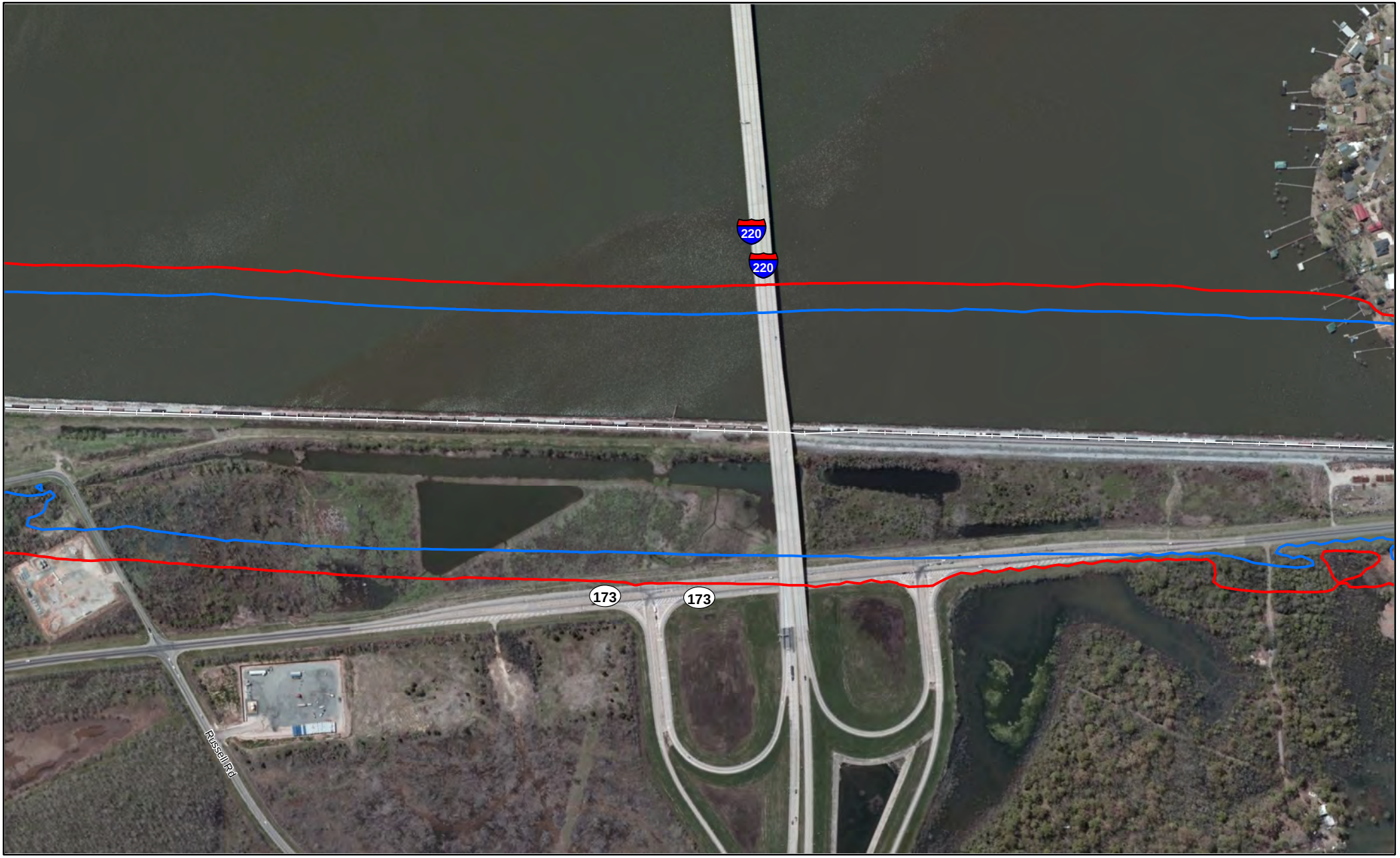
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Noise Contours
Caddo Parish, LA

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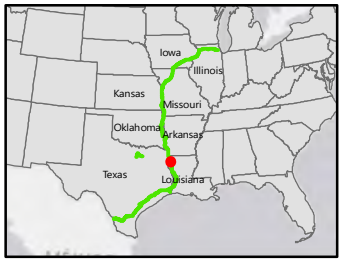
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Caddo Parish, LA

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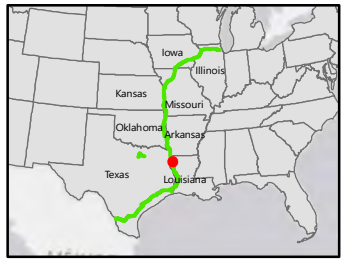
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Caddo Parish, LA

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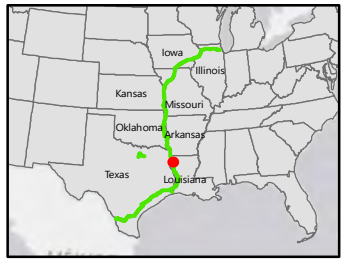
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Caddo Parish, LA

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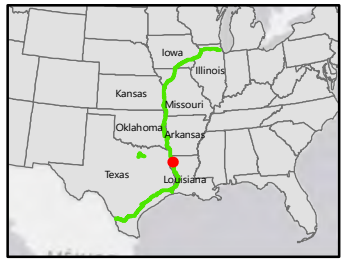
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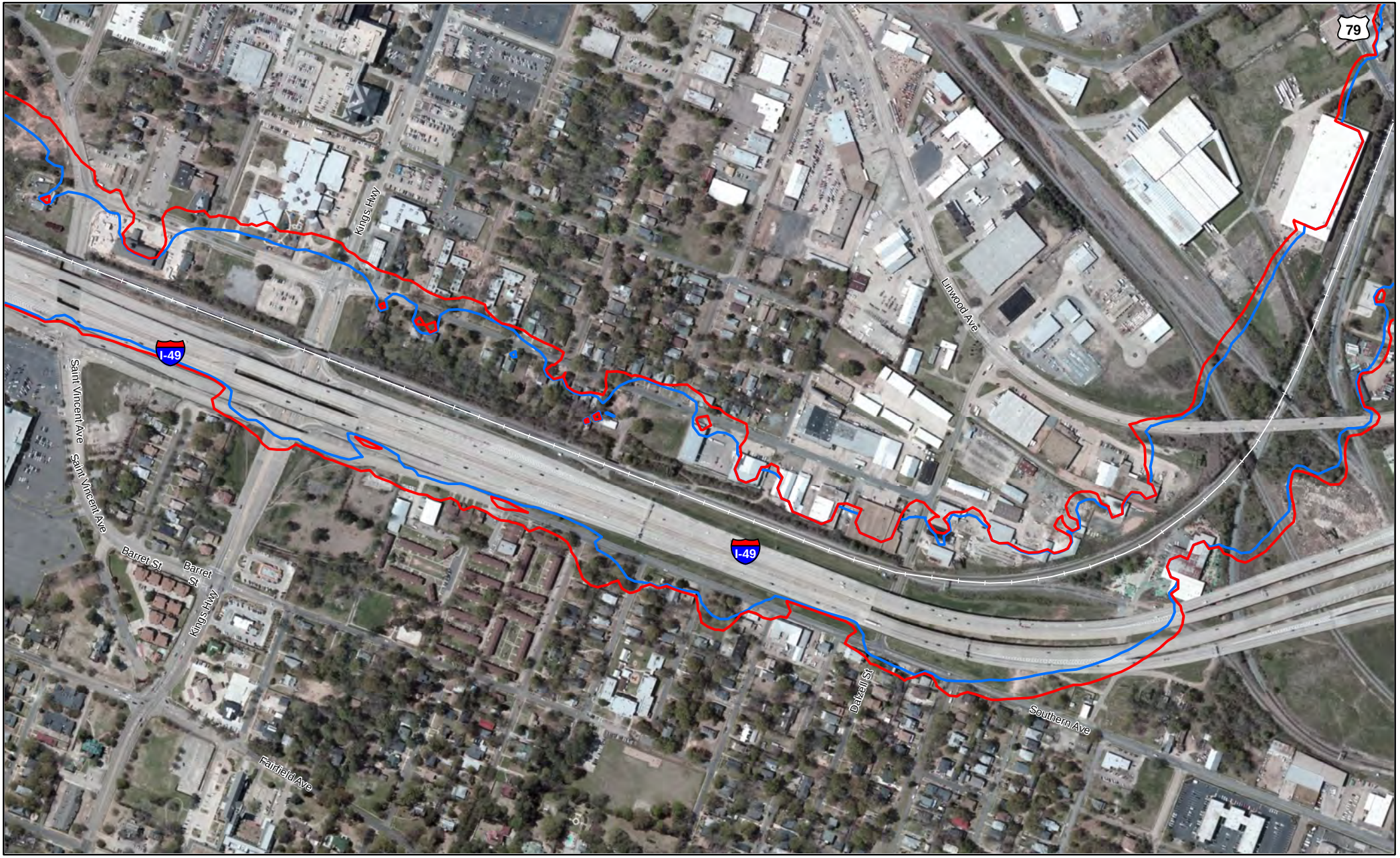
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Noise Contours
Caddo Parish, LA

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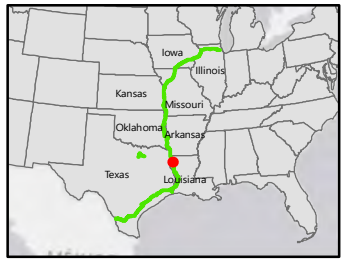
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Noise Contours
Caddo Parish, LA

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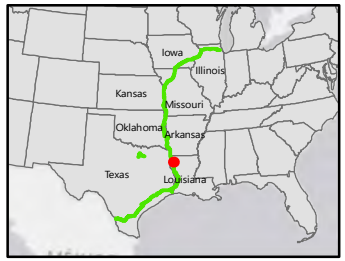
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Noise Contours
Caddo Parish, LA

Page 1030 of 1588

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



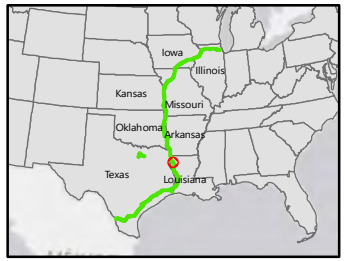
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Noise Contours
Caddo Parish, LA

Page 1031 of 1588

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



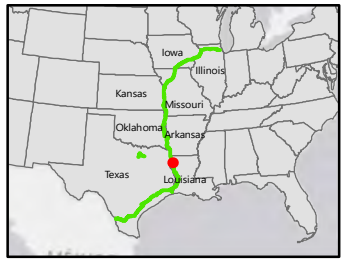
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Noise Contours
Caddo Parish, LA

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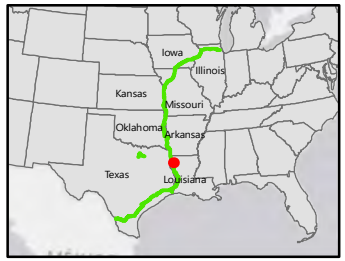
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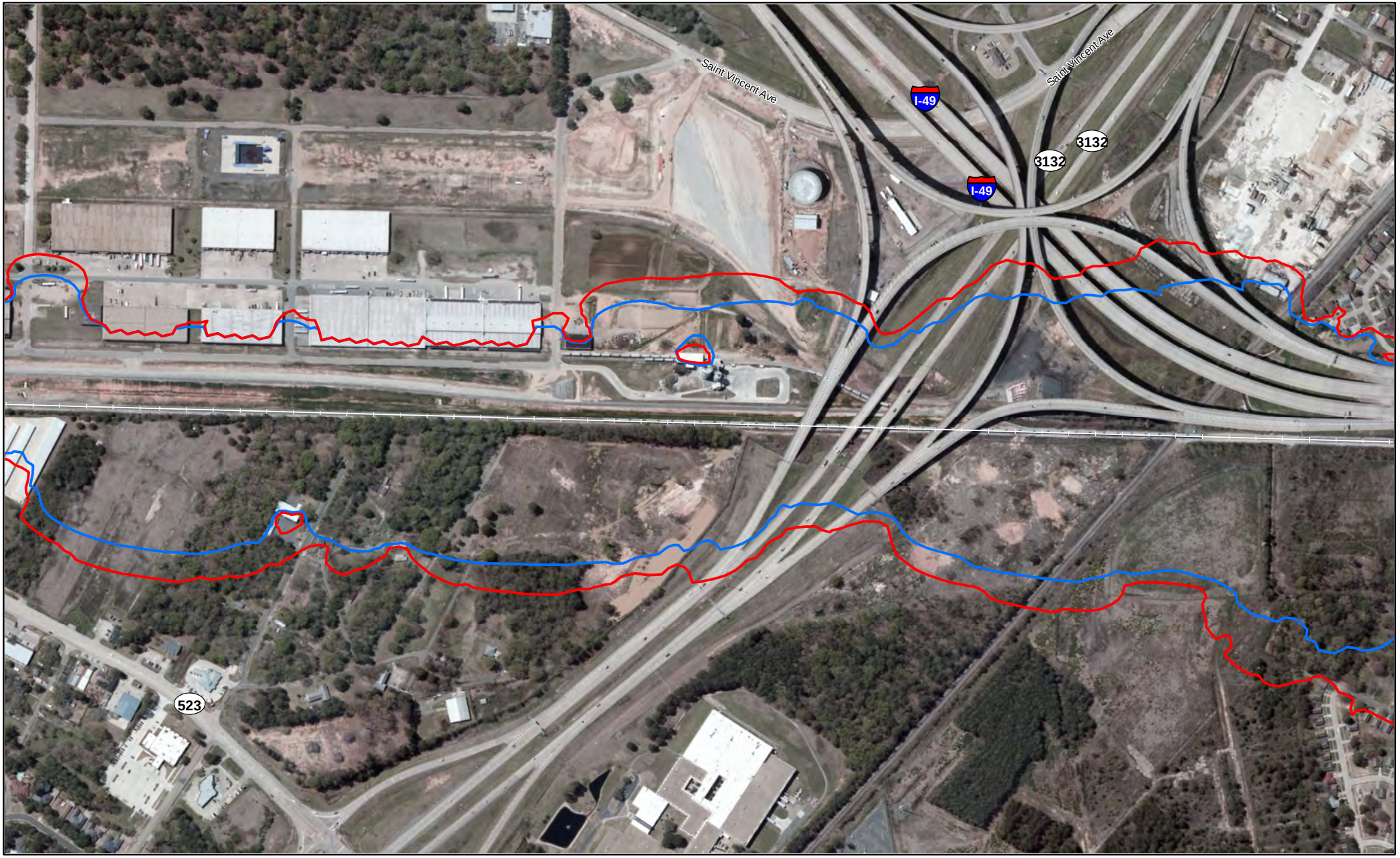
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Noise Contours
Caddo Parish, LA

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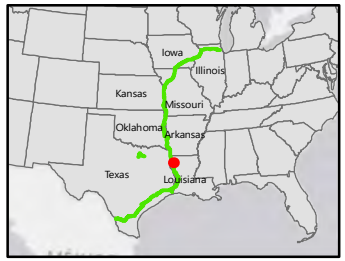
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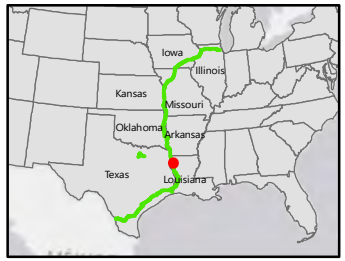
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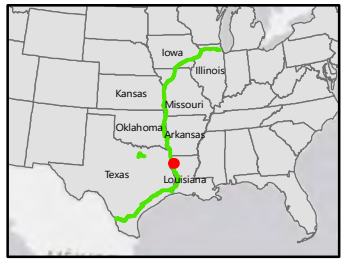
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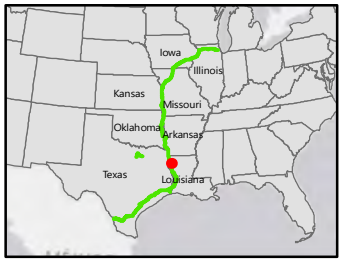
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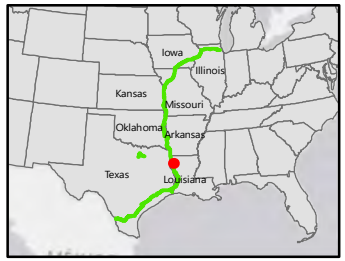
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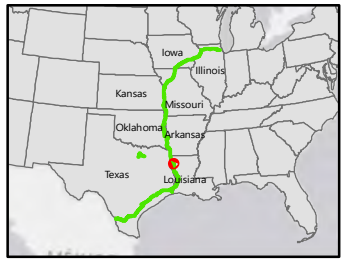
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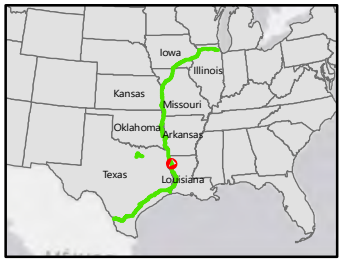
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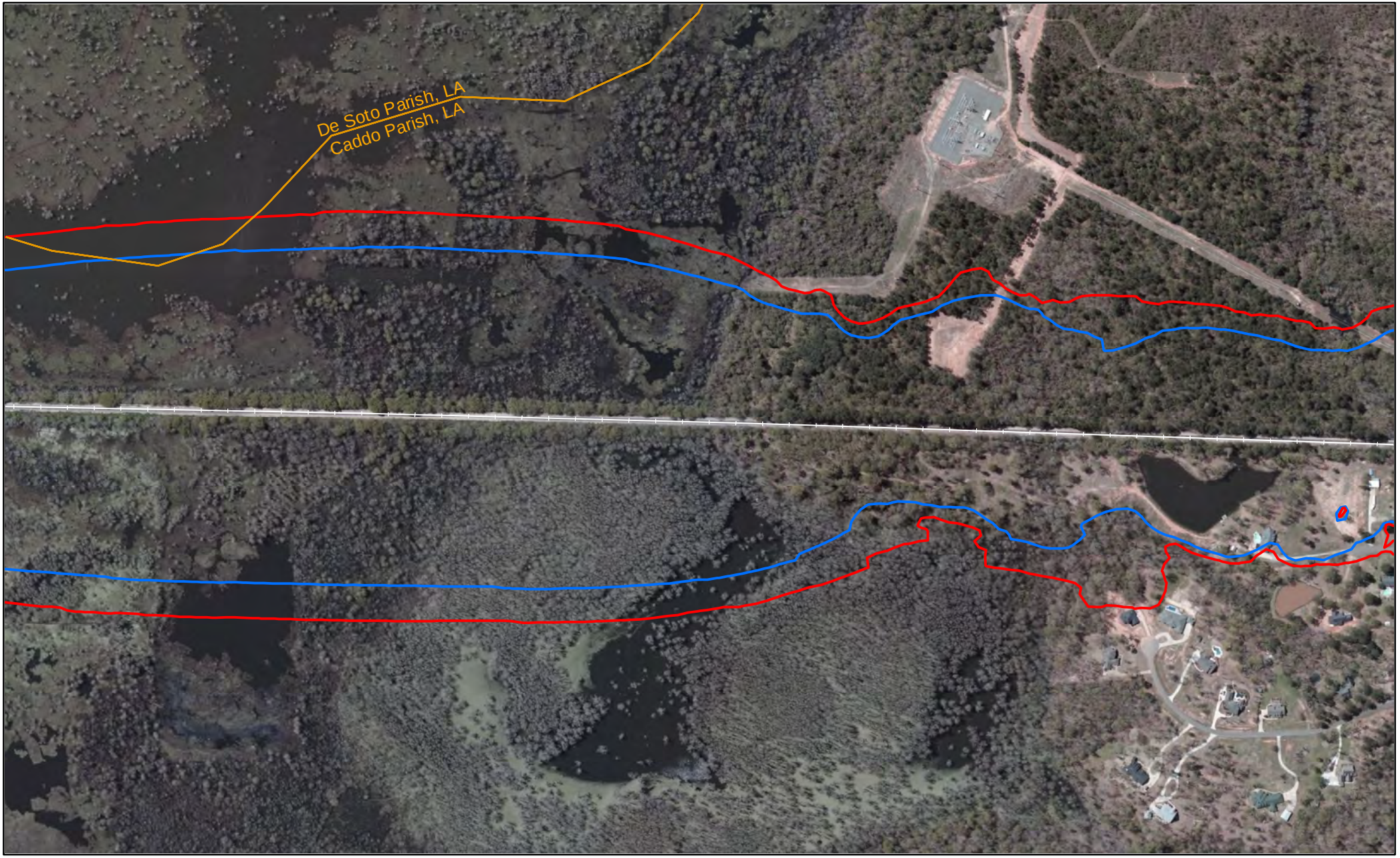
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Caddo Parish, LA

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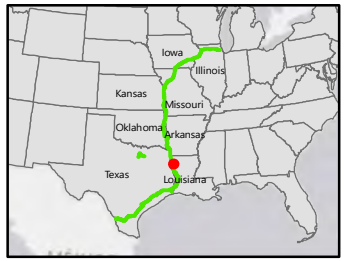
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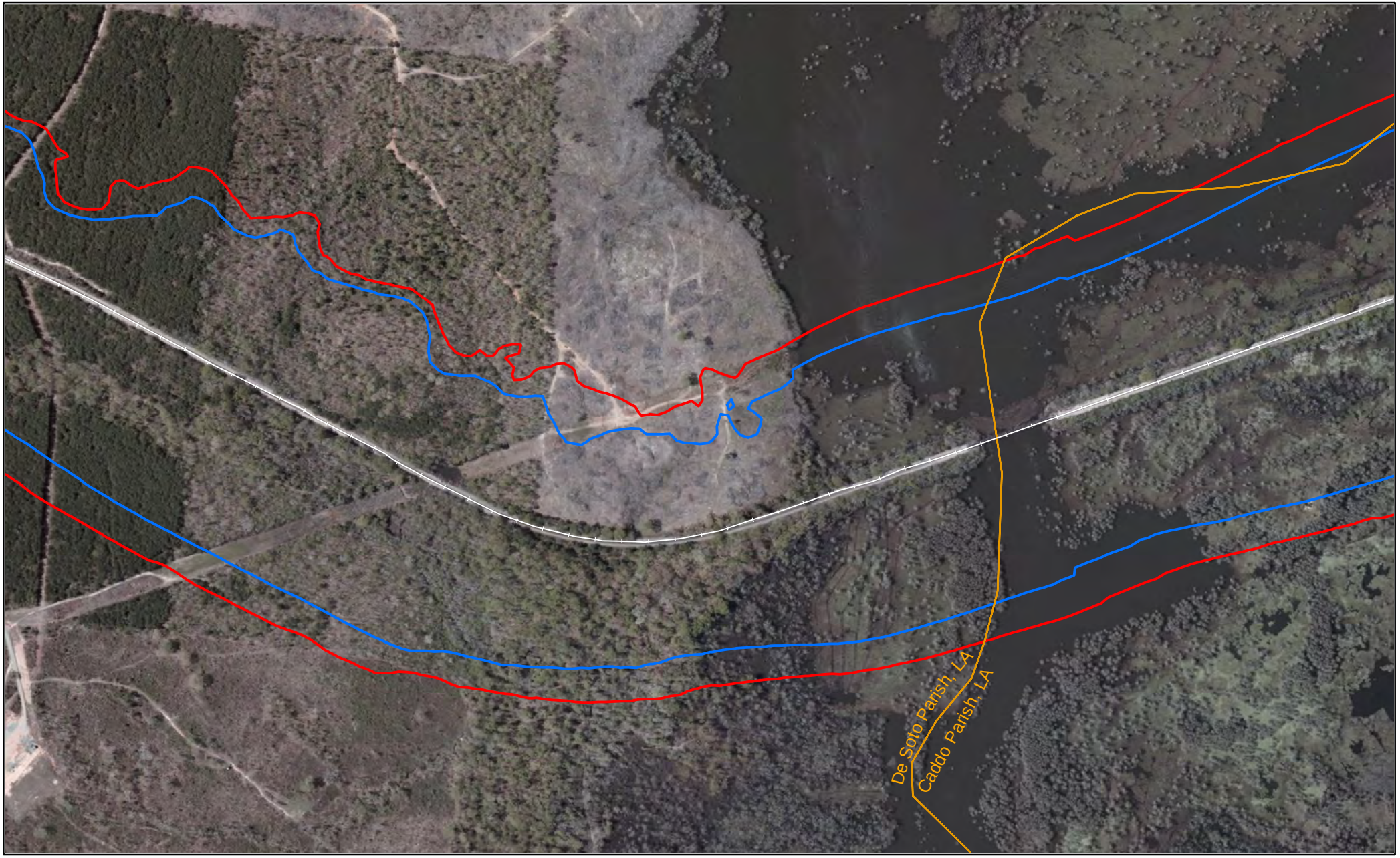
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Noise Contours
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0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



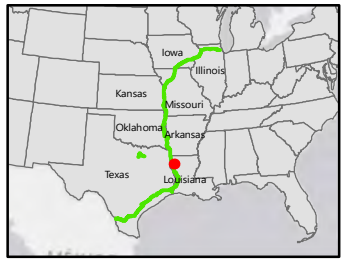
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
De Soto Parish, LA

Miles
0 0.05 0.1



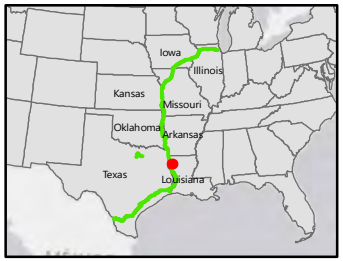
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Noise Contours
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Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



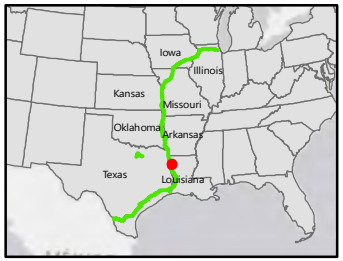
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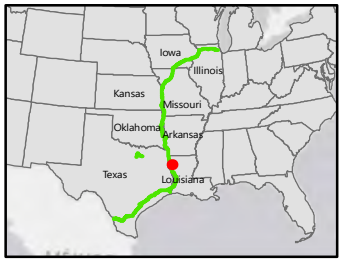
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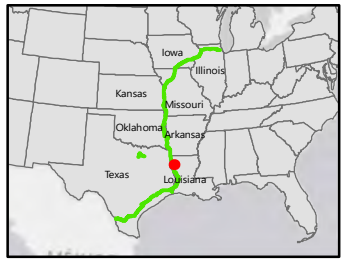
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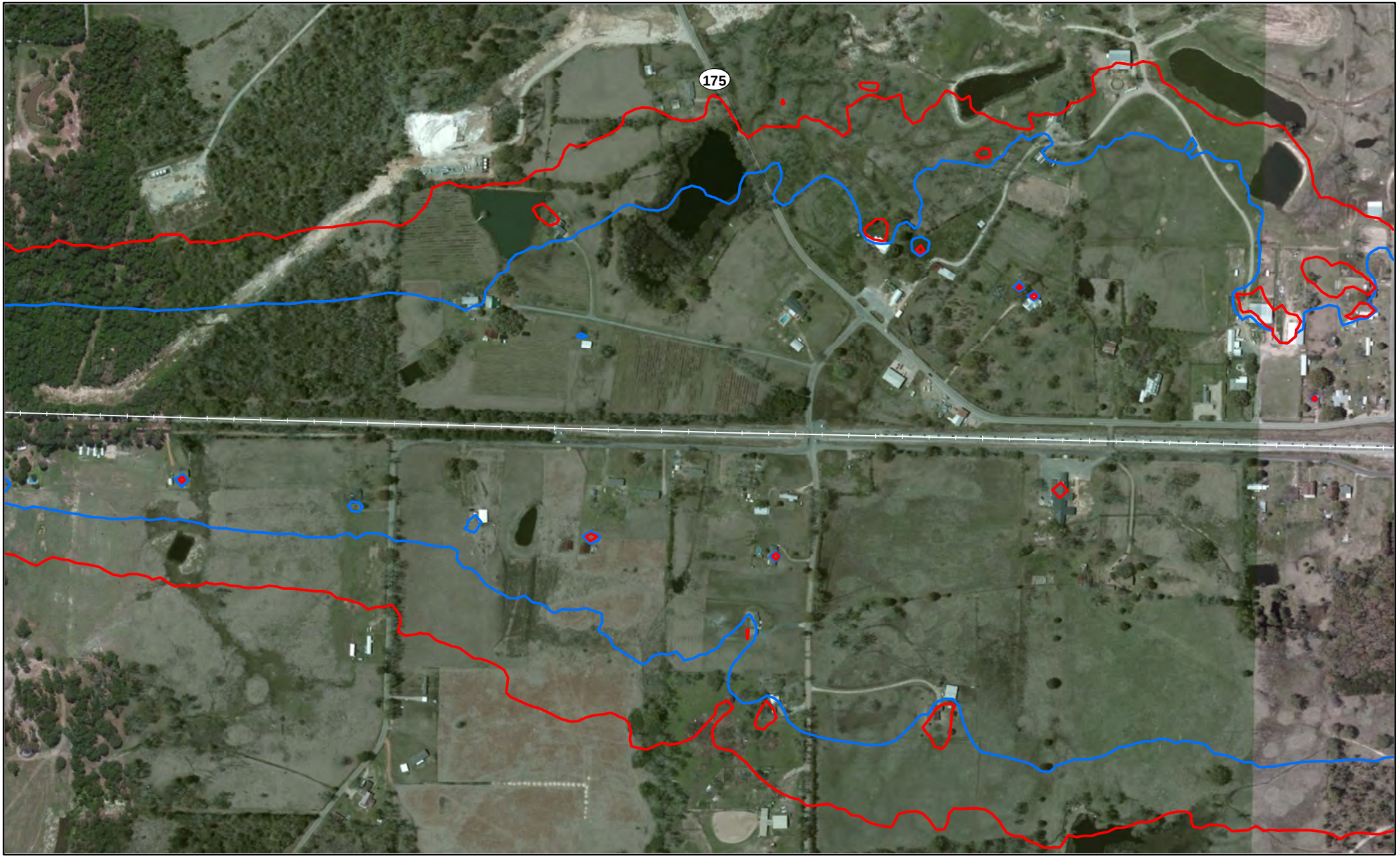
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Noise Contours
De Soto Parish, LA

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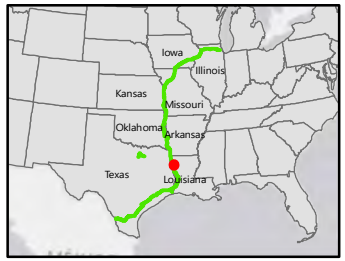
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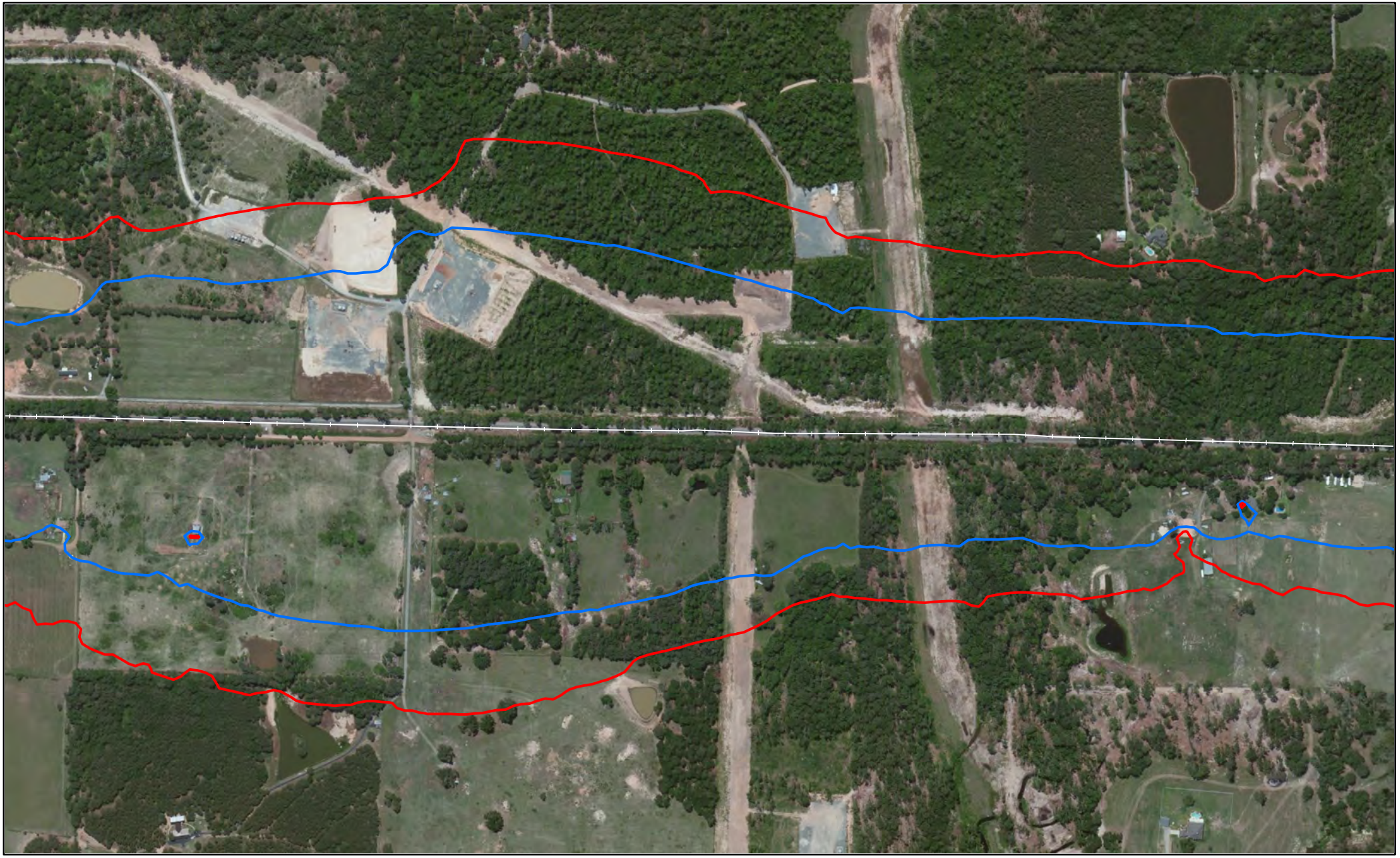
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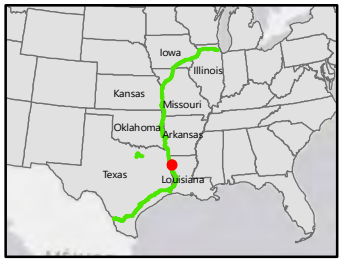
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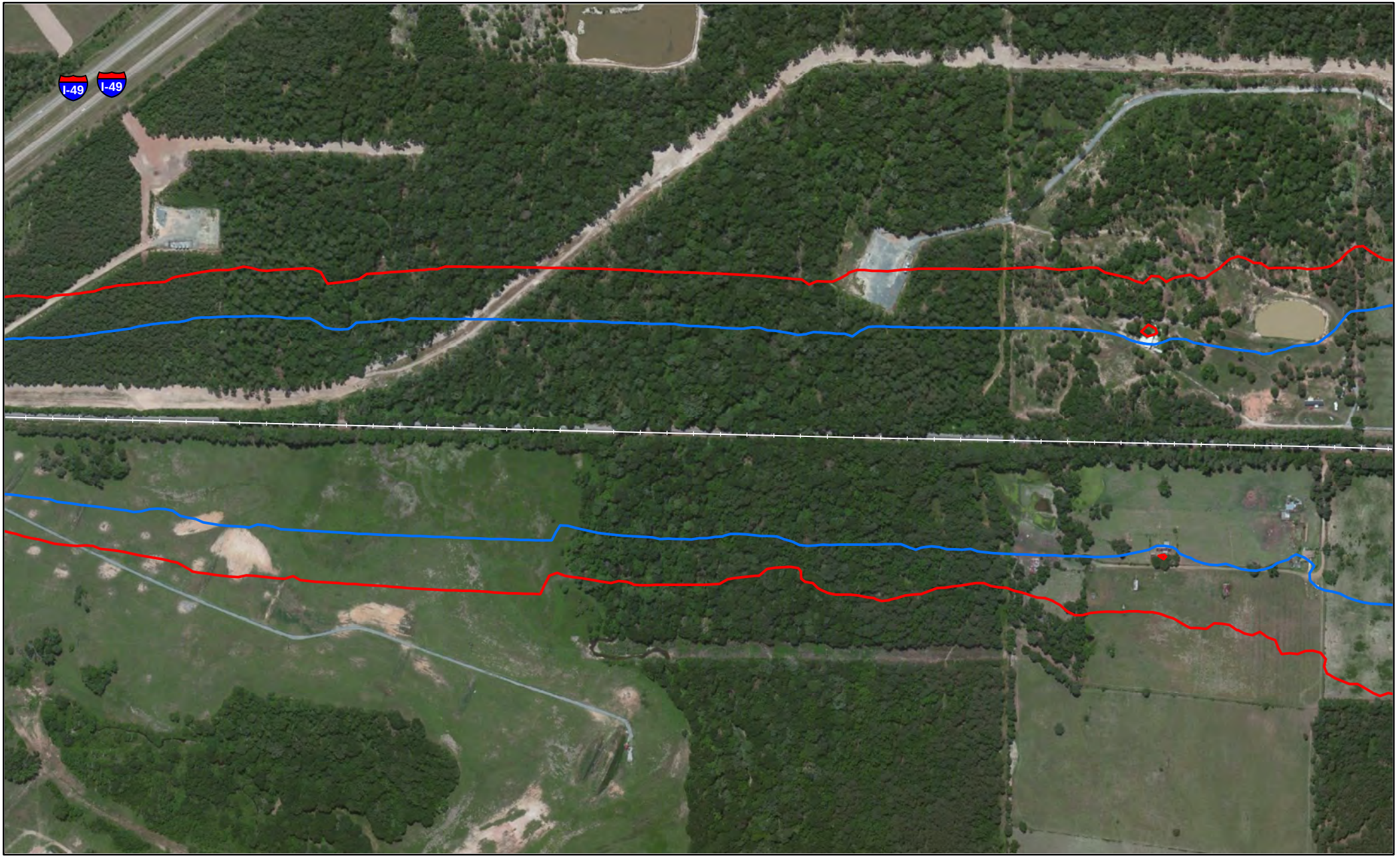
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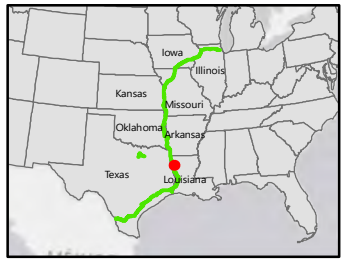
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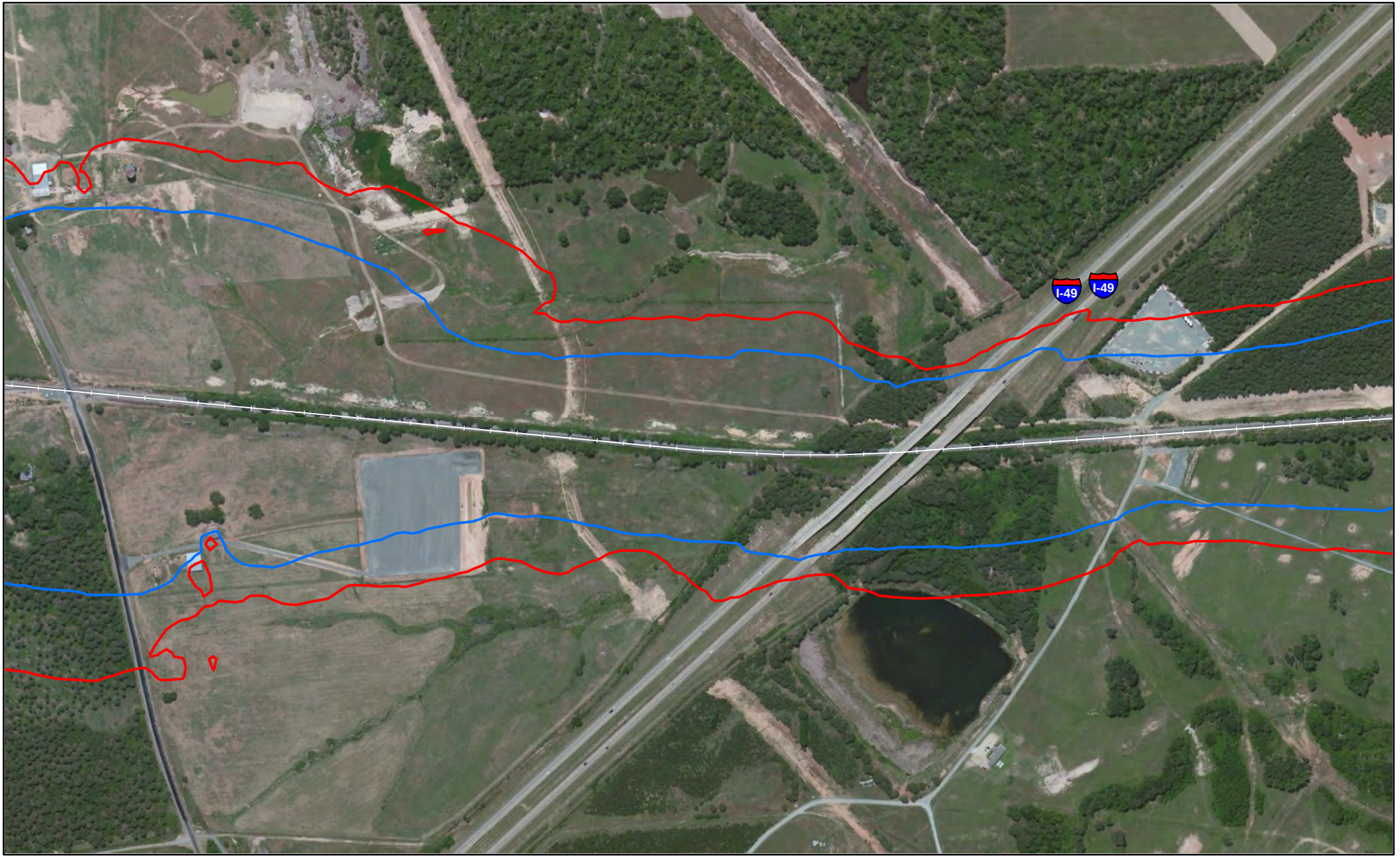
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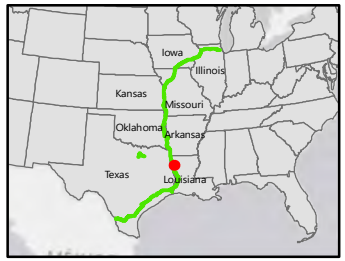
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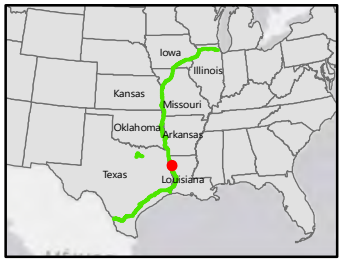
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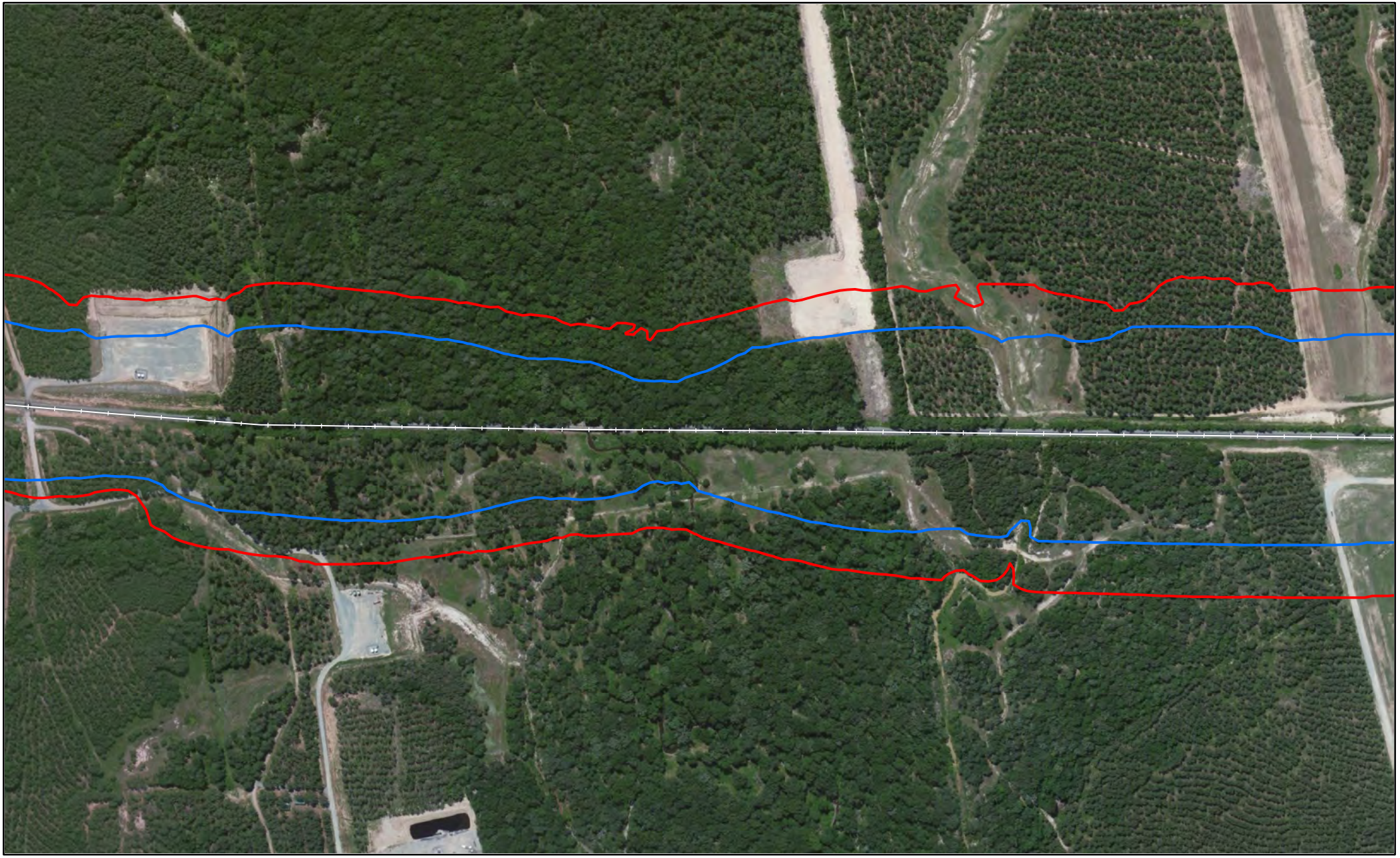
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Noise Contours
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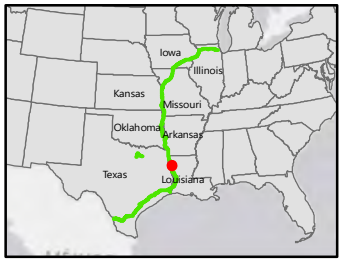
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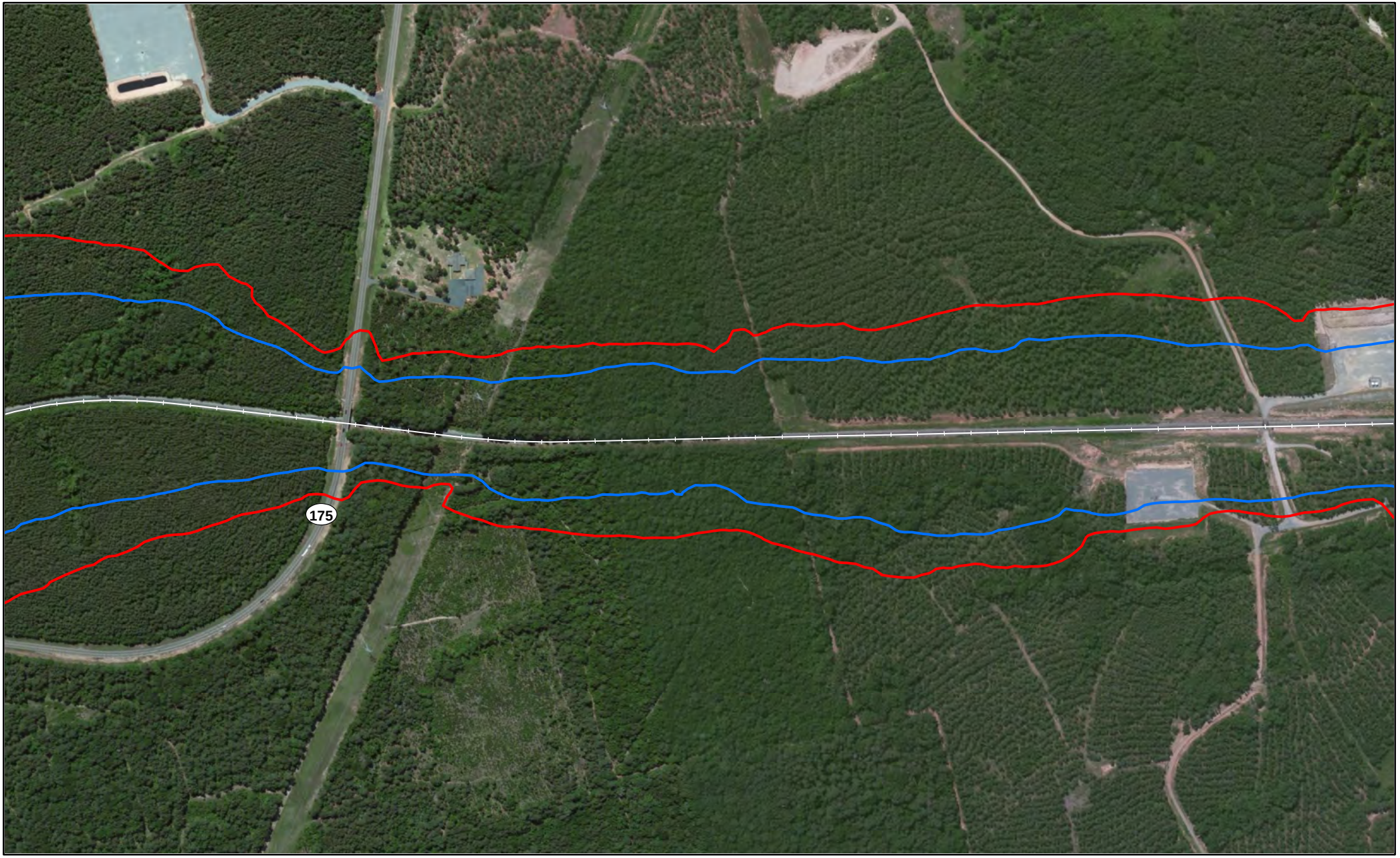
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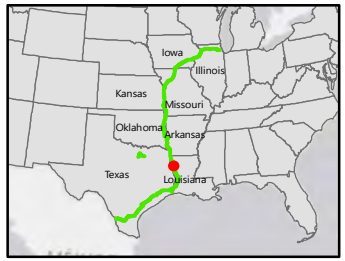
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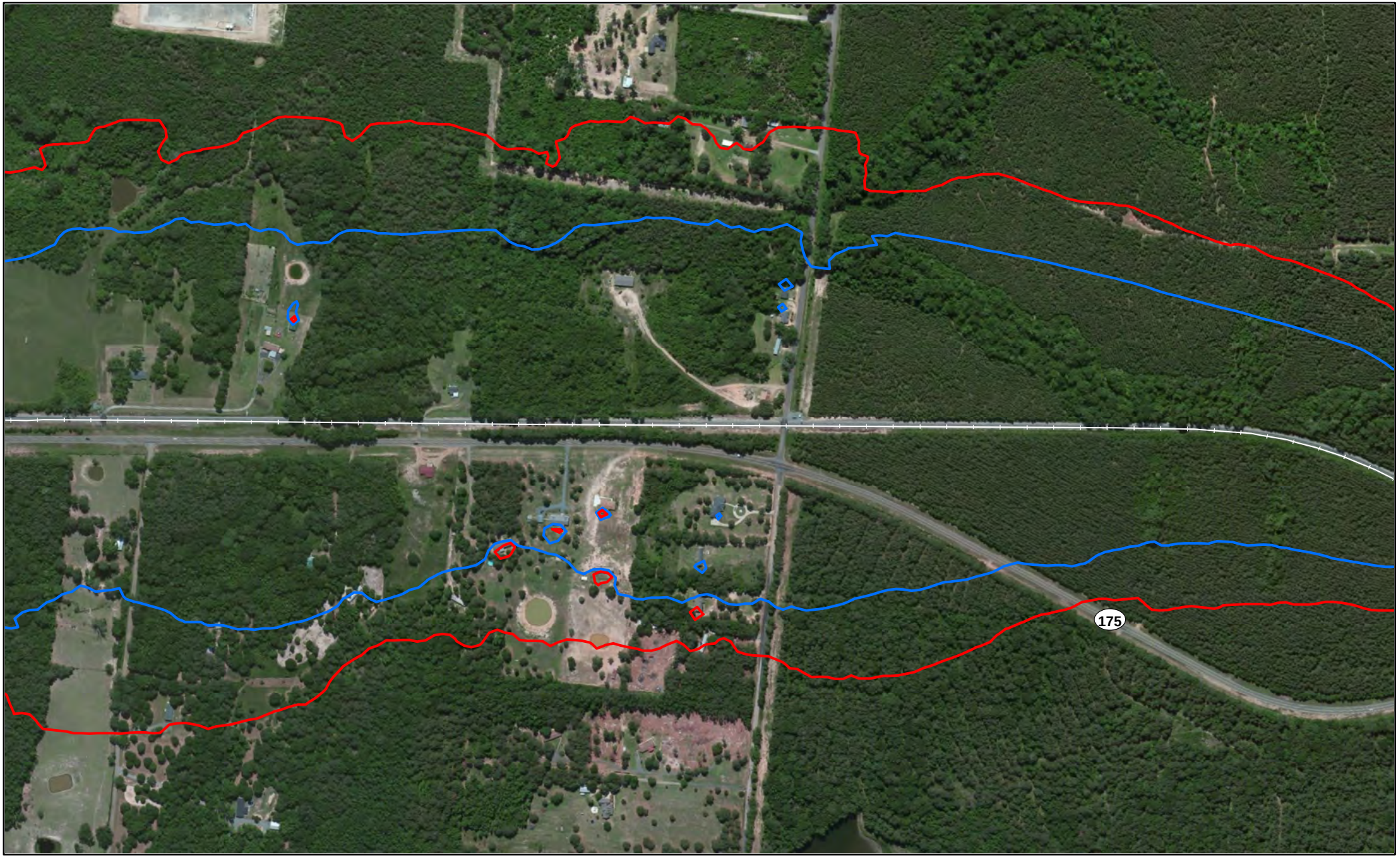
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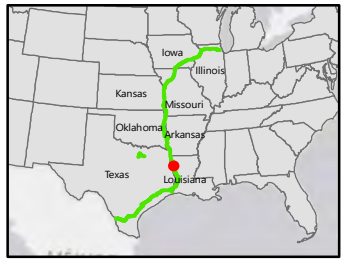
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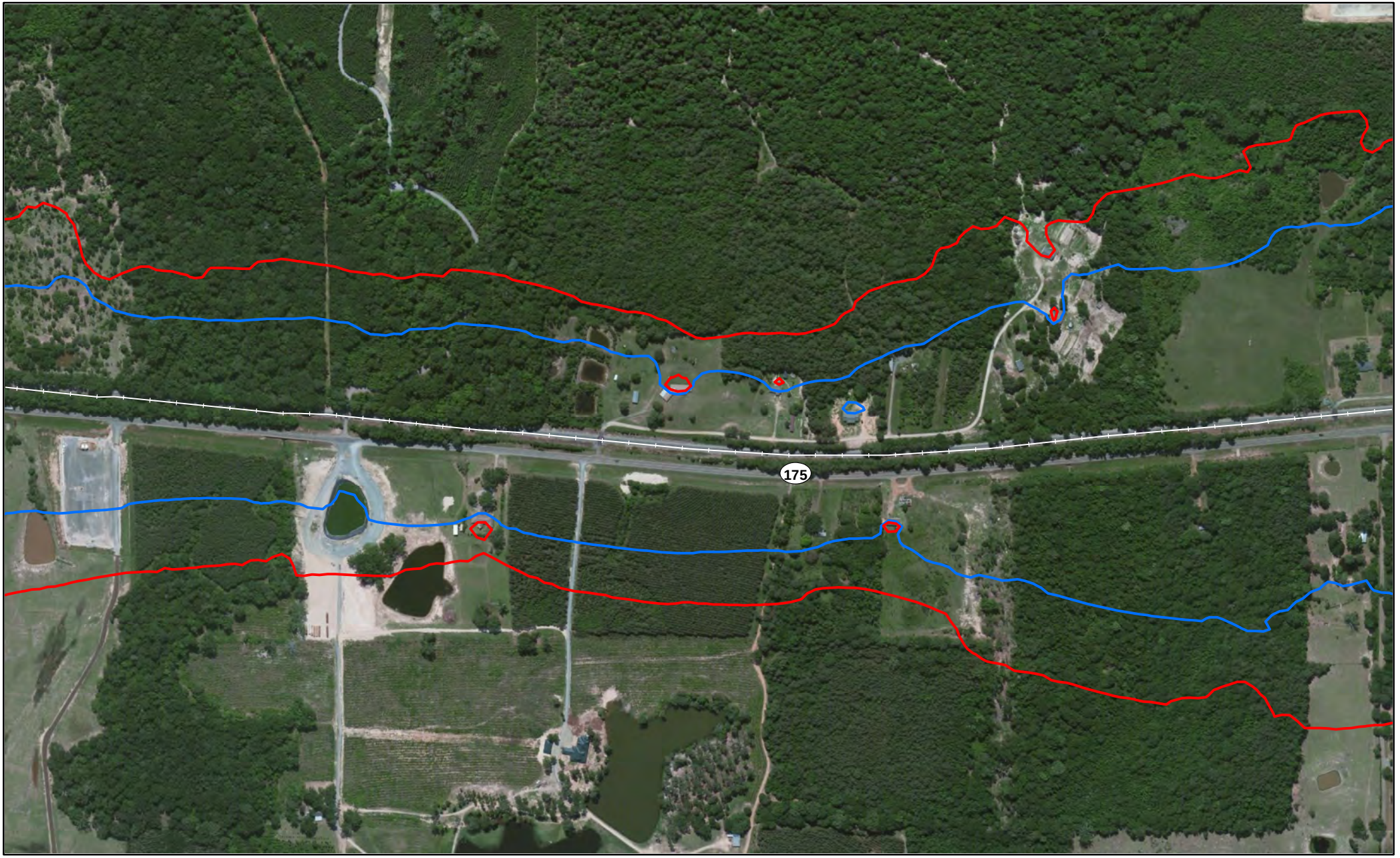
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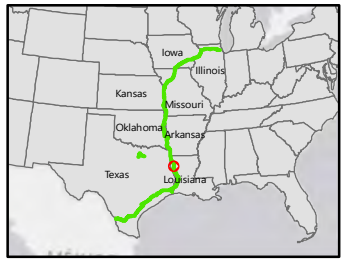
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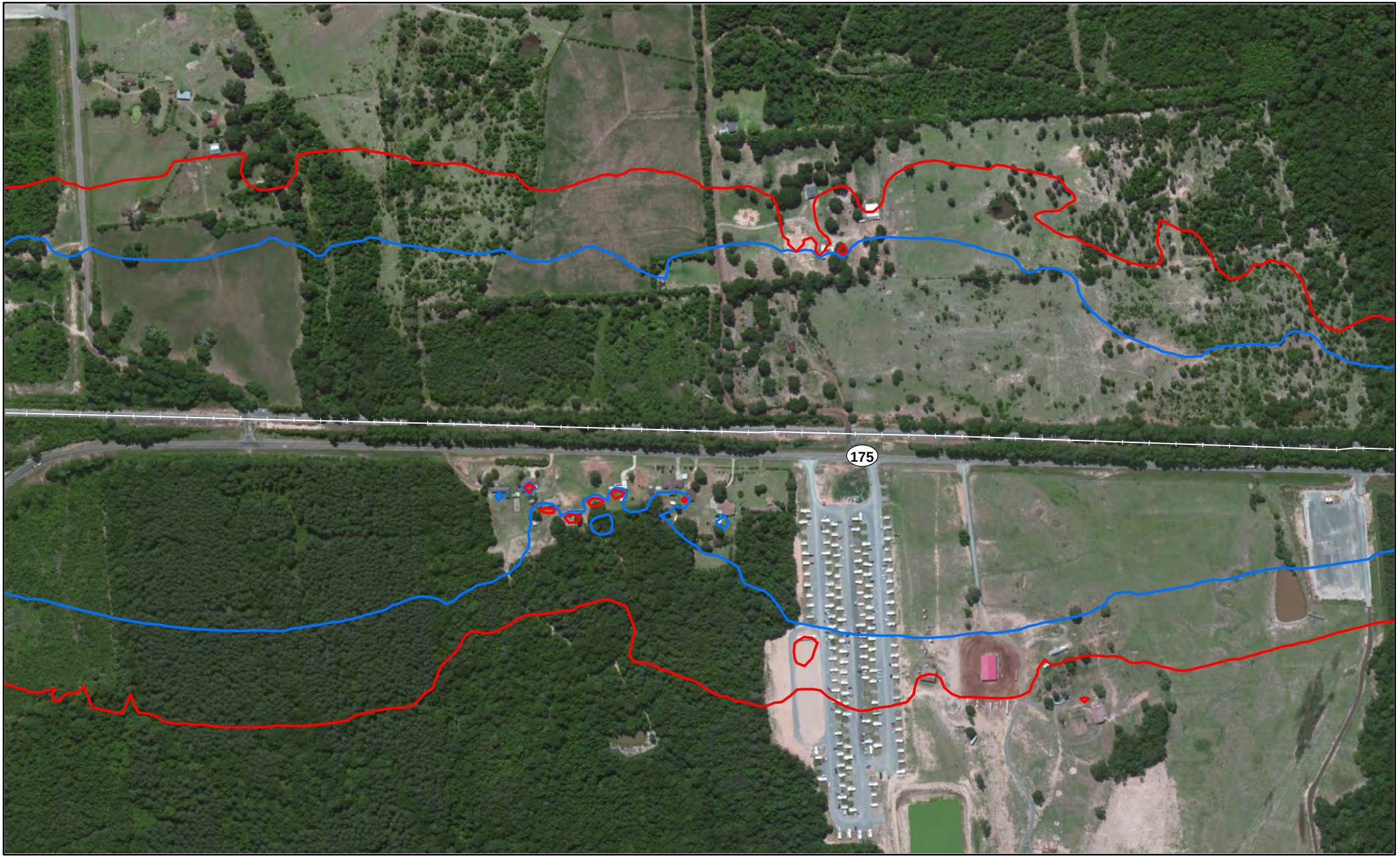
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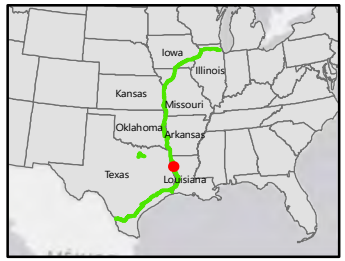
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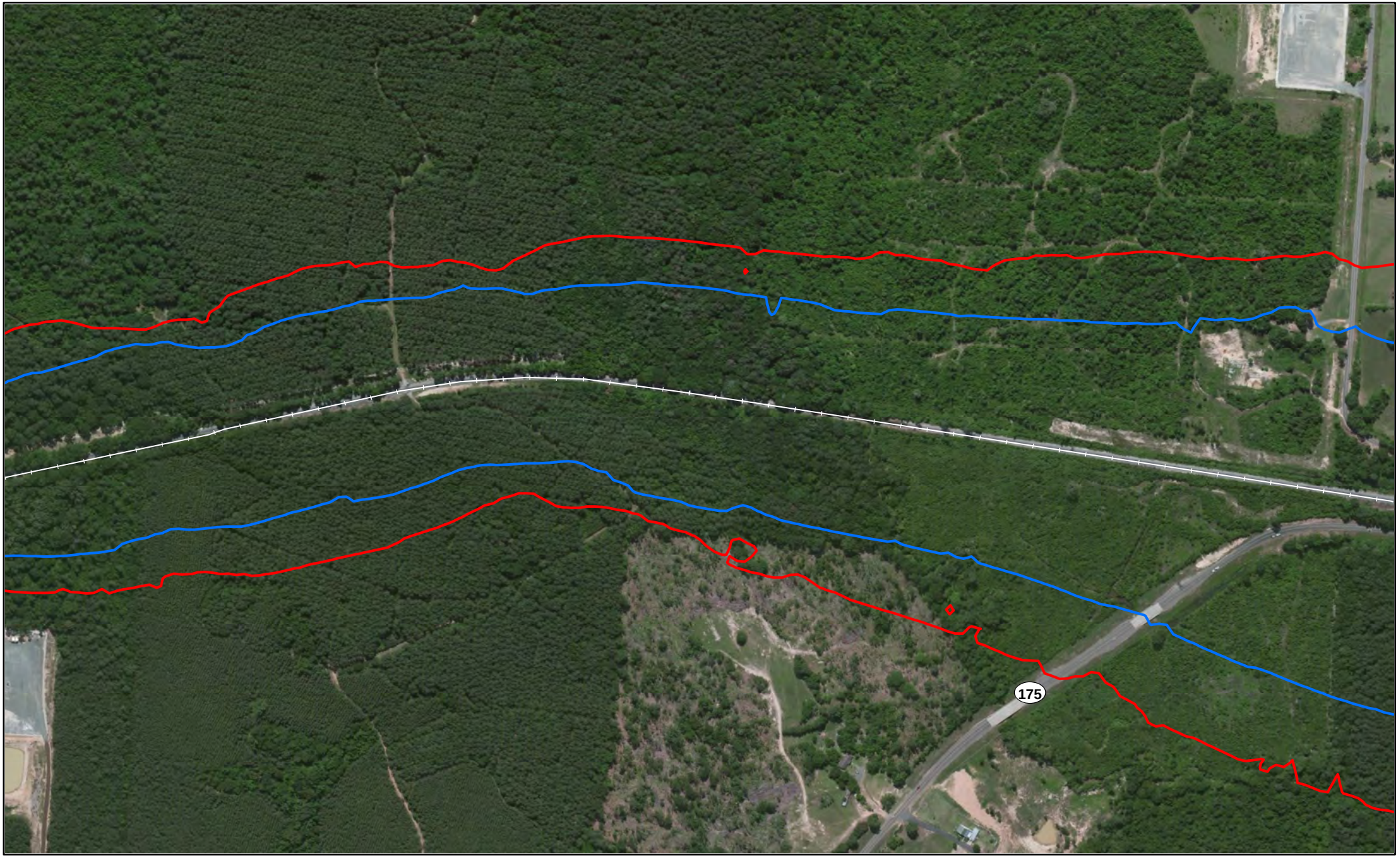
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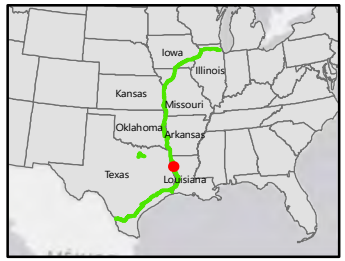
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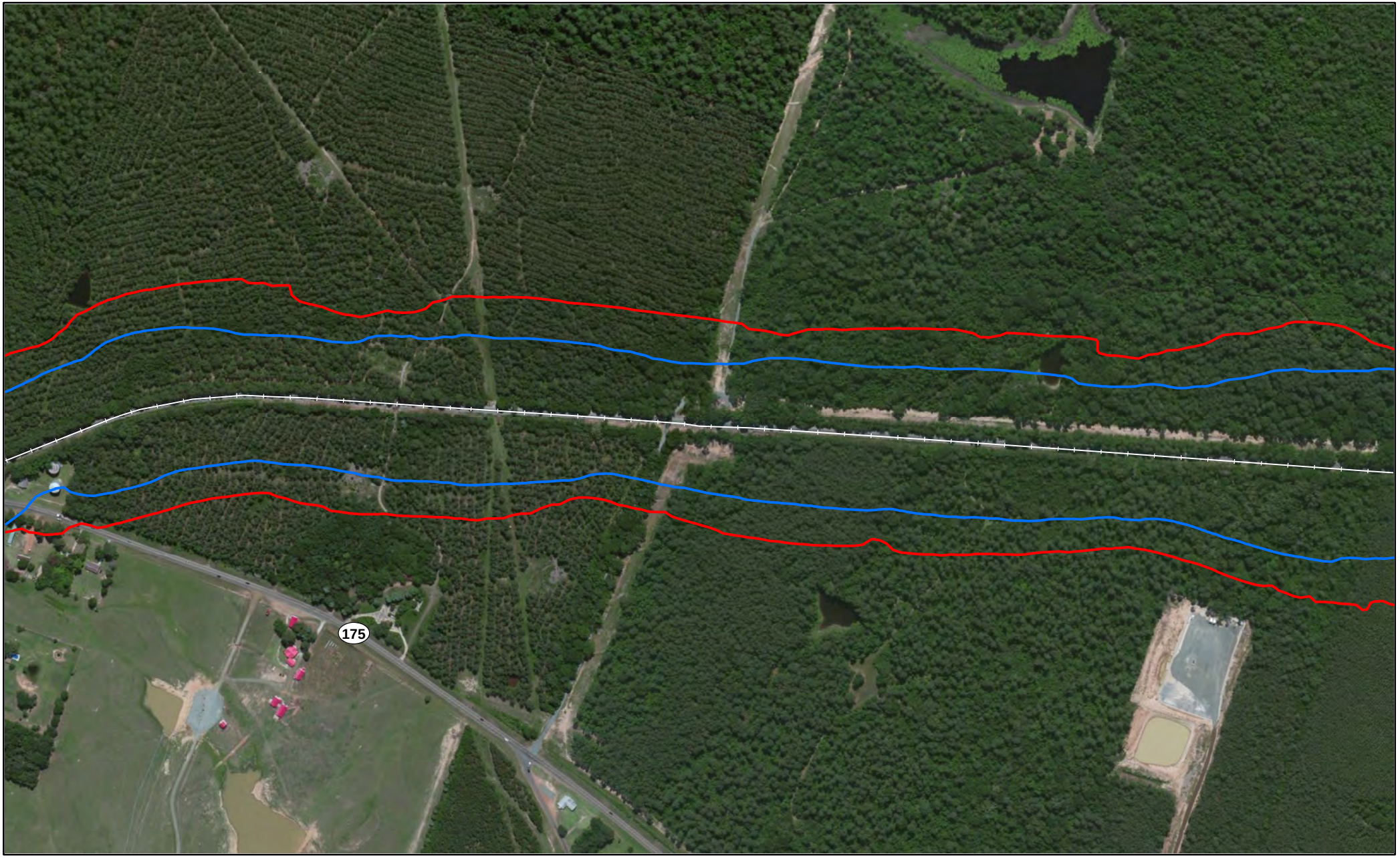
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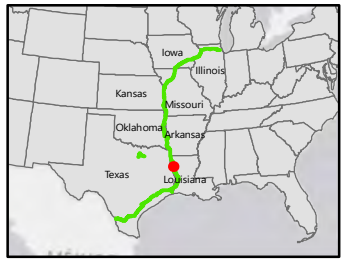
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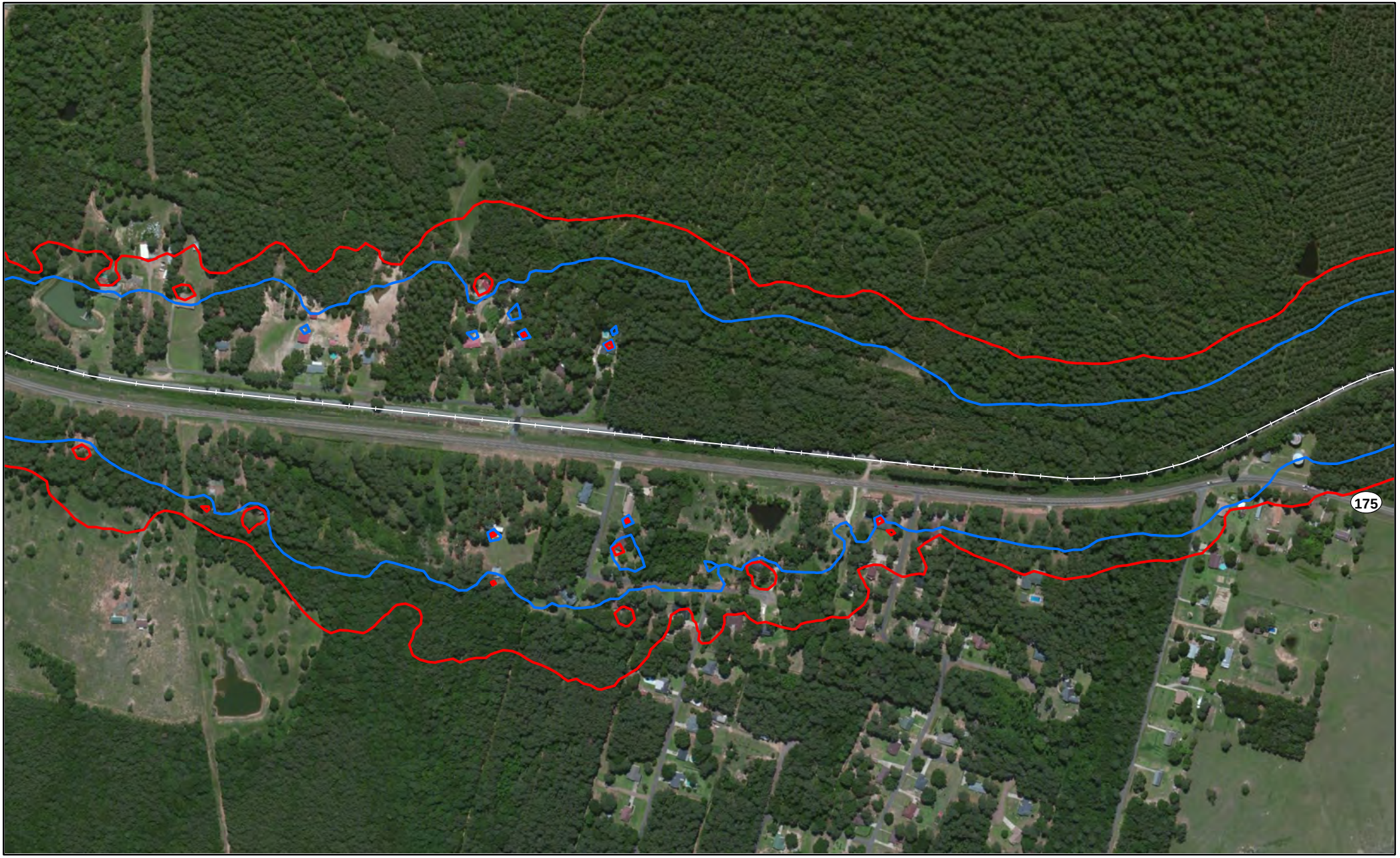
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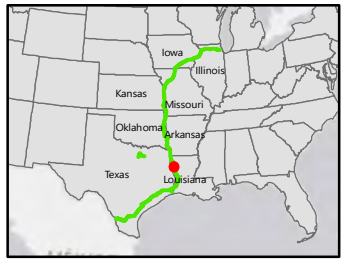
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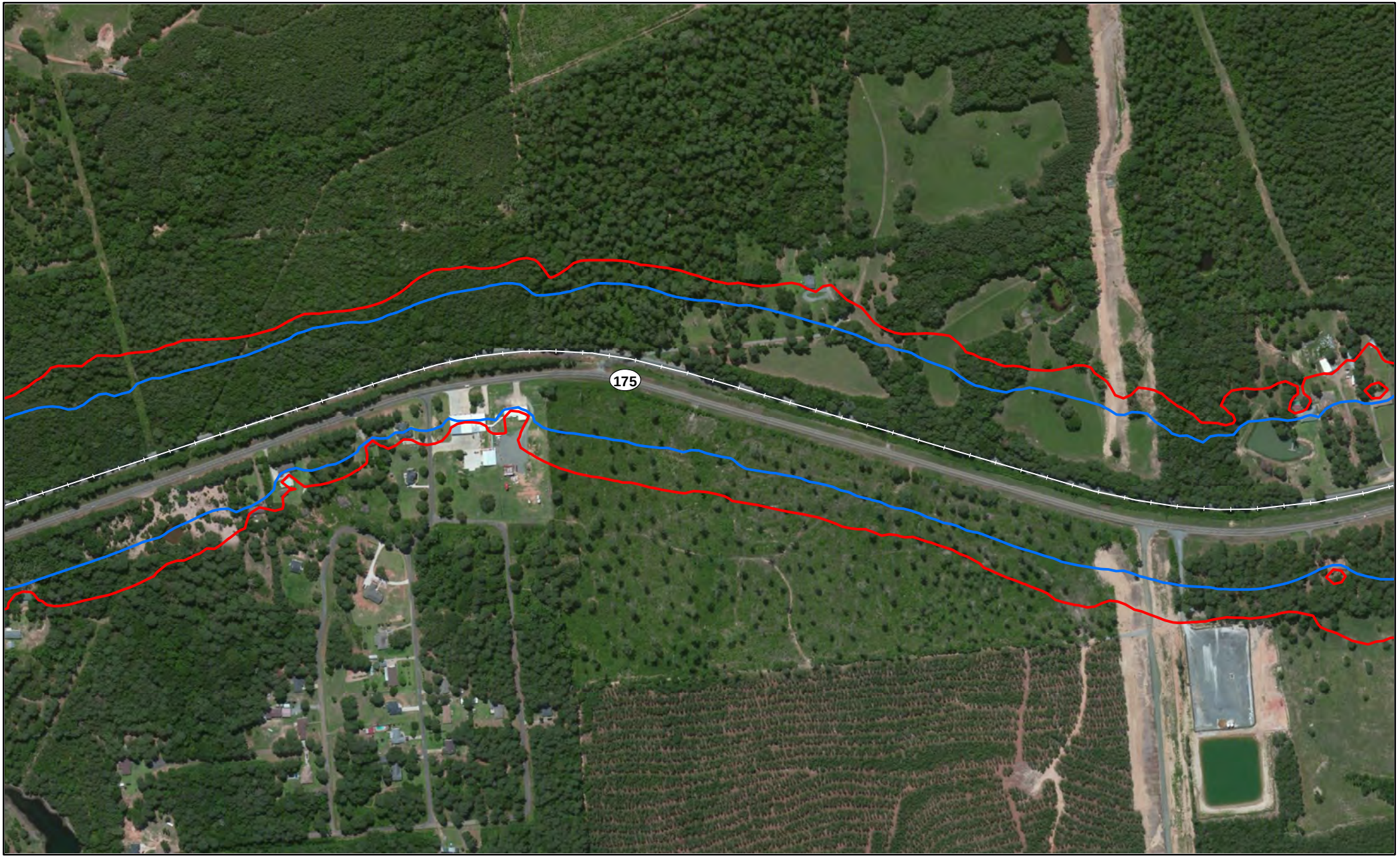
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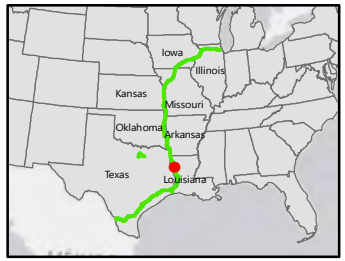
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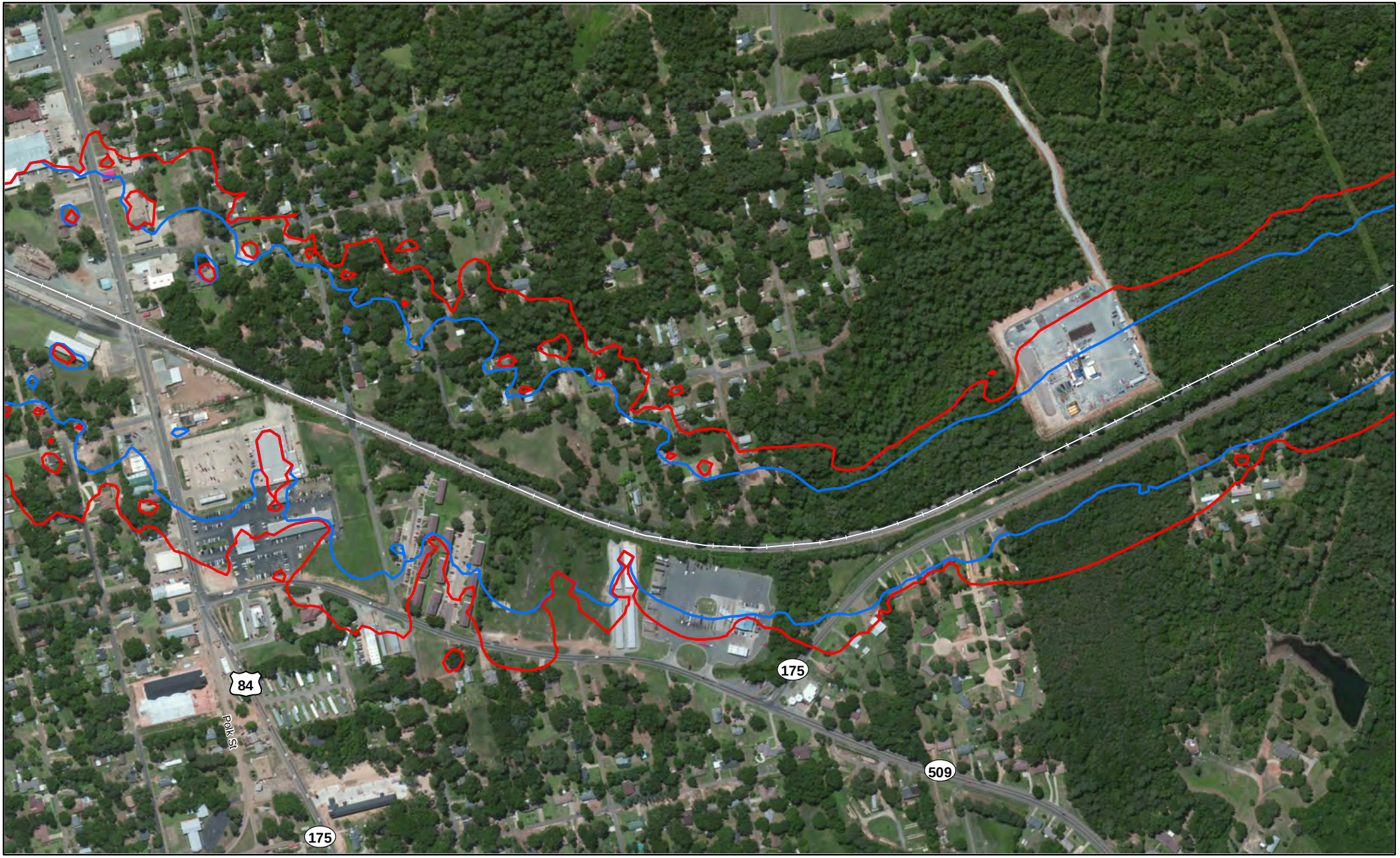
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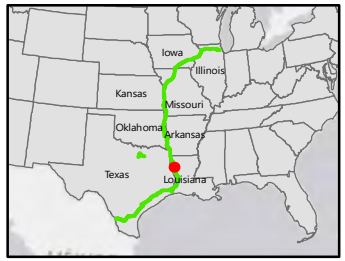
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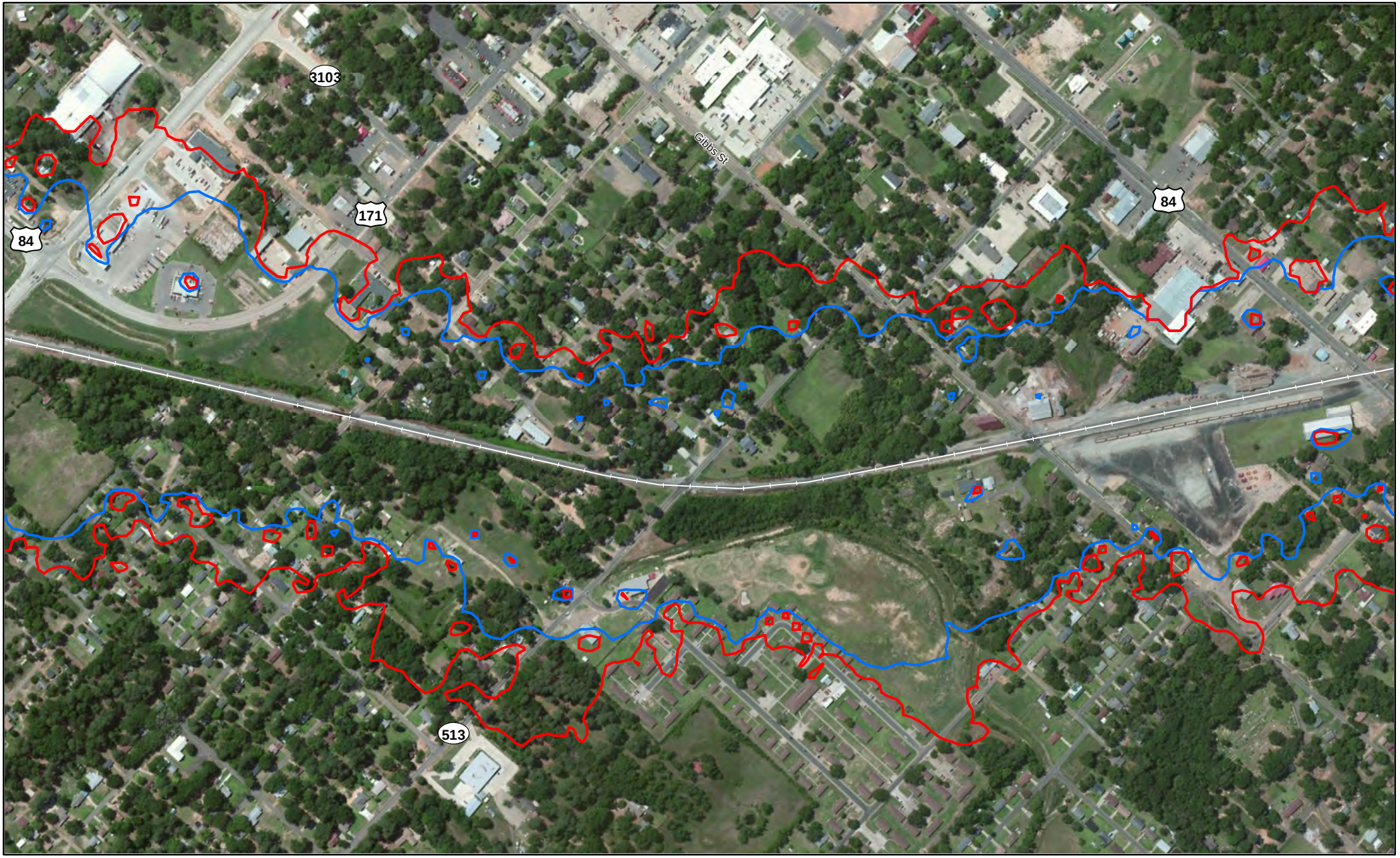
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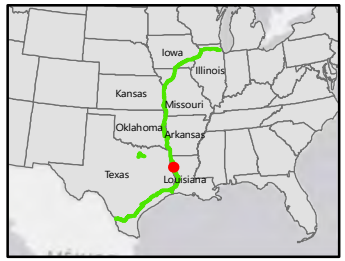
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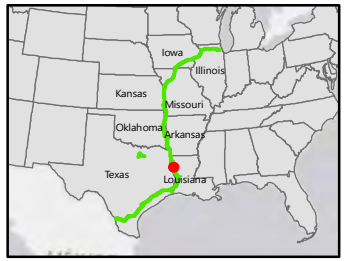
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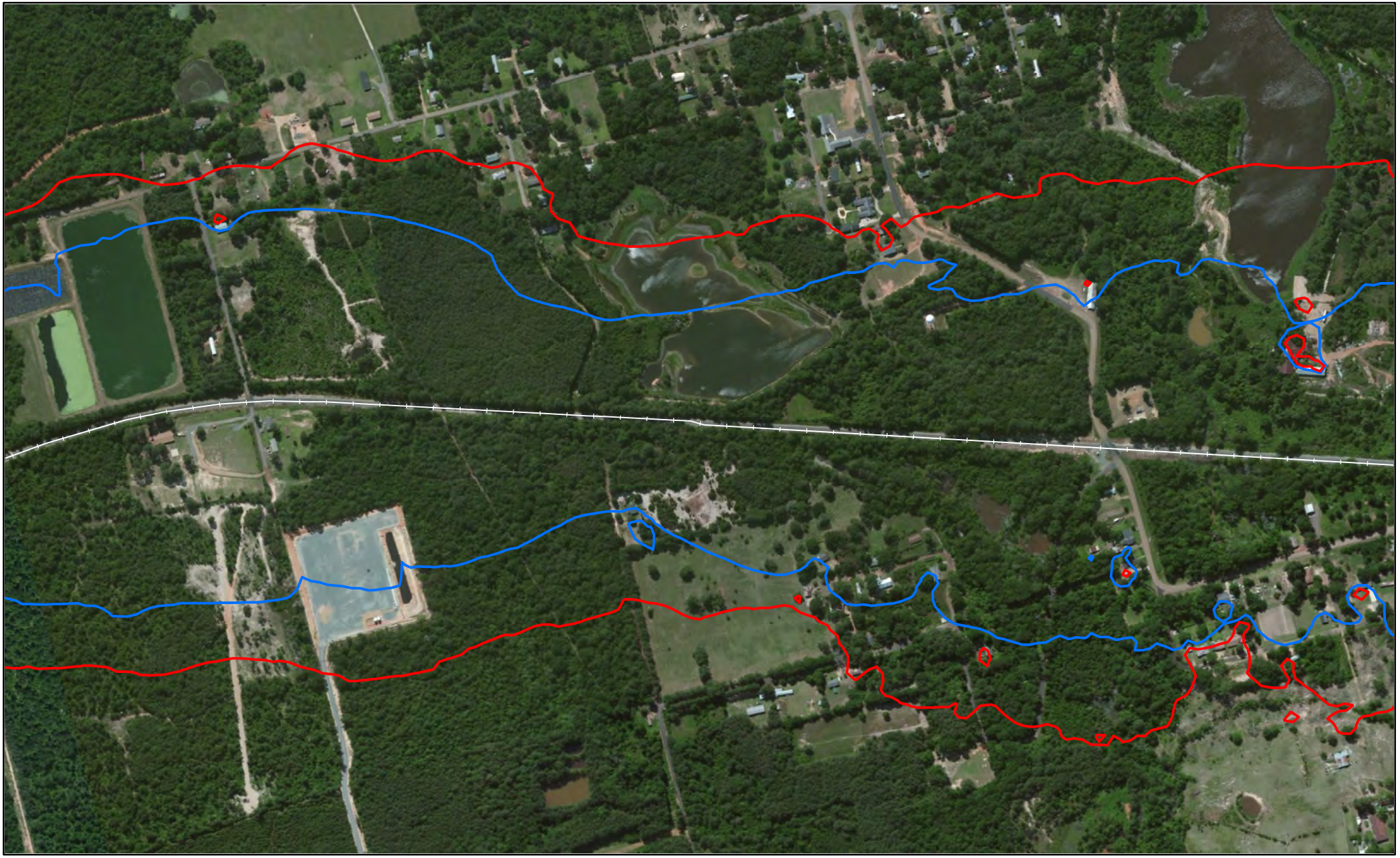
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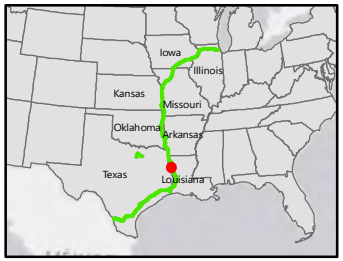
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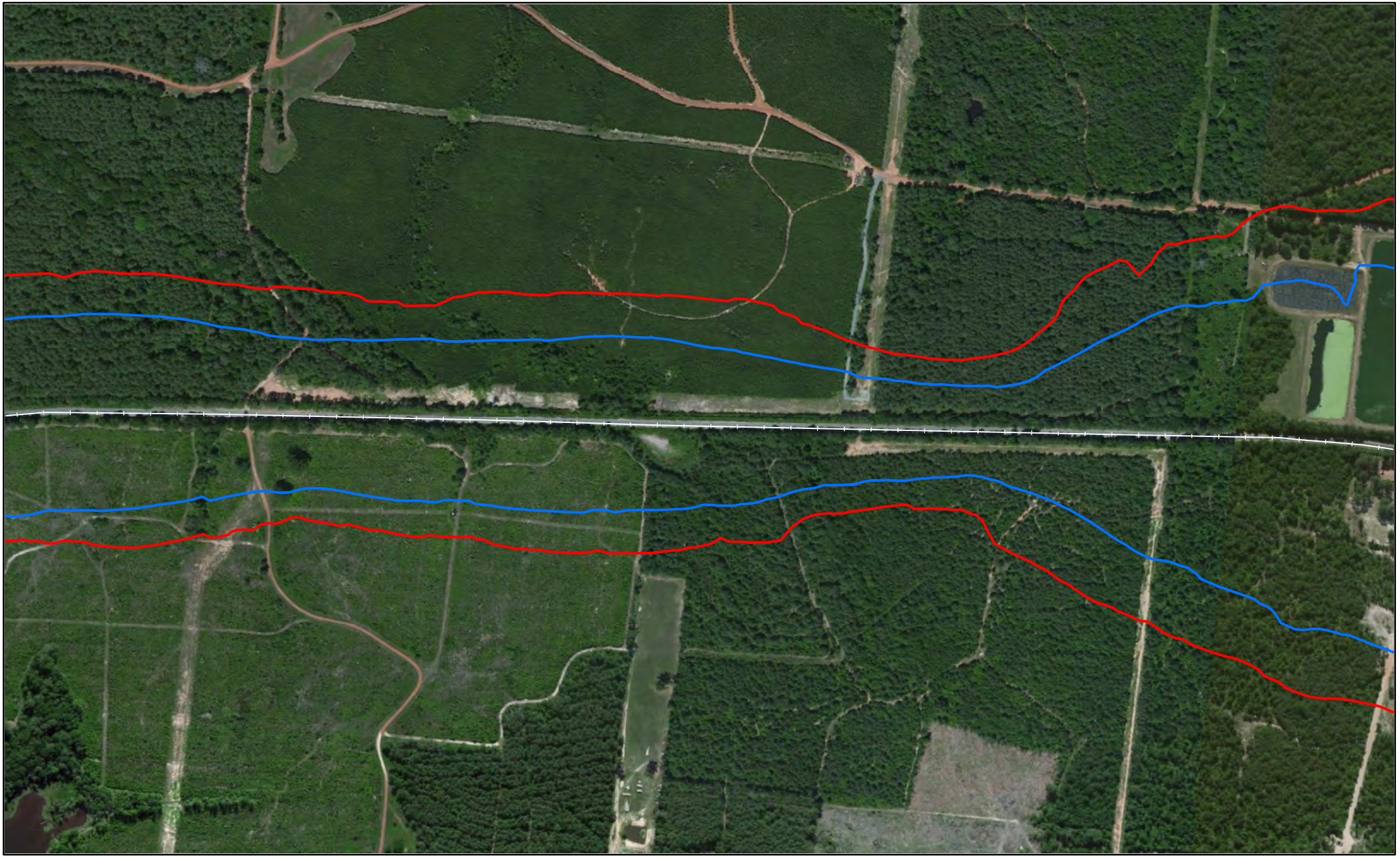
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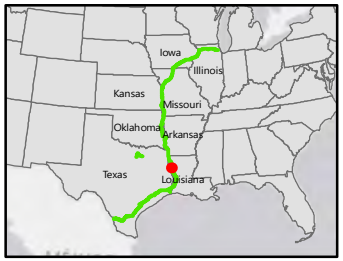
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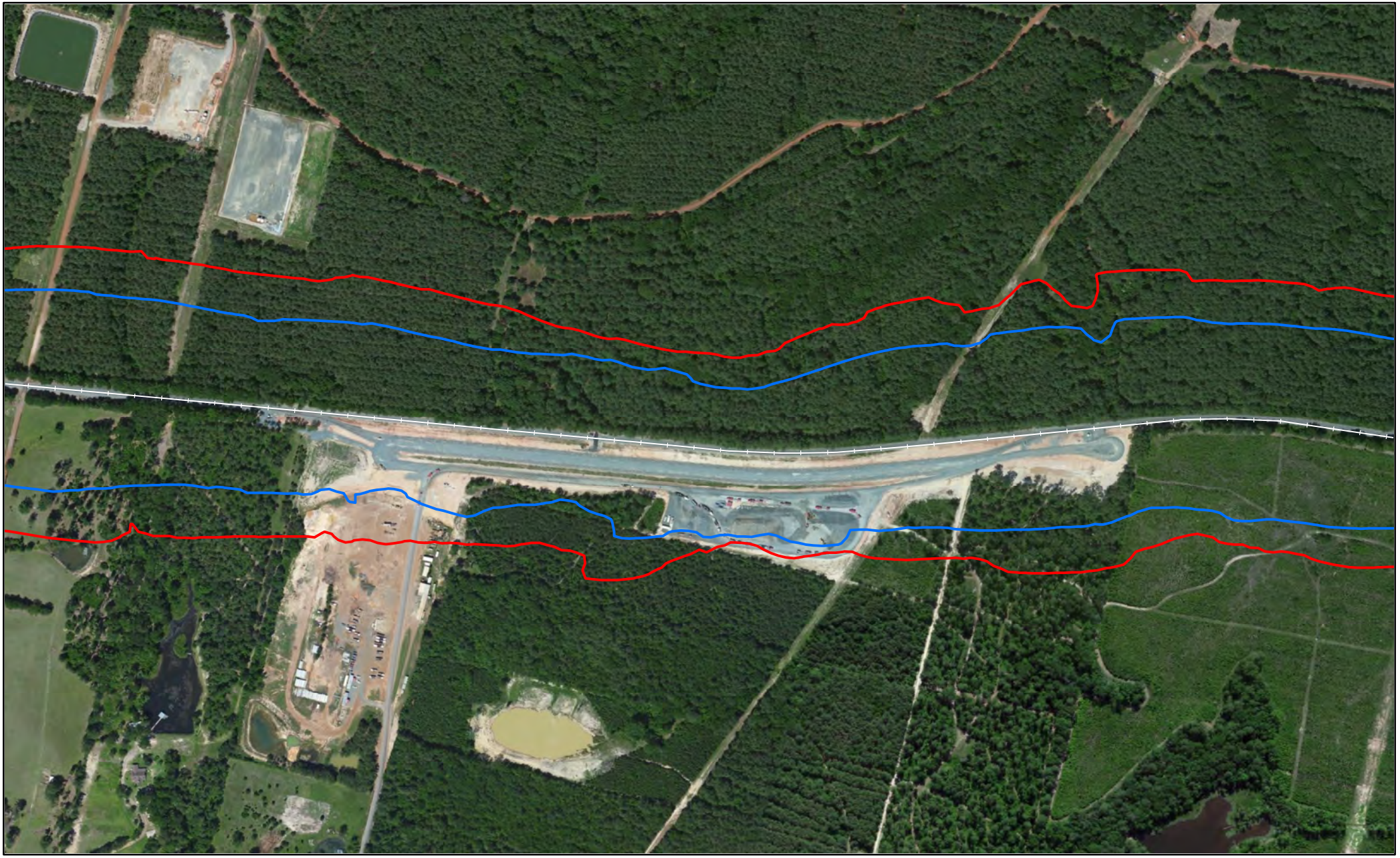
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Miles
0 0.05 0.1



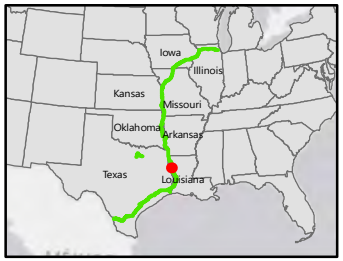
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

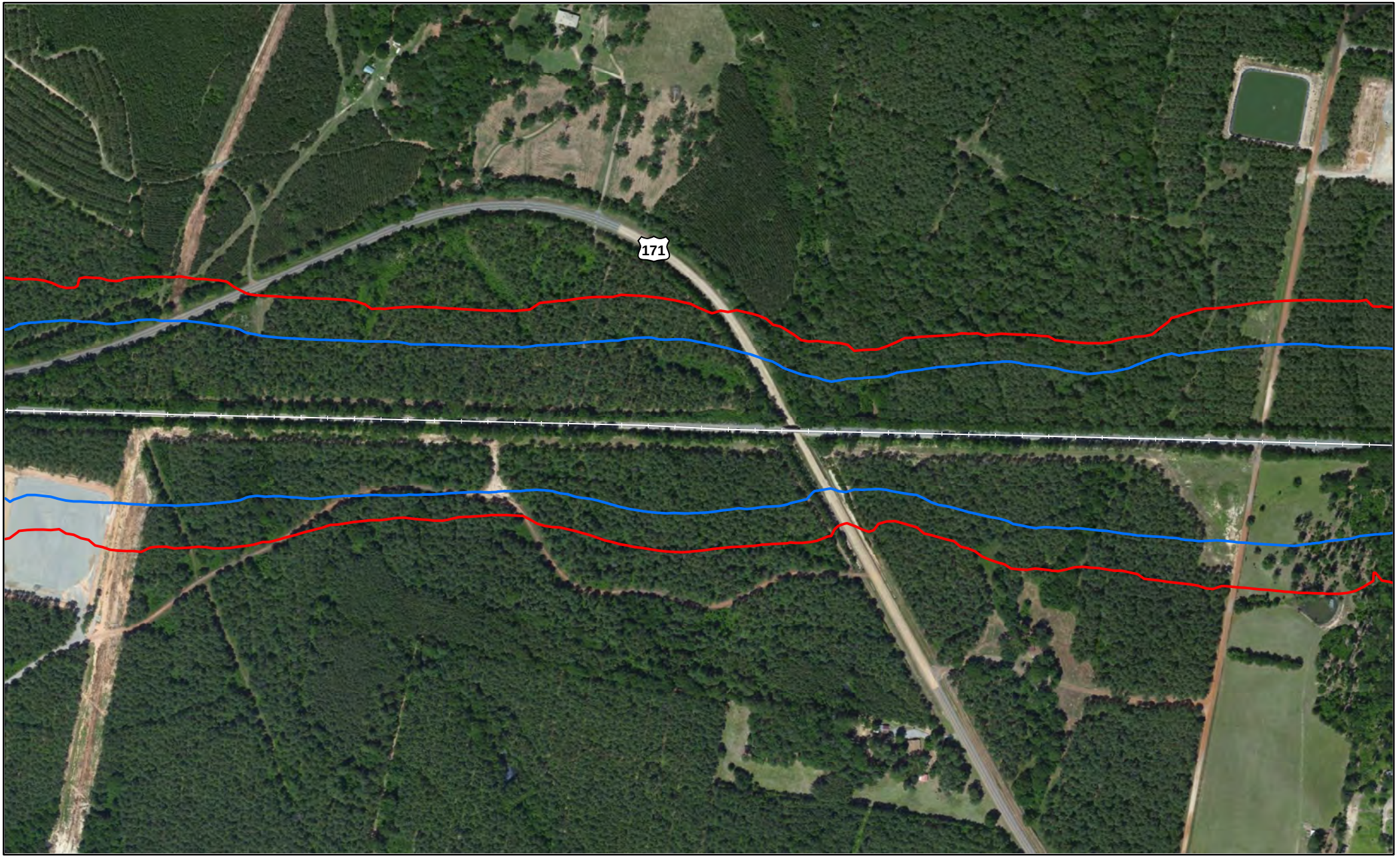
Source: ESRI.



Noise Contours
De Soto Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



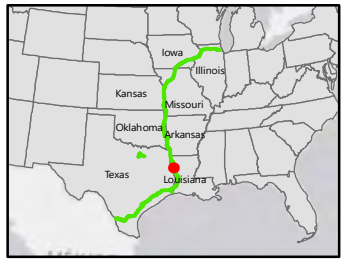
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Tracks

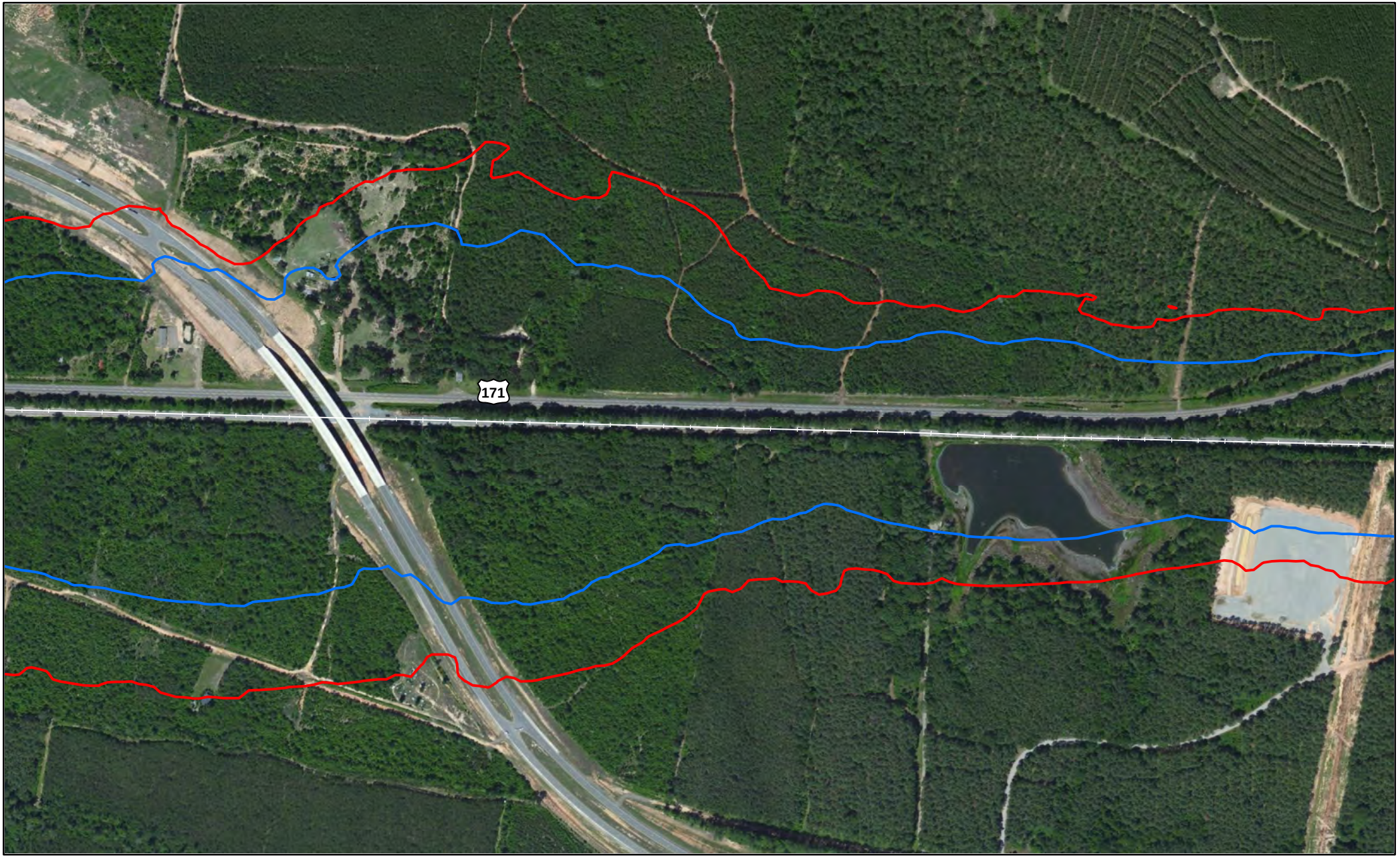
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Noise Contours
De Soto Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



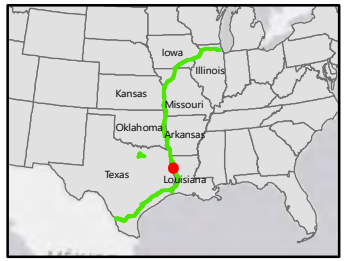
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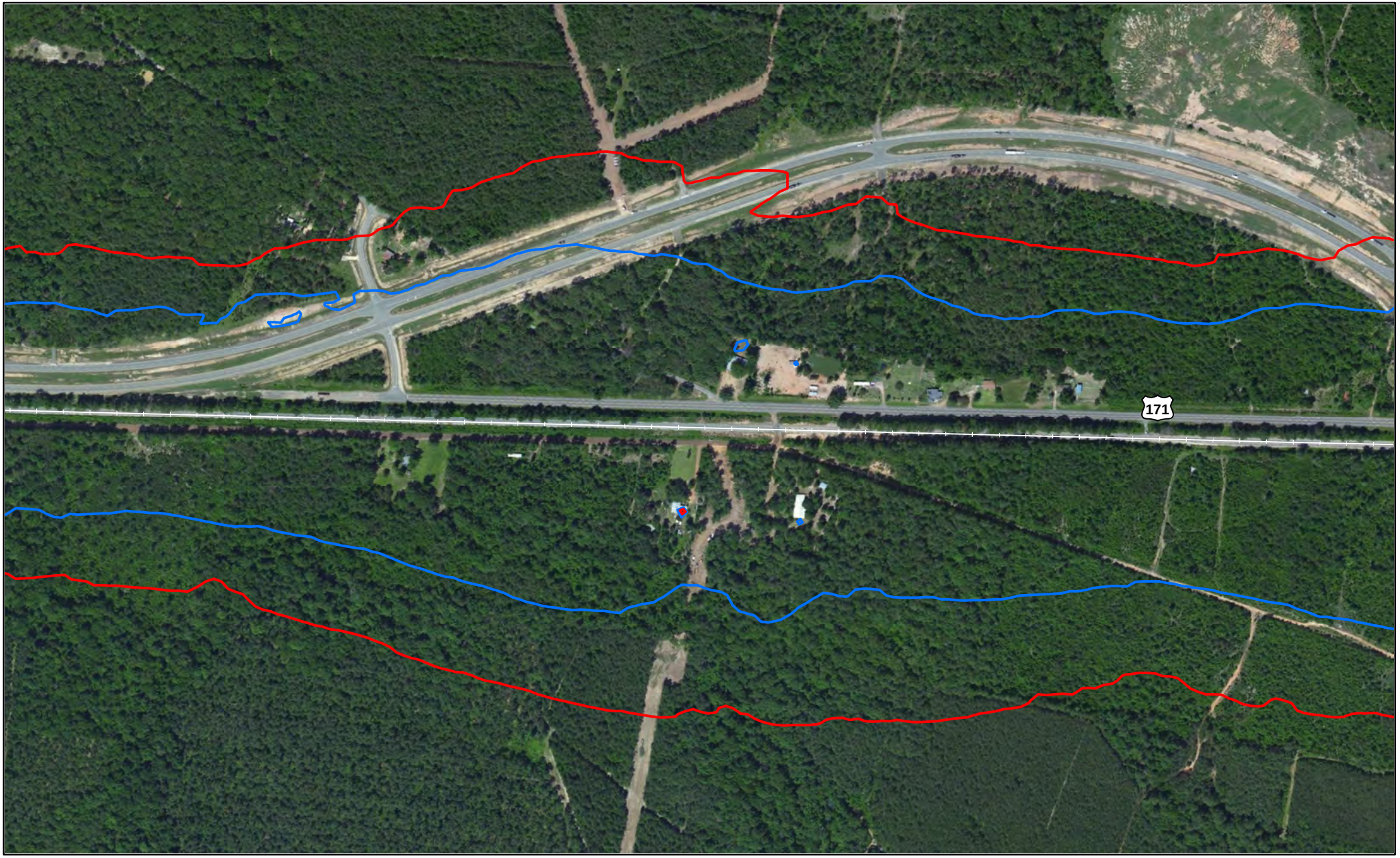
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Noise Contours
De Soto Parish, LA

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



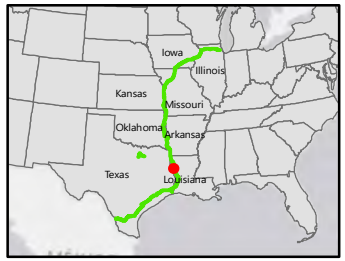
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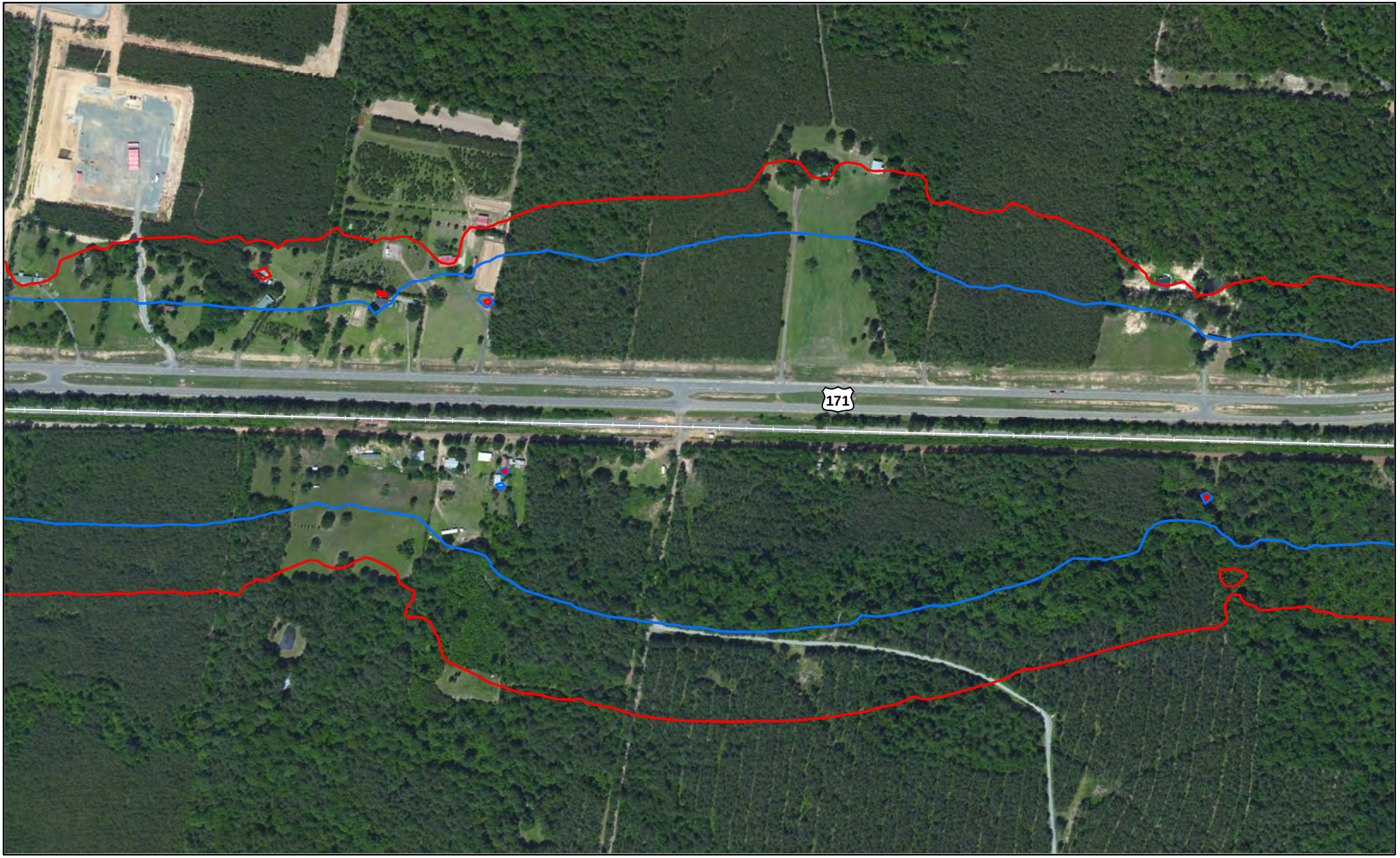
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Noise Contours
De Soto Parish, LA

Miles
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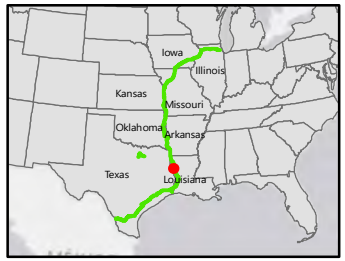
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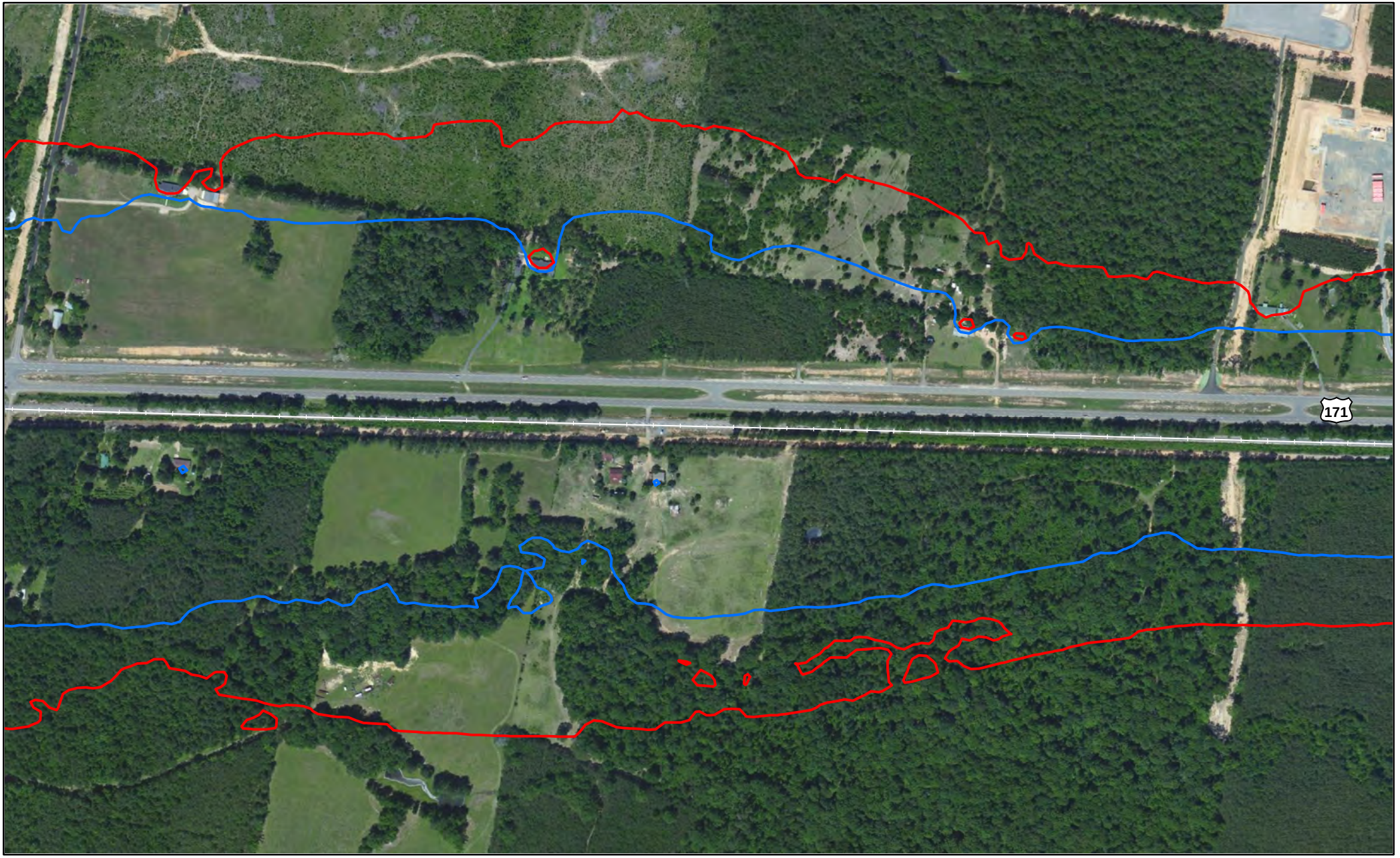
Tracks

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Noise Contours
De Soto Parish, LA

Miles
0 0.05 0.1



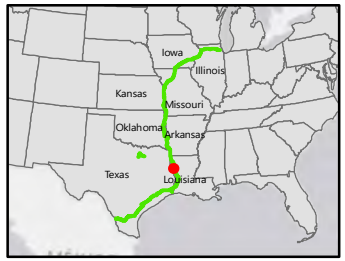
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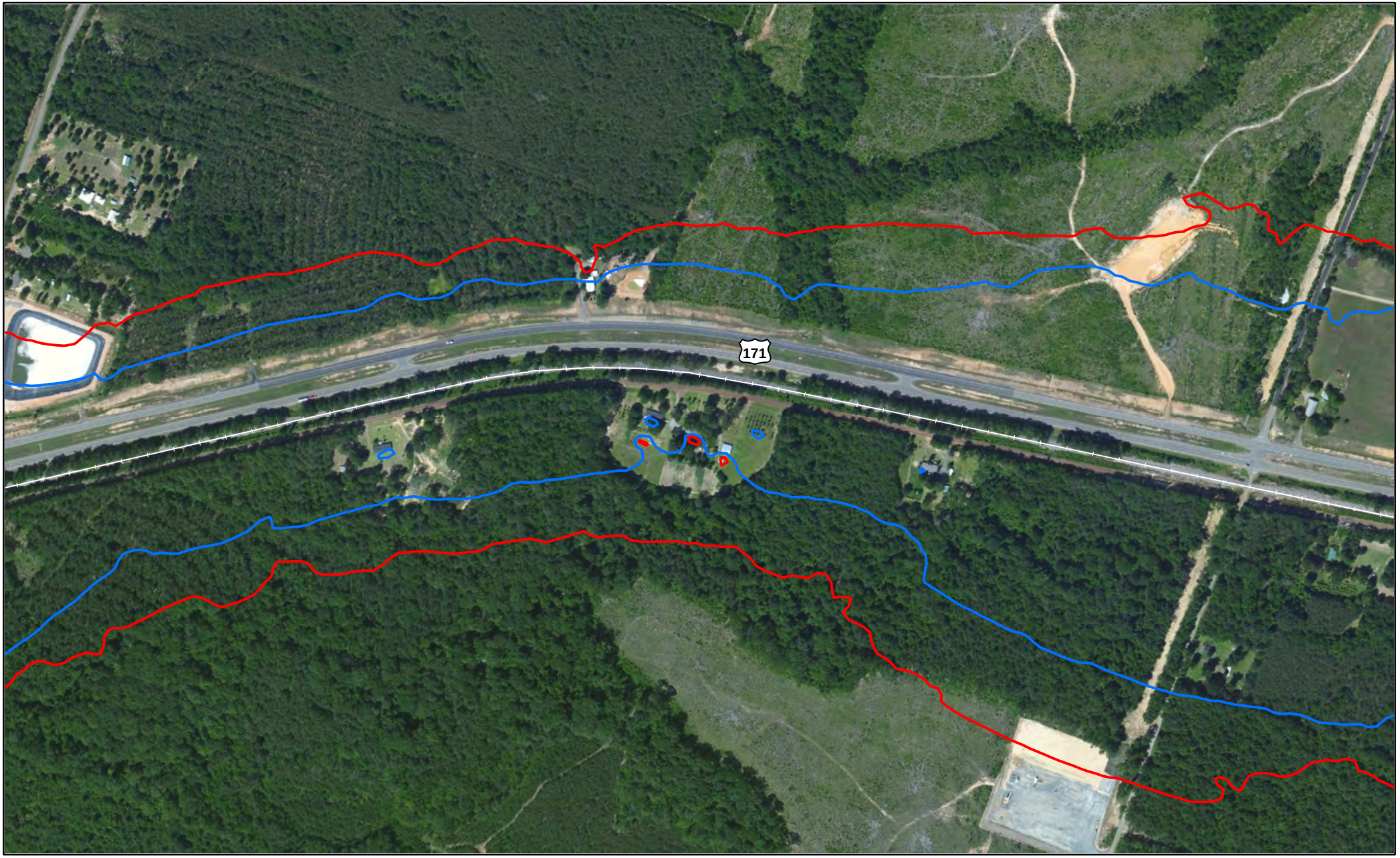
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Noise Contours
De Soto Parish, LA

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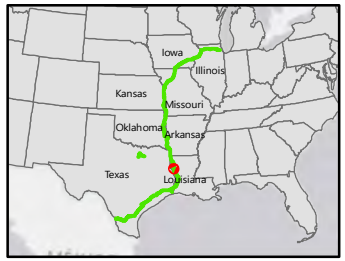
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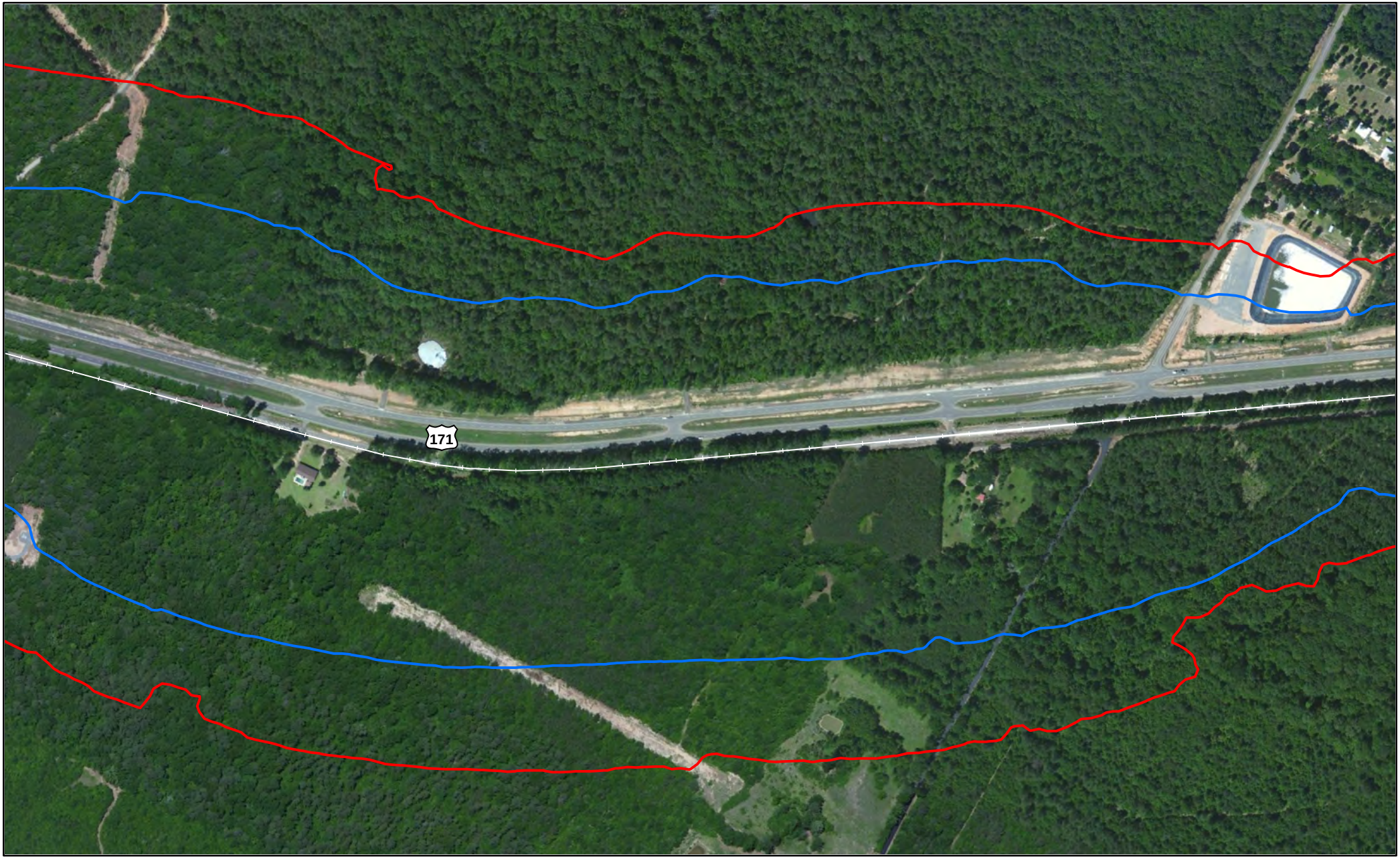
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Noise Contours
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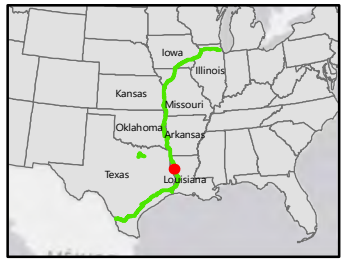
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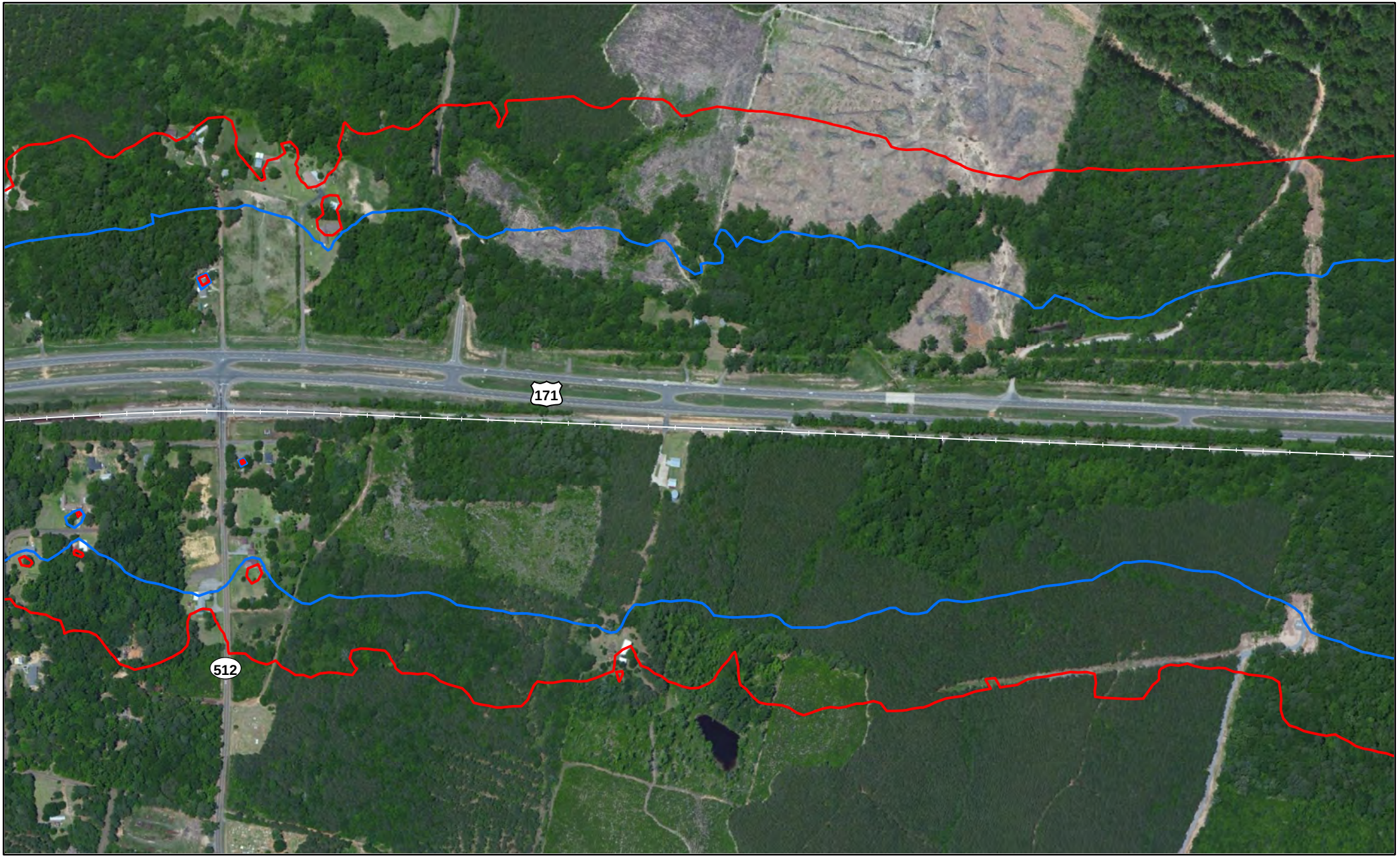
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Noise Contours
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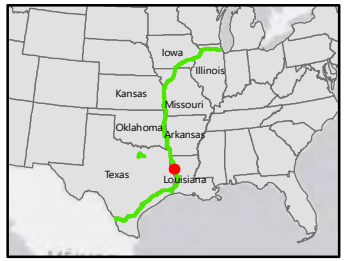
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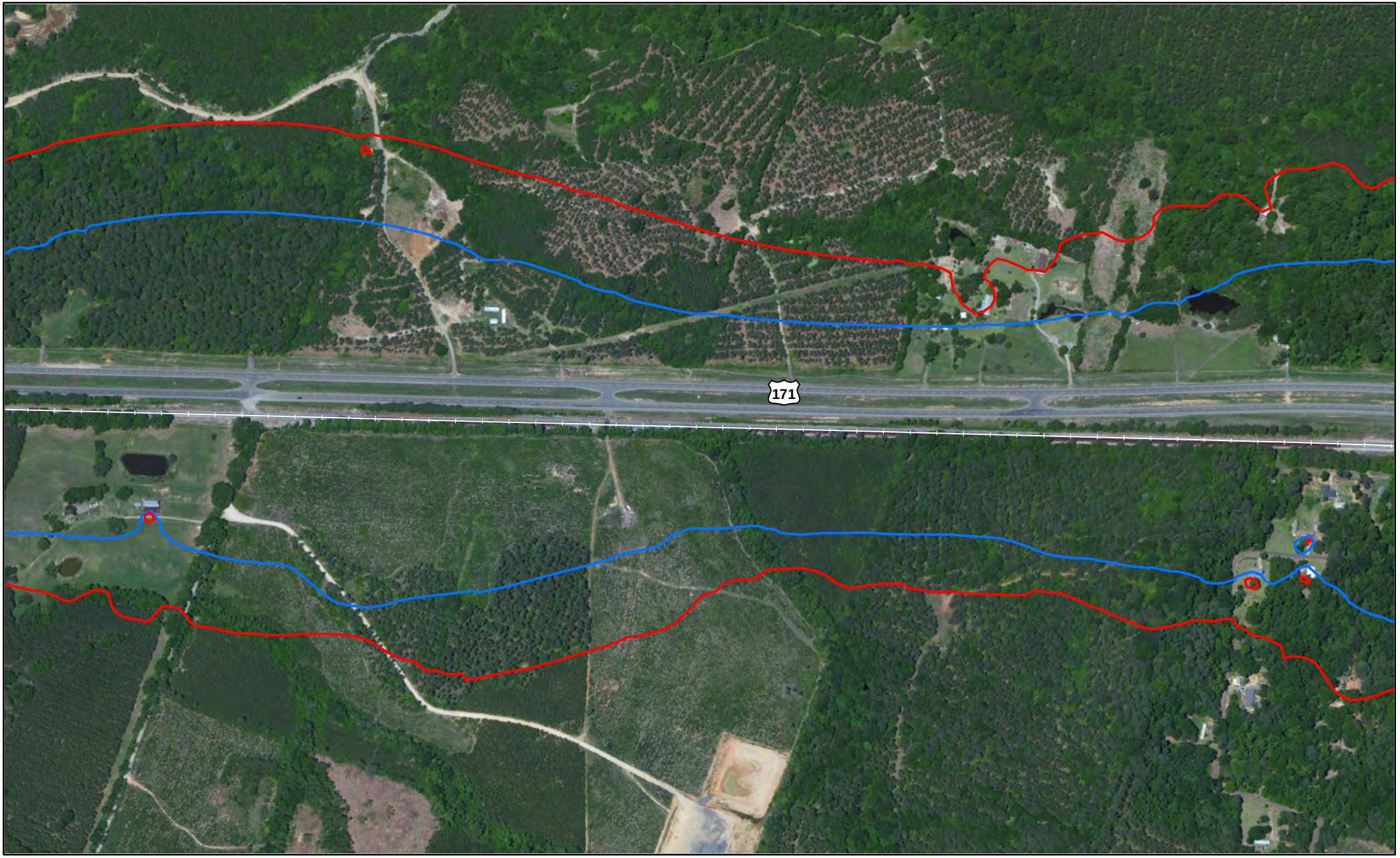
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Noise Contours
De Soto Parish, LA

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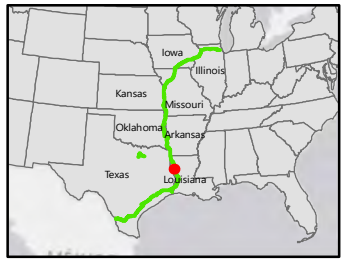
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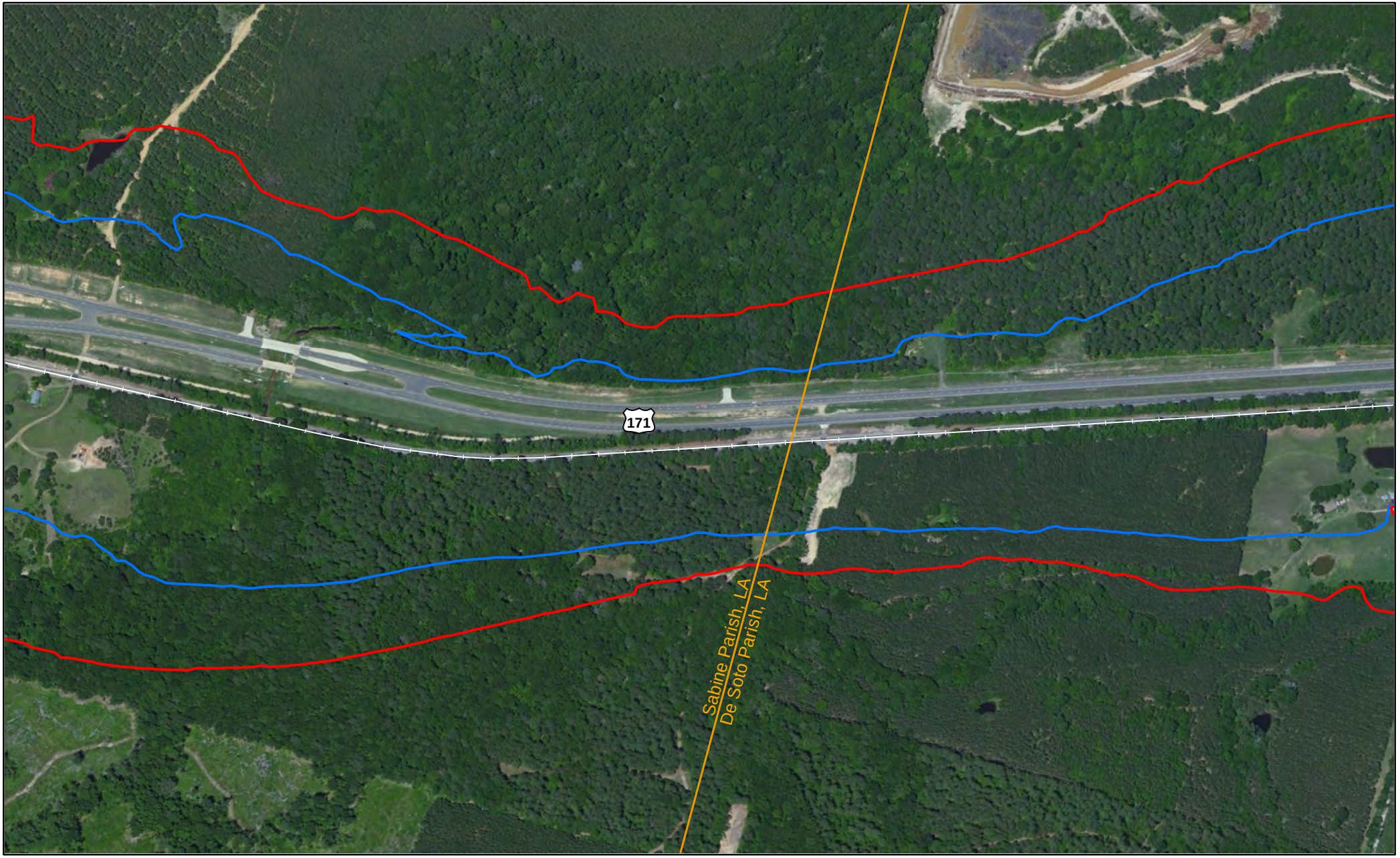
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Noise Contours
De Soto Parish, LA

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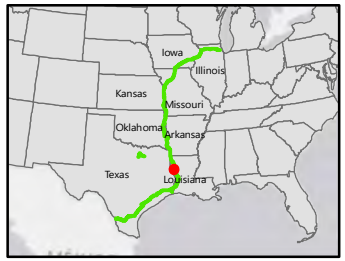
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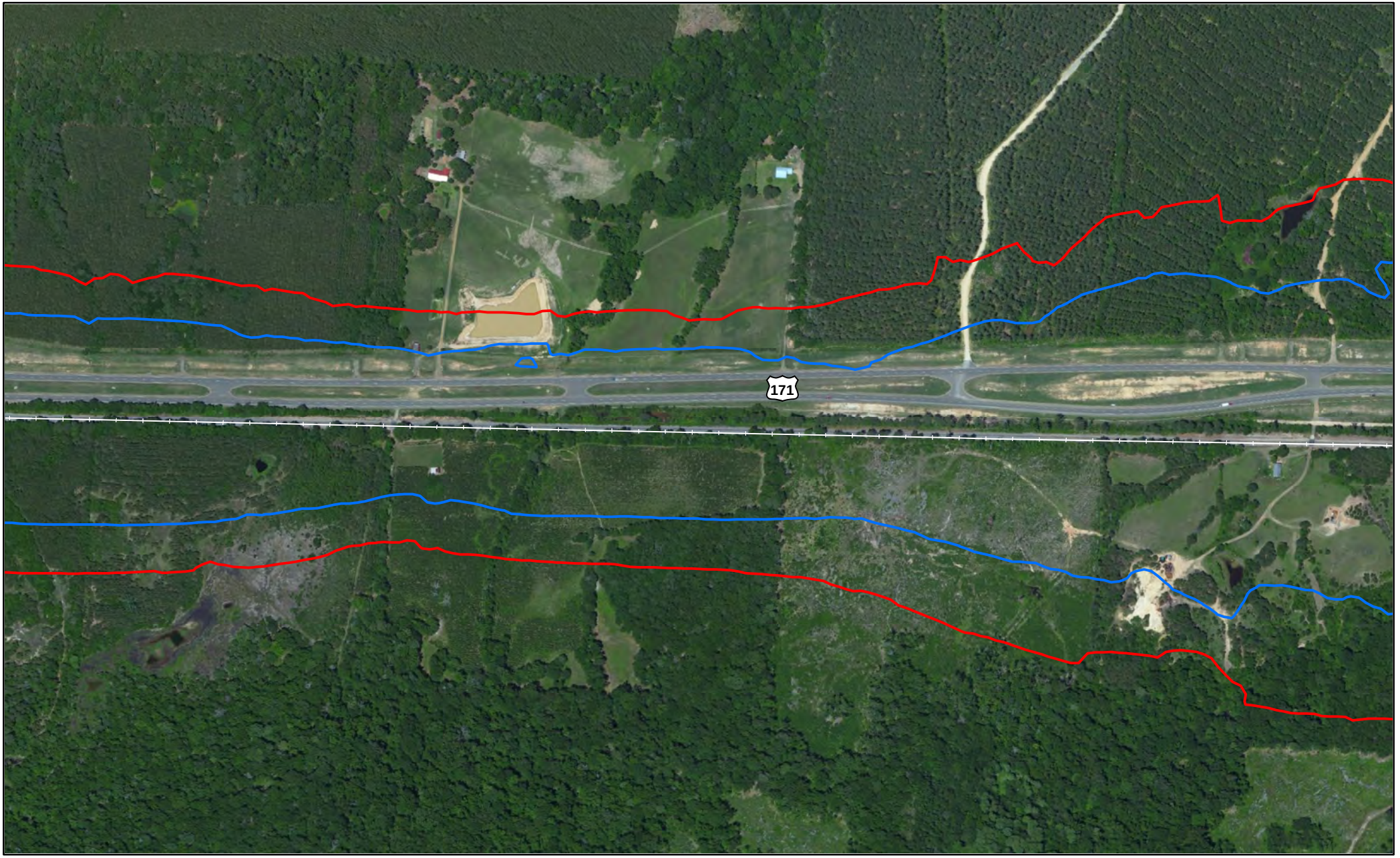
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Noise Contours
Sabine Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



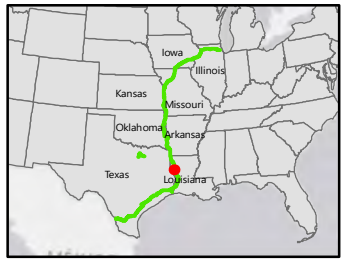
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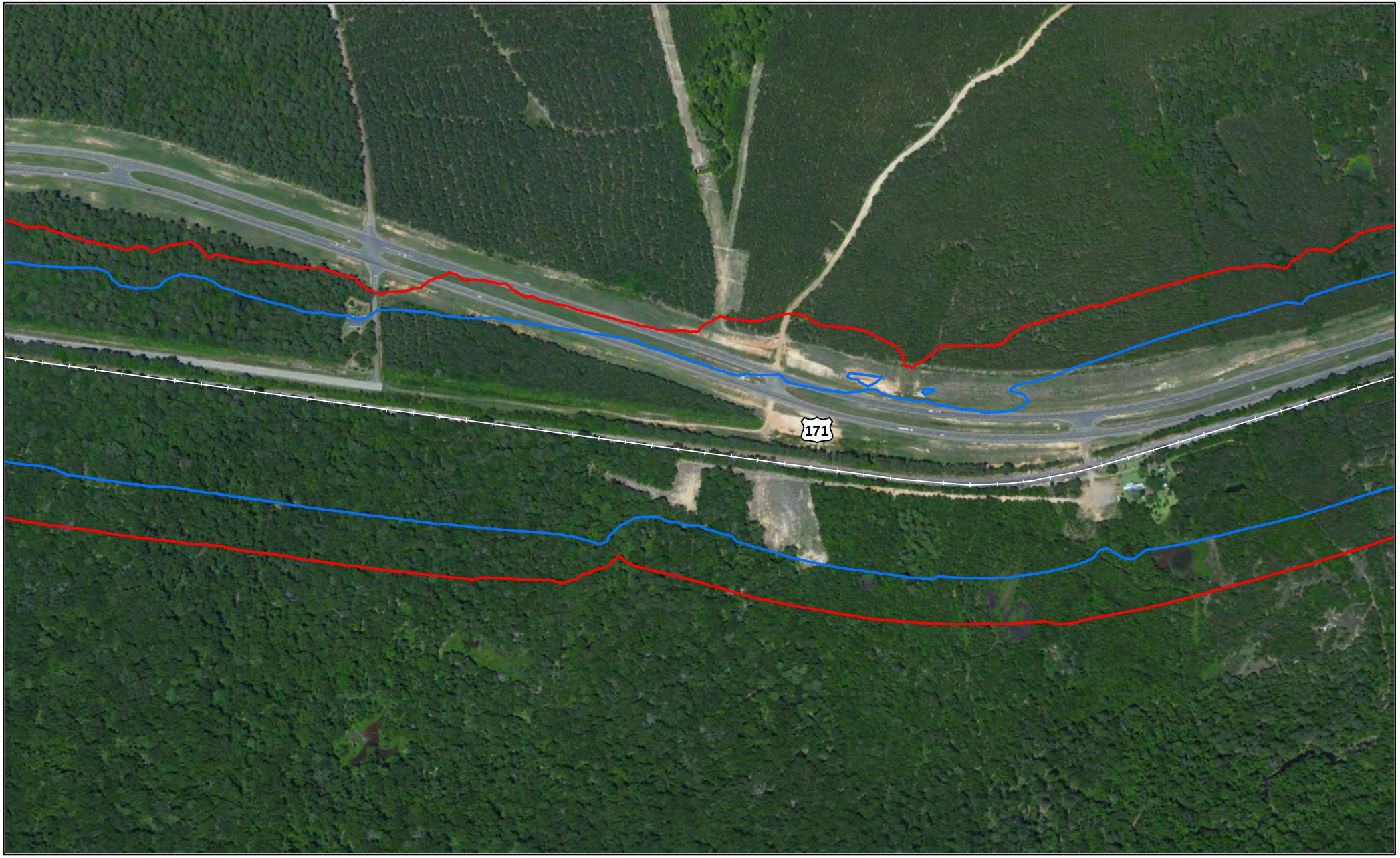
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Noise Contours
Sabine Parish, LA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



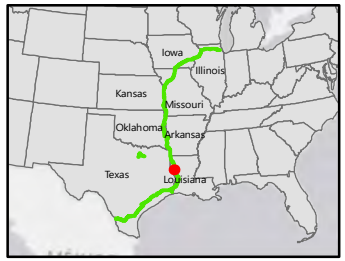
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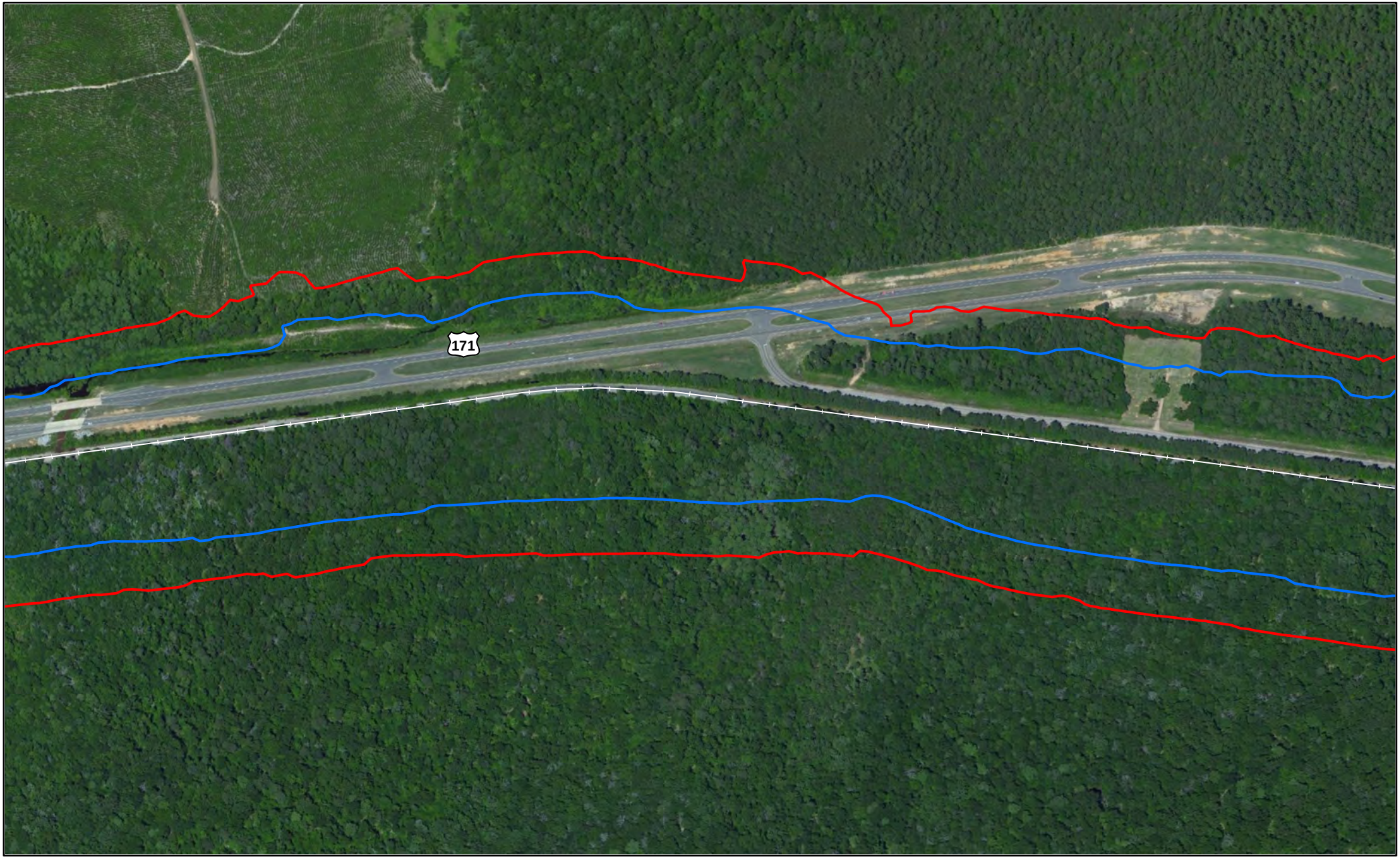
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Noise Contours
Sabine Parish, LA

Miles
0 0.05 0.1



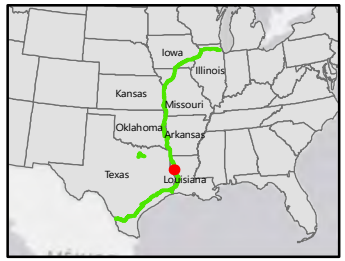
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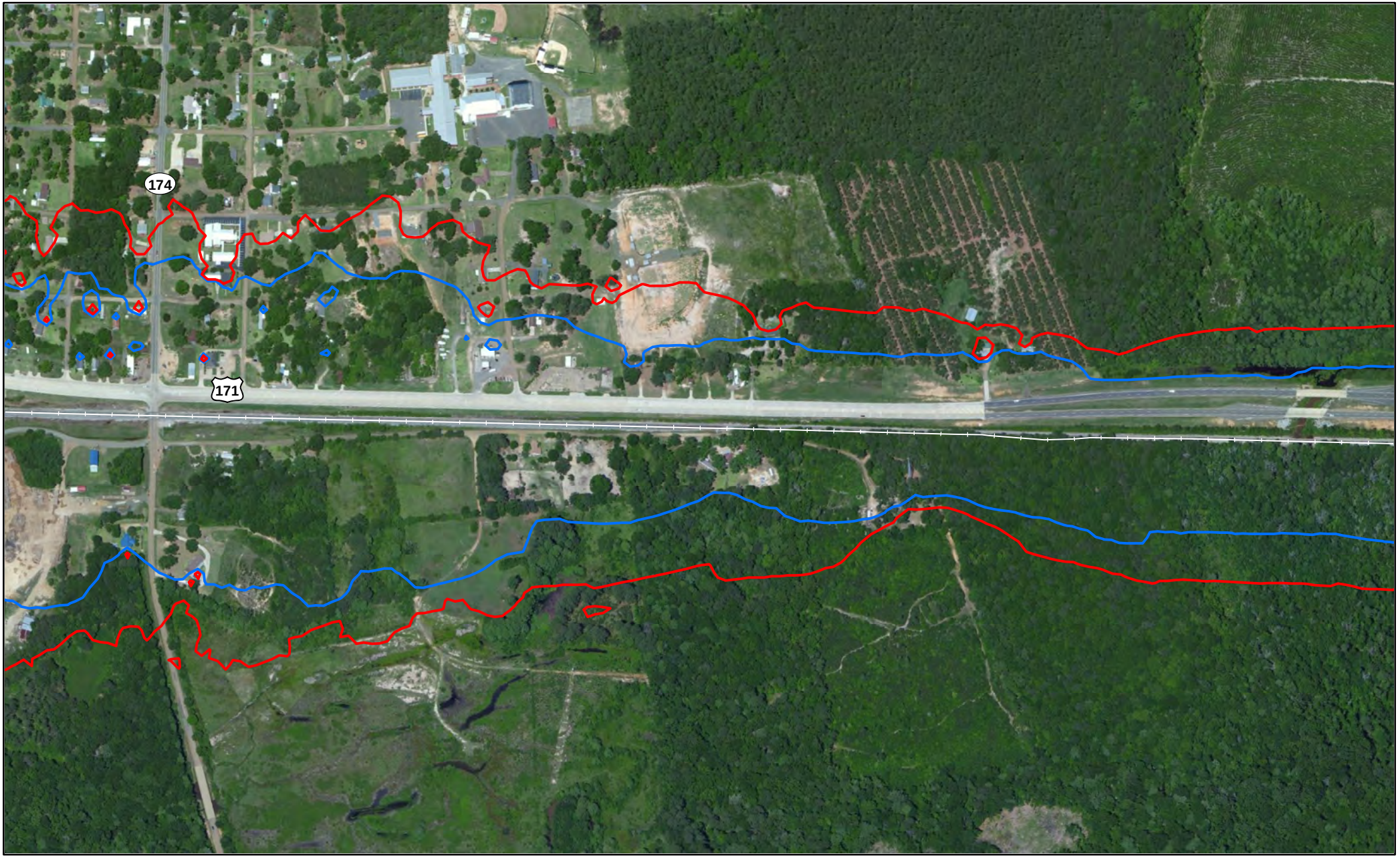
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Noise Contours
Sabine Parish, LA

Miles
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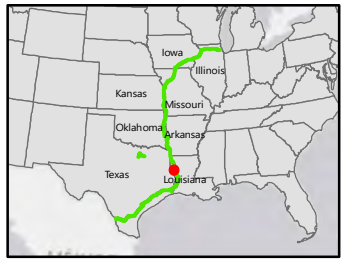
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Noise Contours
Sabine Parish, LA

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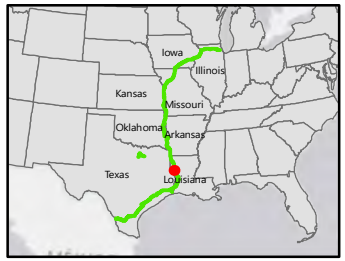
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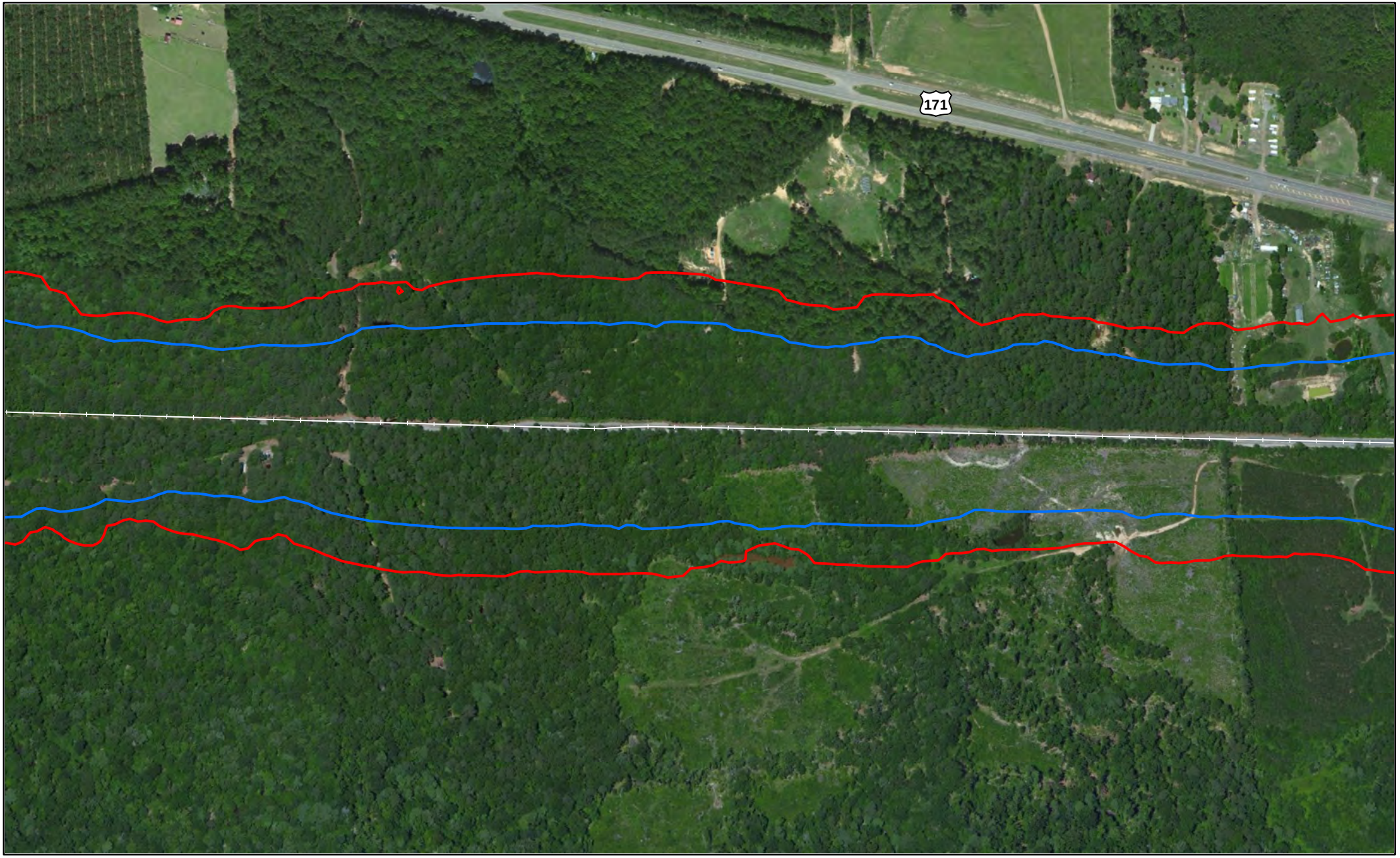
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Noise Contours
Sabine Parish, LA

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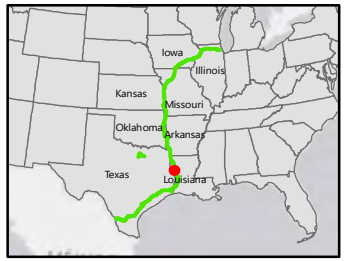
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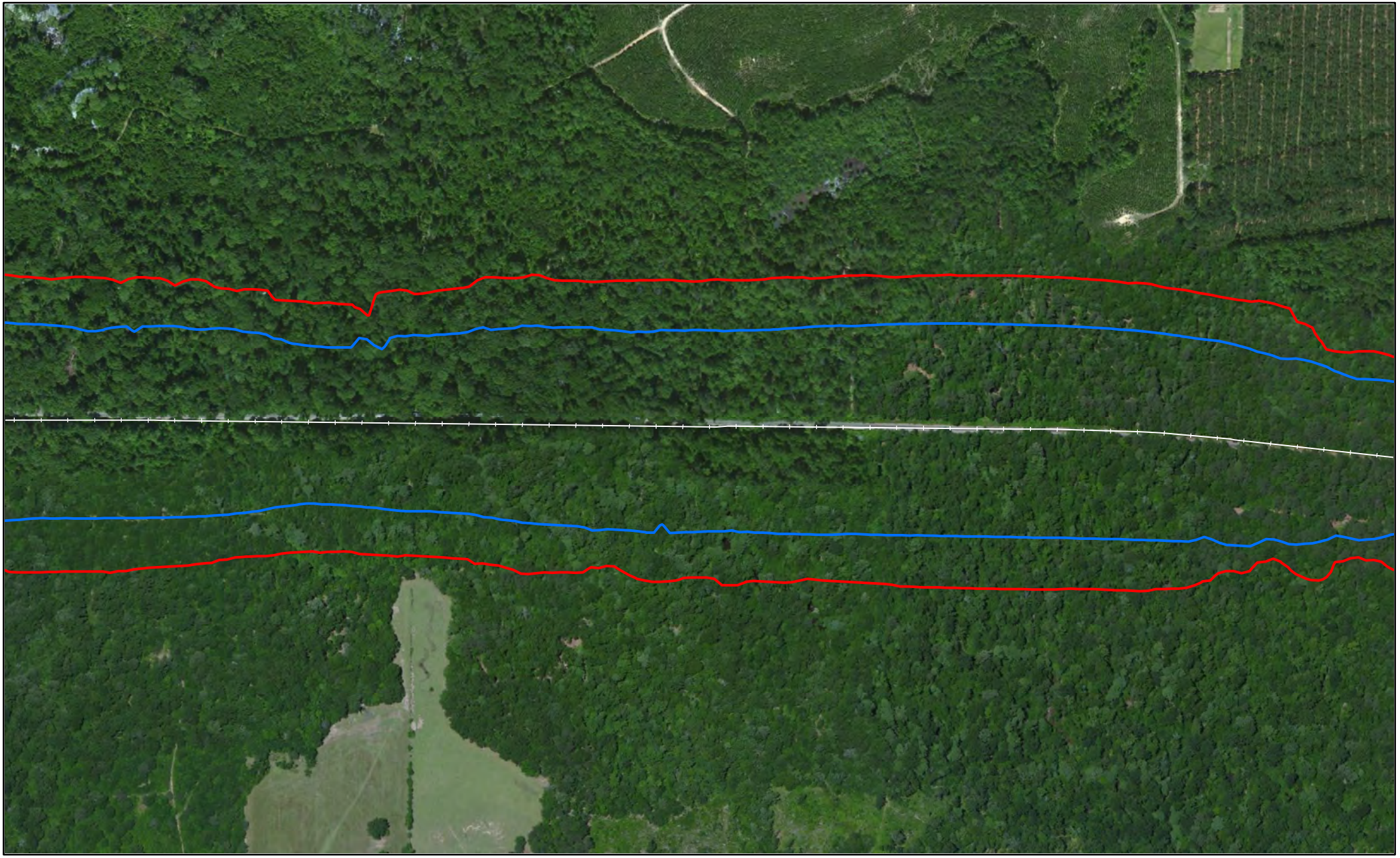
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Noise Contours
Sabine Parish, LA

Miles
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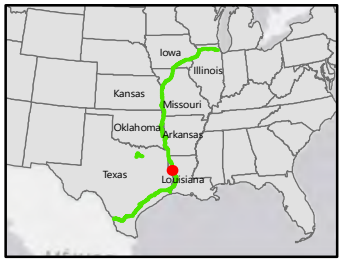
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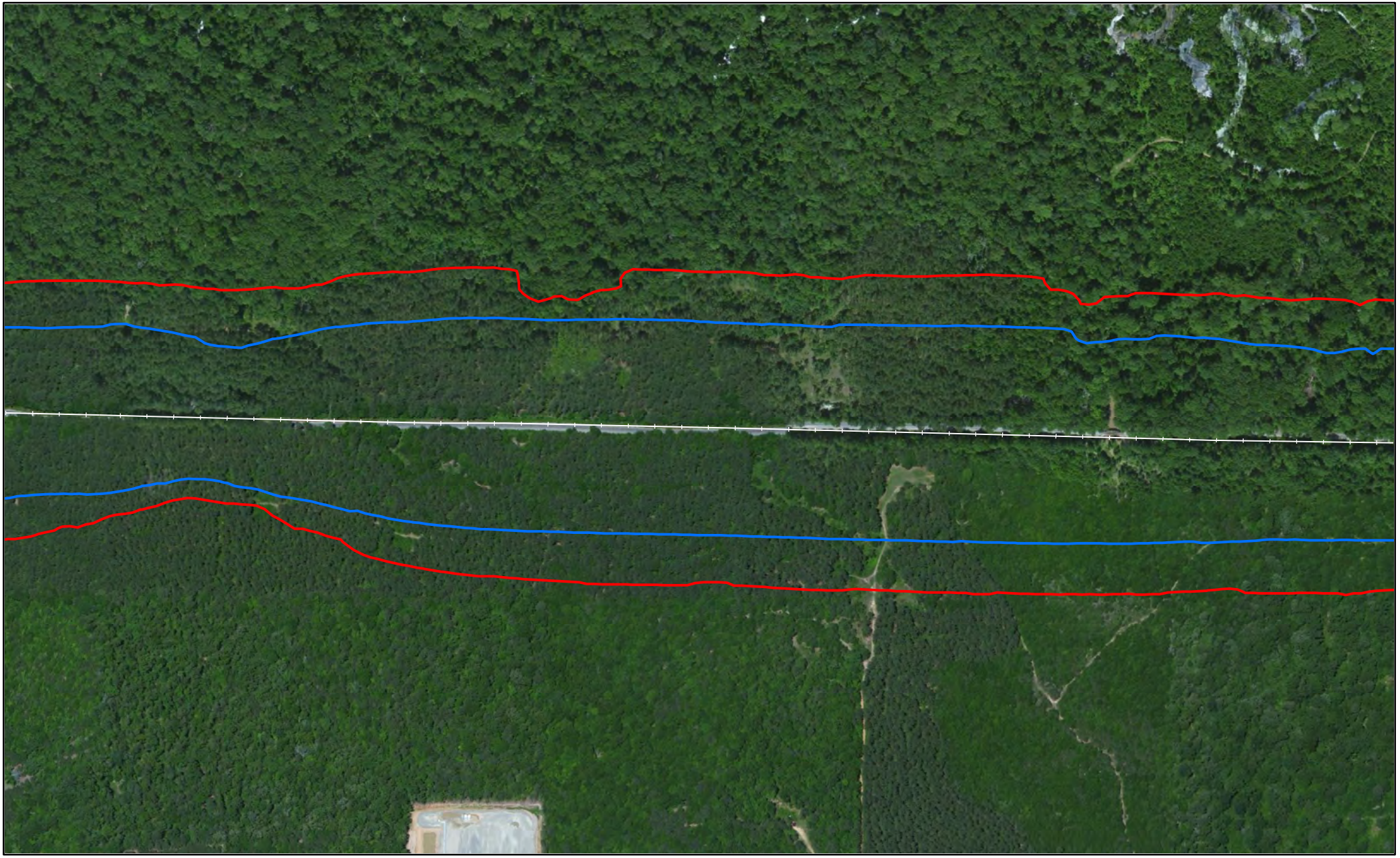
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Noise Contours
Sabine Parish, LA

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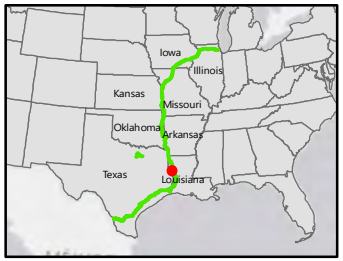
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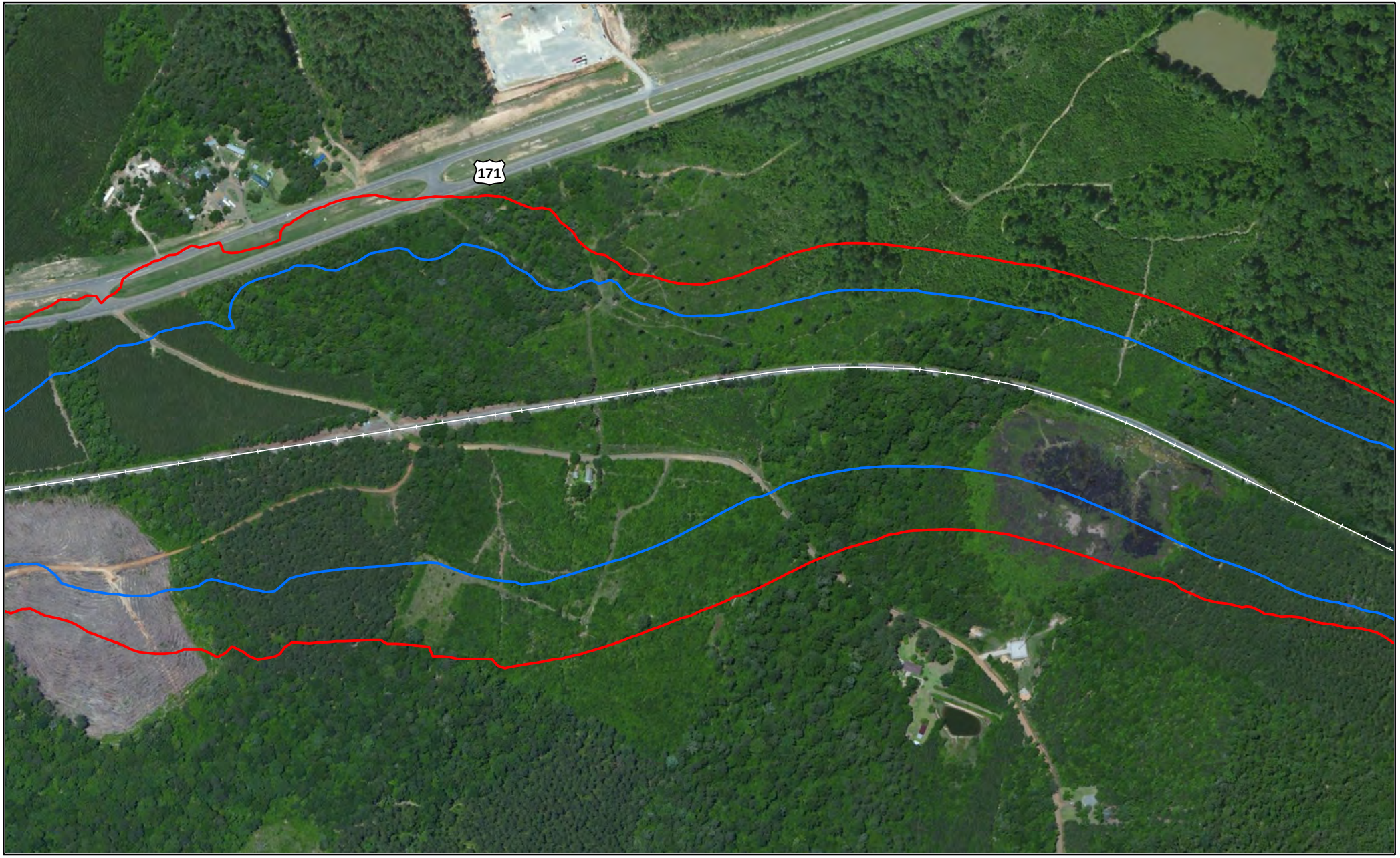
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Noise Contours
Sabine Parish, LA

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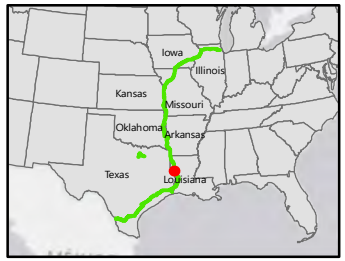
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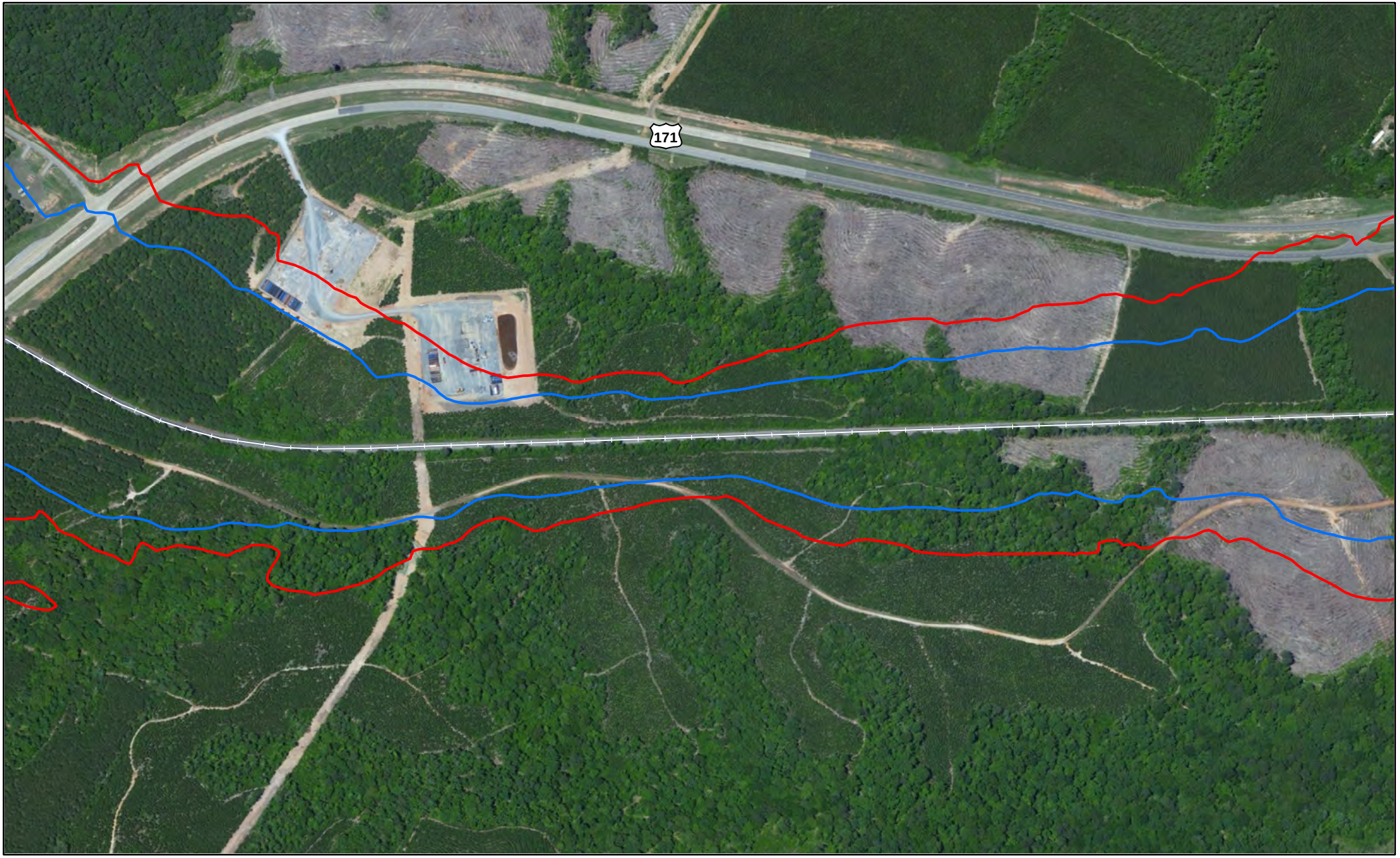
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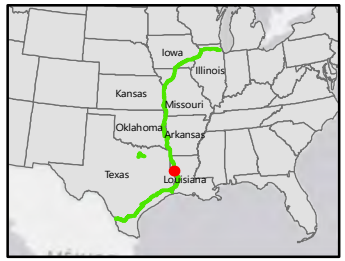
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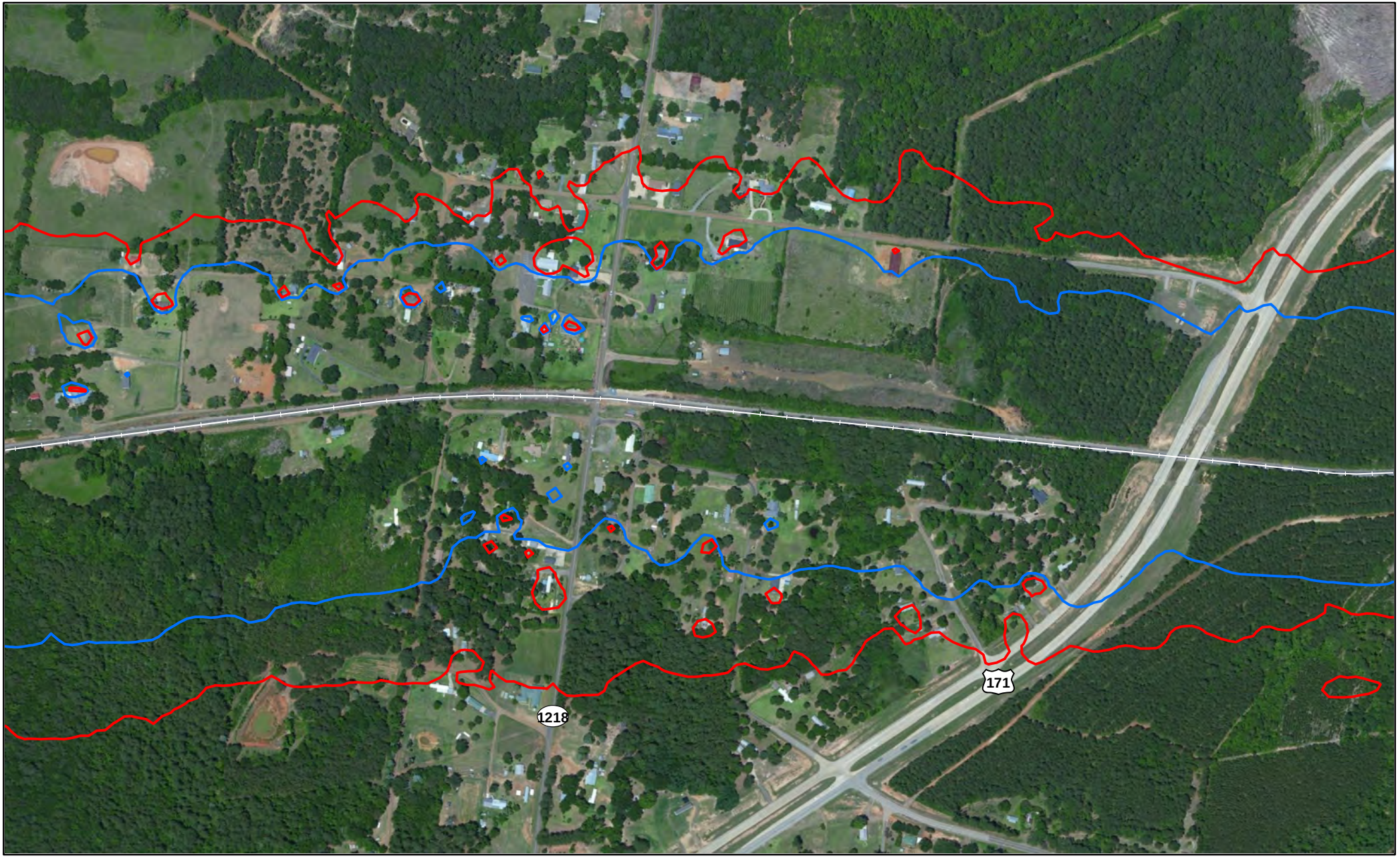
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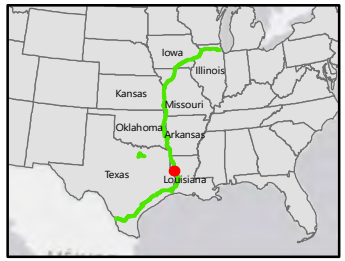
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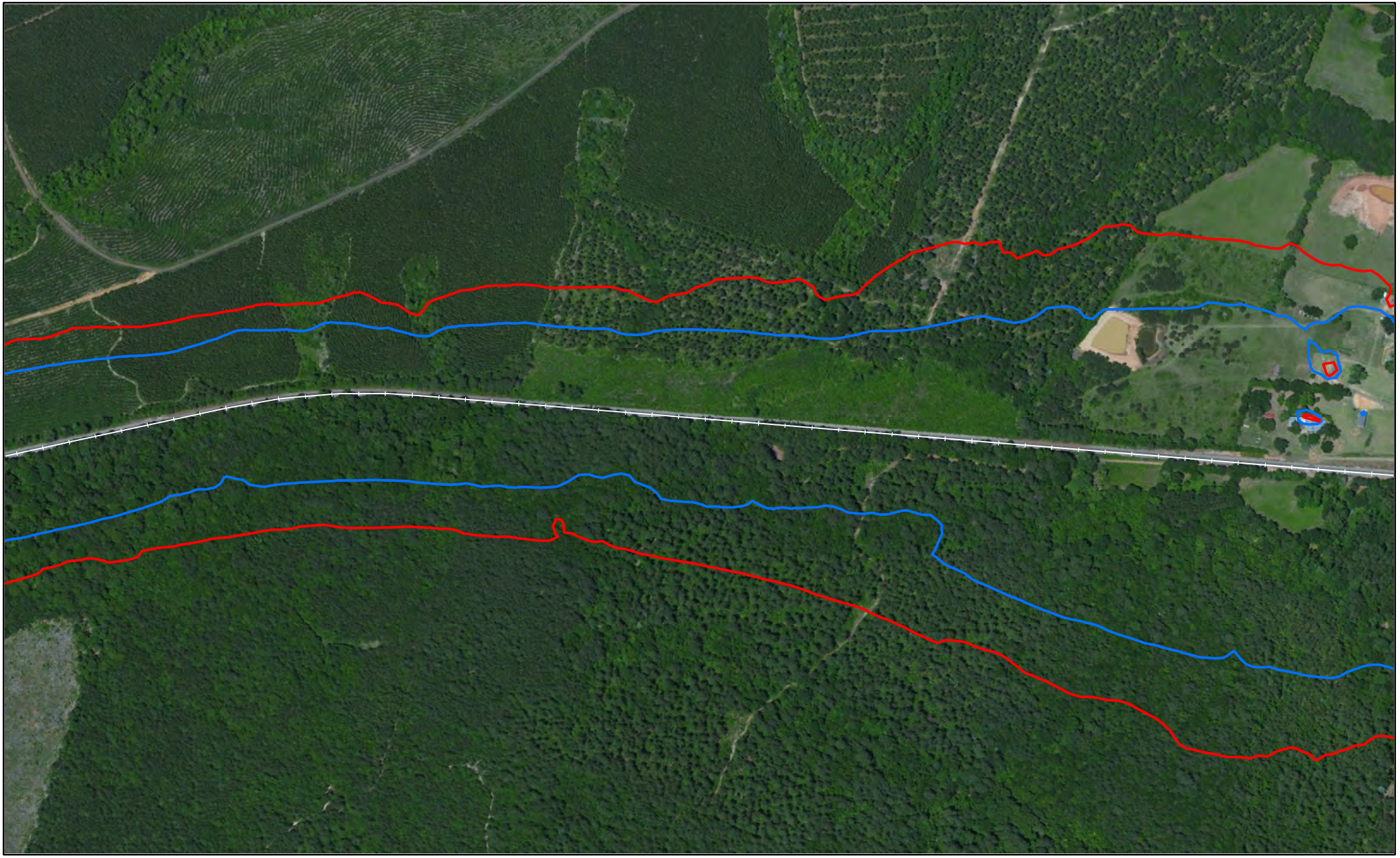
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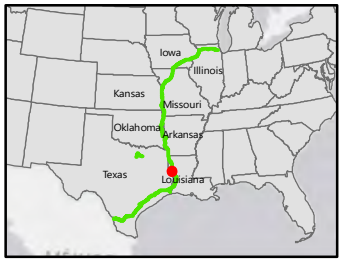
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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

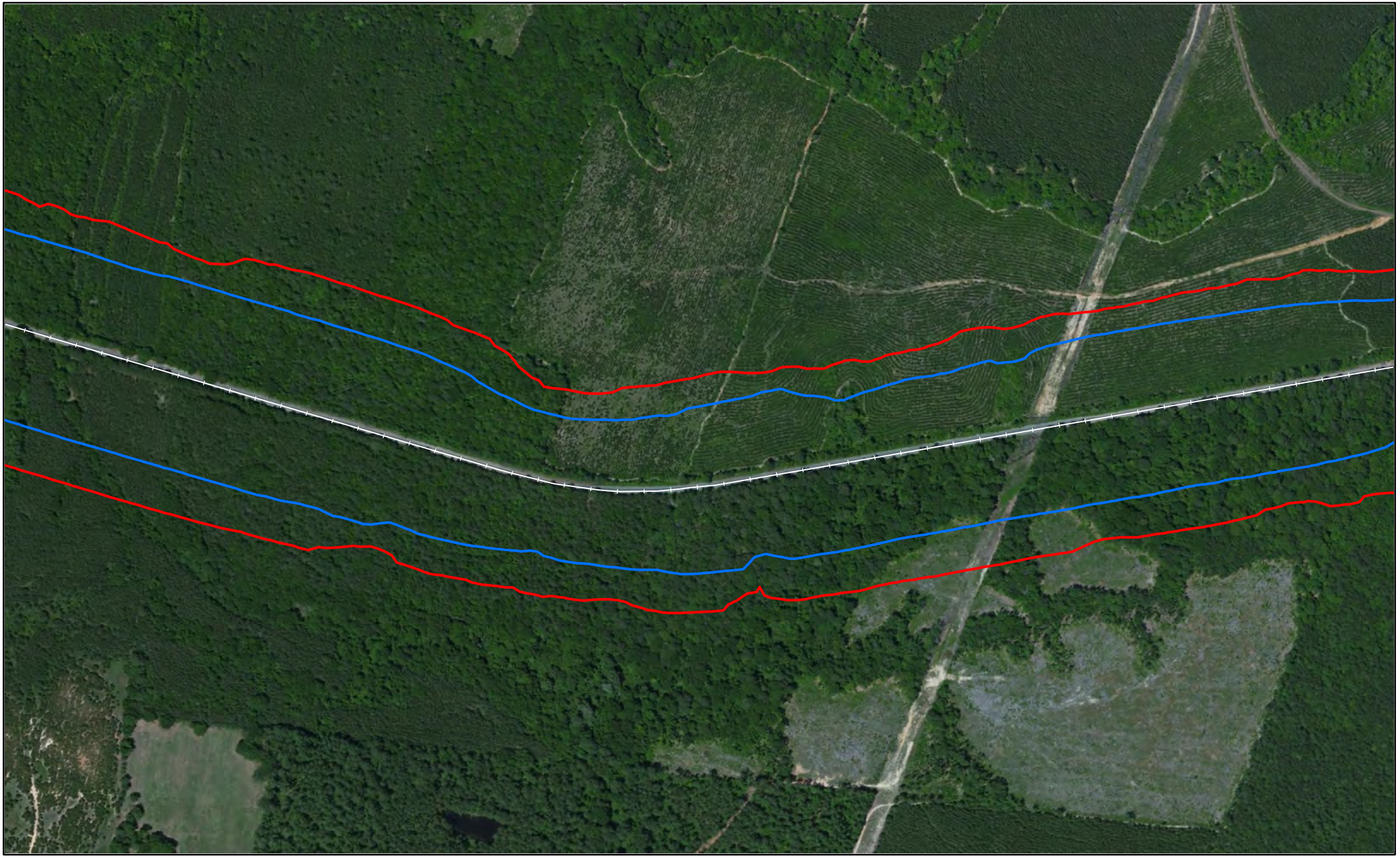
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Noise Contours
Sabine Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



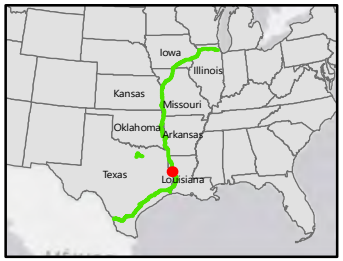
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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

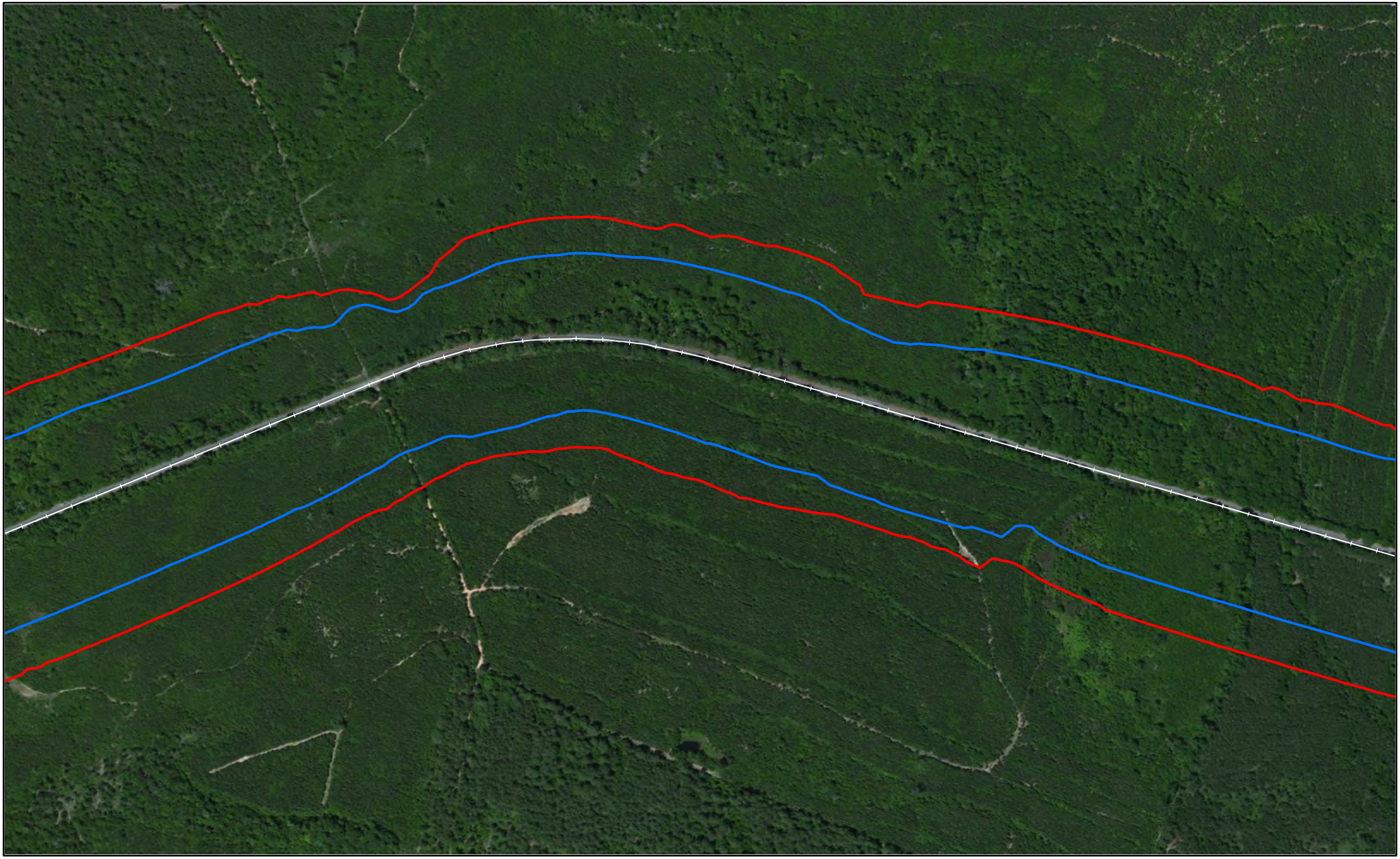
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Noise Contours
Sabine Parish, LA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



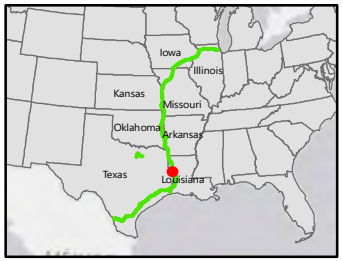
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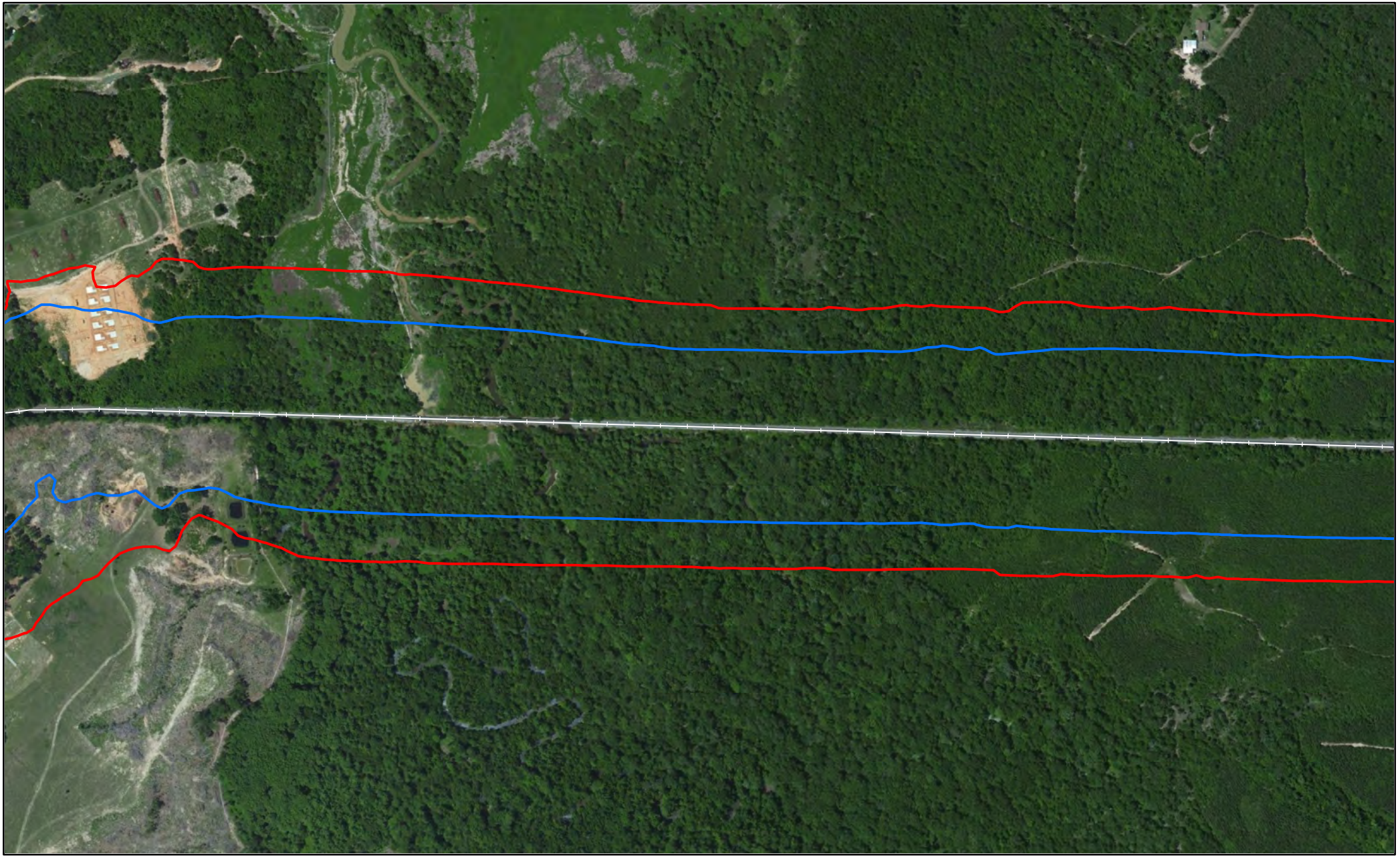
Tracks

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Noise Contours
Sabine Parish, LA

Miles
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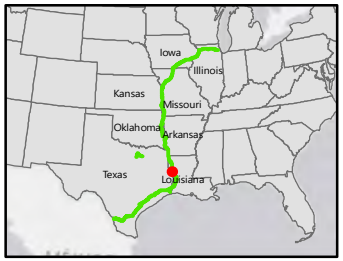
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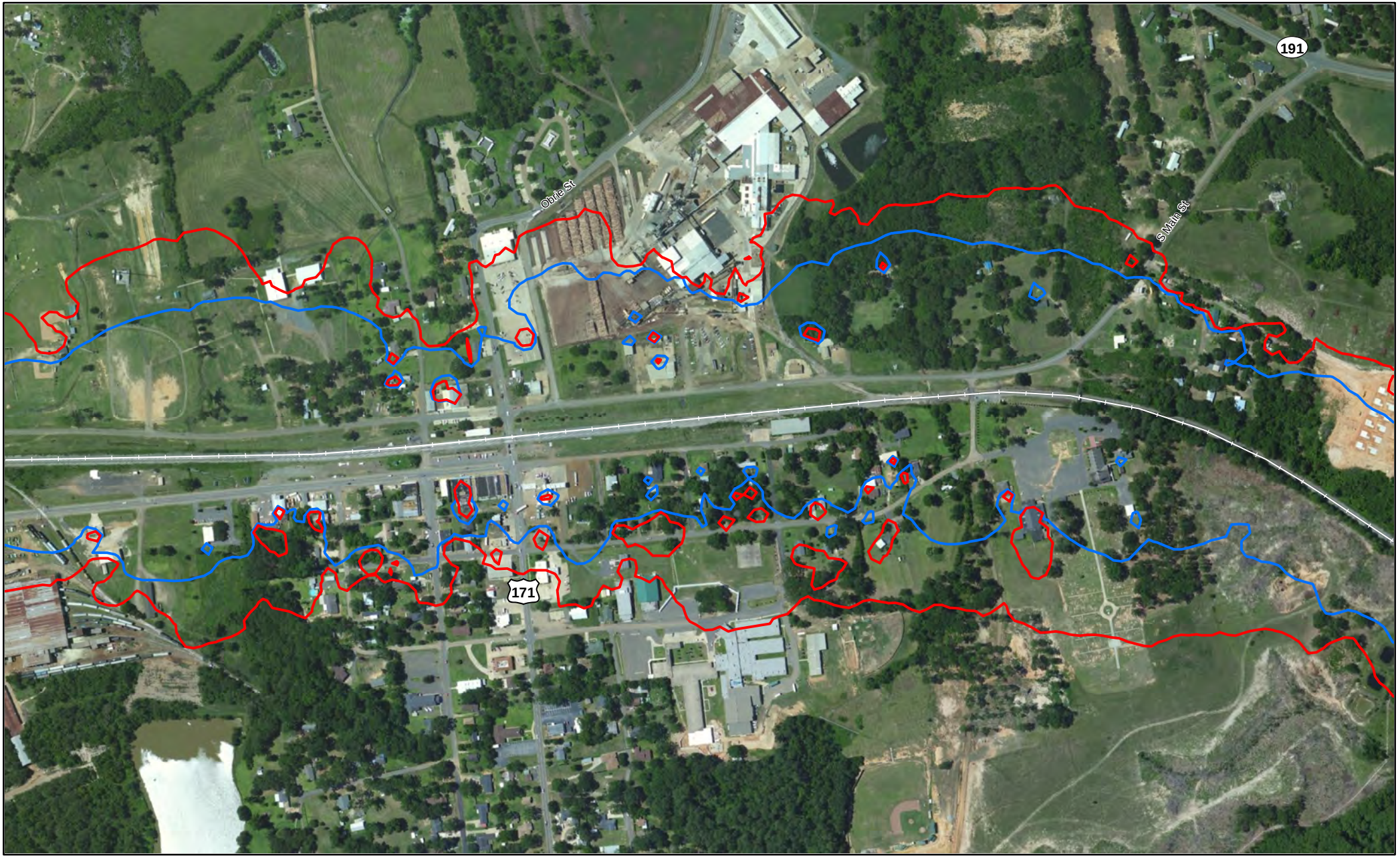
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



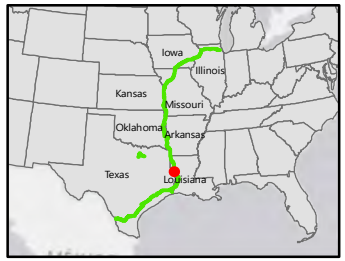
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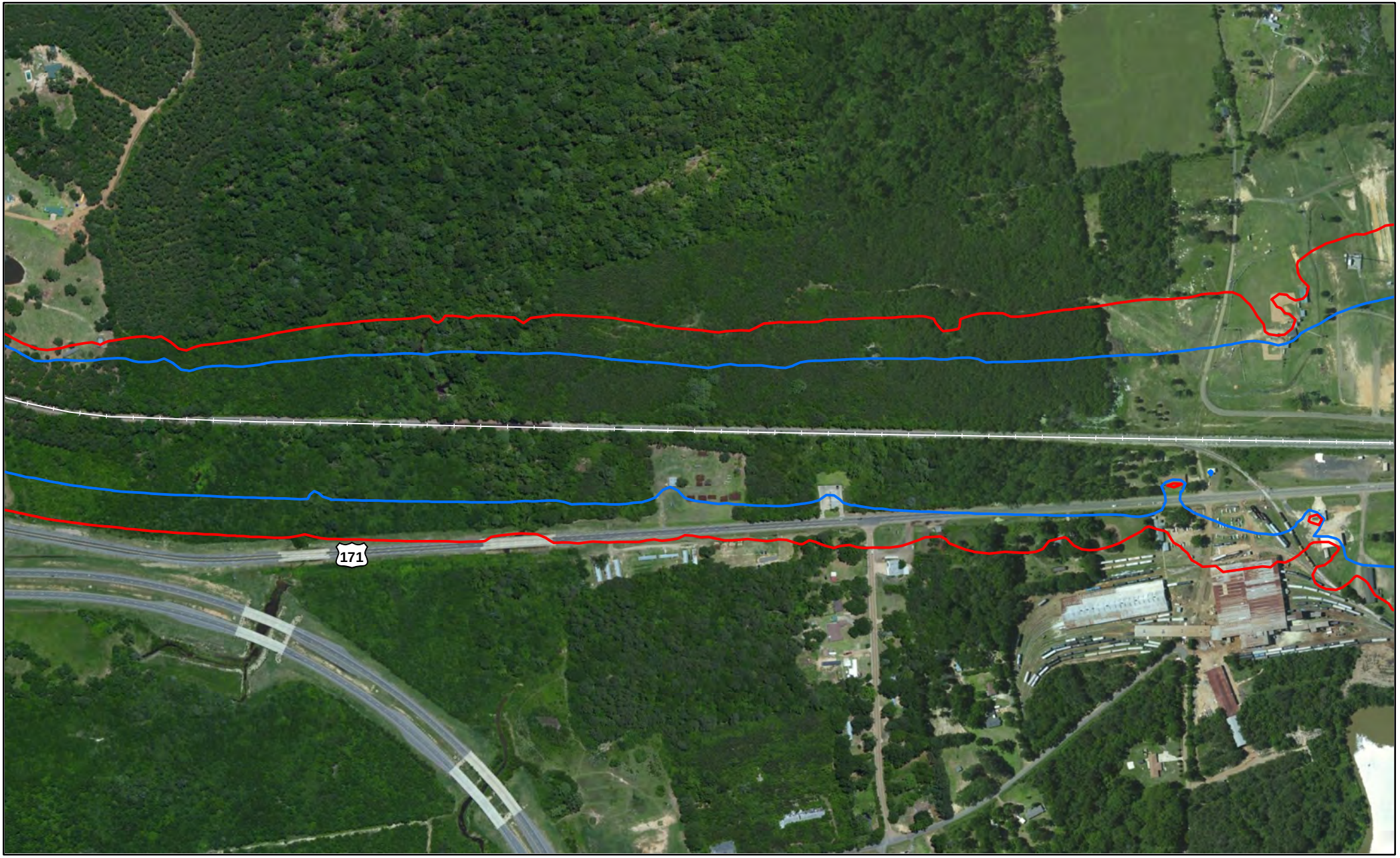
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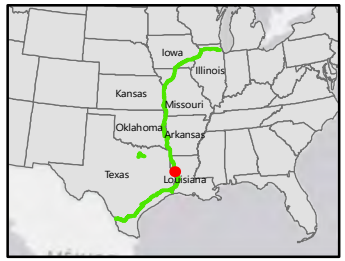
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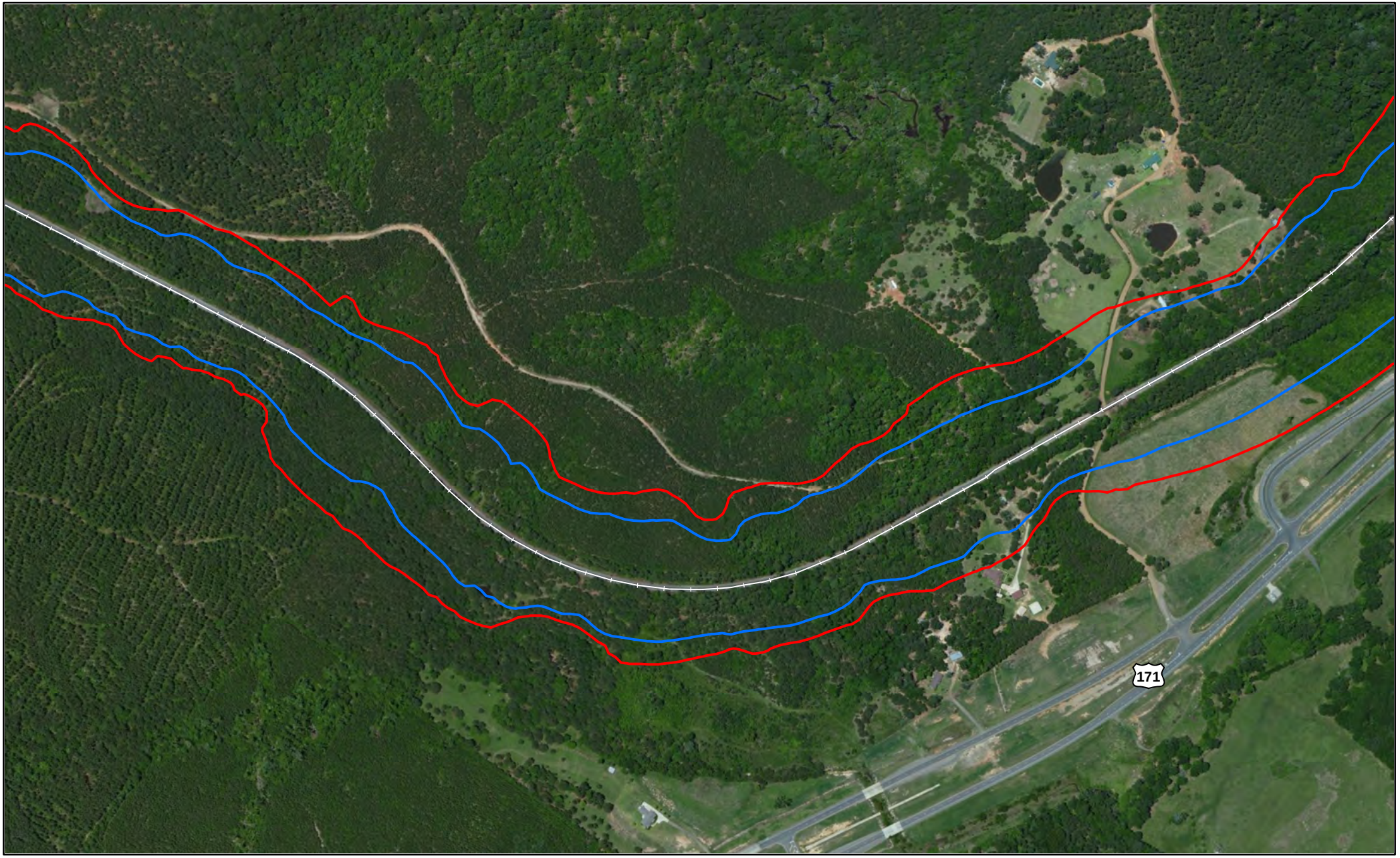
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



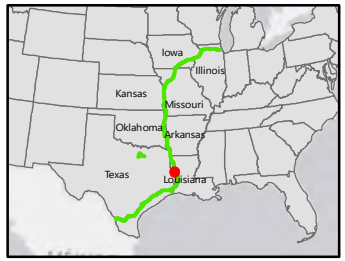
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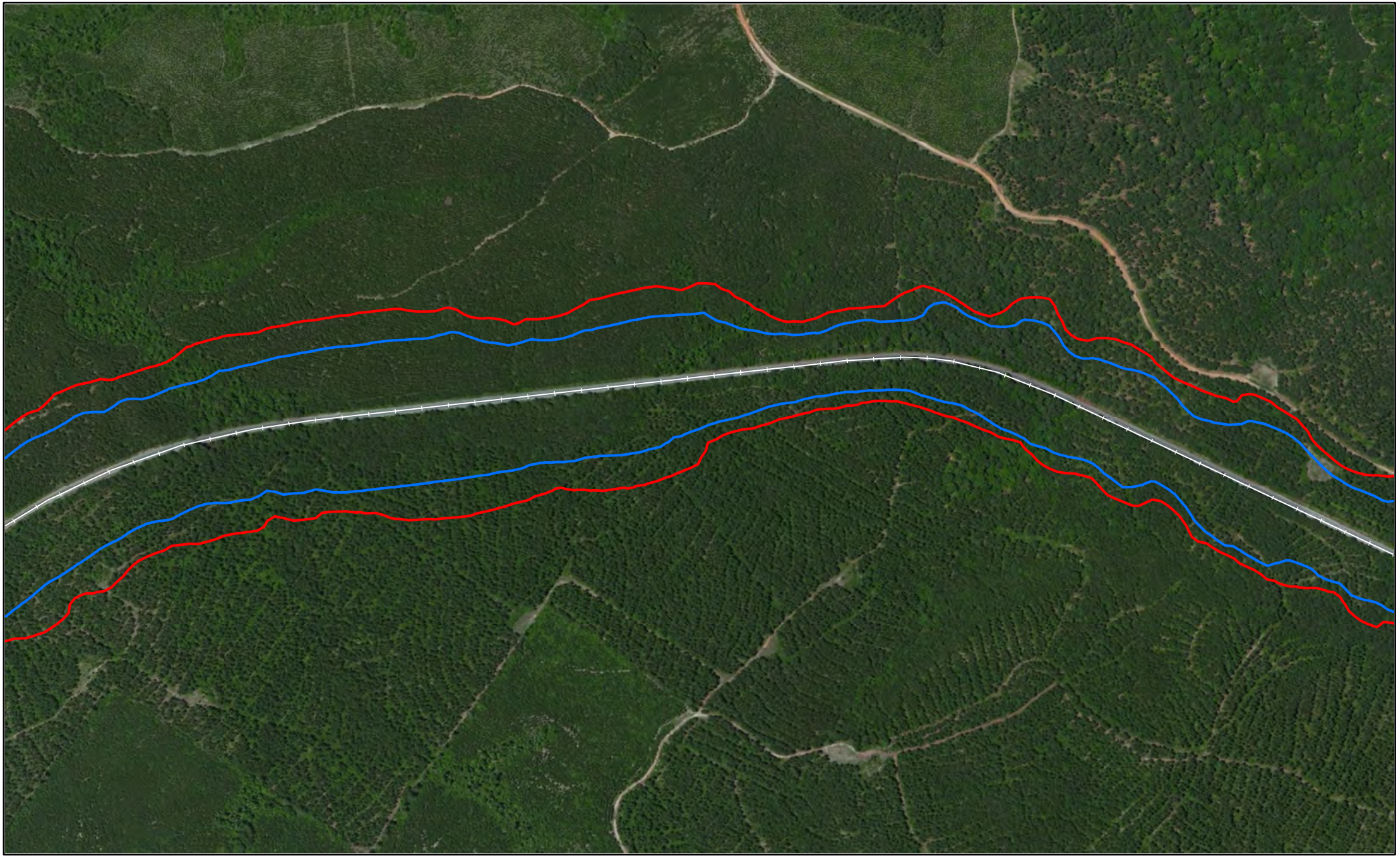
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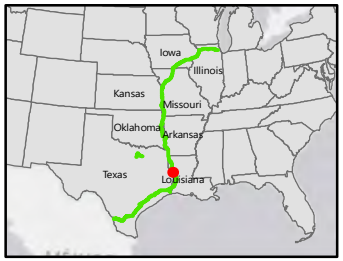
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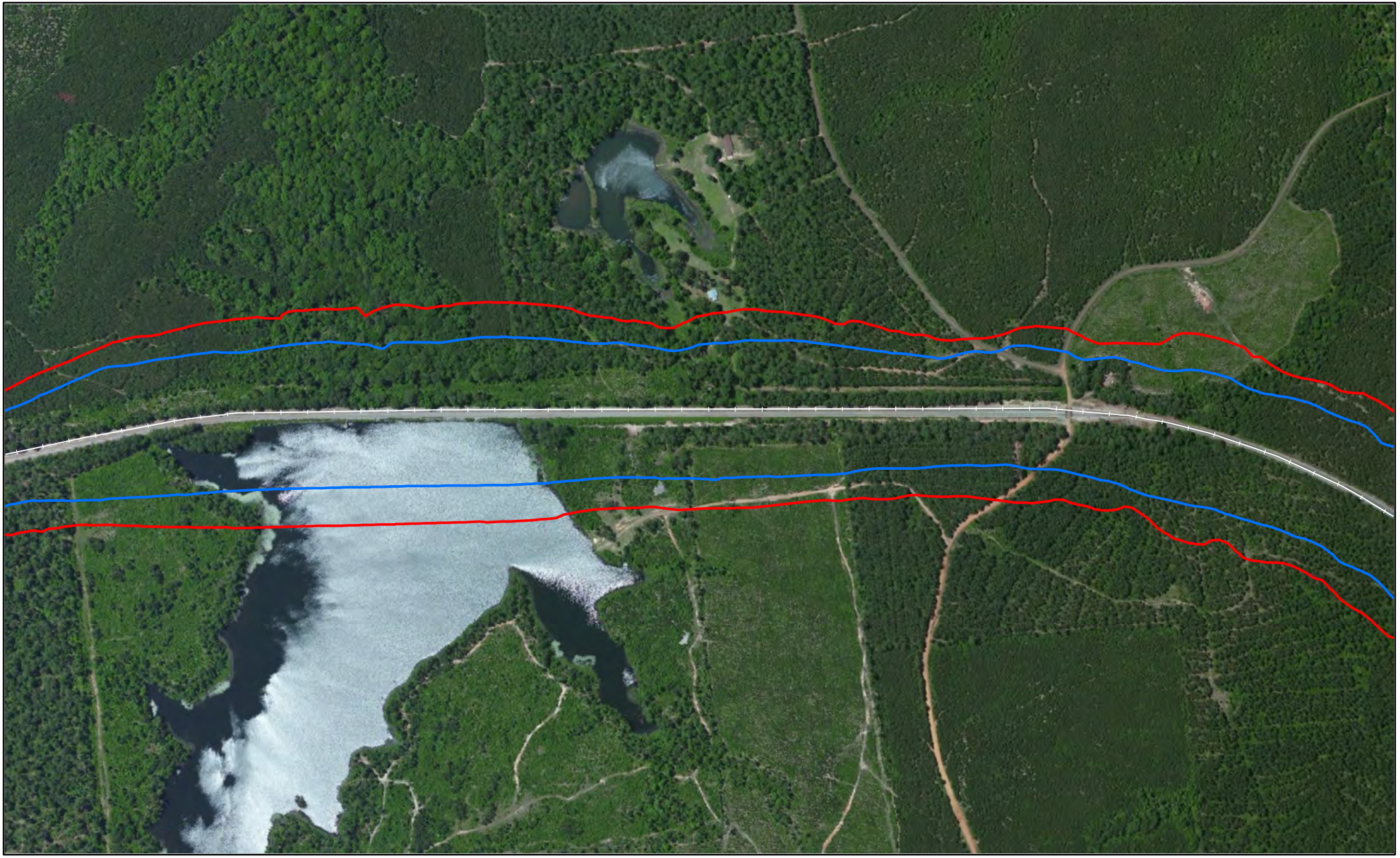
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Noise Contours
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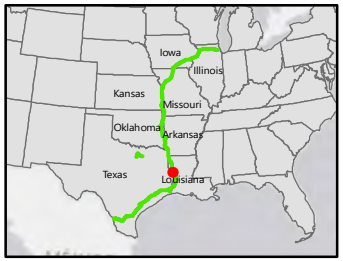
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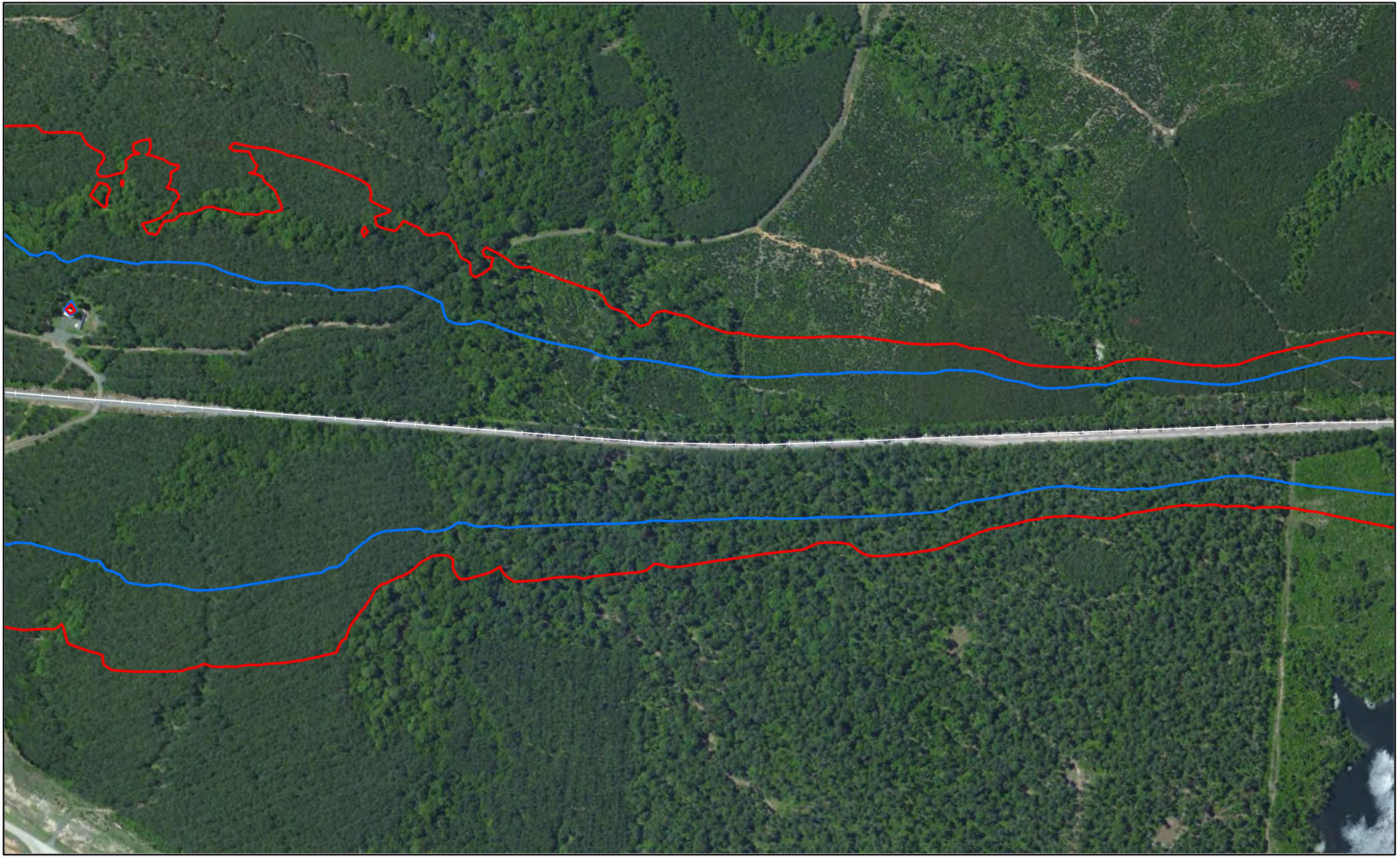
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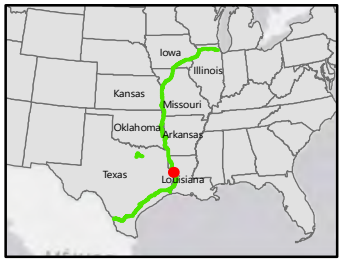
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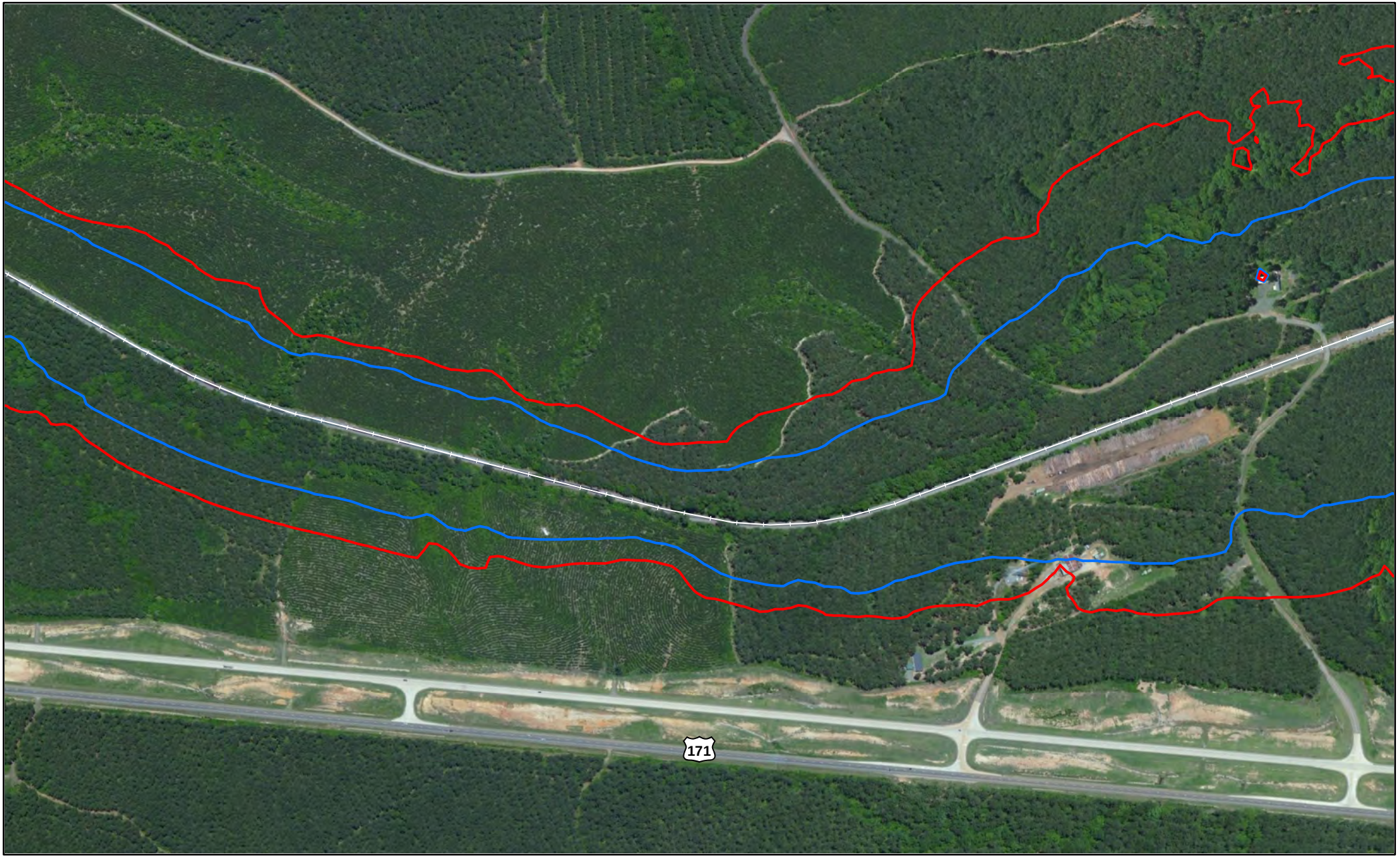
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Noise Contours
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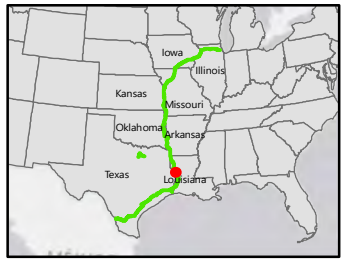
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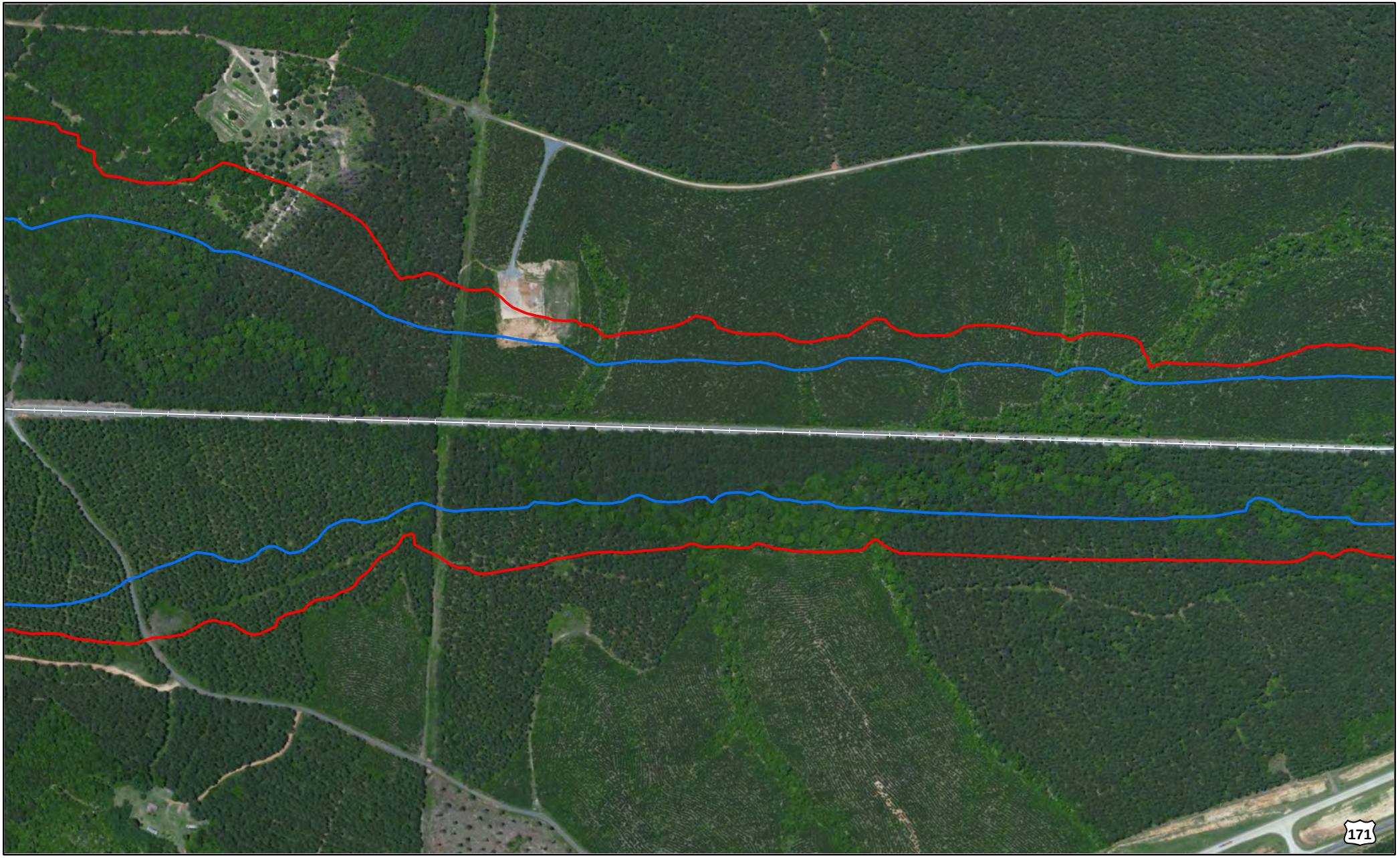
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Noise Contours
Sabine Parish, LA

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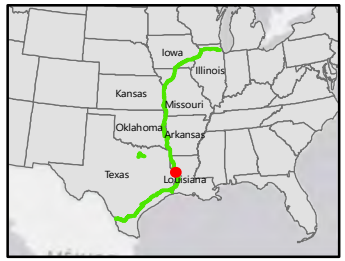
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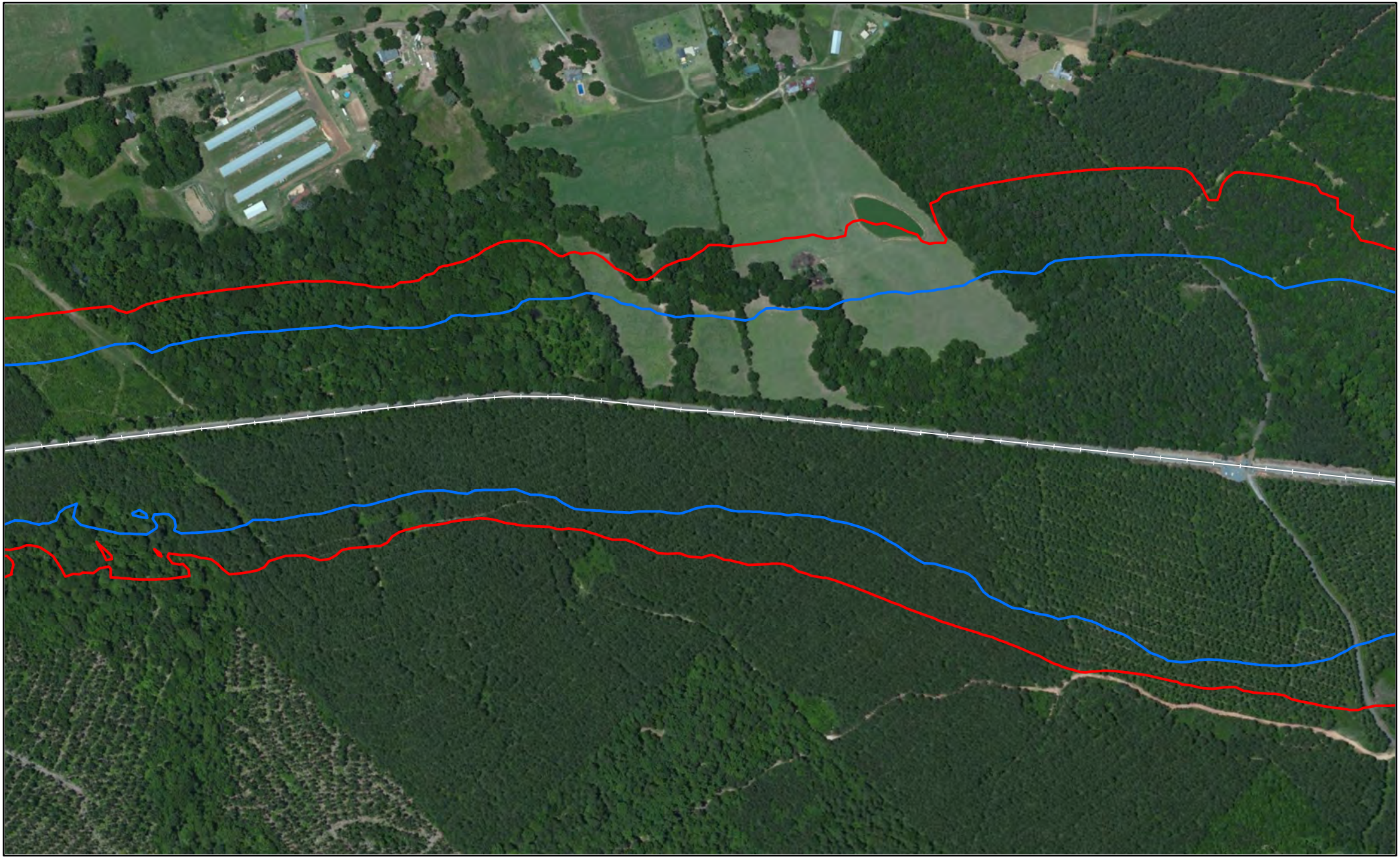
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Sabine Parish, LA

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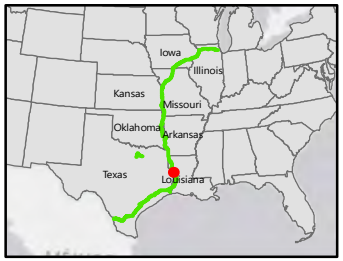
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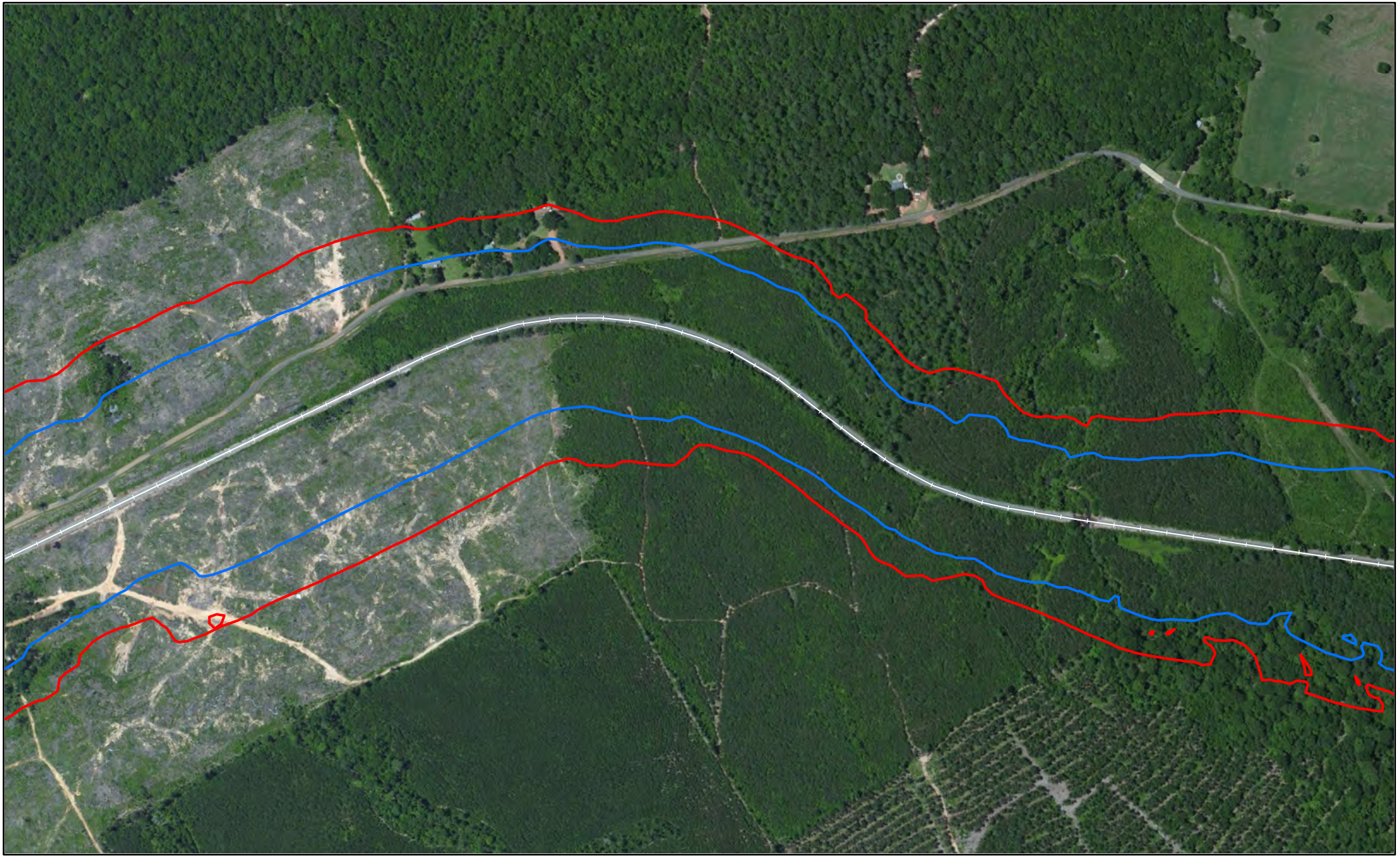
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Noise Contours
Sabine Parish, LA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



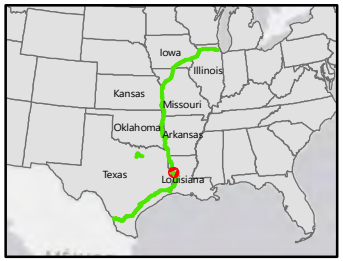
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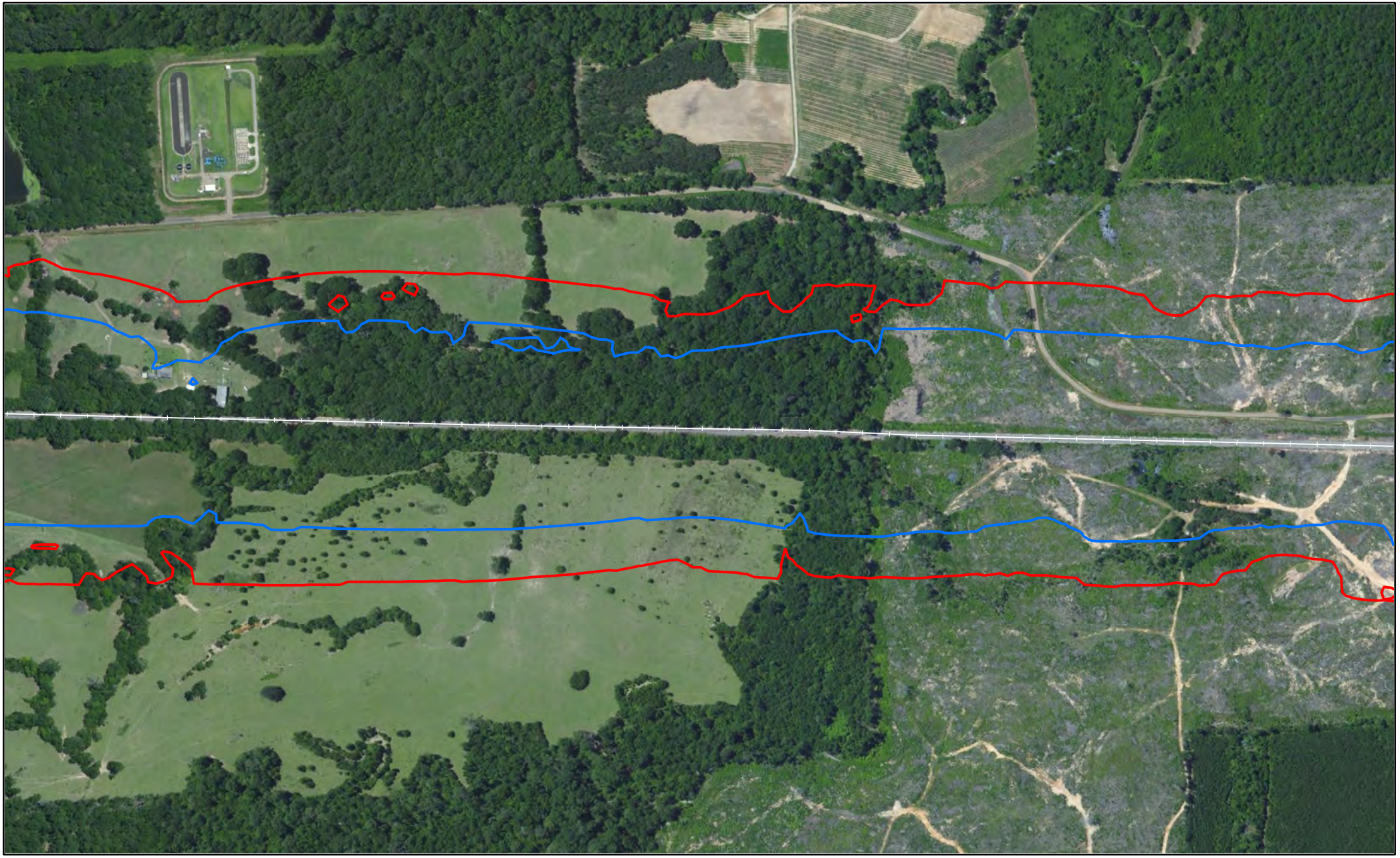
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Noise Contours
Sabine Parish, LA

Miles
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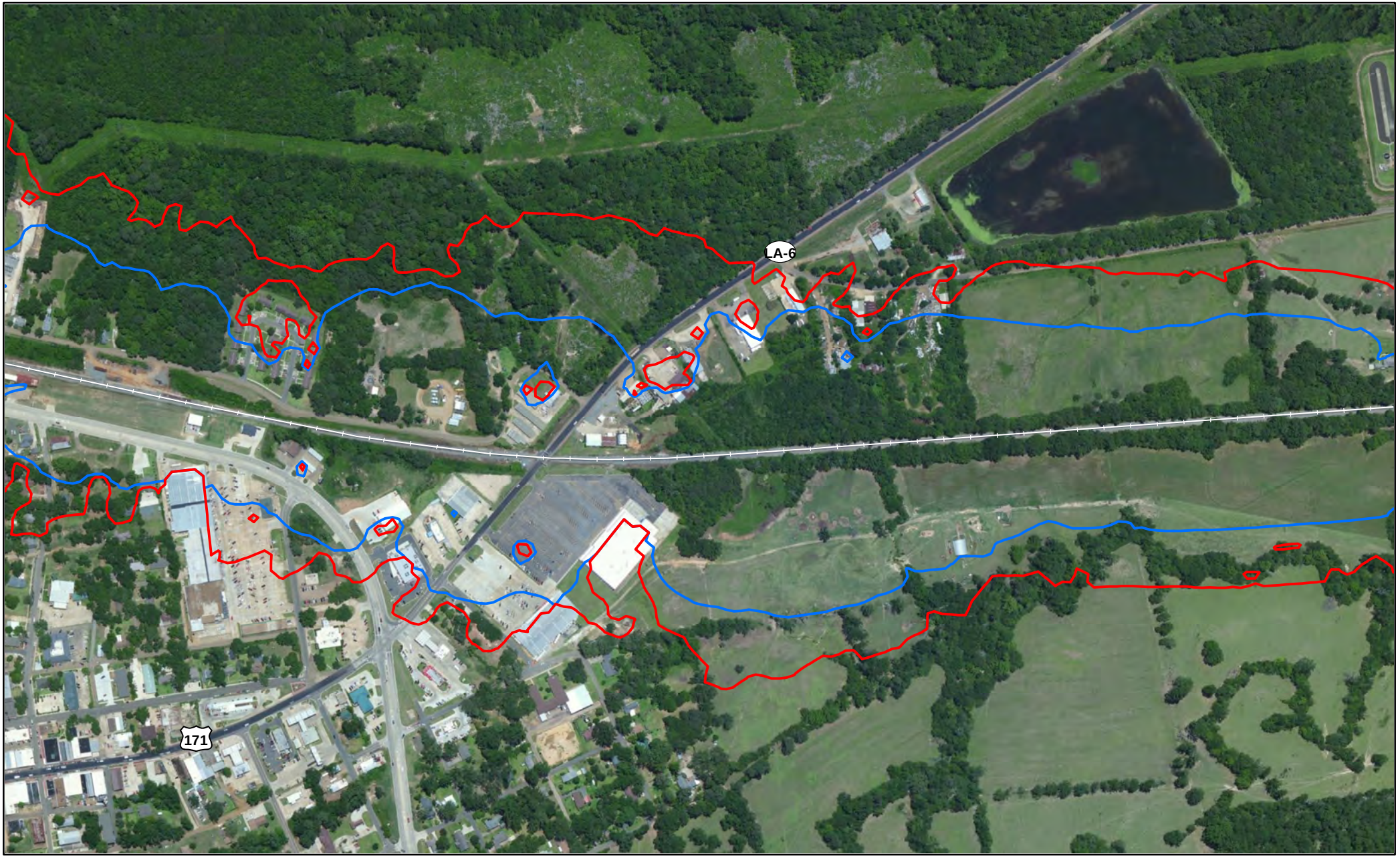
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Noise Contours
Sabine Parish, LA

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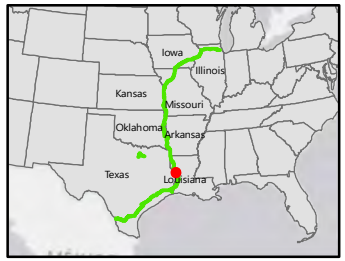
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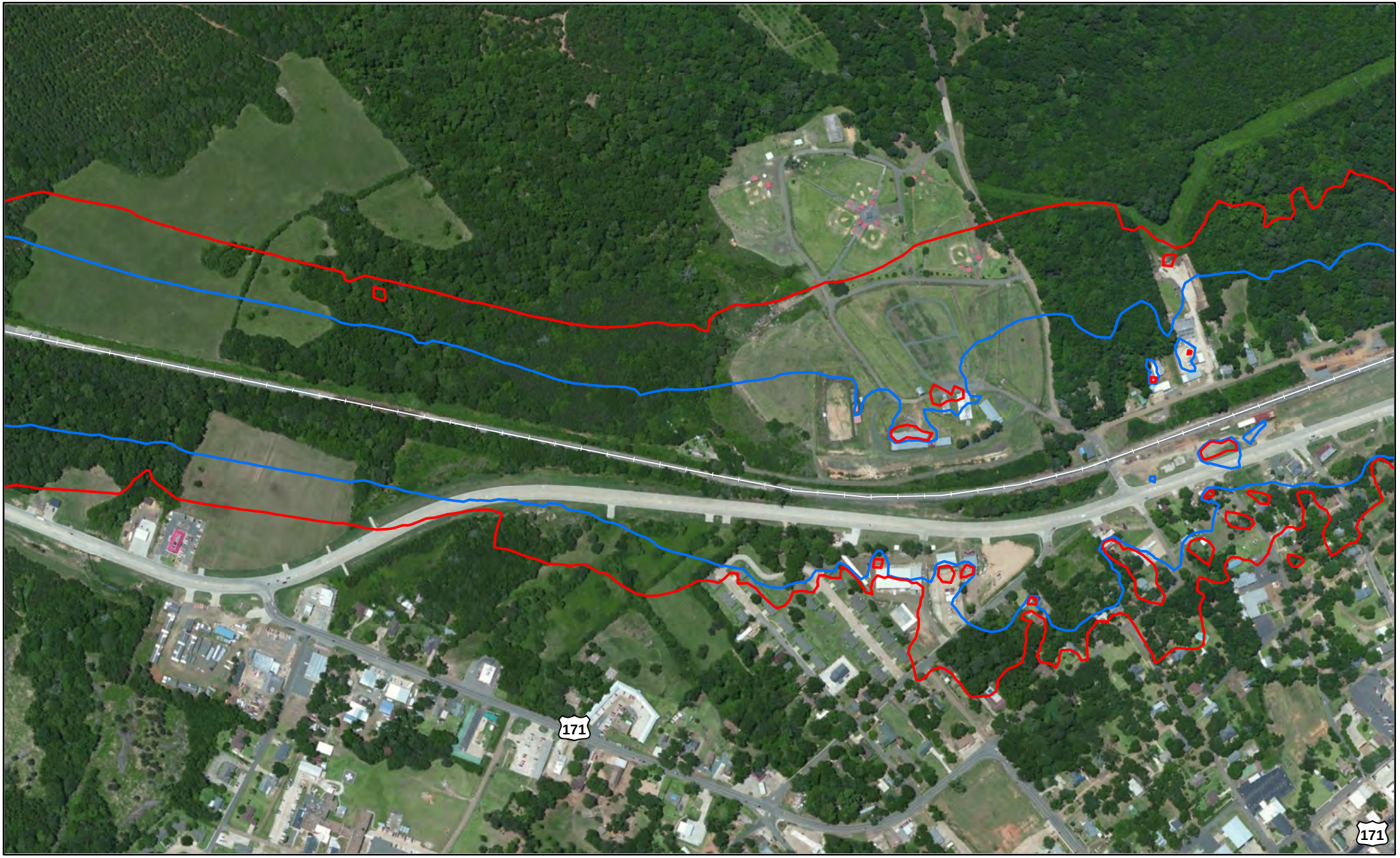
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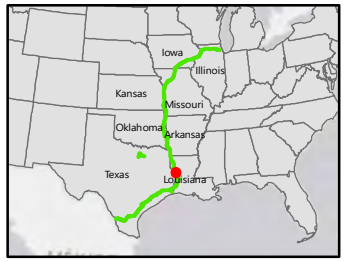
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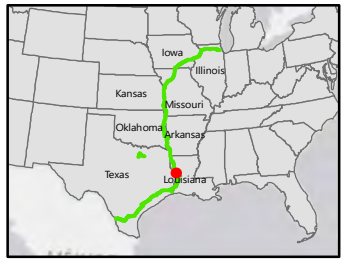
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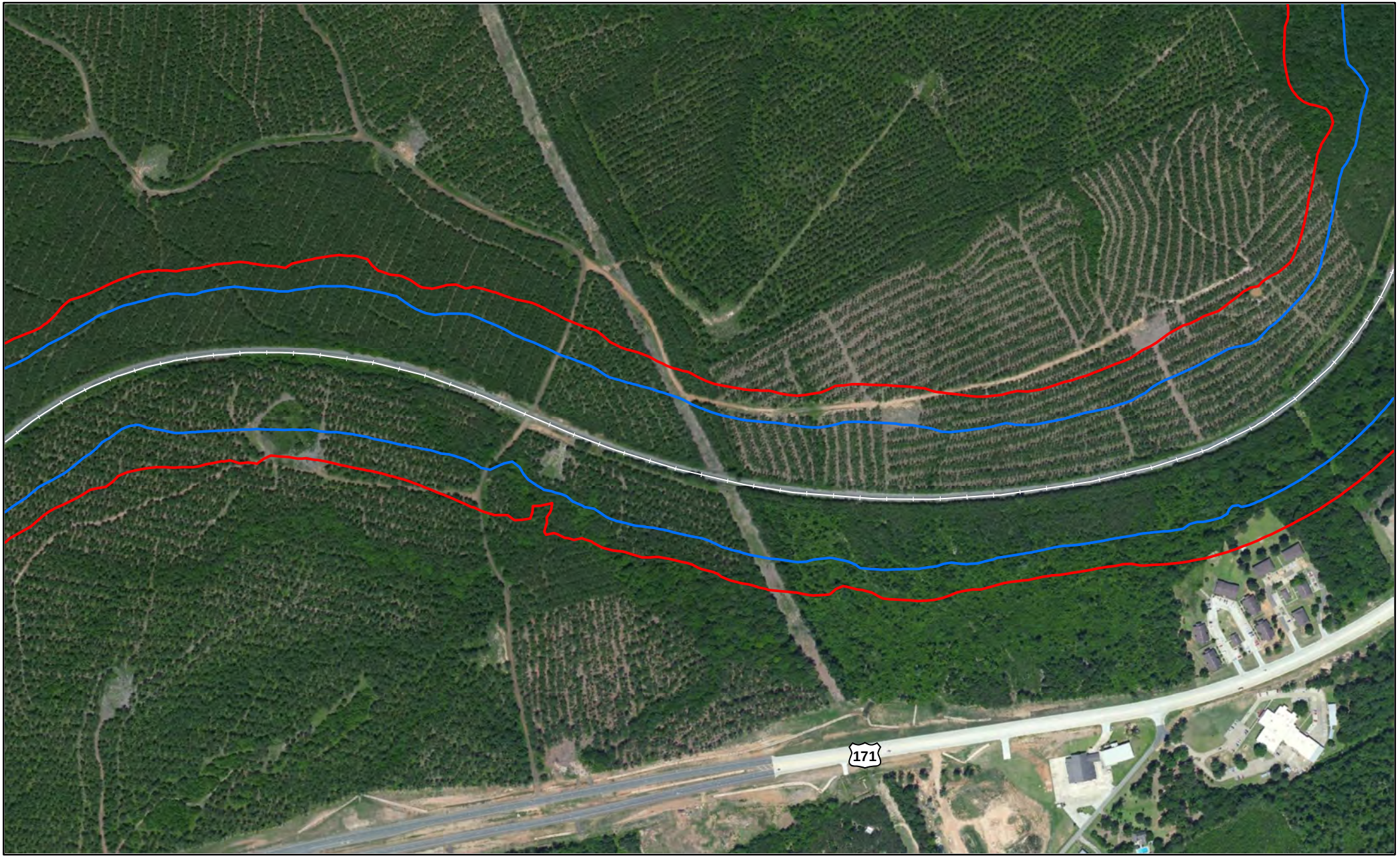
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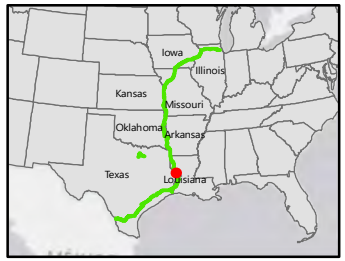
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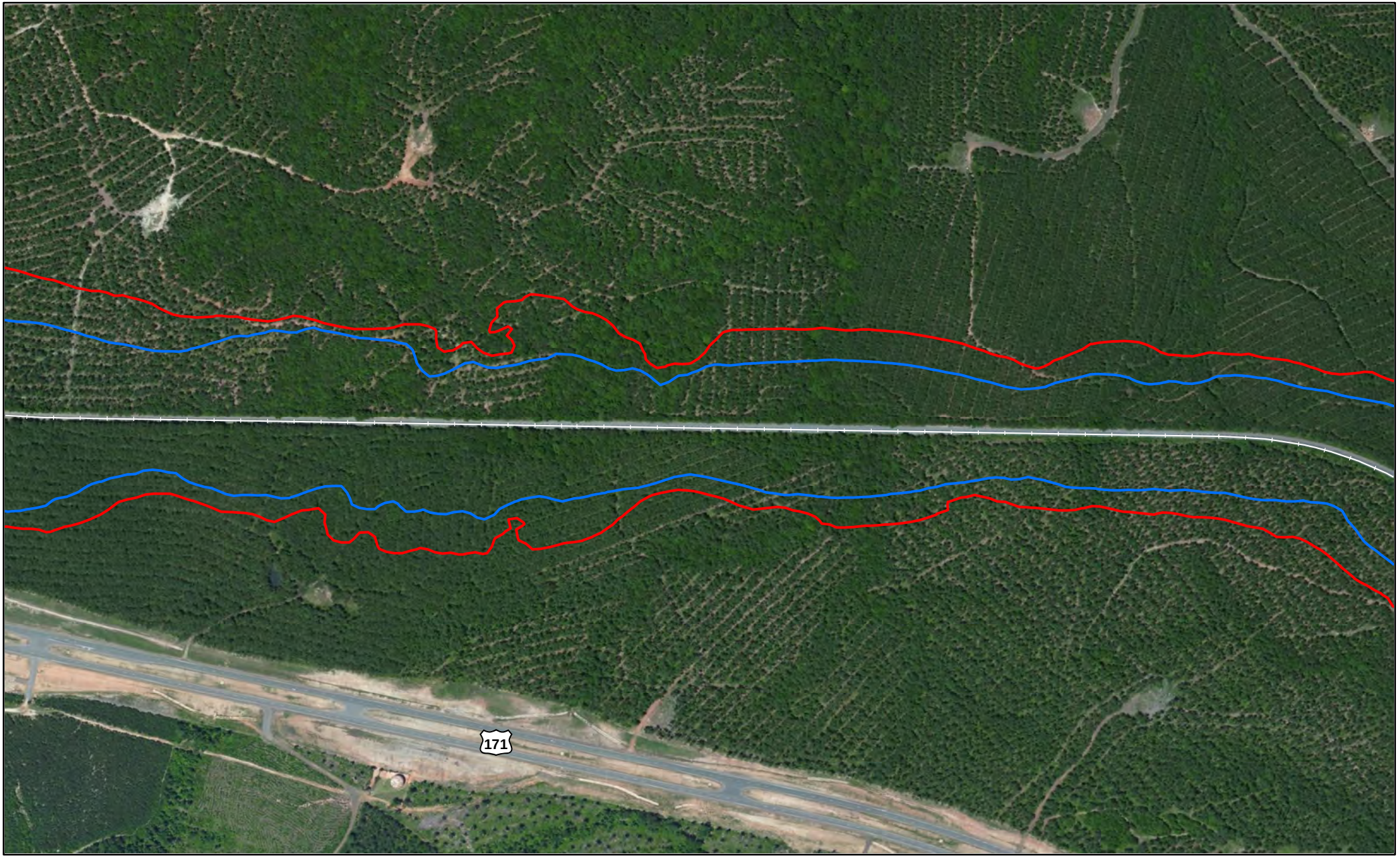
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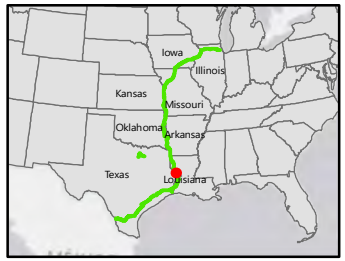
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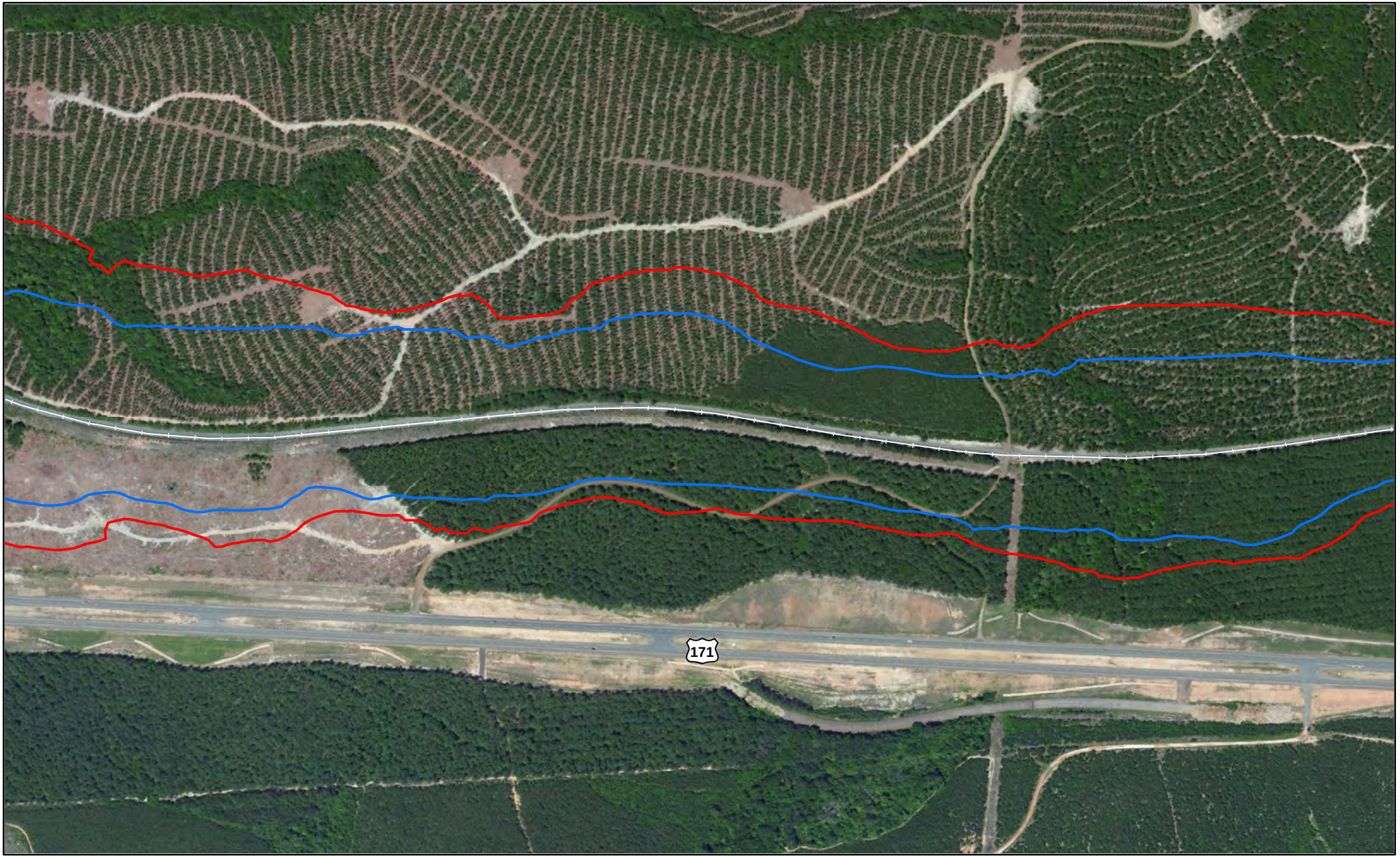
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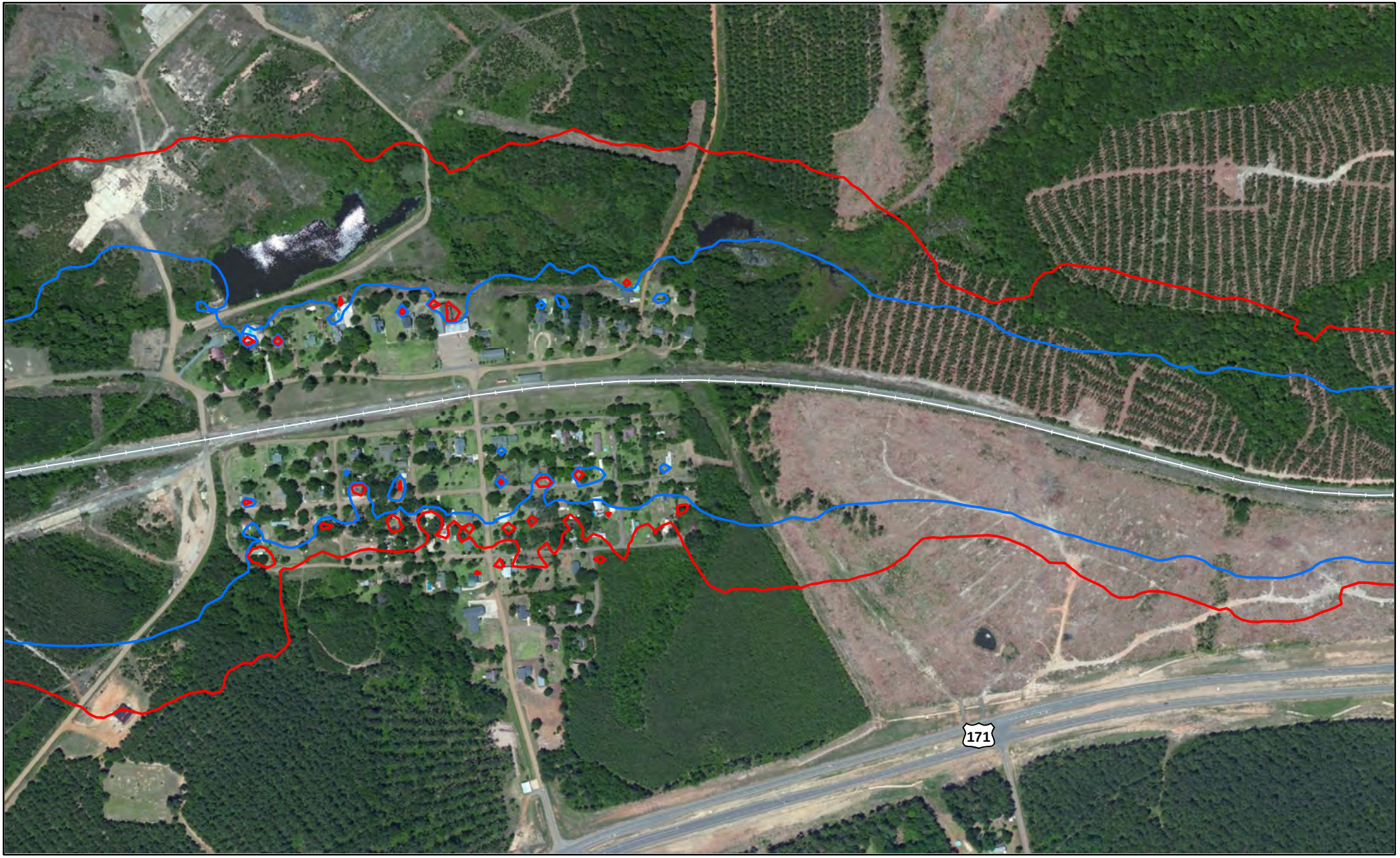
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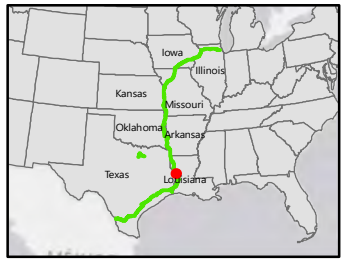
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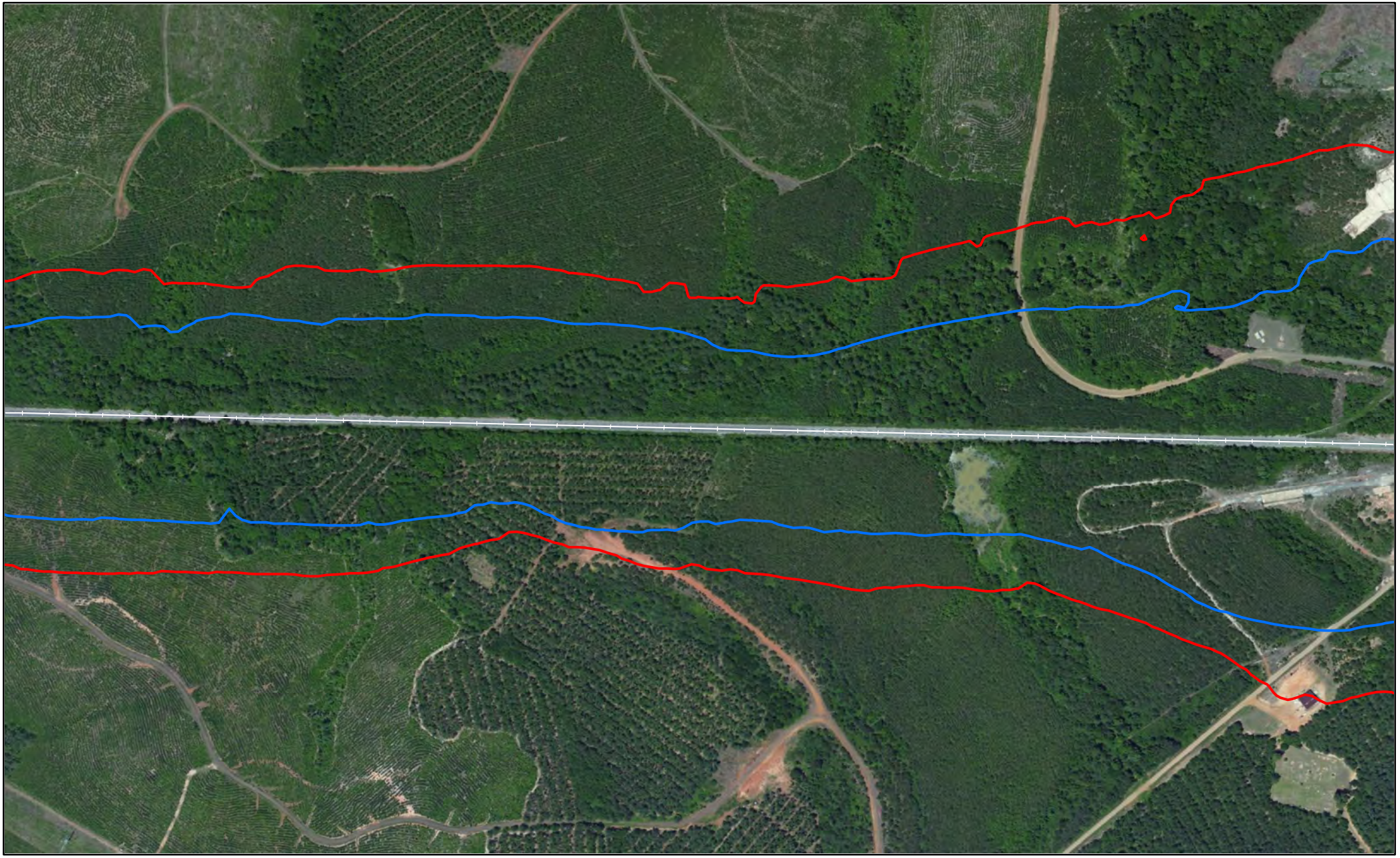
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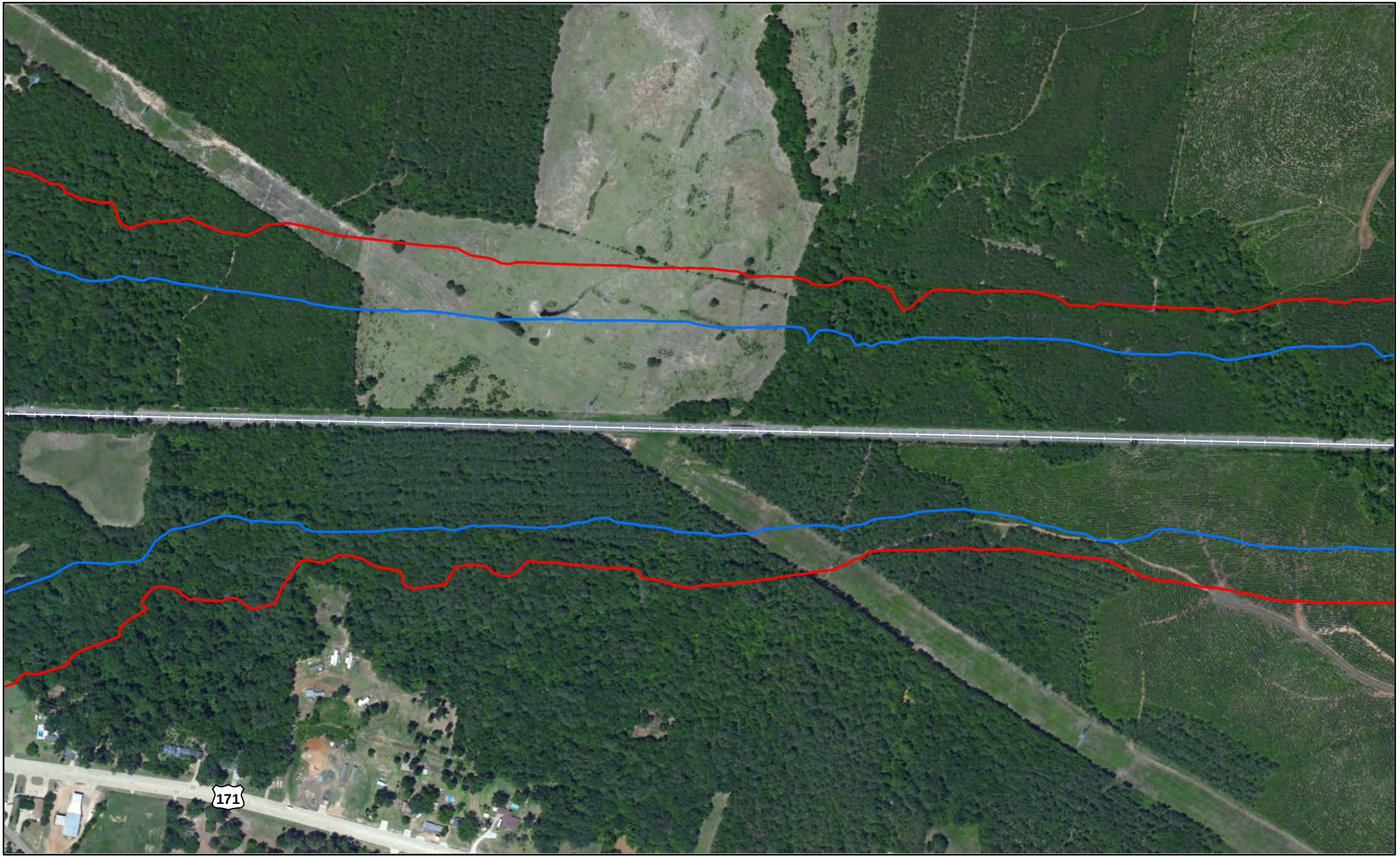
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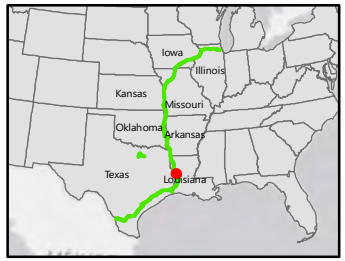
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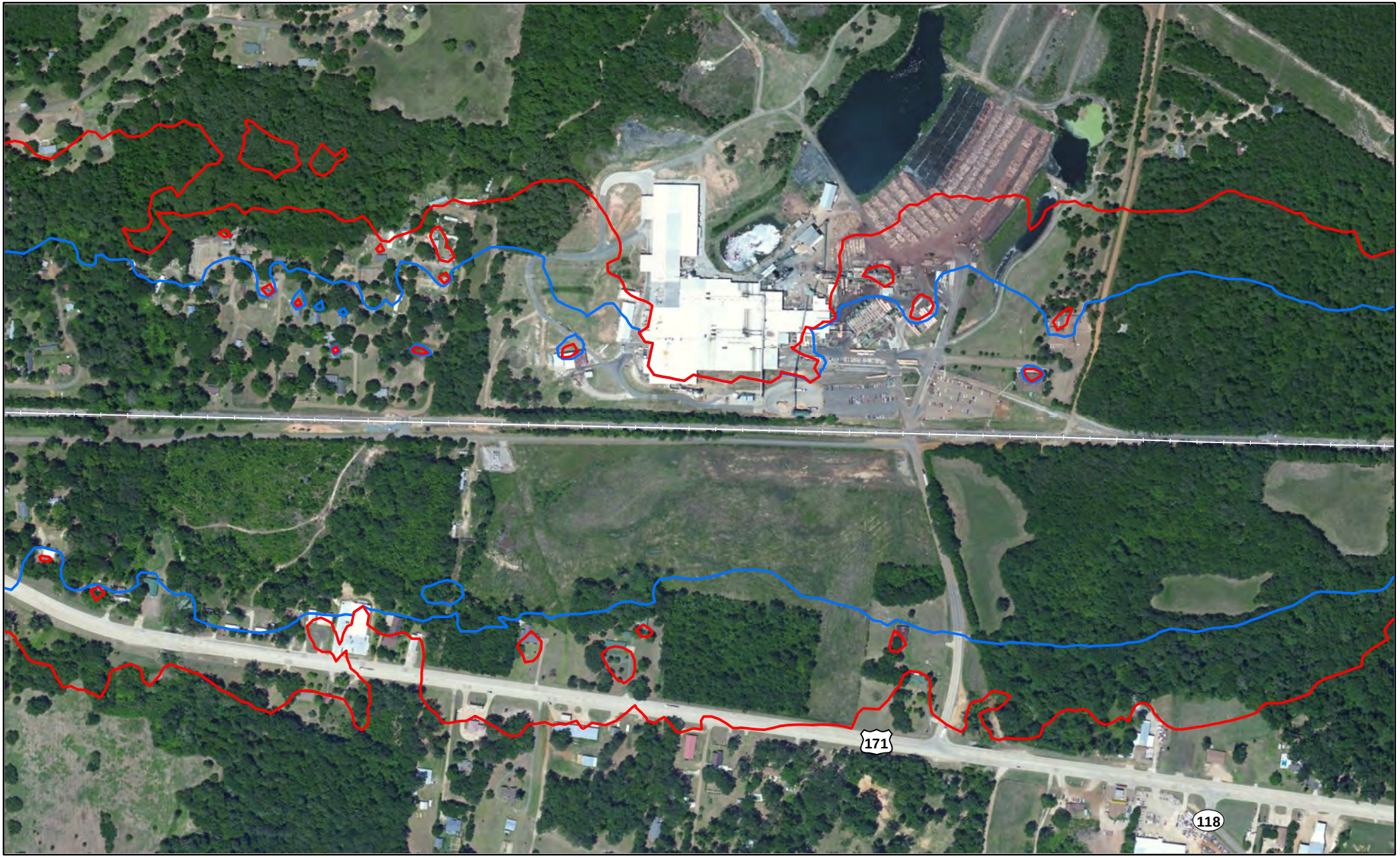
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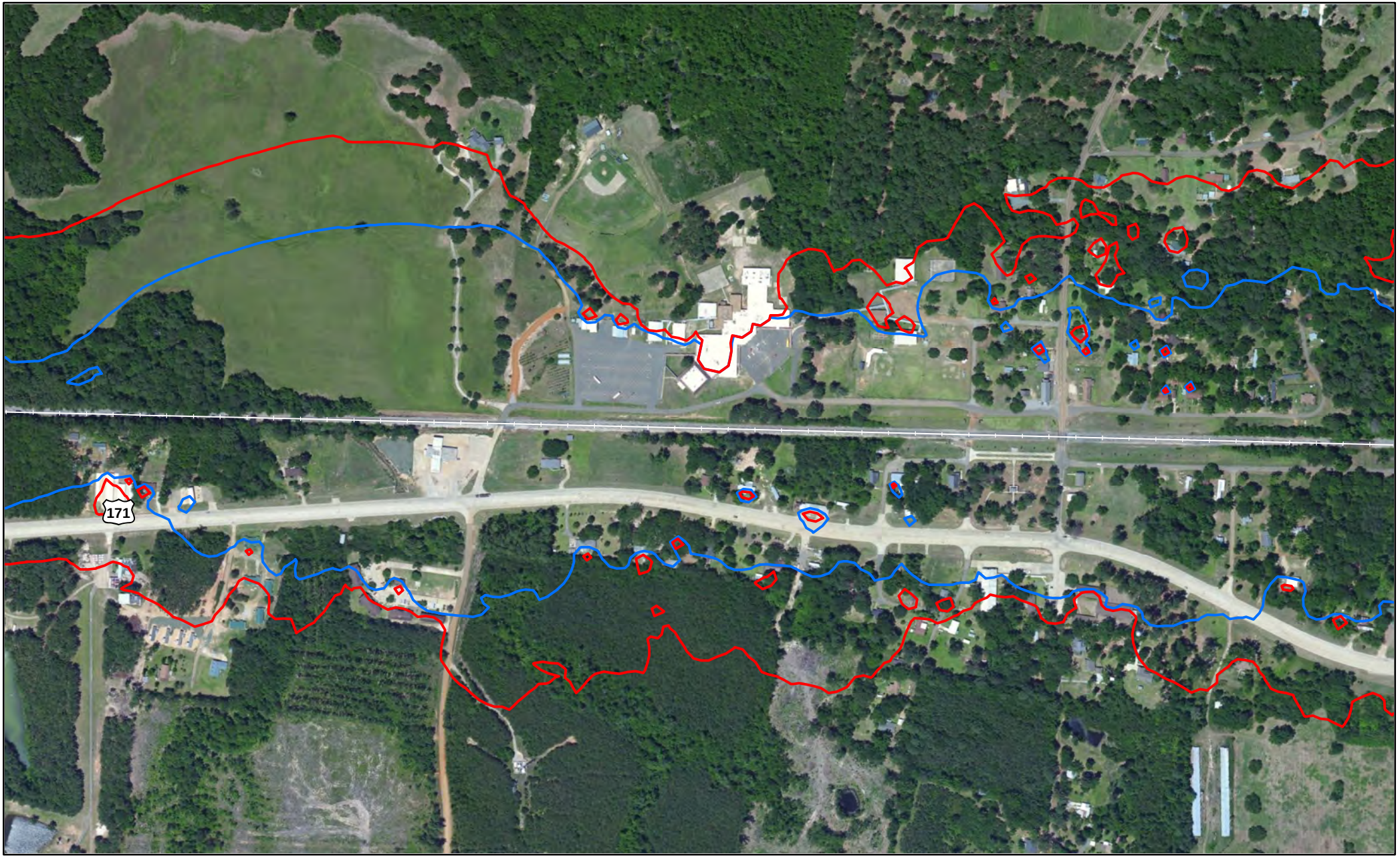
Source: ESRI.



Noise Contours
Sabine Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



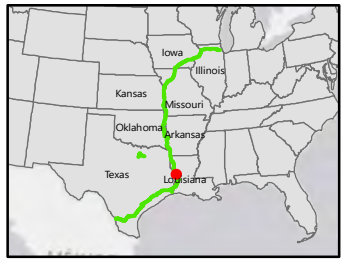
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

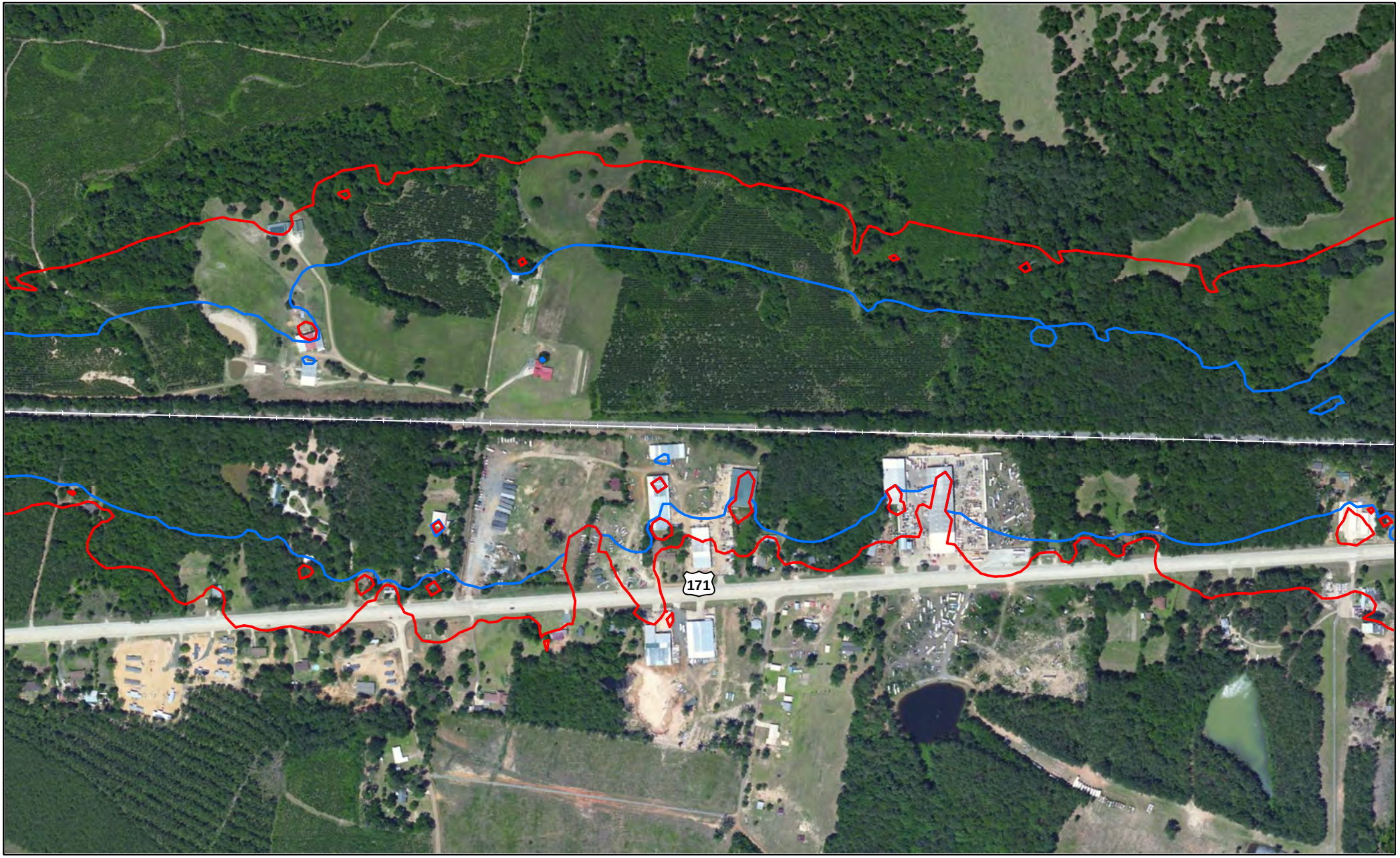
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Noise Contours
Sabine Parish, LA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



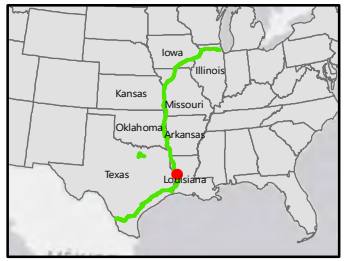
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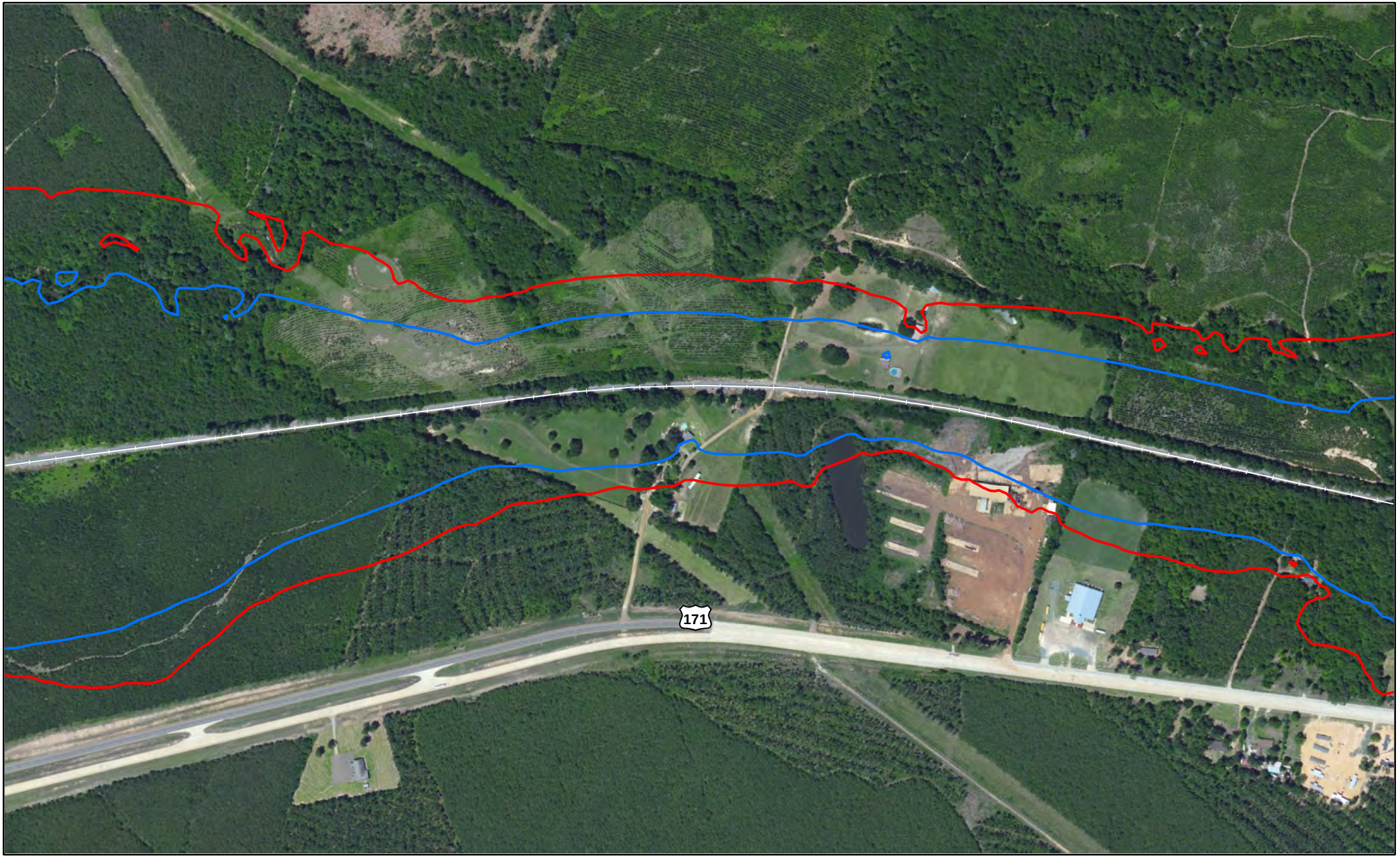
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Noise Contours
Sabine Parish, LA

0 0.05 0.1 Miles

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



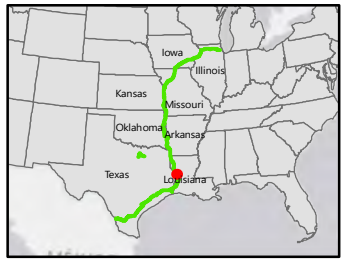
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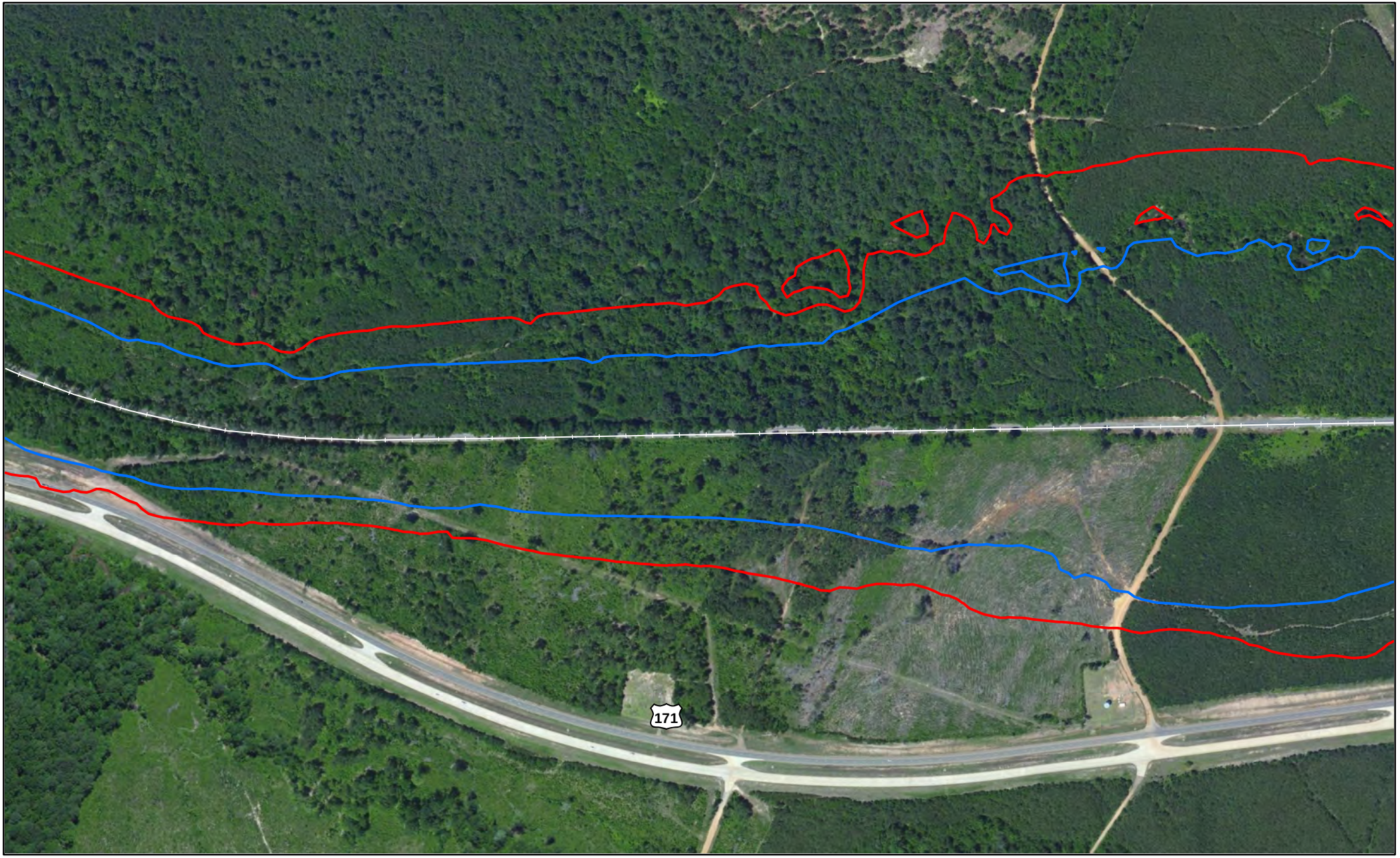
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Noise Contours
Sabine Parish, LA

0 0.05 0.1 Miles

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



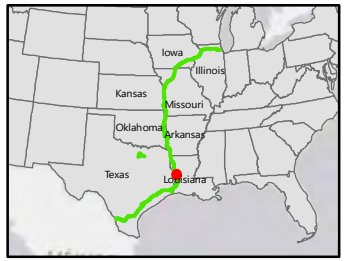
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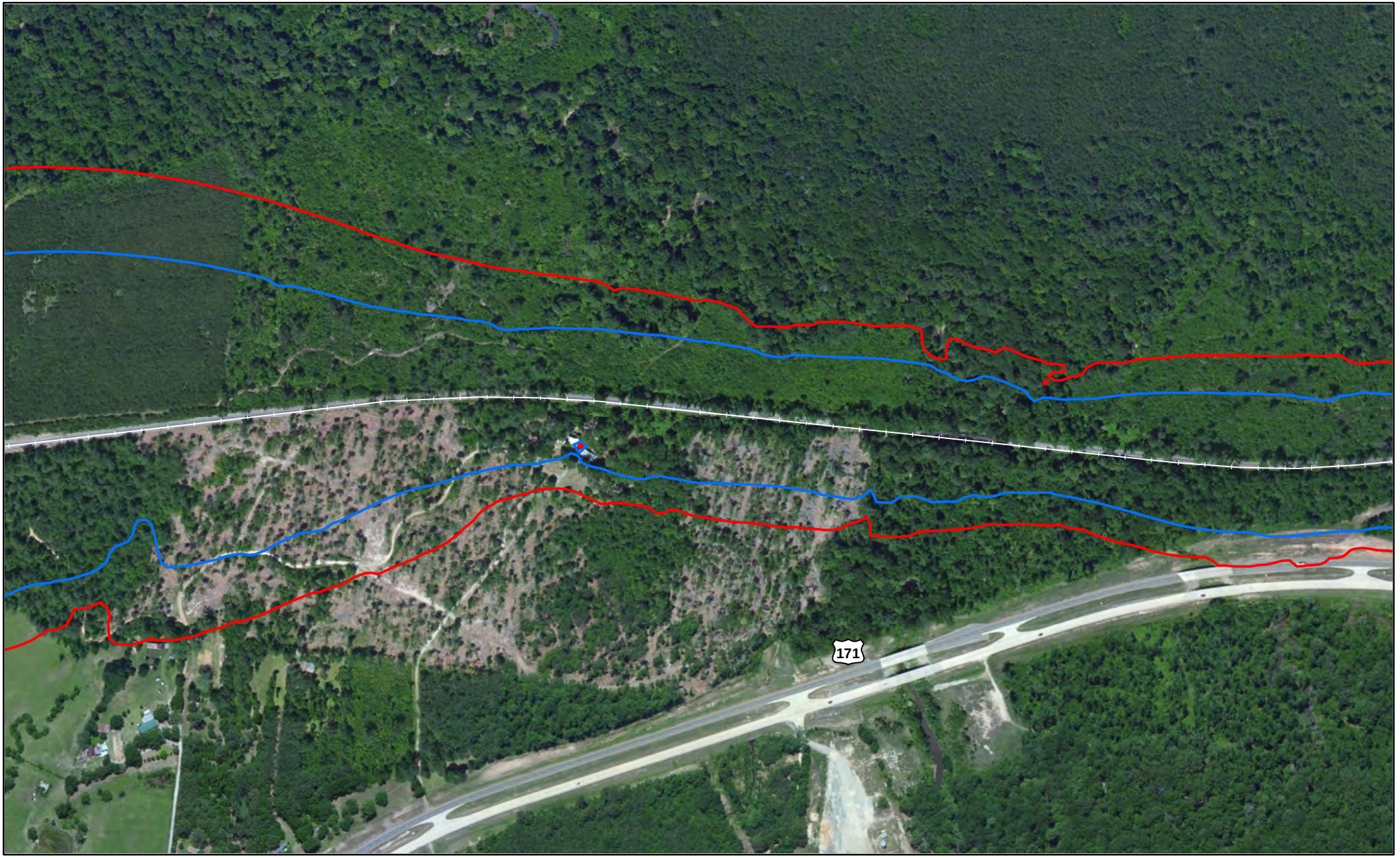
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Sabine Parish, LA

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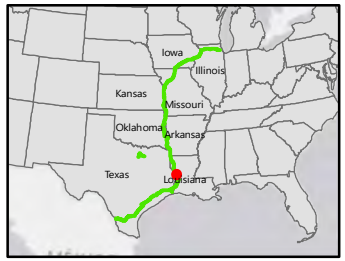
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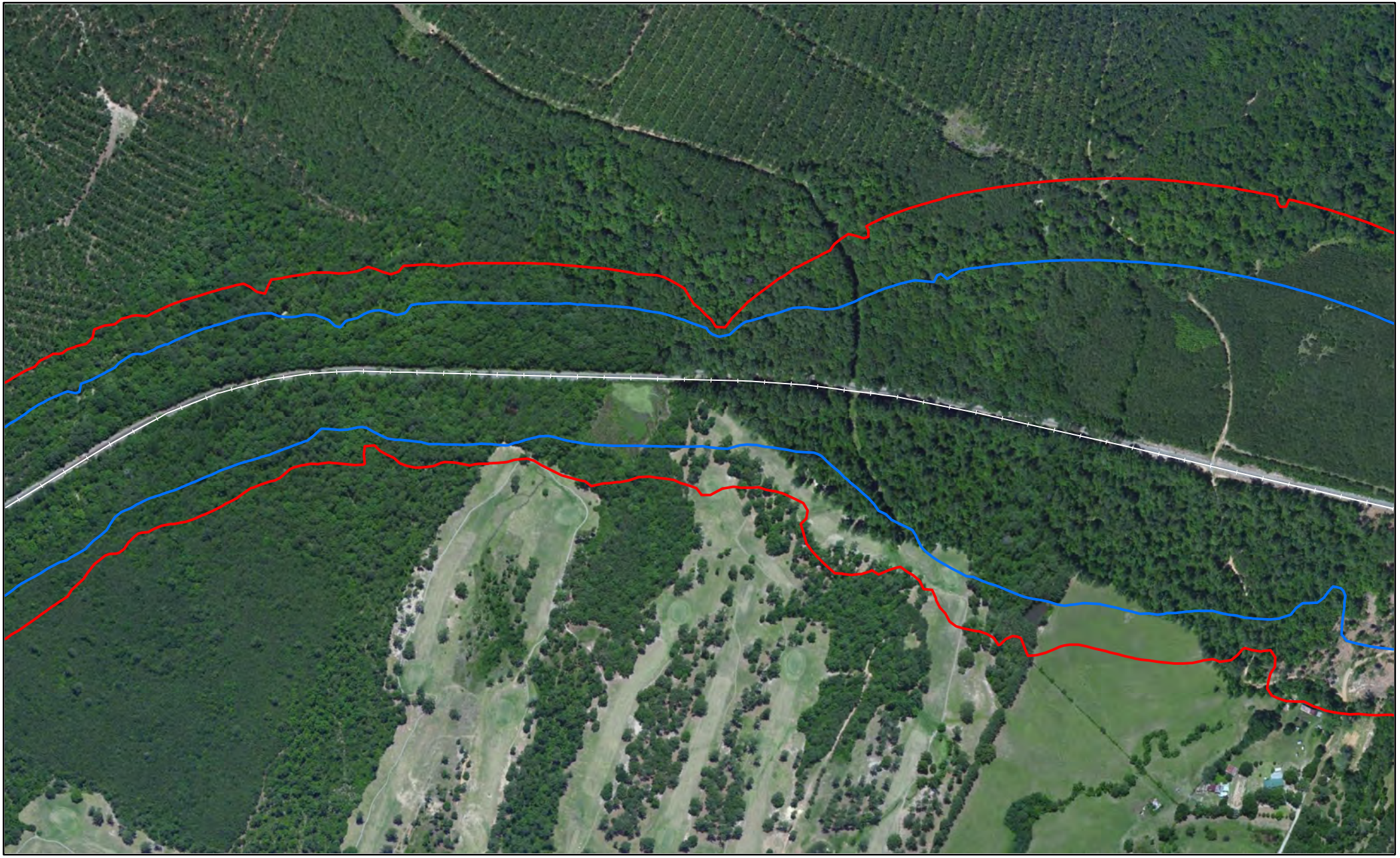
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Noise Contours
Sabine Parish, LA

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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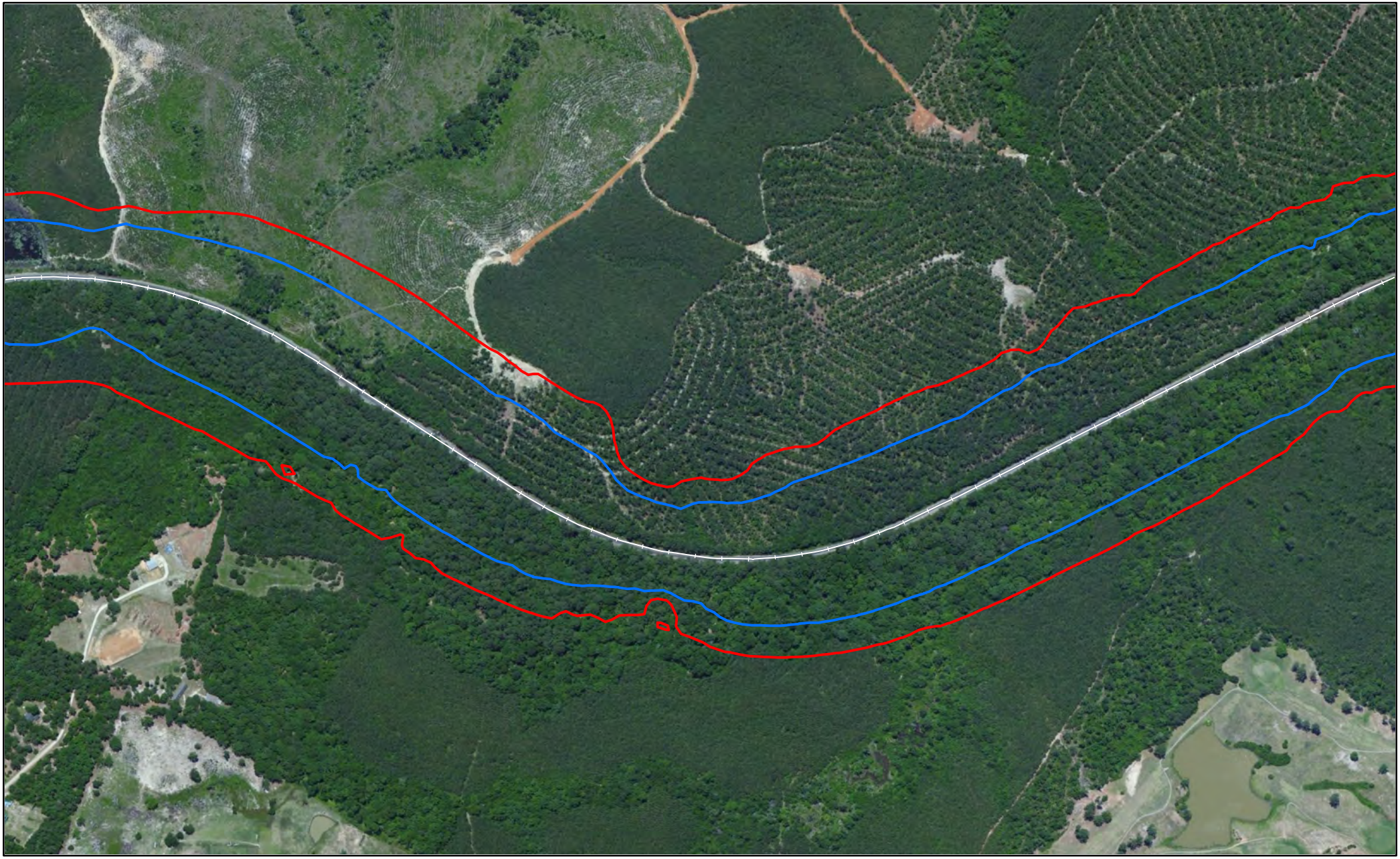
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Noise Contours
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



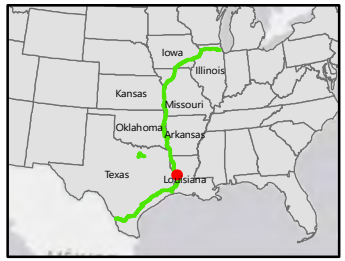
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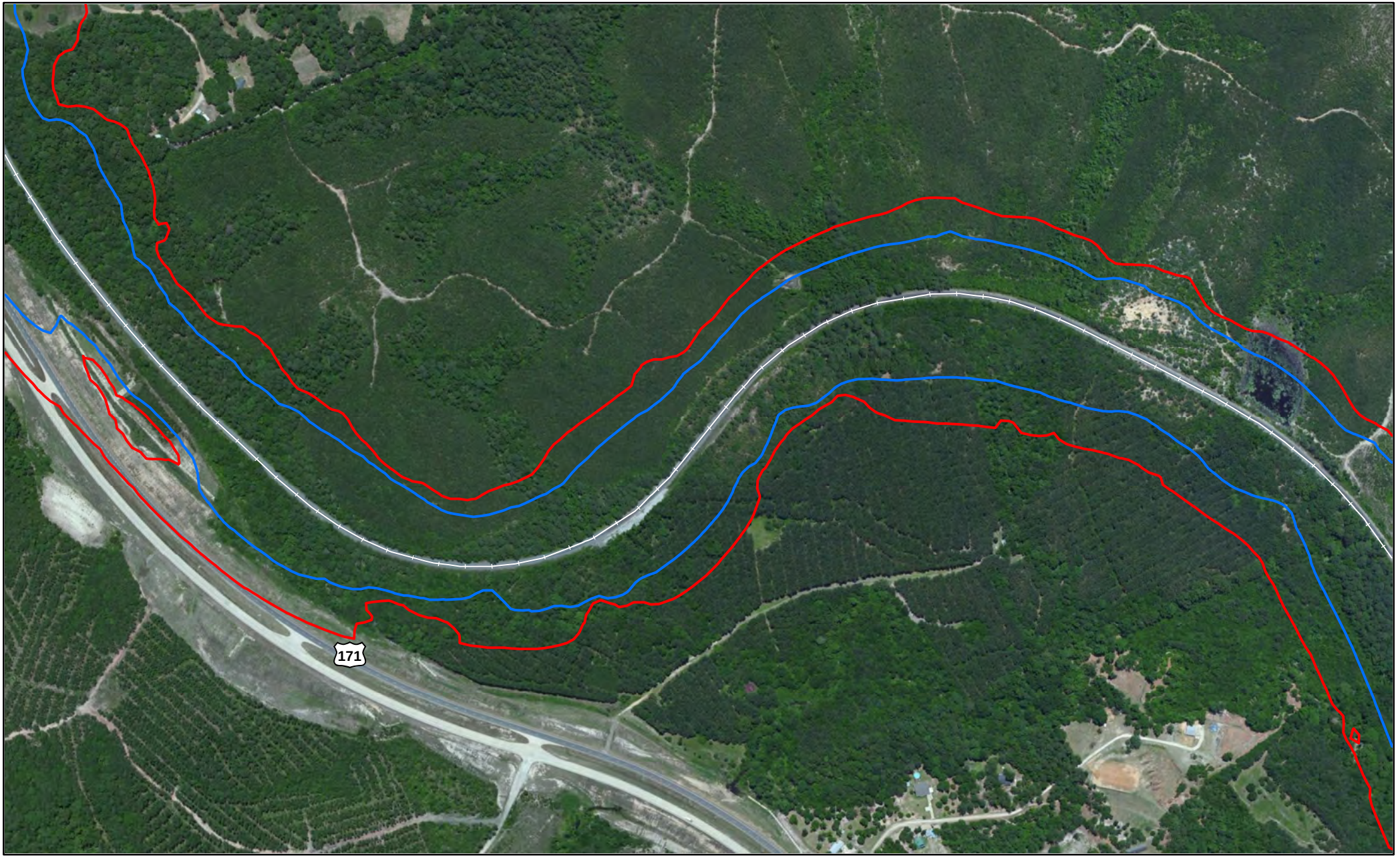
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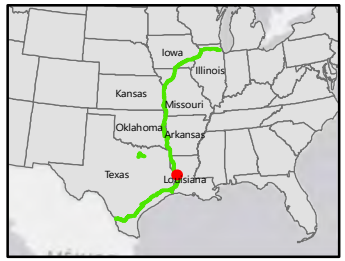
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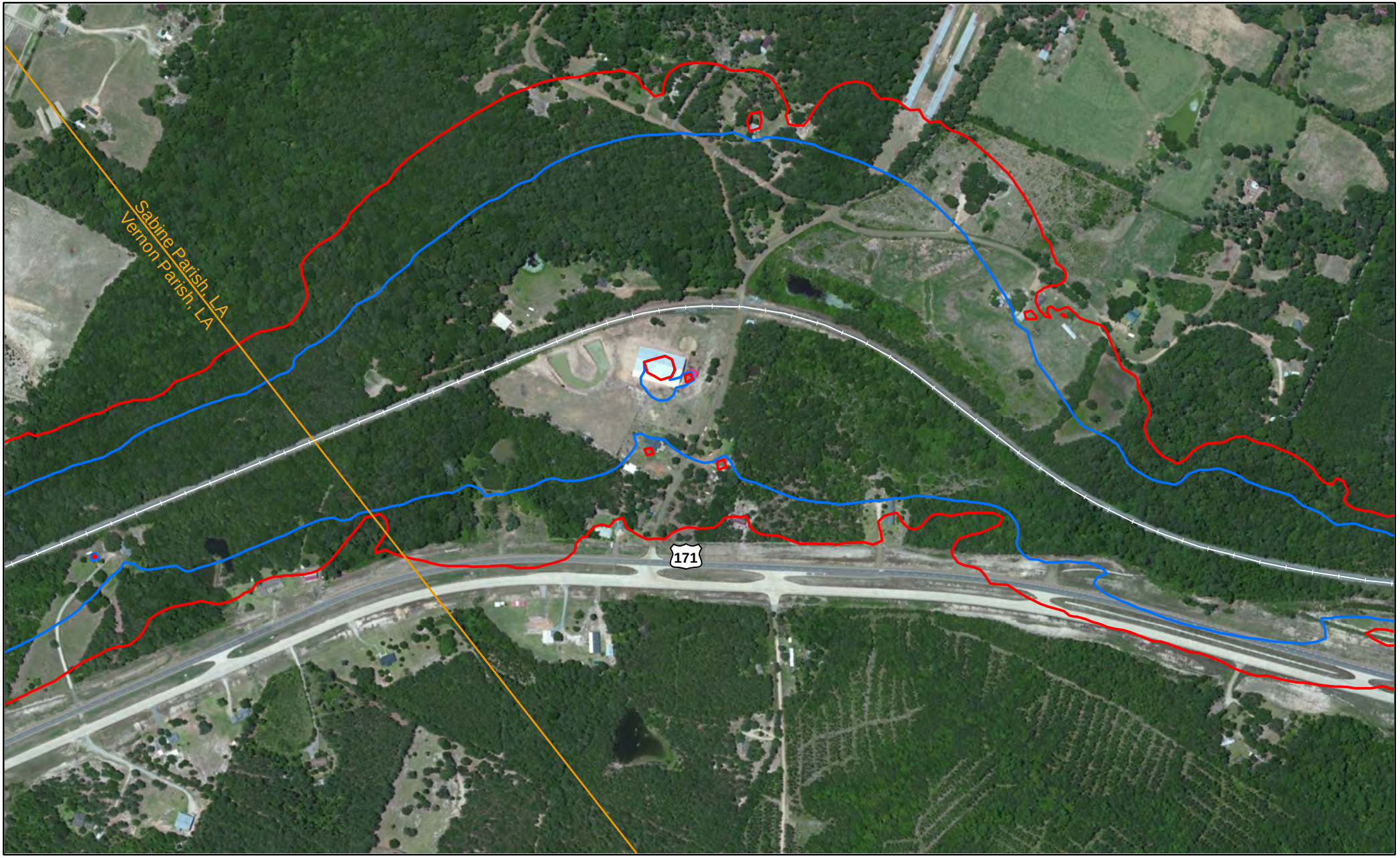
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Noise Contours
Sabine Parish, LA

0 0.05 0.1 Miles

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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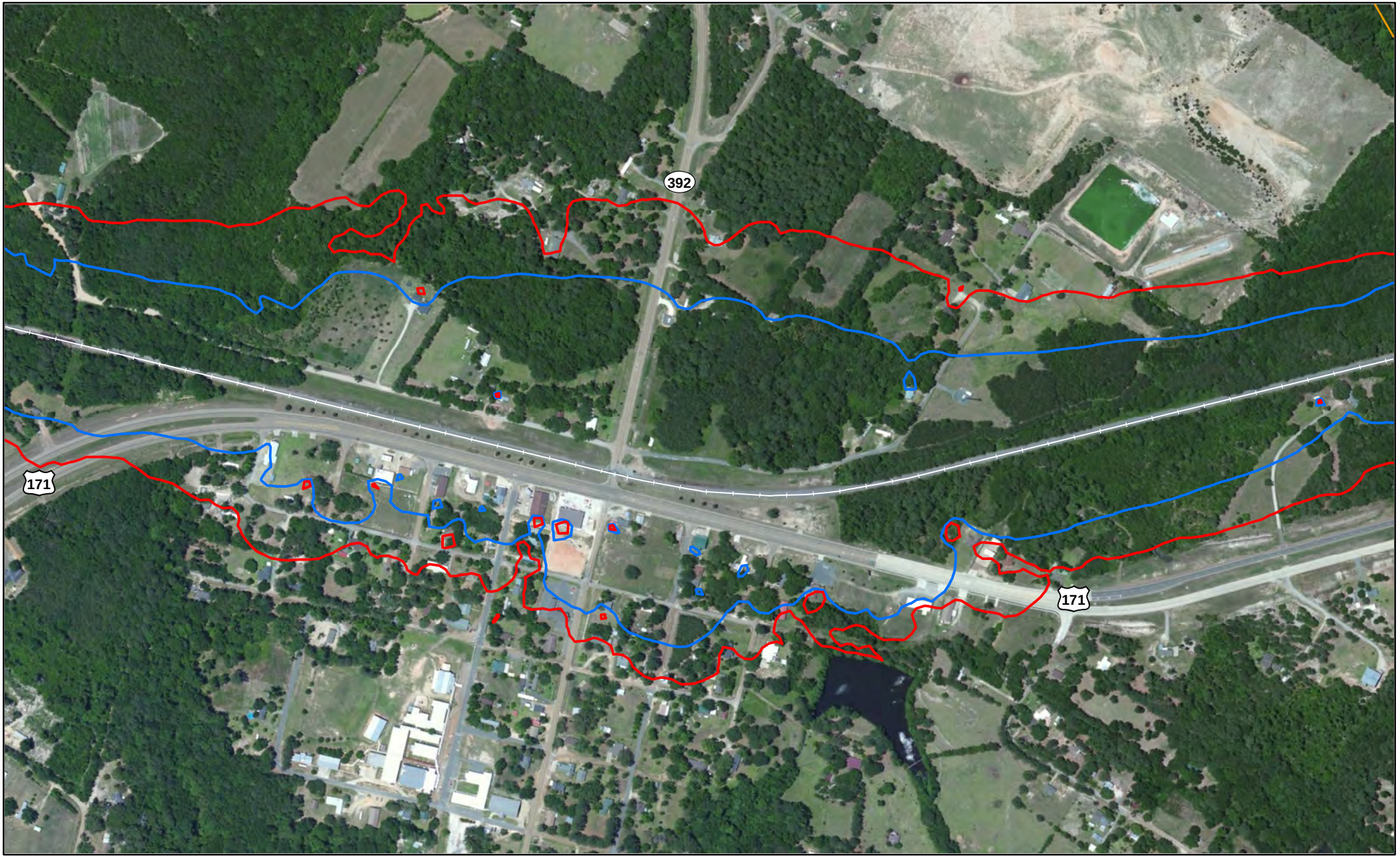
Tracks

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Noise Contours
Sabine Parish, LA

Miles
0 0.05 0.1



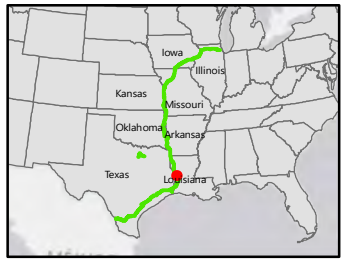
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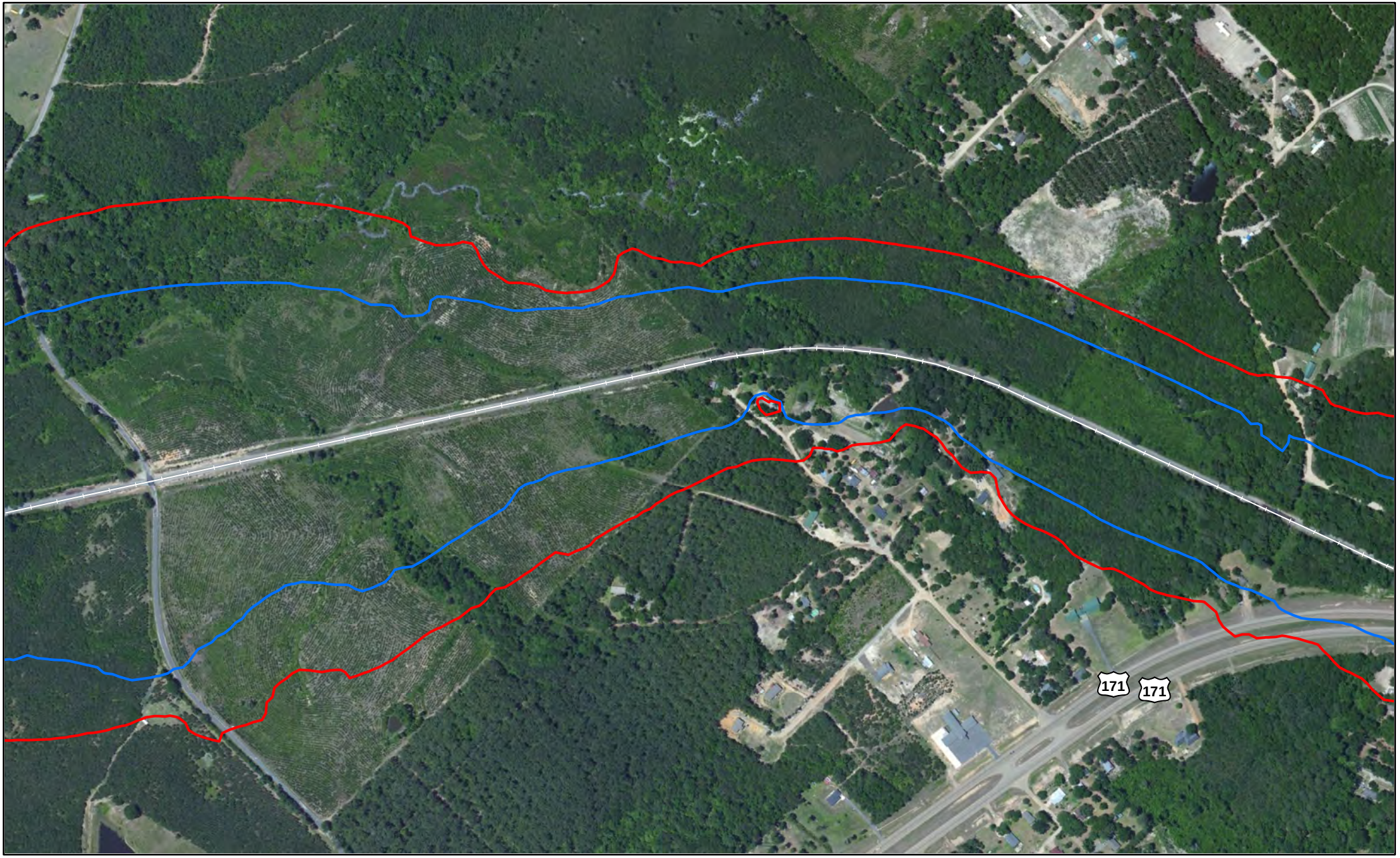
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Noise Contours
Sabine Parish, LA

0 0.05 0.1 Miles

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



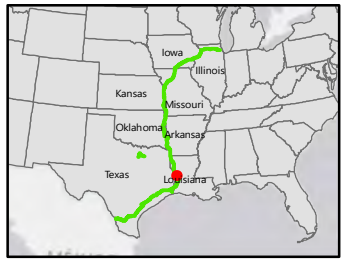
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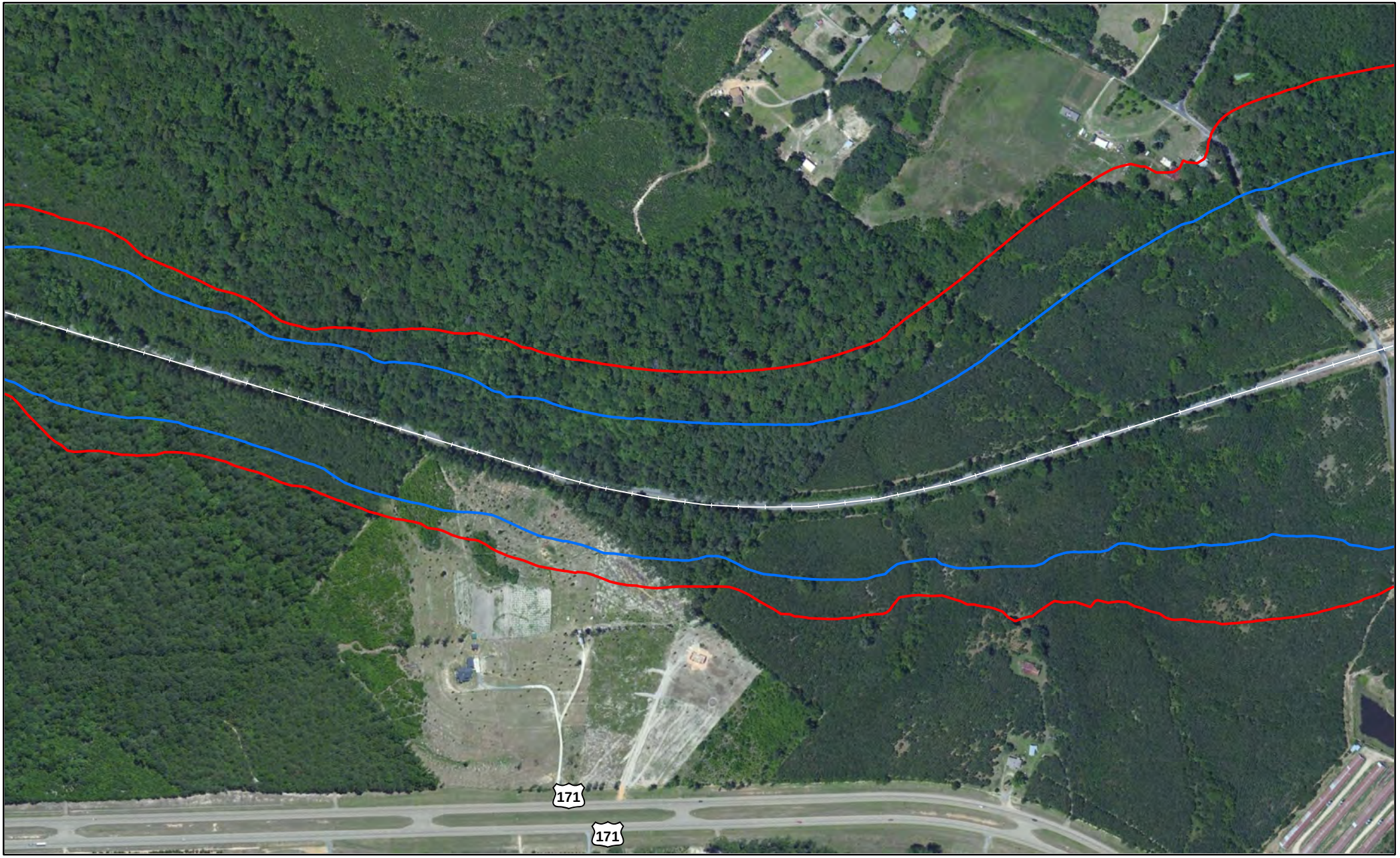
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Noise Contours
Vernon Parish, LA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



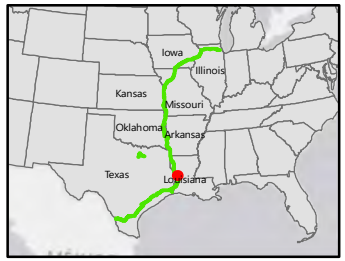
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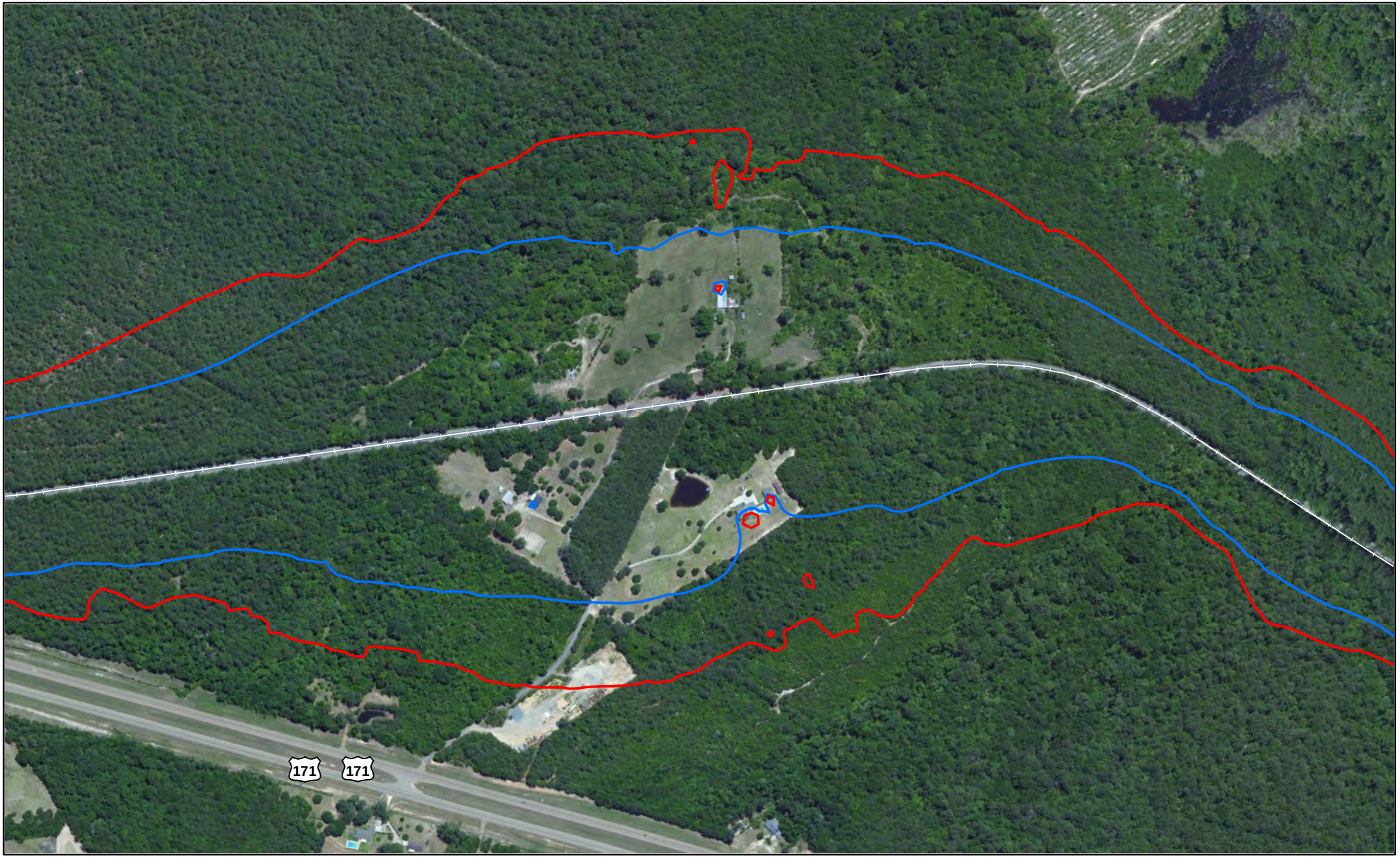
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Noise Contours
Vernon Parish, LA

Miles
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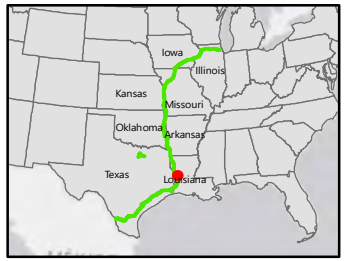
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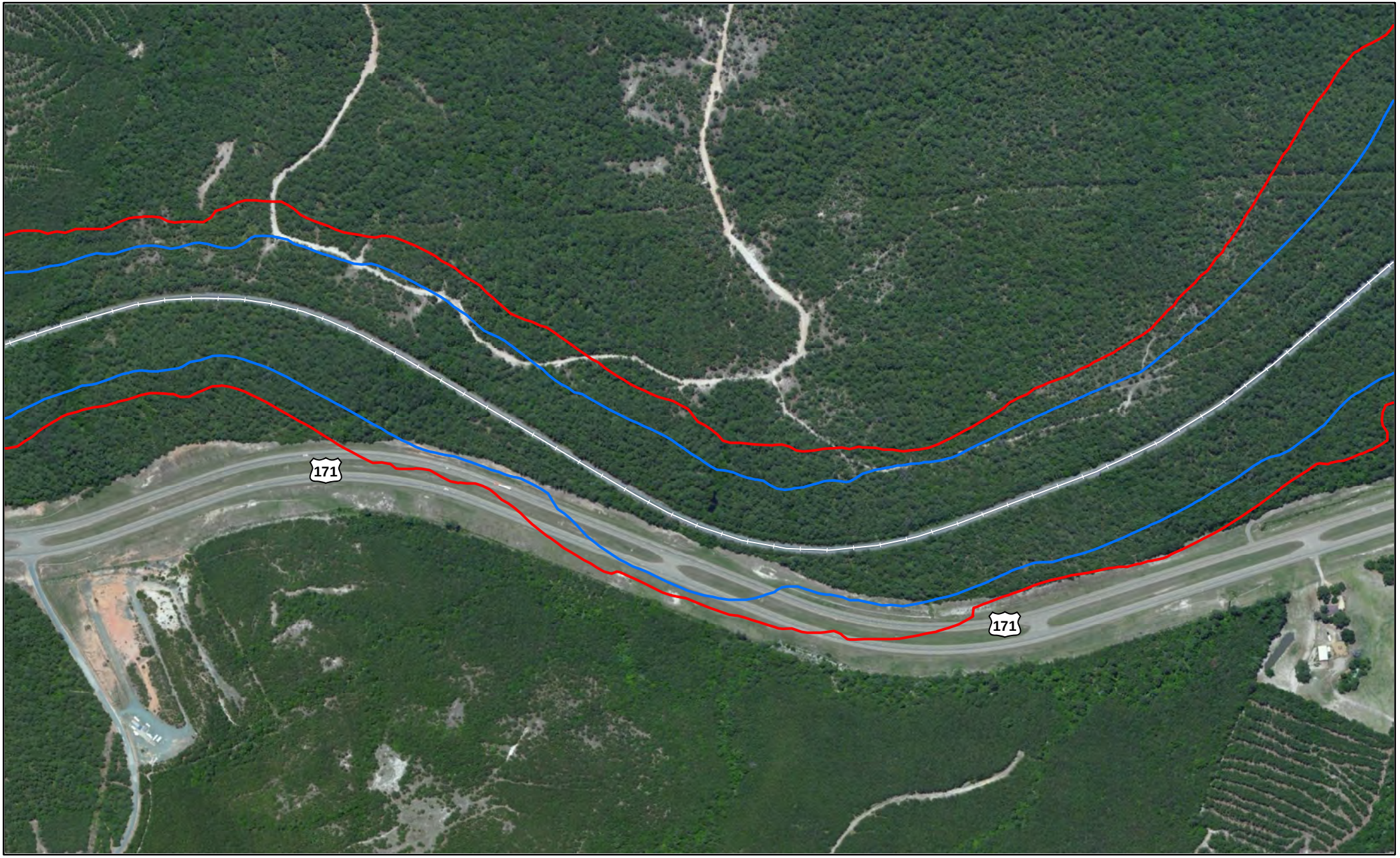
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Noise Contours
Vernon Parish, LA

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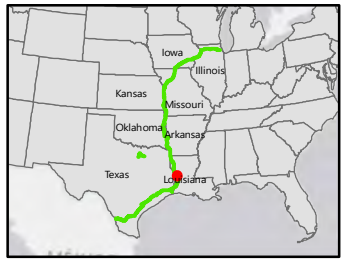
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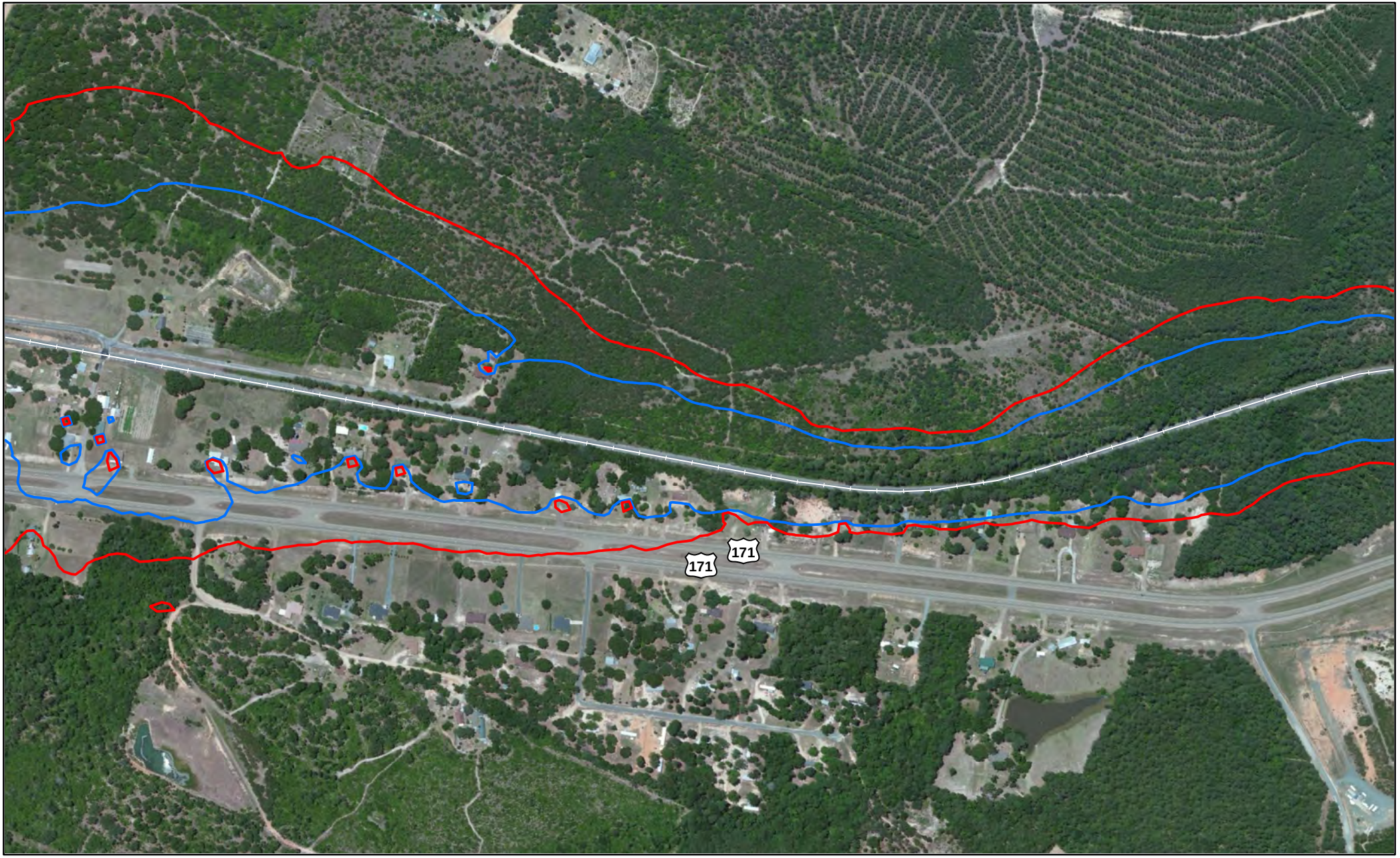
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Noise Contours
Vernon Parish, LA

Miles
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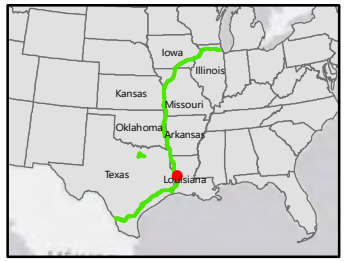
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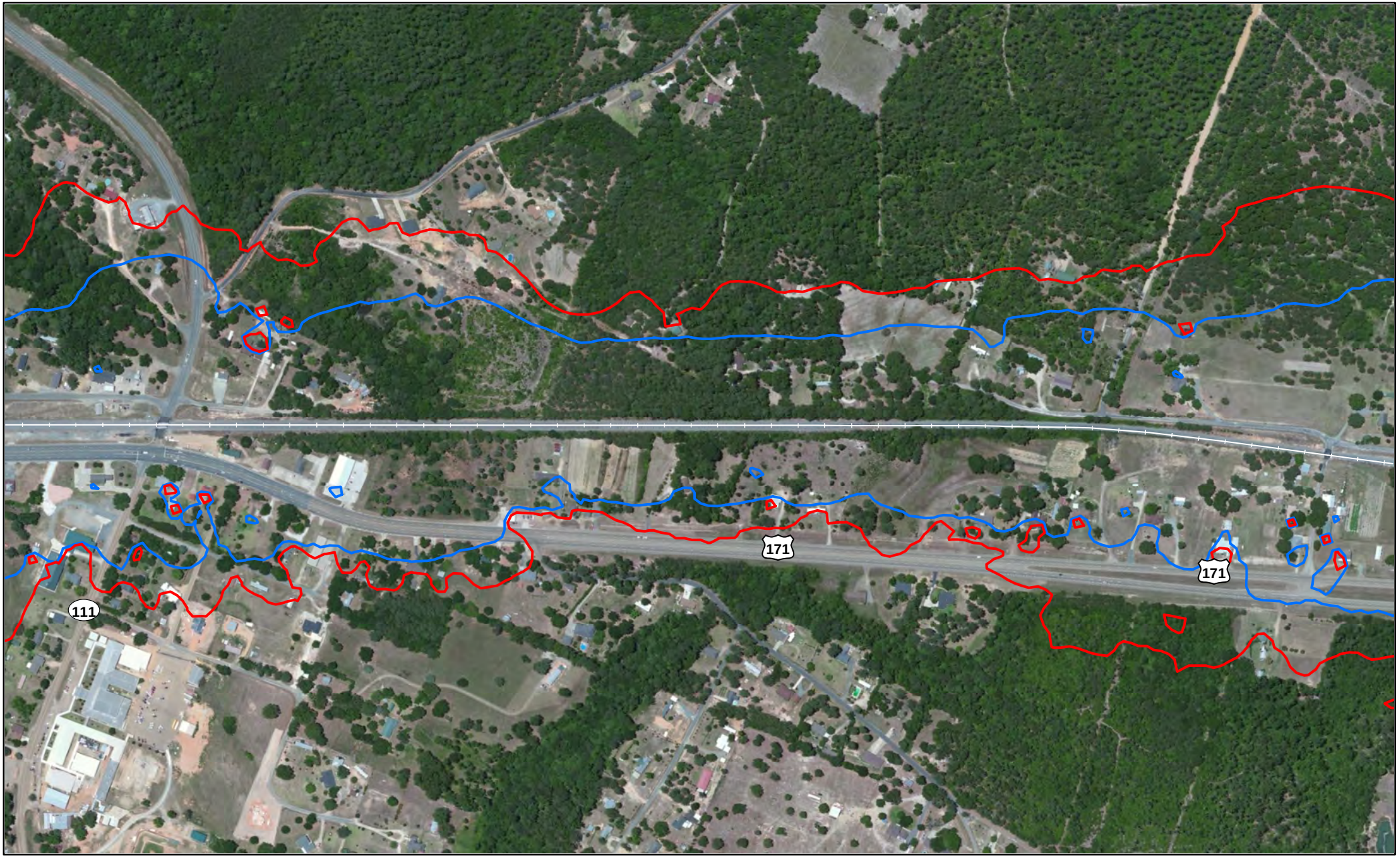
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Noise Contours
Vernon Parish, LA

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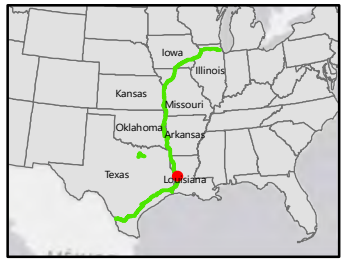
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Noise Contours
Vernon Parish, LA

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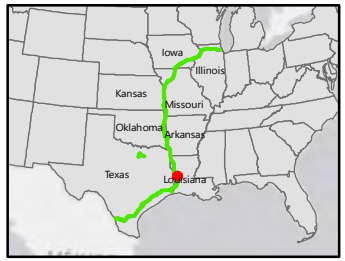
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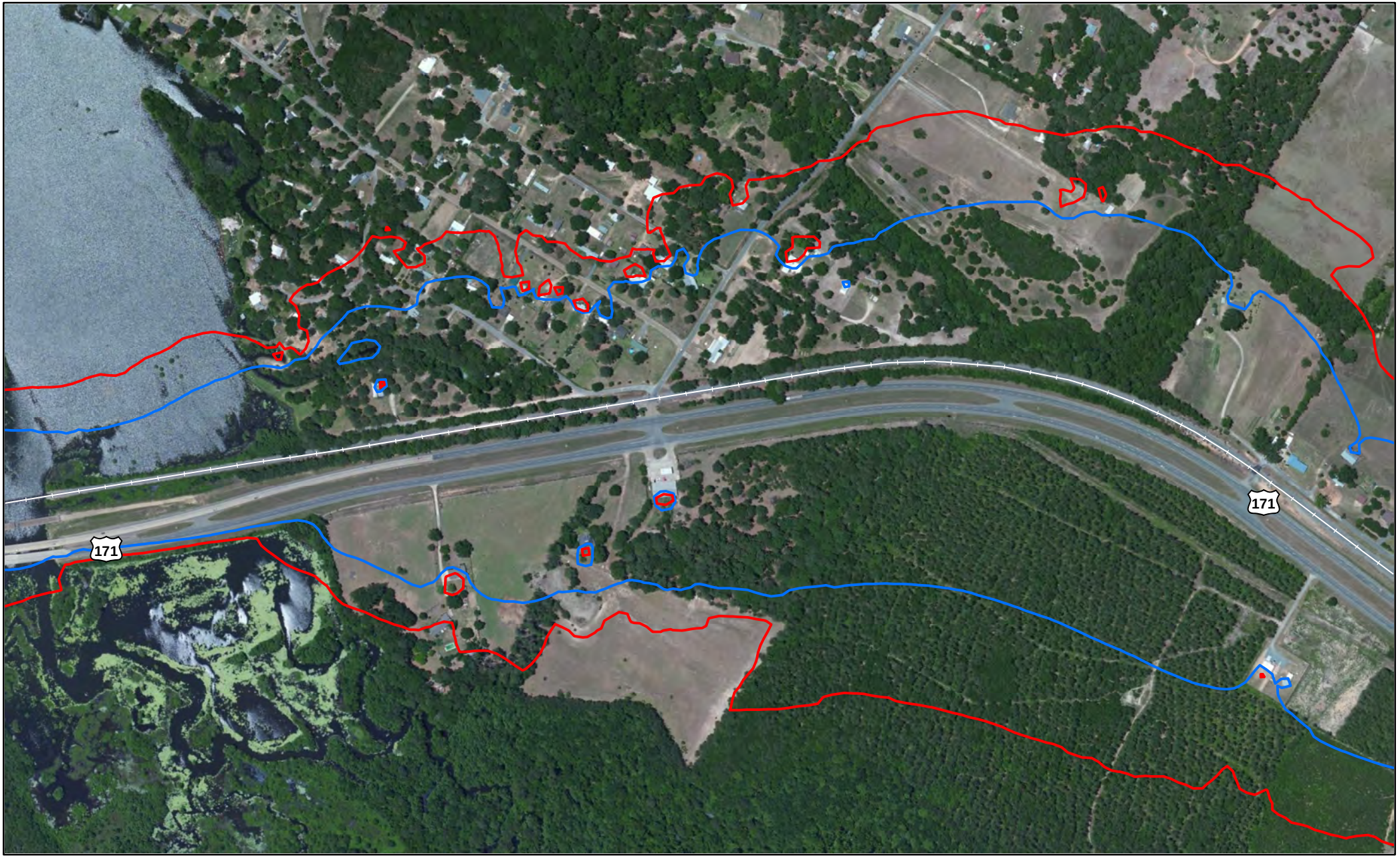
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Noise Contours
Vernon Parish, LA

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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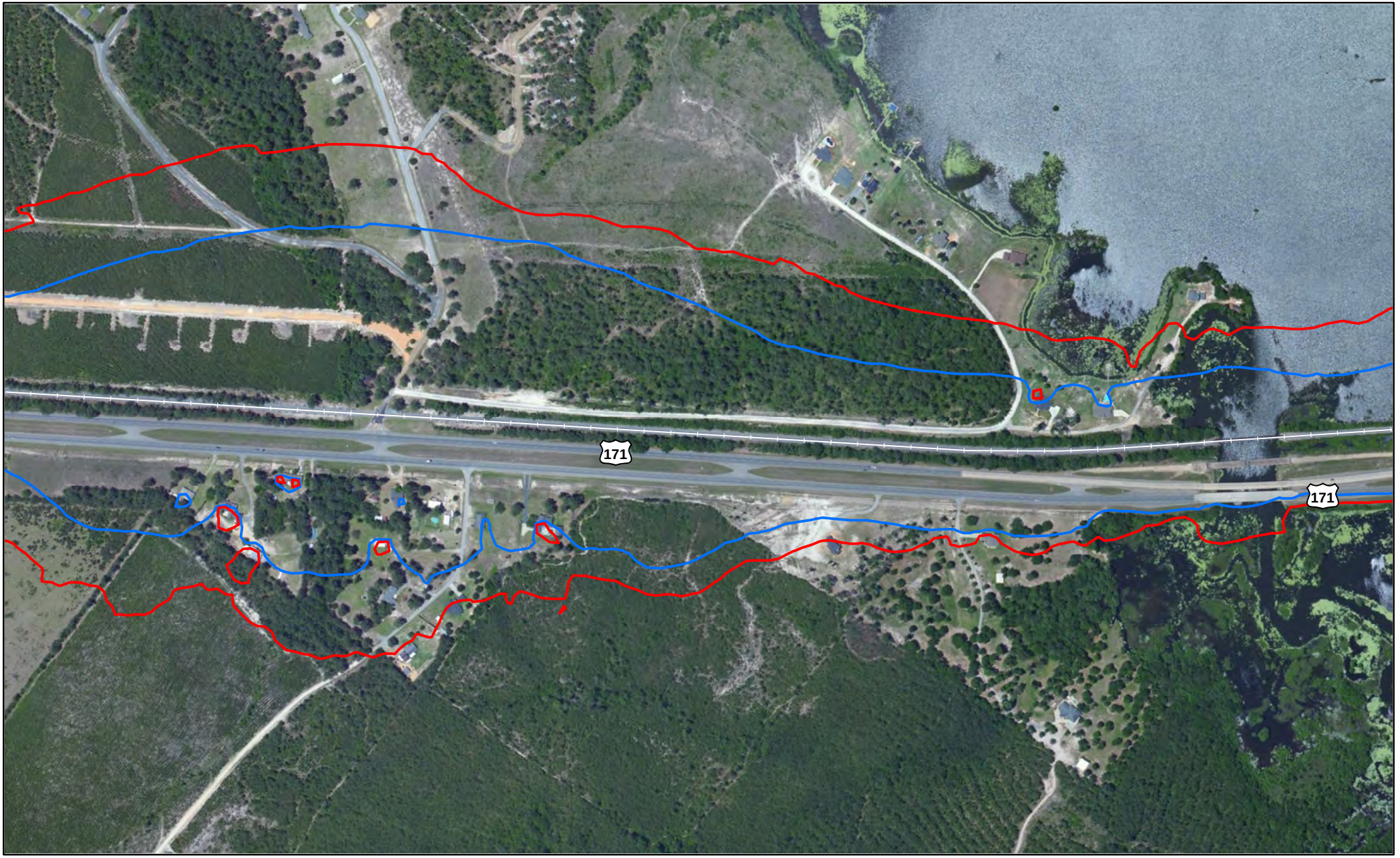
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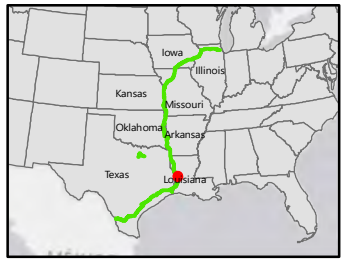
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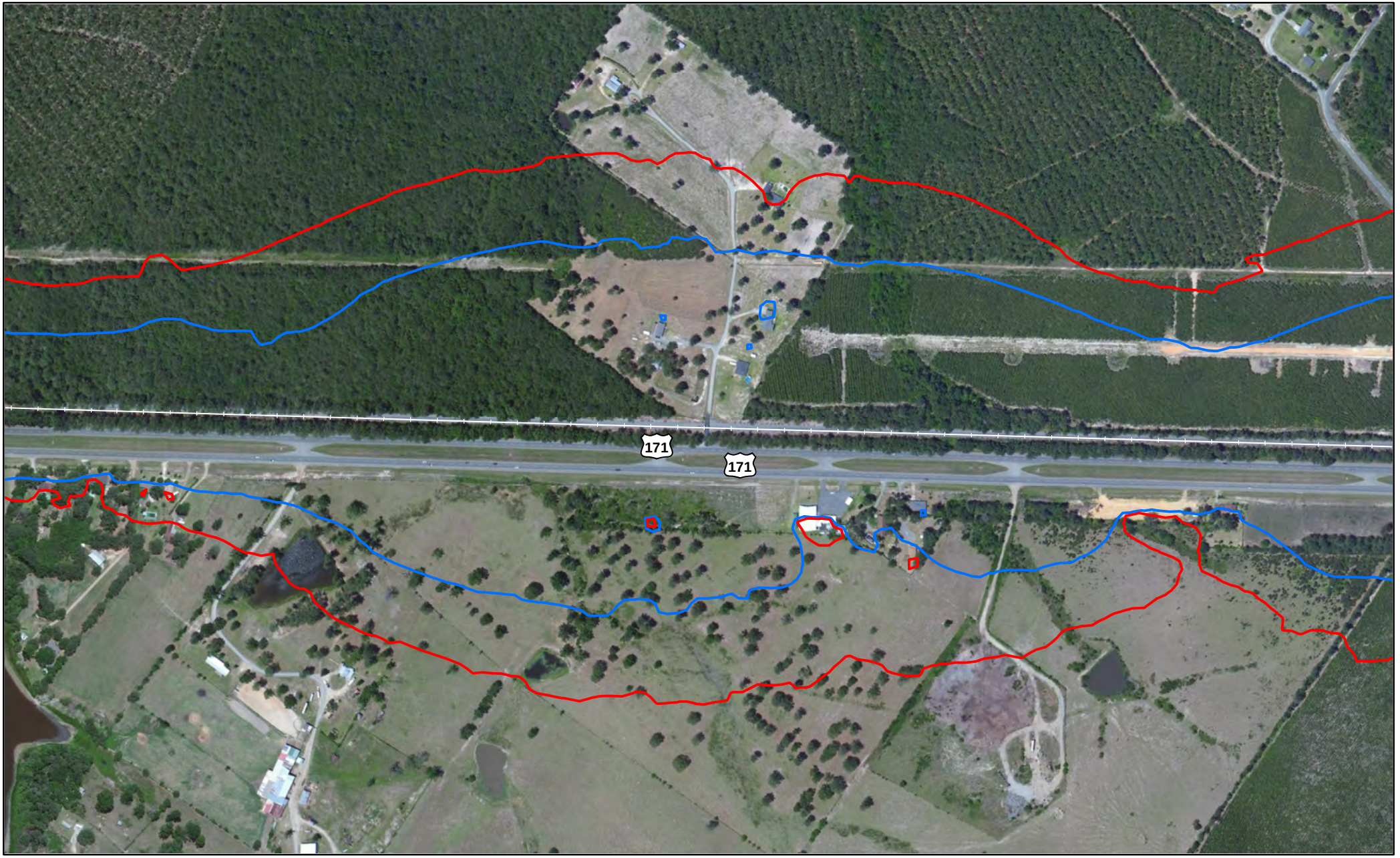
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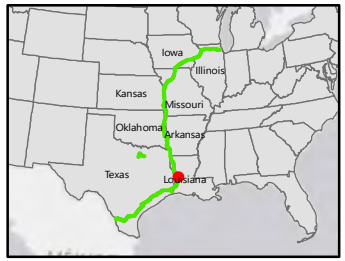
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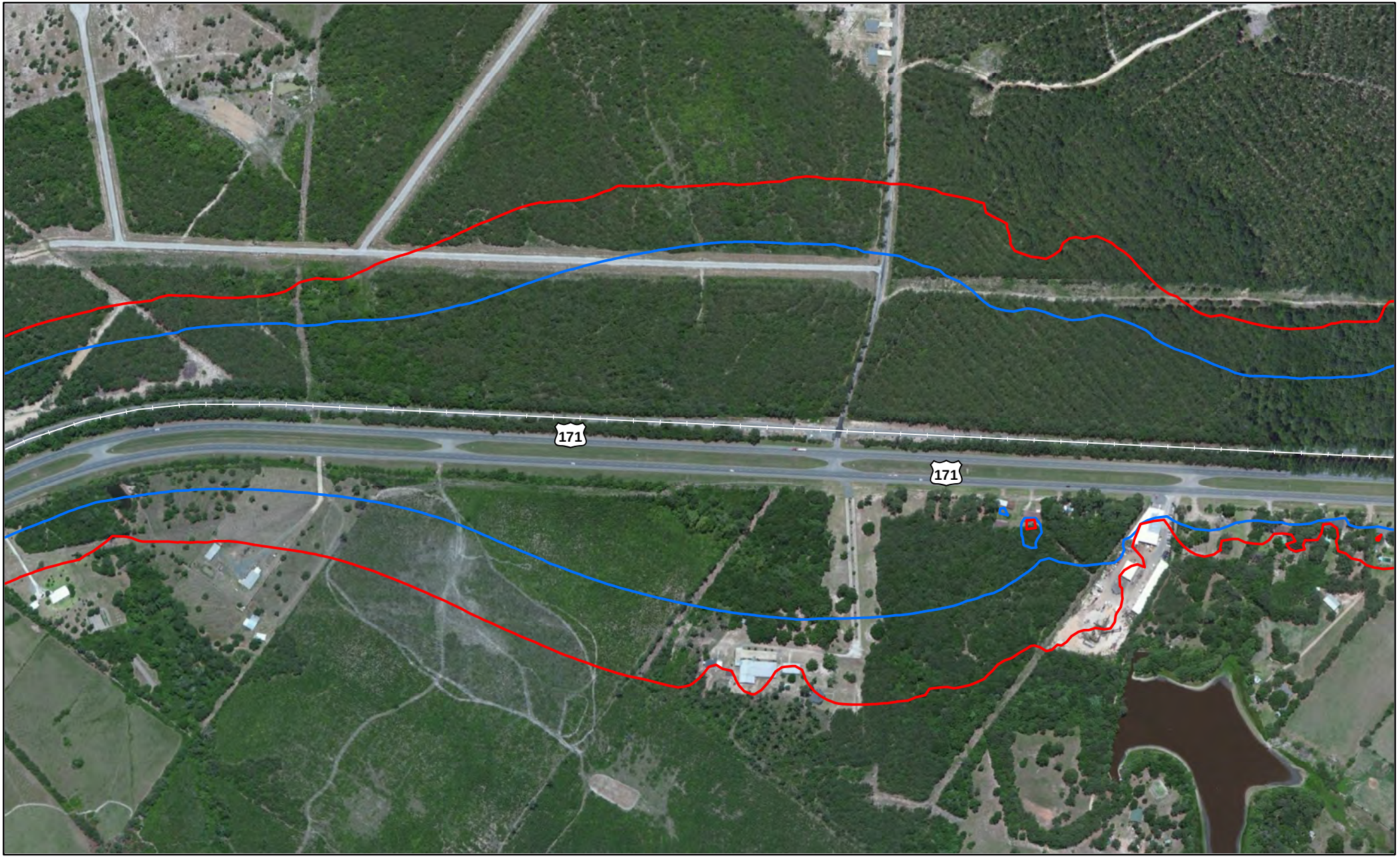
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Noise Contours
Vernon Parish, LA

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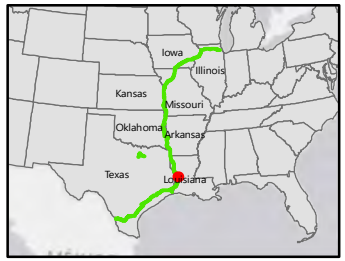
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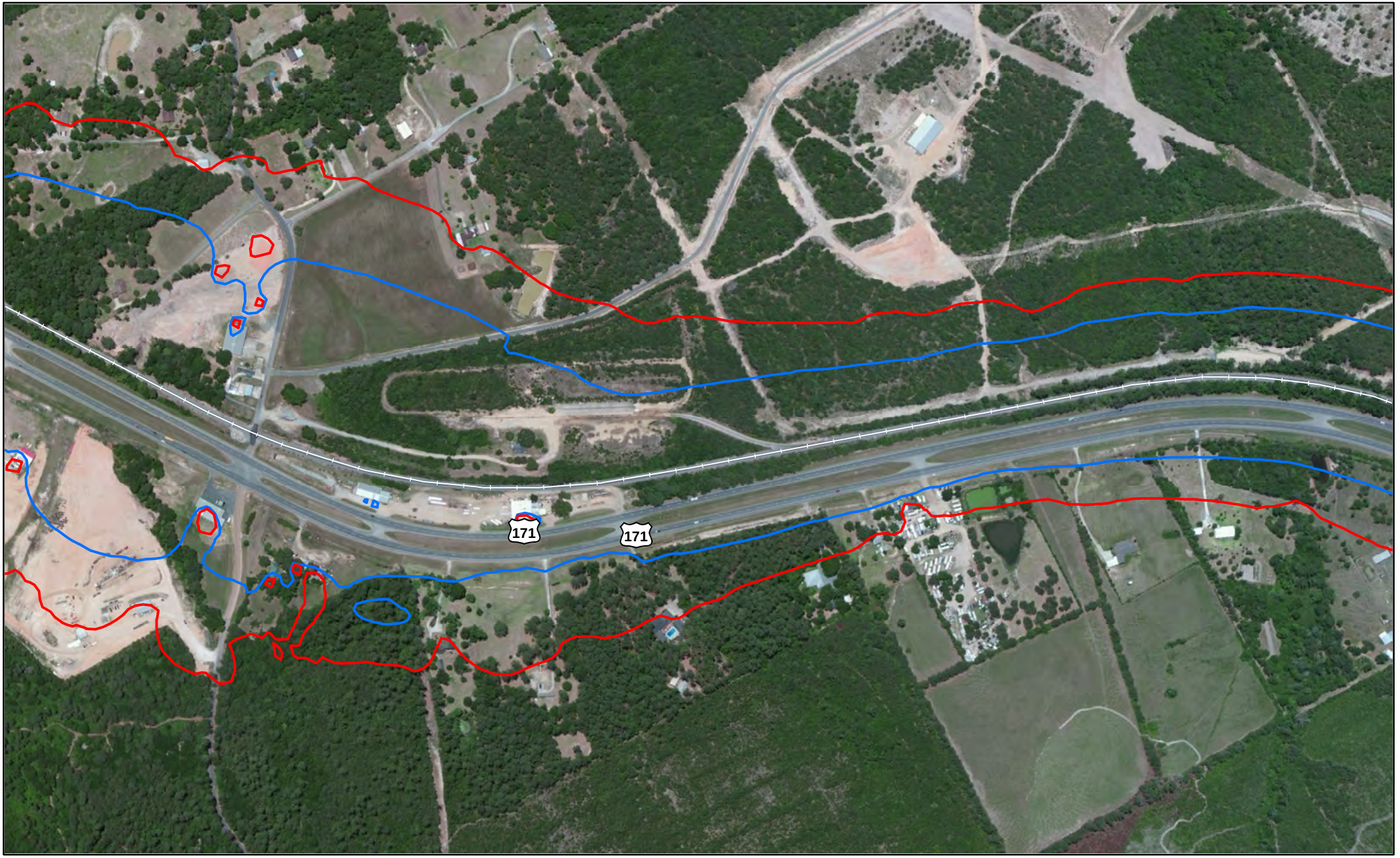
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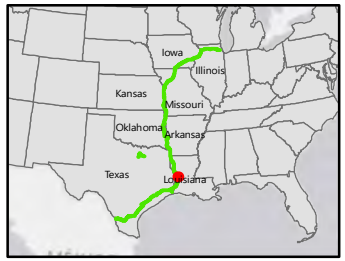
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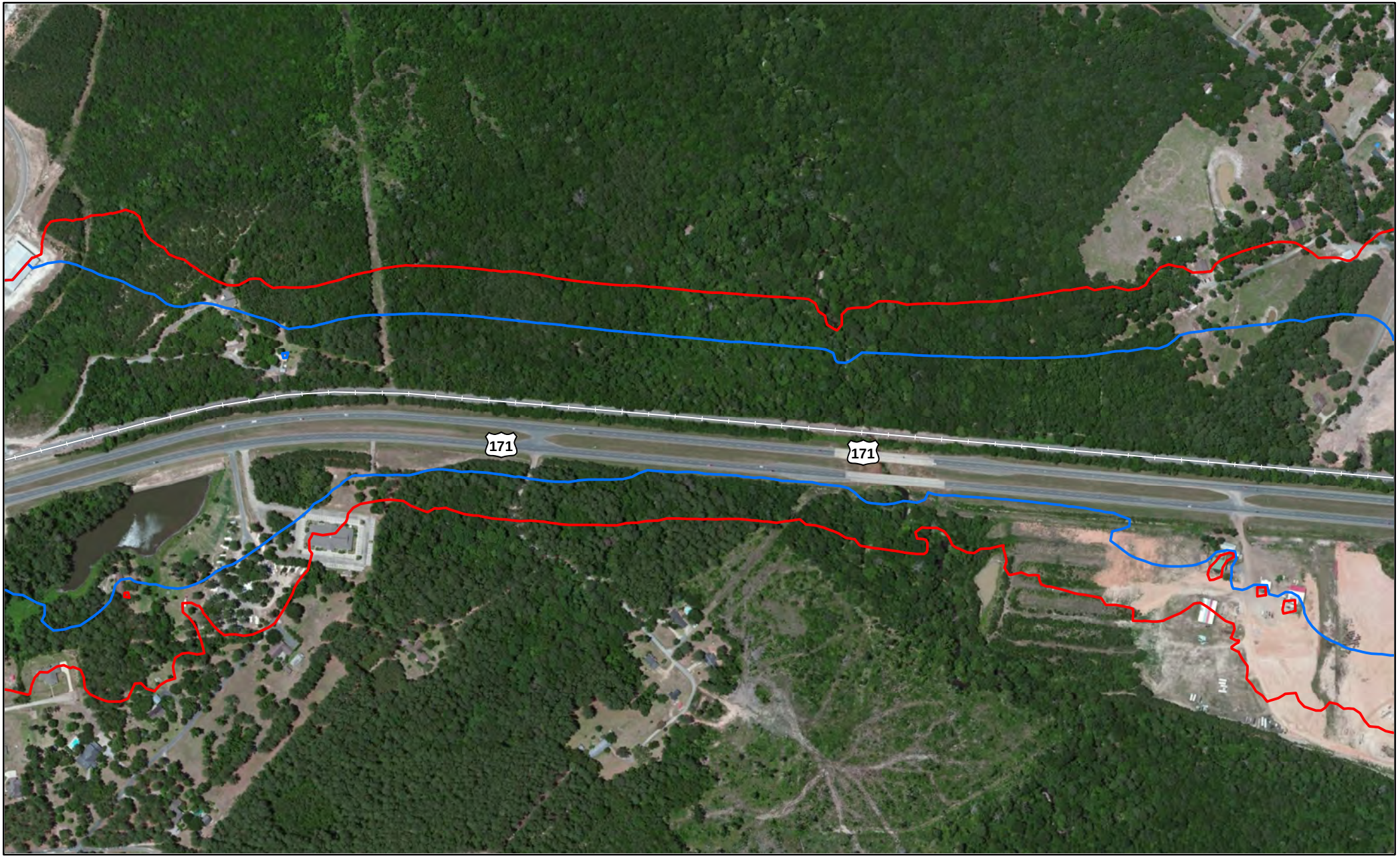
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Noise Contours
Vernon Parish, LA

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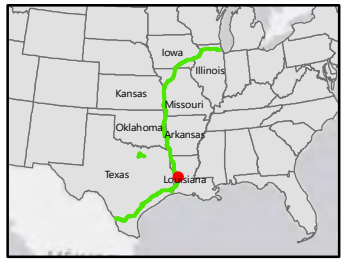
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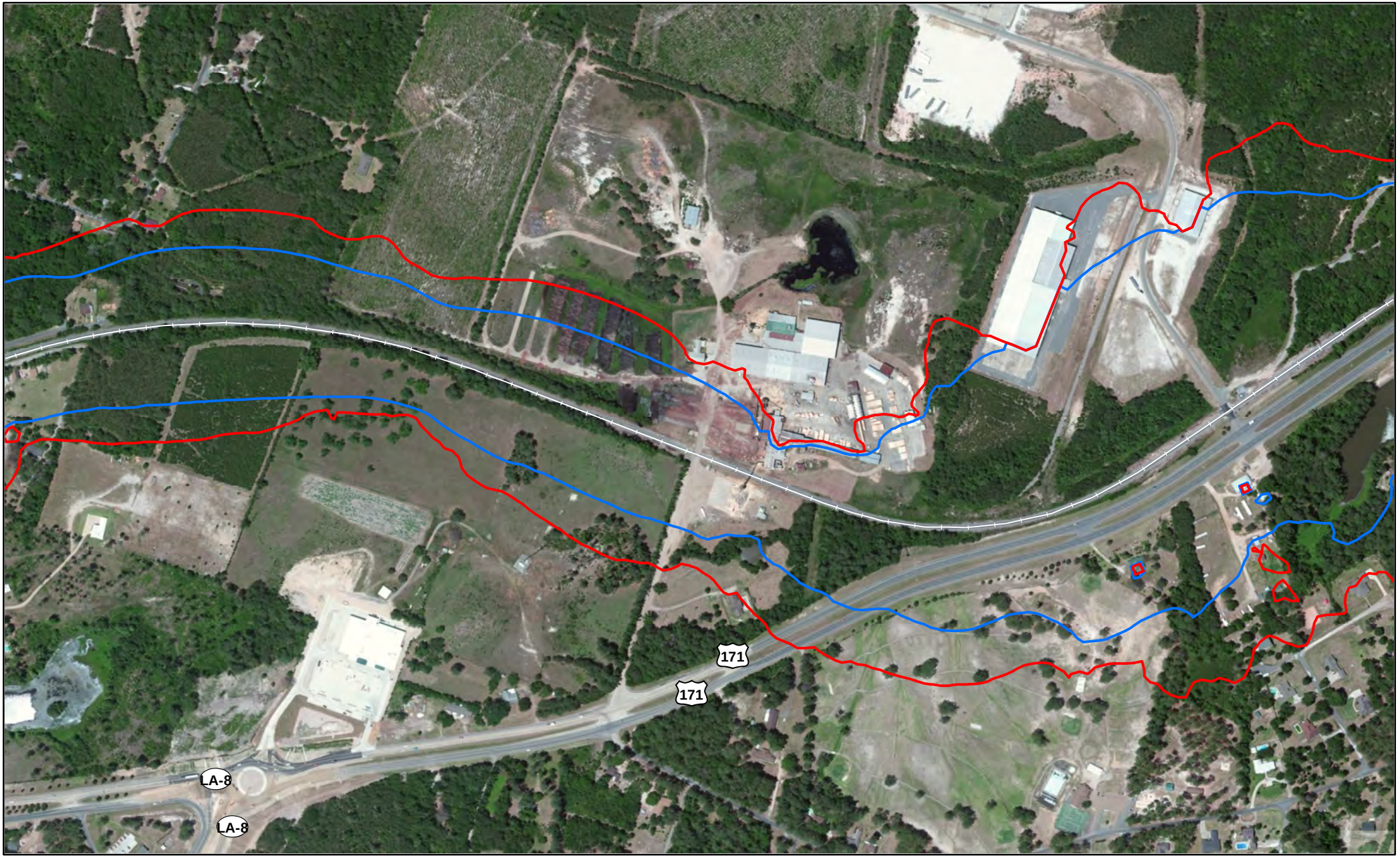
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0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



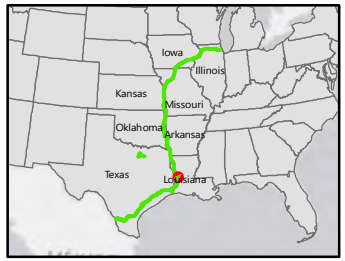
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

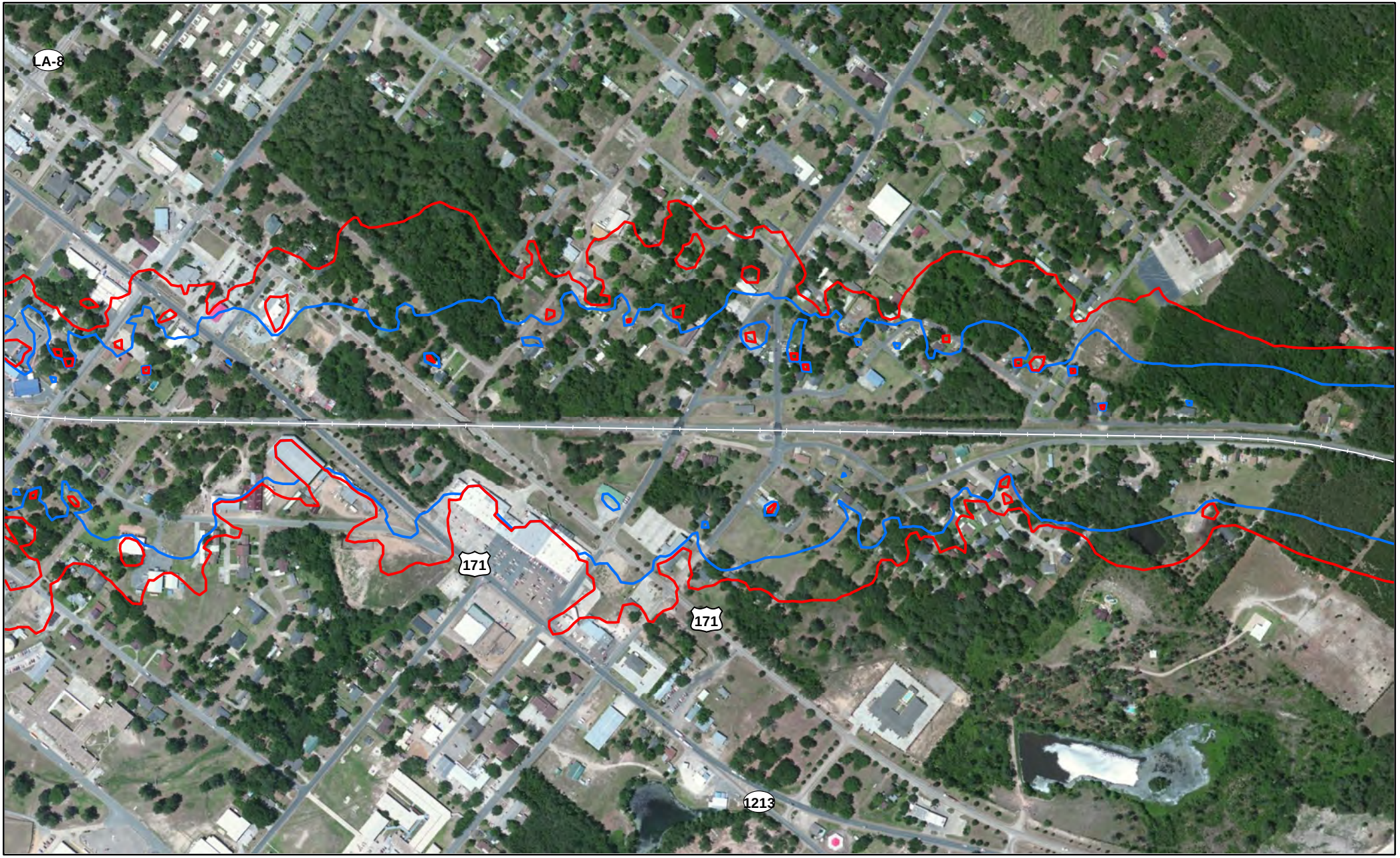
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Noise Contours
Vernon Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



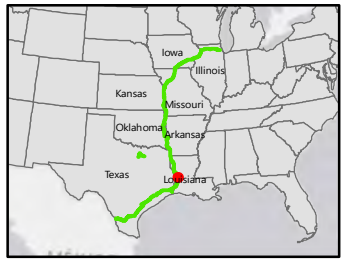
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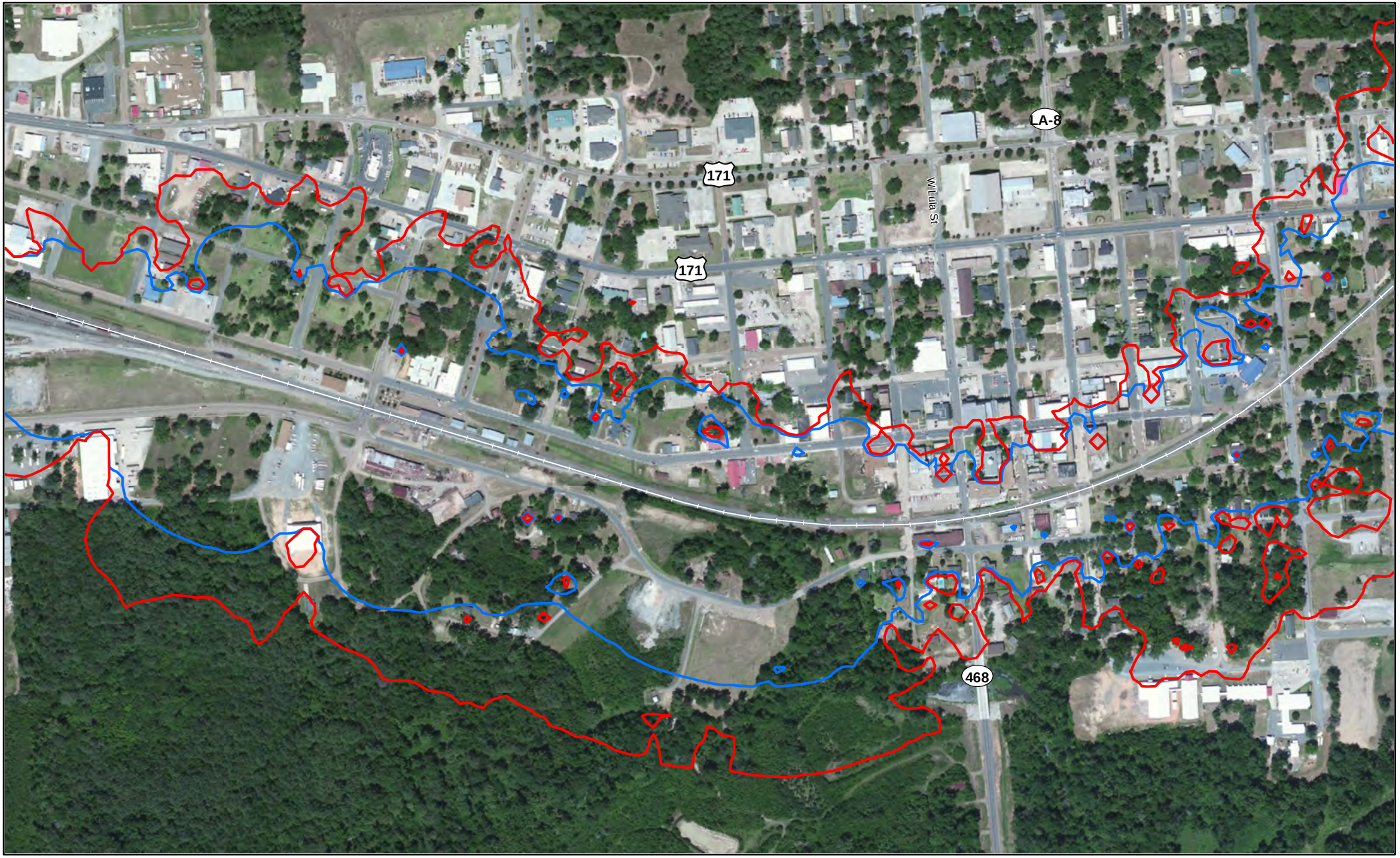
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Noise Contours
Vernon Parish, LA

Miles
0 0.05 0.1



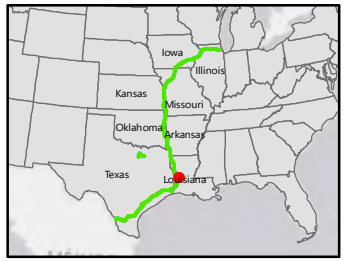
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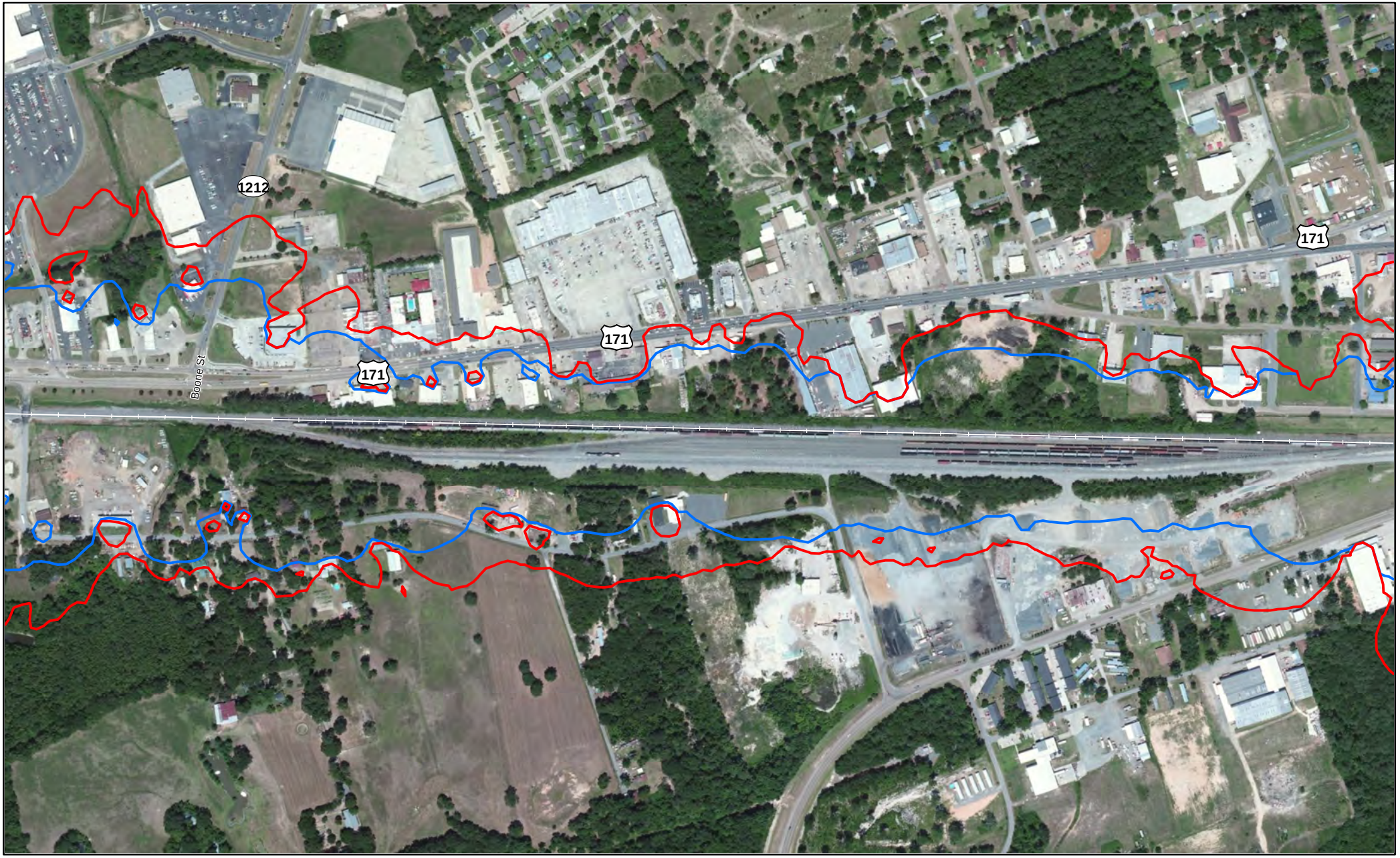
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Noise Contours
Vernon Parish, LA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



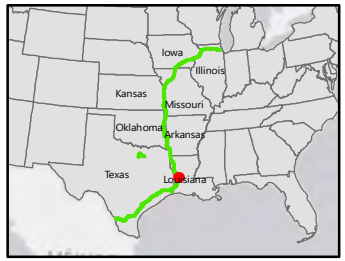
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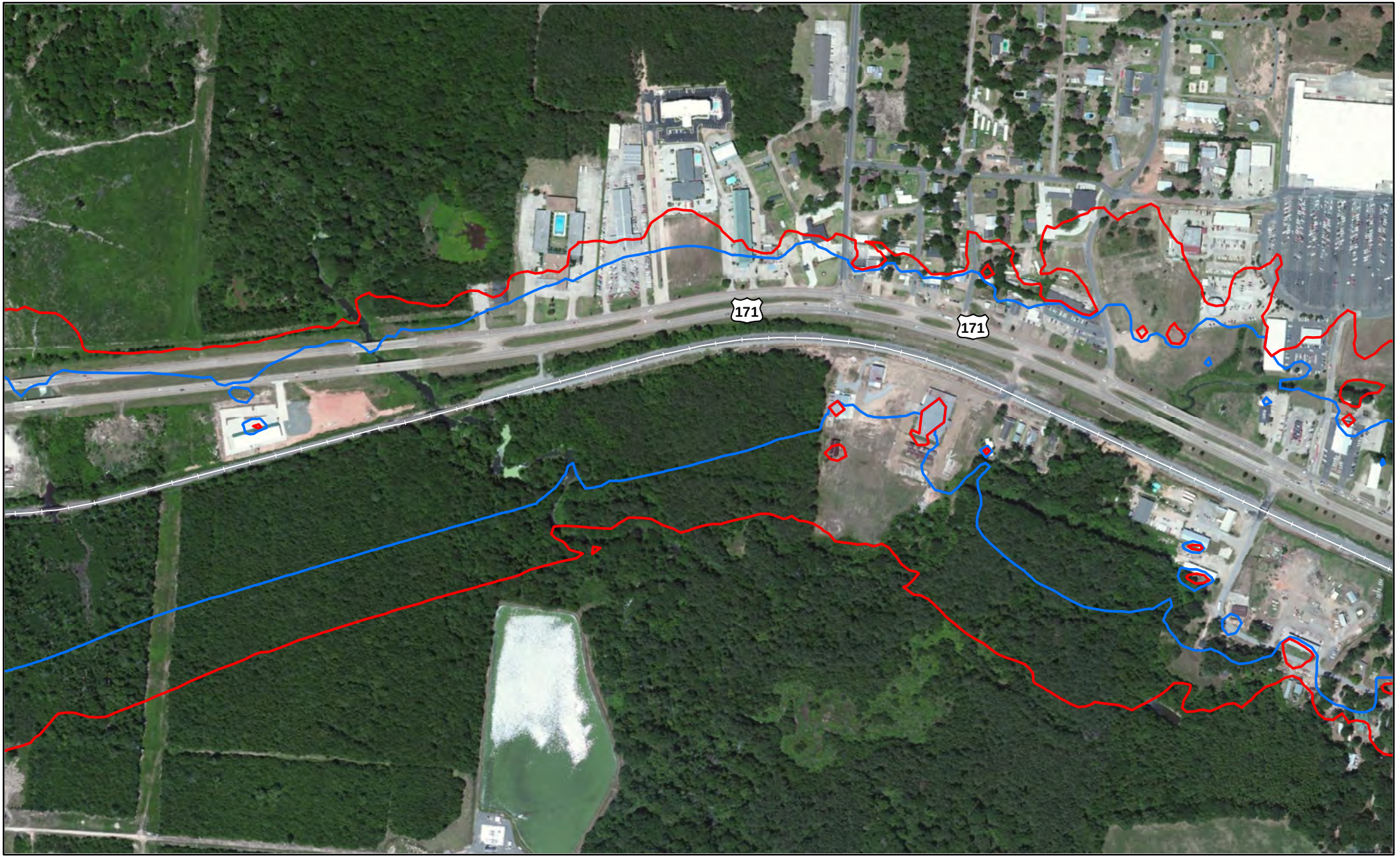
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Noise Contours
Vernon Parish, LA

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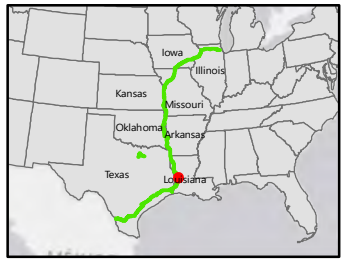
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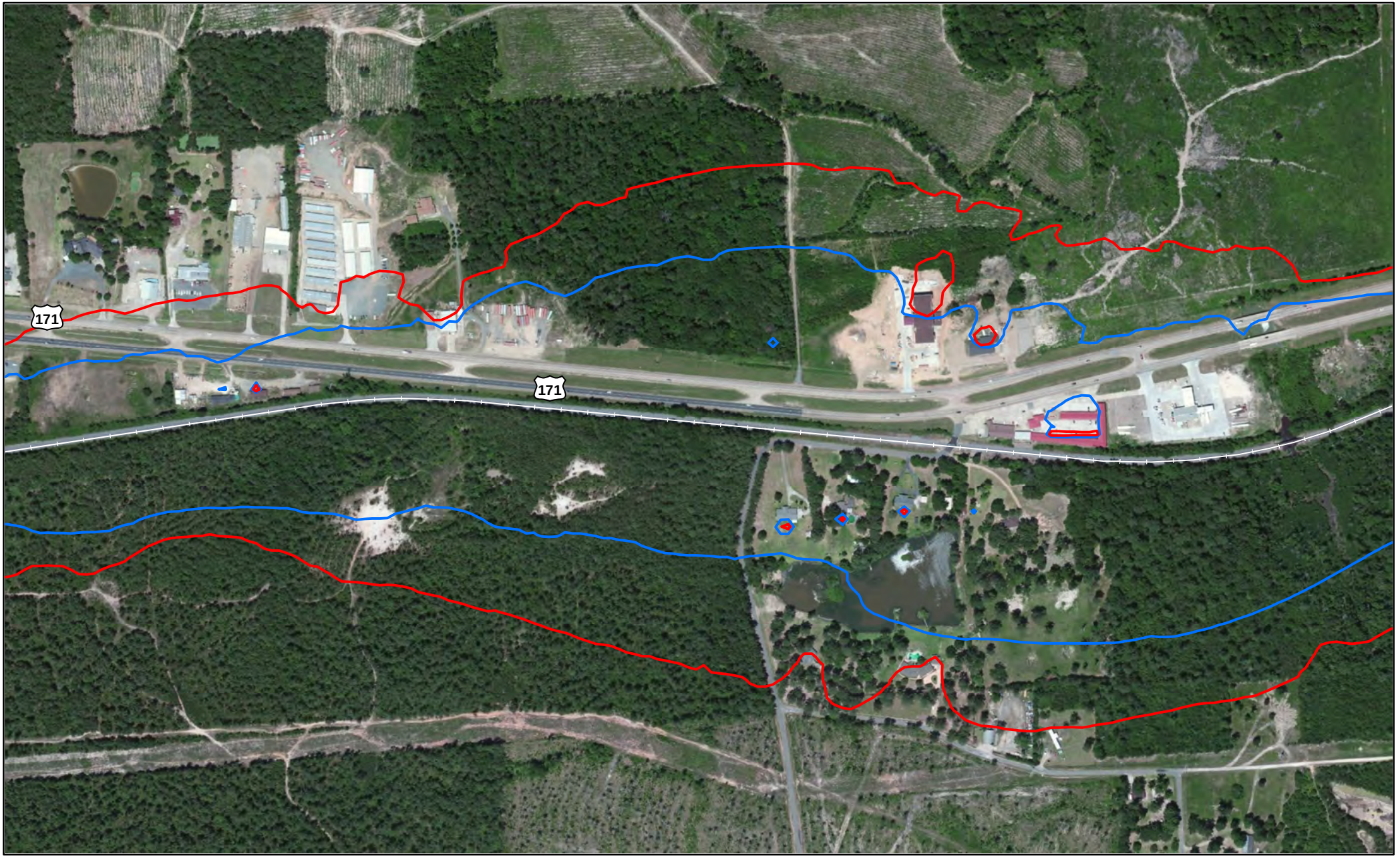
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Noise Contours
Vernon Parish, LA

Miles
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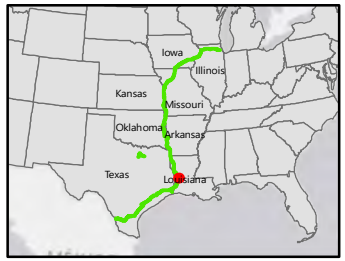
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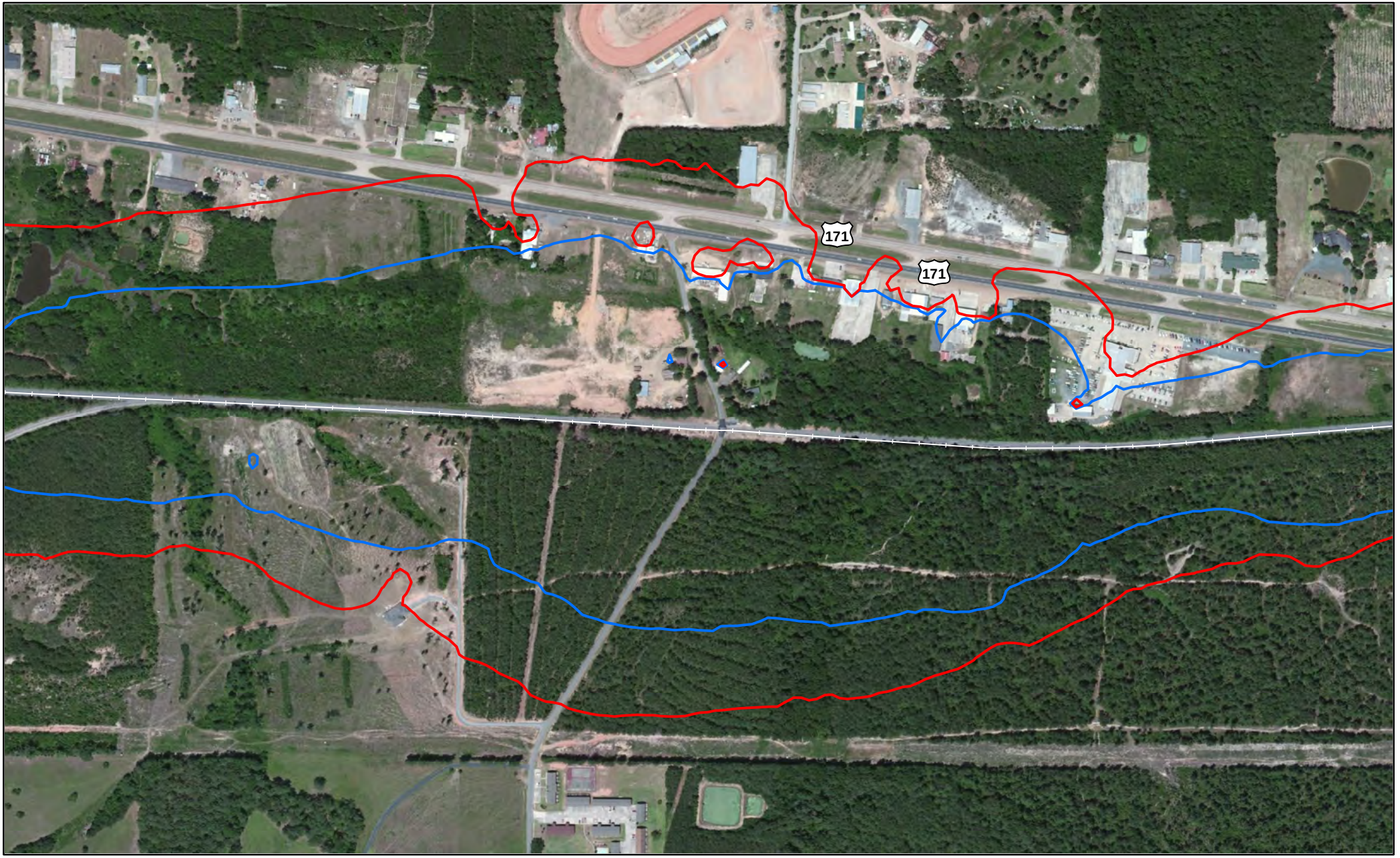
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Noise Contours
Vernon Parish, LA

Miles
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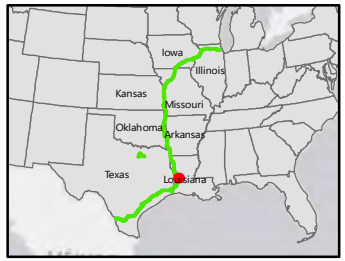
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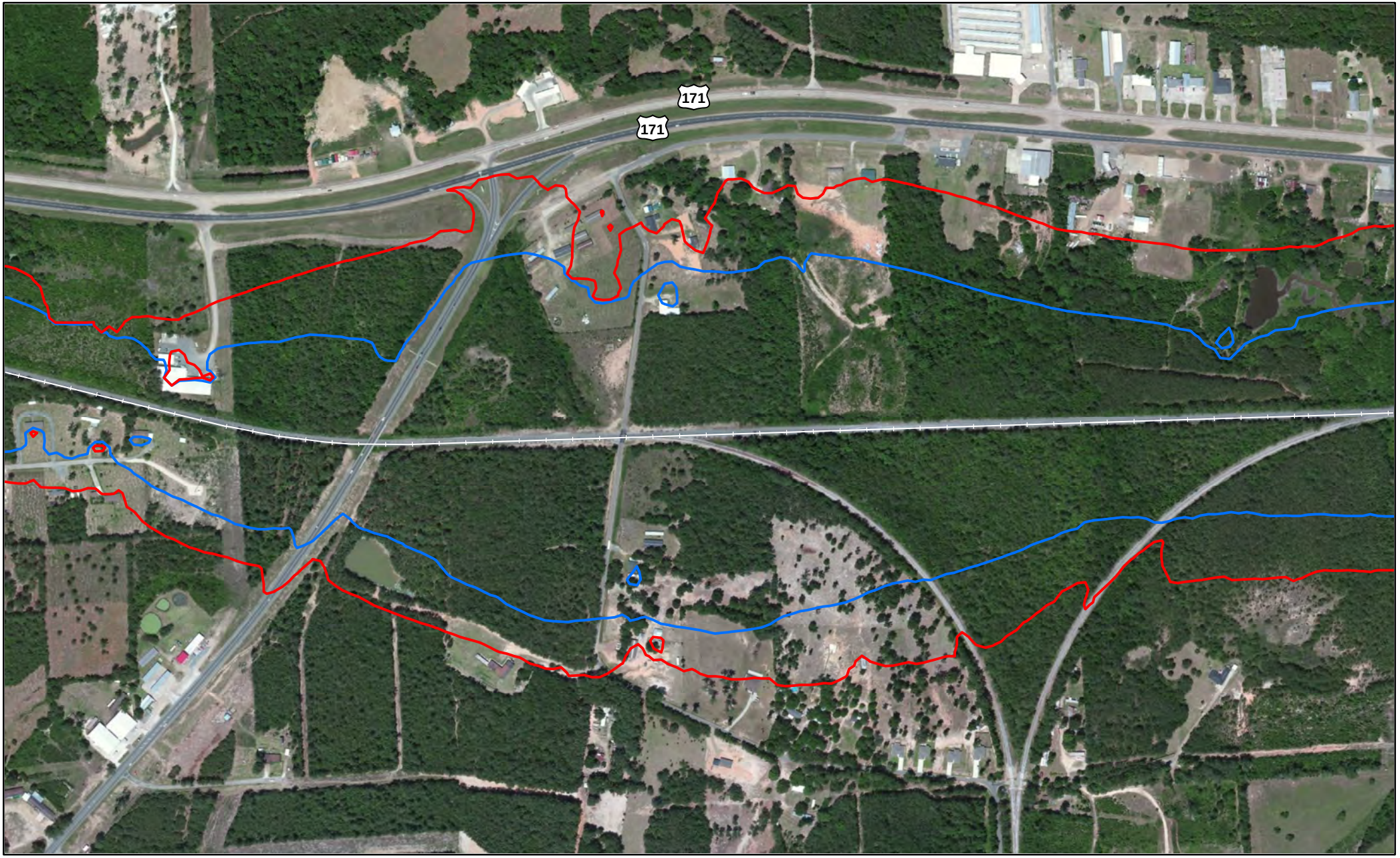
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Noise Contours
Vernon Parish, LA

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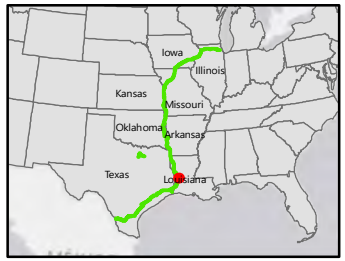
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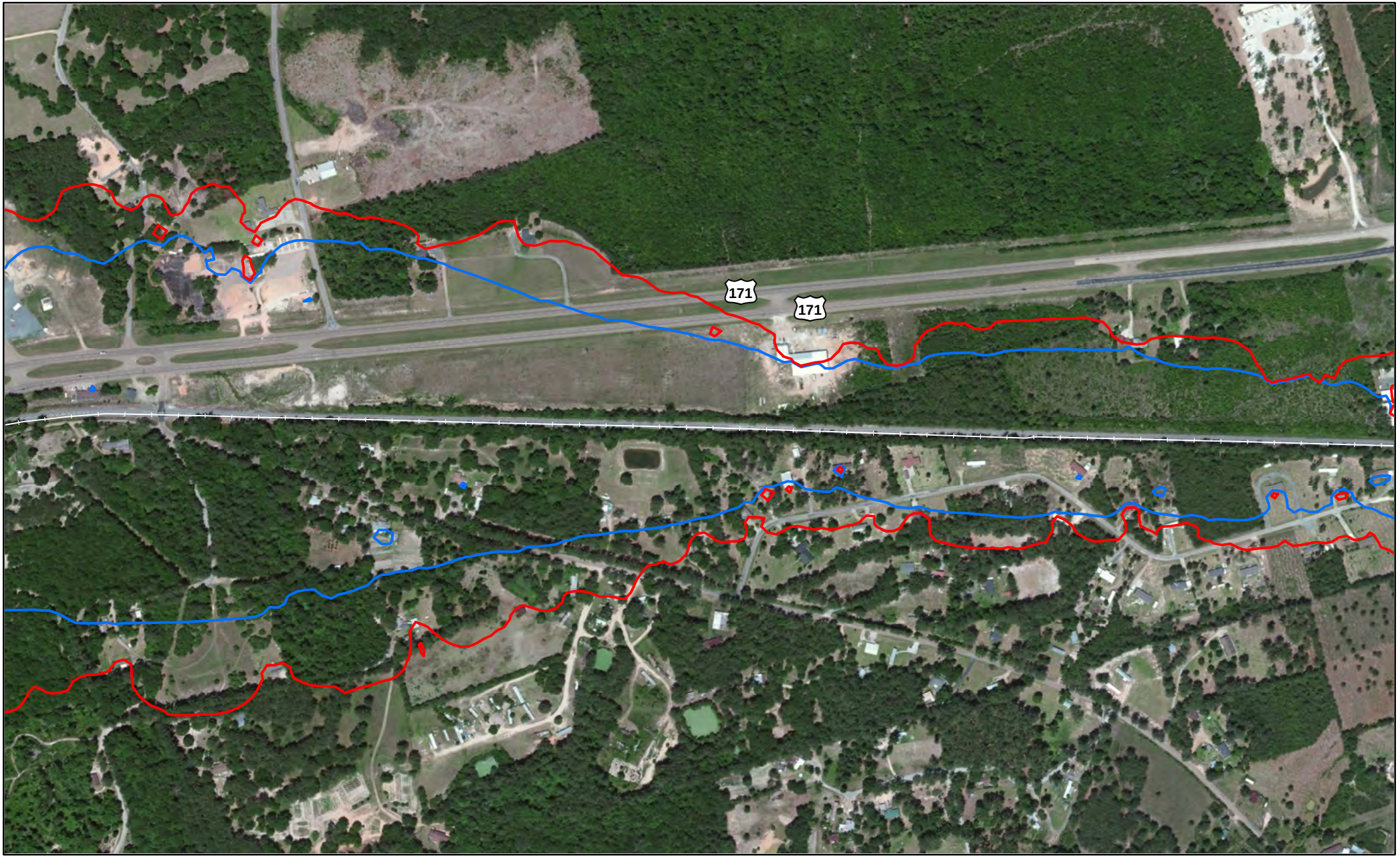
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Noise Contours
Vernon Parish, LA

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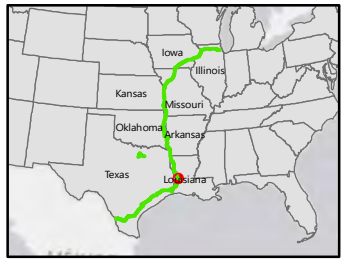
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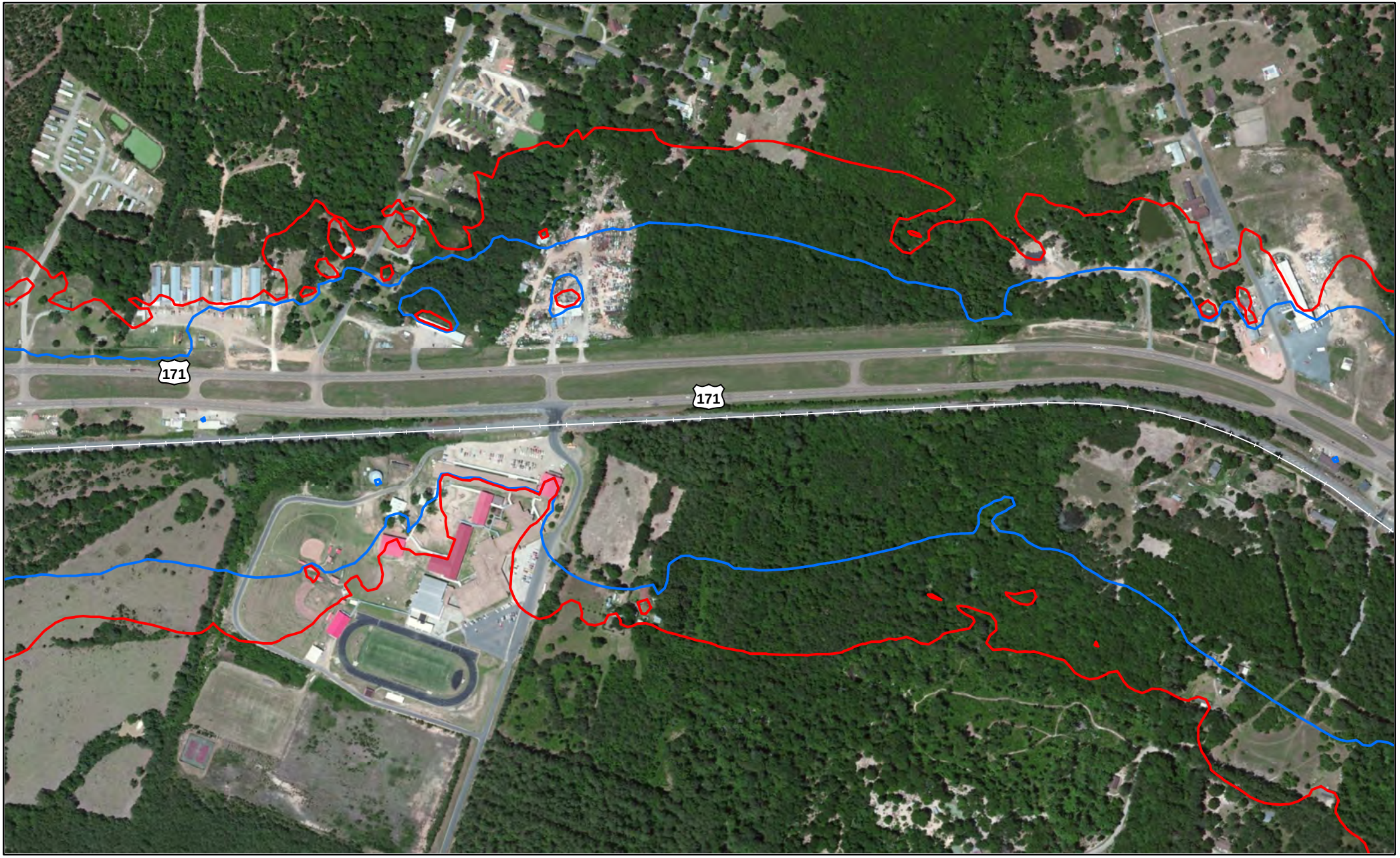
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Noise Contours
Vernon Parish, LA

0 0.05 0.1 Miles

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



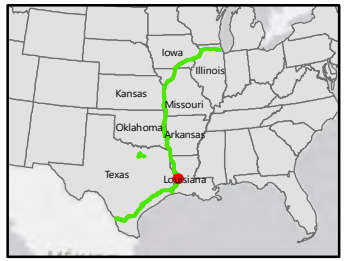
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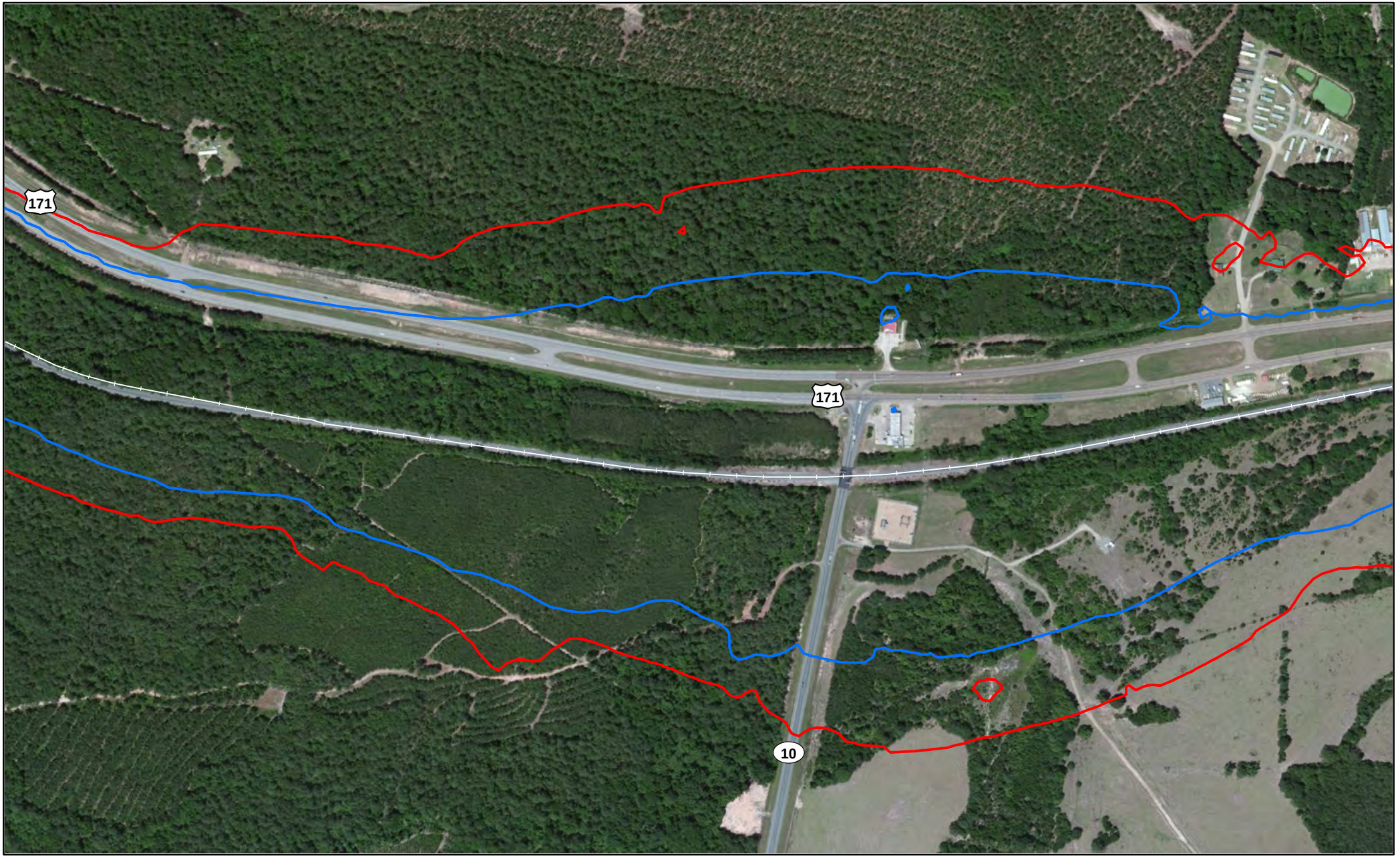
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Noise Contours
Vernon Parish, LA

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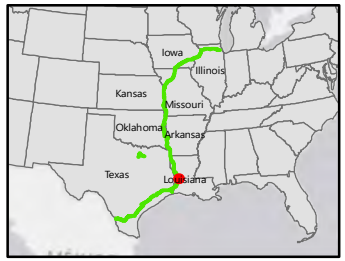
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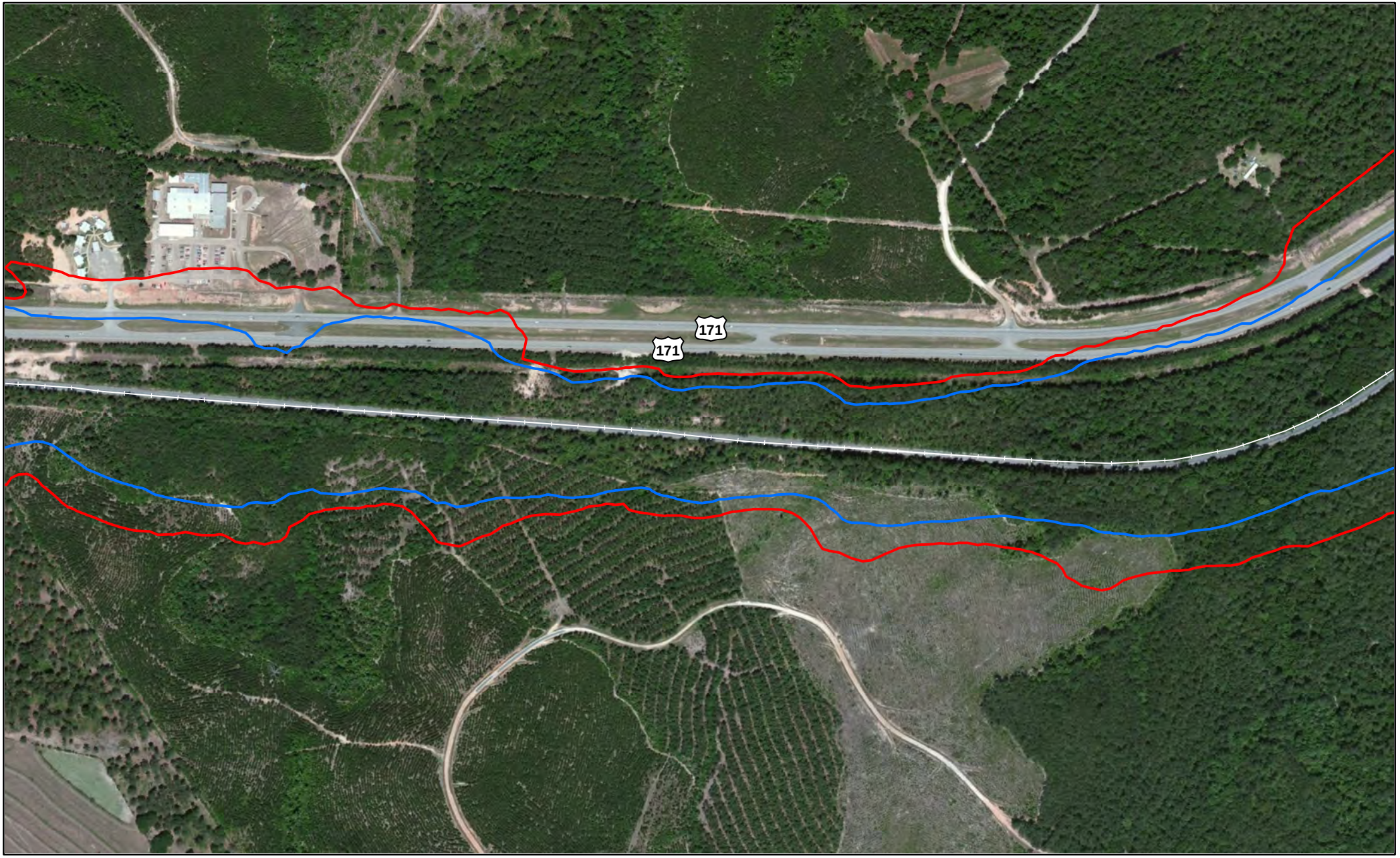
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Noise Contours
Vernon Parish, LA

Miles
0 0.05 0.1



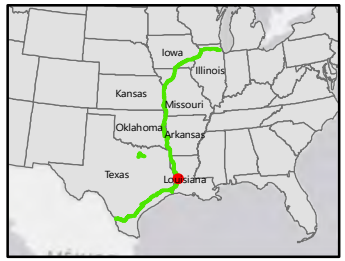
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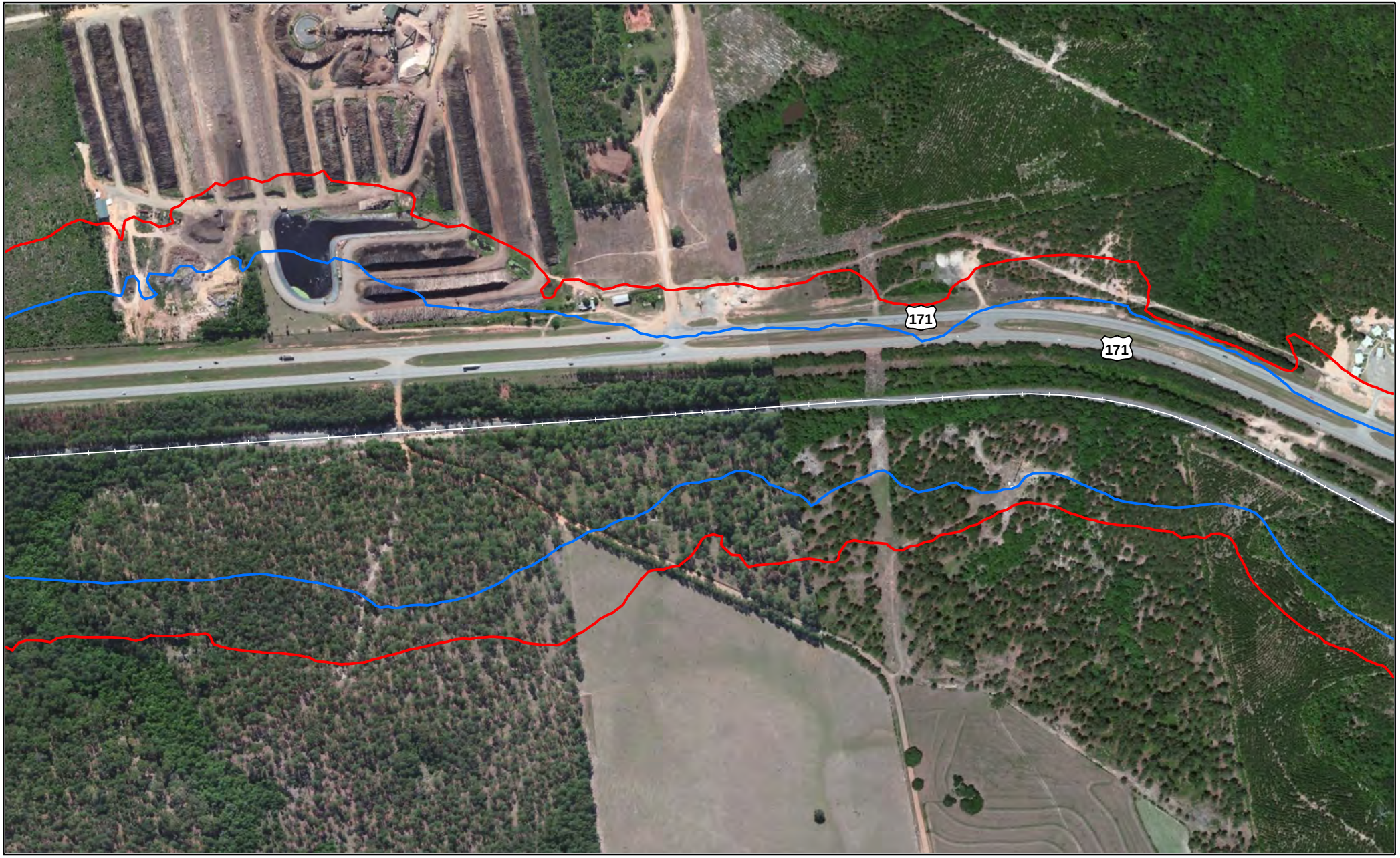
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Noise Contours
Vernon Parish, LA

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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Noise Contours
Vernon Parish, LA

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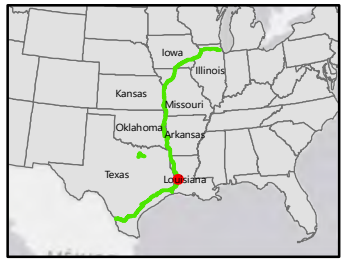
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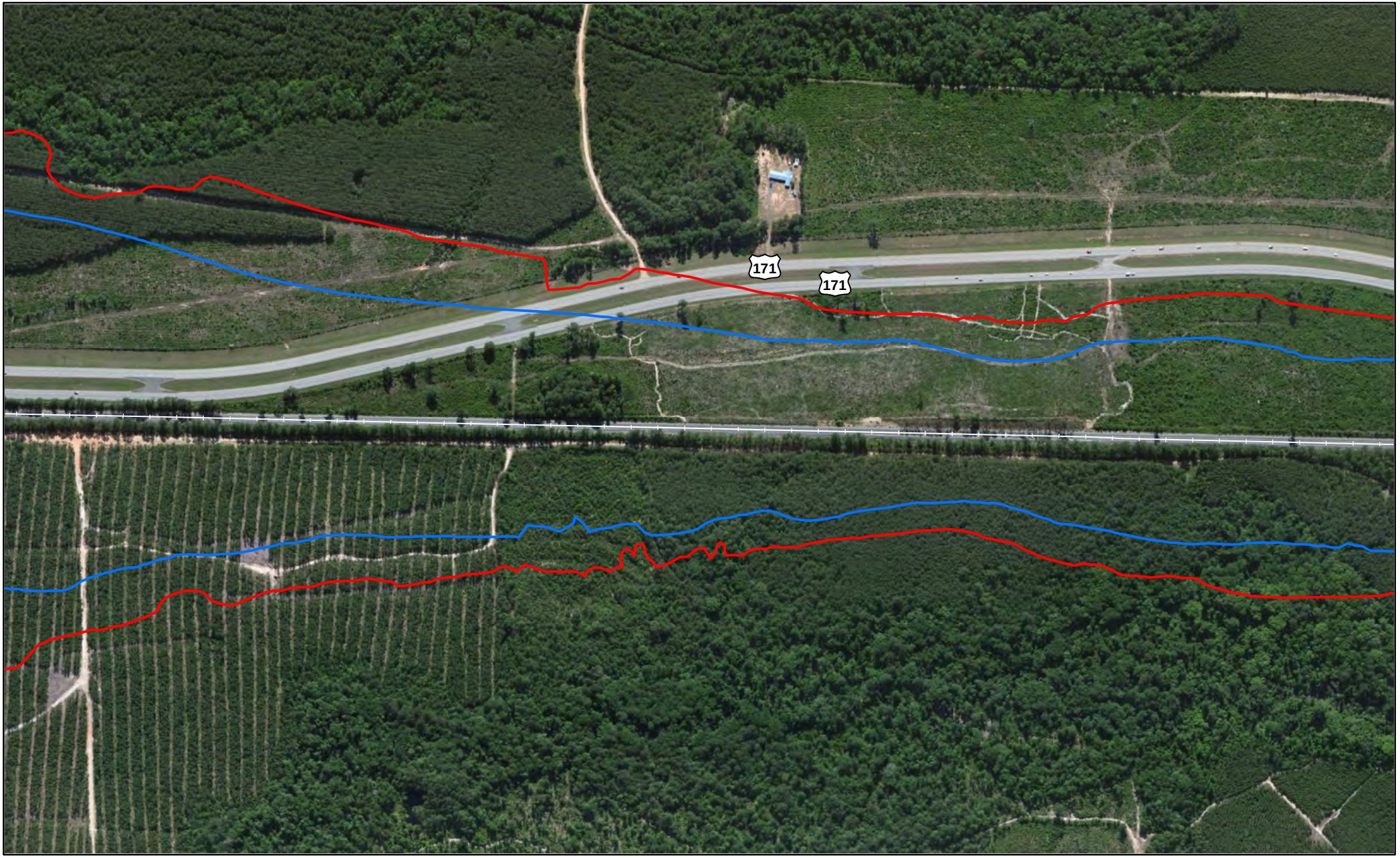
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Noise Contours
Vernon Parish, LA

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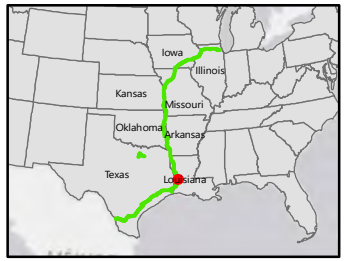
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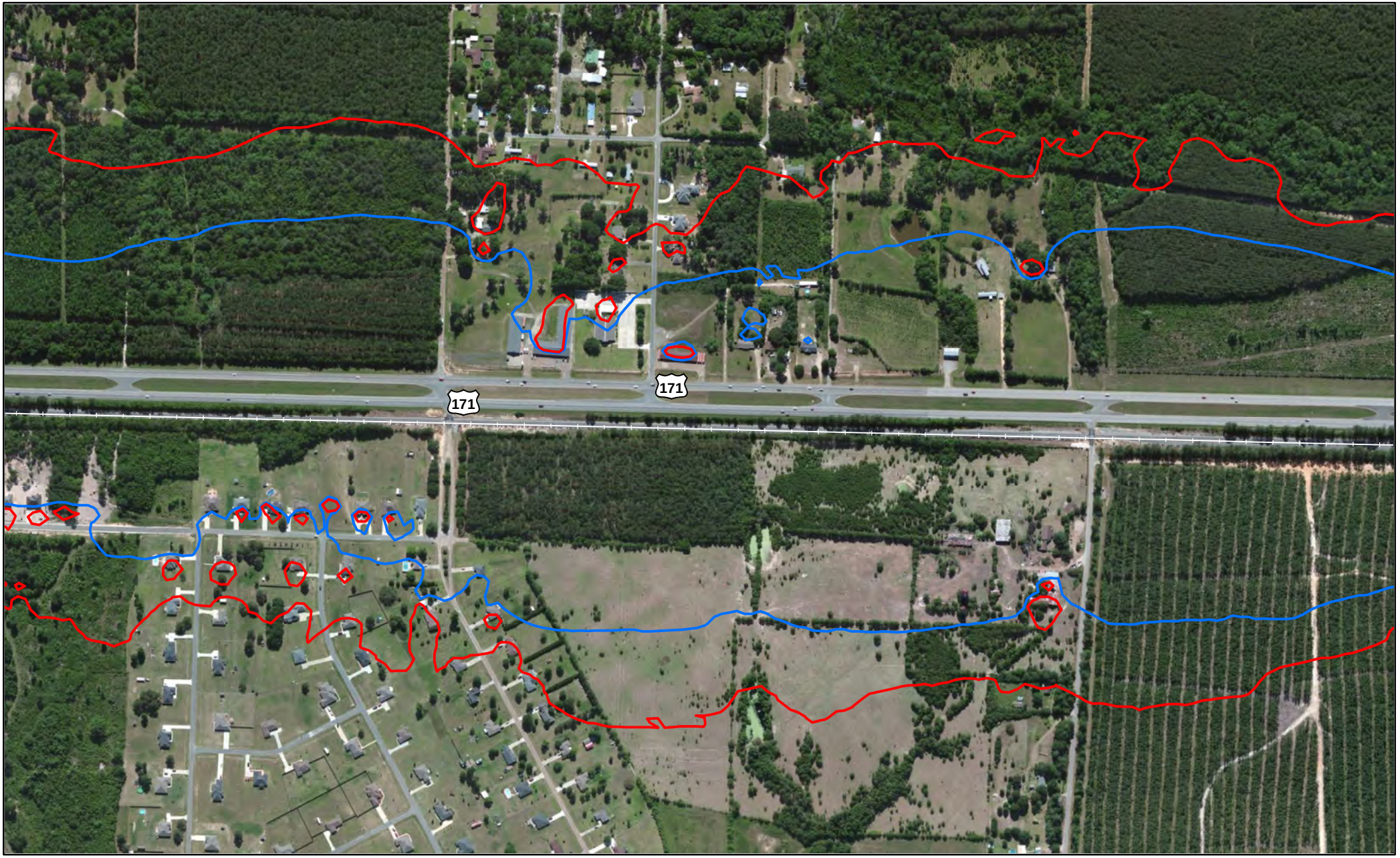
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Noise Contours
Vernon Parish, LA

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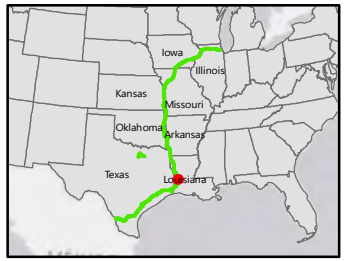
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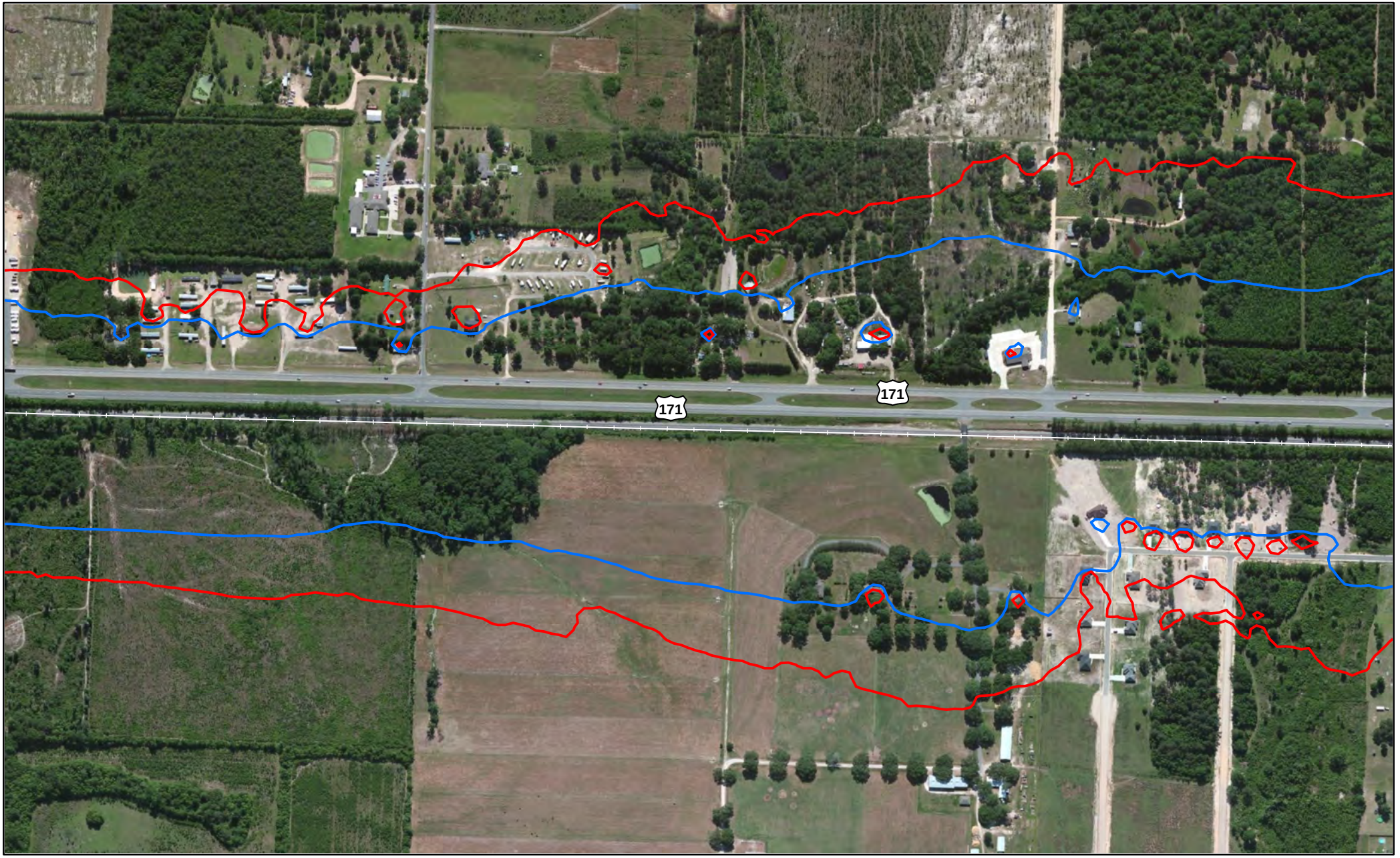
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Noise Contours
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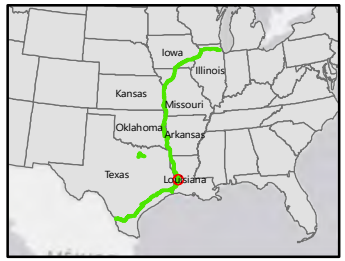
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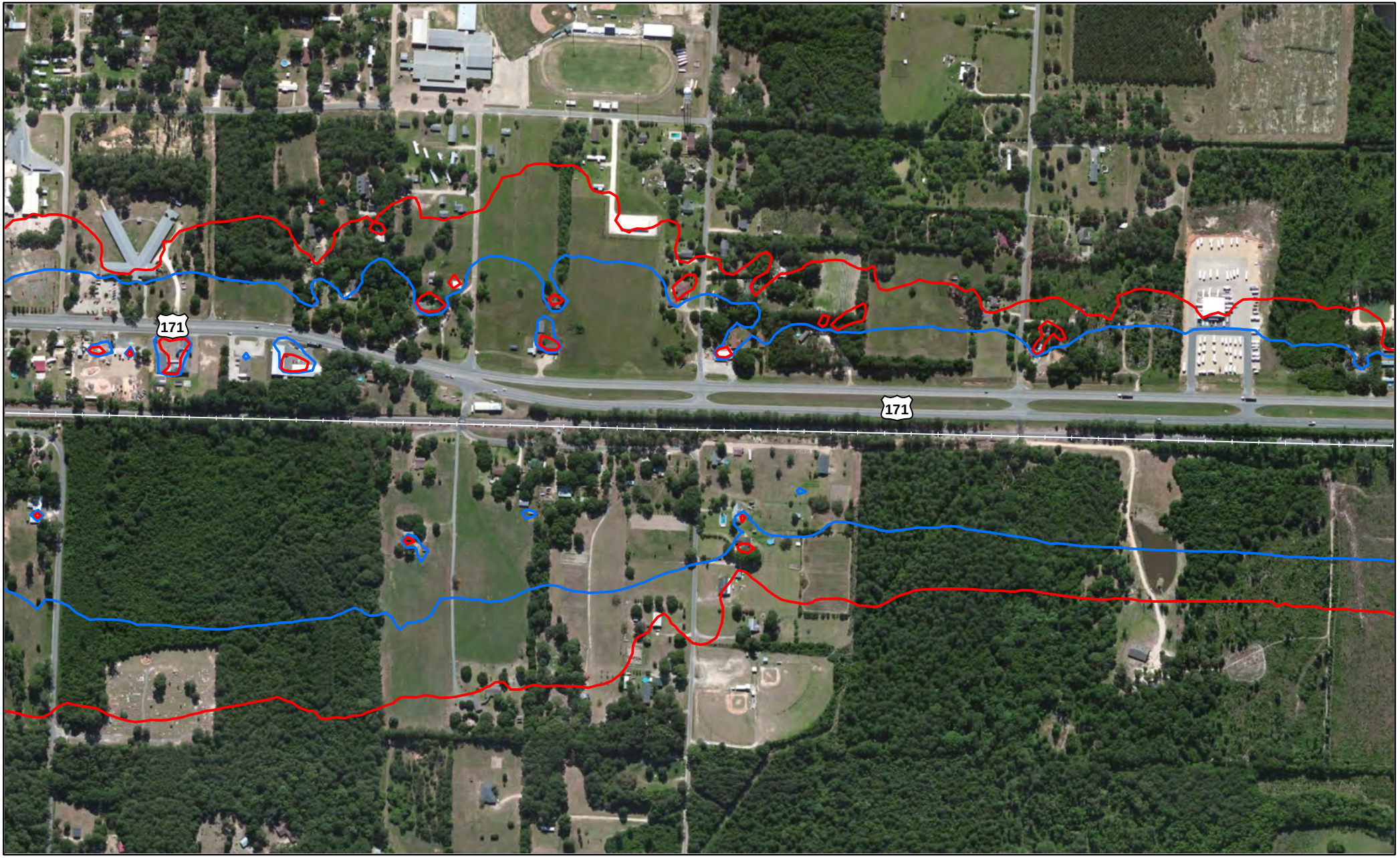
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Noise Contours
Vernon Parish, LA

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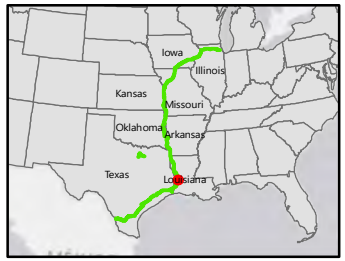
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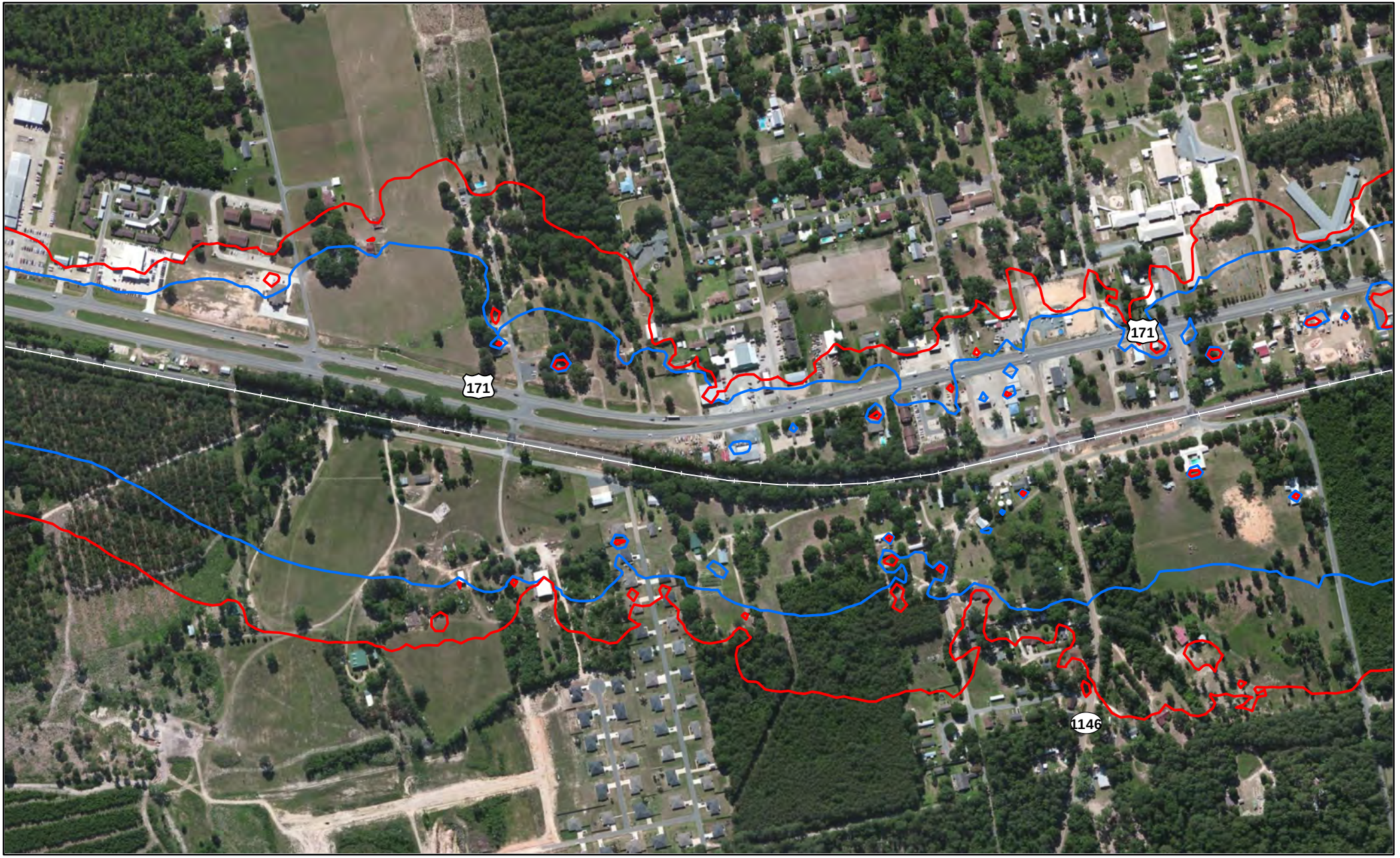
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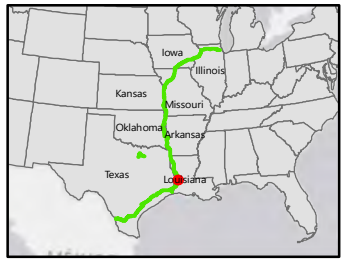
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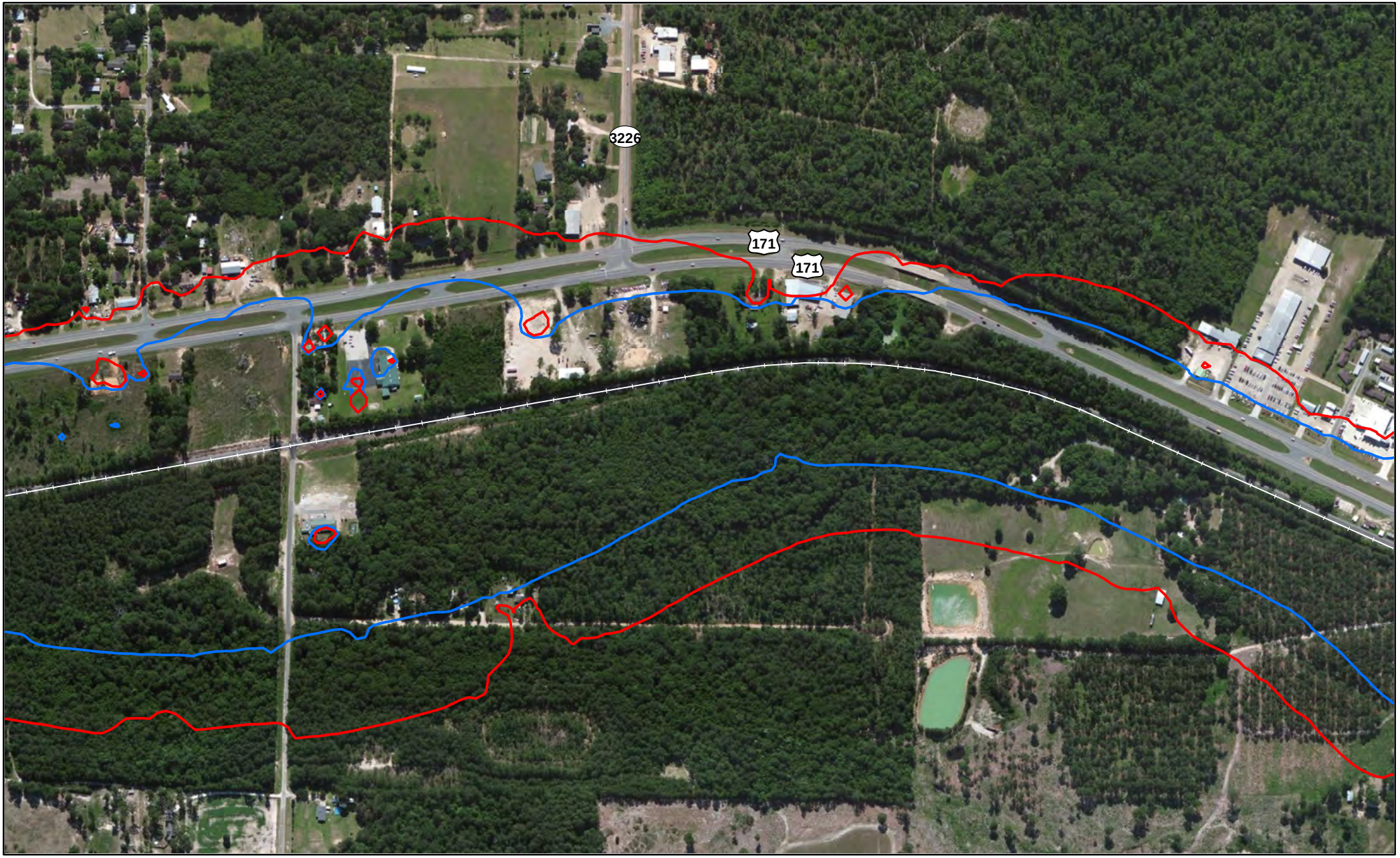
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Noise Contours
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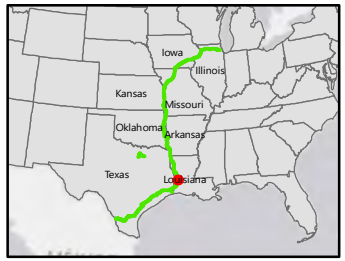
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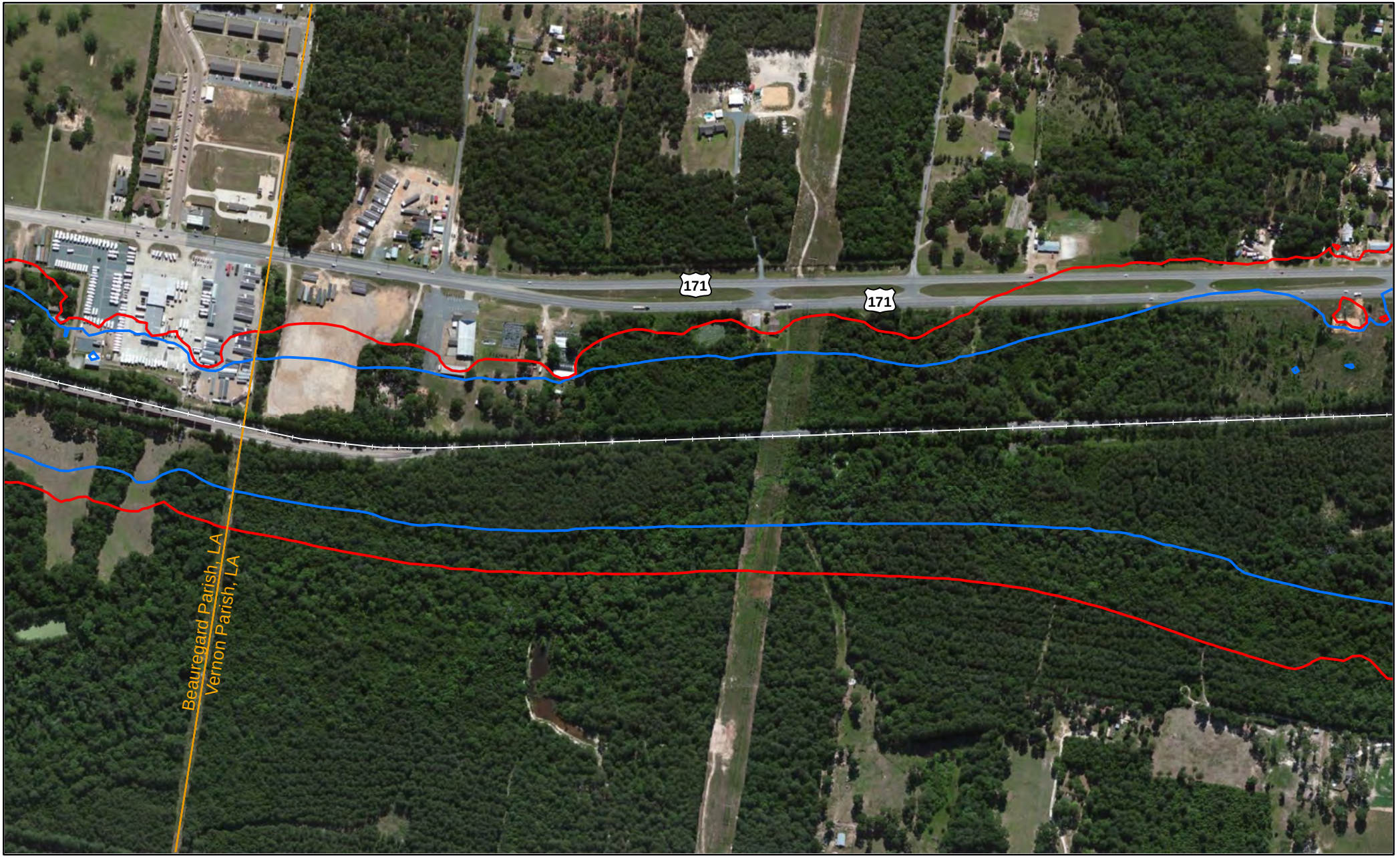
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Noise Contours
Vernon Parish, LA

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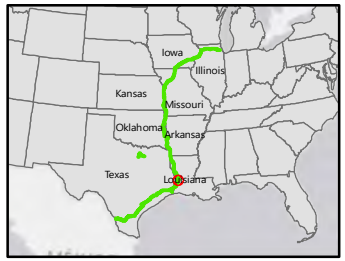
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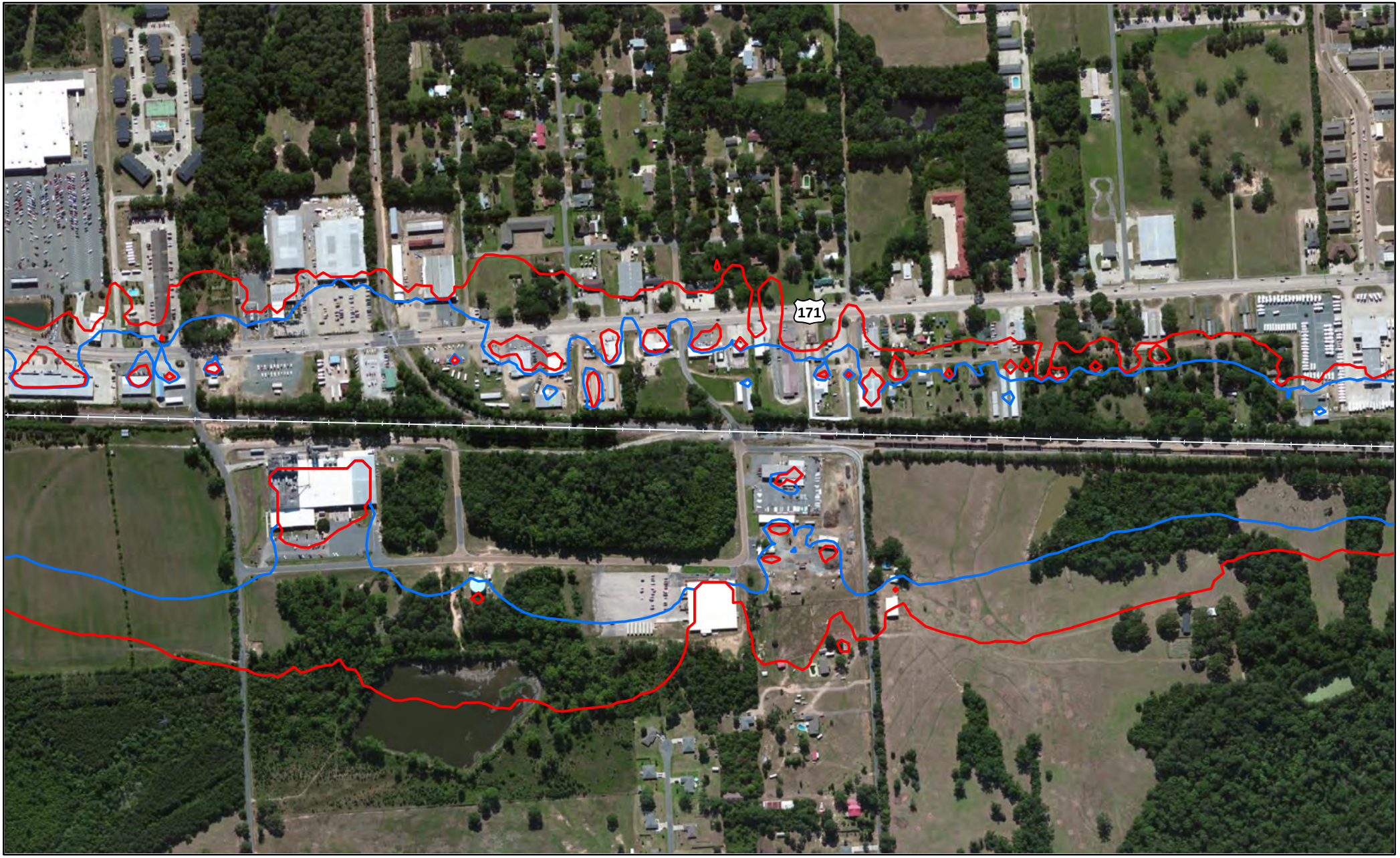
Tracks

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Noise Contours
Beauregard Parish, LA

Miles
0 0.05 0.1



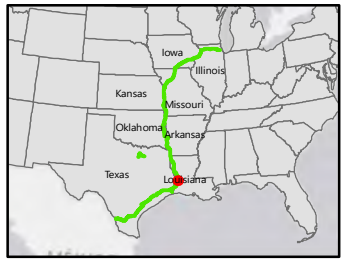
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Noise Contours
Beauregard Parish, LA

Miles
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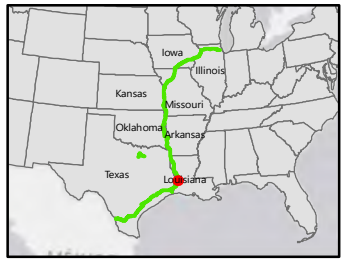
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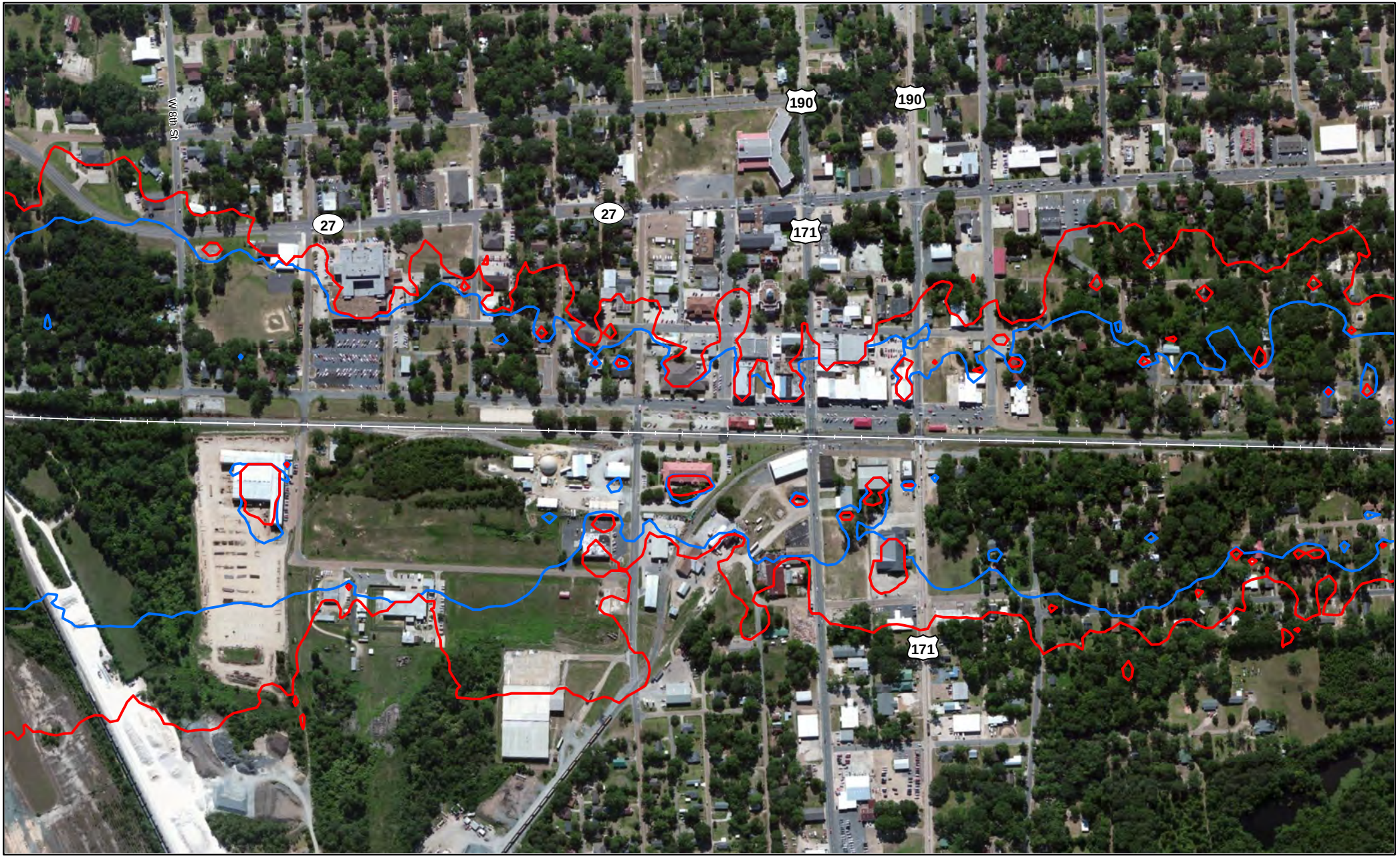
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0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



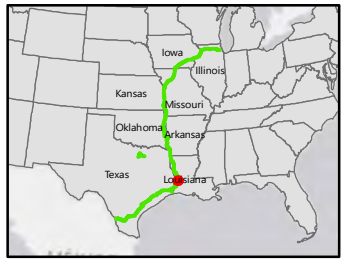
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

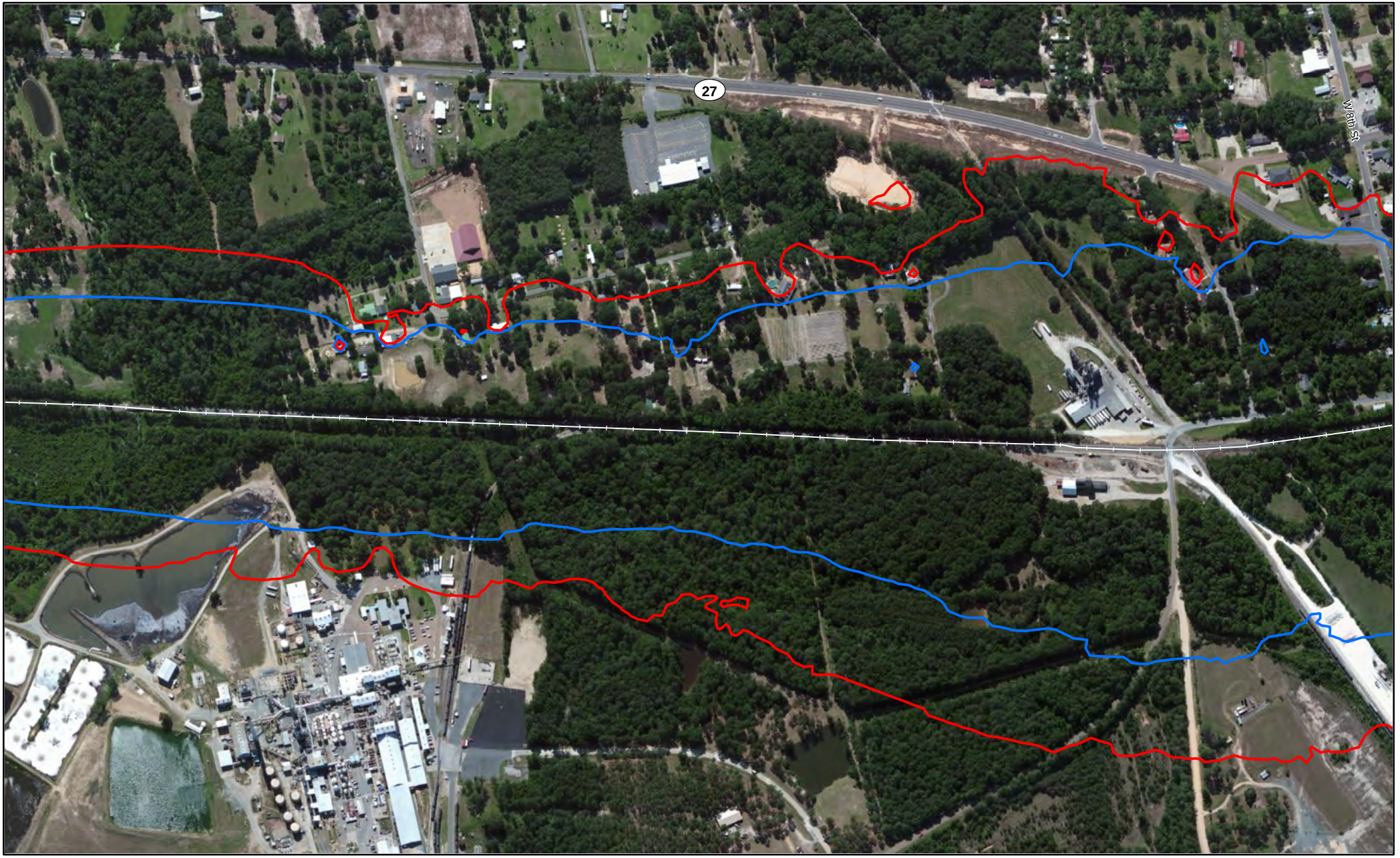
Source: ESRI.



Noise Contours
Beauregard Parish, LA

0 0.05 0.1 Miles

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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Noise Impact (65 Ldn and 3 dBA Increase)

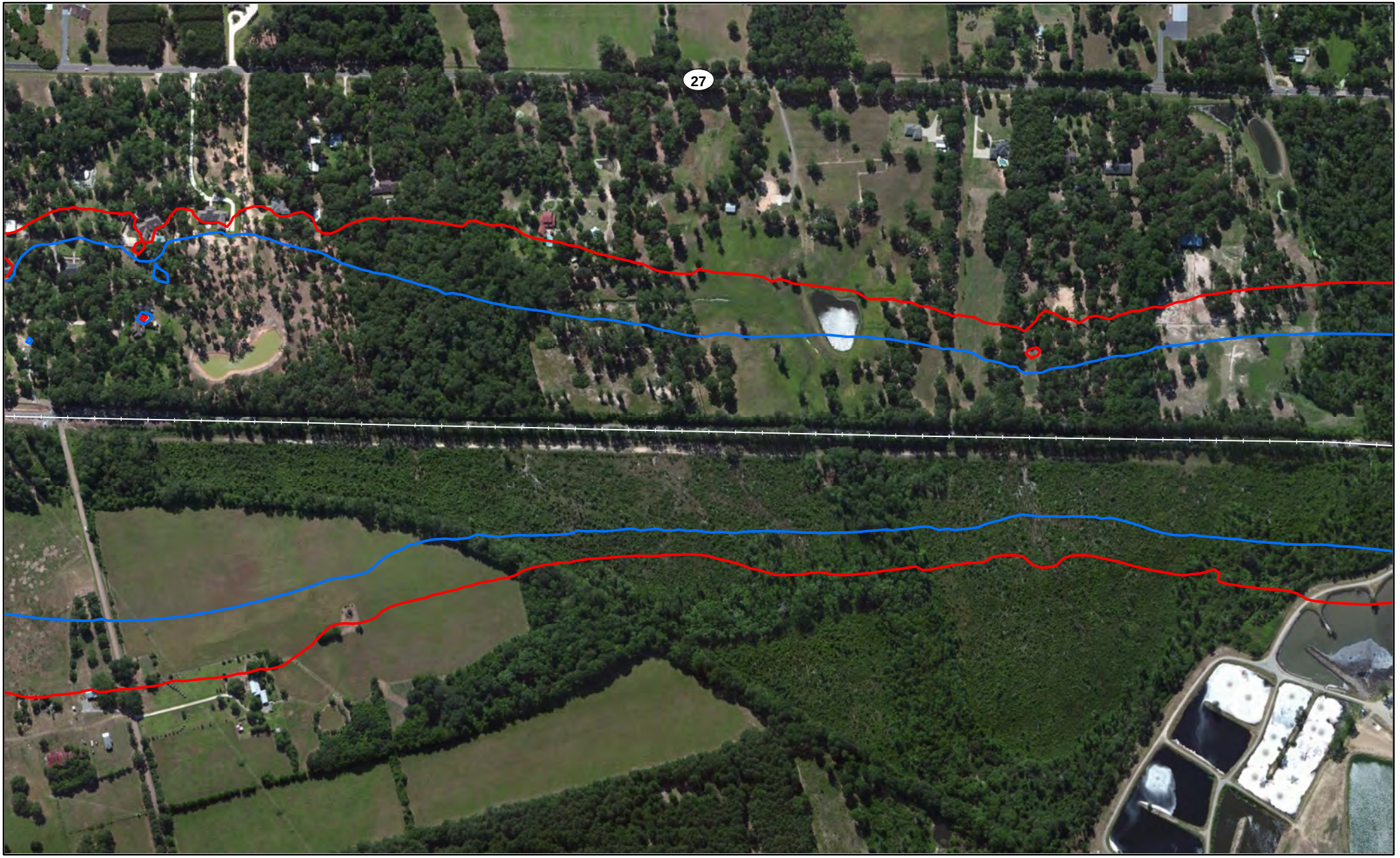
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Noise Contours
Beauregard Parish, LA

Miles
0 0.05 0.1



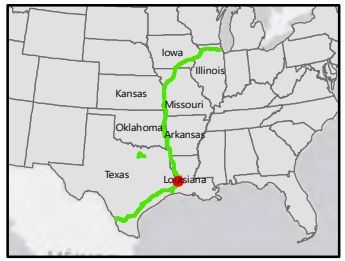
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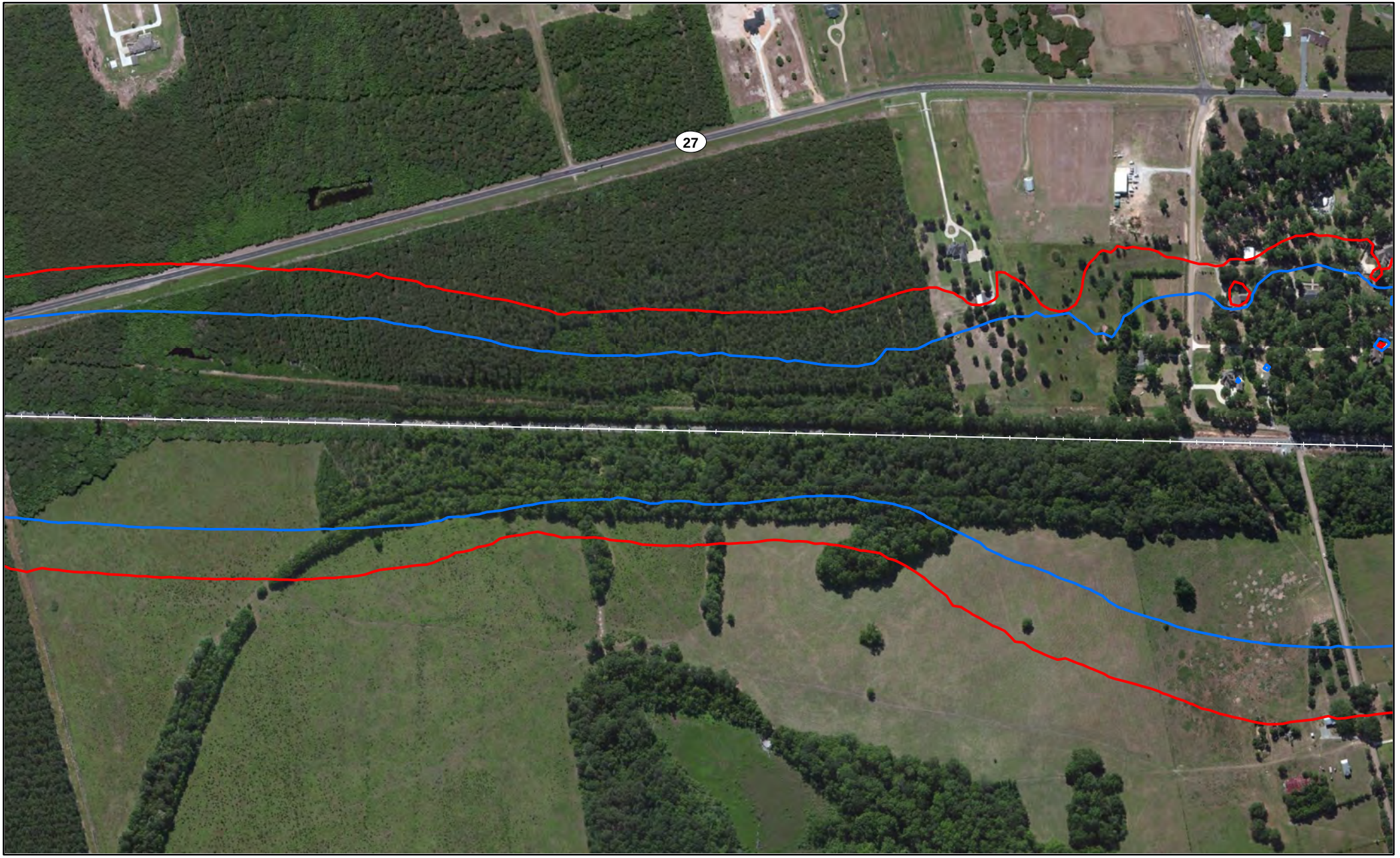
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Noise Contours
Beauregard Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



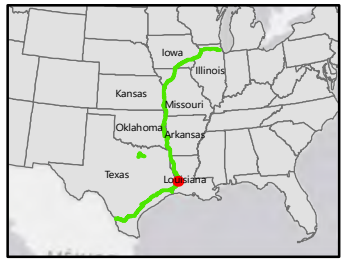
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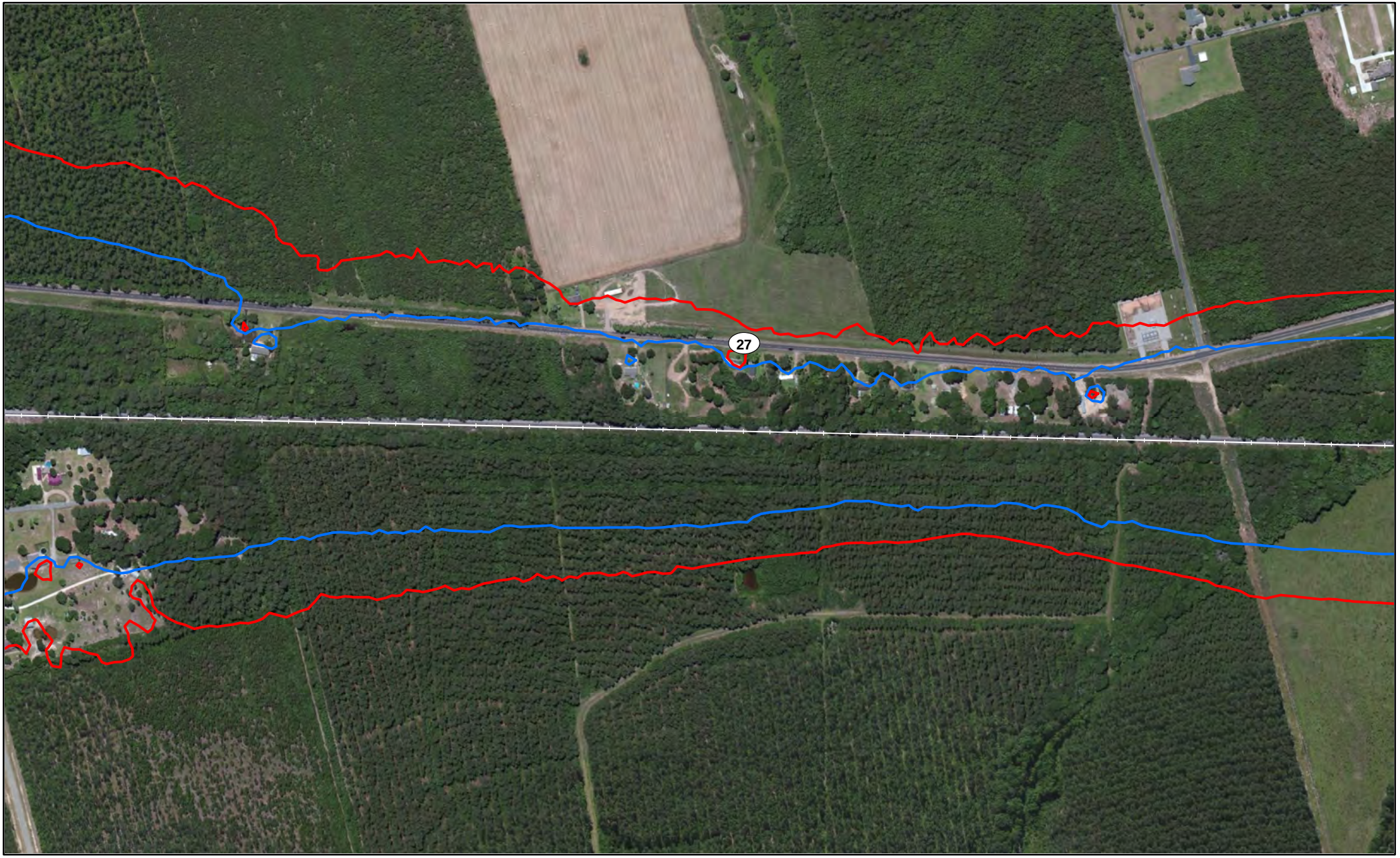
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Noise Contours
Beauregard Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



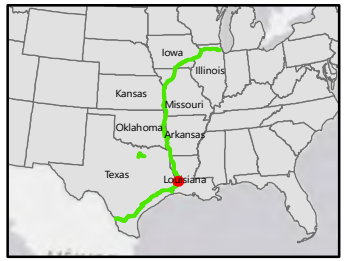
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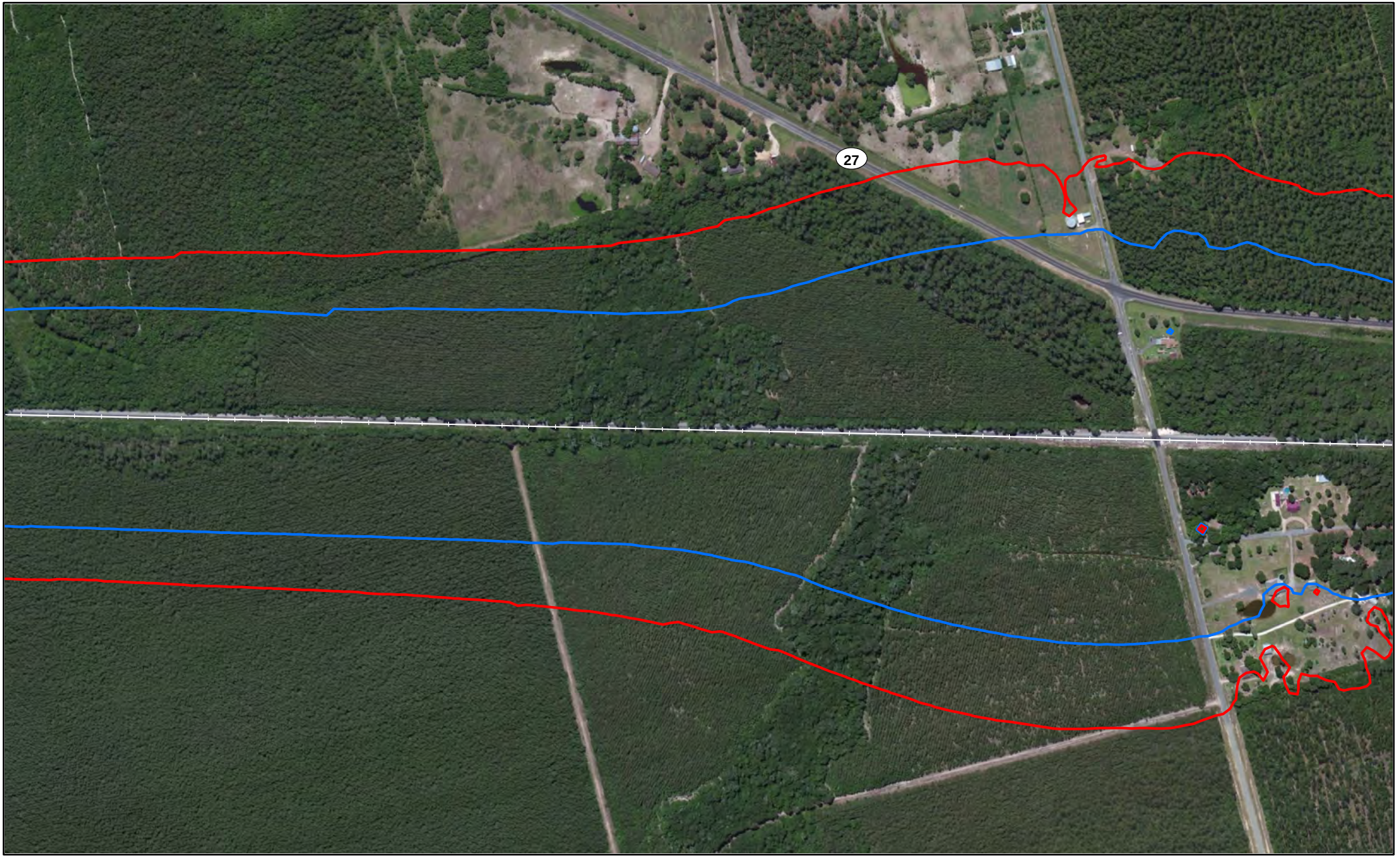
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Noise Contours
Beauregard Parish, LA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



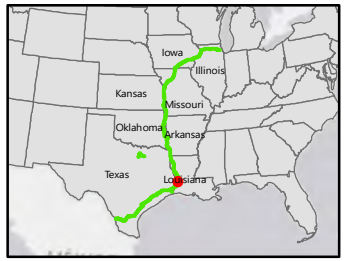
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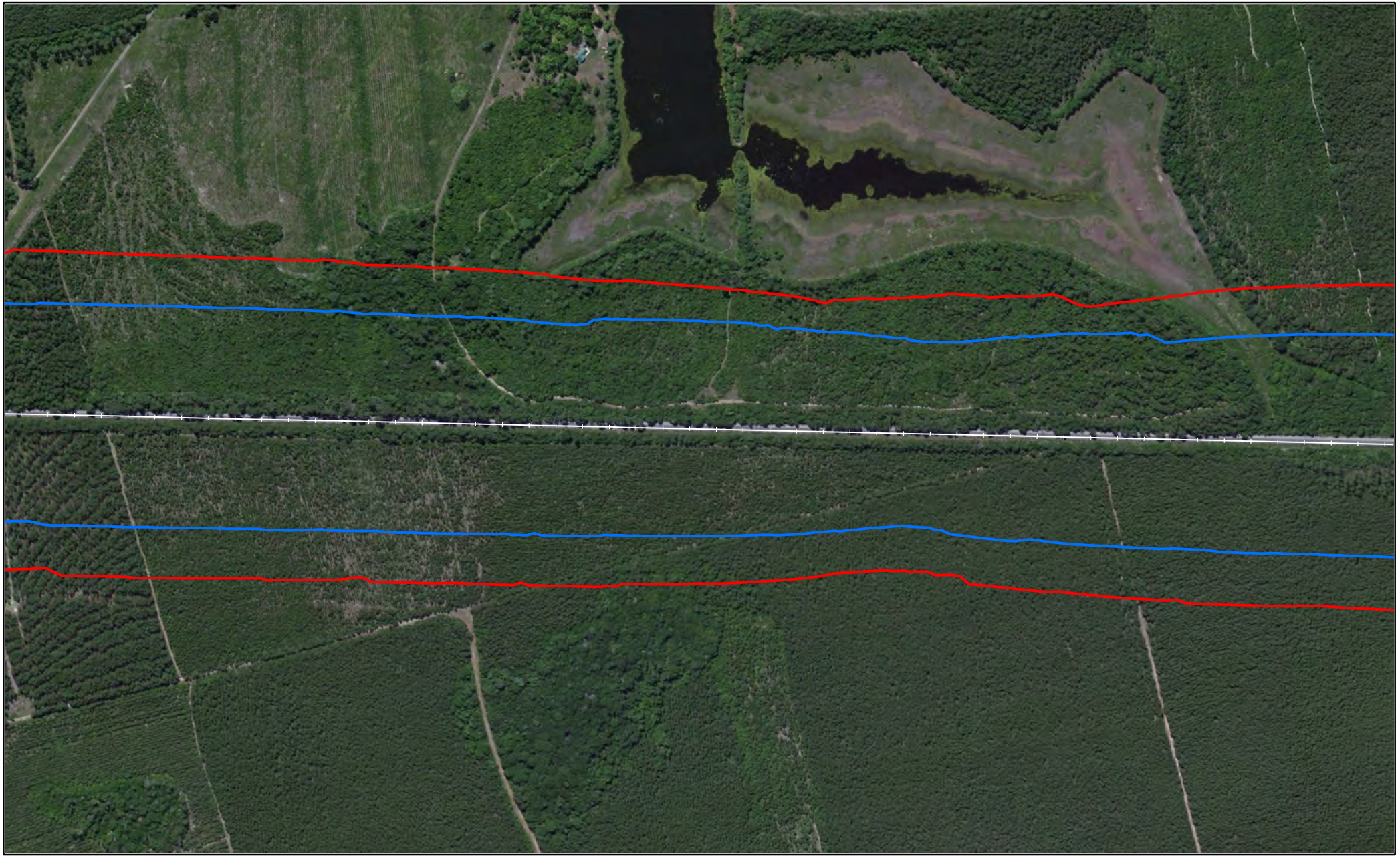
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Noise Contours
Beauregard Parish, LA

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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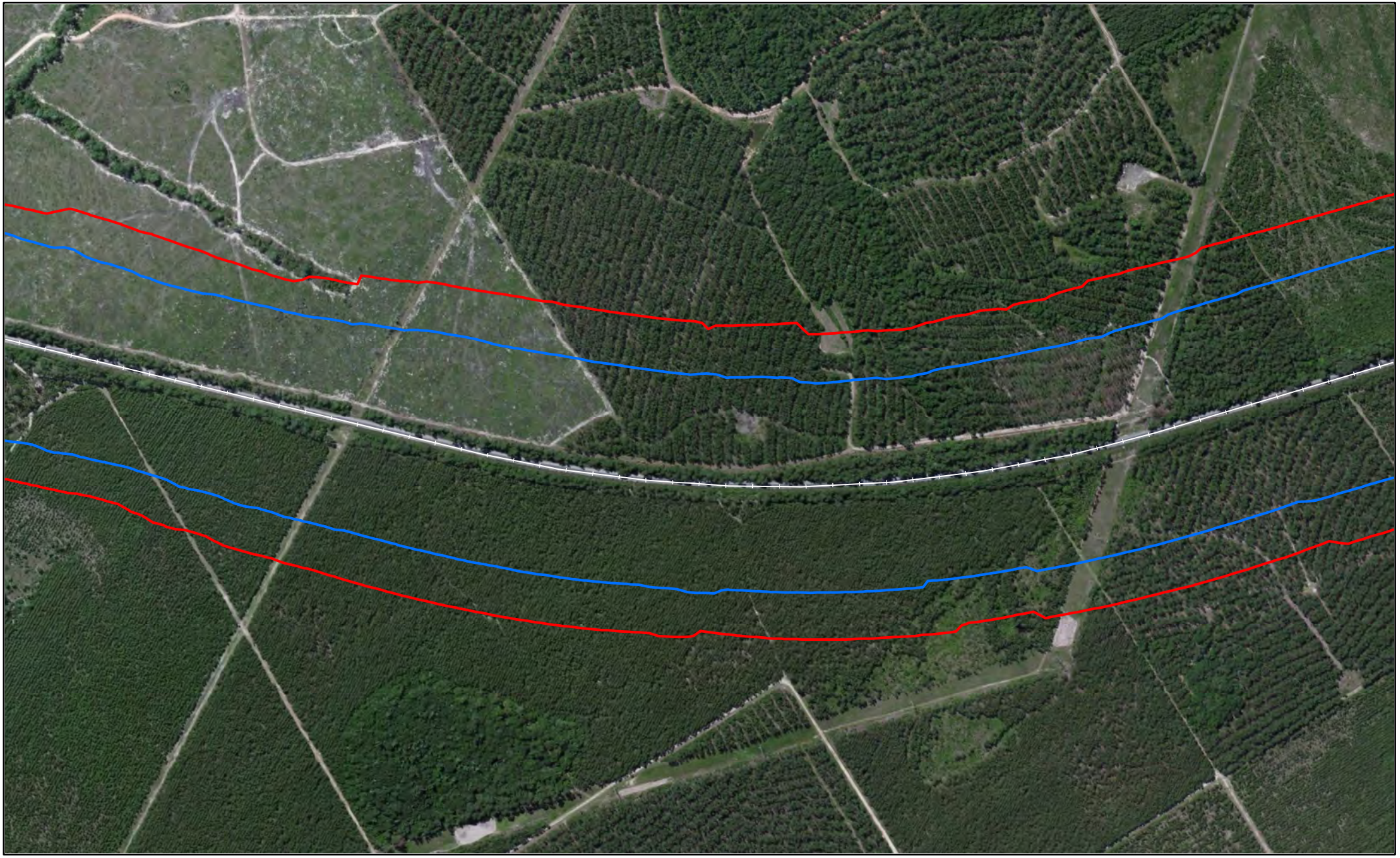


Noise Contours
Beauregard Parish, LA

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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Noise Contours
Beauregard Parish, LA

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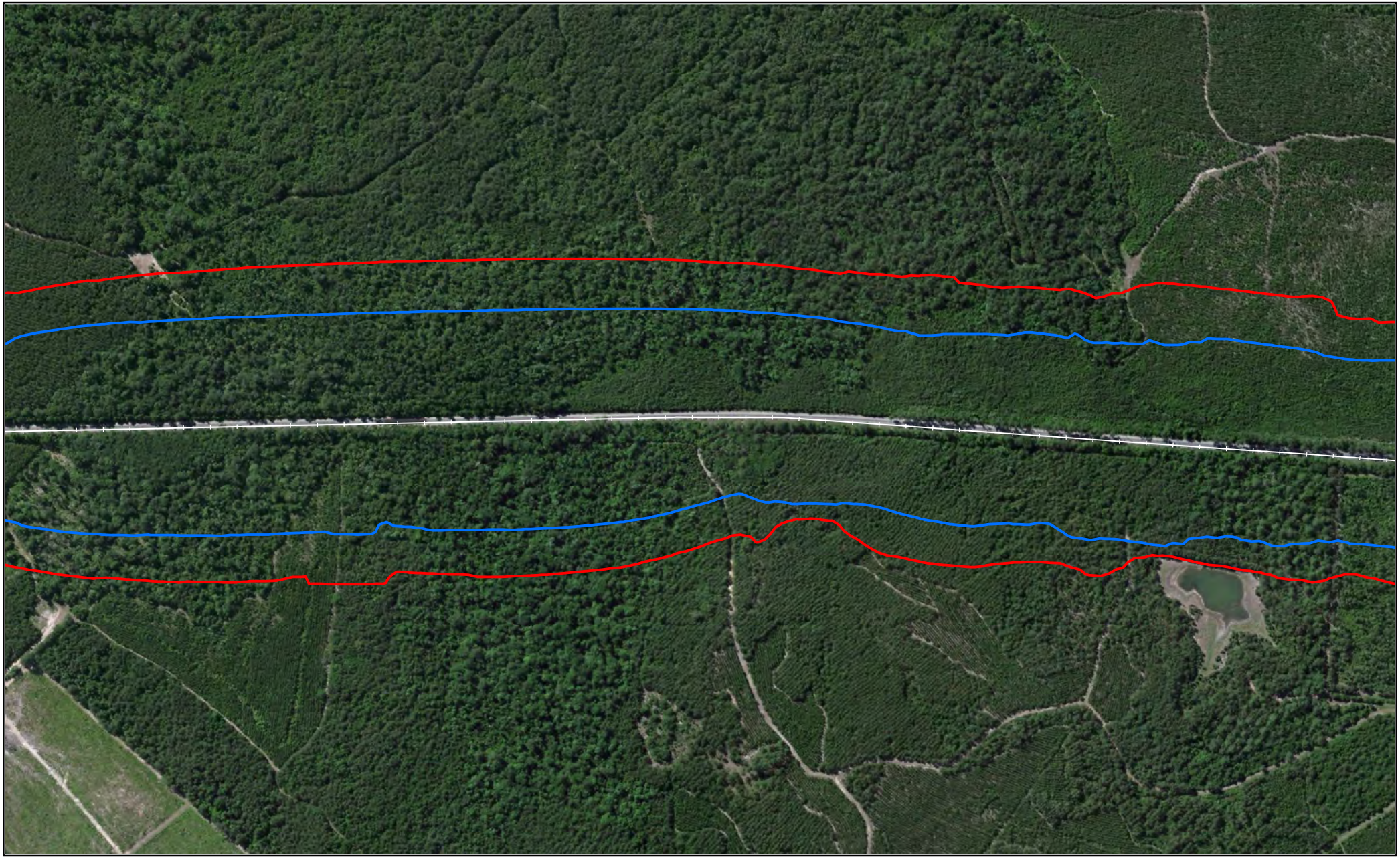


Noise Contours
Beauregard Parish, LA

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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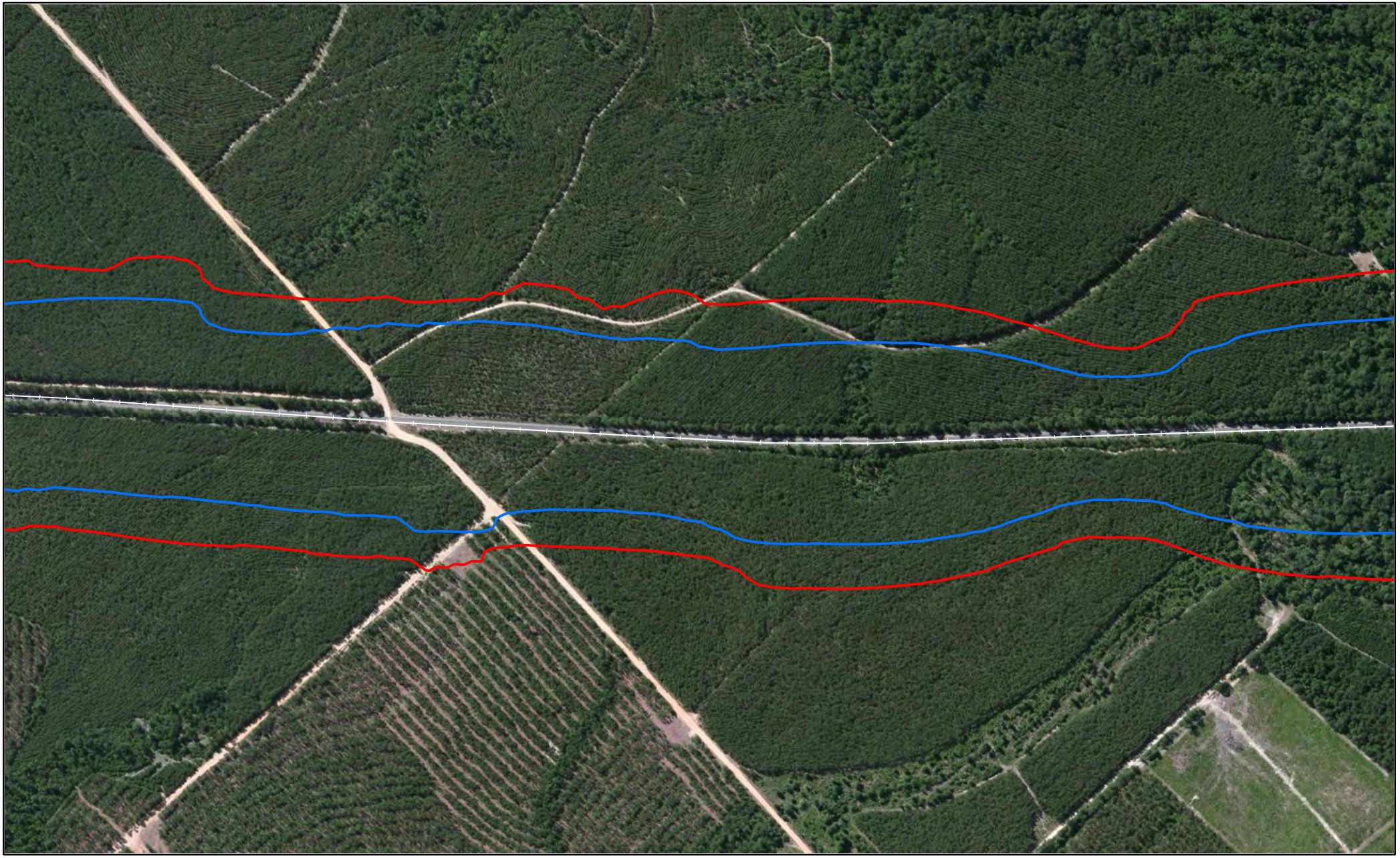
Tracks

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Noise Contours
Beauregard Parish, LA

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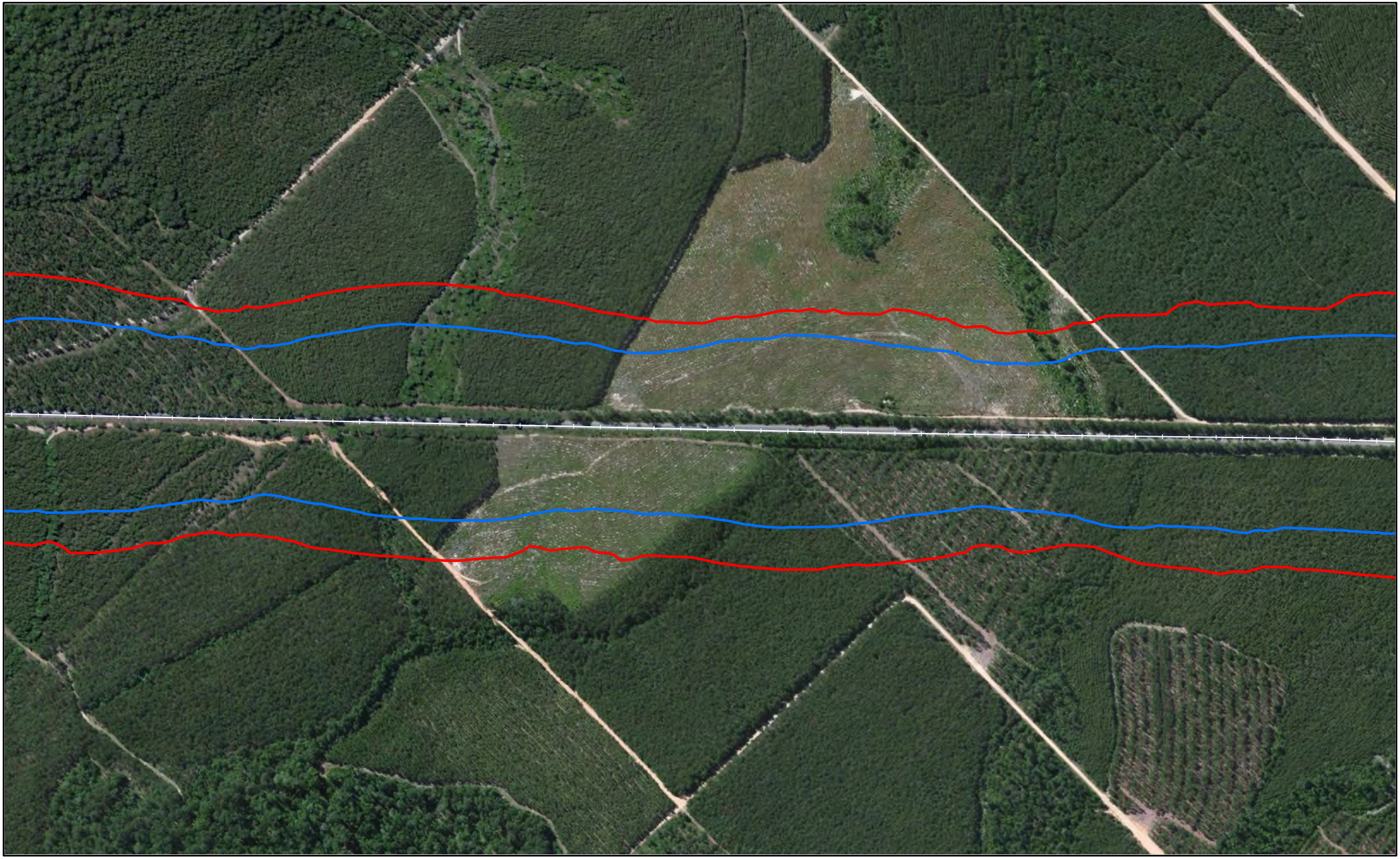
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Noise Contours
Beauregard Parish, LA

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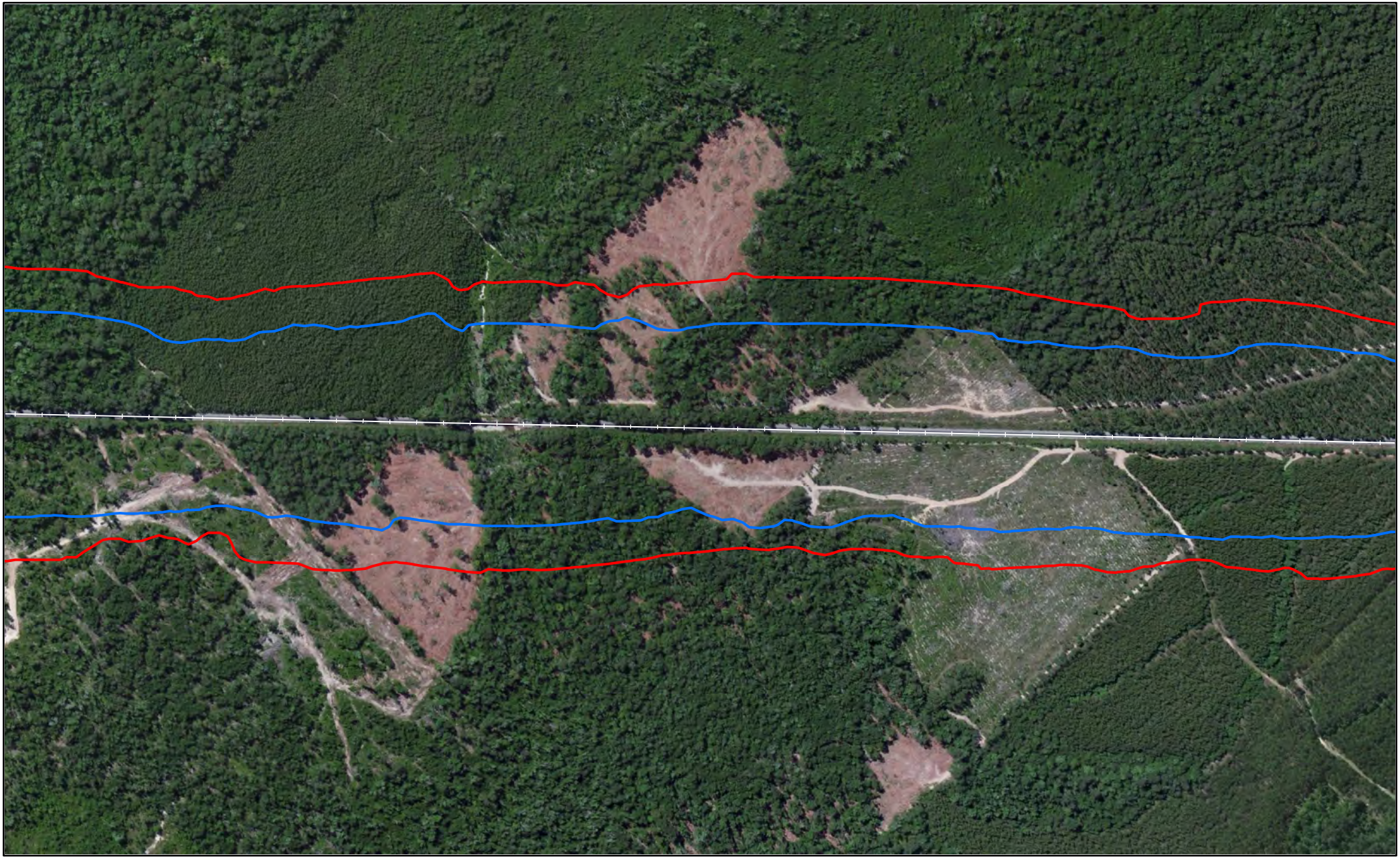
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Noise Contours
Beauregard Parish, LA

Miles
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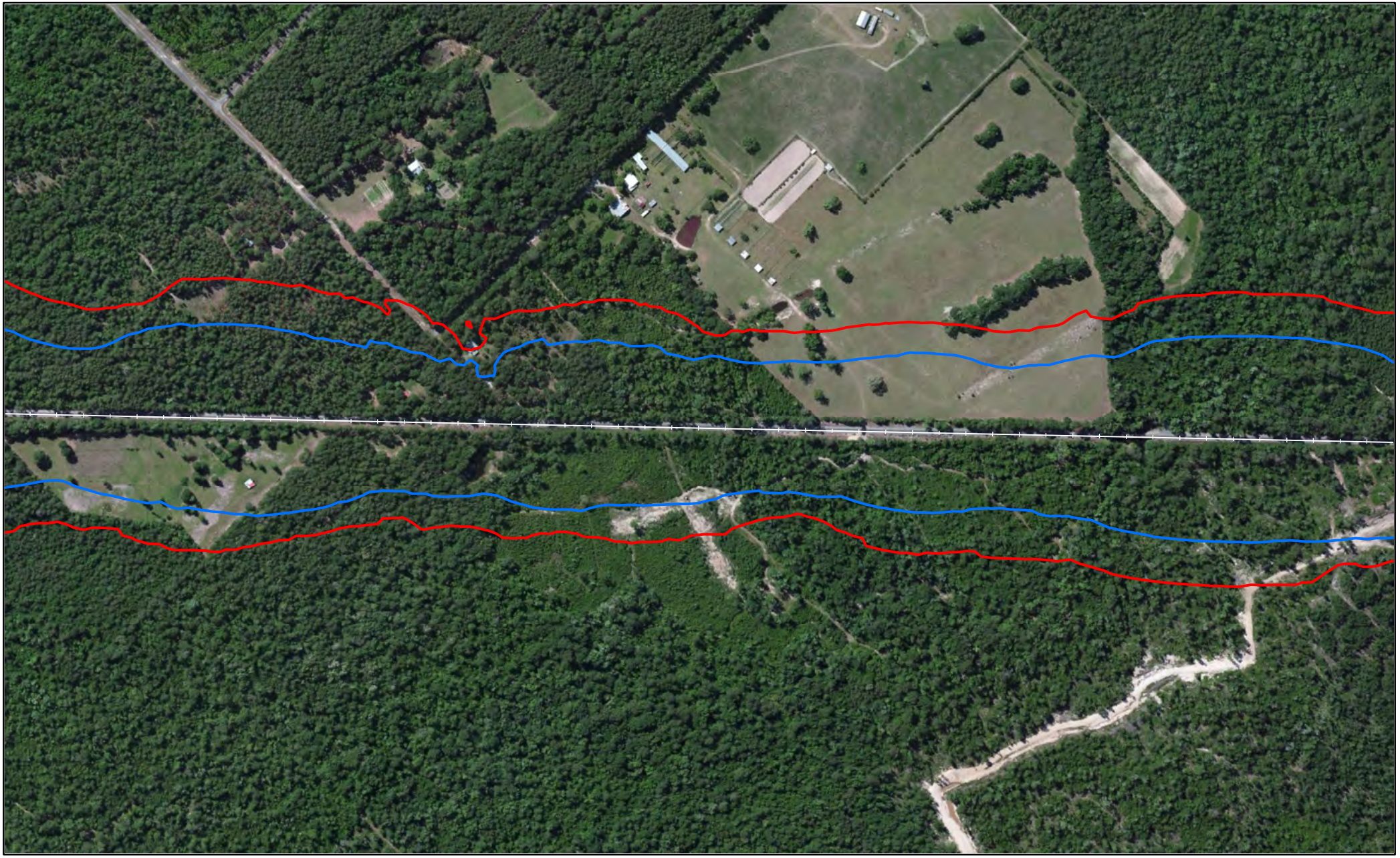
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Noise Contours
Beauregard Parish, LA

Miles
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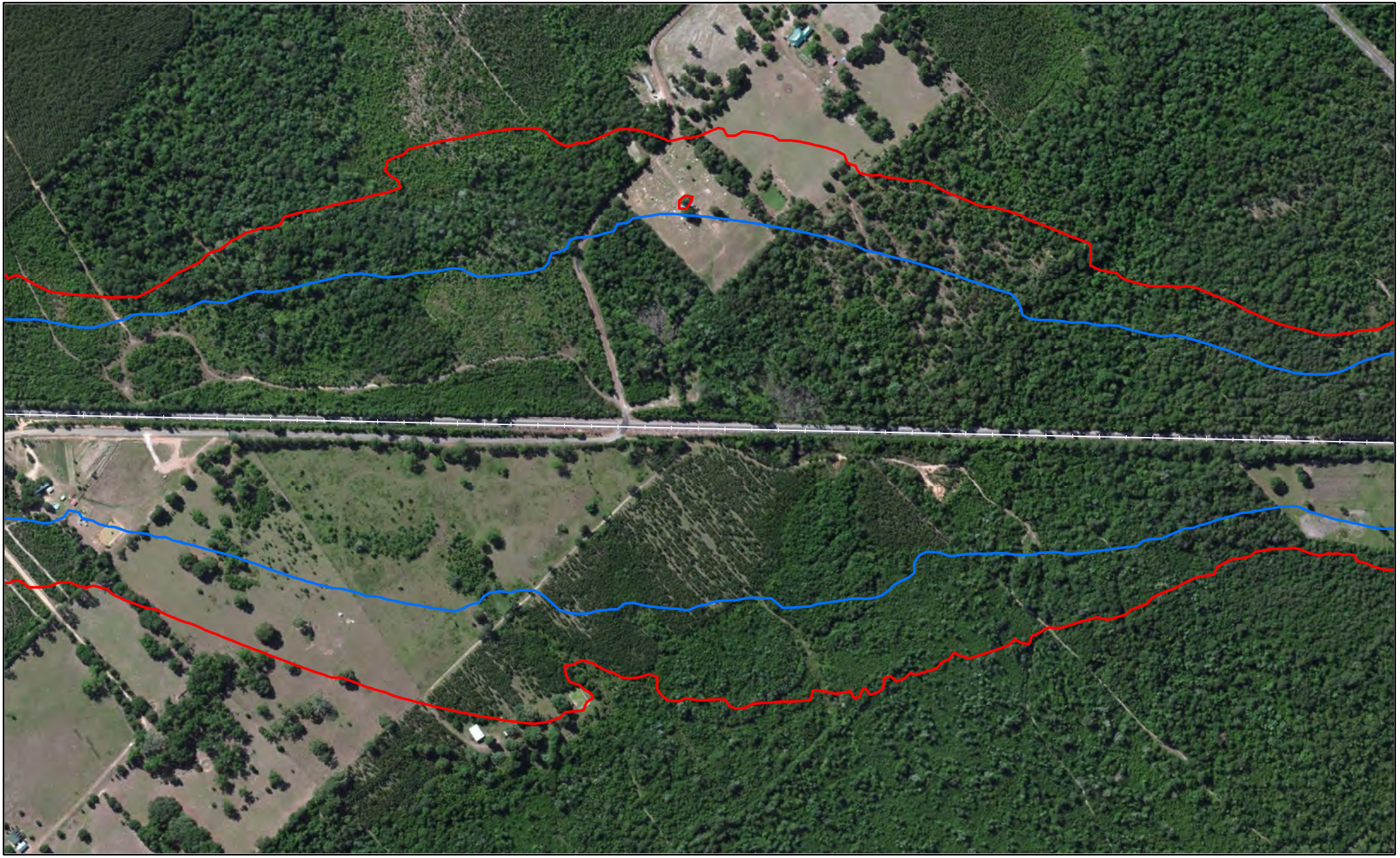
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Noise Contours
Beauregard Parish, LA

Miles
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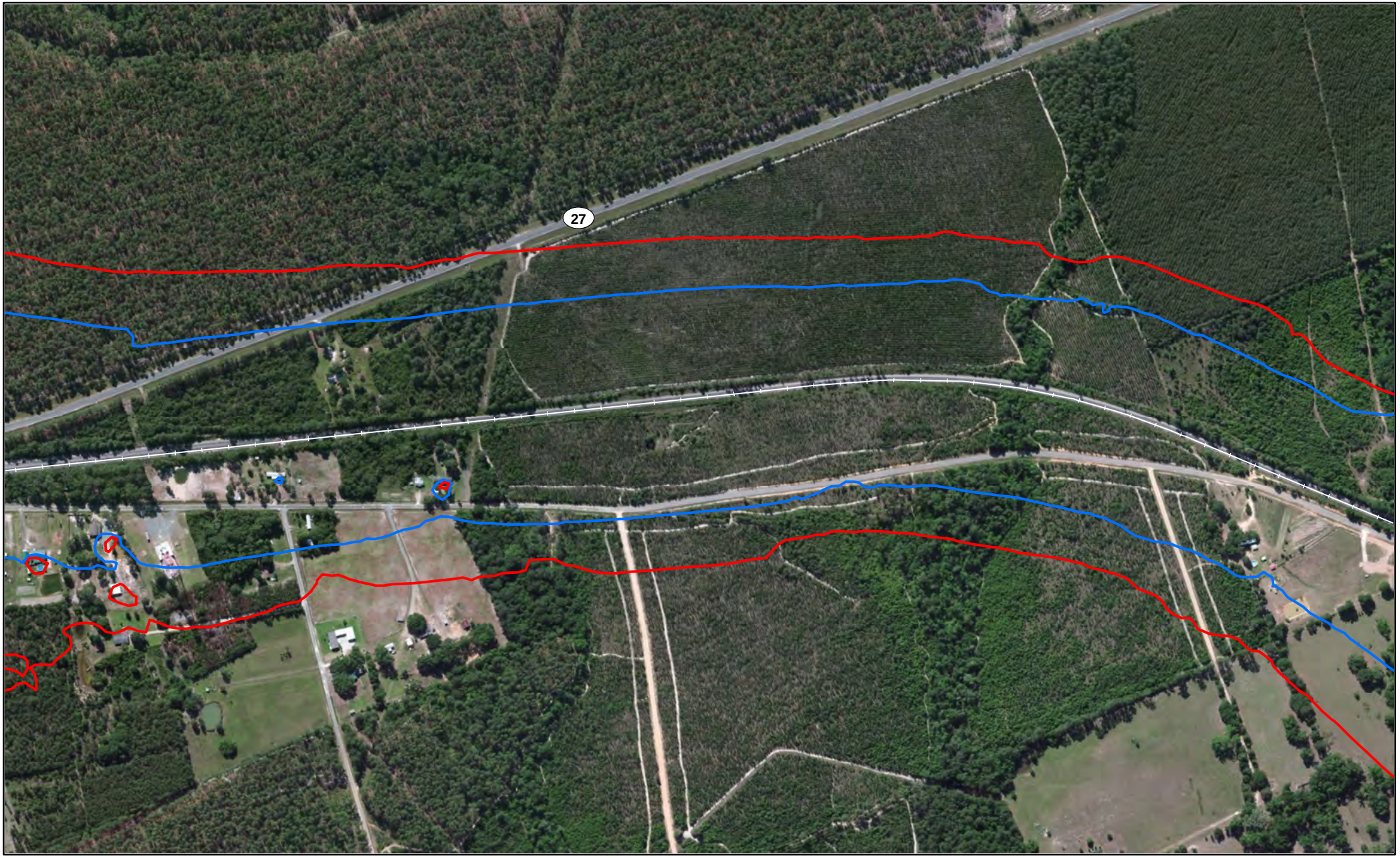


Noise Contours
Beauregard Parish, LA

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0 0.05 0.1 Miles

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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Noise Contours
Beauregard Parish, LA

Miles
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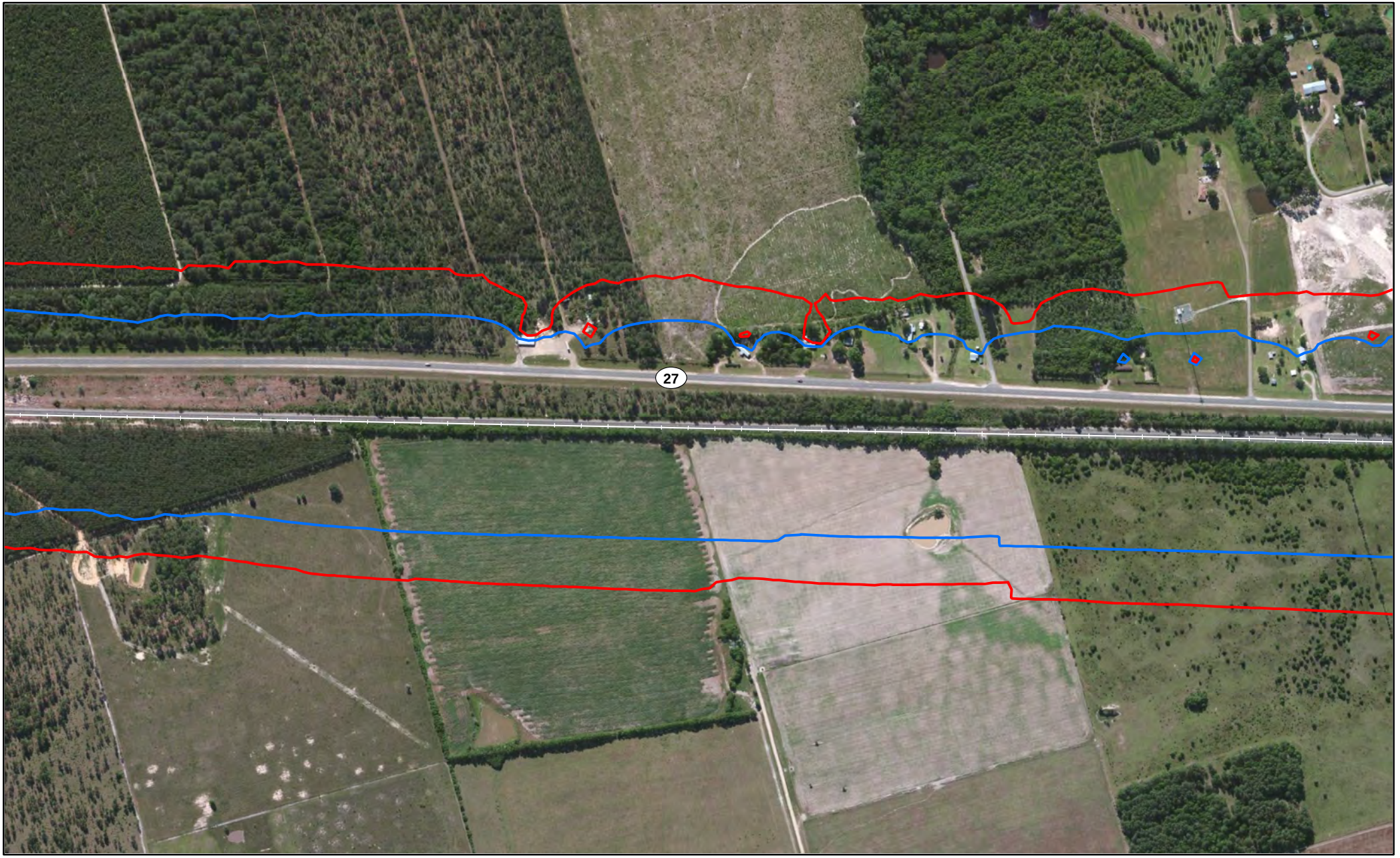
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Noise Contours
Beauregard Parish, LA

Miles
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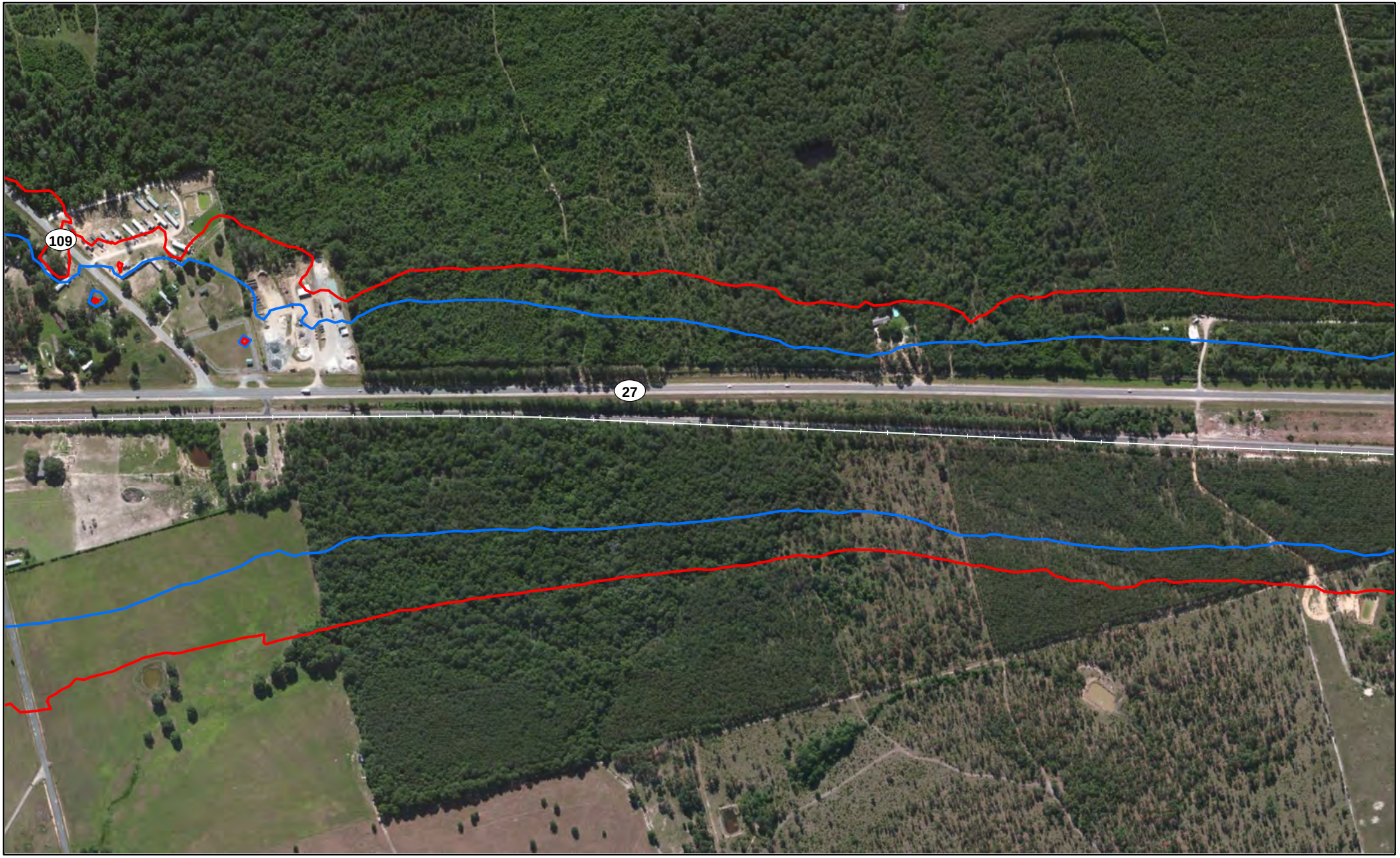
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Noise Contours
Beauregard Parish, LA

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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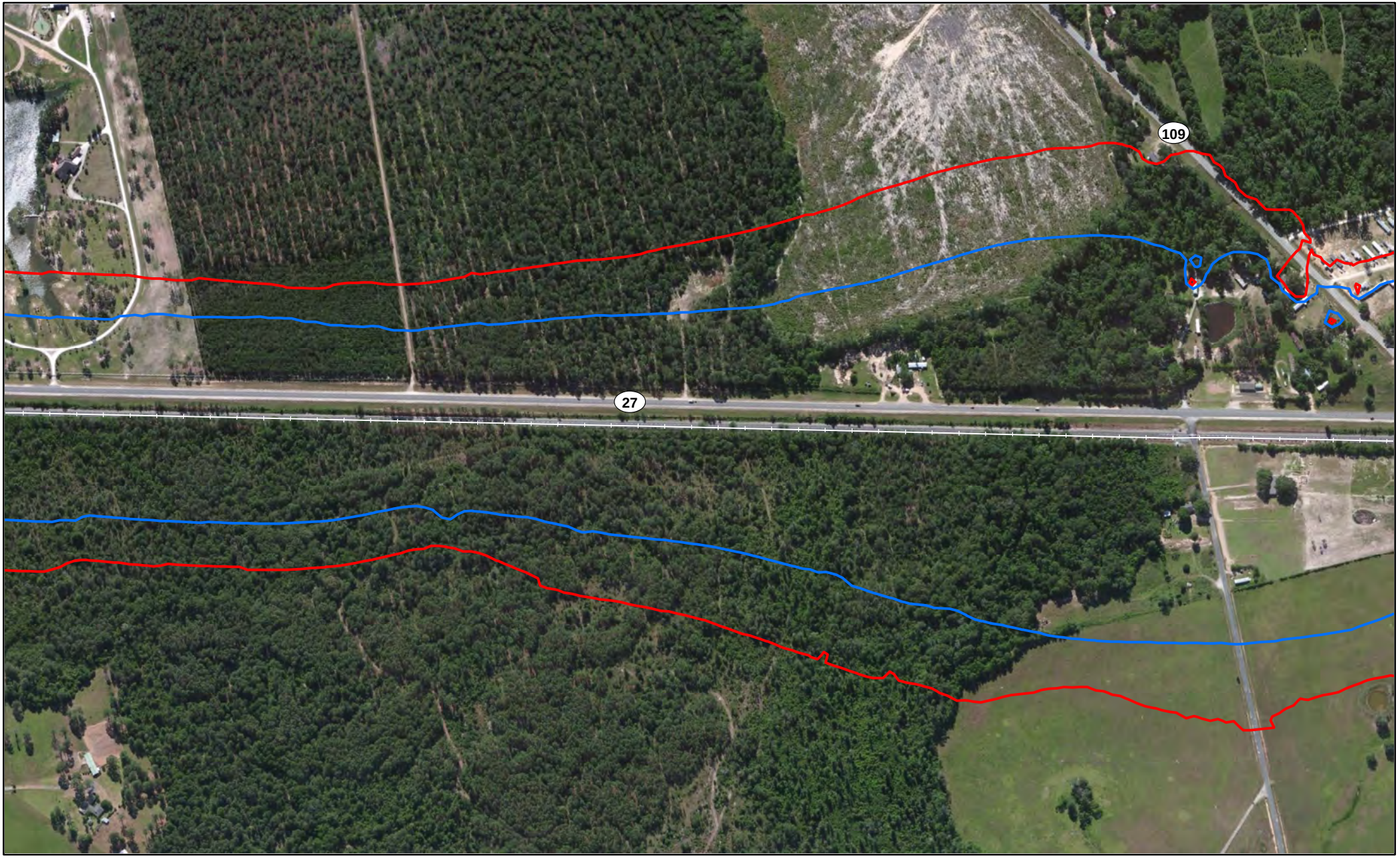
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Noise Contours
Beauregard Parish, LA

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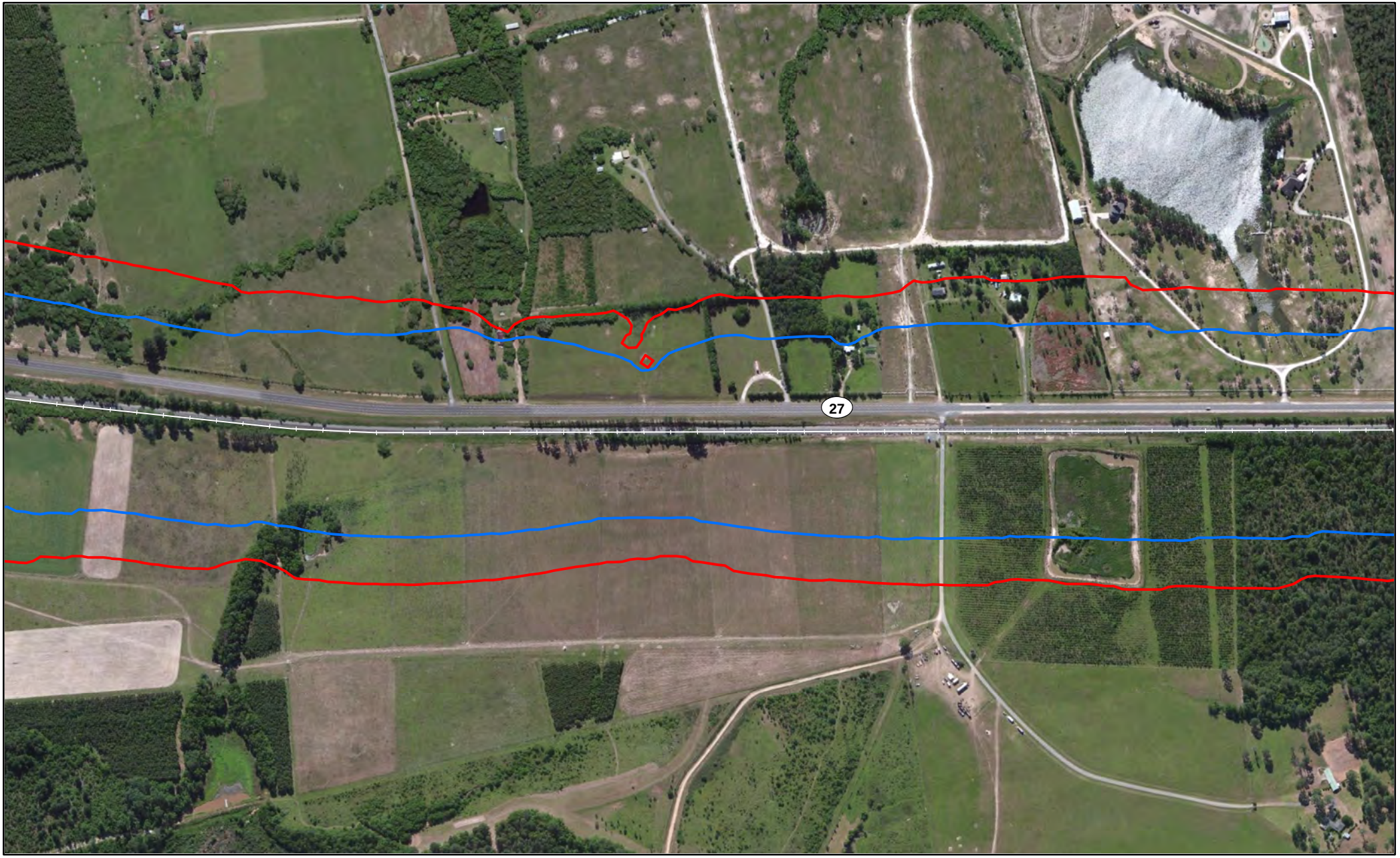
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Noise Contours
Beauregard Parish, LA

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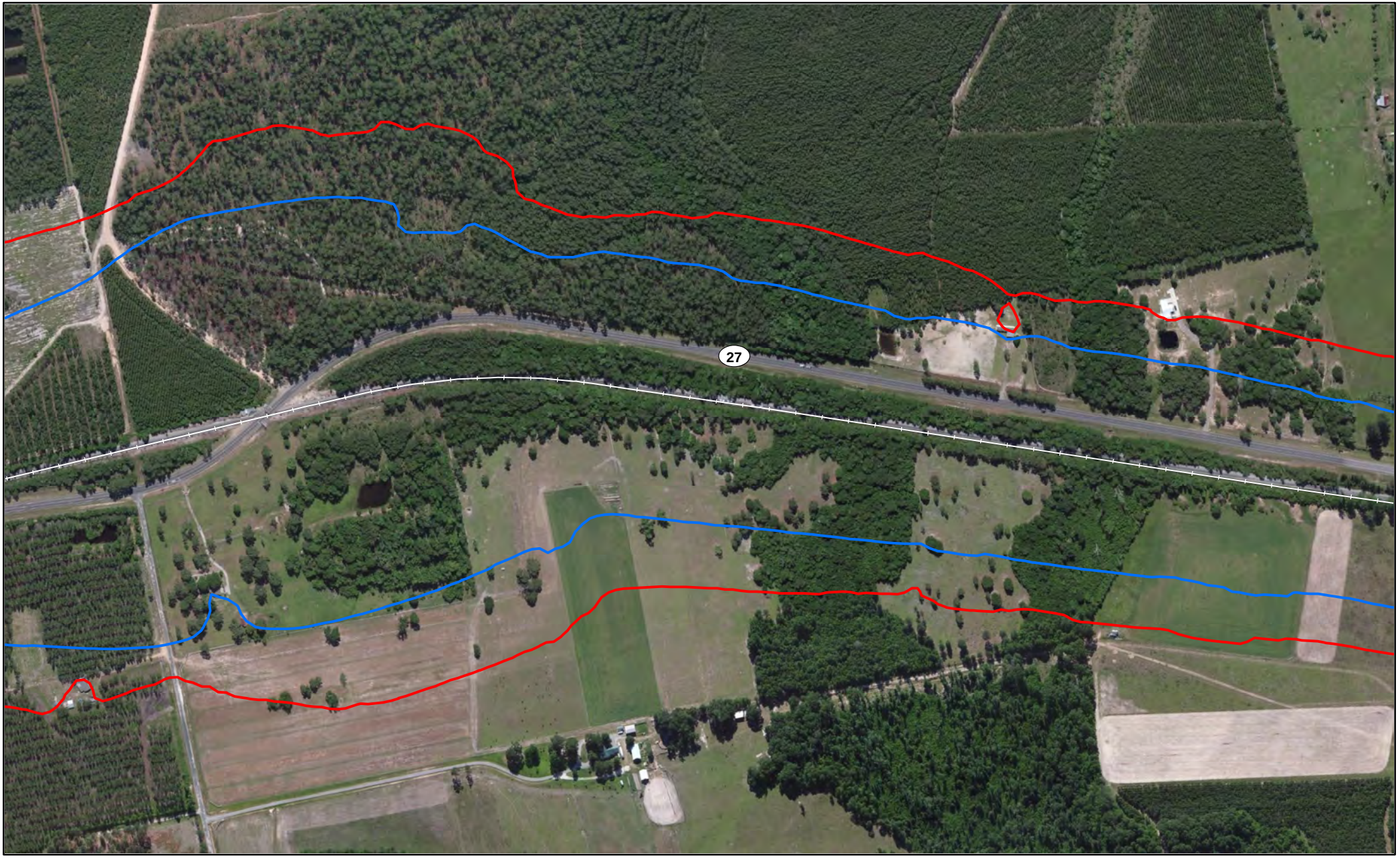
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Noise Contours
Beauregard Parish, LA

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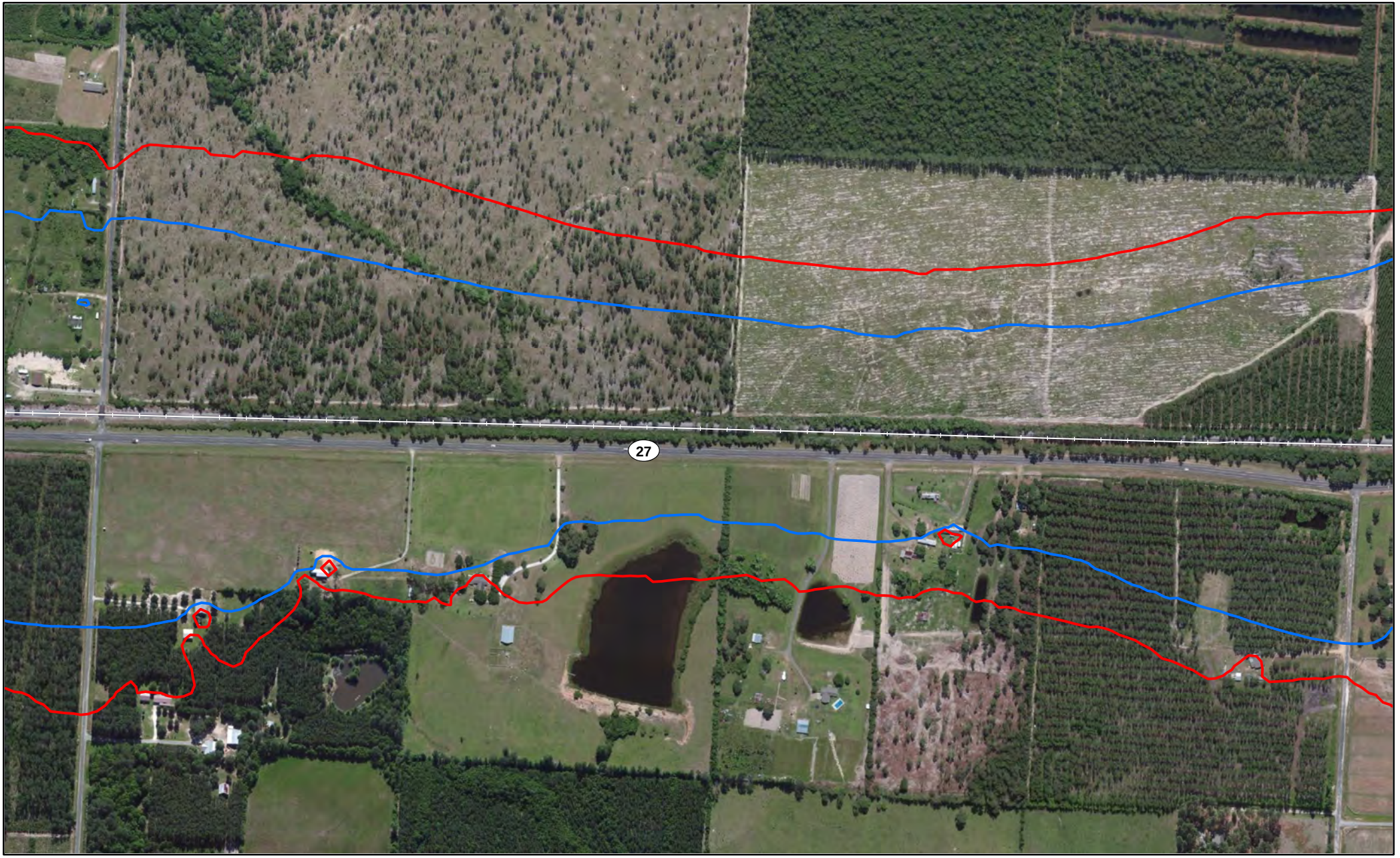
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Beauregard Parish, LA

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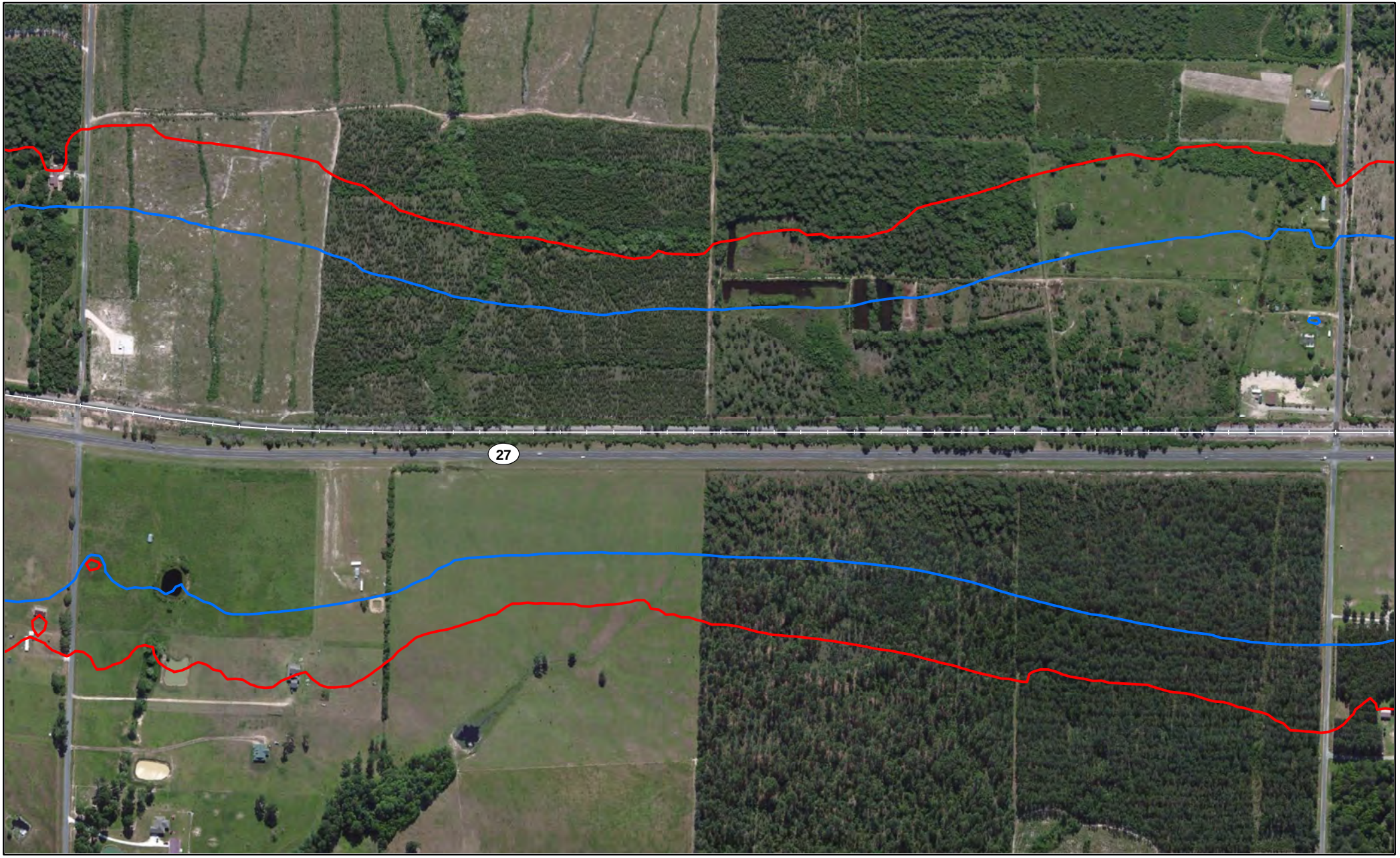
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Noise Contours
Beauregard Parish, LA

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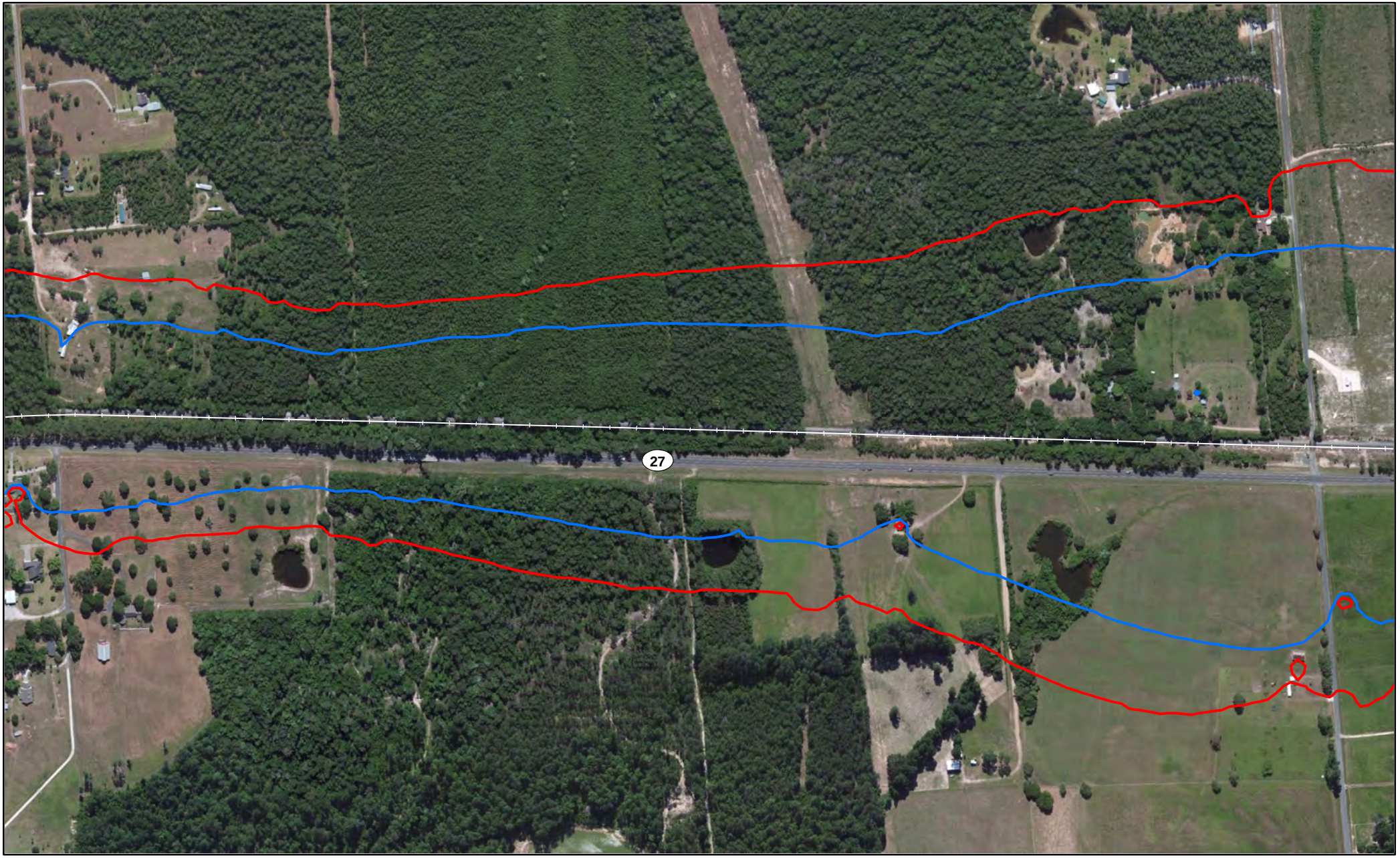
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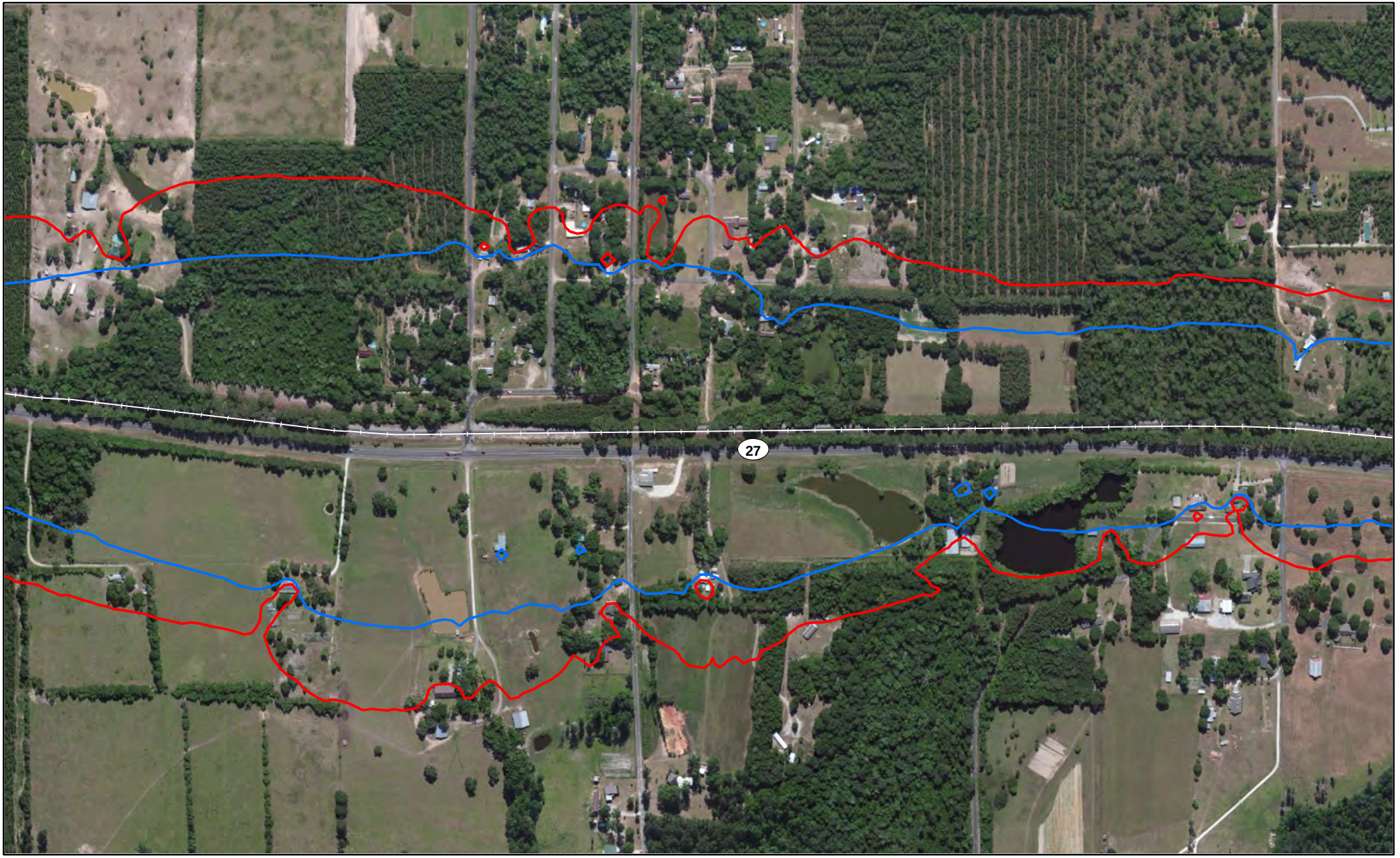
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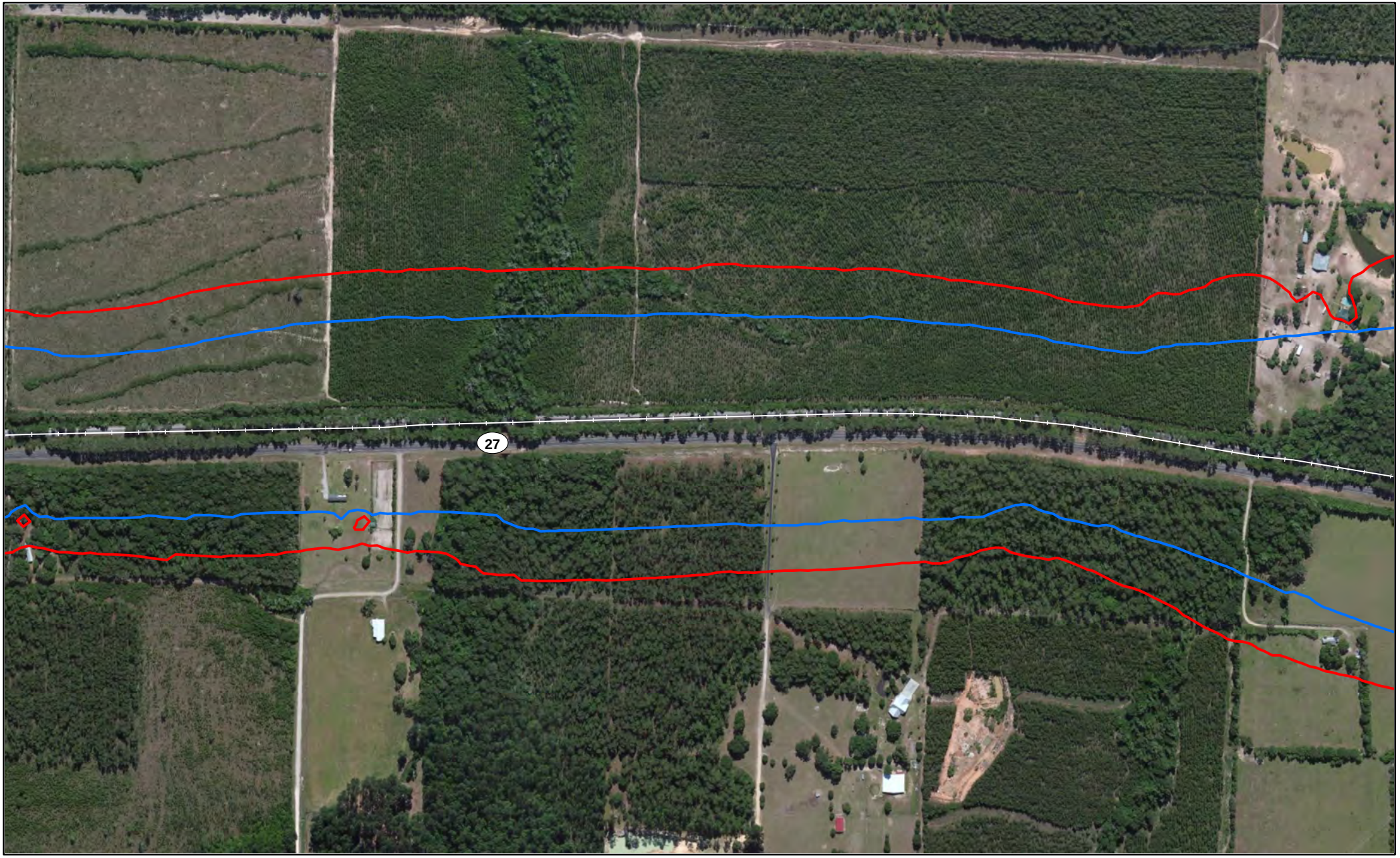
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Beauregard Parish, LA

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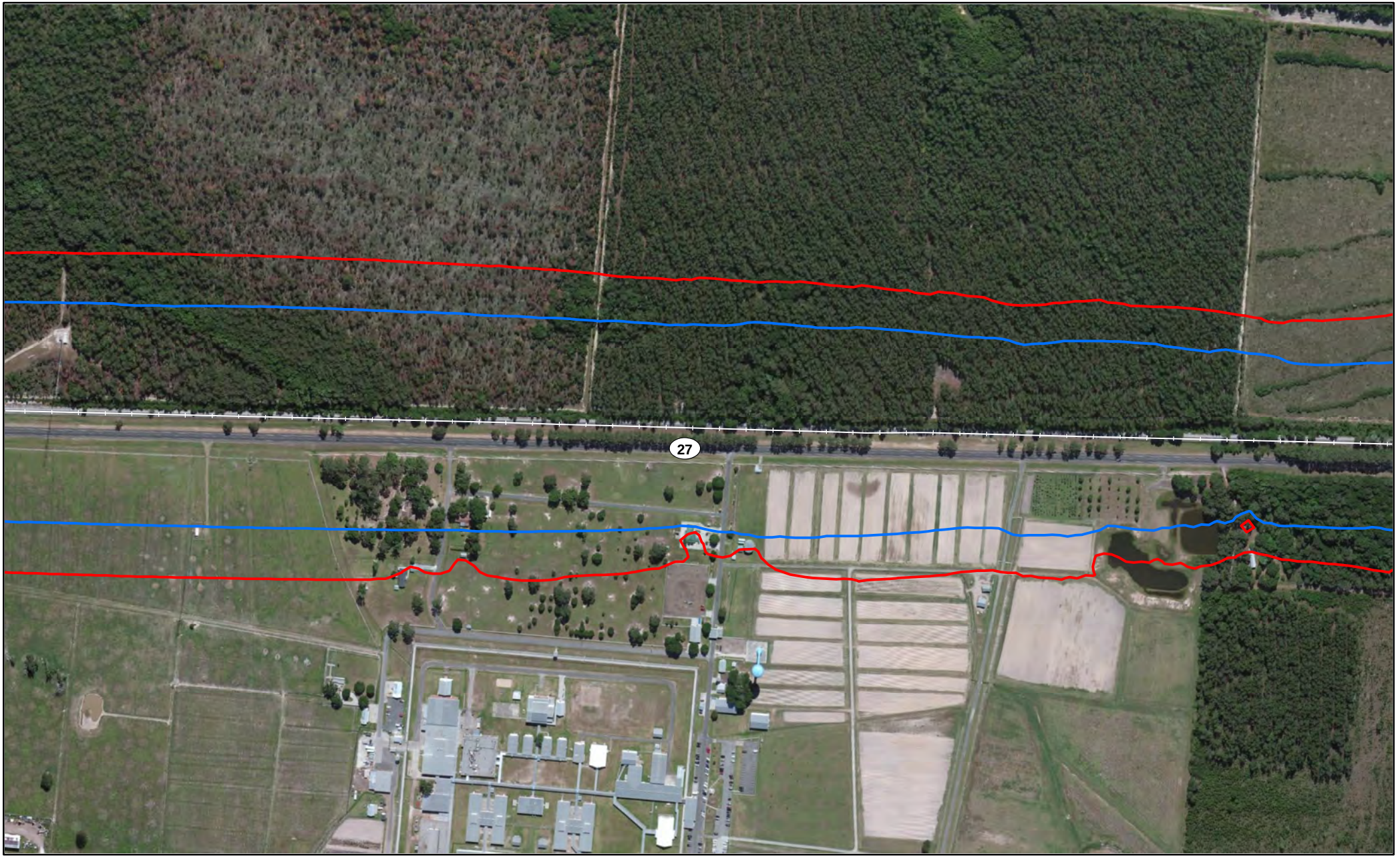
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Noise Contours
Beauregard Parish, LA

0 0.05 0.1 Miles

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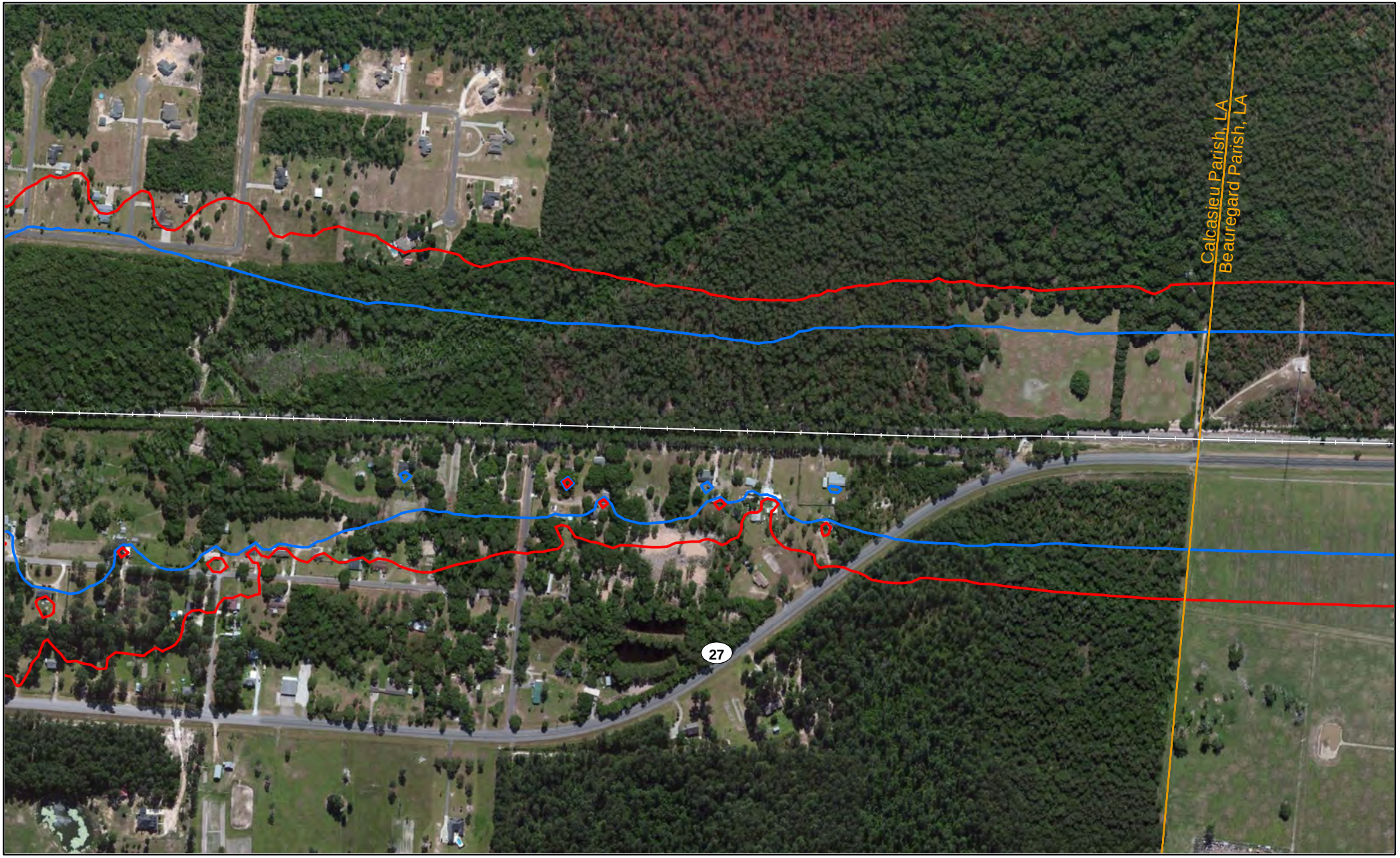
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Noise Contours
Beauregard Parish, LA

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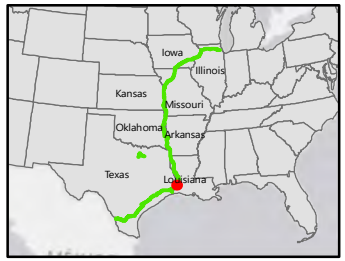
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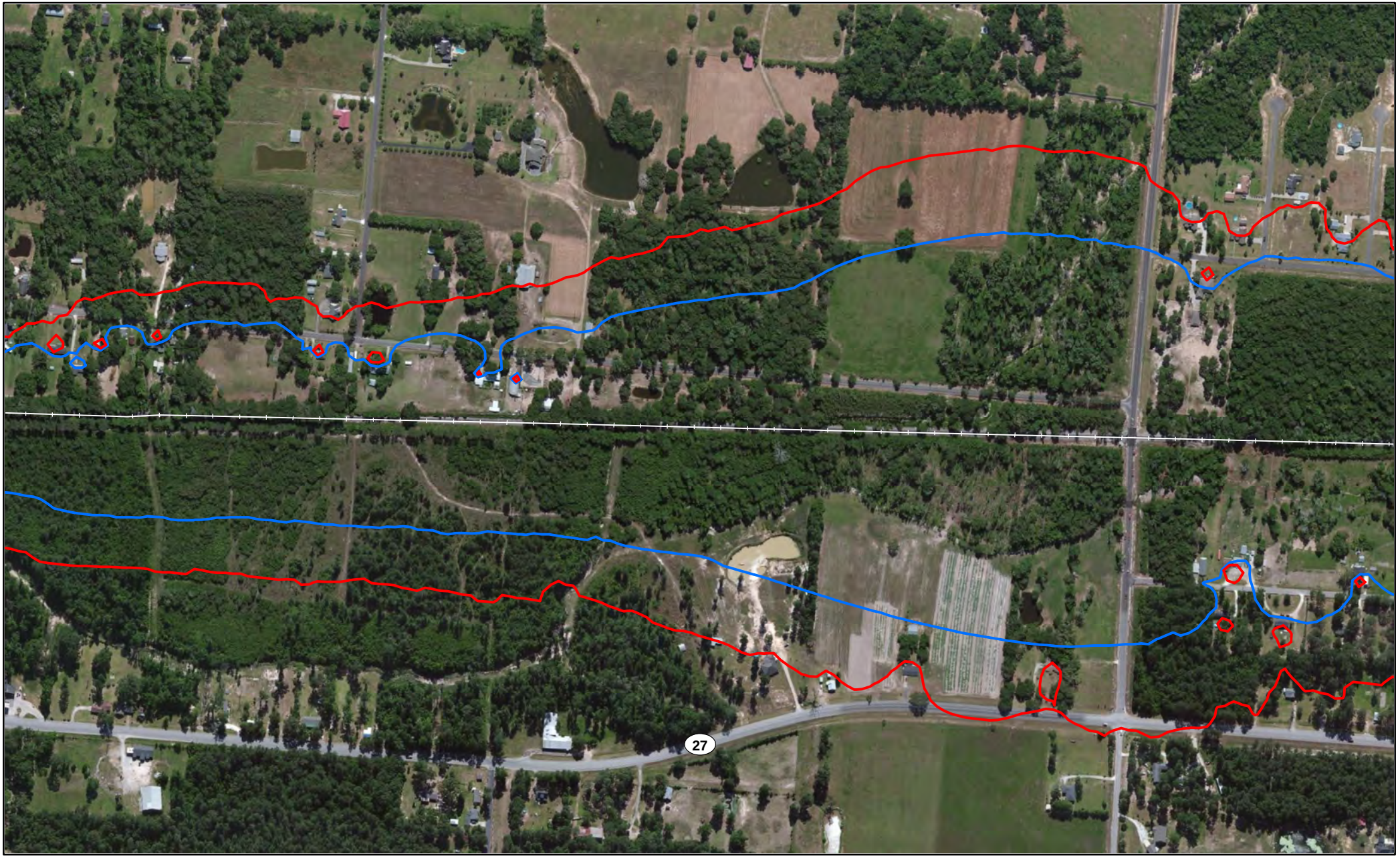
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Noise Contours
Calcasieu Parish, LA

Miles
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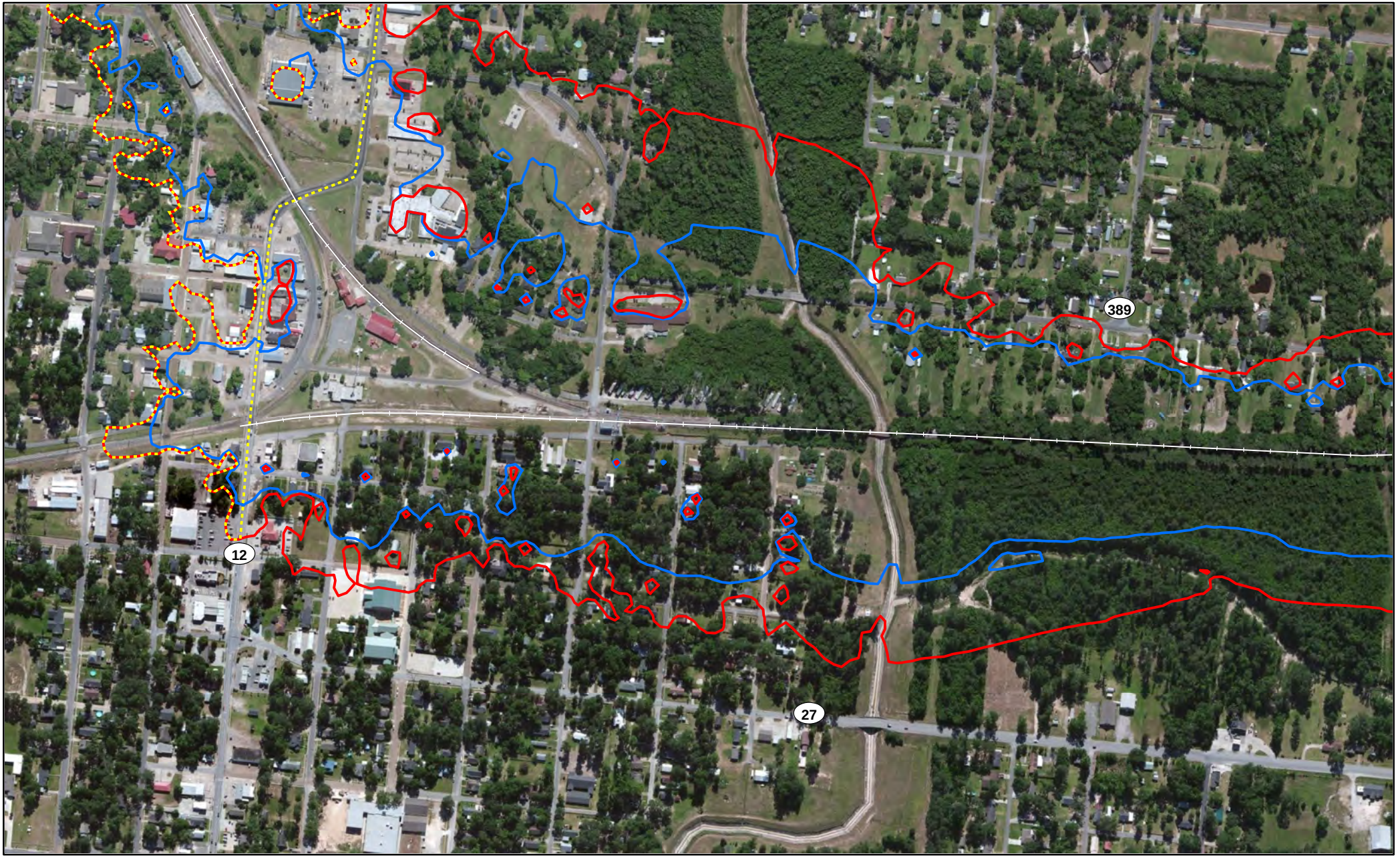
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Noise Contours
Calcasieu Parish, LA

Miles
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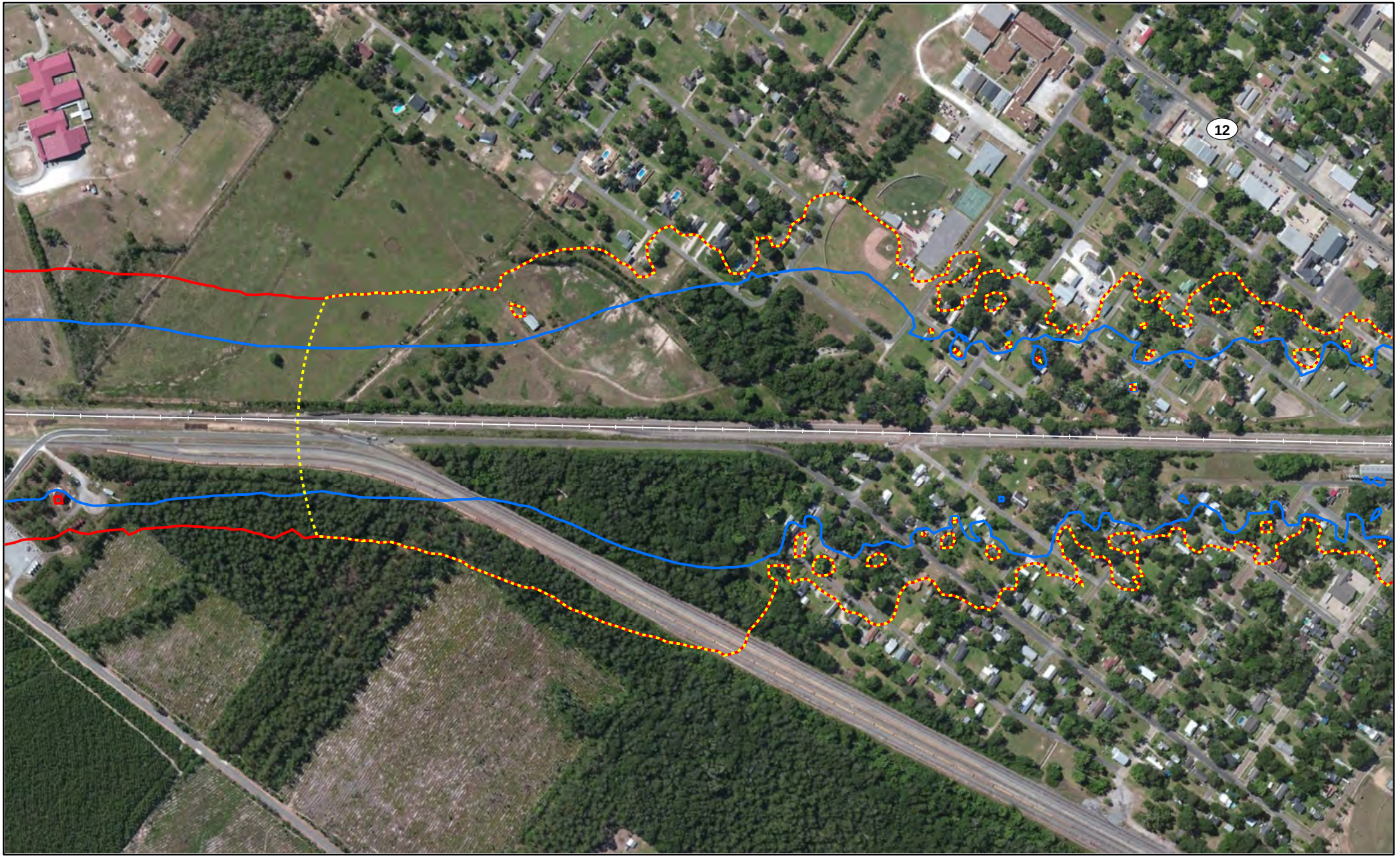
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Noise Contours
Calcasieu Parish, LA

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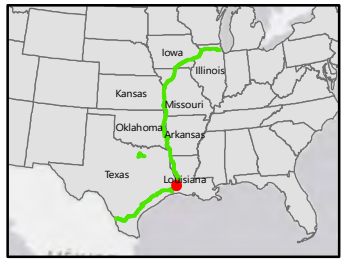
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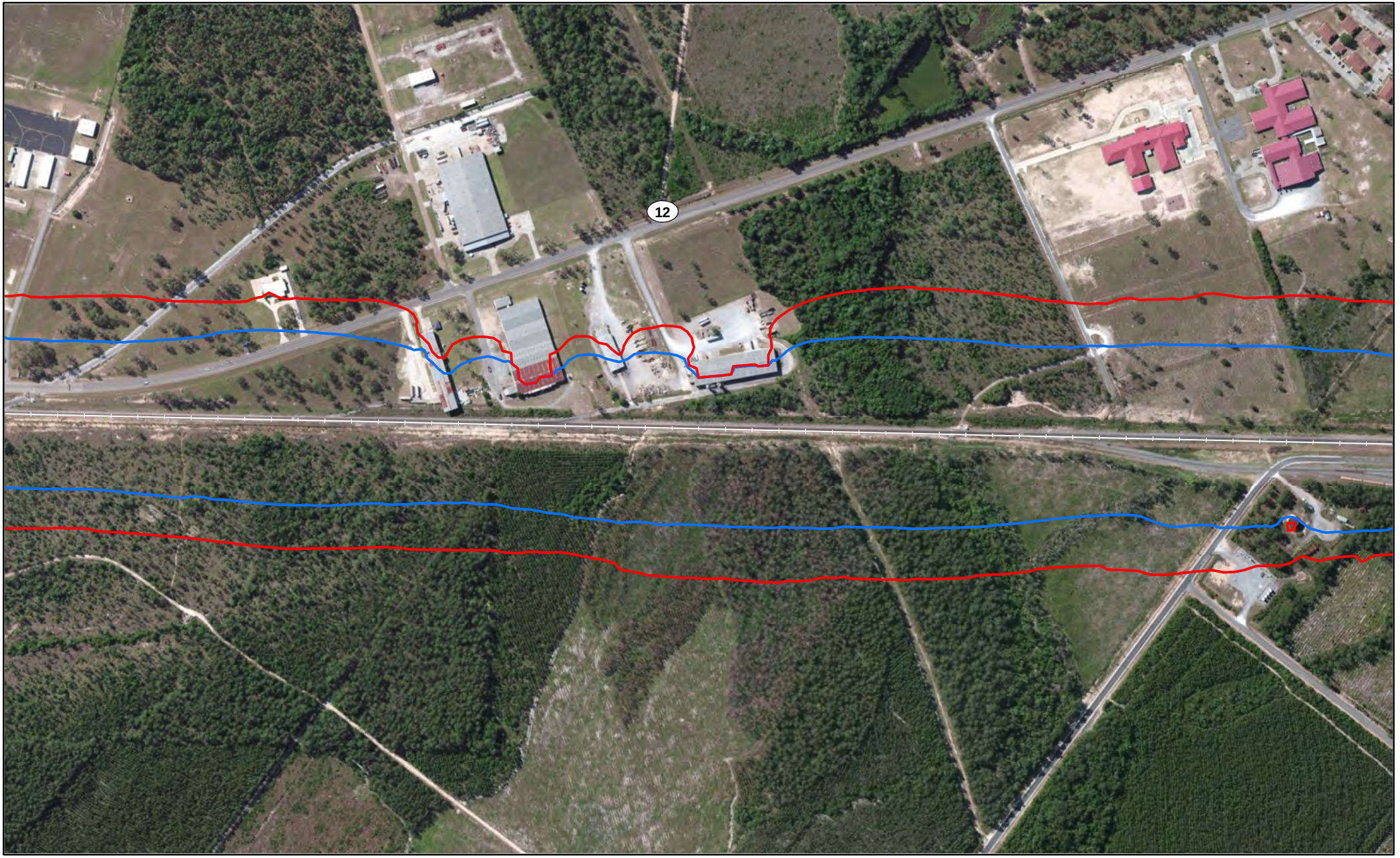


Noise Contours
Calcasieu Parish, LA

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



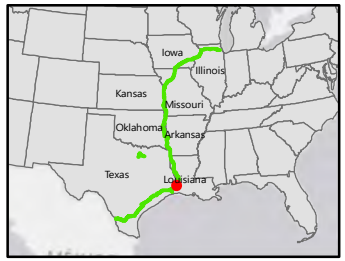
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

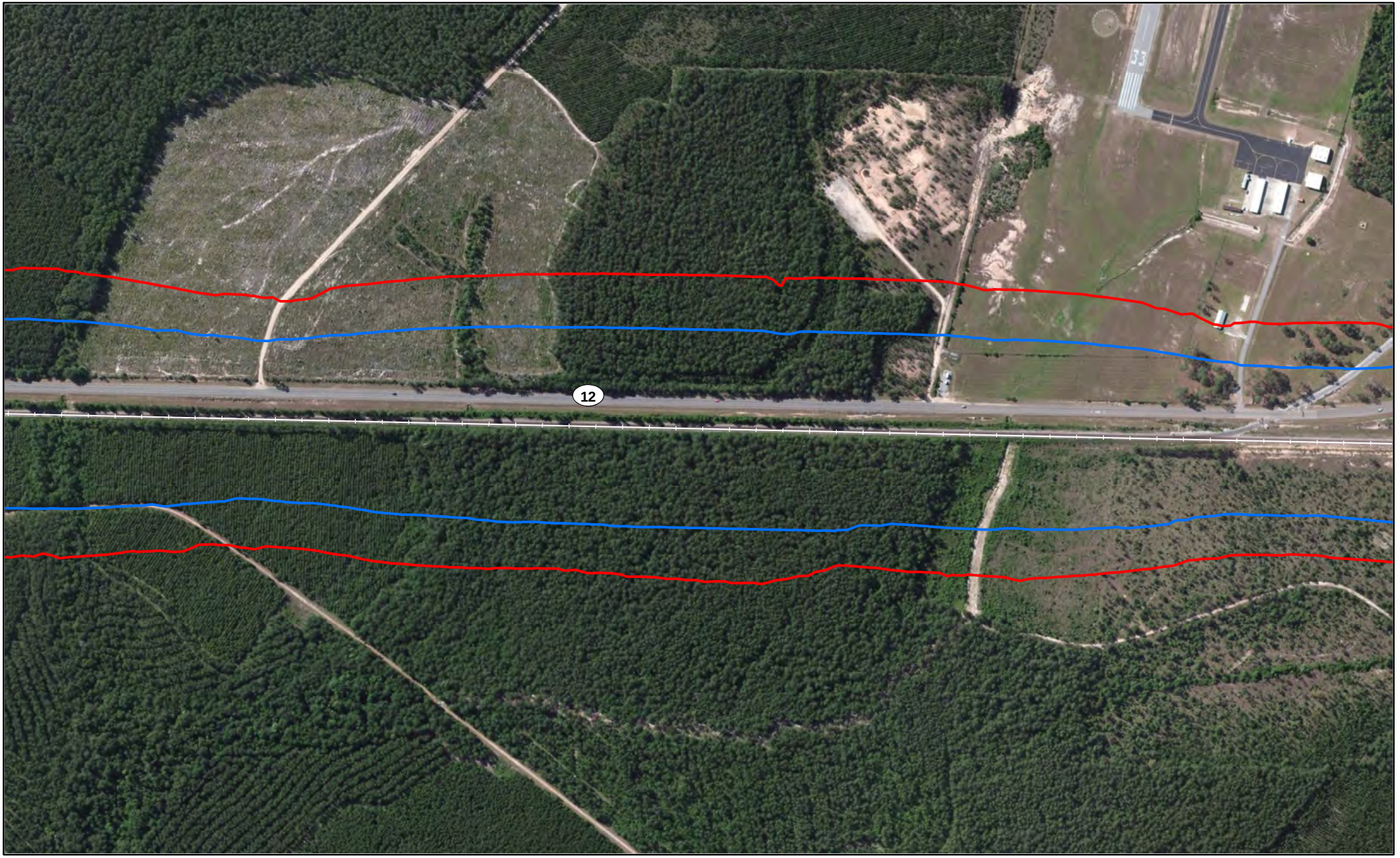
Source: ESRI.



Noise Contours
Calcasieu Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



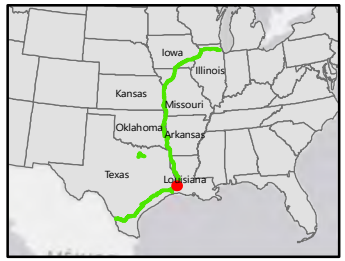
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

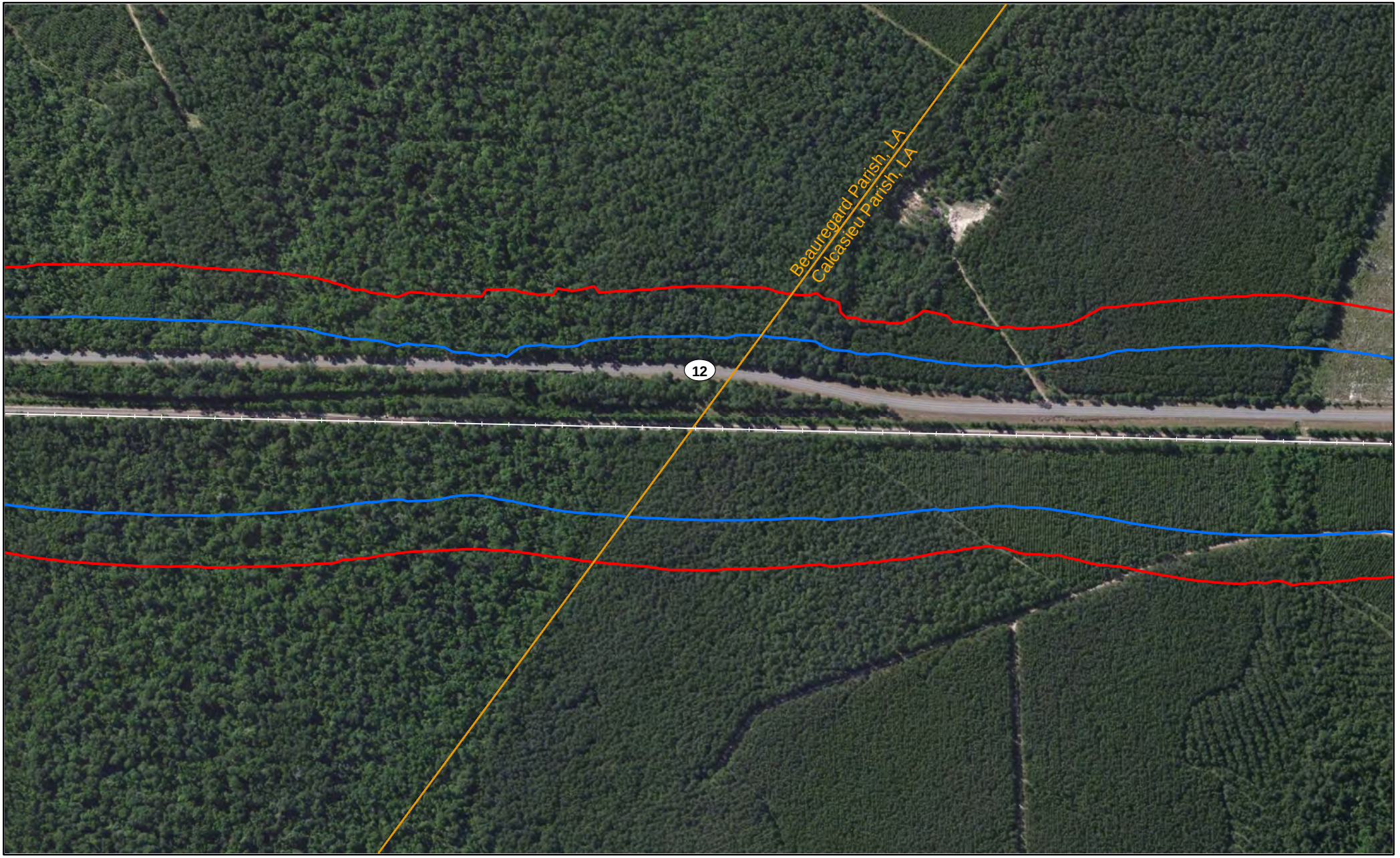
Source: ESRI.



Noise Contours
Calcasieu Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



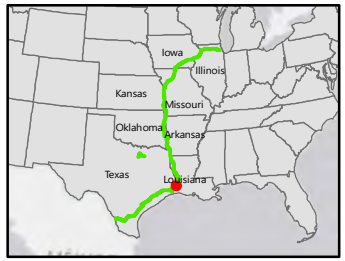
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

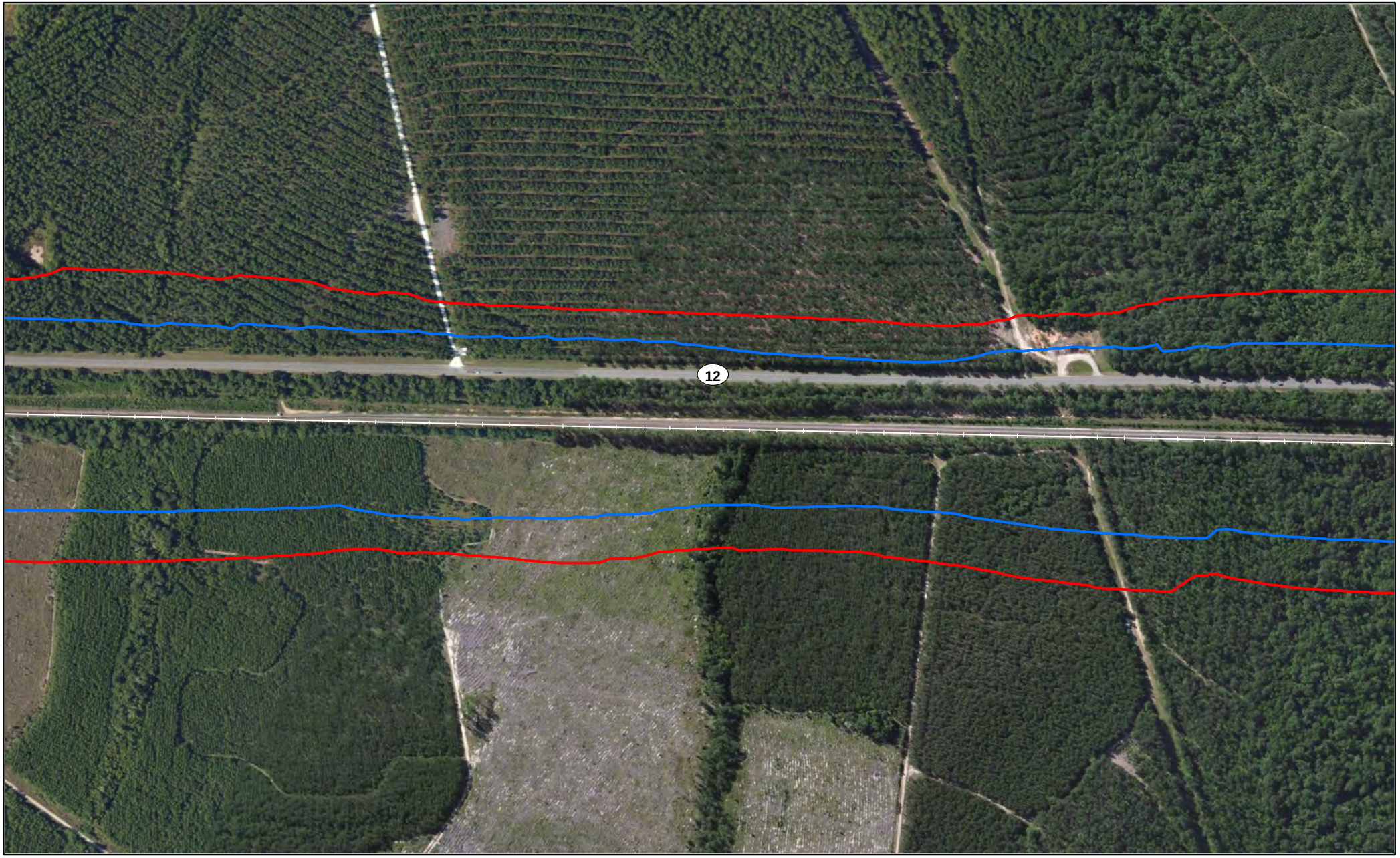
Source: ESRI.



Noise Contours
Calcasieu Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



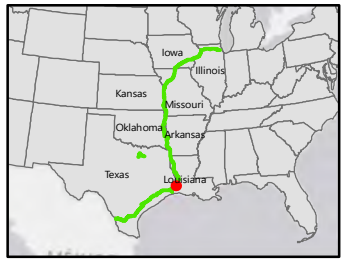
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

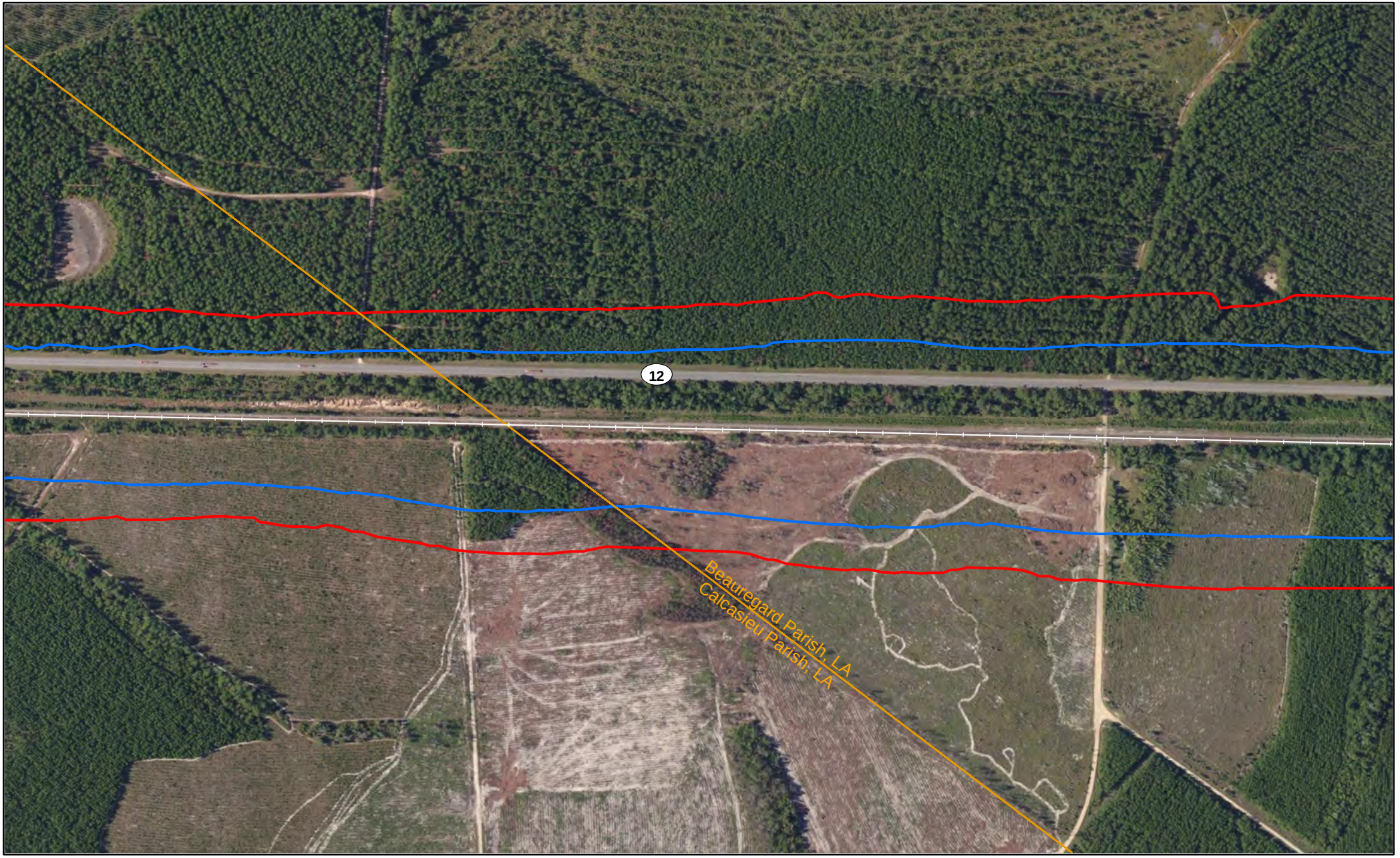
Tracks

Source: ESRI.



Noise Contours
Beauregard Parish, LA

Miles
0 0.05 0.1



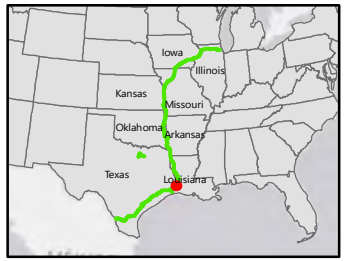
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

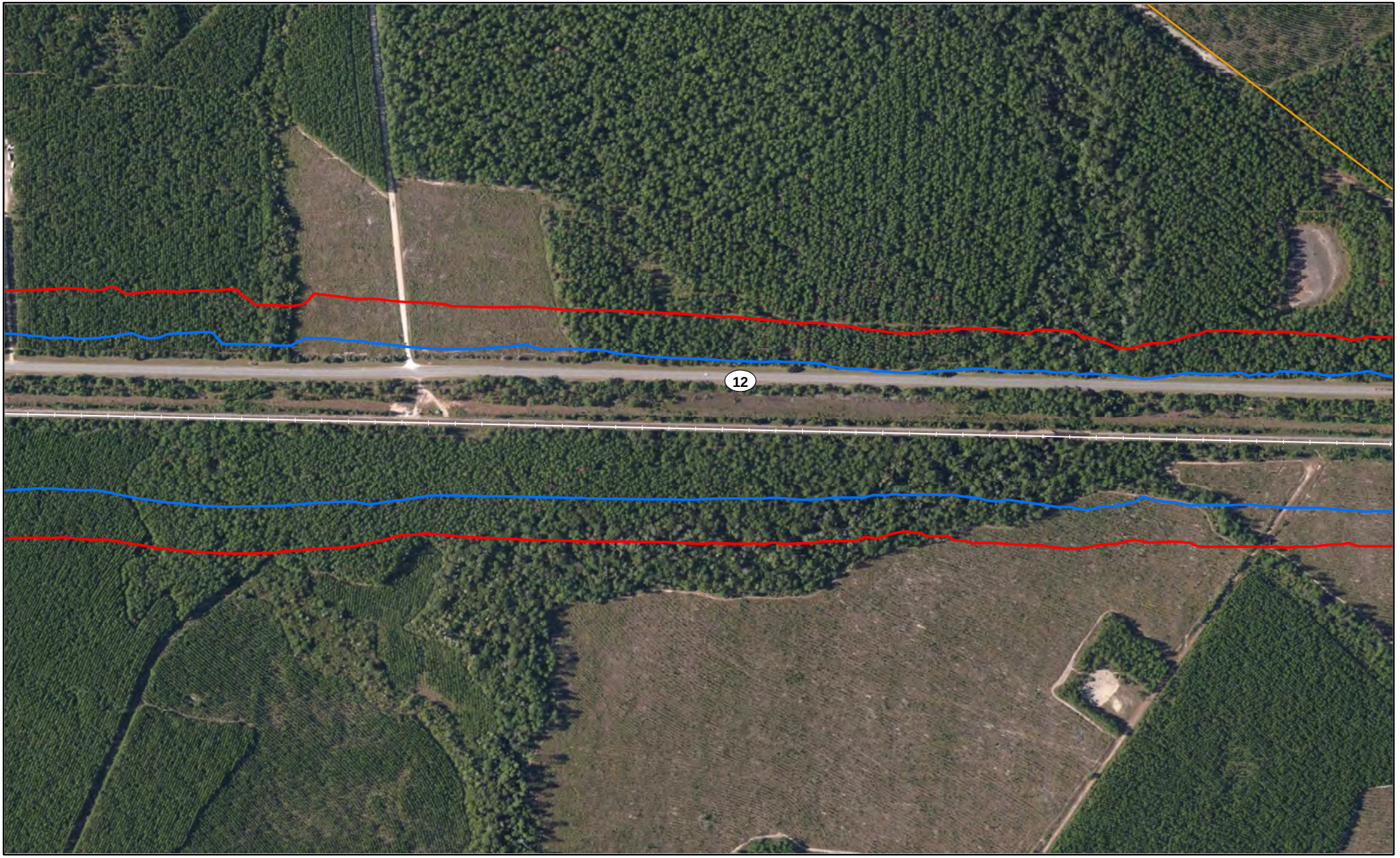
Source: ESRI.



Noise Contours
Calcasieu Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



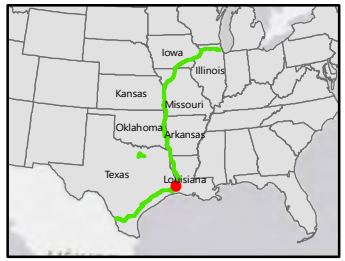
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

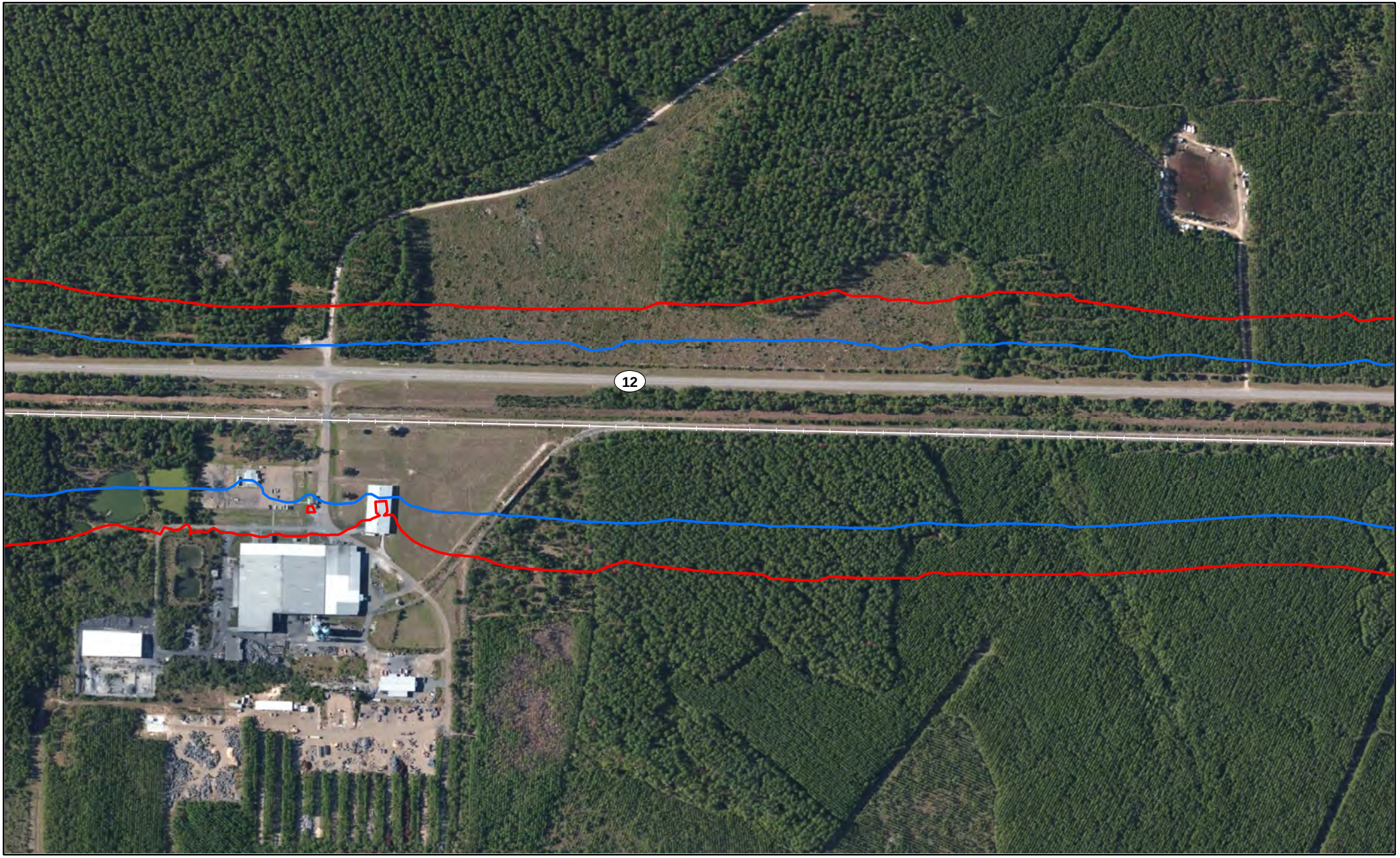
Source: ESRI.



Noise Contours
Calcasieu Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



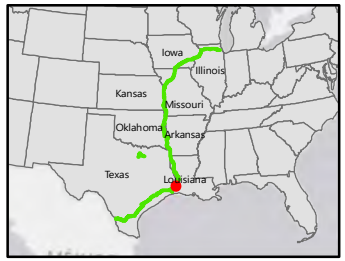
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

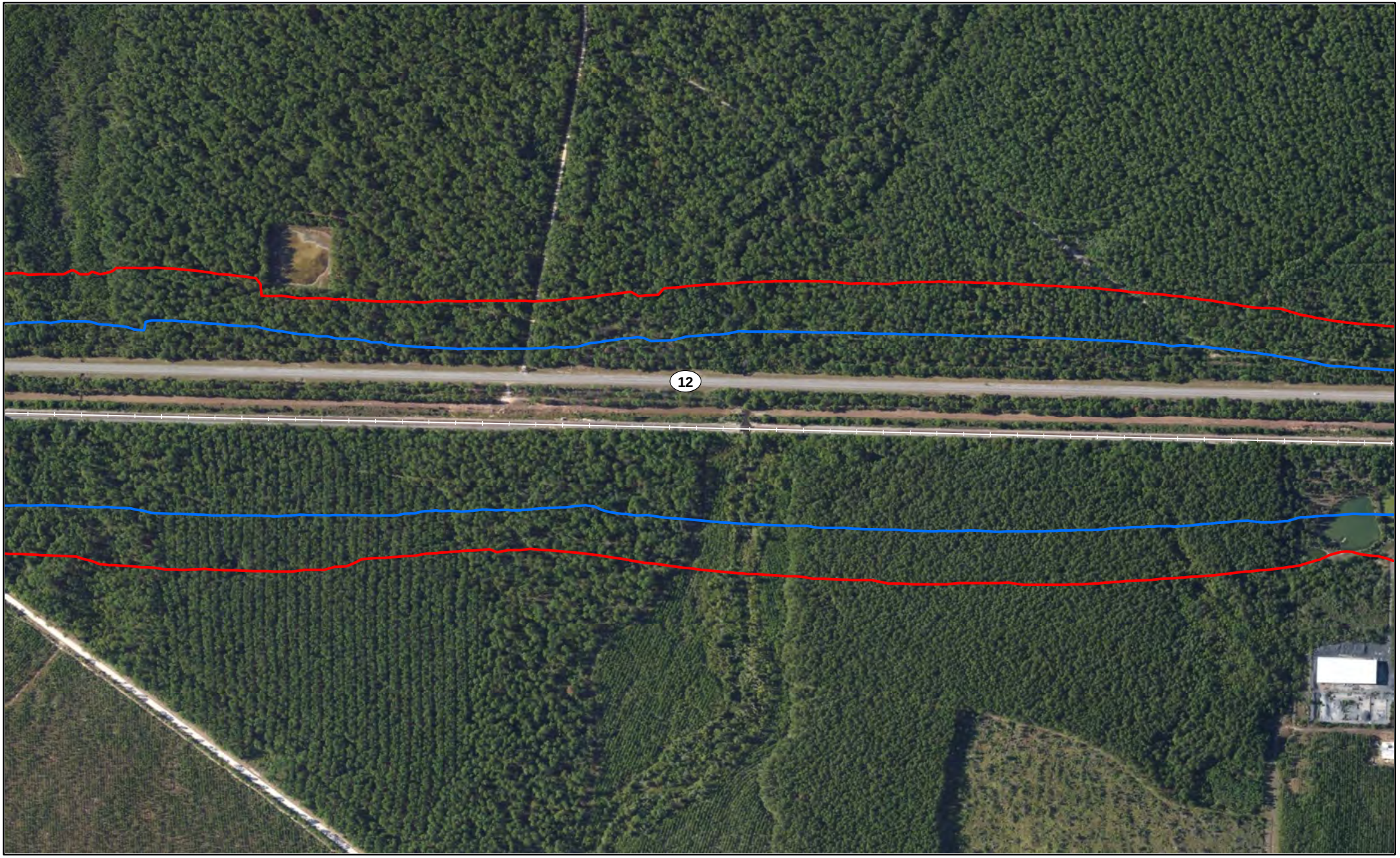
Tracks

Source: ESRI.



Noise Contours
Calcasieu Parish, LA

Miles
0 0.05 0.1



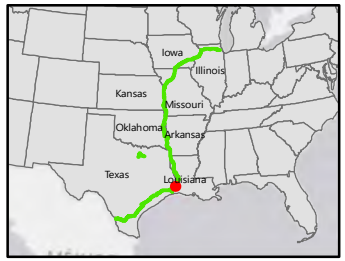
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

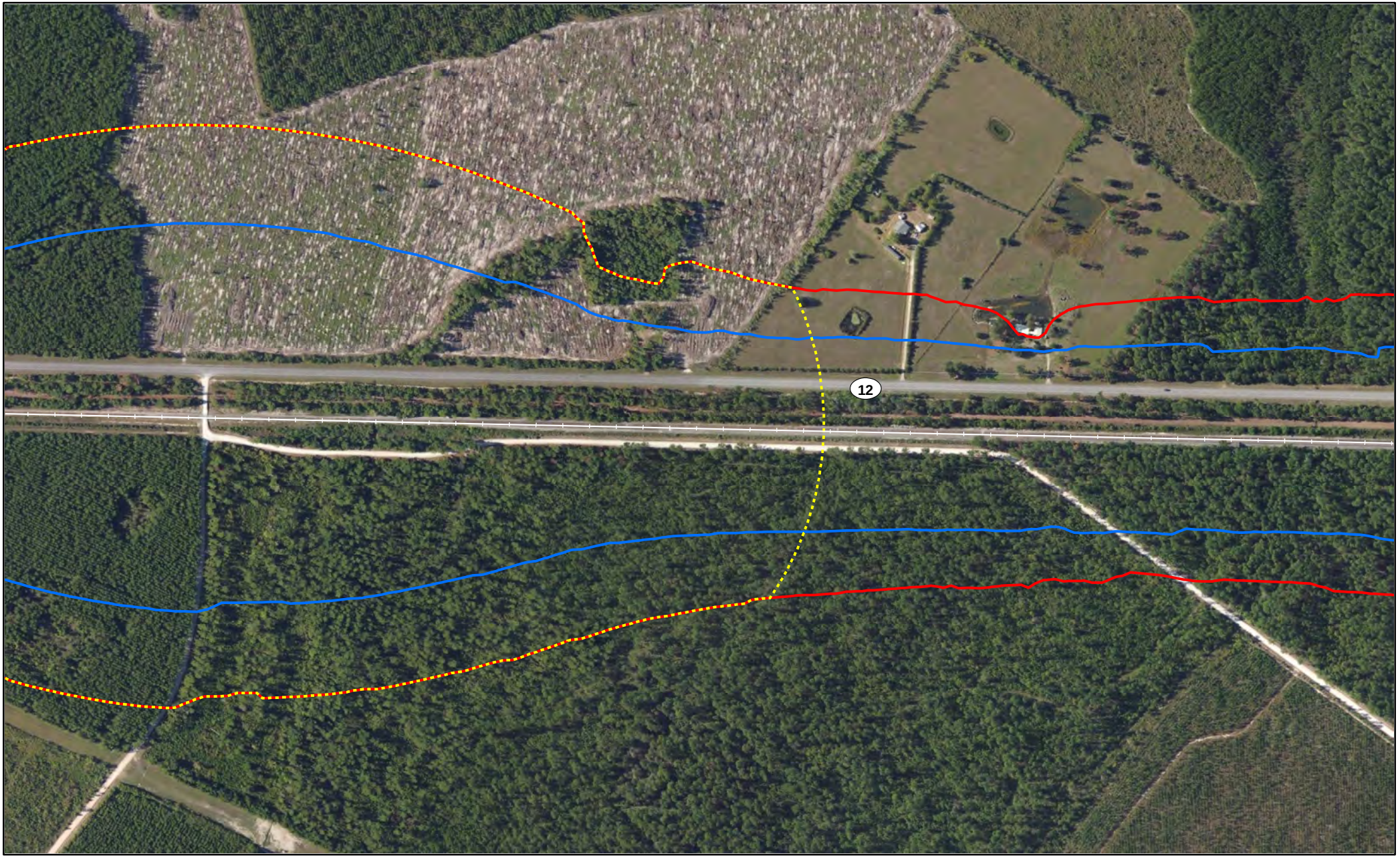
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Noise Contours
Calcasieu Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



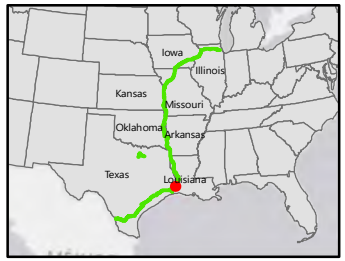
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

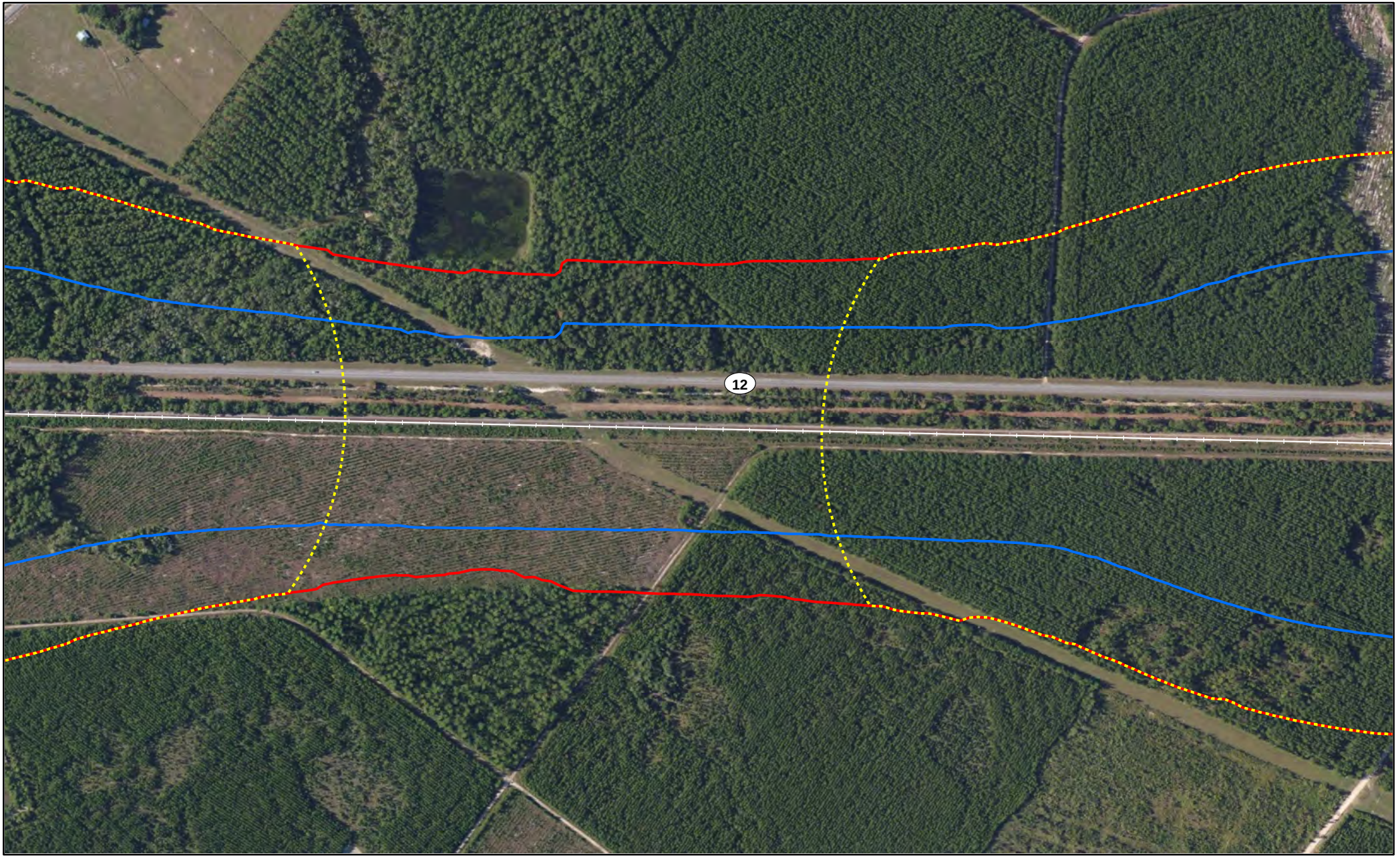
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Noise Contours
Calcasieu Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



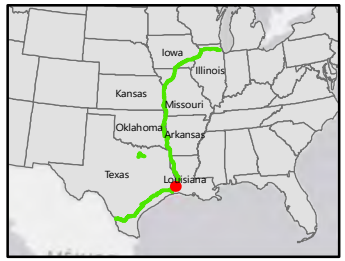
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

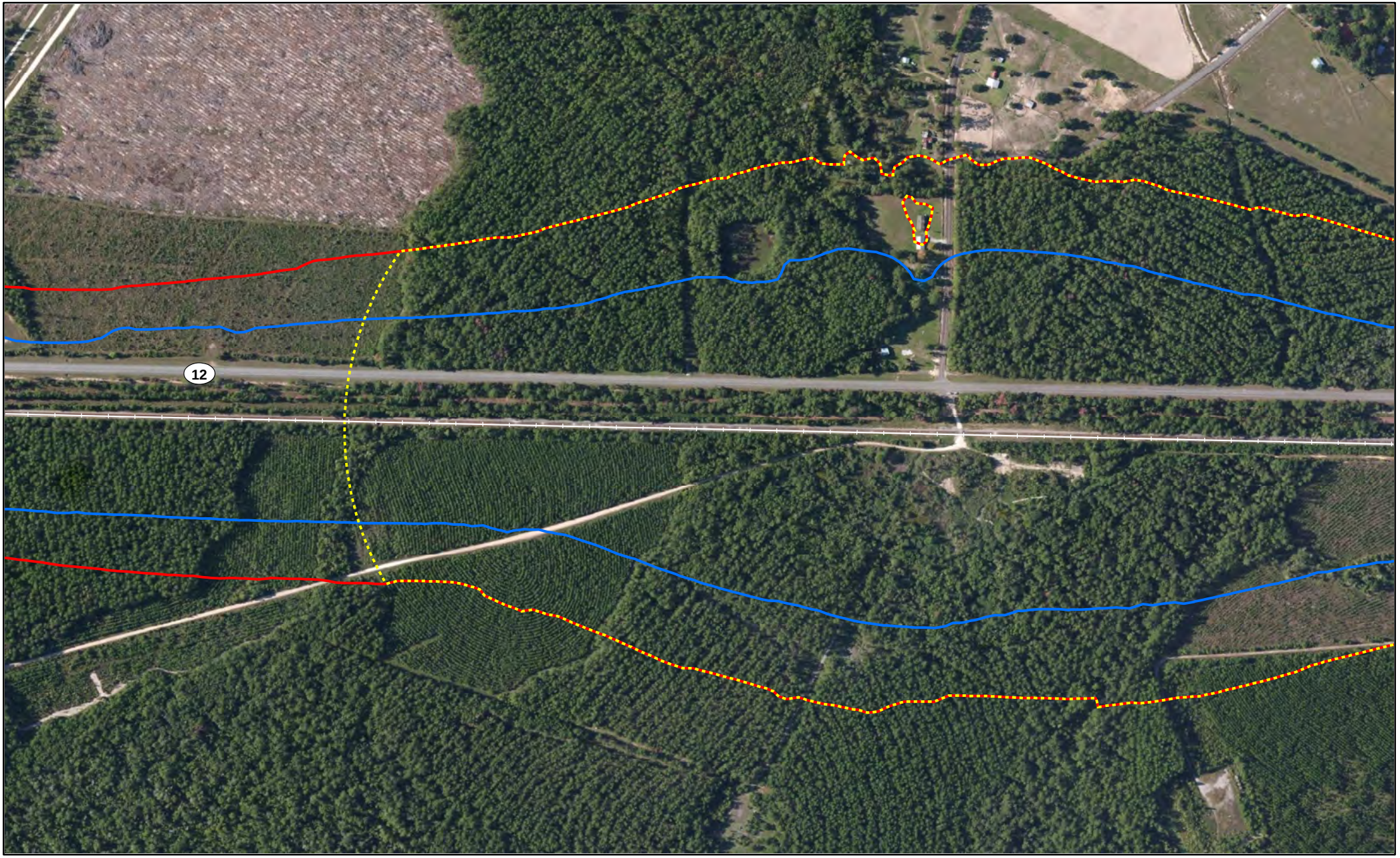
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Noise Contours
Calcasieu Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



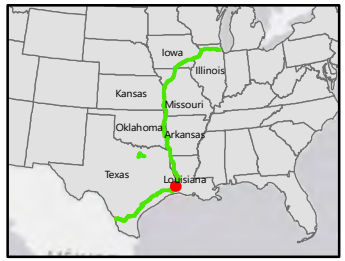
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

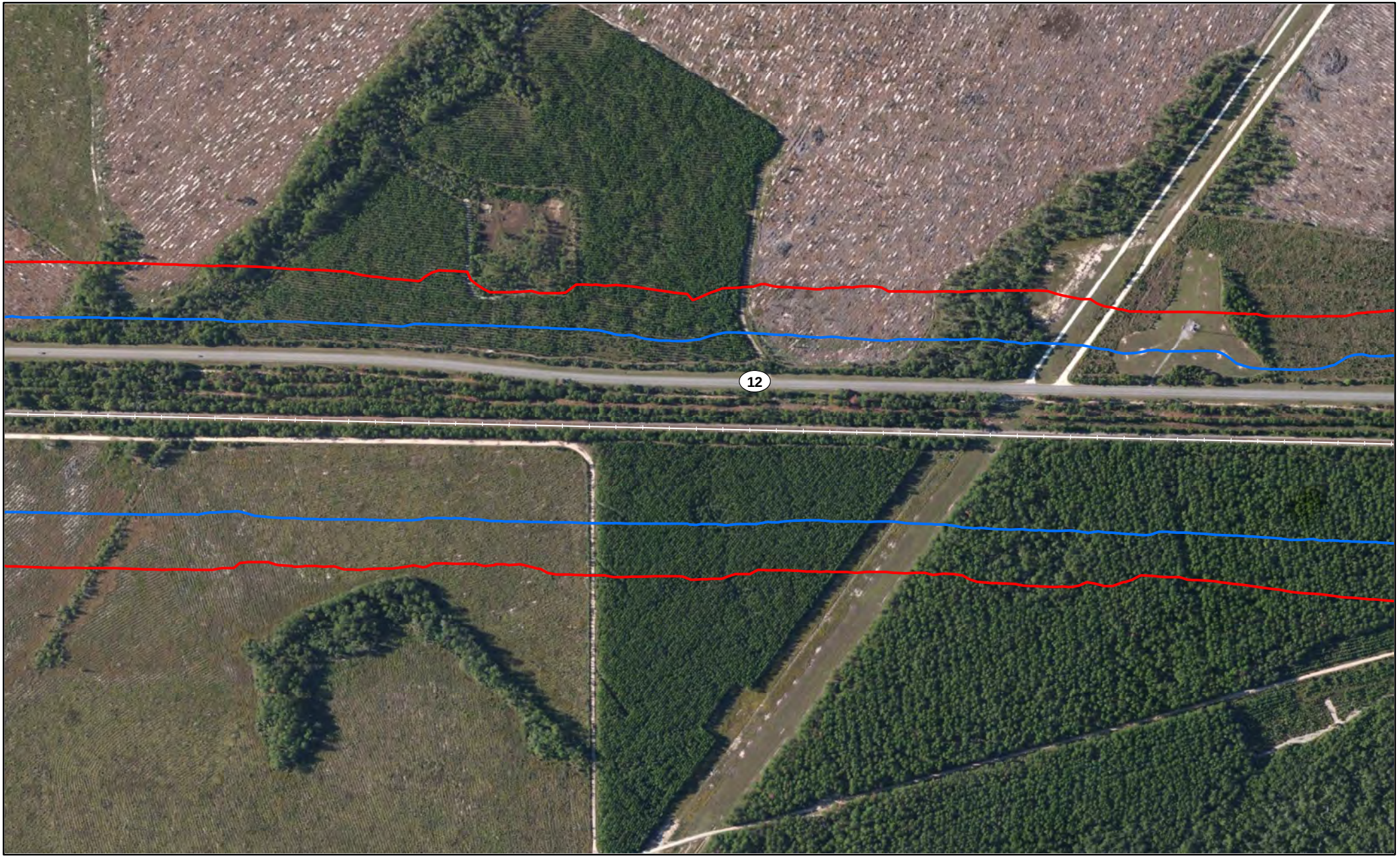


Noise Contours
Calcasieu Parish, LA

Page 1201 of 1588

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



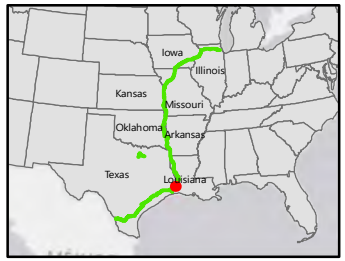
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

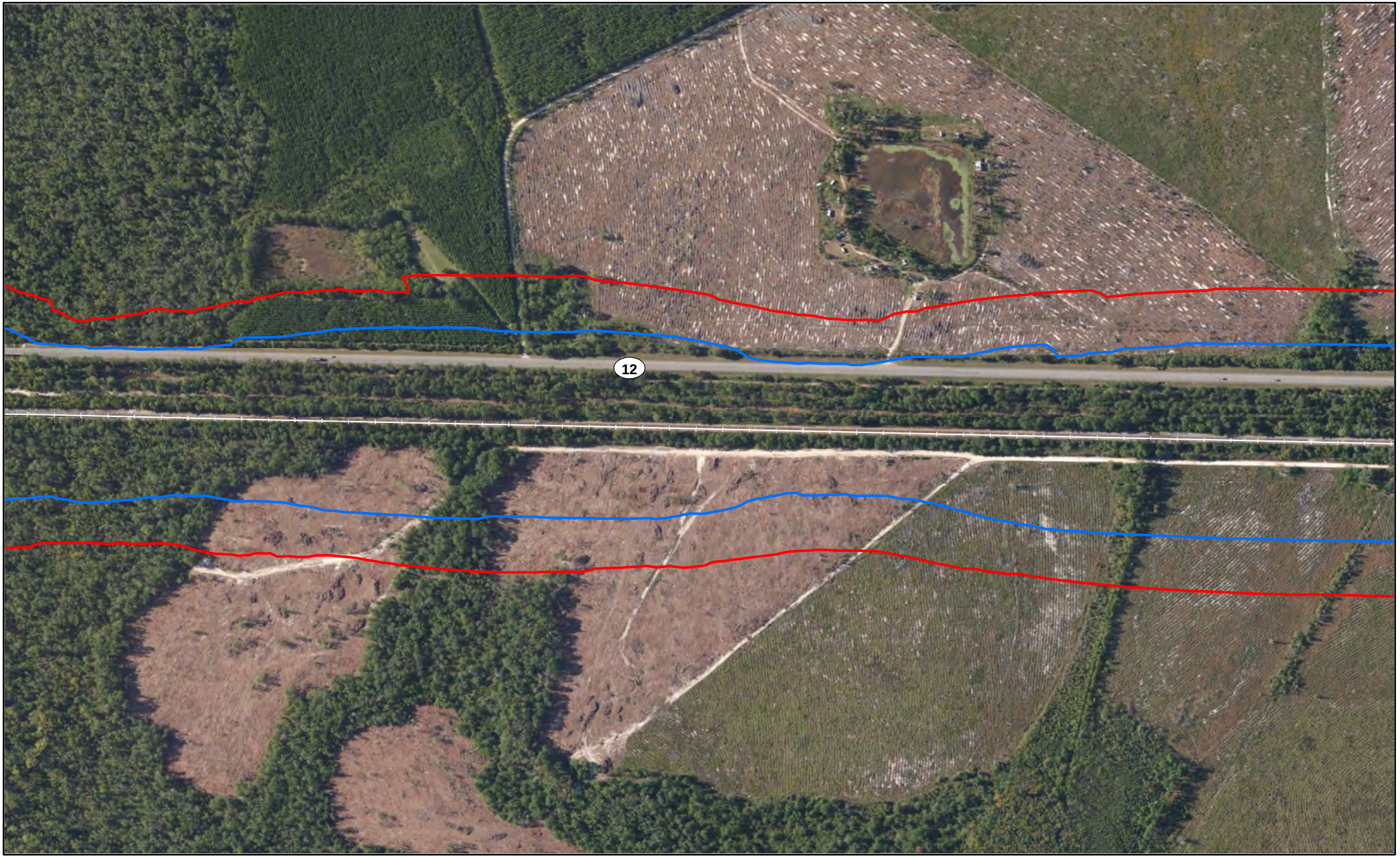
Source: ESRI.



Noise Contours
Calcasieu Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

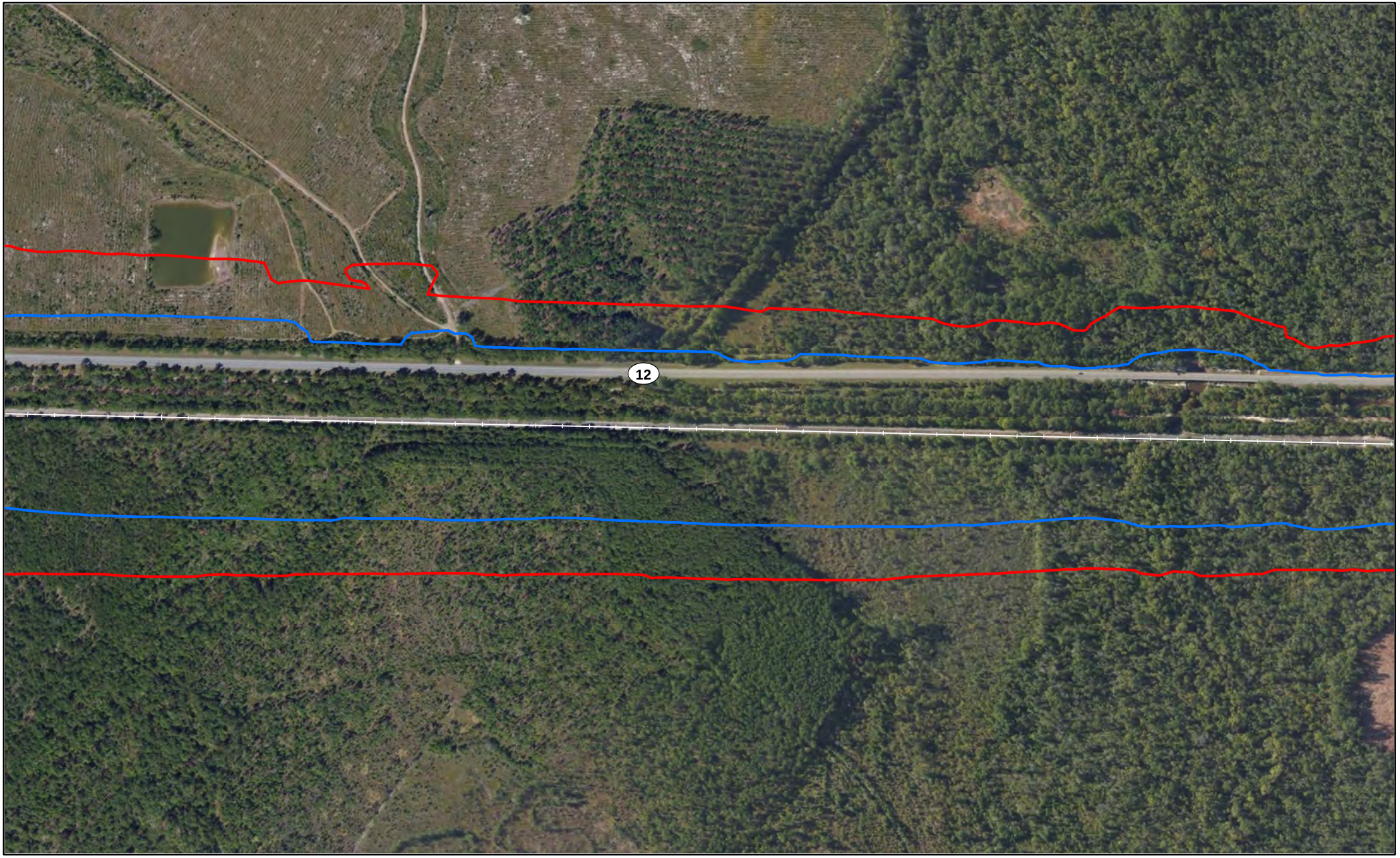
Source: ESRI.



Noise Contours
Calcasieu Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

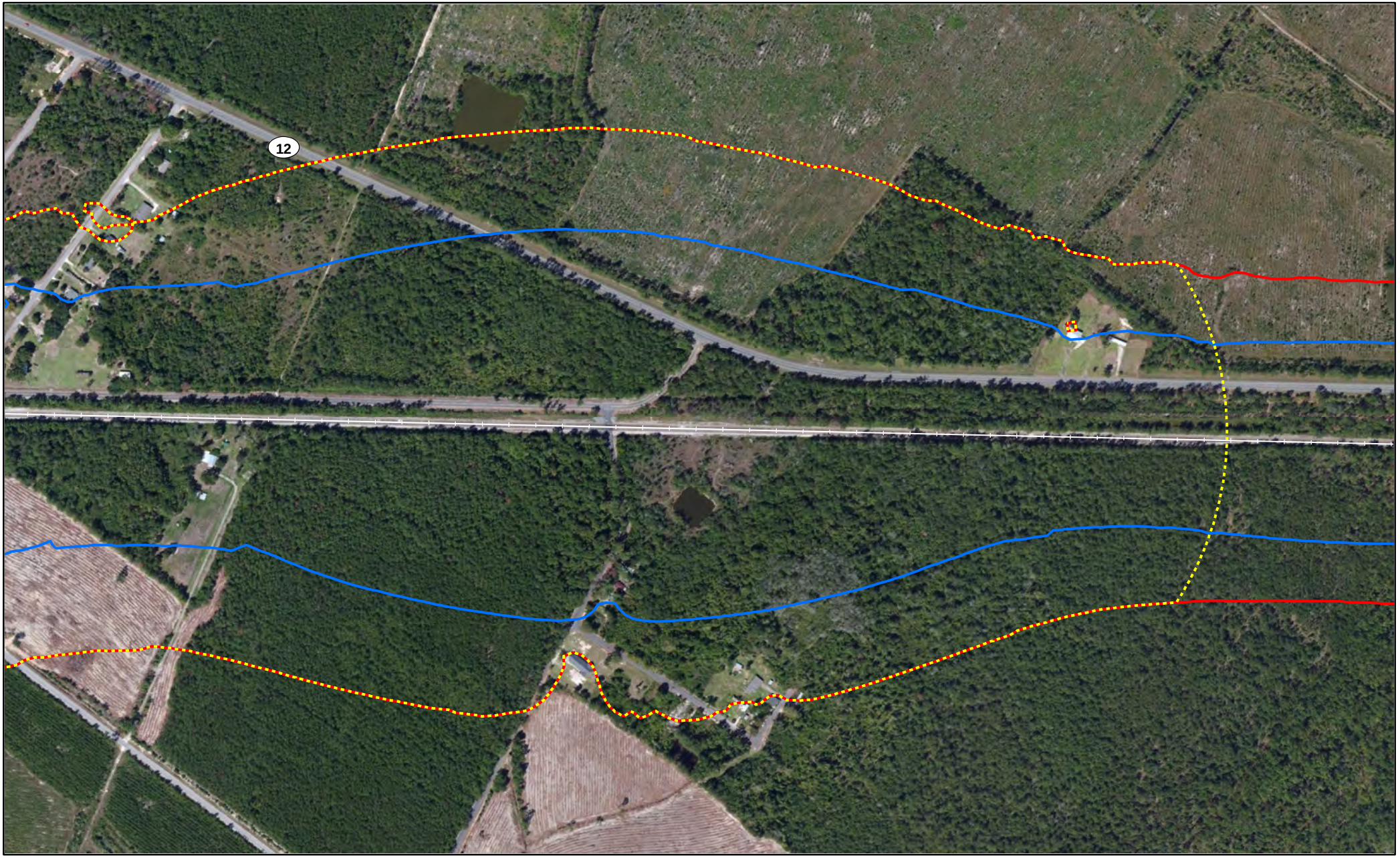
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Noise Contours
Calcasieu Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

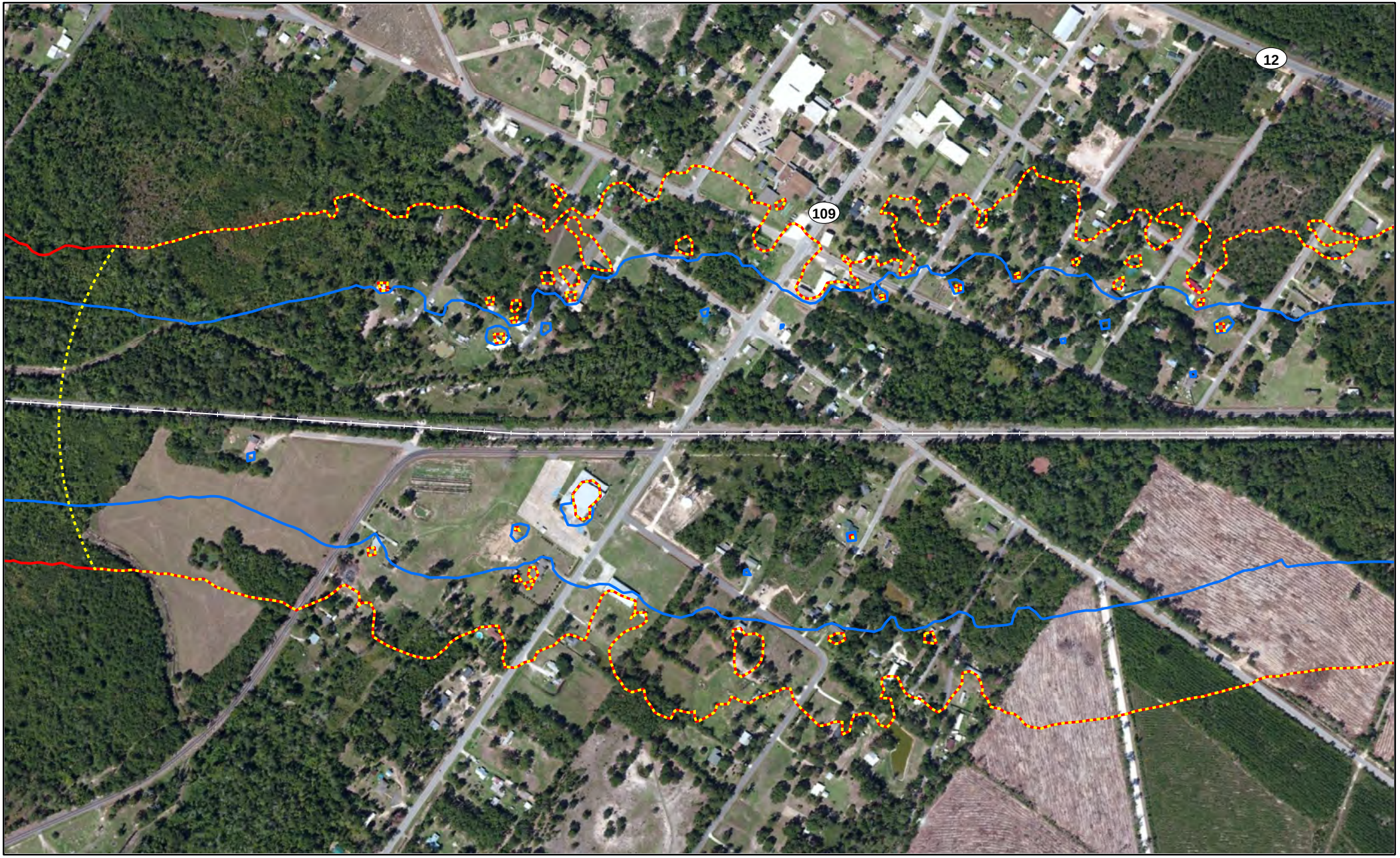
Tracks

Source: ESRI.



Noise Contours
Calcasieu Parish, LA

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

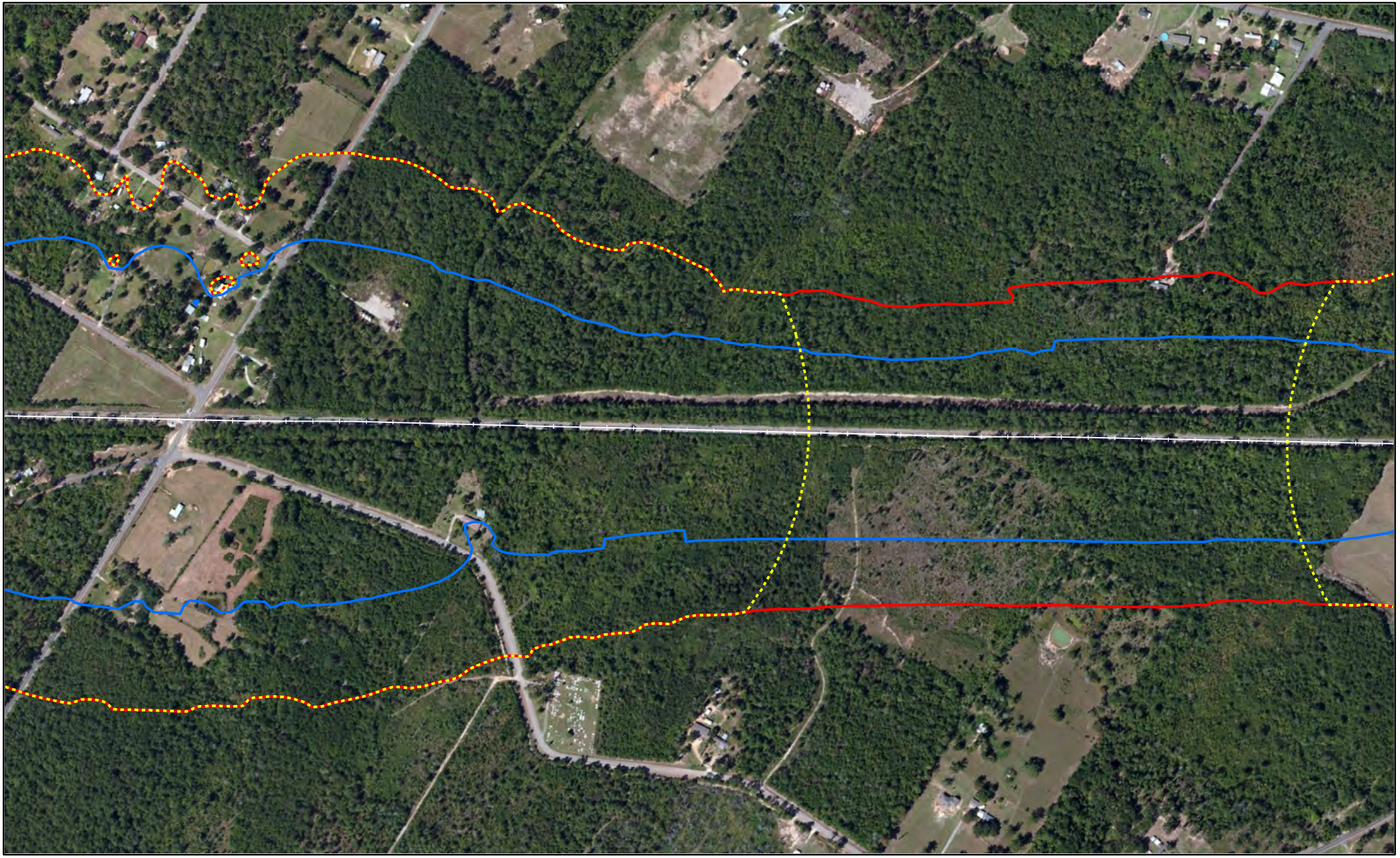
Tracks

Source: ESRI.



Noise Contours
Calcasieu Parish, LA

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

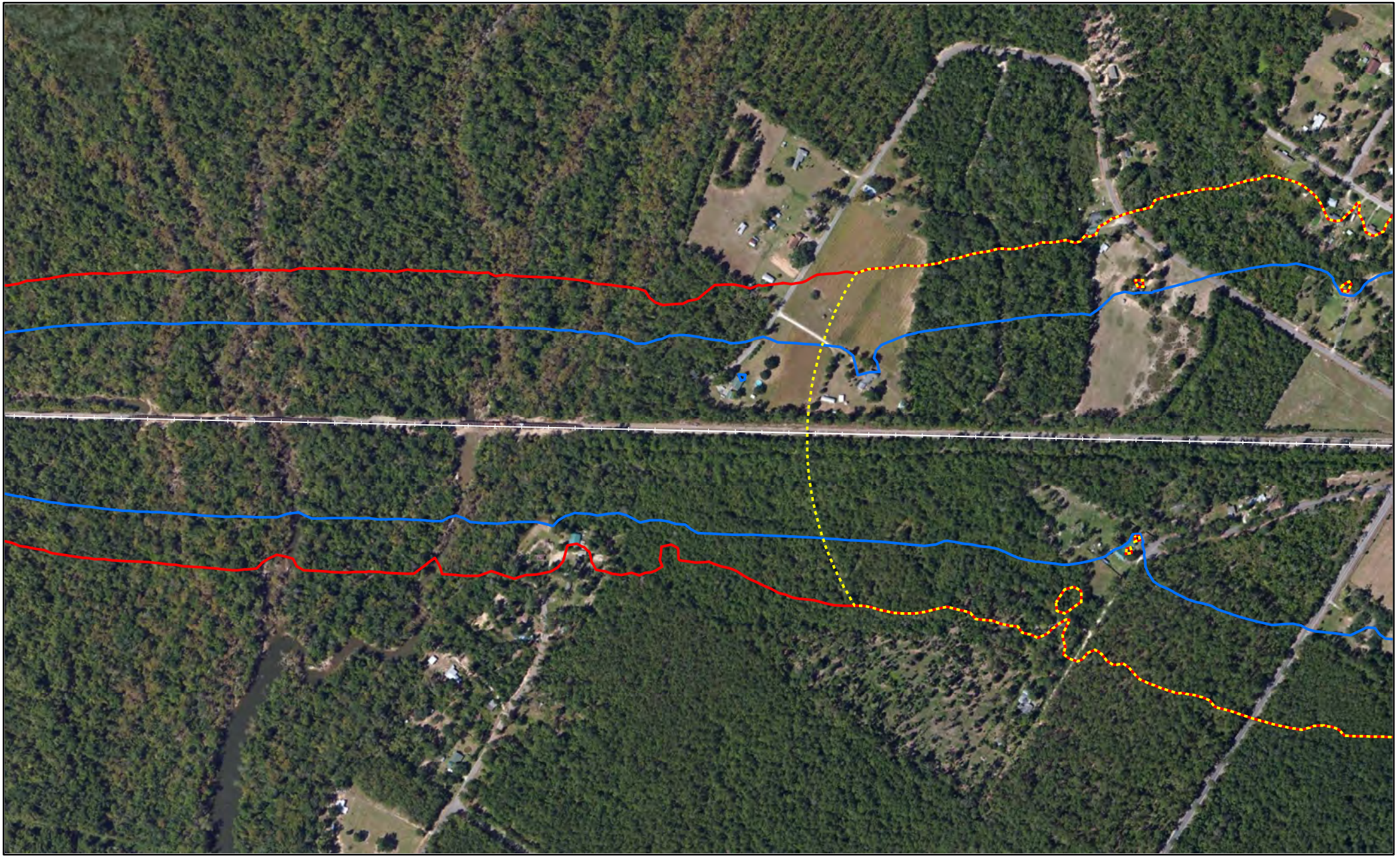
Source: ESRI.



Noise Contours
Calcasieu Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

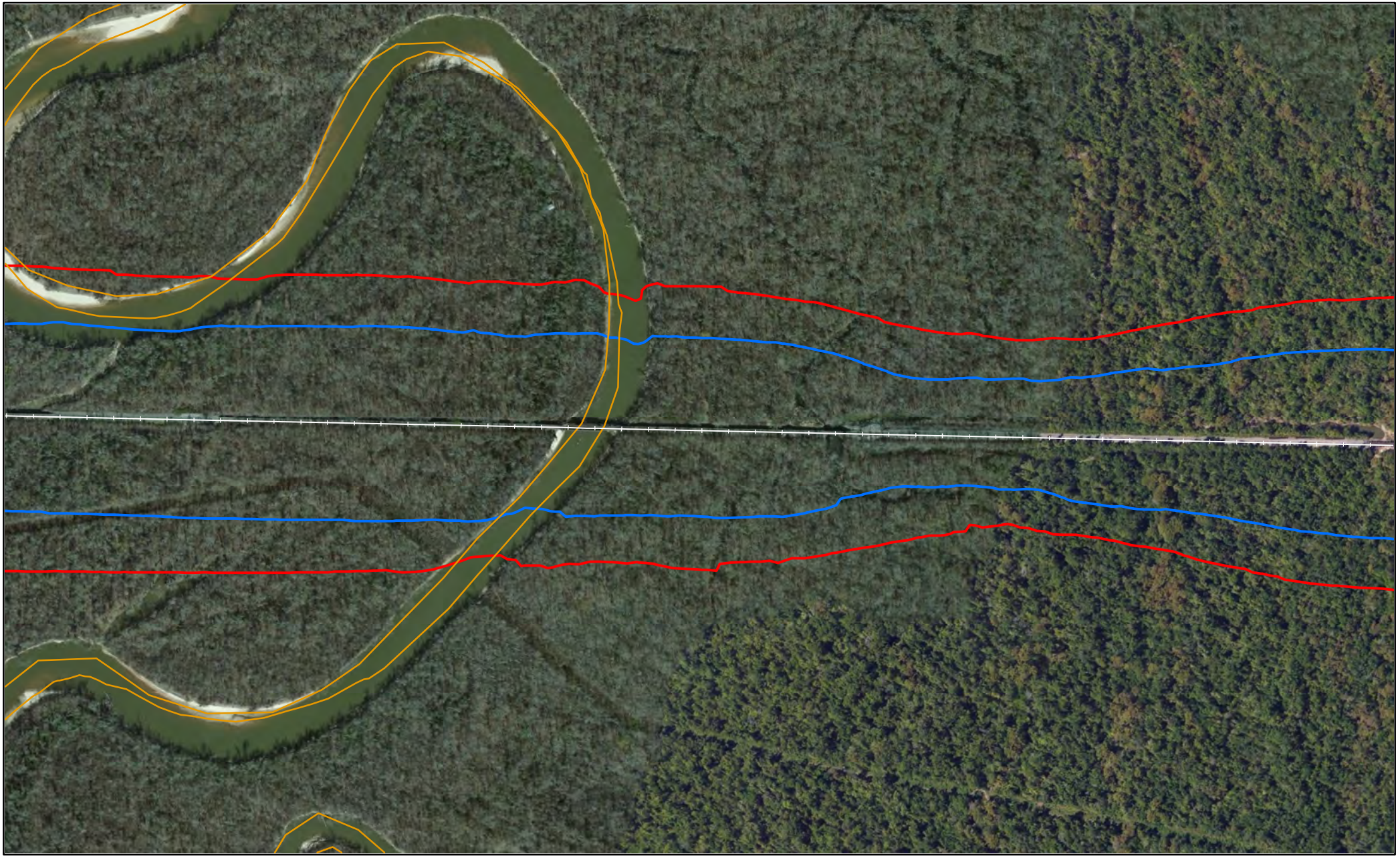
Tracks

Source: ESRI.



Noise Contours
Calcasieu Parish, LA

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

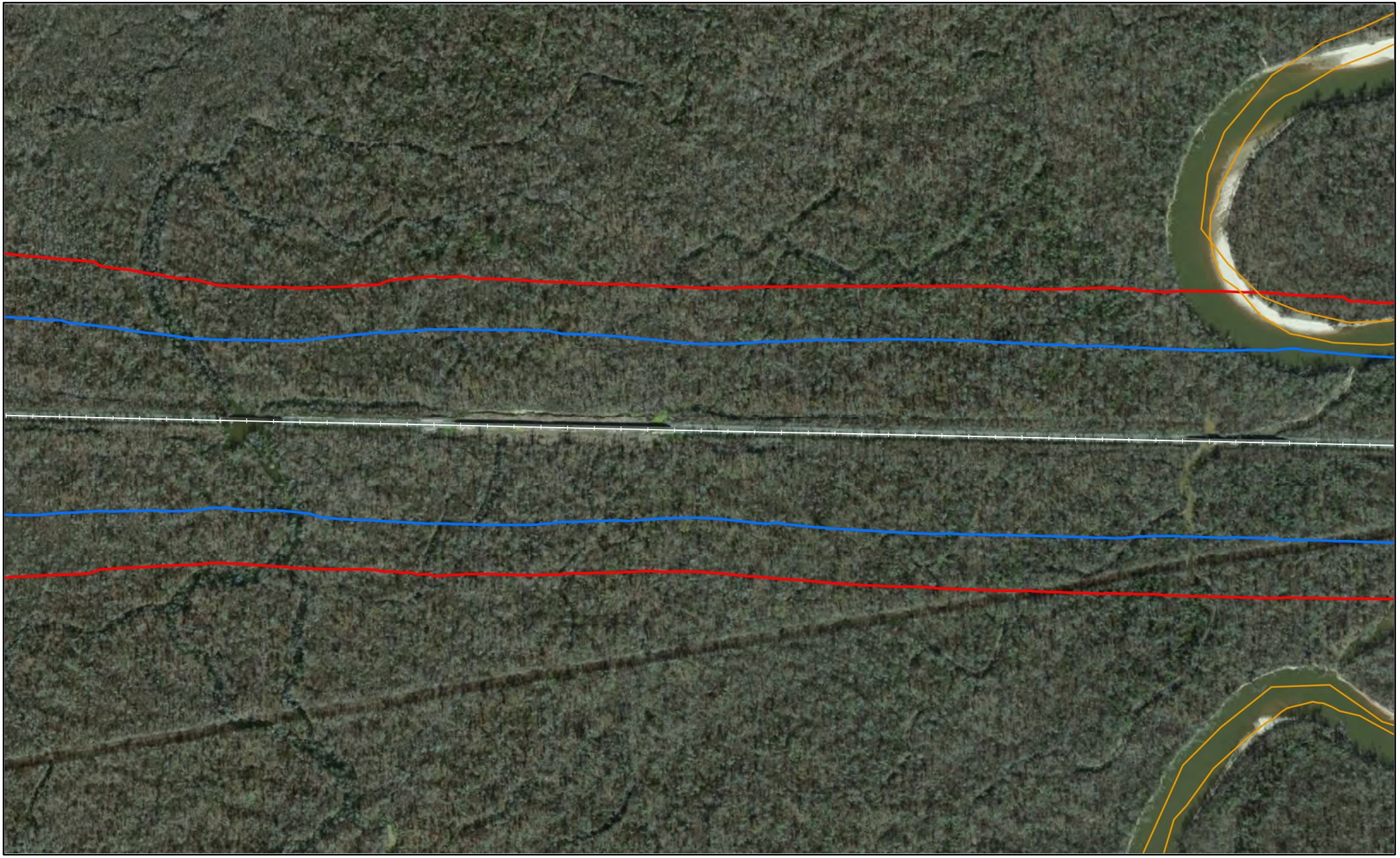
Source: ESRI.



Noise Contours
Calcasieu Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

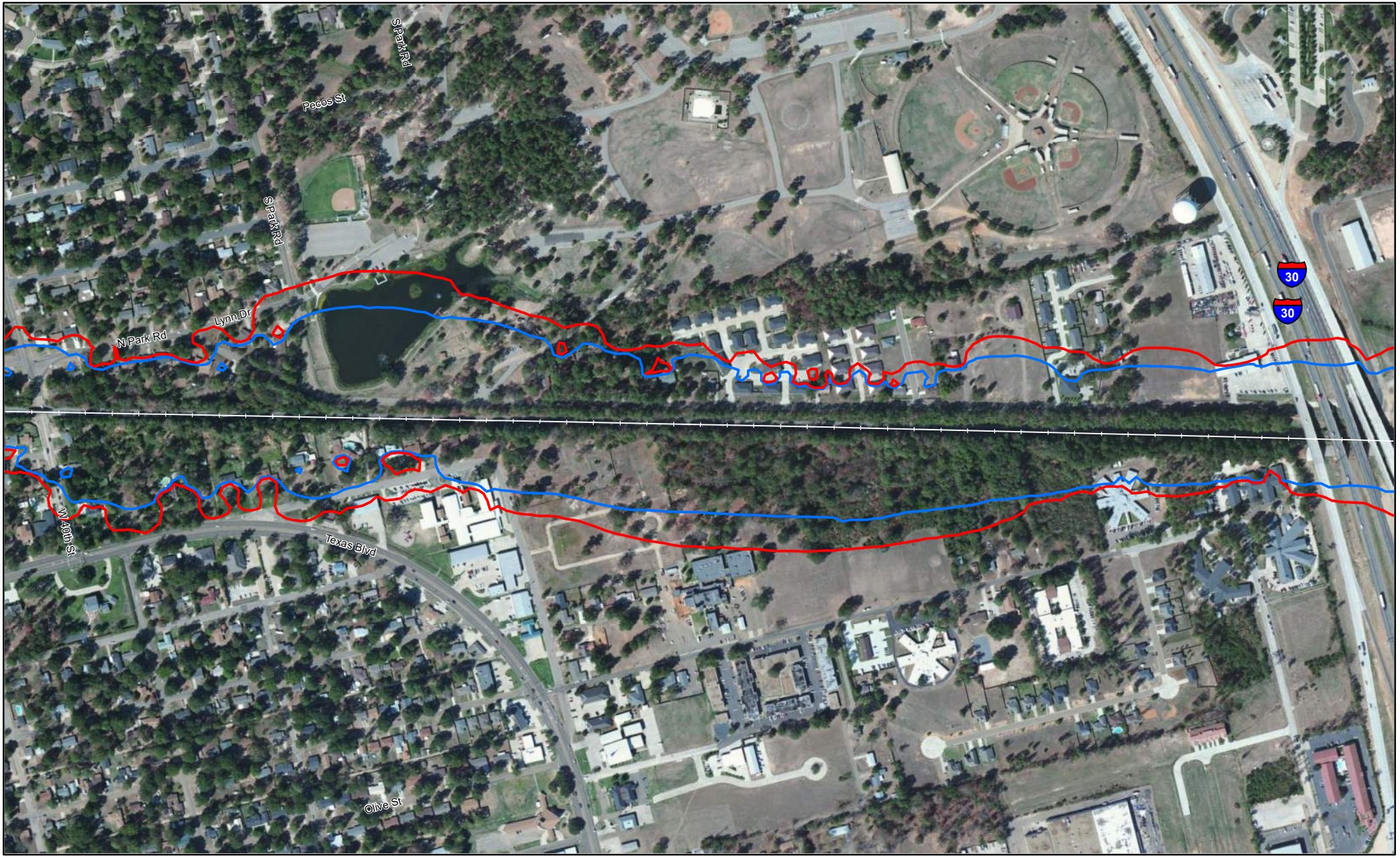


Noise Contours
Calcasieu Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN

Appendix M – Attachment 7: Texas



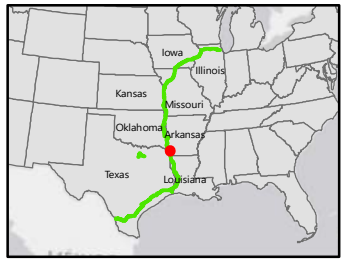
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

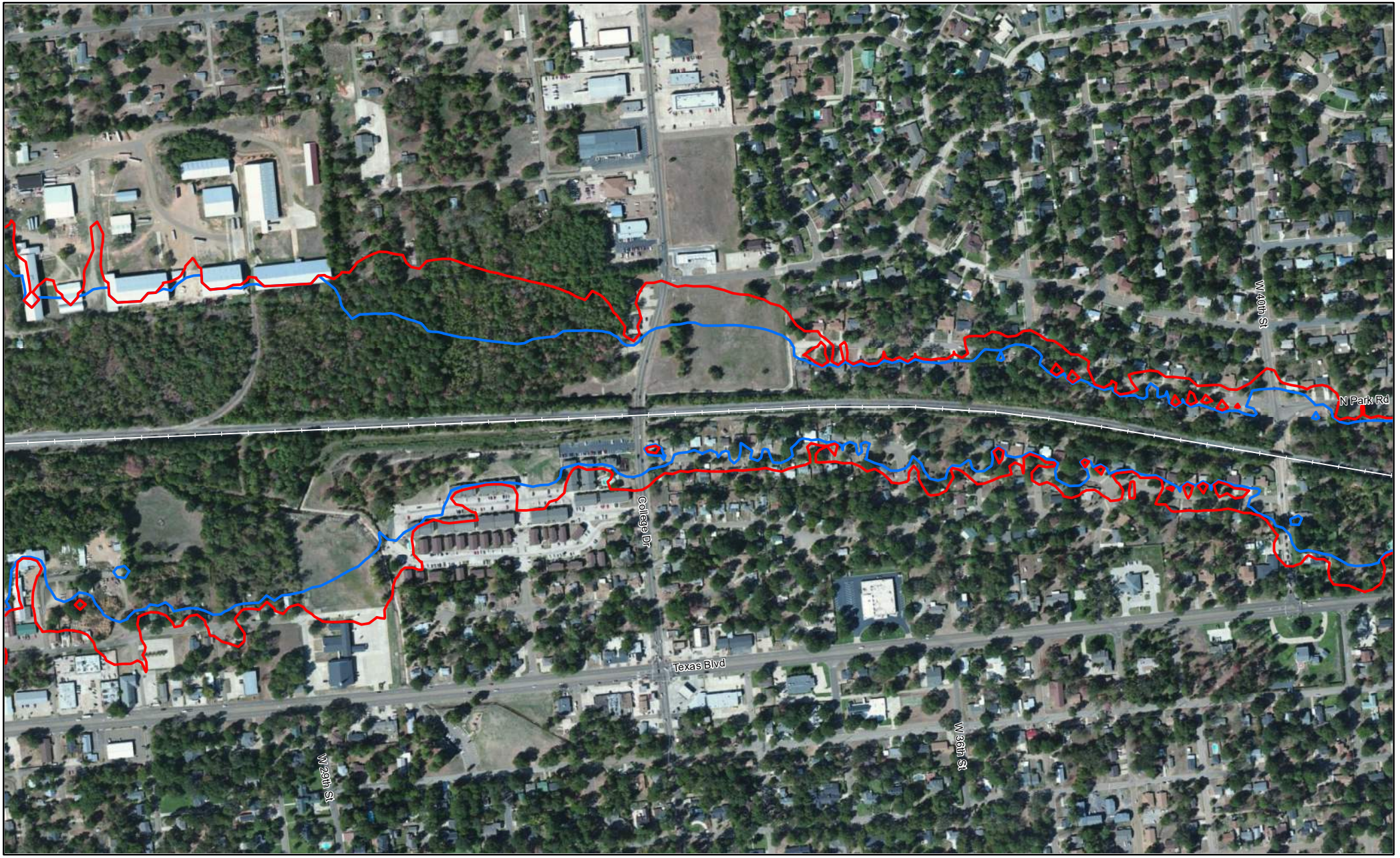
Source: ESRI.



Noise Contours
Bowie County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



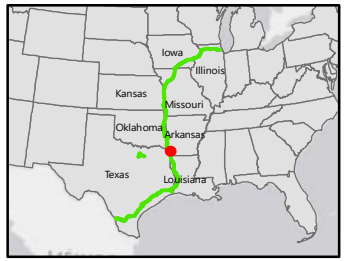
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

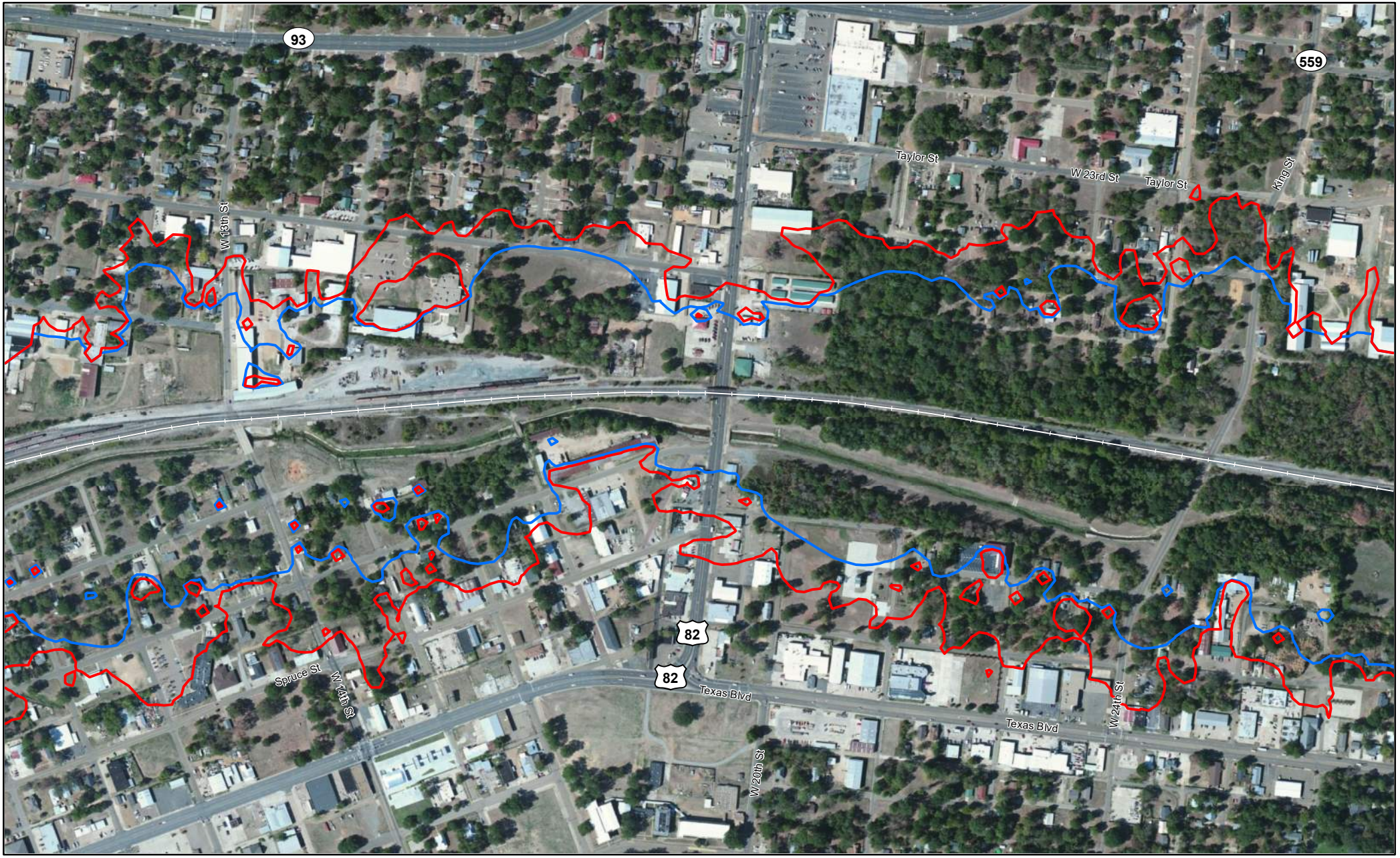
Source: ESRI.



Noise Contours
Bowie County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



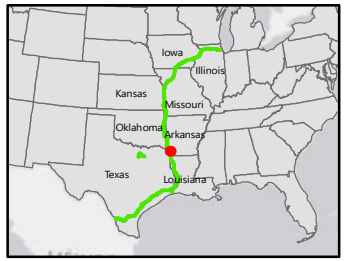
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

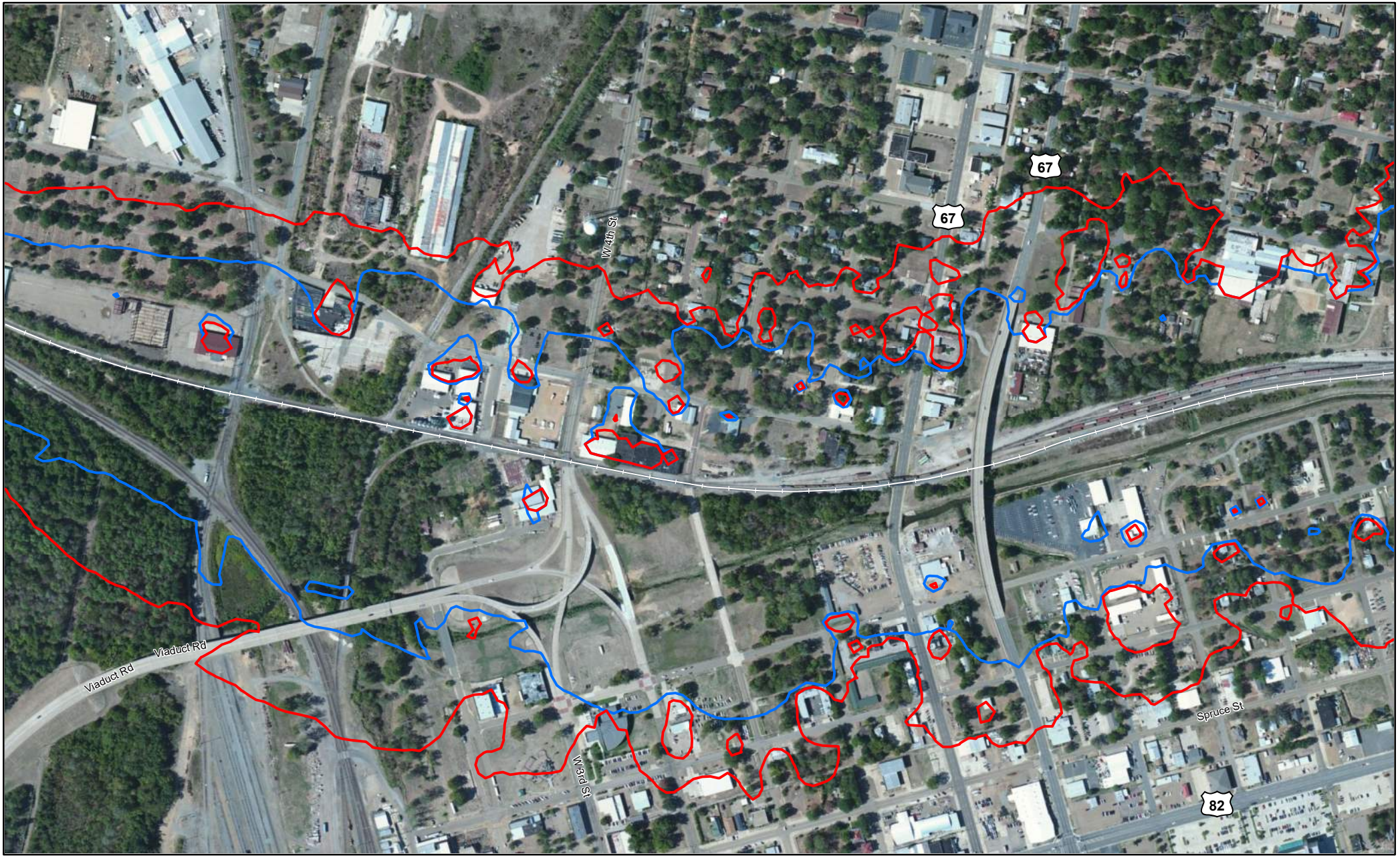
Source: ESRI.



Noise Contours
Bowie County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



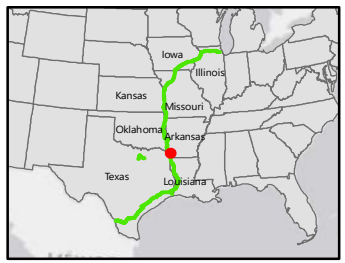
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

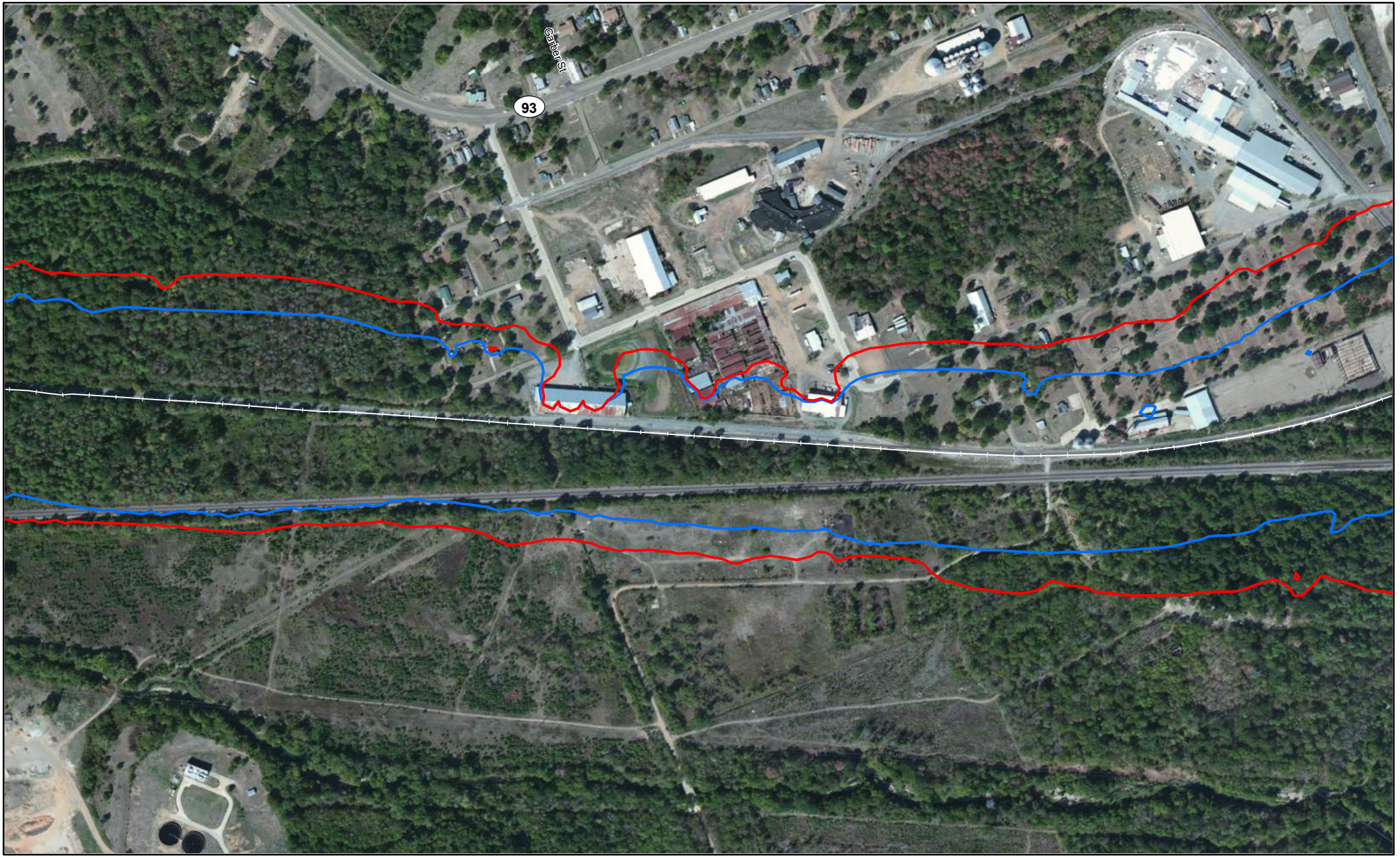
Source: ESRI.



Noise Contours
Bowie County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



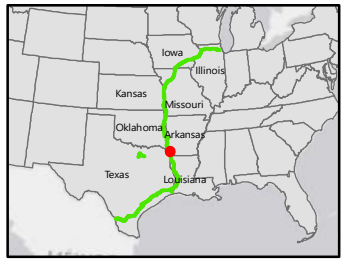
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

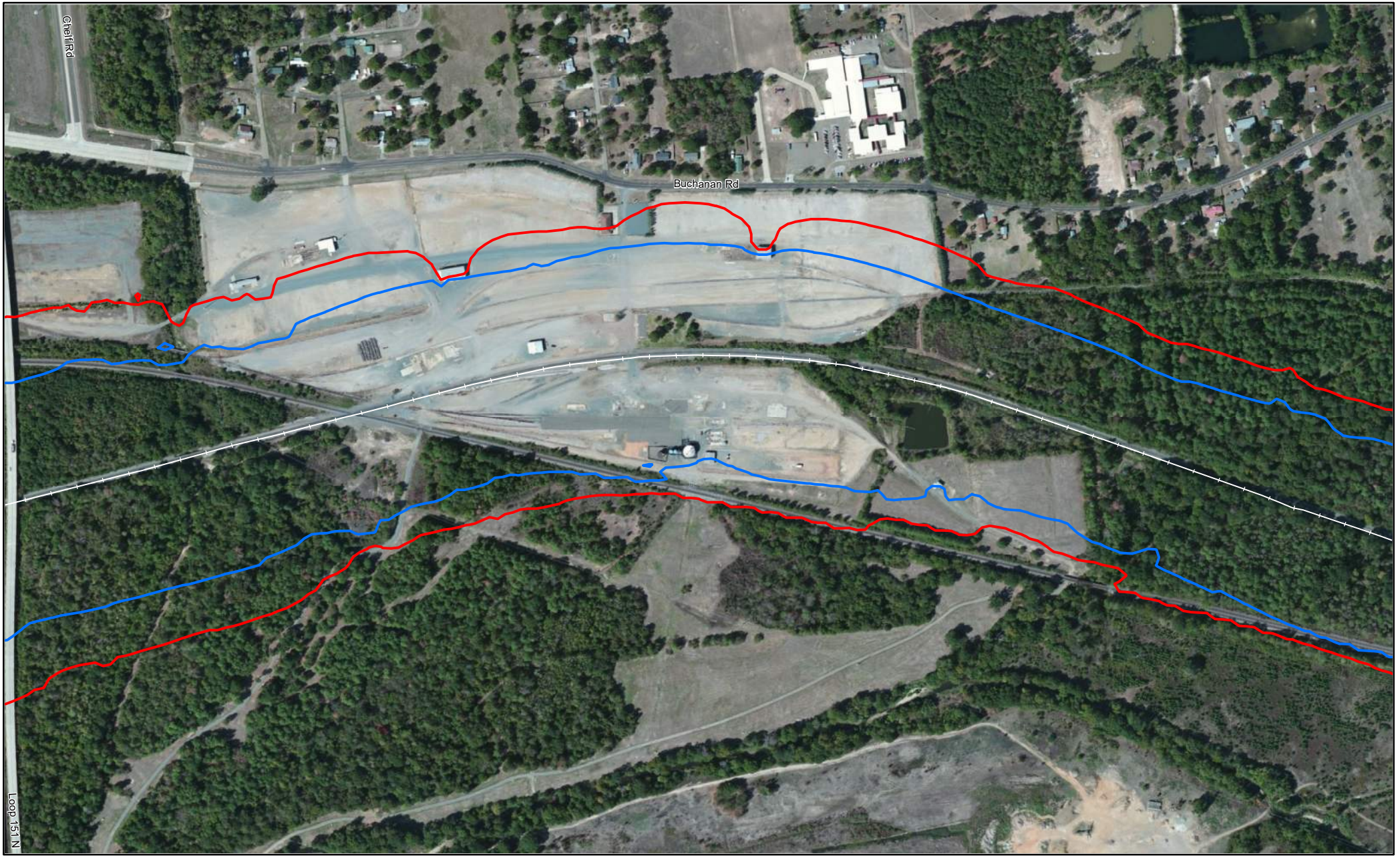
Source: ESRI.



Noise Contours
Bowie County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



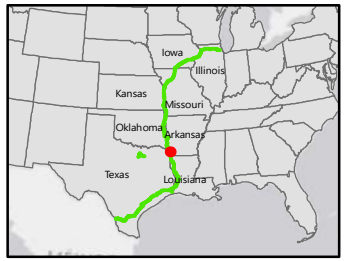
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

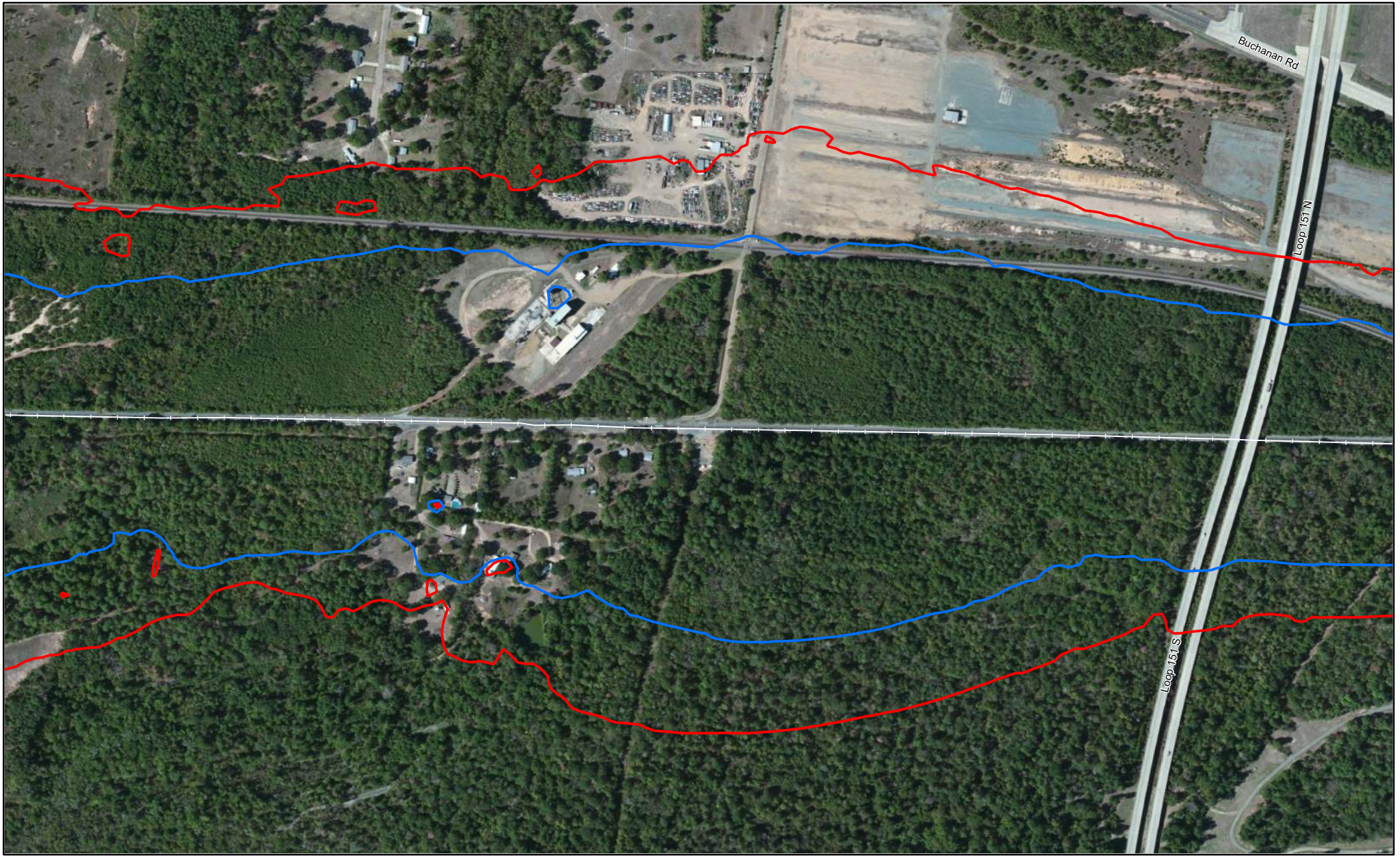
Source: ESRI.



Noise Contours
Bowie County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



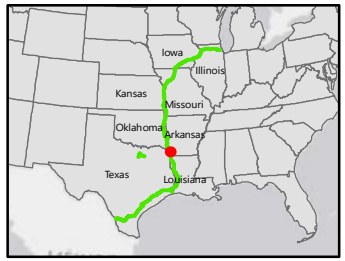
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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

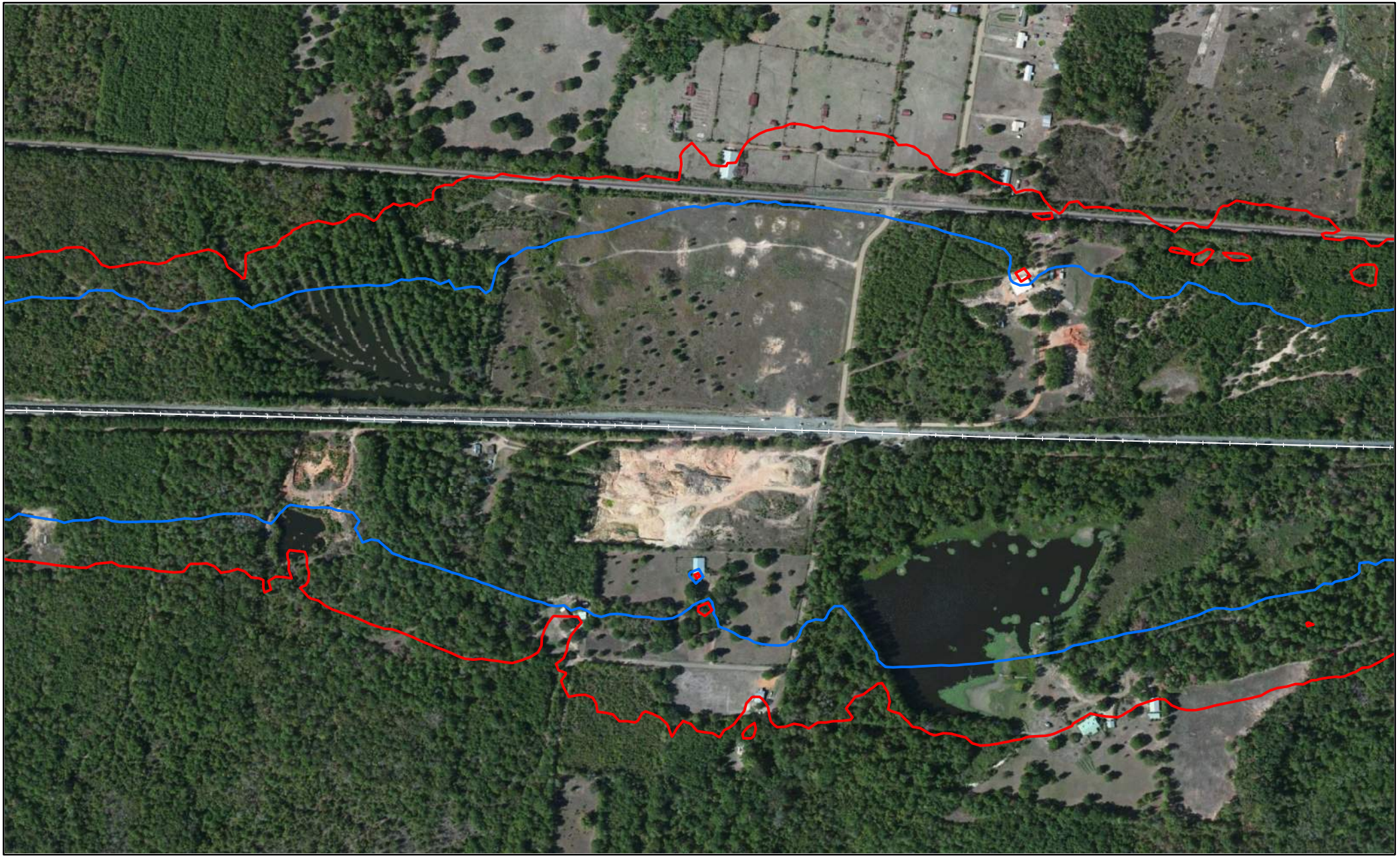
Source: ESRI.



Noise Contours
Bowie County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



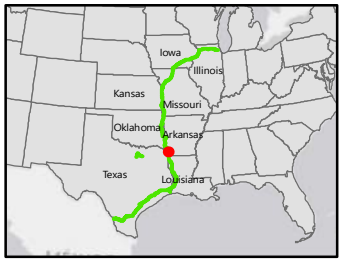
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

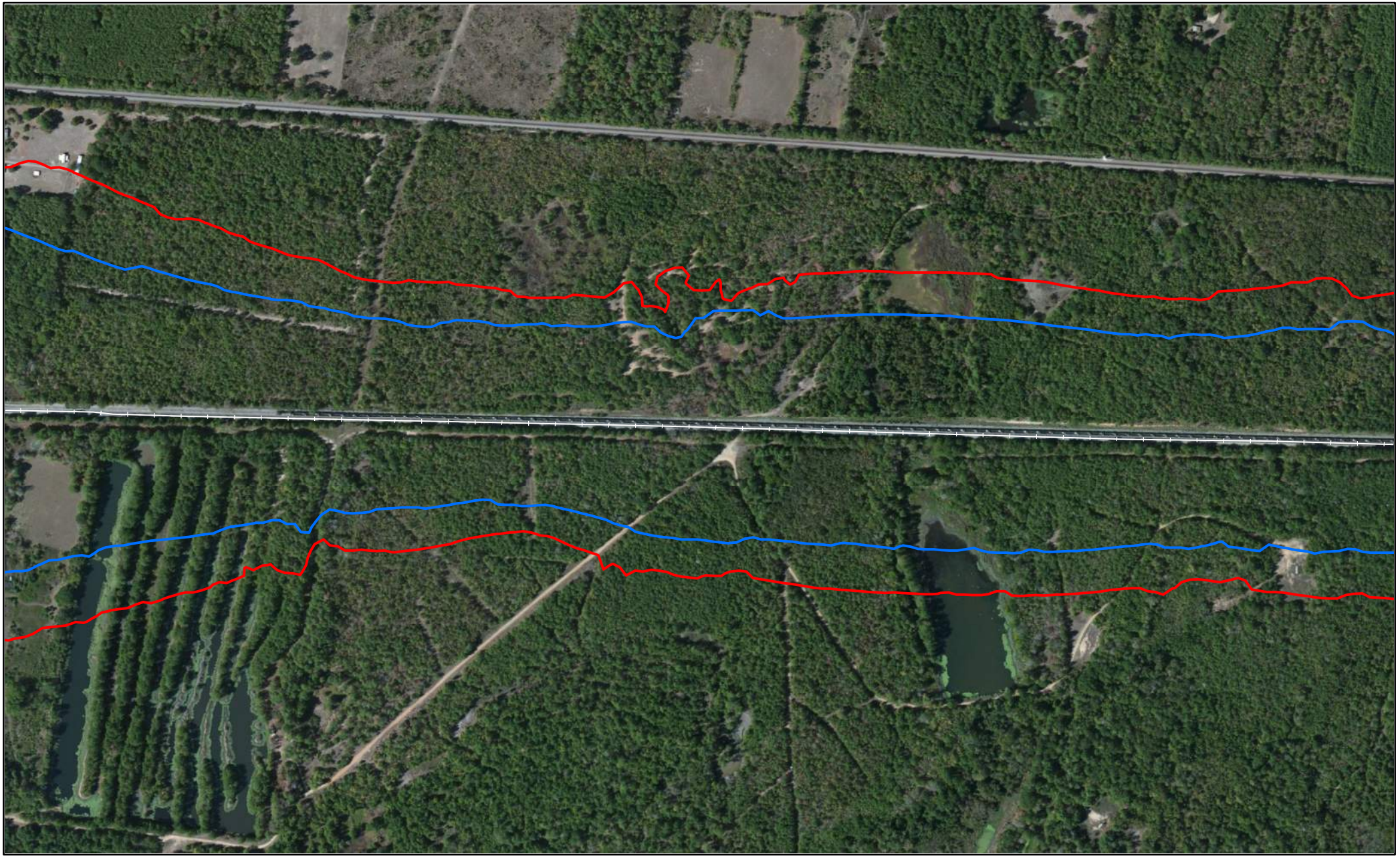
Tracks

Source: ESRI.



Noise Contours
Bowie County, TX

Miles
0 0.05 0.1



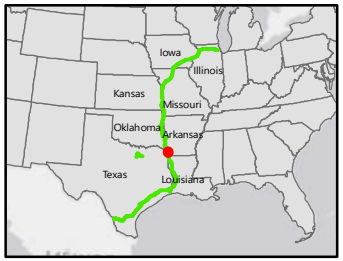
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

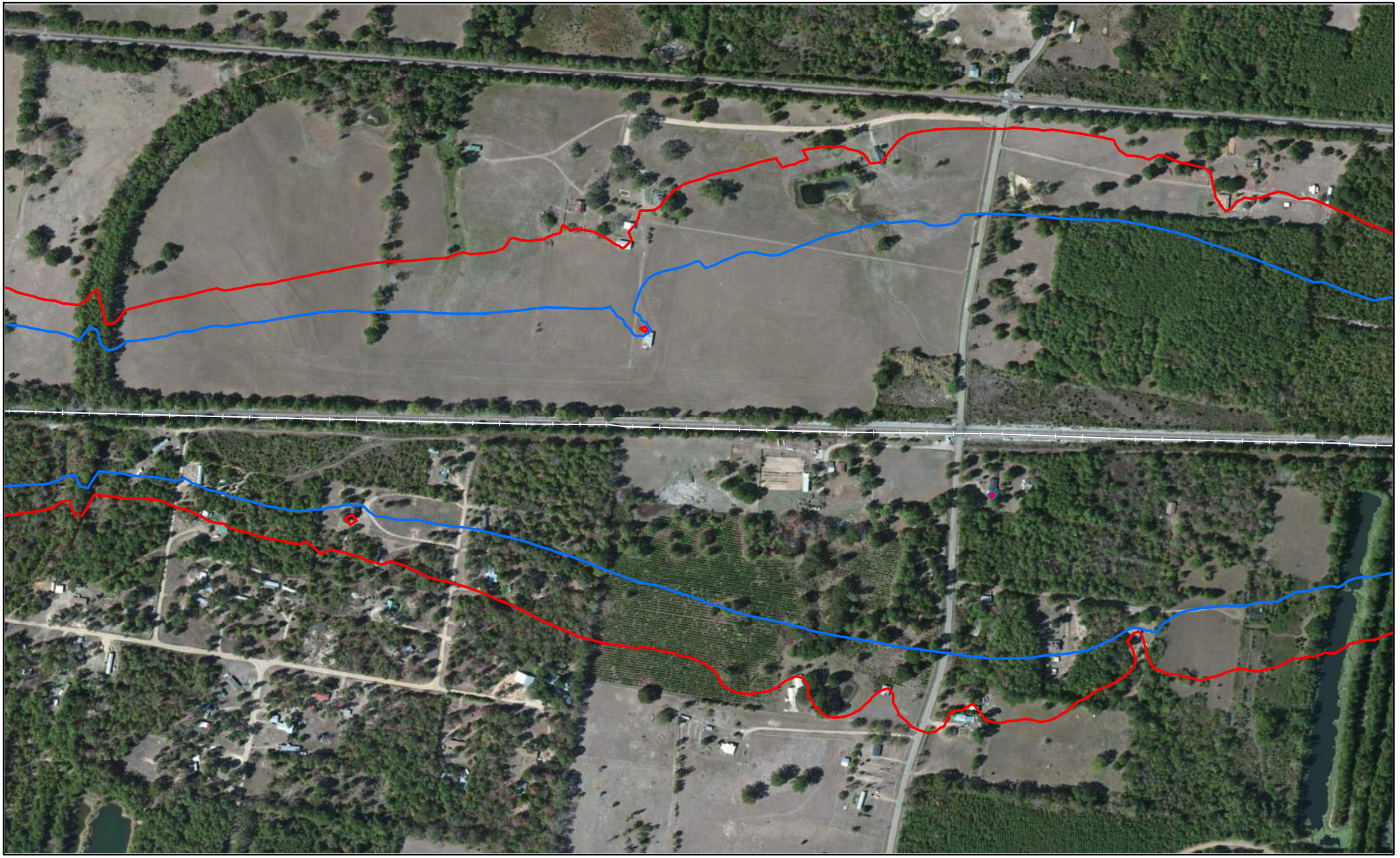
Tracks

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Noise Contours
Bowie County, TX

Miles
0 0.05 0.1



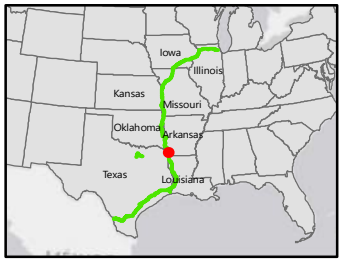
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Proposed Acquisition Noise (65 Ldn)

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Tracks

Source: ESRI.



Noise Contours
Bowie County, TX

Miles
0 0.05 0.1



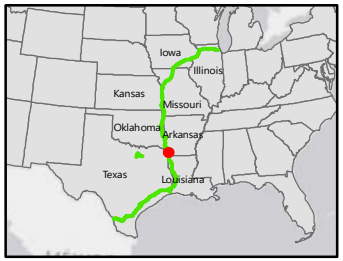
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Tracks

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Noise Contours
Bowie County, TX

Miles
0 0.05 0.1



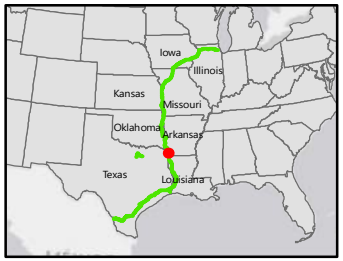
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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

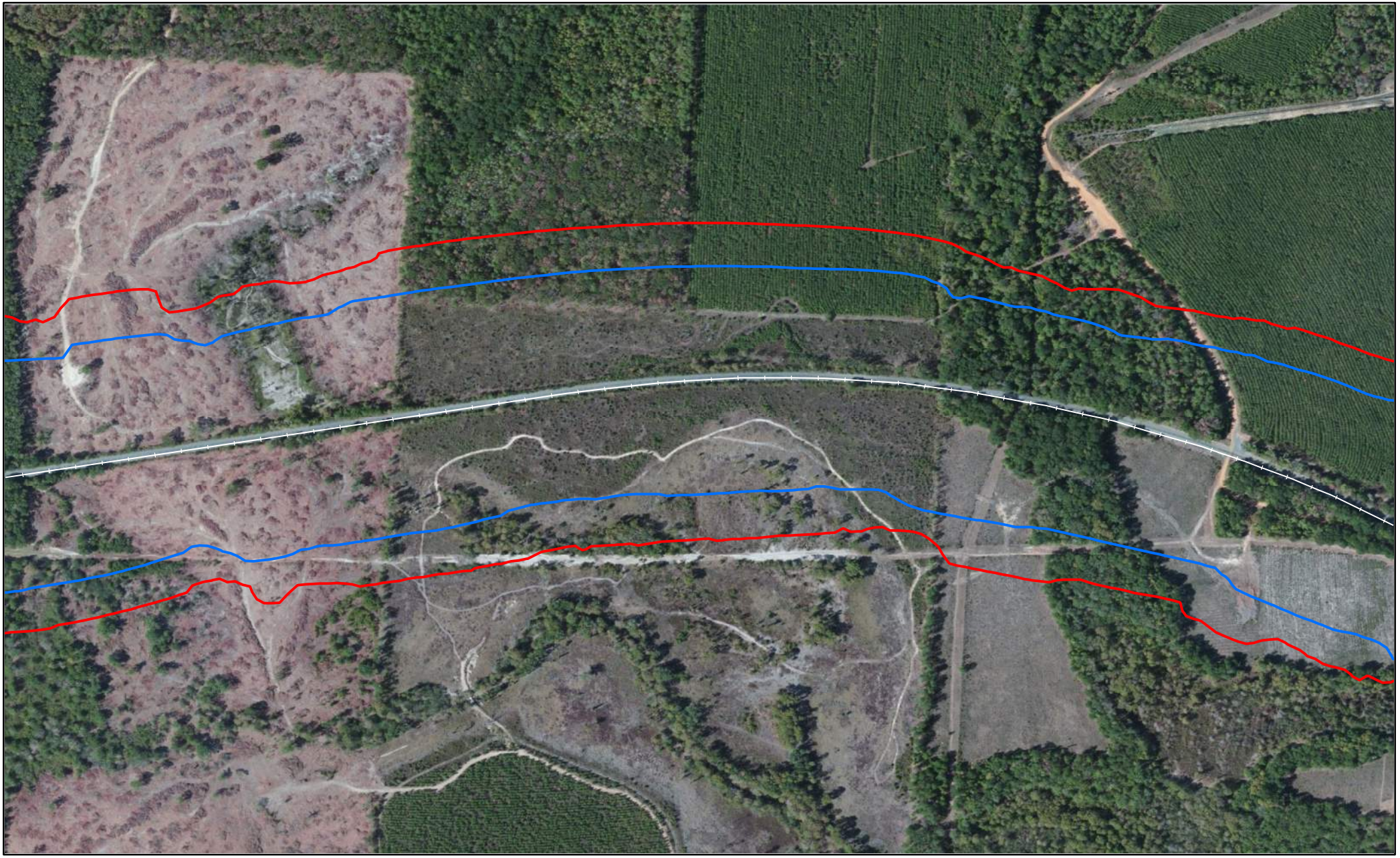
Source: ESRI.



Noise Contours
Cass County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



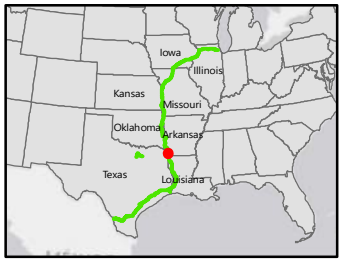
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

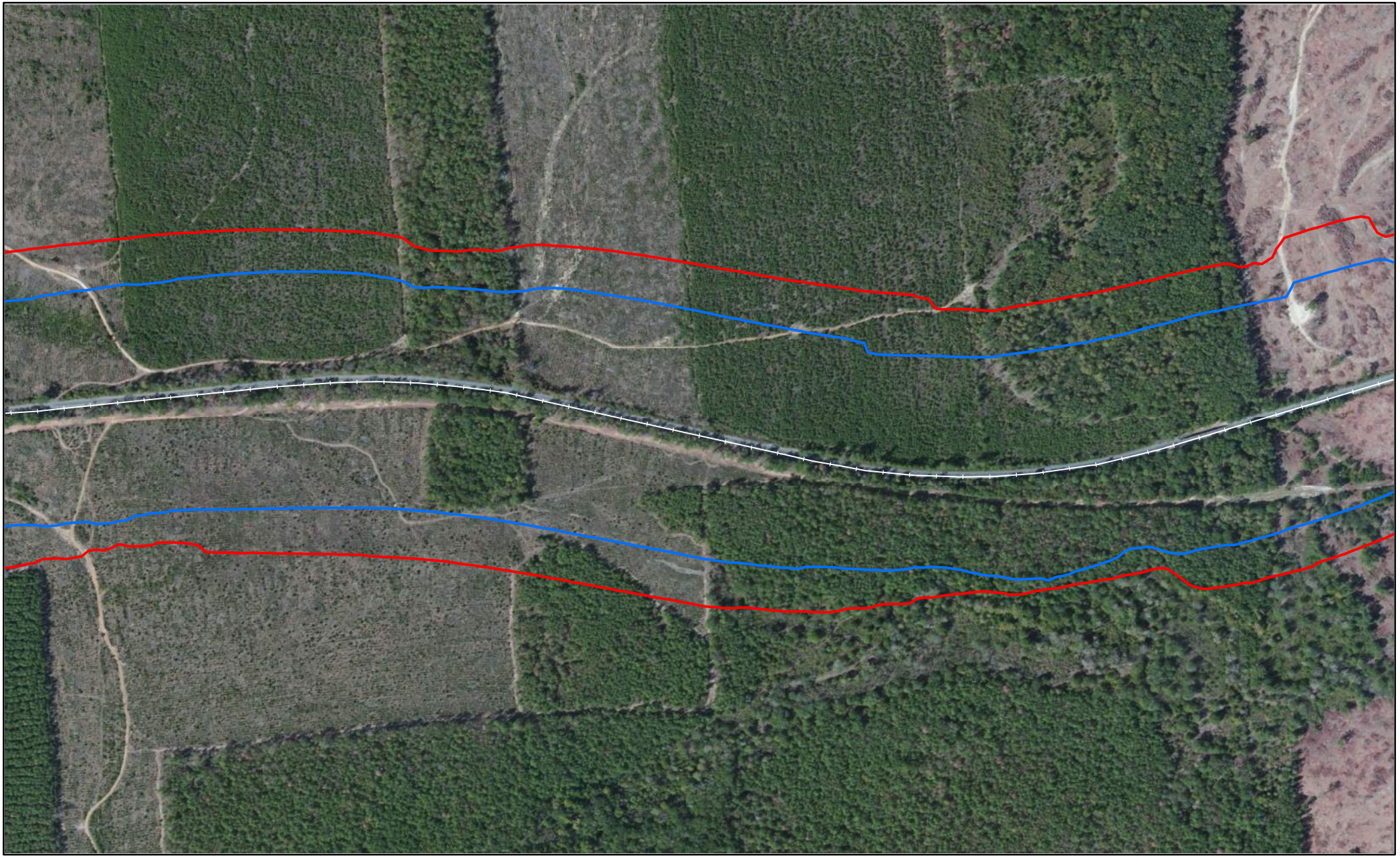
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Source: ESRI.



Noise Contours
Cass County, TX

Miles
0 0.05 0.1



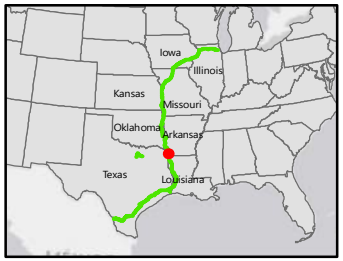
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Tracks

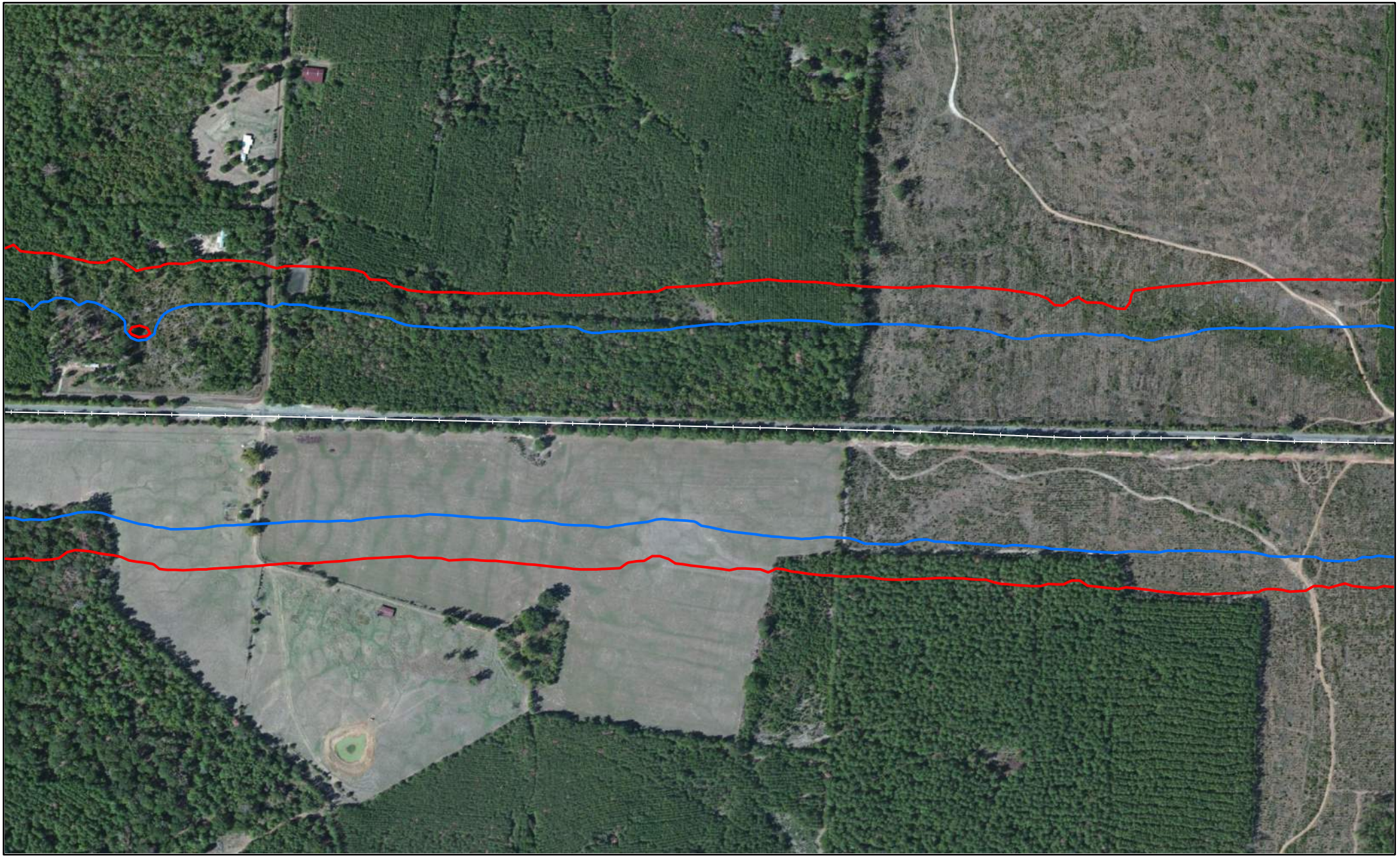
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Noise Contours
Cass County, TX

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Miles
0 0.05 0.1



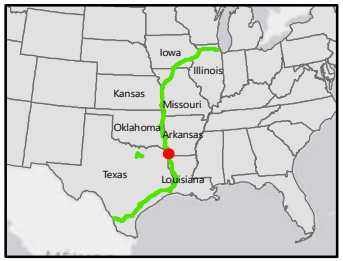
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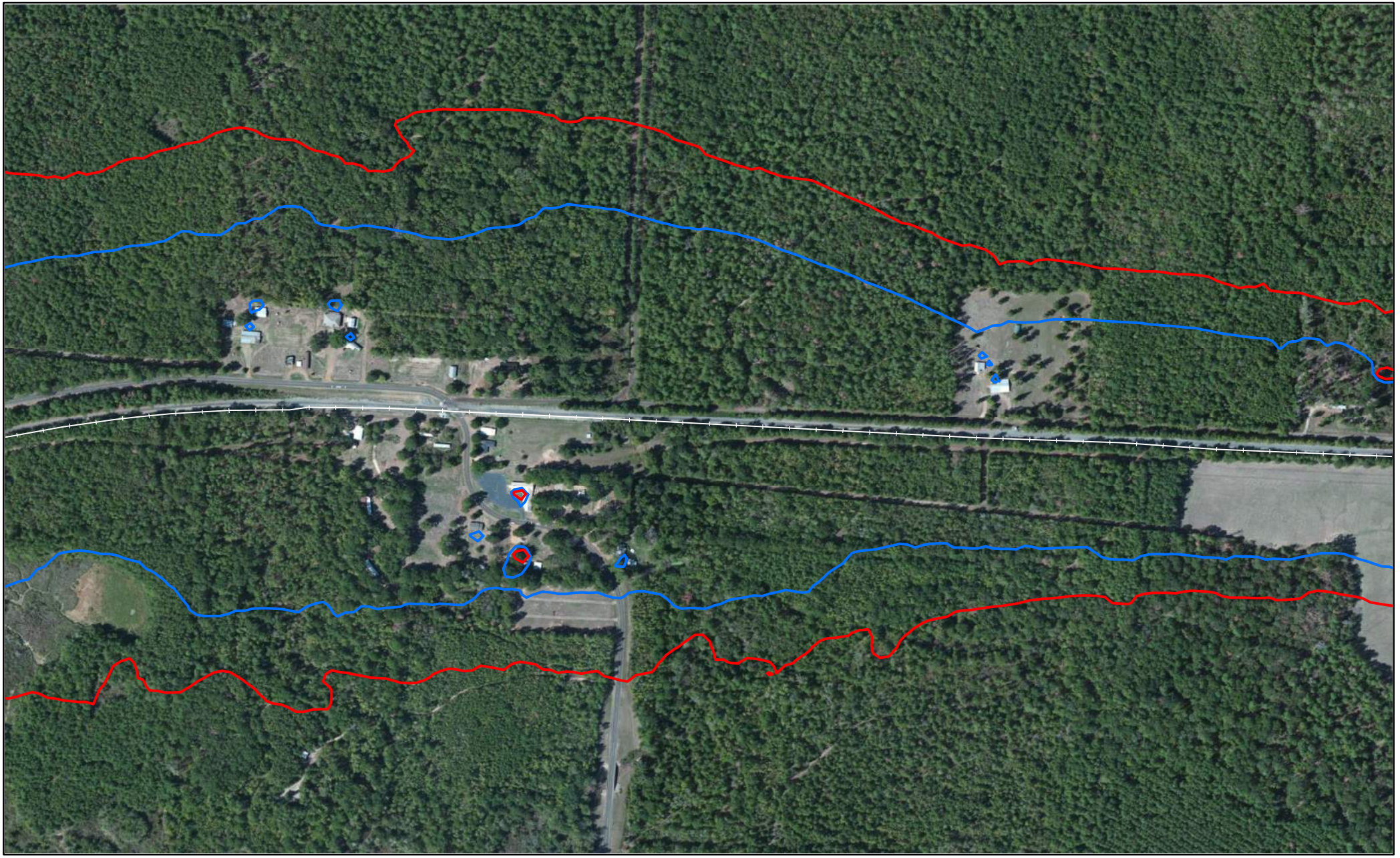
Tracks

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Noise Contours
Cass County, TX

Miles
0 0.05 0.1



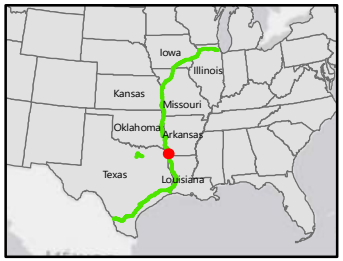
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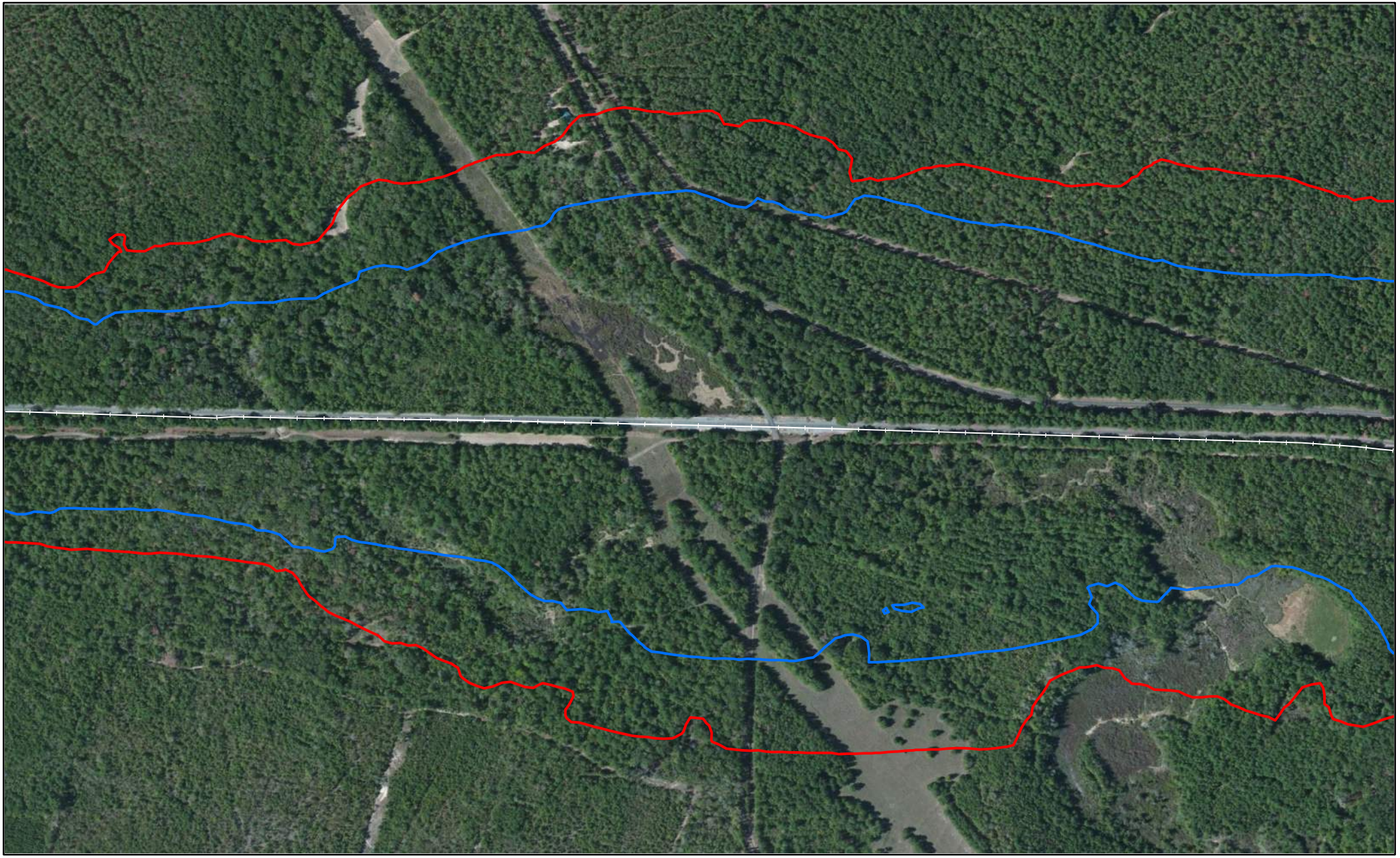


Noise Contours
Cass County, TX

Page 973 of 1588

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



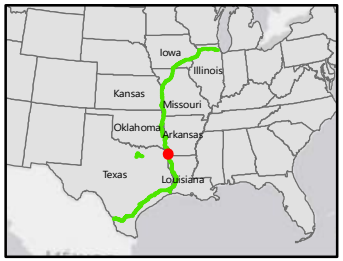
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Proposed Acquisition Noise (65 Ldn)

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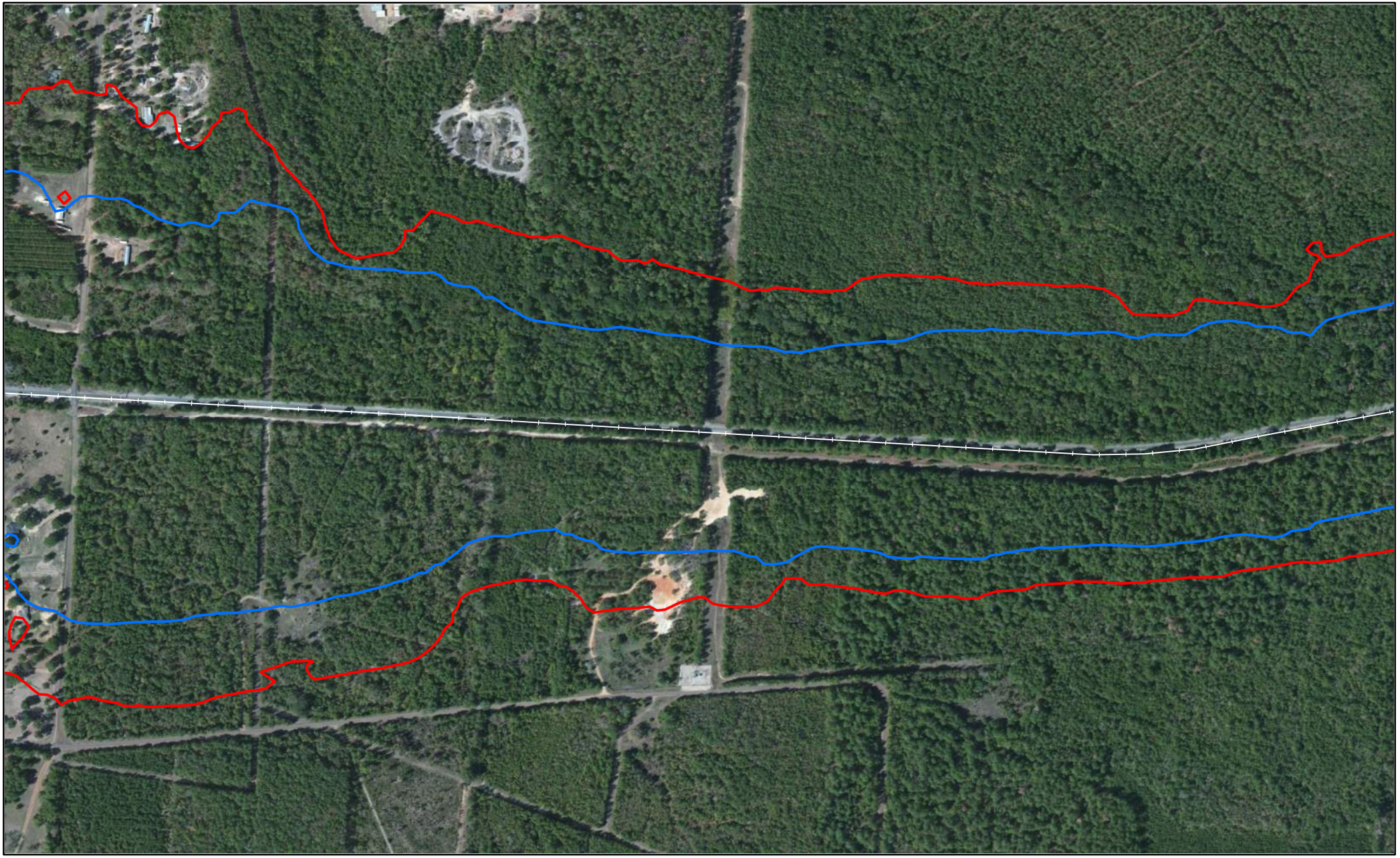
Tracks

Source: ESRI.



Noise Contours
Cass County, TX

Miles
0 0.05 0.1



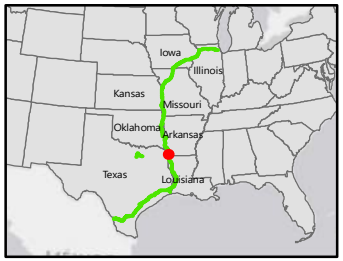
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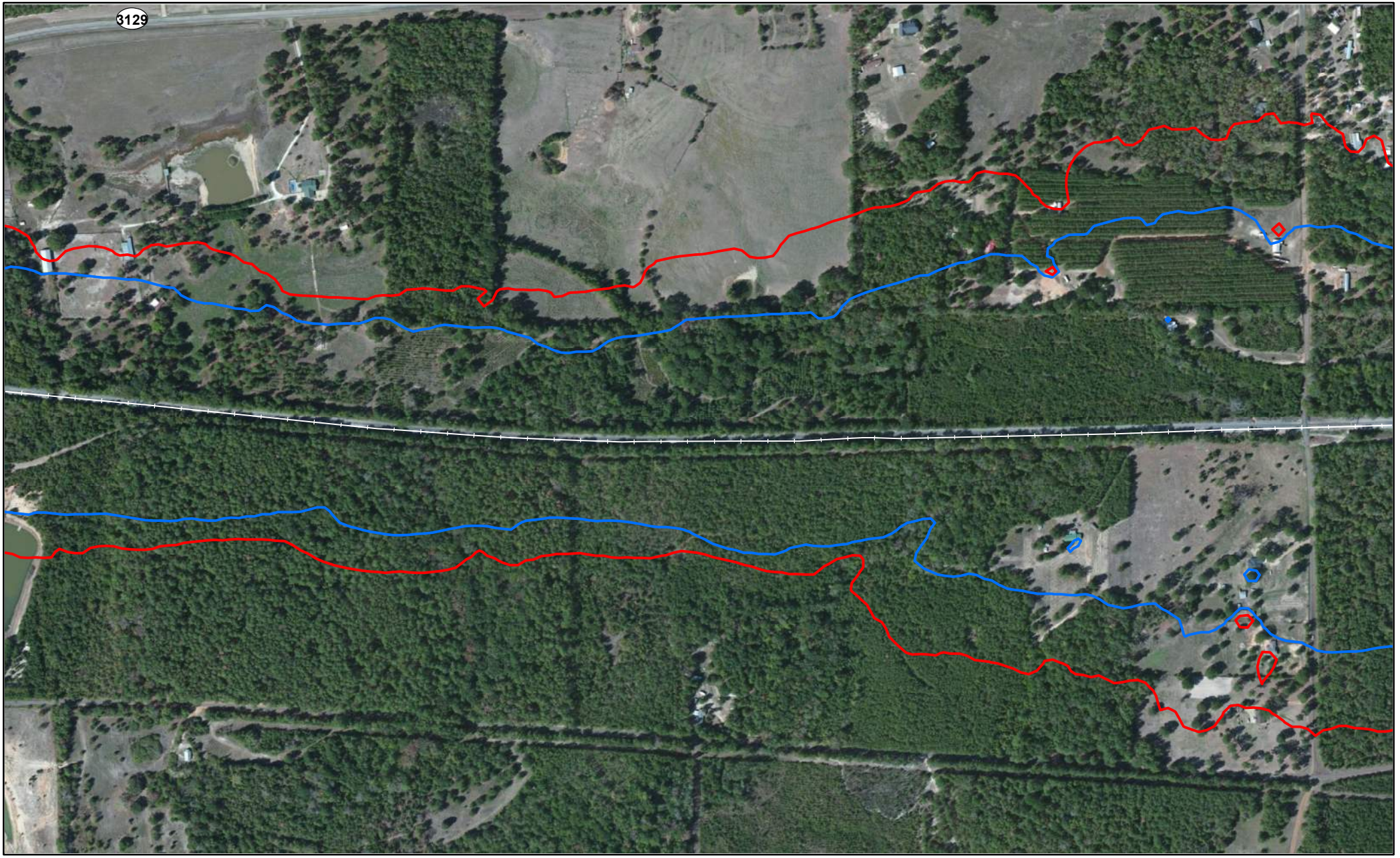
Tracks

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Noise Contours
Cass County, TX

Miles
0 0.05 0.1



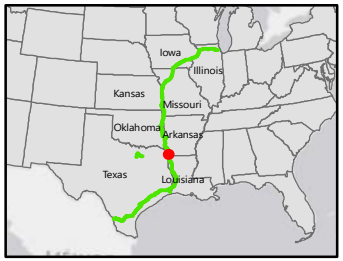
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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

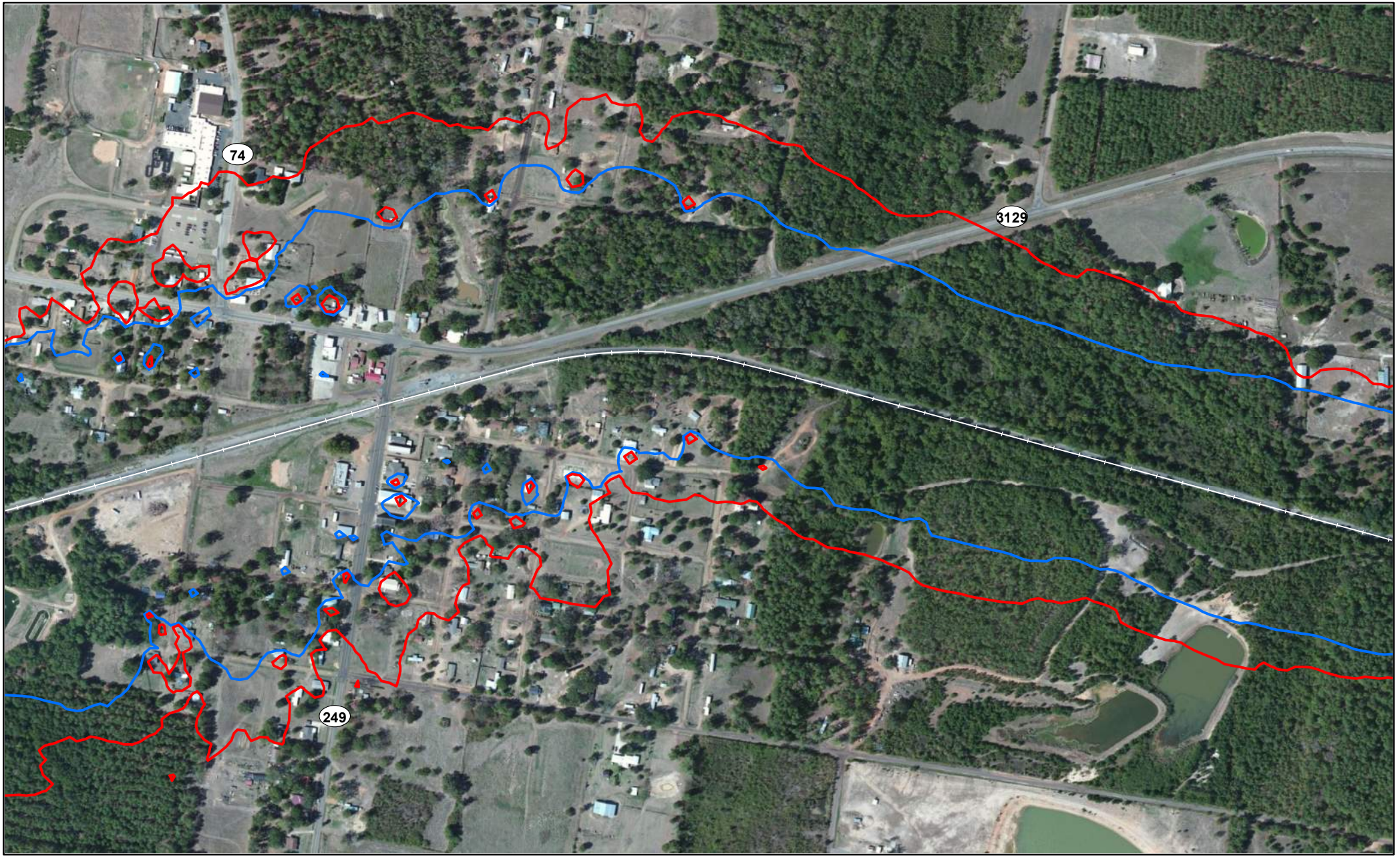
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Noise Contours
Cass County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



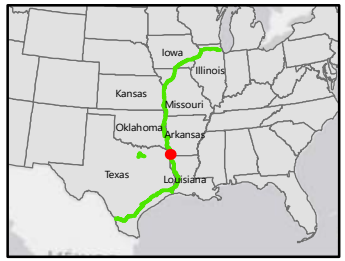
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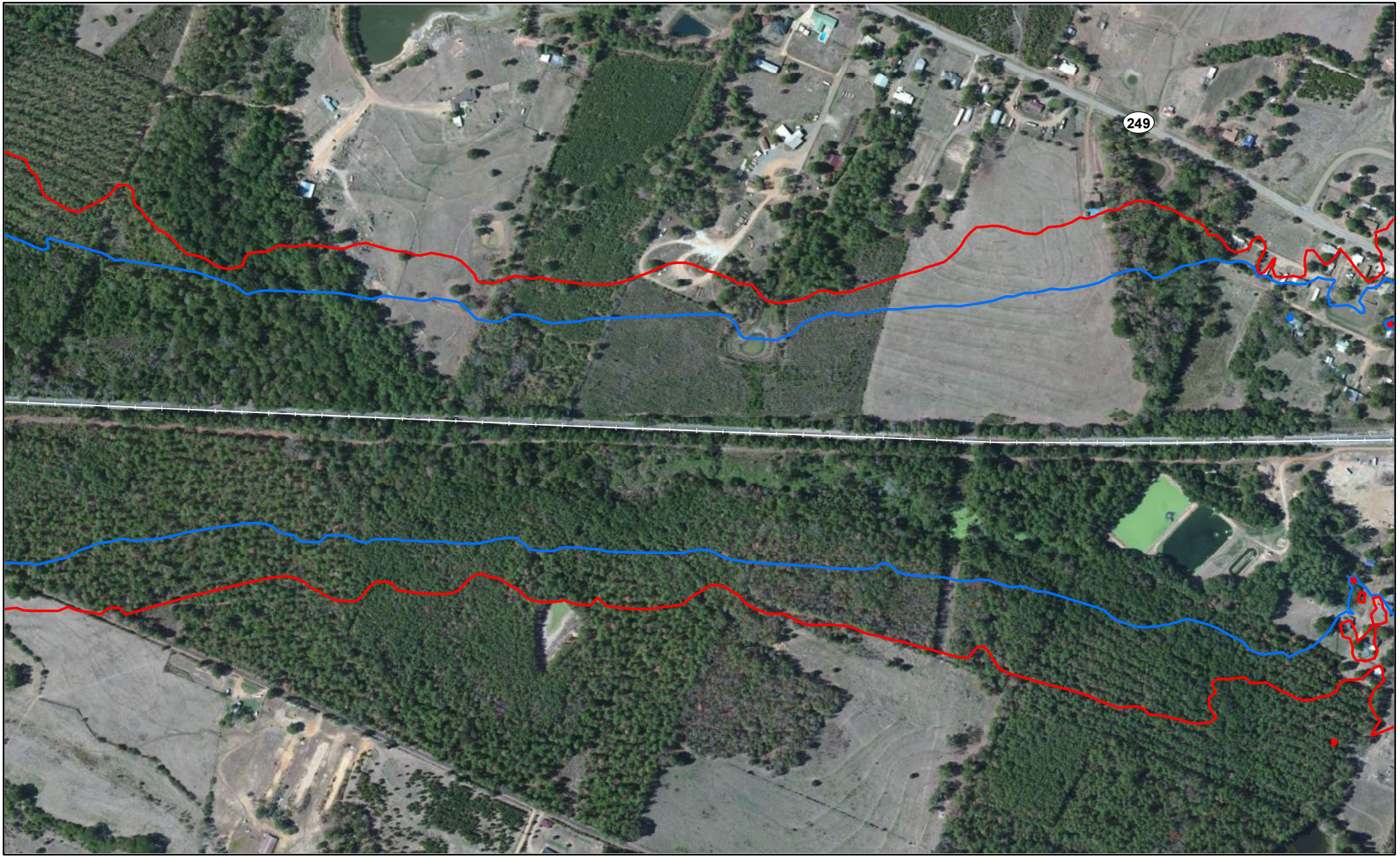
Tracks

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Noise Contours
Cass County, TX

Miles
0 0.05 0.1



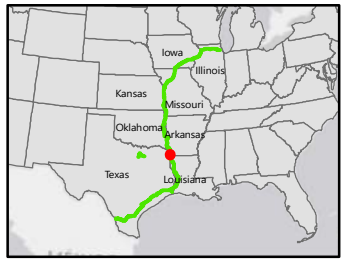
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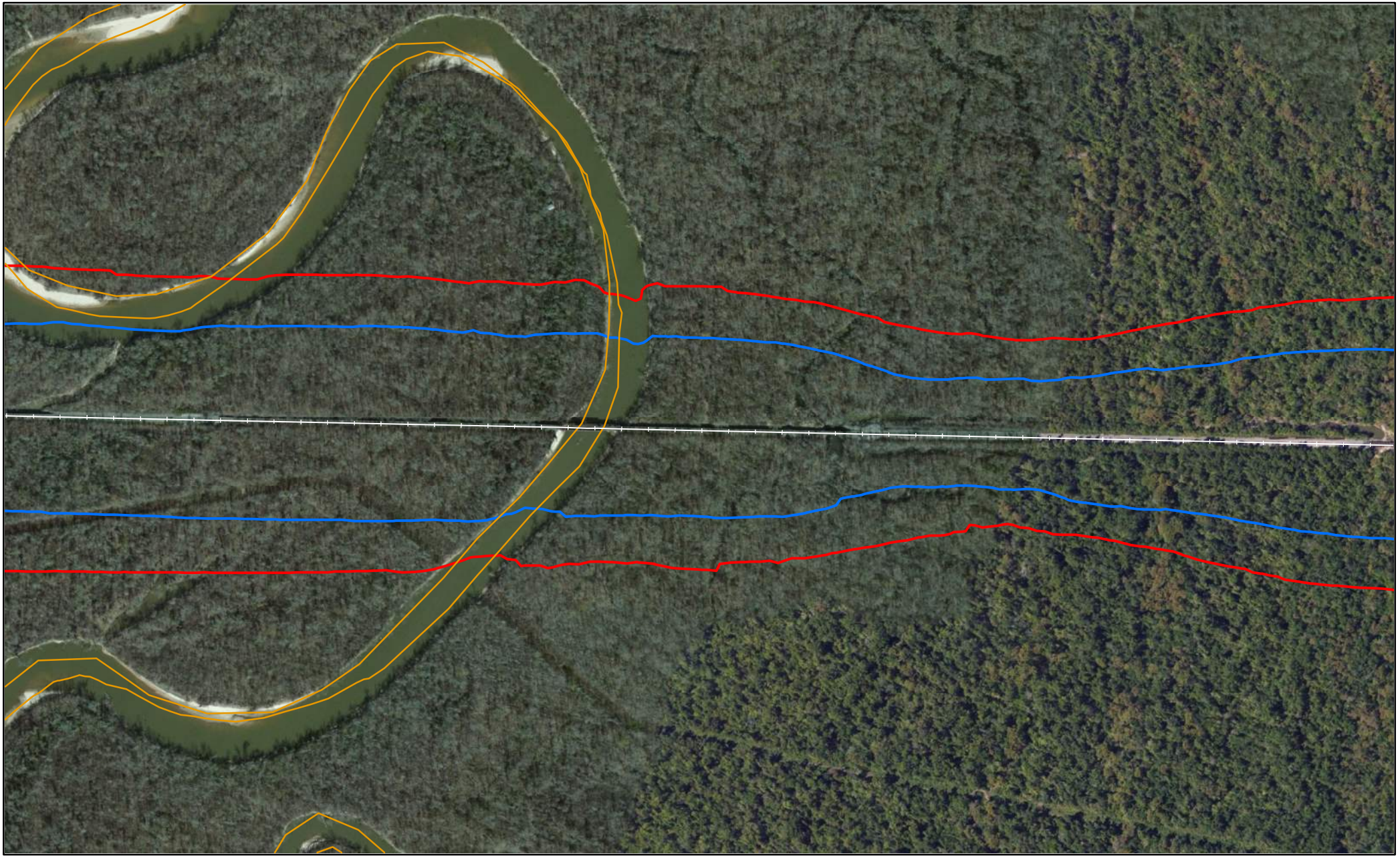
Tracks

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Noise Contours
Cass County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

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Noise Impact (65 Ldn and 3 dBA Increase)

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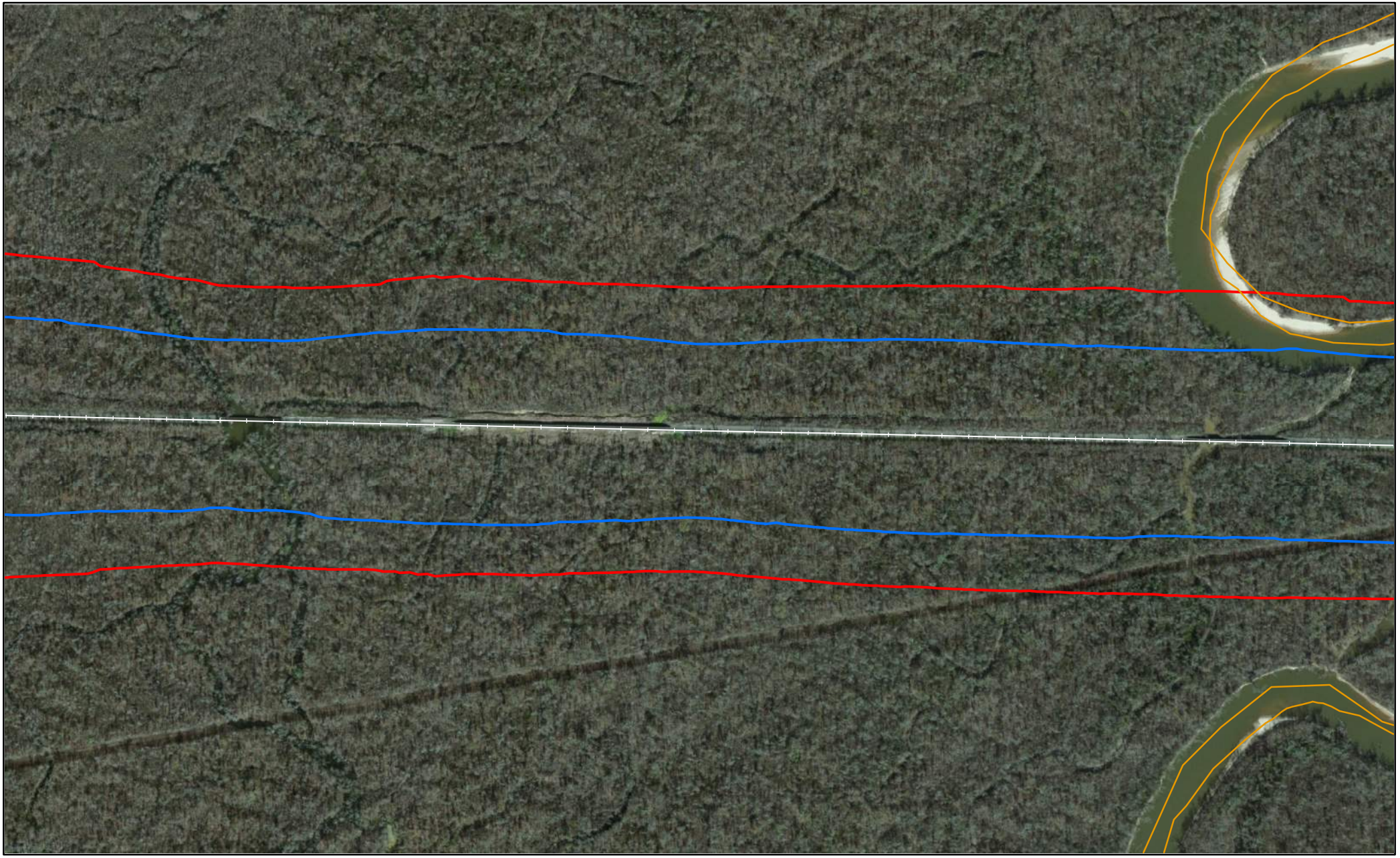
Source: ESRI.



Noise Contours
Calcasieu Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

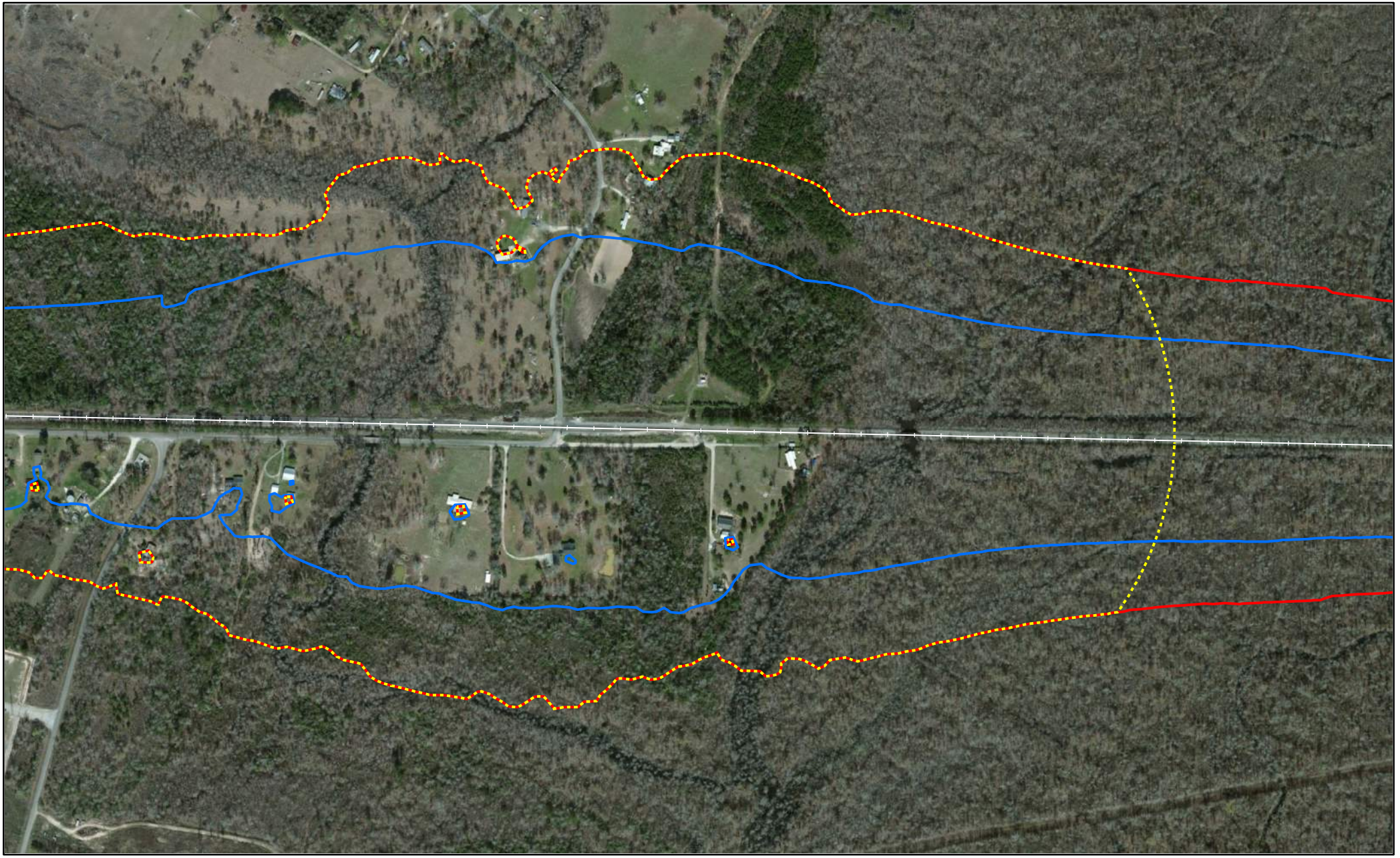
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Noise Contours
Calcasieu Parish, LA

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Newton County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

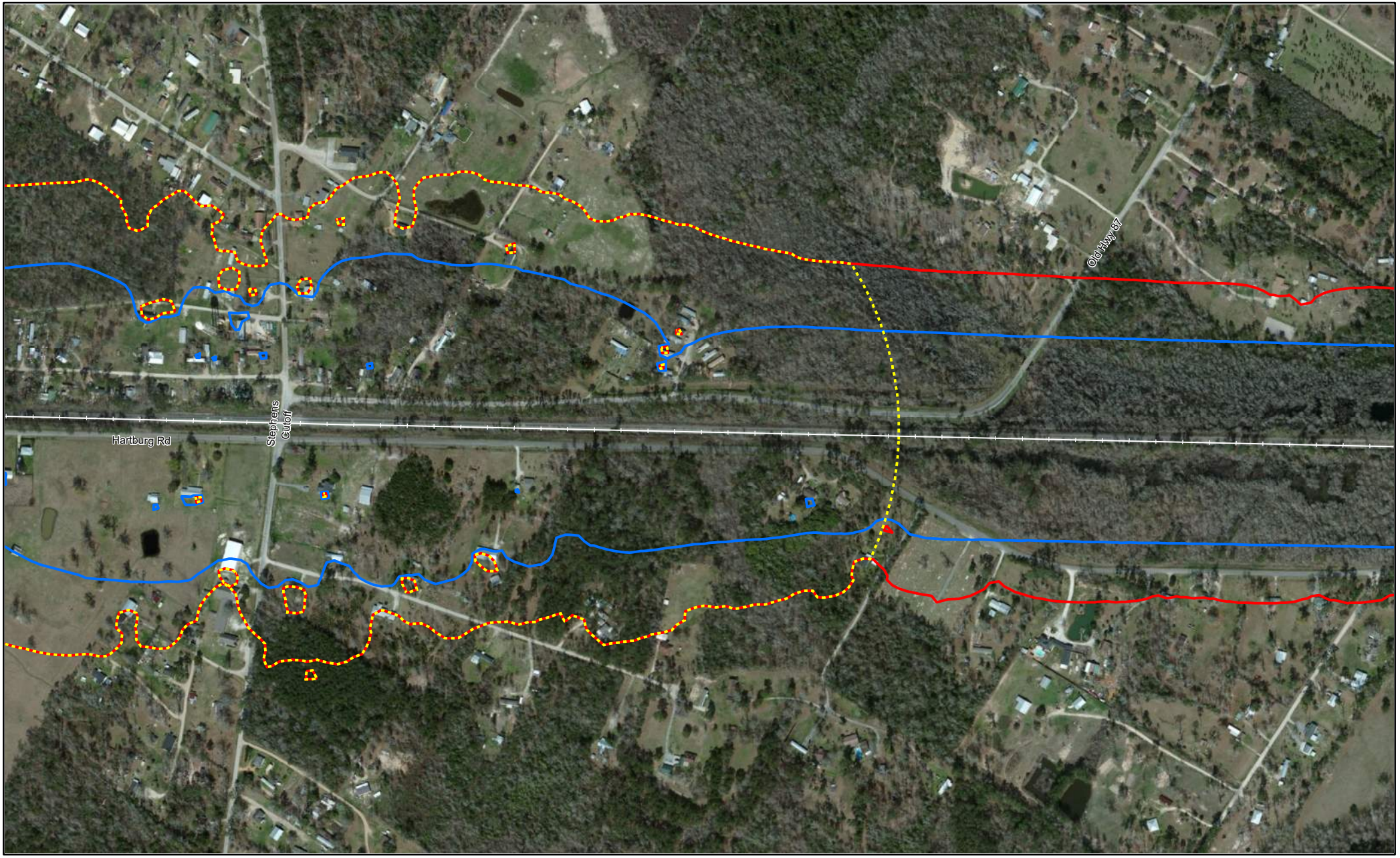
Tracks

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Noise Contours
Newton County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

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Noise Impact (65 Ldn and 3 dBA Increase)

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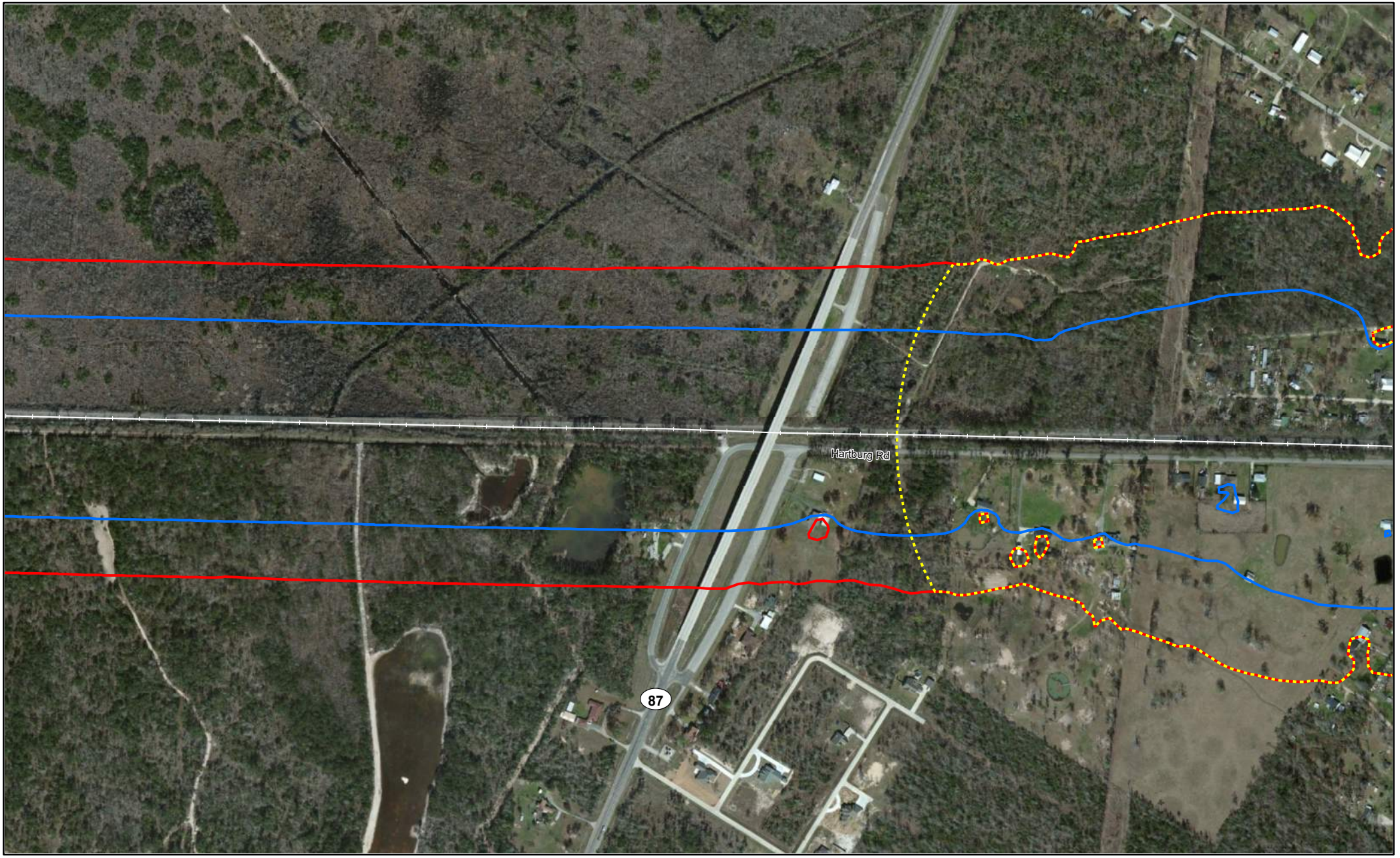
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Noise Contours
Newton County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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Noise Contours
Newton County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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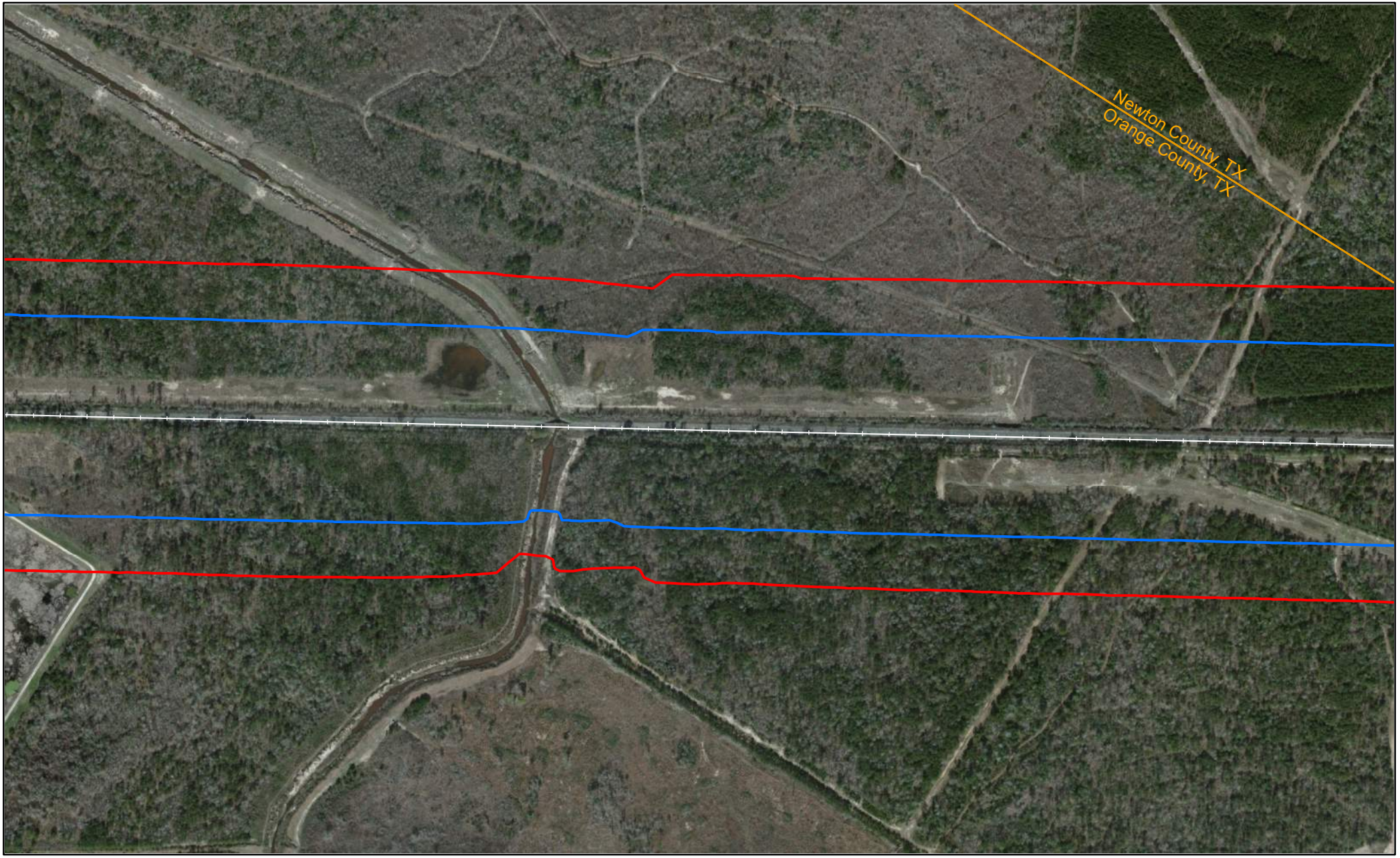
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Noise Contours
Orange County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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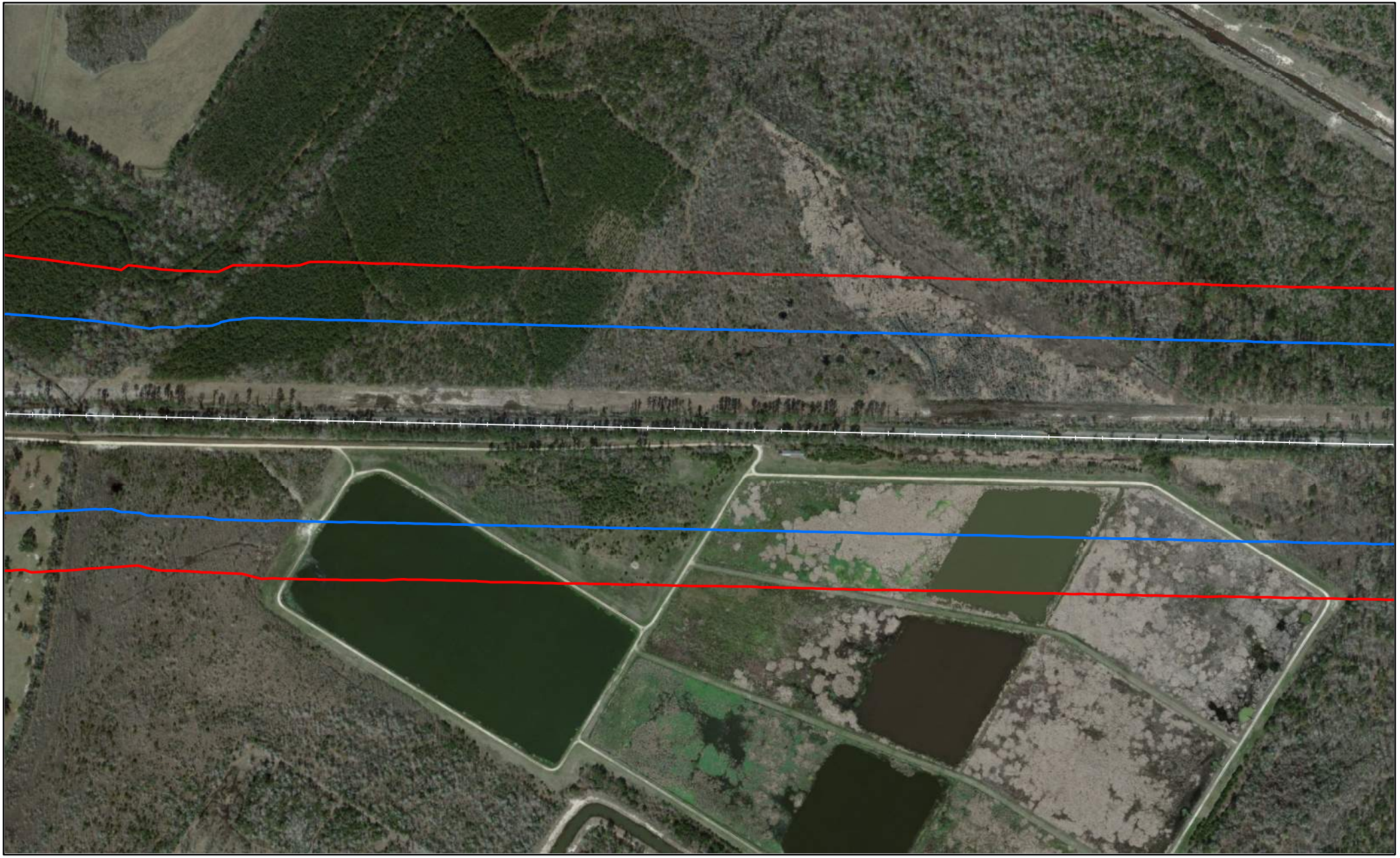
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Noise Contours
Orange County, TX

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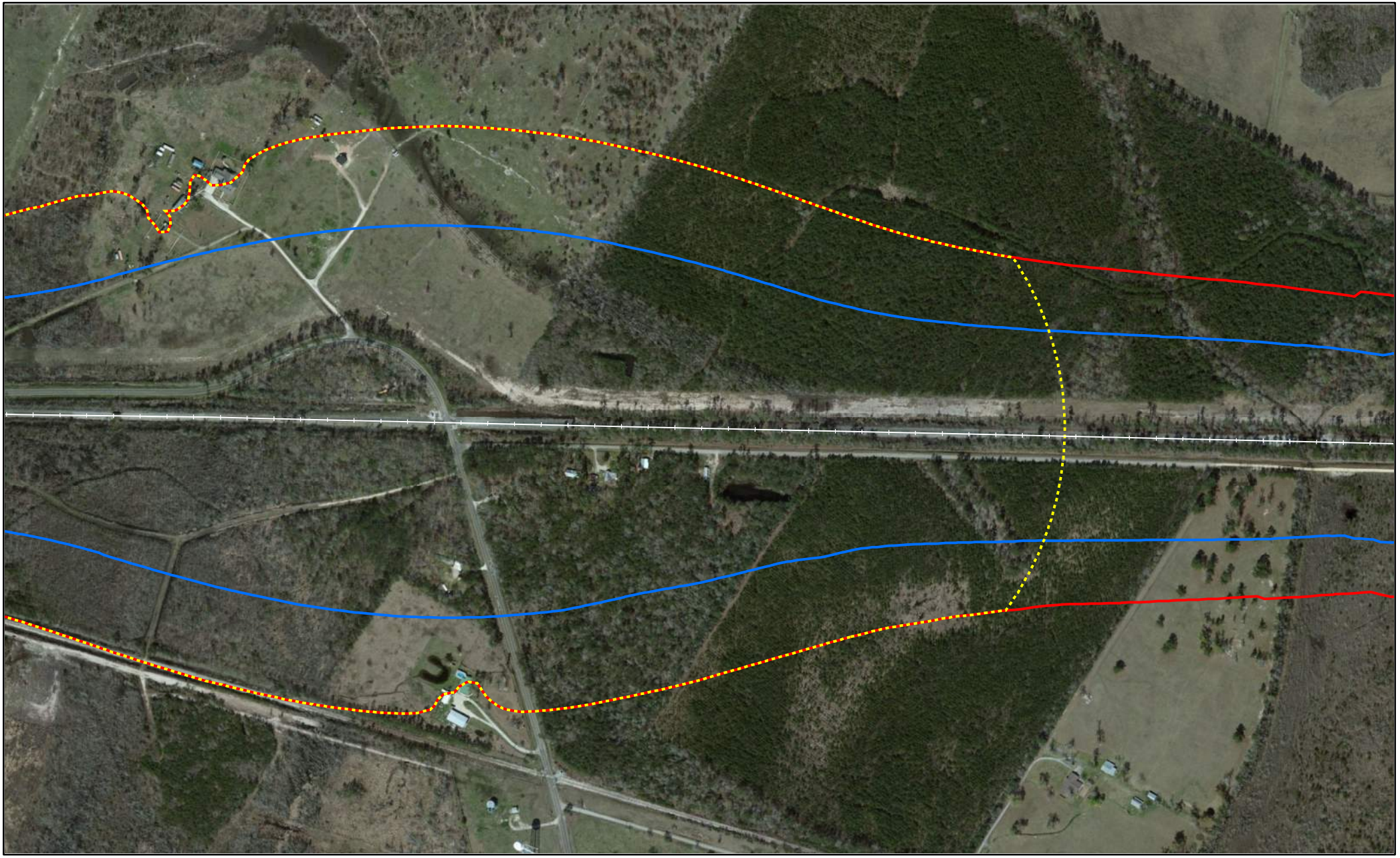
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Noise Contours
Orange County, TX

Miles
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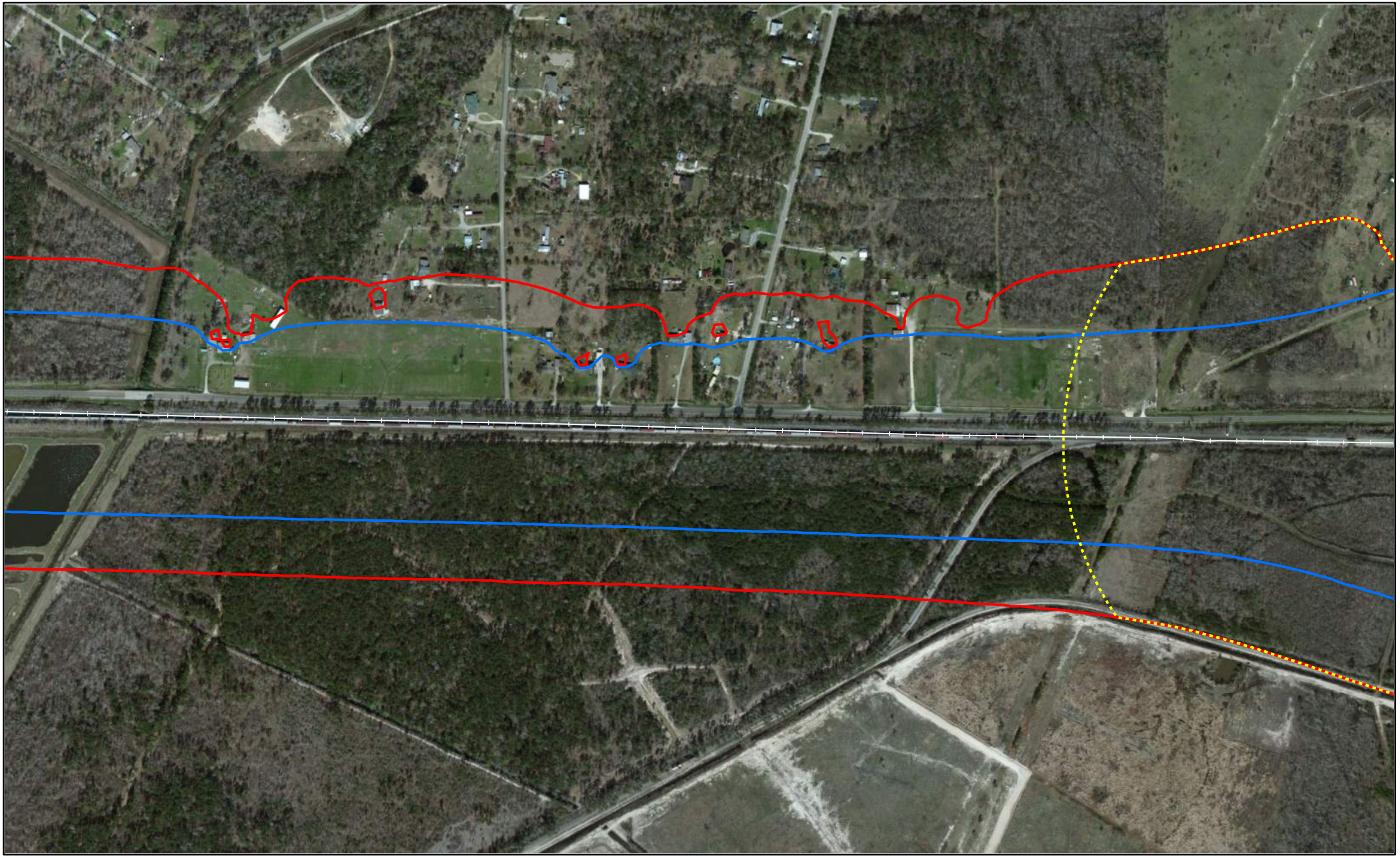
Tracks

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Noise Contours
Orange County, TX

Miles
0 0.05 0.1



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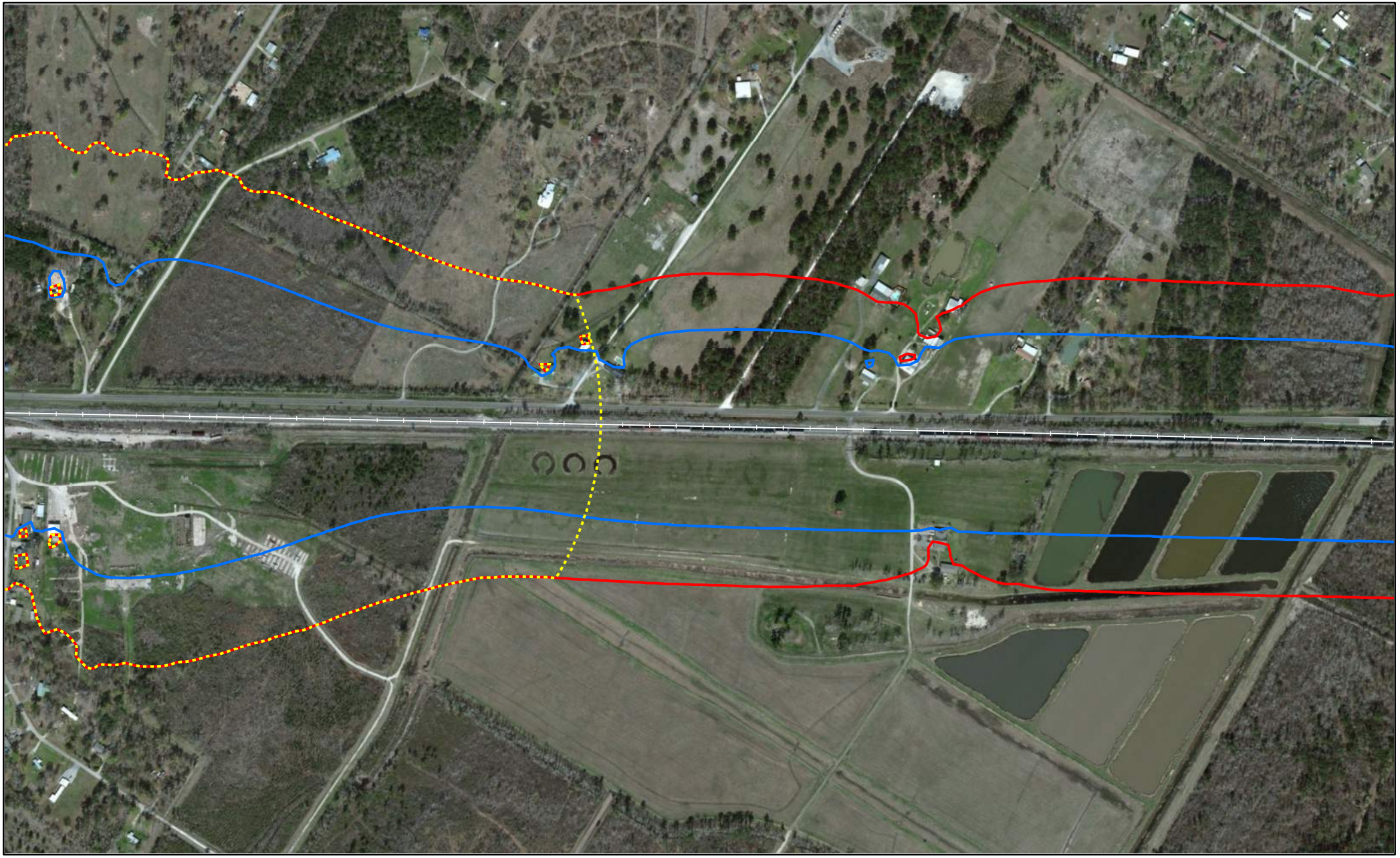
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Noise Contours
Orange County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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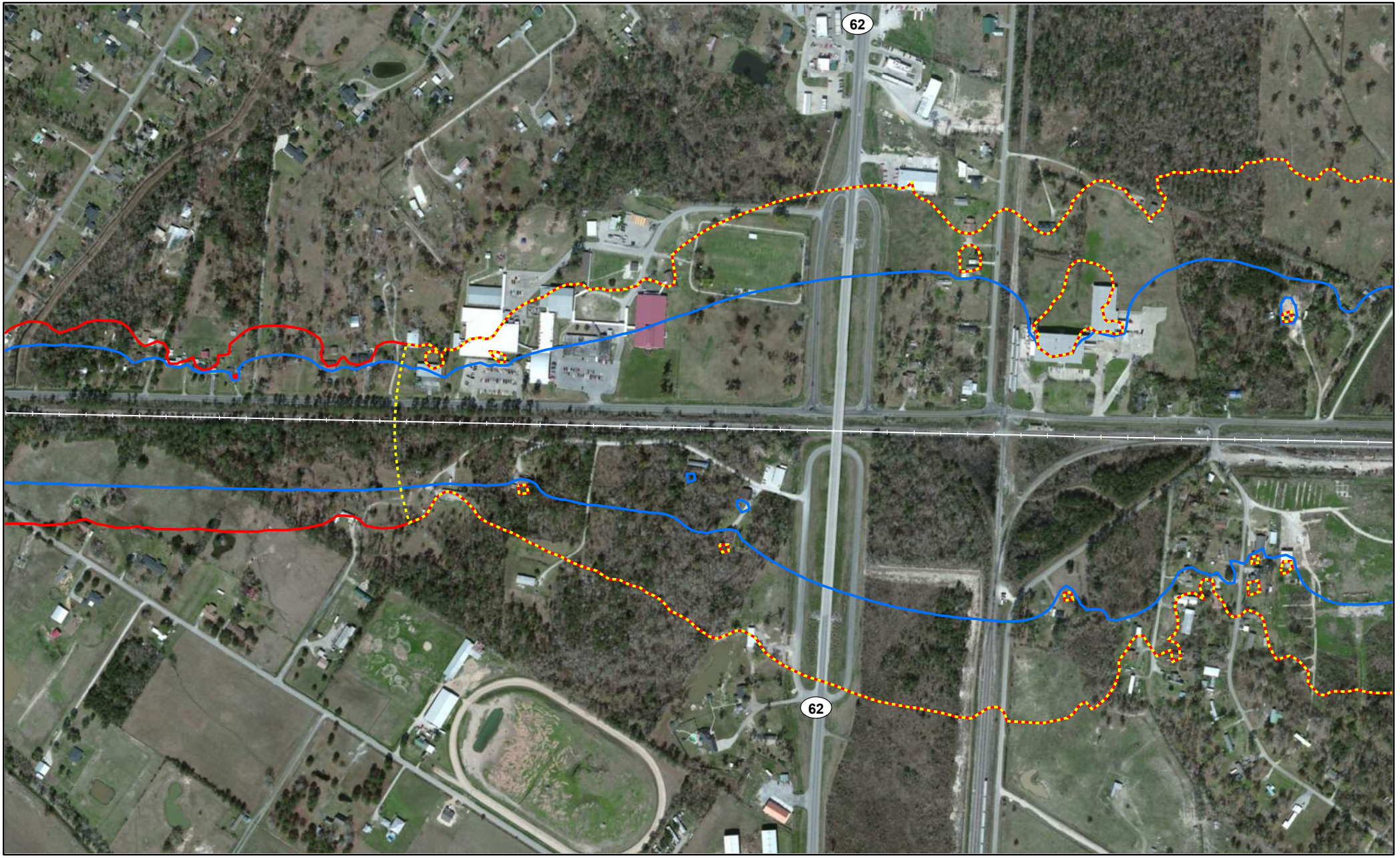
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Noise Contours
Orange County, TX

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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

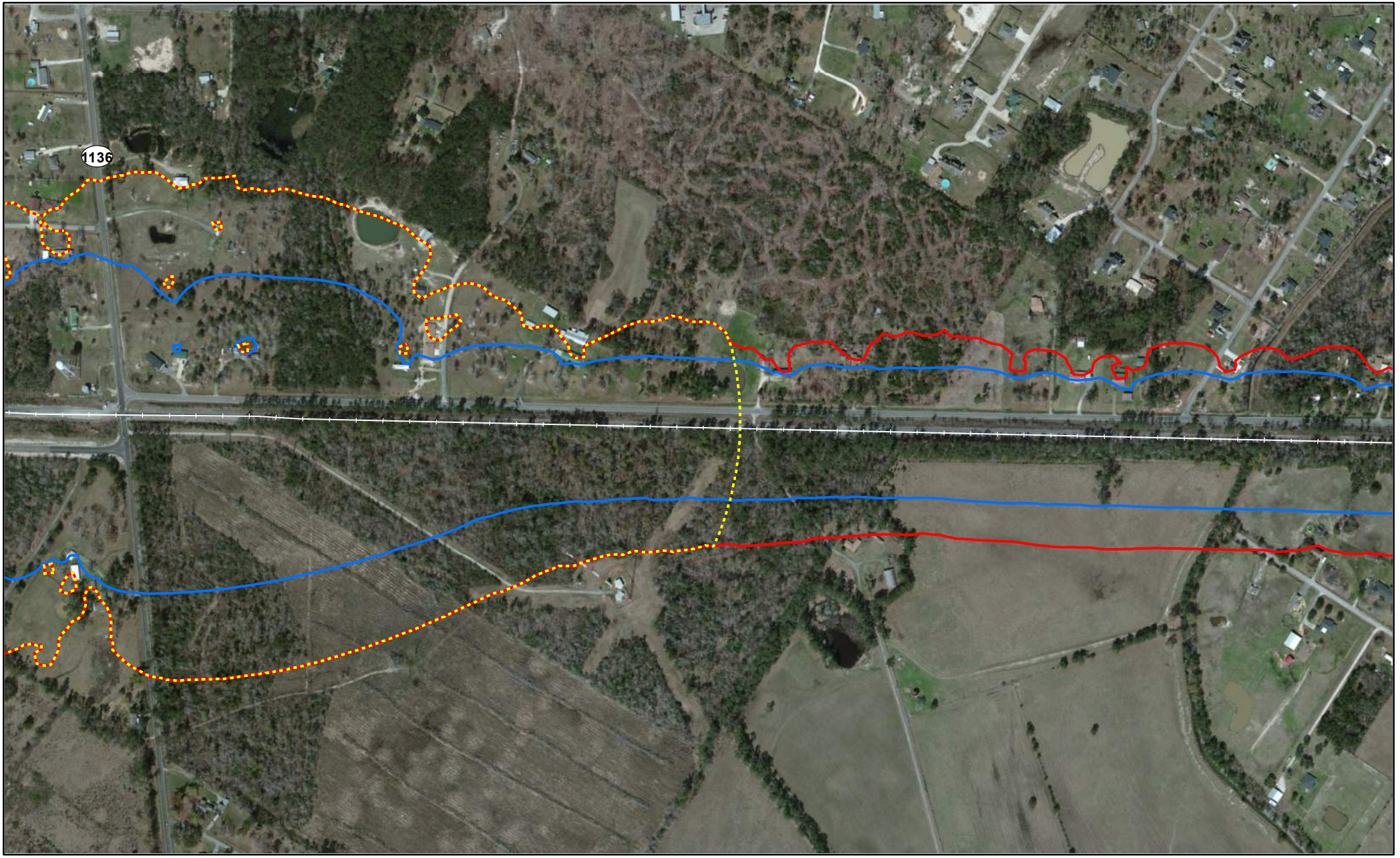
Source: ESRI.



Noise Contours
Orange County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

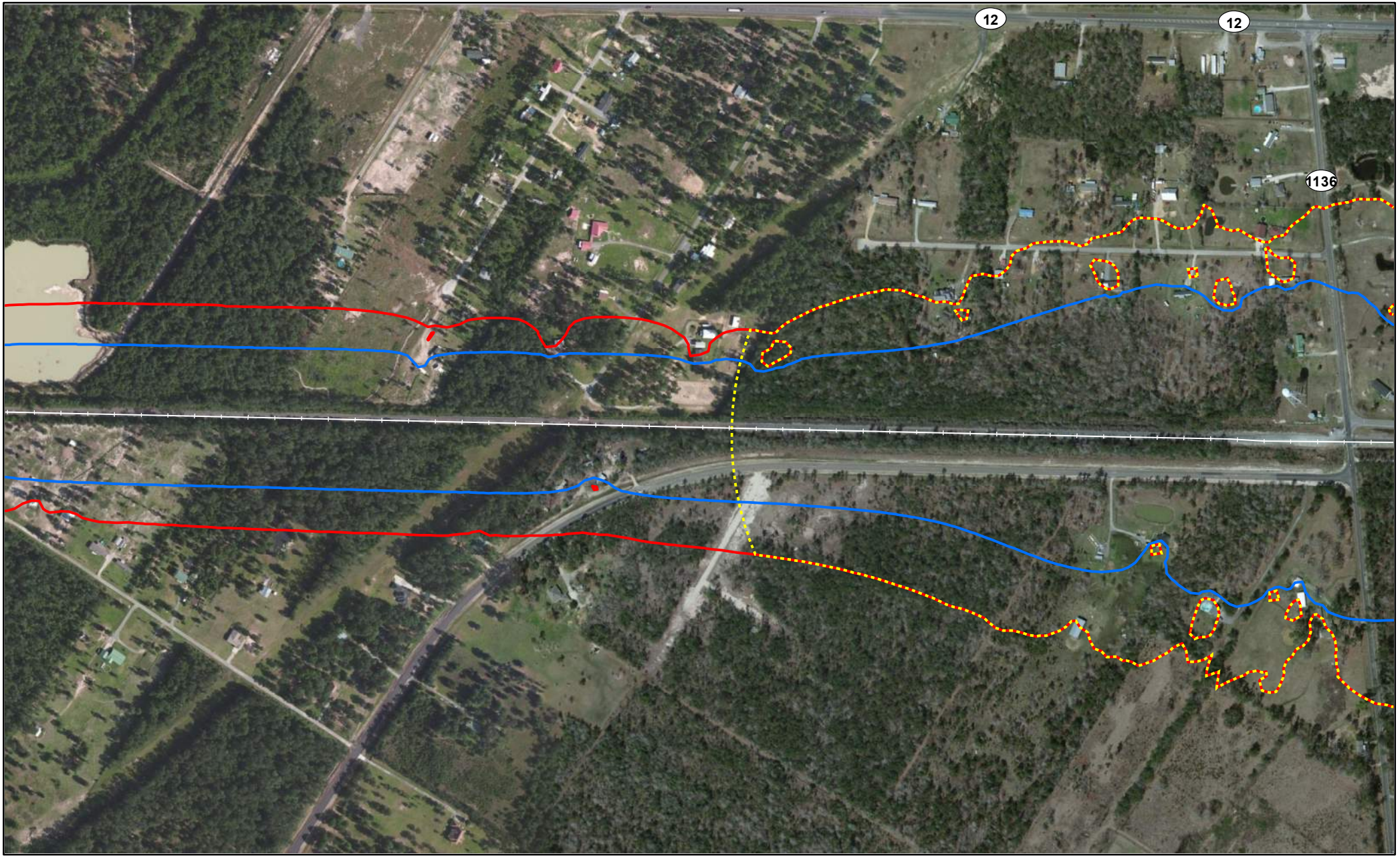
Tracks

Source: ESRI.



Noise Contours
Orange County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

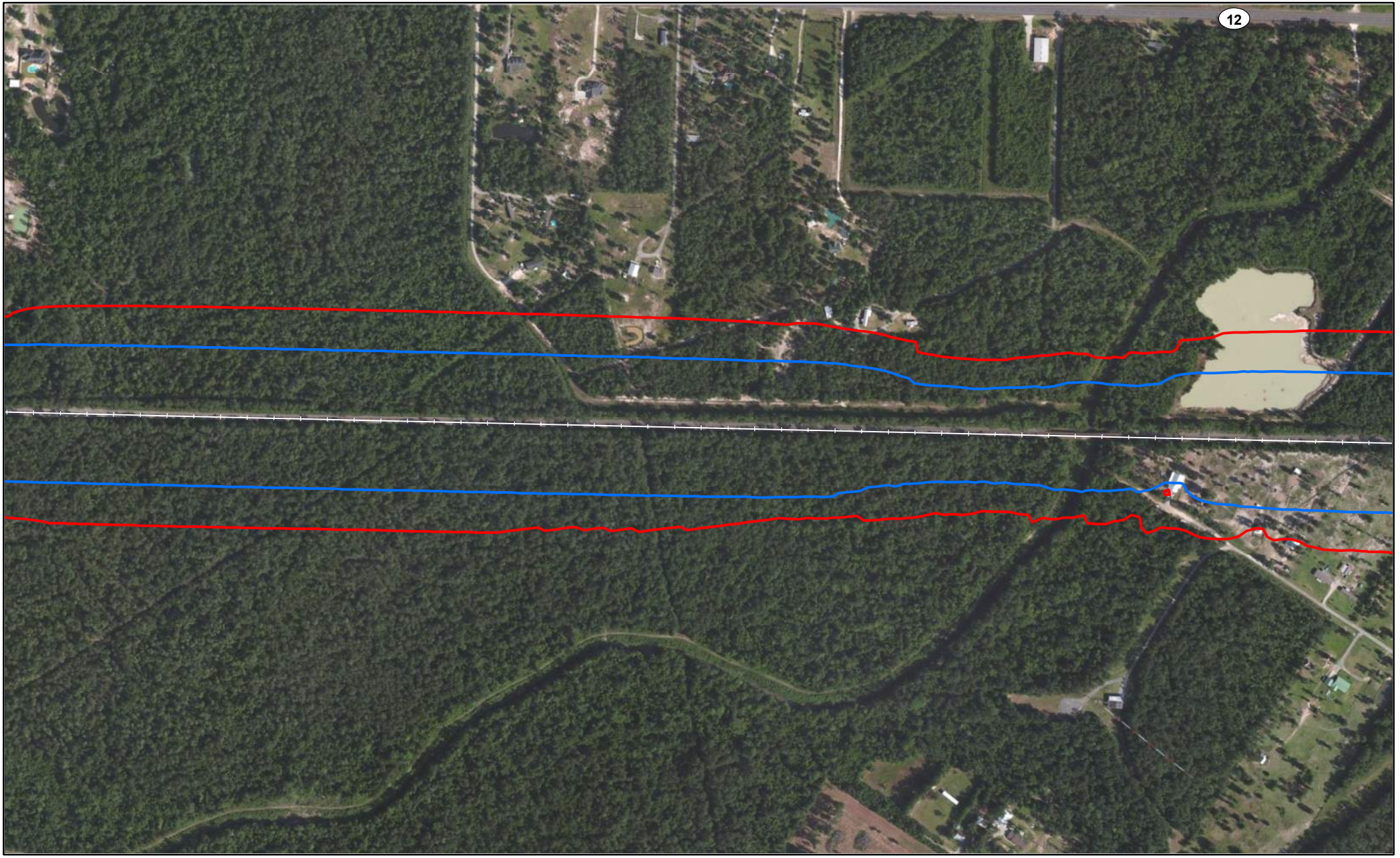
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Noise Contours
Orange County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

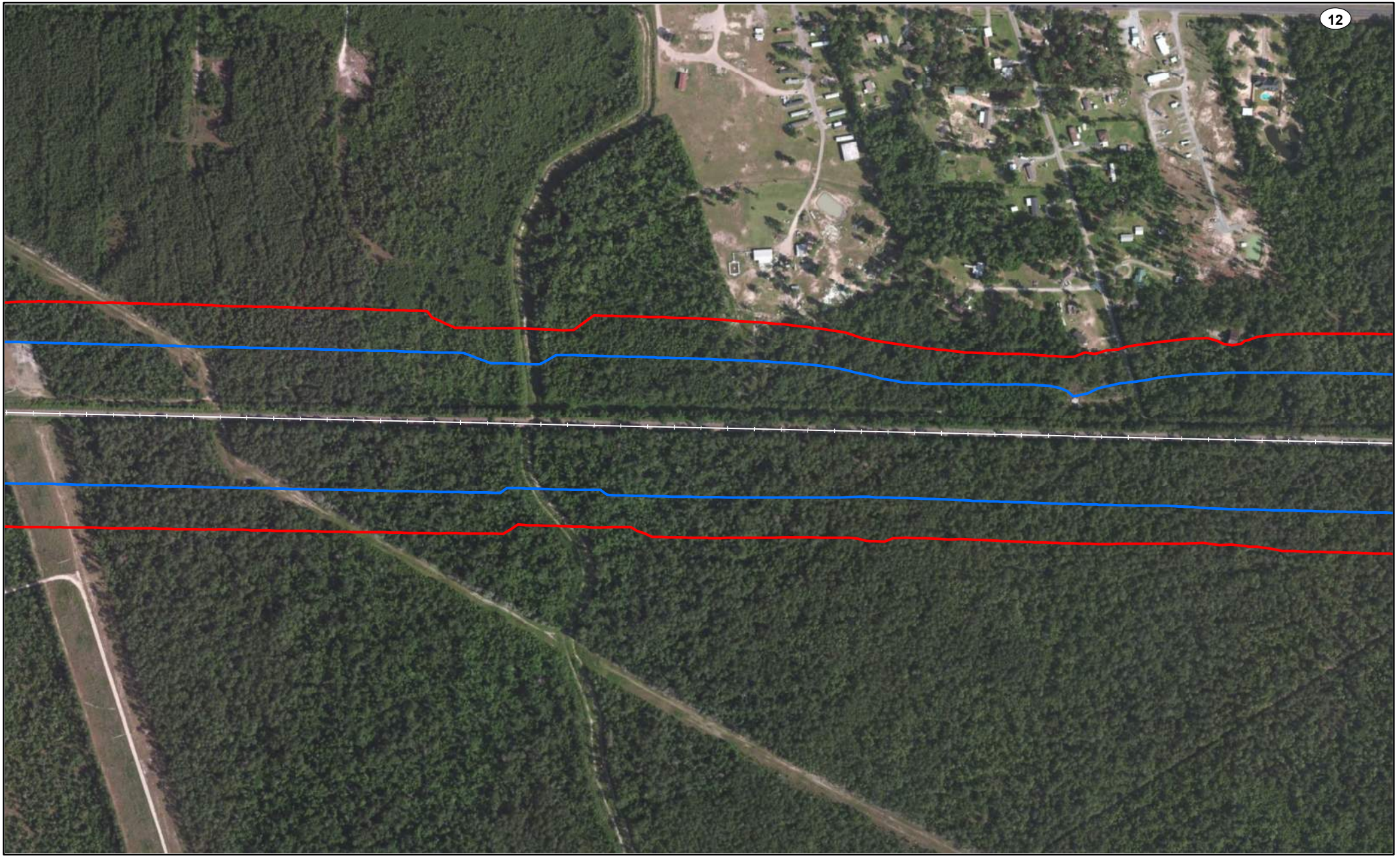
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Noise Contours
Orange County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

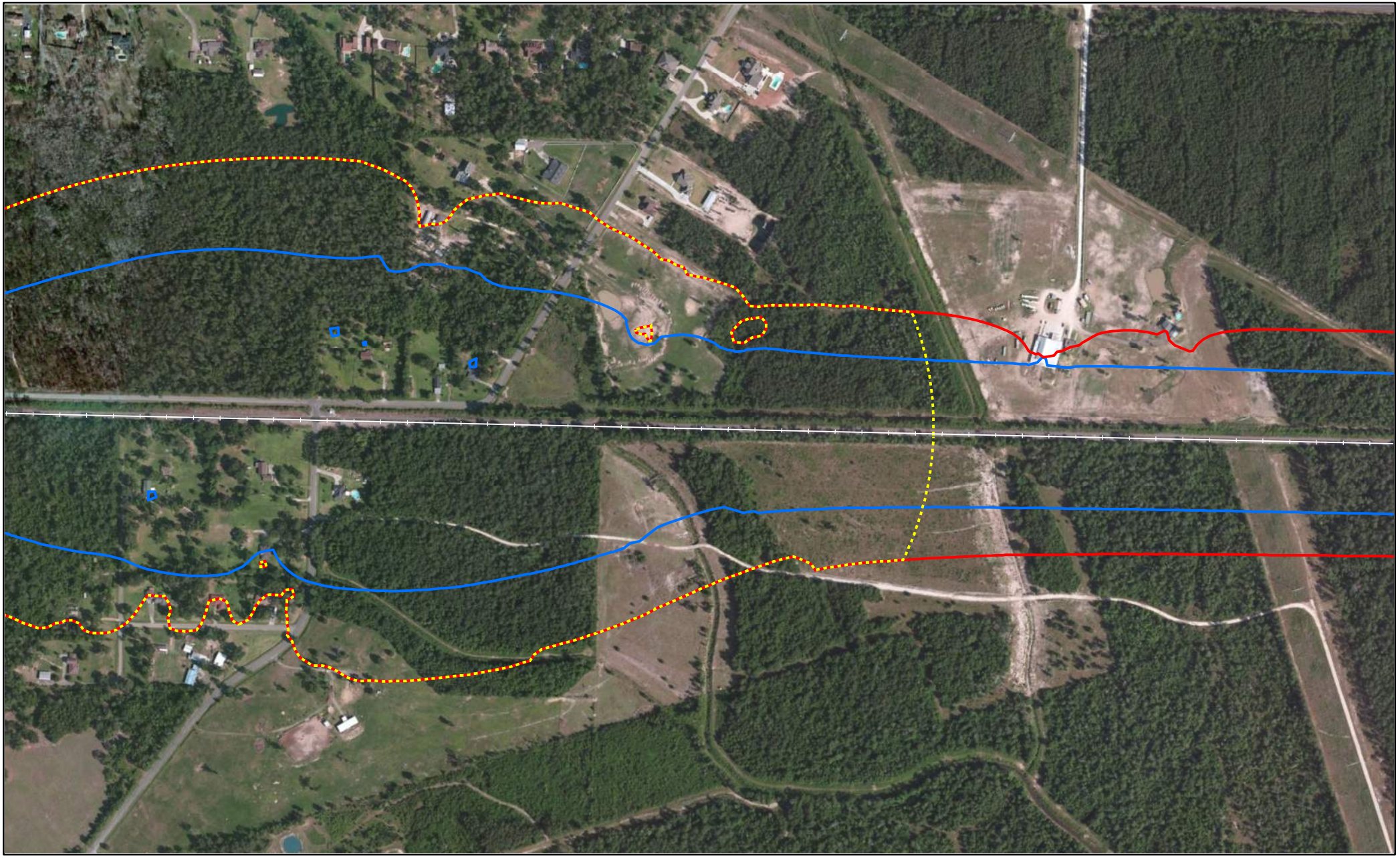
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Noise Contours
Orange County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



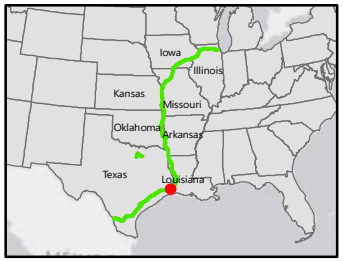
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

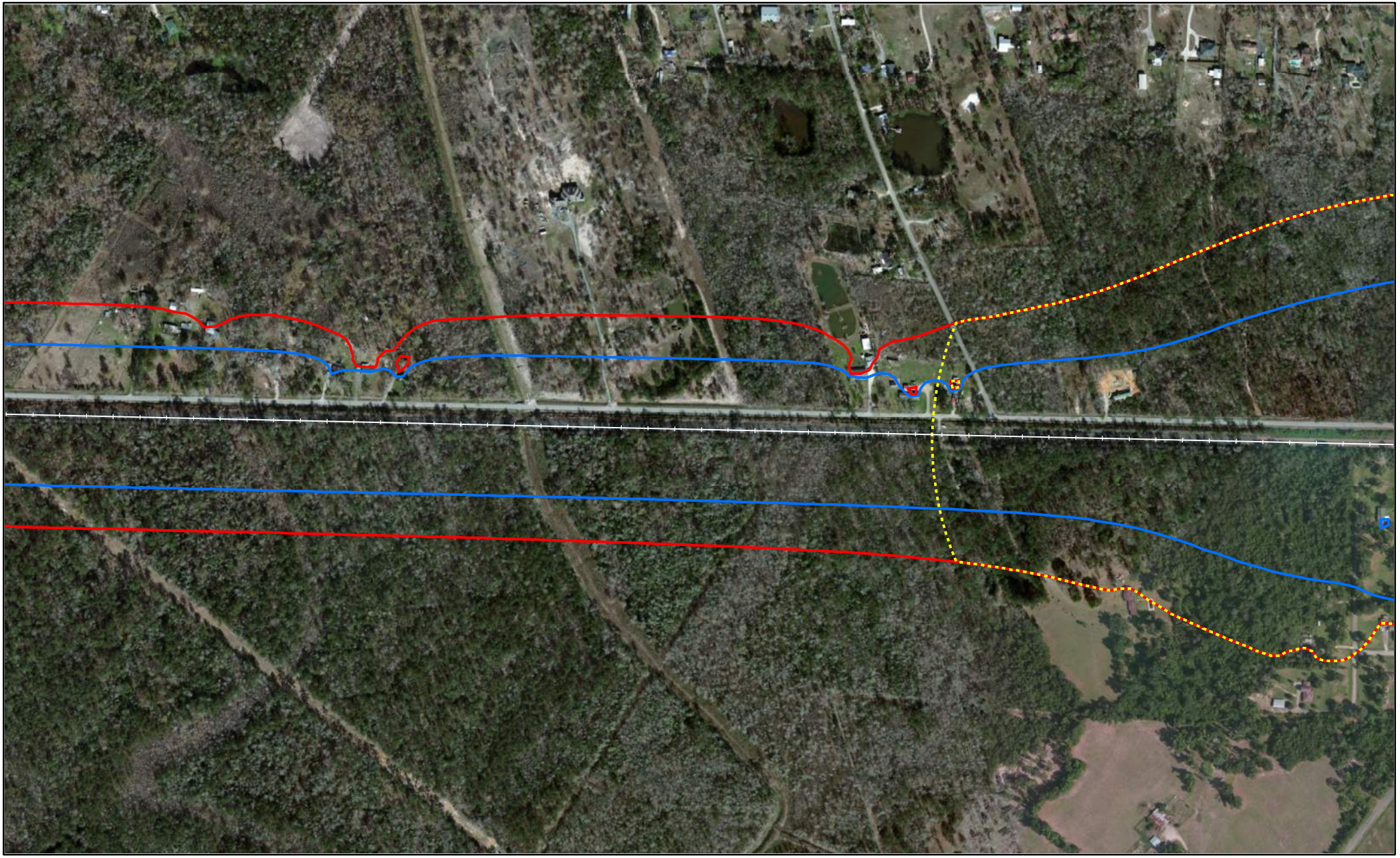
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Noise Contours
Orange County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

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Noise Impact (65 Ldn and 3 dBA Increase)

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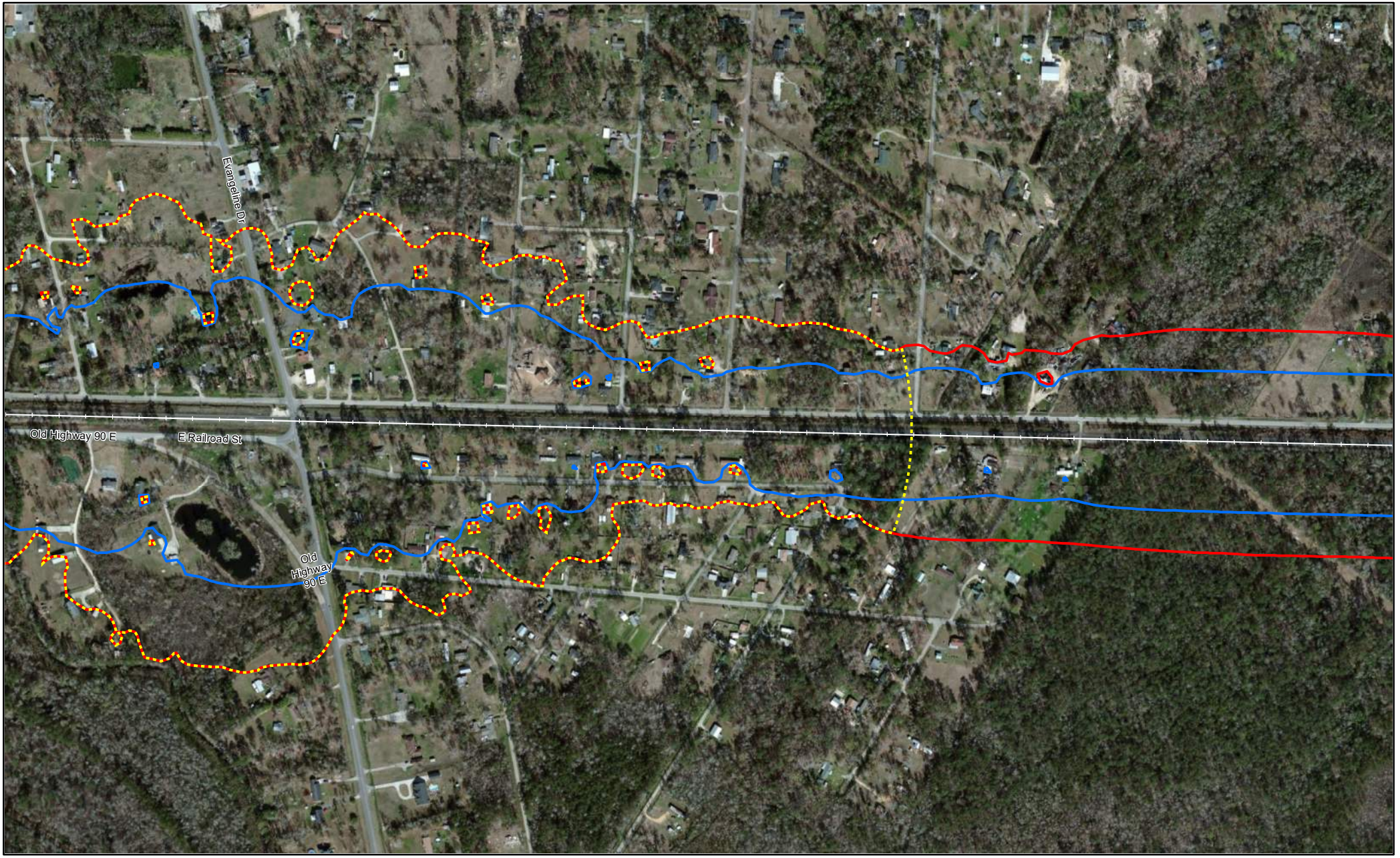
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Noise Contours
Orange County, TX

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

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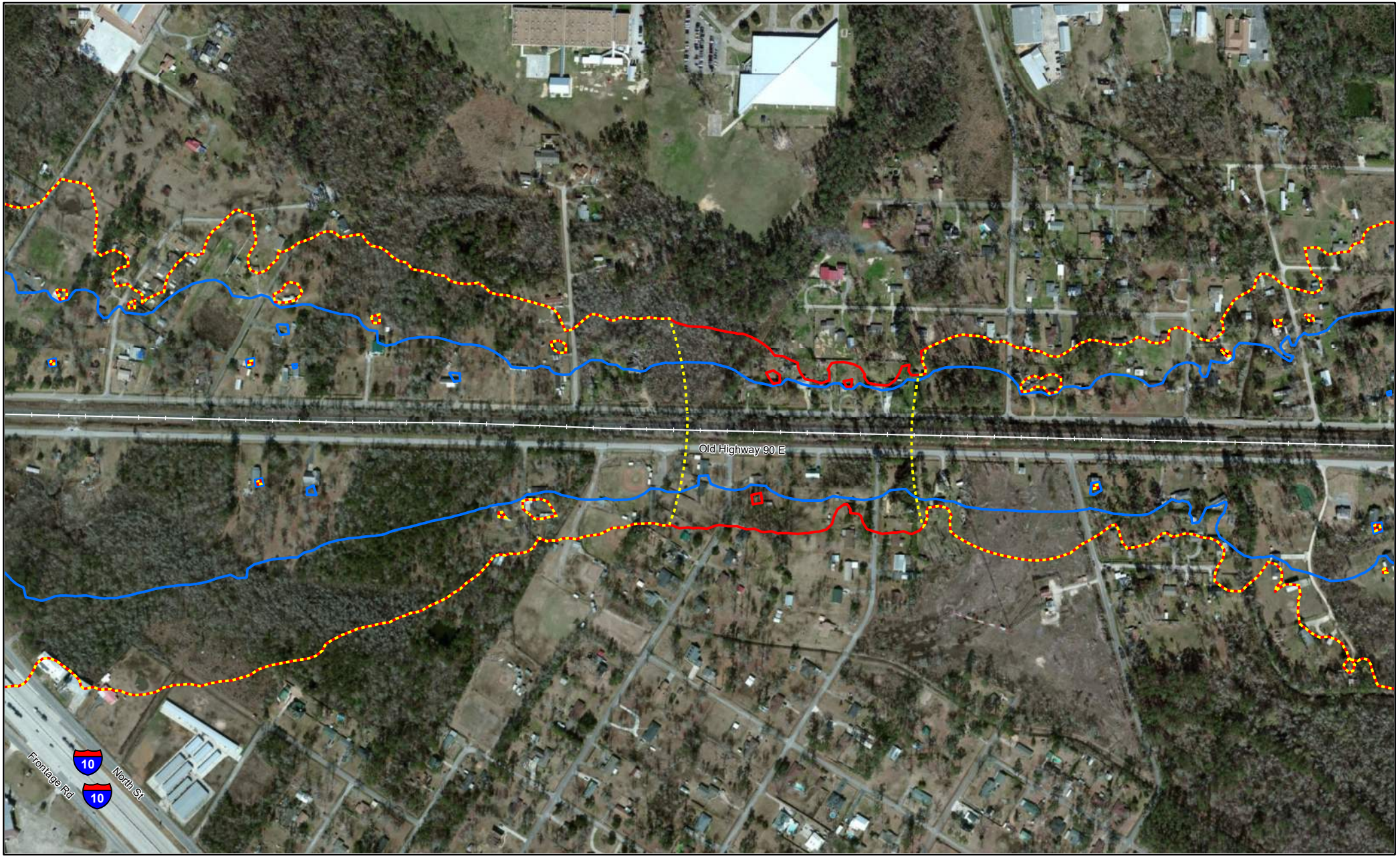
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Orange County, TX

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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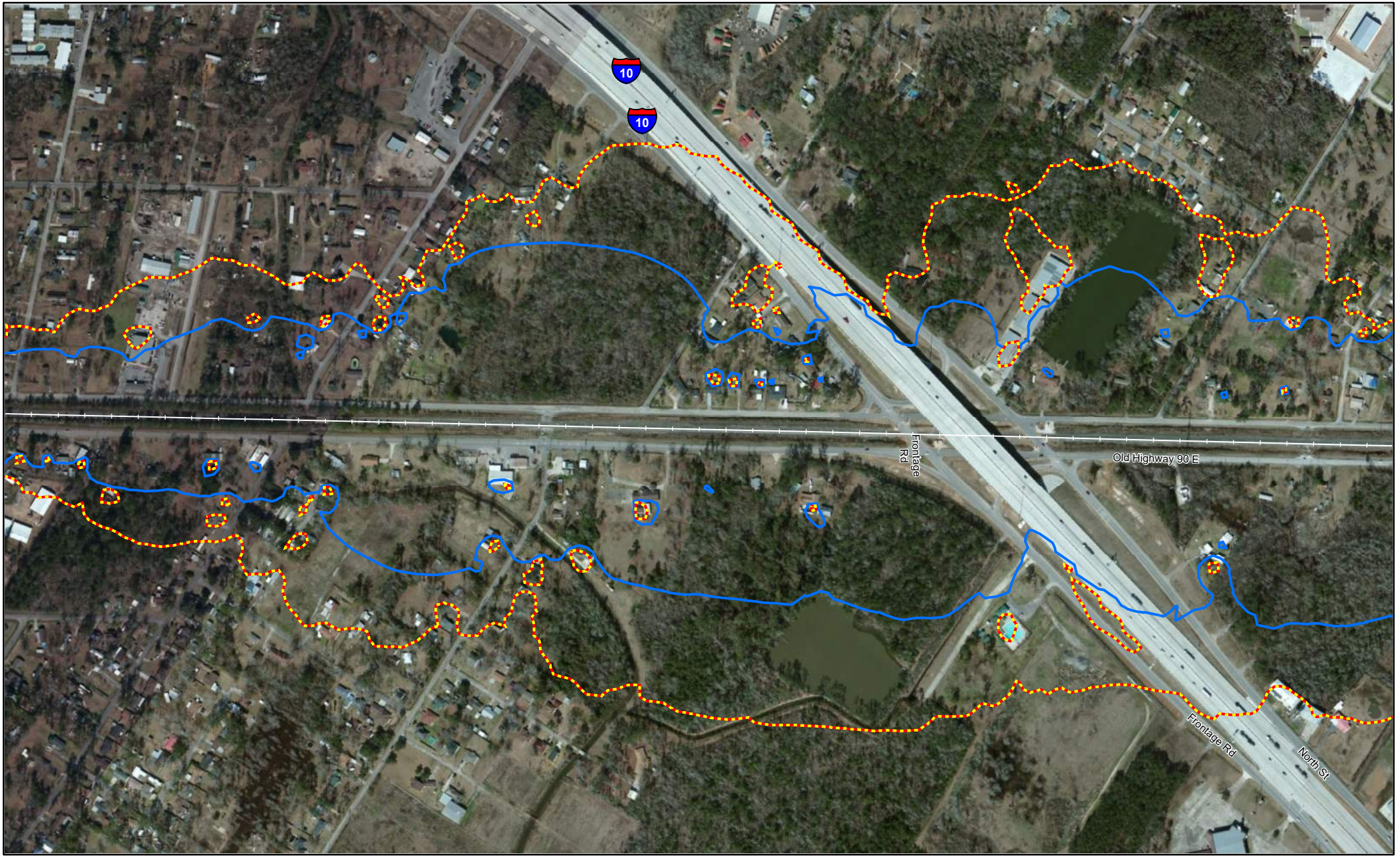
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Orange County, TX

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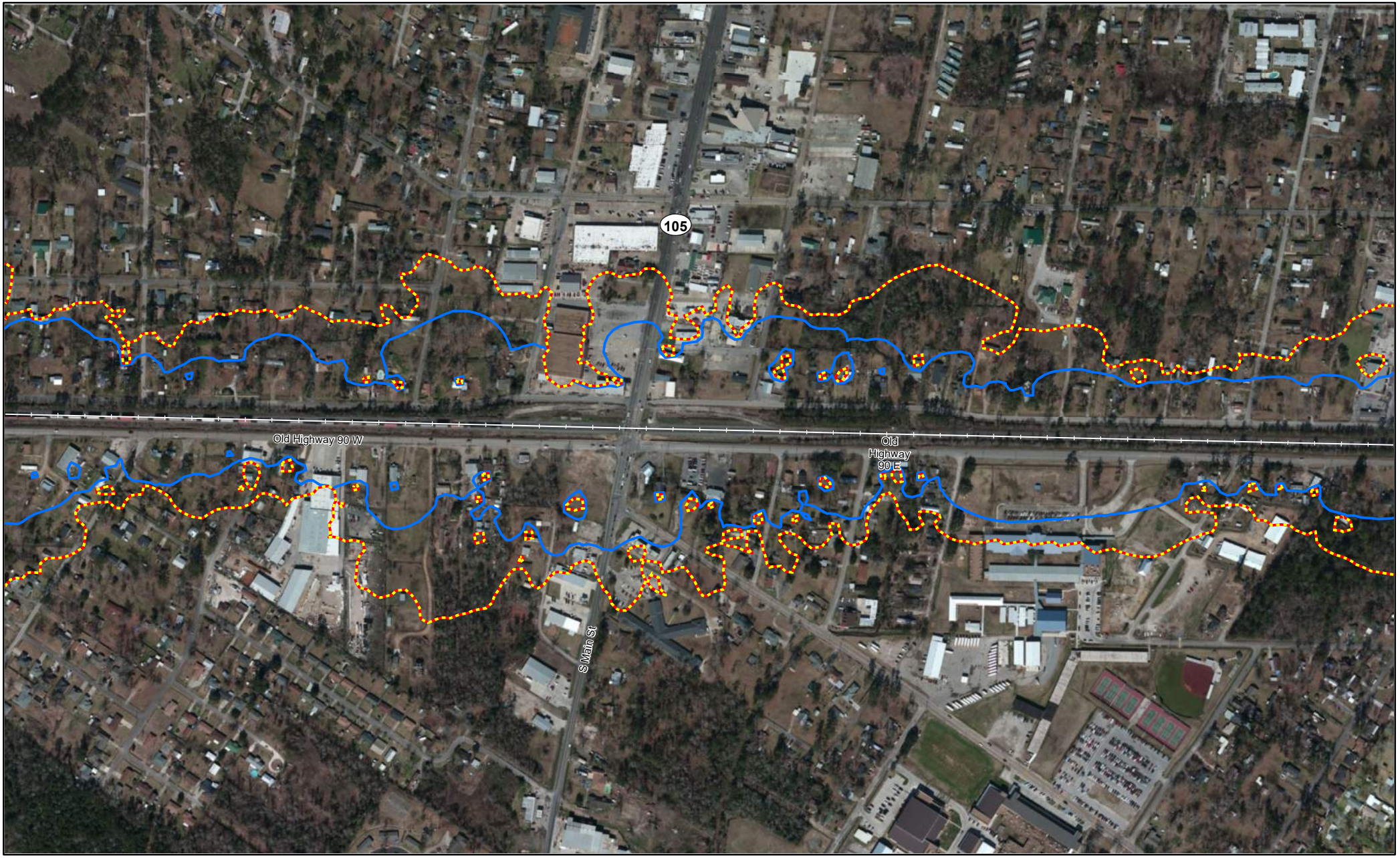
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Orange County, TX

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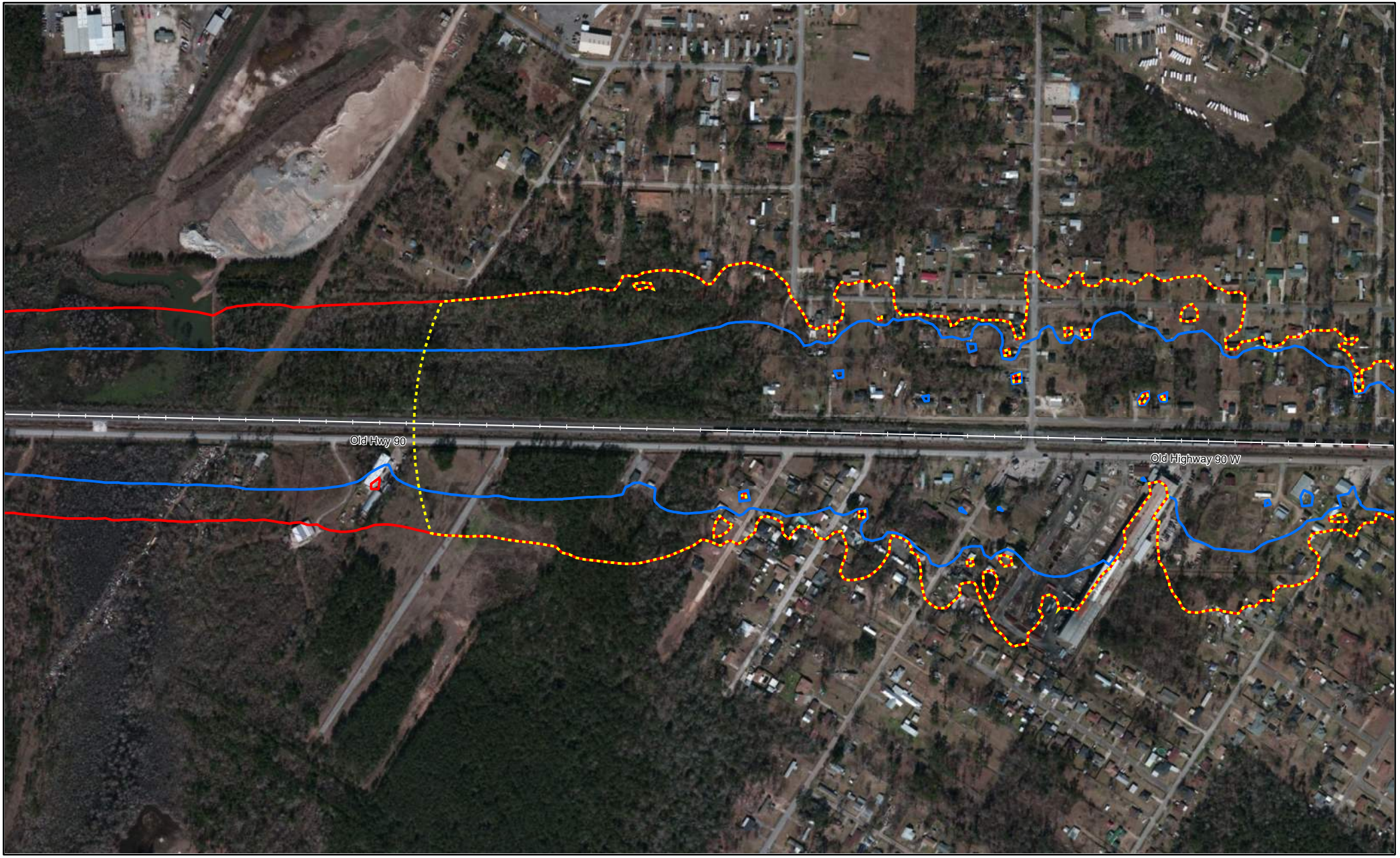
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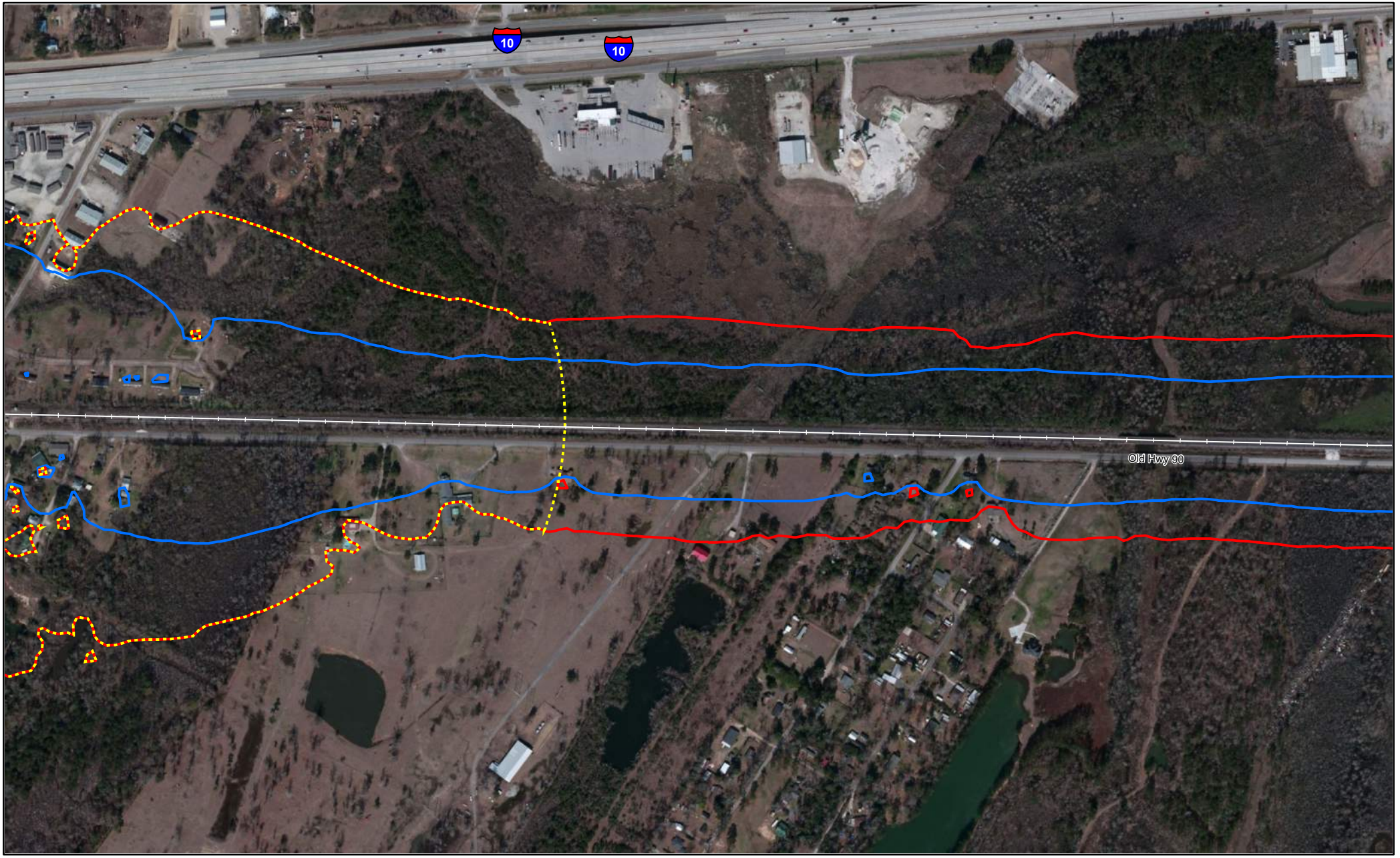
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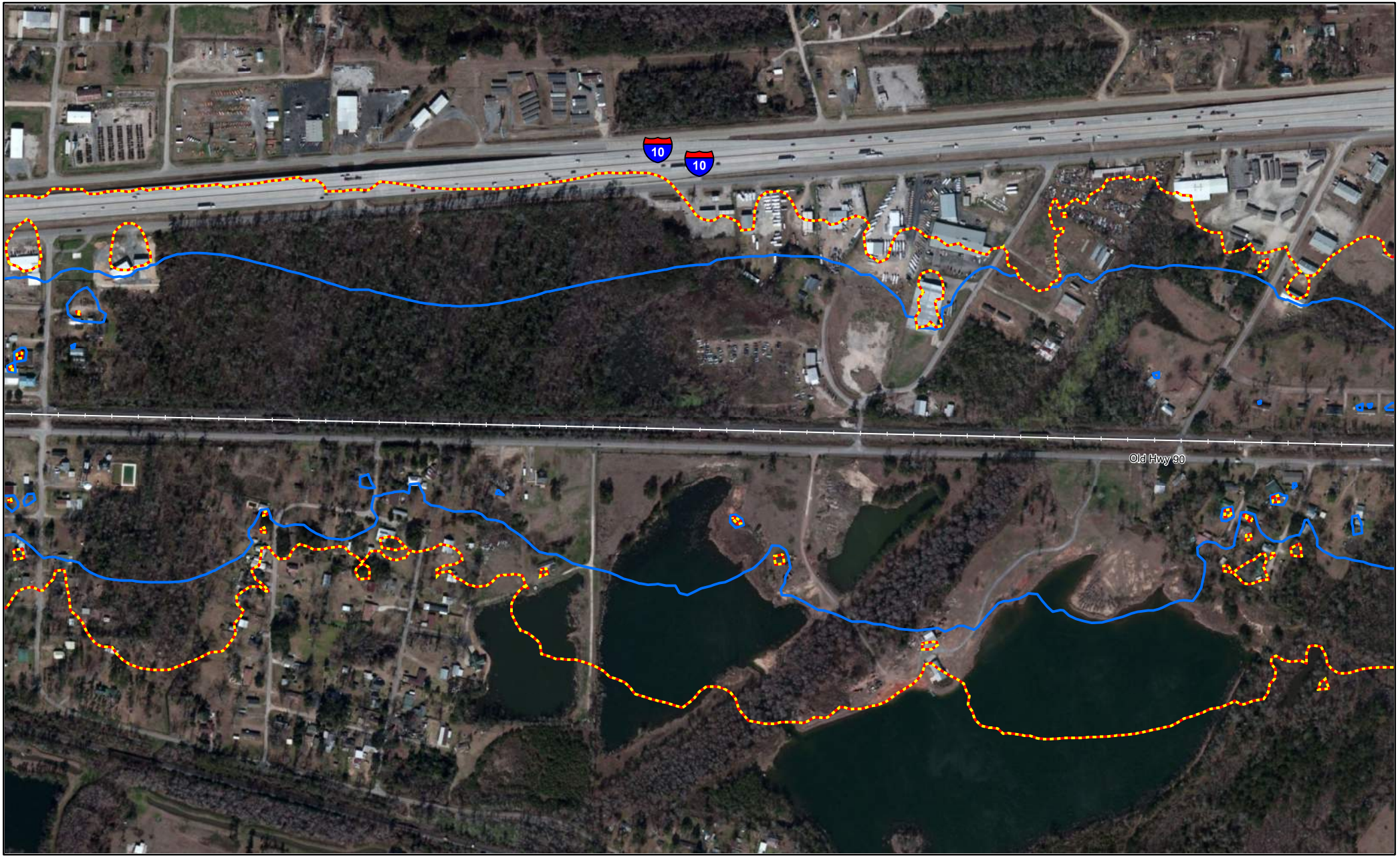
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Orange County, TX

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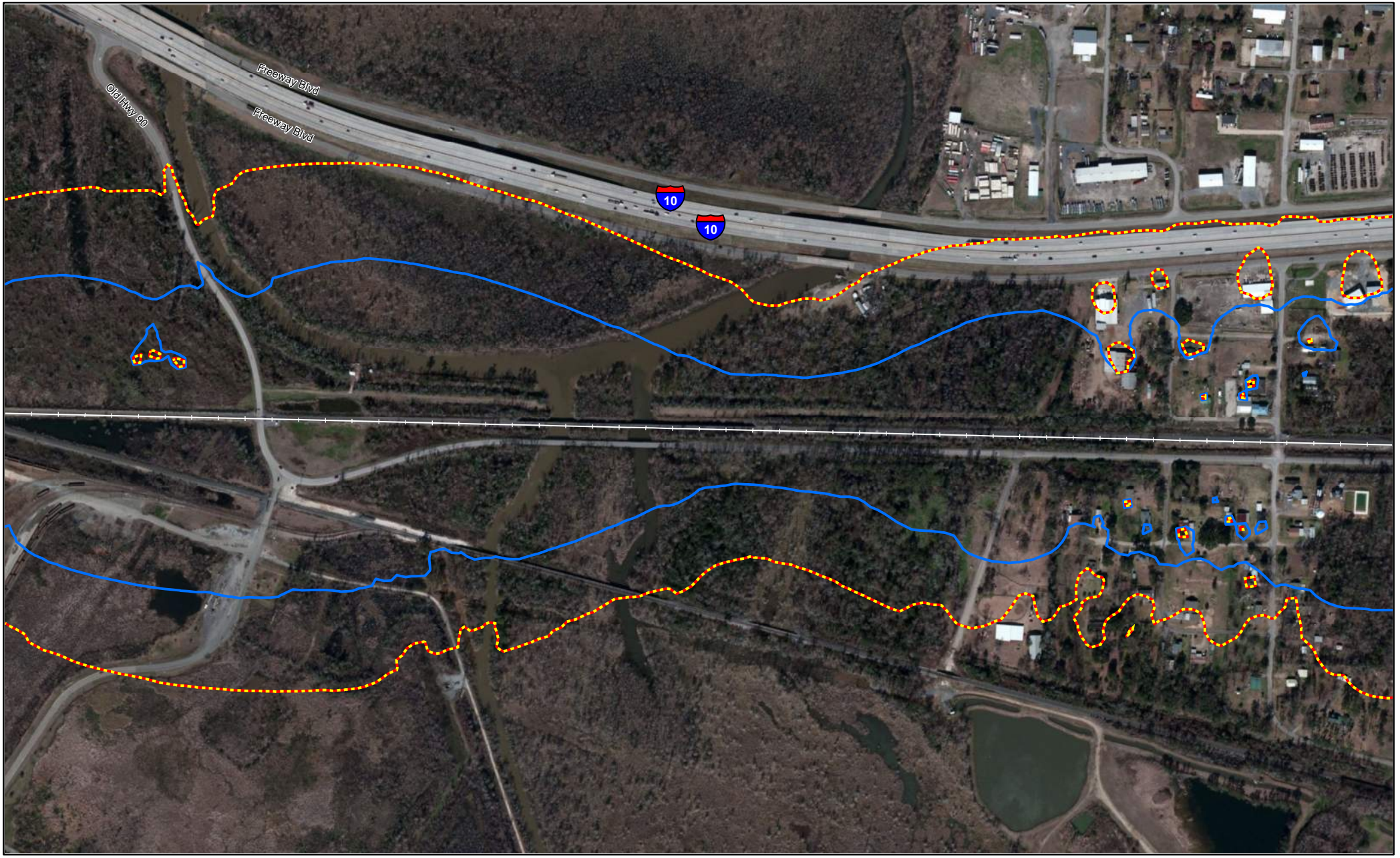
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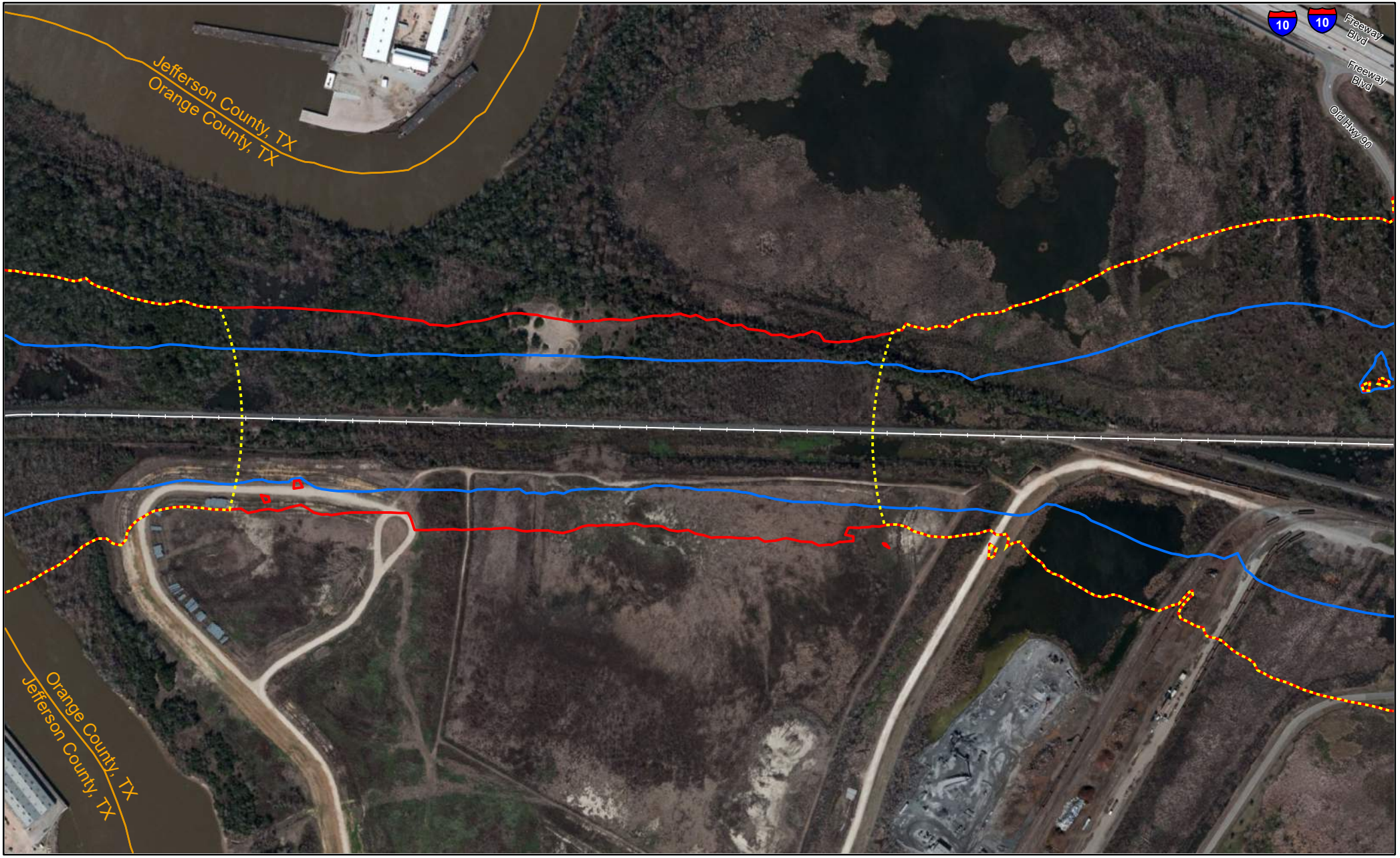
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Noise Contours
Orange County, TX

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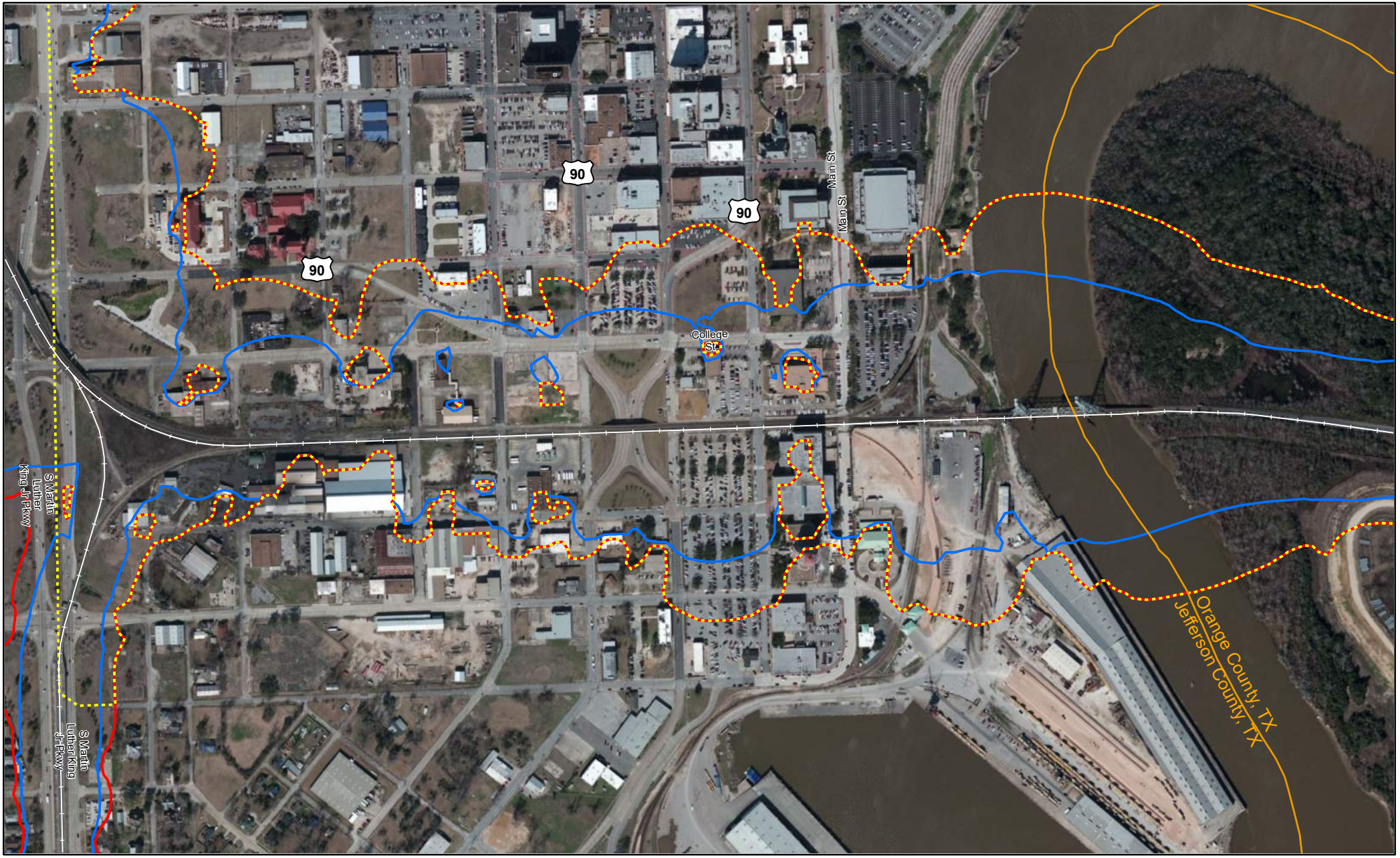
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Noise Contours
Jefferson County, TX

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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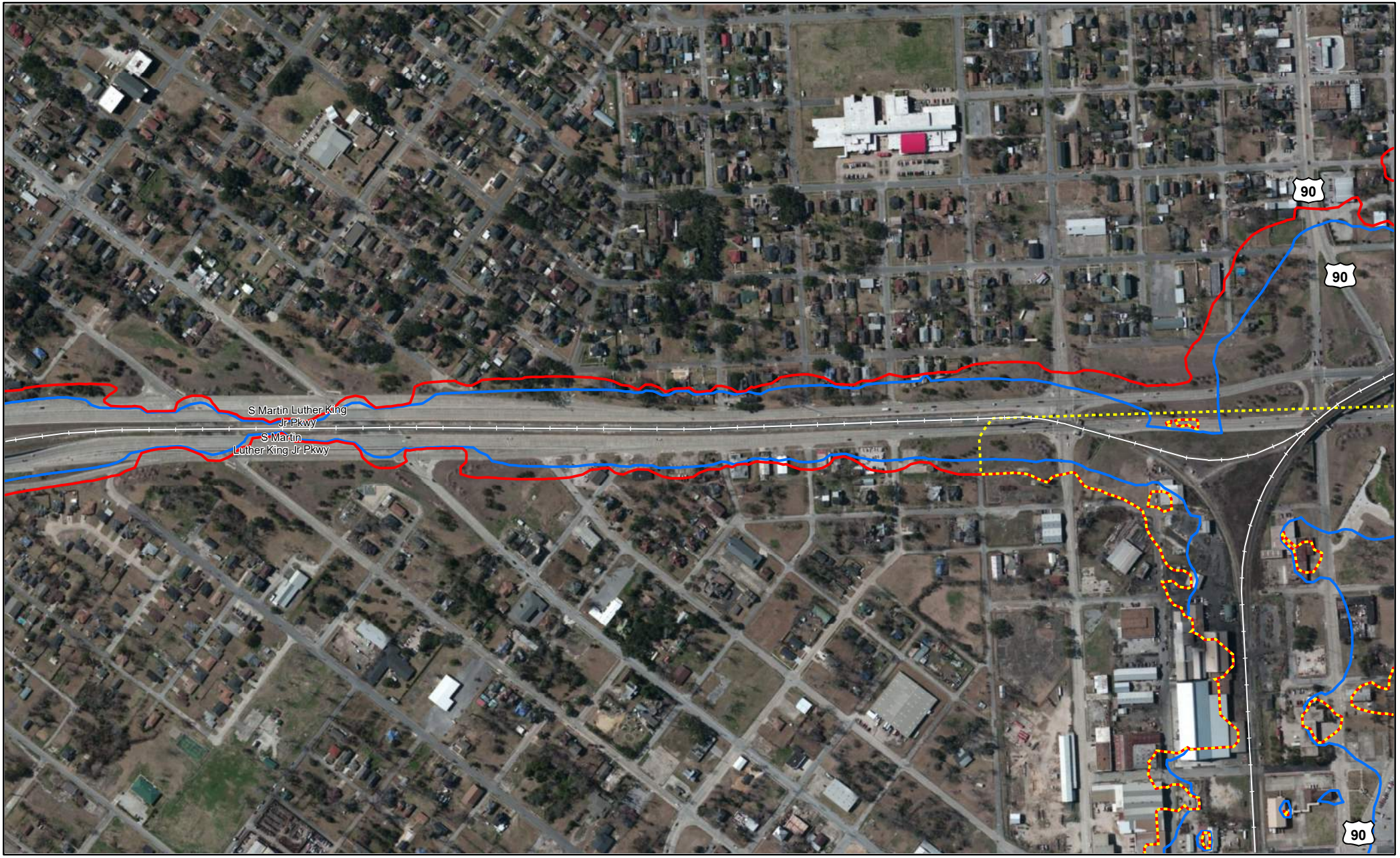
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Noise Contours
Jefferson County, TX

Miles
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Jefferson County, TX

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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Jefferson County, TX

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



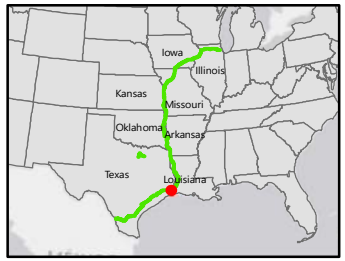
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Jefferson County, TX

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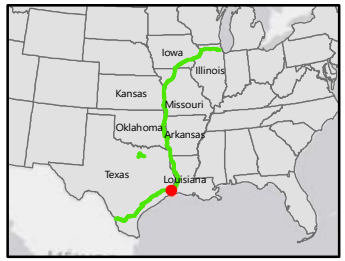
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Jefferson County, TX

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



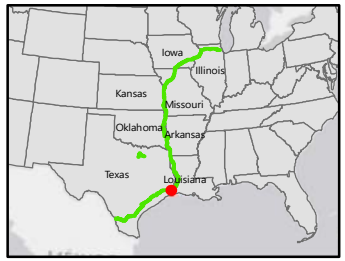
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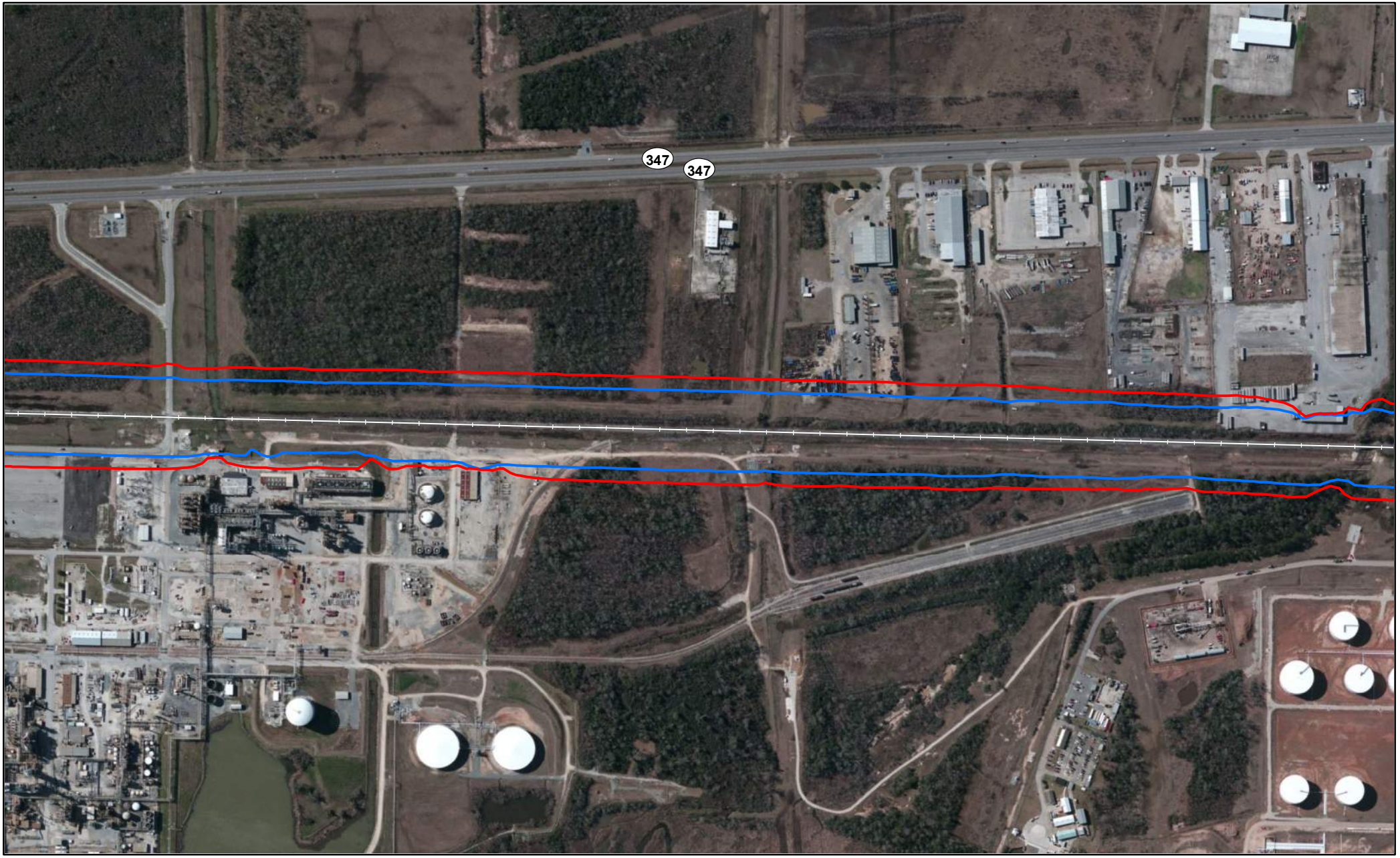
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Noise Contours
Jefferson County, TX

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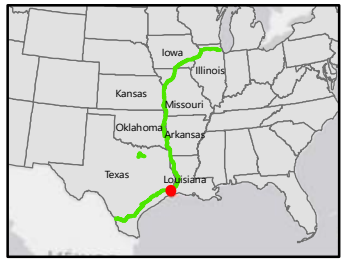
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Noise Contours
Jefferson County, TX

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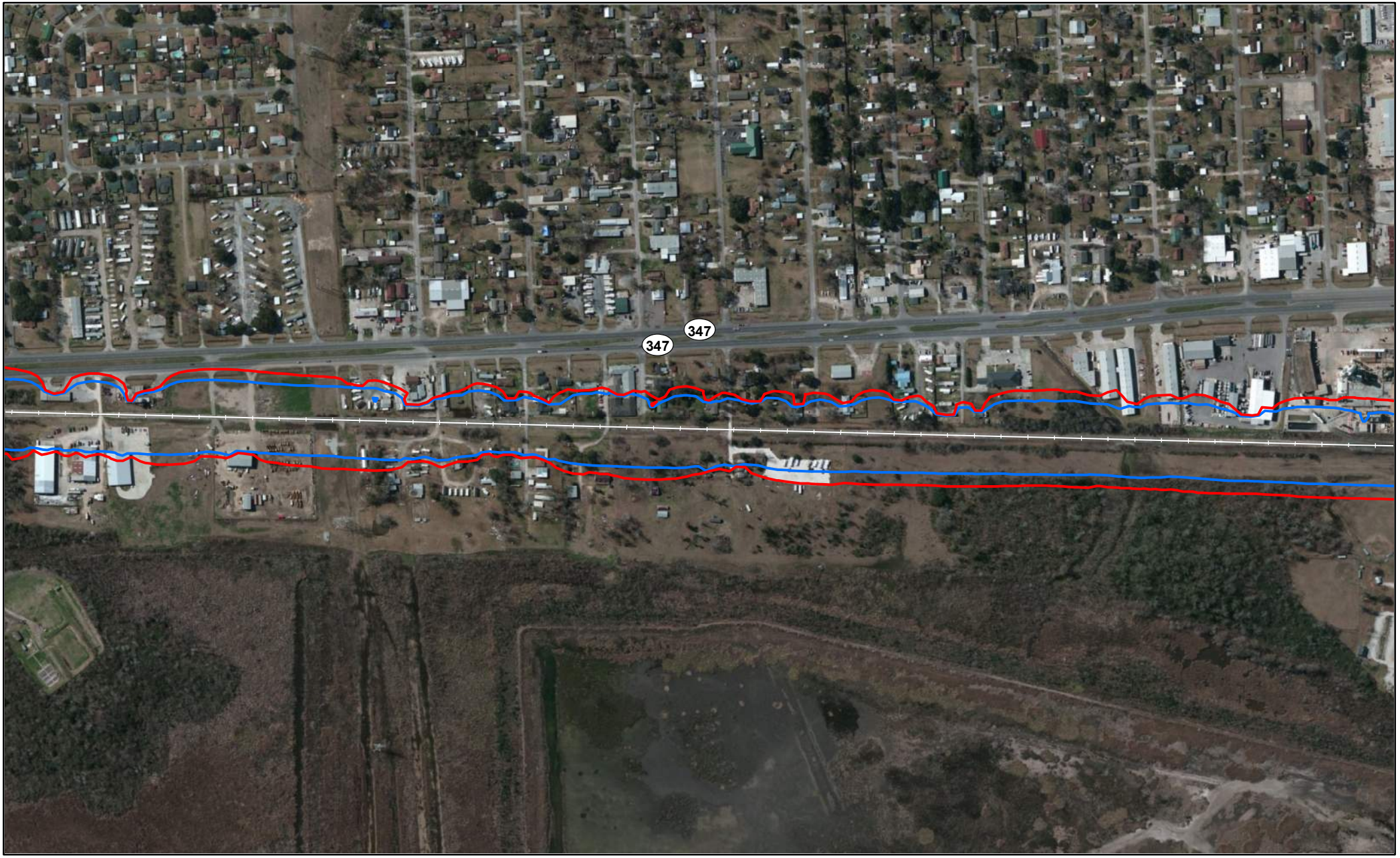
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Jefferson County, TX

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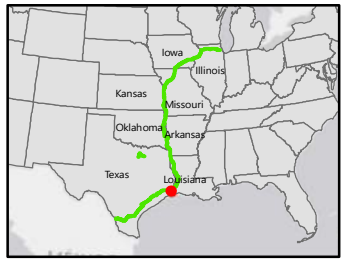
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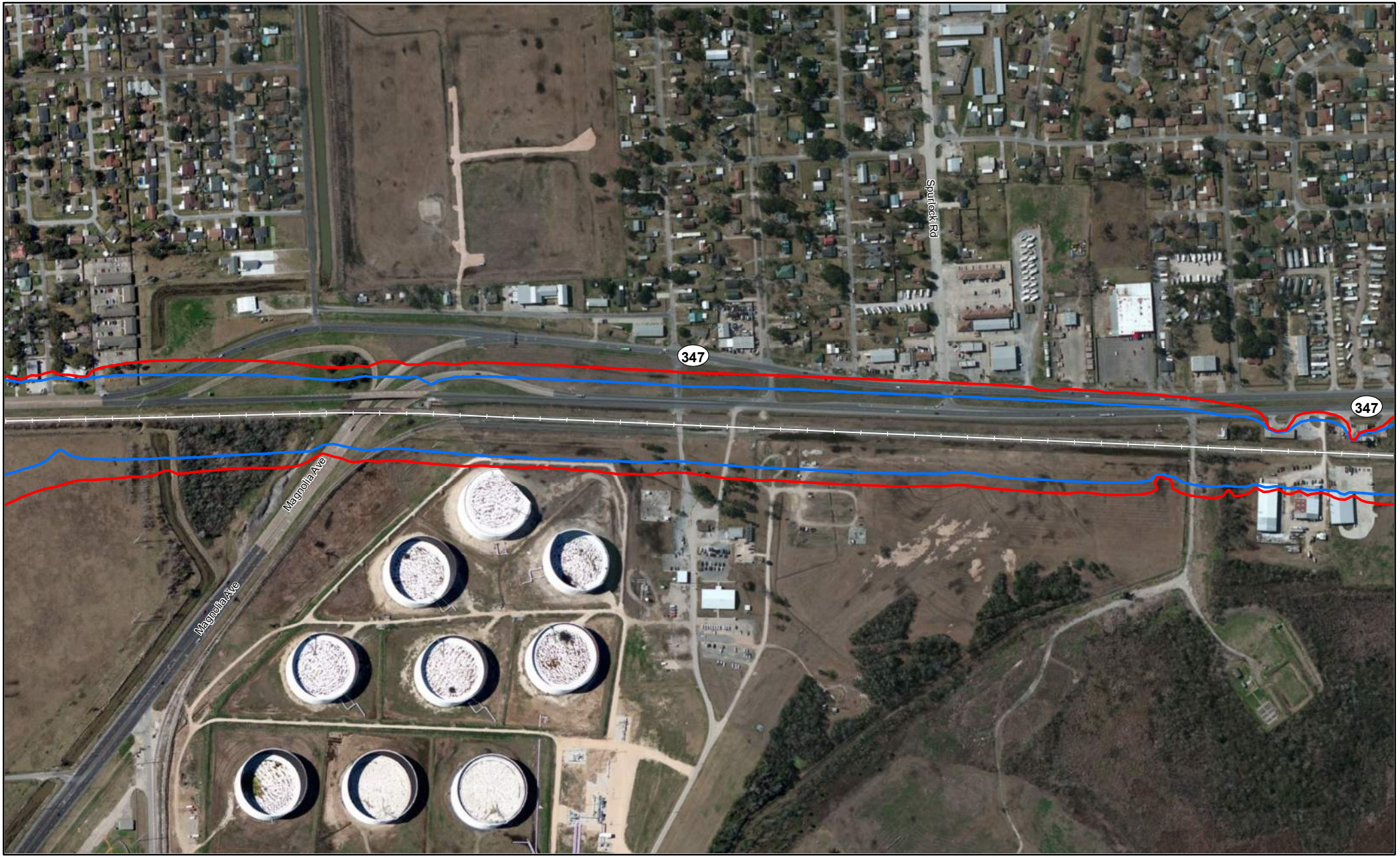
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Noise Contours
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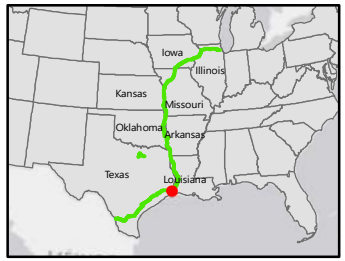
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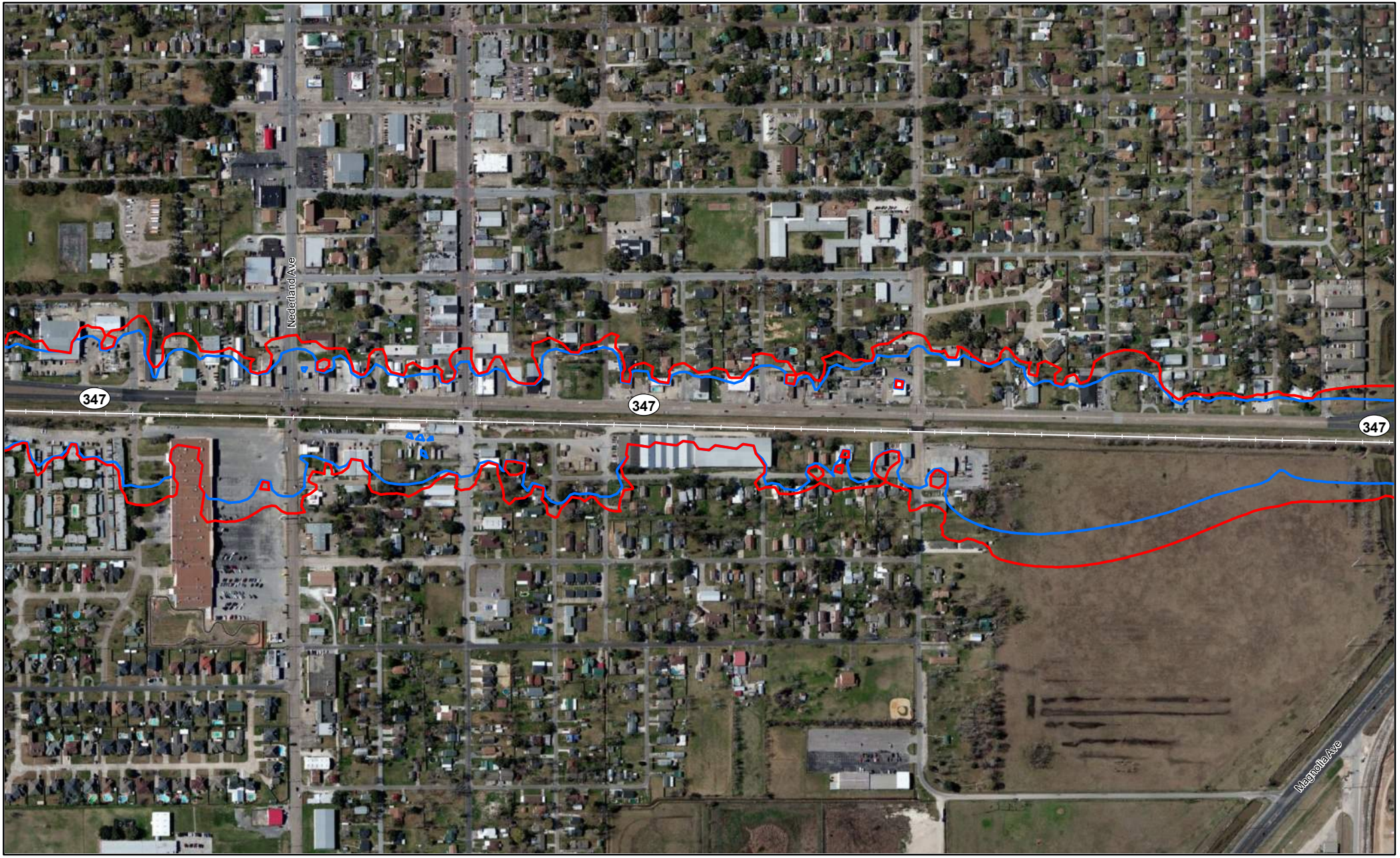
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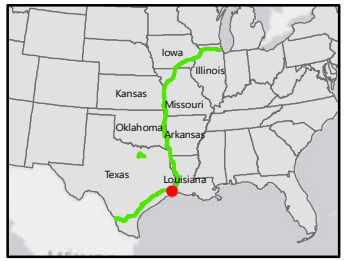
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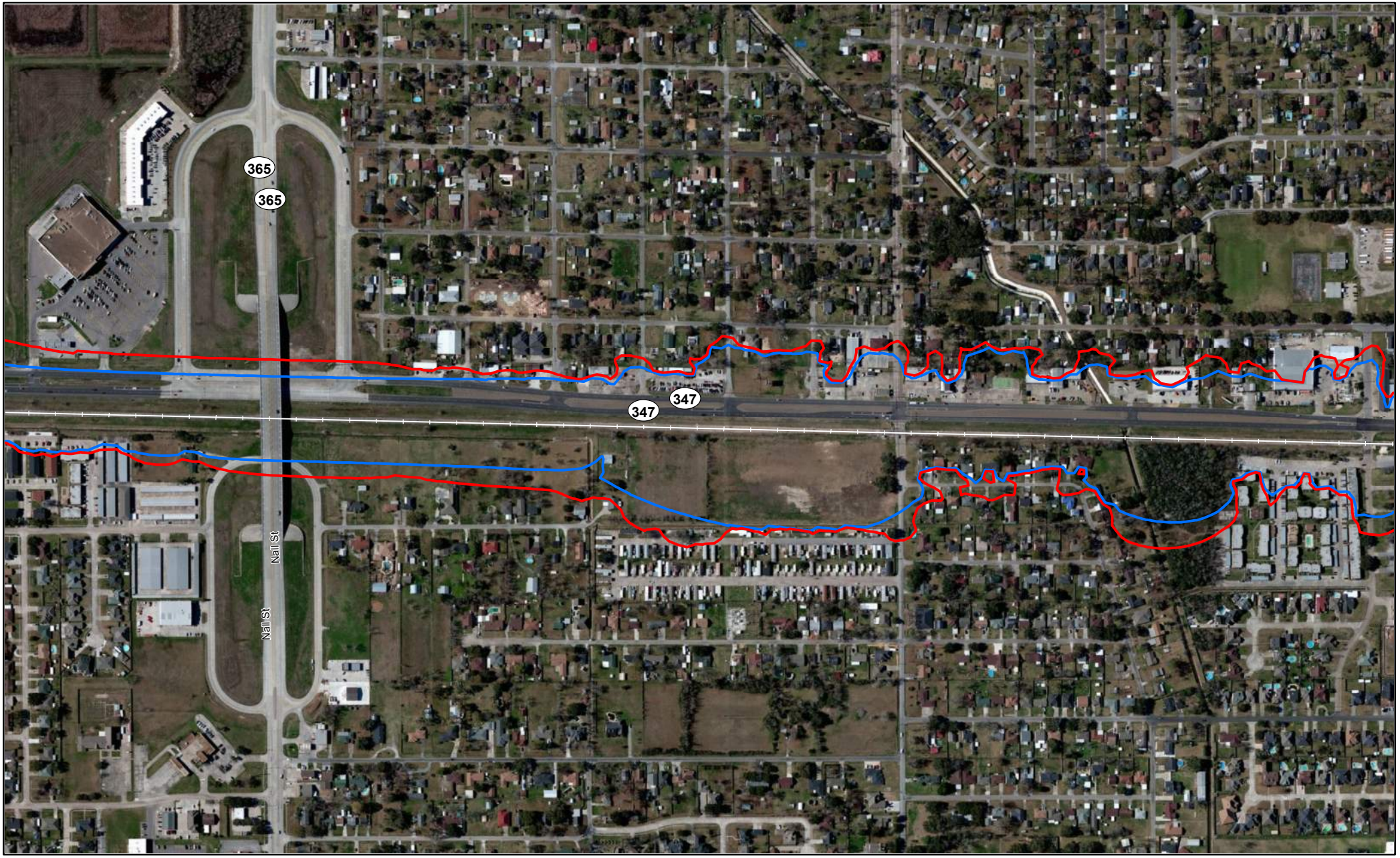
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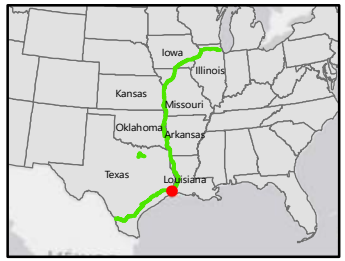
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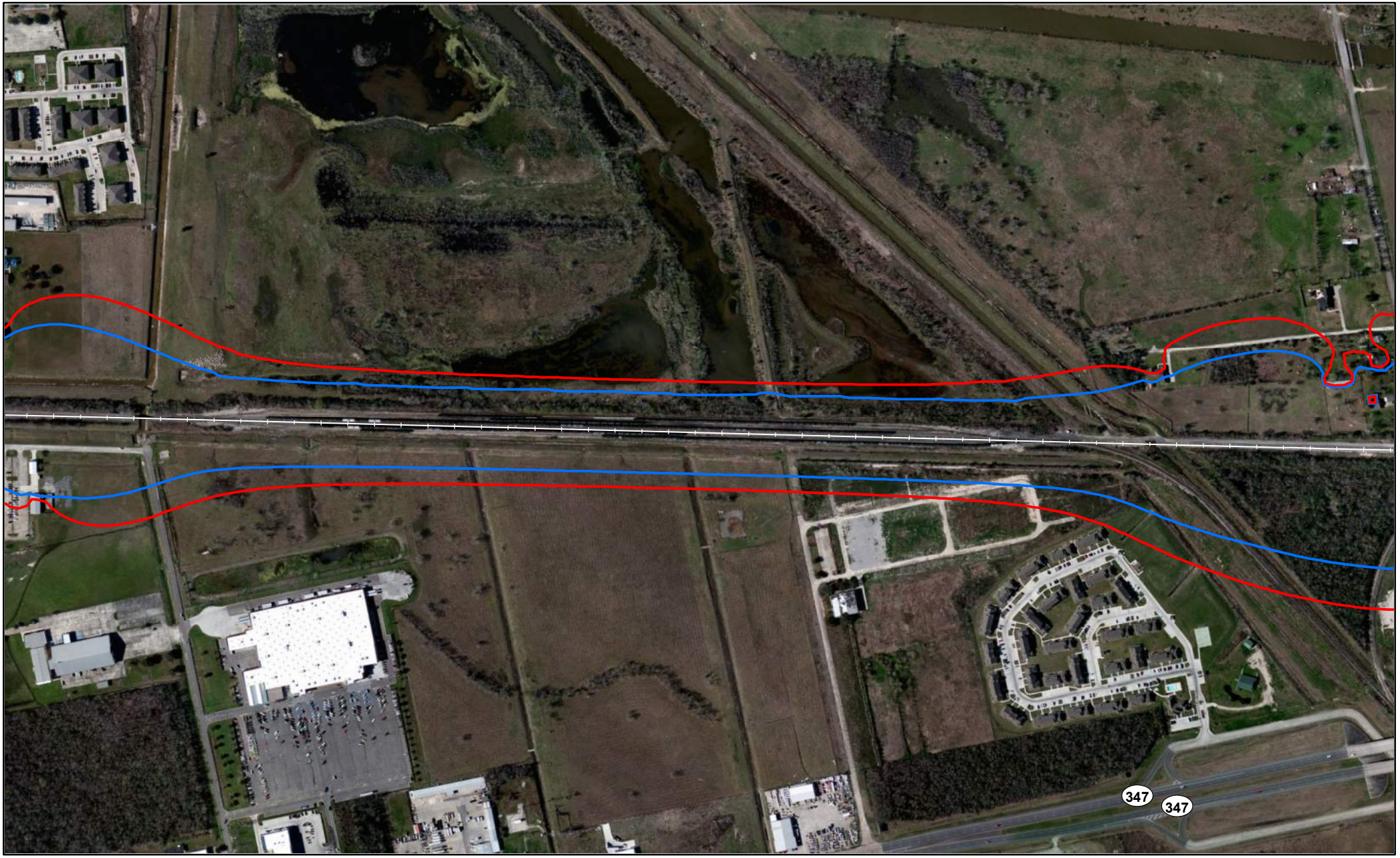
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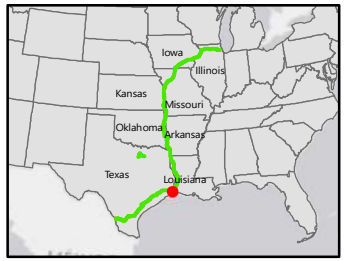
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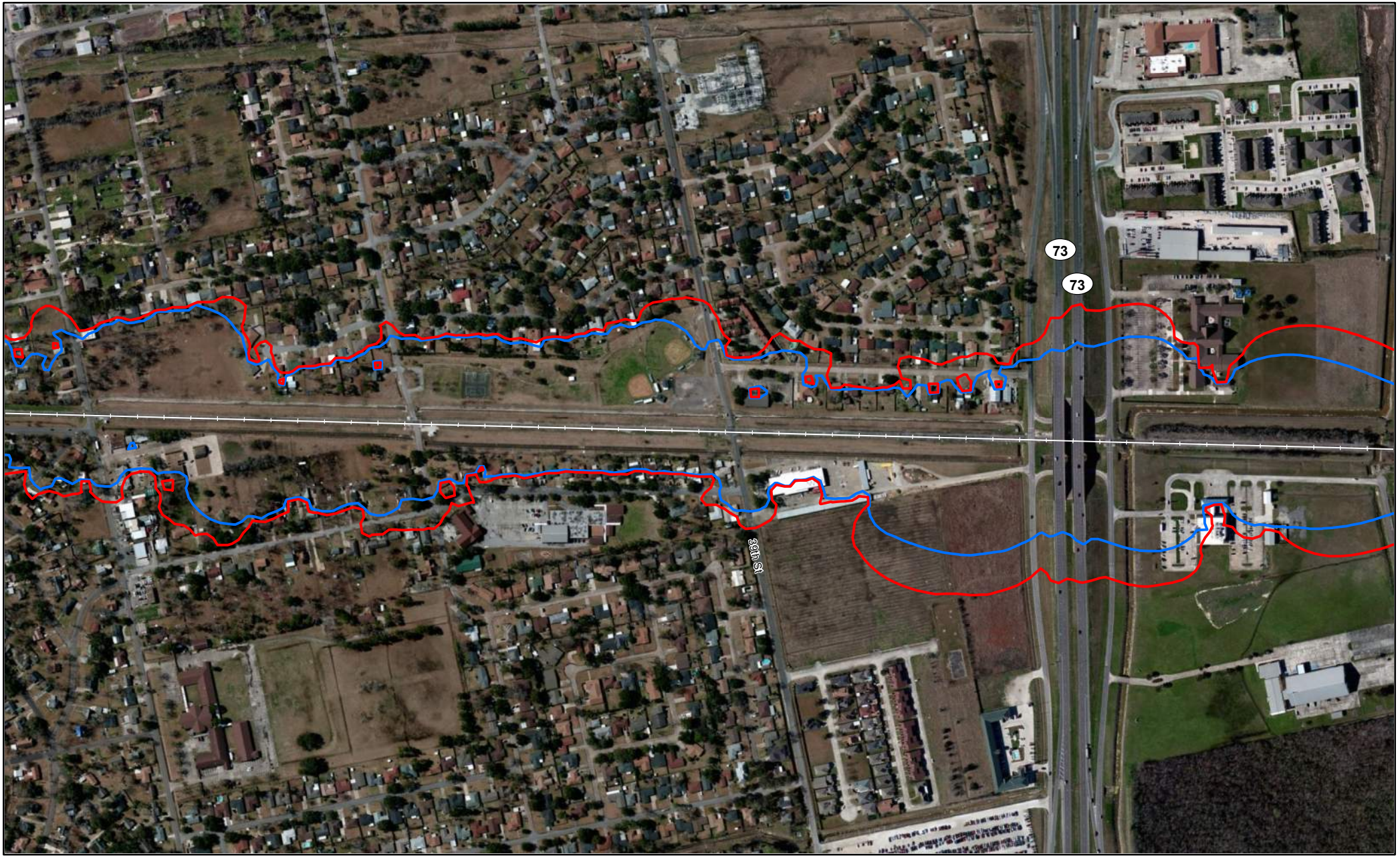
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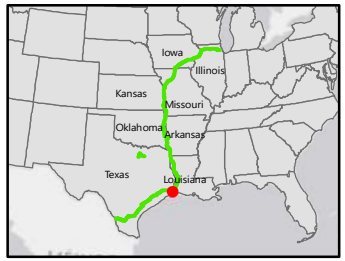
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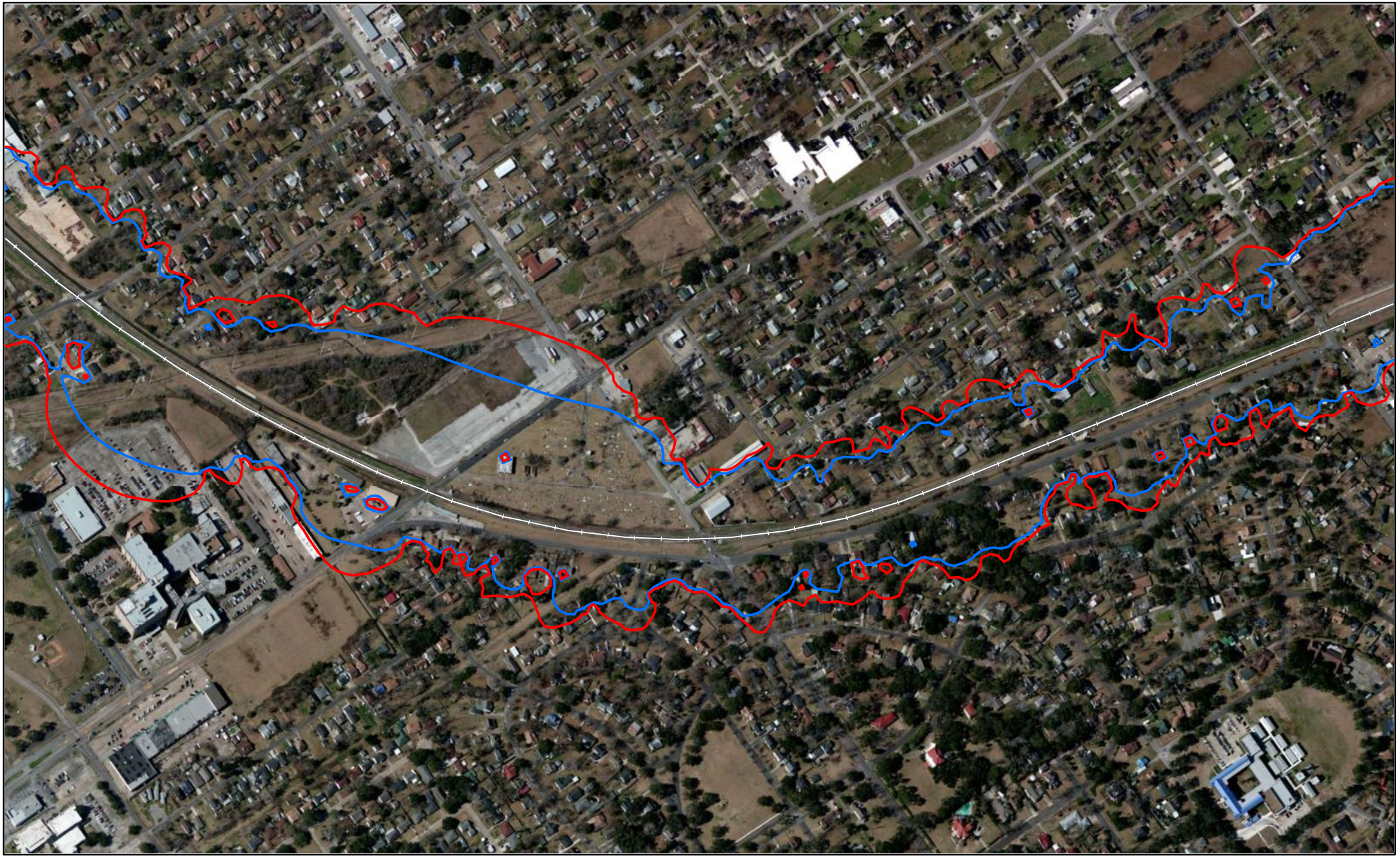
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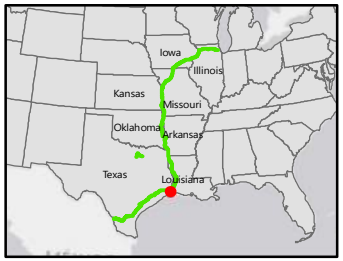
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jefferson County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



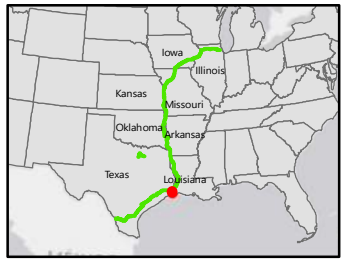
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Jefferson County, TX

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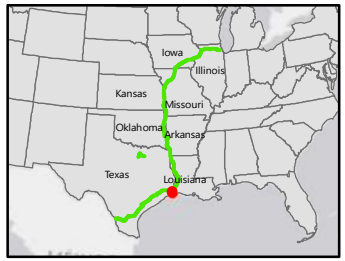
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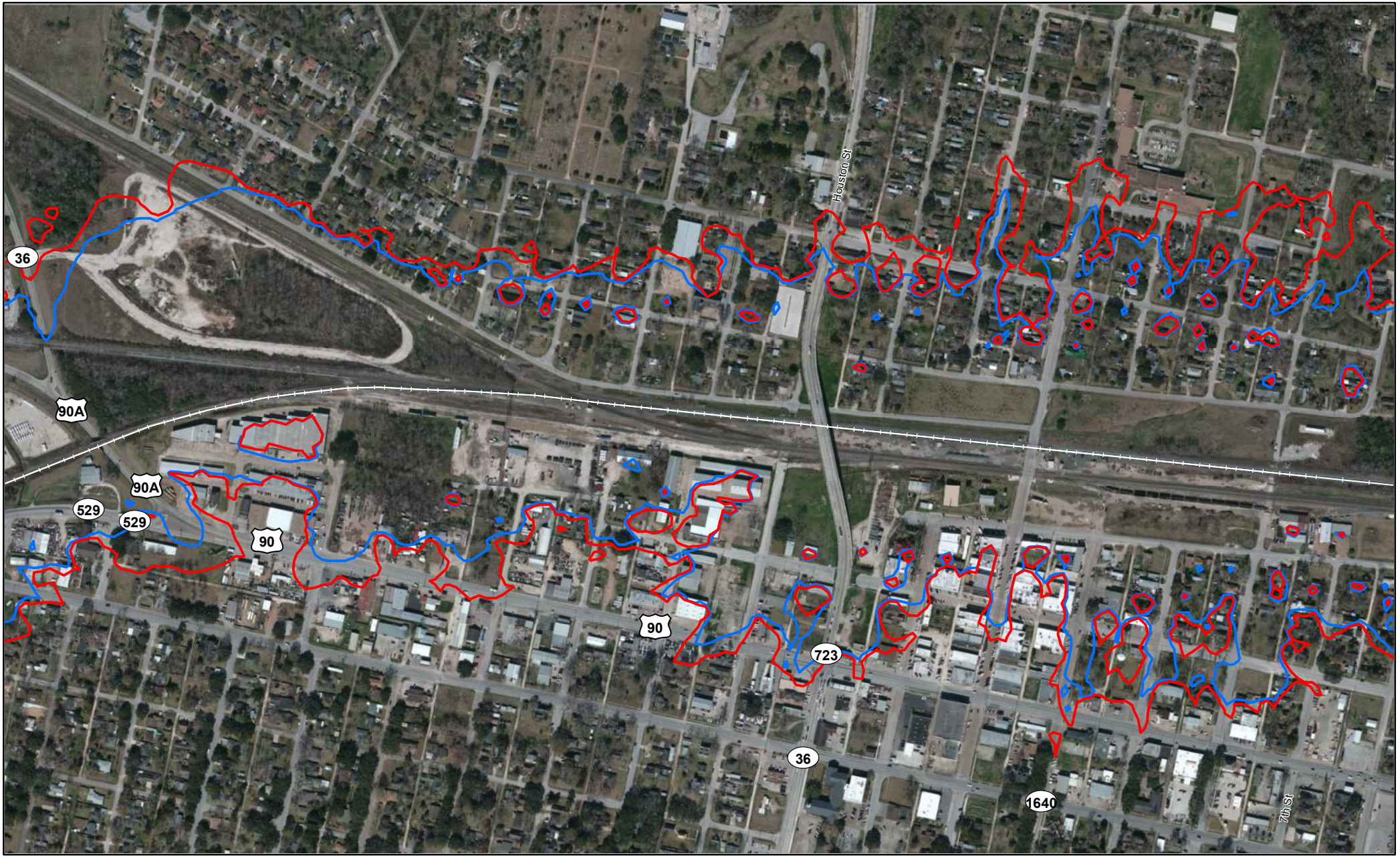
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Noise Contours
Jefferson County, TX

Miles
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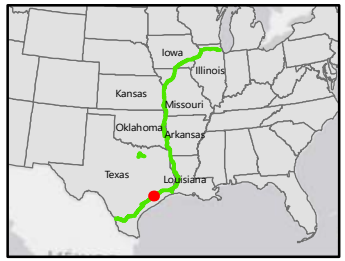
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Noise Contours
Fort Bend County, TX

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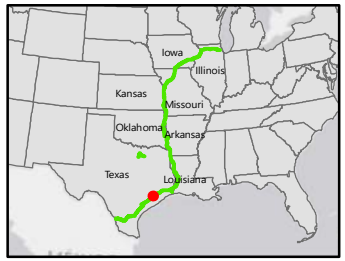
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Fort Bend County, TX

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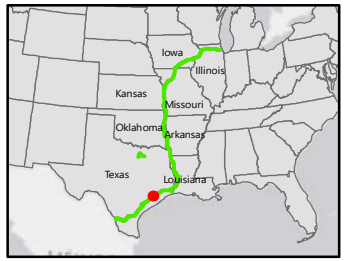
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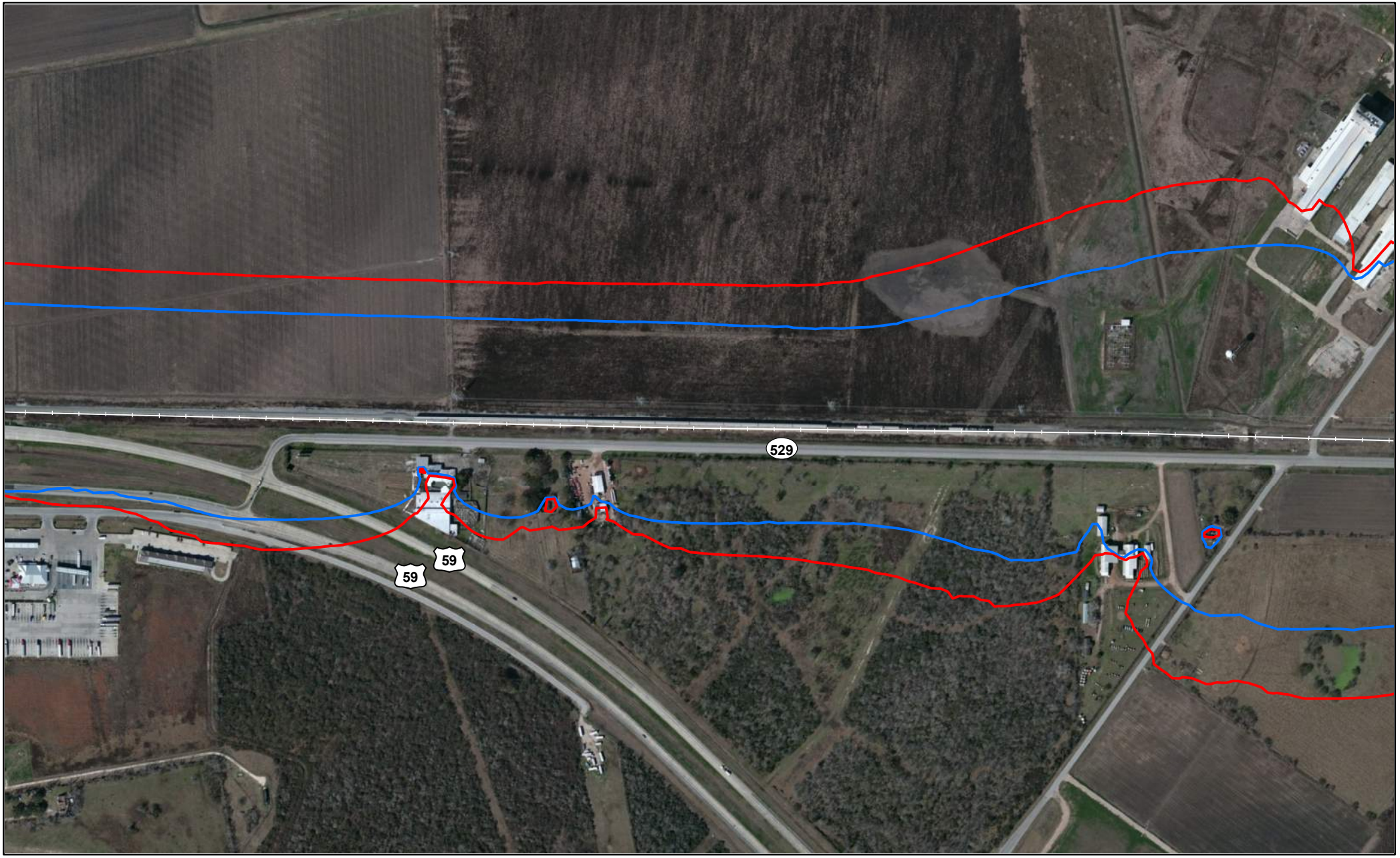
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Noise Contours
Fort Bend County, TX

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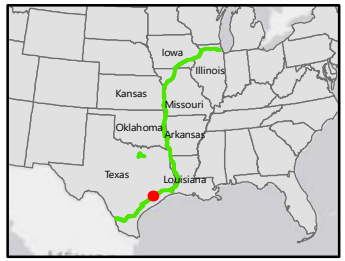
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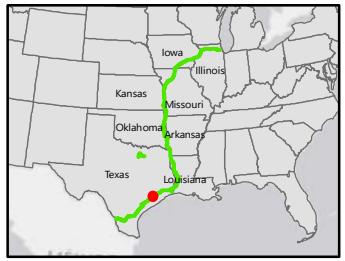
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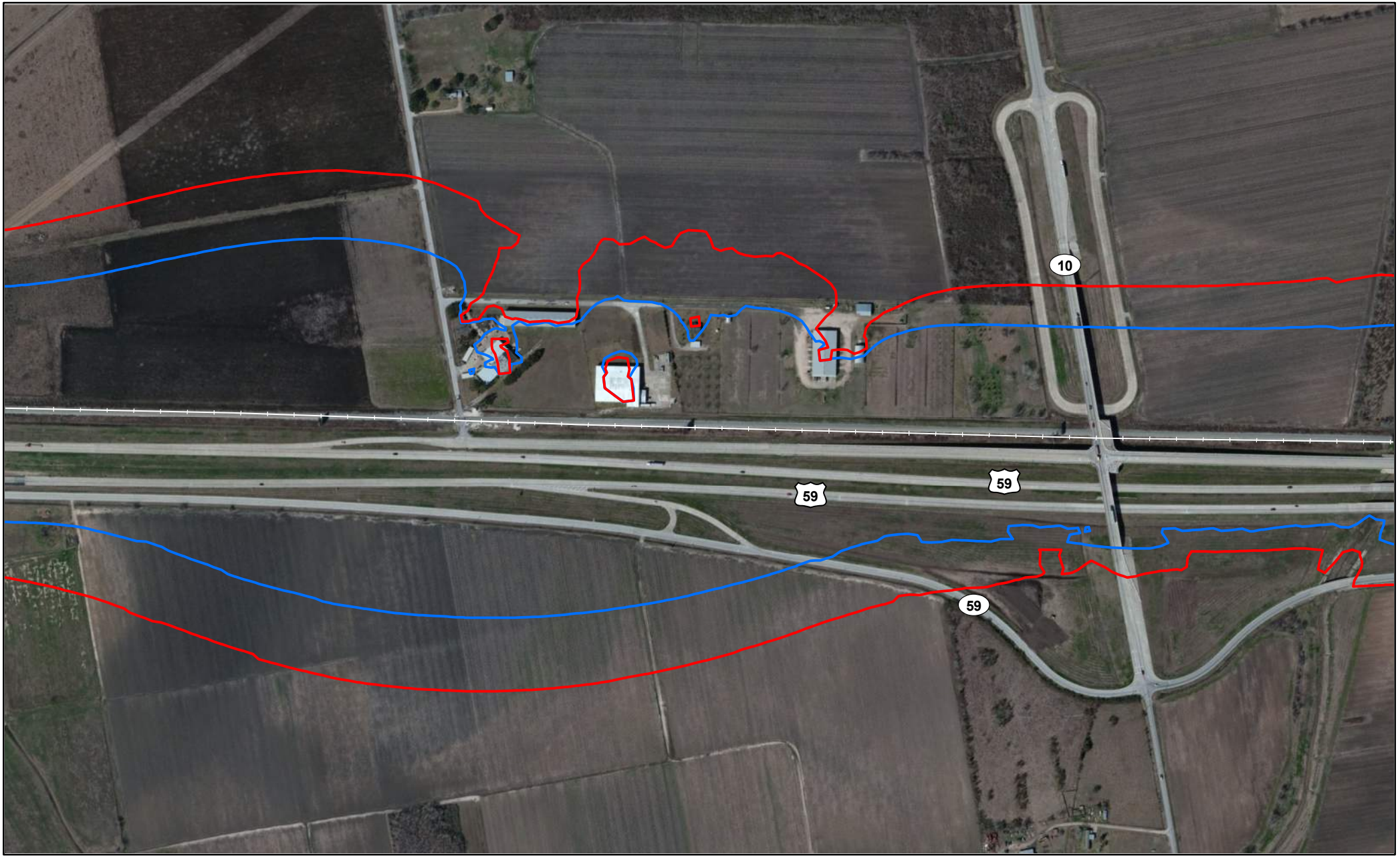
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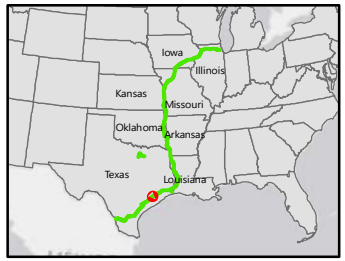
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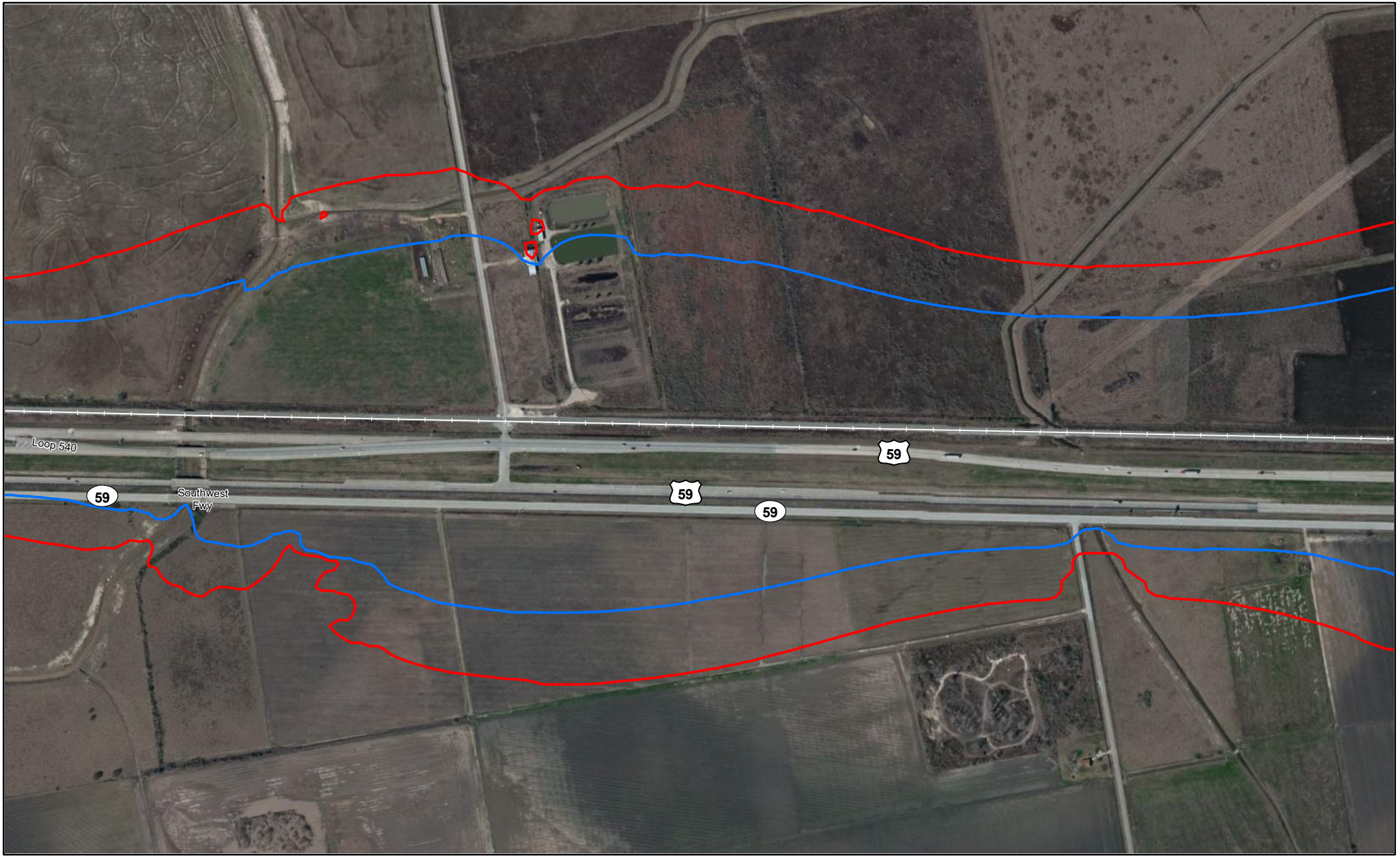
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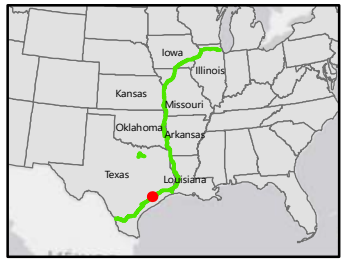
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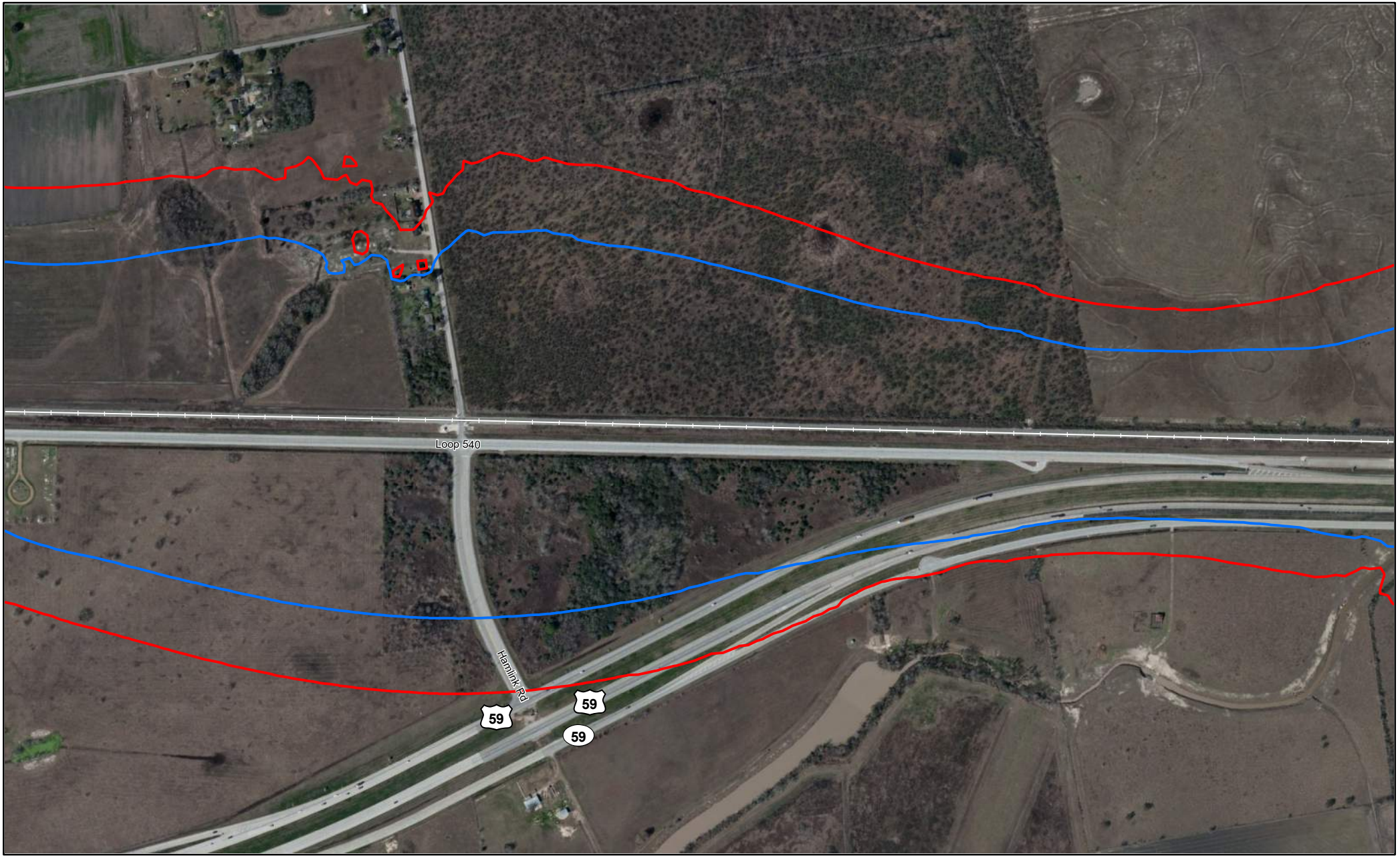
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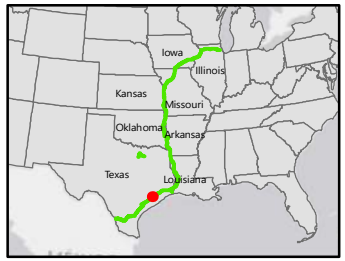
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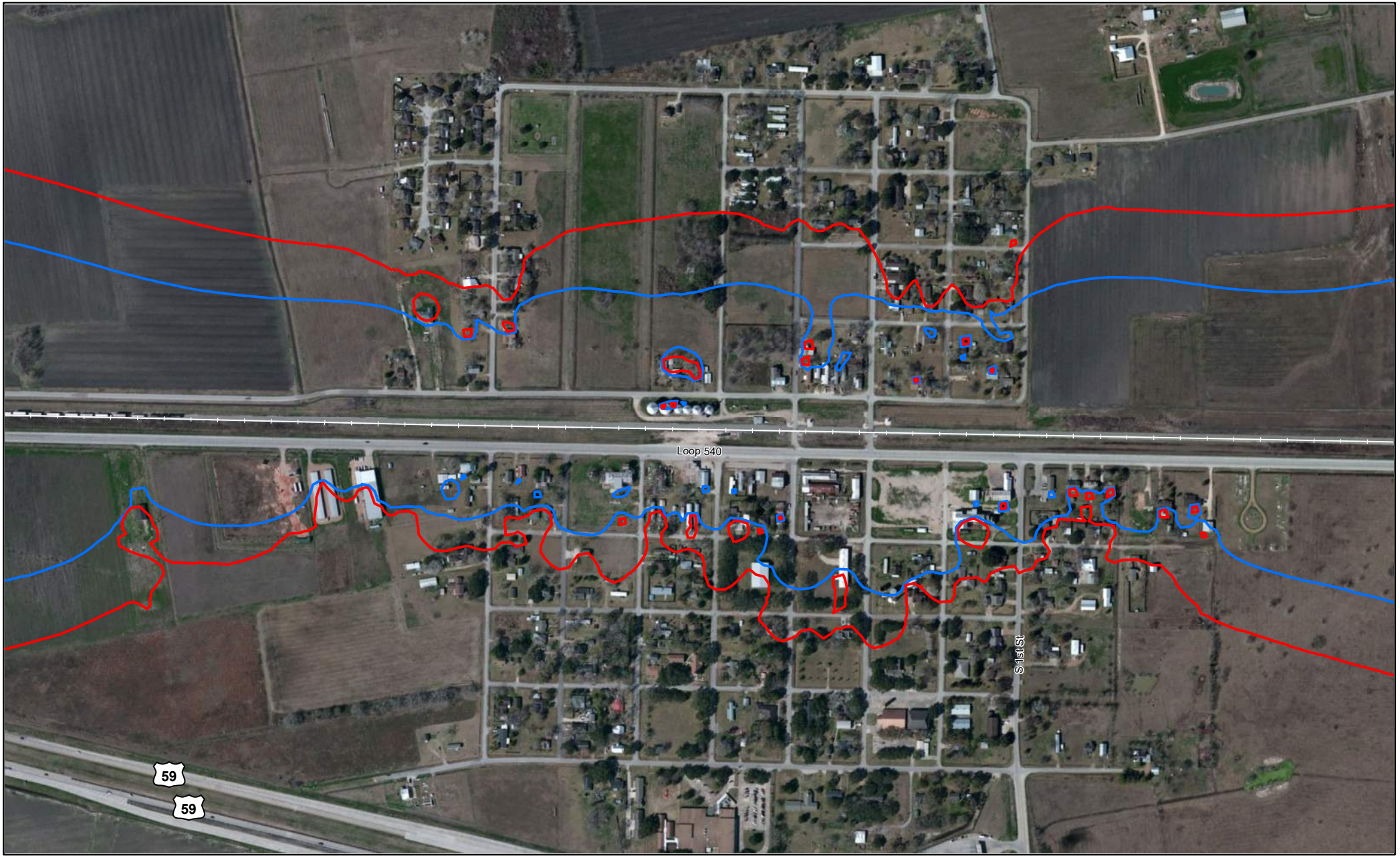
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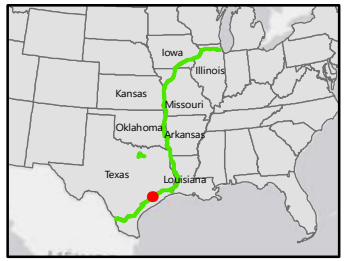
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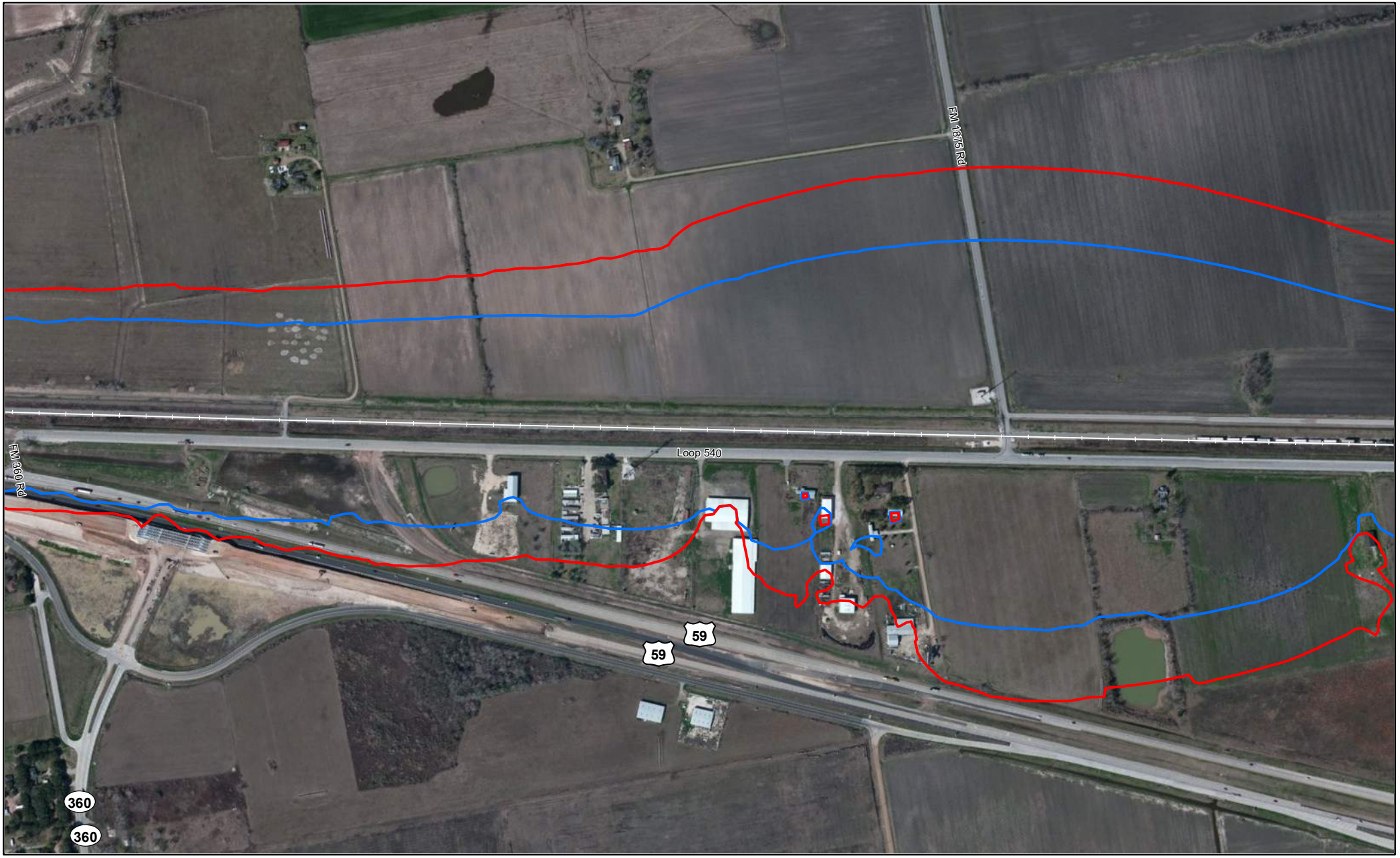
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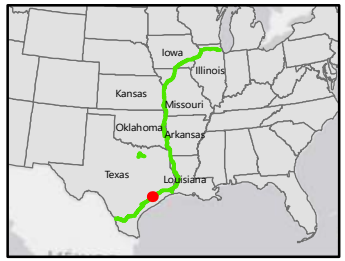
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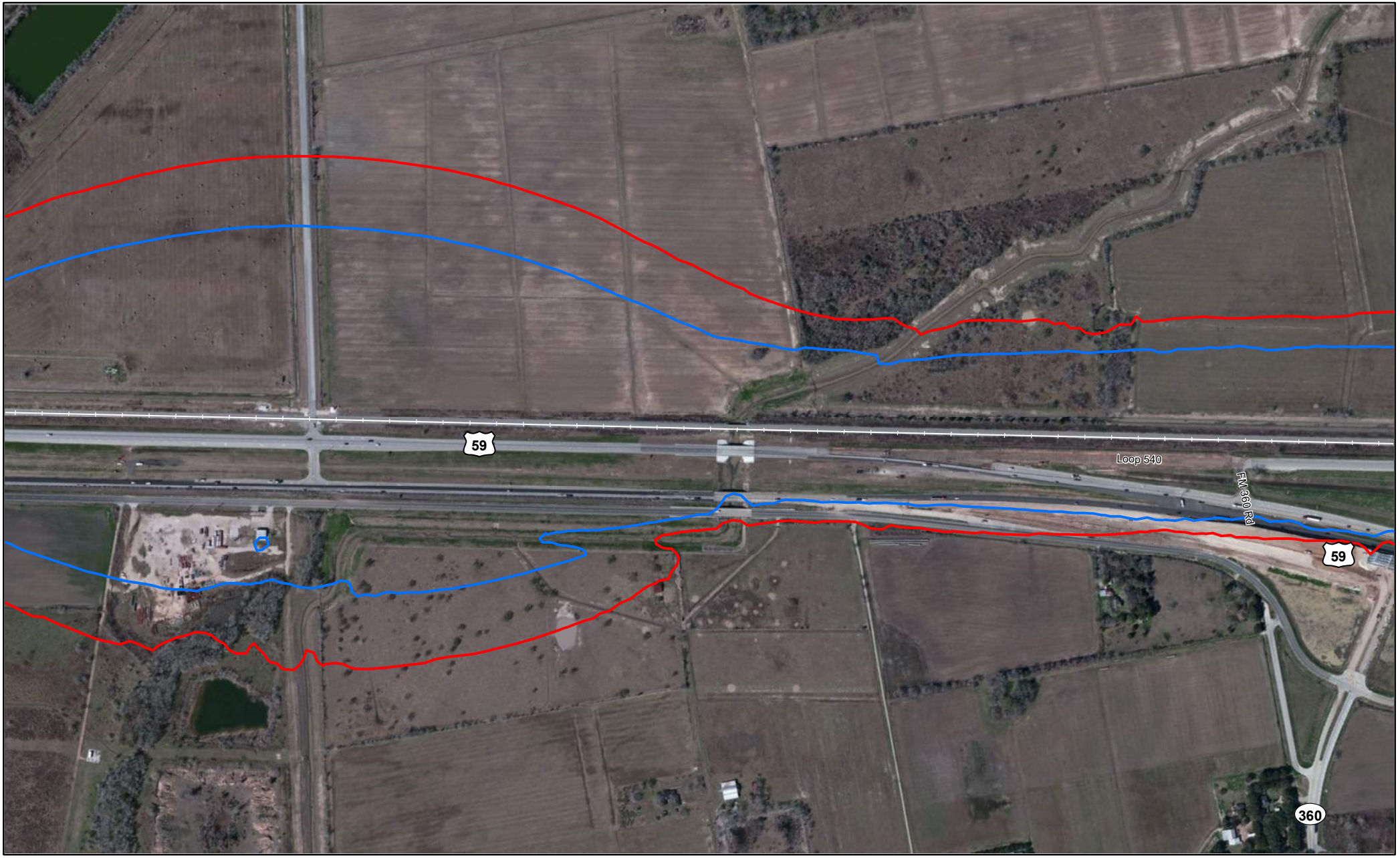
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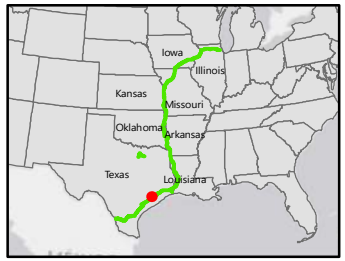
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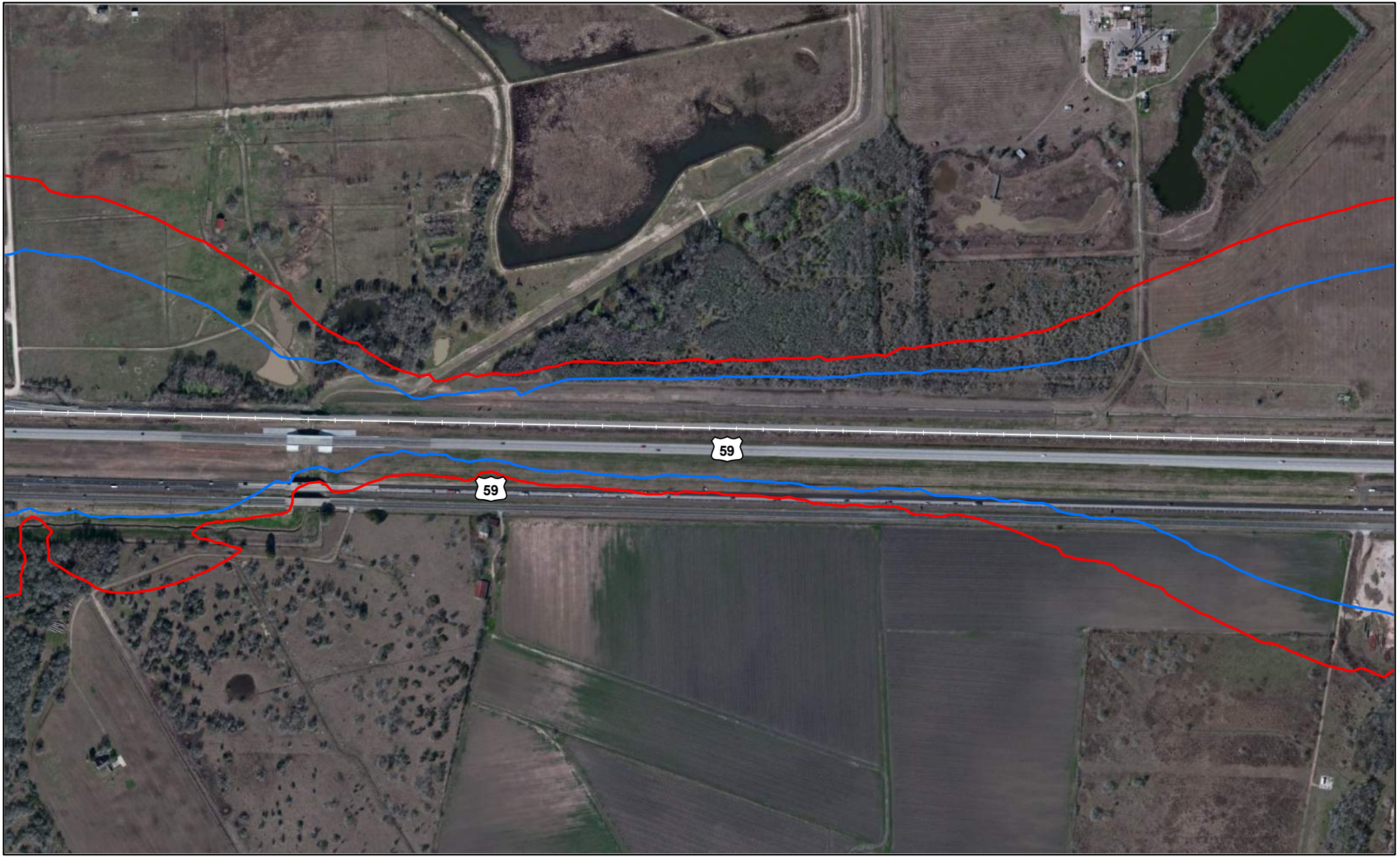
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Noise Contours
Fort Bend County, TX

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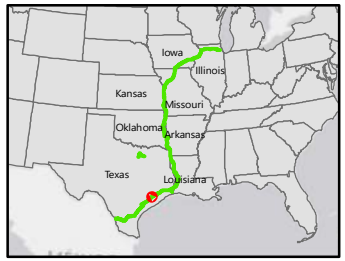
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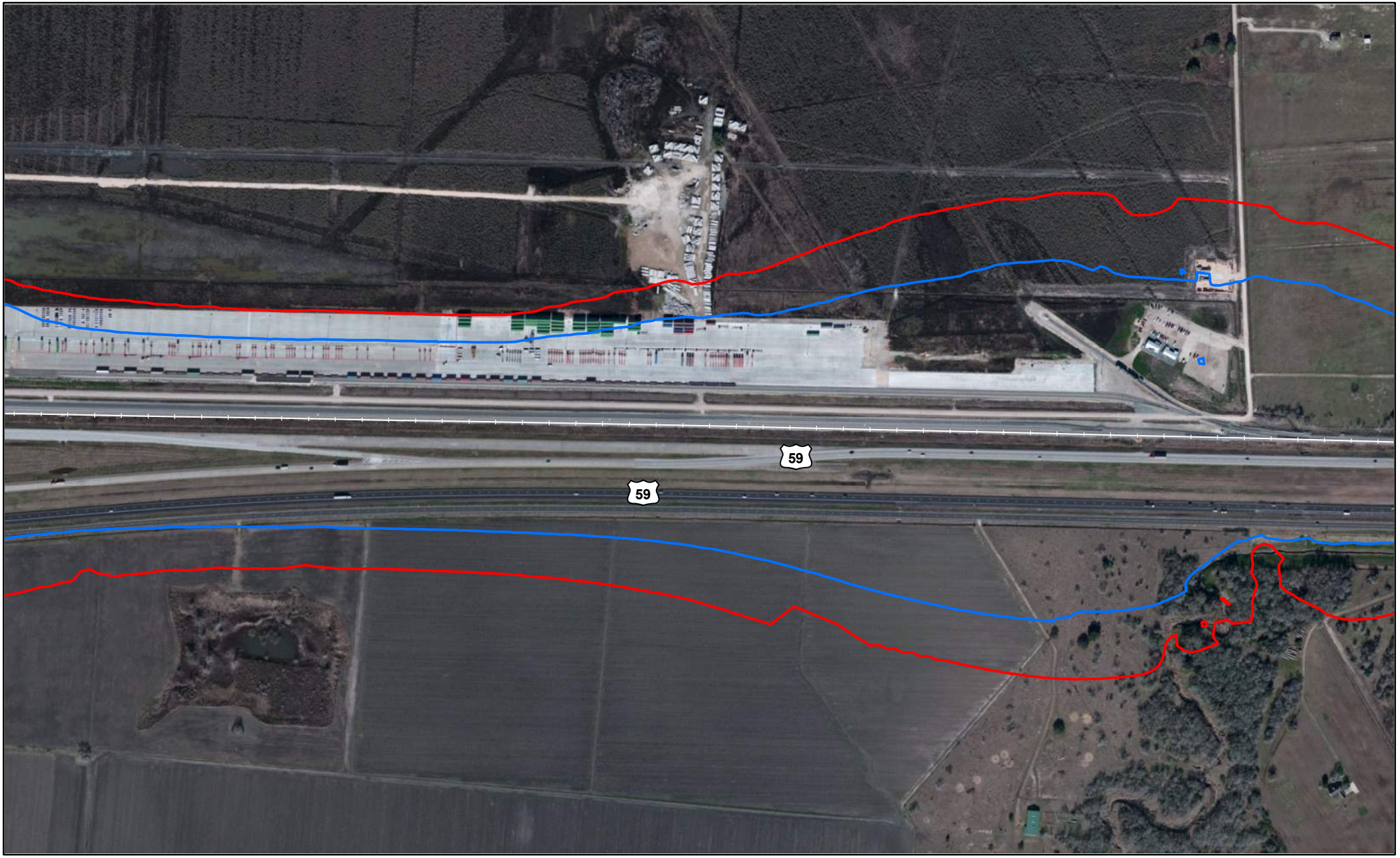
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Noise Contours
Fort Bend County, TX

Miles
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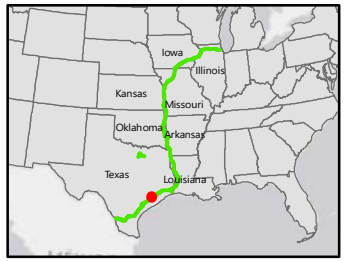
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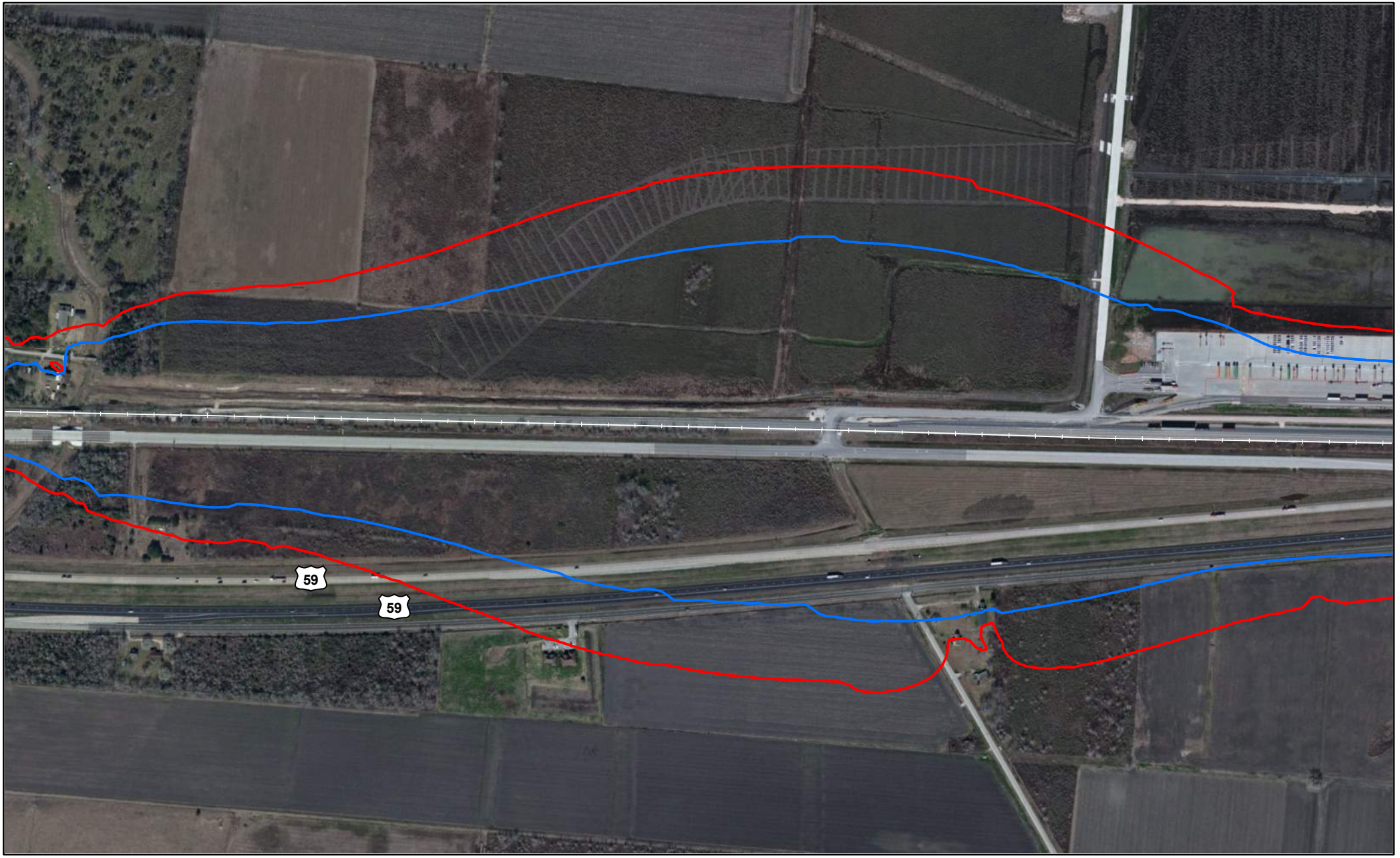
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Noise Contours
Fort Bend County, TX

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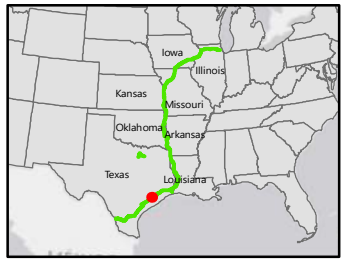
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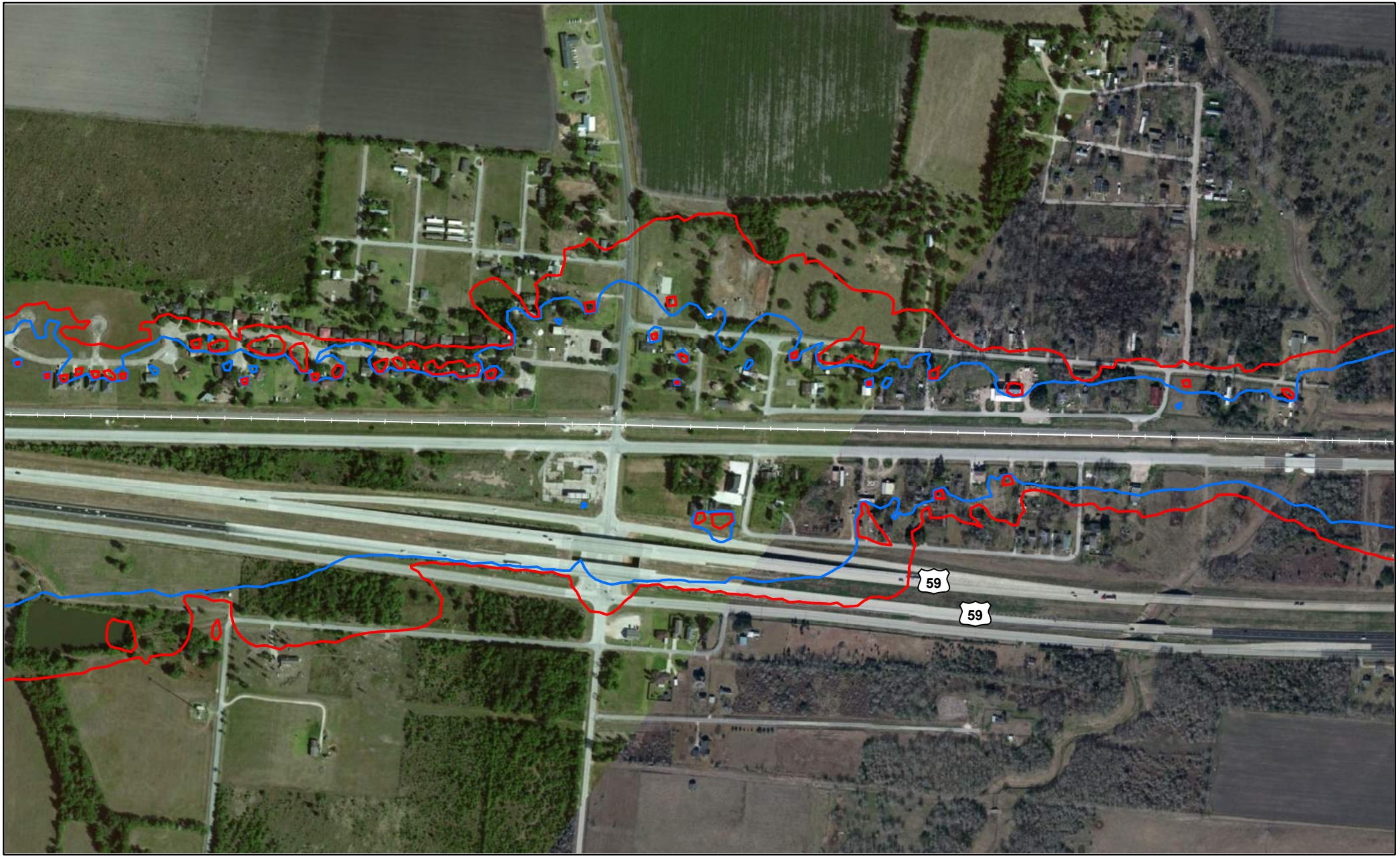
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Noise Contours
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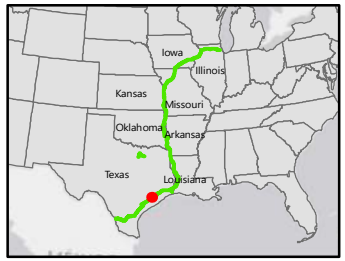
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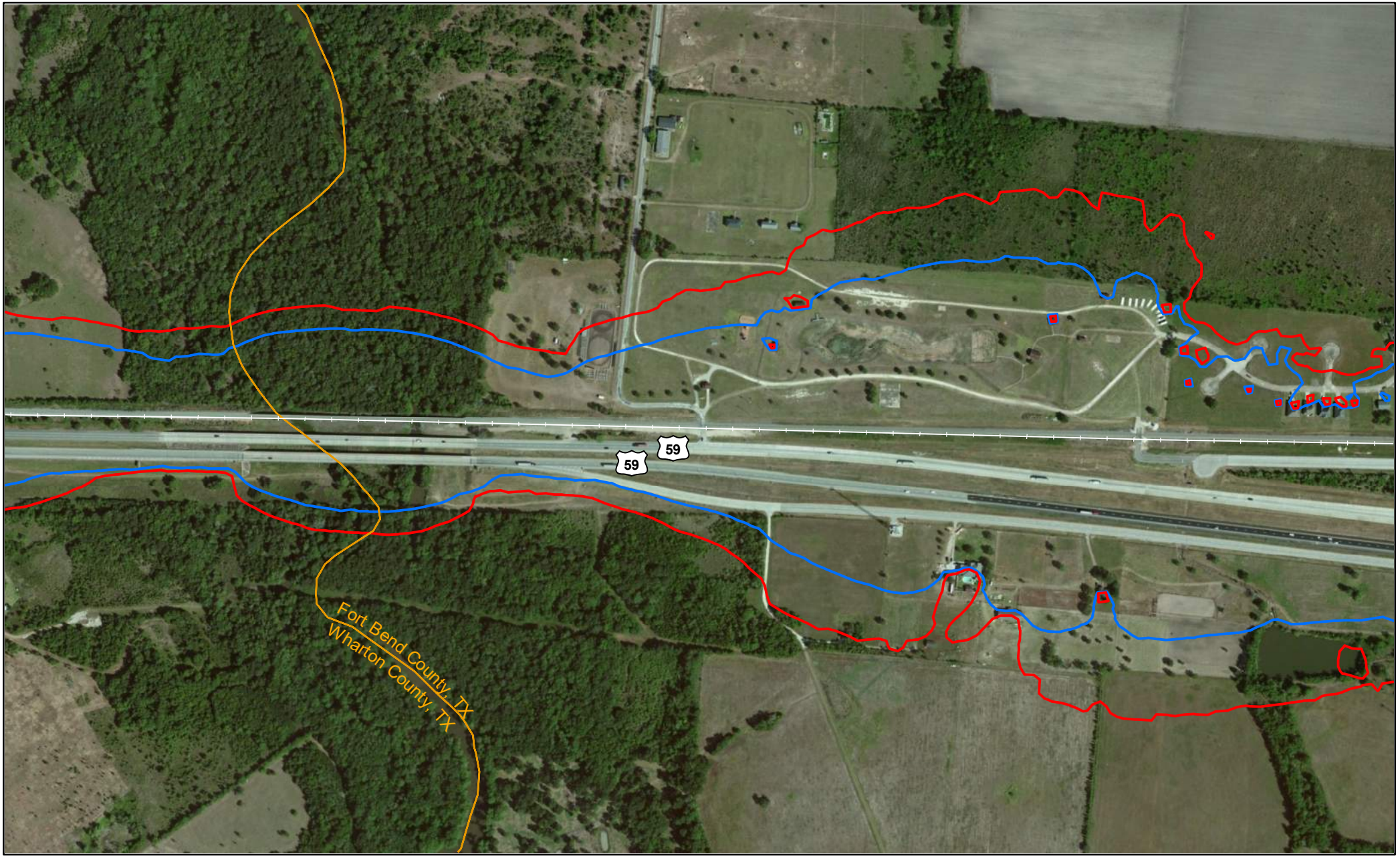
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Noise Contours
Fort Bend County, TX

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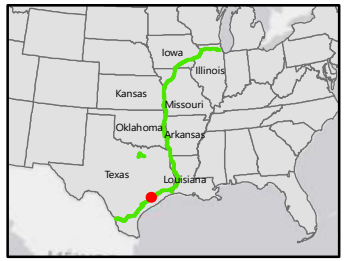
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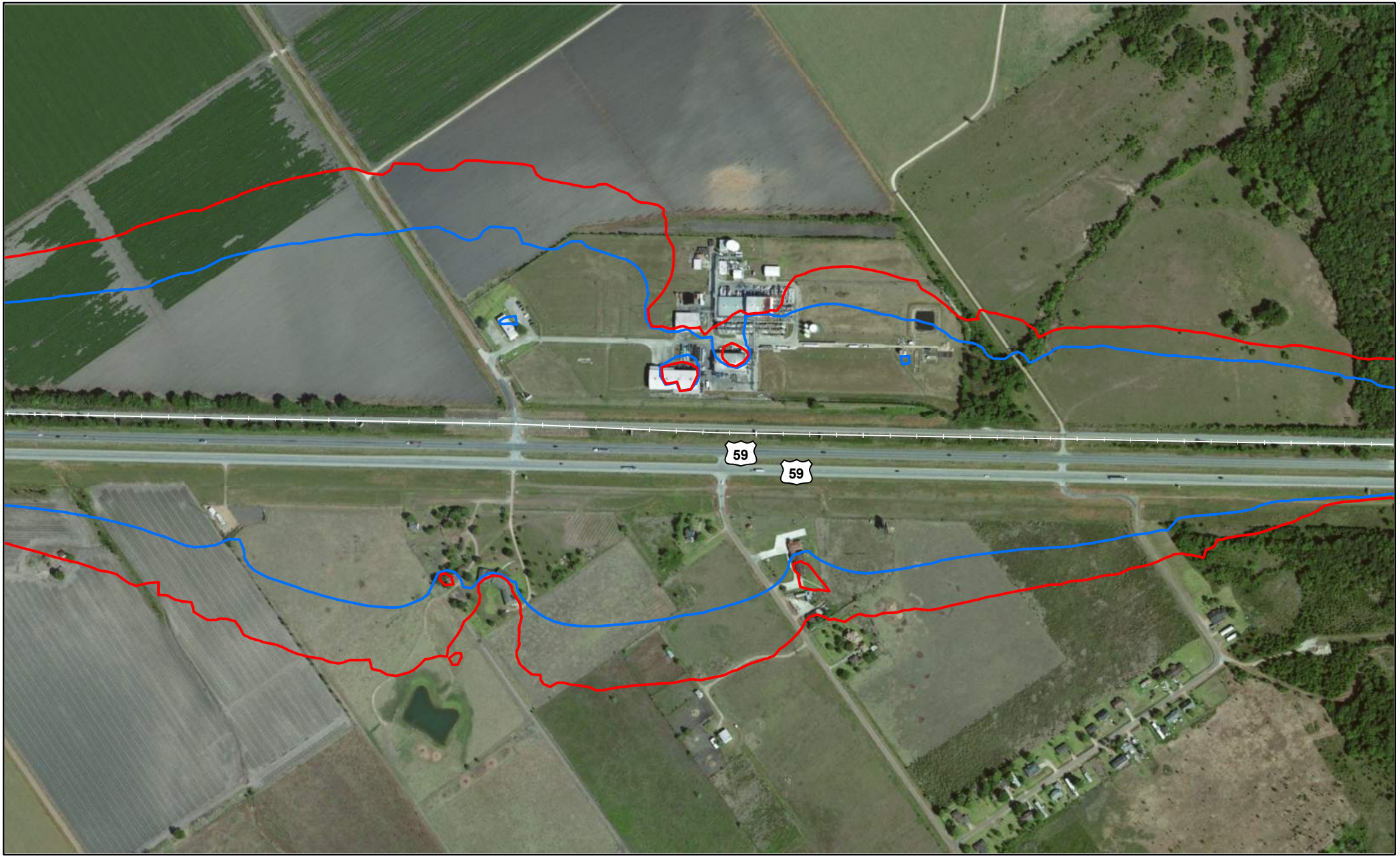
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Noise Contours
Wharton County, TX

Miles
0 0.05 0.1

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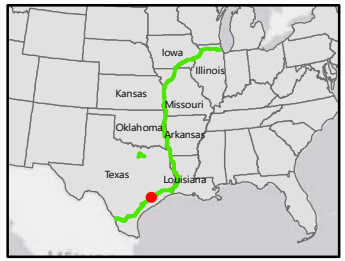
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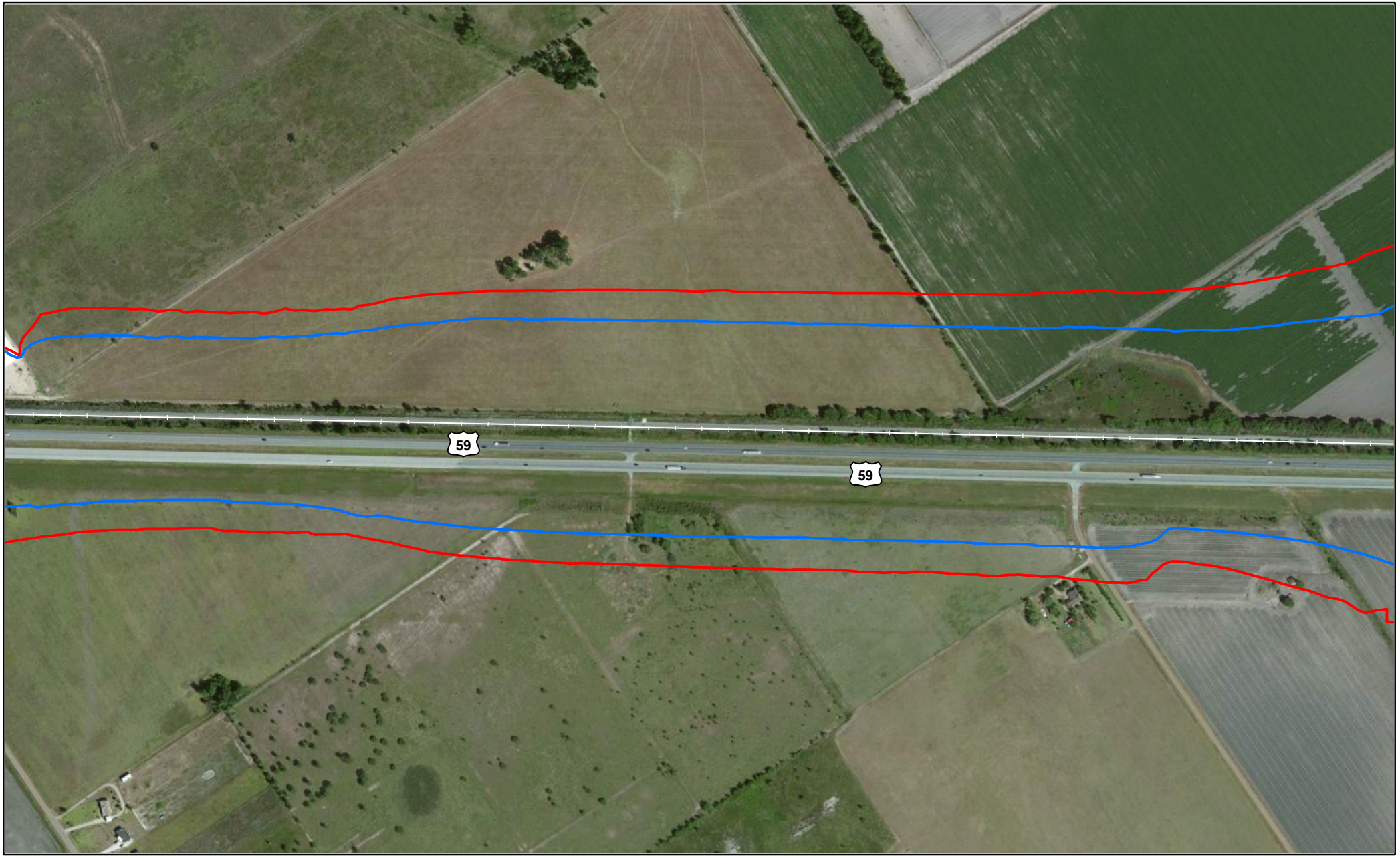
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Noise Contours
Wharton County, TX

Miles
0 0.05 0.1

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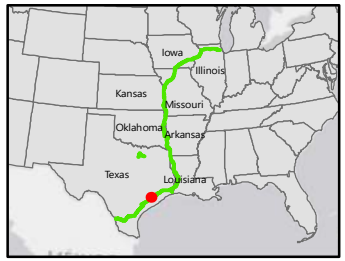
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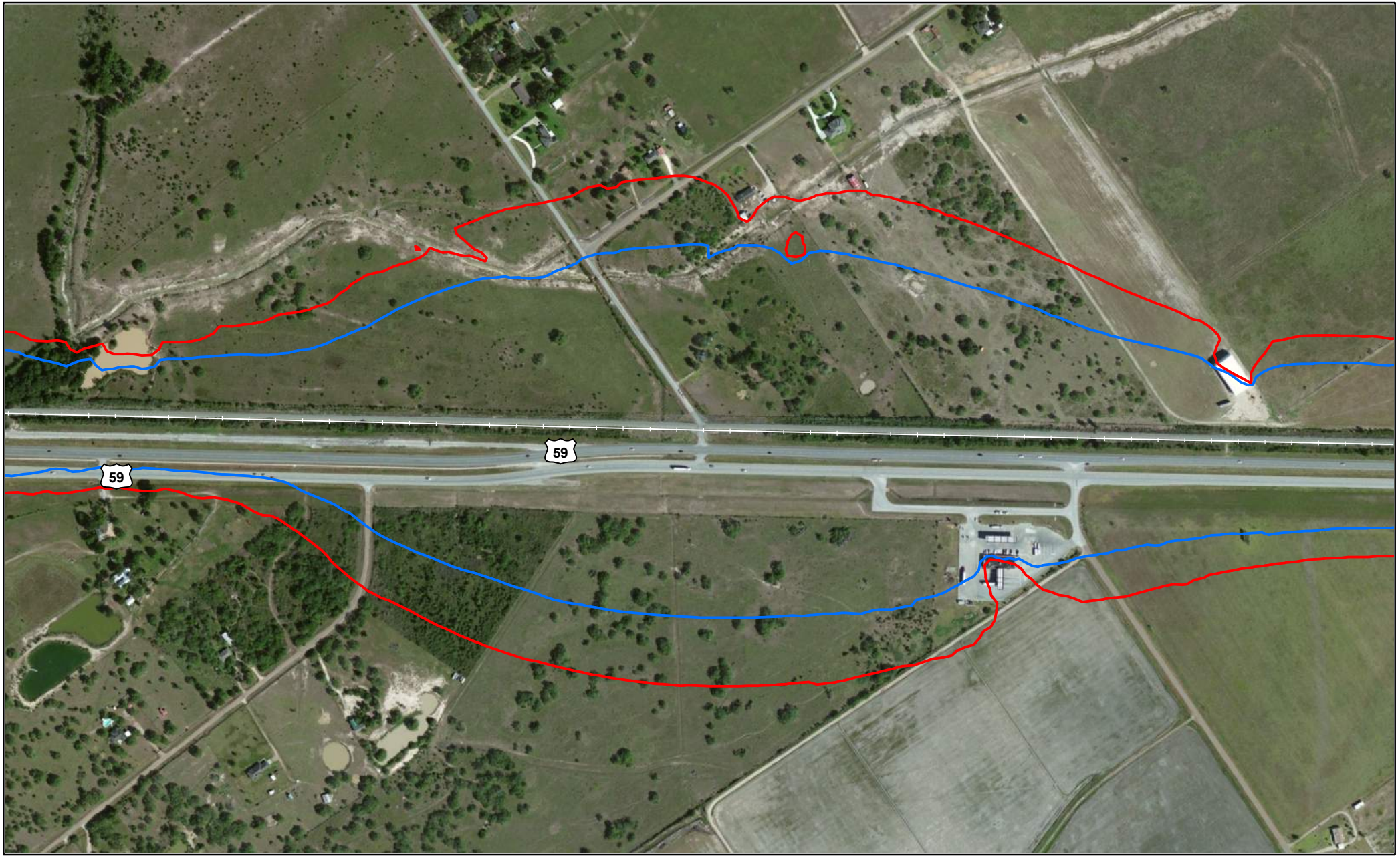
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Noise Contours
Wharton County, TX

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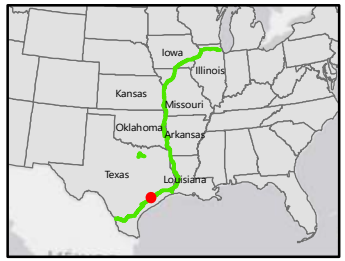
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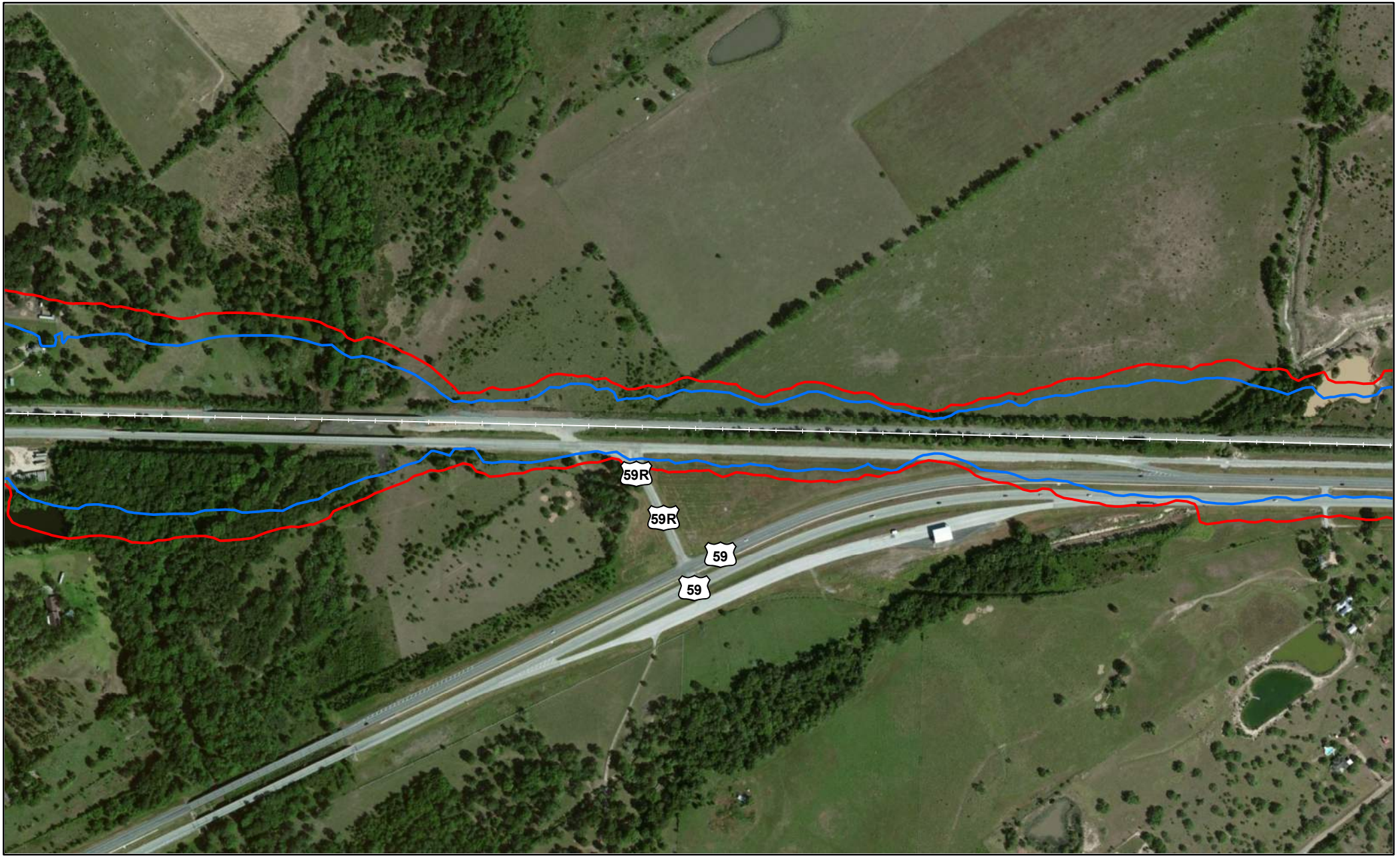
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Noise Contours
Wharton County, TX

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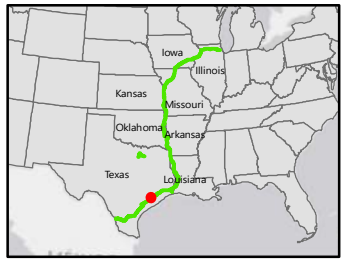
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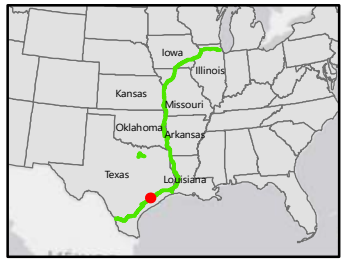
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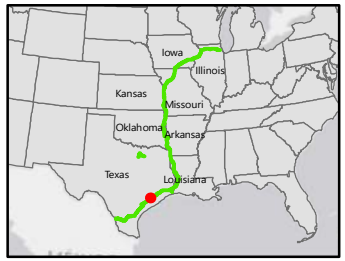
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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

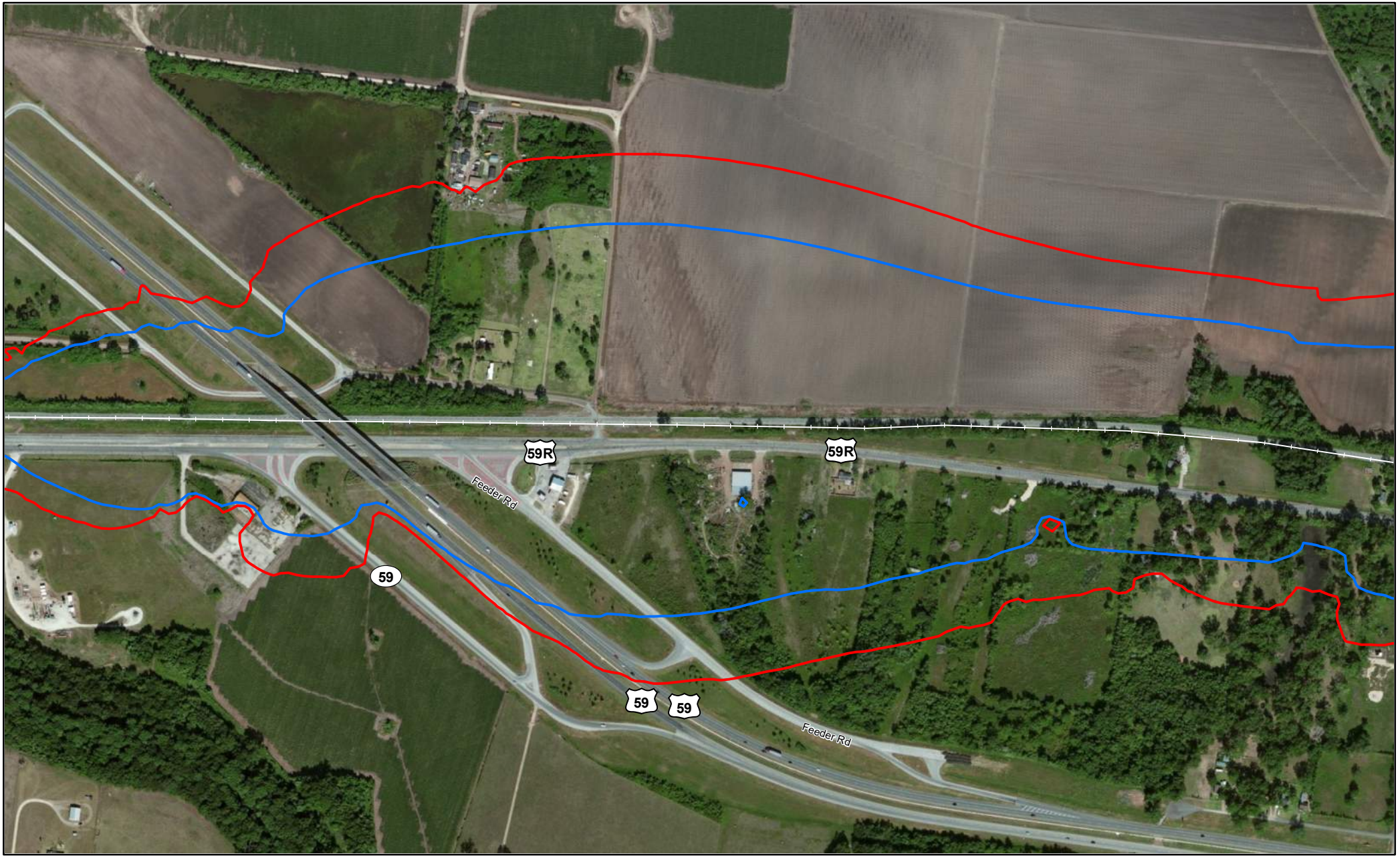
Source: ESRI.



Noise Contours
Wharton County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



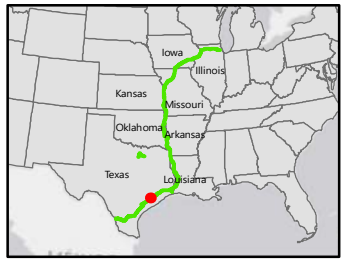
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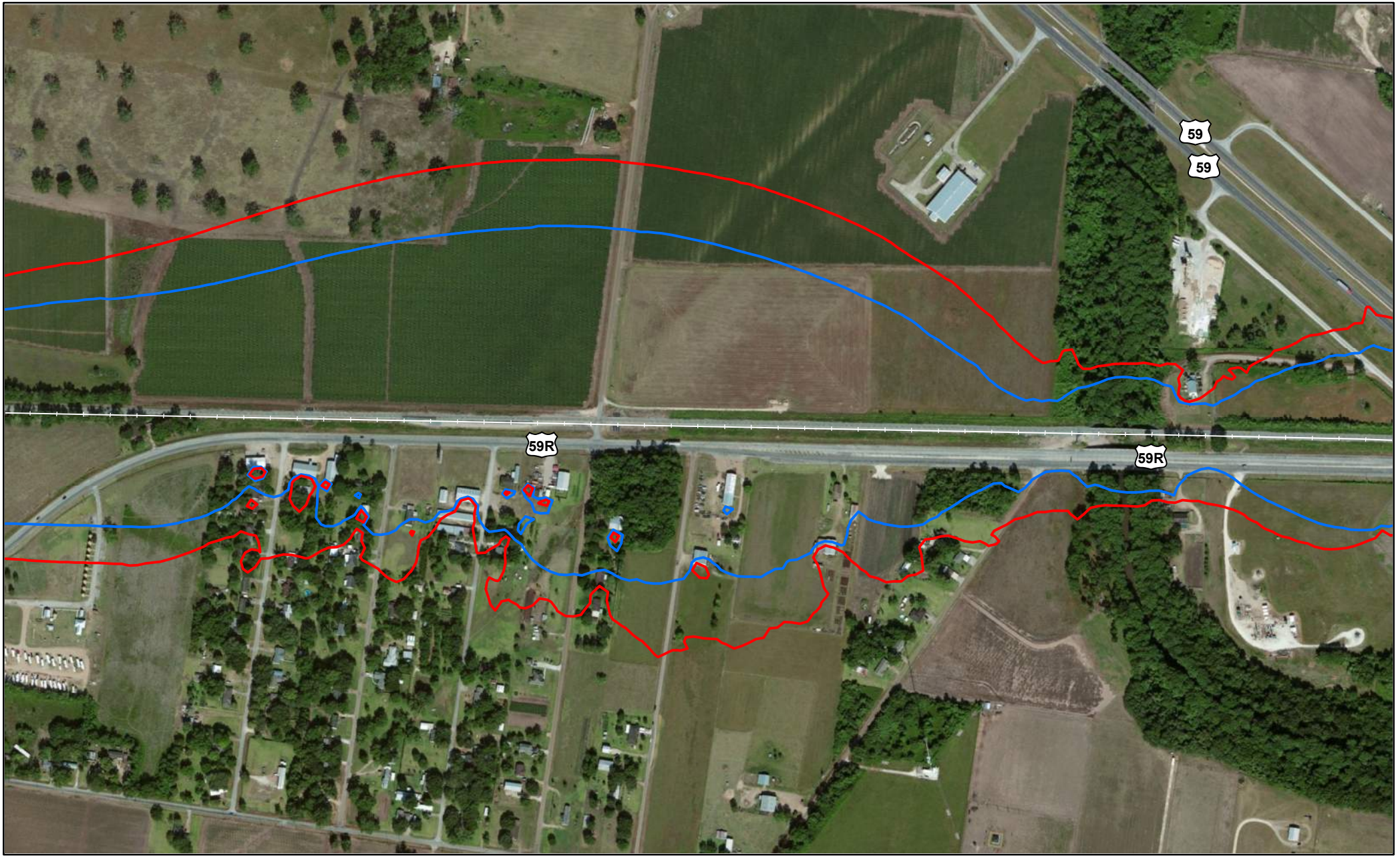
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Noise Contours
Wharton County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



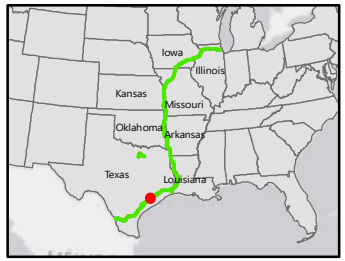
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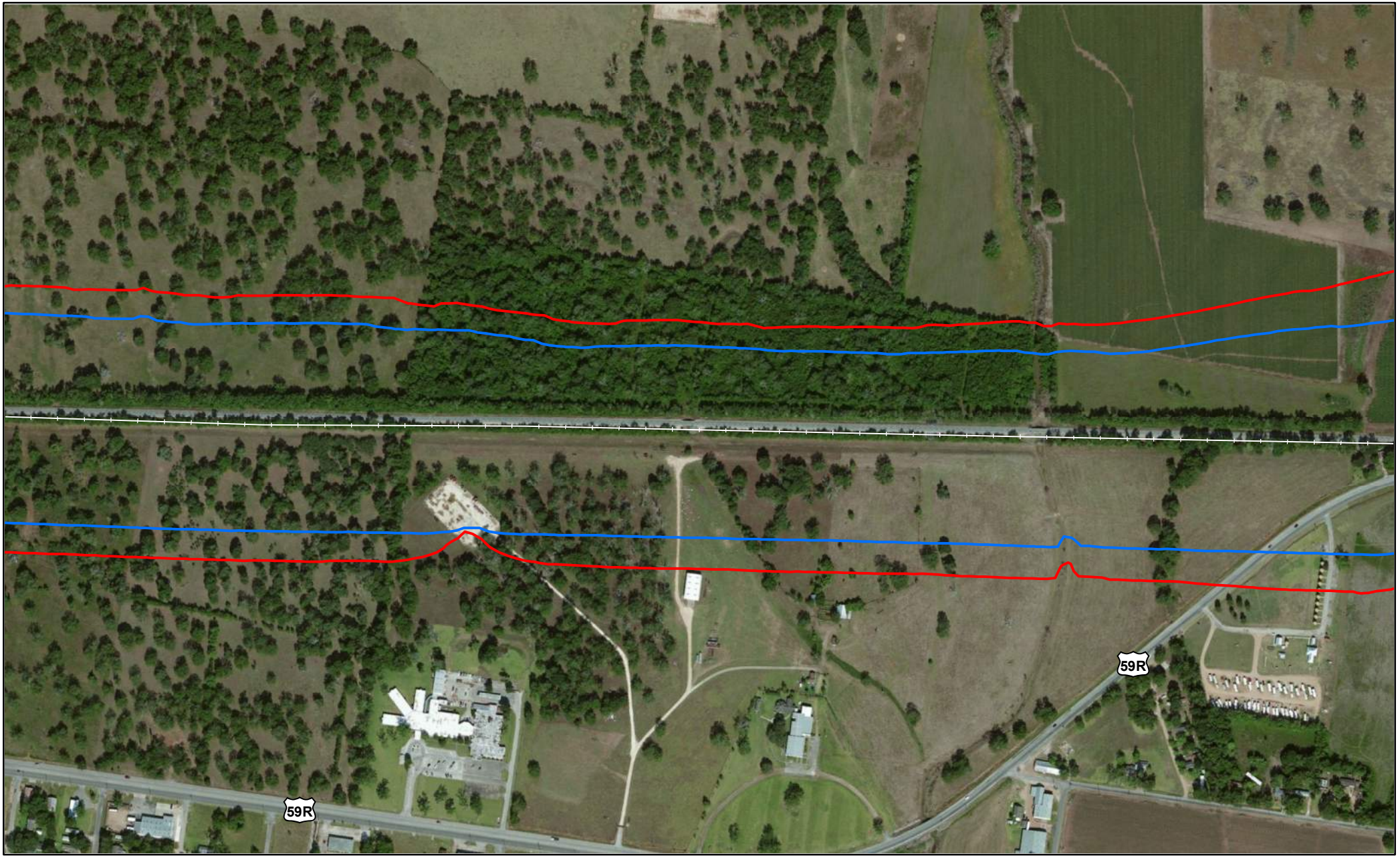
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Noise Contours
Wharton County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



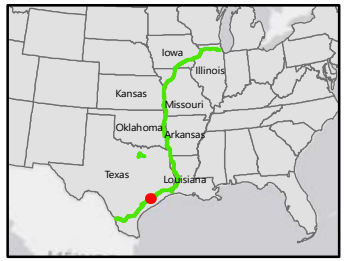
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Noise Contours
Wharton County, TX

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



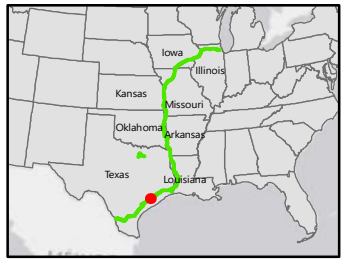
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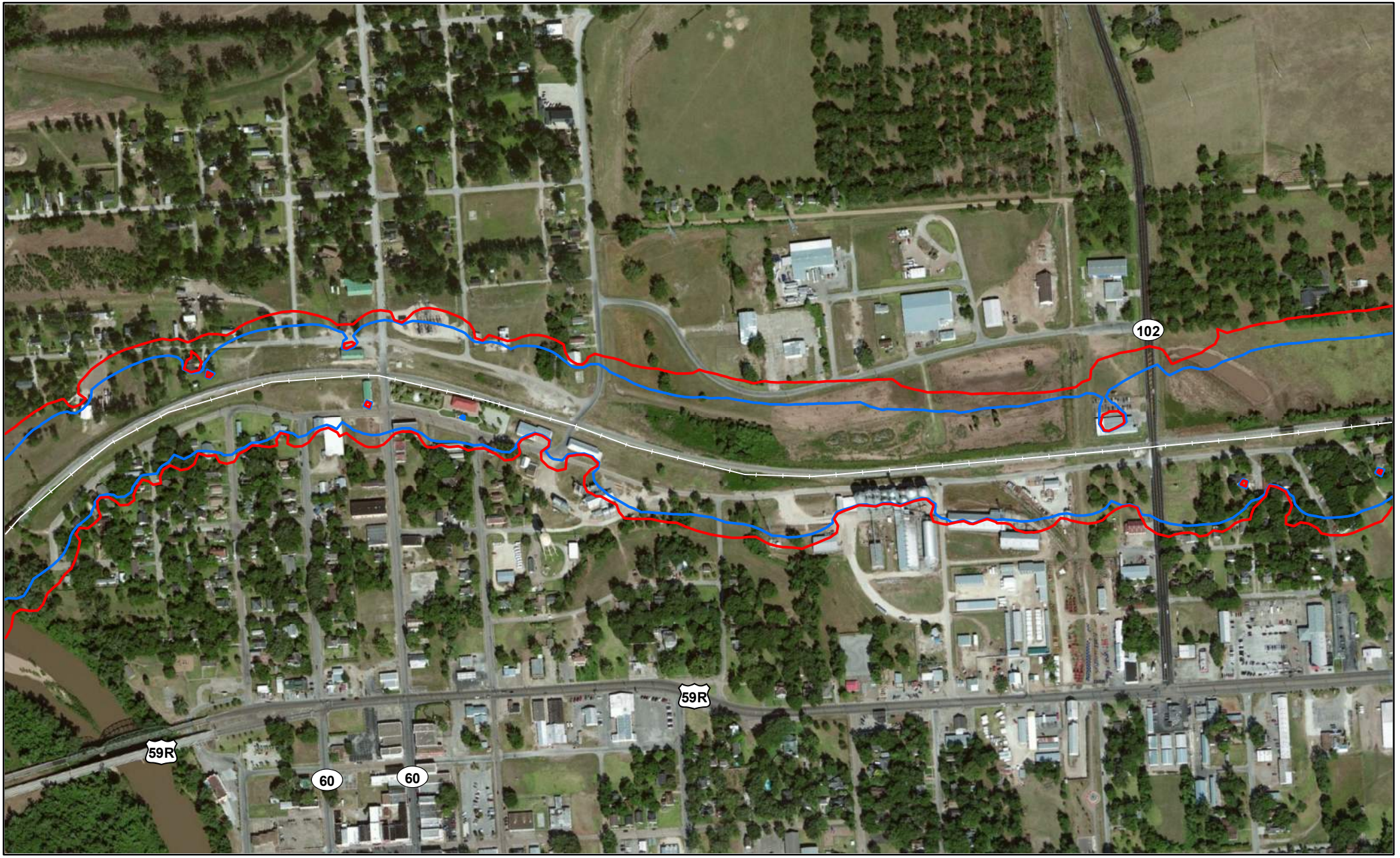
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Noise Contours
Wharton County, TX

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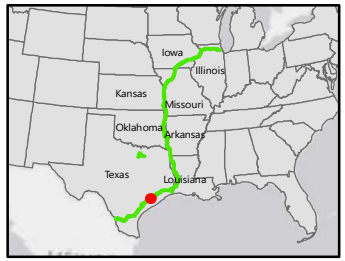
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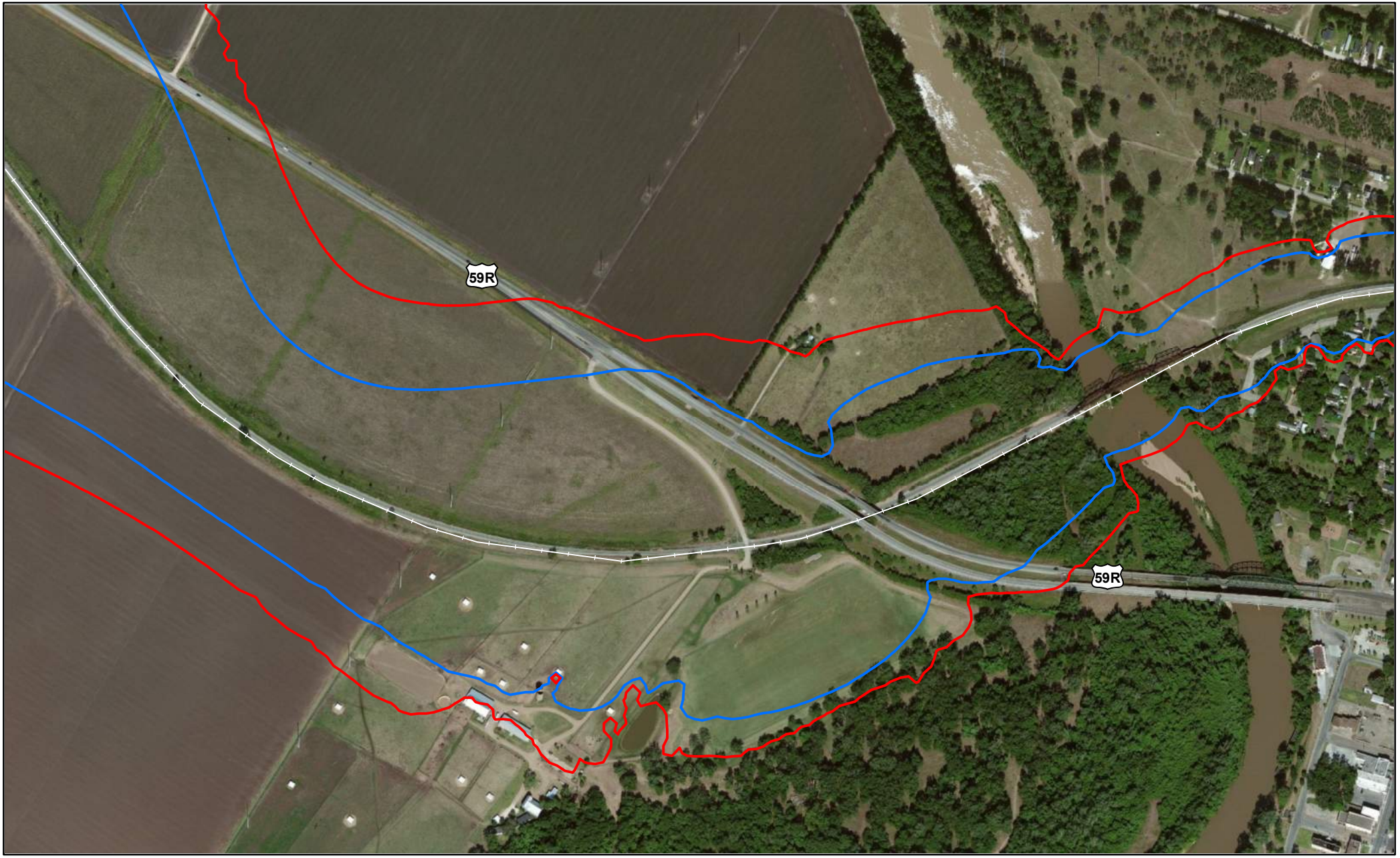
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Wharton County, TX

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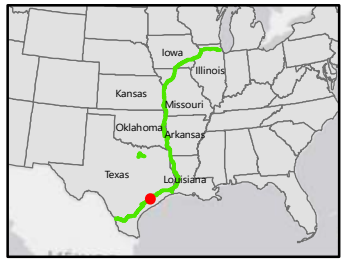
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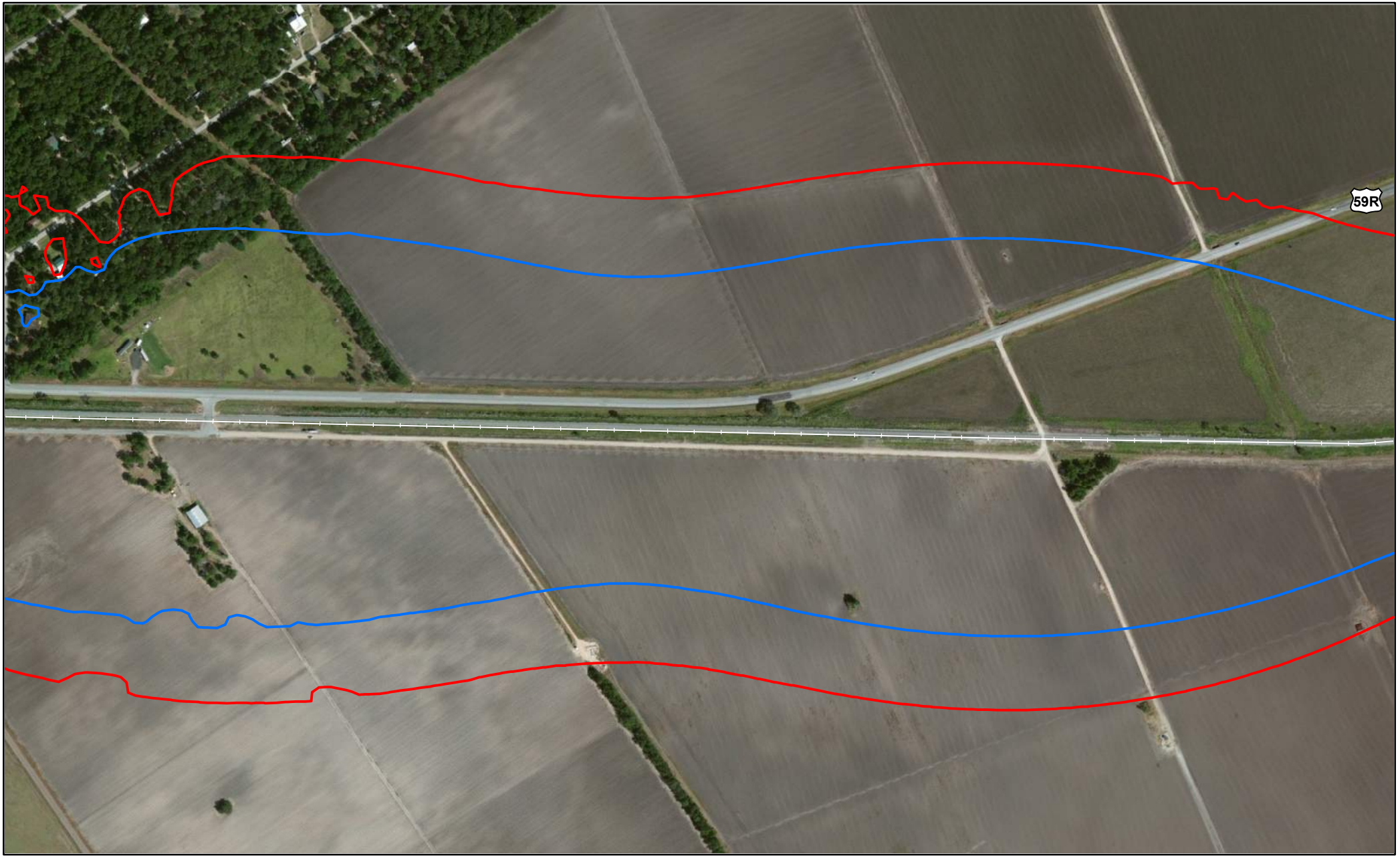
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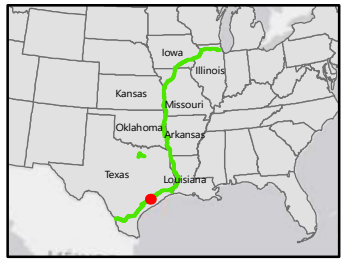
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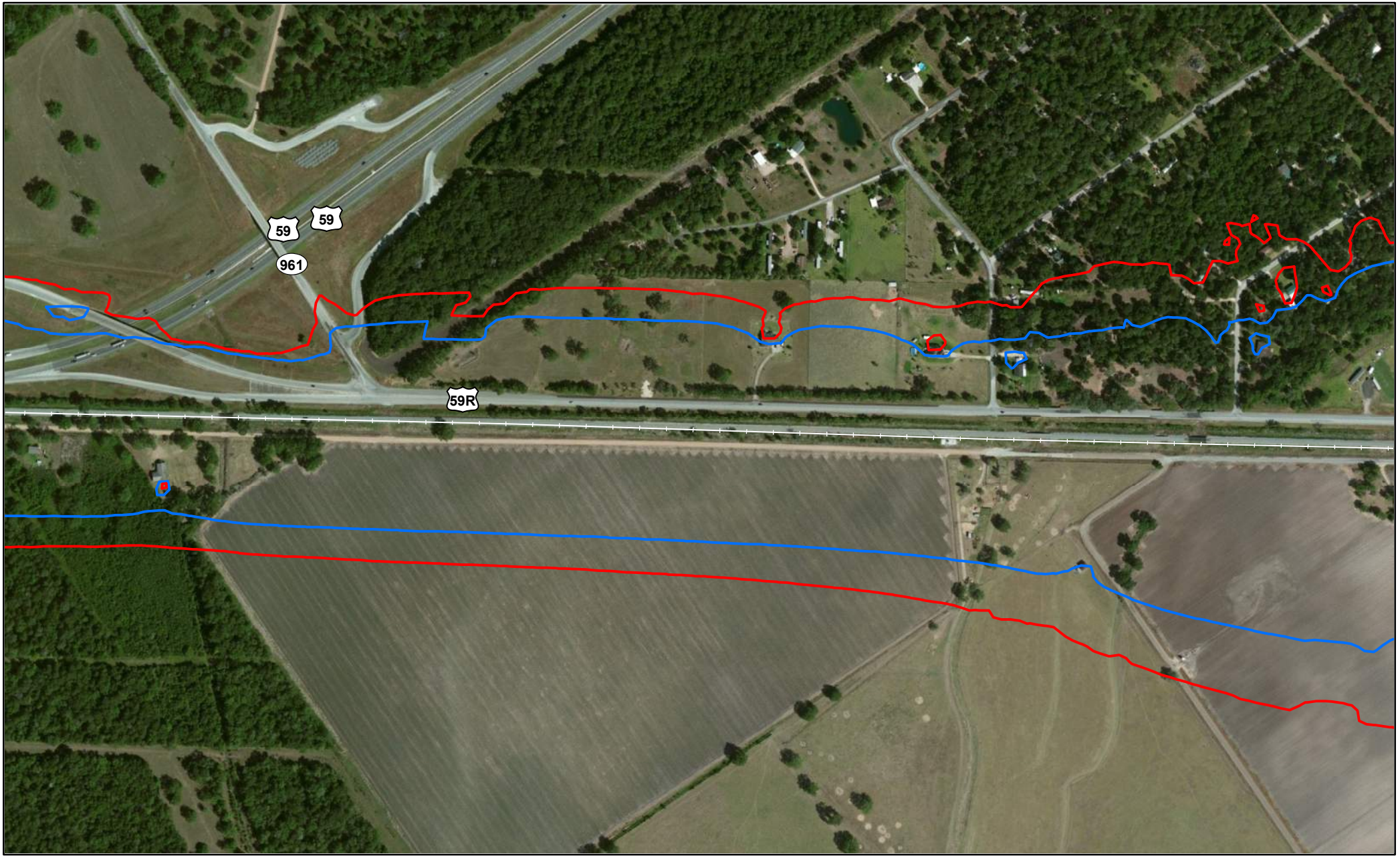
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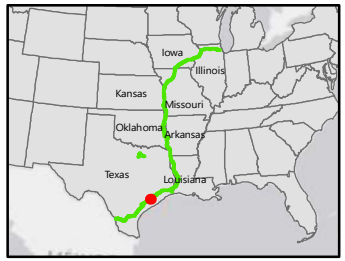
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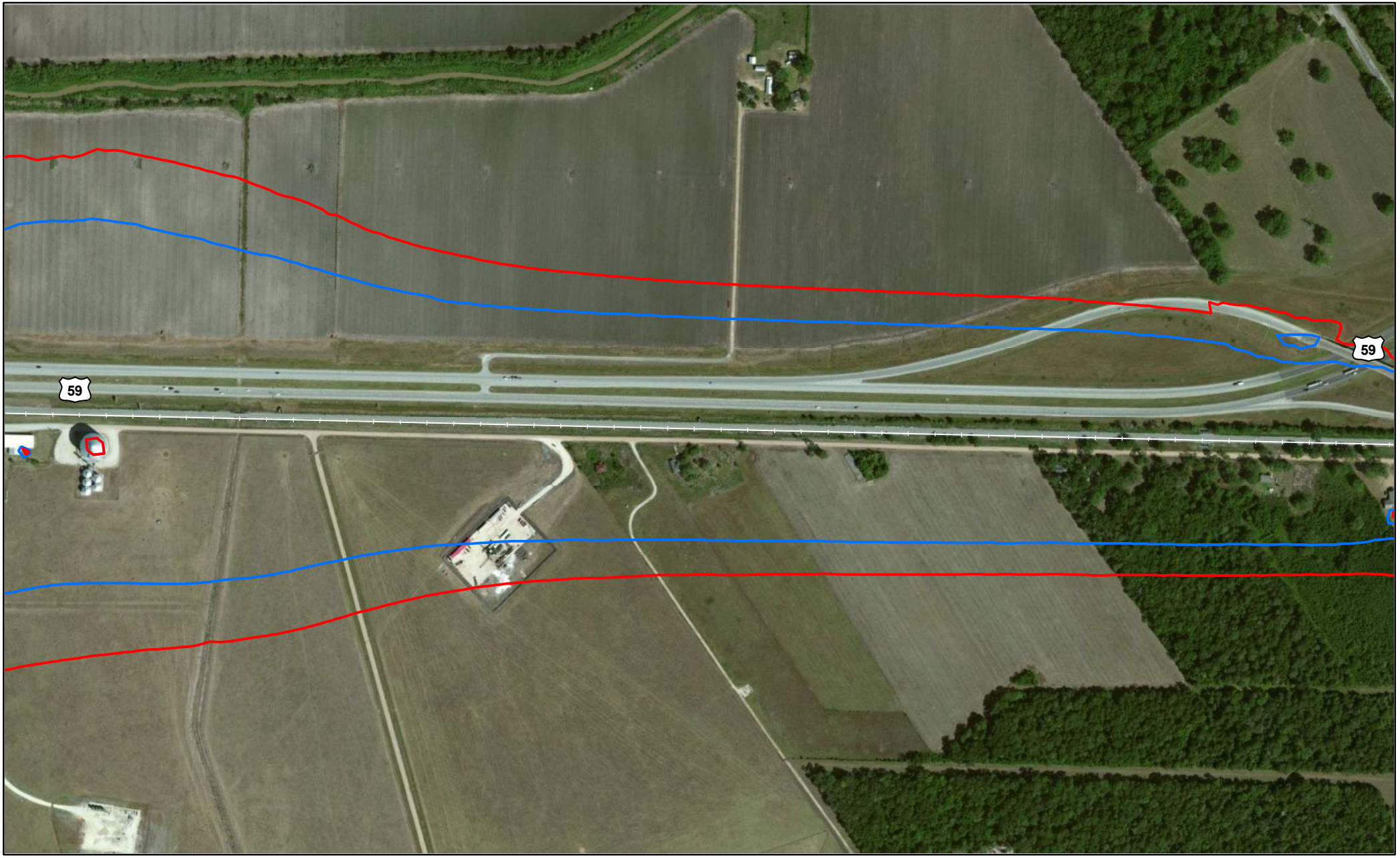
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Noise Contours
Wharton County, TX

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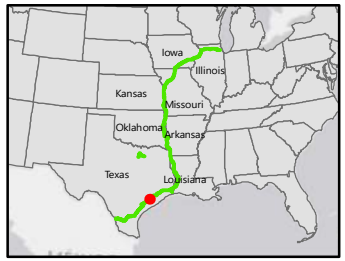
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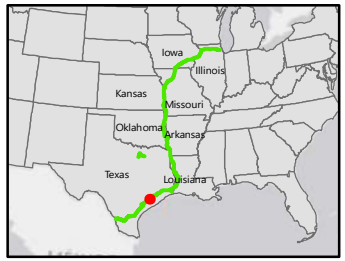
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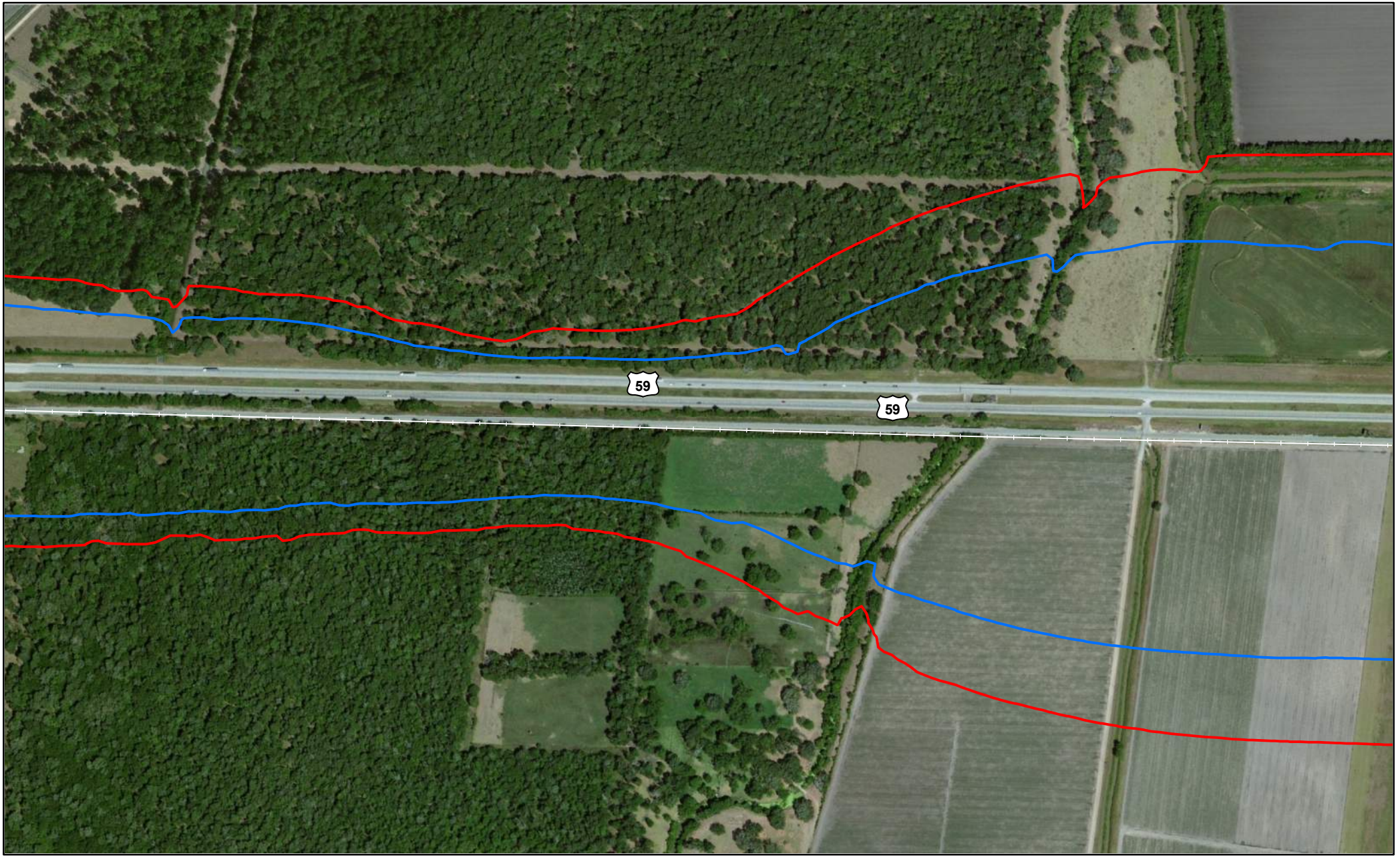
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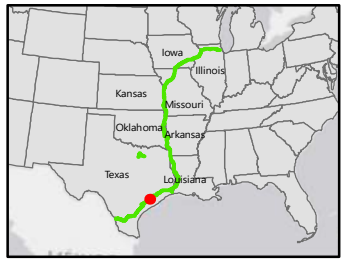
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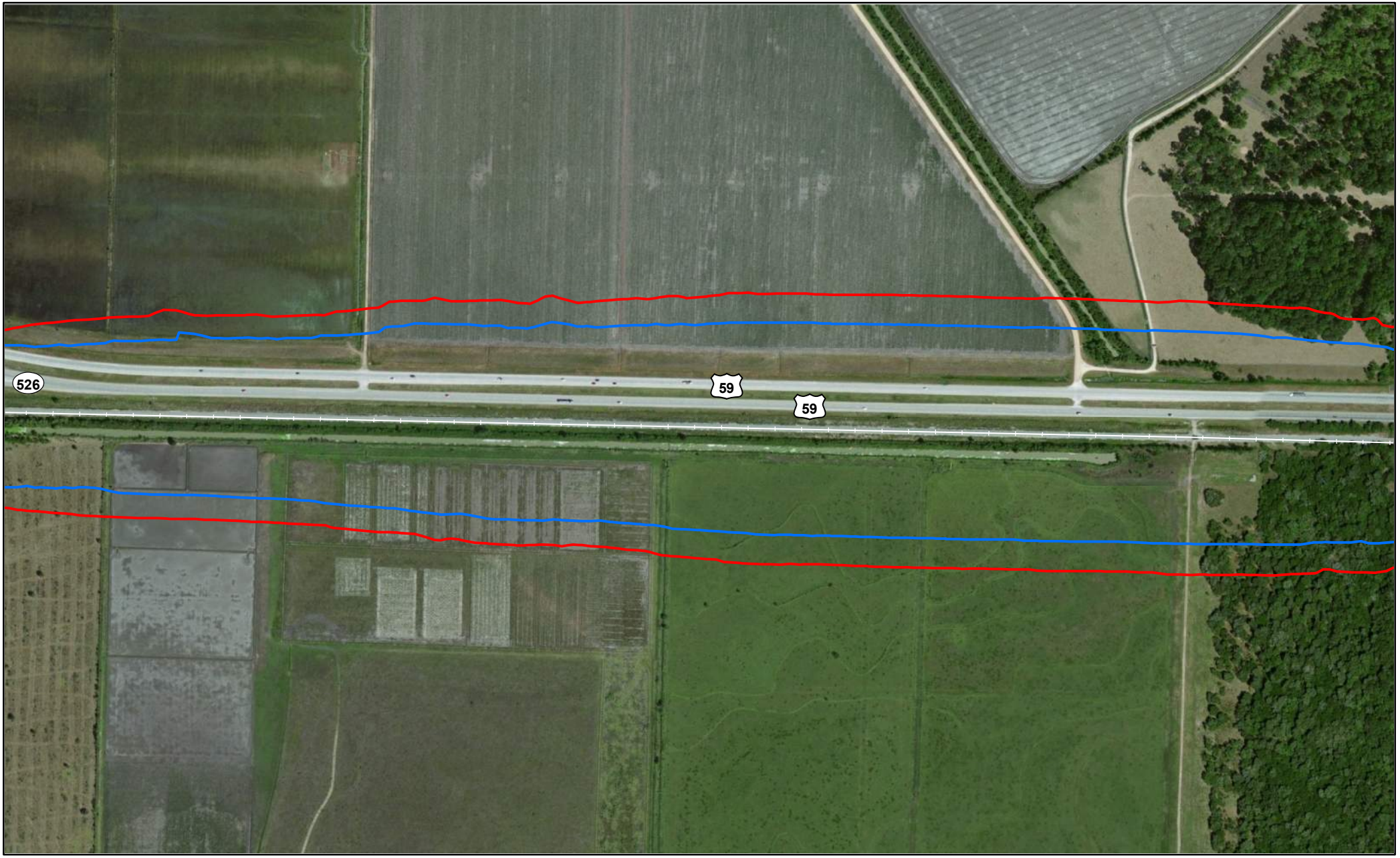
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Noise Contours
Wharton County, TX

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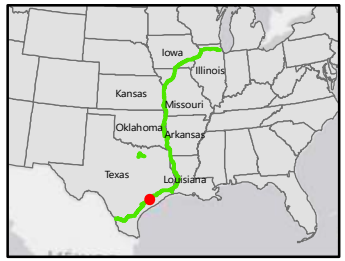
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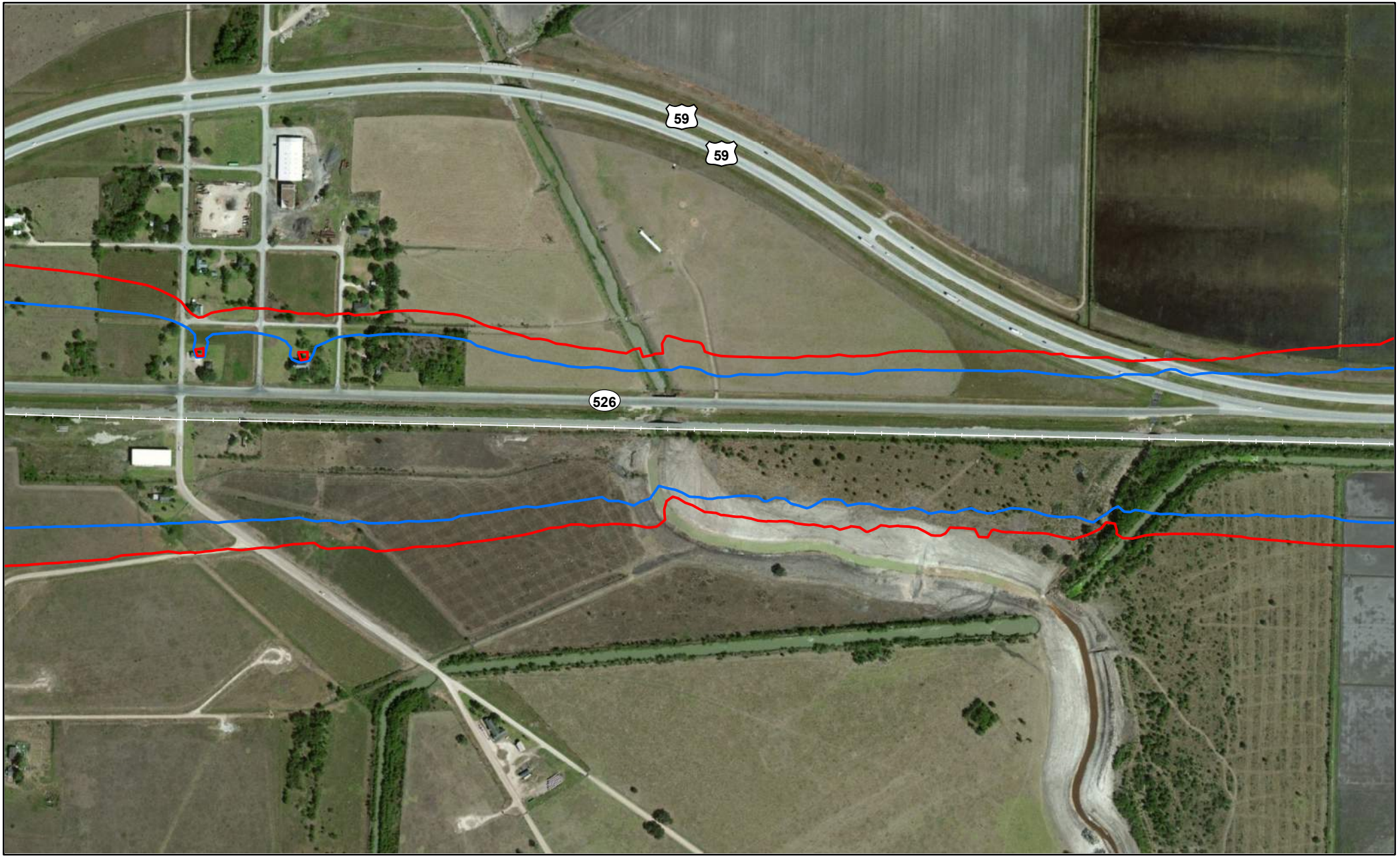
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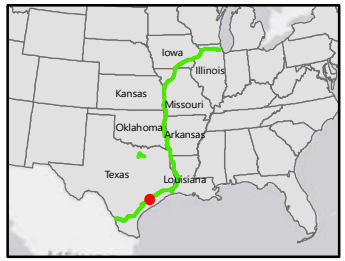
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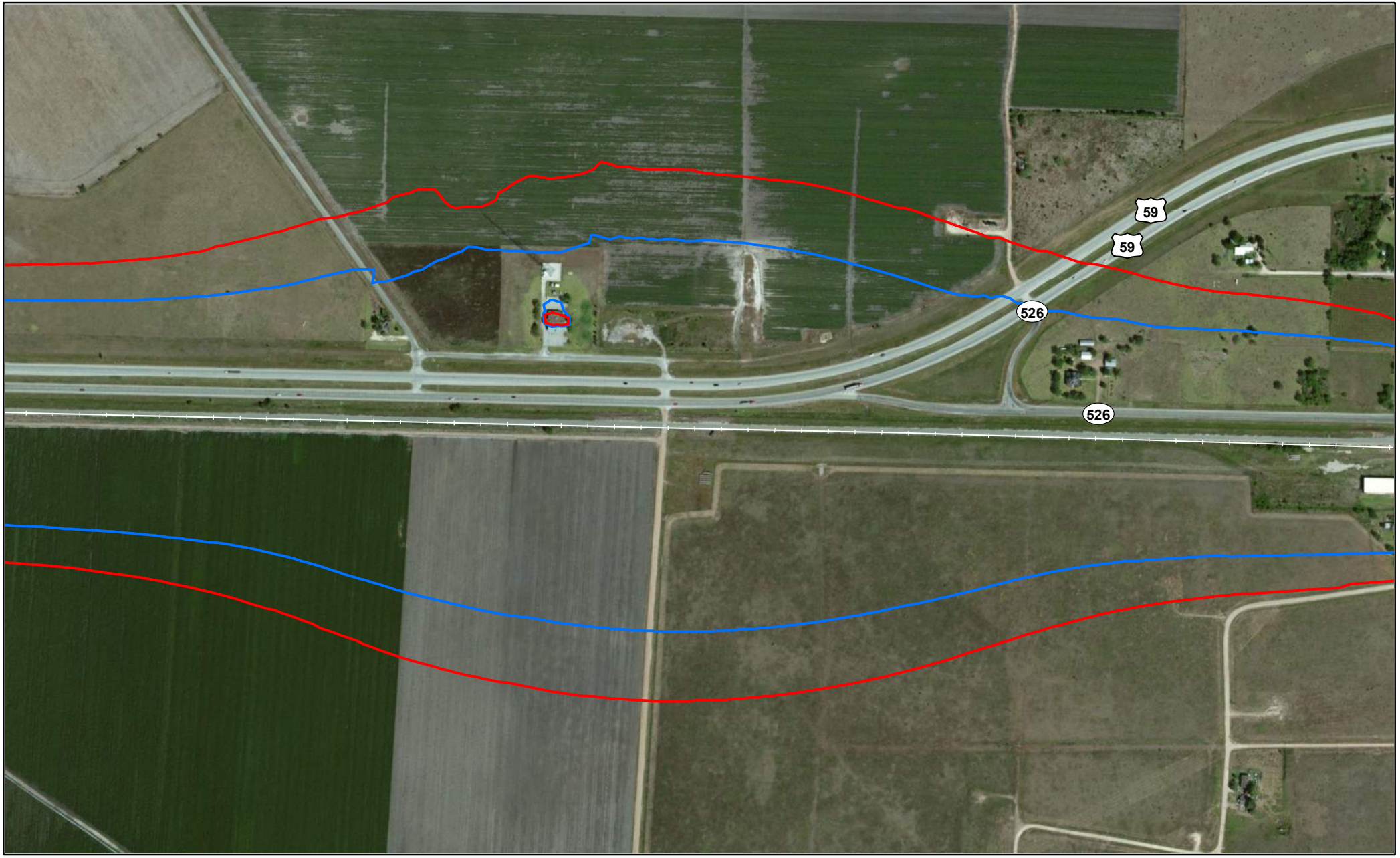
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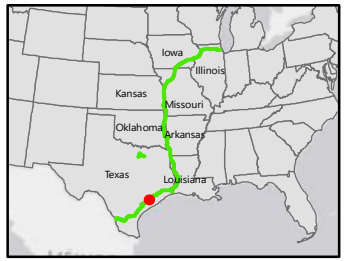
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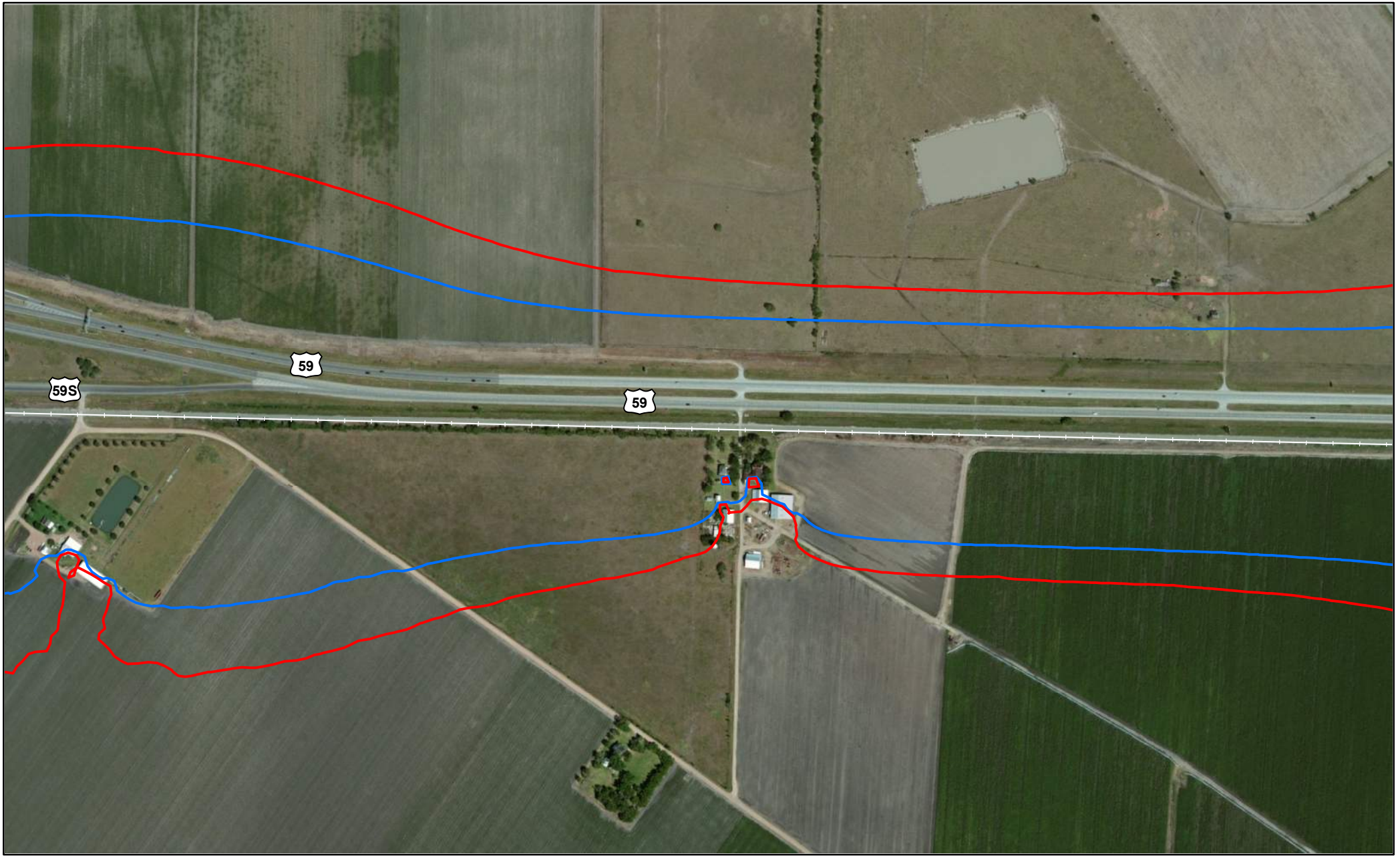
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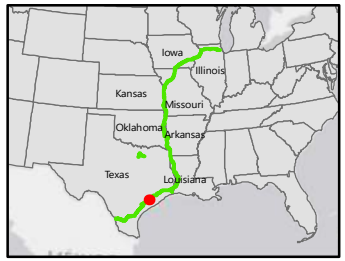
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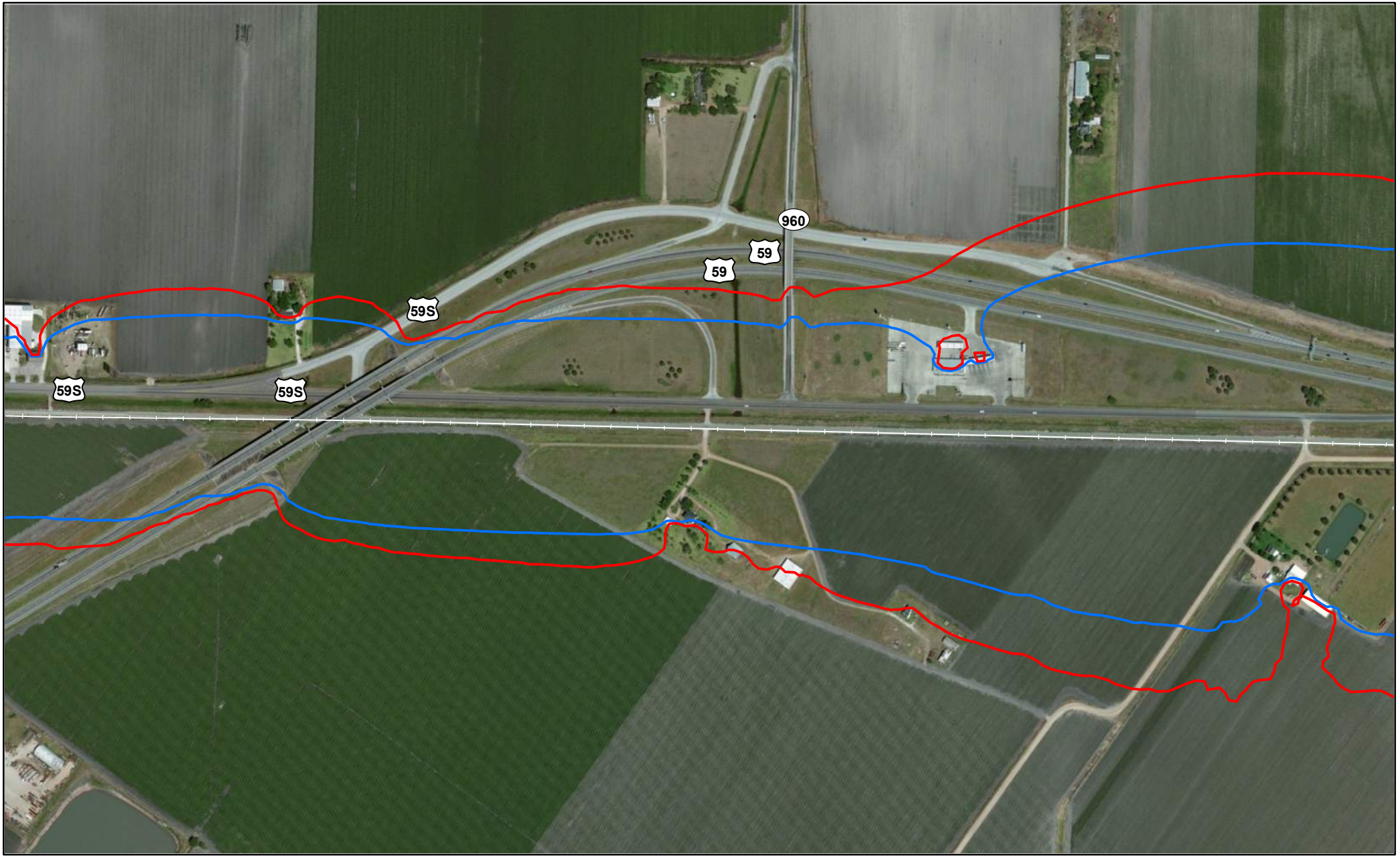
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Noise Contours
Wharton County, TX

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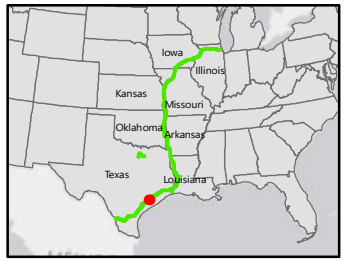
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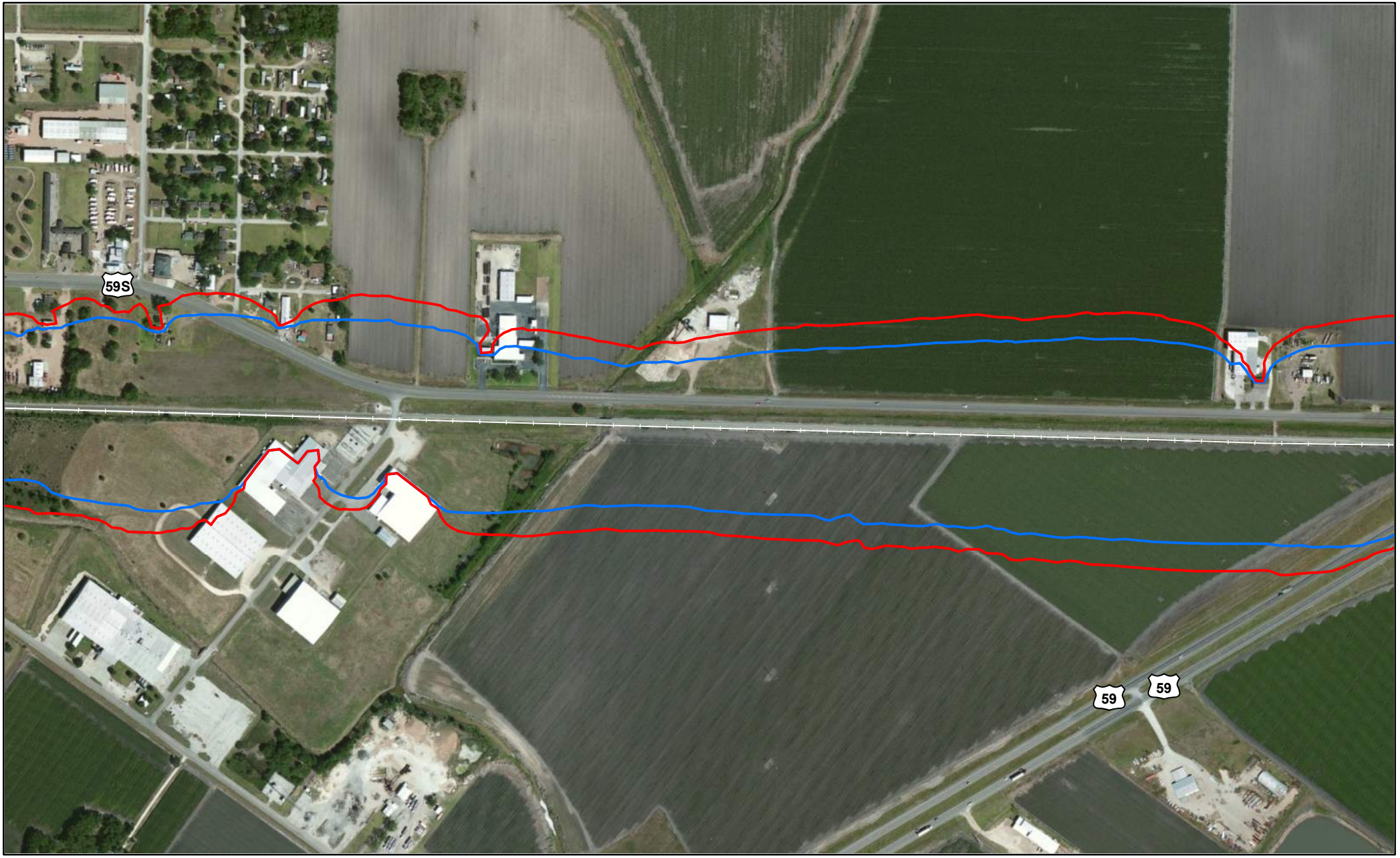
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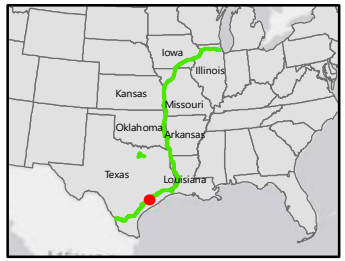
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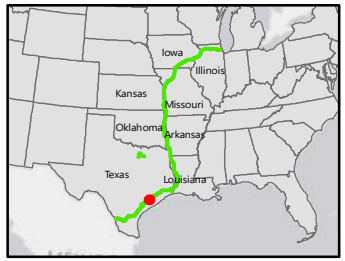
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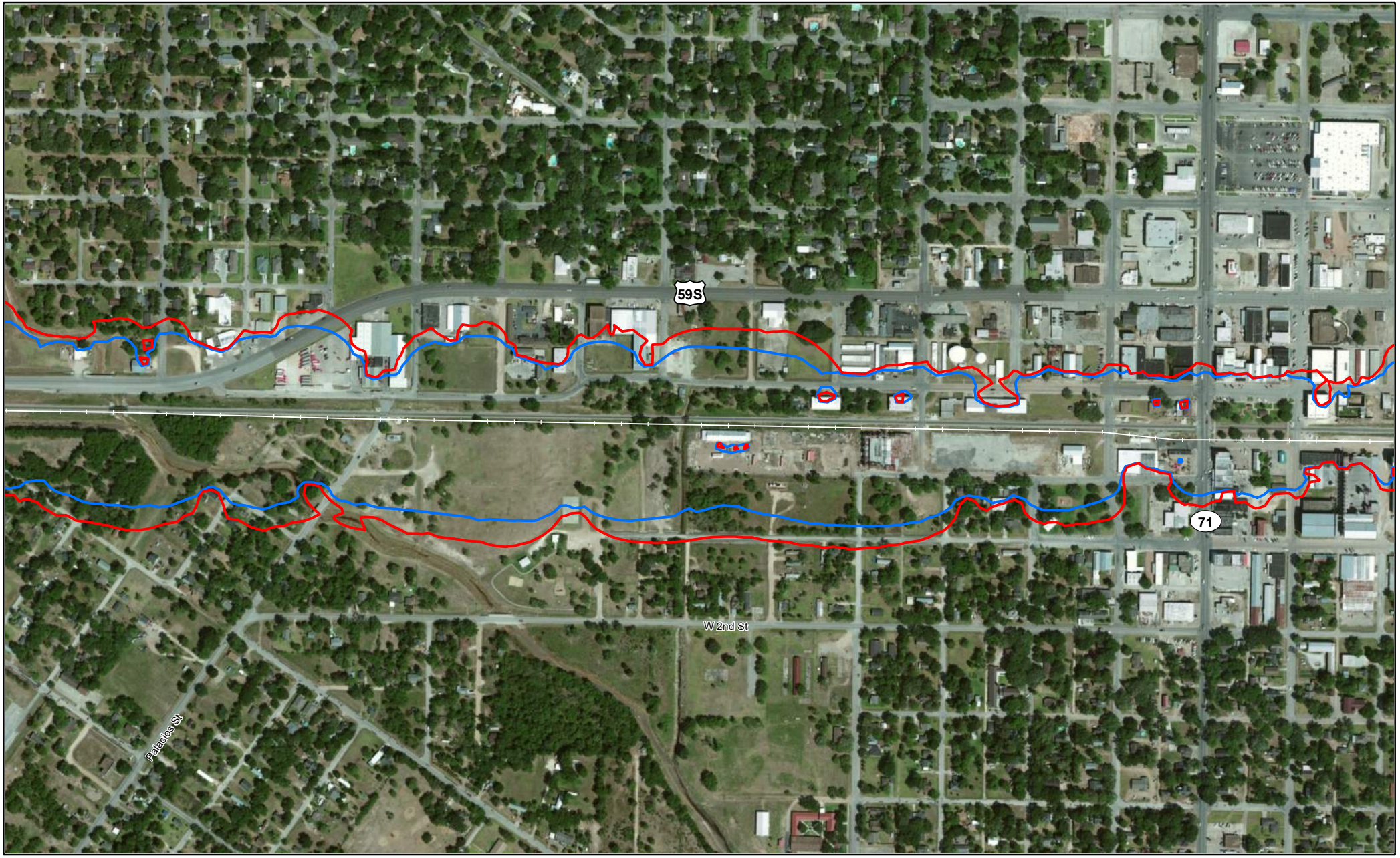
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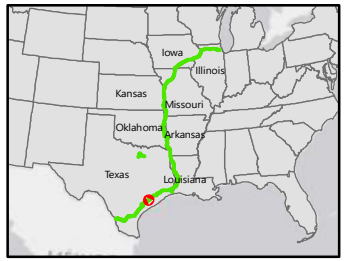
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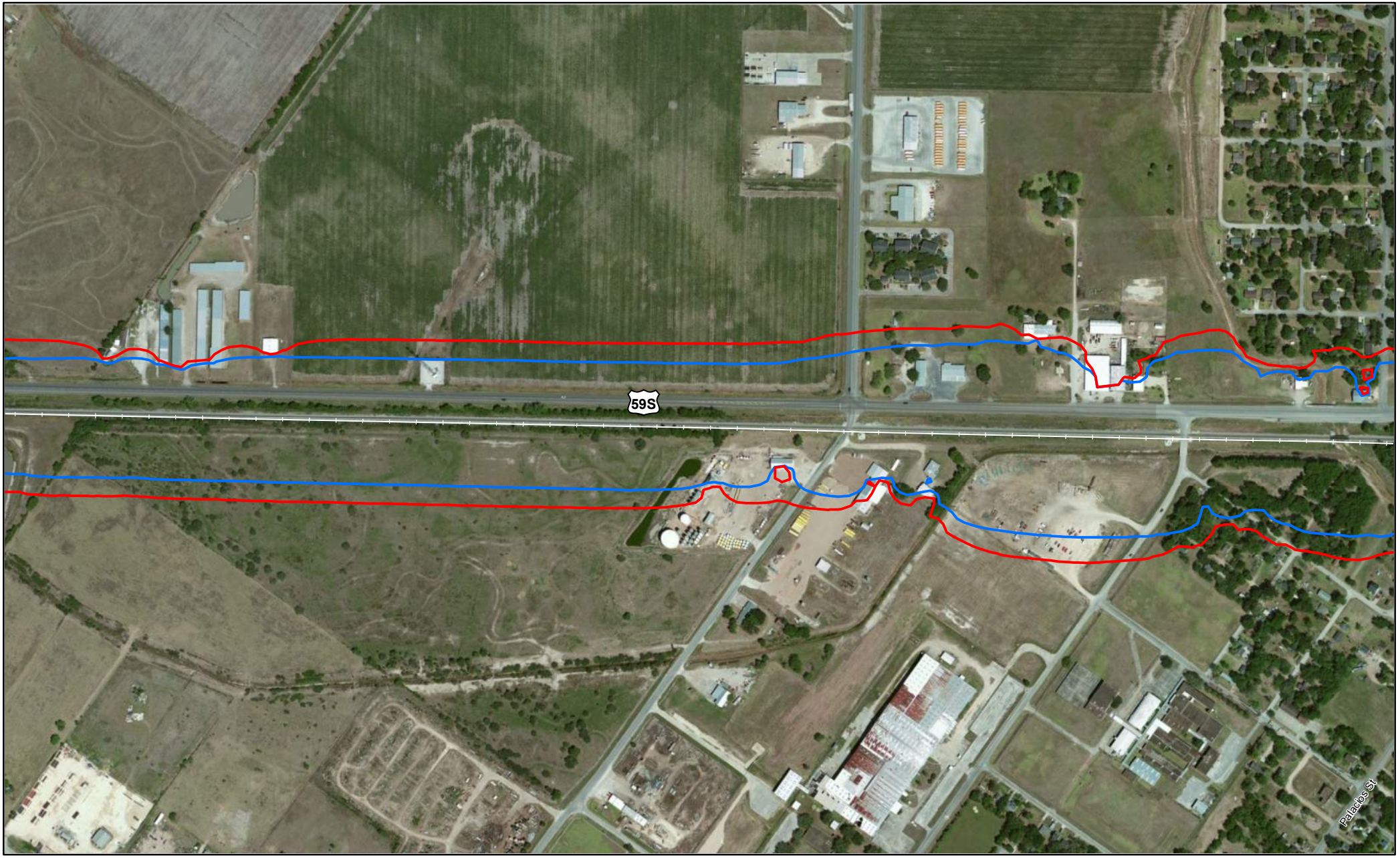
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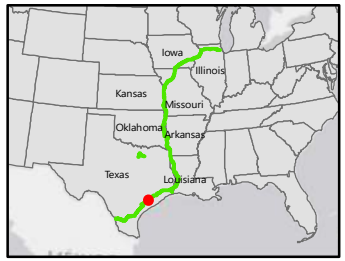
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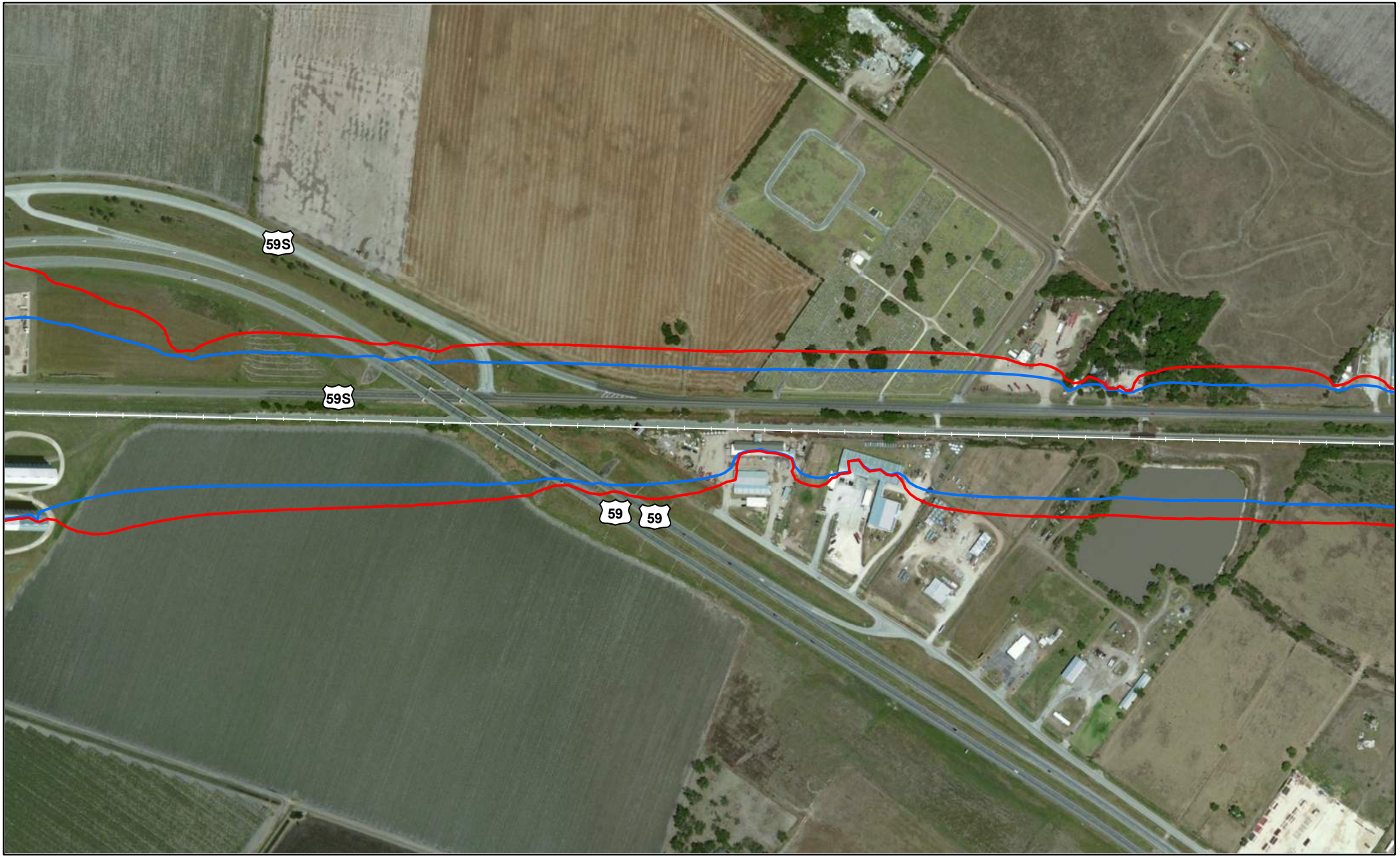
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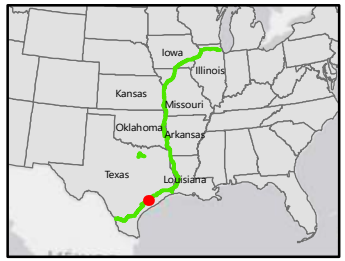
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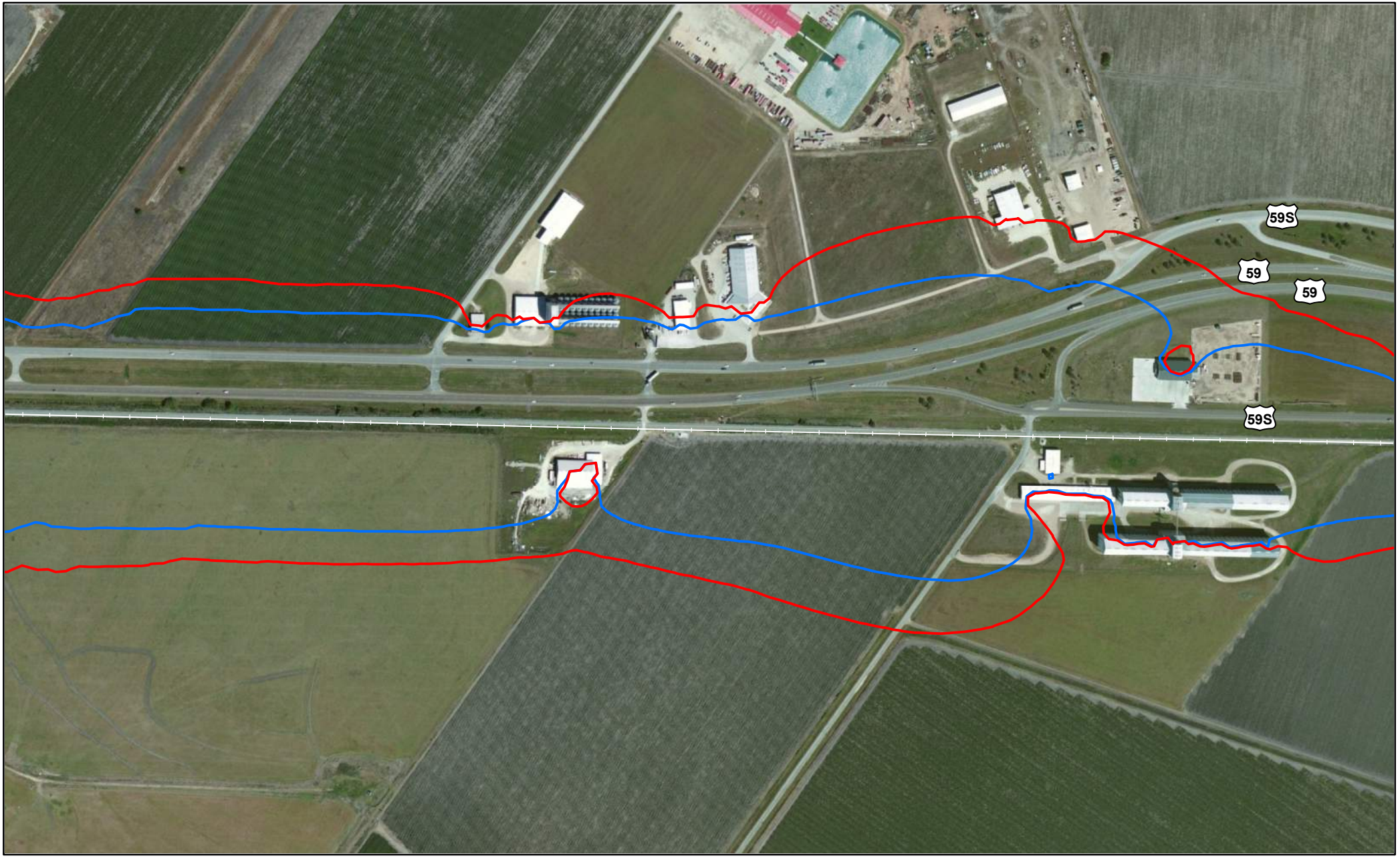
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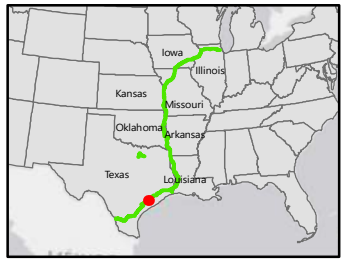
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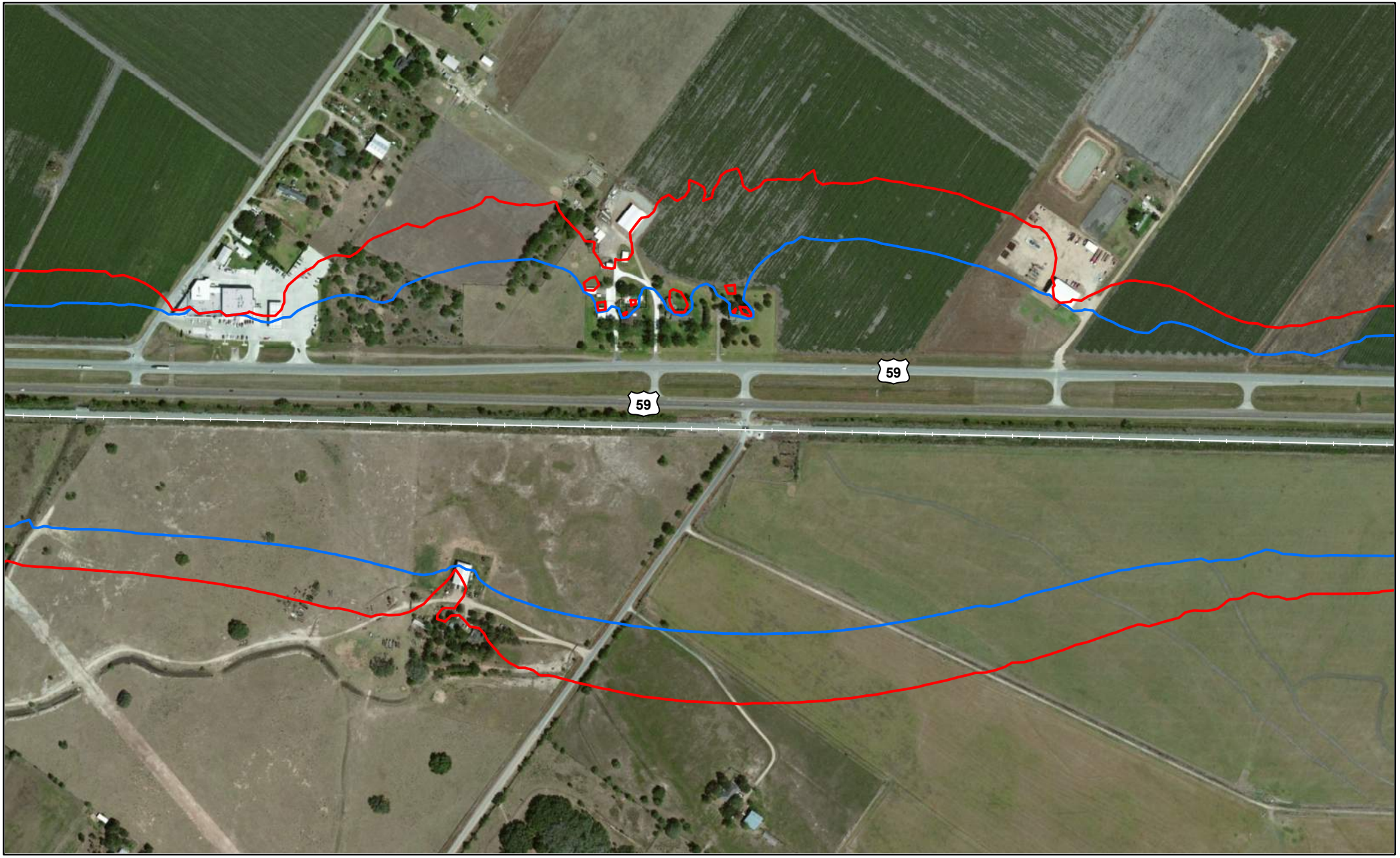
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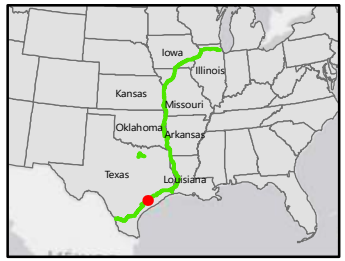
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

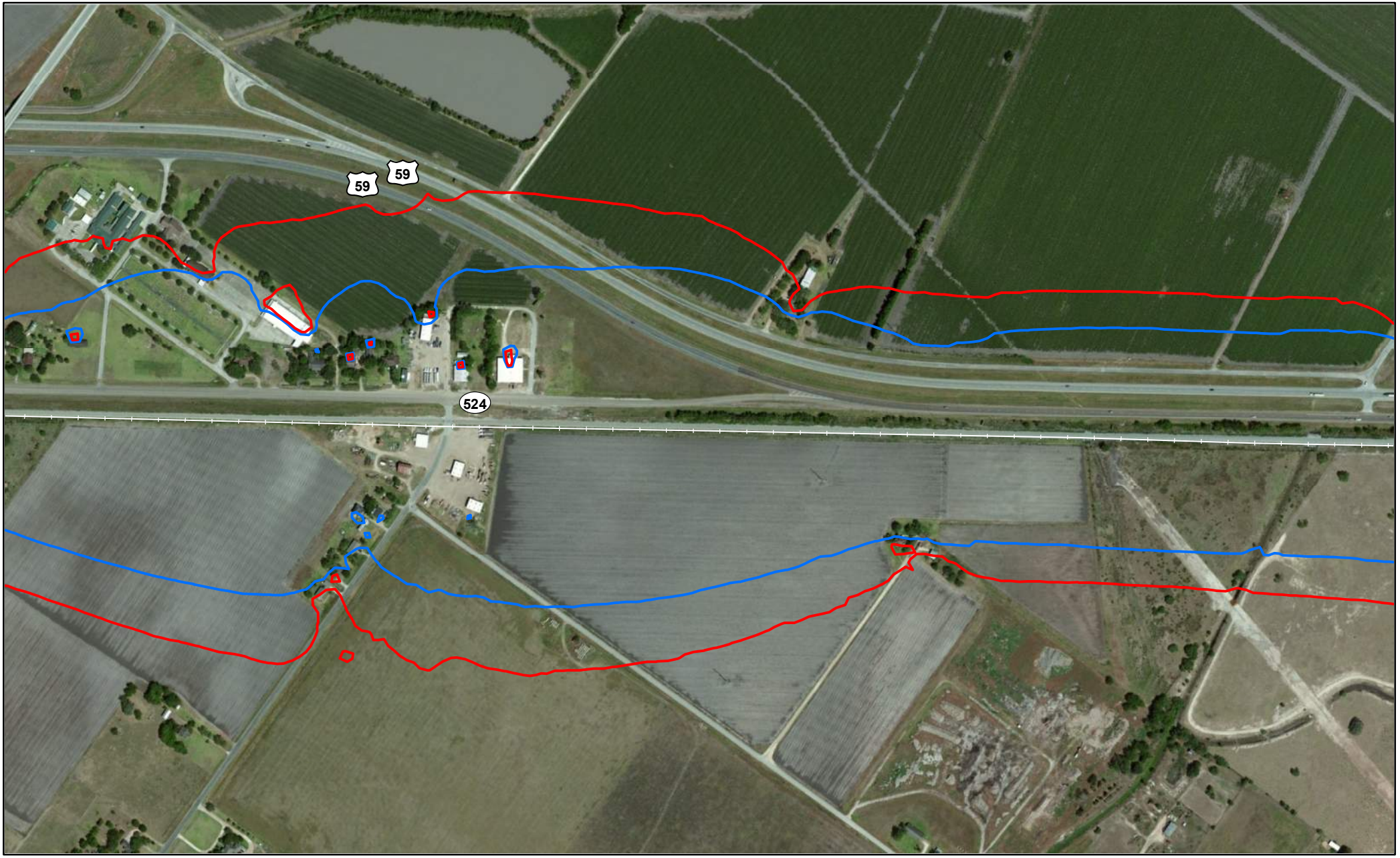
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Noise Contours
Wharton County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



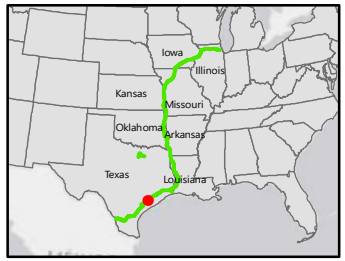
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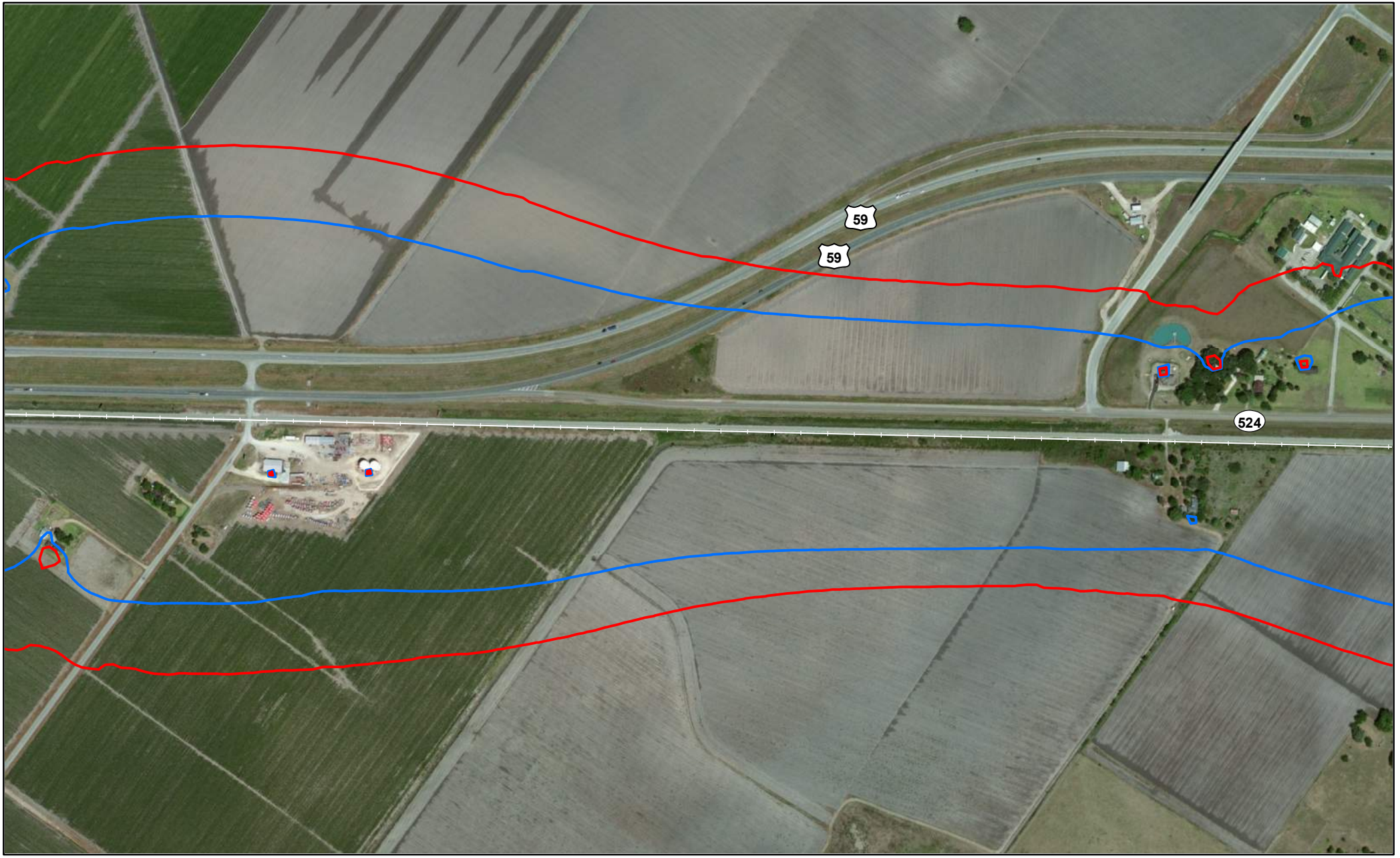
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Noise Contours
Wharton County, TX

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



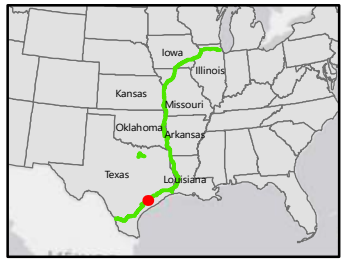
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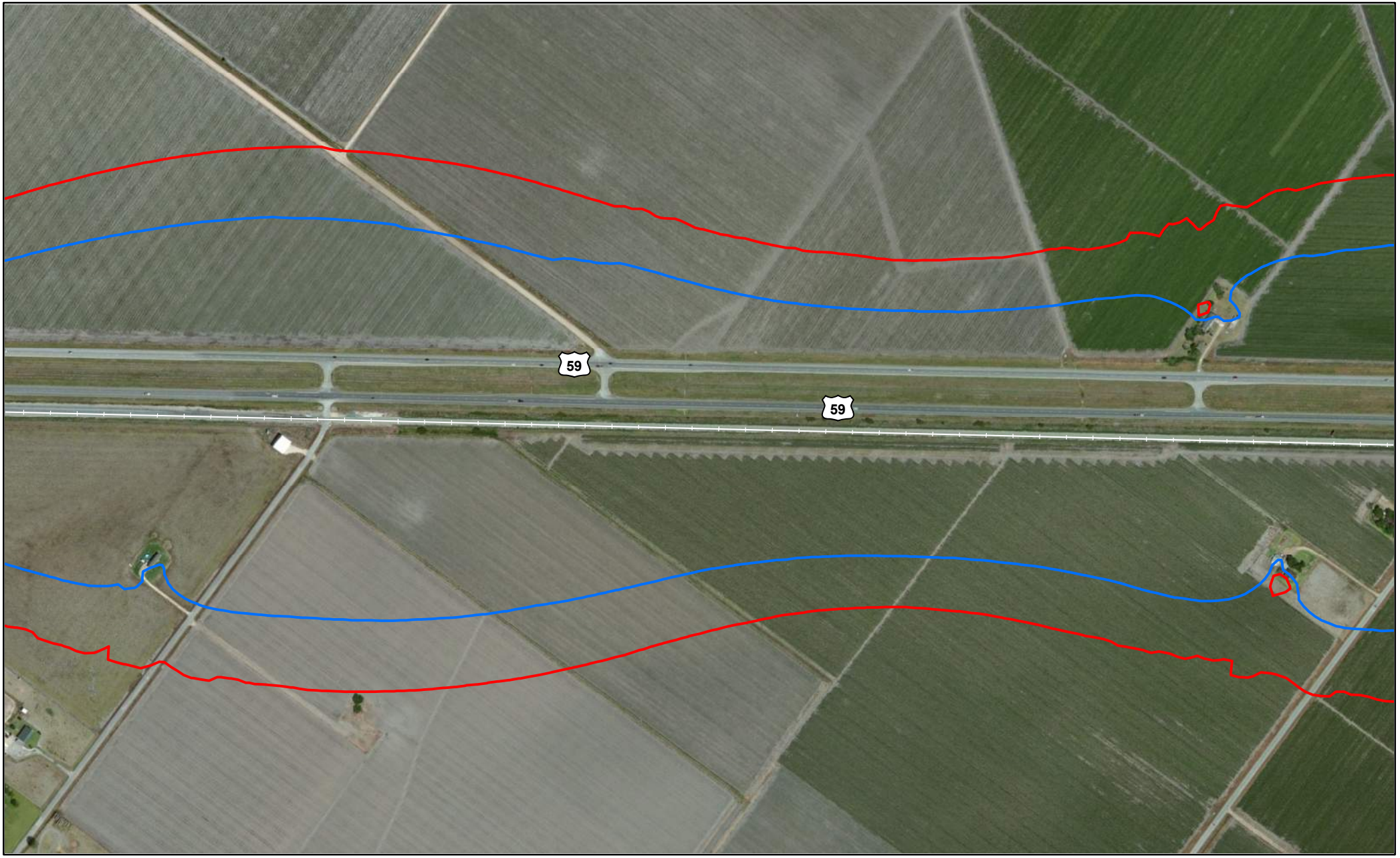
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Noise Contours
Wharton County, TX

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



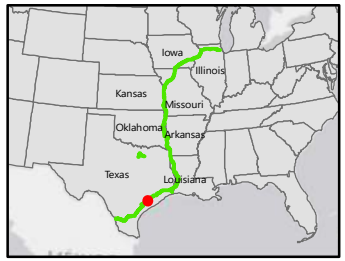
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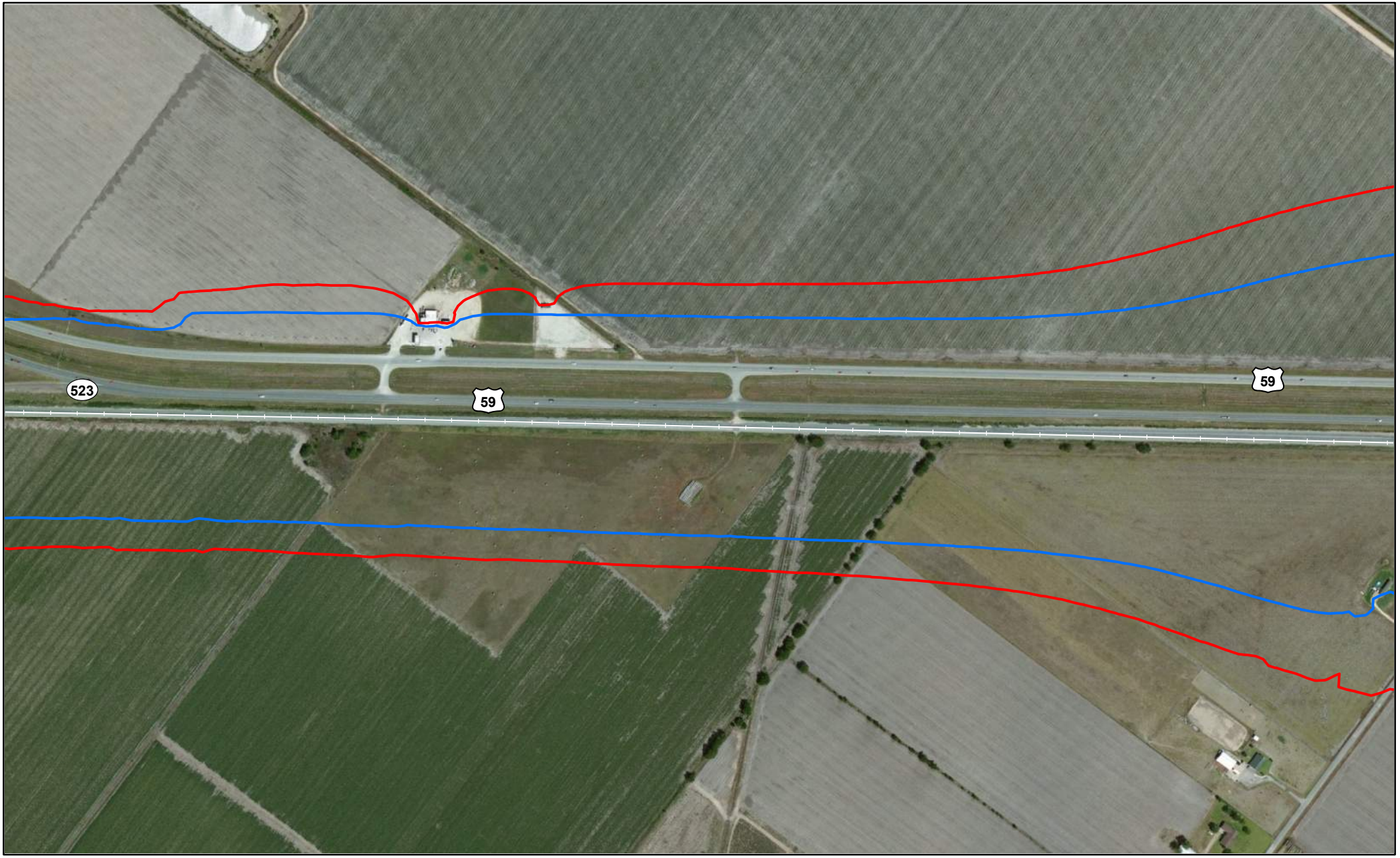
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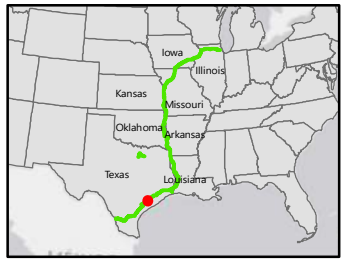
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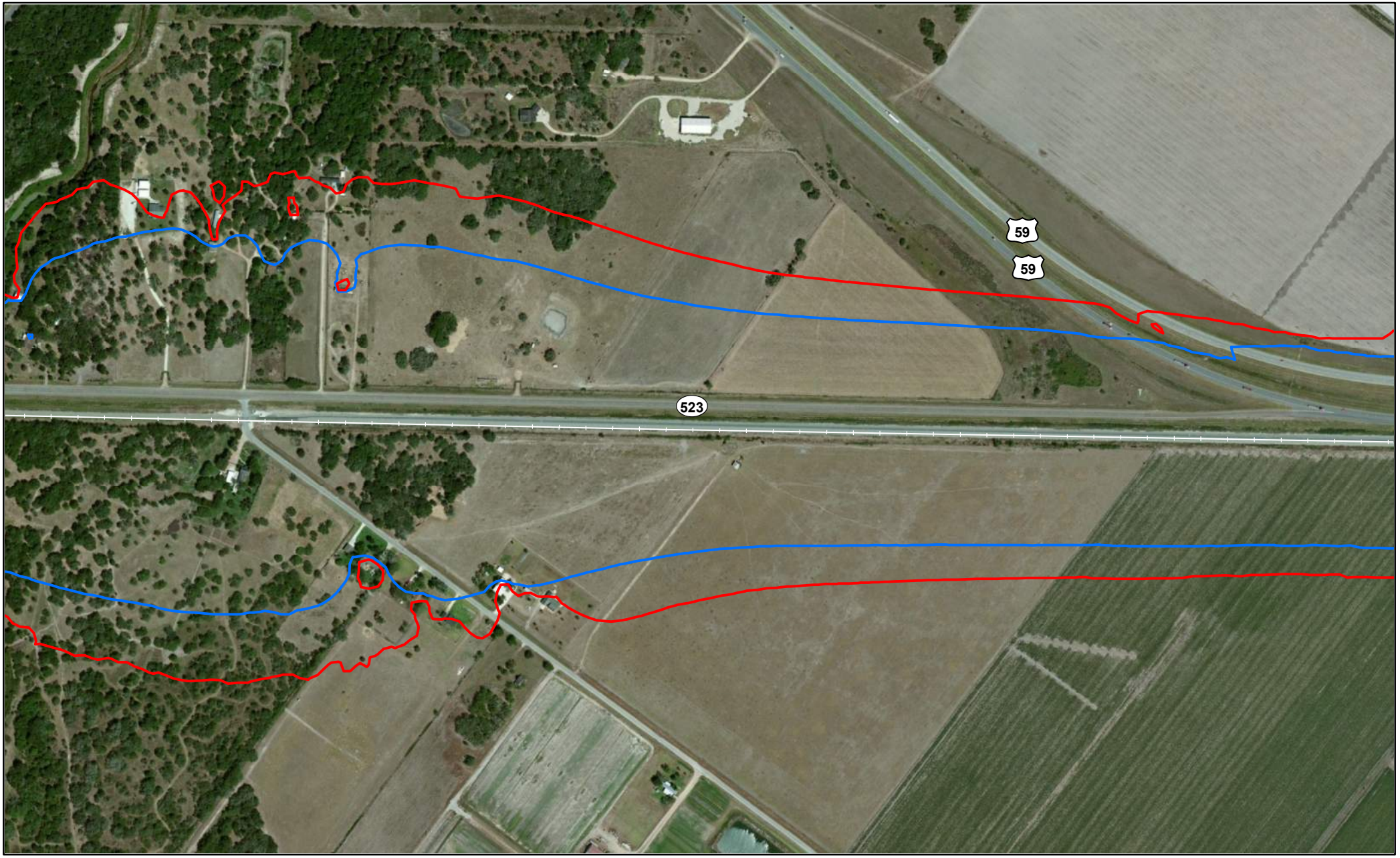
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Noise Contours
Wharton County, TX

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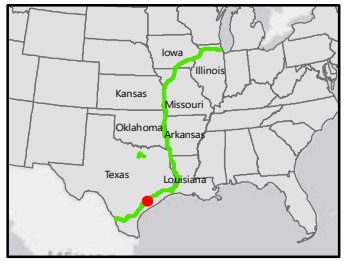
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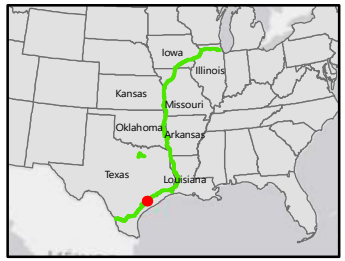
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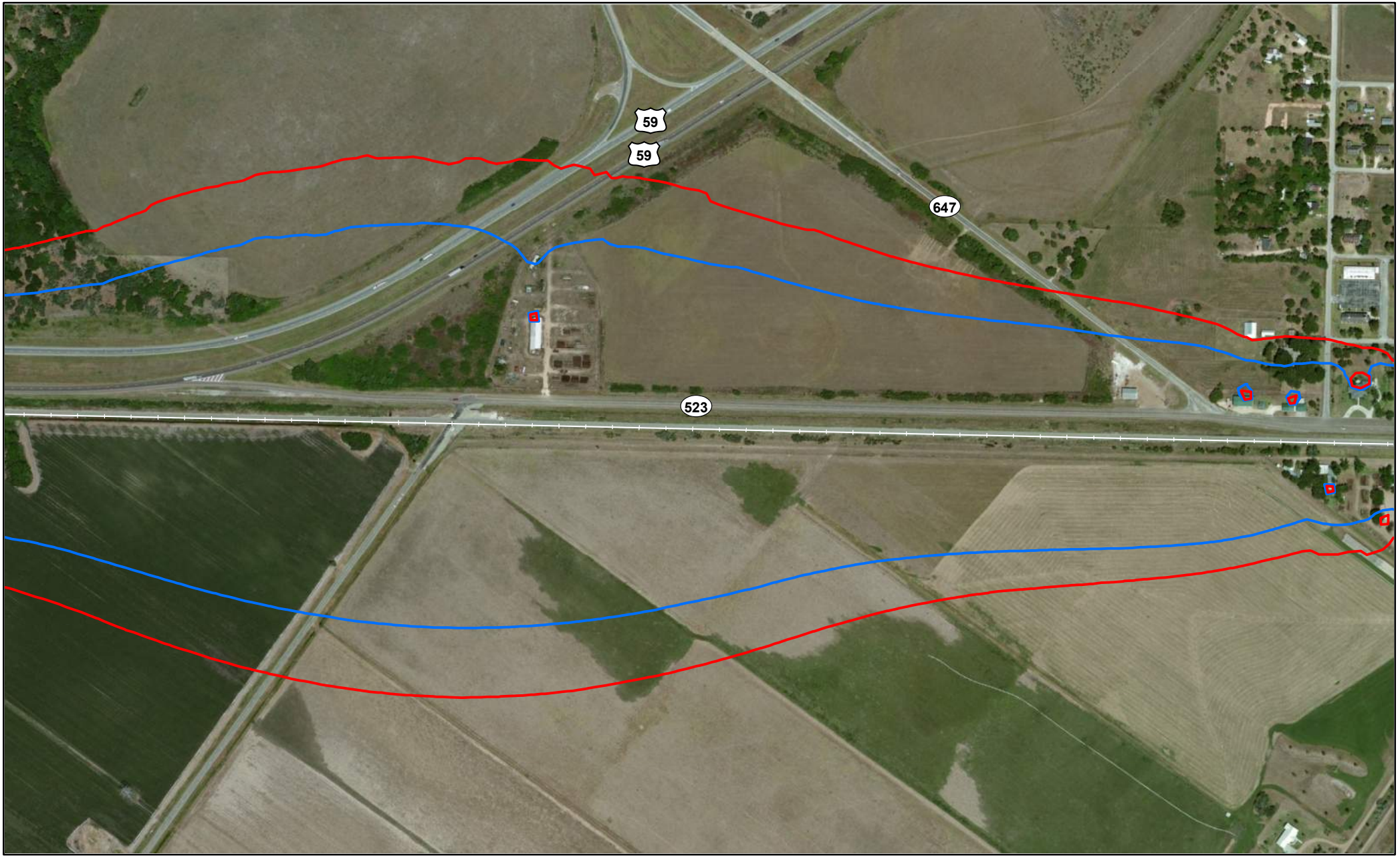
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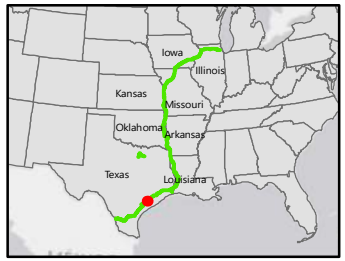
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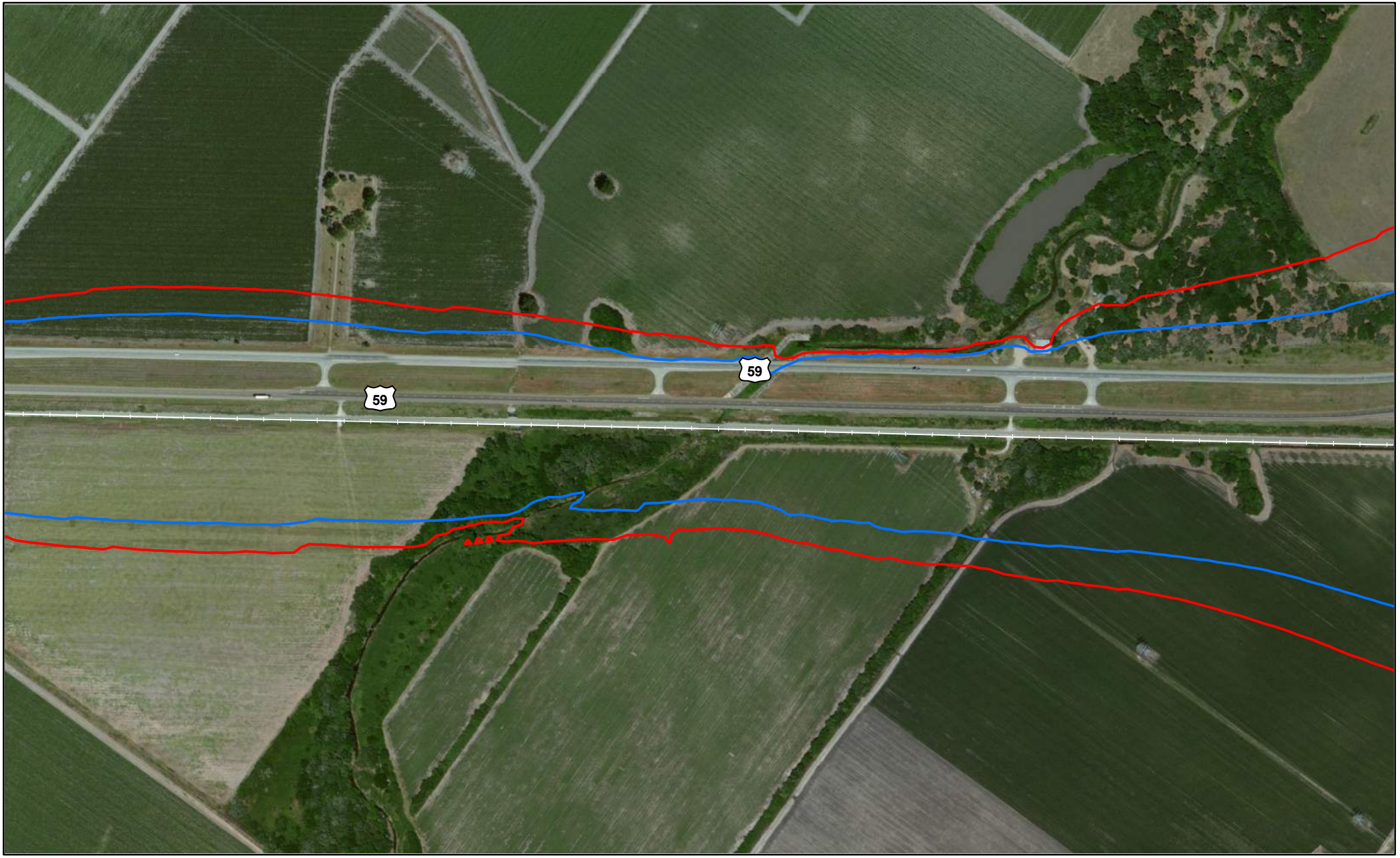
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Noise Contours
Wharton County, TX

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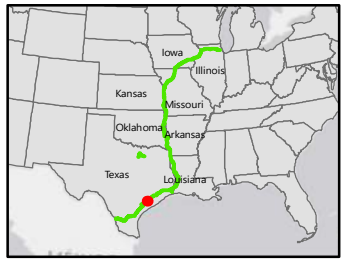
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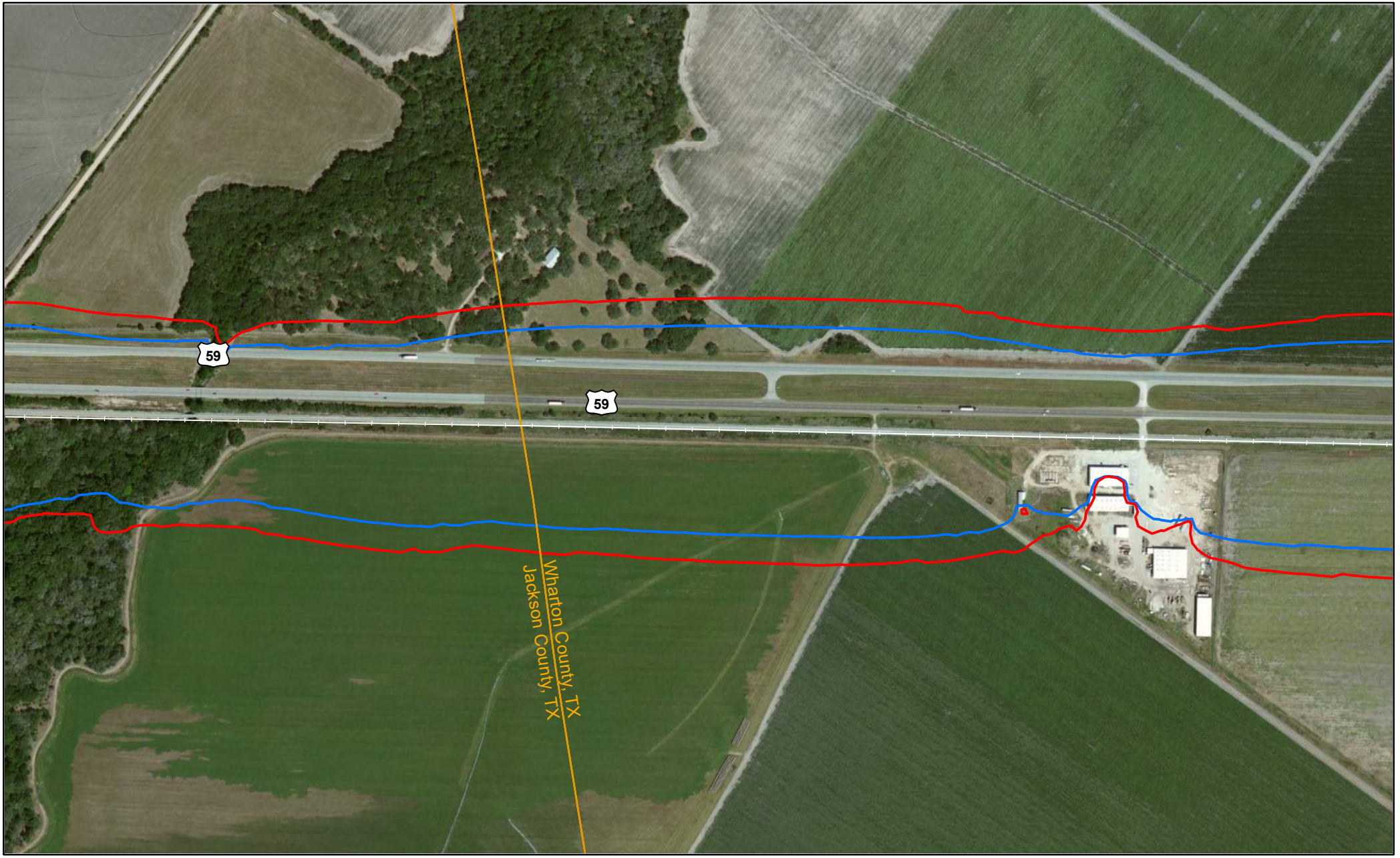
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Noise Contours
Wharton County, TX

Miles
0 0.05 0.1



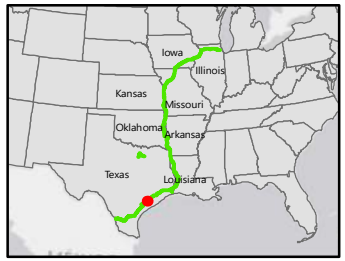
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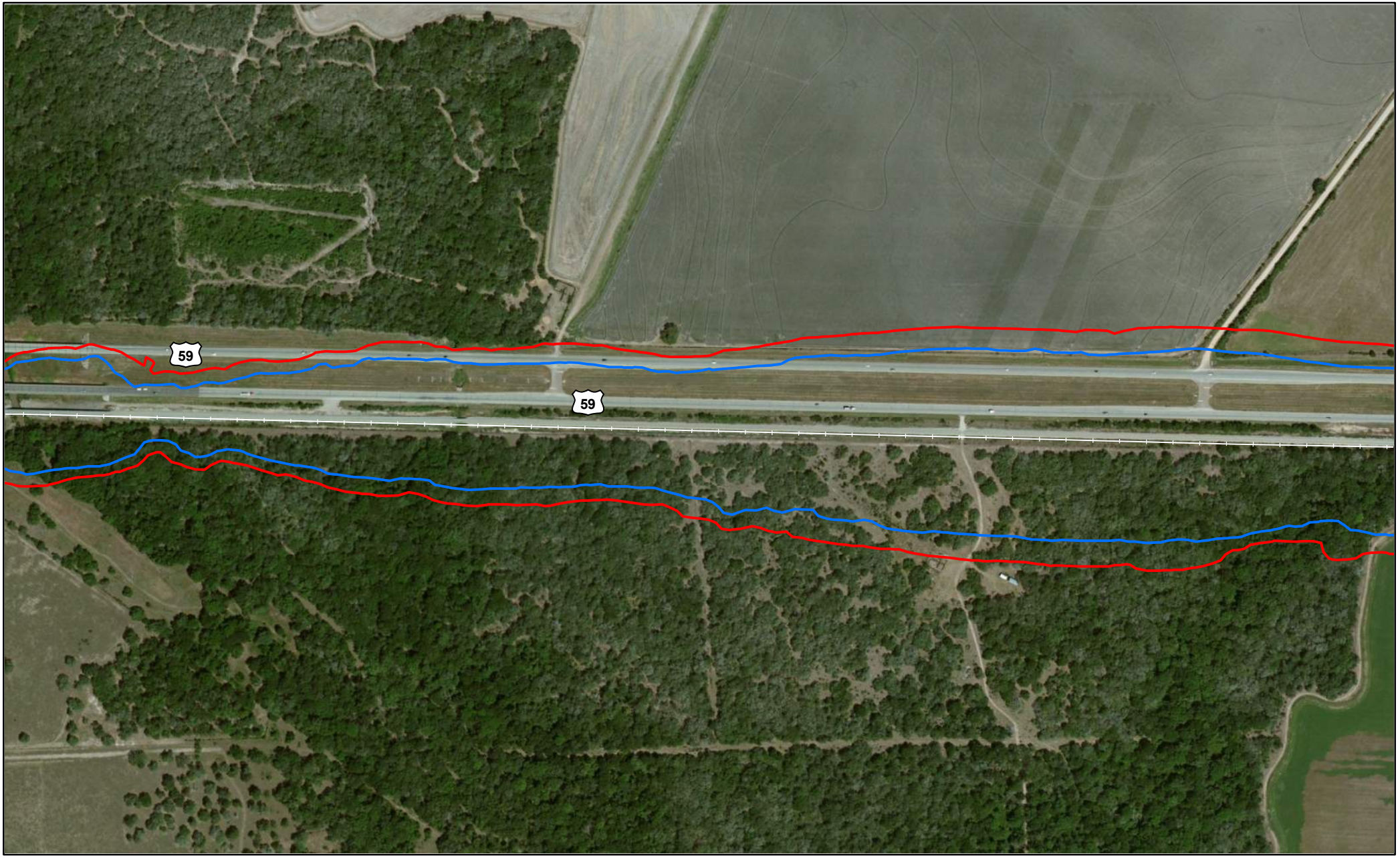
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Noise Contours
Wharton County, TX

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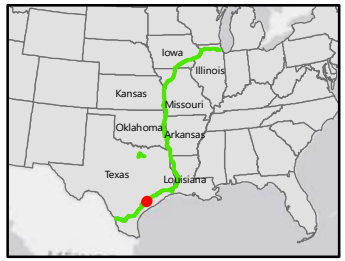
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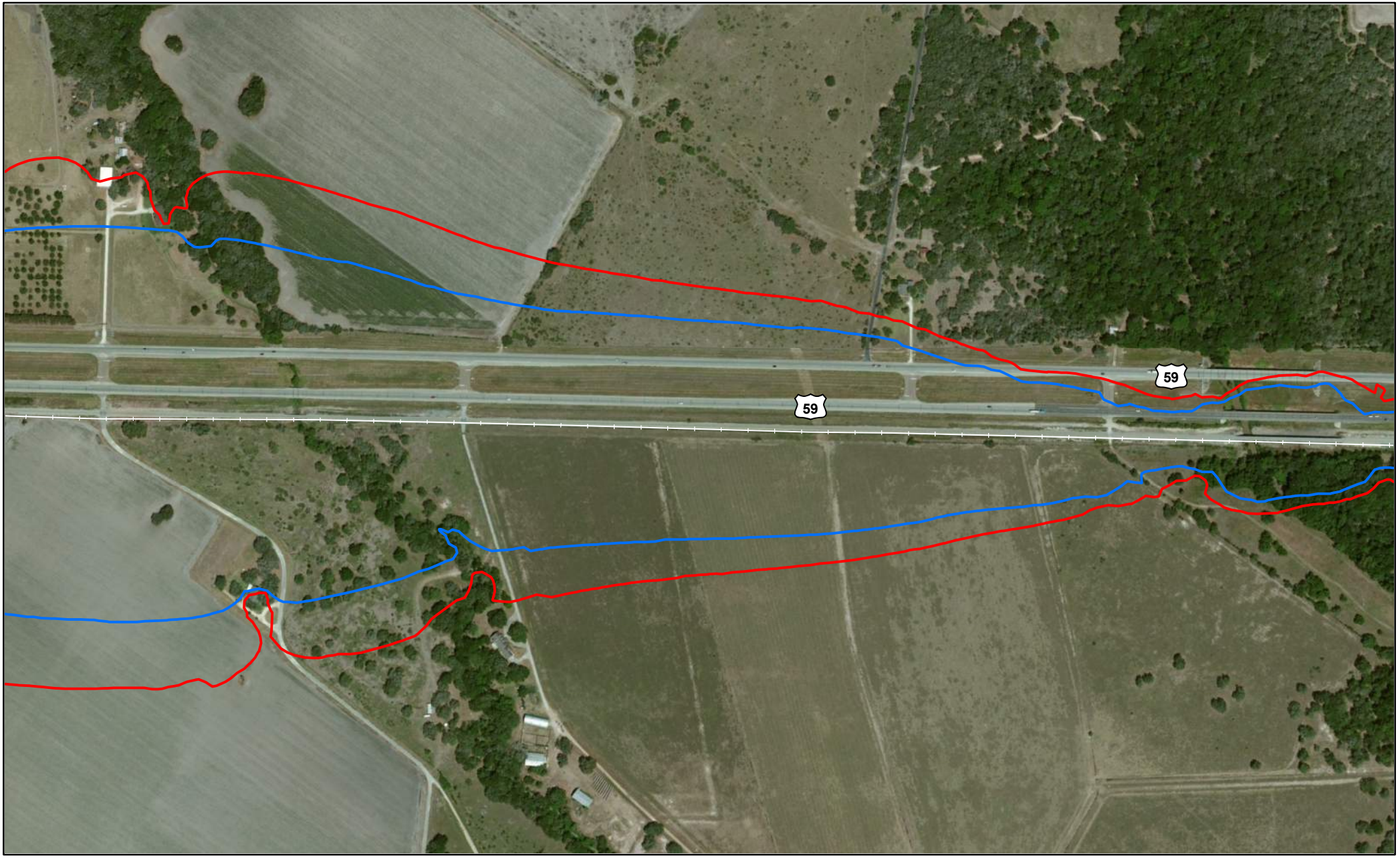
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Noise Contours
Jackson County, TX

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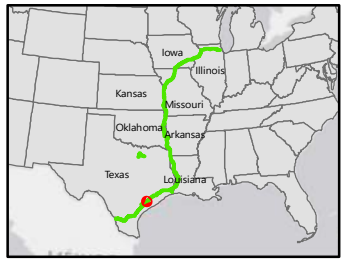
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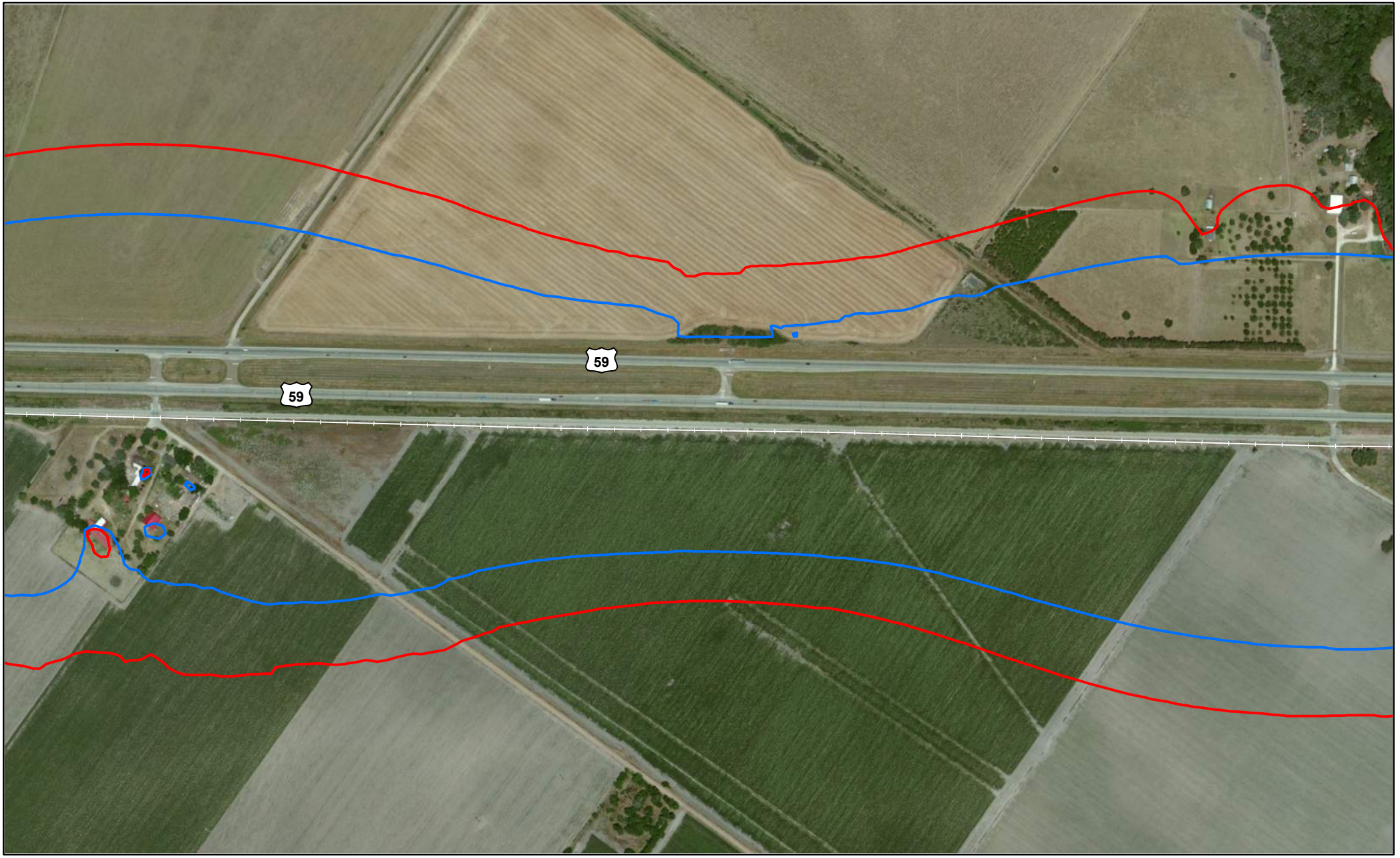
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Jackson County, TX

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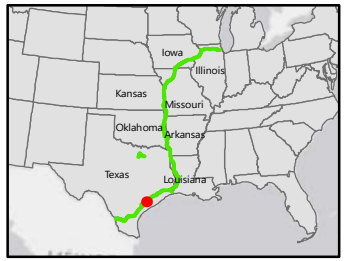
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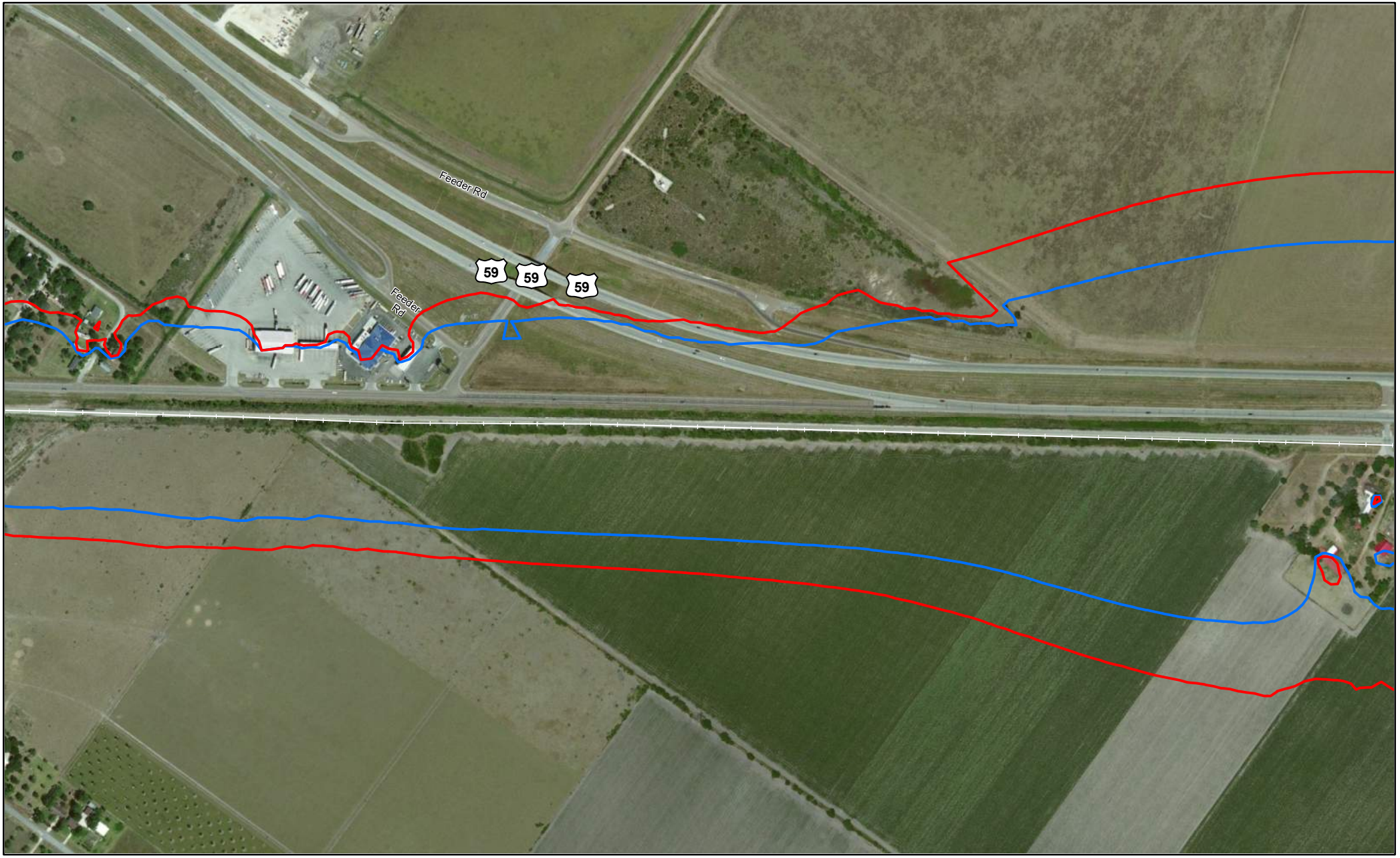
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Noise Contours
Jackson County, TX

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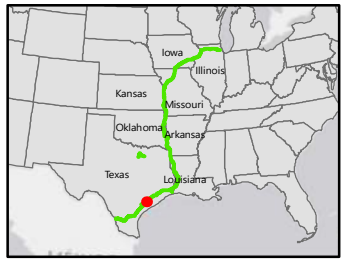
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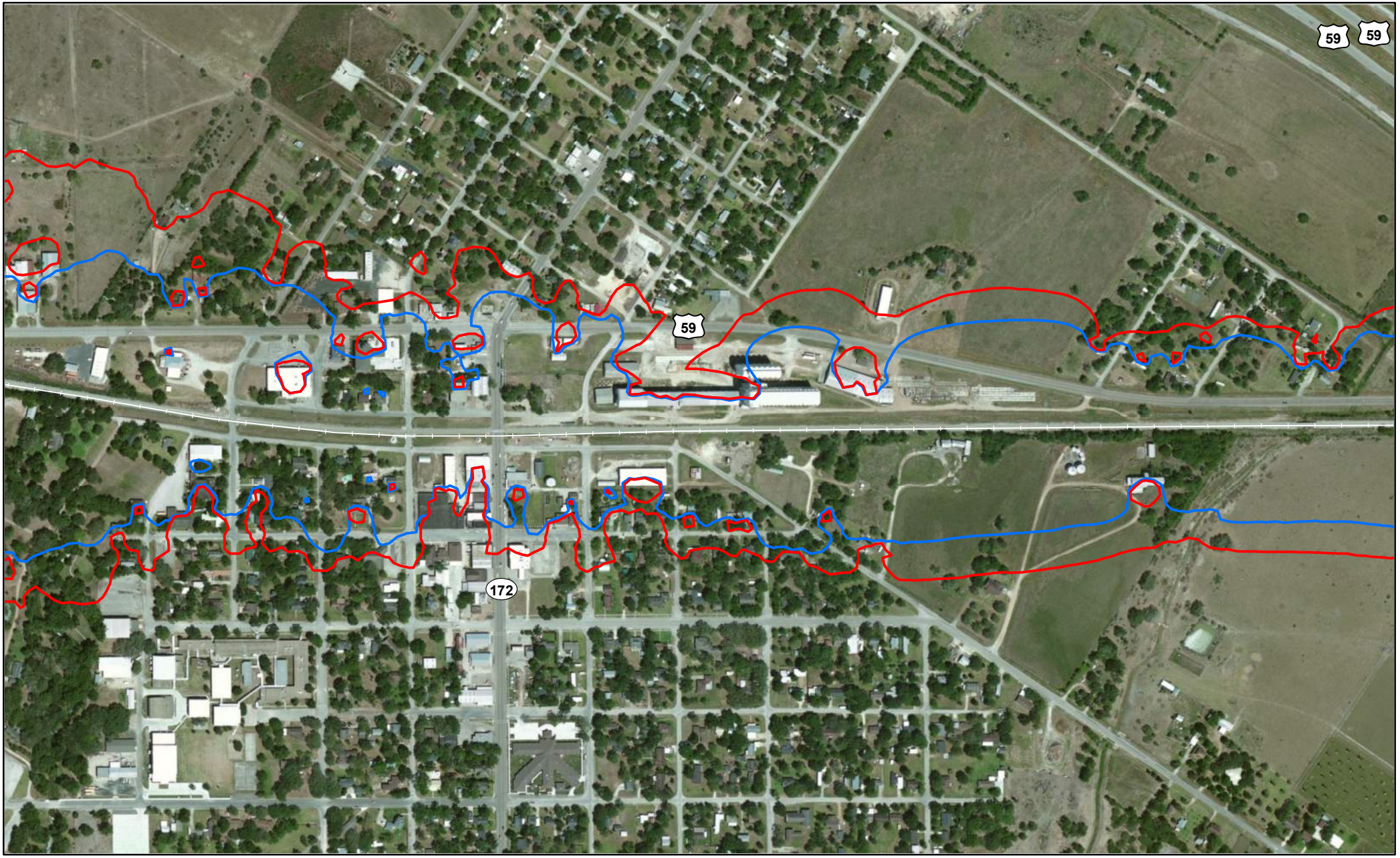
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Noise Contours
Jackson County, TX

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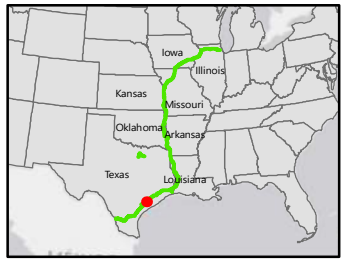
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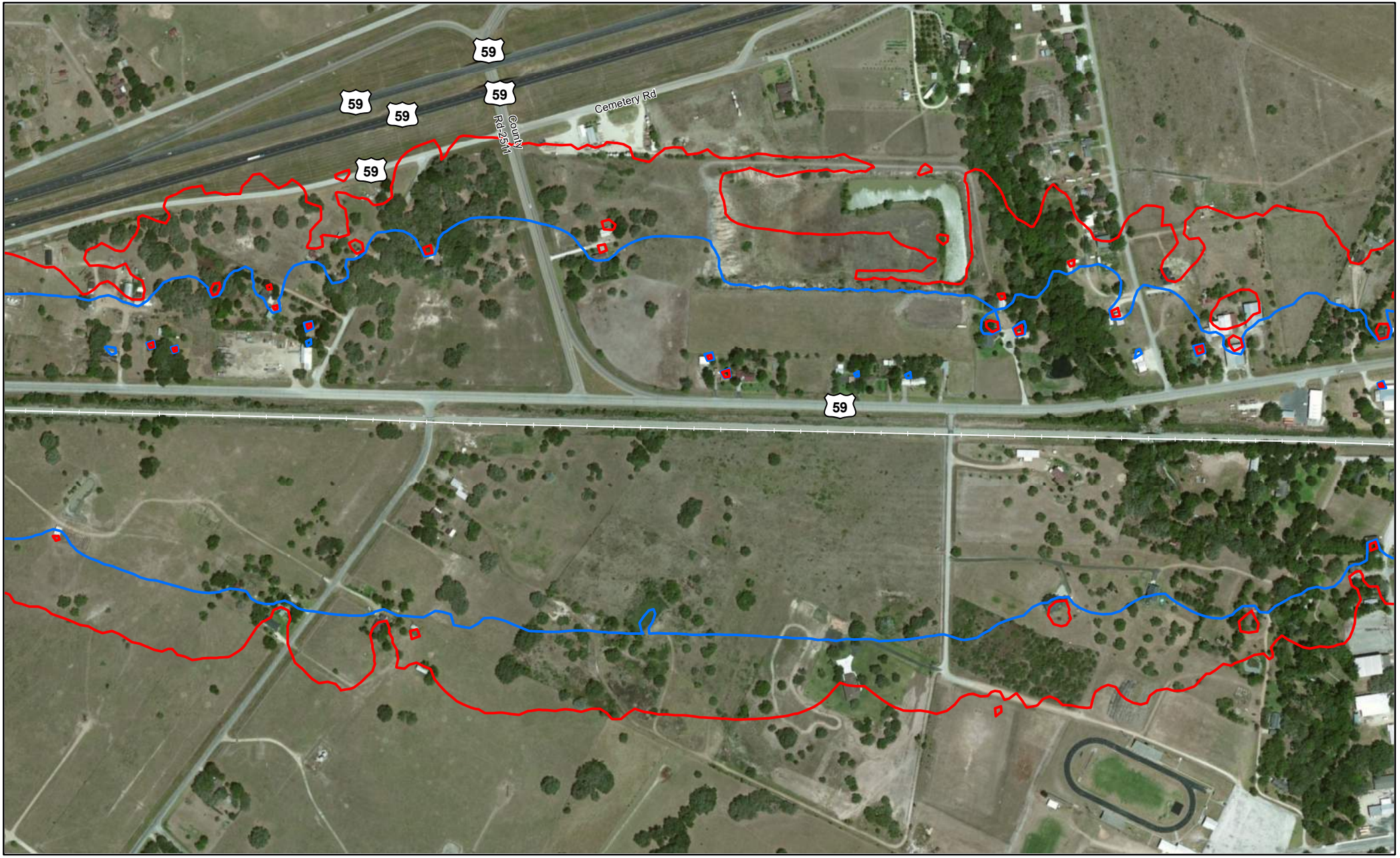
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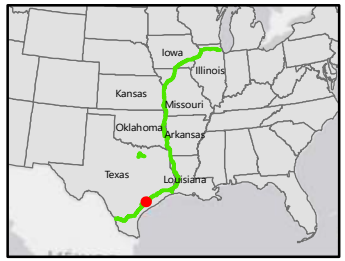
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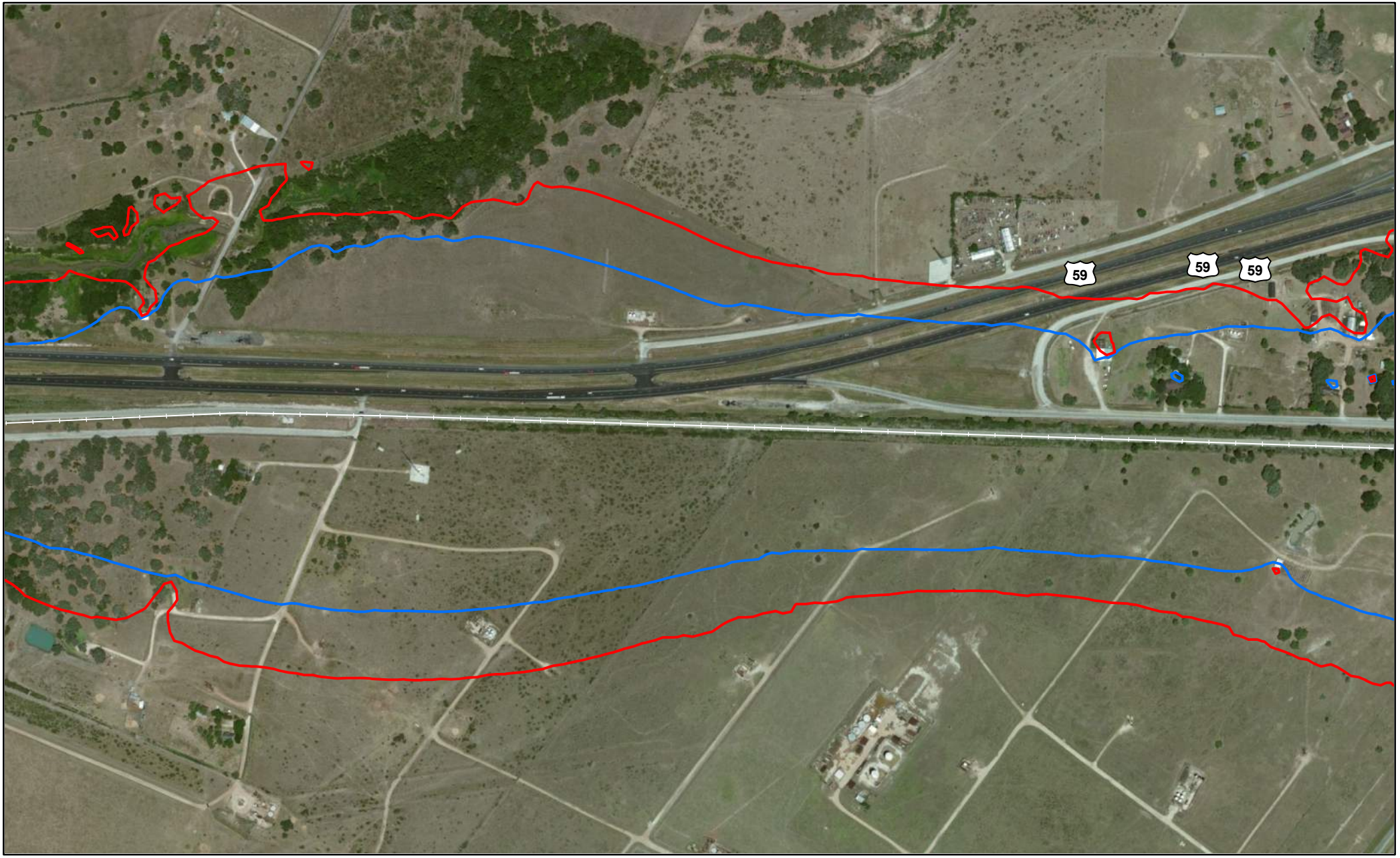
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Noise Contours
Jackson County, TX

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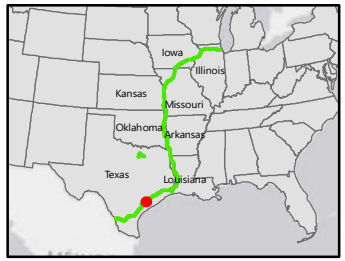
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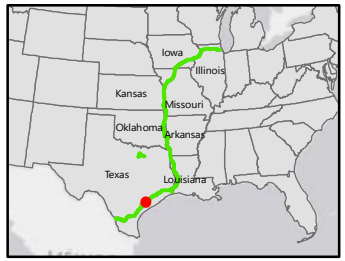
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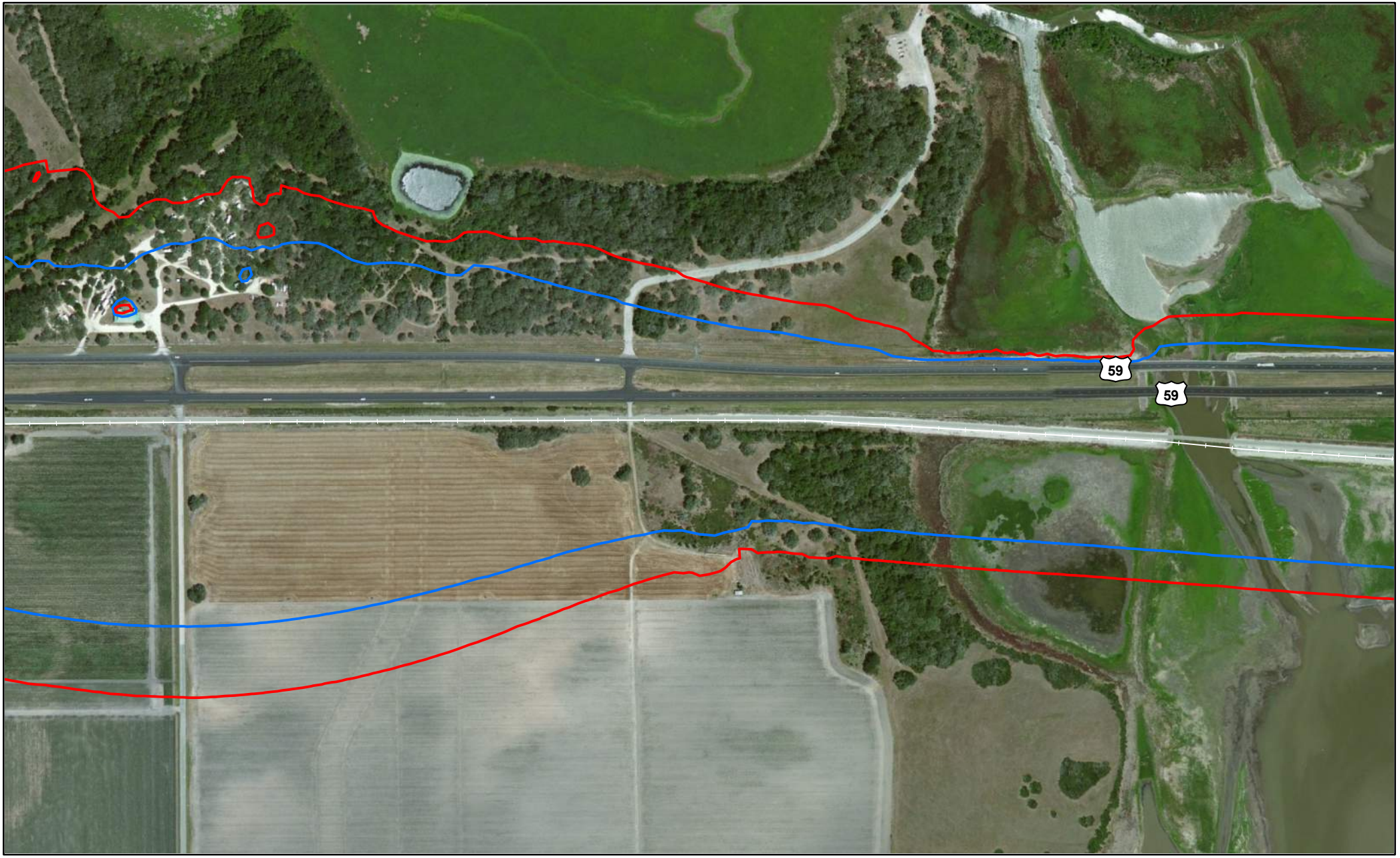
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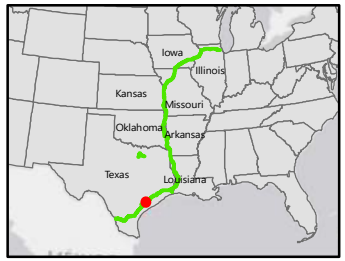
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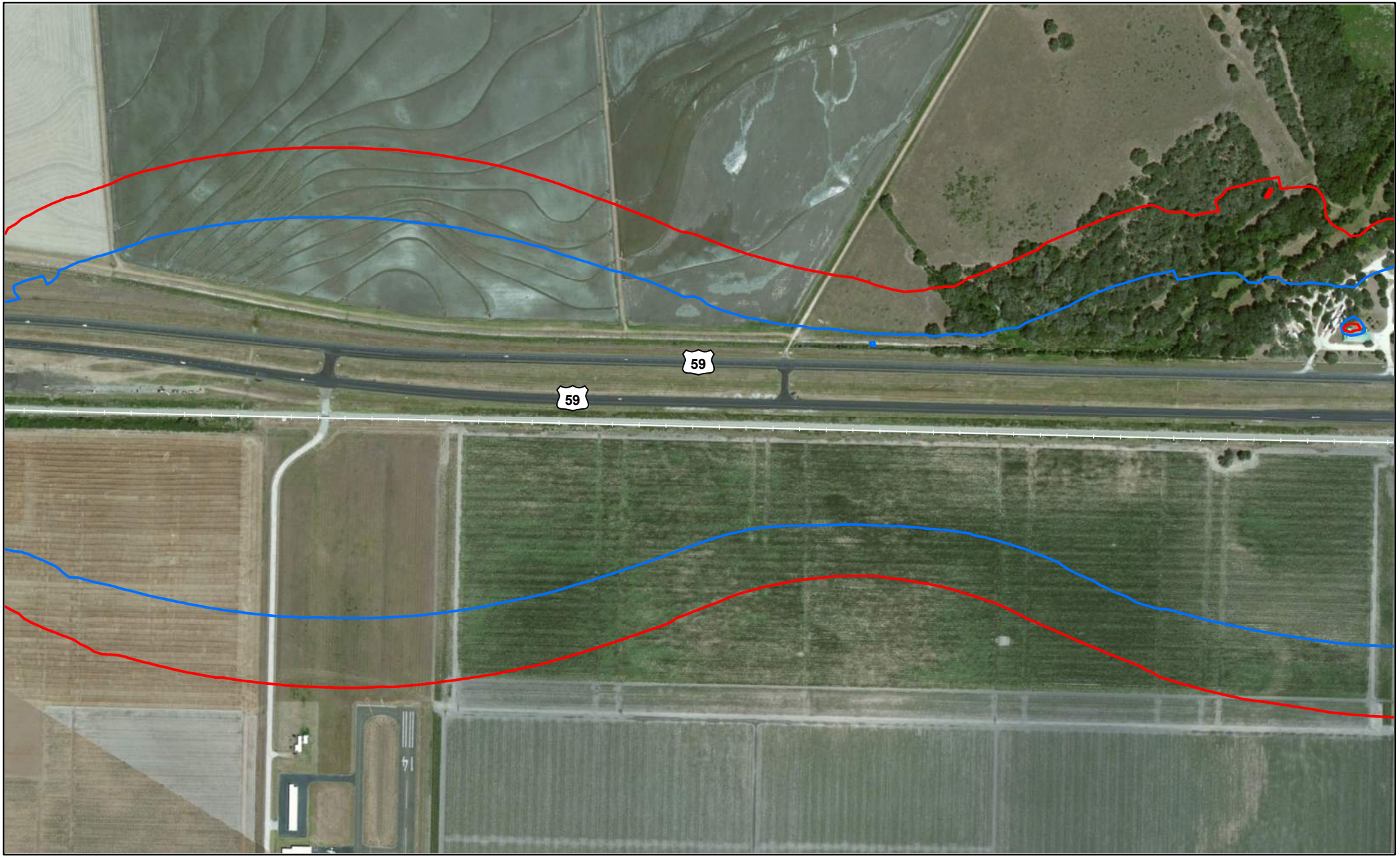
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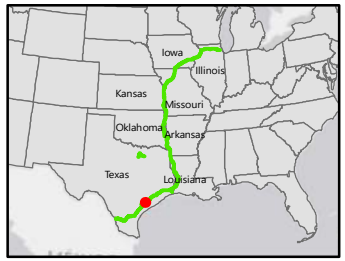
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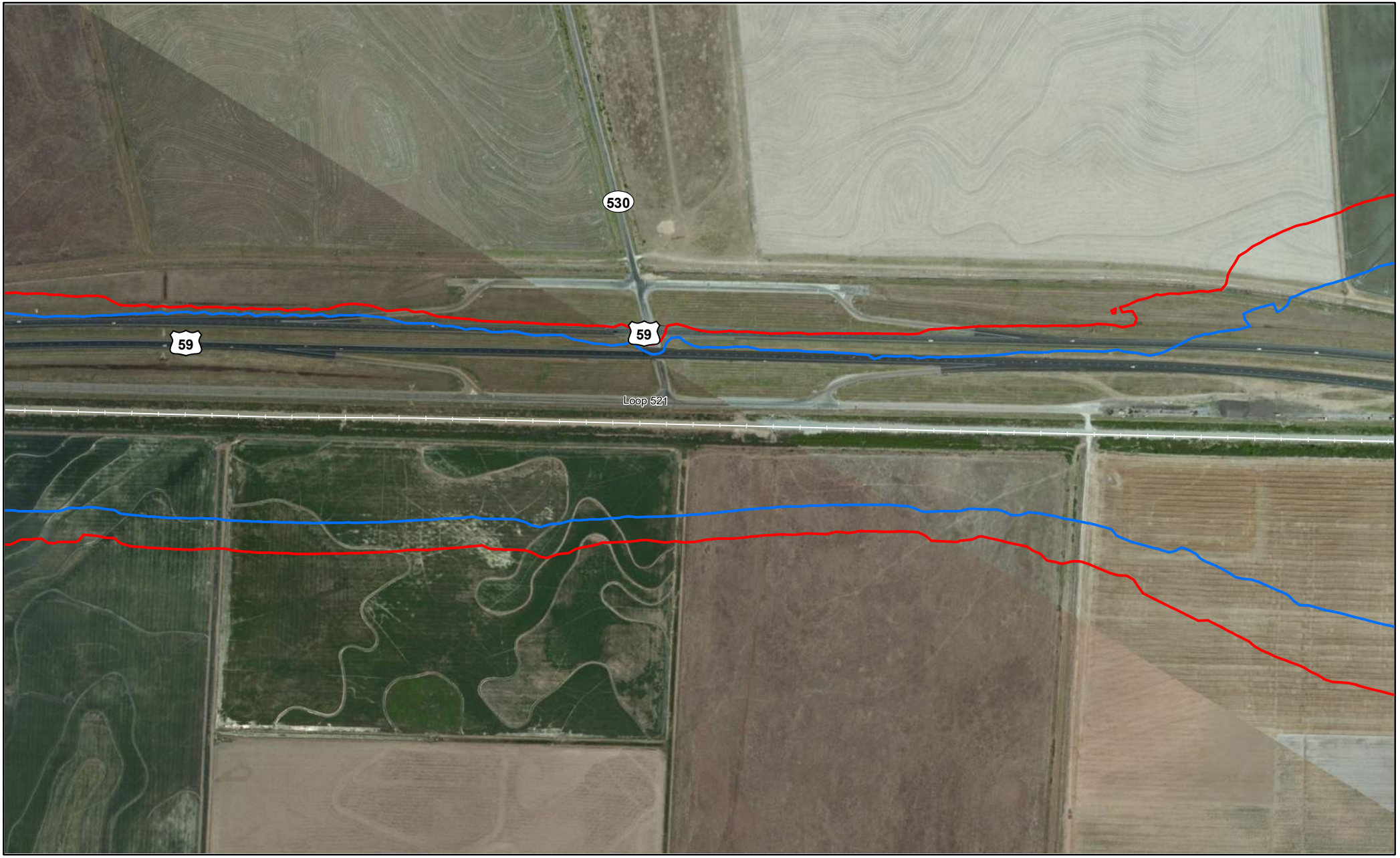
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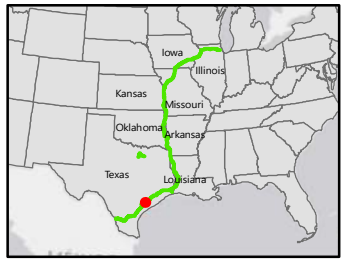
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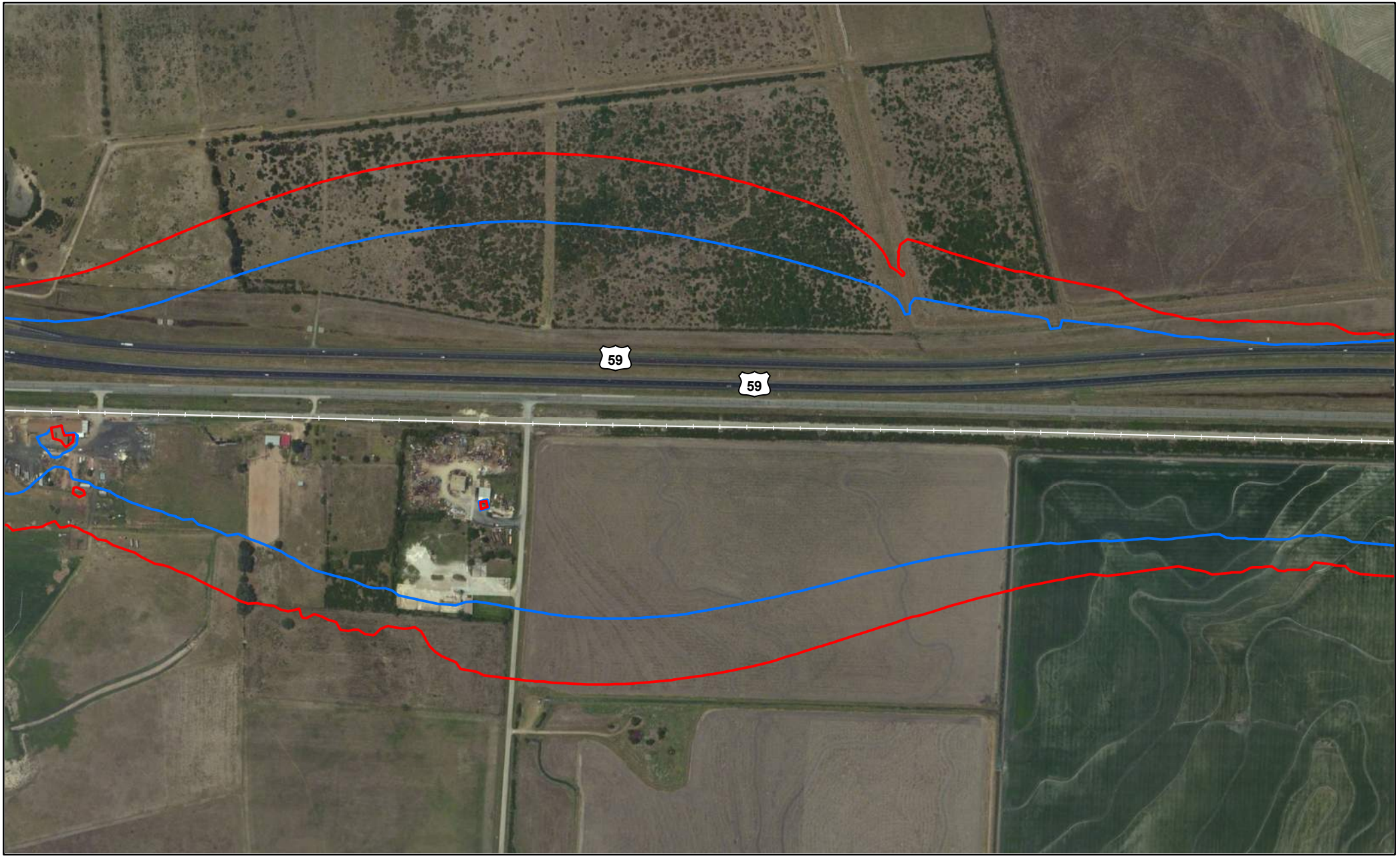
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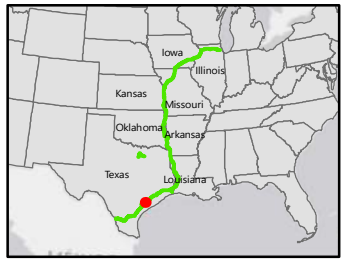
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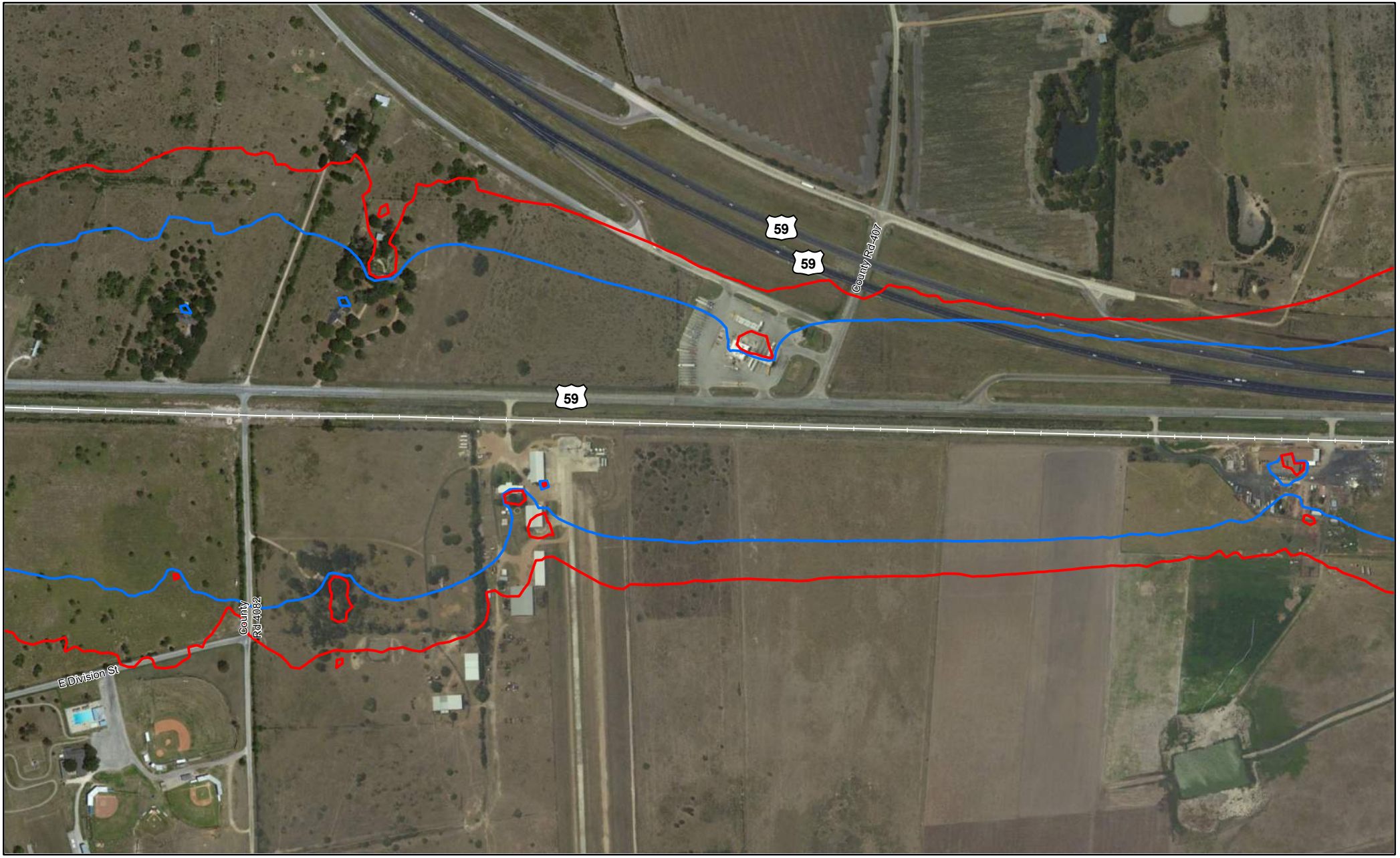
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Jackson County, TX

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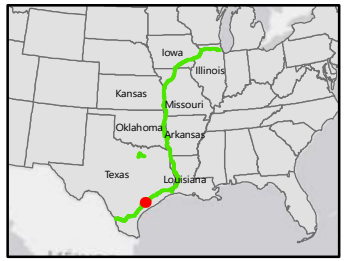
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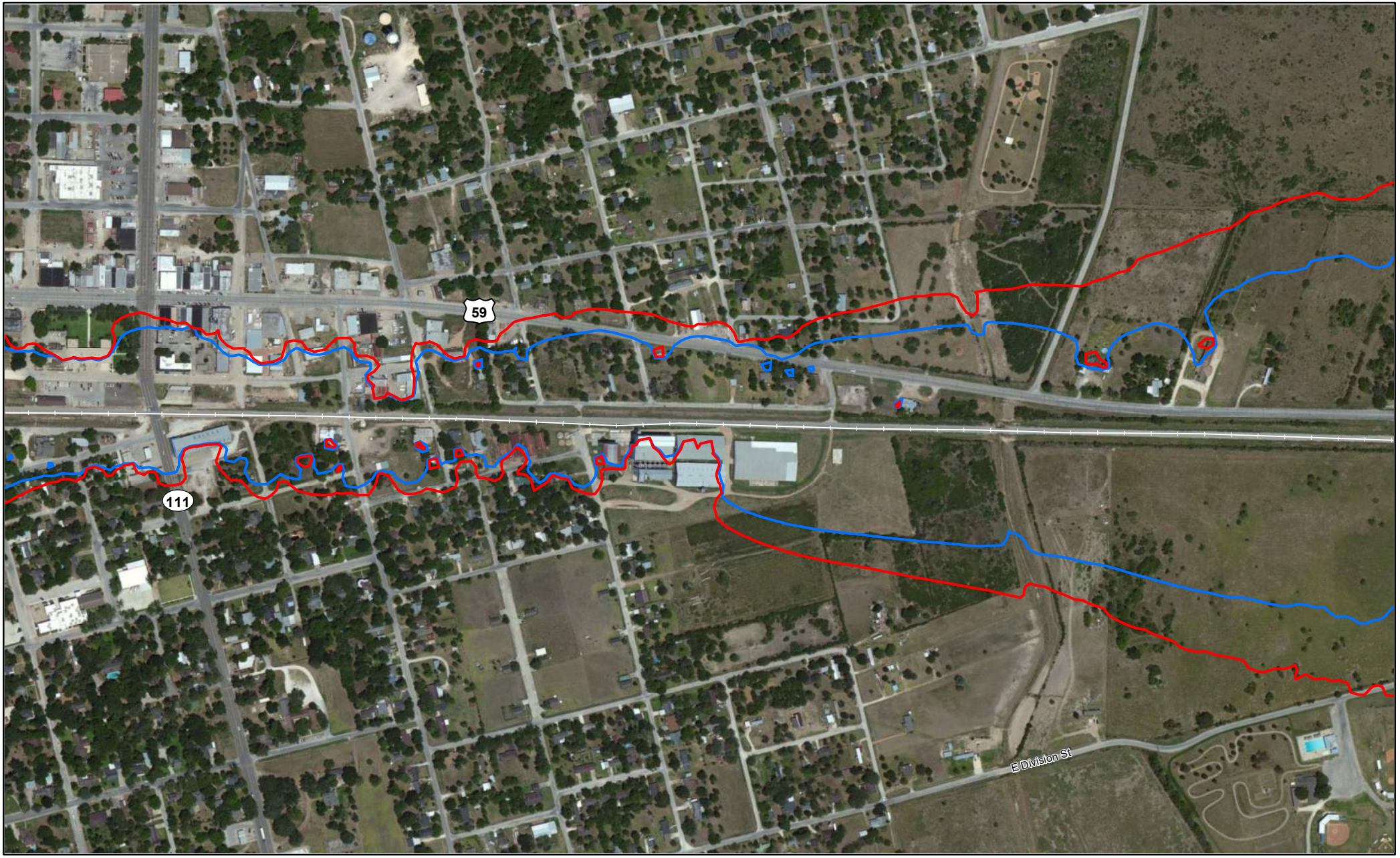
Source: ESRI.



Noise Contours
Jackson County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



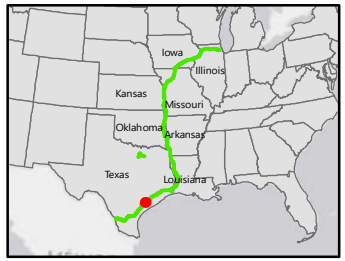
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jackson County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



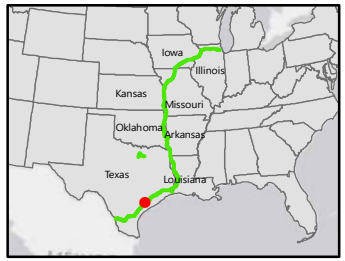
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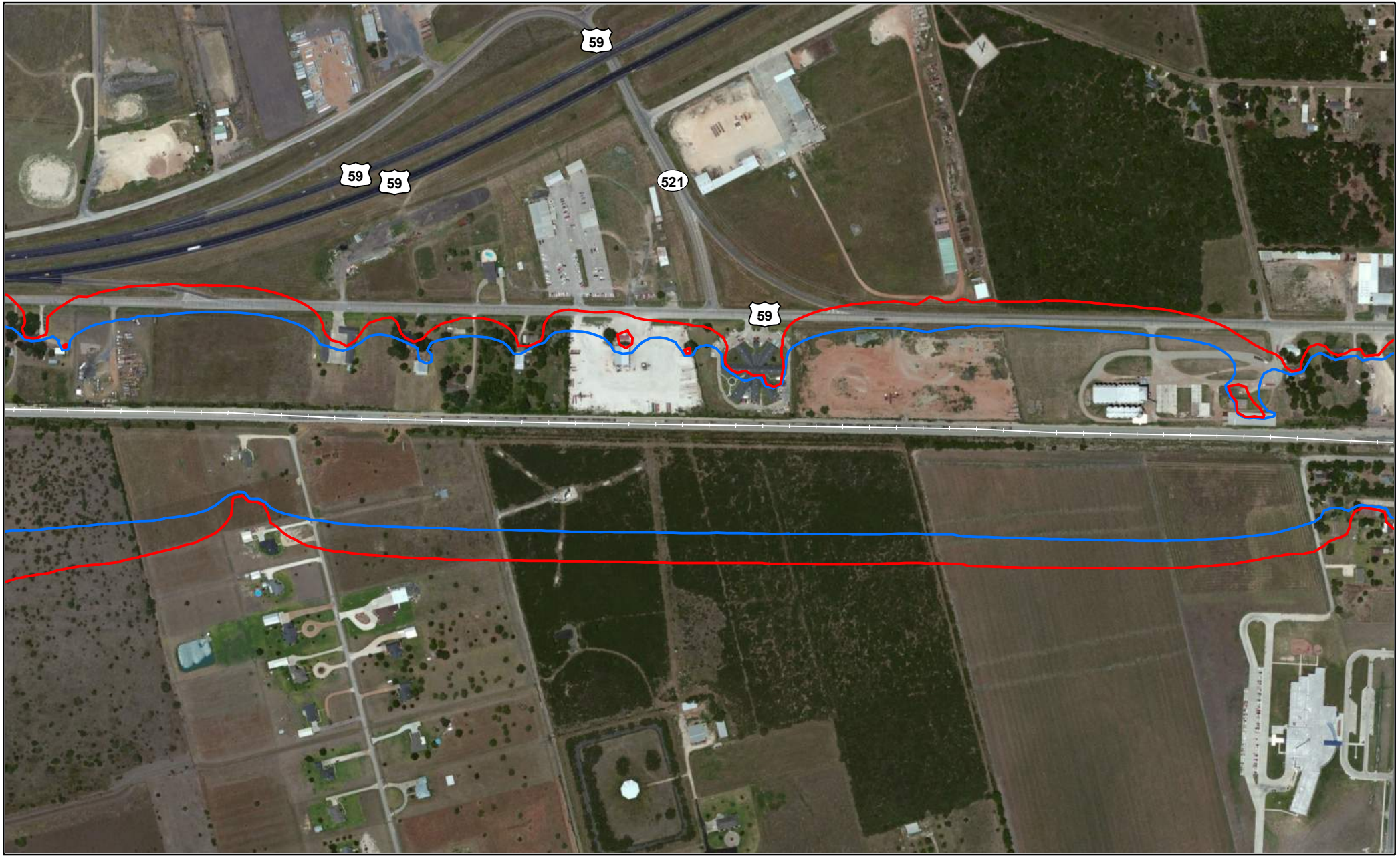
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Noise Contours
Jackson County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



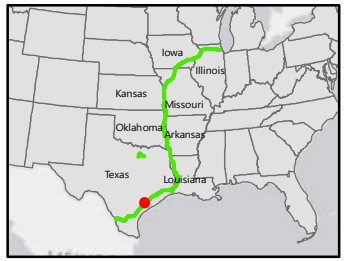
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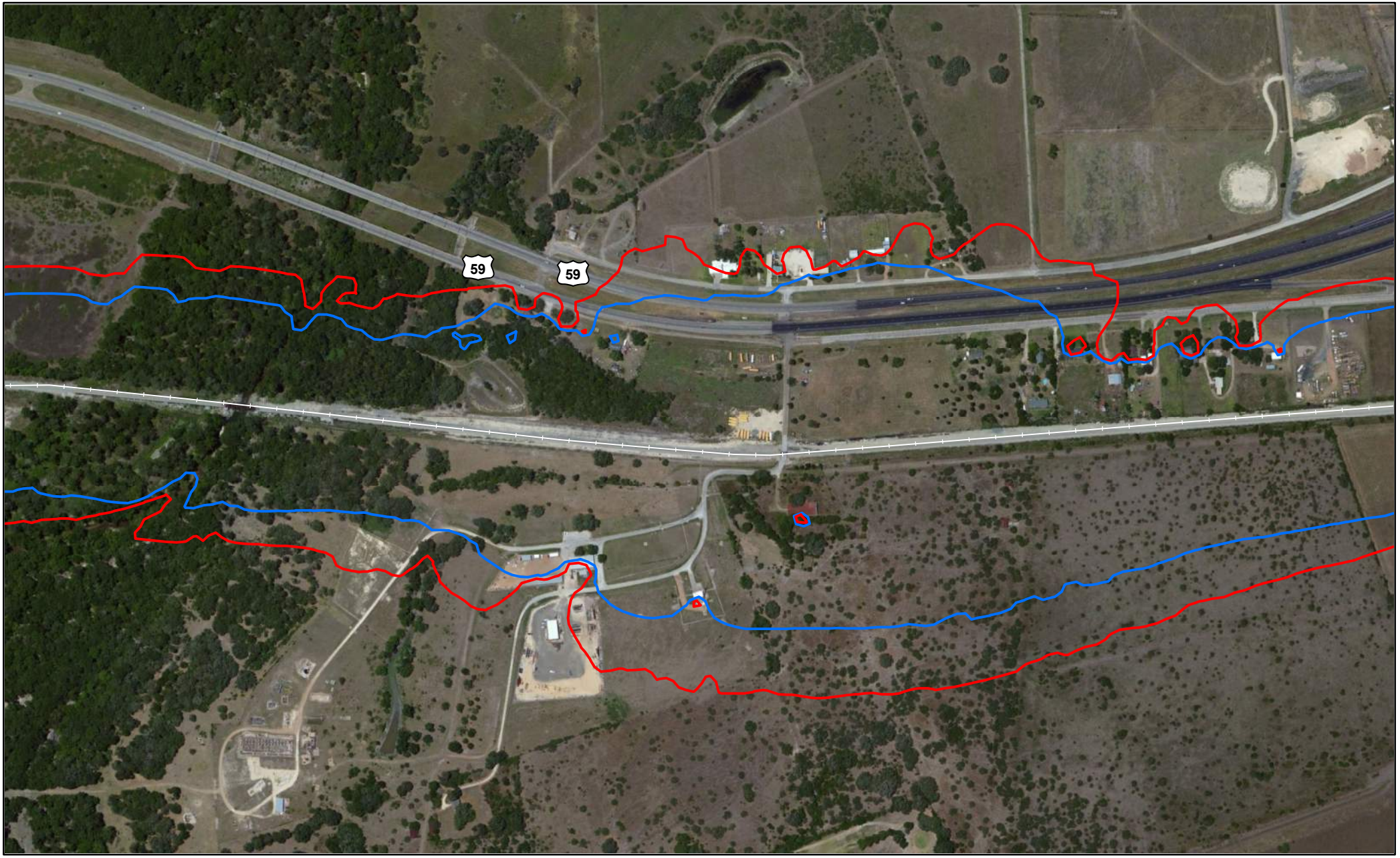
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Noise Contours
Jackson County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



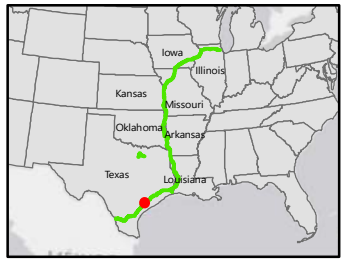
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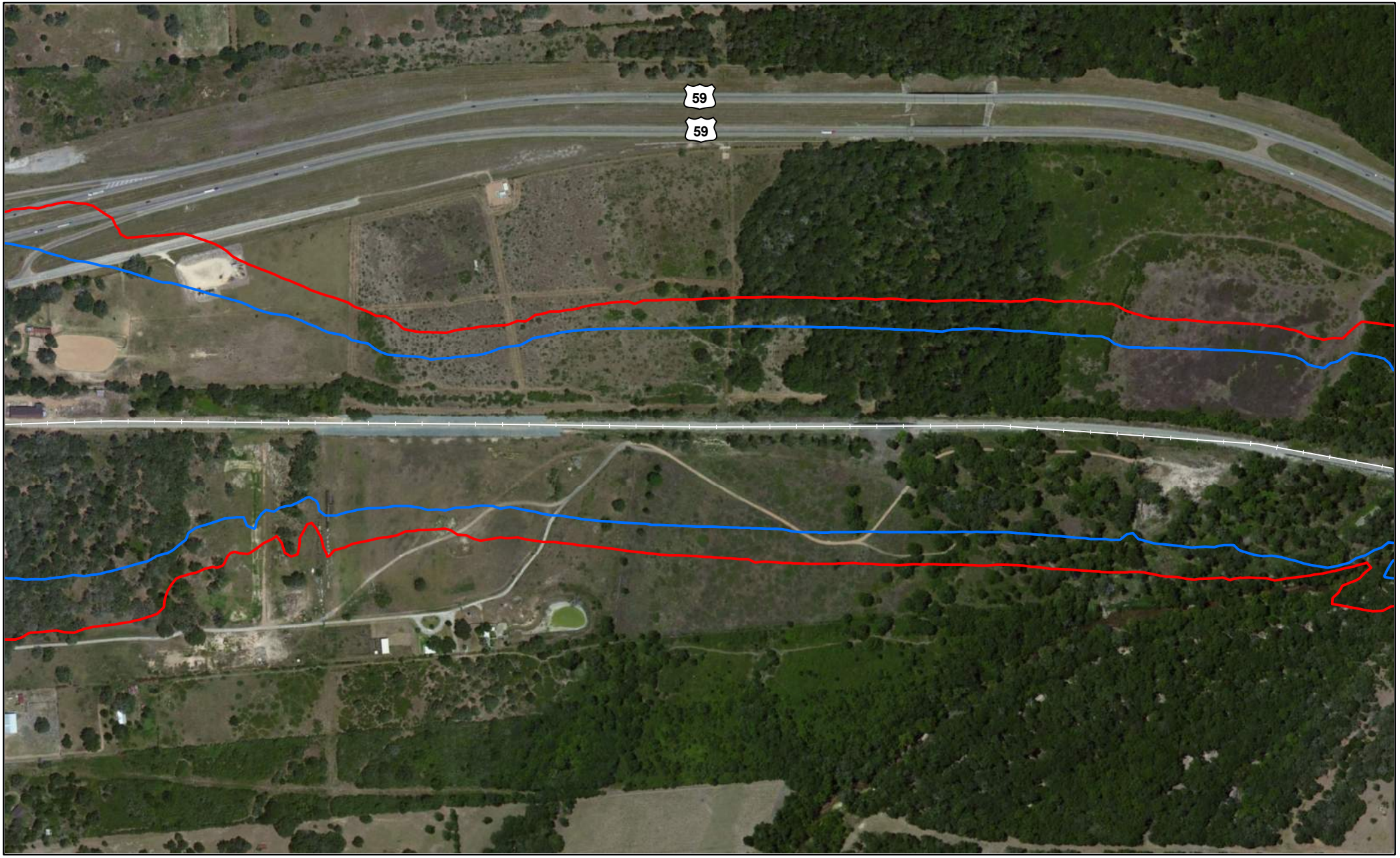
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Noise Contours
Jackson County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



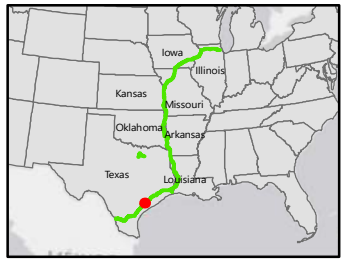
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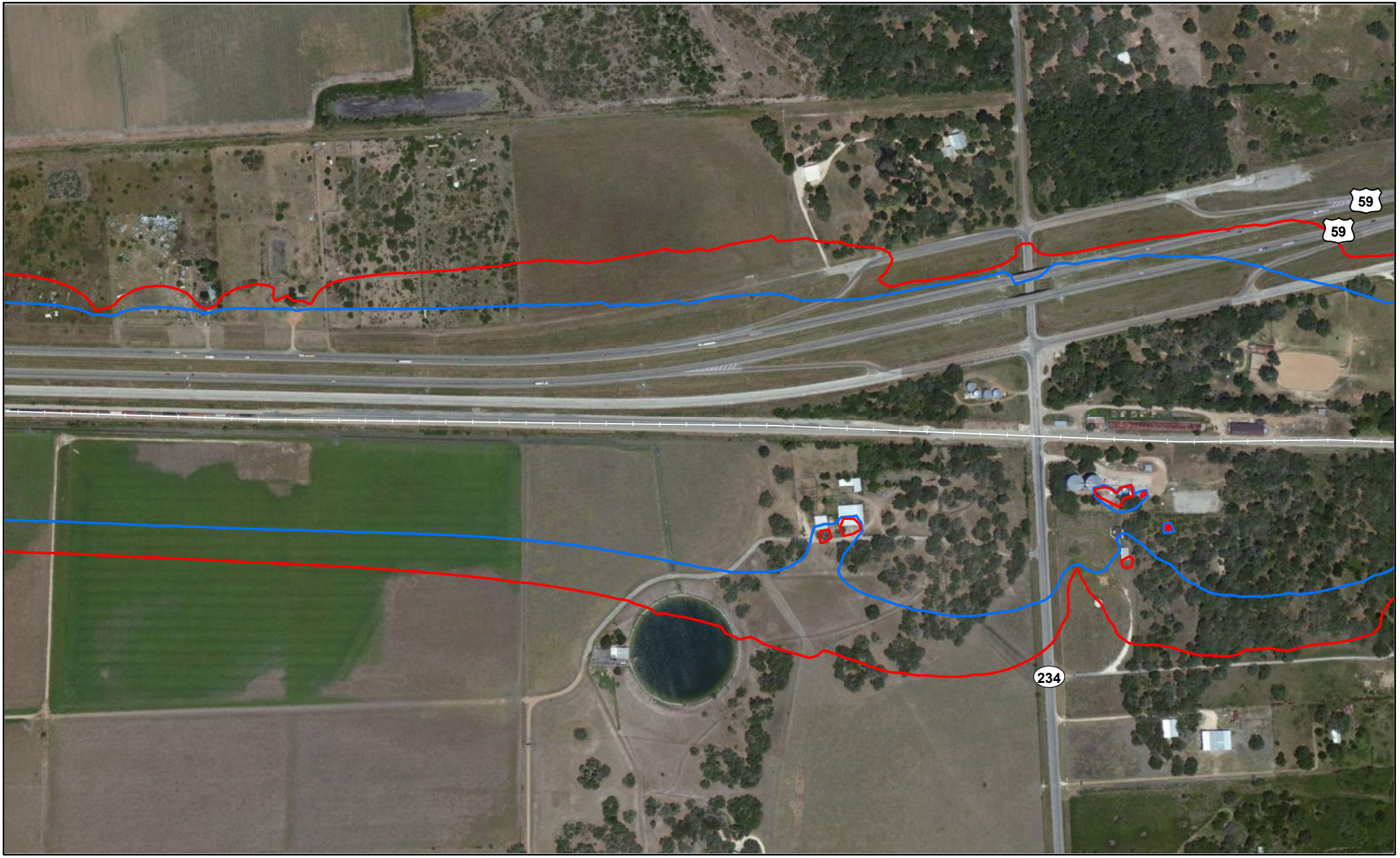
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Noise Contours
Jackson County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



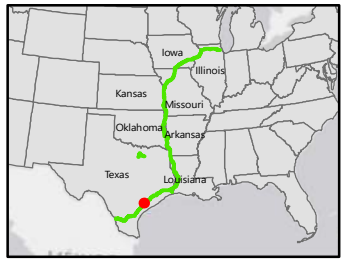
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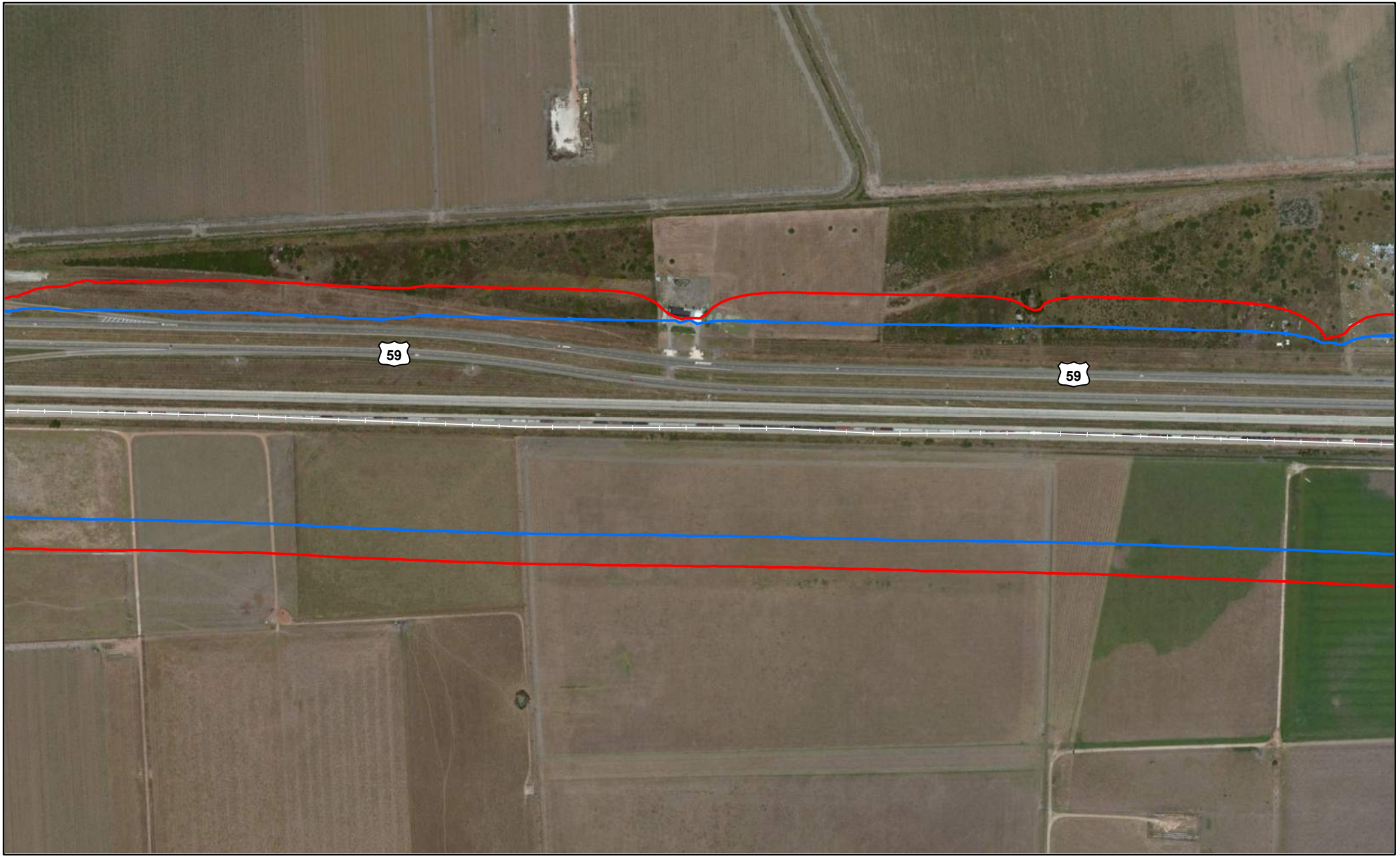
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Noise Contours
Jackson County, TX

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



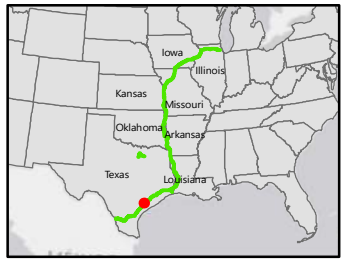
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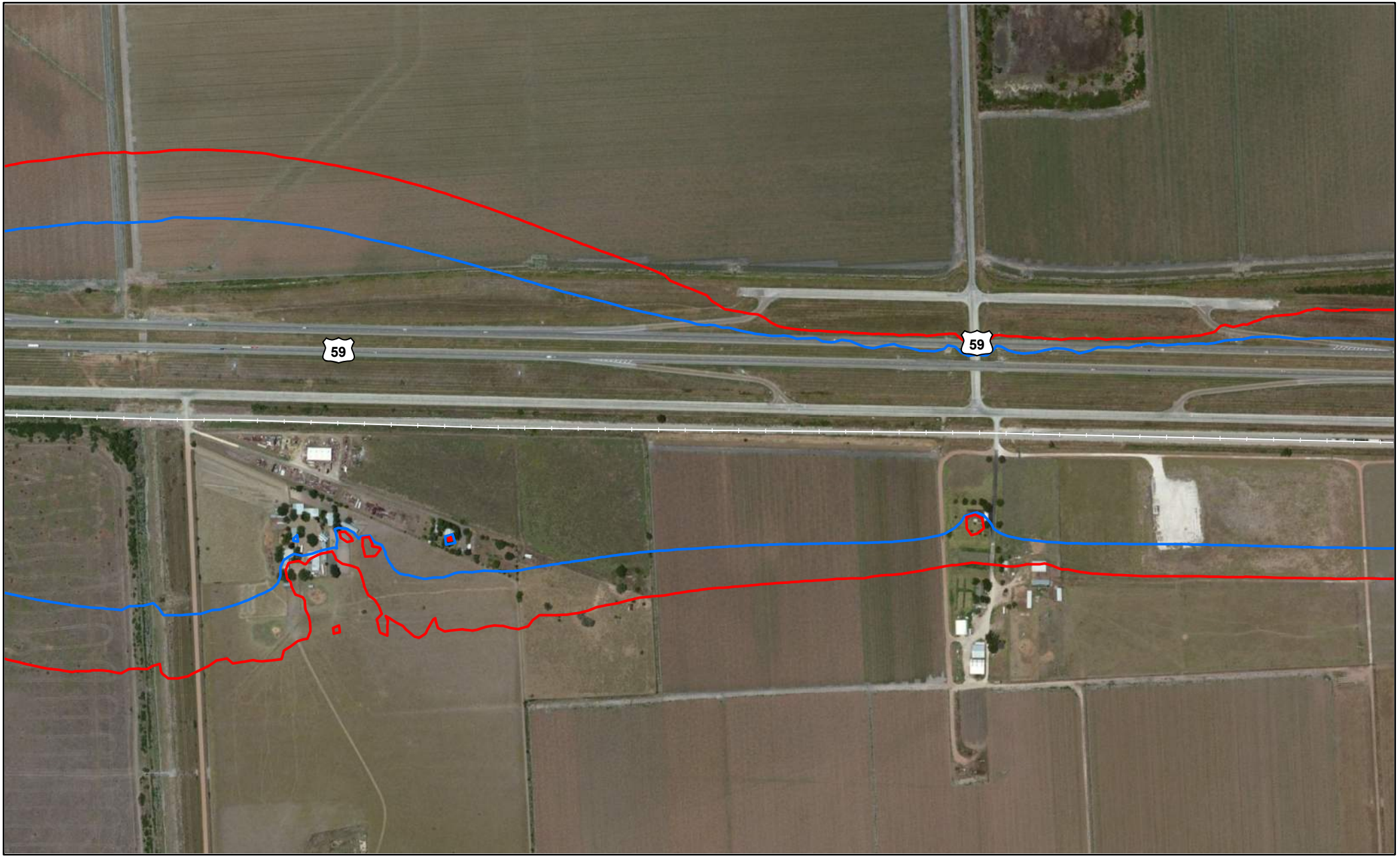
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Noise Contours
Jackson County, TX

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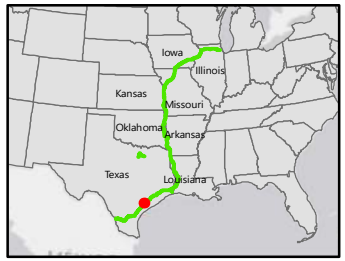
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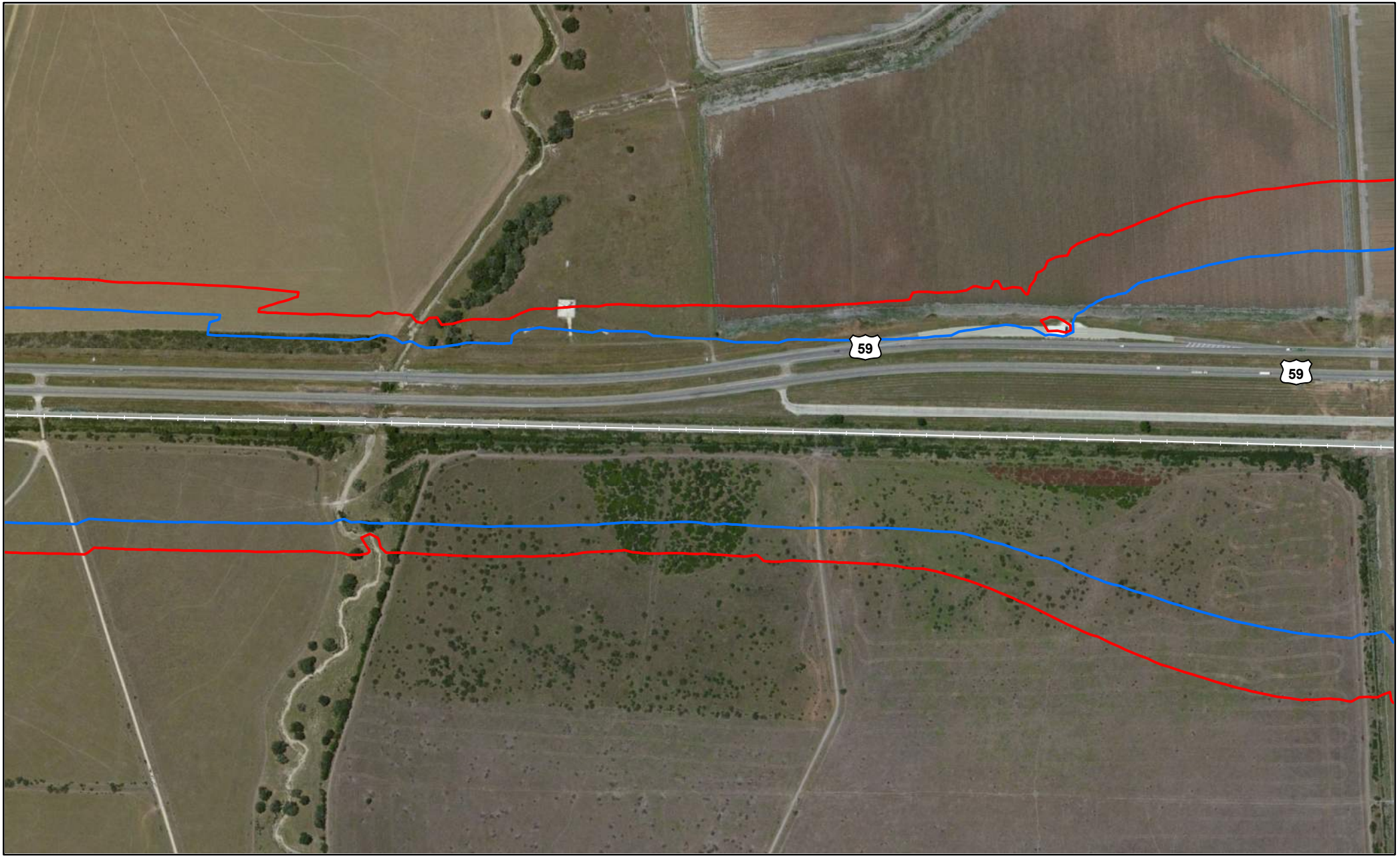
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Noise Contours
Jackson County, TX

Miles
0 0.05 0.1



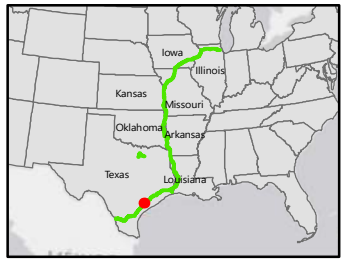
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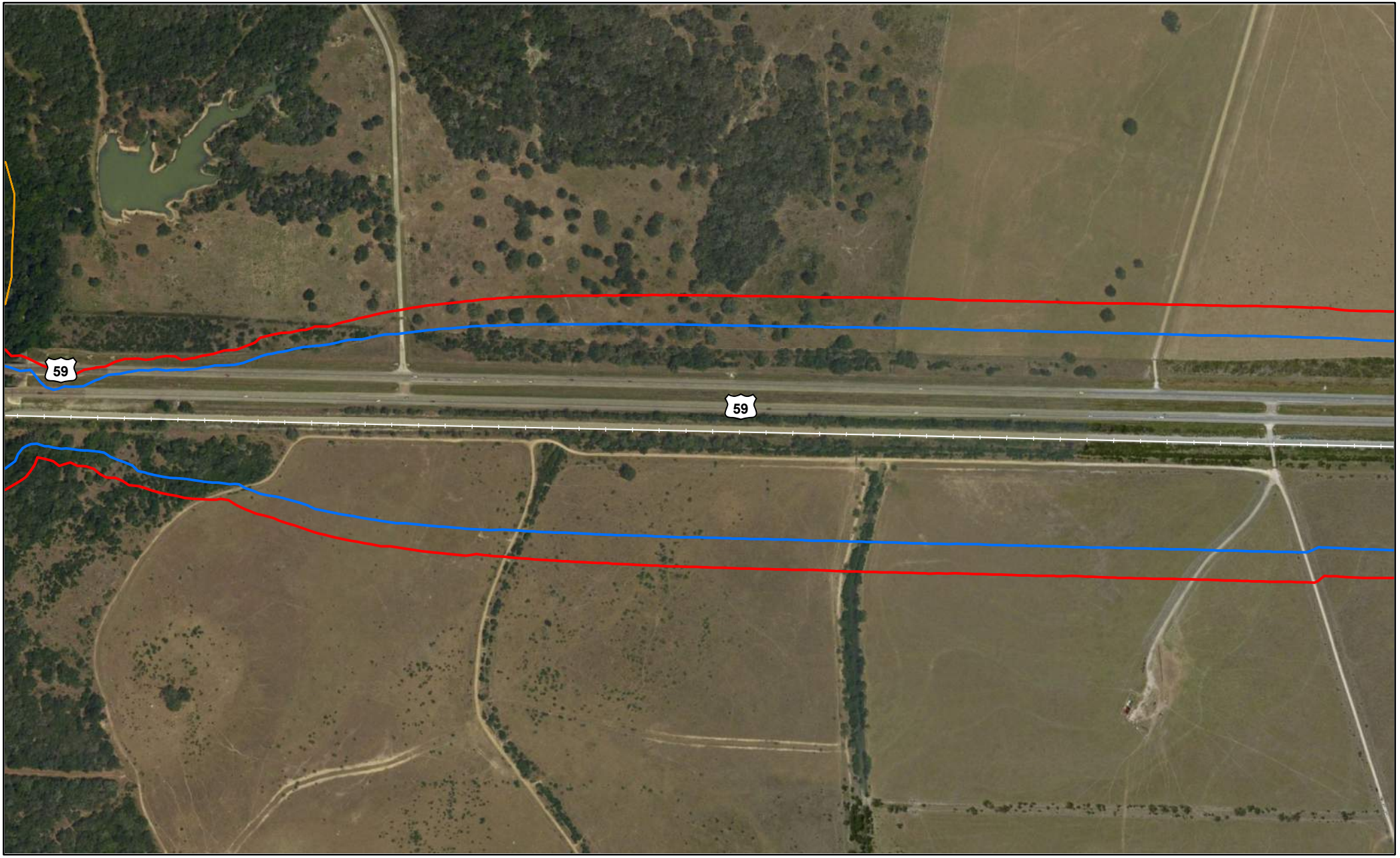
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Noise Contours
Jackson County, TX

Miles
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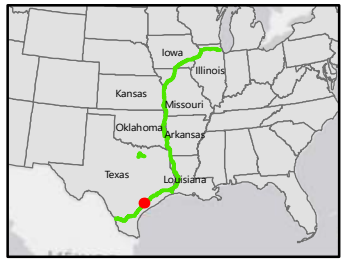
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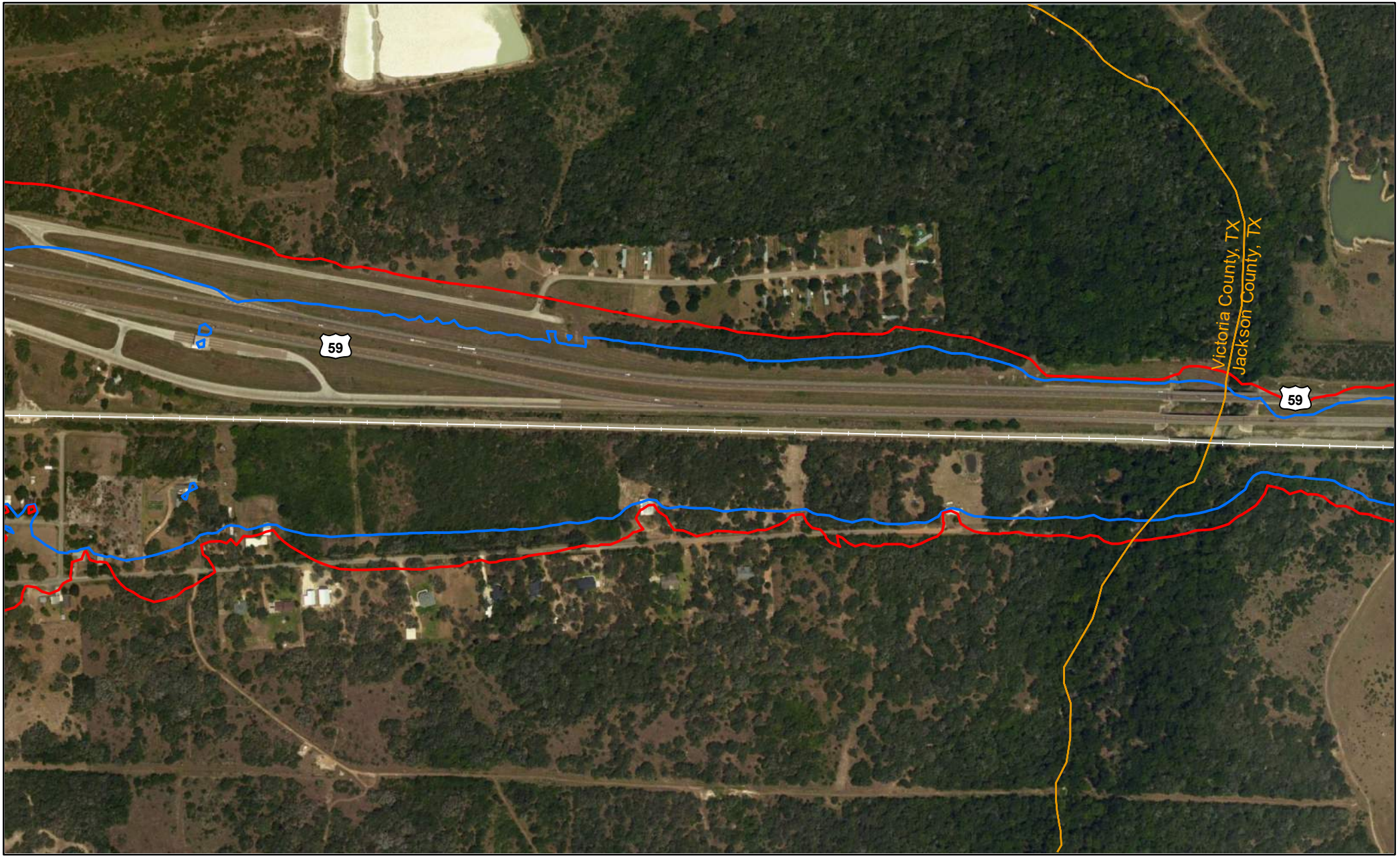
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Noise Contours
Jackson County, TX

Miles
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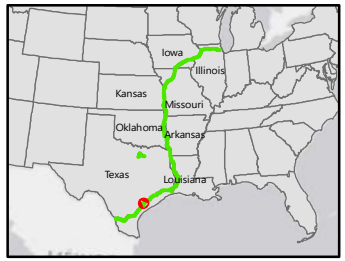
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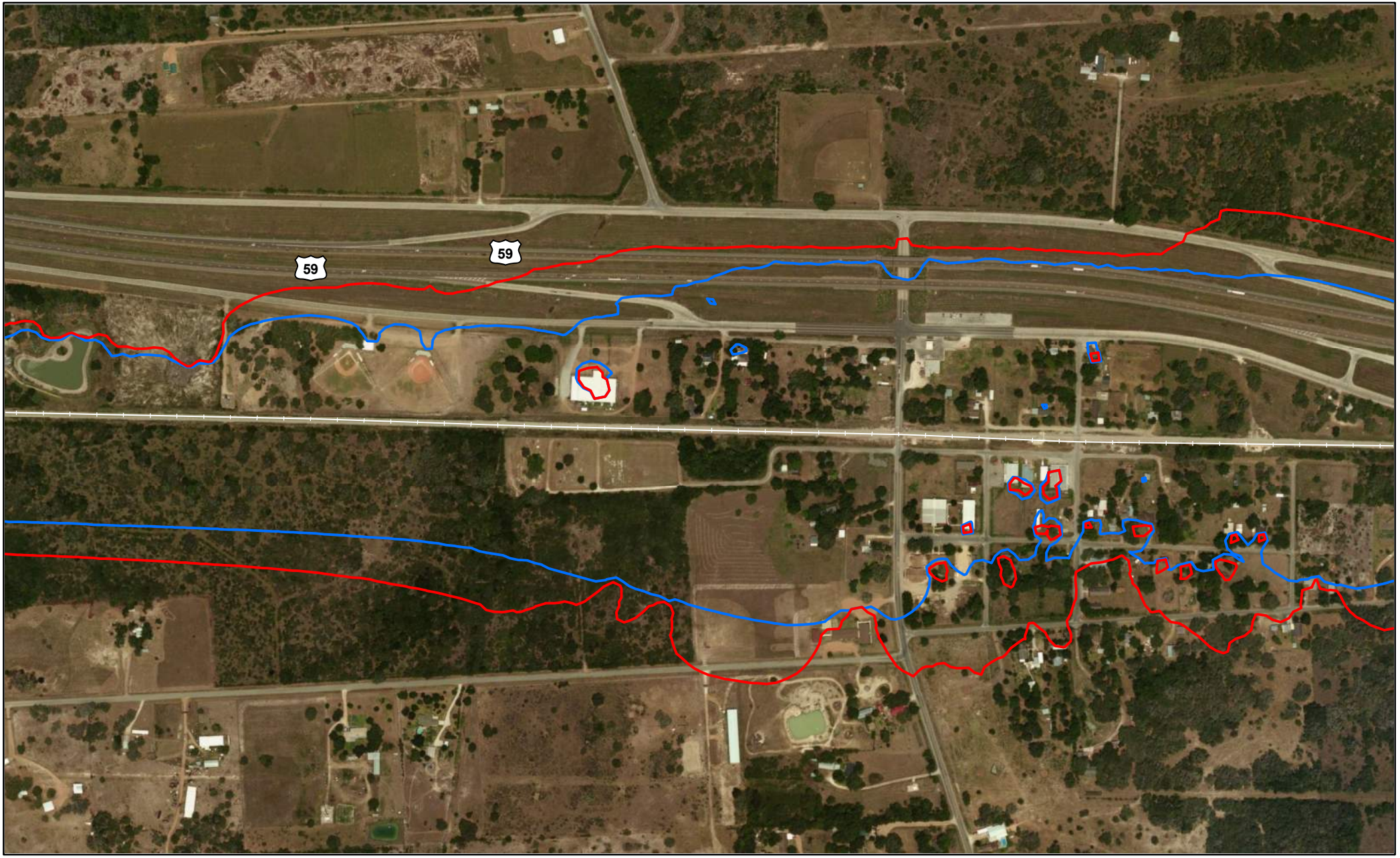
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Noise Contours
Victoria County, TX

Miles
0 0.05 0.1



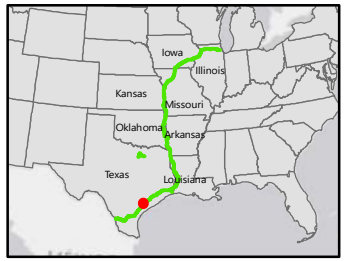
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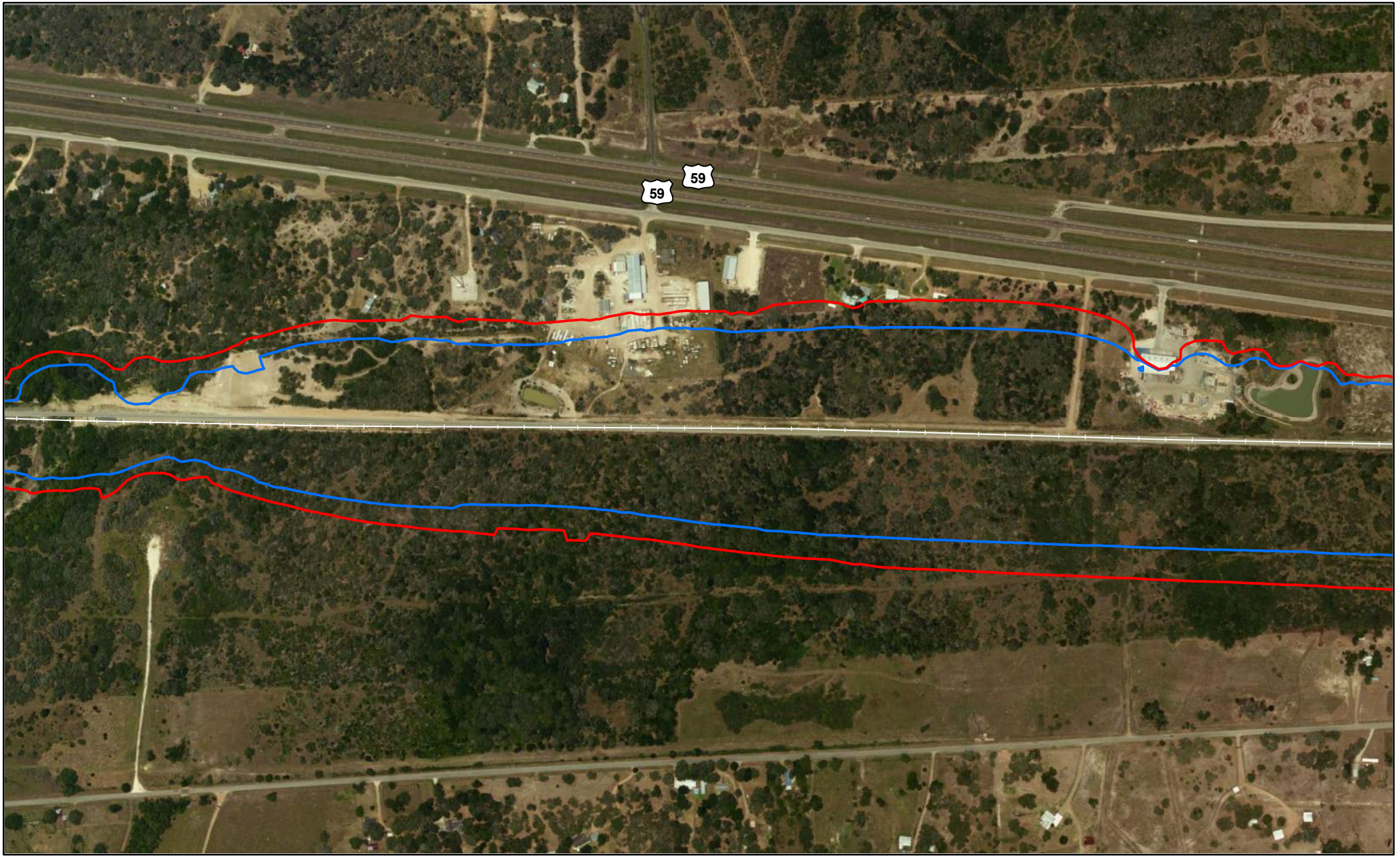
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Noise Contours
Victoria County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



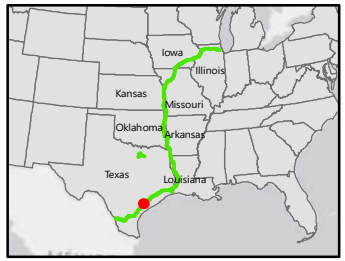
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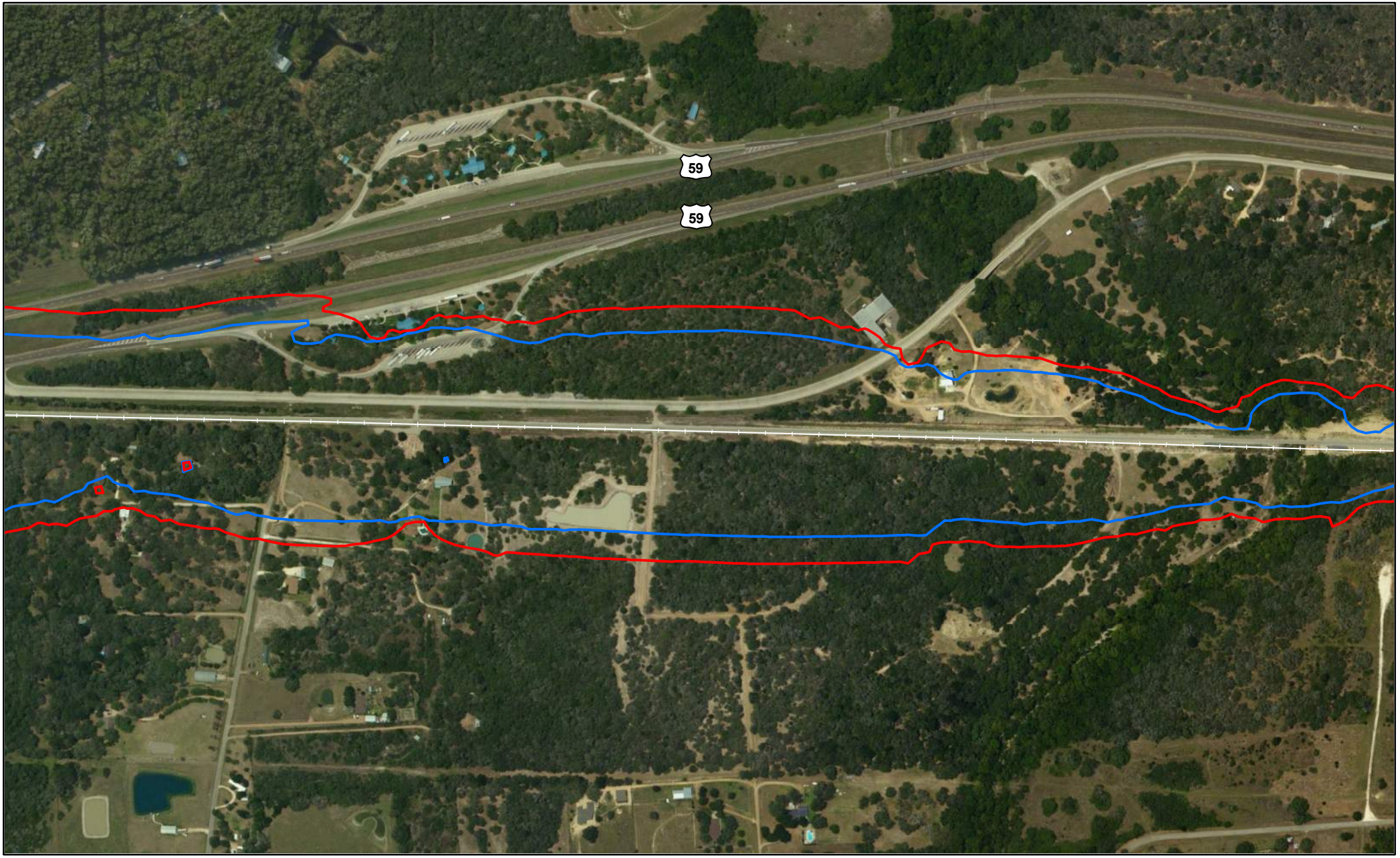
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Noise Contours
Victoria County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



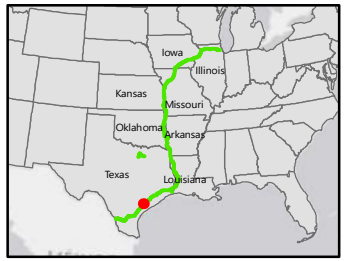
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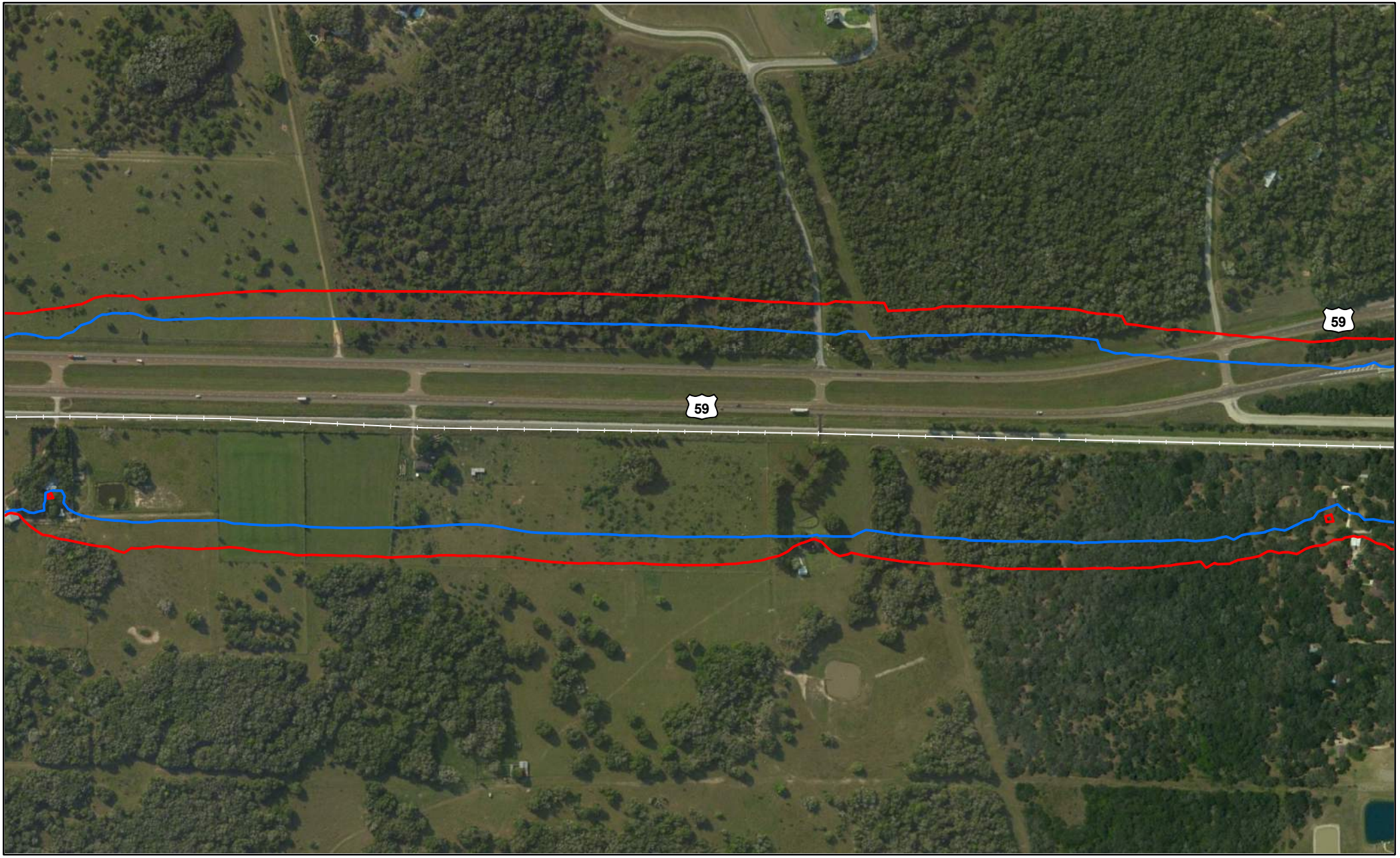
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Noise Contours
Victoria County, TX

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



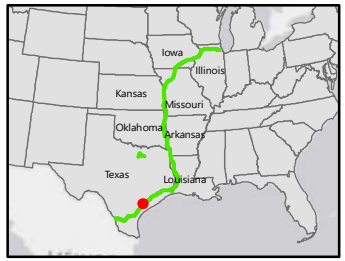
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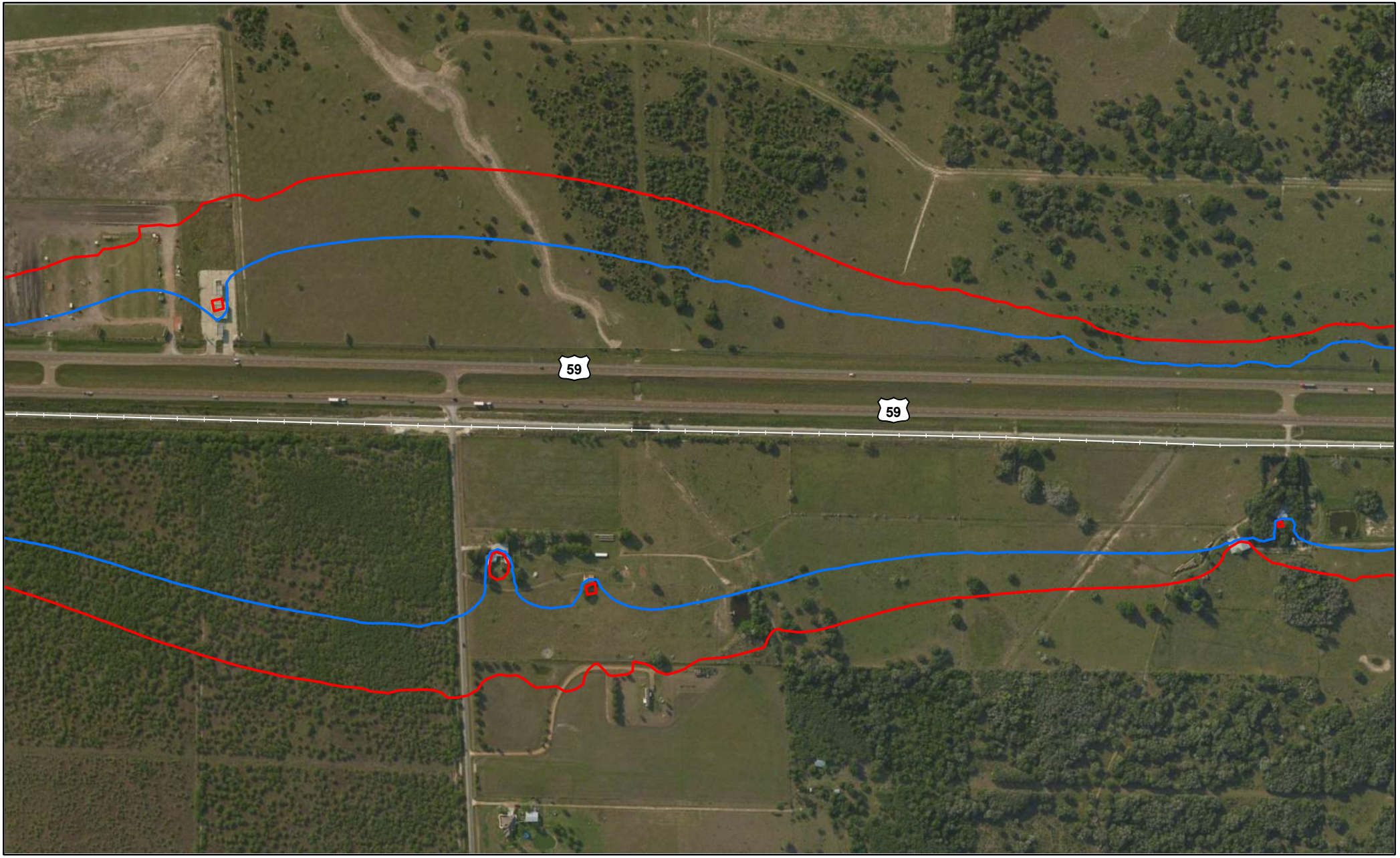
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Noise Contours
Victoria County, TX

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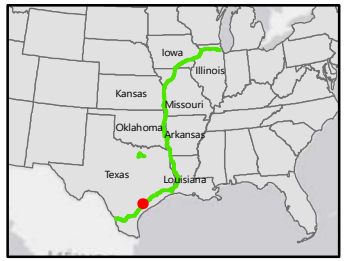
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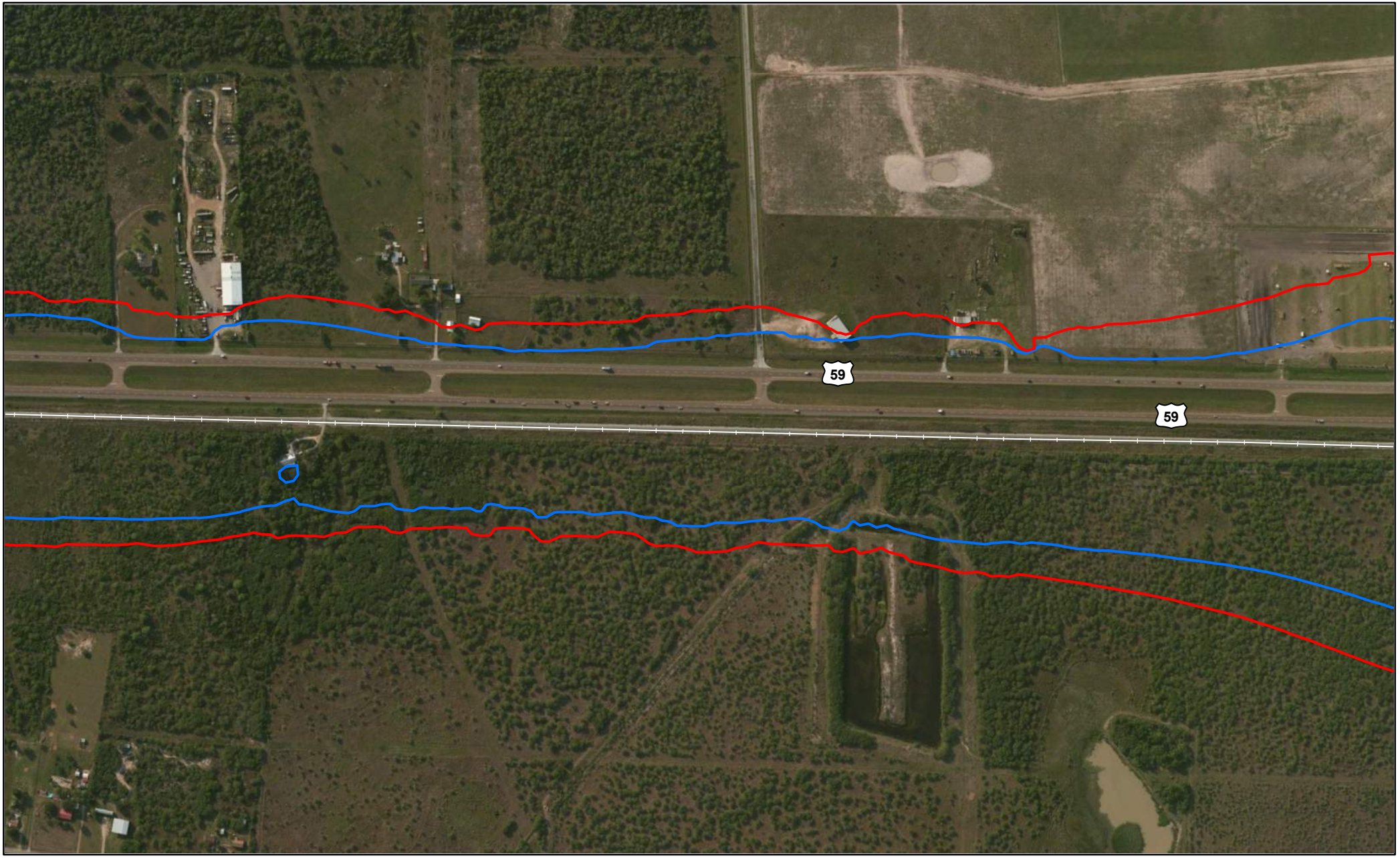
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Noise Contours
Victoria County, TX

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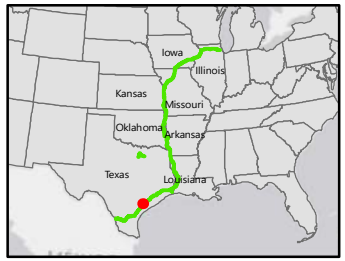
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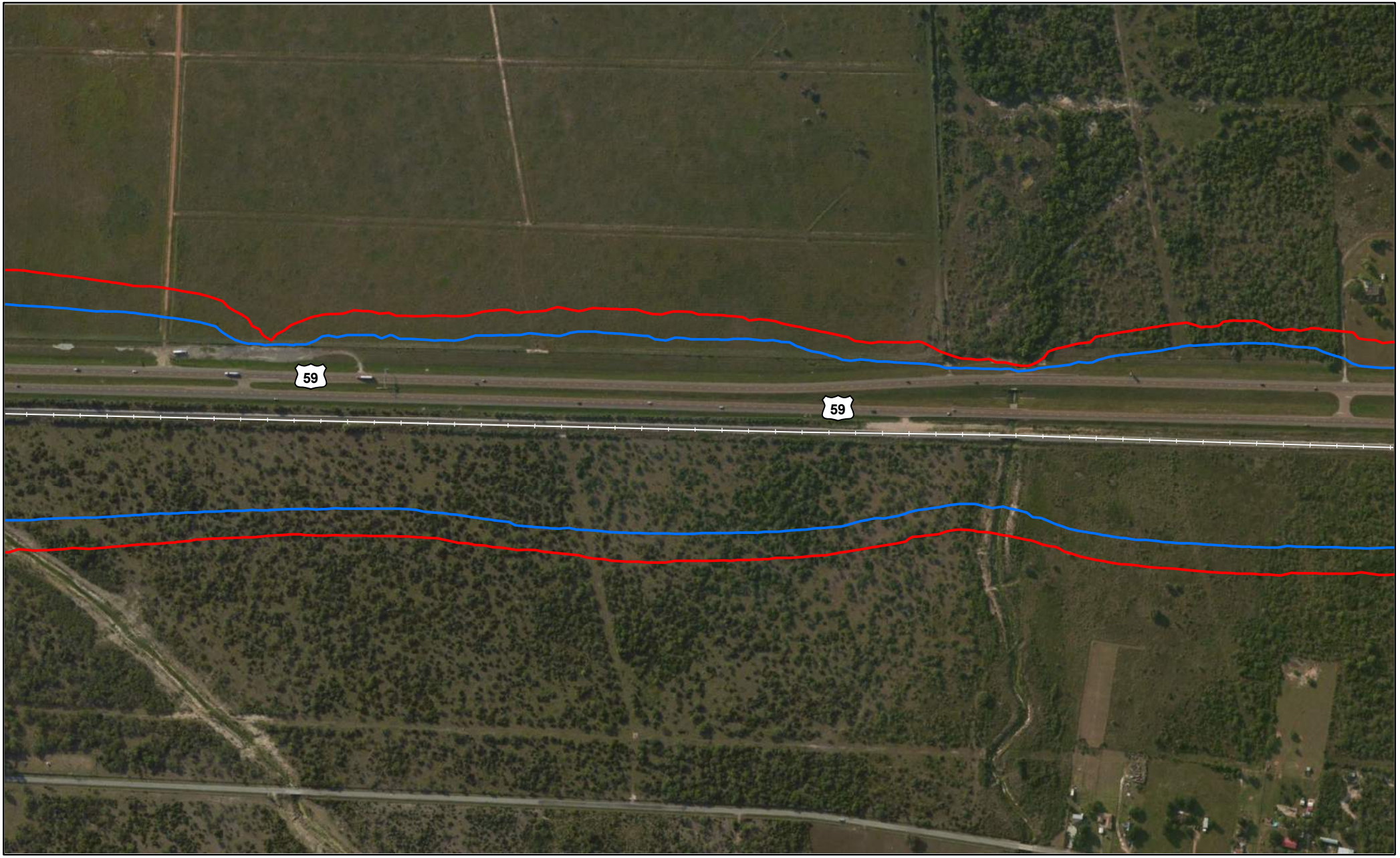
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Noise Contours
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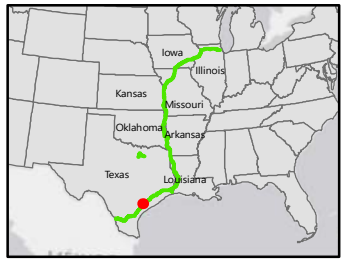
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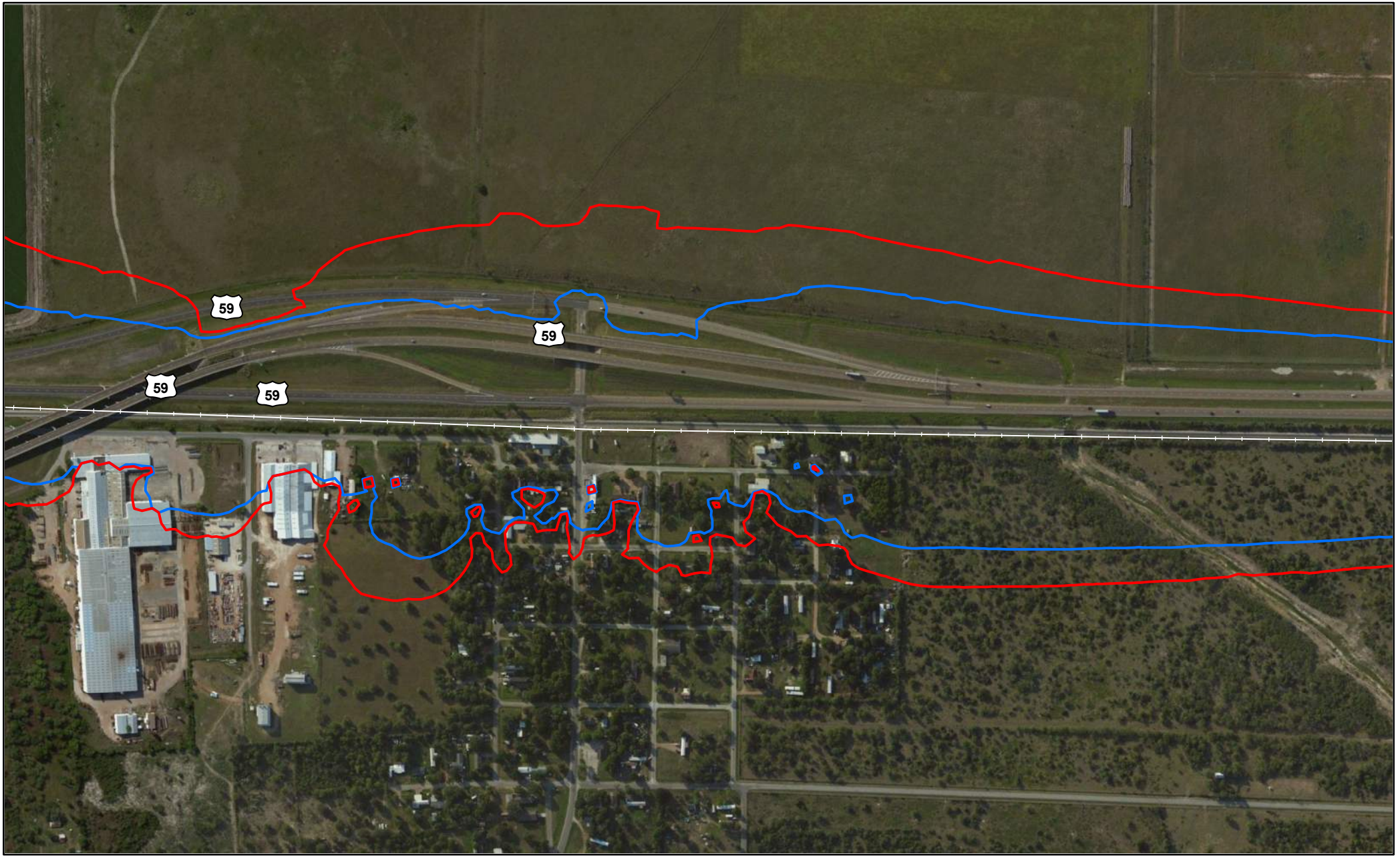
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Victoria County, TX

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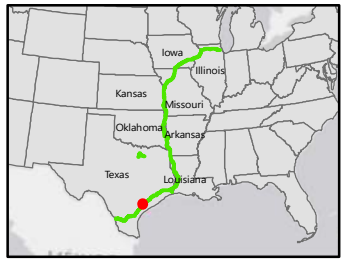
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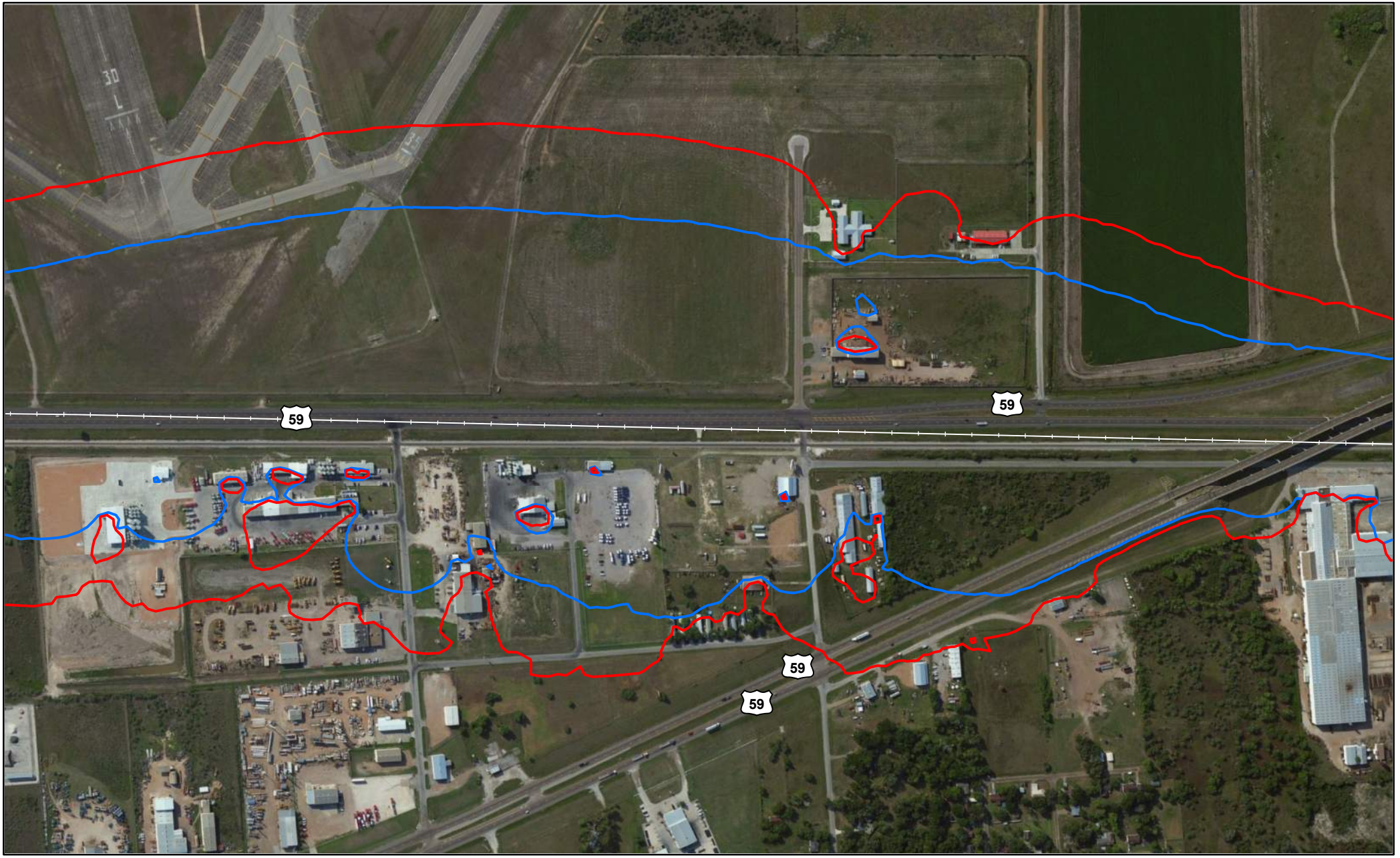
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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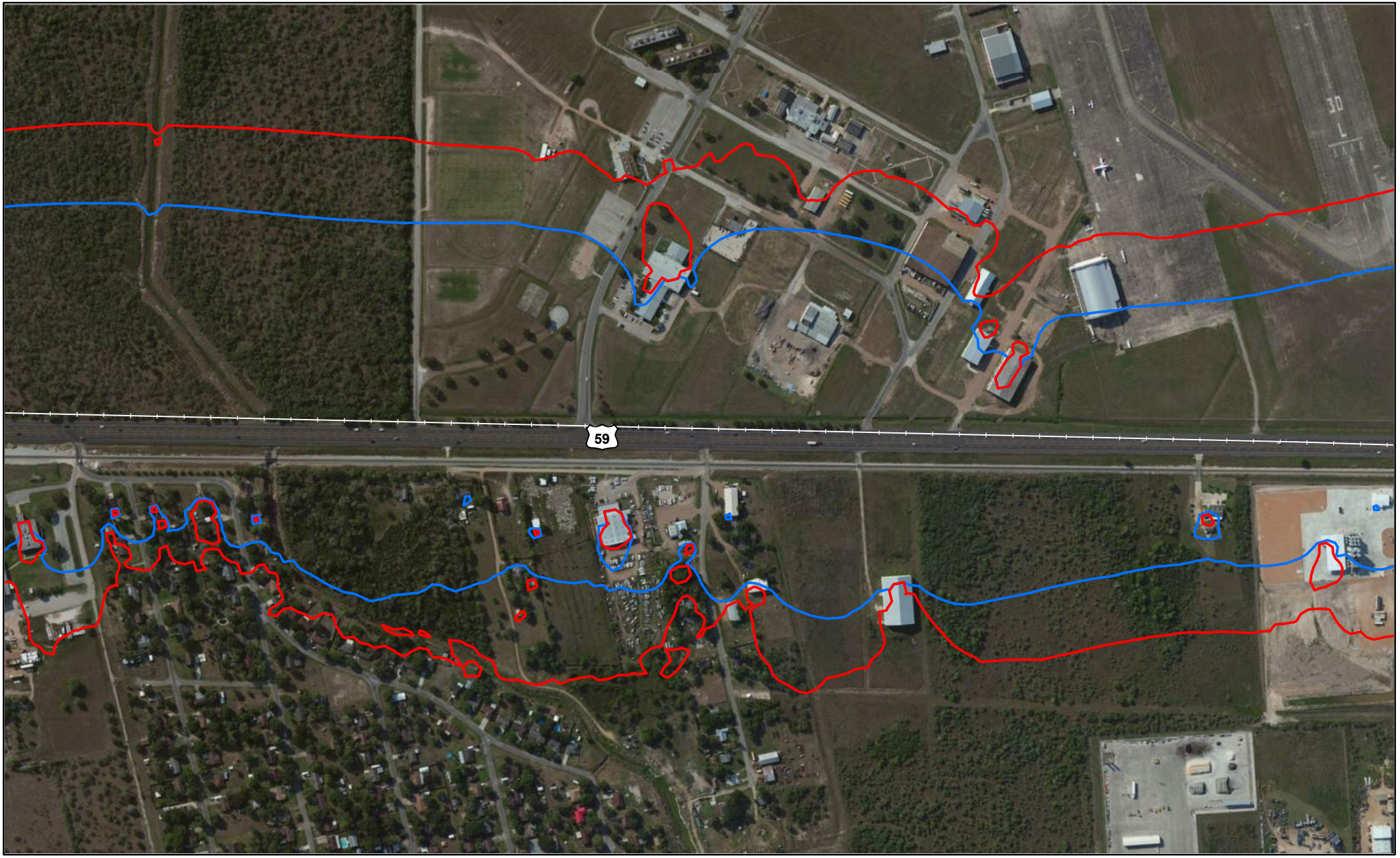
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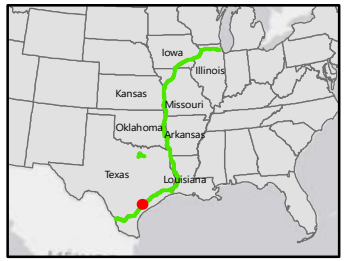
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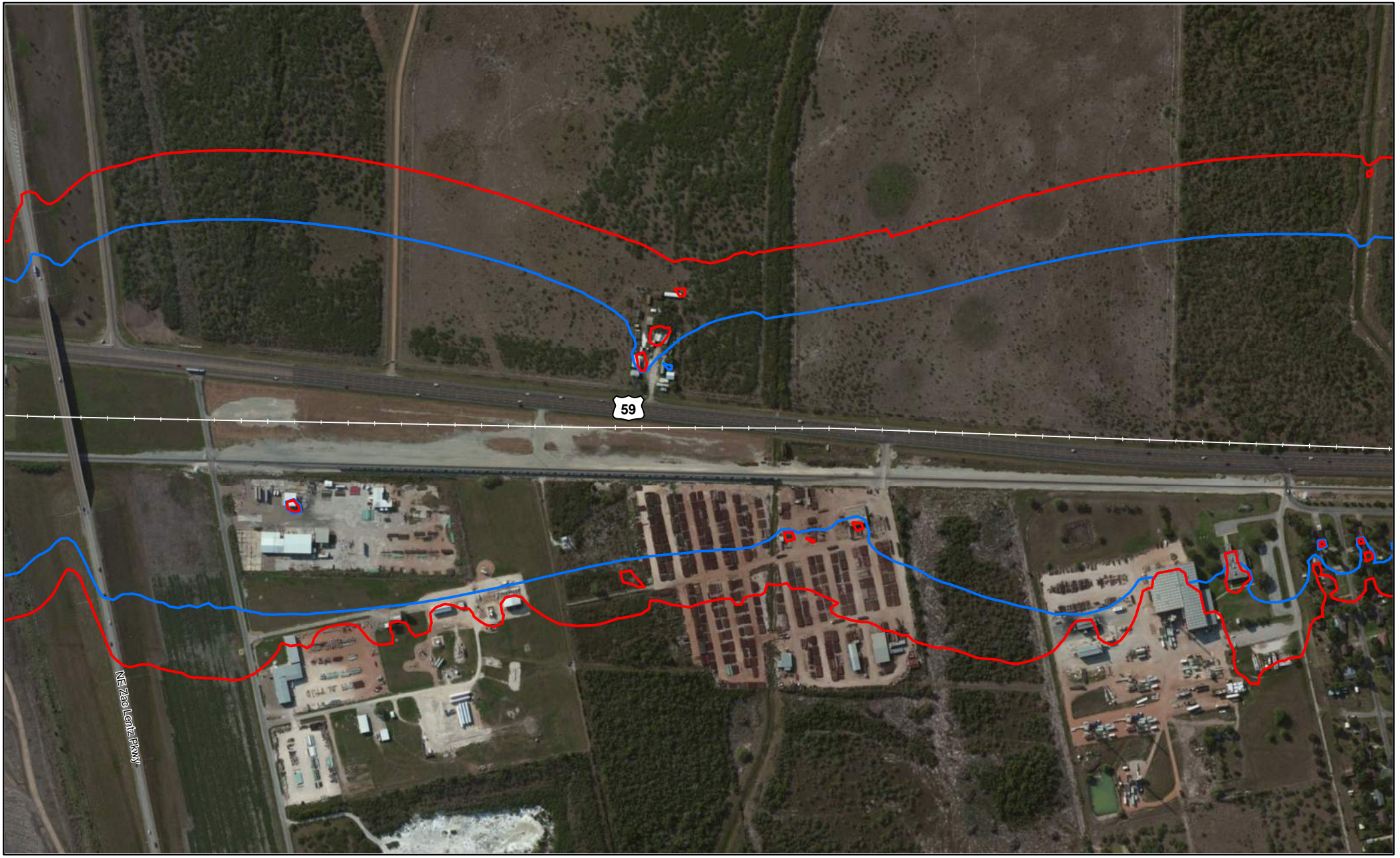
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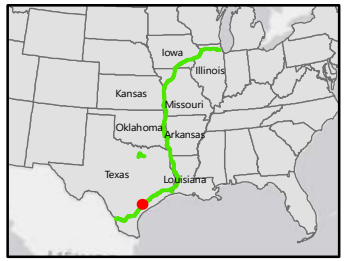
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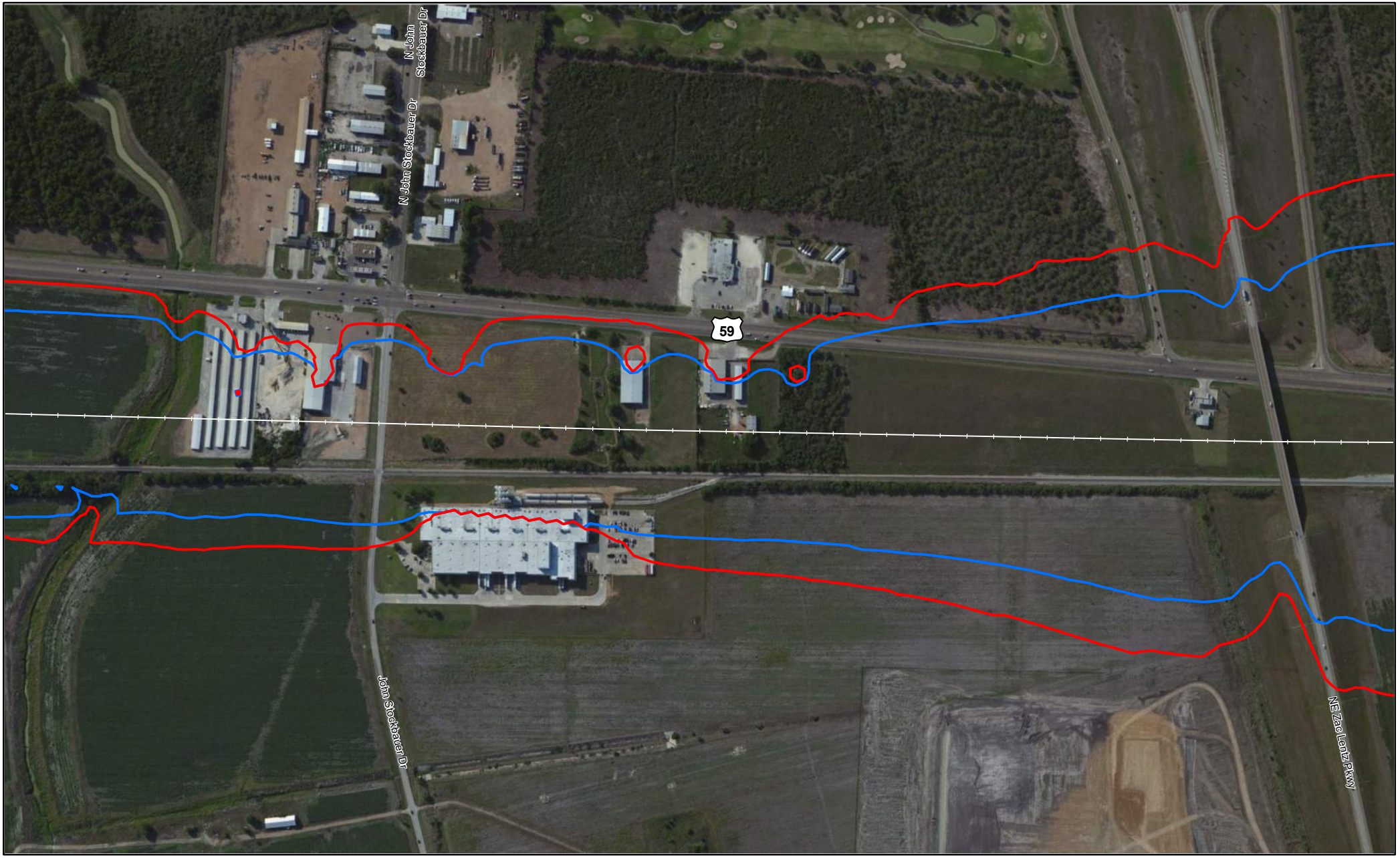
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0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



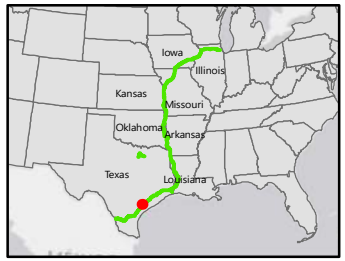
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Victoria County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



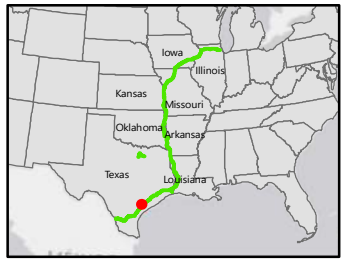
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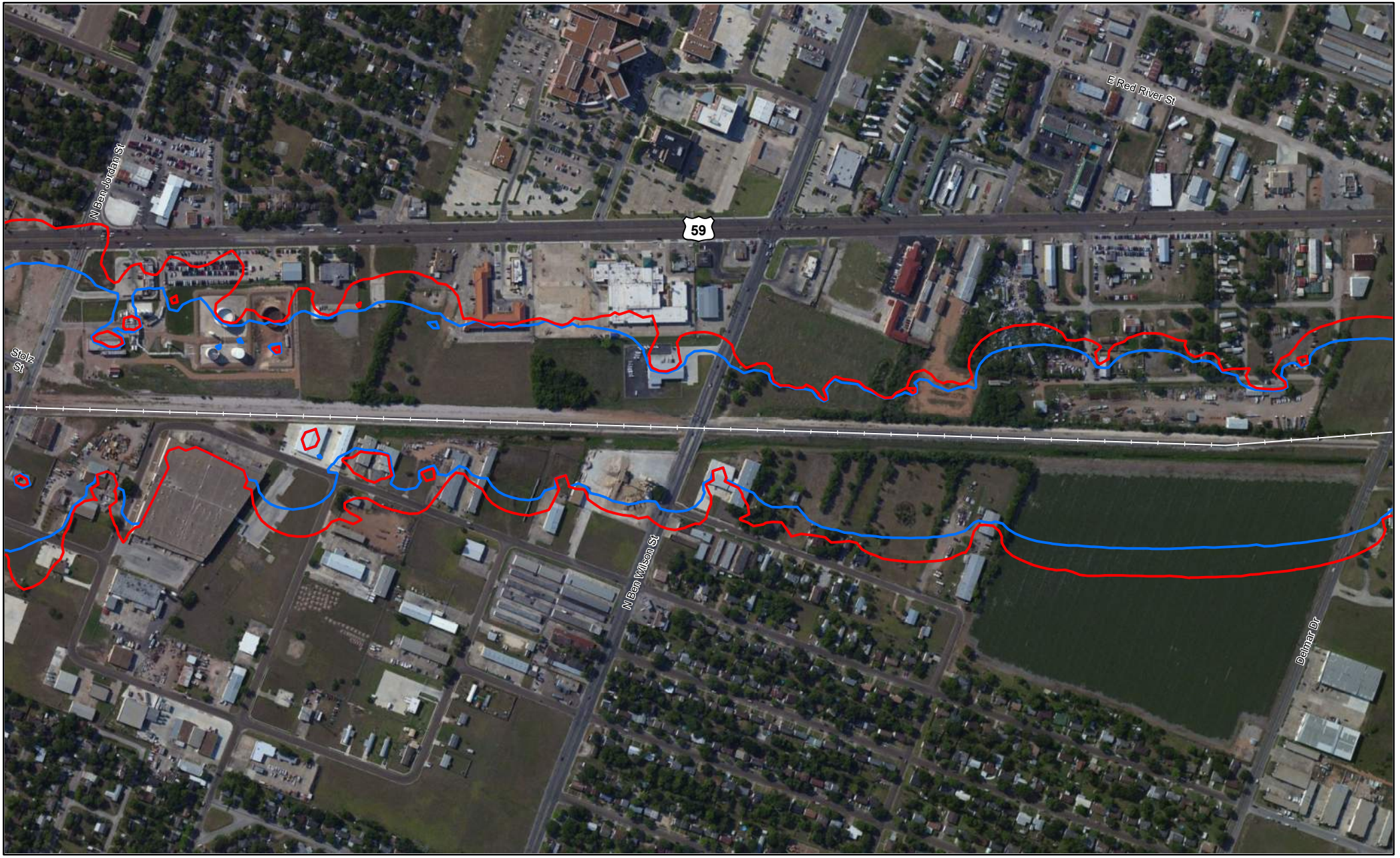
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Noise Contours
Victoria County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



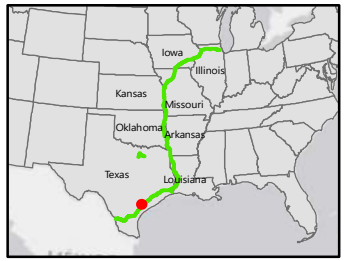
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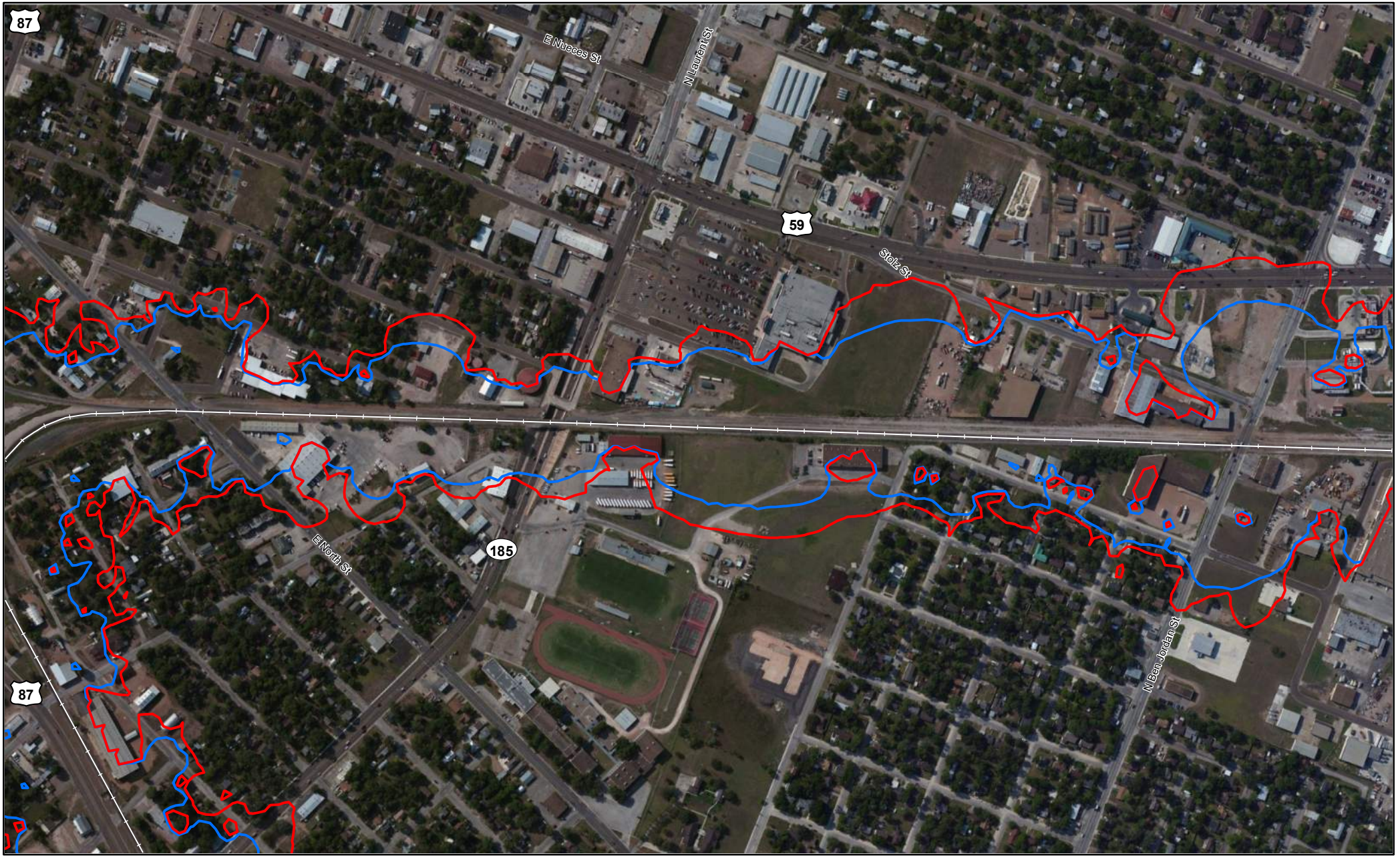
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Noise Contours
Victoria County, TX

Miles
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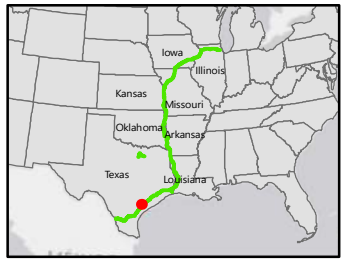
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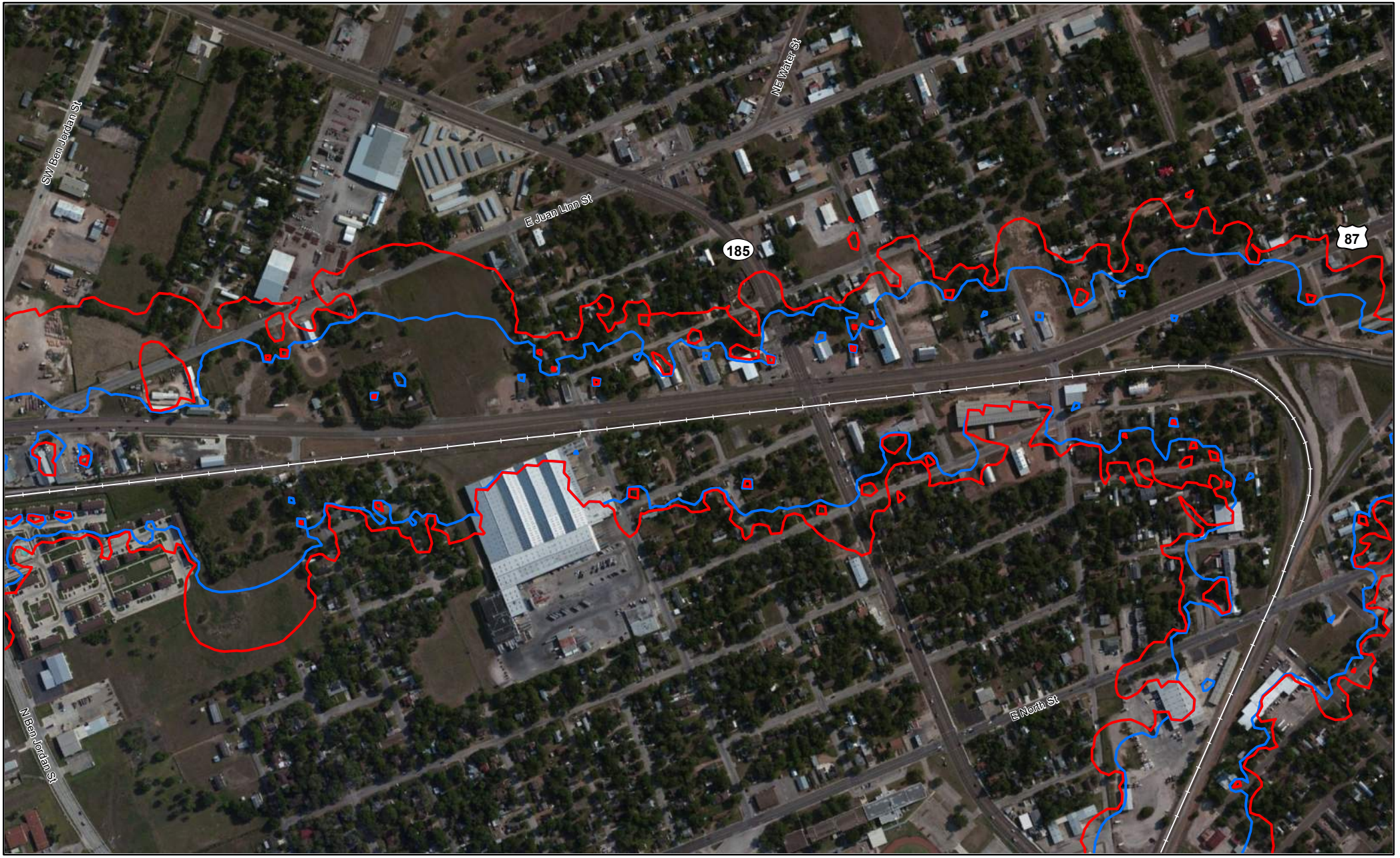
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Noise Contours
Victoria County, TX

Miles
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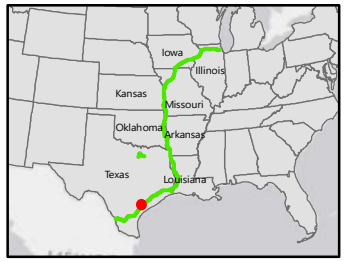
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Noise Contours
Victoria County, TX

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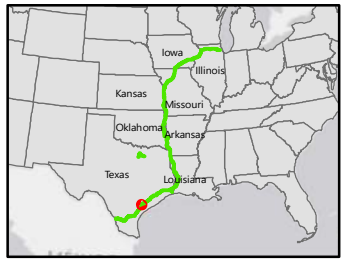
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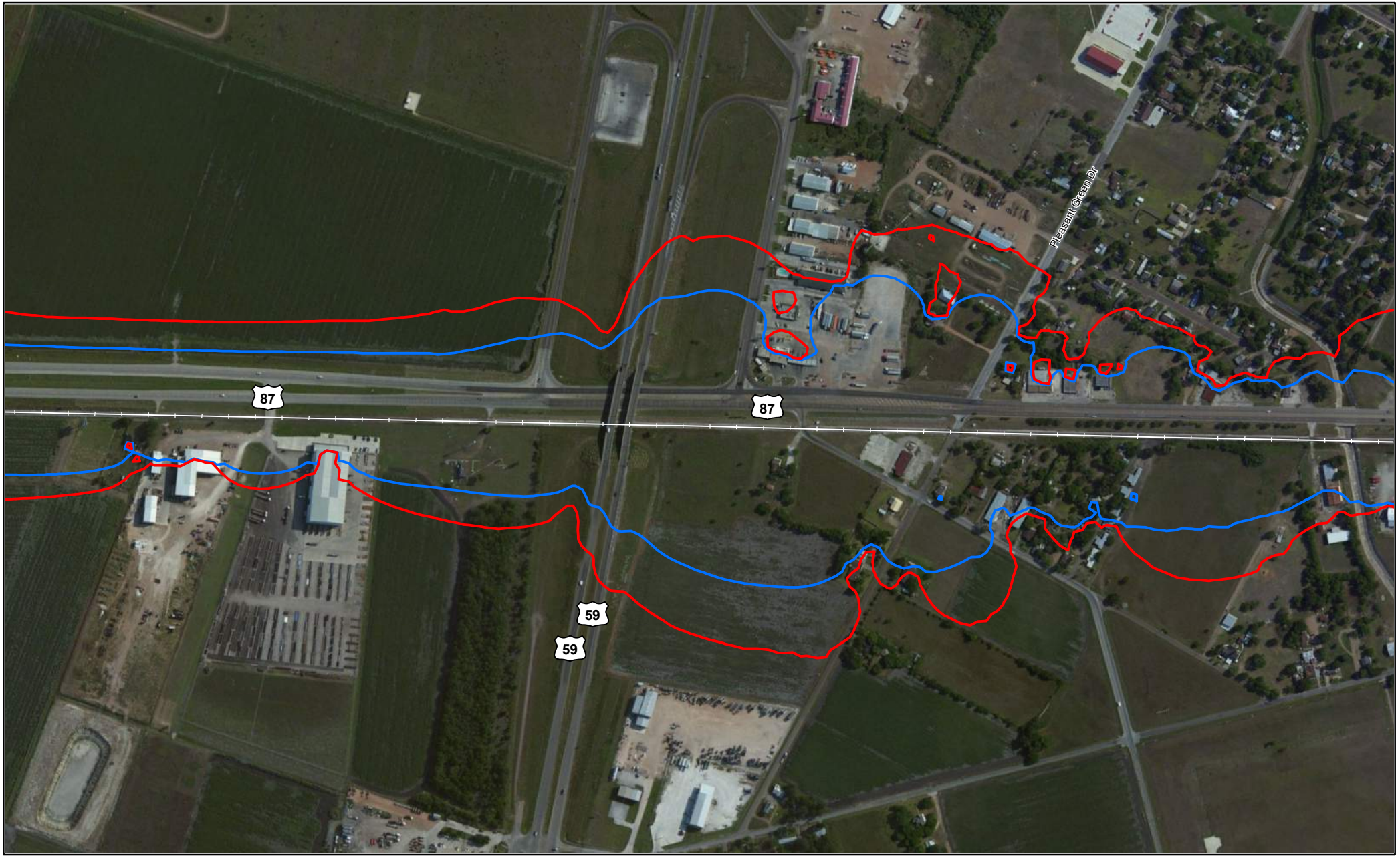
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Noise Contours
Victoria County, TX

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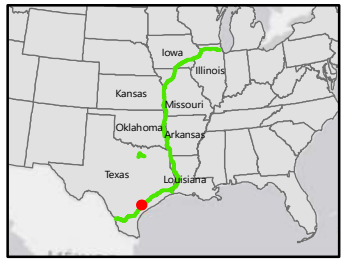
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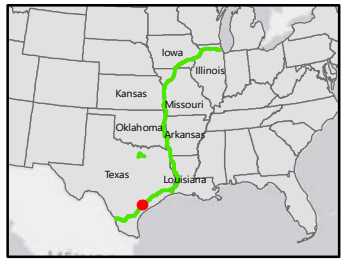
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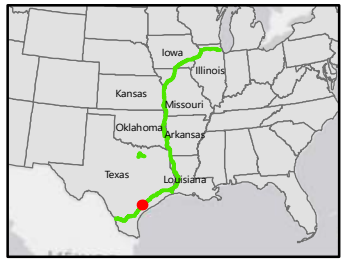
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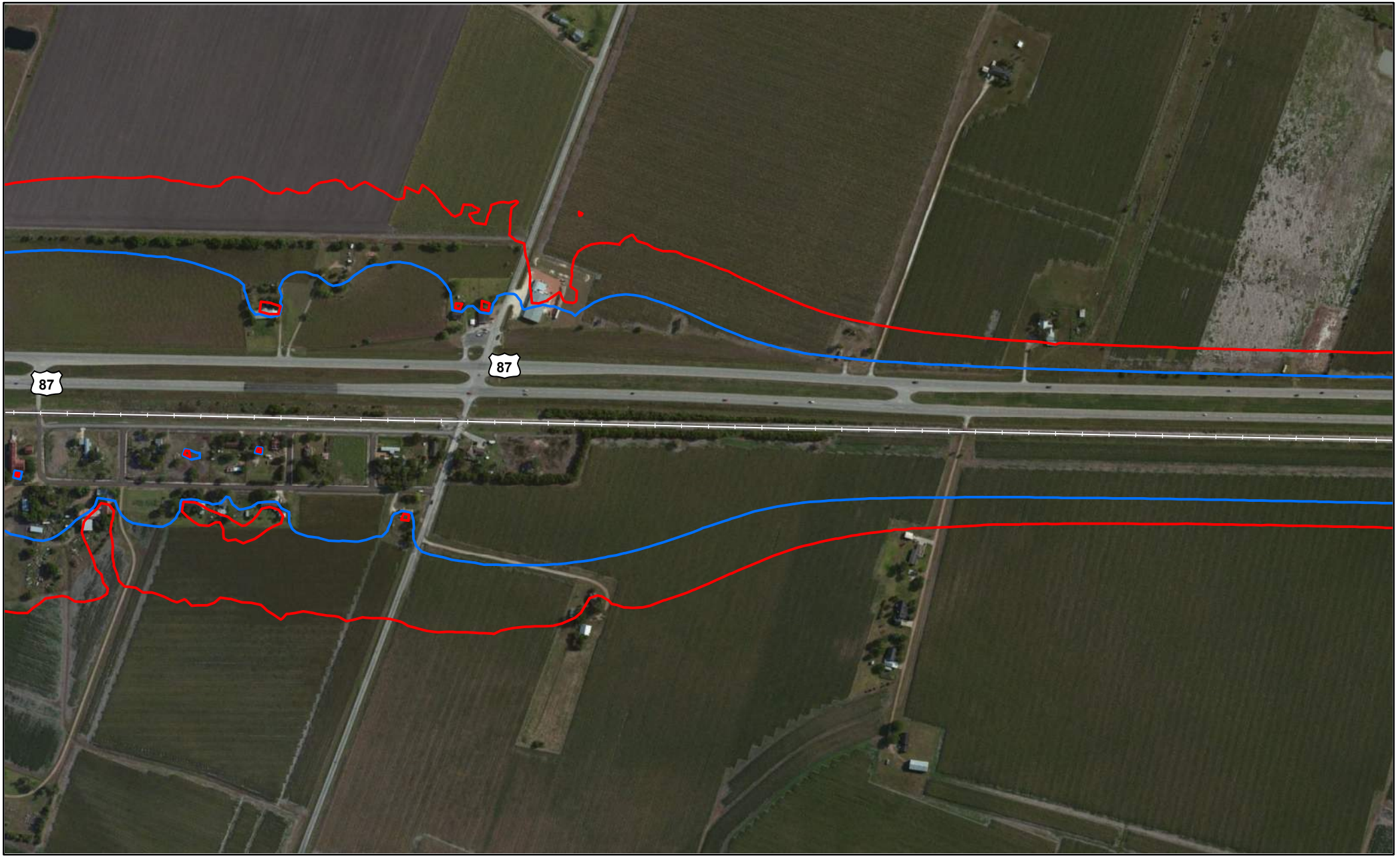
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Noise Contours
Victoria County, TX

Miles
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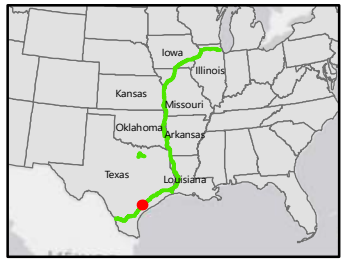
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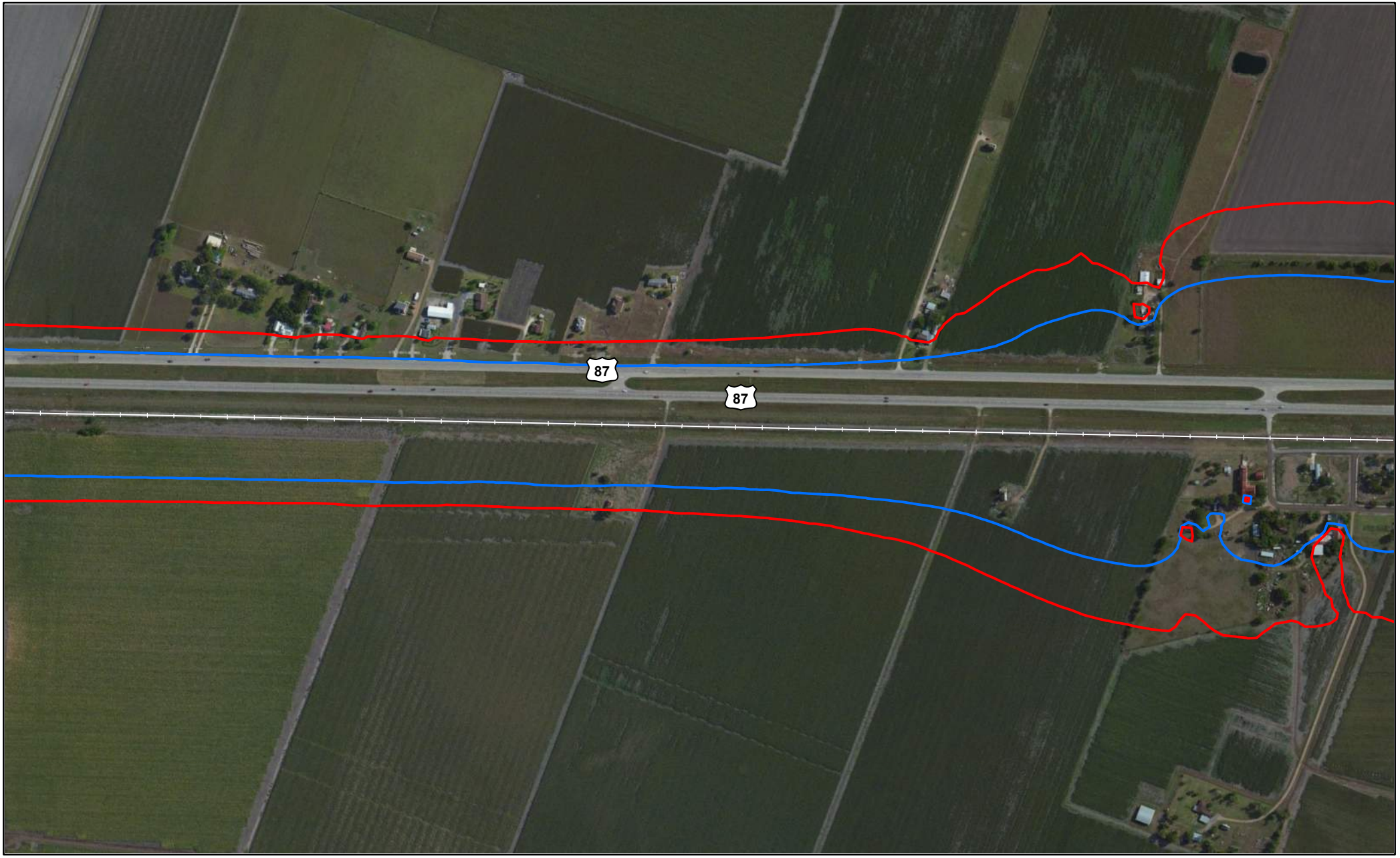
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Noise Contours
Victoria County, TX

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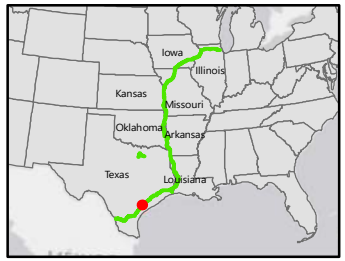
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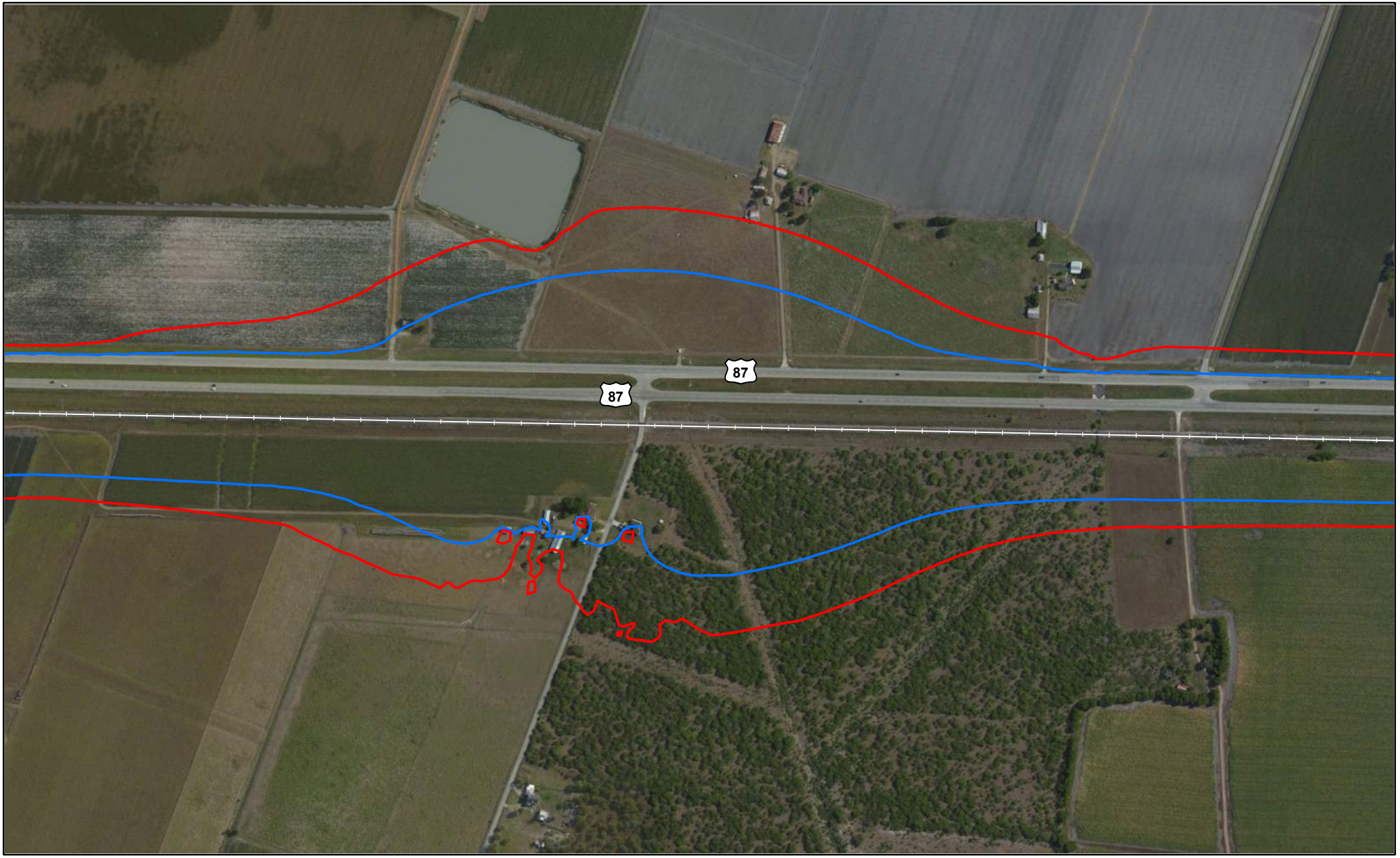
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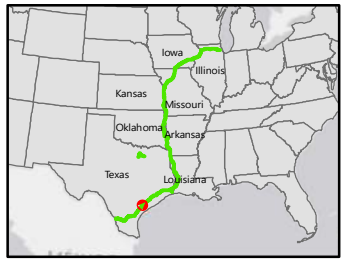
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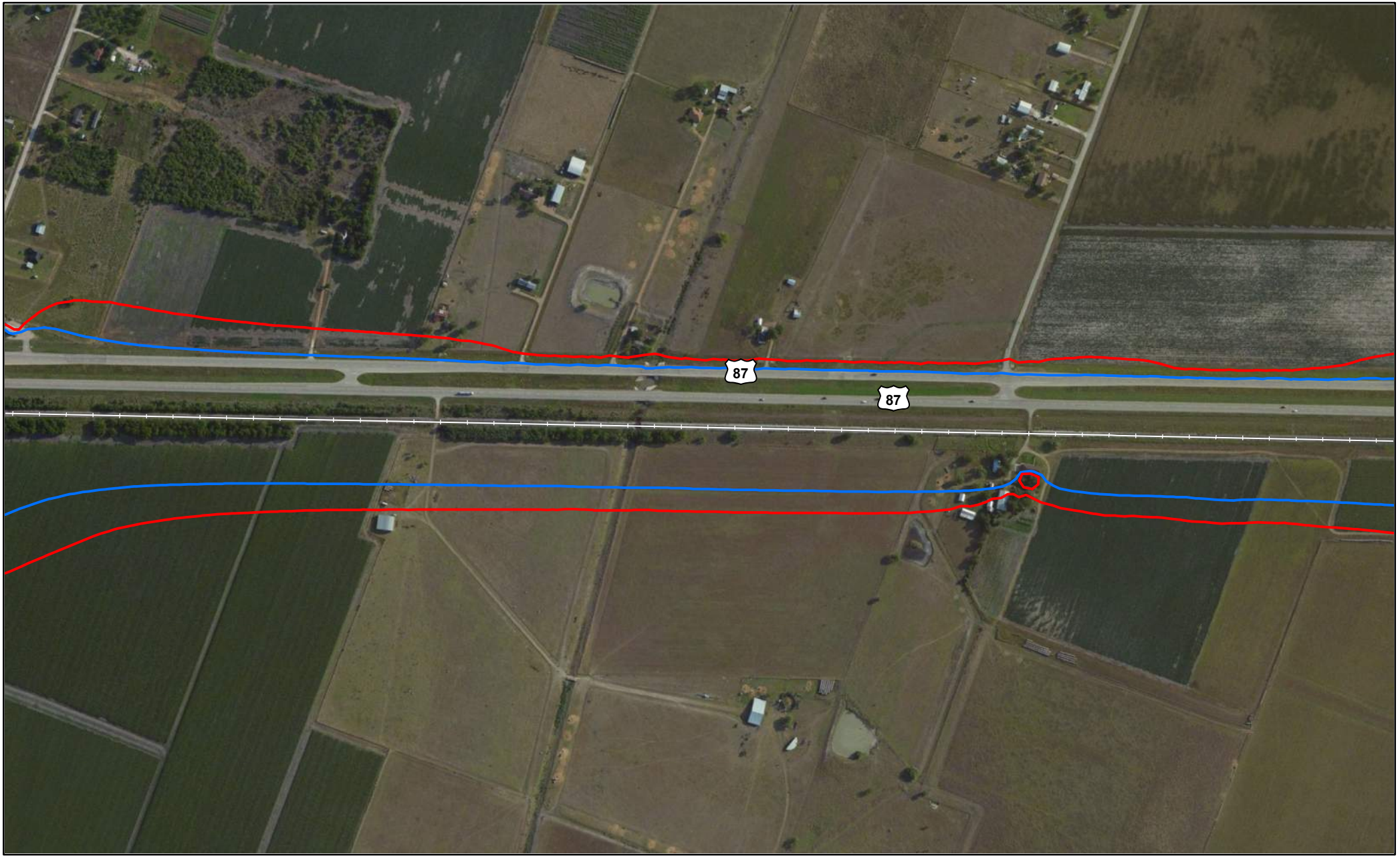
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Noise Contours
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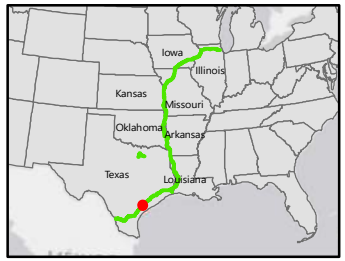
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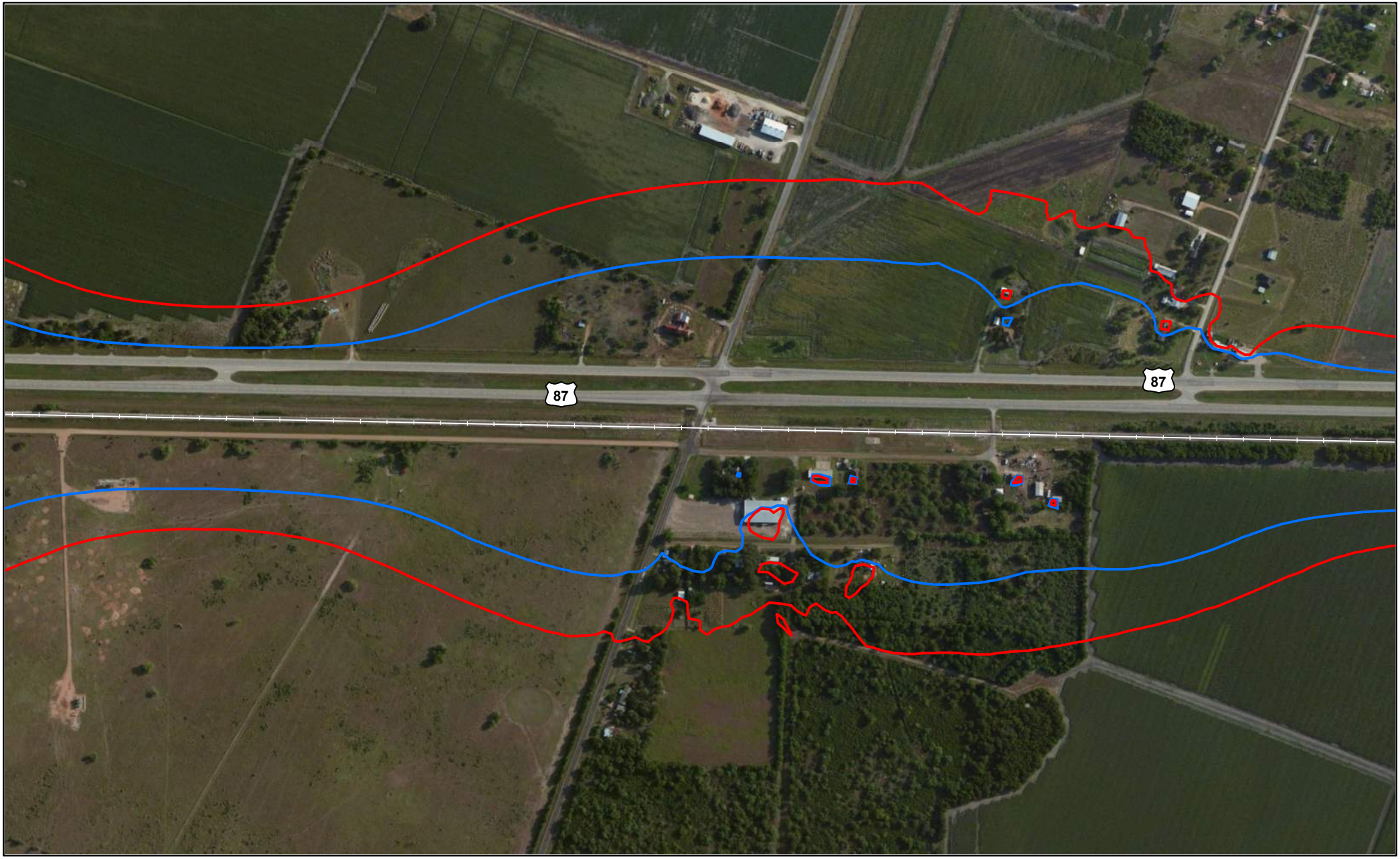
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Victoria County, TX

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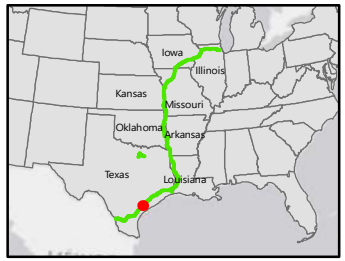
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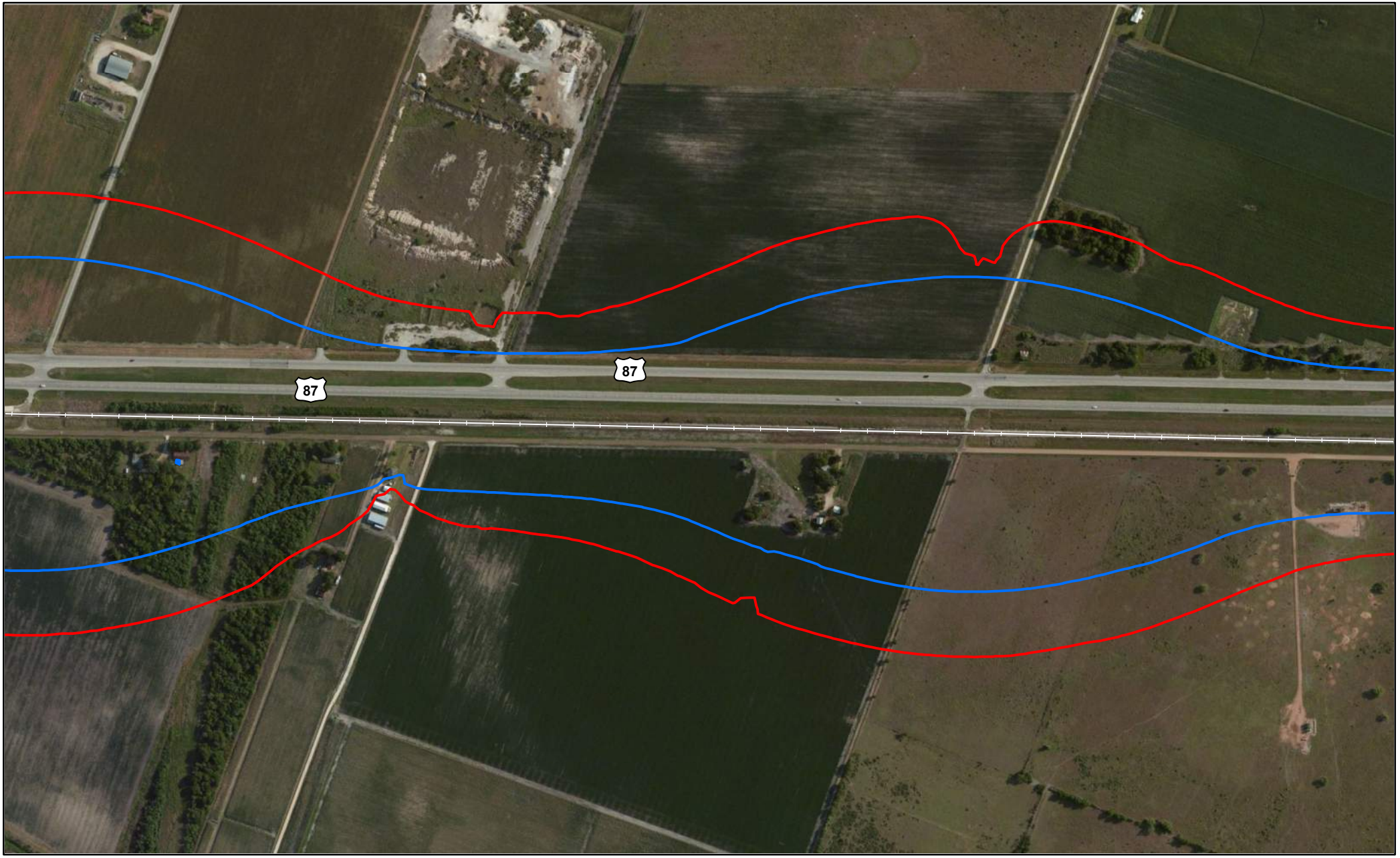
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Noise Contours
Victoria County, TX

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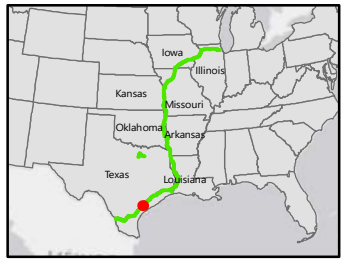
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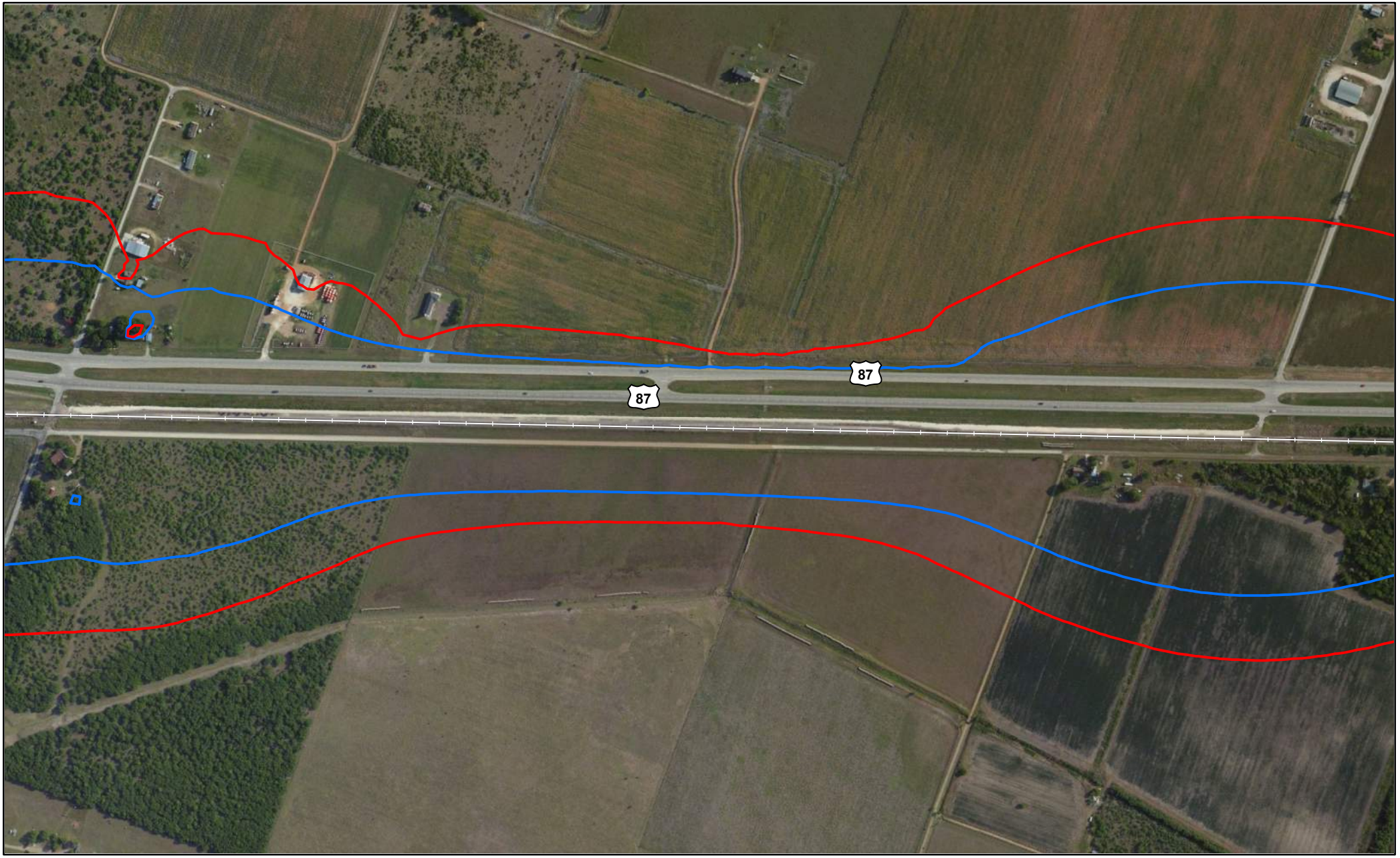
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Noise Contours
Victoria County, TX

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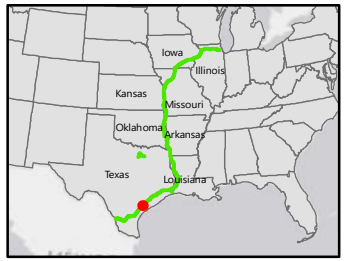
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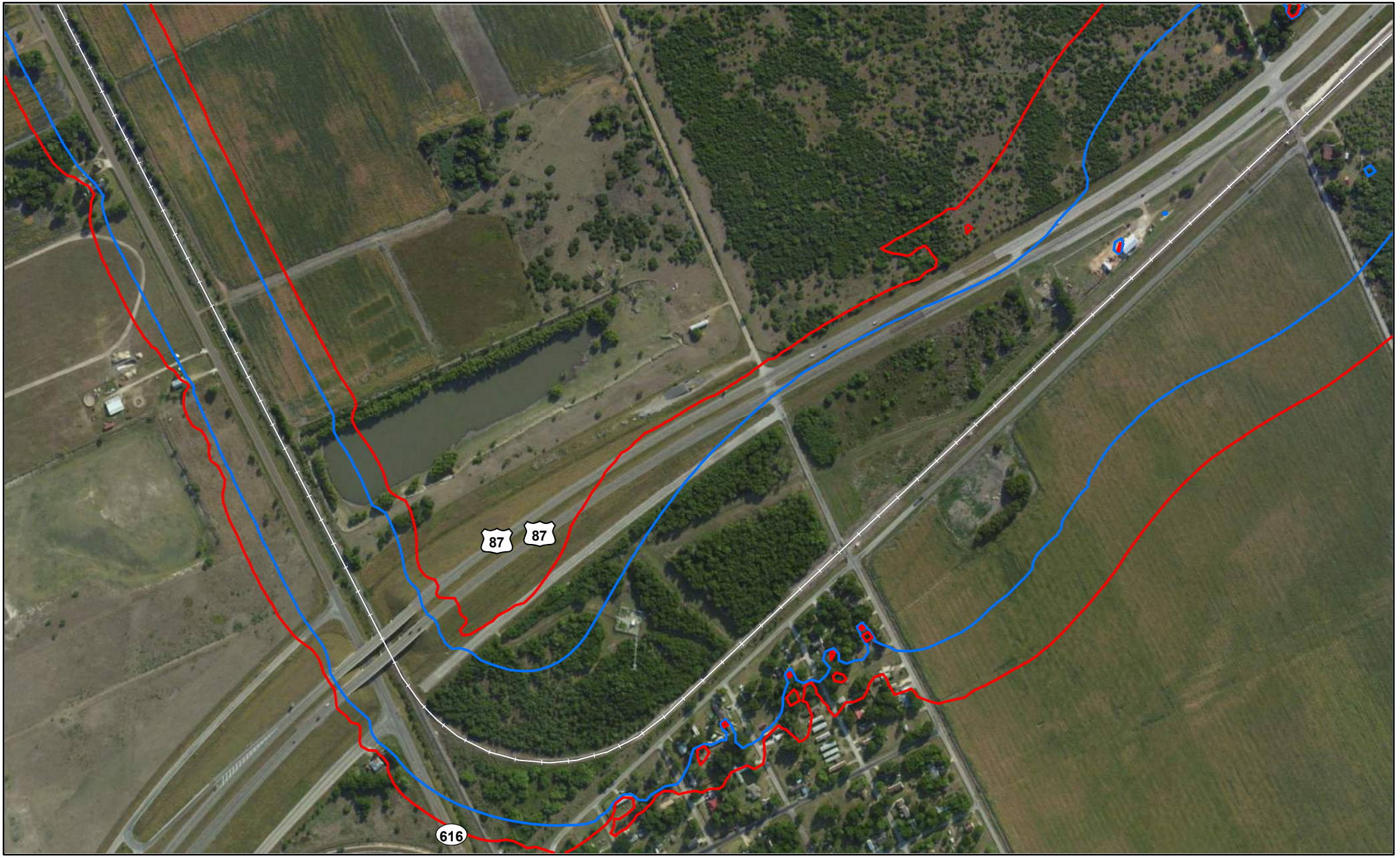
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Victoria County, TX

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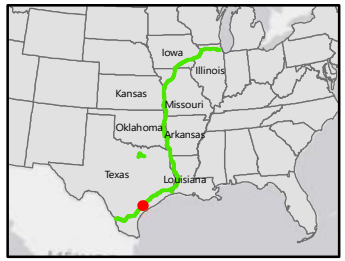
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Victoria County, TX

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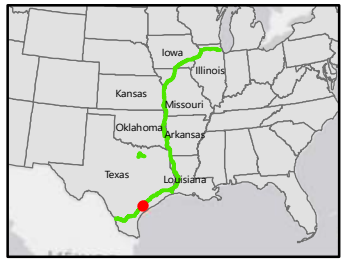
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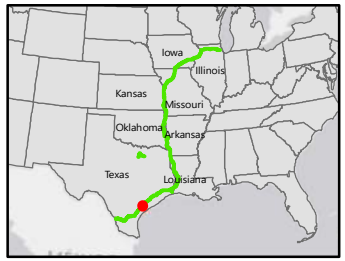
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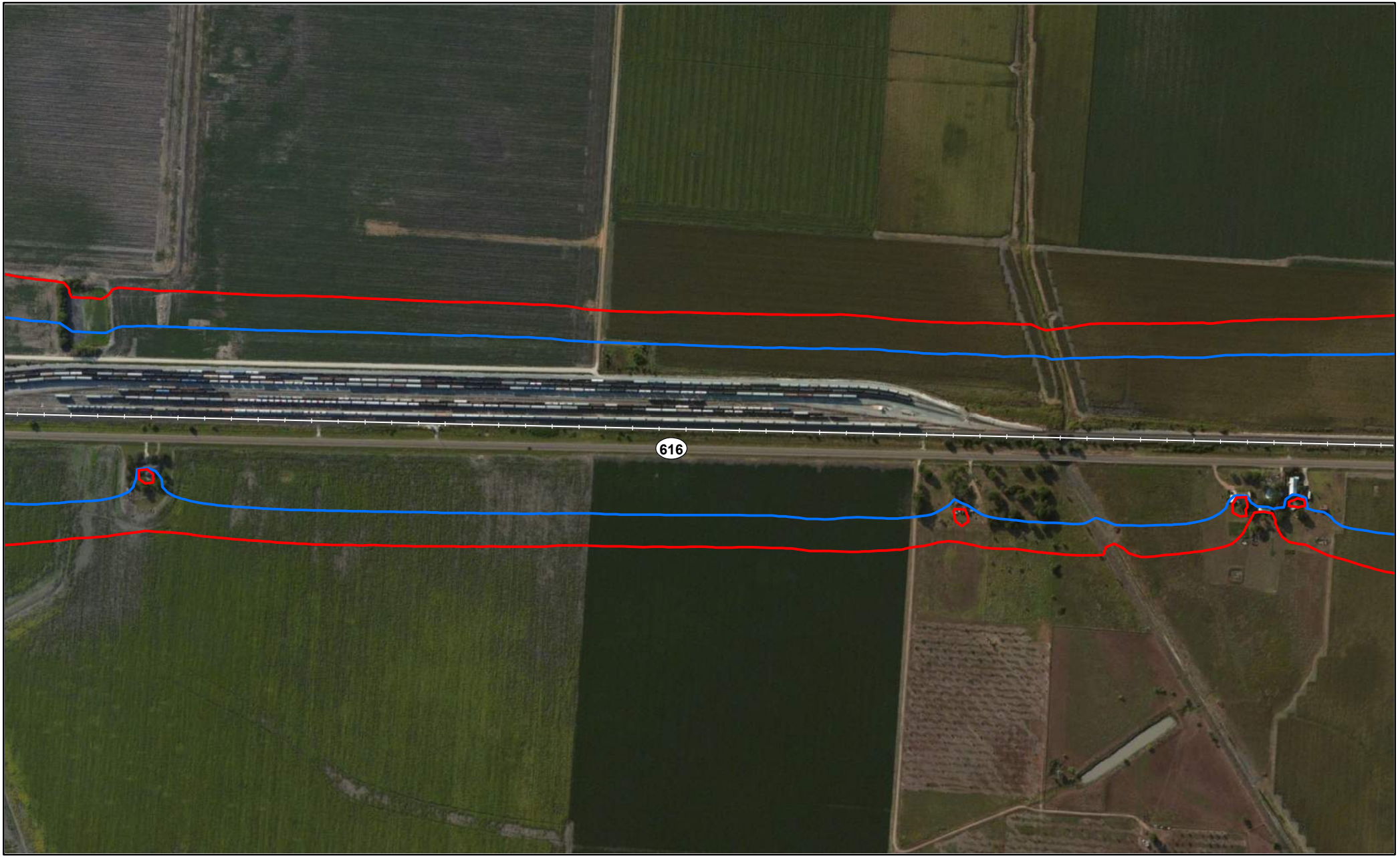
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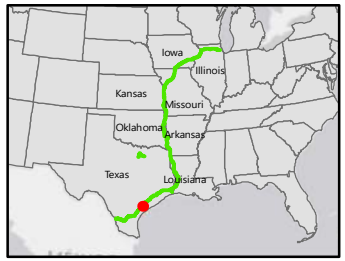
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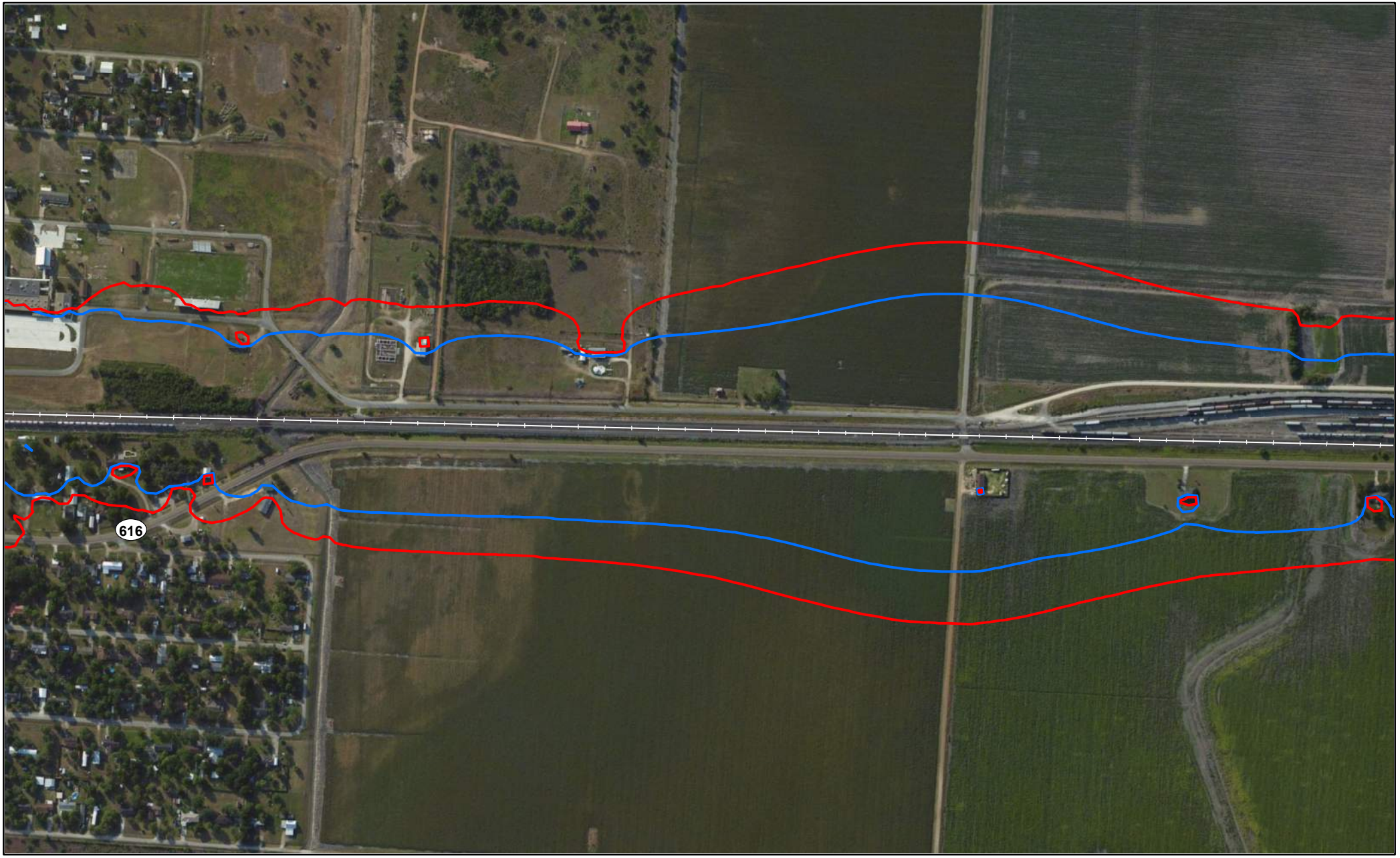
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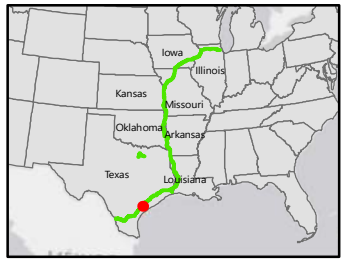
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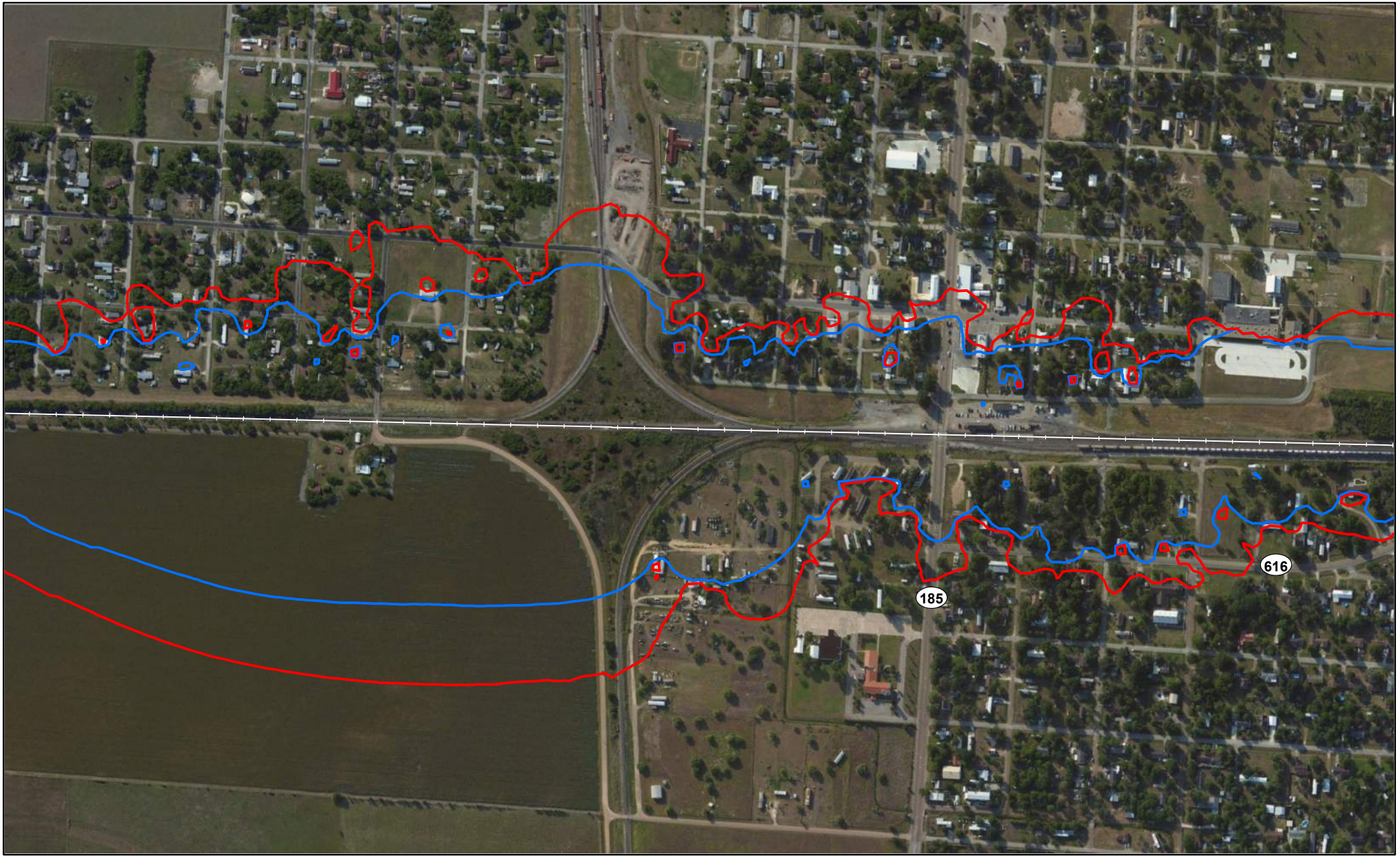
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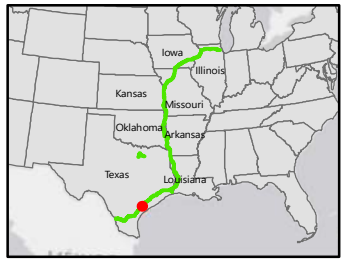
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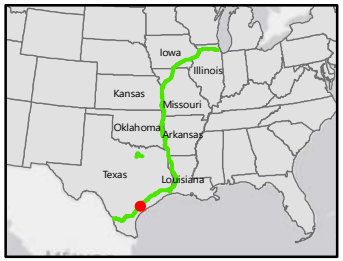
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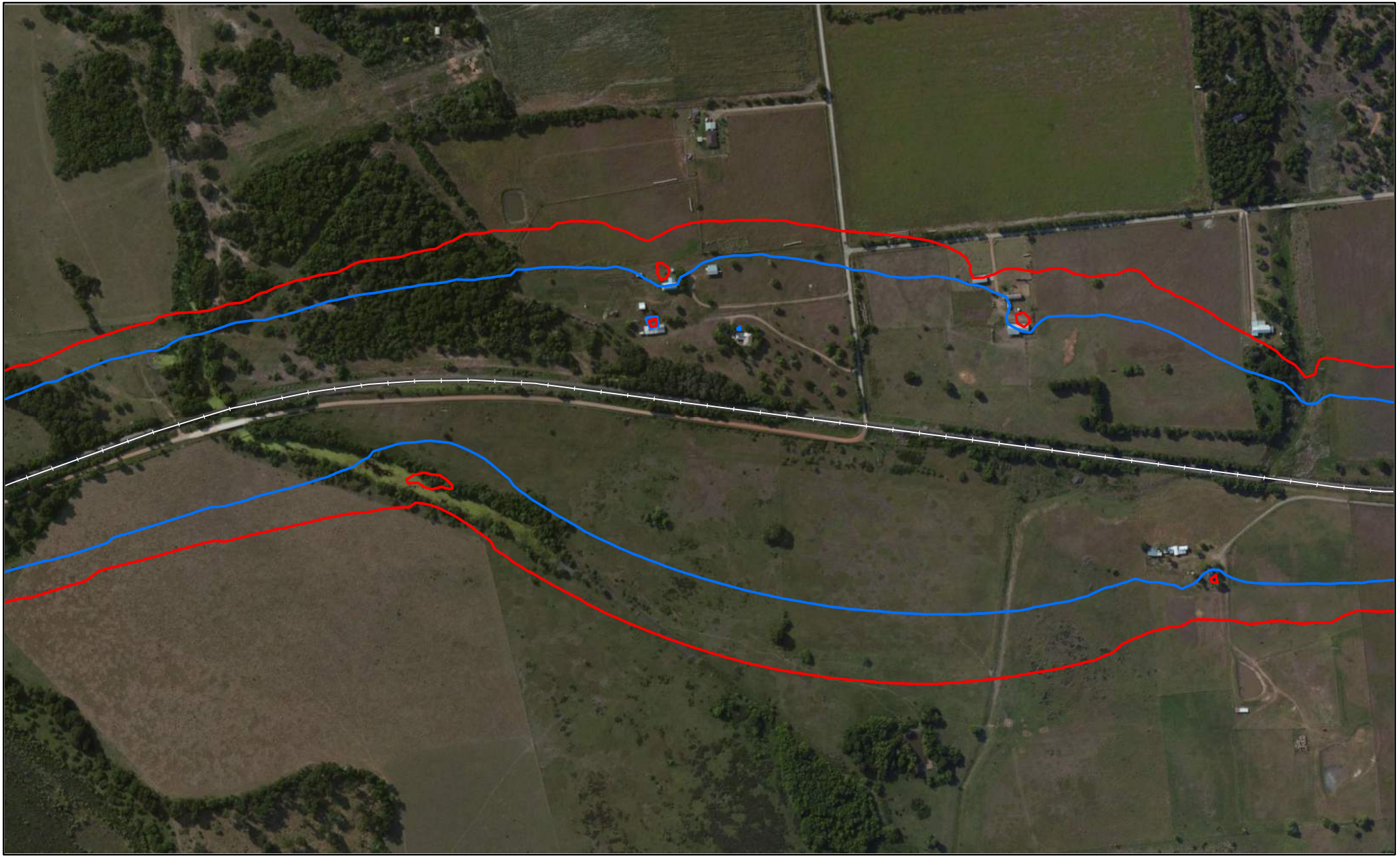
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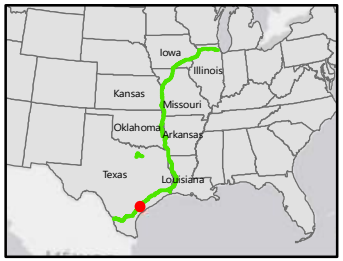
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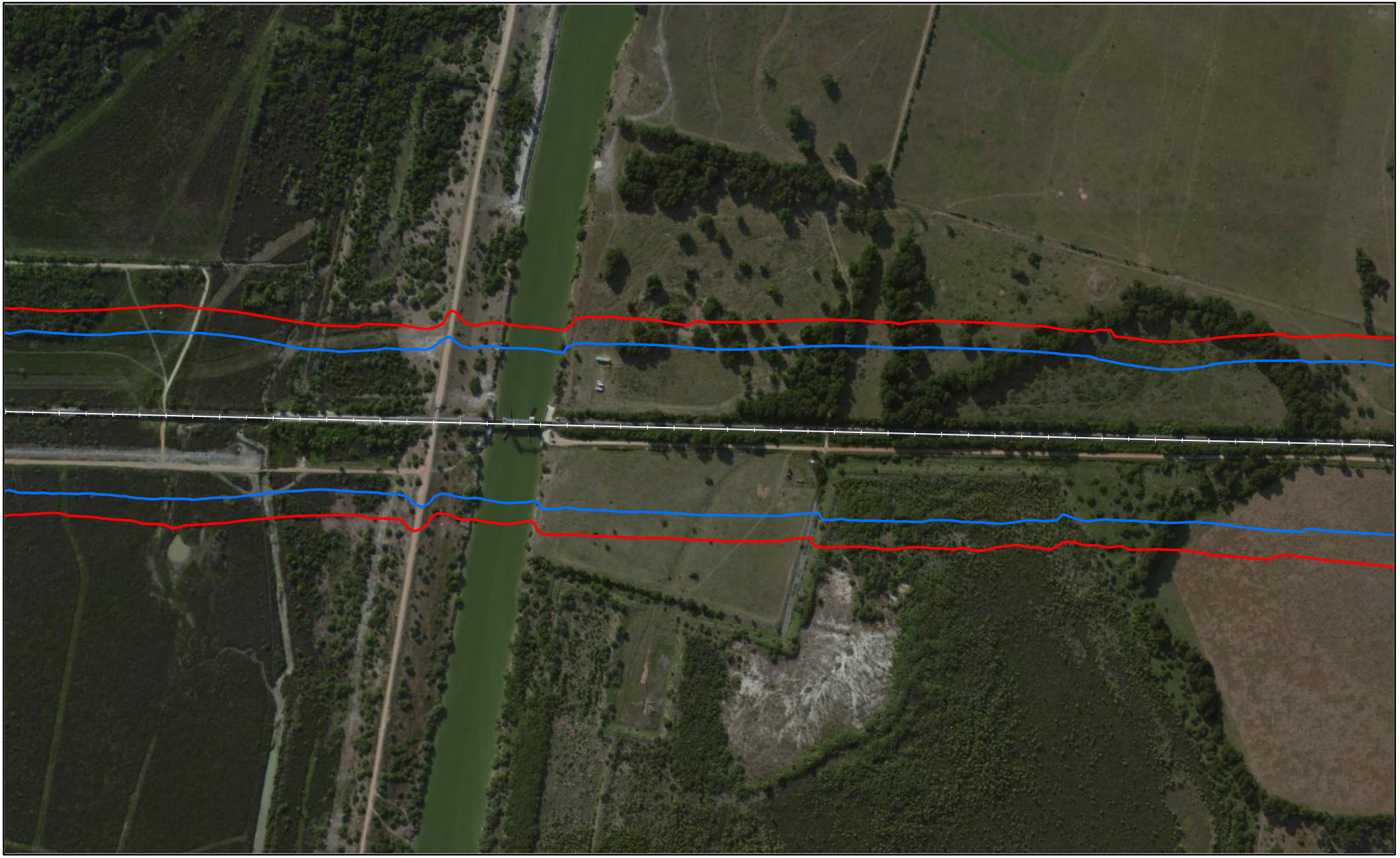
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Victoria County, TX

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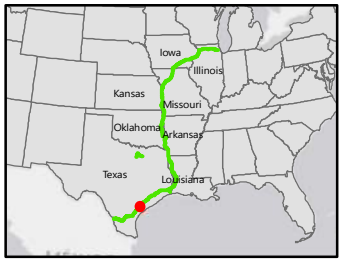
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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

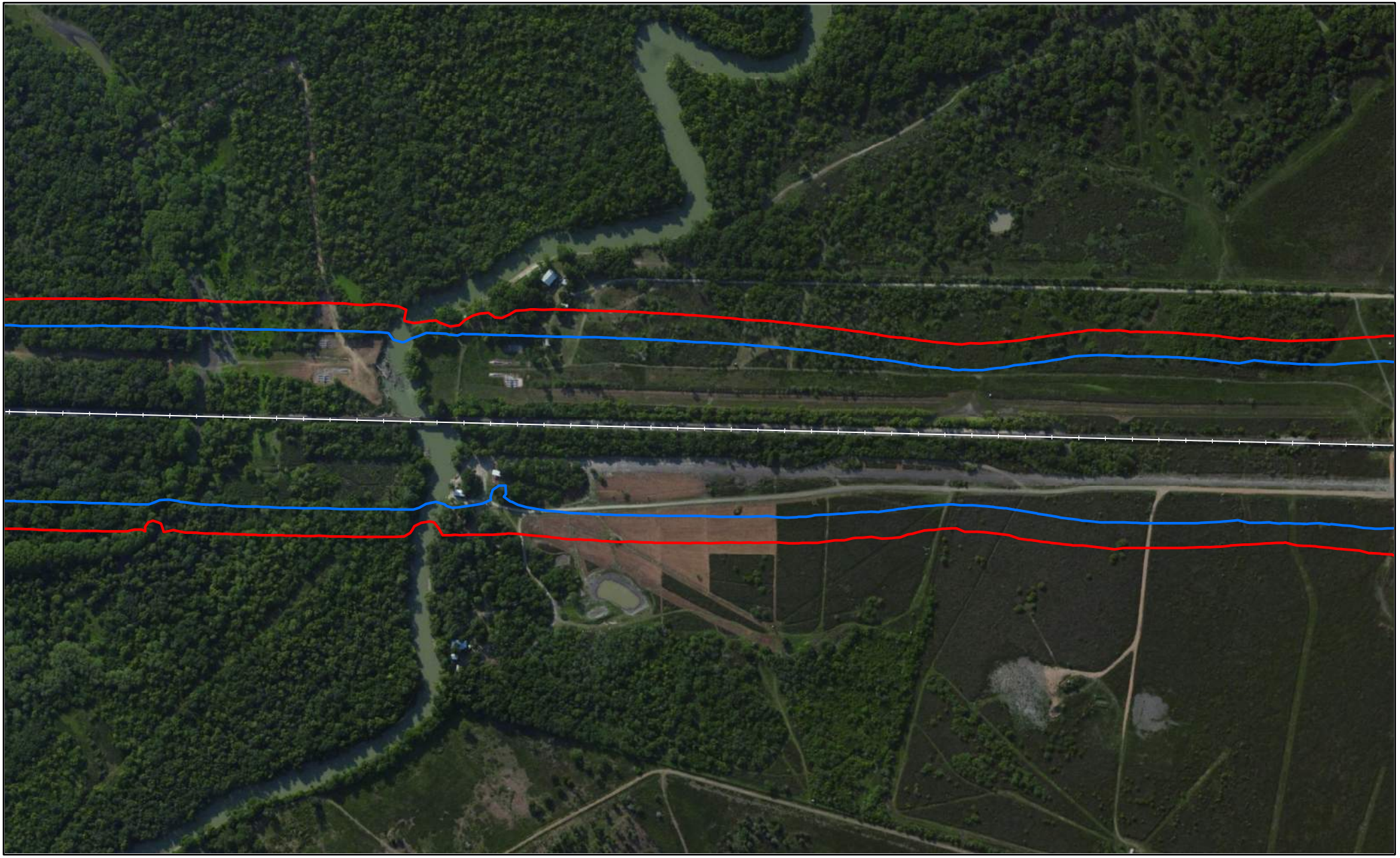
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Noise Contours
Victoria County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



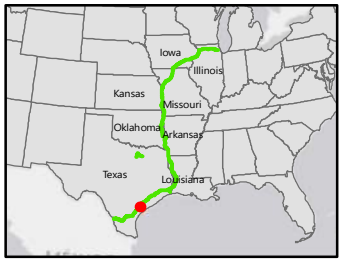
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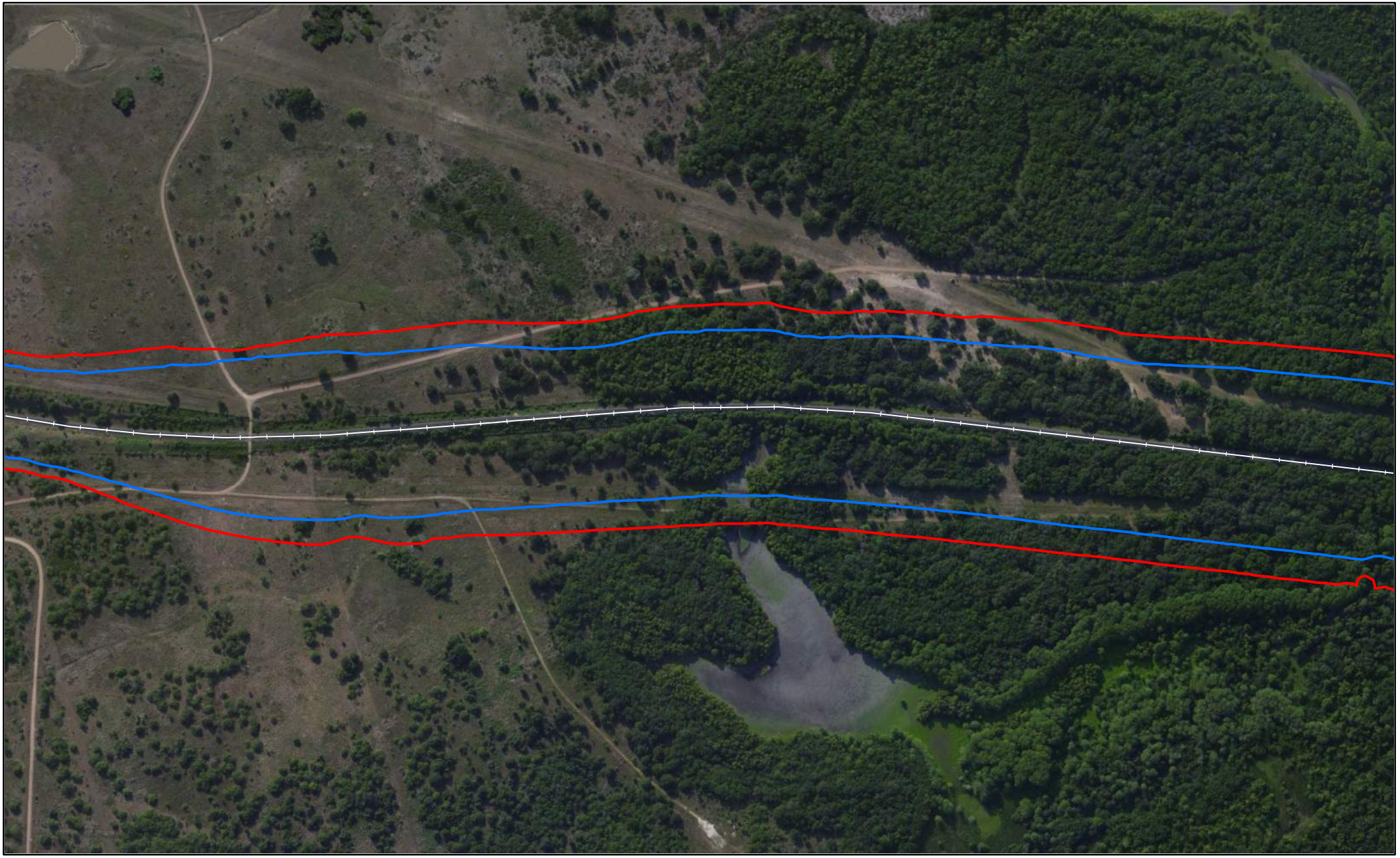
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Noise Contours
Victoria County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



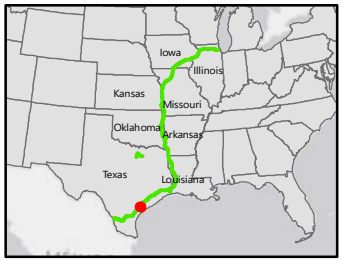
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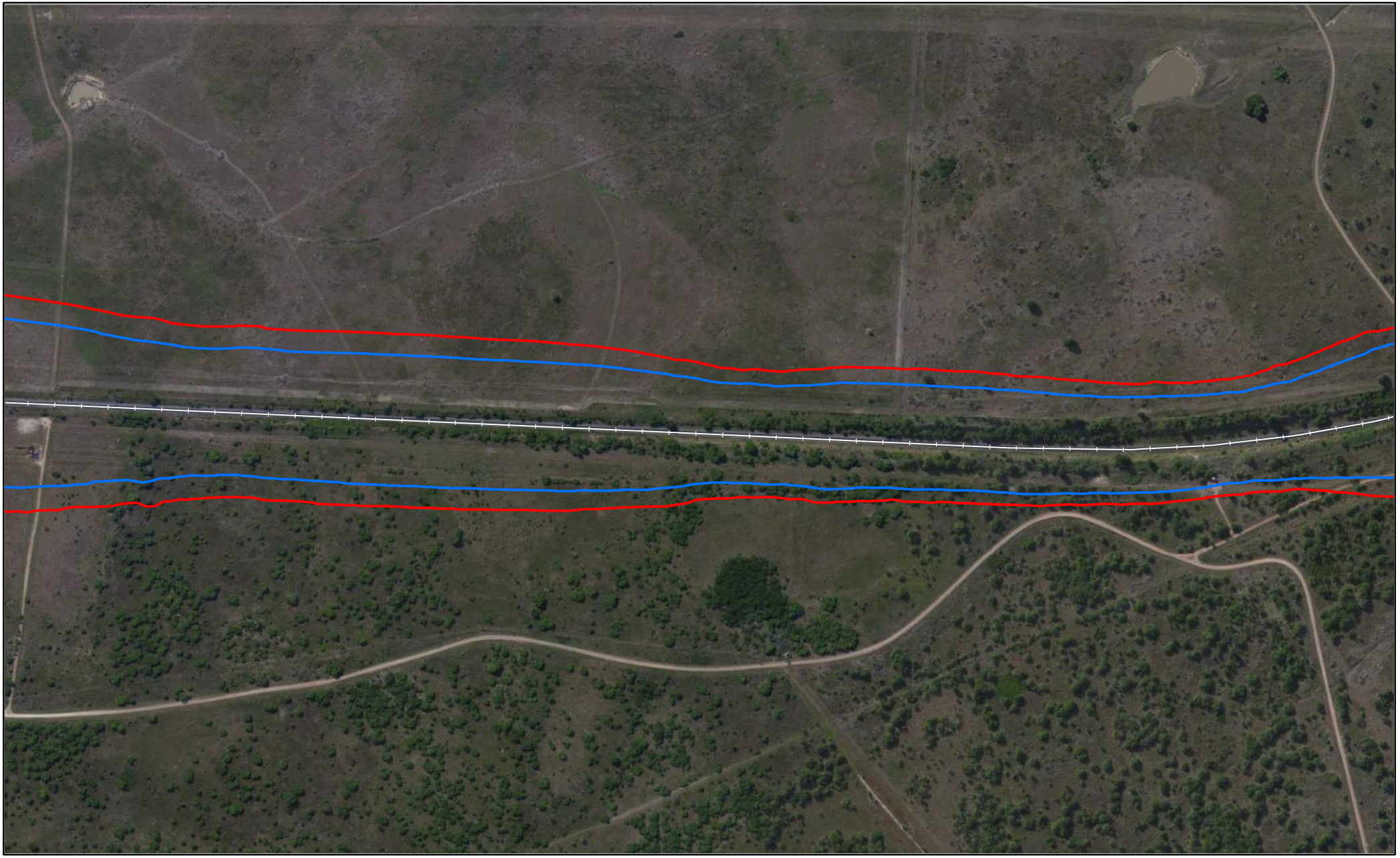
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Noise Contours
Victoria County, TX

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0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



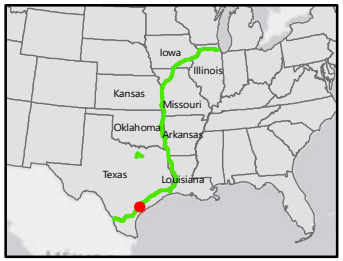
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Noise Contours
Victoria County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



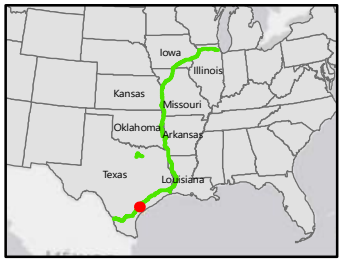
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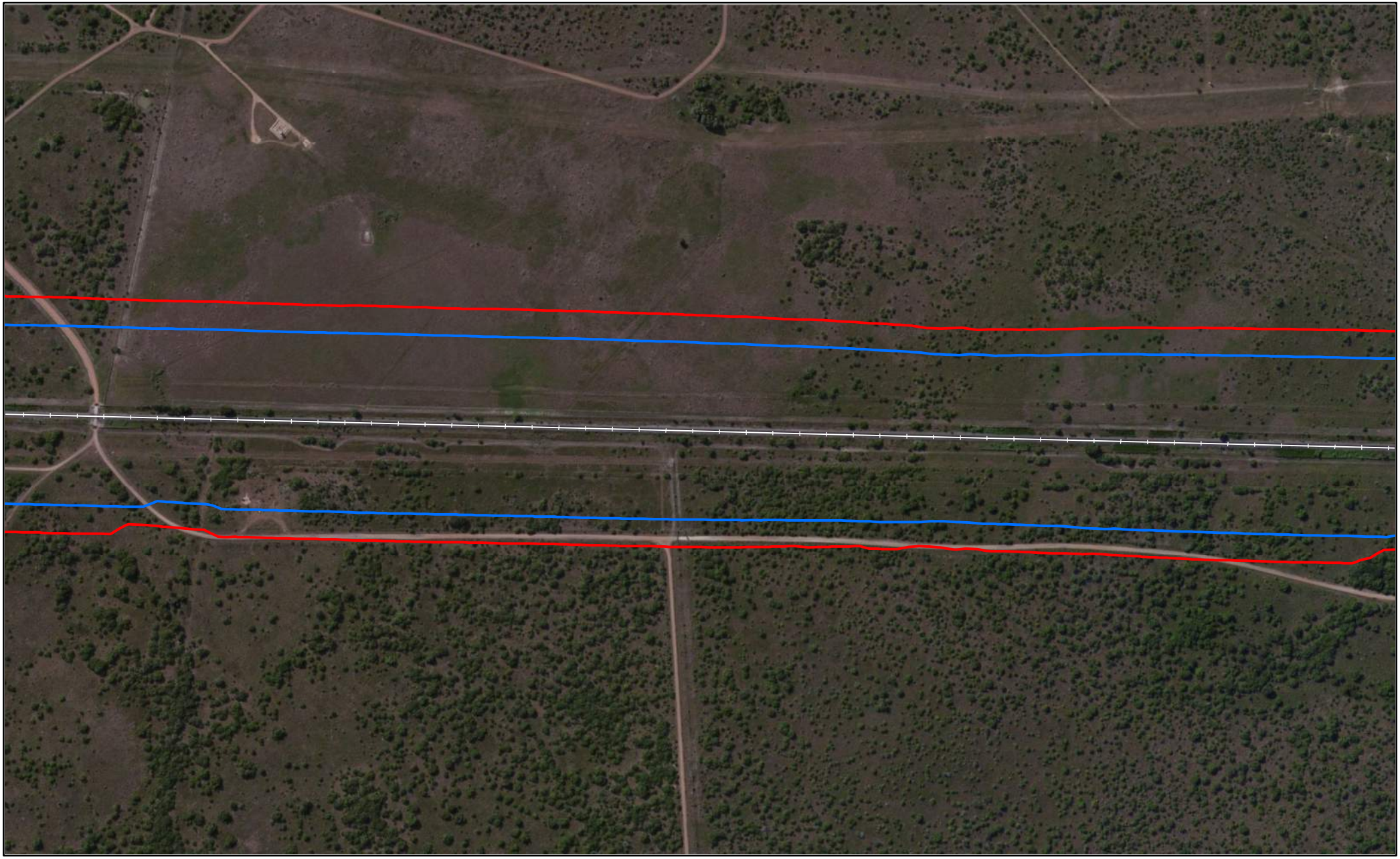
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Noise Contours
Victoria County, TX

Miles
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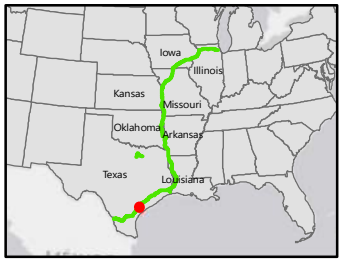
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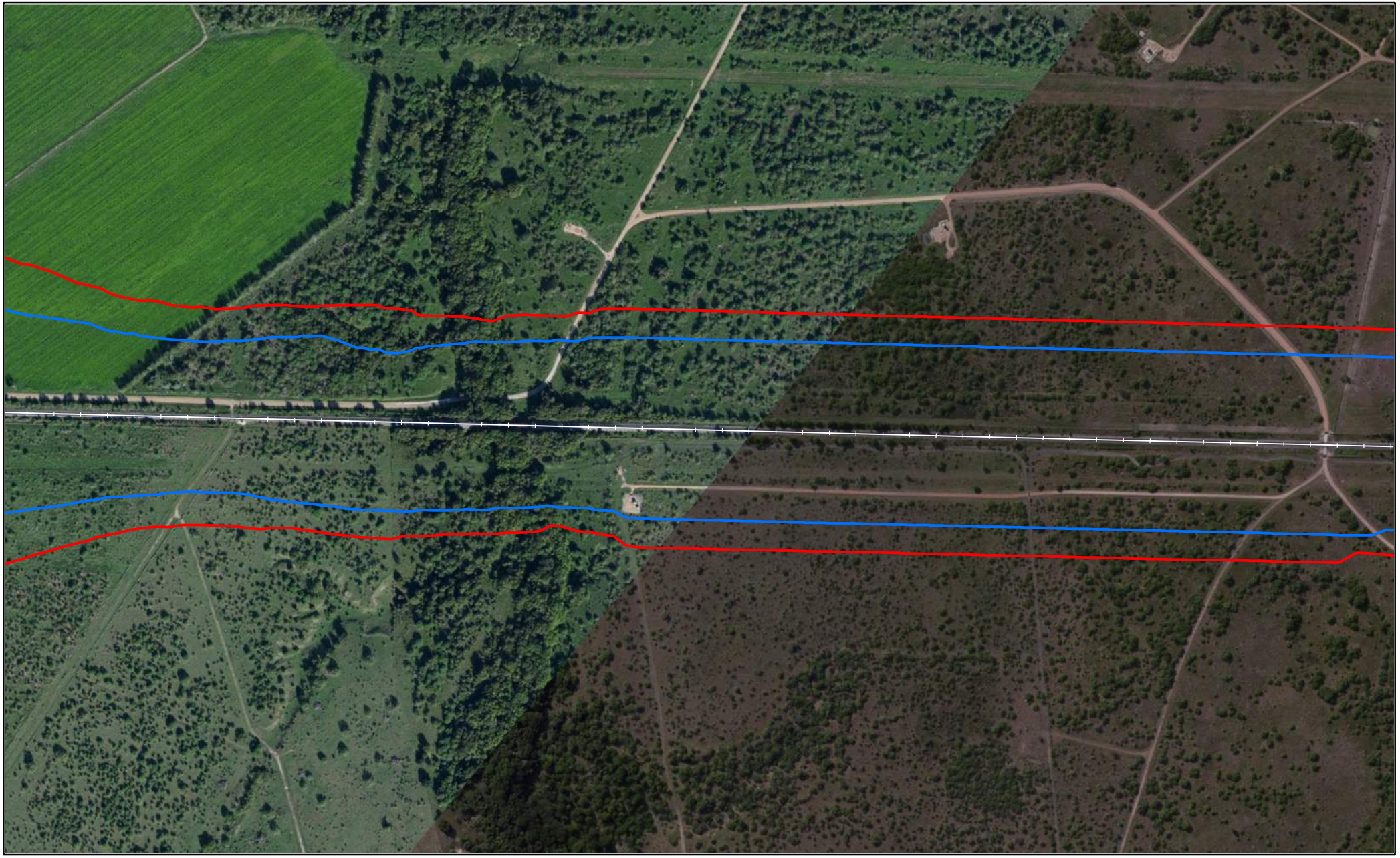
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Noise Contours
Victoria County, TX

Miles
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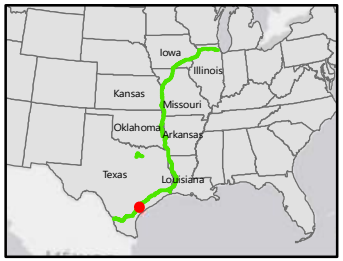
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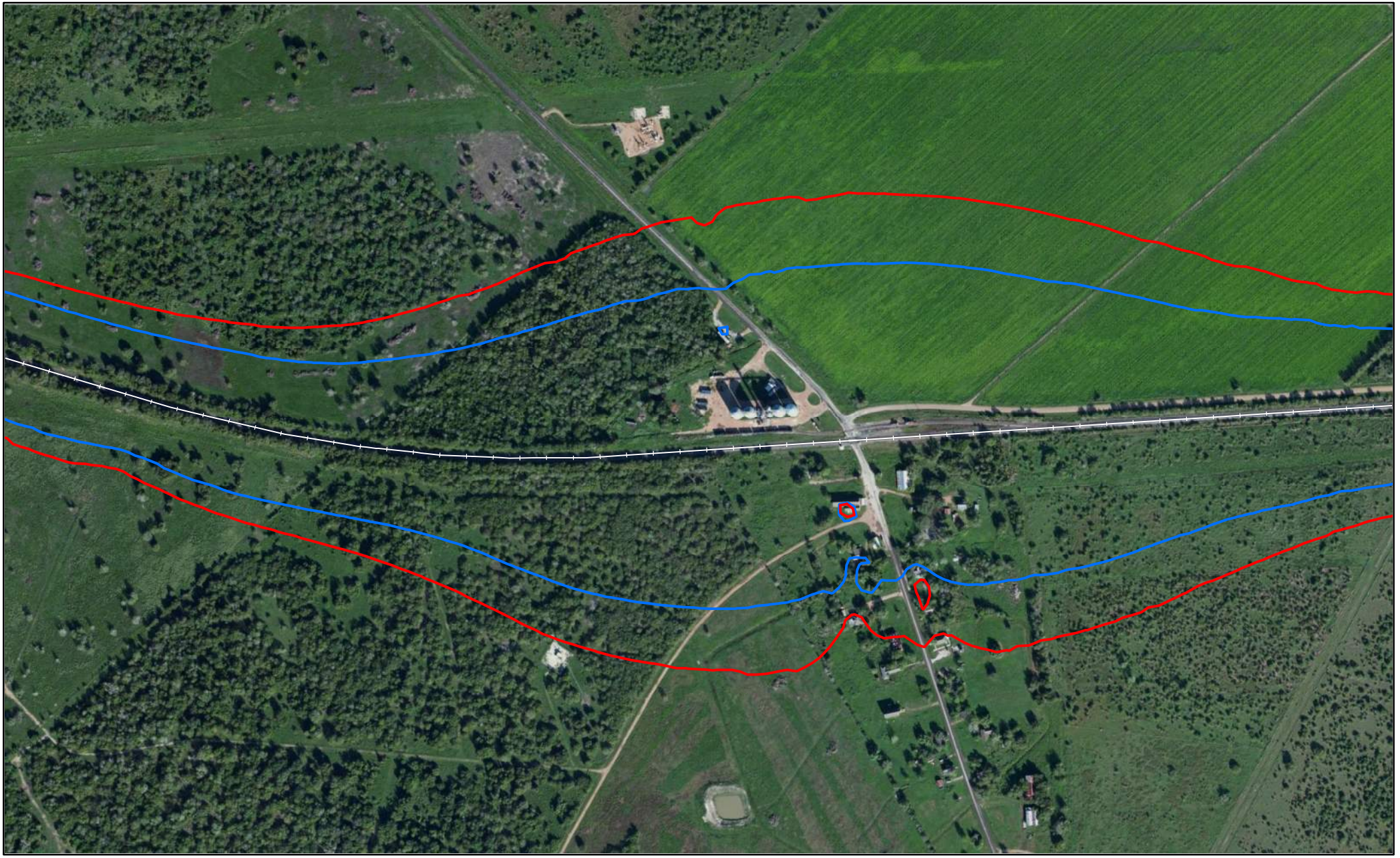
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Noise Contours
Victoria County, TX

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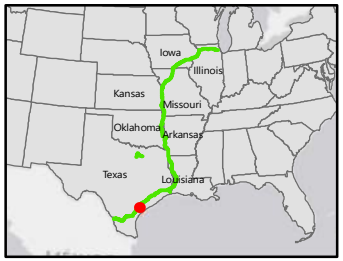
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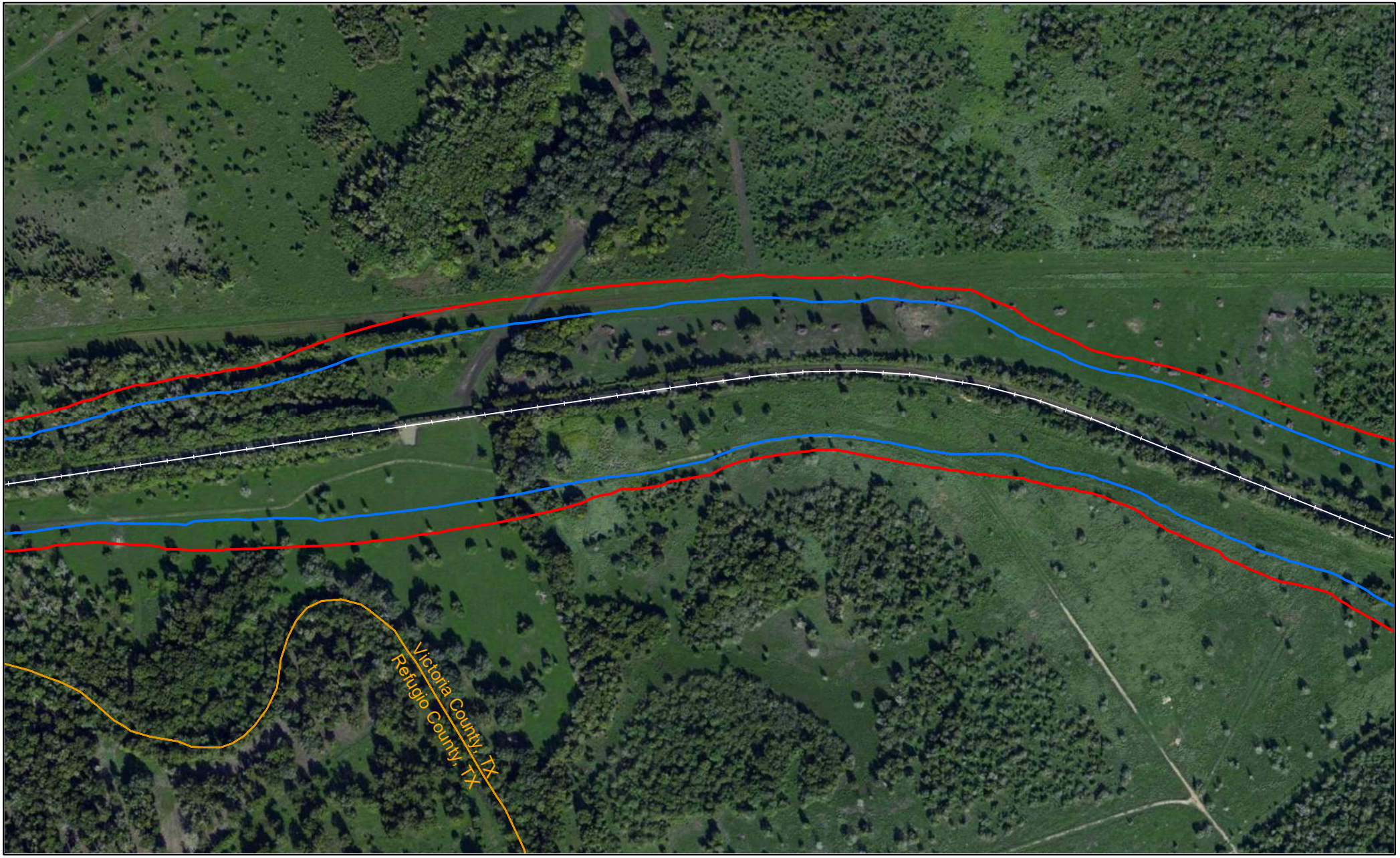
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Victoria County, TX

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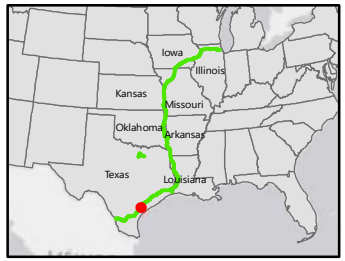
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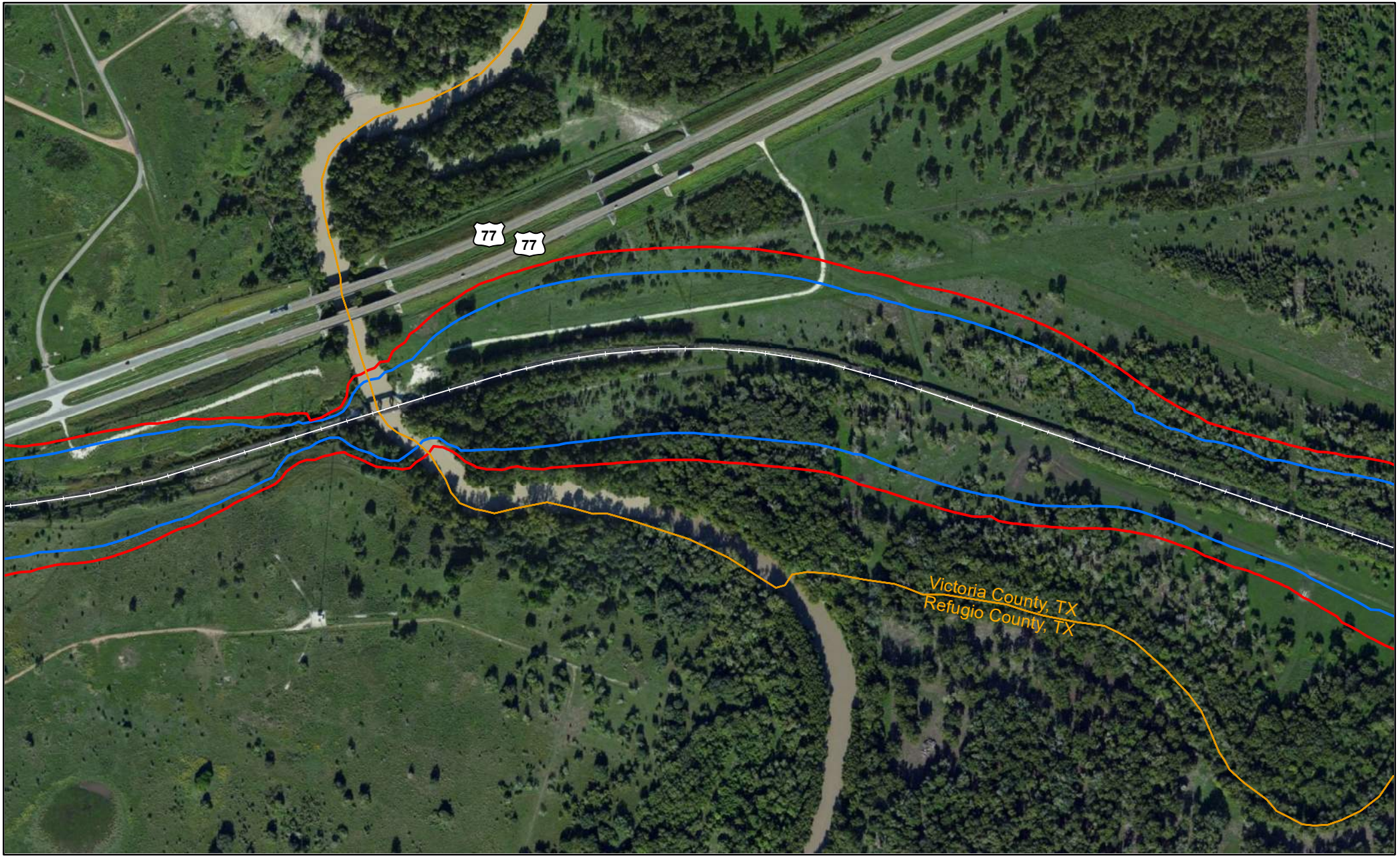
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Noise Contours
Refugio County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



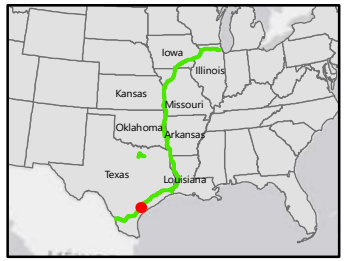
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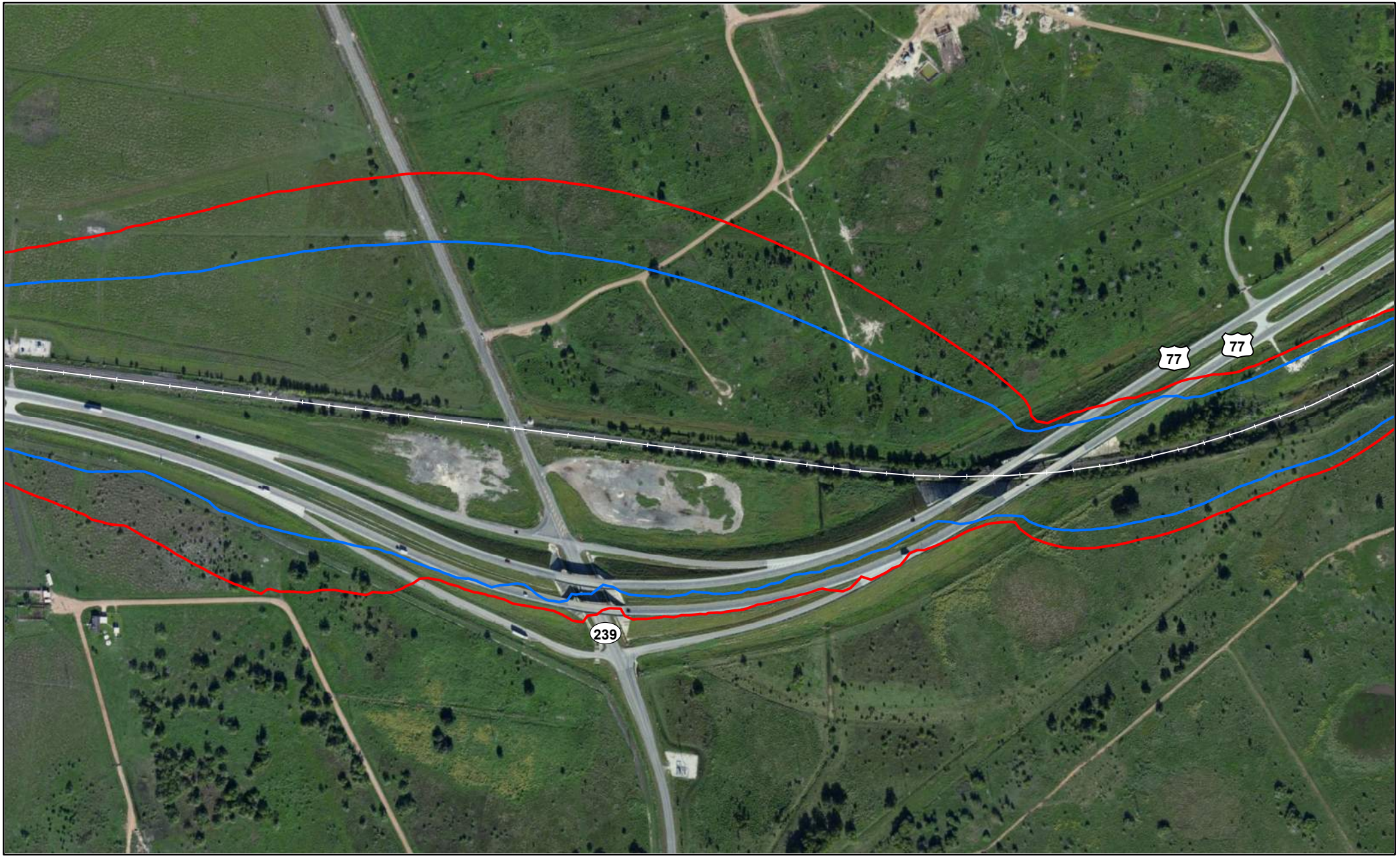
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Noise Contours
Refugio County, TX

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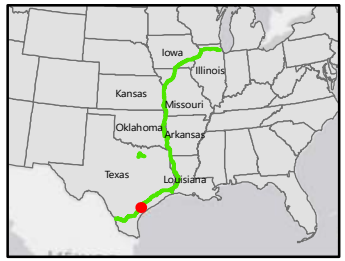
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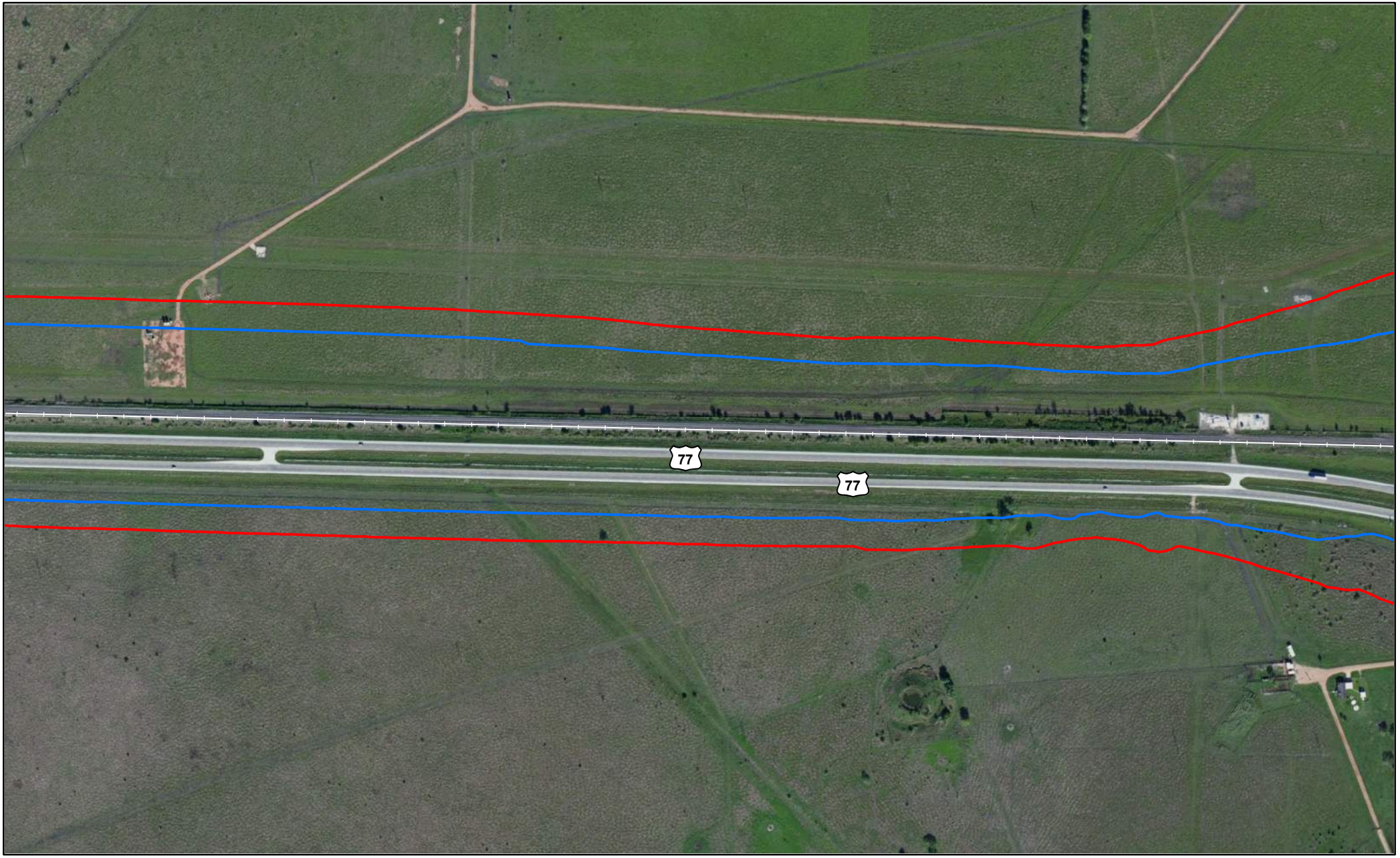
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Noise Contours
Refugio County, TX

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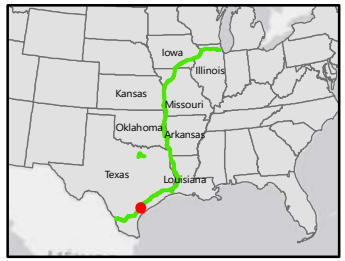
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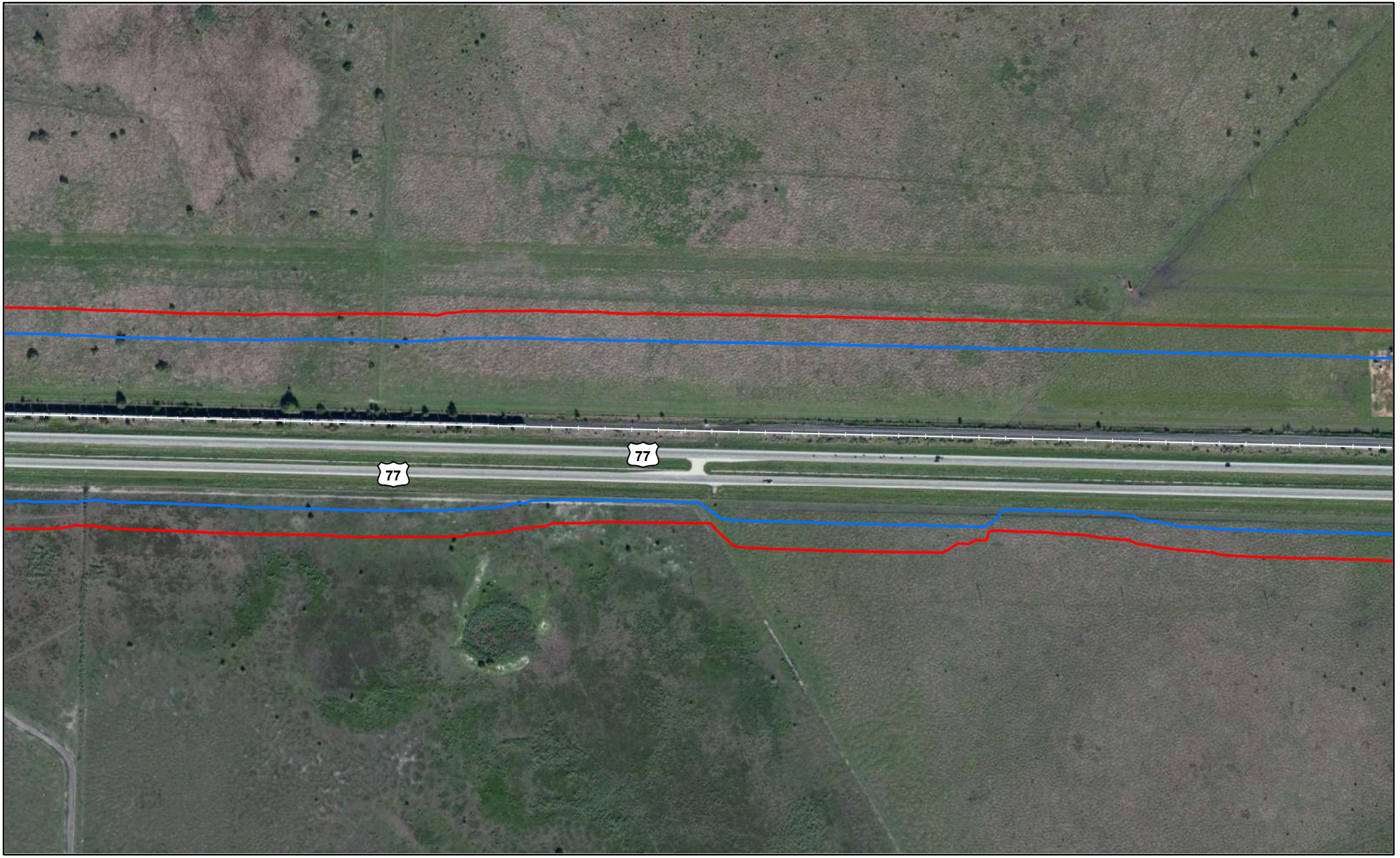
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Noise Contours
Refugio County, TX

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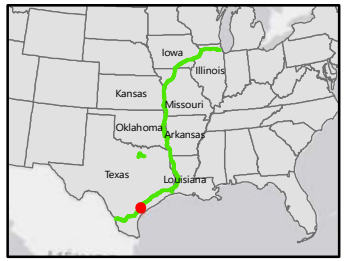
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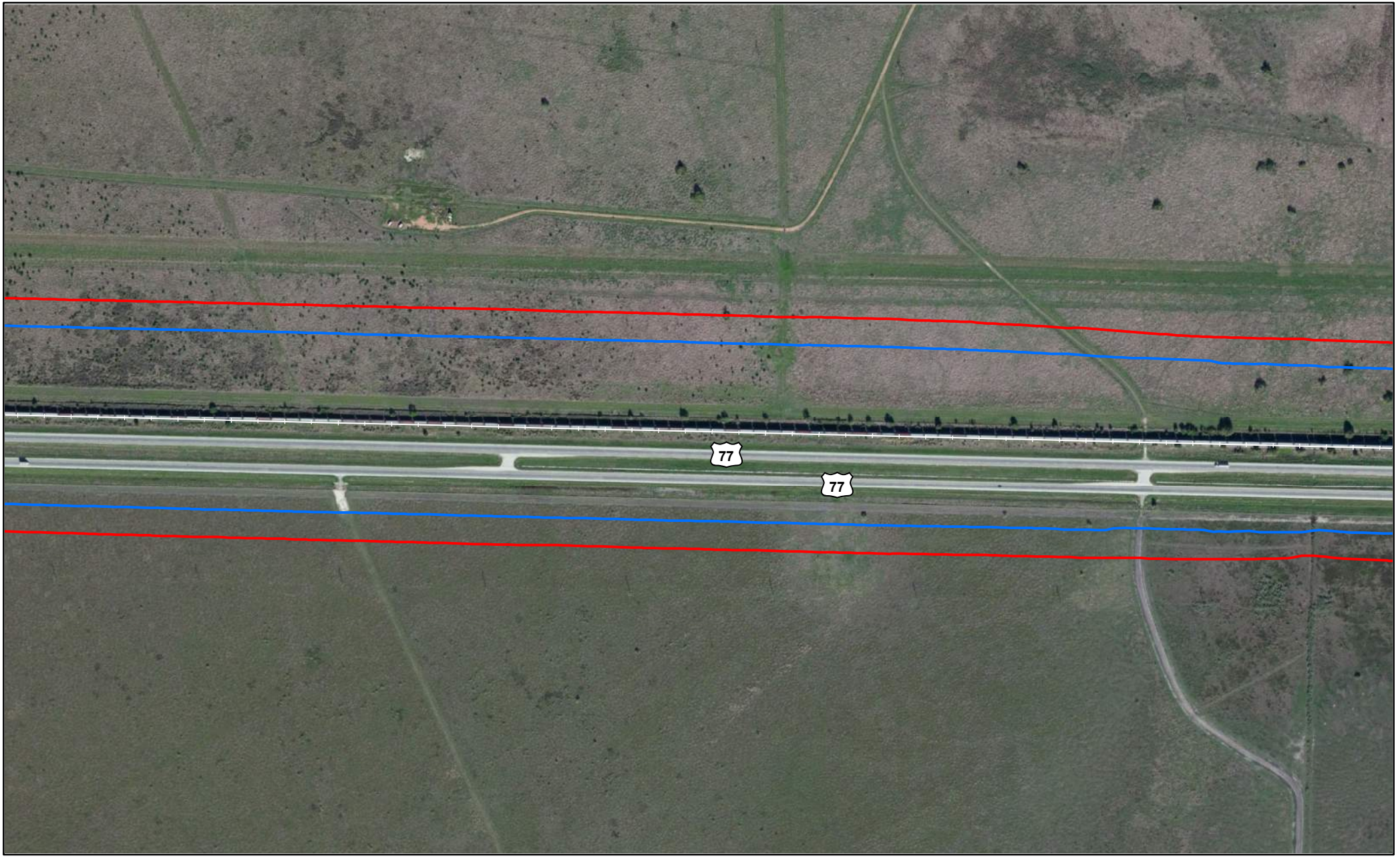
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Noise Contours
Refugio County, TX

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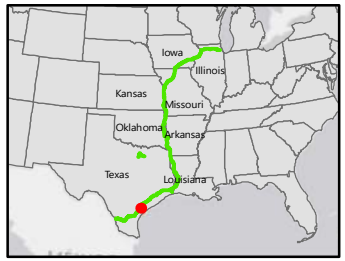
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Noise Contours
Refugio County, TX

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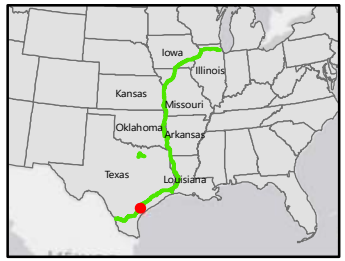
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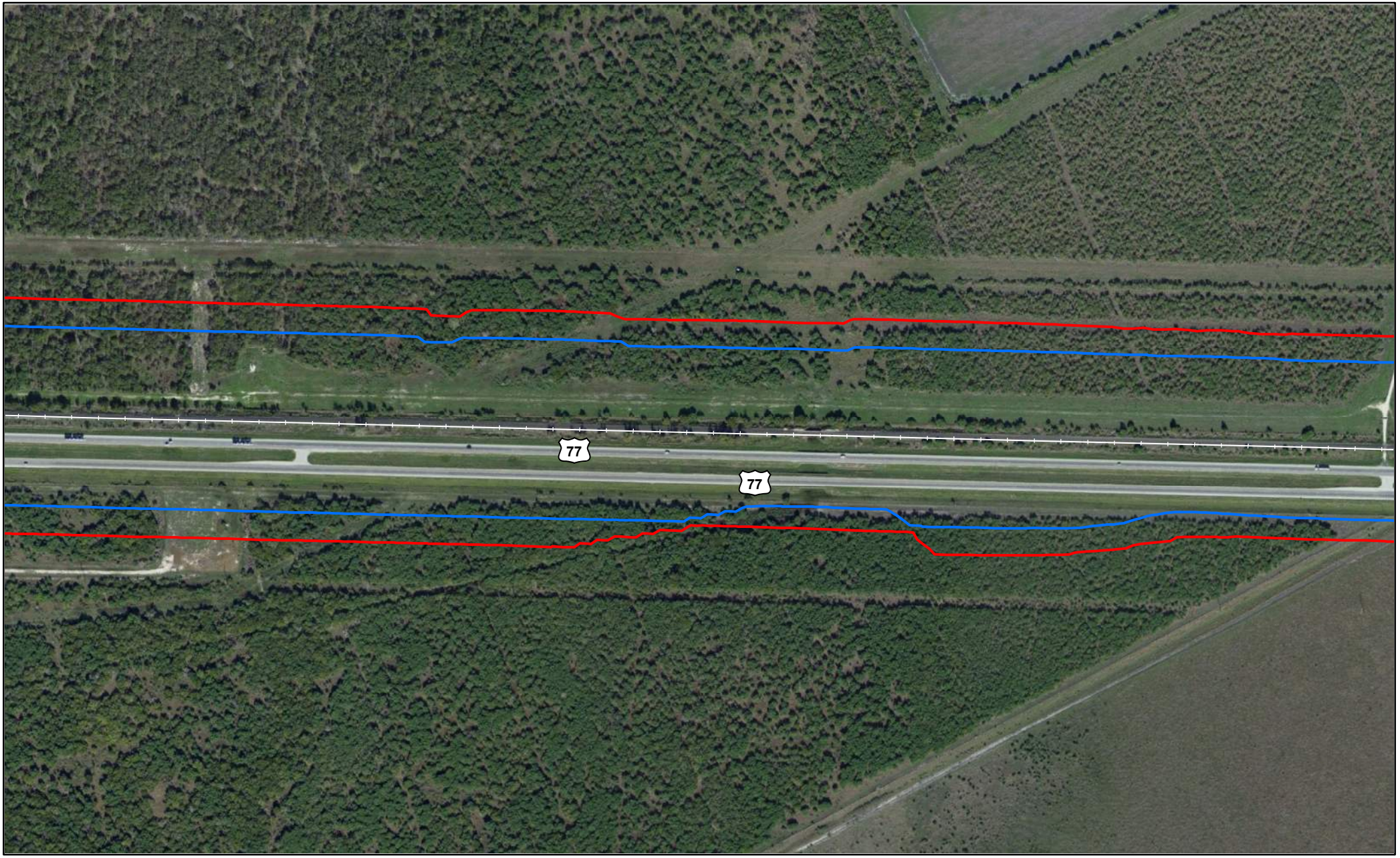
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Noise Contours
Refugio County, TX

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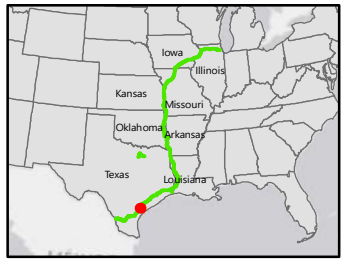
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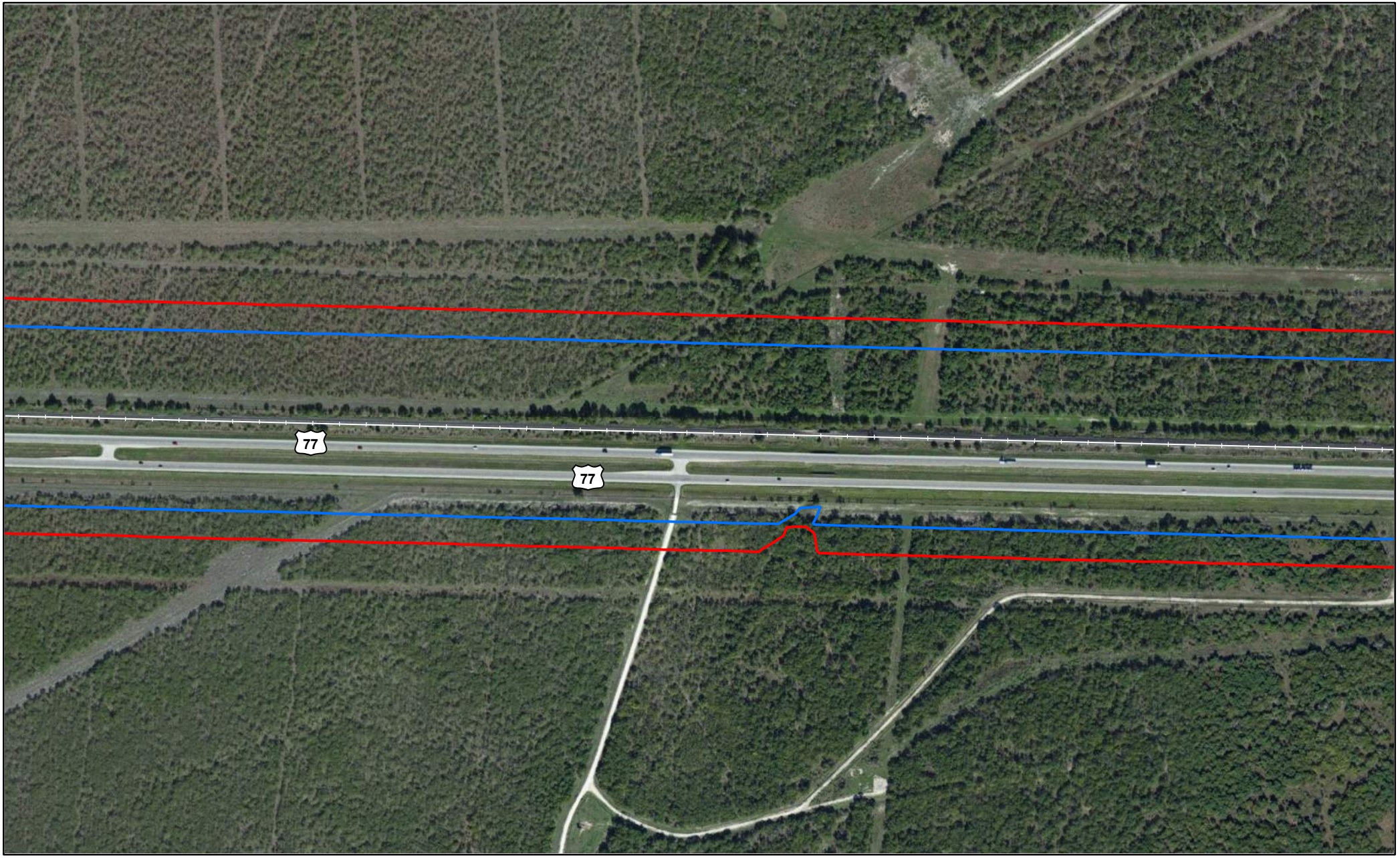
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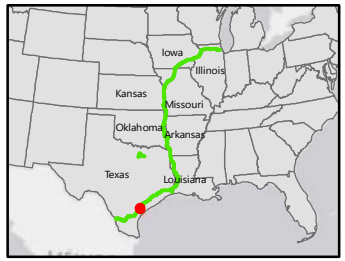
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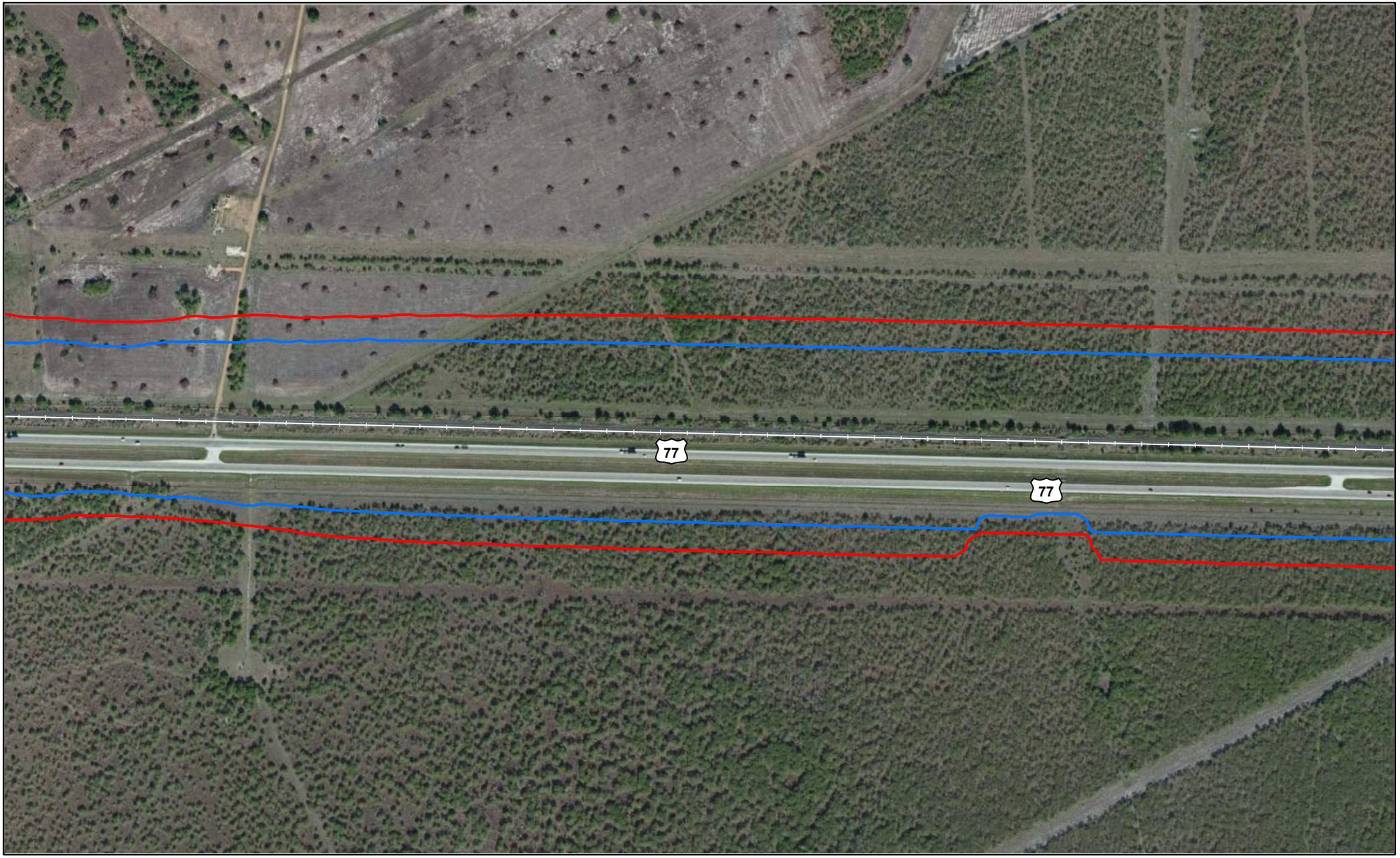
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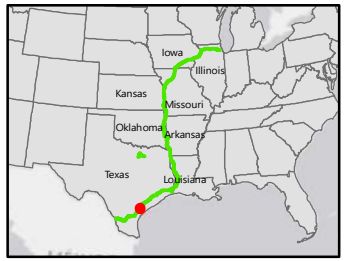
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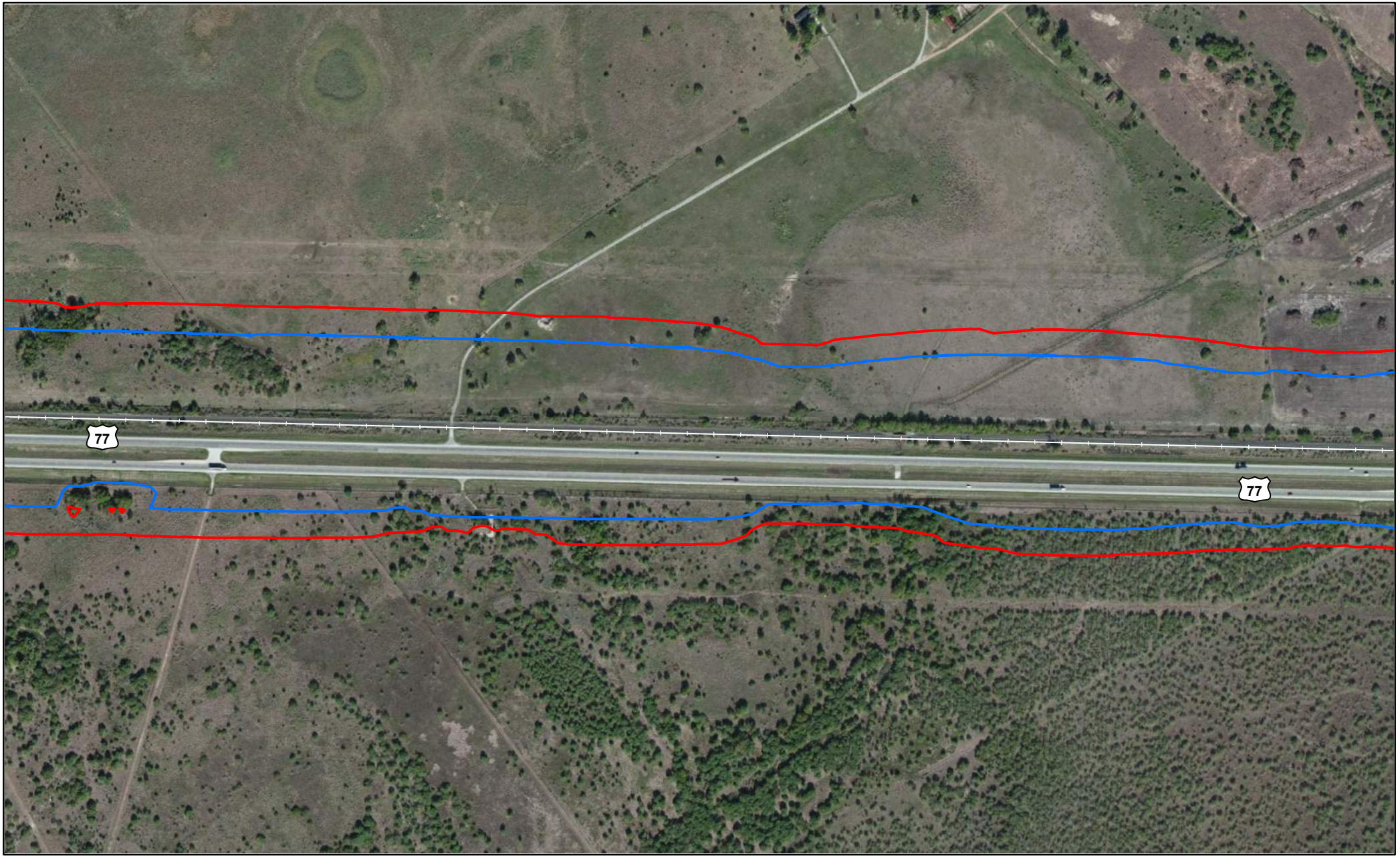
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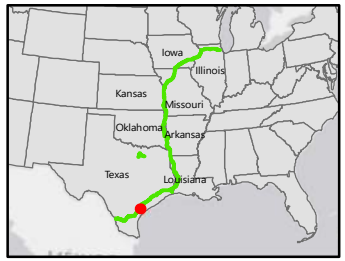
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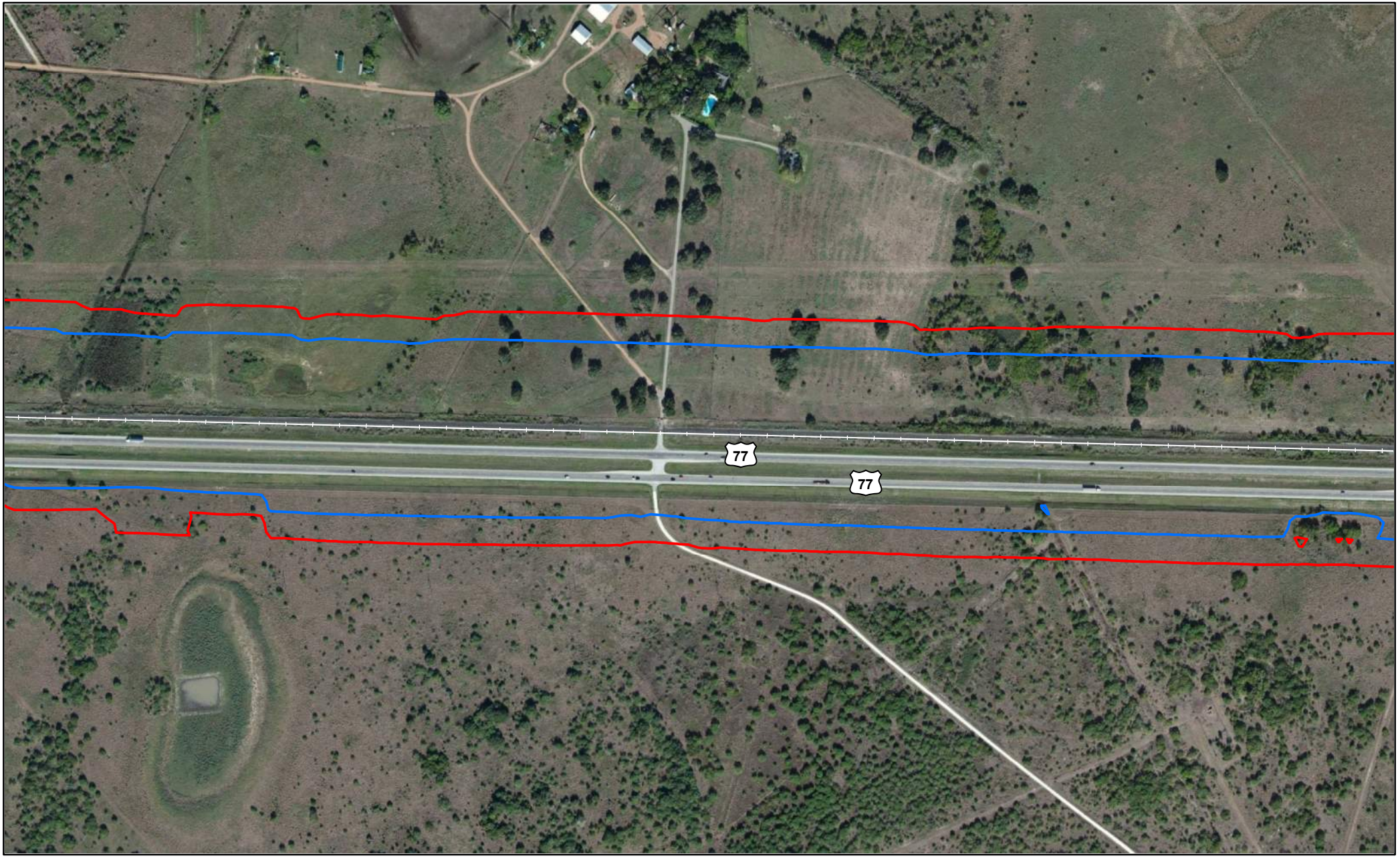
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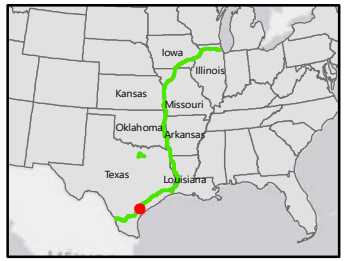
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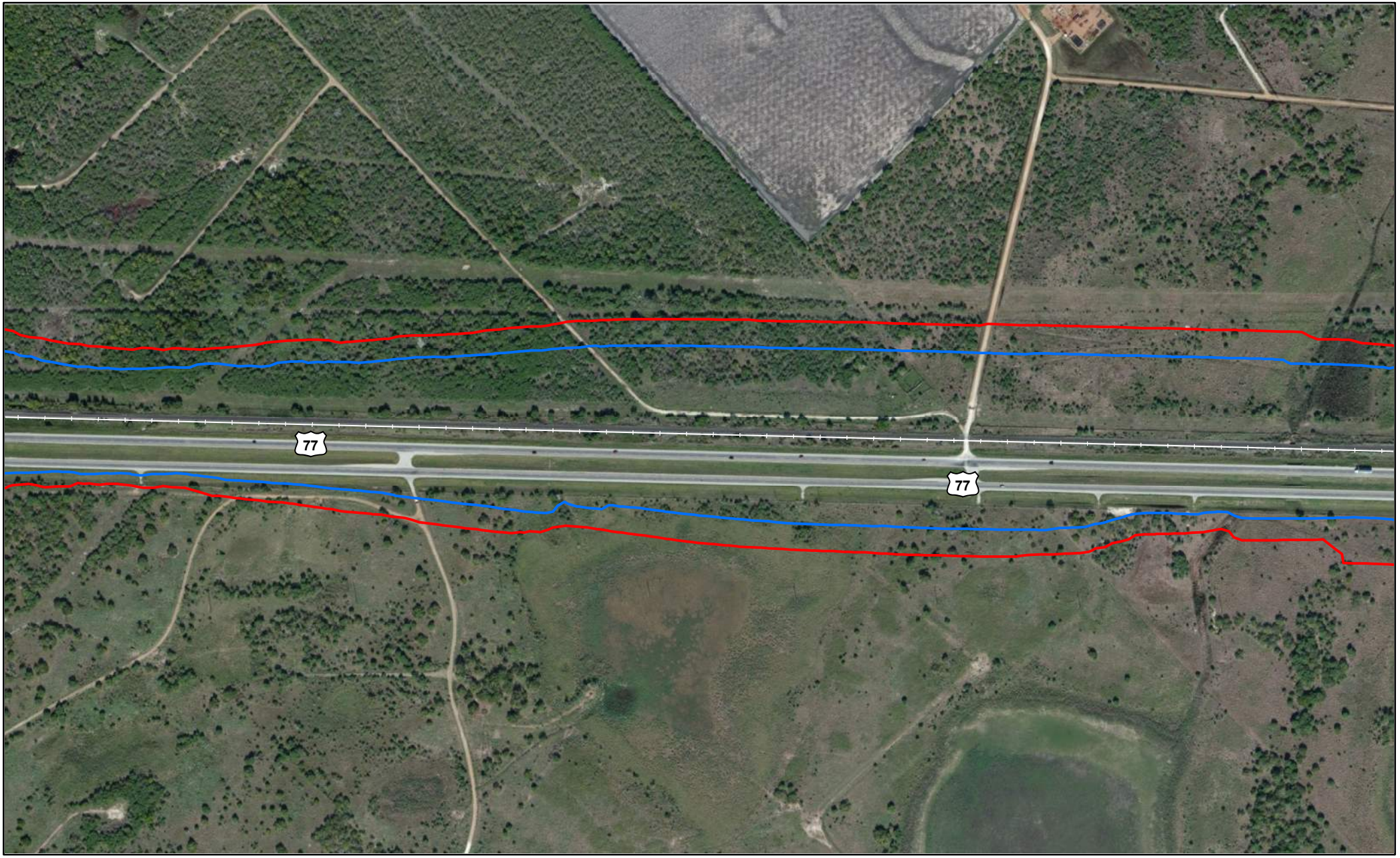
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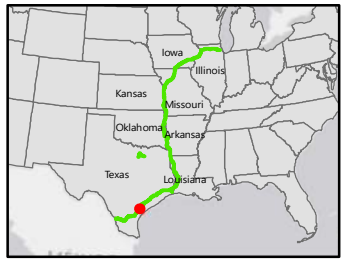
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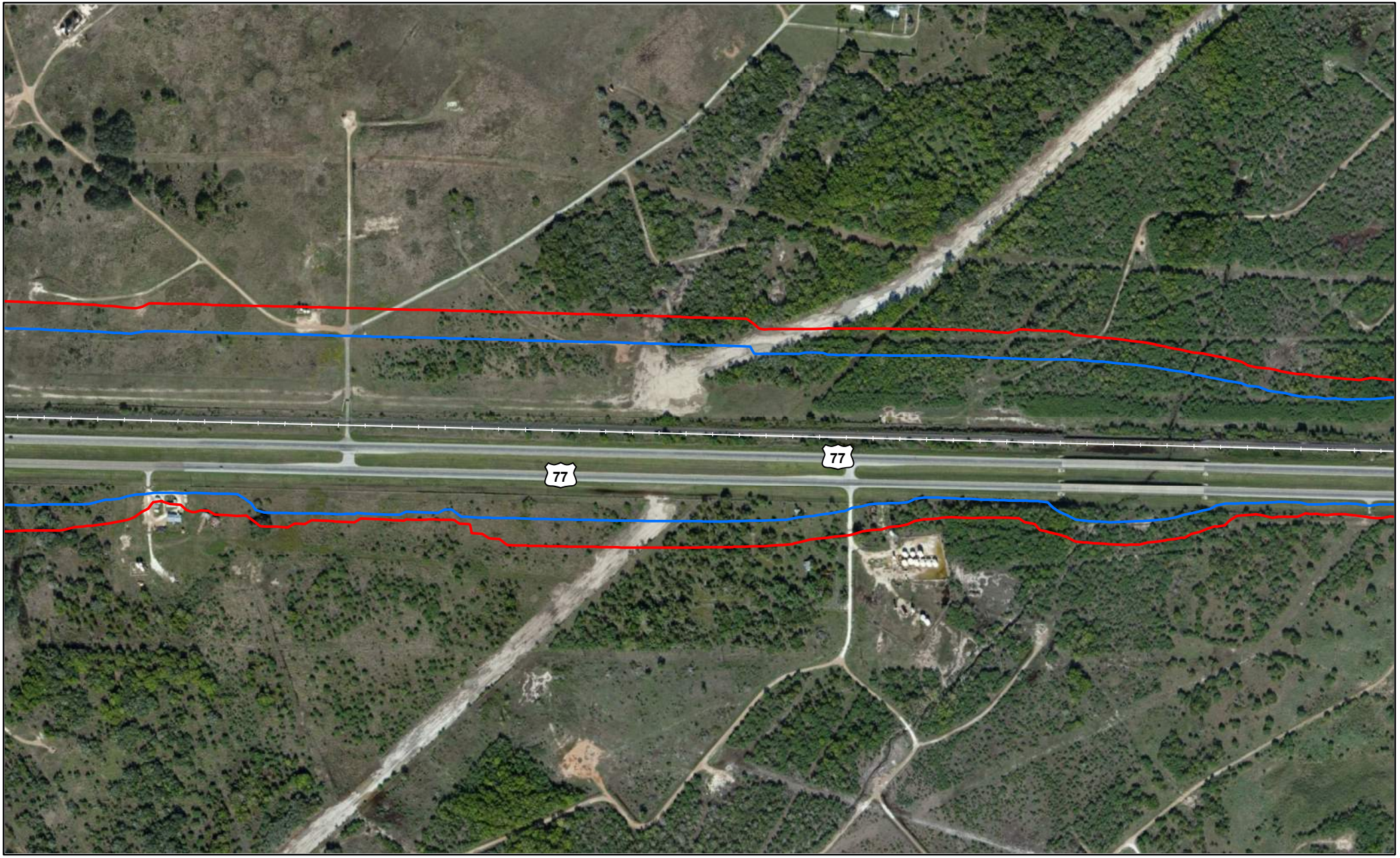
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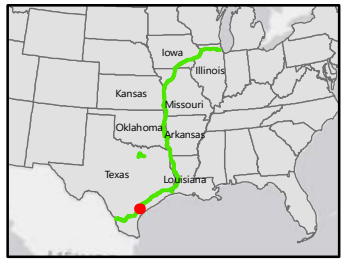
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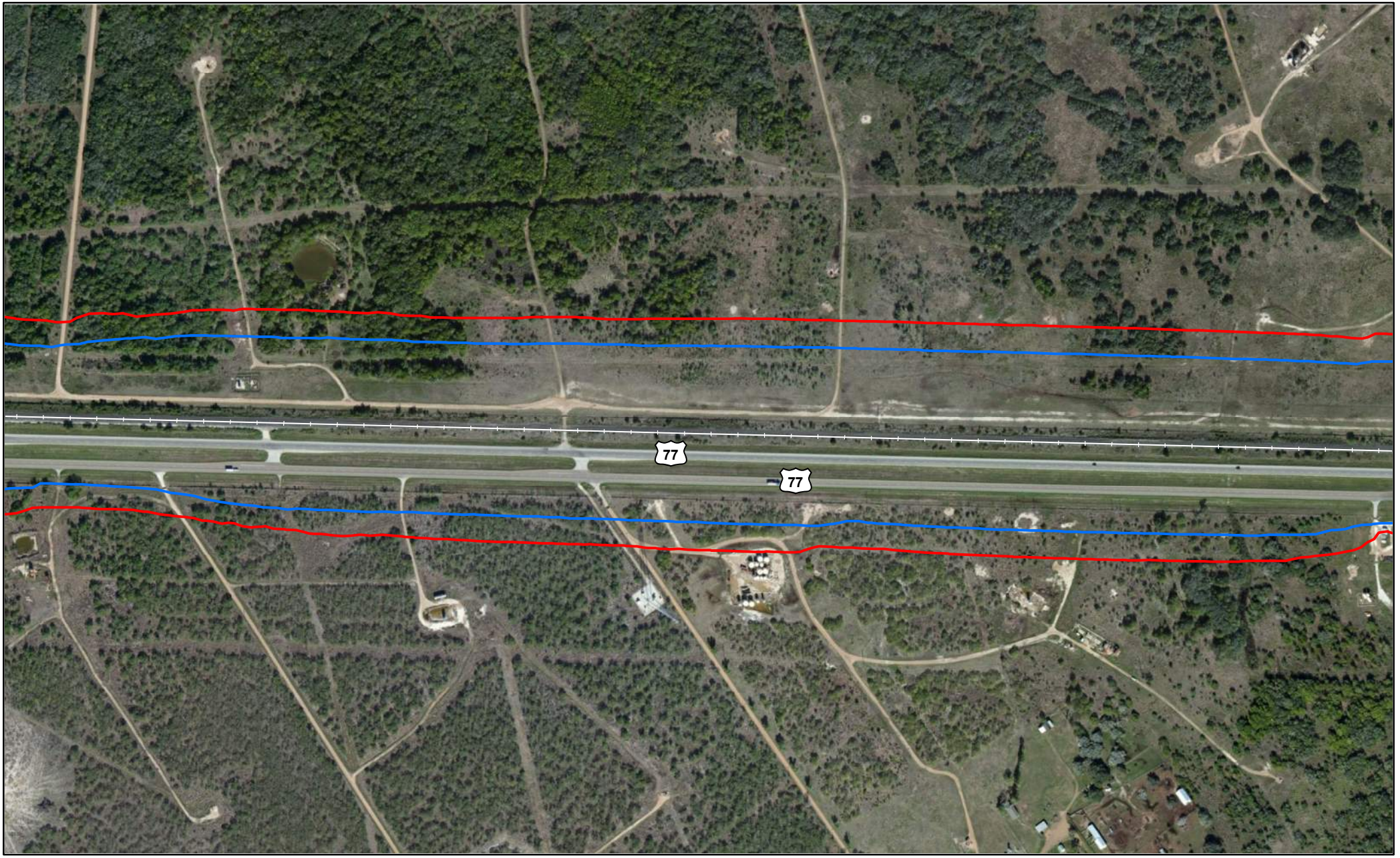
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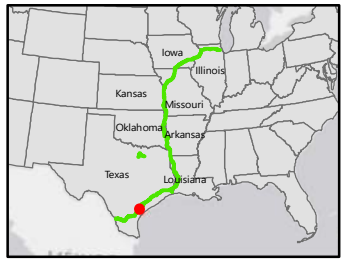
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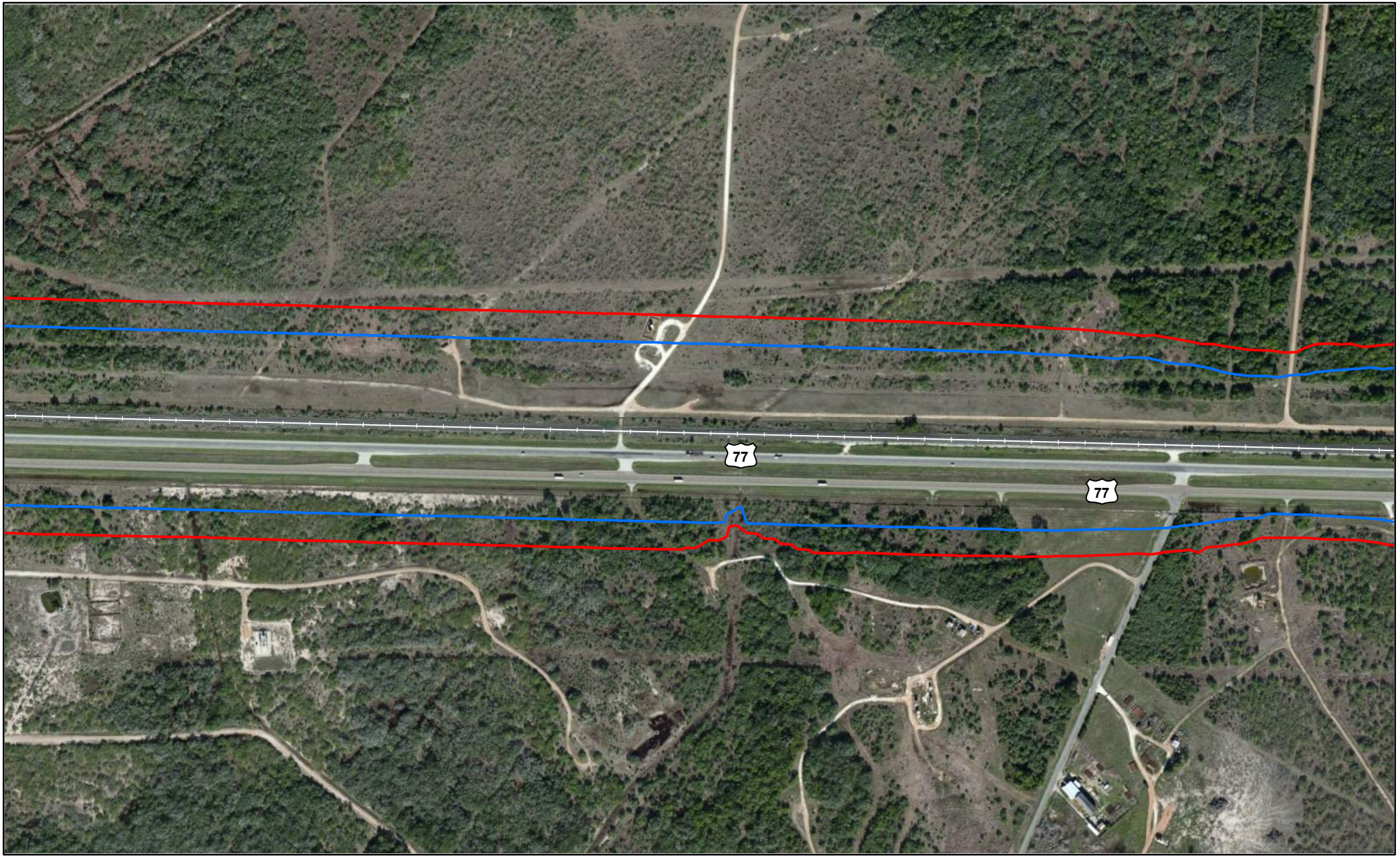
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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



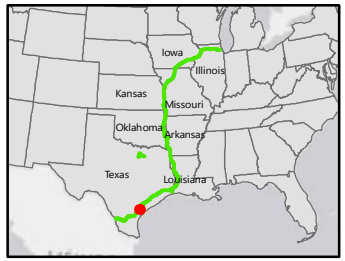
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

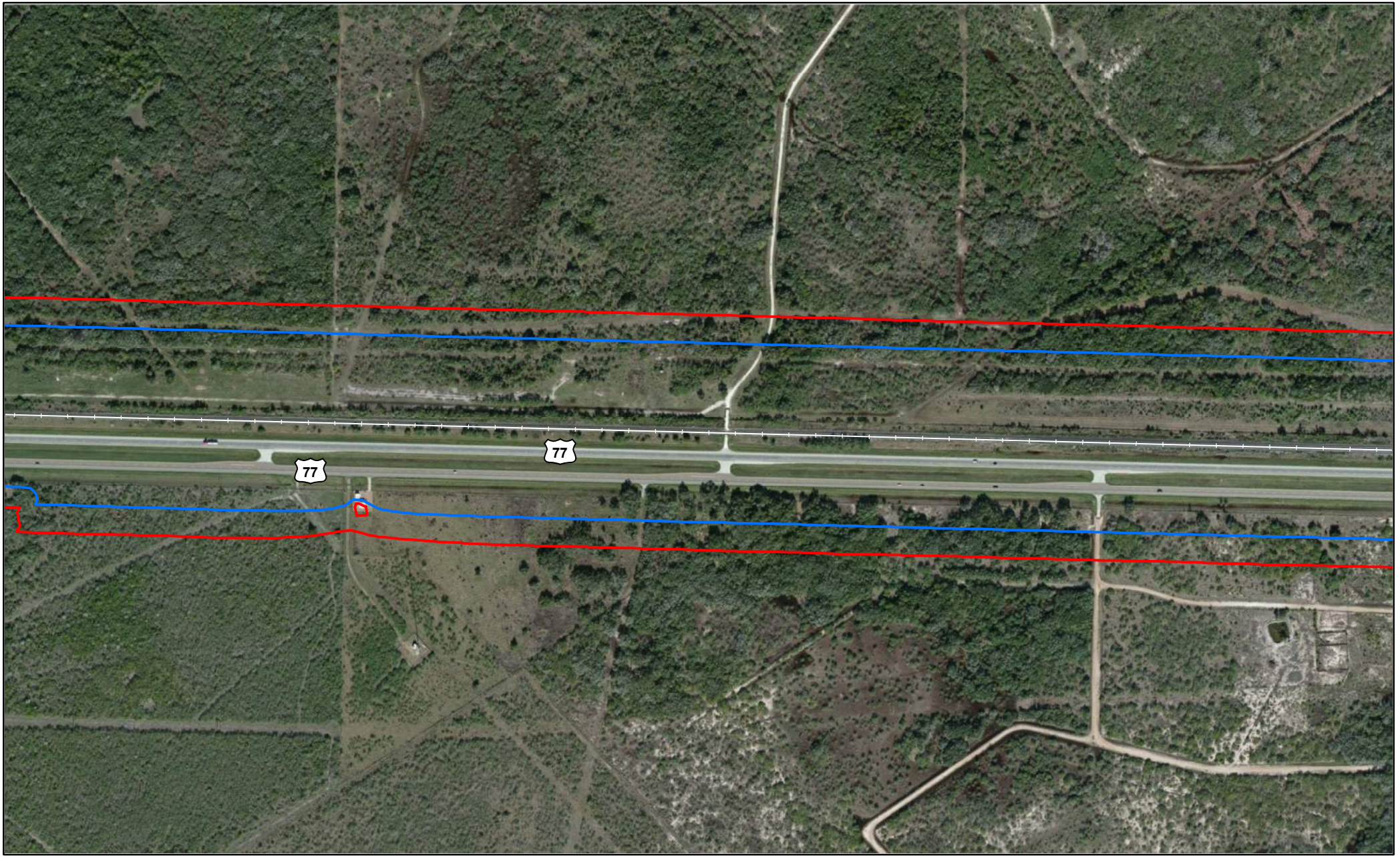
Source: ESRI.



Noise Contours
Refugio County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



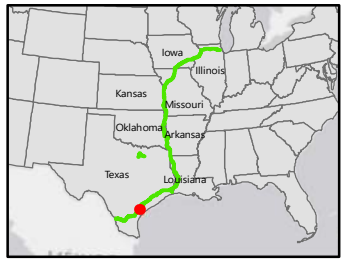
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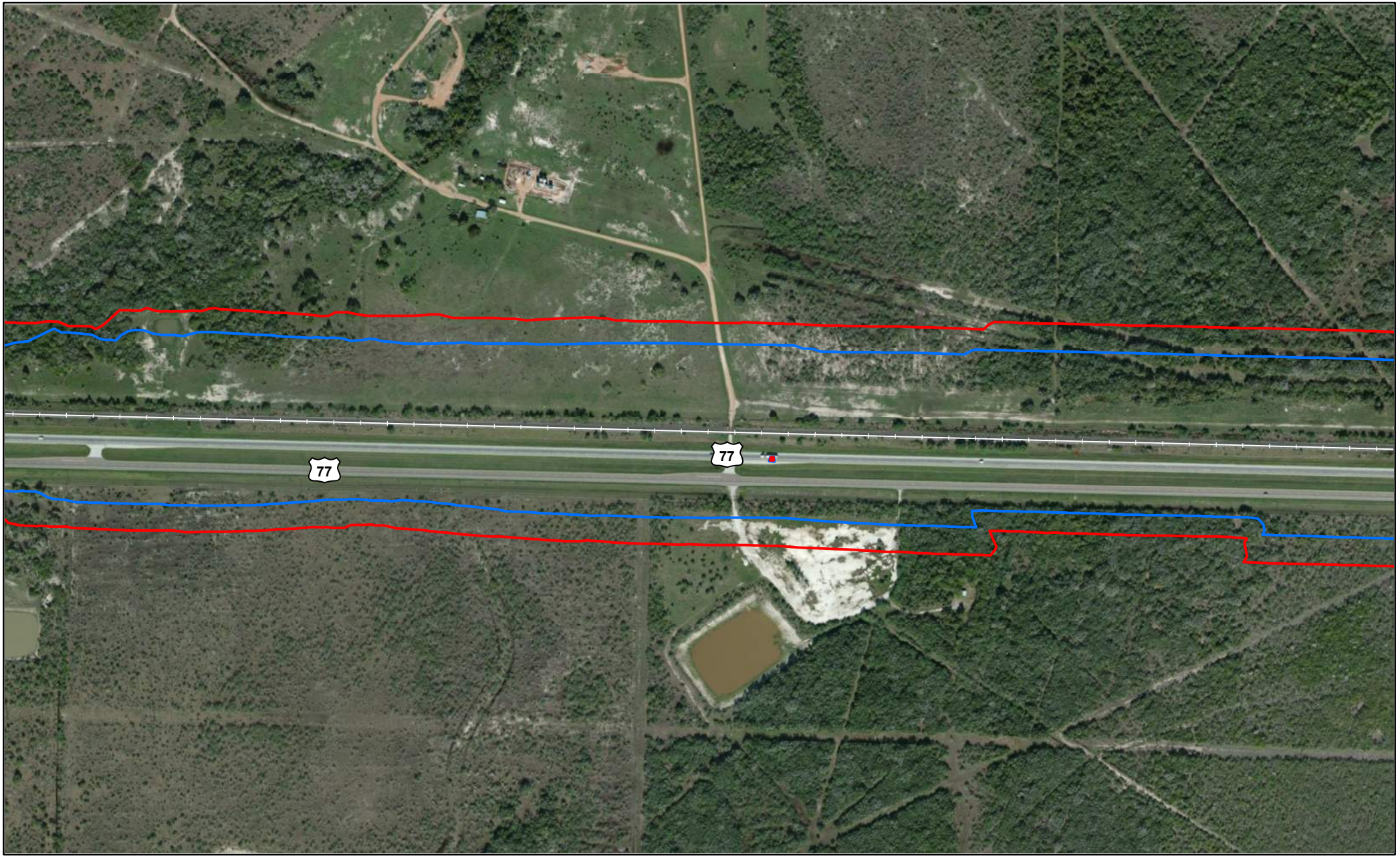
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Noise Contours
Refugio County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



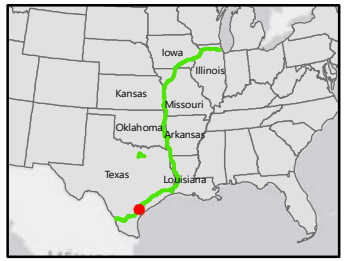
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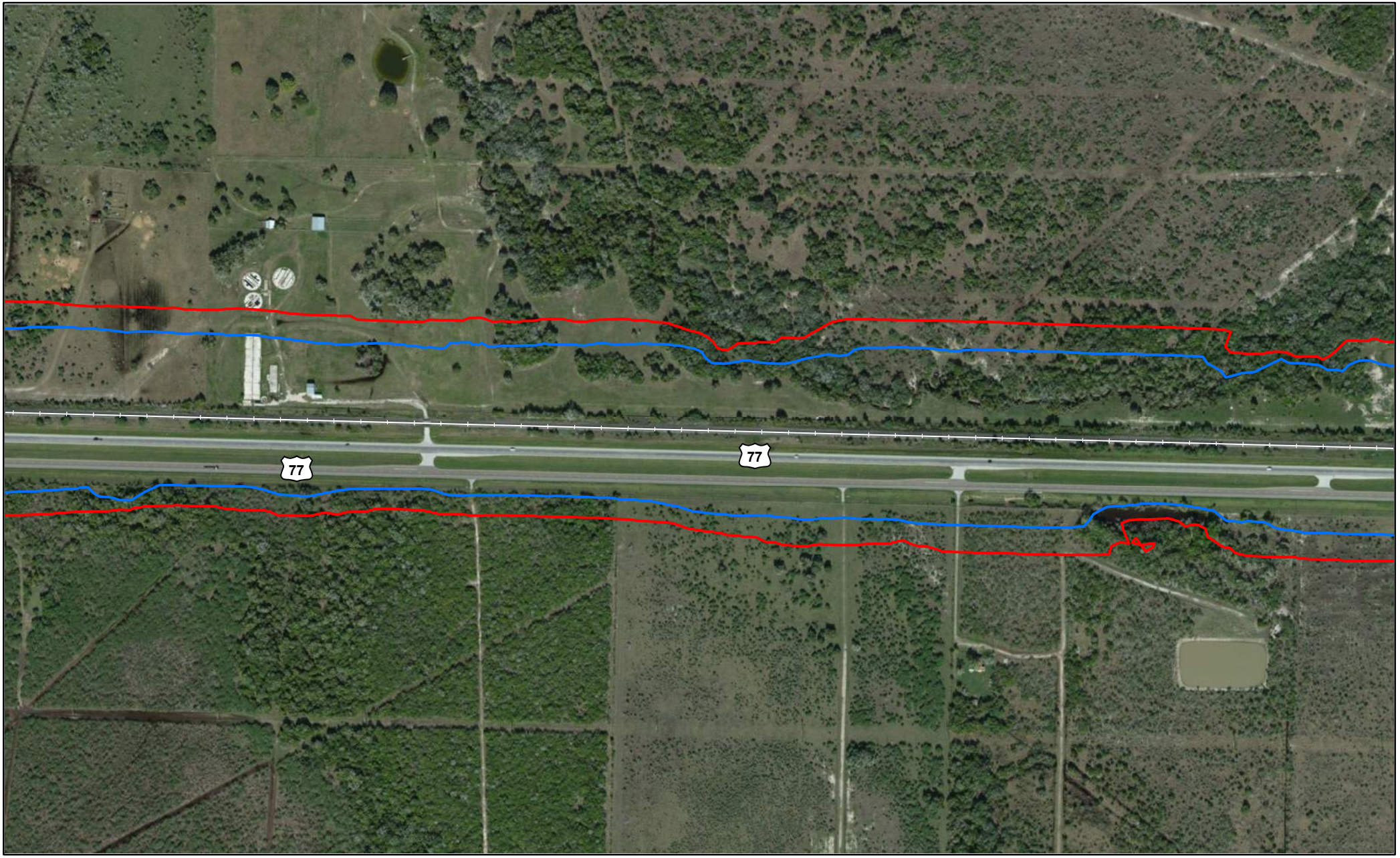
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Noise Contours
Refugio County, TX

Miles
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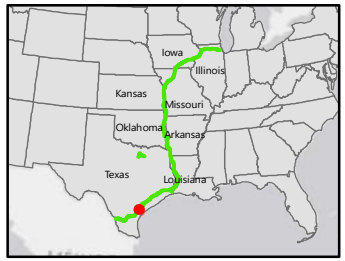
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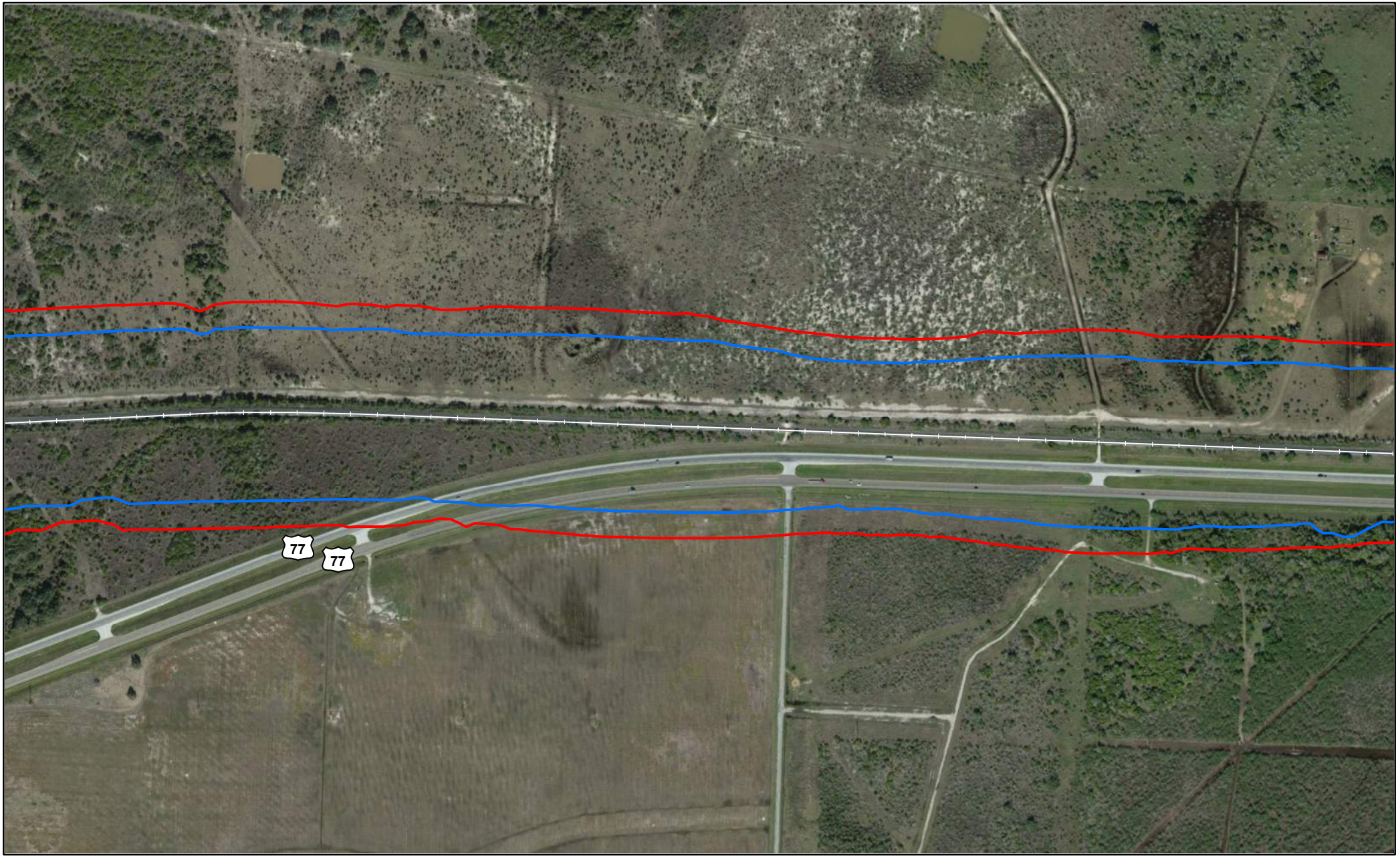
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Noise Contours
Refugio County, TX

0 0.05 0.1 Miles

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



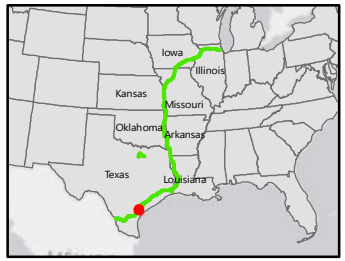
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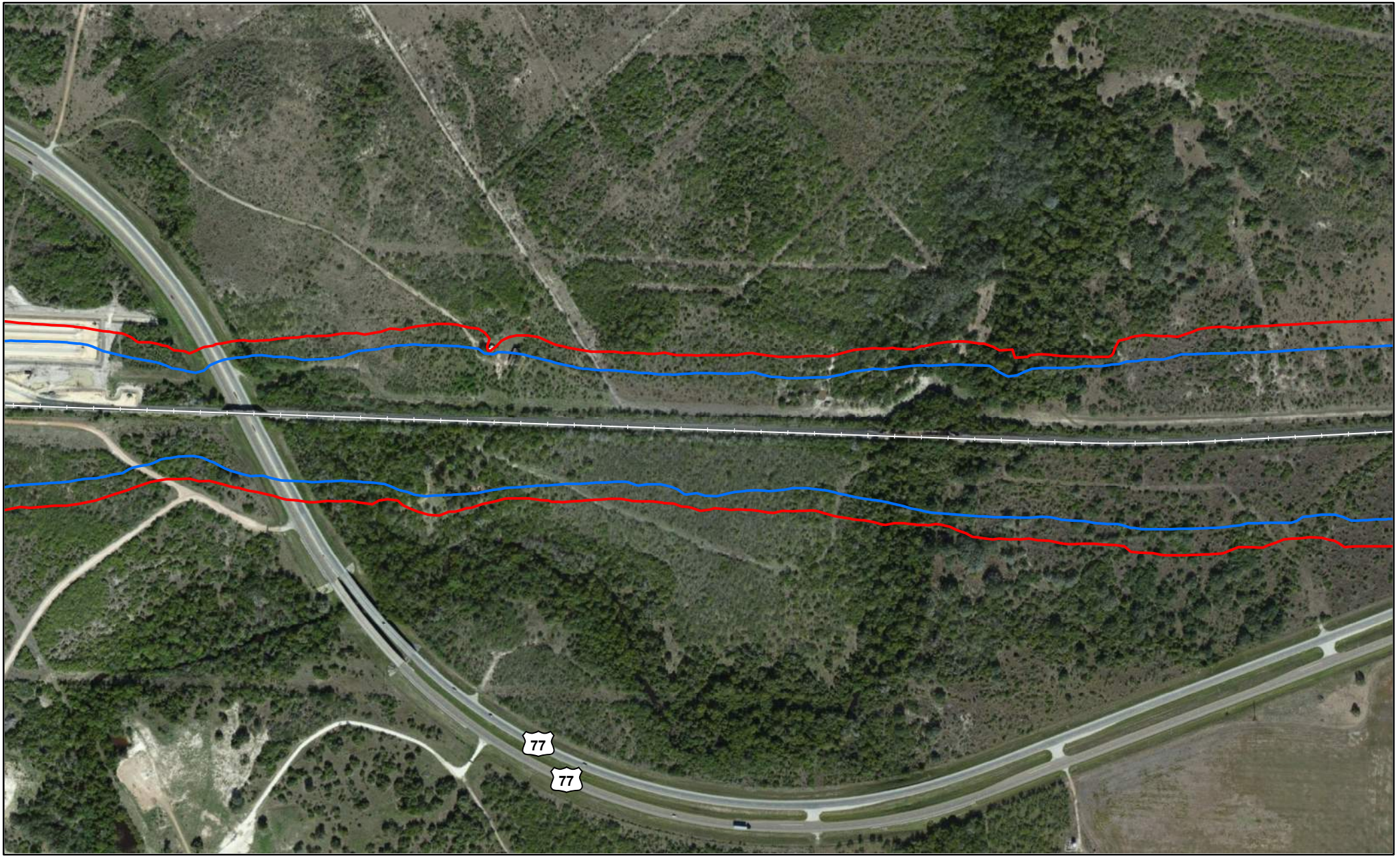
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Noise Contours
Refugio County, TX

Miles
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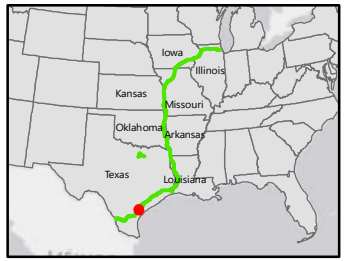
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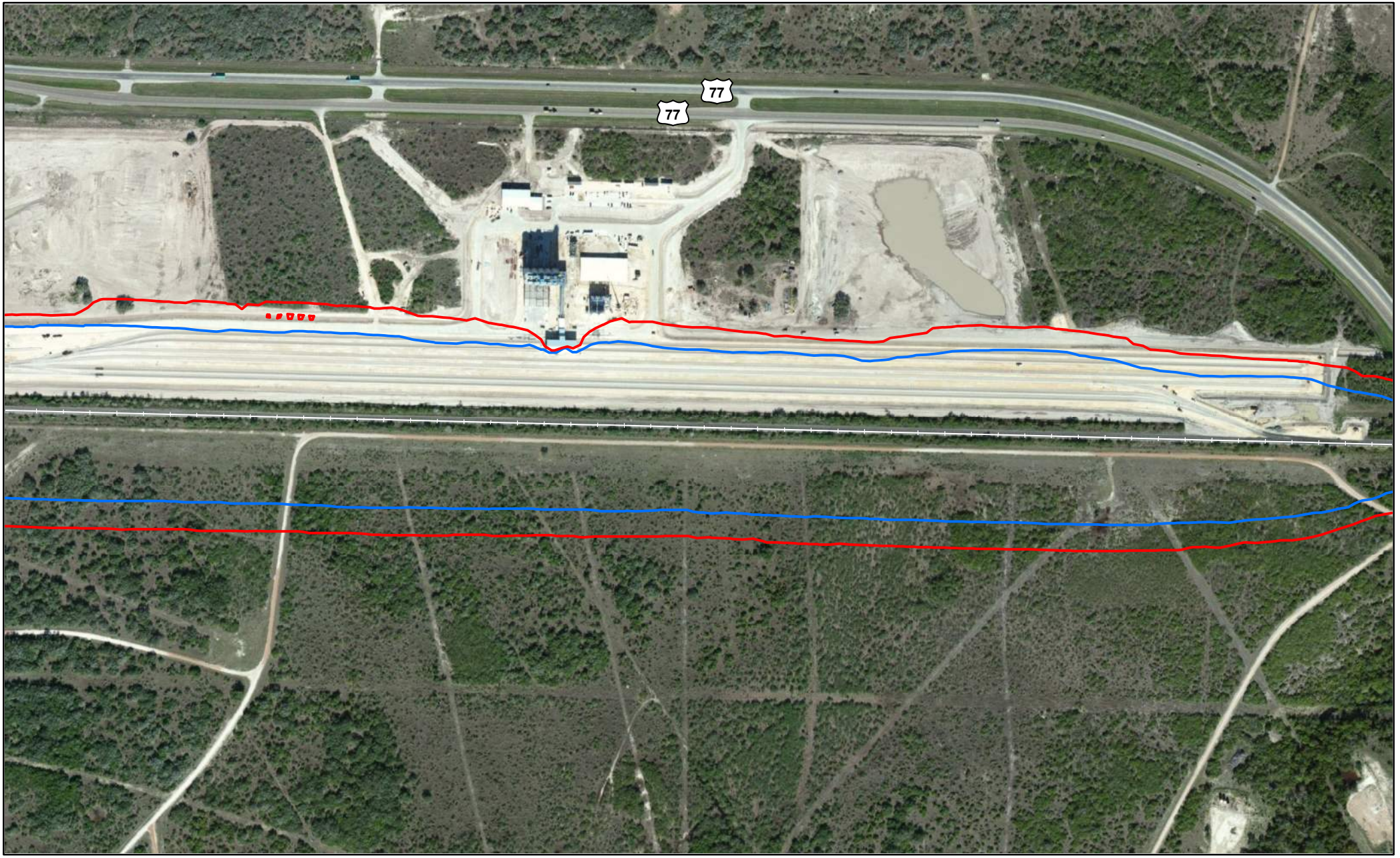
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Noise Contours
Refugio County, TX

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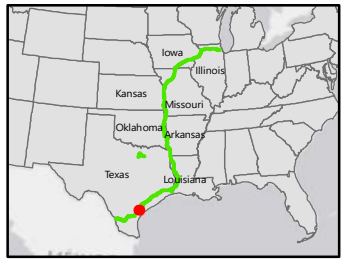
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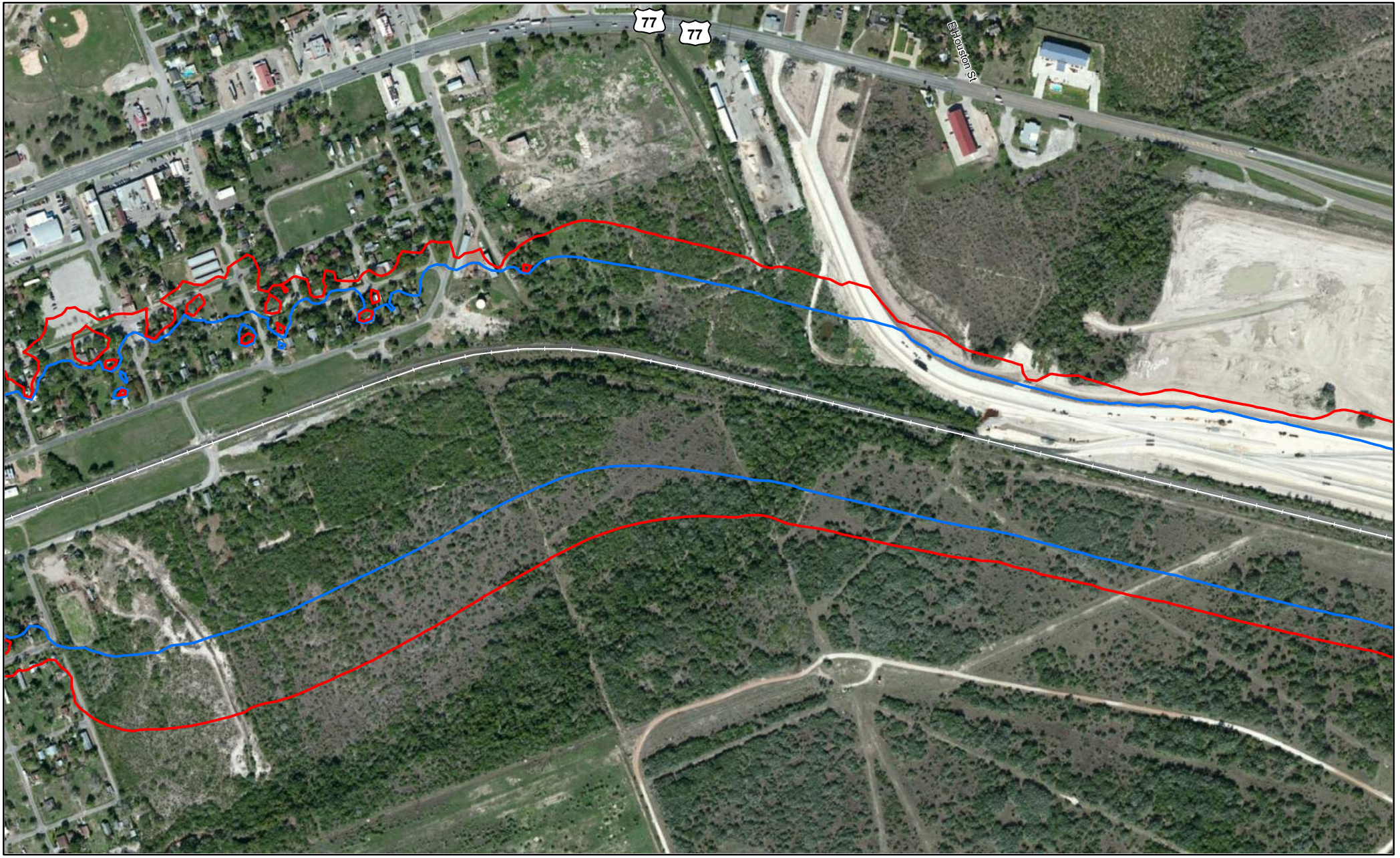
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Noise Contours
Refugio County, TX

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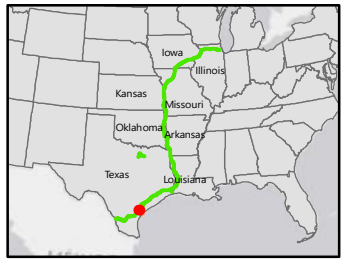
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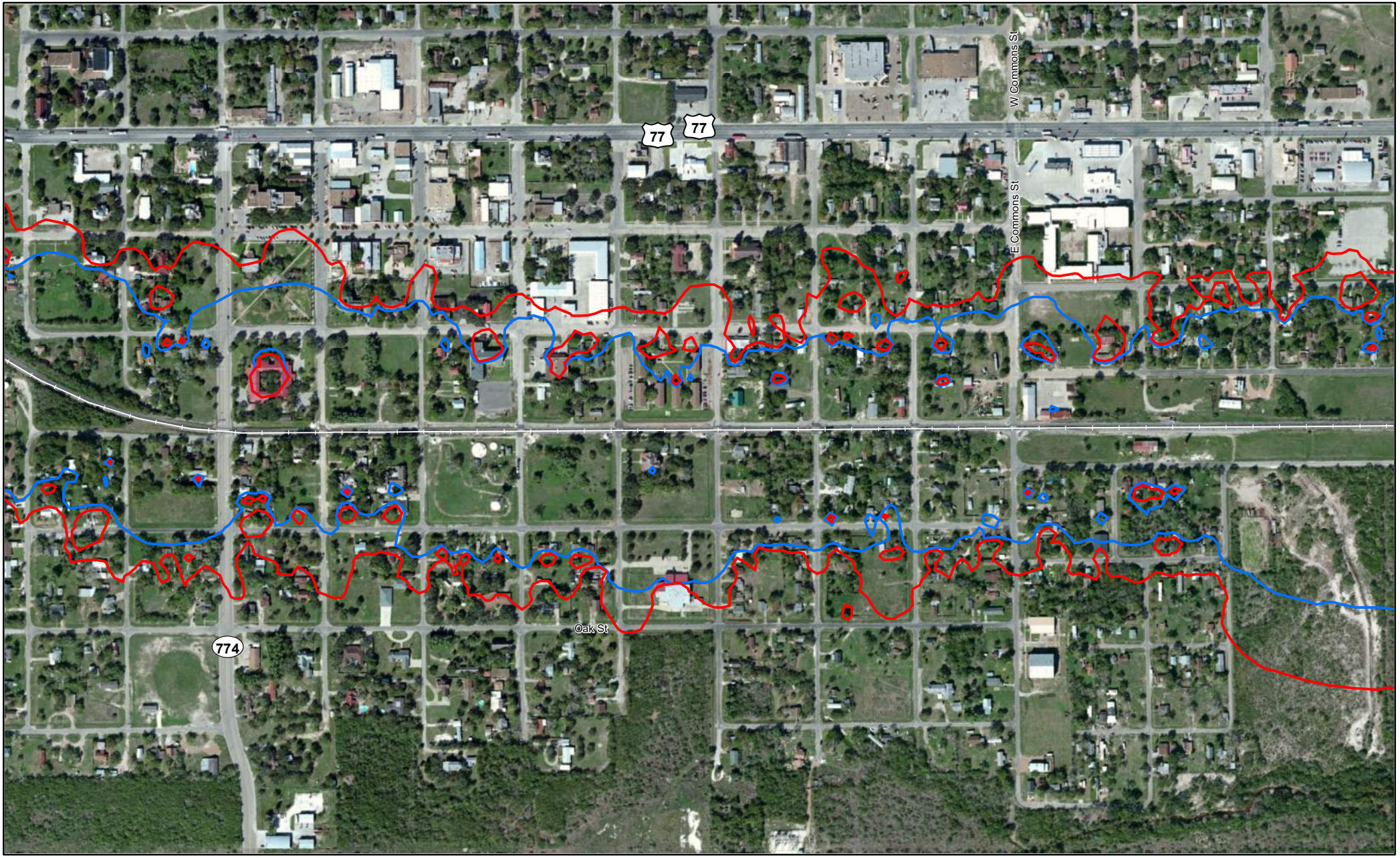
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Noise Contours
Refugio County, TX

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0 0.05 0.1

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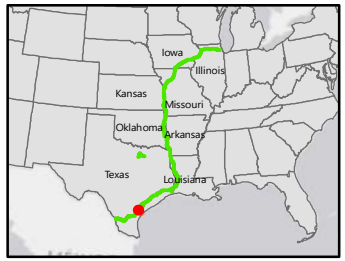
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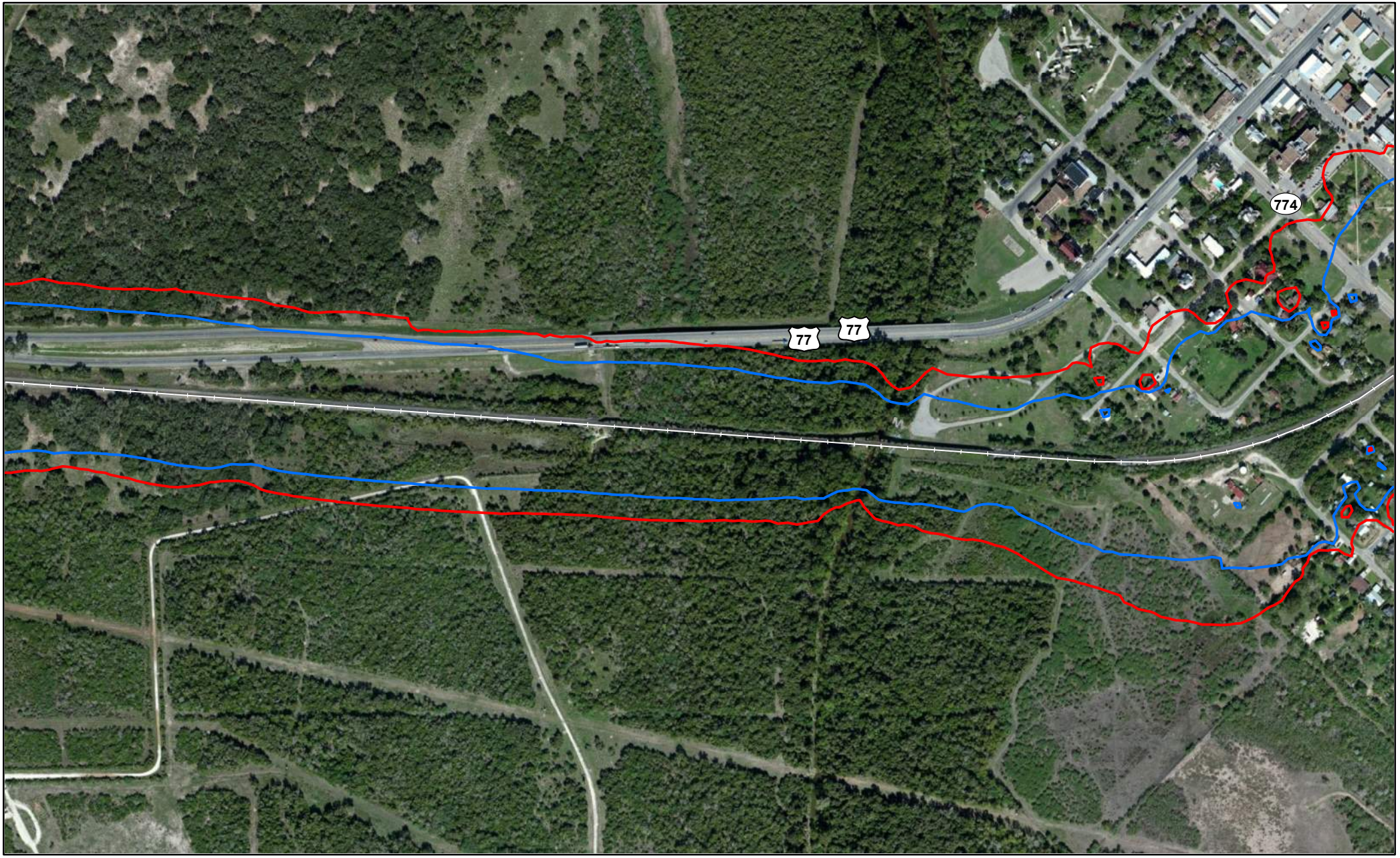
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Noise Contours
Refugio County, TX

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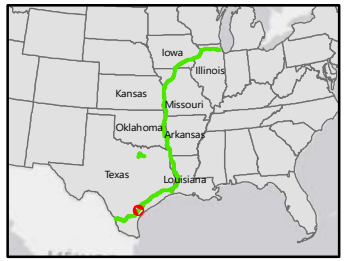
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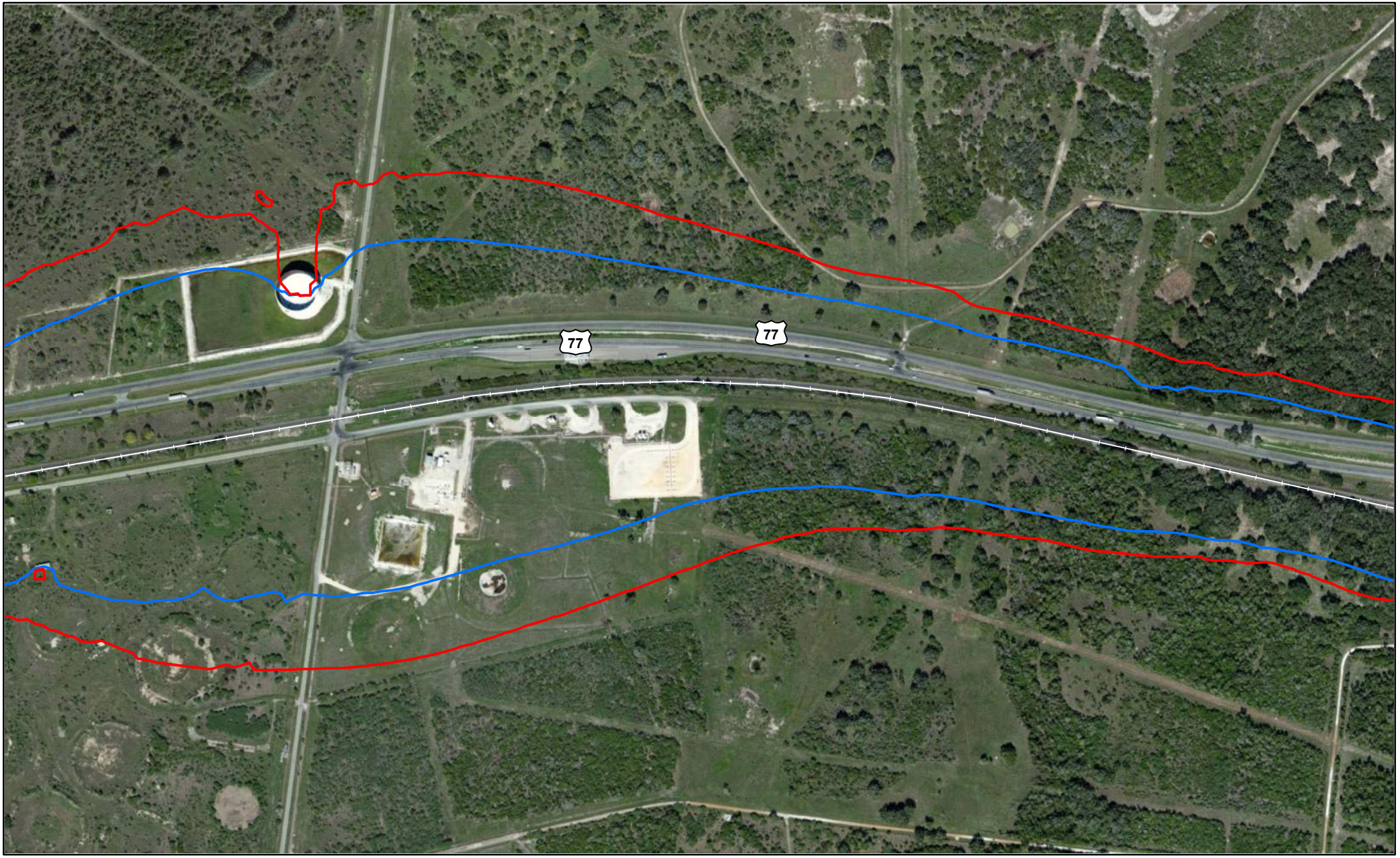
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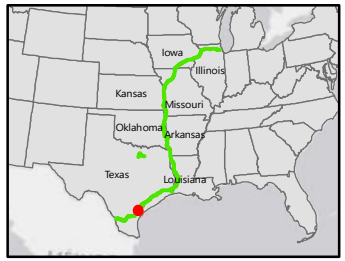
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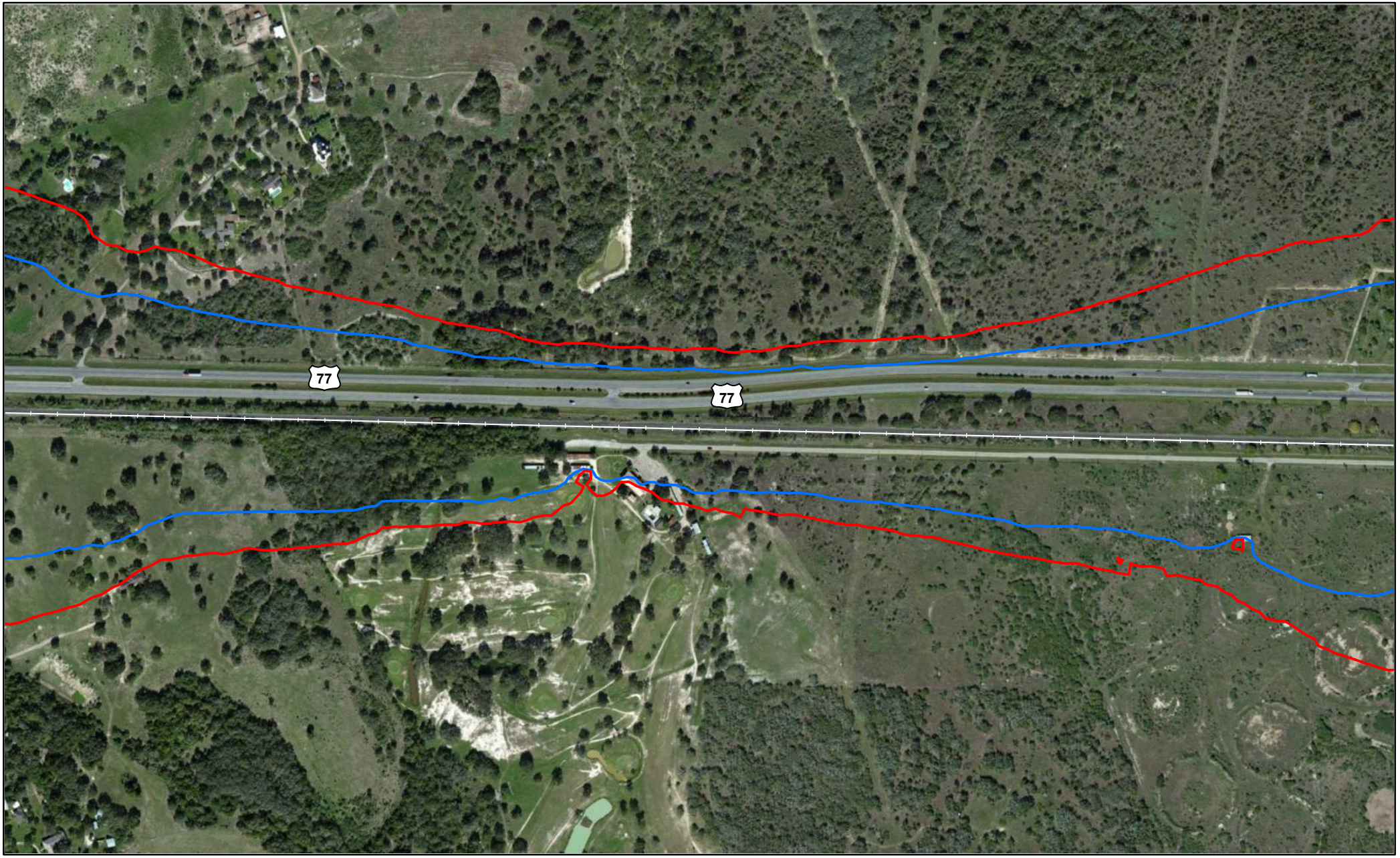
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Noise Contours
Refugio County, TX

0 0.05 0.1 Miles

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



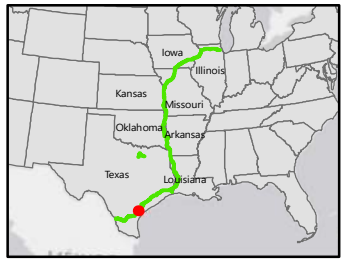
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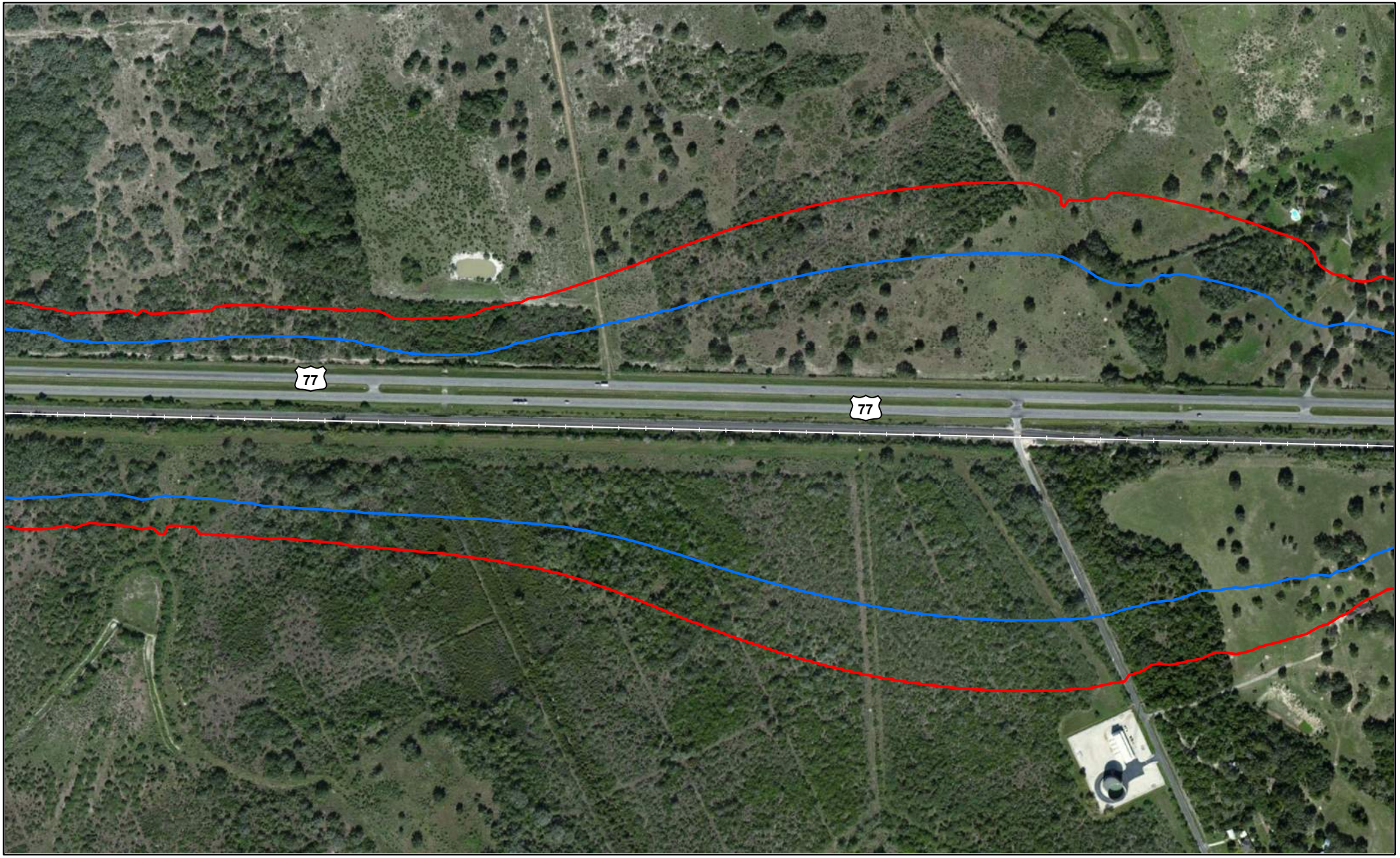
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Noise Contours
Refugio County, TX

Miles
0 0.05 0.1

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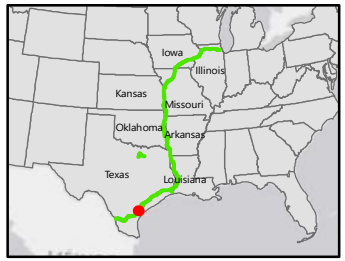
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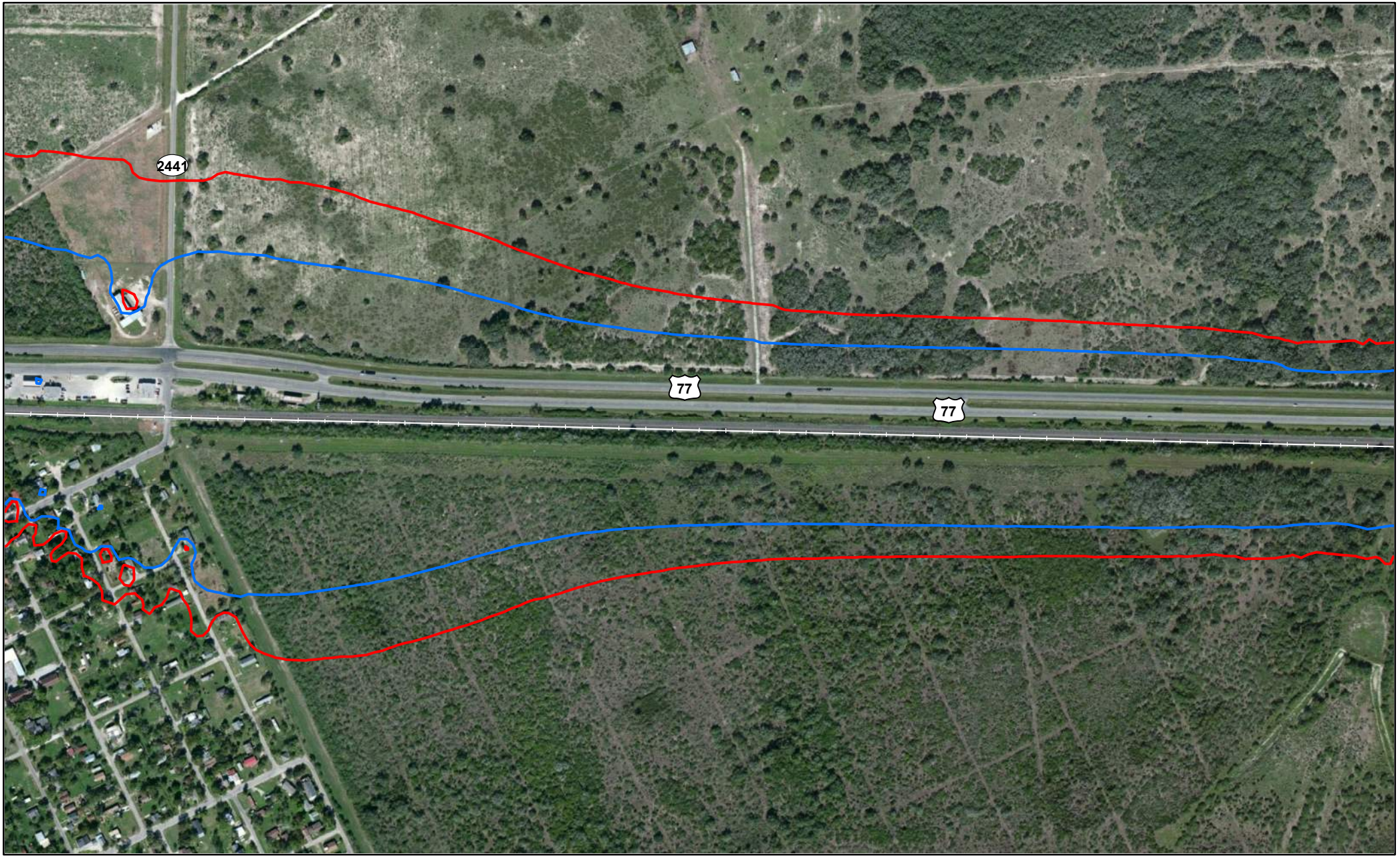
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Noise Contours
Refugio County, TX

Miles
0 0.05 0.1



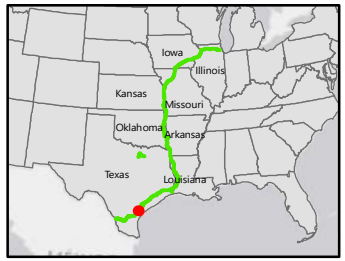
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Noise Contours
Refugio County, TX

Miles
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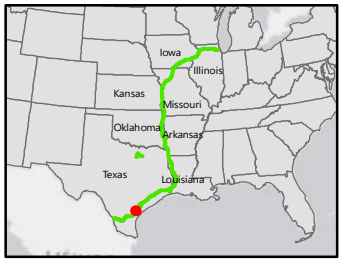
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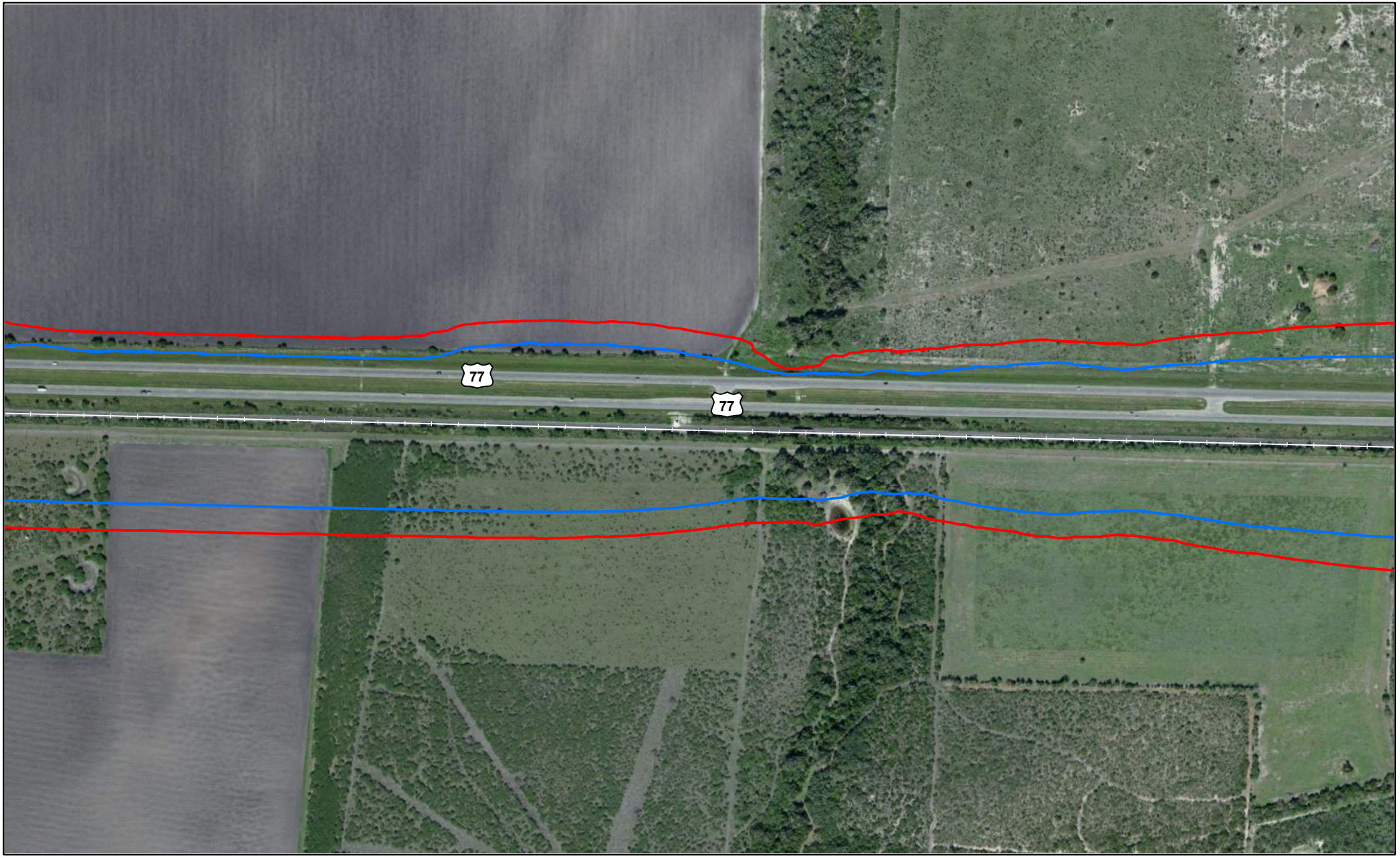
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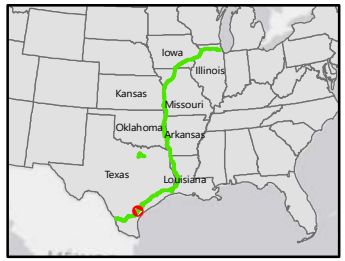
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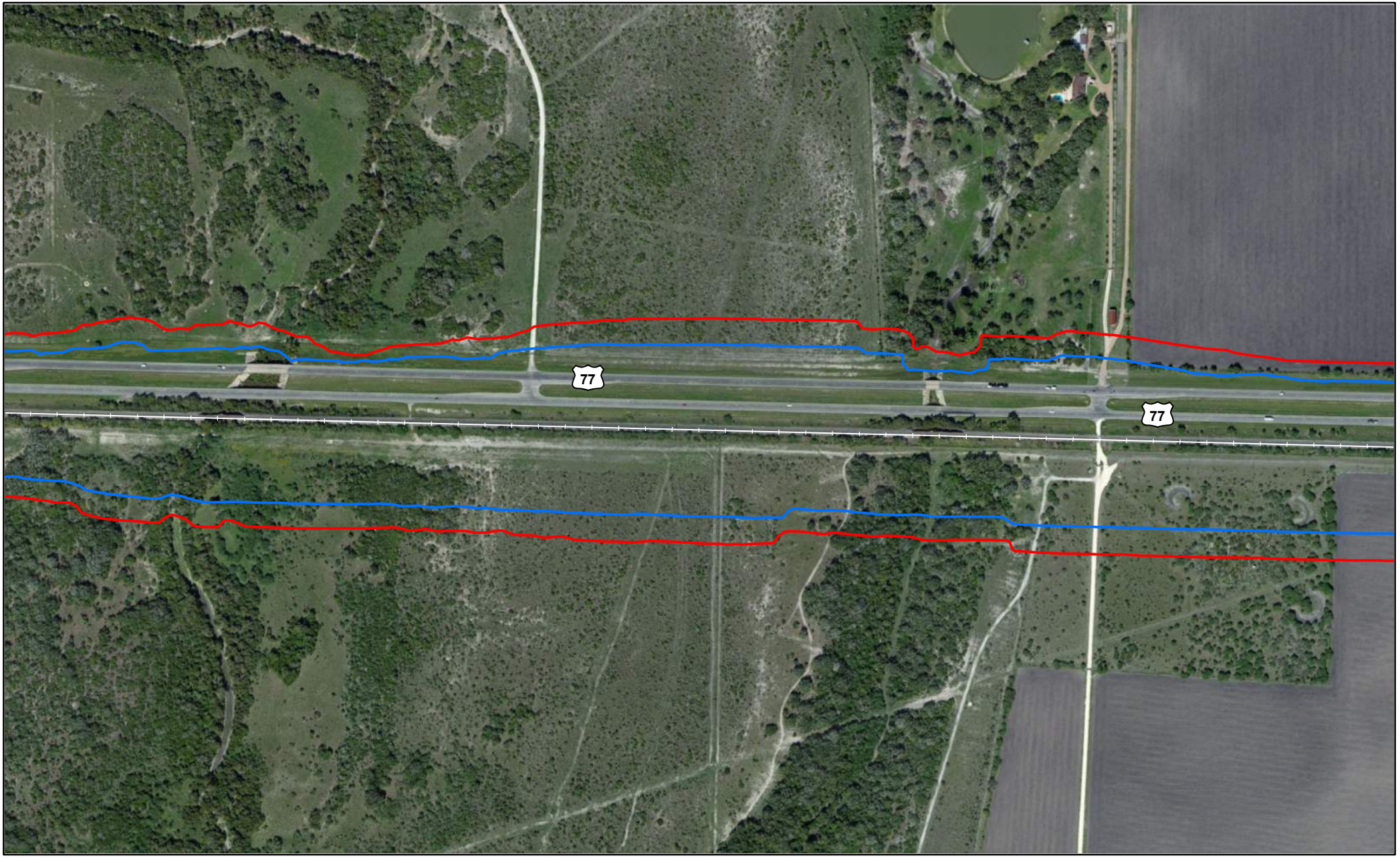
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Noise Contours
Refugio County, TX

0 0.05 0.1 Miles

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



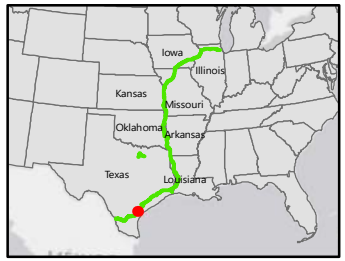
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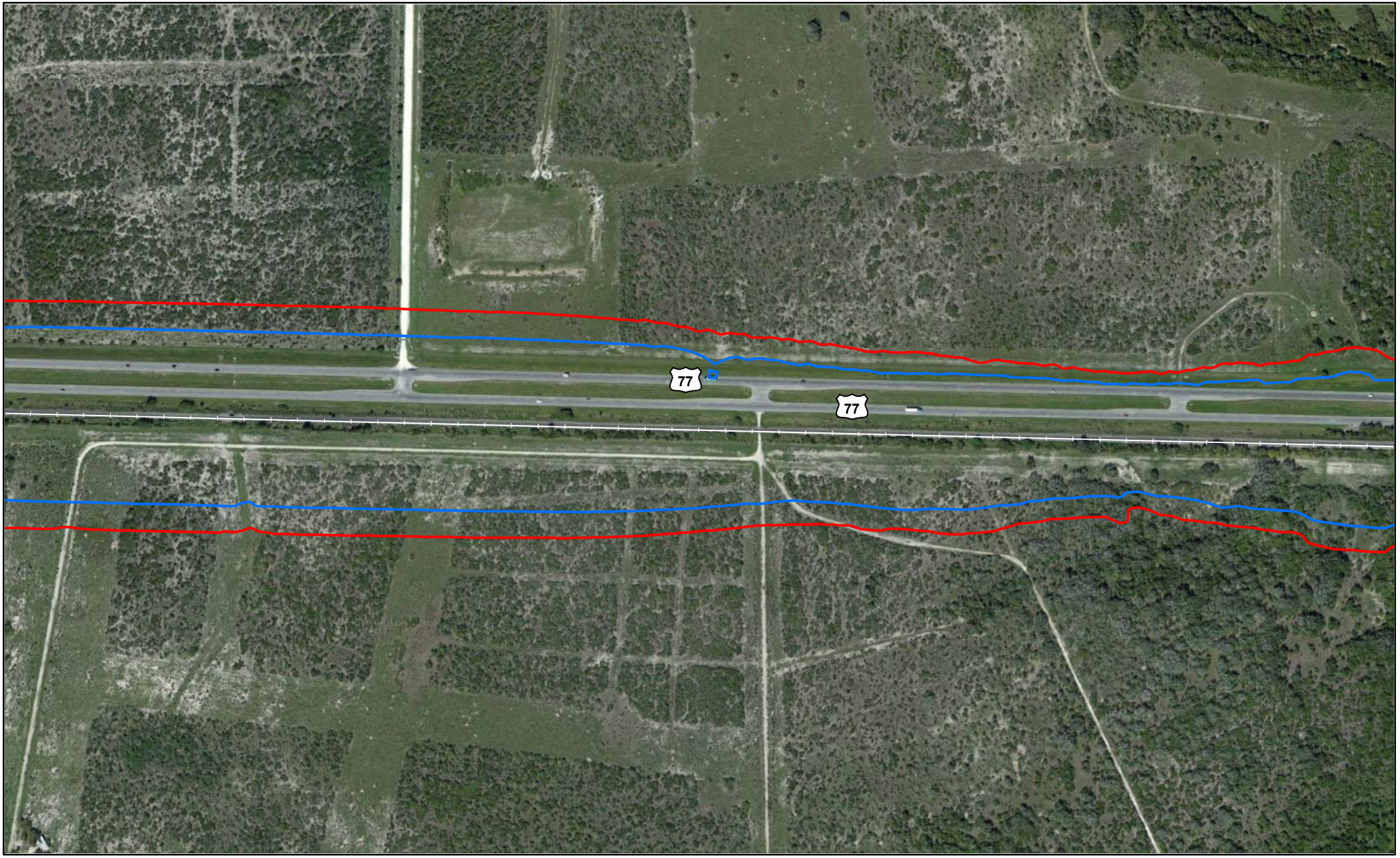
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Noise Contours
Refugio County, TX

Miles
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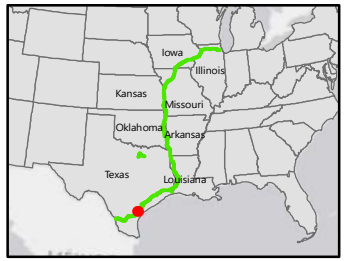
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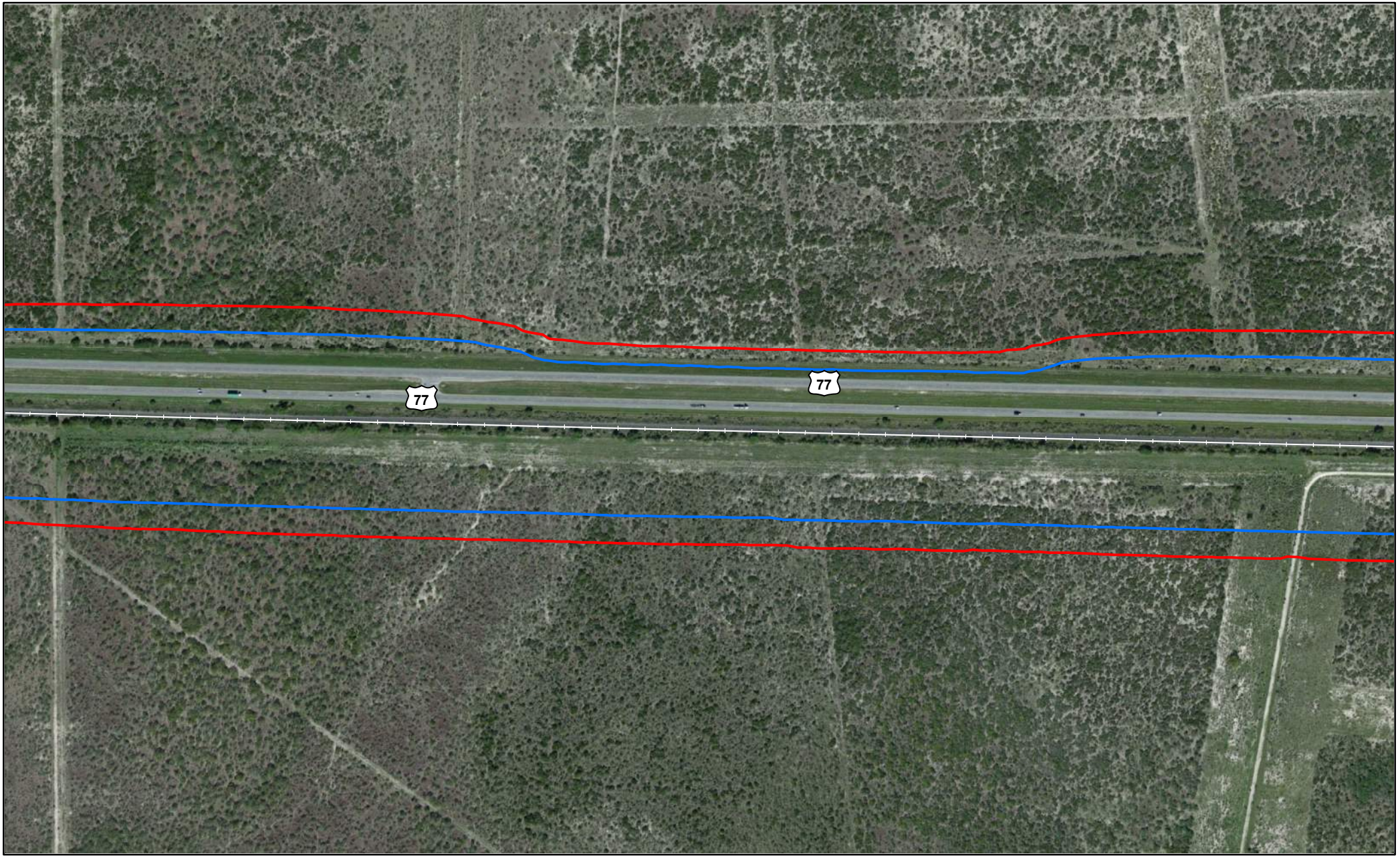
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Noise Contours
Refugio County, TX

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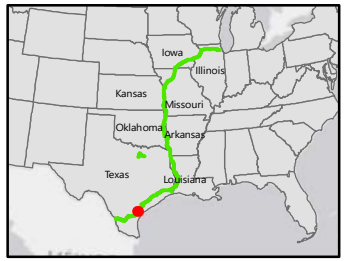
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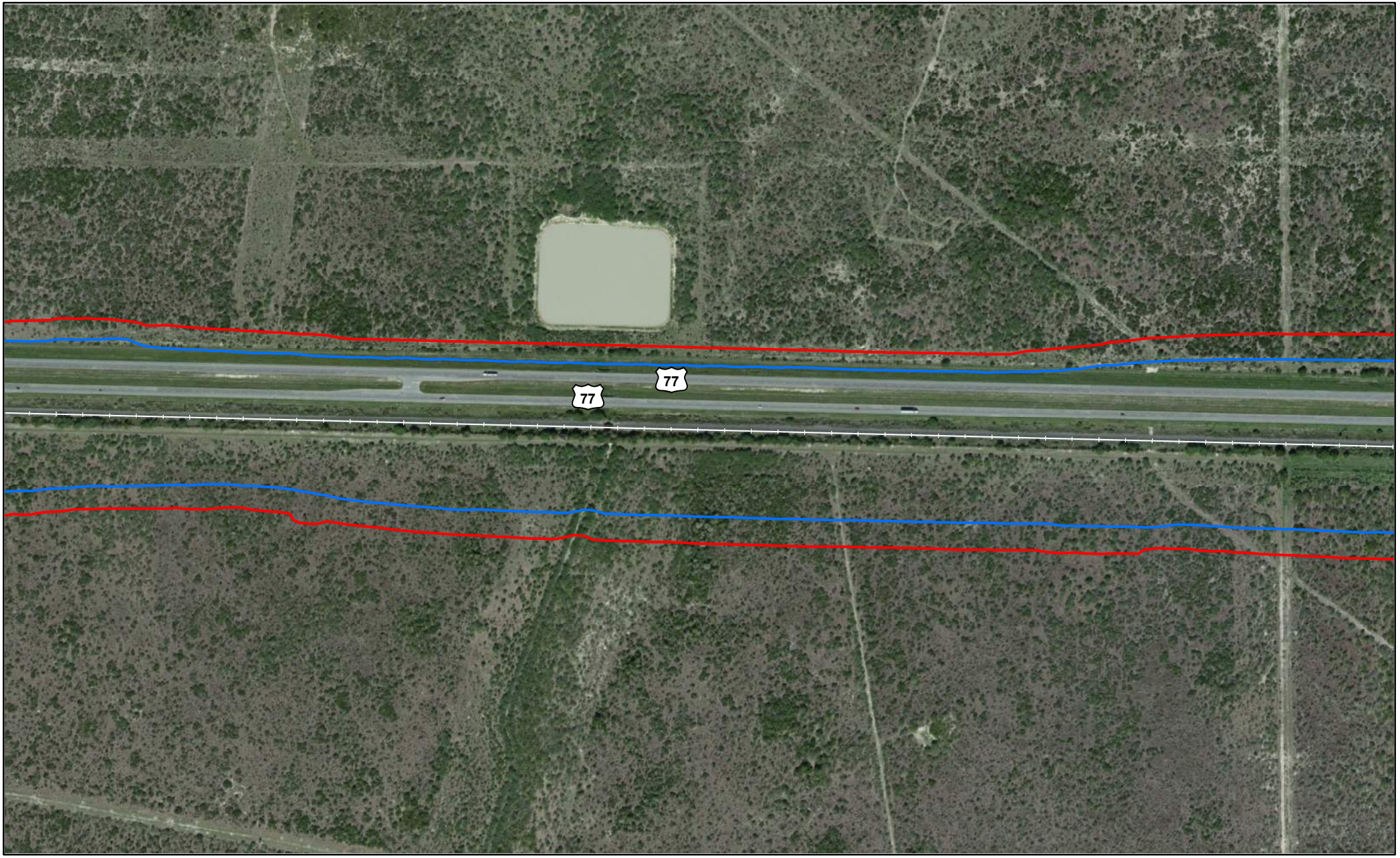
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Noise Contours
Refugio County, TX

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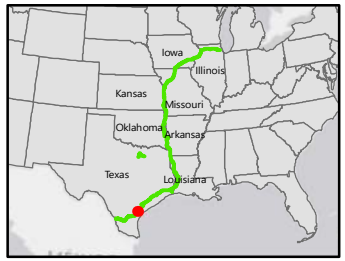
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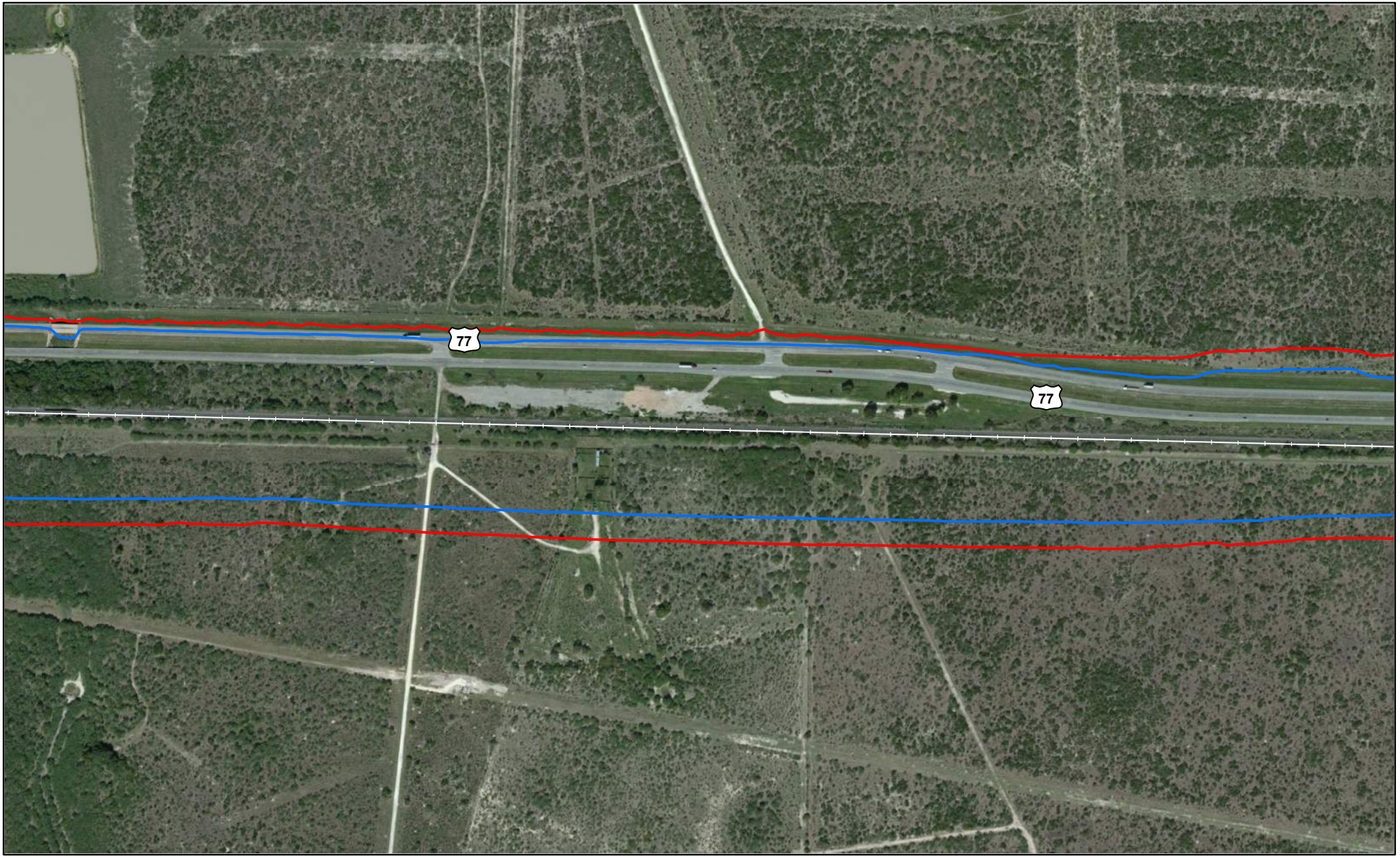
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Noise Contours
Refugio County, TX

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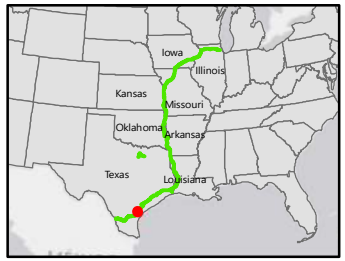
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Noise Contours
Refugio County, TX

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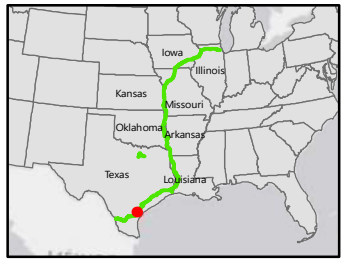
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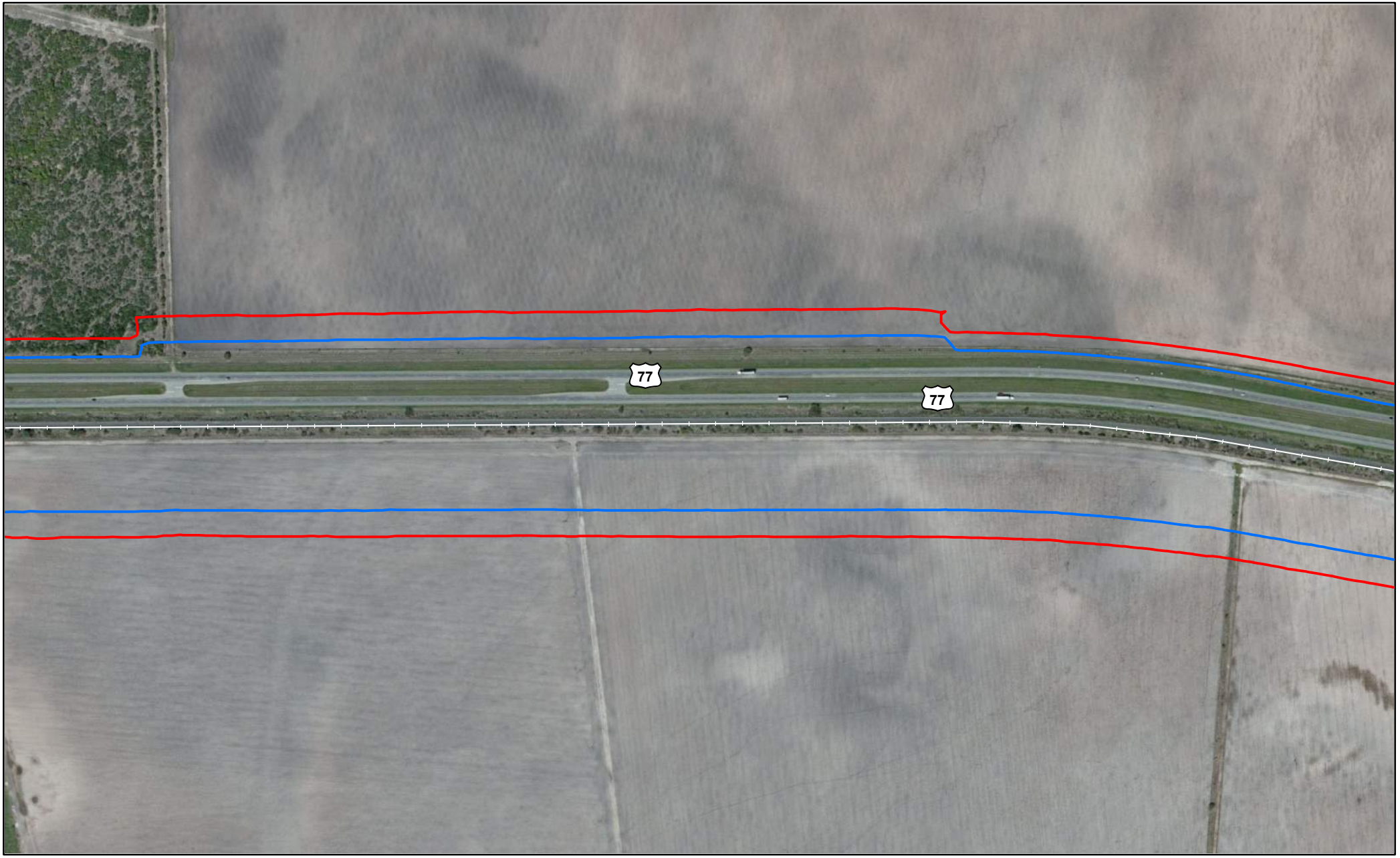
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Noise Contours
Refugio County, TX

Miles
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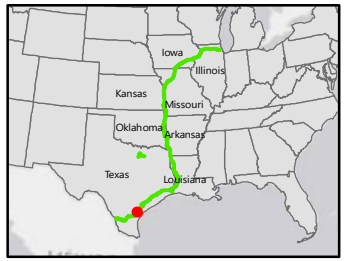
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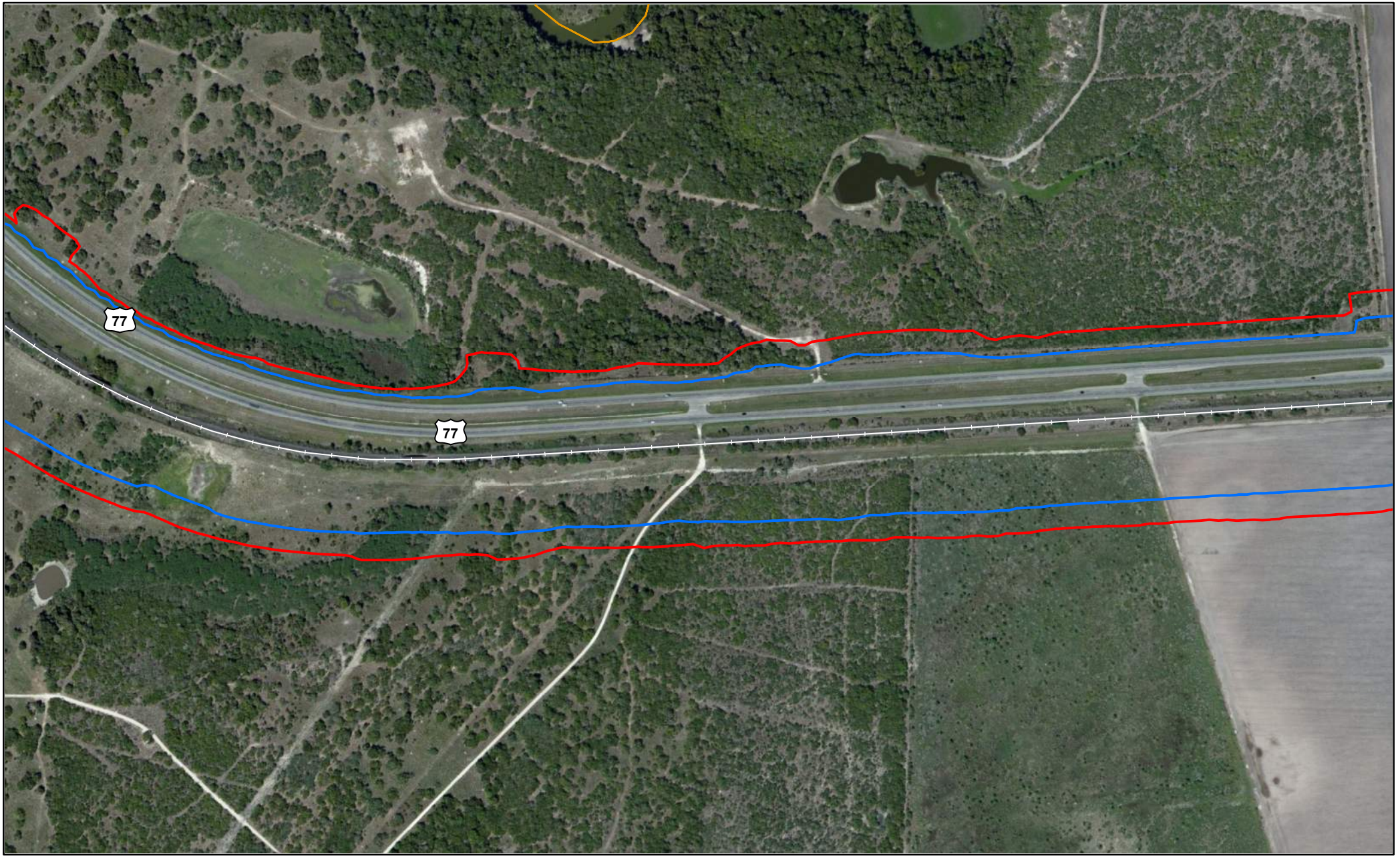
Source: ESRI.



Noise Contours
Refugio County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



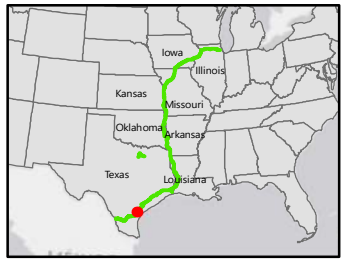
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

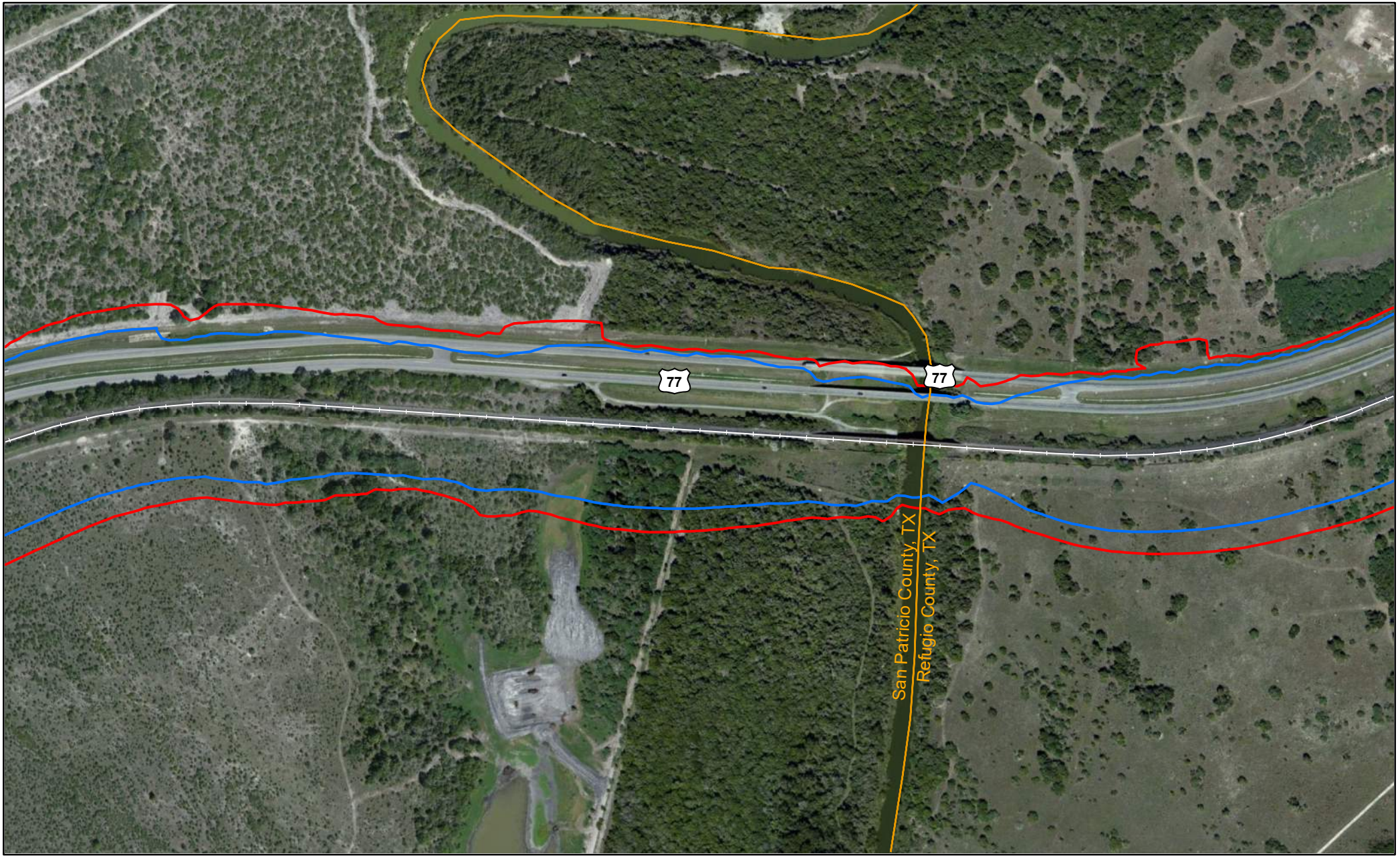
Source: ESRI.



Noise Contours
San Patricio County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



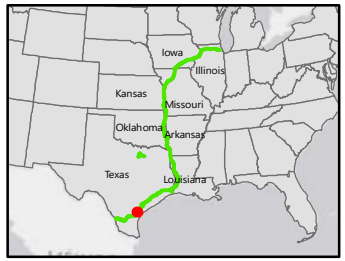
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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

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Noise Contours
San Patricio County, TX

Miles
0 0.05 0.1



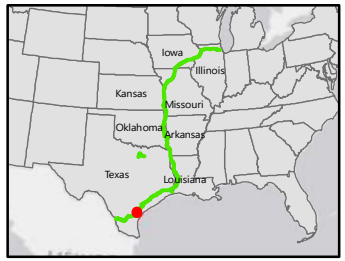
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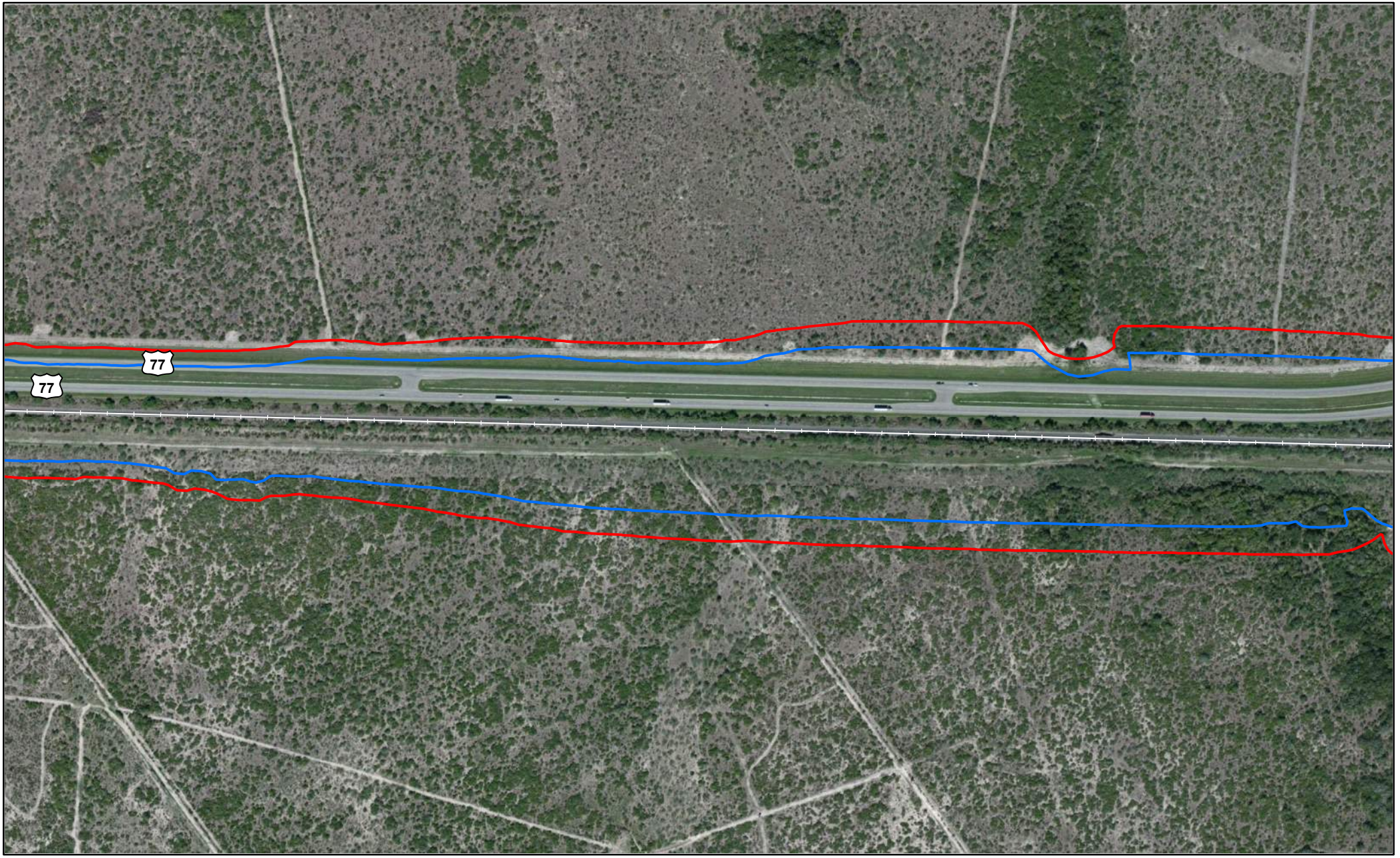
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Noise Contours
San Patricio County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



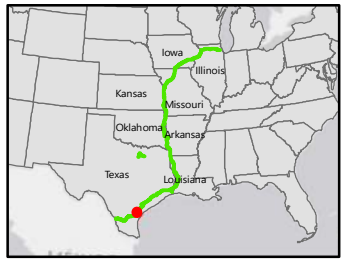
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Noise Impact (65 Ldn and 3 dBA Increase)

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Source: ESRI.



Noise Contours
San Patricio County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



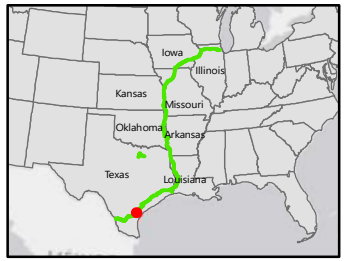
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Tracks

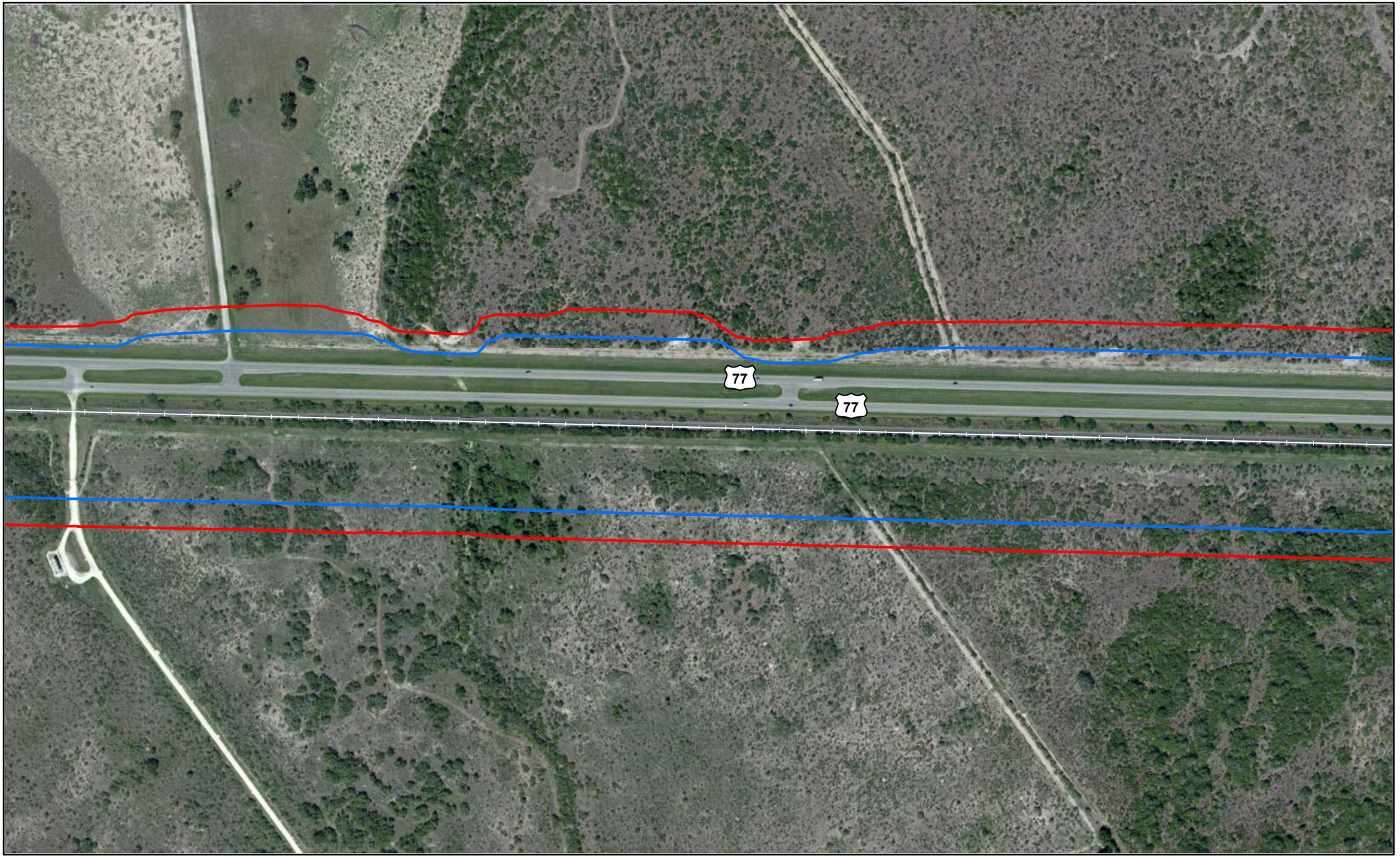
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Noise Contours
San Patricio County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



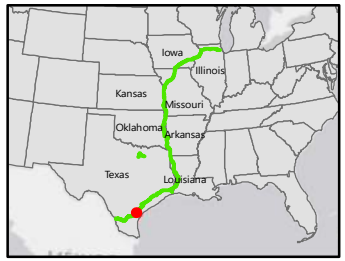
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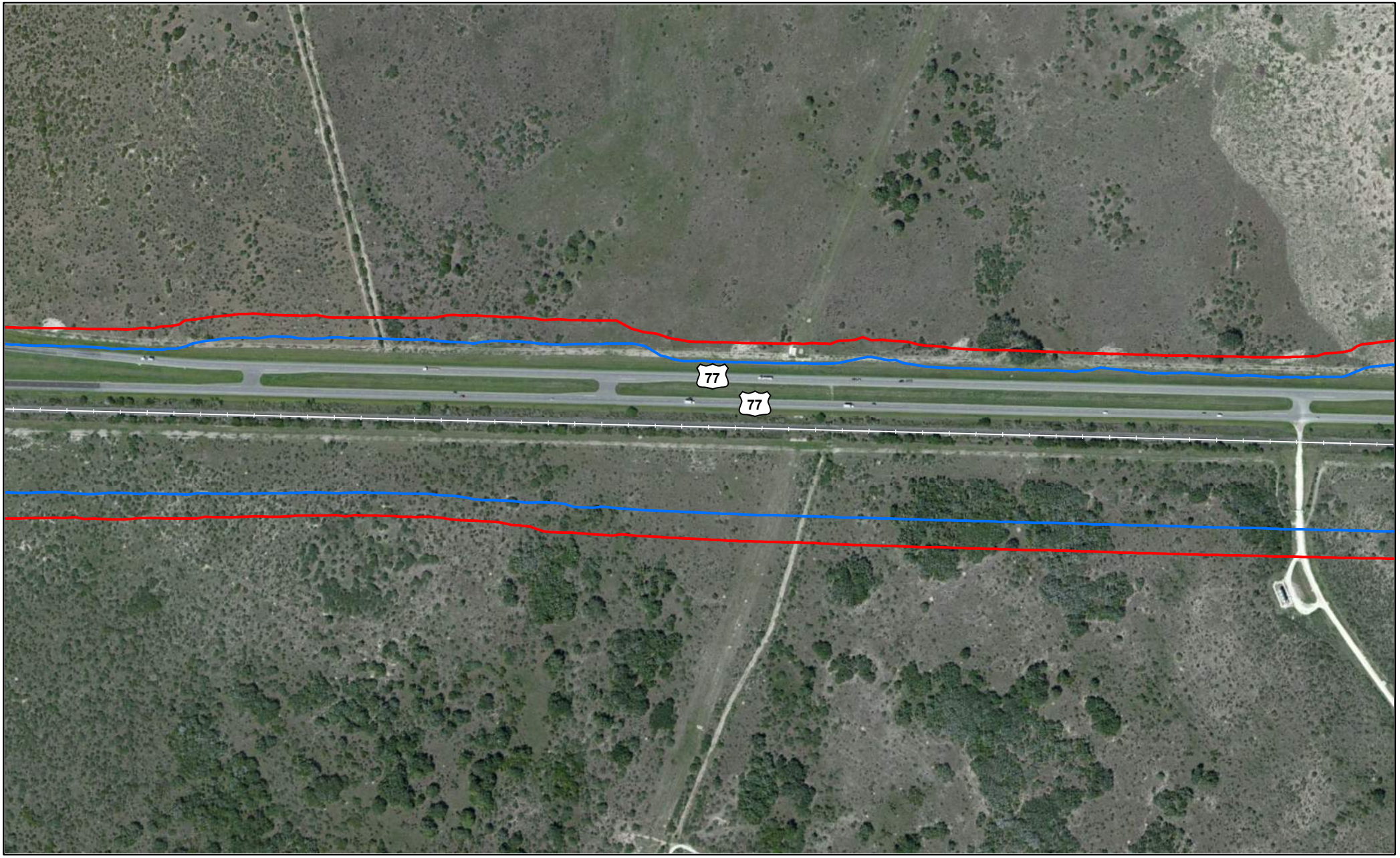
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Noise Contours
San Patricio County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



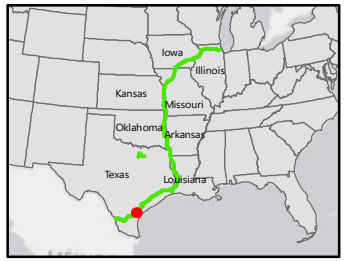
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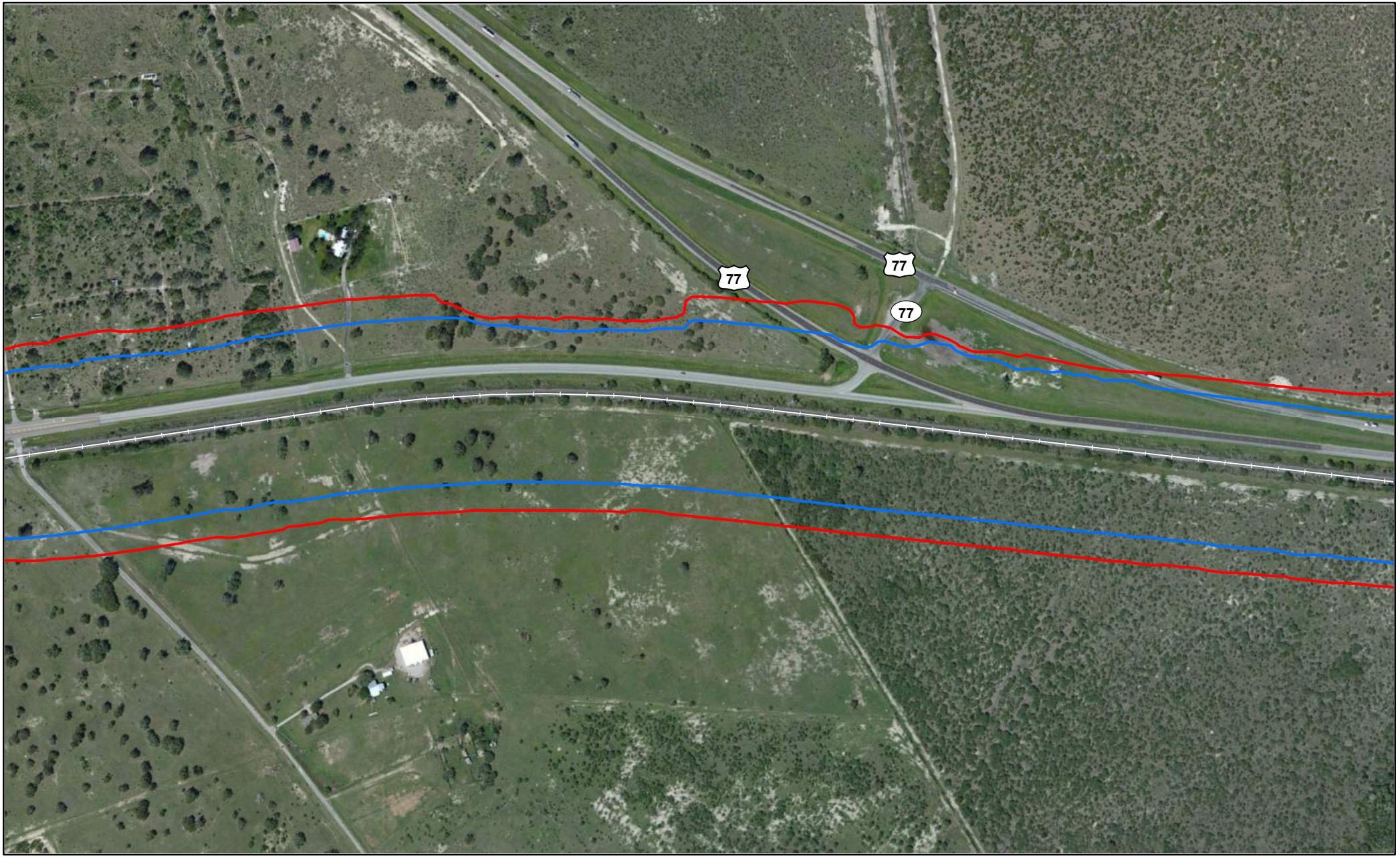
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Noise Contours
San Patricio County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



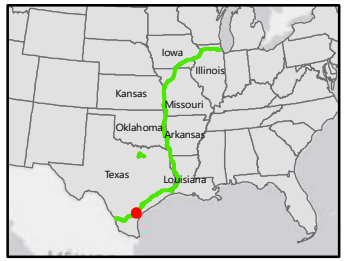
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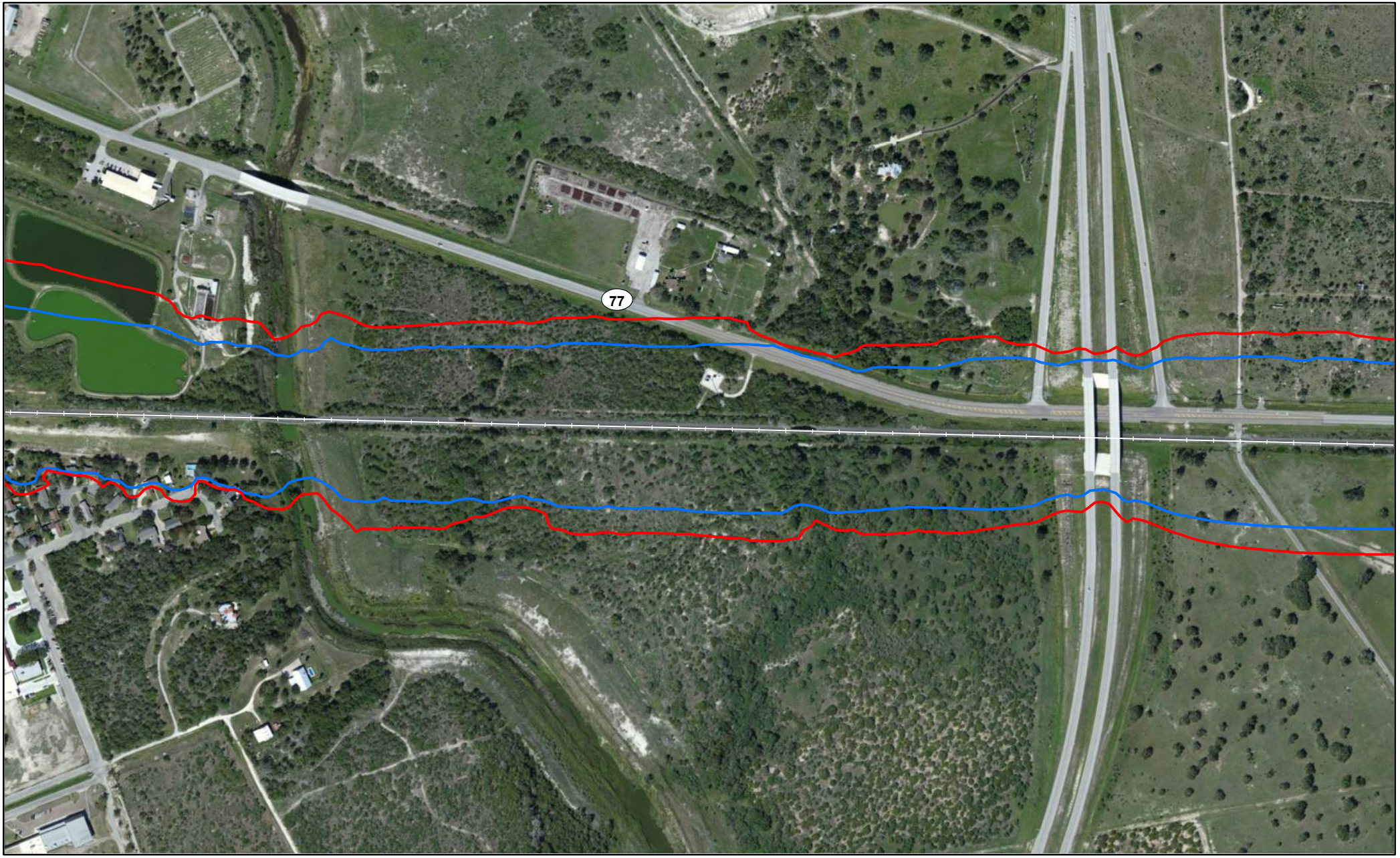
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Noise Contours
San Patricio County, TX

Miles
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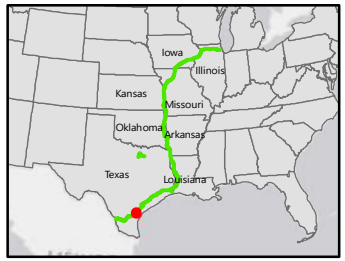
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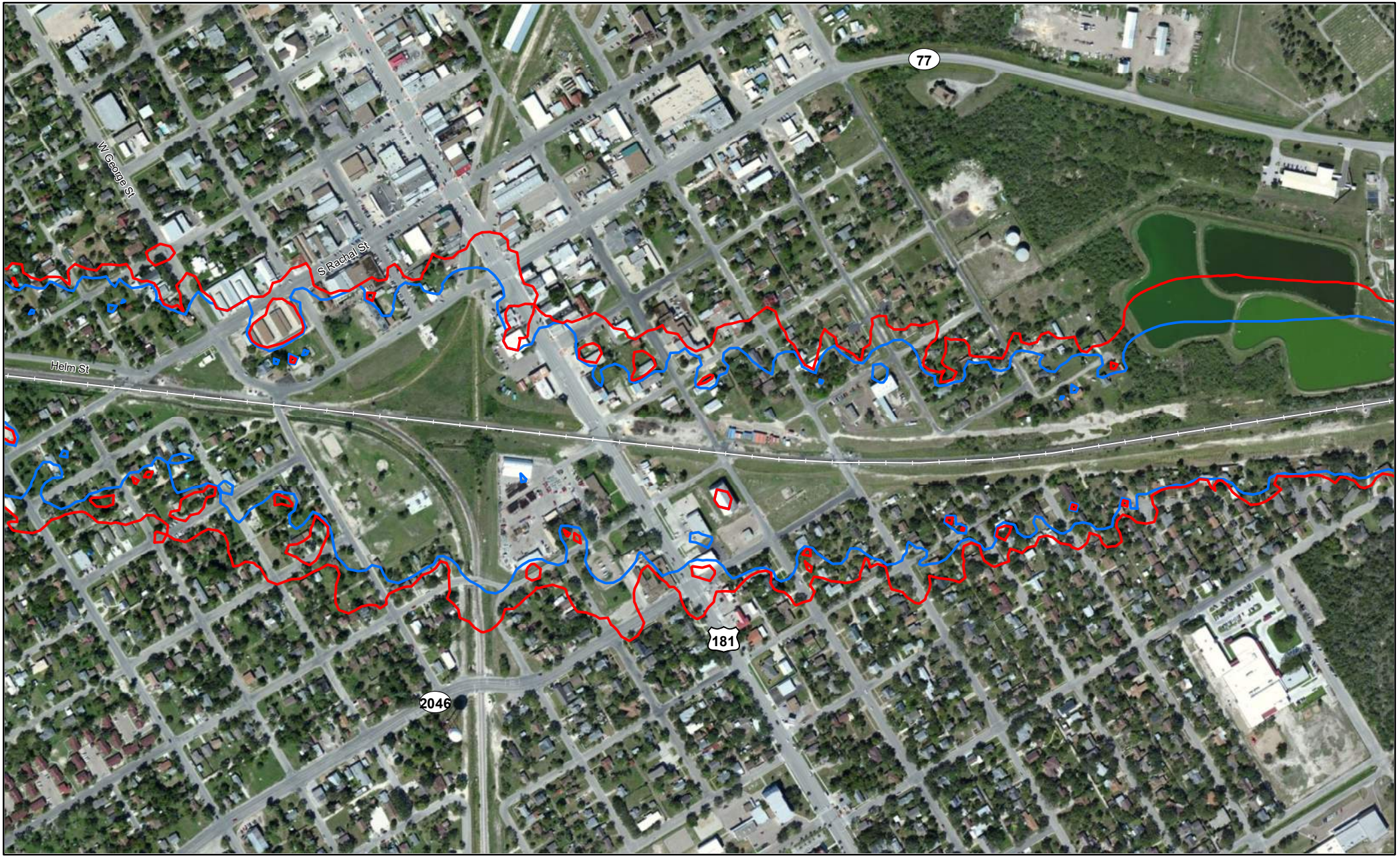
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Noise Contours
San Patricio County, TX

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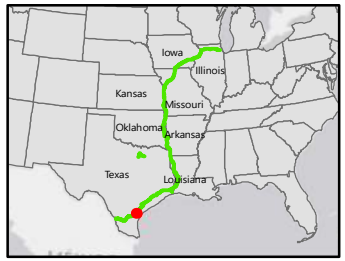
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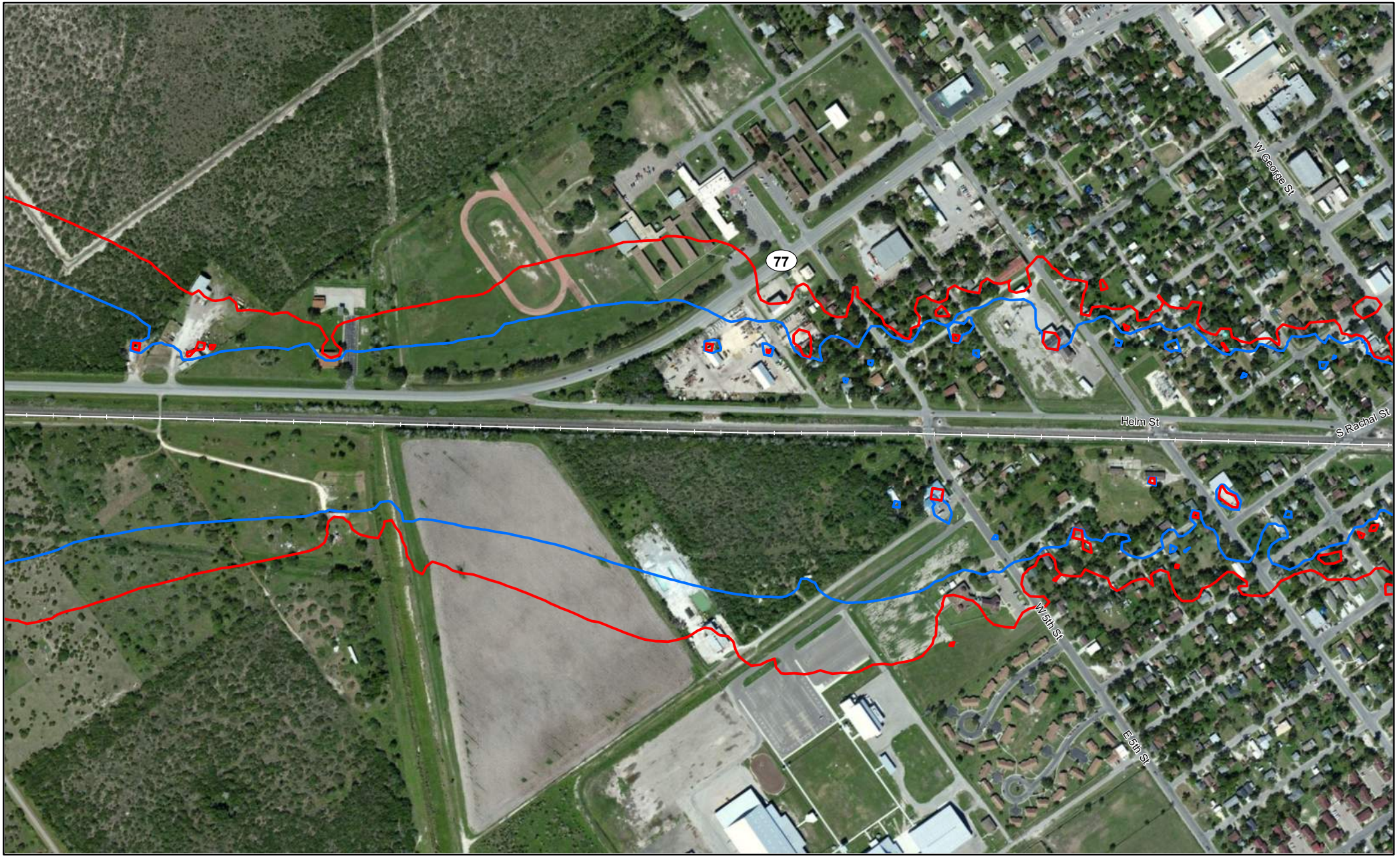
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Noise Contours
San Patricio County, TX

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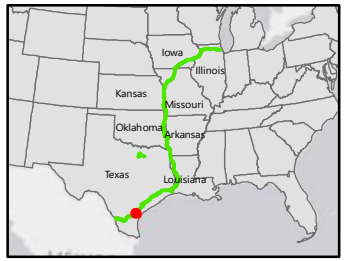
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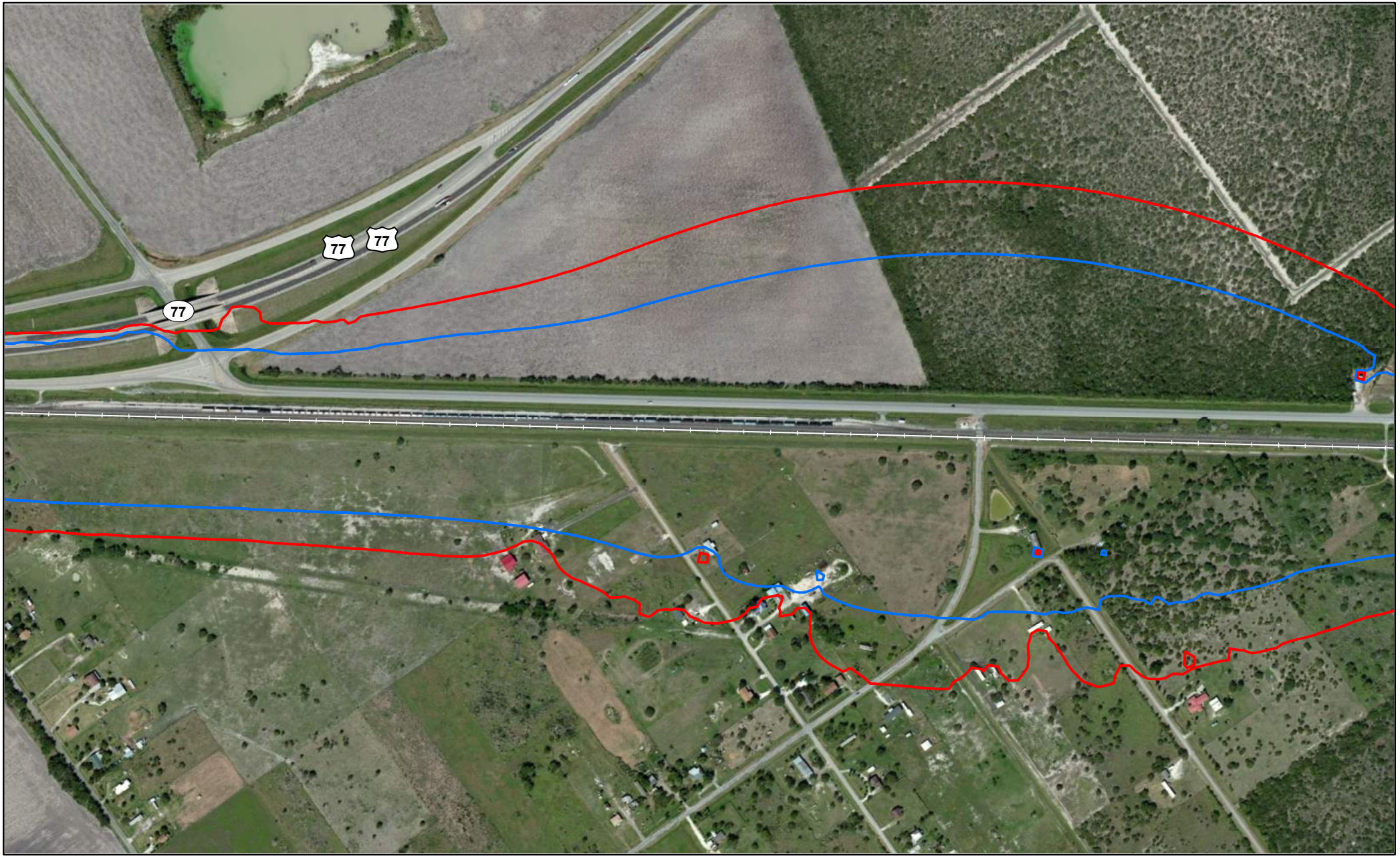
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Noise Contours
San Patricio County, TX

Miles
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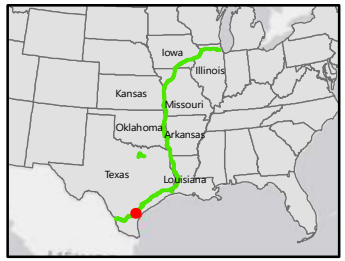
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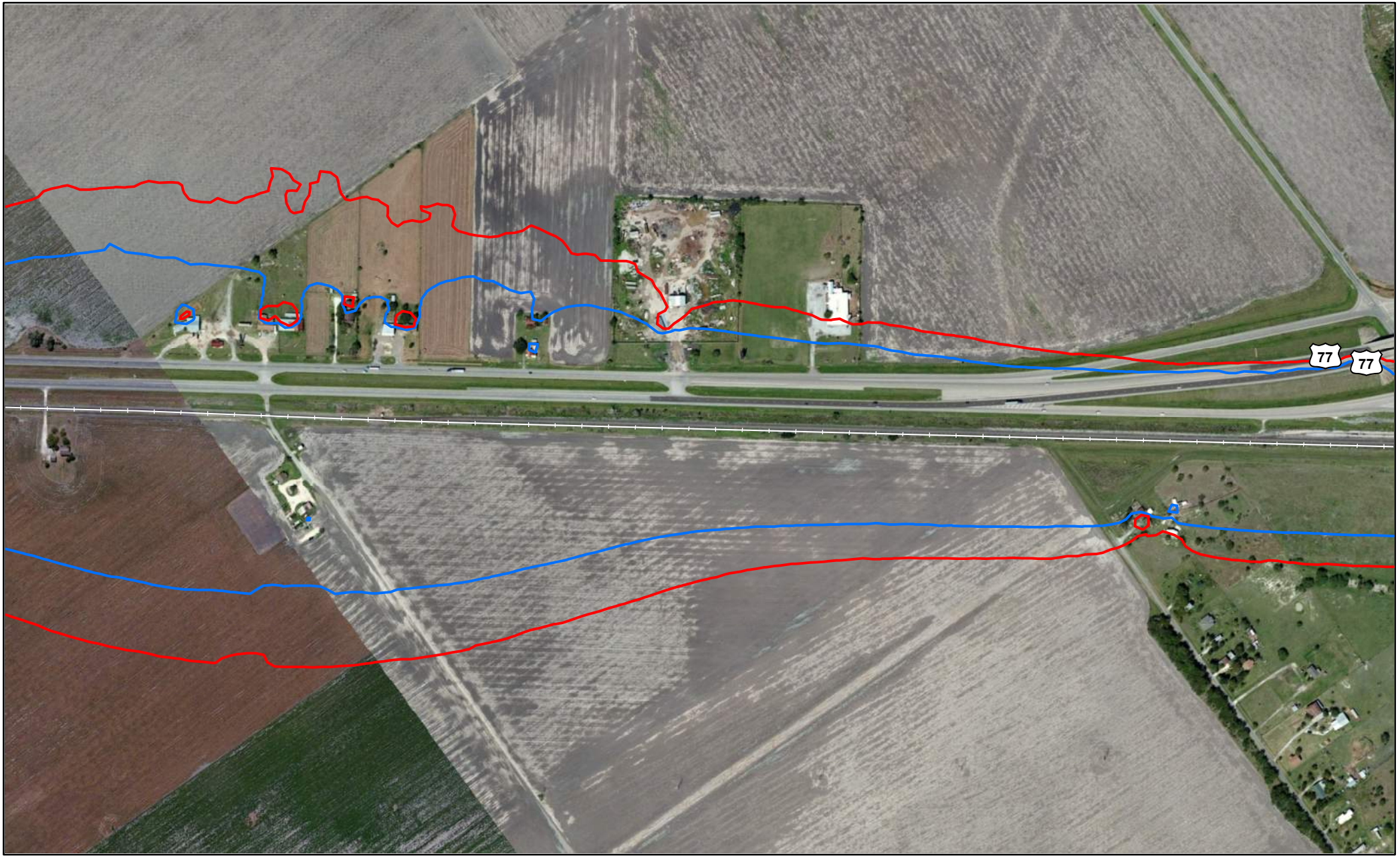
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Noise Contours
San Patricio County, TX

Miles
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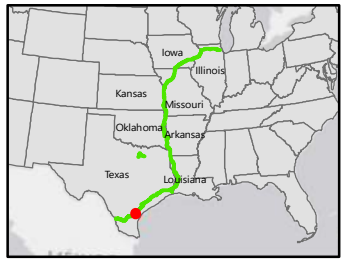
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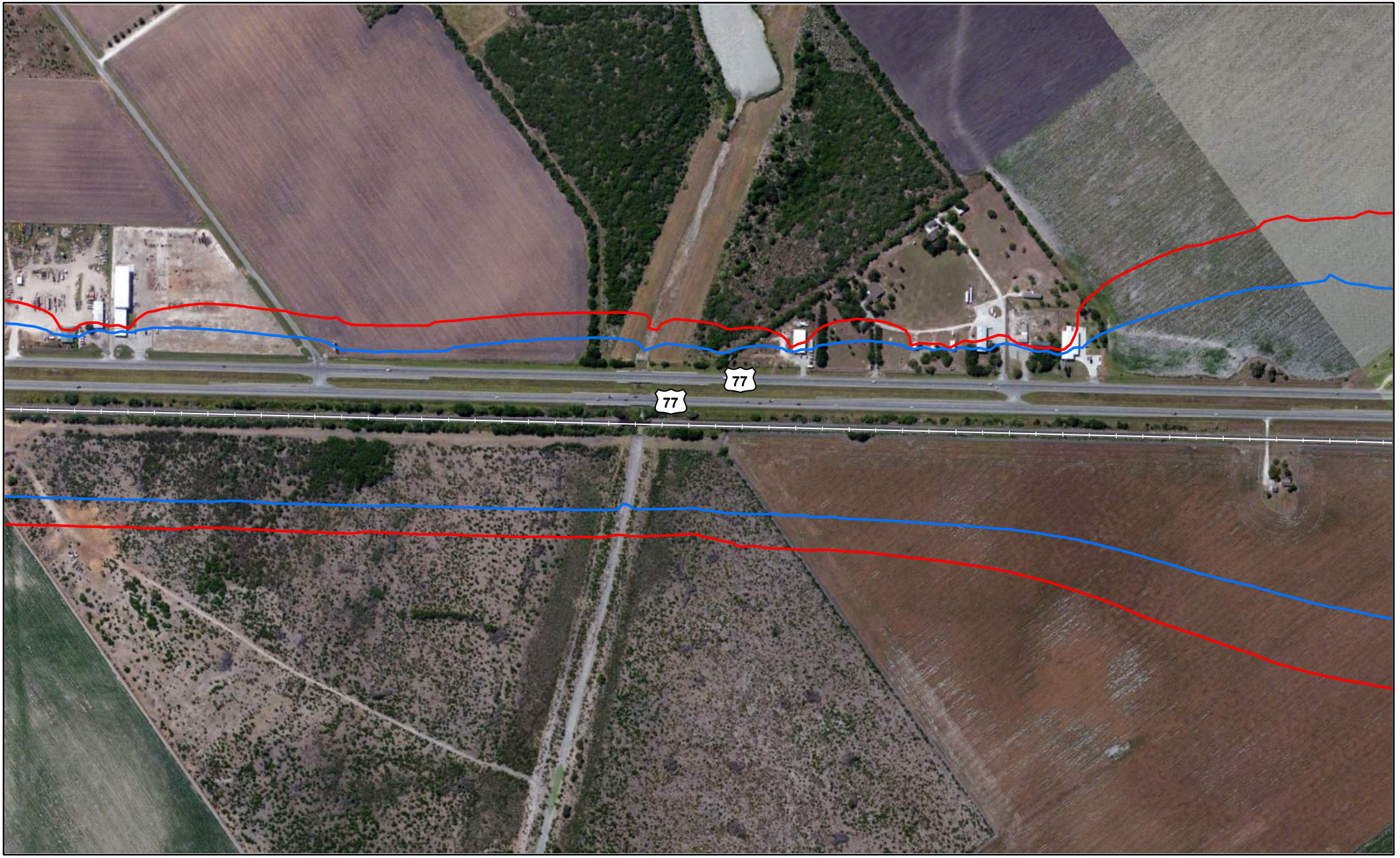
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Noise Contours
San Patricio County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



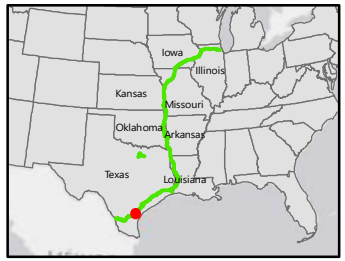
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Noise Contours
San Patricio County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



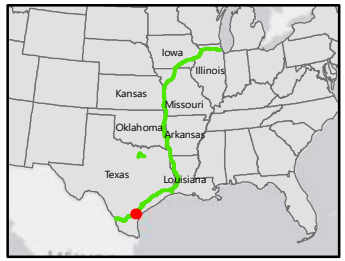
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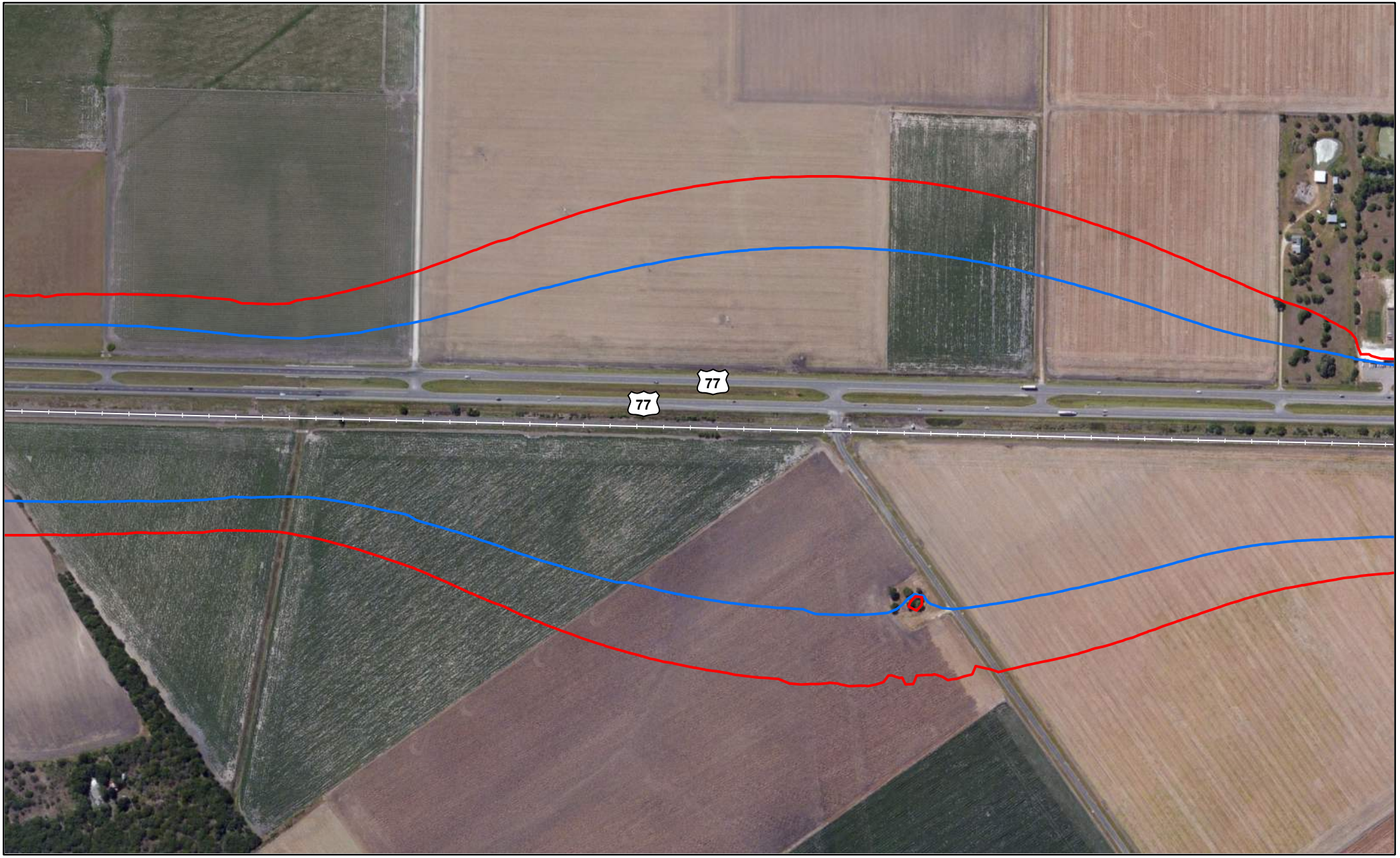
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Noise Contours
San Patricio County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



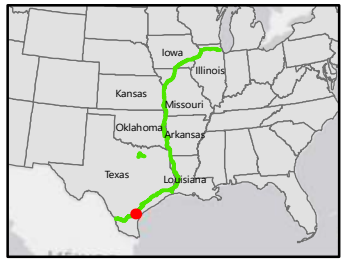
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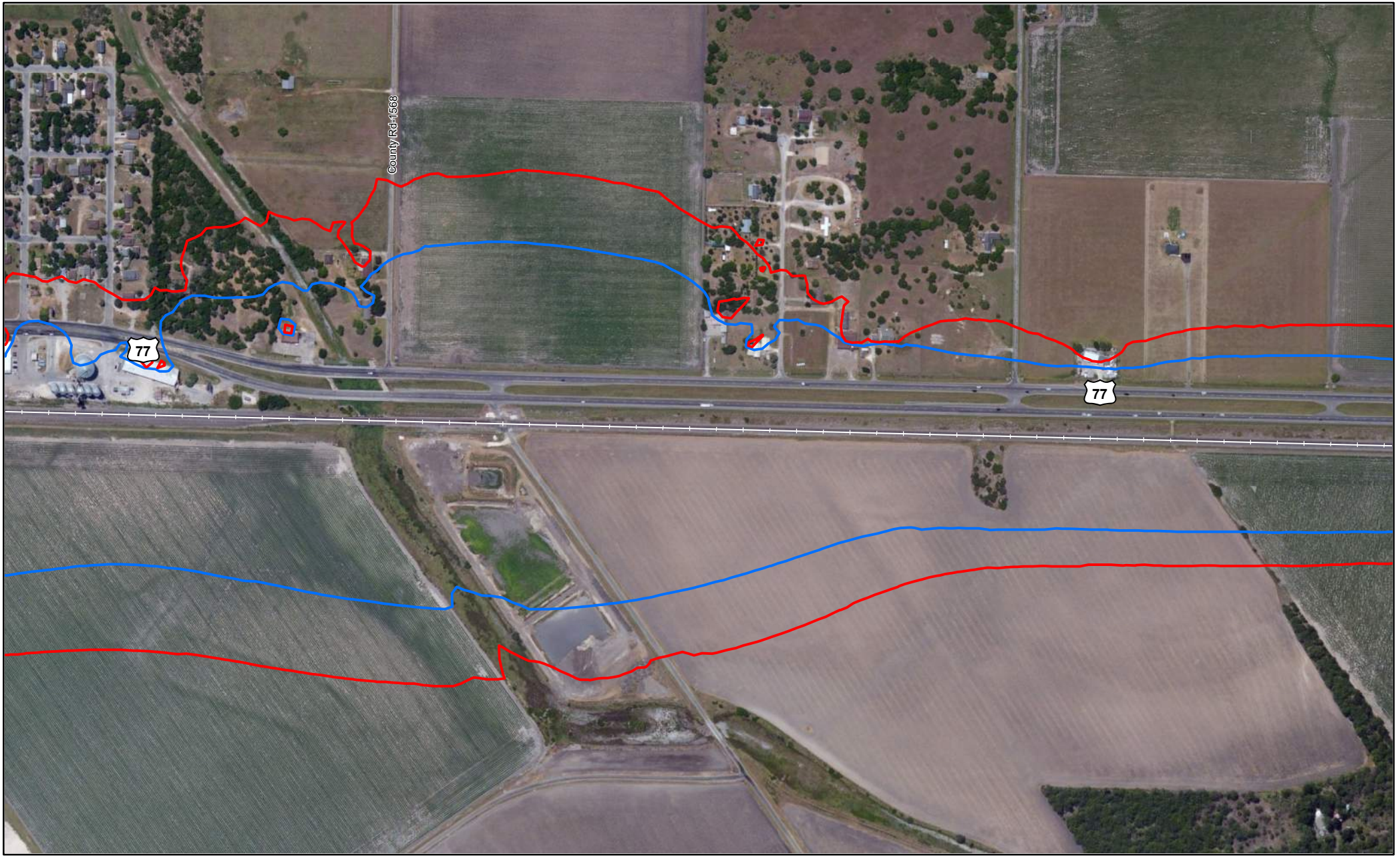
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Noise Contours
San Patricio County, TX

Miles
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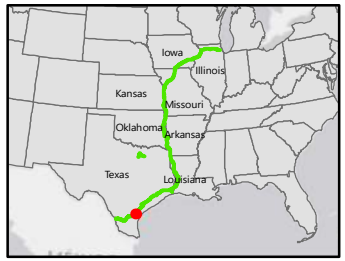
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Noise Contours
San Patricio County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



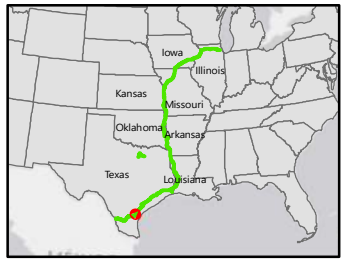
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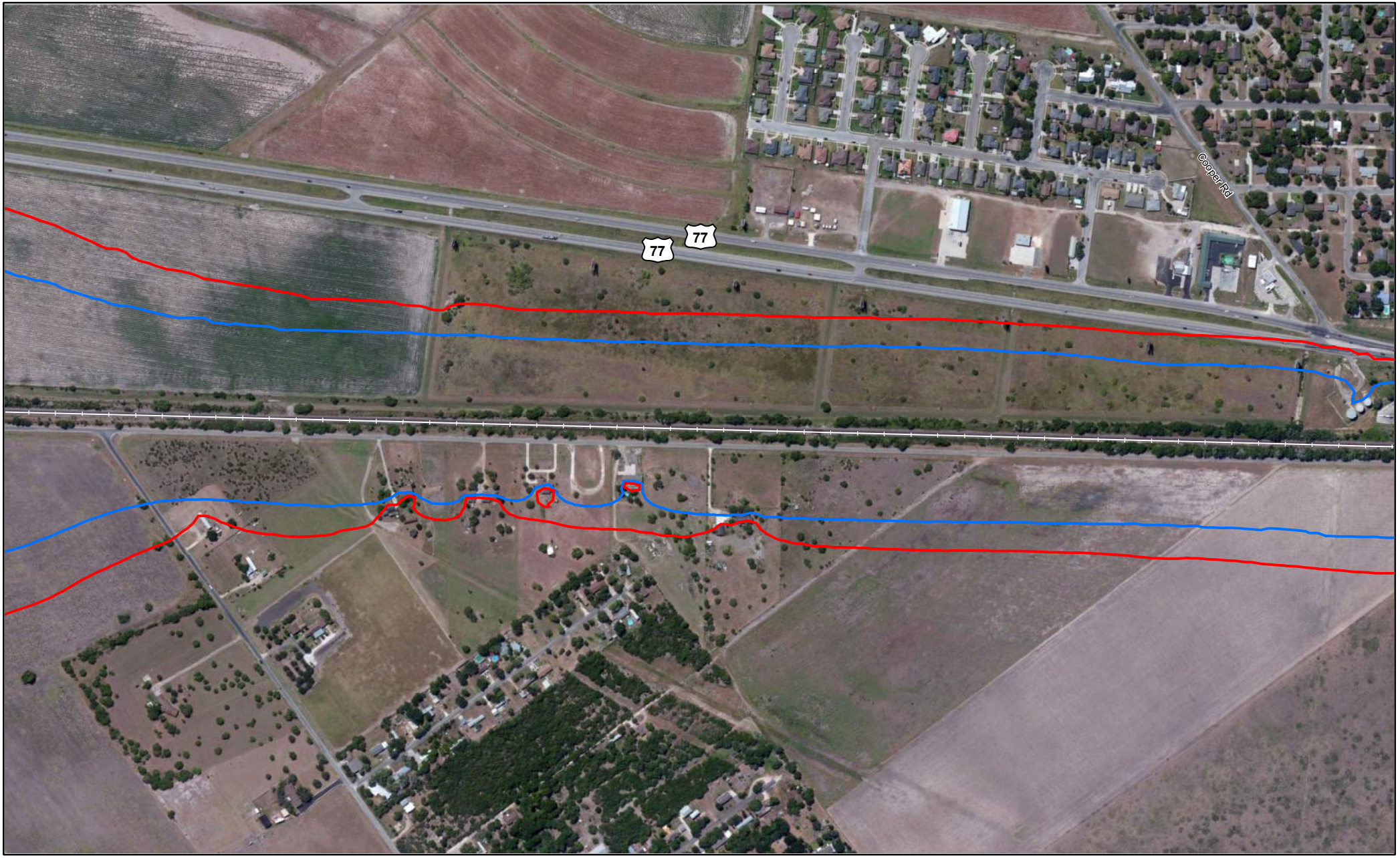
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Noise Contours
San Patricio County, TX

Miles
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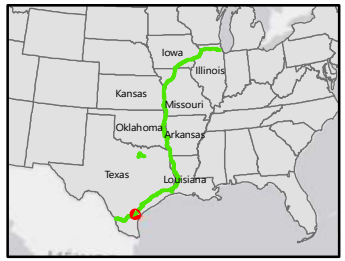
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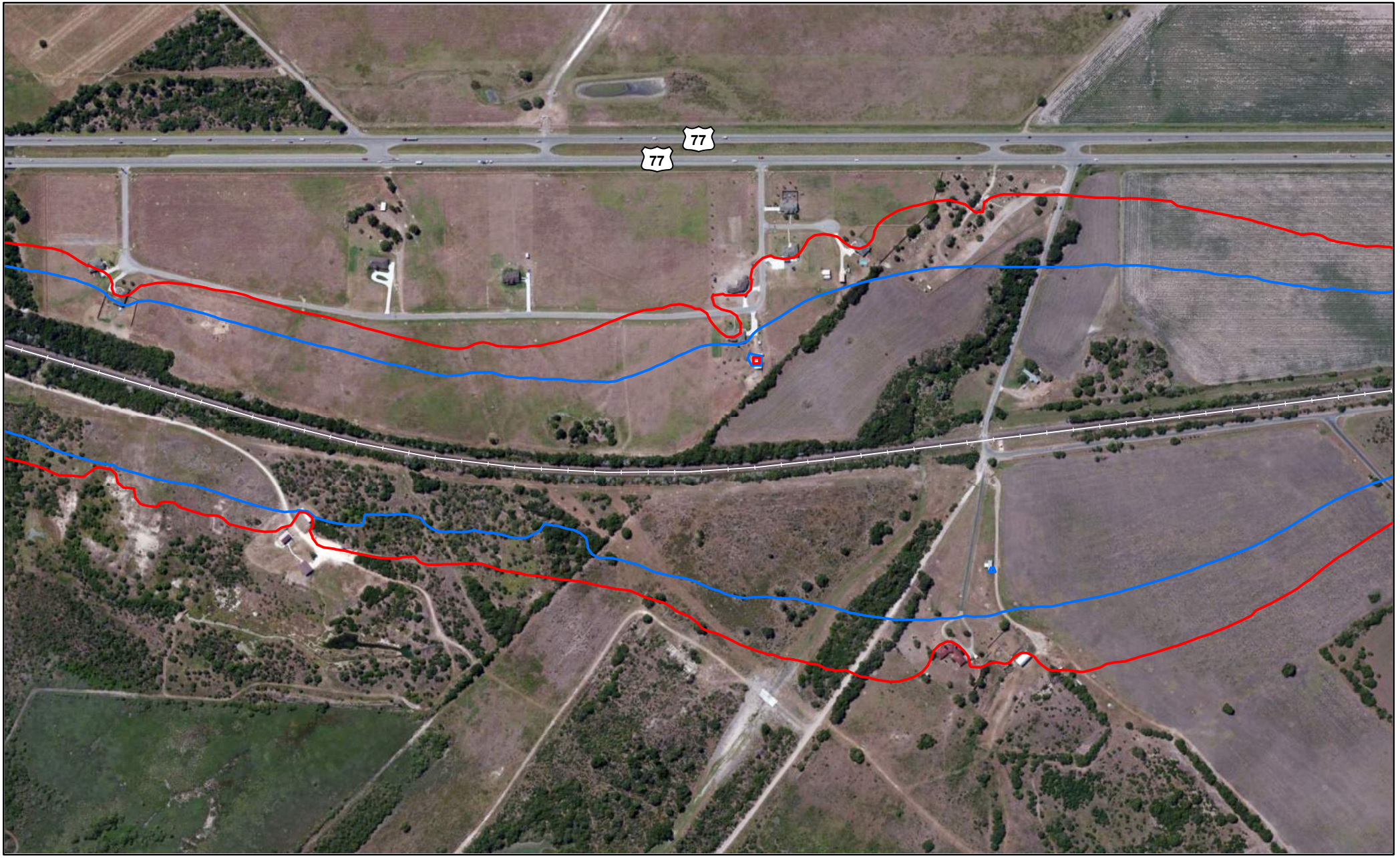
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Noise Contours
San Patricio County, TX

Miles
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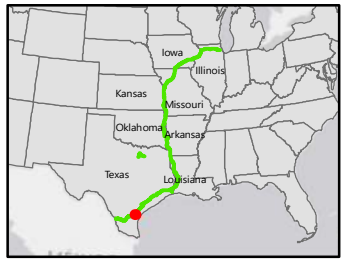
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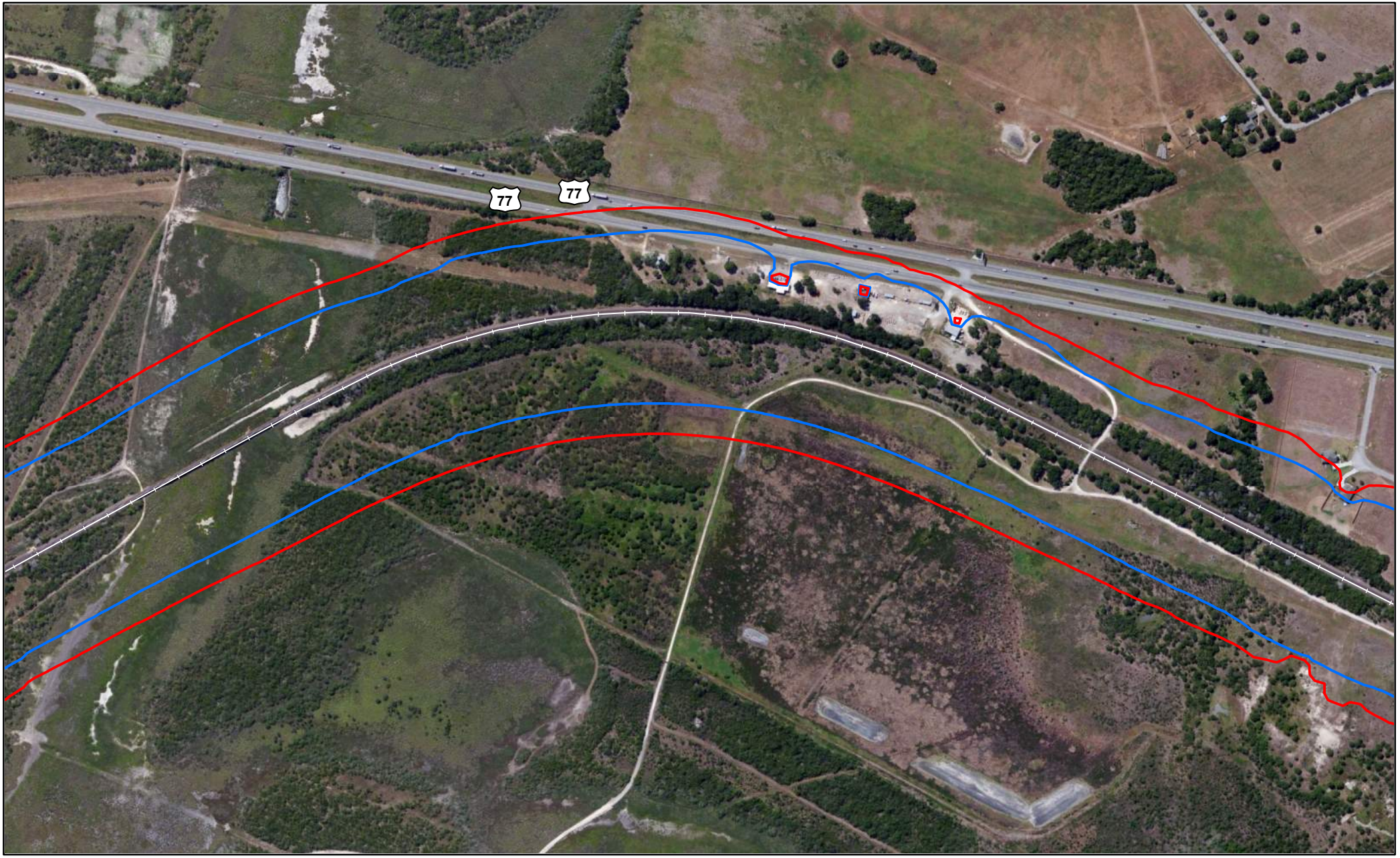
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Noise Contours
San Patricio County, TX

Miles
0 0.05 0.1

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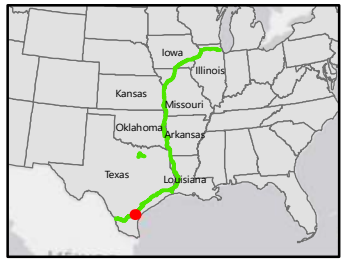
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

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Noise Contours
San Patricio County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



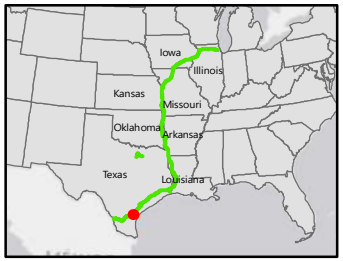
No-Action Alternative Noise (65 Ldn)

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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Nueces County, TX

Miles
0 0.05 0.1



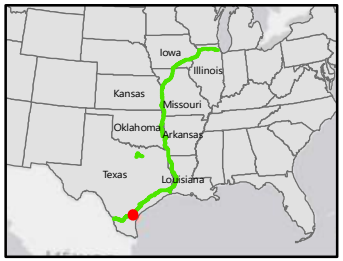
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Tracks

Source: ESRI.



Noise Contours
Nueces County, TX

Miles
0 0.05 0.1



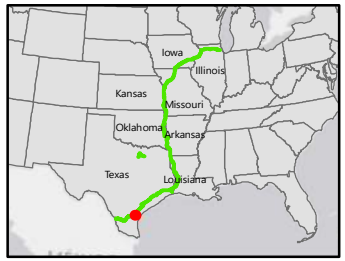
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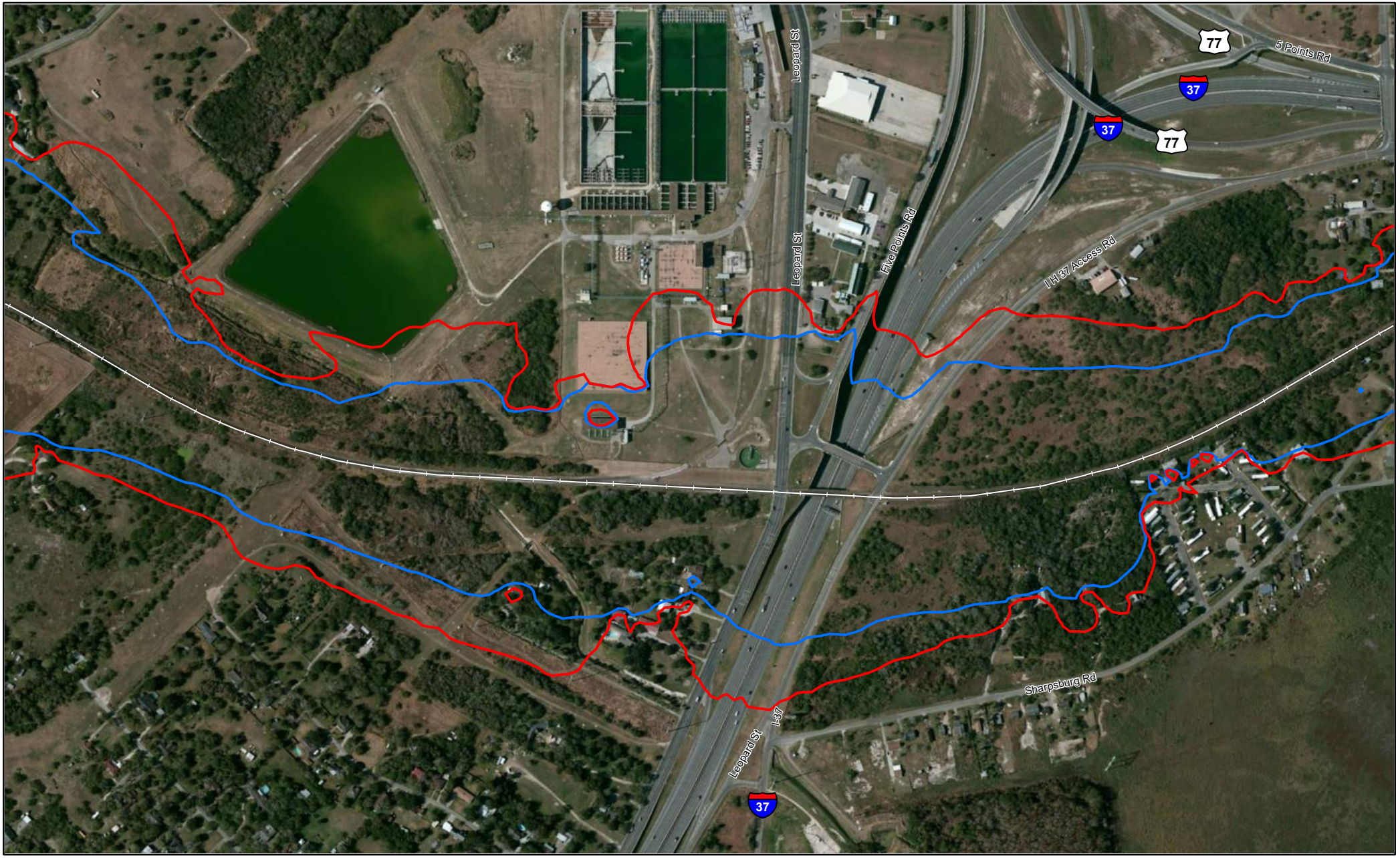
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Noise Contours
Nueces County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



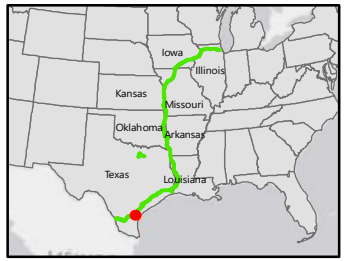
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Nueces County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



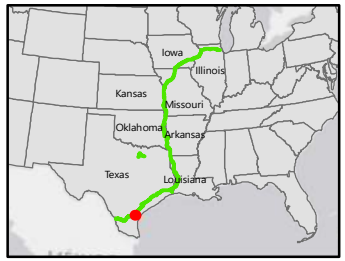
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Nueces County, TX

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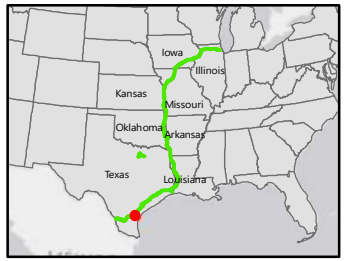
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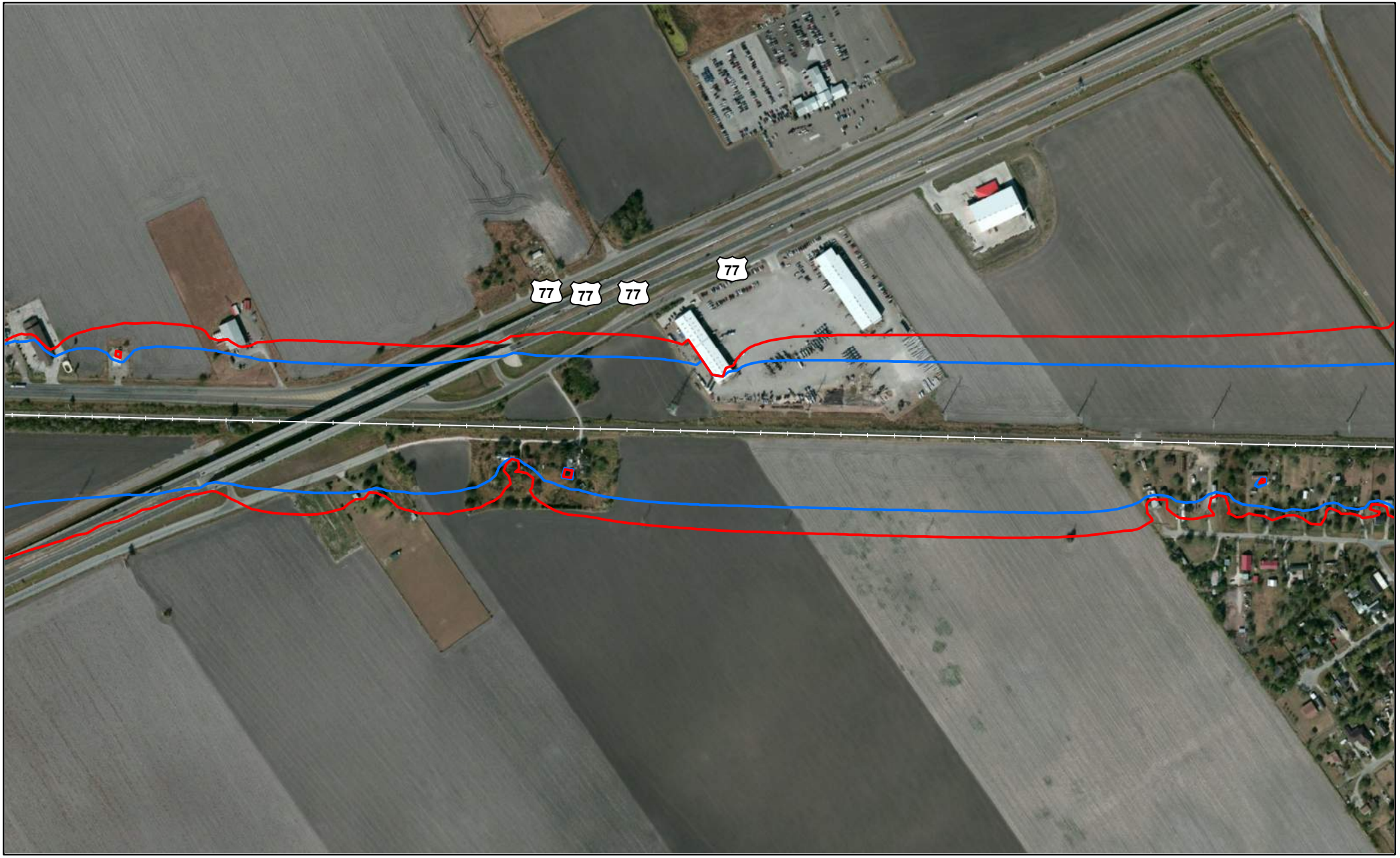
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Noise Contours
Nueces County, TX

Miles
0 0.05 0.1



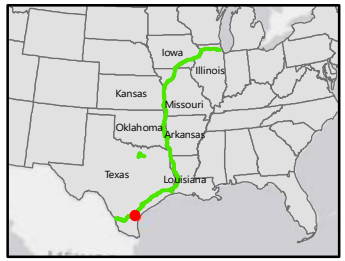
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Nueces County, TX

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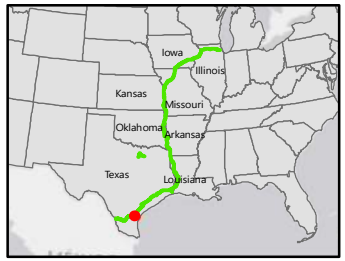
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Nueces County, TX

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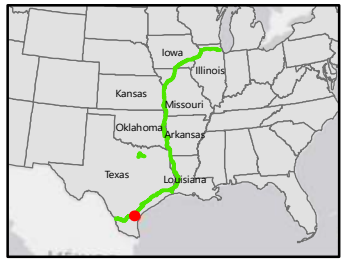
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Nueces County, TX

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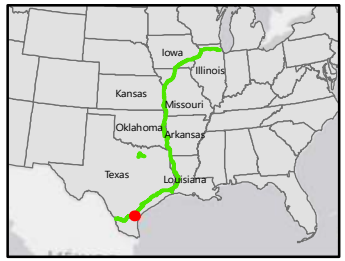
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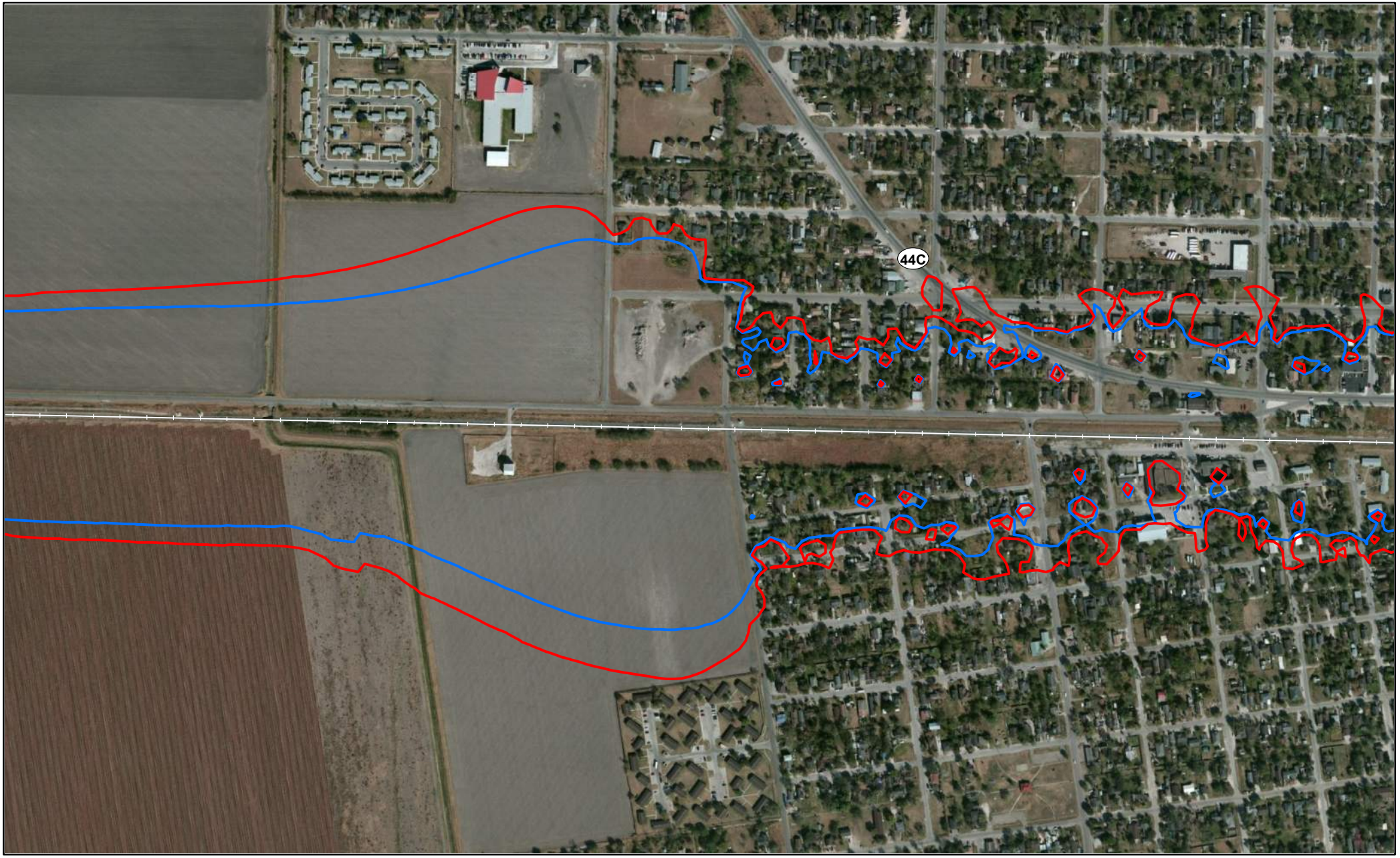
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Noise Contours
Nueces County, TX

Miles
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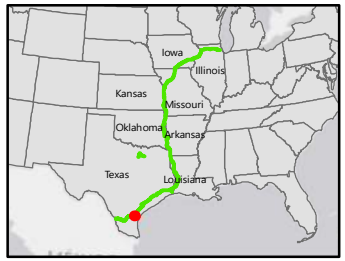
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Nueces County, TX

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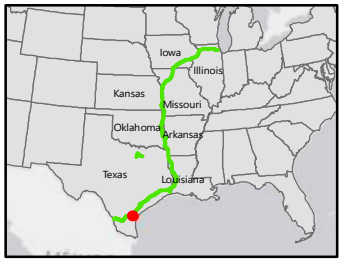
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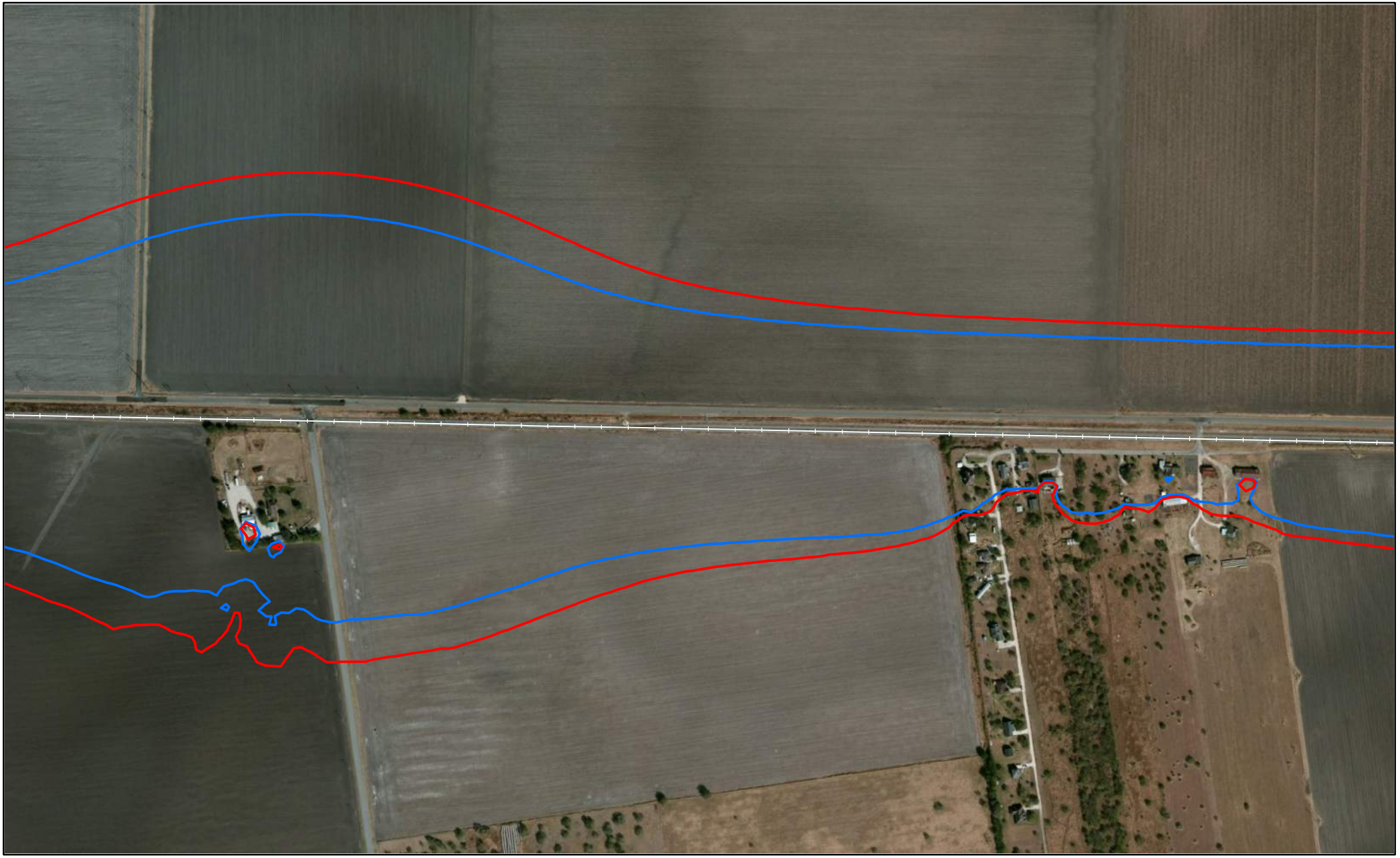
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Noise Contours
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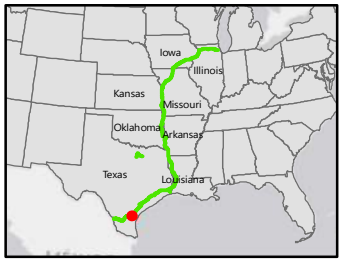
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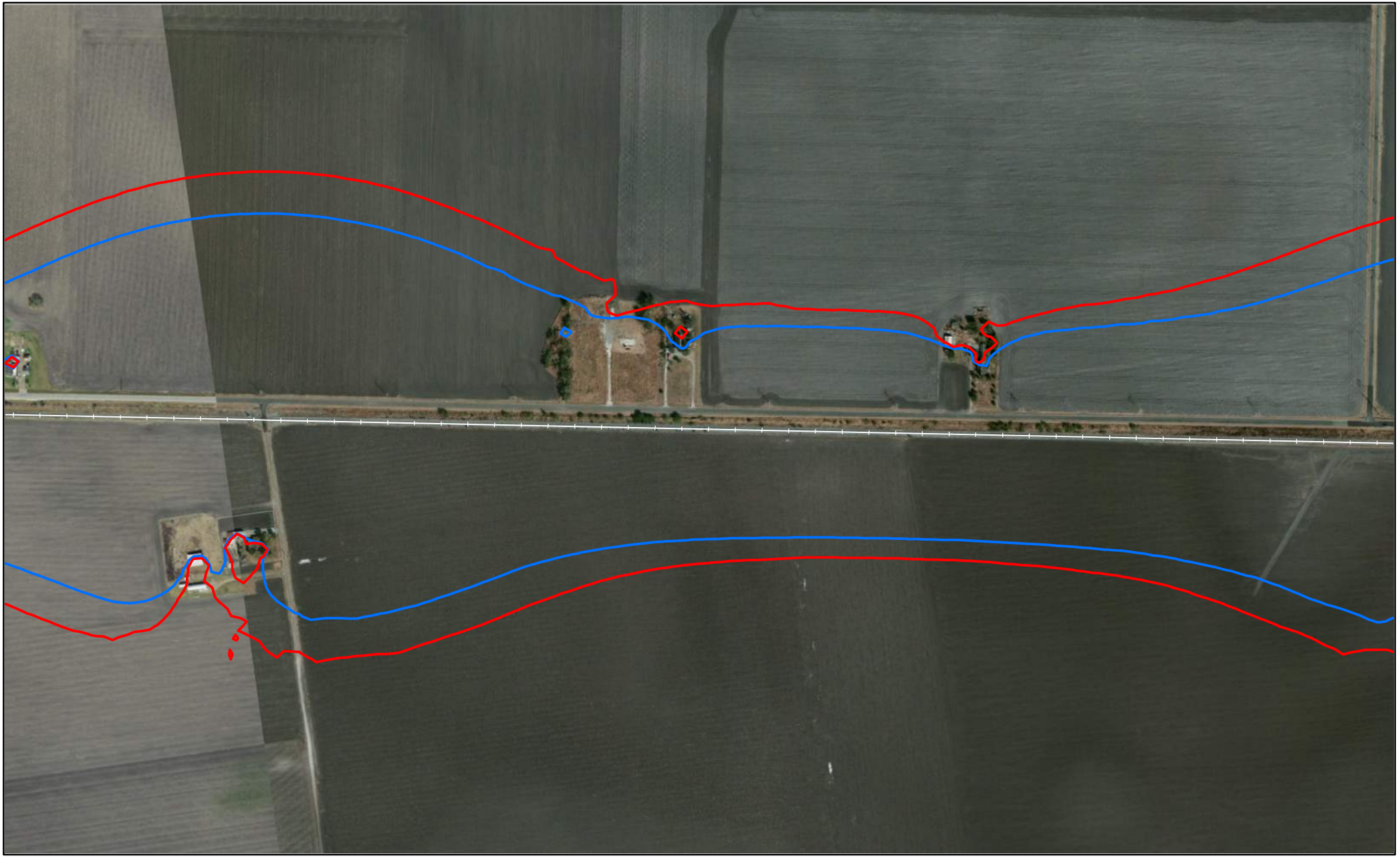
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Noise Contours
Nueces County, TX

Miles
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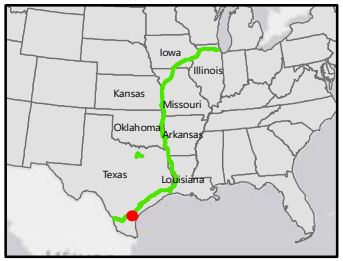
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Nueces County, TX

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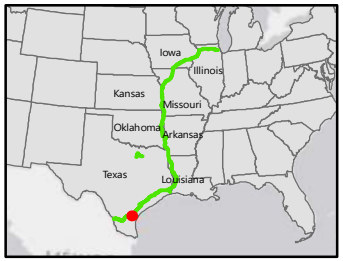
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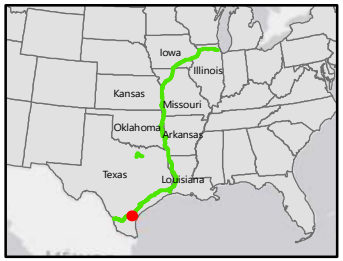
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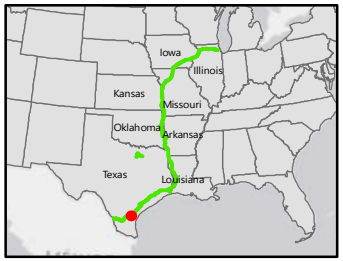
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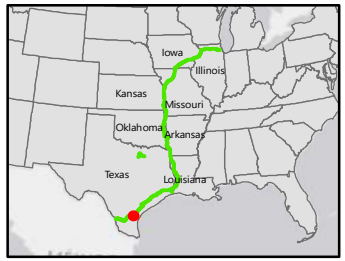
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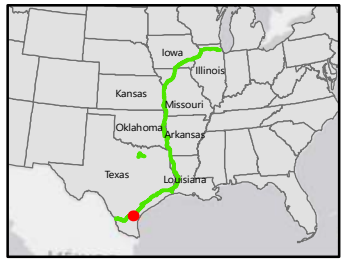
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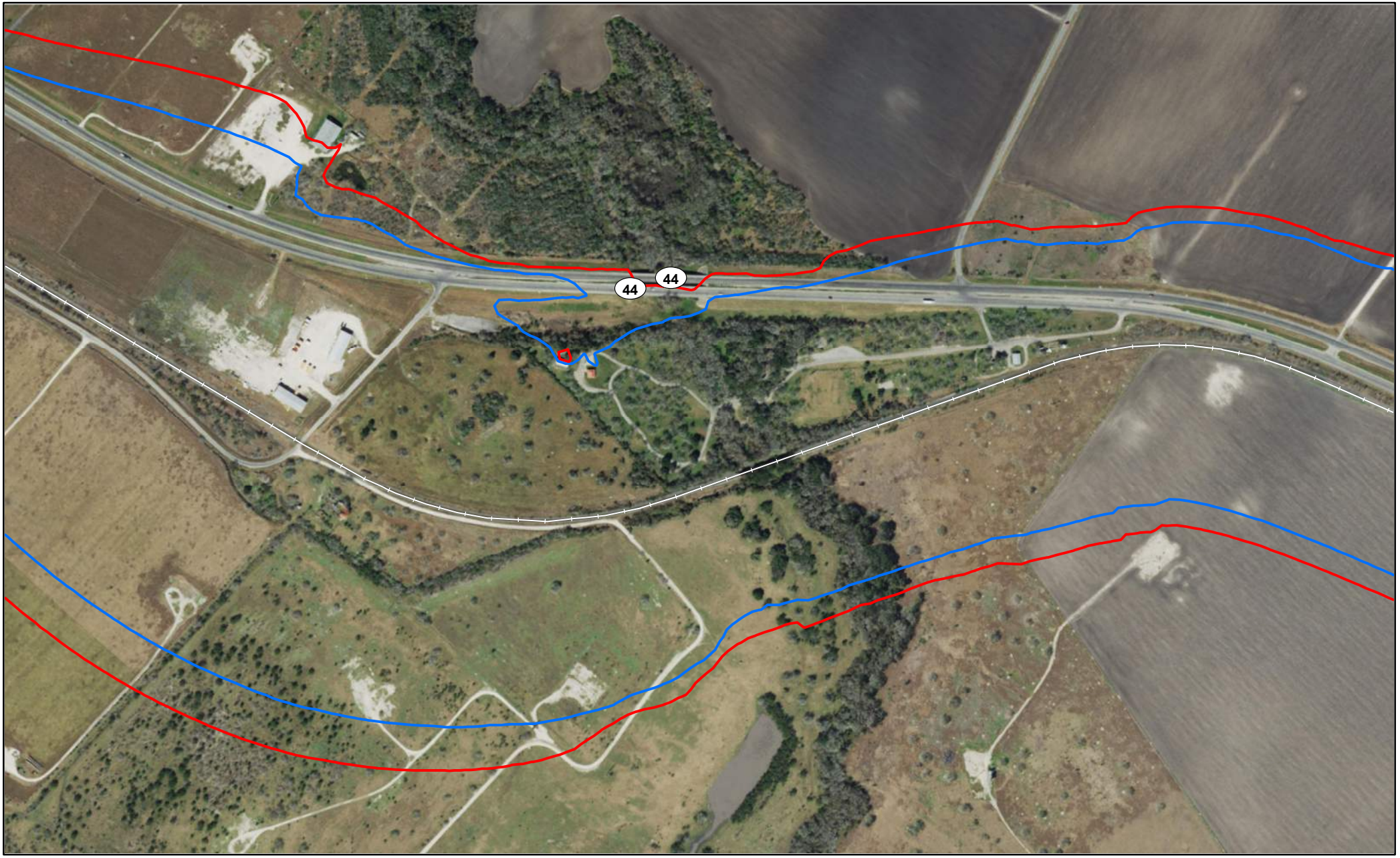
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Noise Contours
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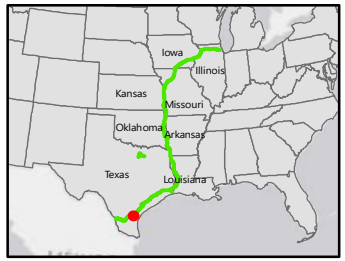
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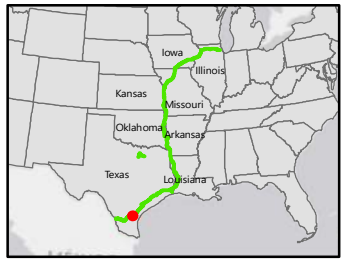
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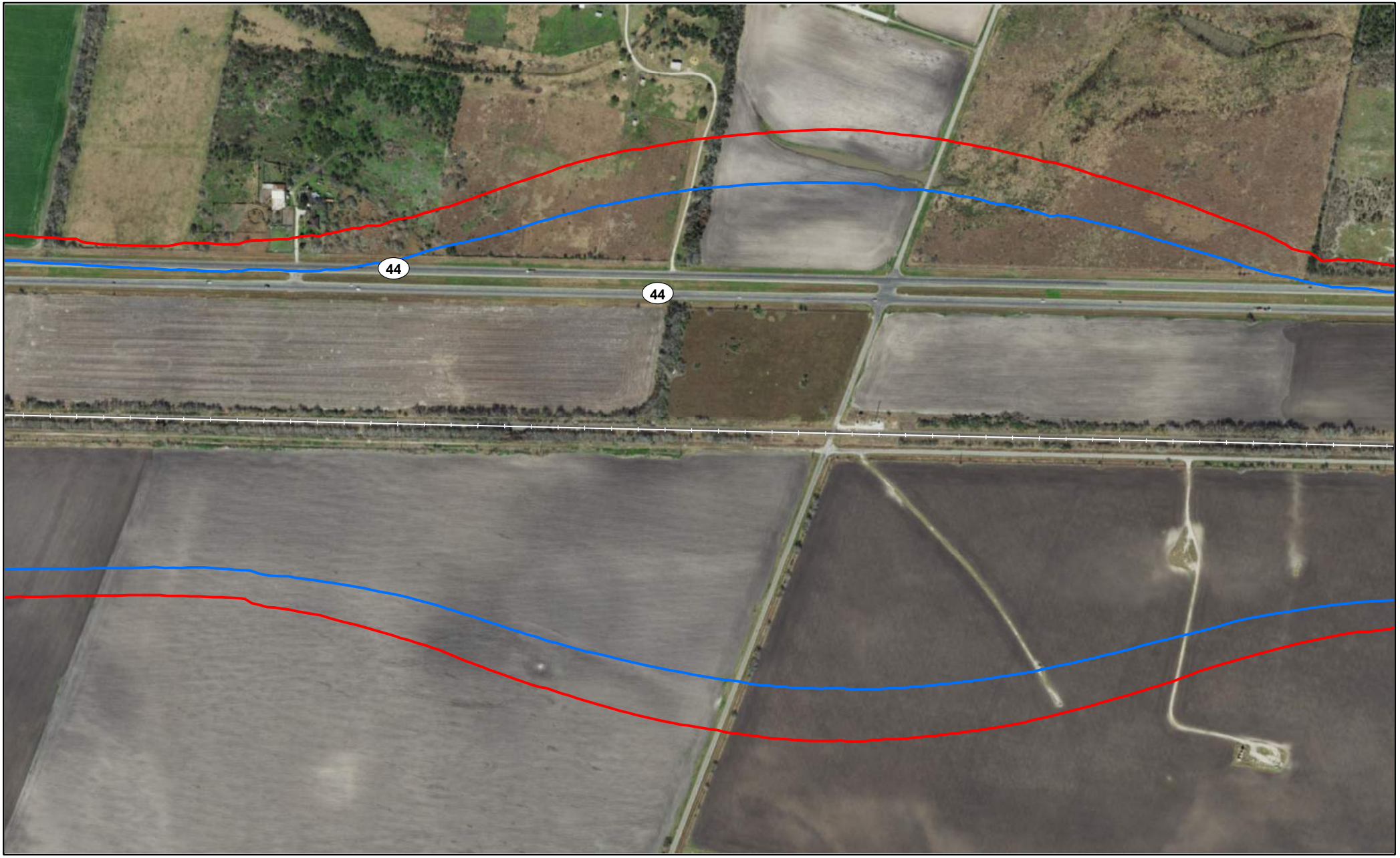
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Nueces County, TX

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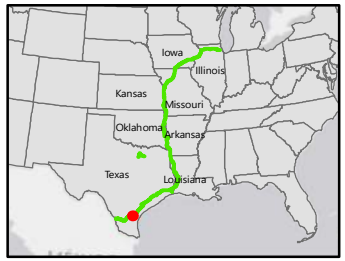
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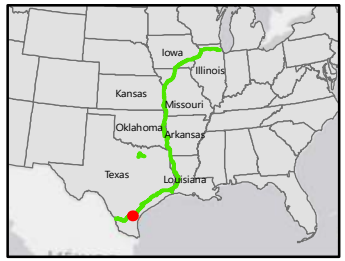
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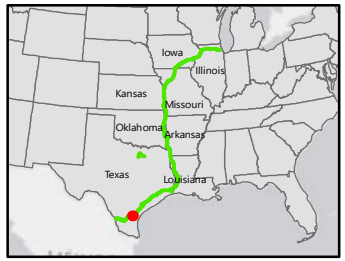
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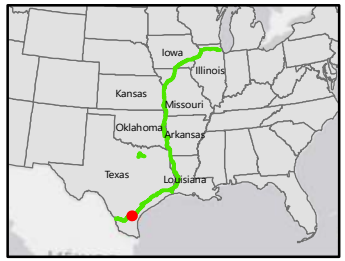
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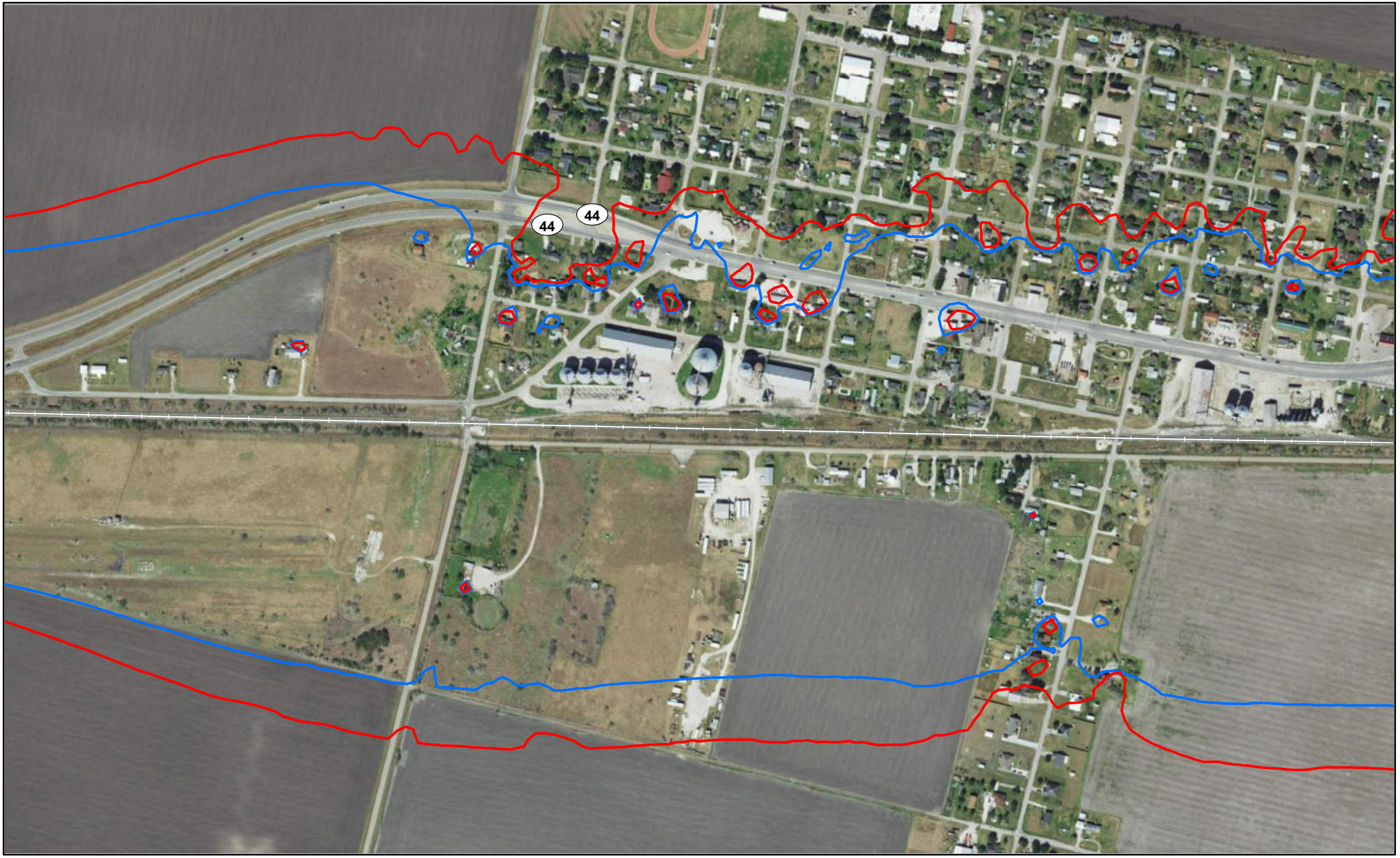
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Nueces County, TX

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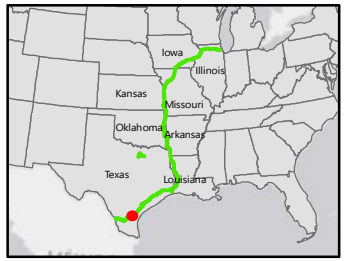
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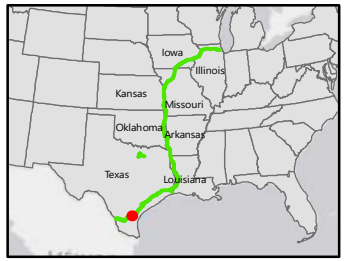
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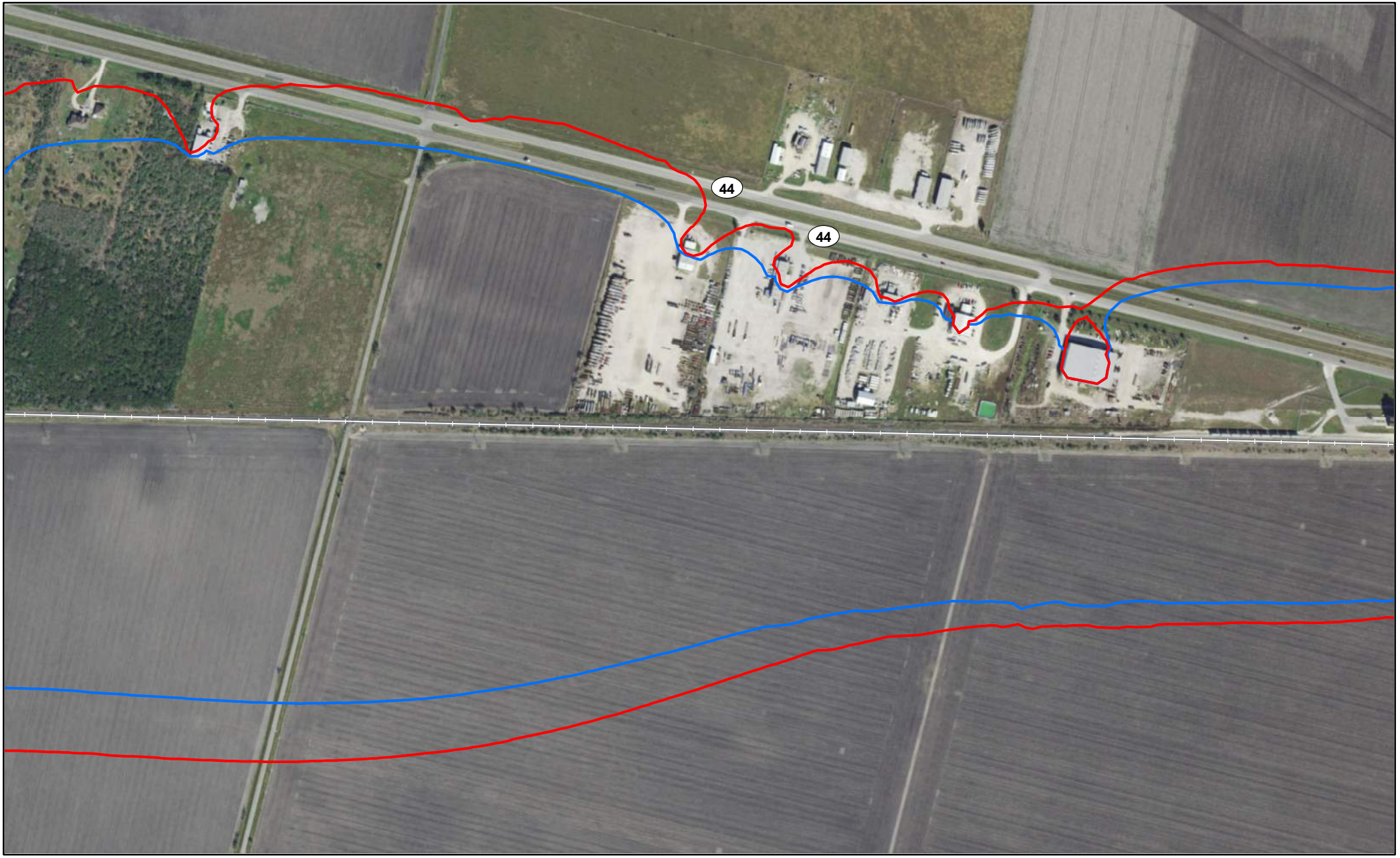
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Noise Contours
Nueces County, TX

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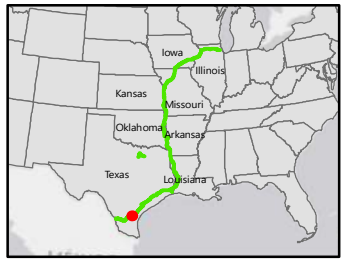
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Noise Contours
Jim Wells County, TX

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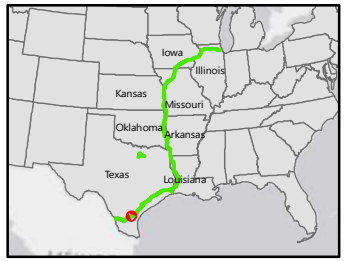
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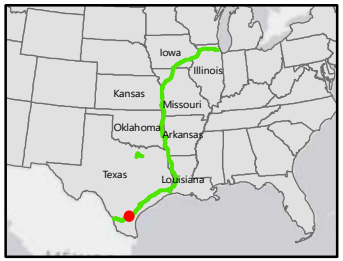
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Noise Contours
Jim Wells County, TX

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Miles
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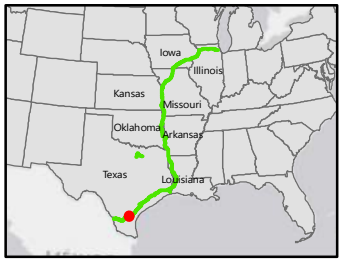
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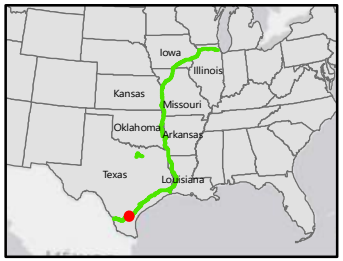
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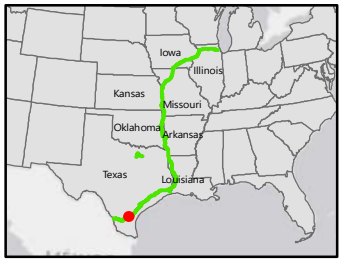
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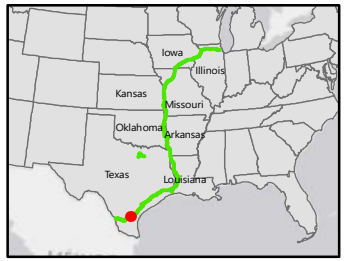
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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

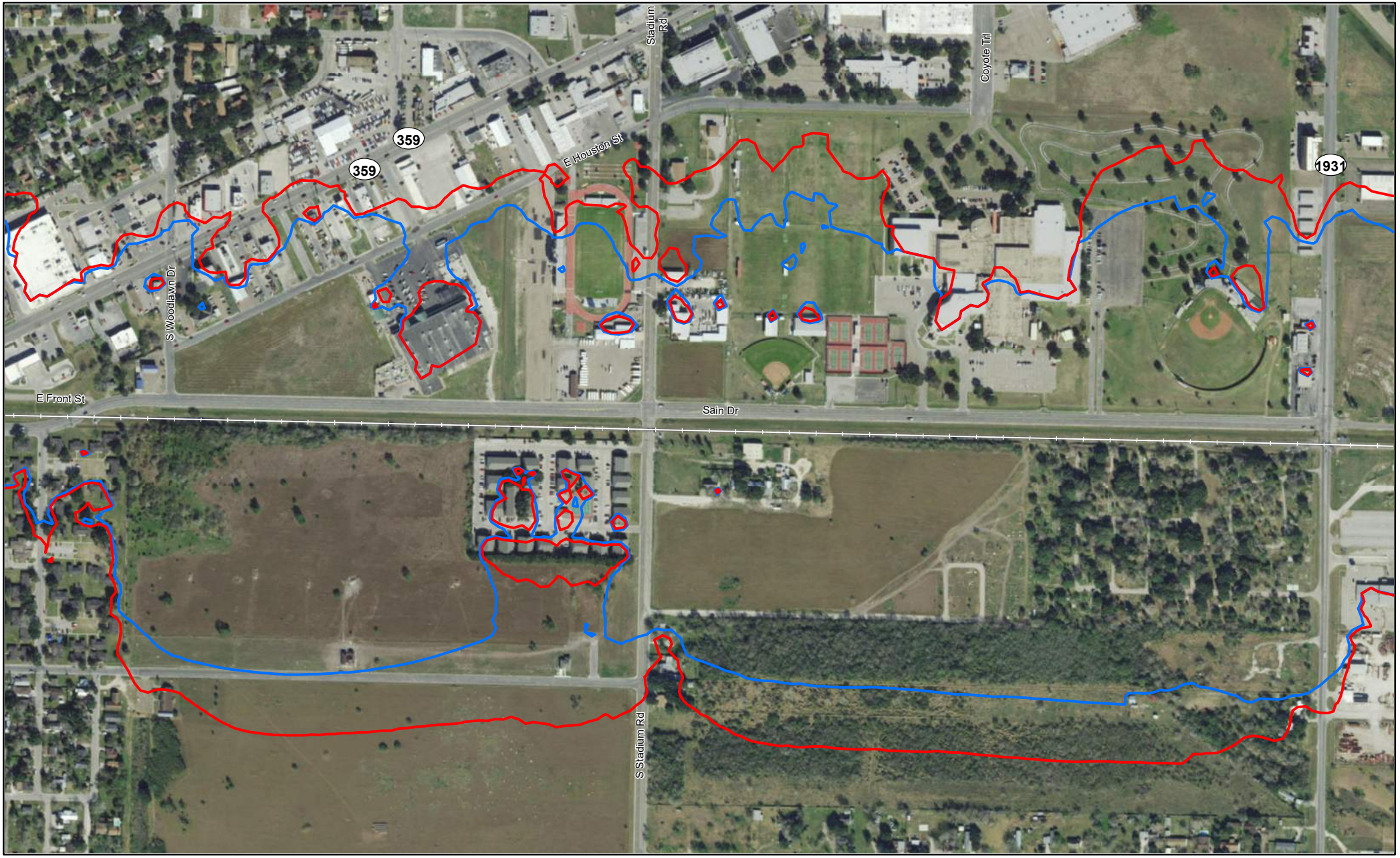
Source: ESRI.



Noise Contours
Jim Wells County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



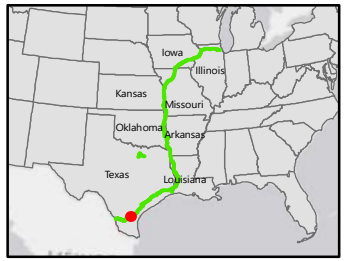
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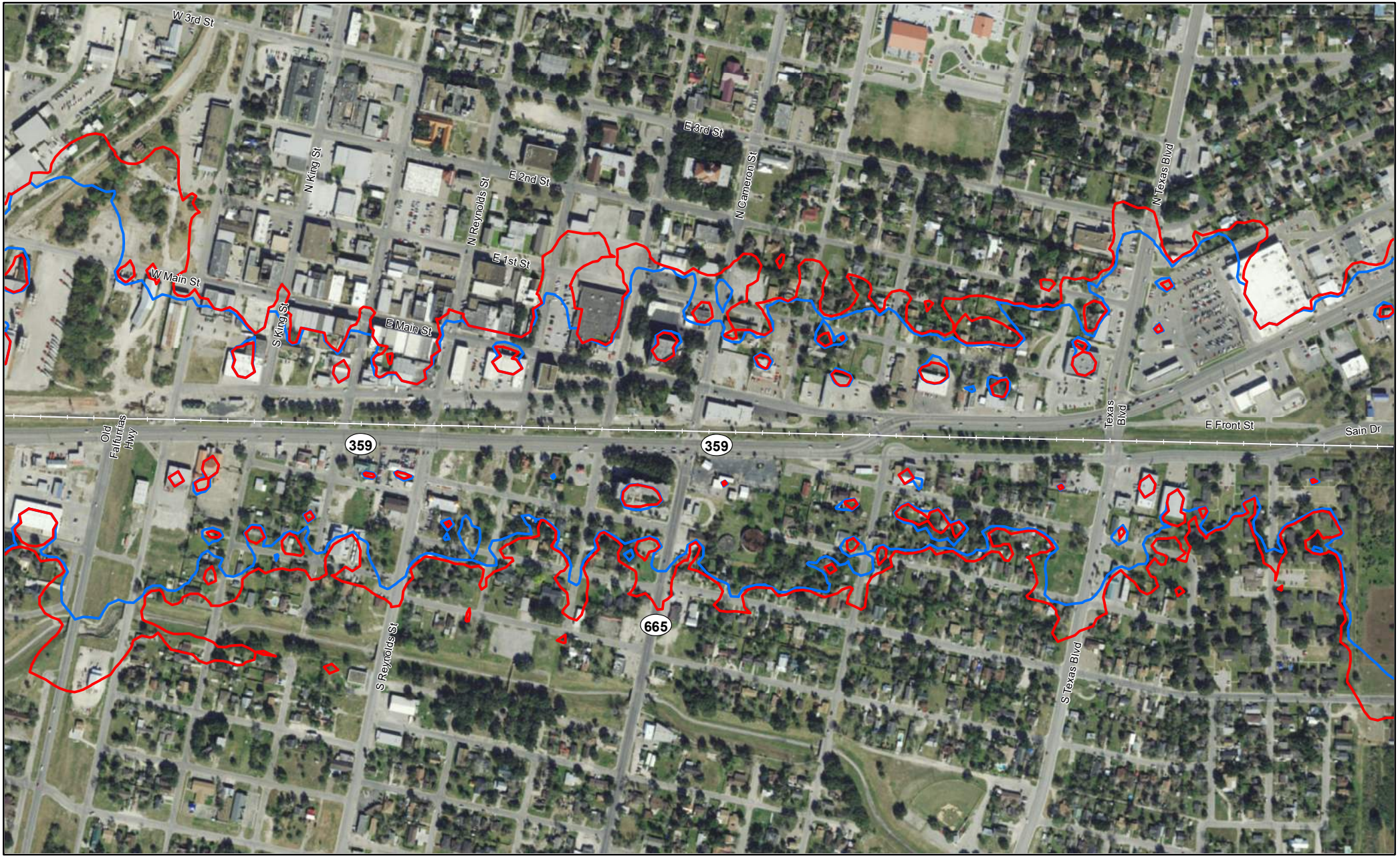
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Noise Contours
Jim Wells County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



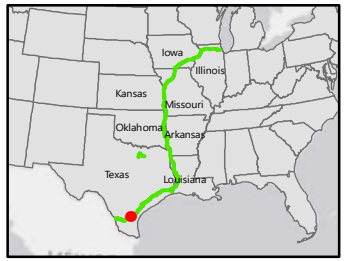
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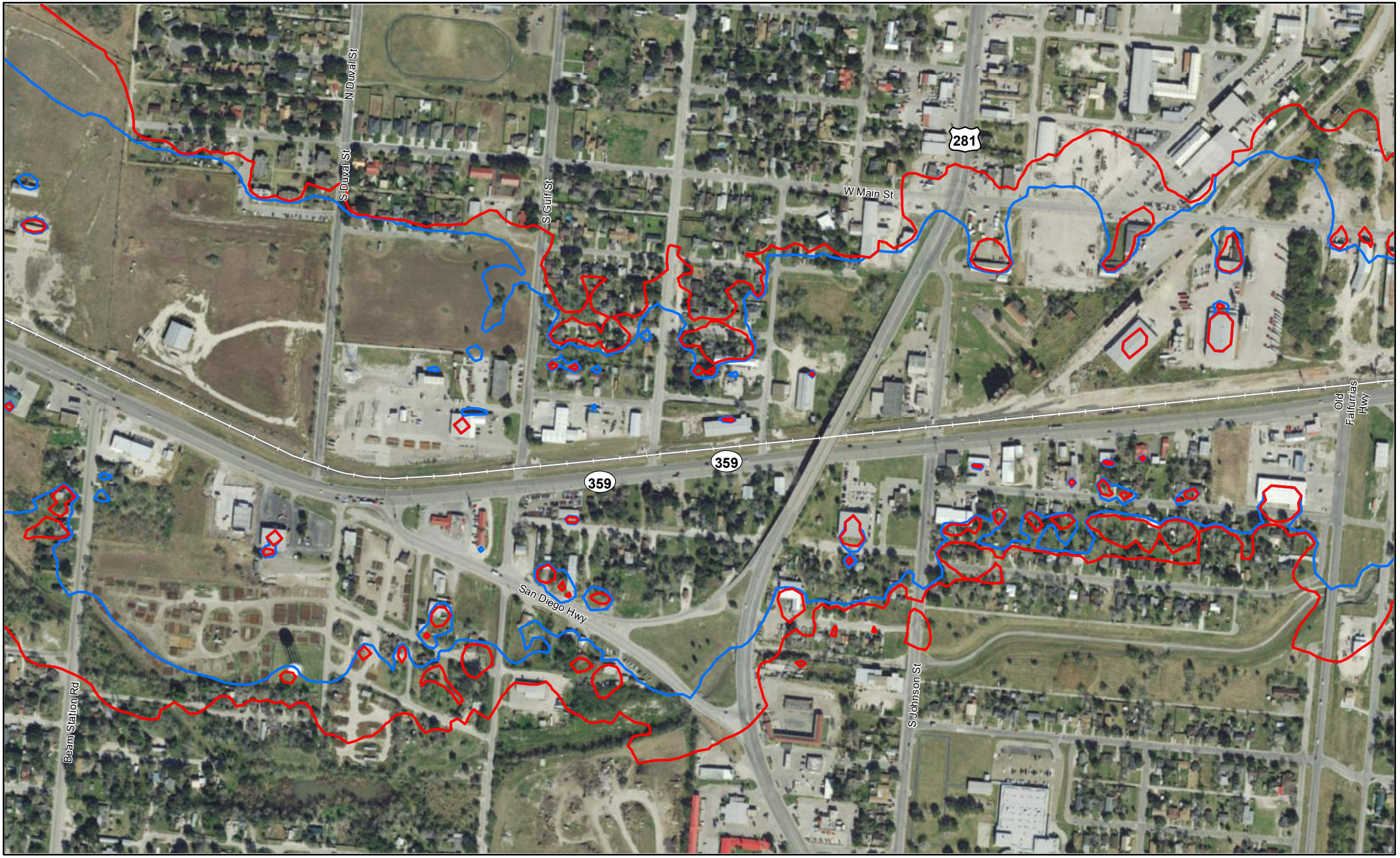
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Noise Contours
Jim Wells County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



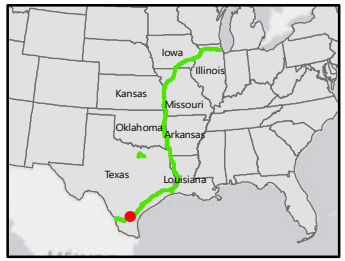
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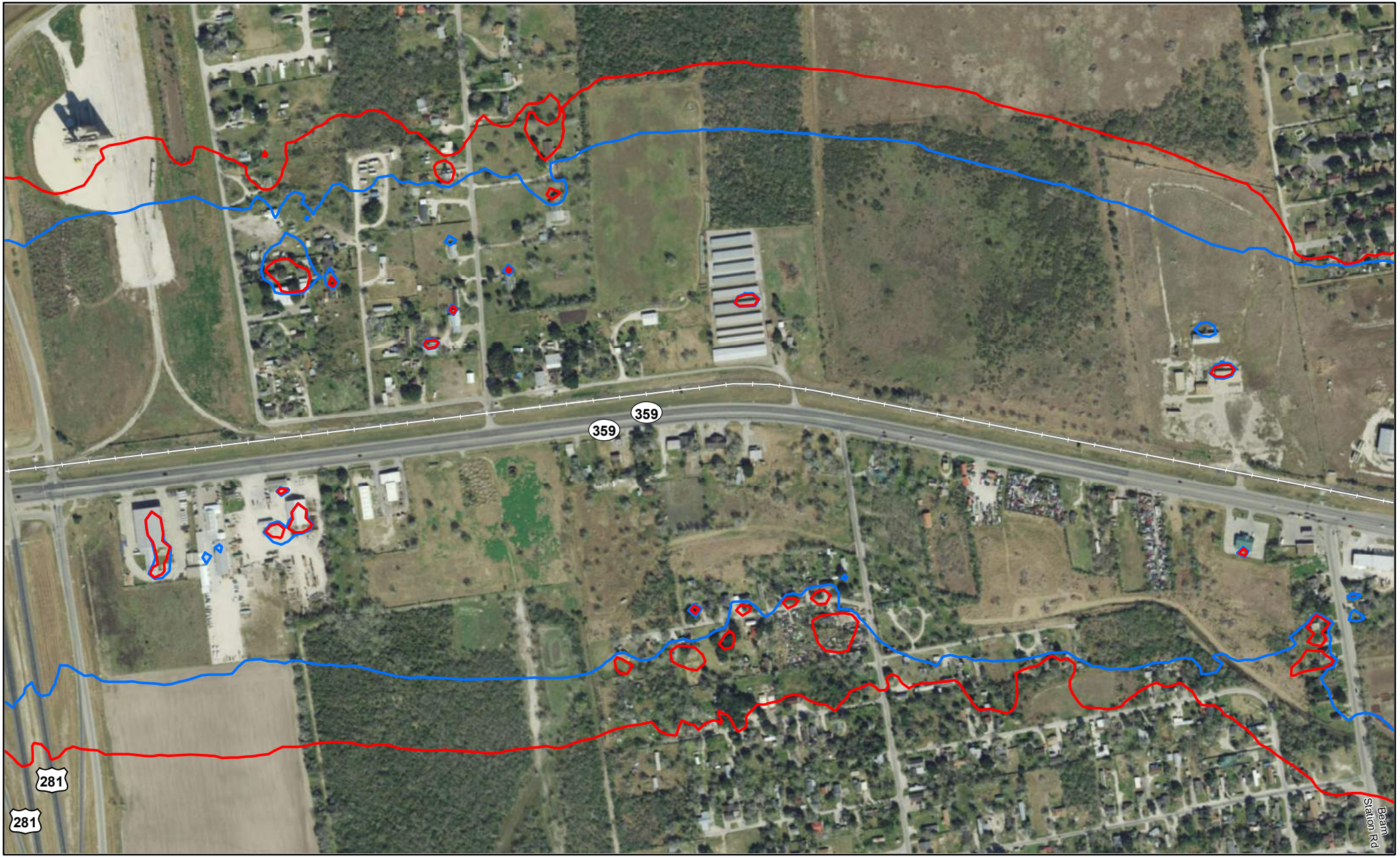


Noise Contours
Jim Wells County, TX

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



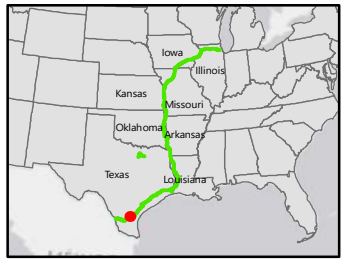
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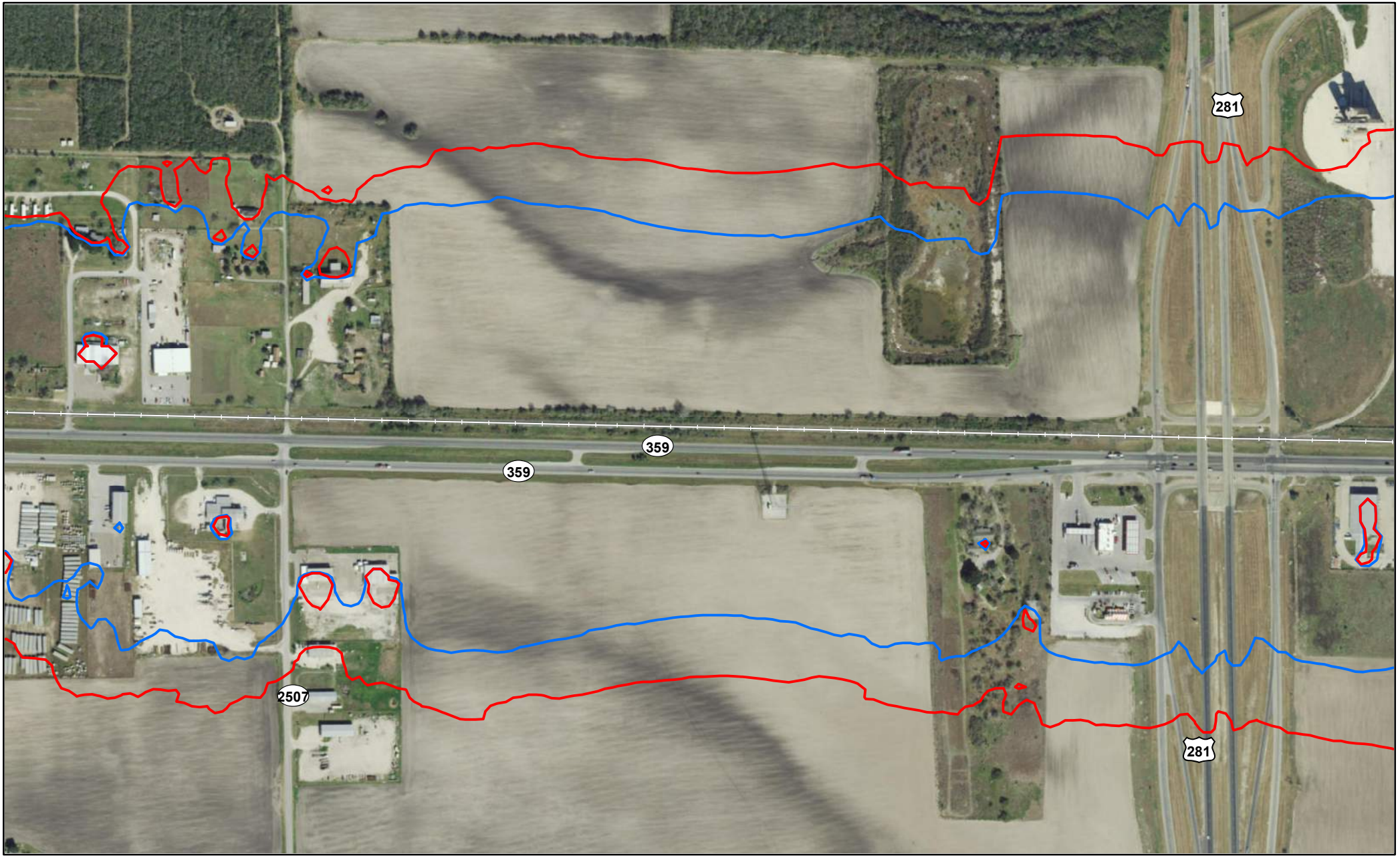
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Noise Contours
Jim Wells County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



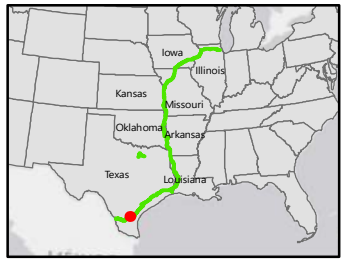
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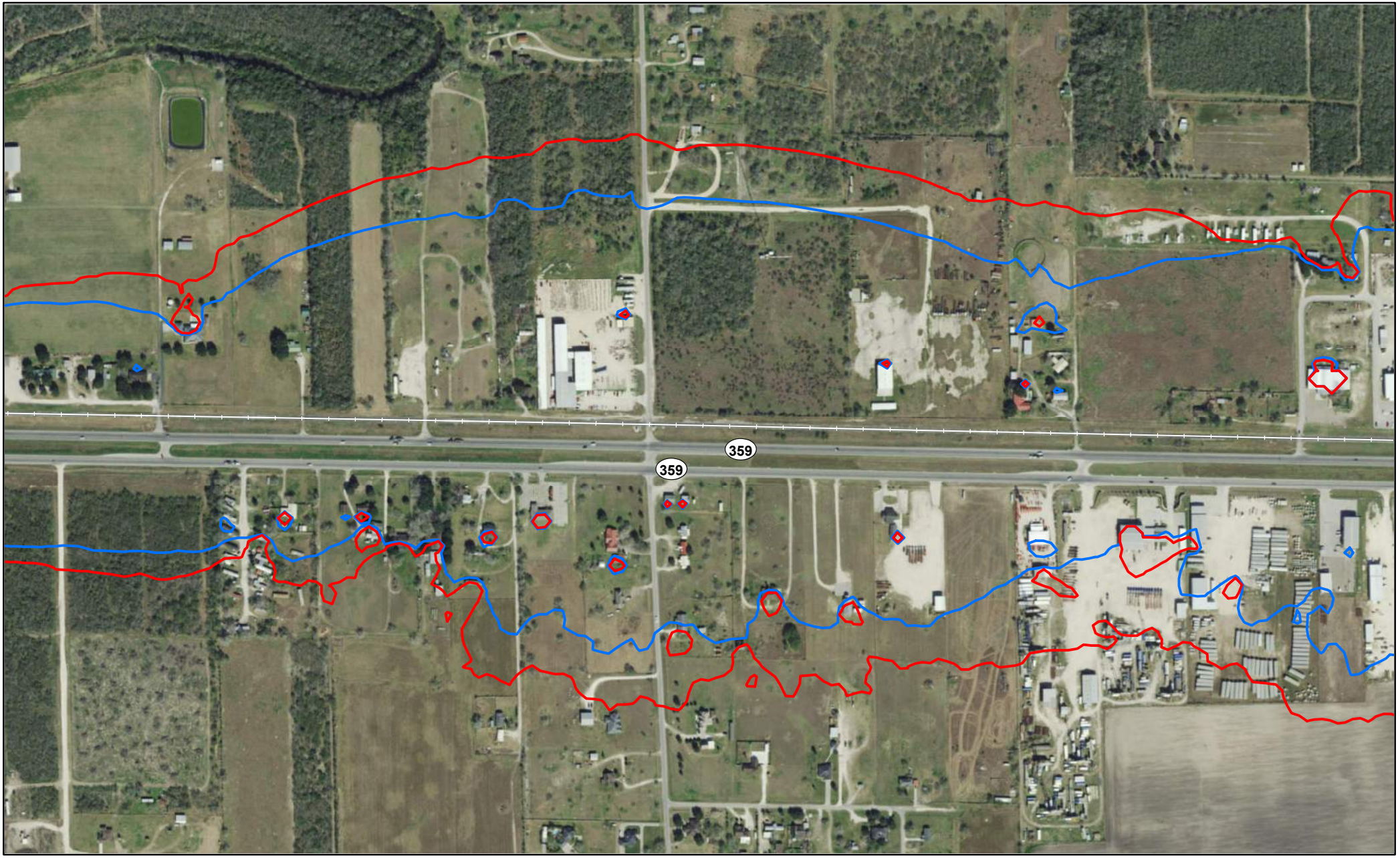
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Noise Contours
Jim Wells County, TX

Miles
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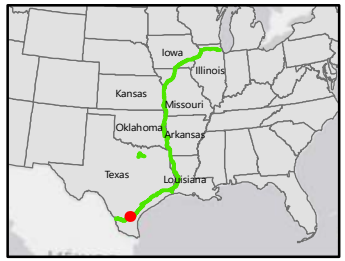
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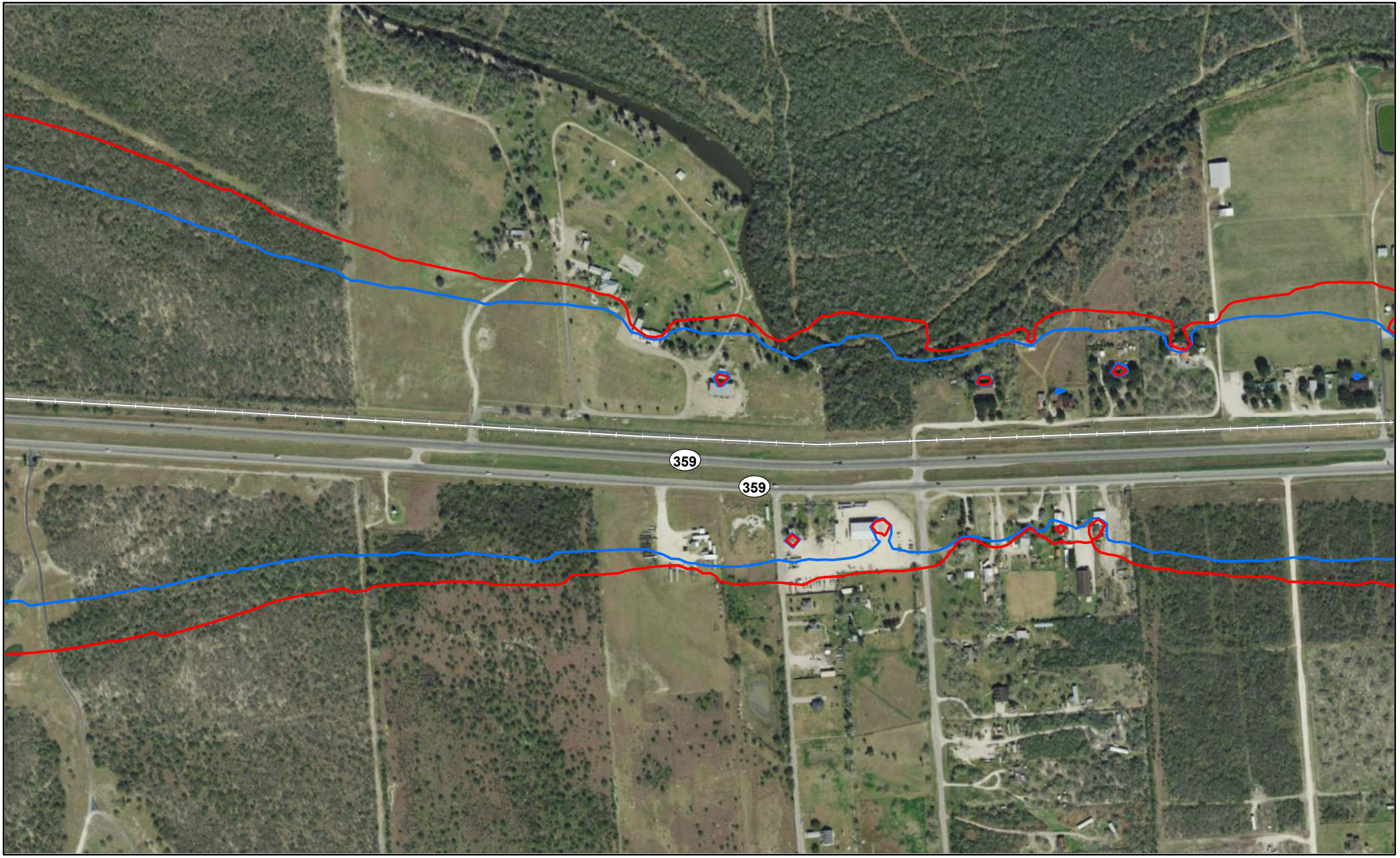


Noise Contours
Jim Wells County, TX

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



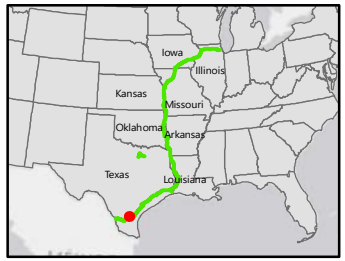
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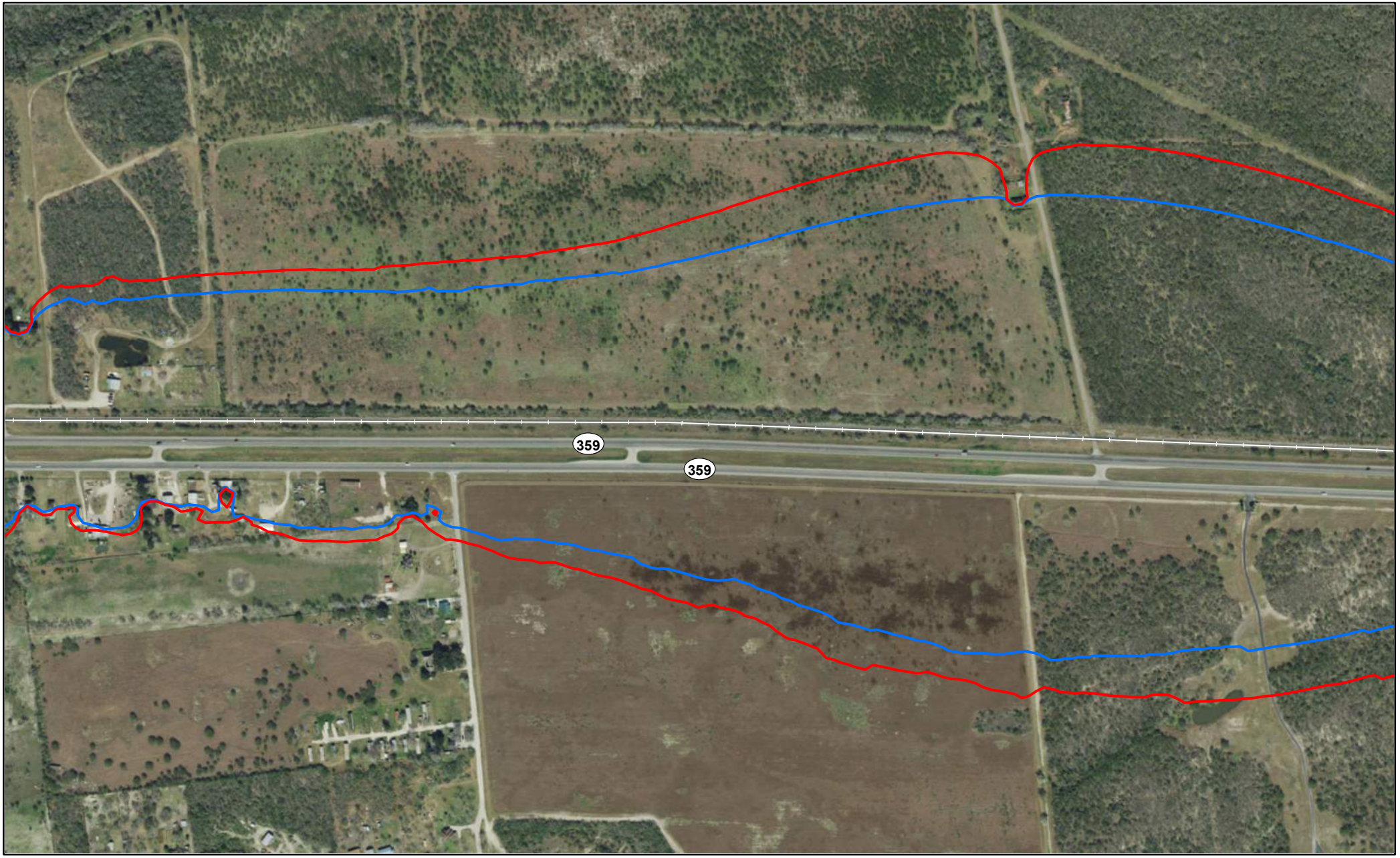
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Noise Contours
Jim Wells County, TX

Miles
0 0.05 0.1



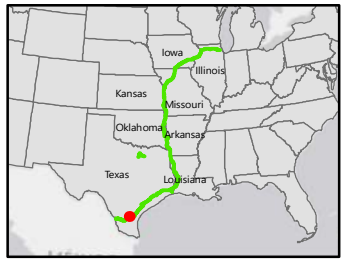
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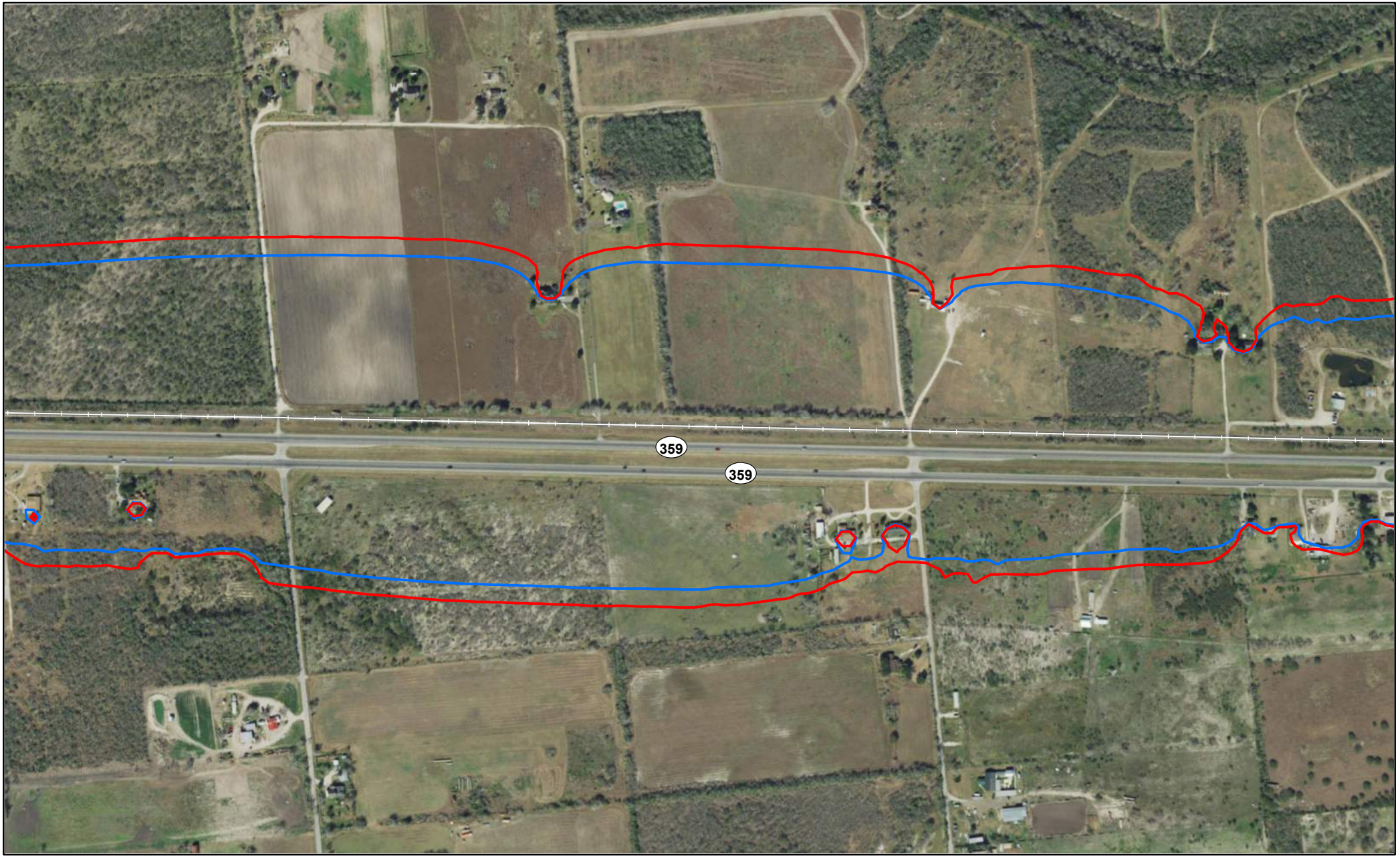
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Noise Contours
Jim Wells County, TX

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Miles
0 0.05 0.1



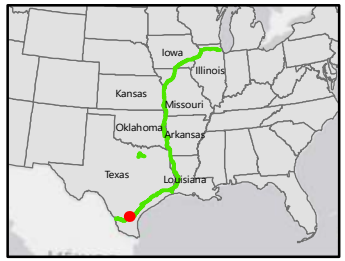
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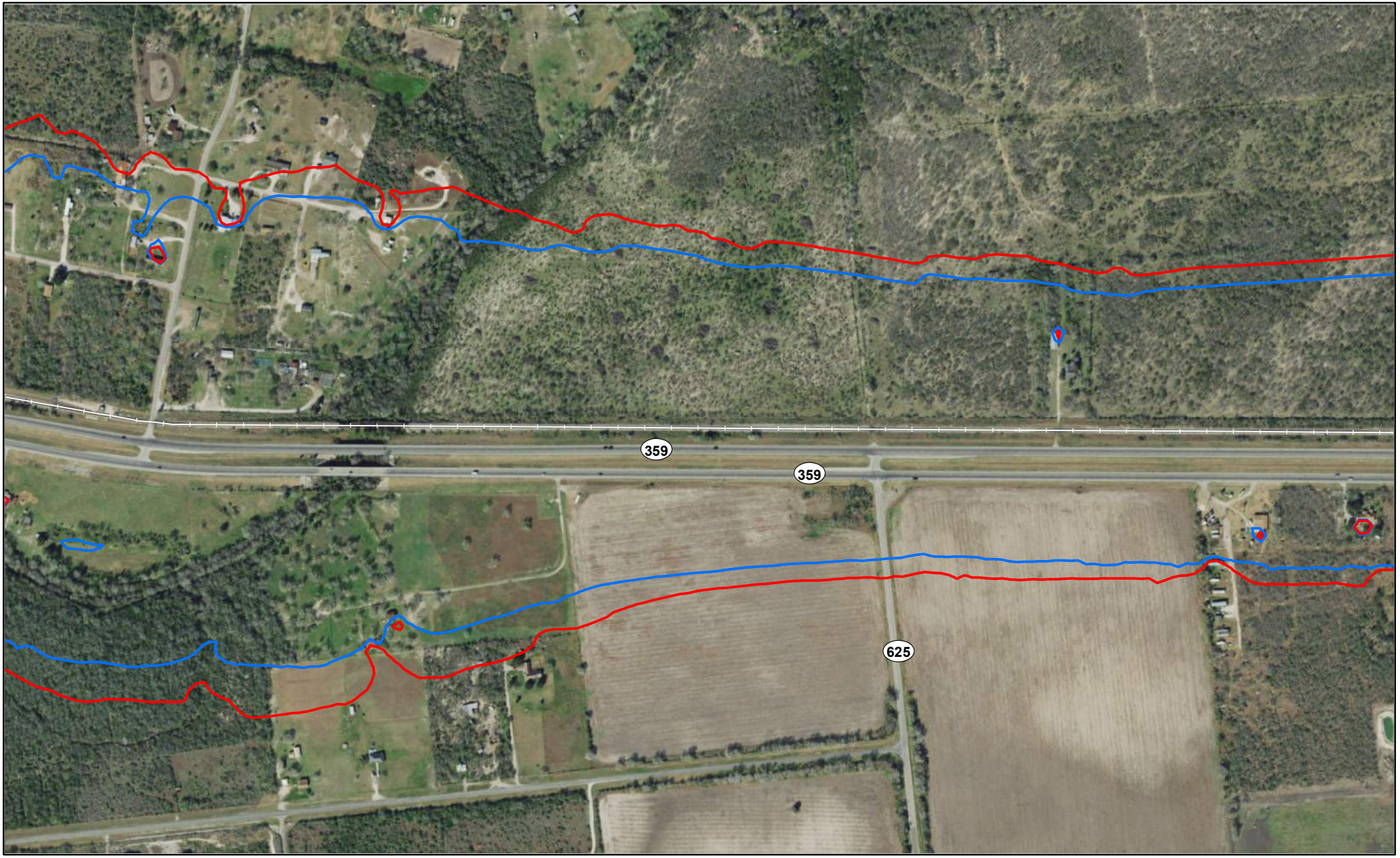
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Noise Contours
Jim Wells County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



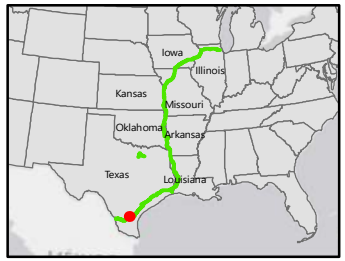
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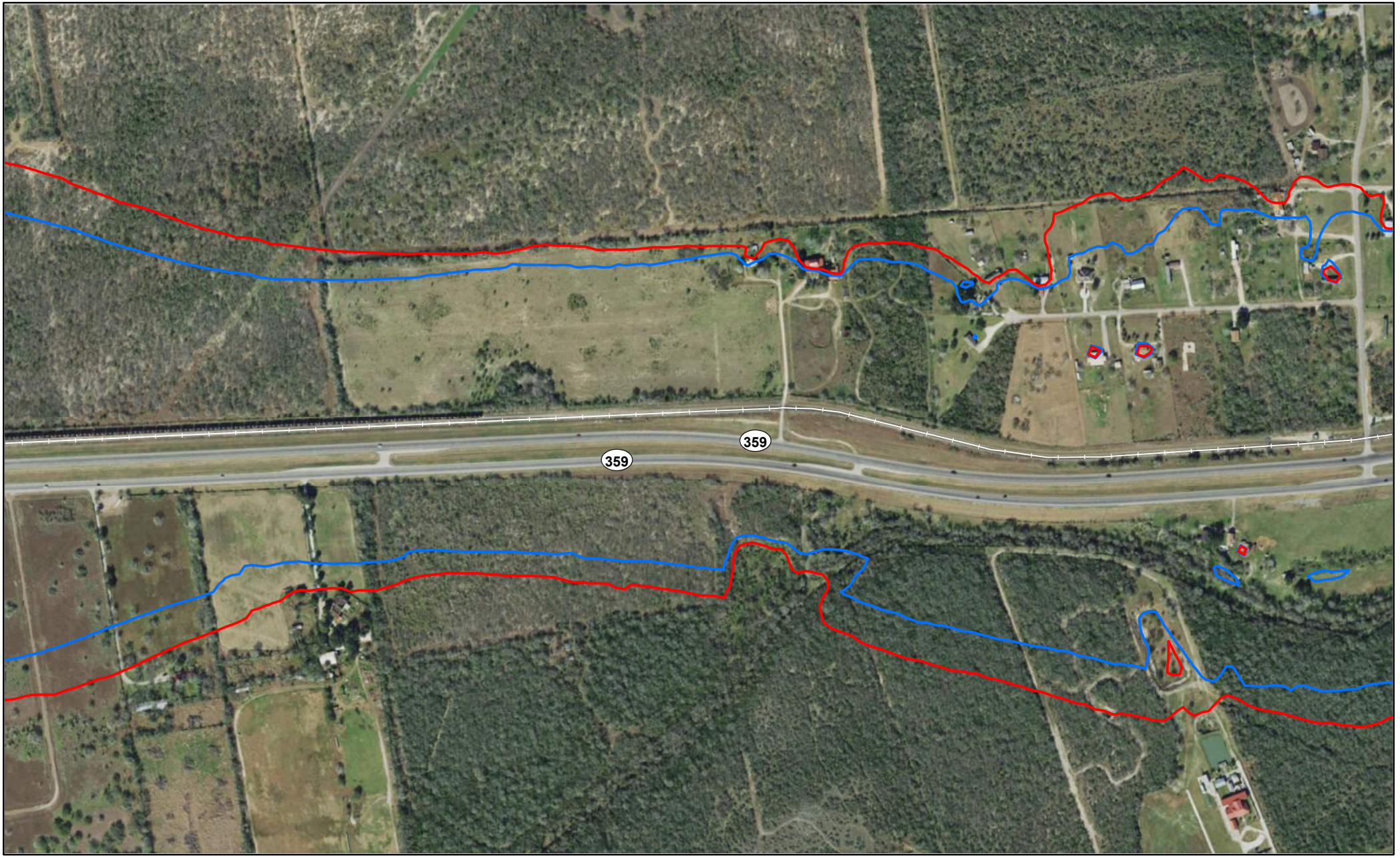
Tracks

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Noise Contours
Jim Wells County, TX

0 0.05 0.1 Miles



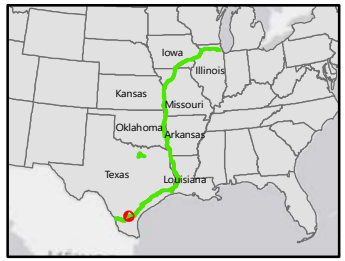
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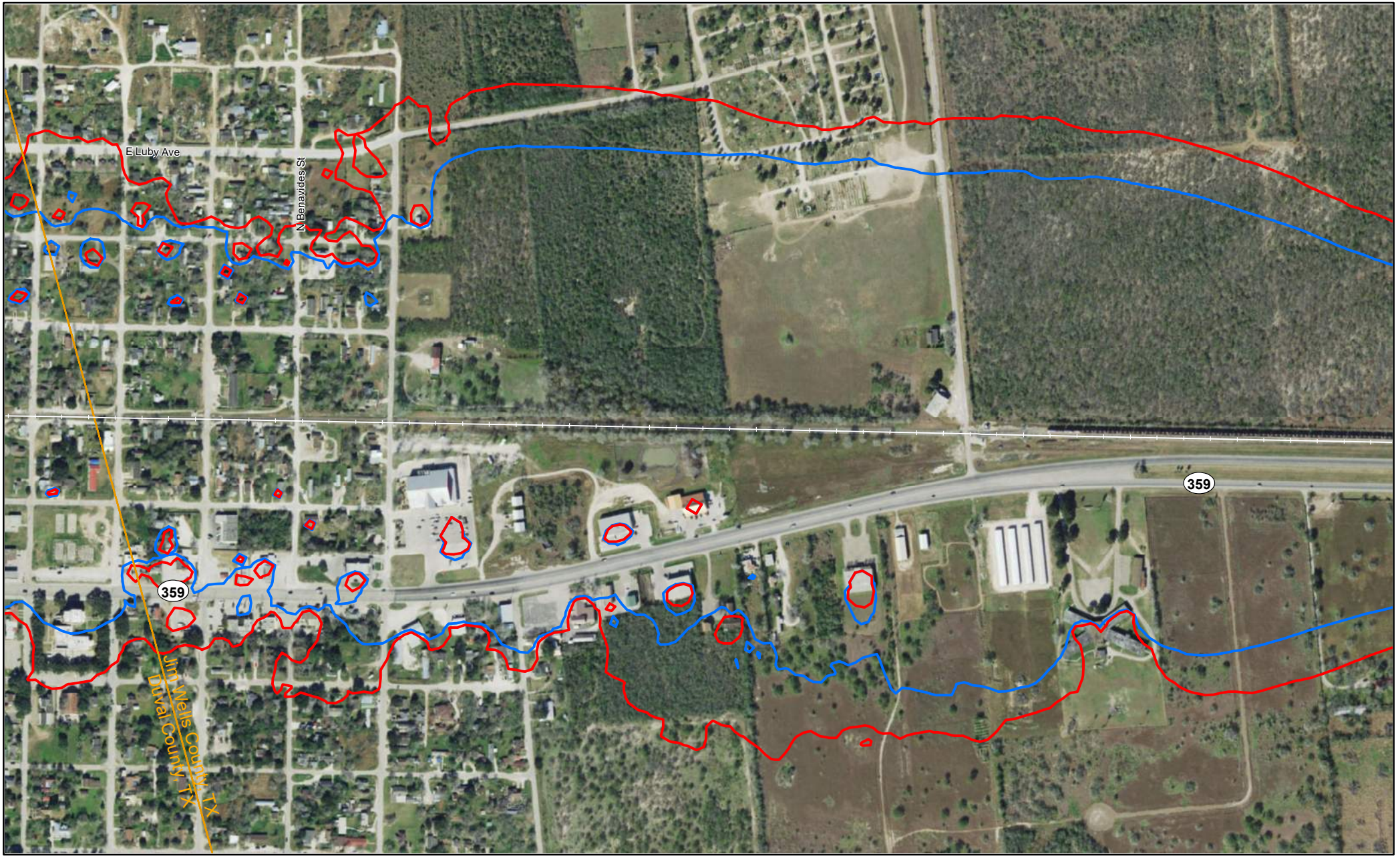
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Noise Contours
Jim Wells County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



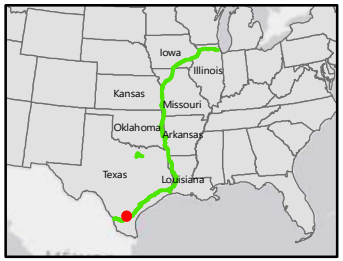
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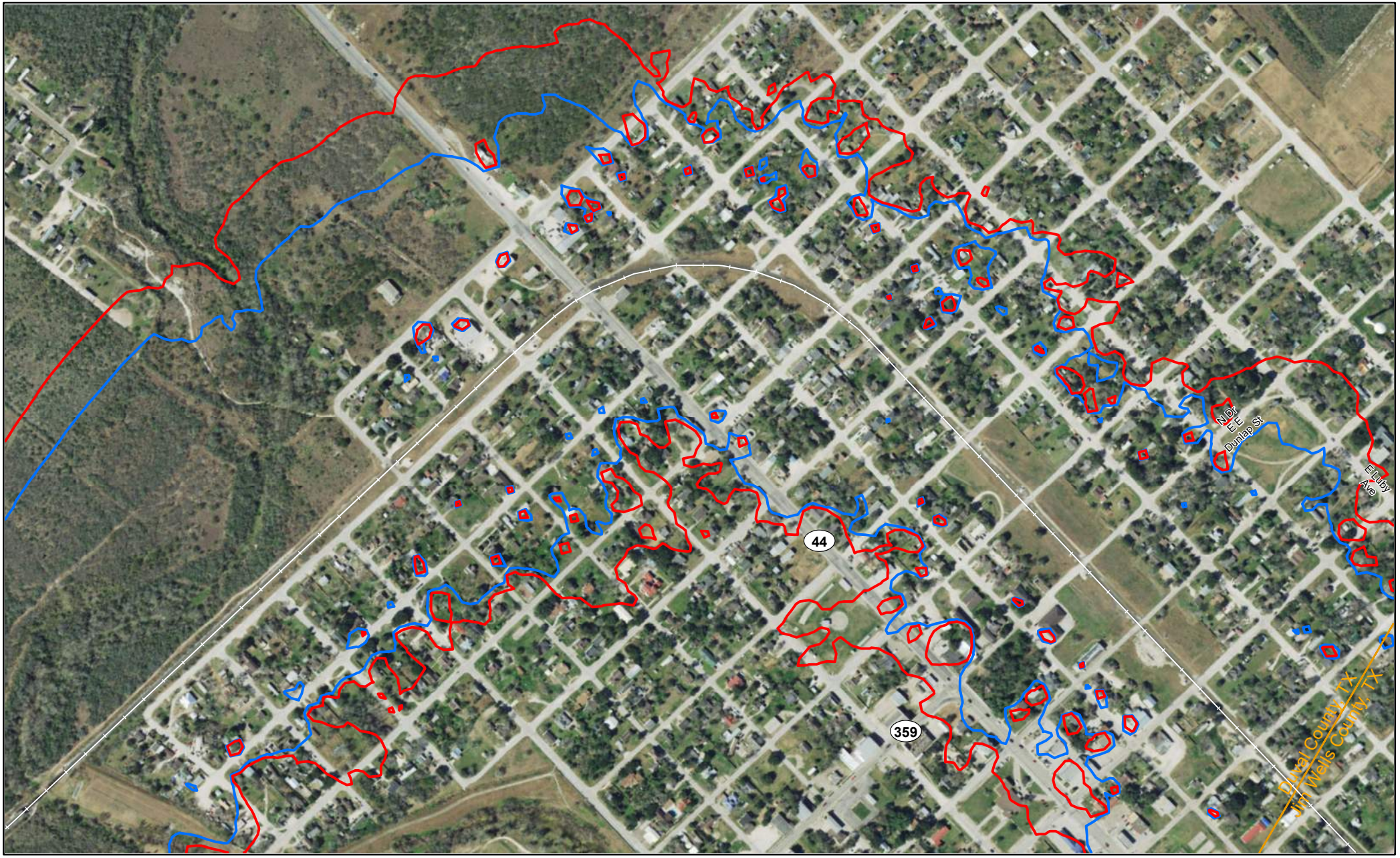
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Noise Contours
Duval County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



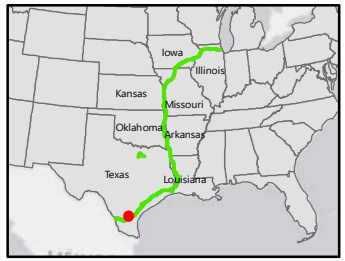
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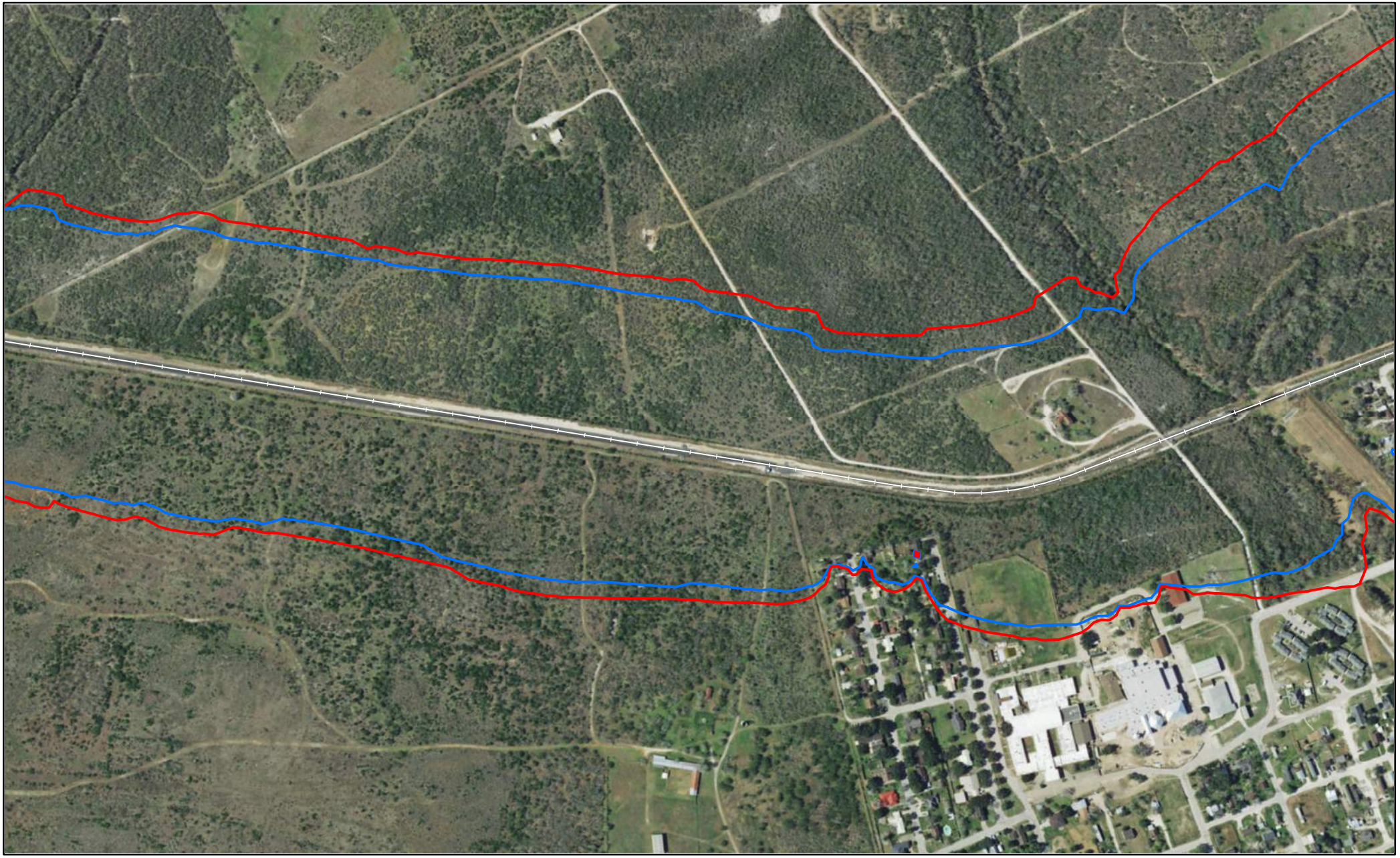
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Noise Contours
Duval County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



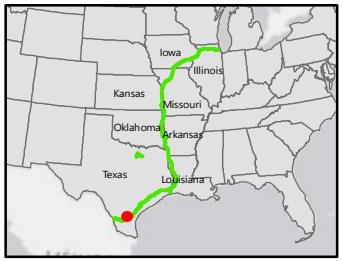
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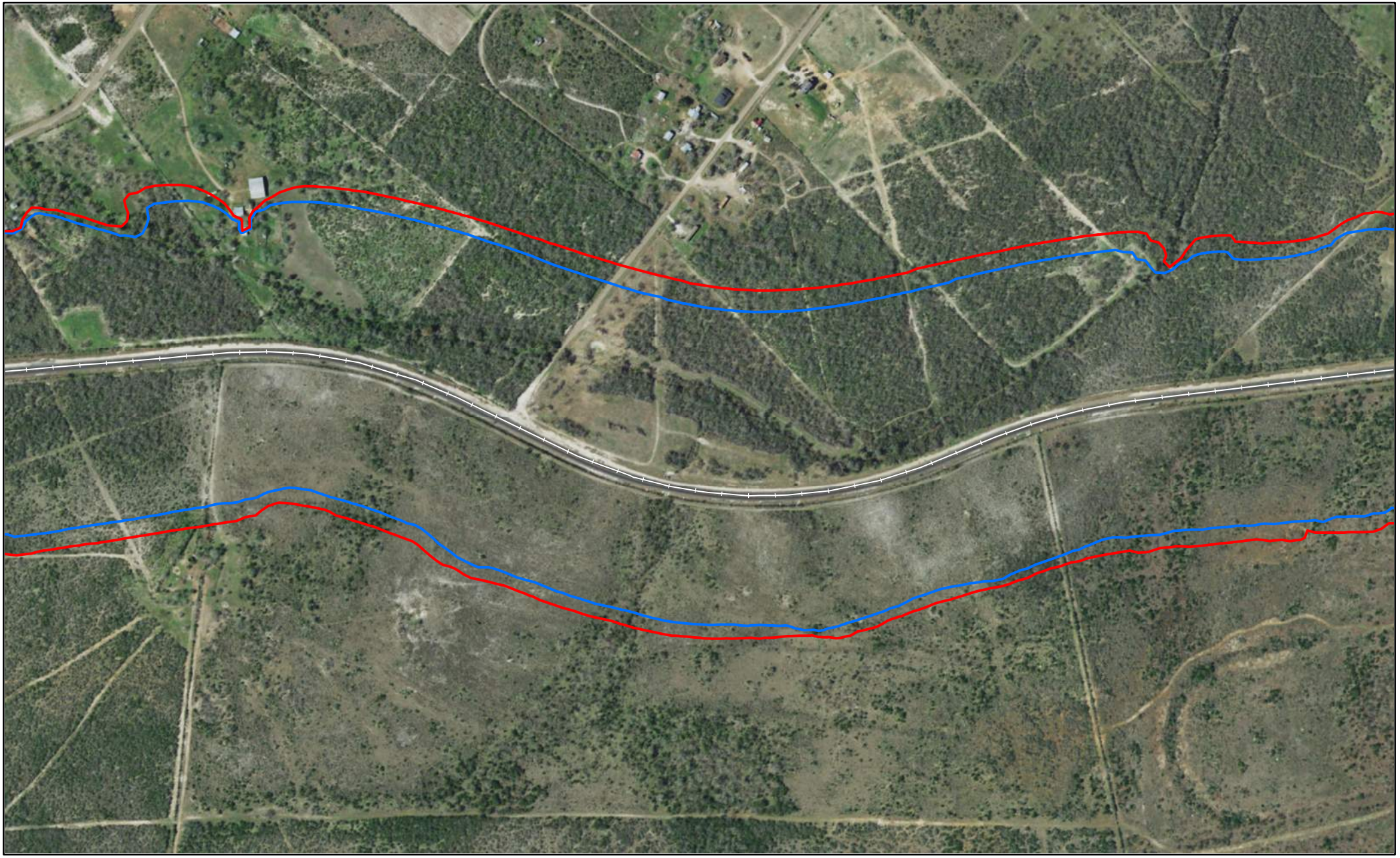
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Noise Contours
Duval County, TX

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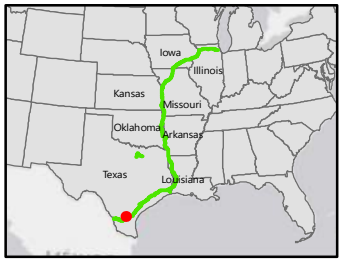
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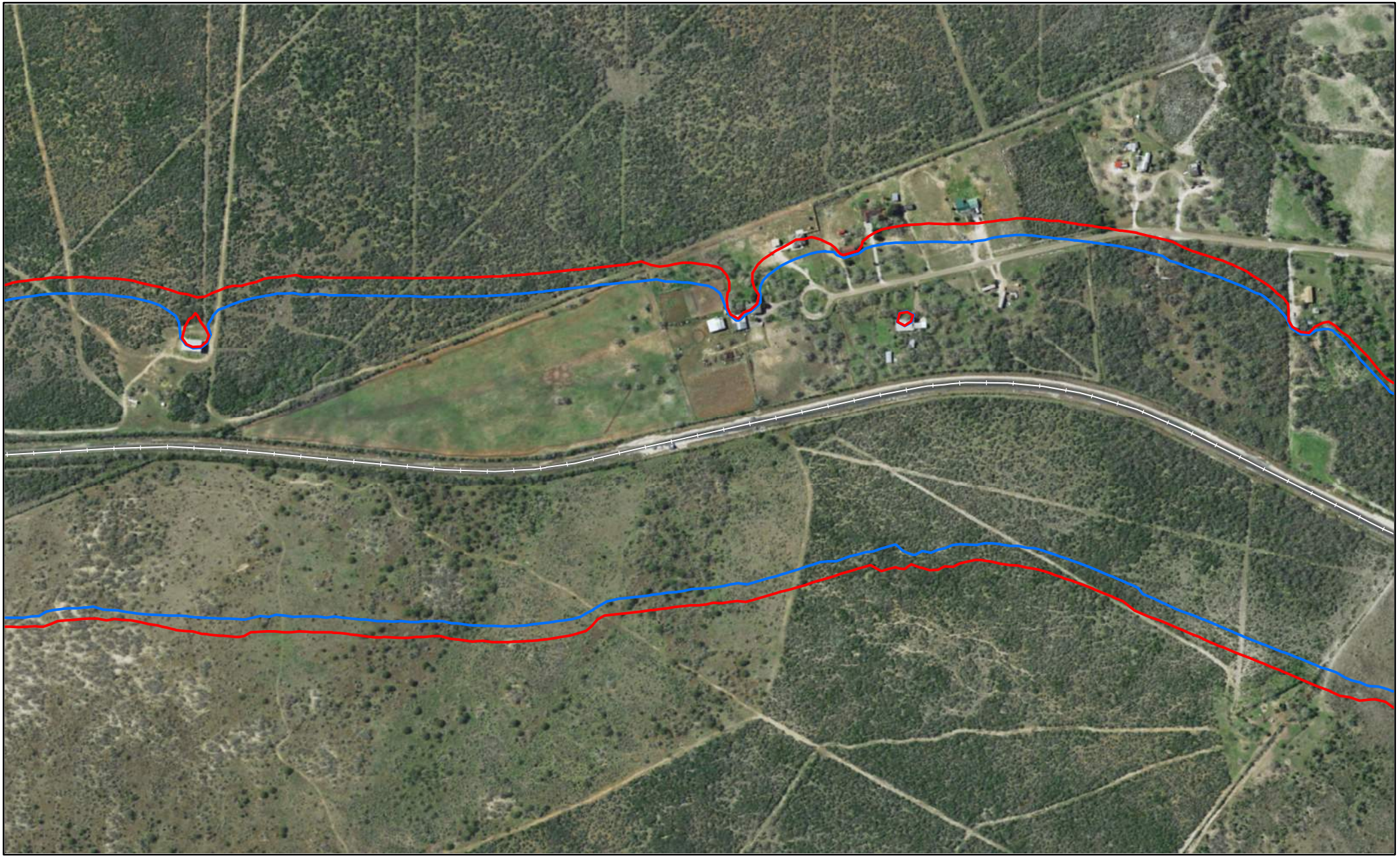
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Noise Contours
Duval County, TX

Miles
0 0.05 0.1



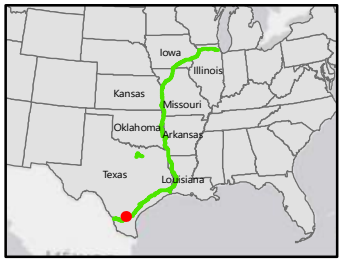
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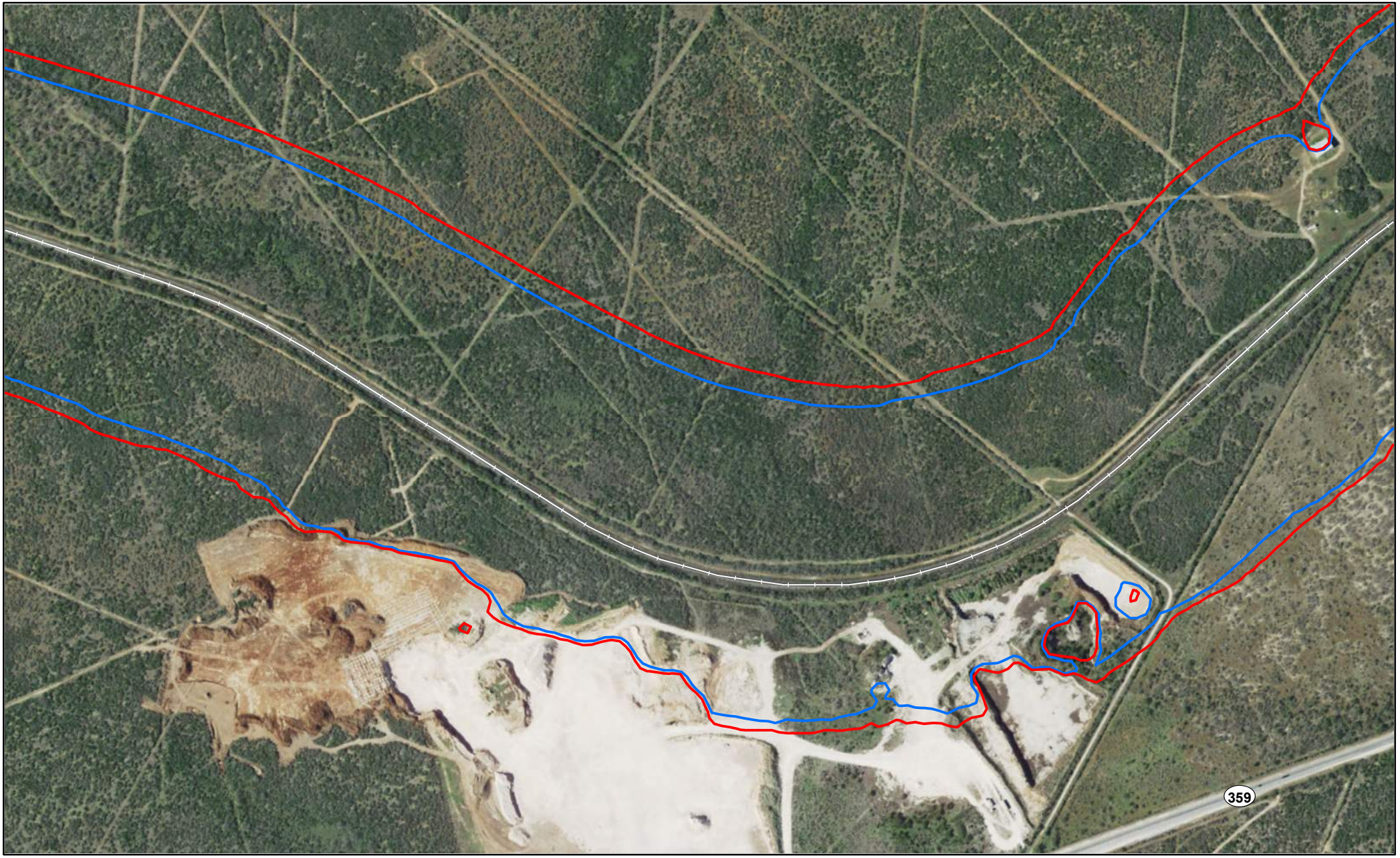
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Duval County, TX

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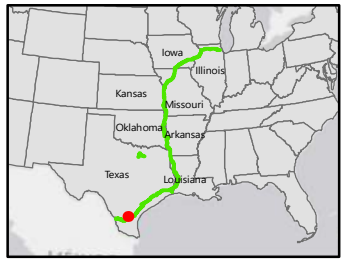
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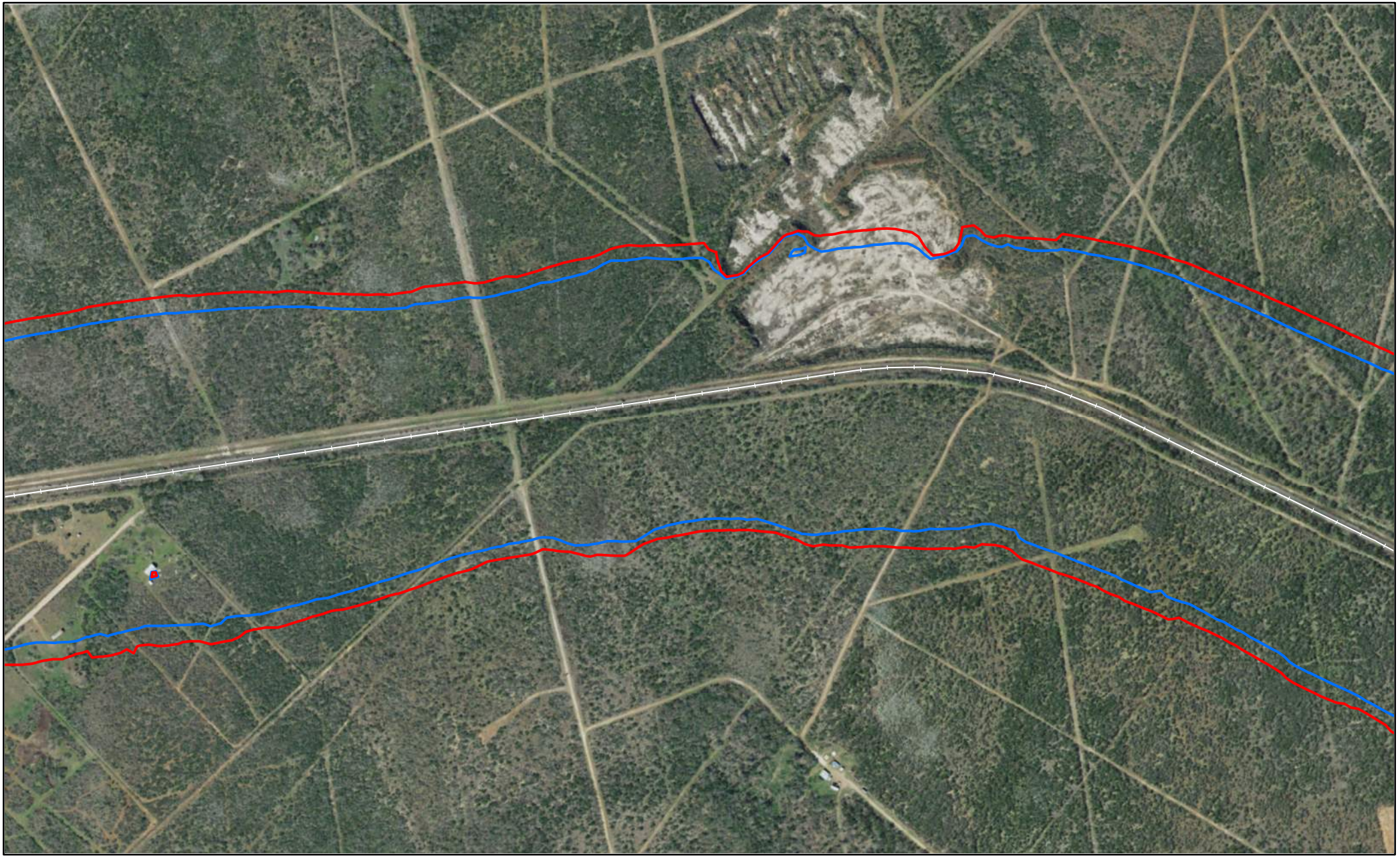
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Noise Contours
Duval County, TX

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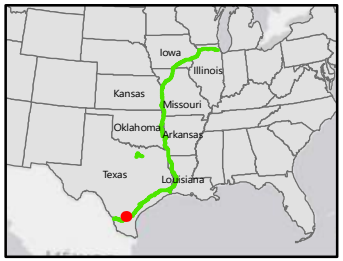
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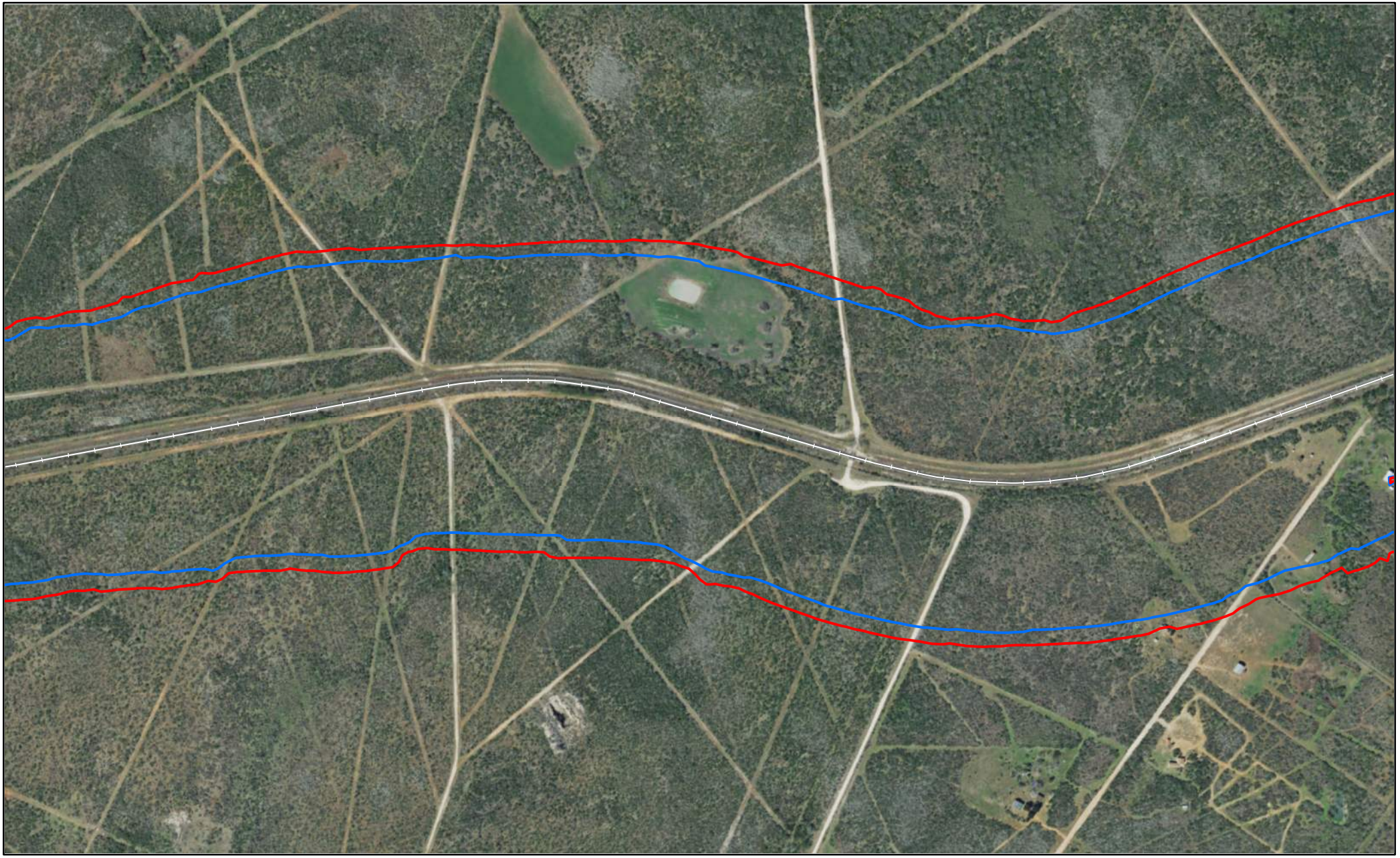
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Duval County, TX

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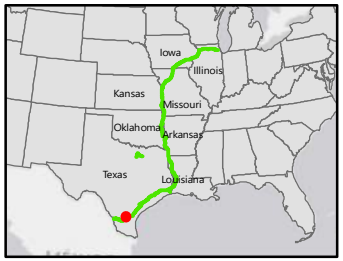
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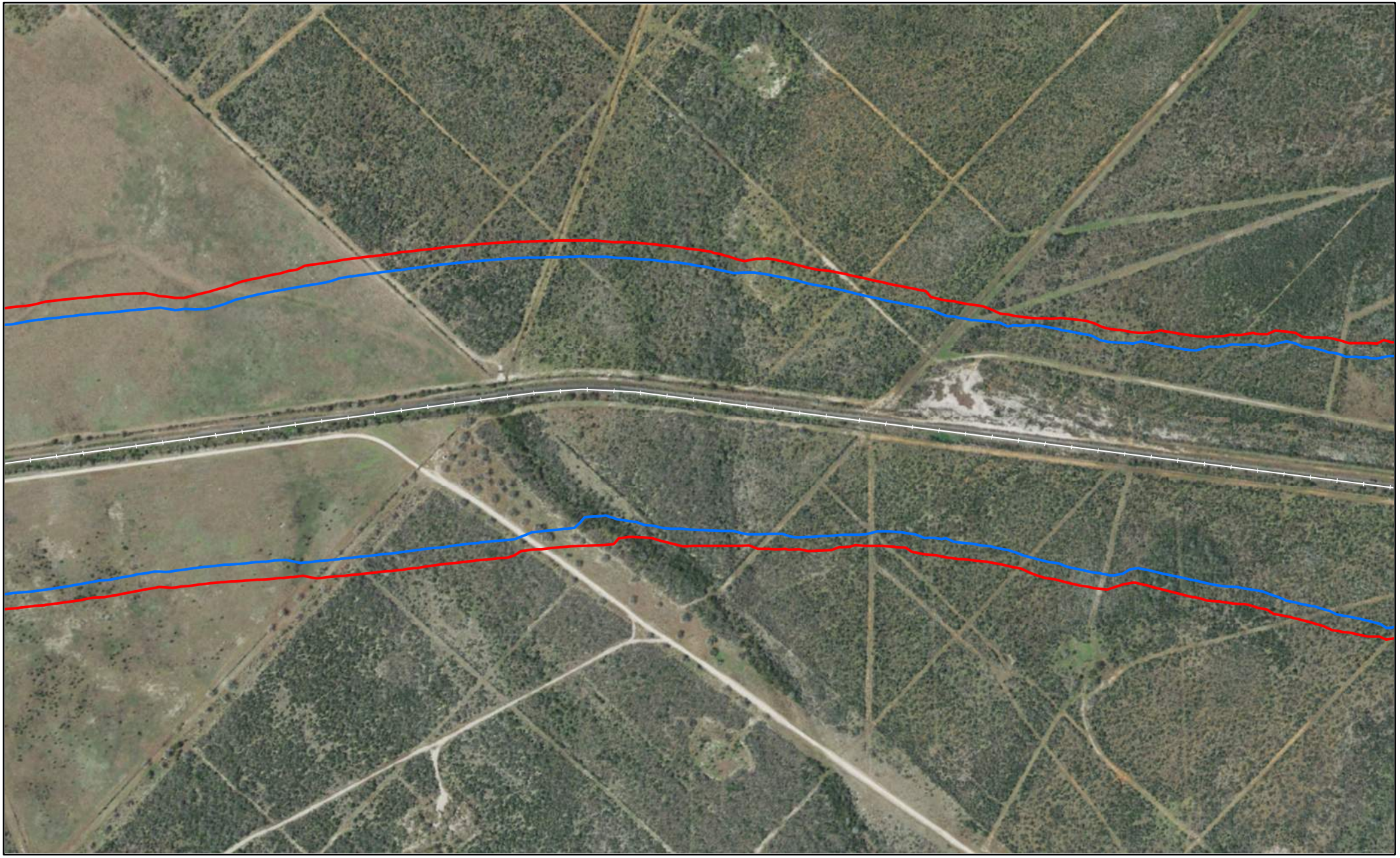
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Noise Contours
Duval County, TX

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Noise Contours
Duval County, TX

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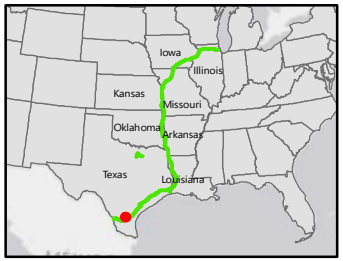
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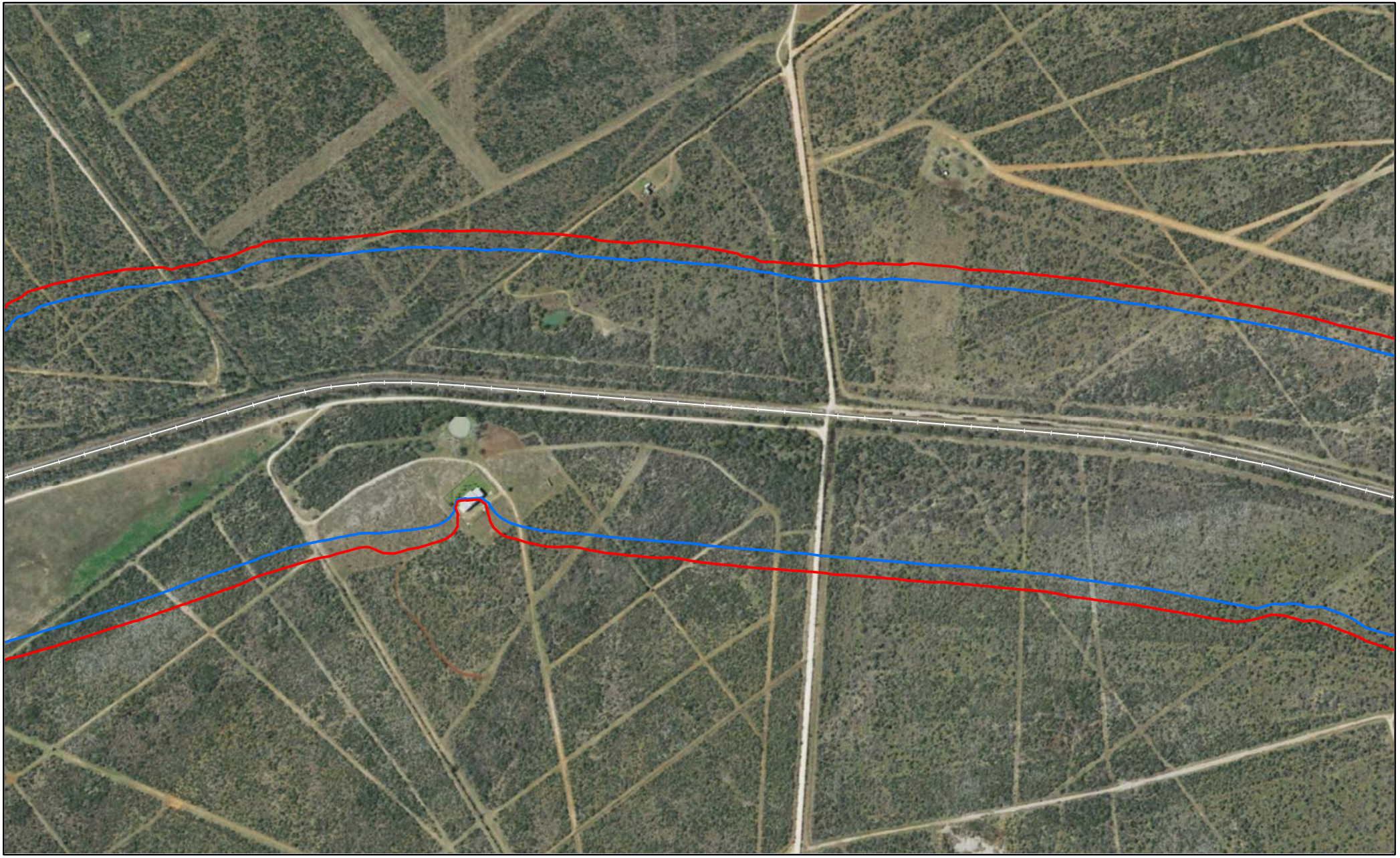
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Noise Contours
Duval County, TX

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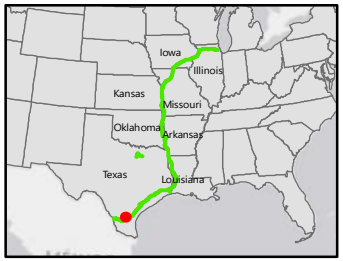
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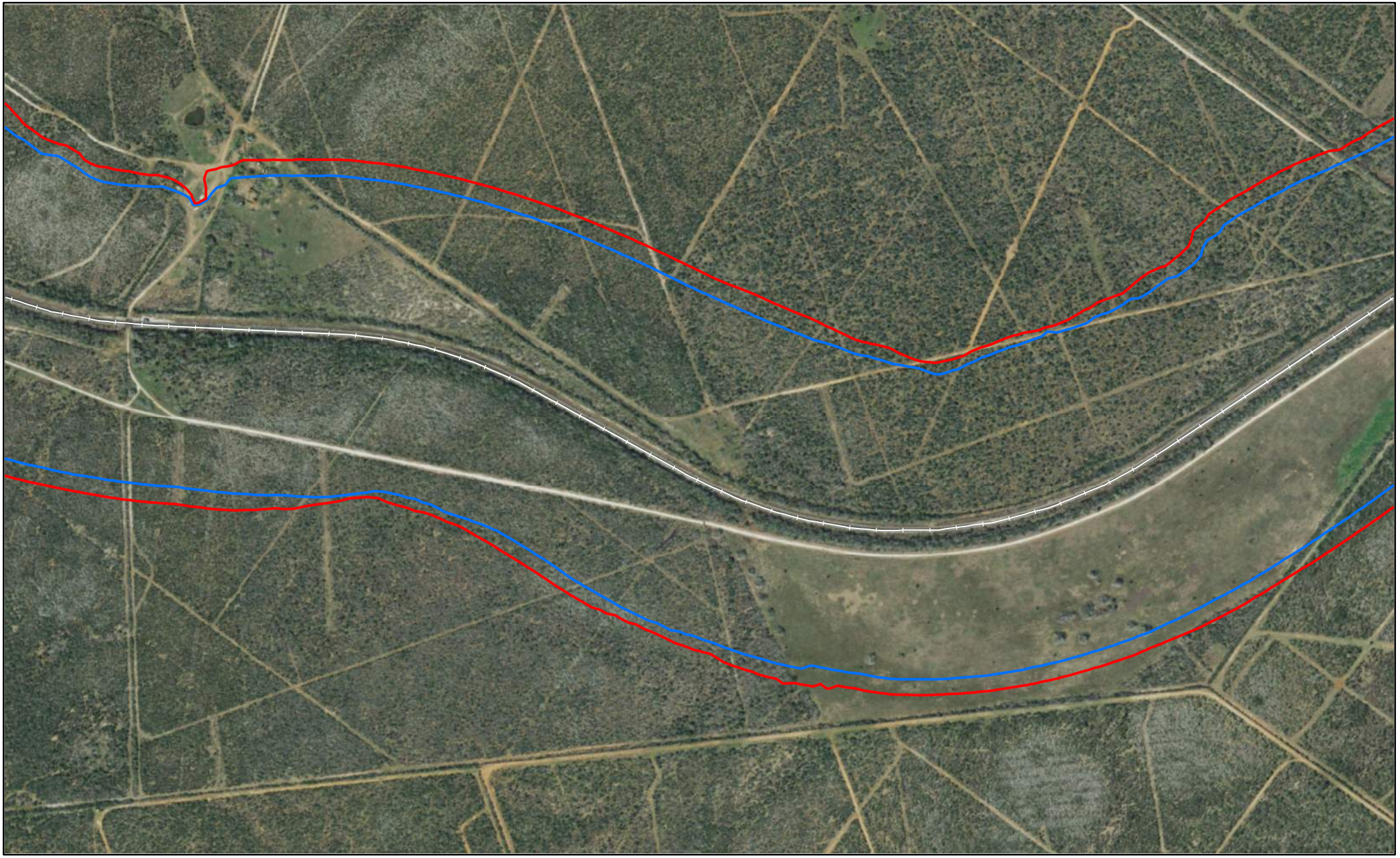
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Noise Contours
Duval County, TX

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0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



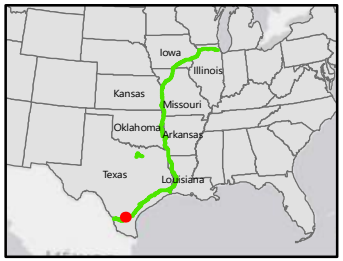
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

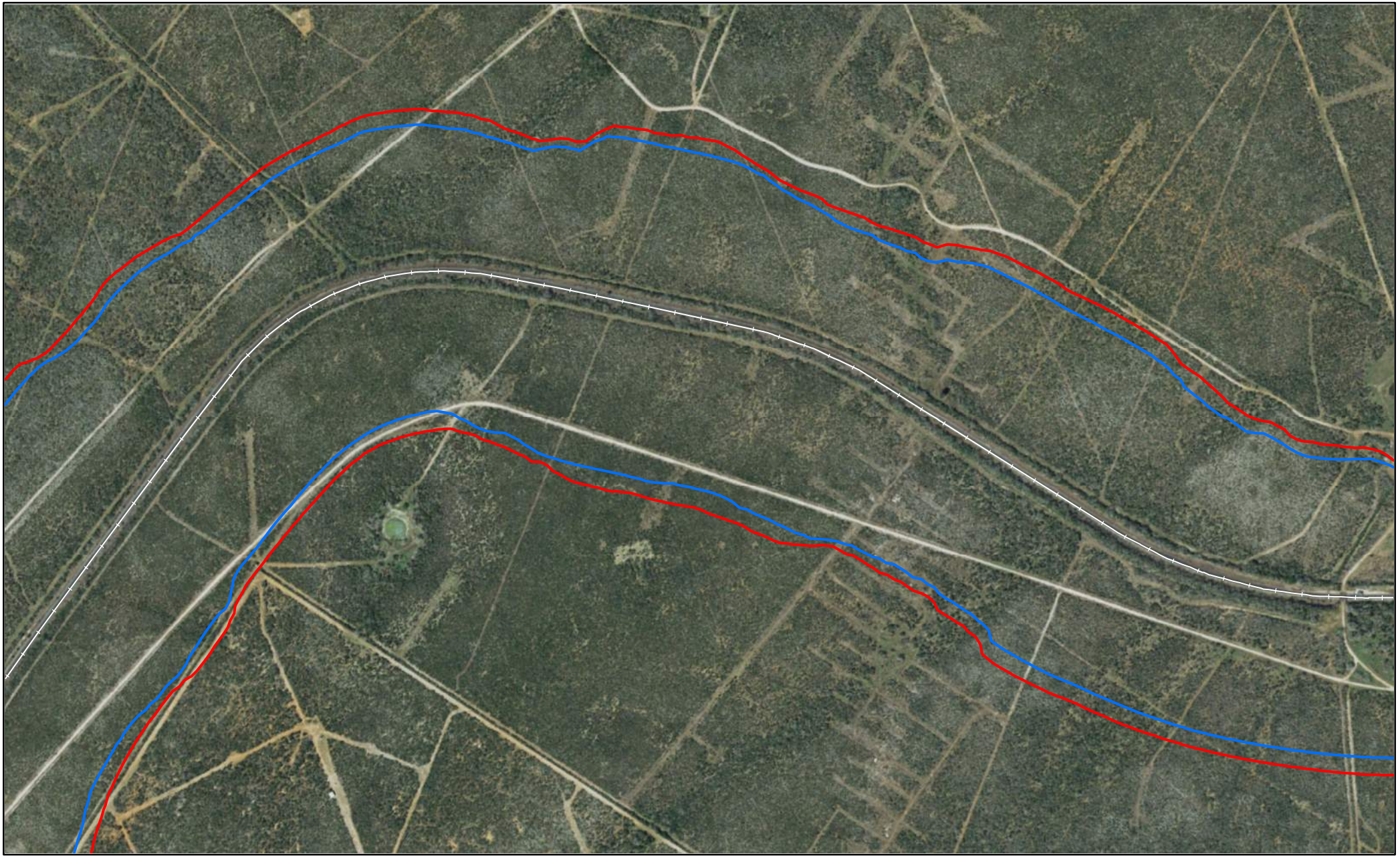
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Noise Contours
Duval County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



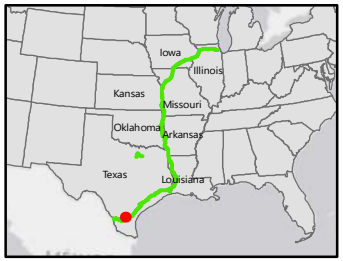
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Noise Contours
Duval County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



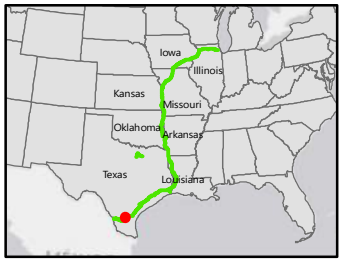
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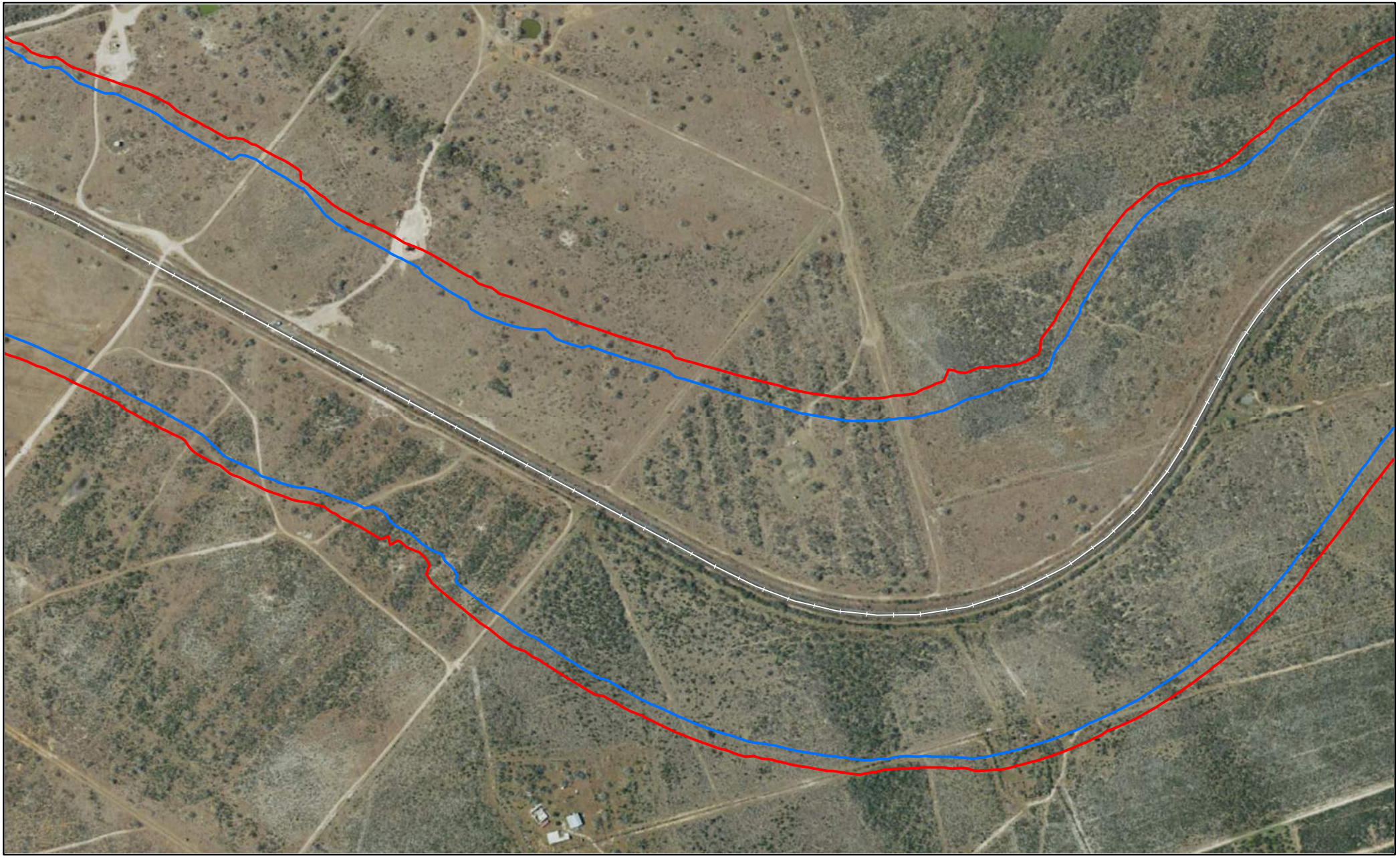
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Noise Contours
Duval County, TX

Miles
0 0.05 0.1



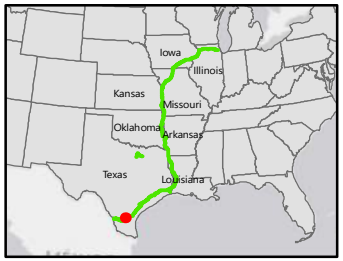
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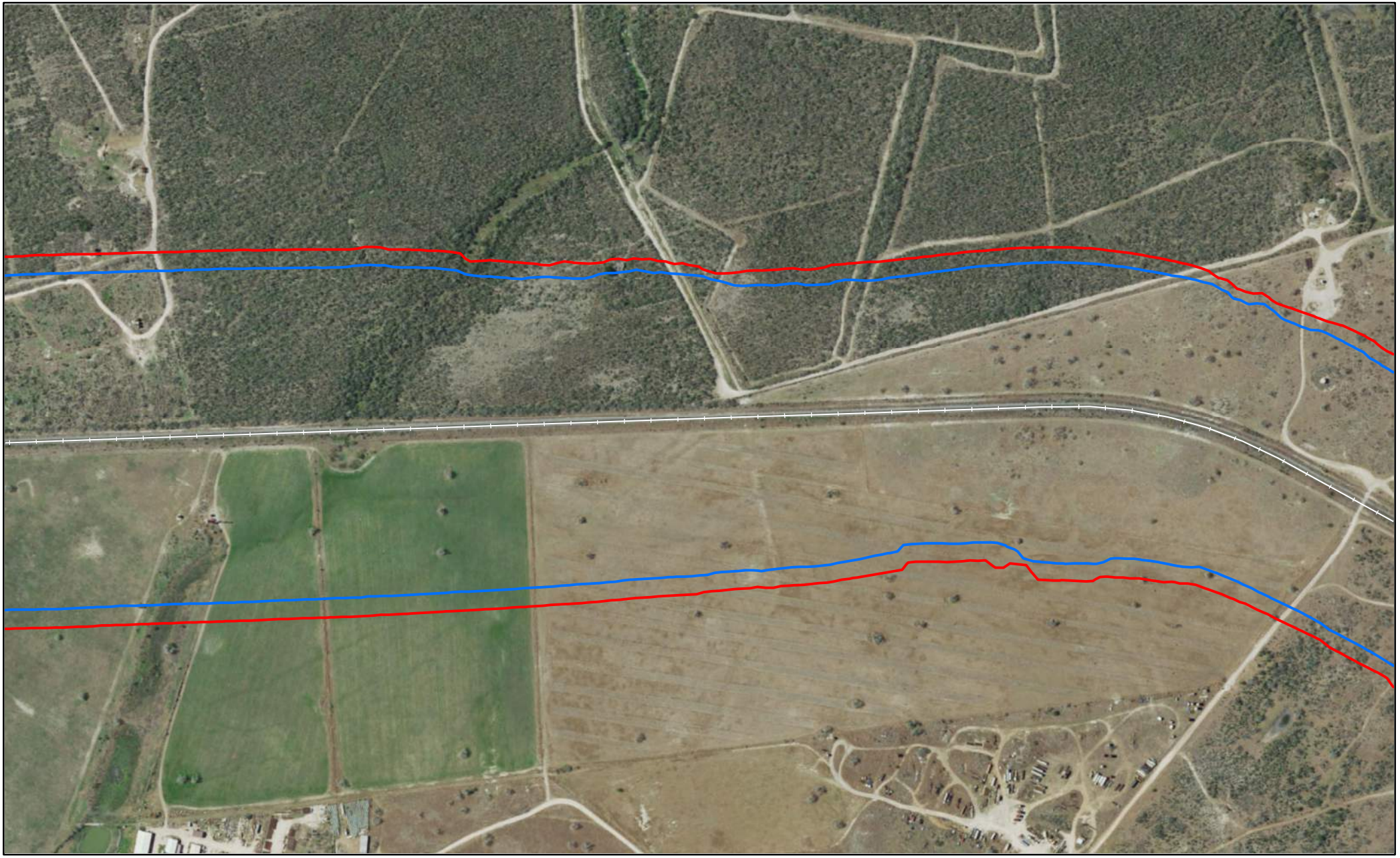
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Noise Contours
Duval County, TX

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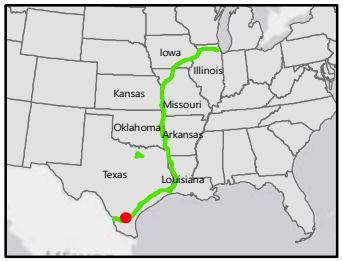
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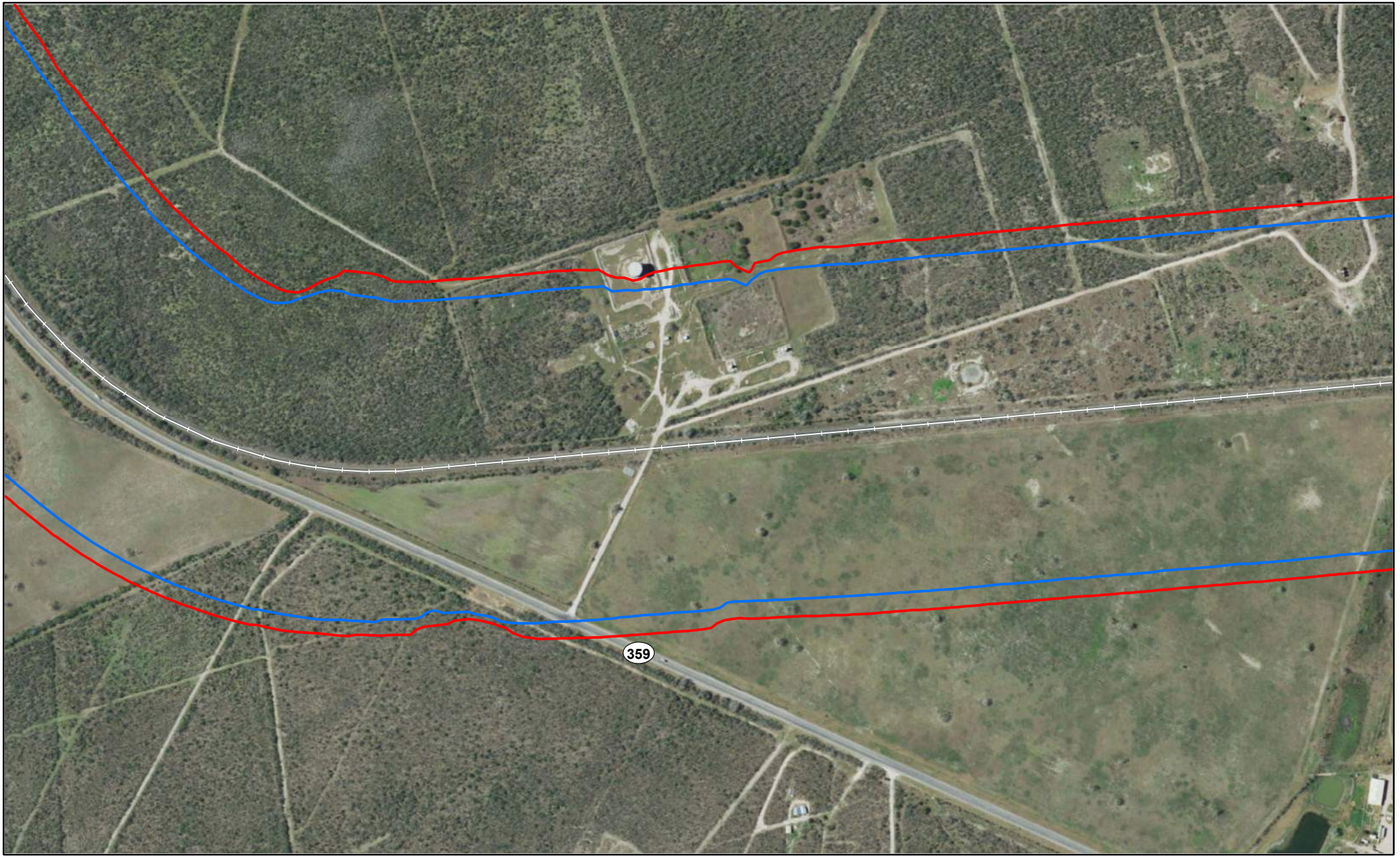
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Noise Contours
Duval County, TX

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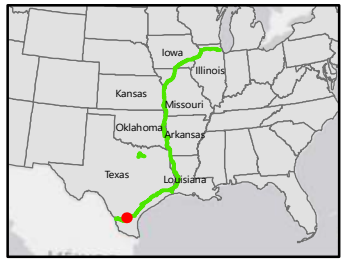
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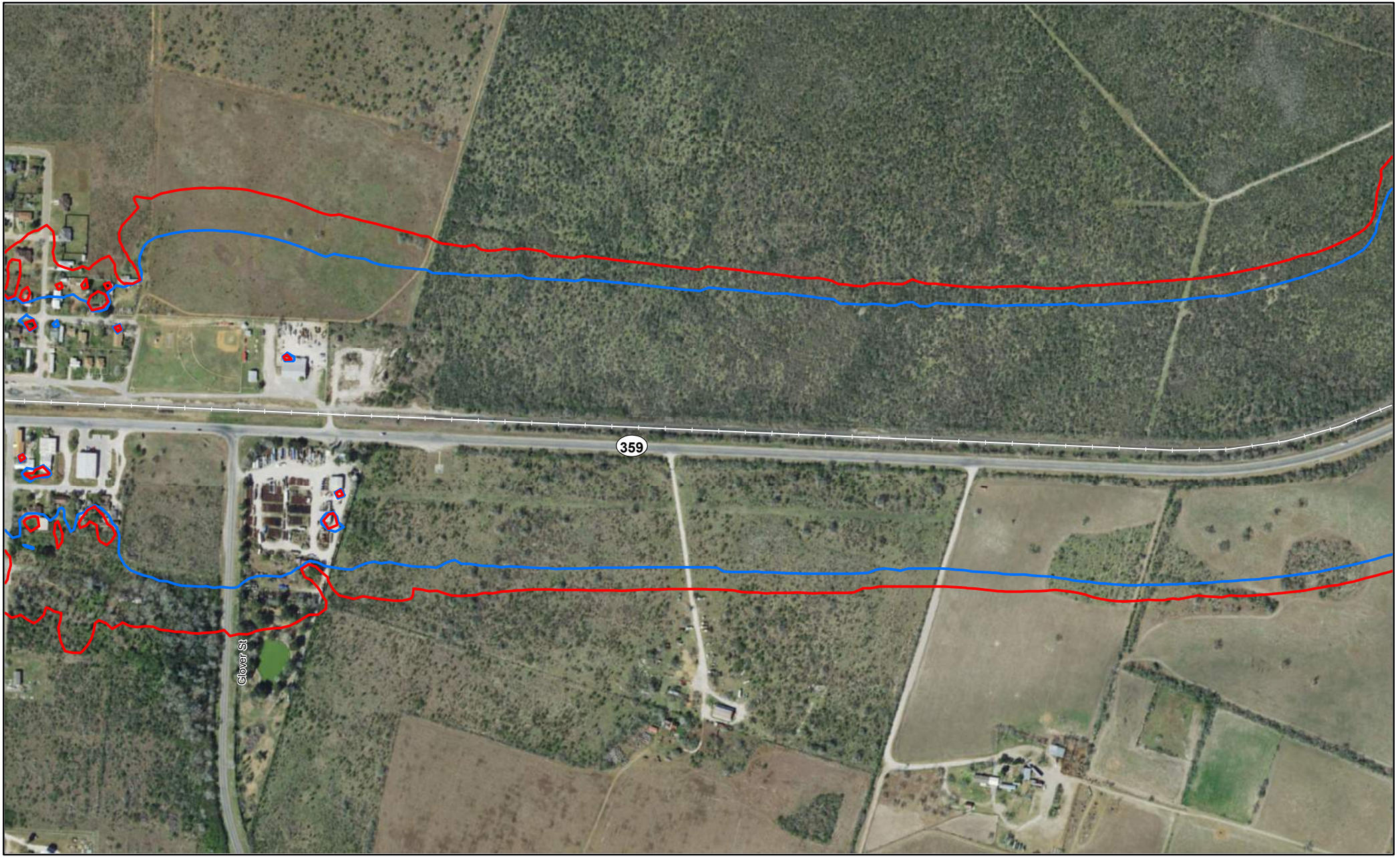
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Noise Contours
Duval County, TX

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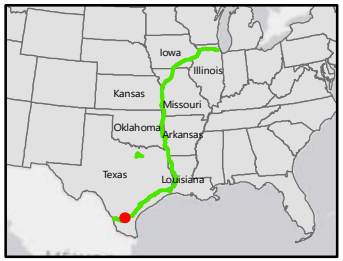
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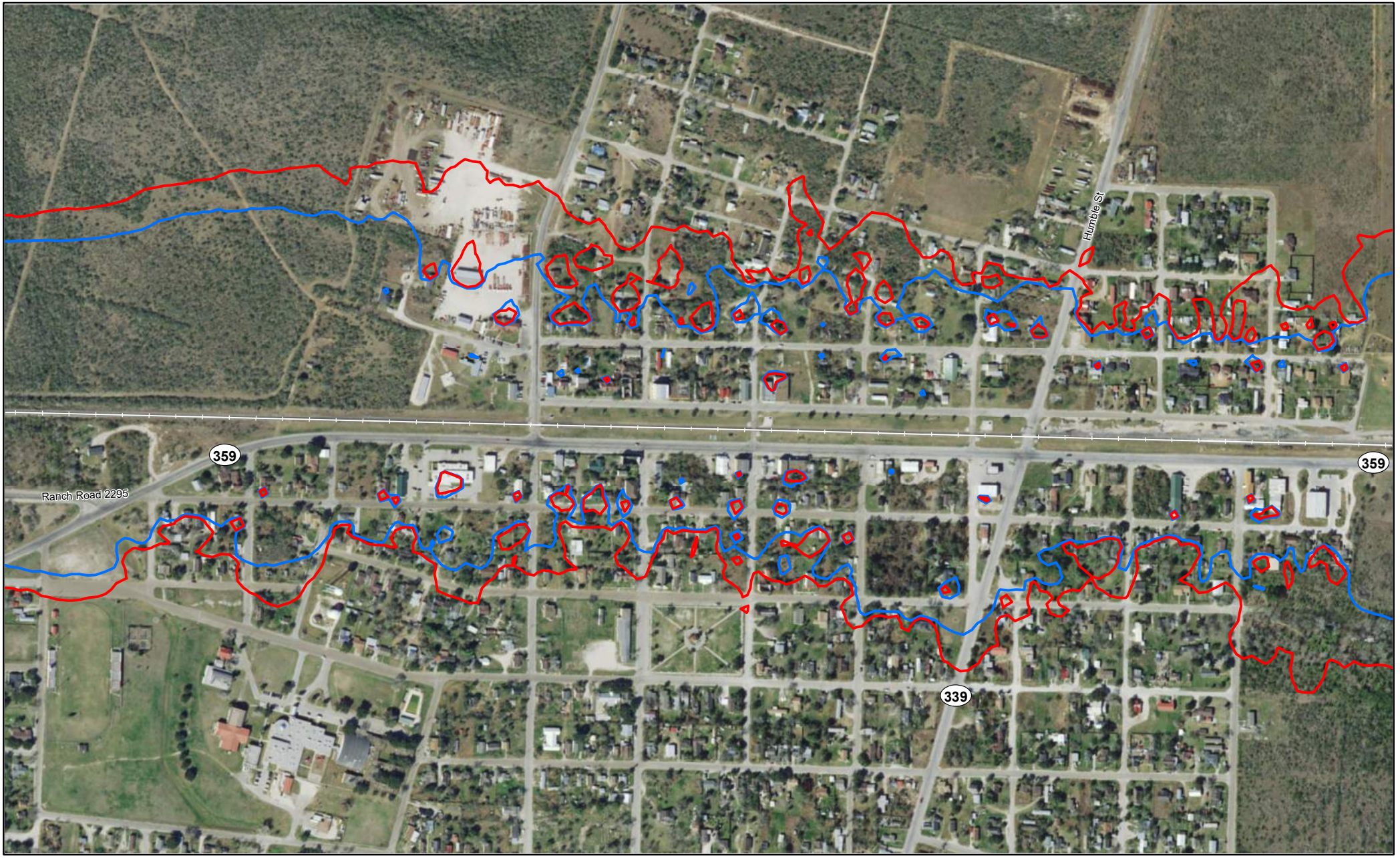
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Duval County, TX

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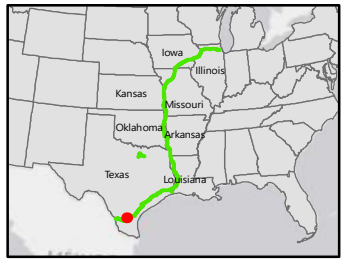
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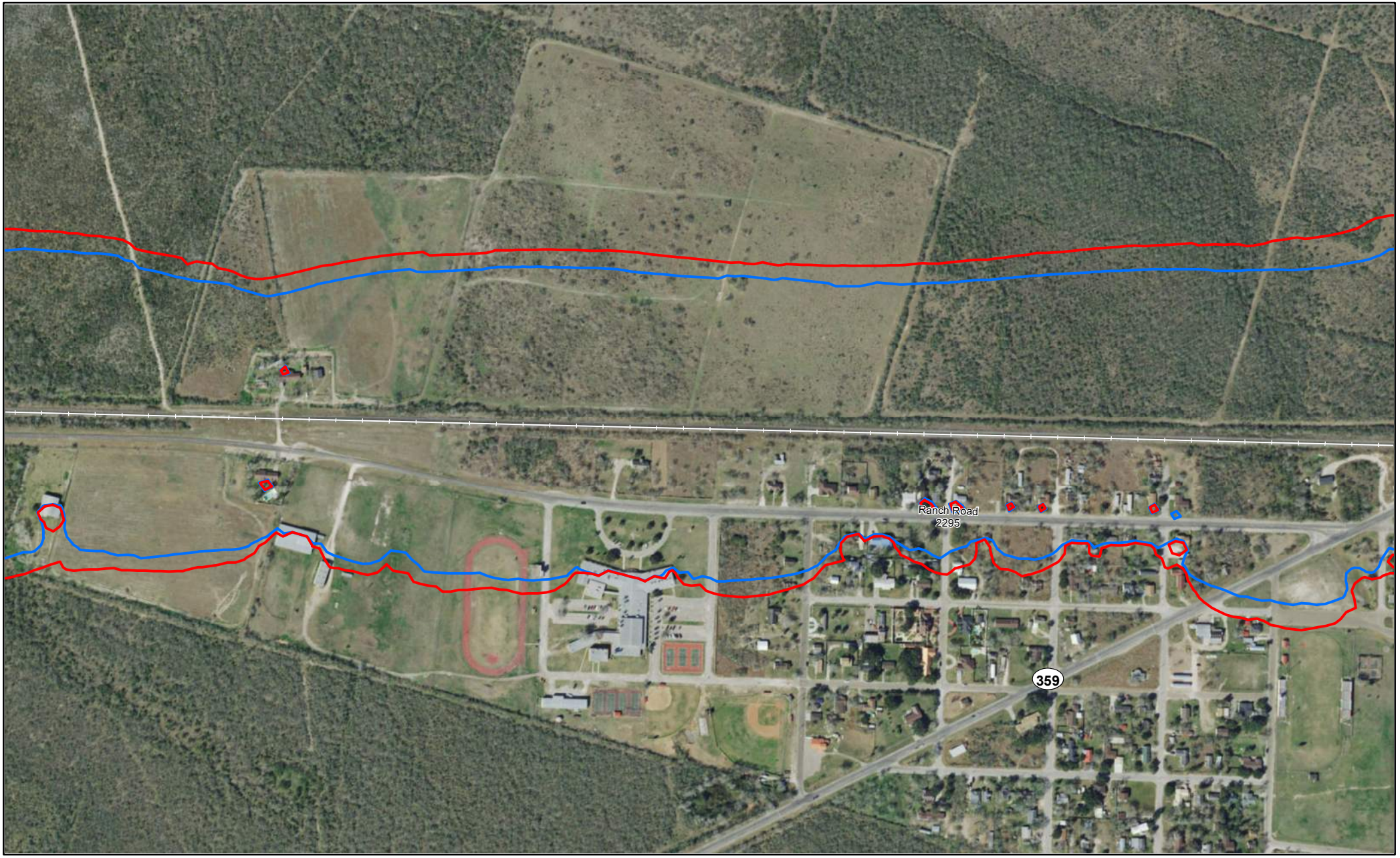
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Noise Contours
Duval County, TX

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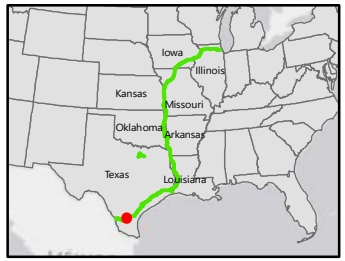
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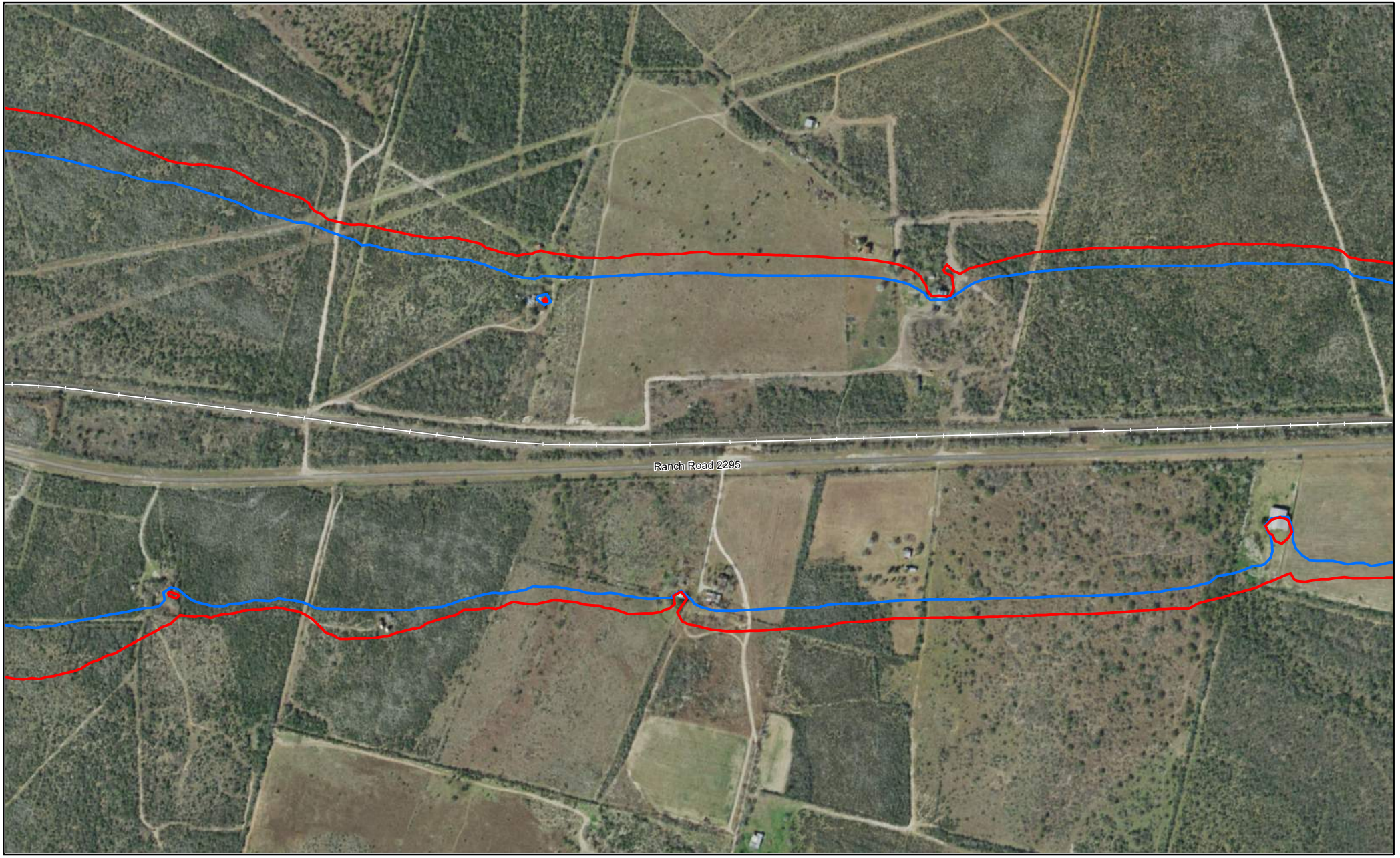
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Noise Contours
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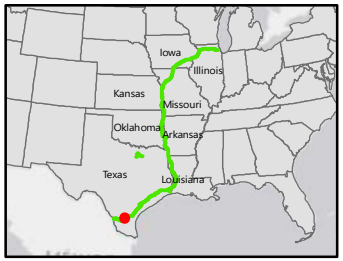
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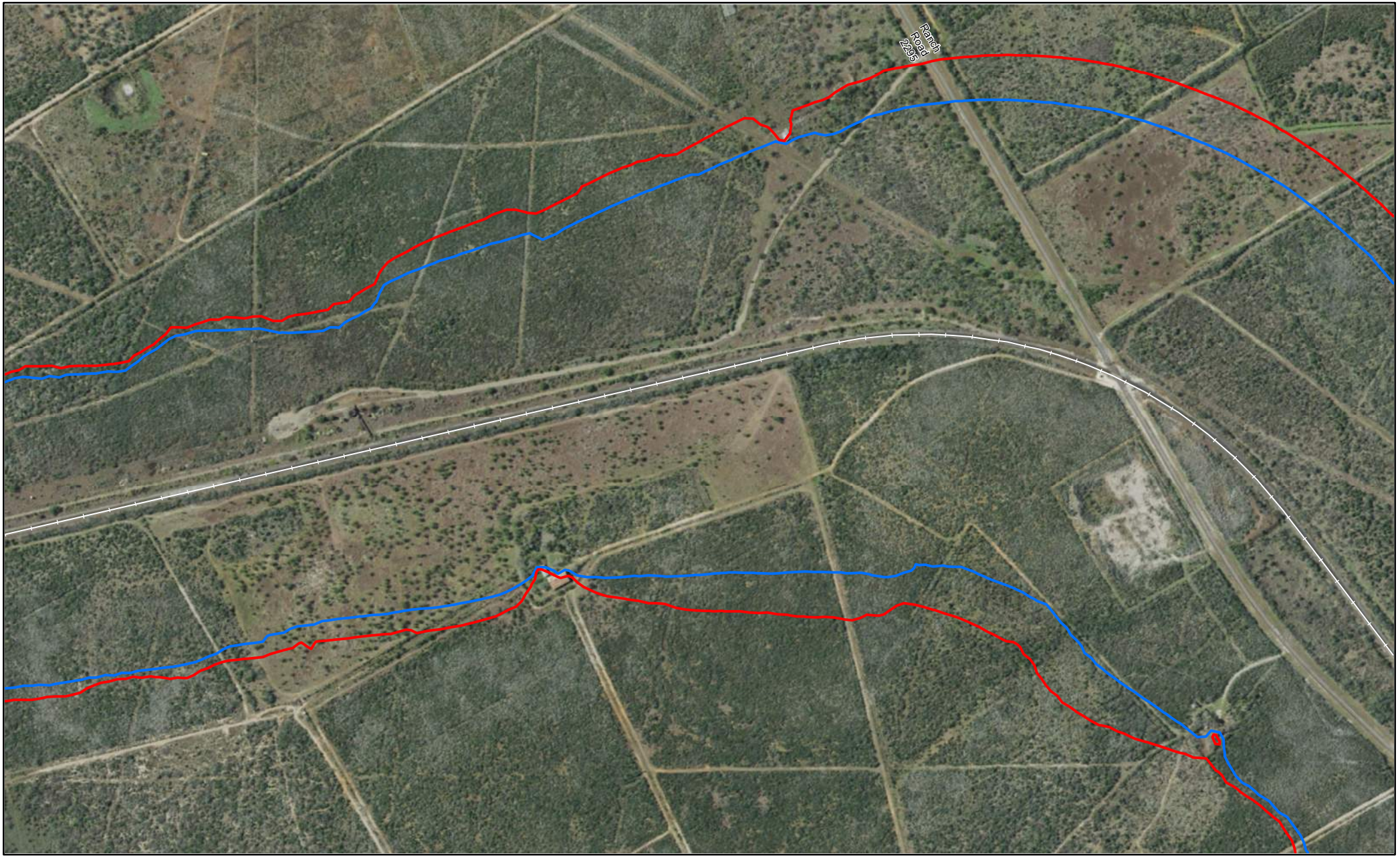
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Noise Contours
Duval County, TX

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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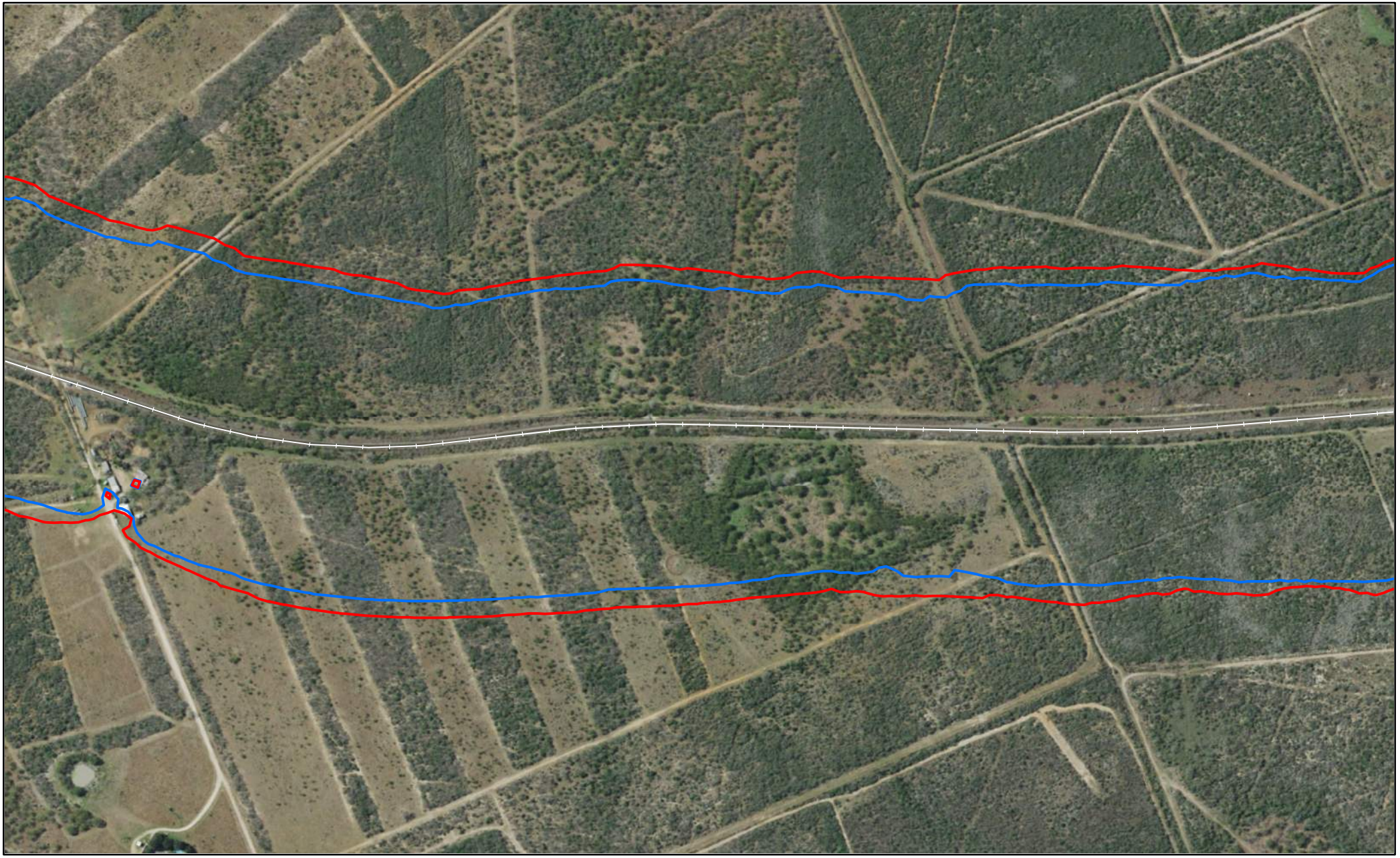
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Noise Contours
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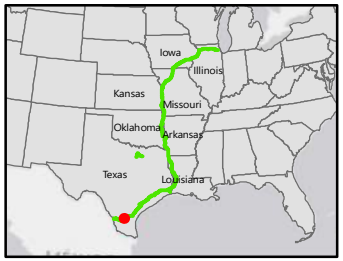
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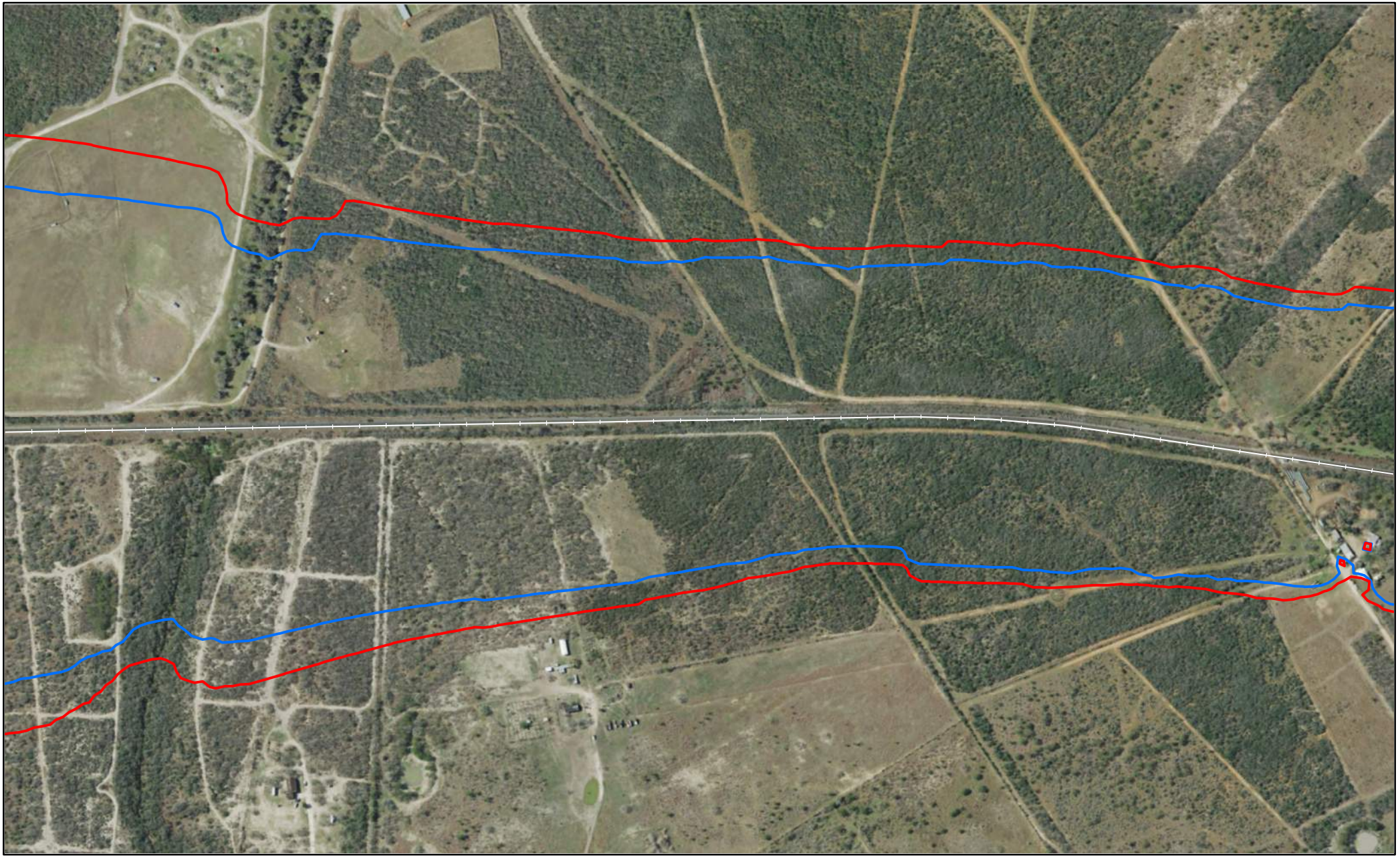
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Duval County, TX

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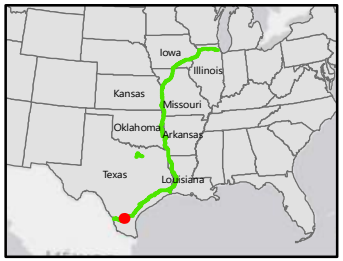
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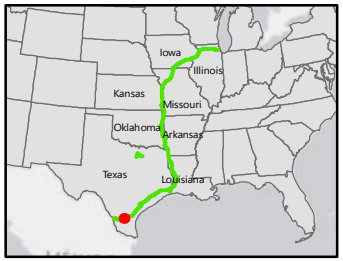
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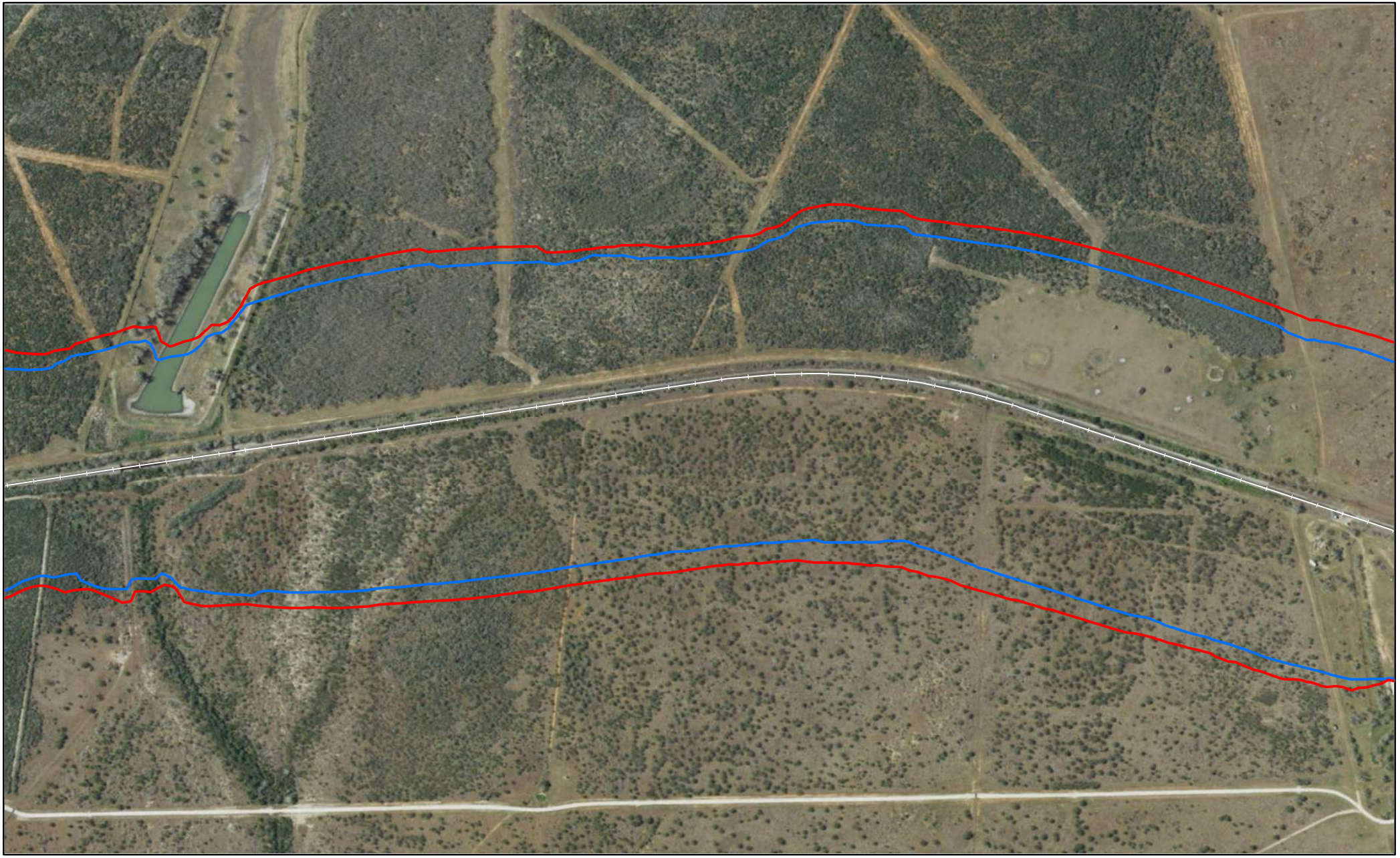
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Noise Contours
Duval County, TX

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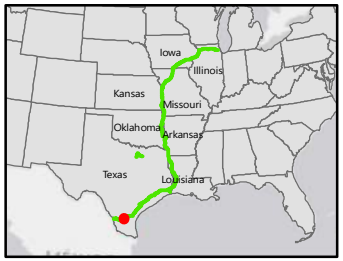
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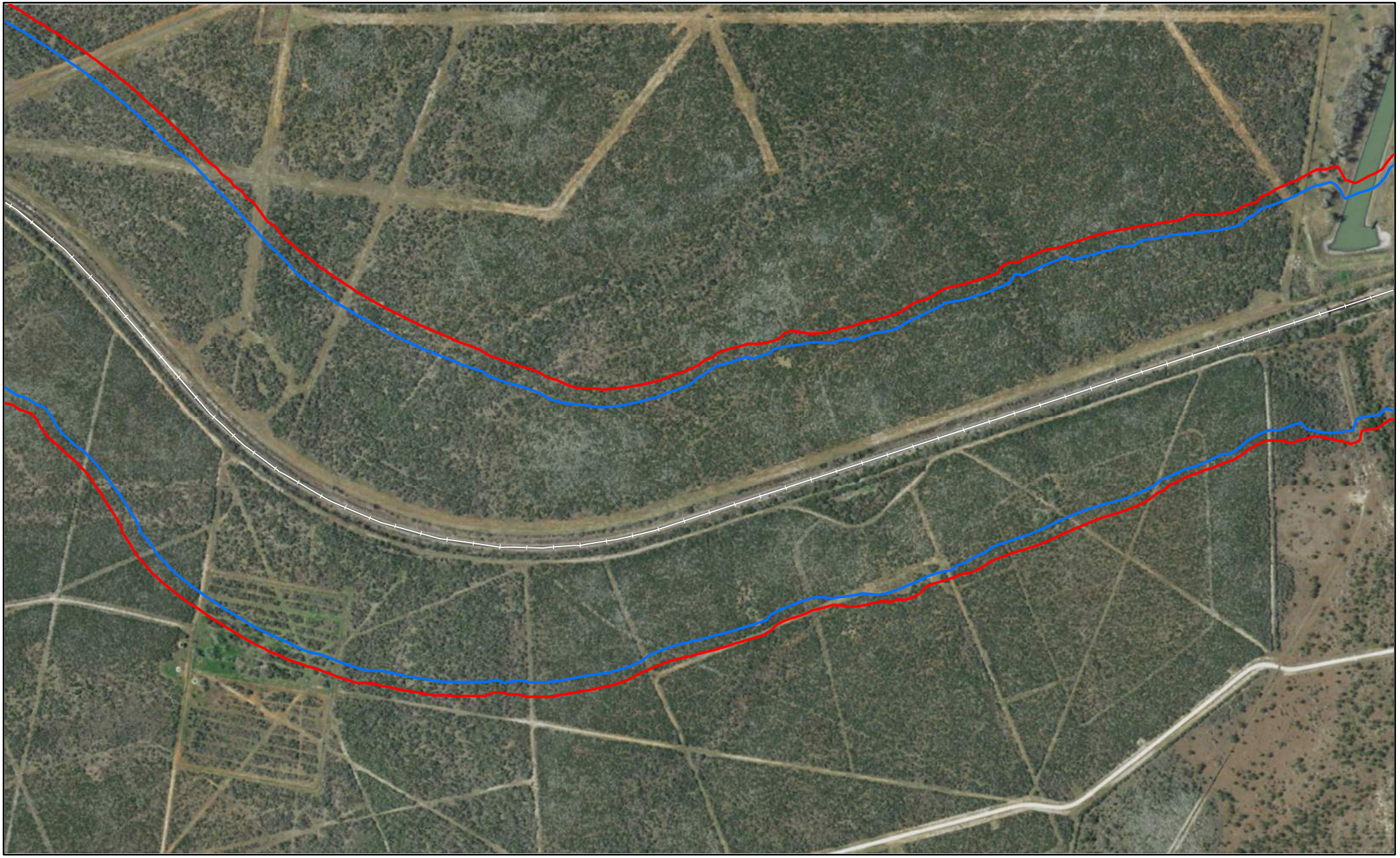
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Noise Contours
Duval County, TX

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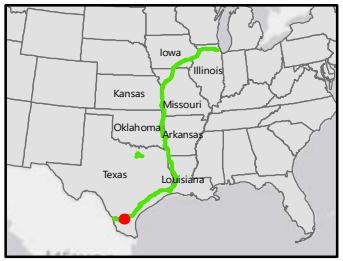
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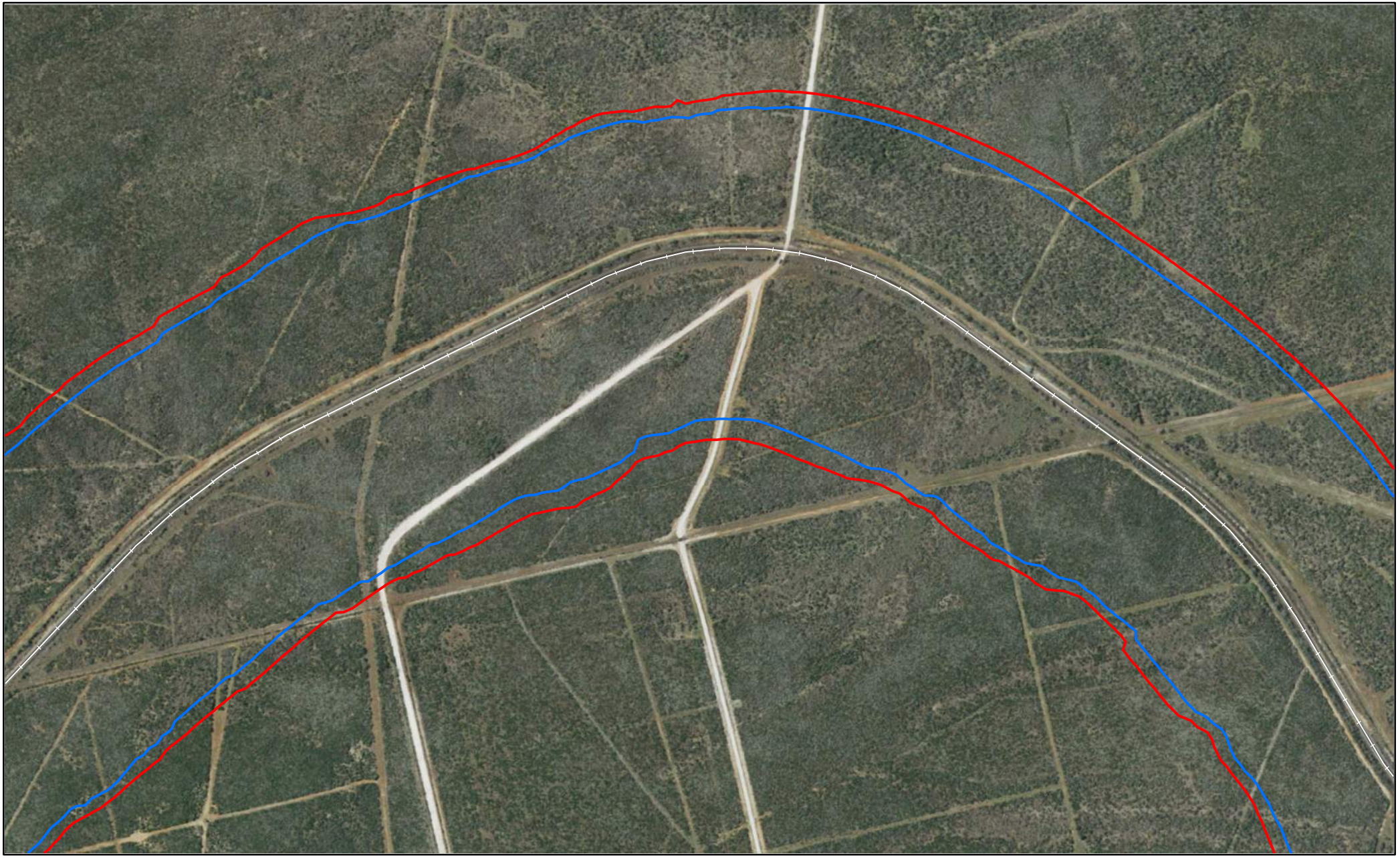
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Duval County, TX

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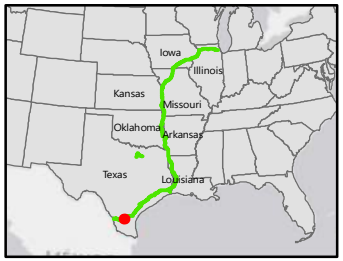
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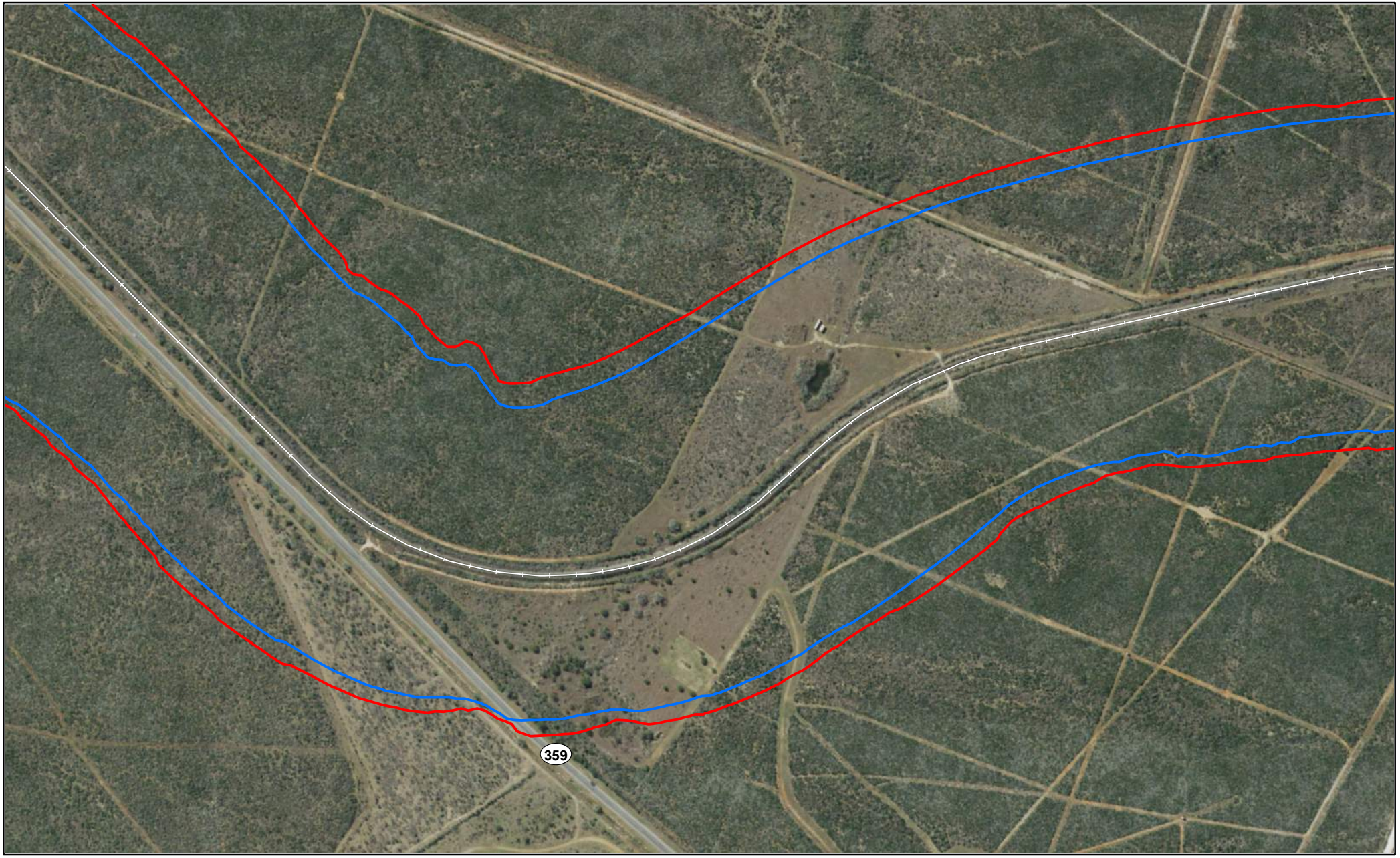
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Noise Contours
Duval County, TX

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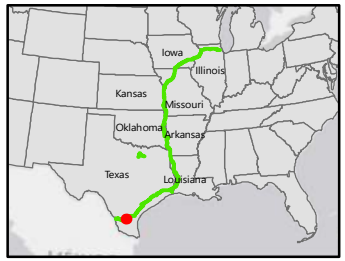
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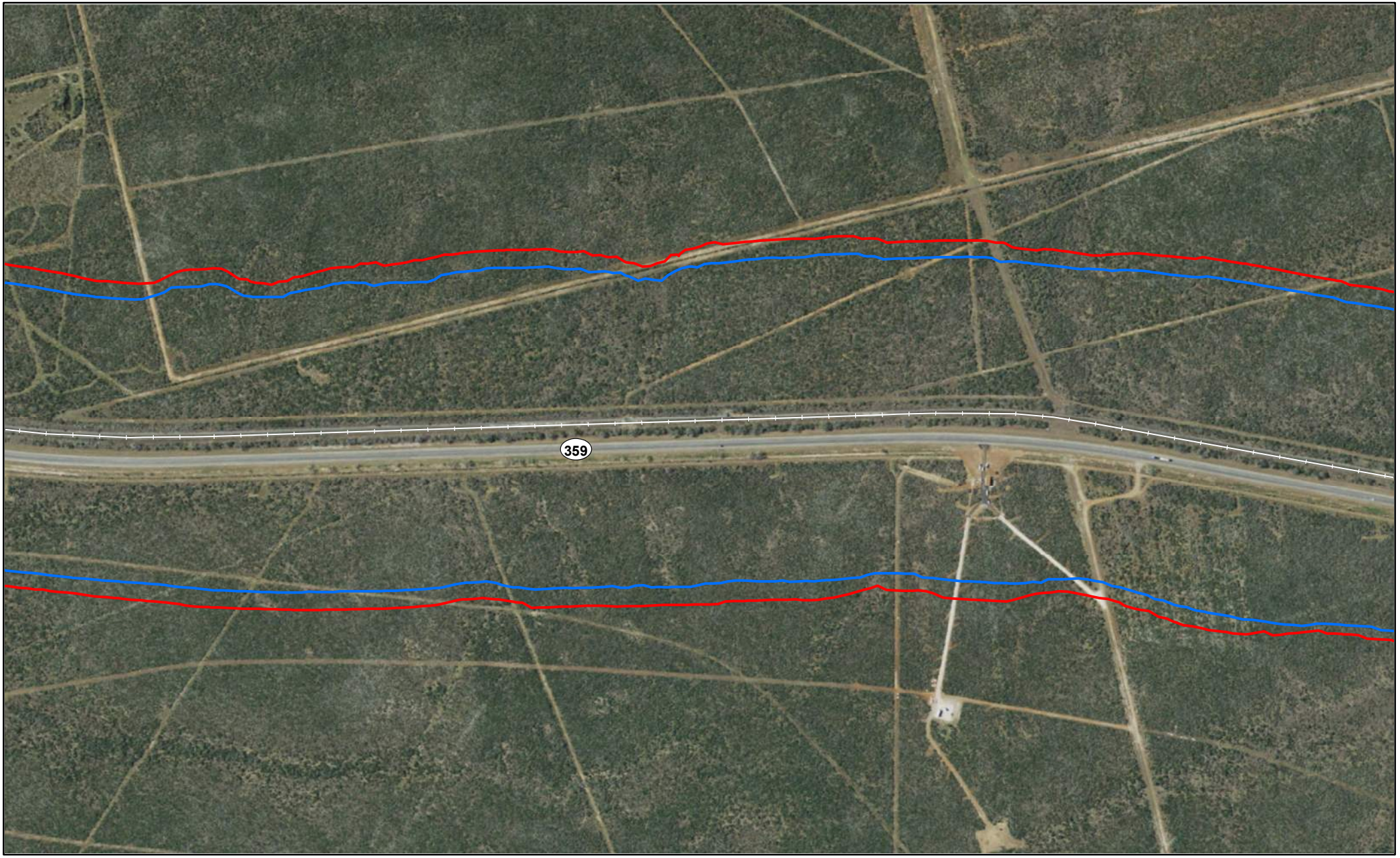
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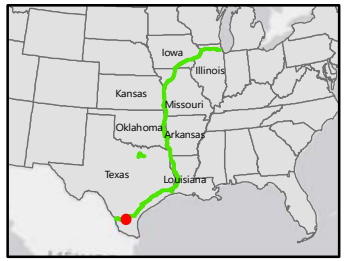
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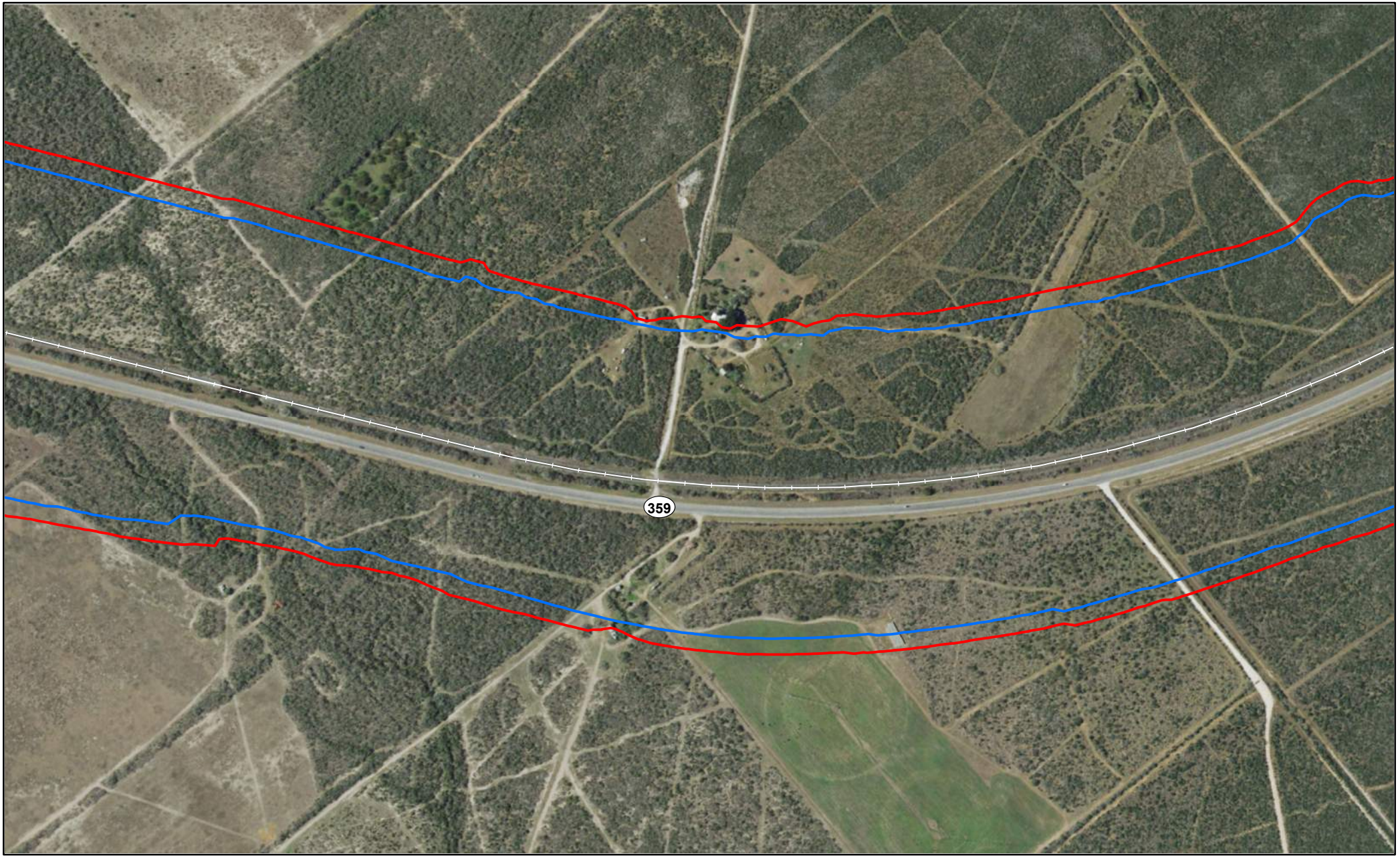
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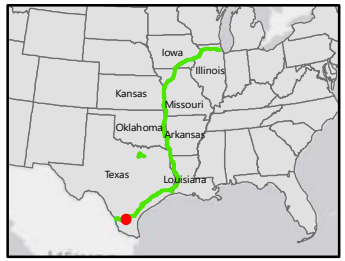
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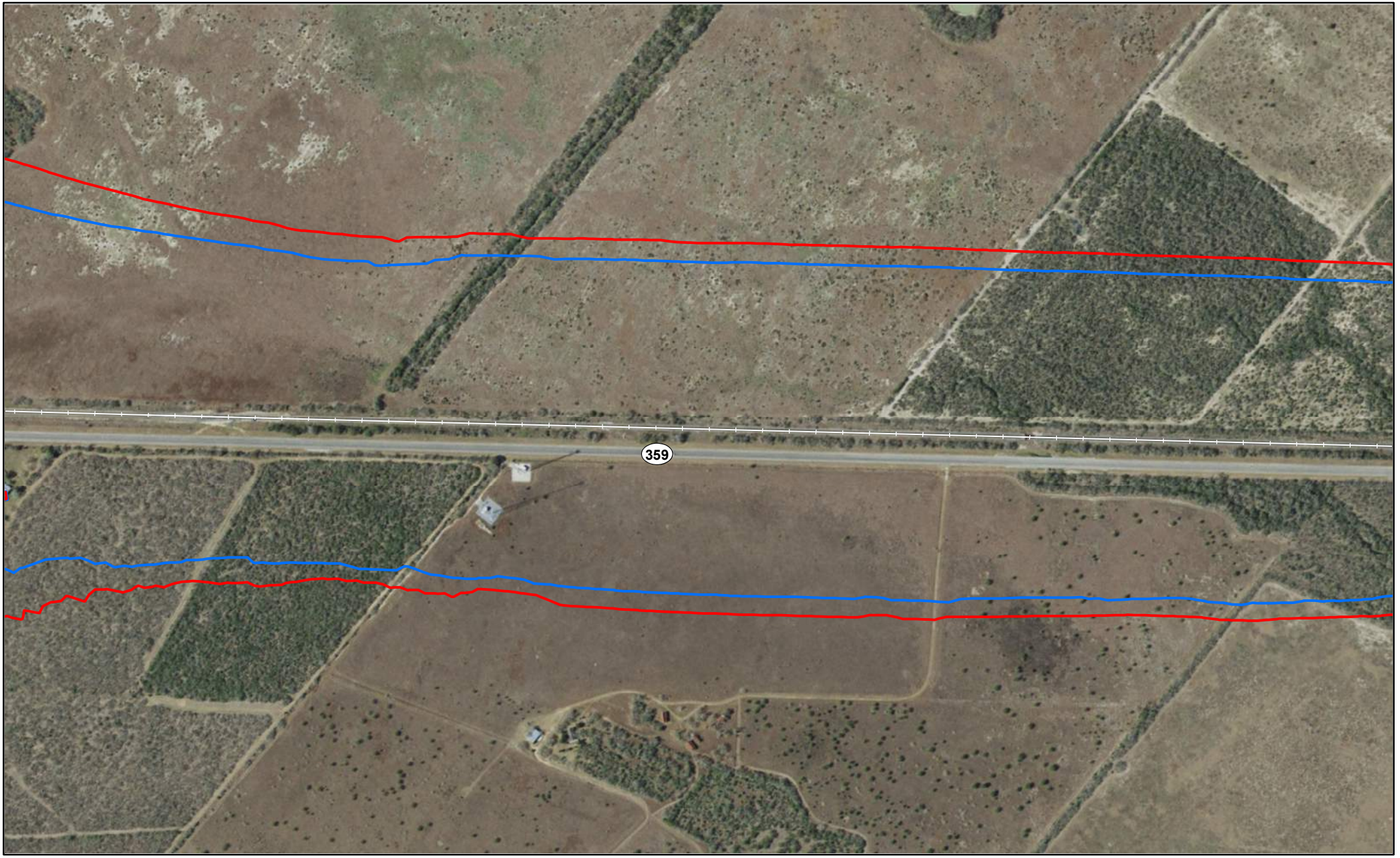
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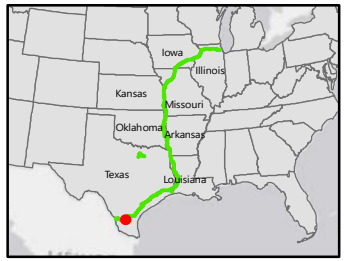
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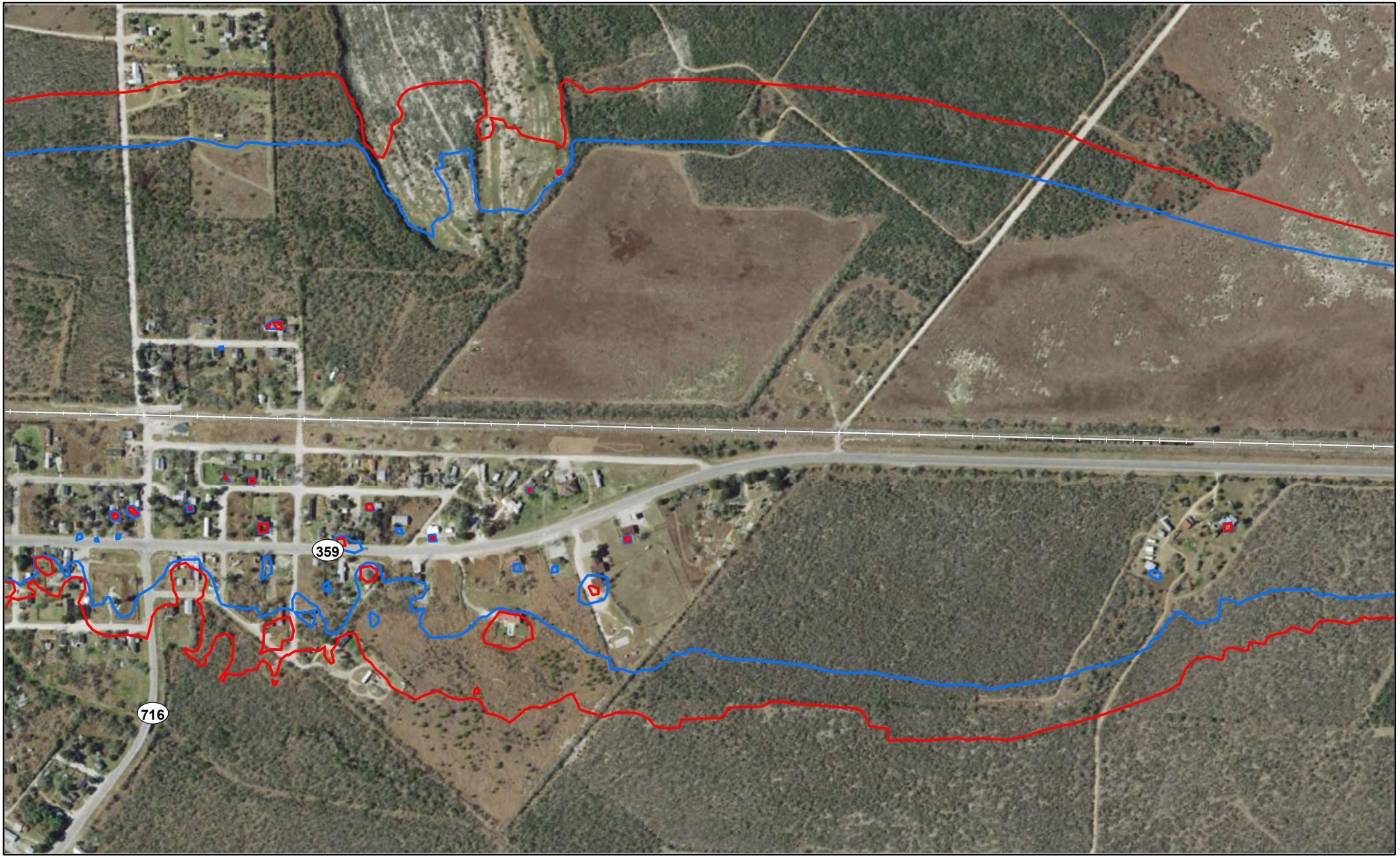
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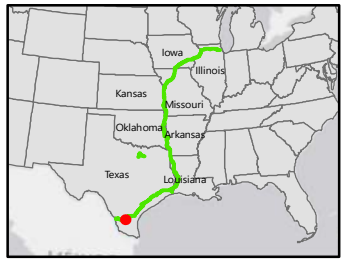
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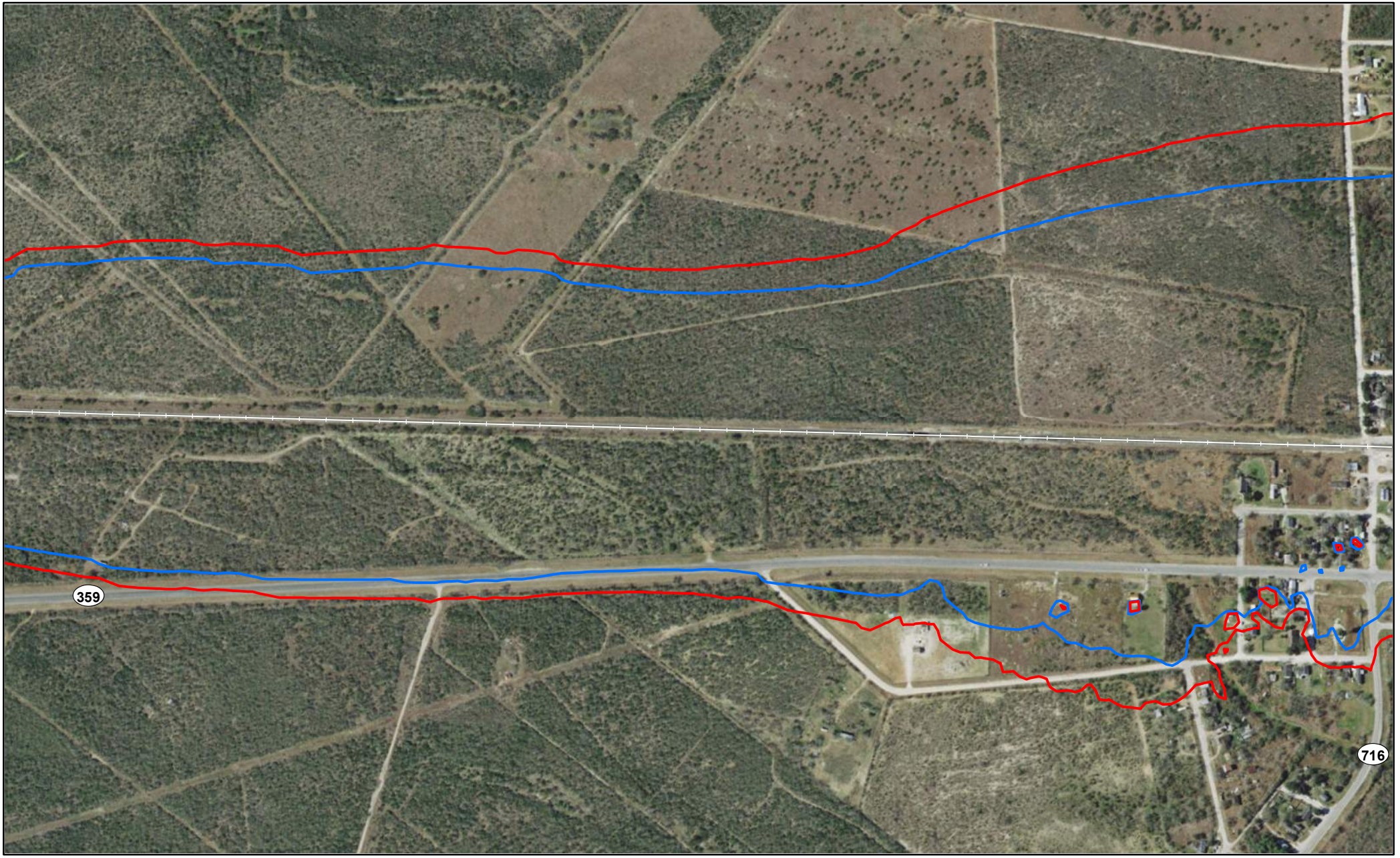
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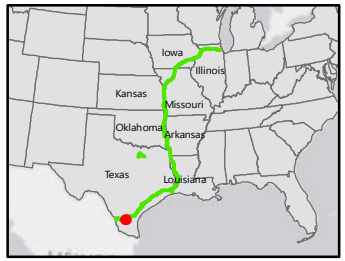
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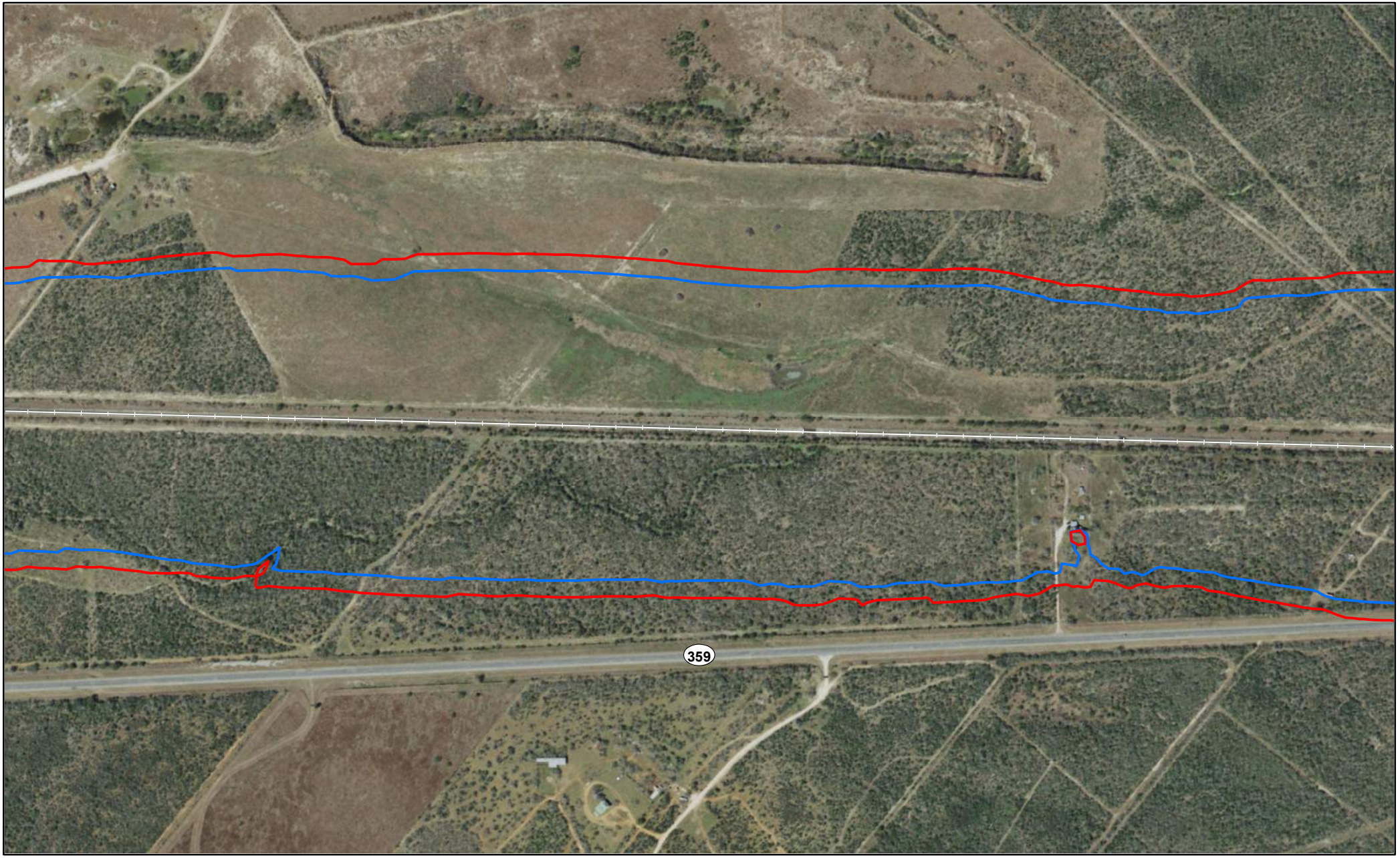
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0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



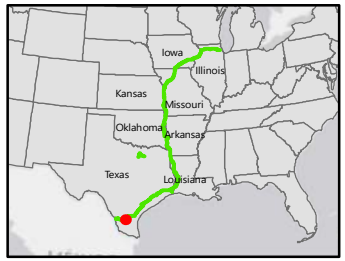
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

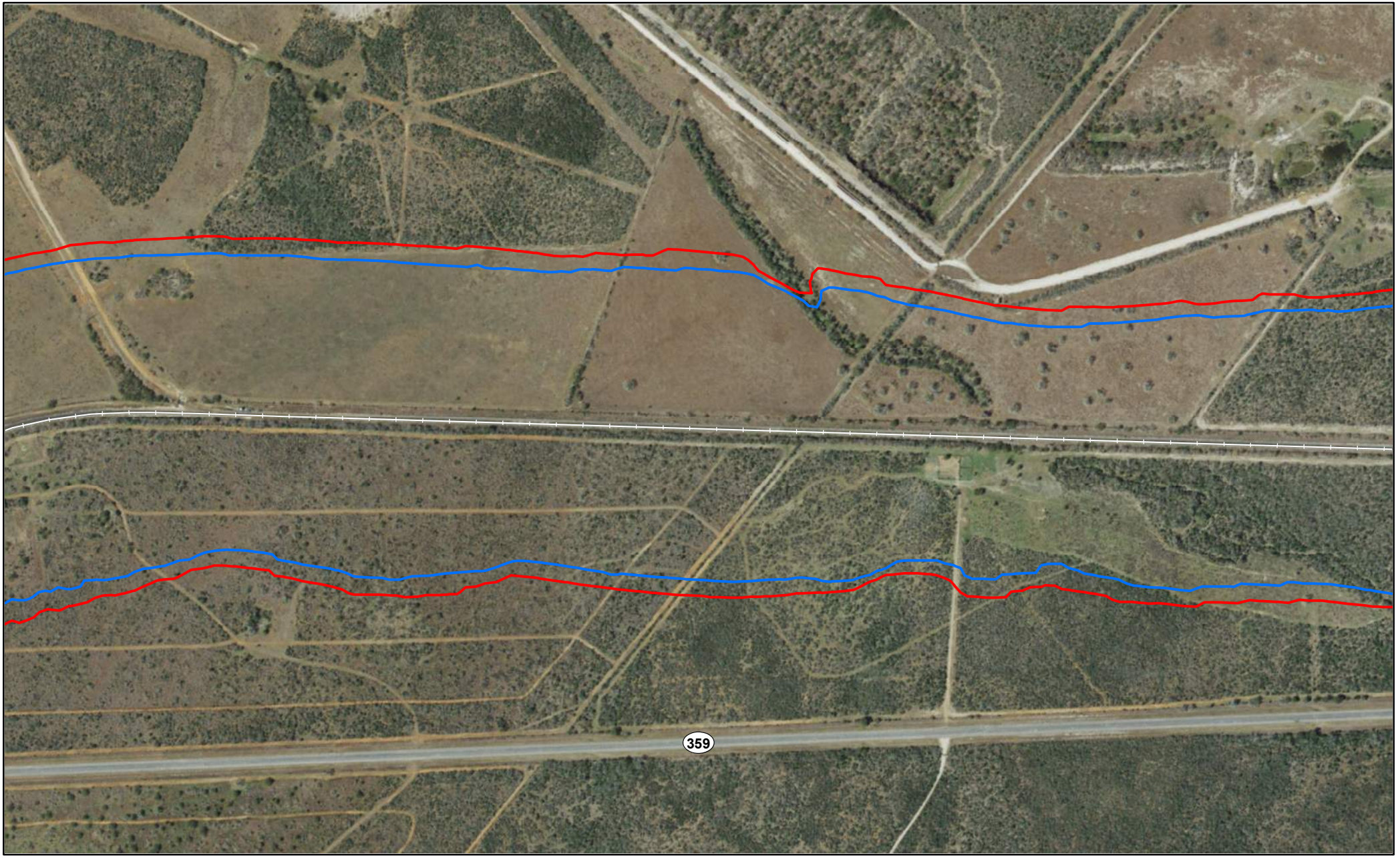
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Noise Contours
Duval County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



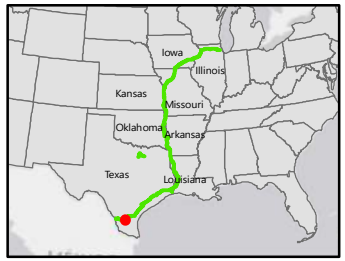
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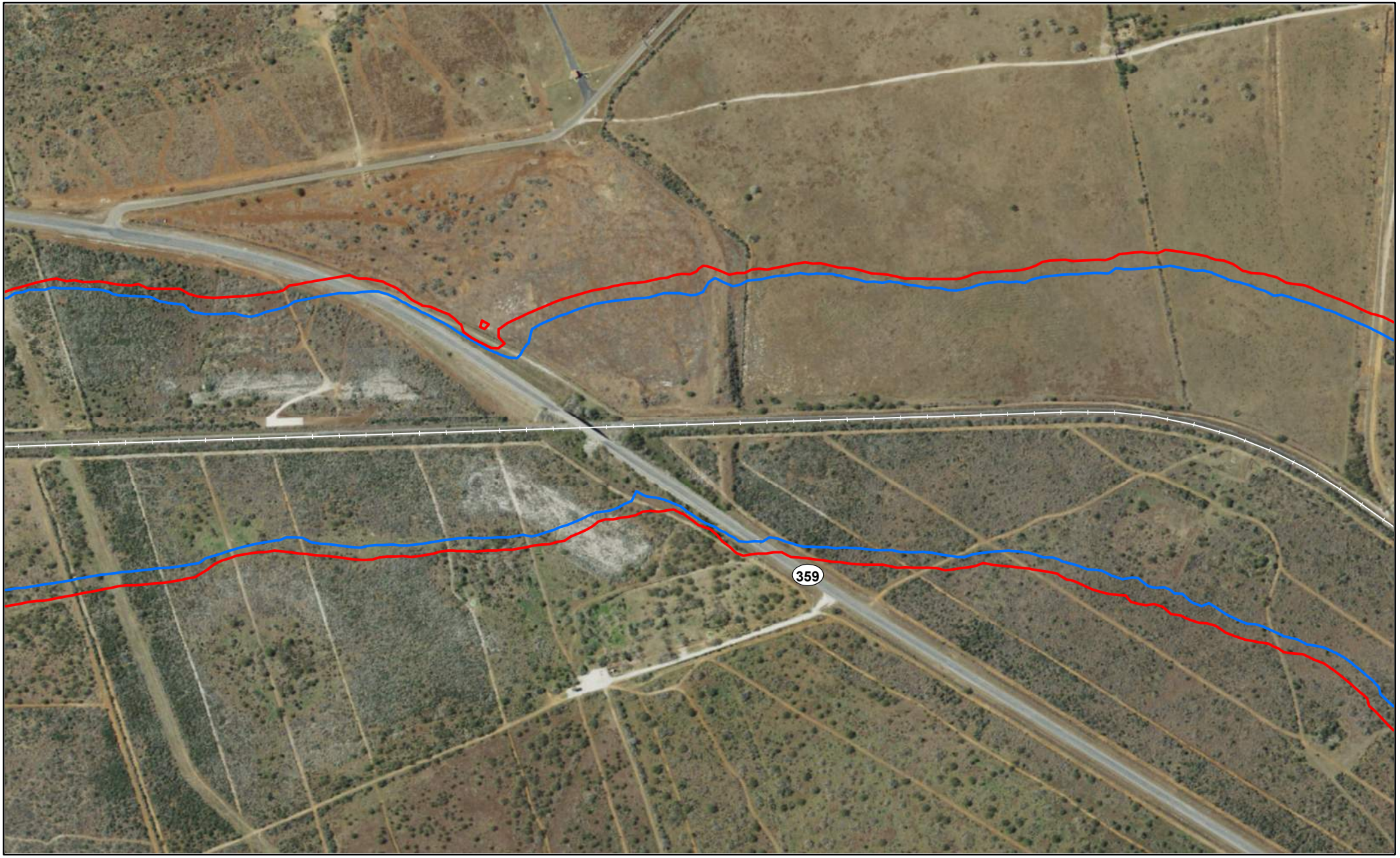
Tracks

Source: ESRI.



Noise Contours
Duval County, TX

Miles
0 0.05 0.1



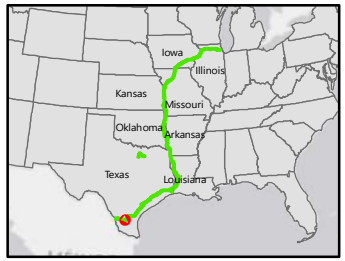
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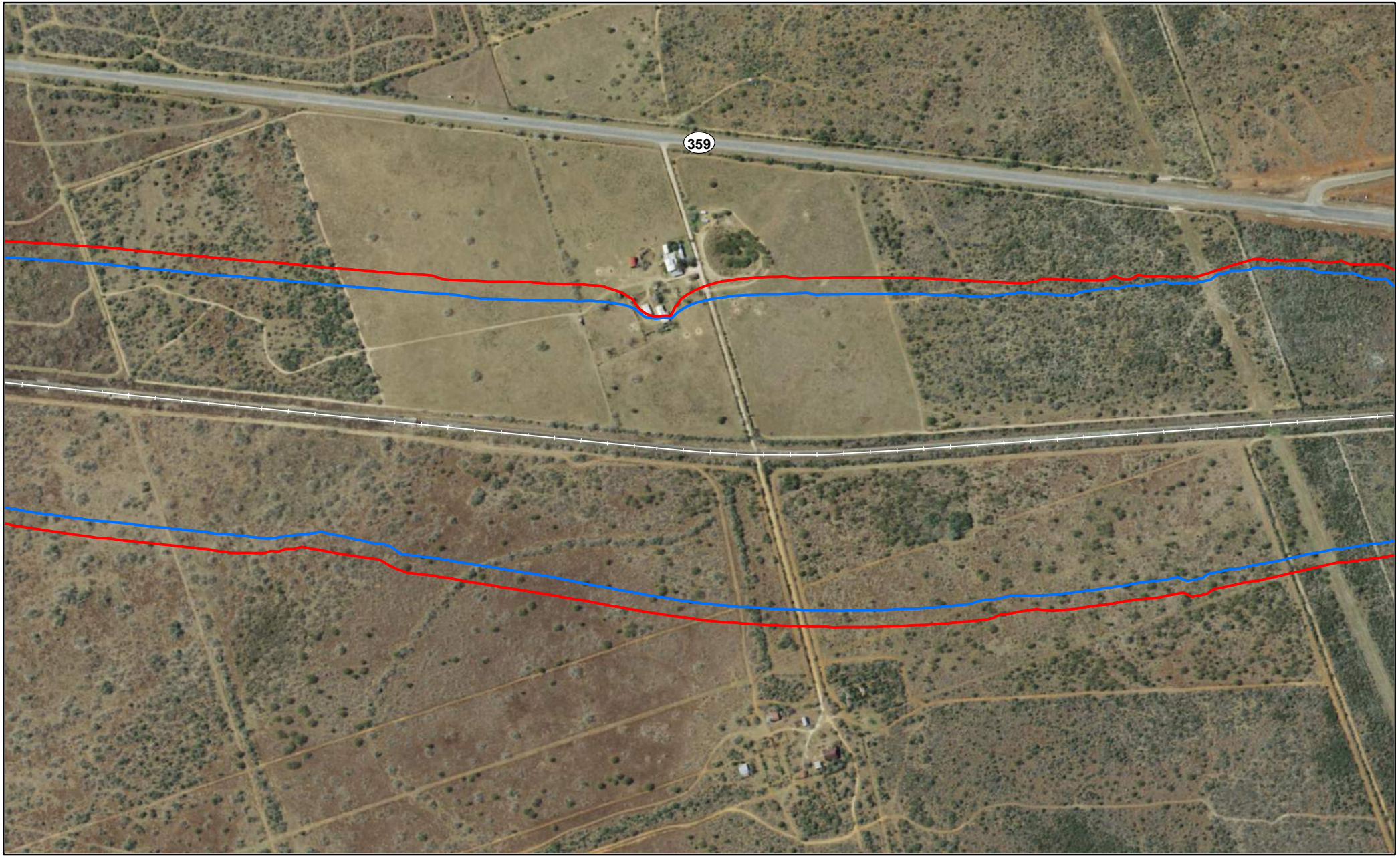
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Noise Contours
Duval County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



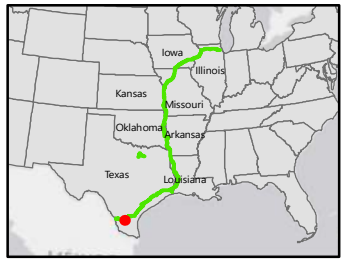
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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Duval County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



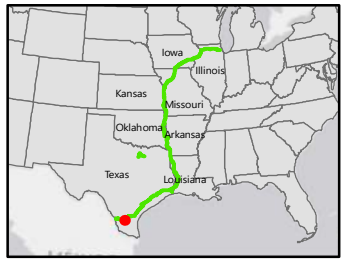
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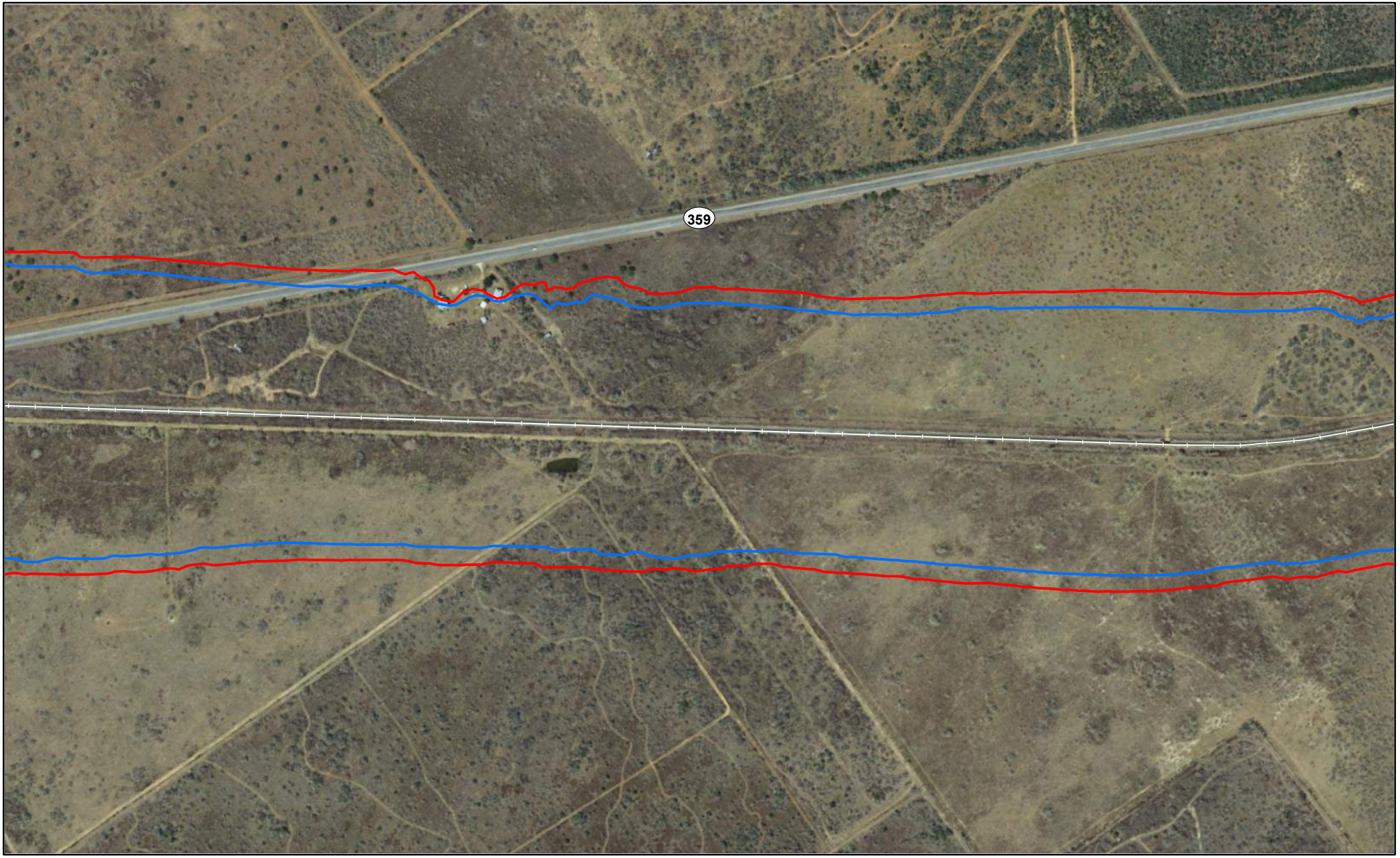
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Noise Contours
Duval County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



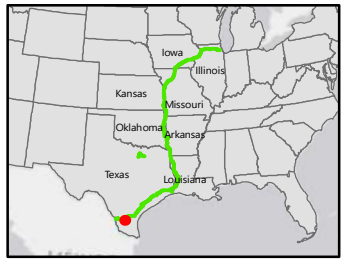
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Tracks

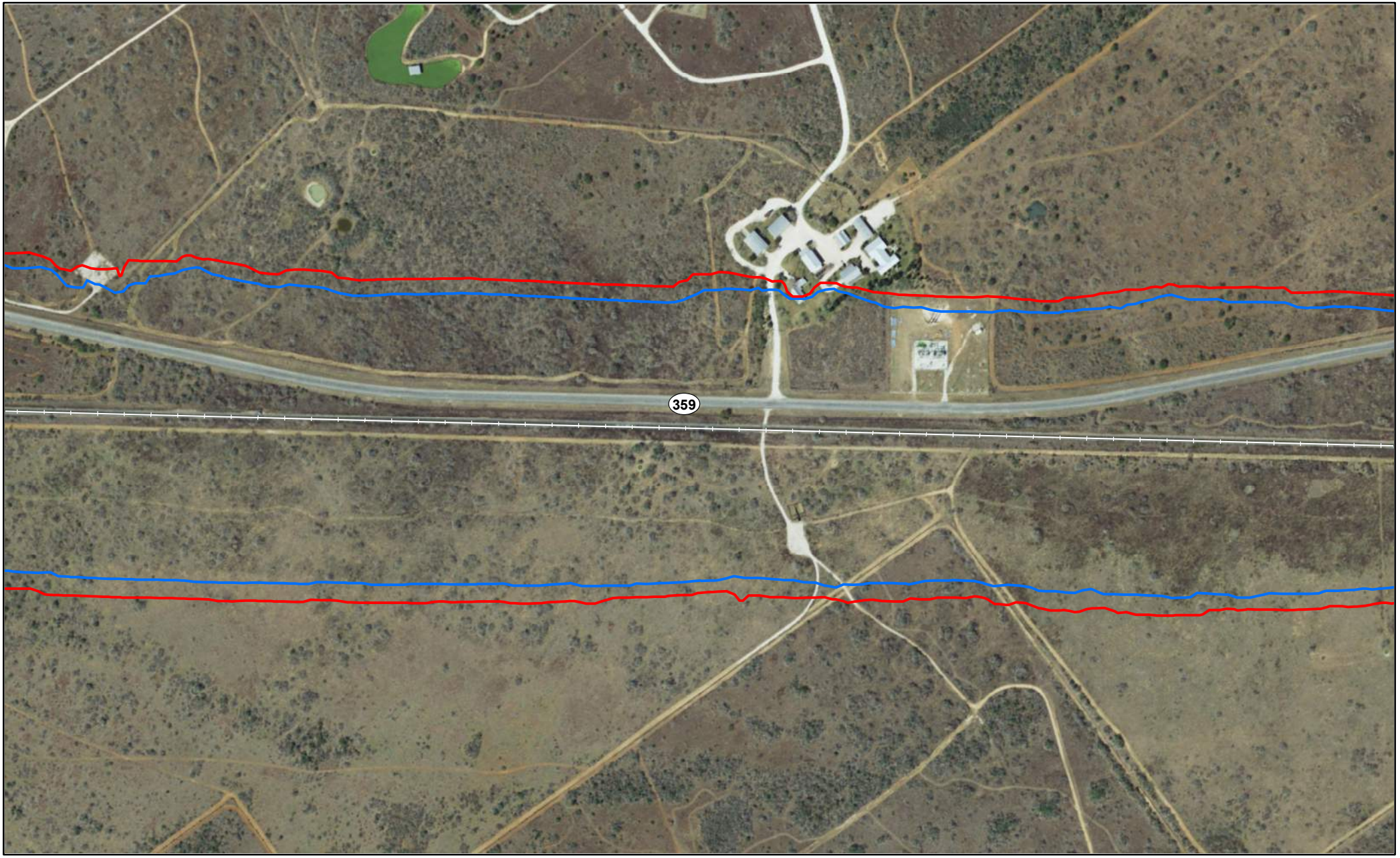
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Noise Contours
Duval County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



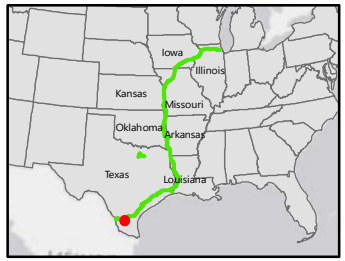
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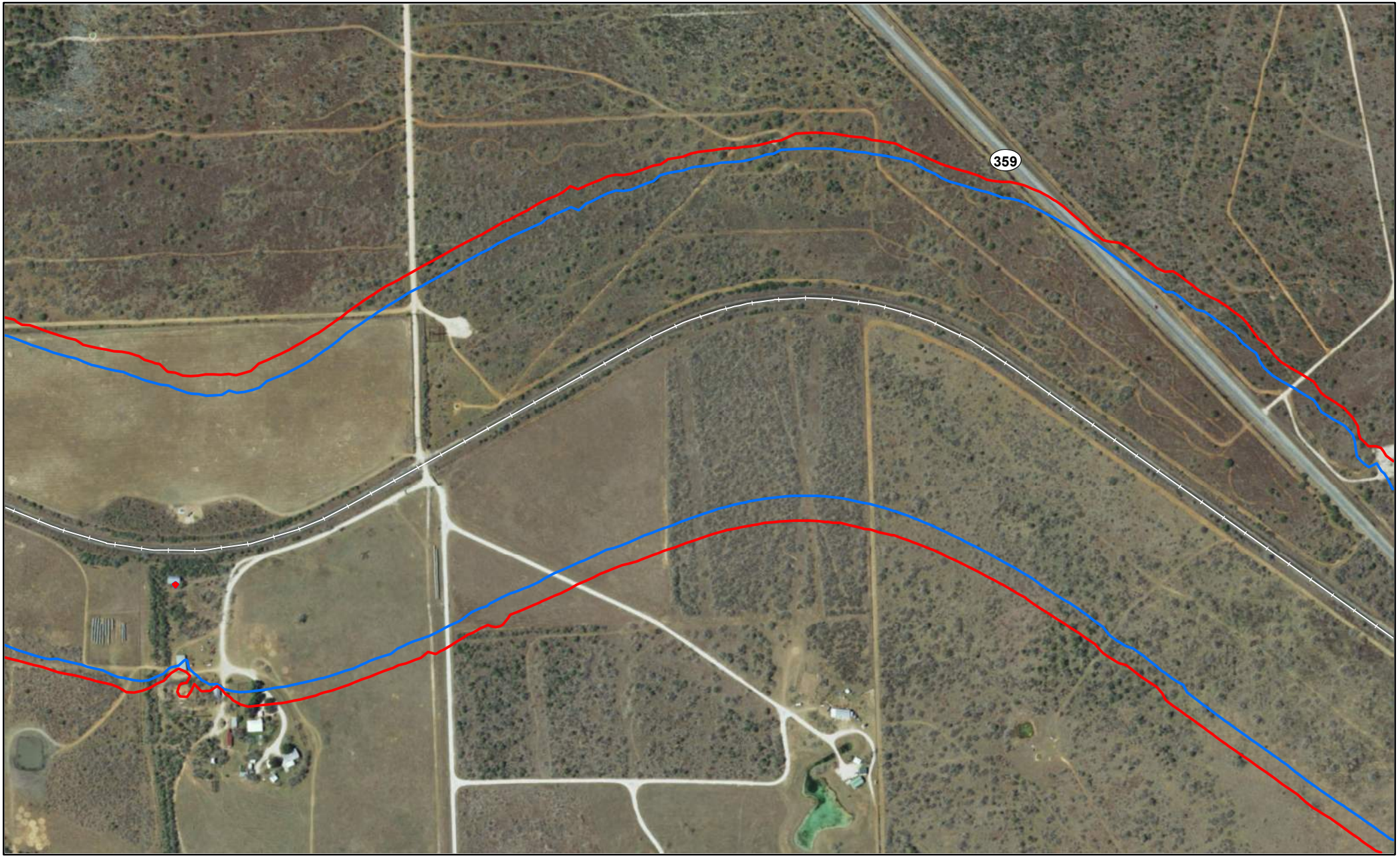
Tracks

Source: ESRI.



Noise Contours
Duval County, TX

Miles
0 0.05 0.1



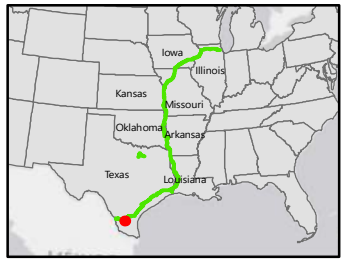
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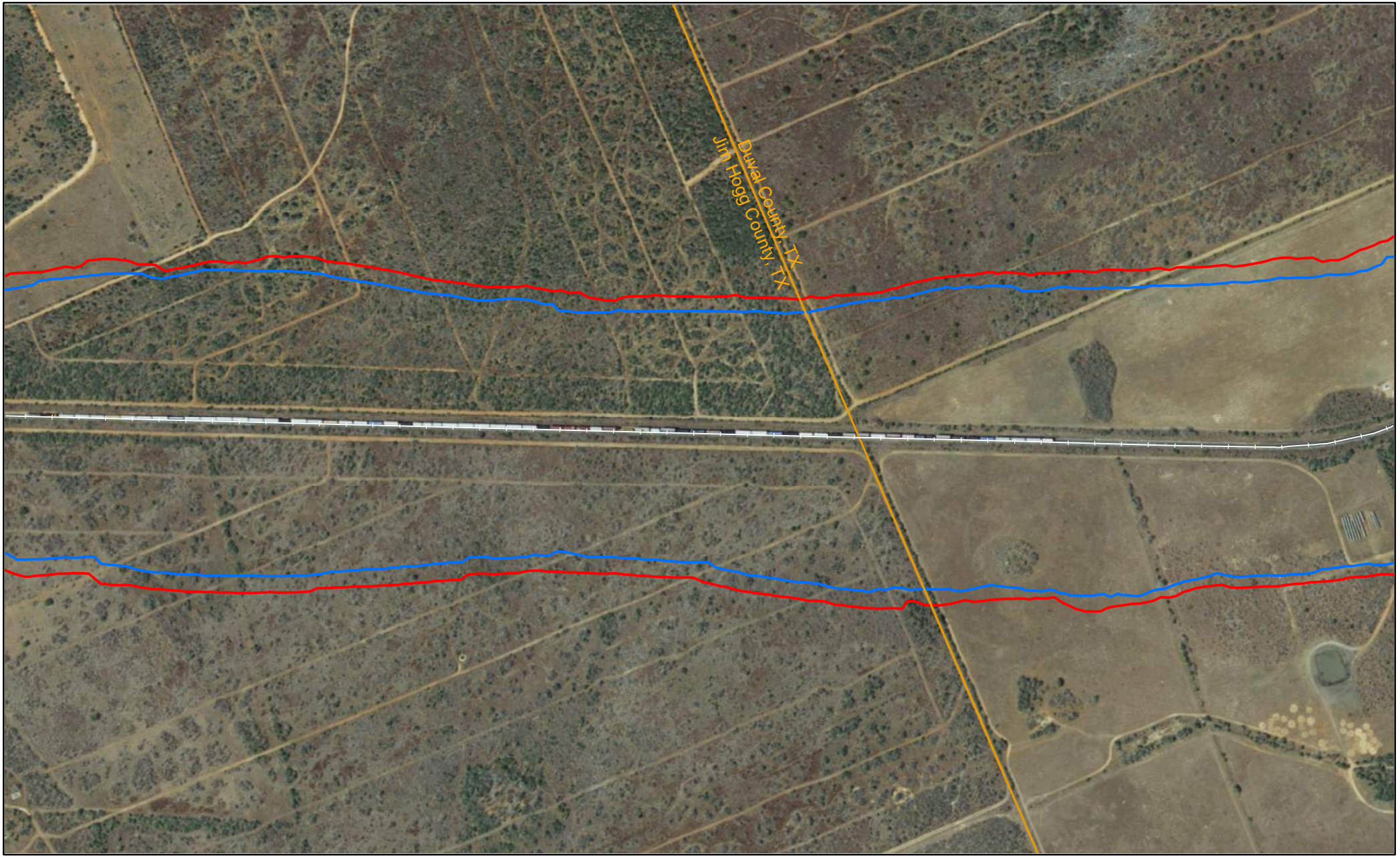
Tracks

Source: ESRI.



Noise Contours
Duval County, TX

Miles
0 0.05 0.1



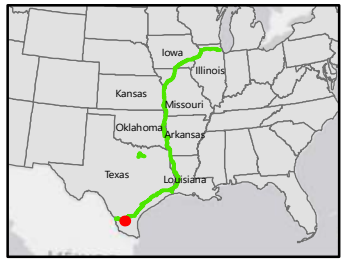
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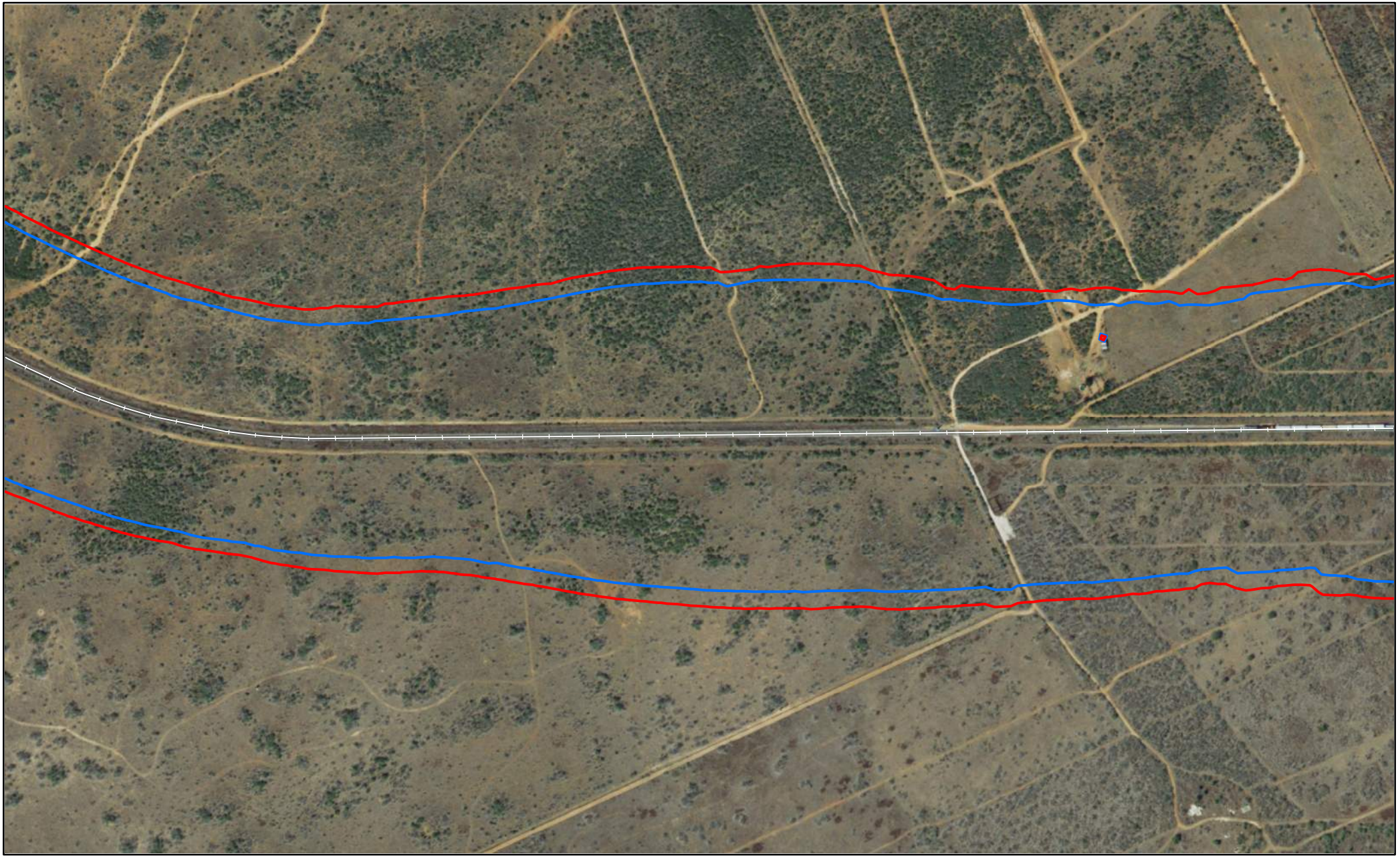


Noise Contours
Jim Hogg County, TX

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



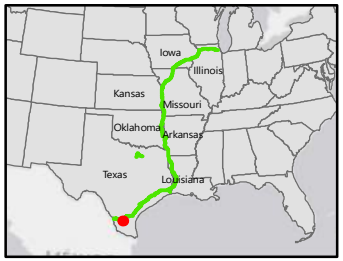
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jim Hogg County, TX

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



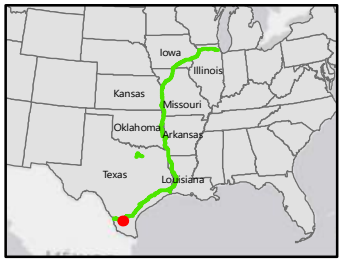
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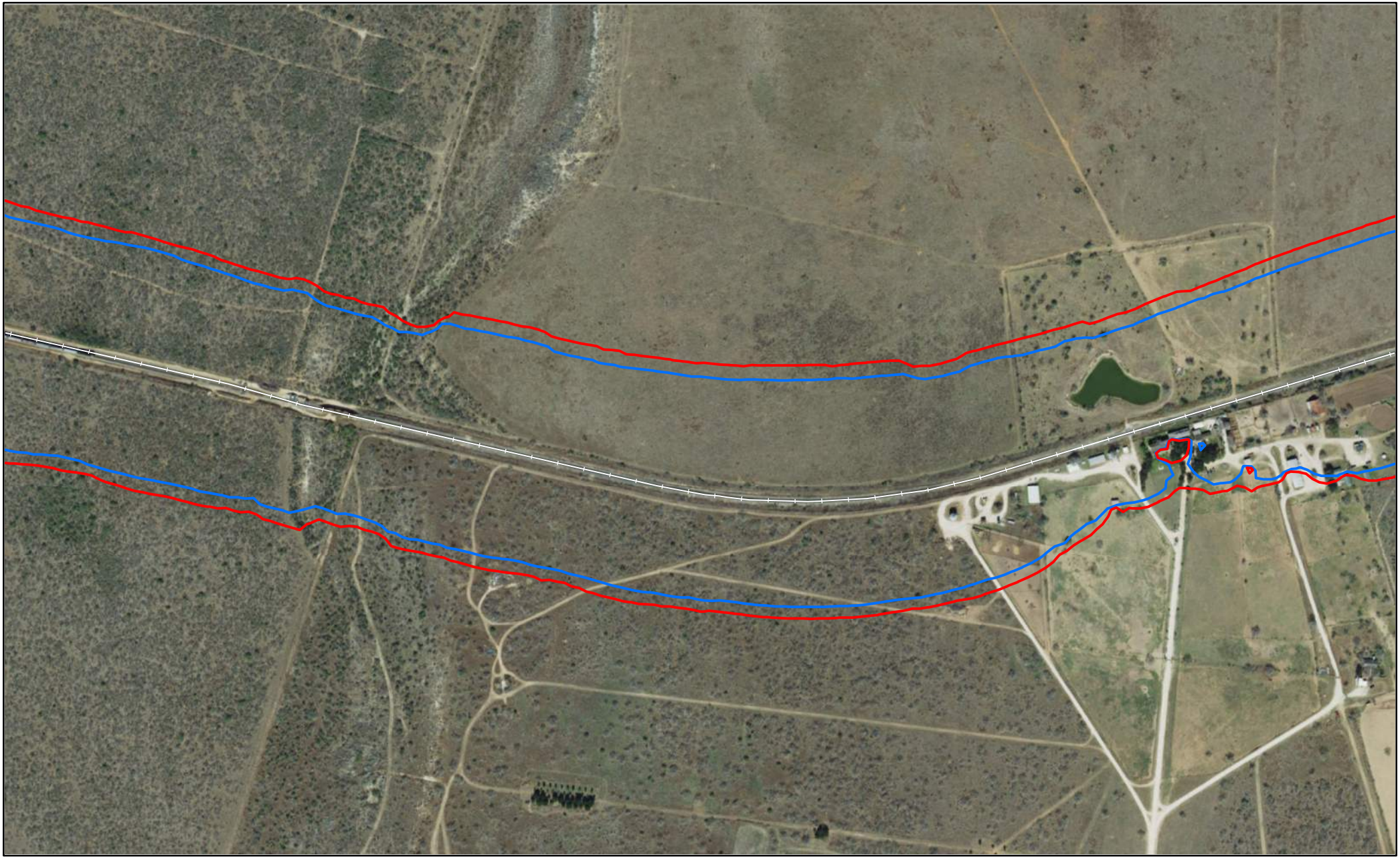


Noise Contours
Jim Hogg County, TX

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



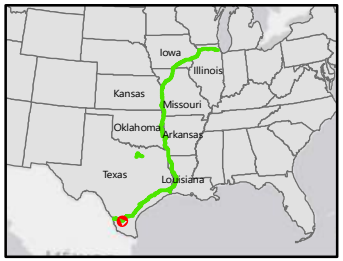
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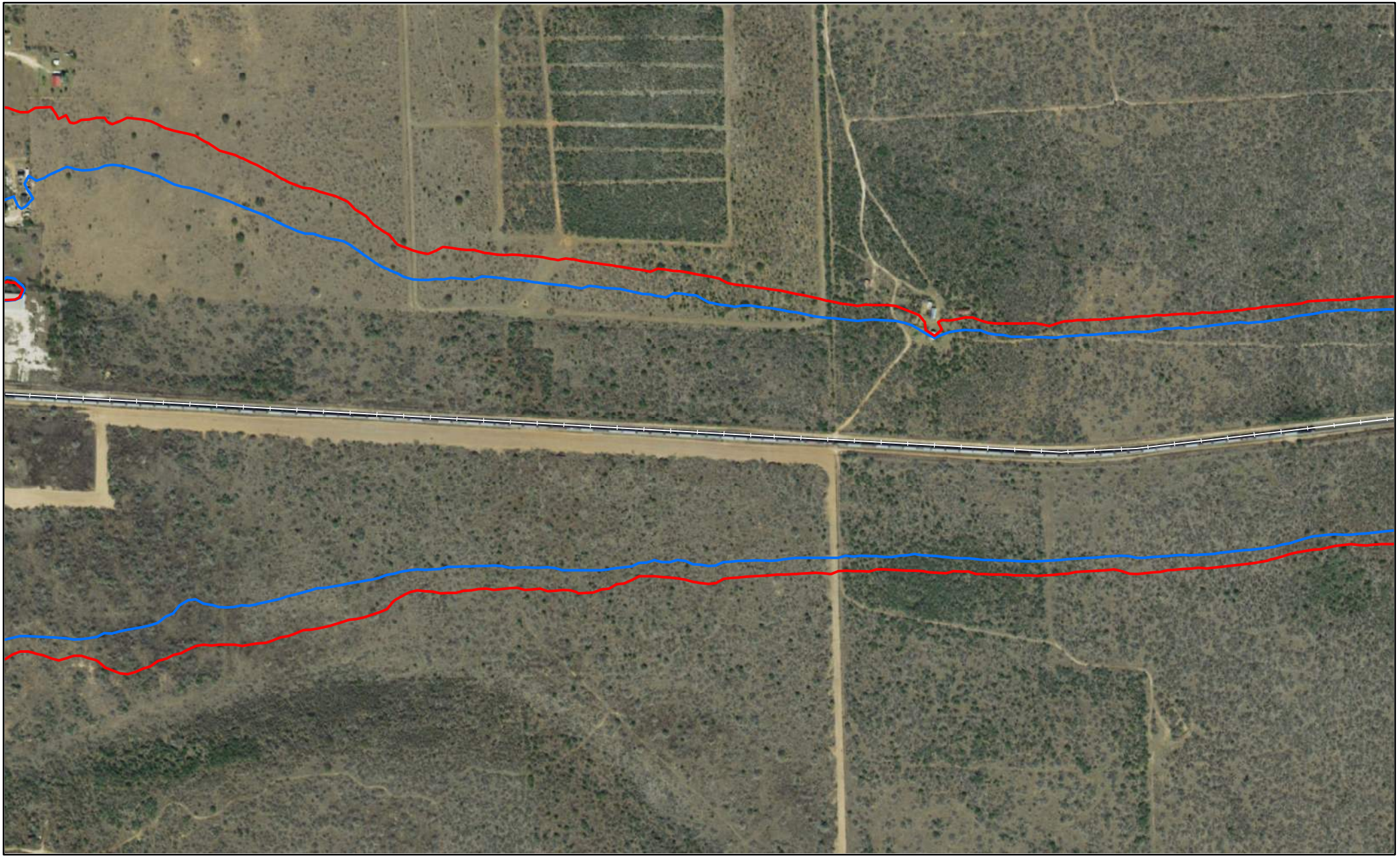


Noise Contours
Jim Hogg County, TX

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



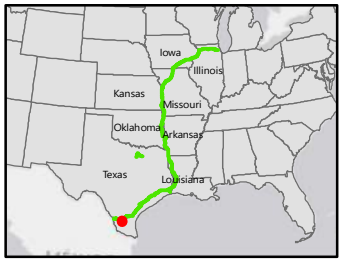
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Noise Contours
Jim Hogg County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



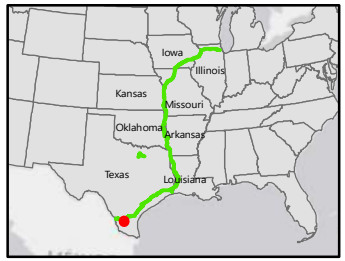
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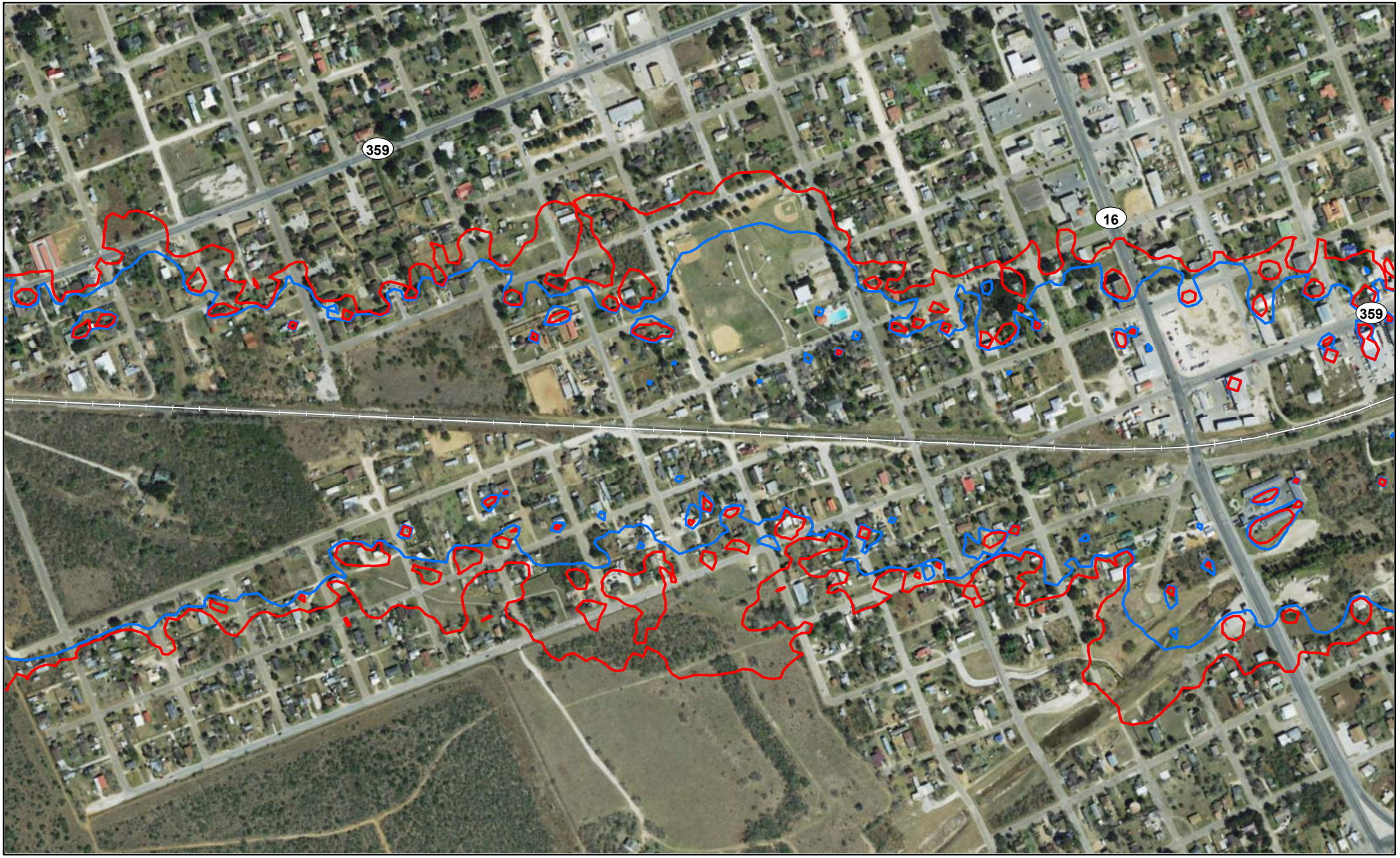
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Noise Contours
Jim Hogg County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



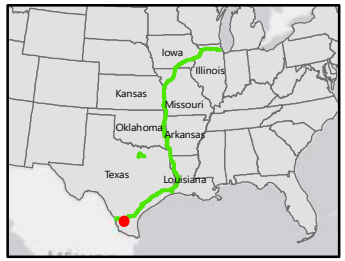
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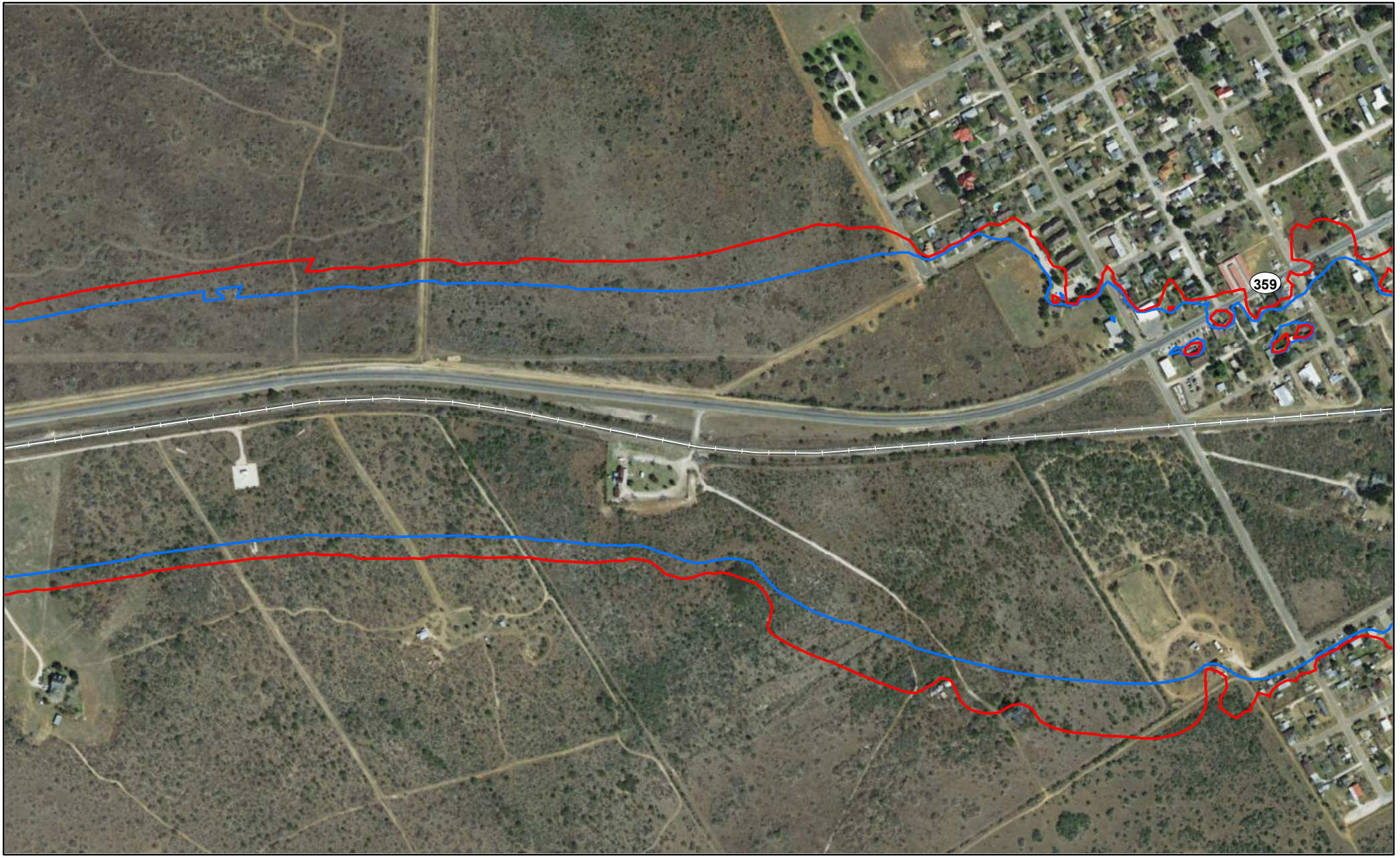
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Noise Contours
Jim Hogg County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



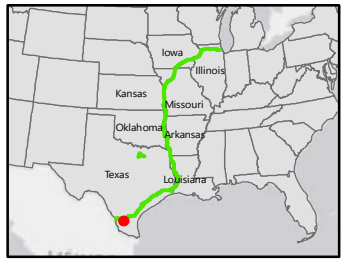
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Noise Contours
Jim Hogg County, TX

Miles
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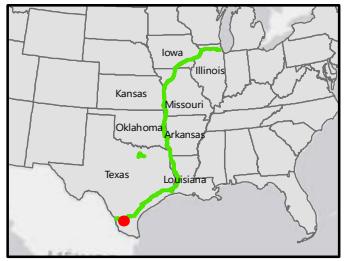
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Noise Contours
Jim Hogg County, TX

Miles
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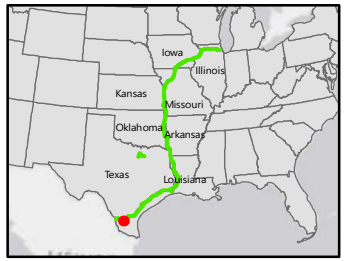
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Noise Contours
Jim Hogg County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



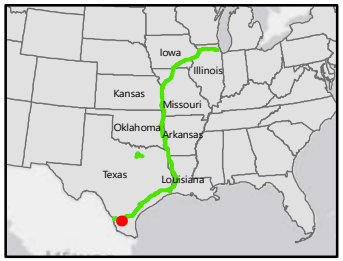
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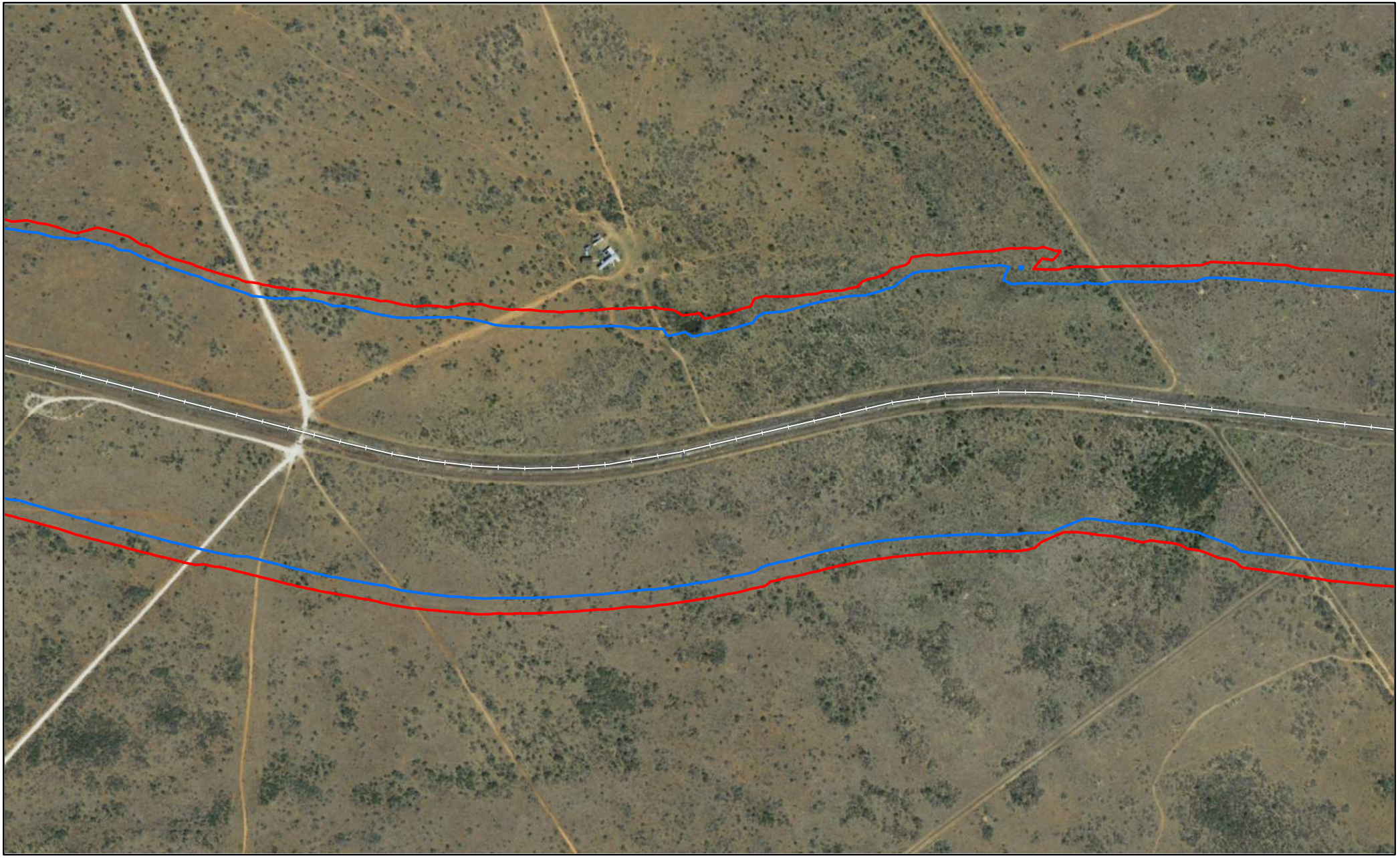


Noise Contours
Jim Hogg County, TX

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



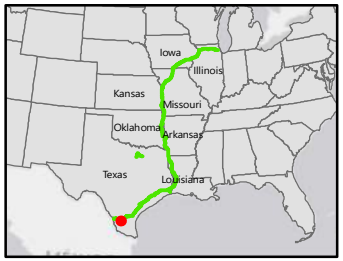
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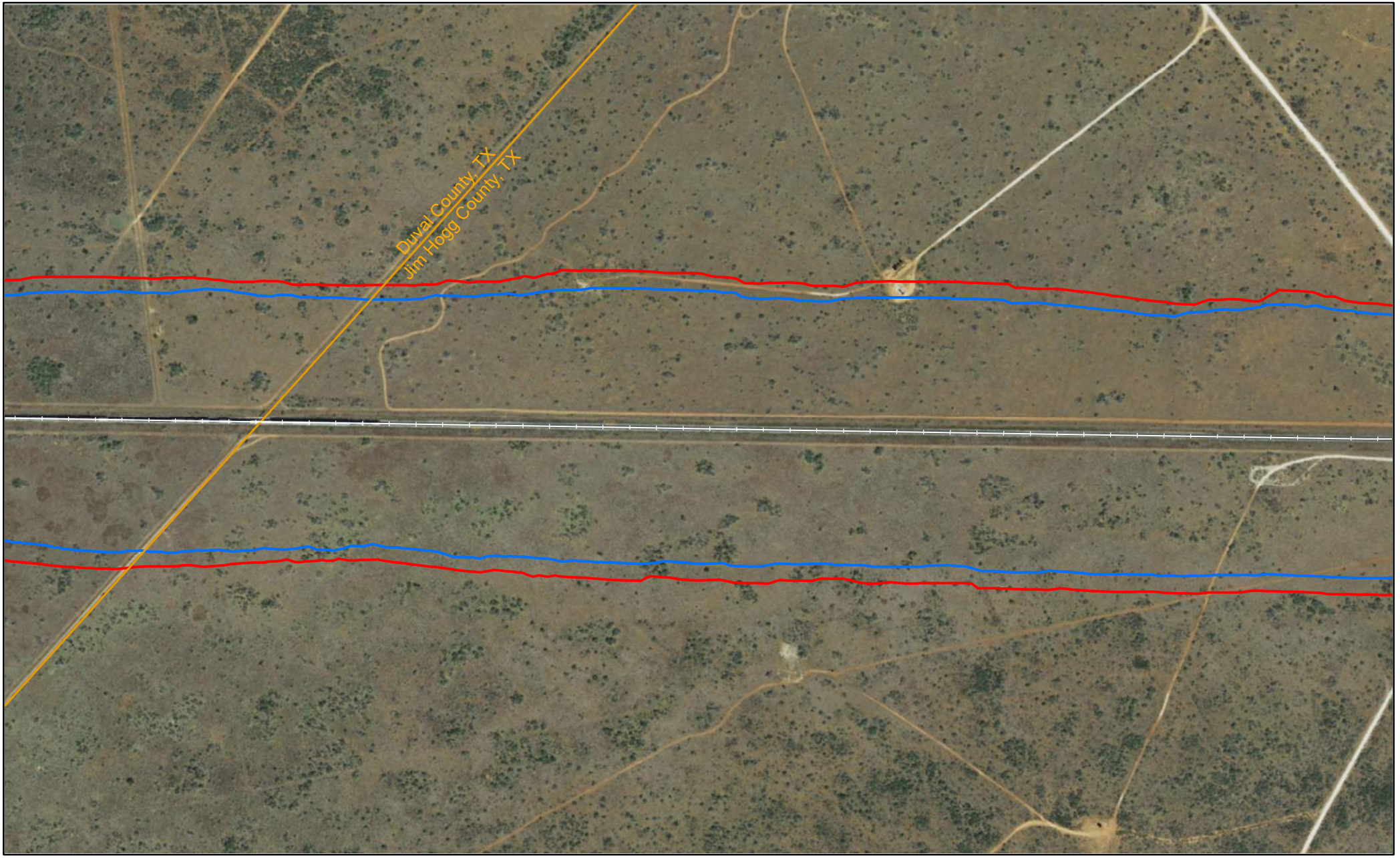


Noise Contours
Jim Hogg County, TX

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



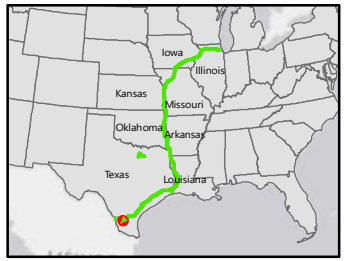
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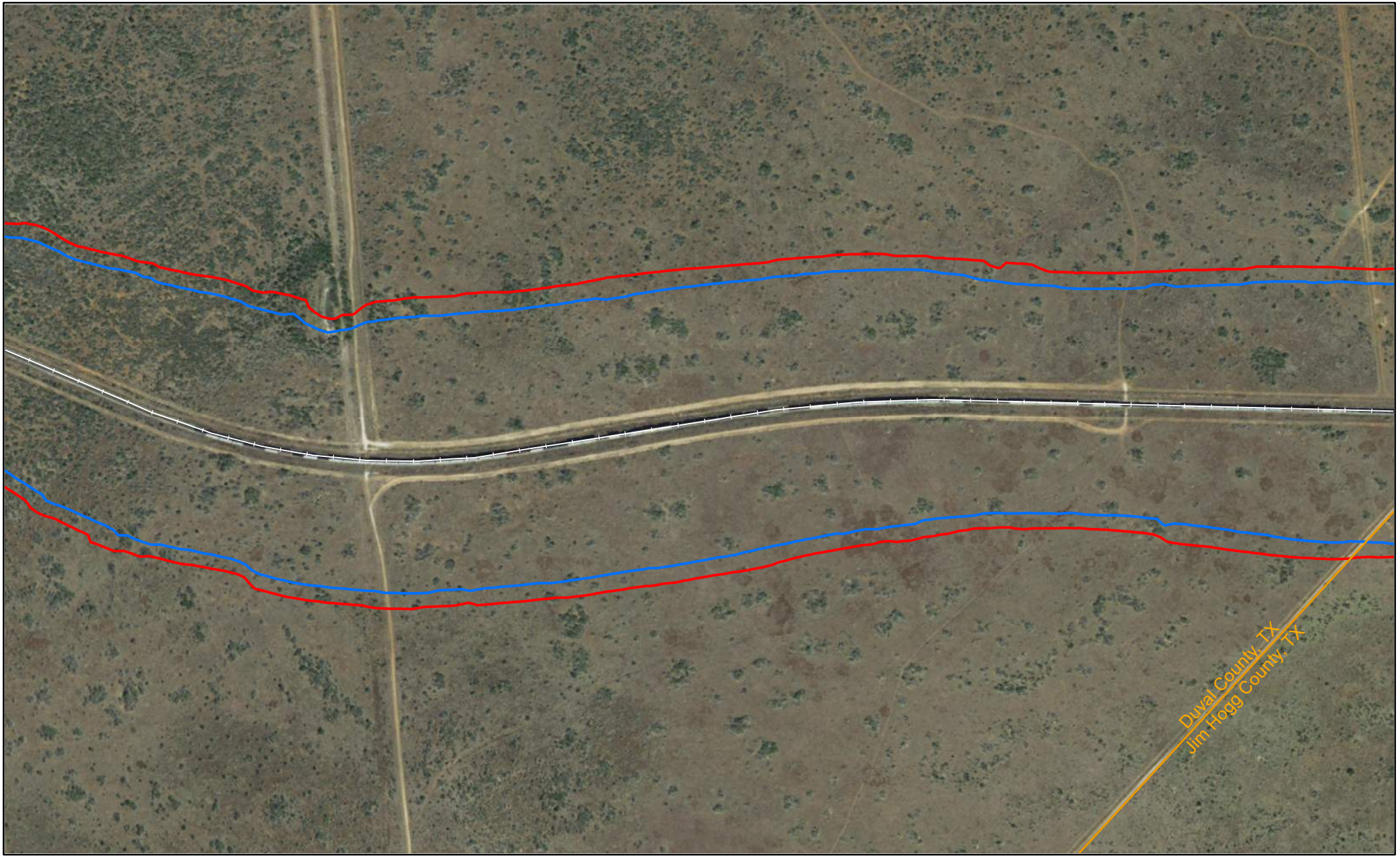
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Noise Contours
Jim Hogg County, TX

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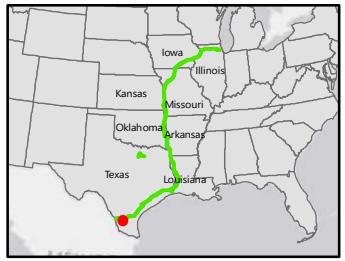
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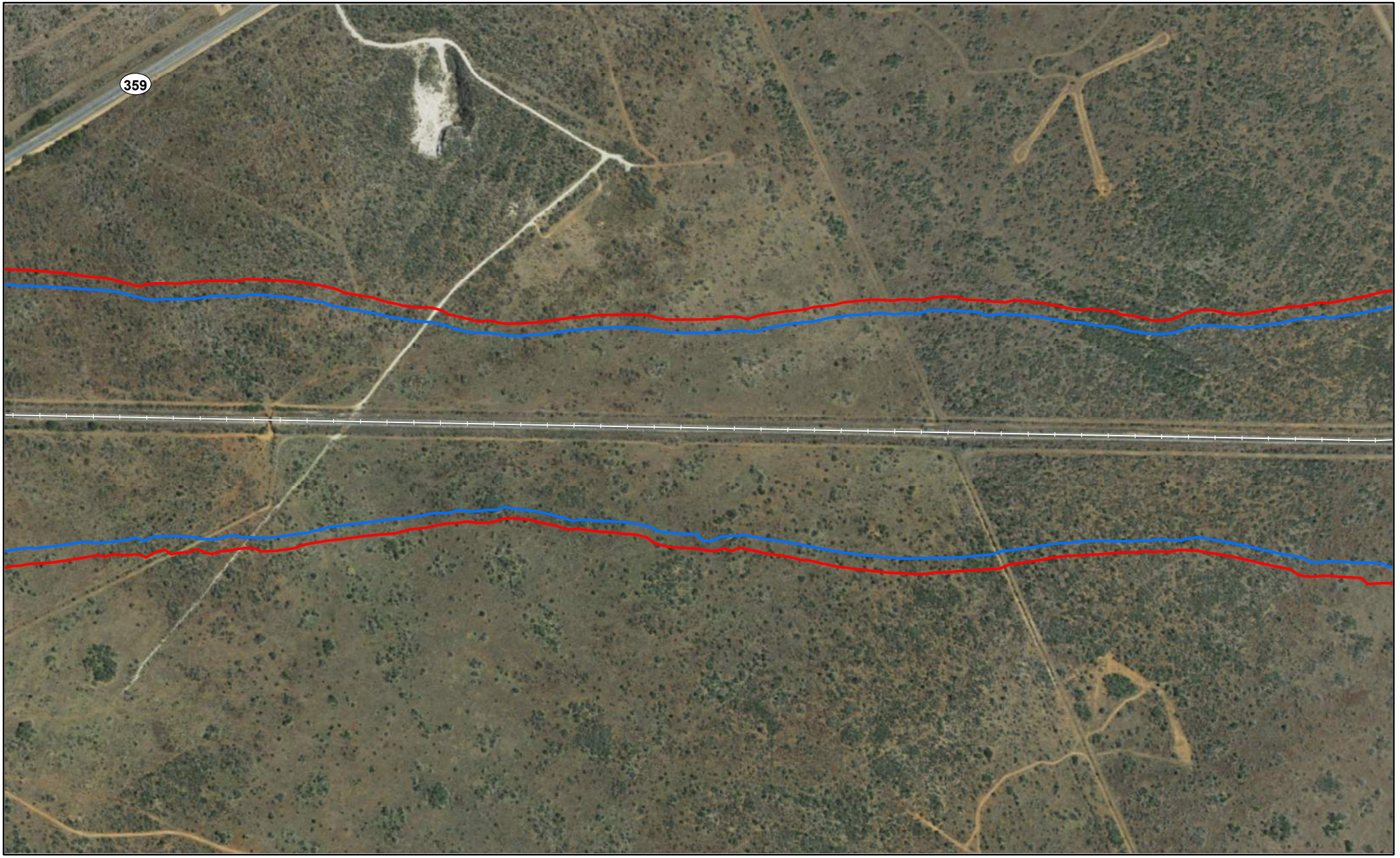
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Noise Contours
Jim Hogg County, TX

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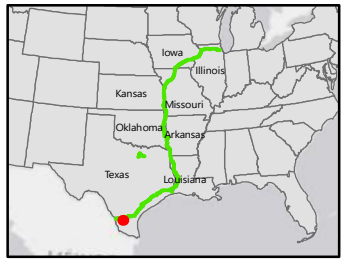
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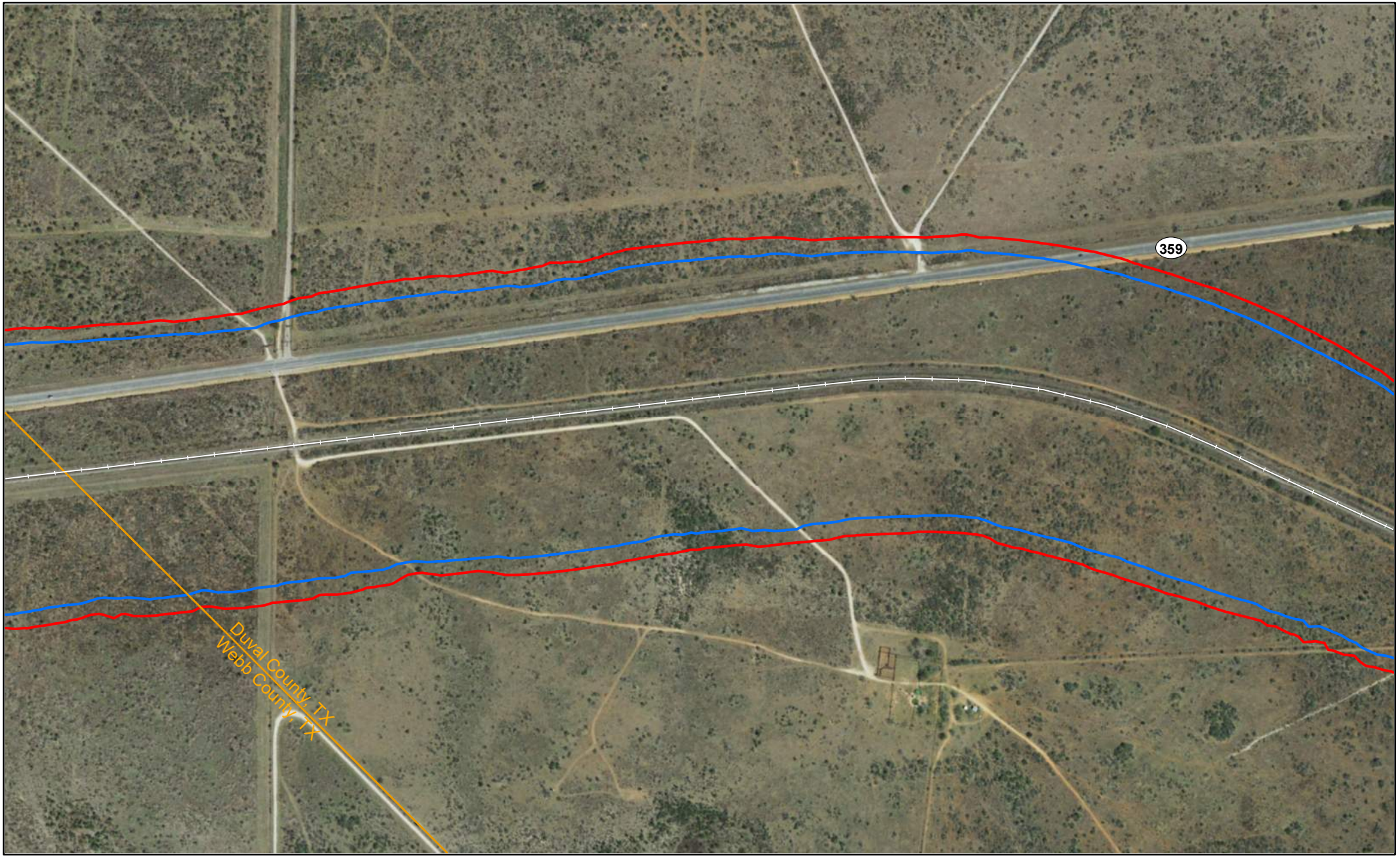
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Noise Contours
Duval County, TX

Miles
0 0.05 0.1

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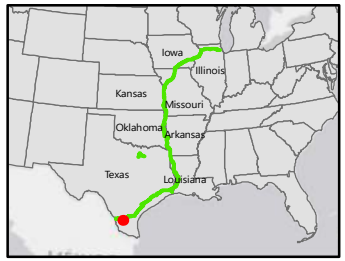
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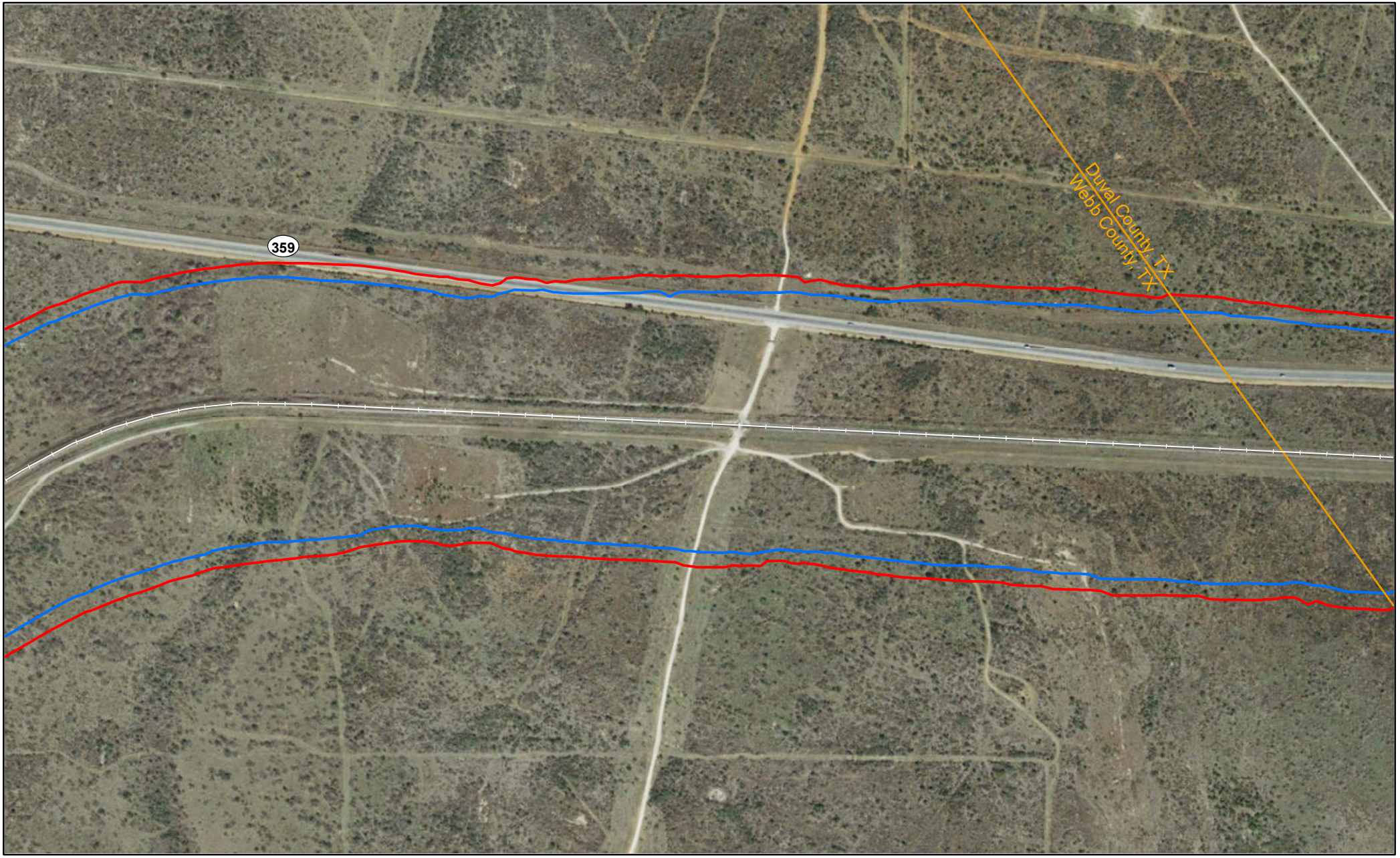
Tracks

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Noise Contours
Duval County, TX

Miles
0 0.05 0.1



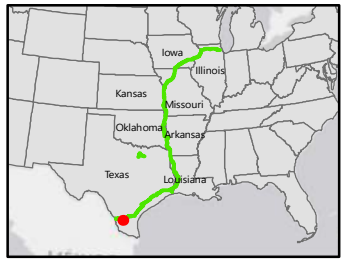
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

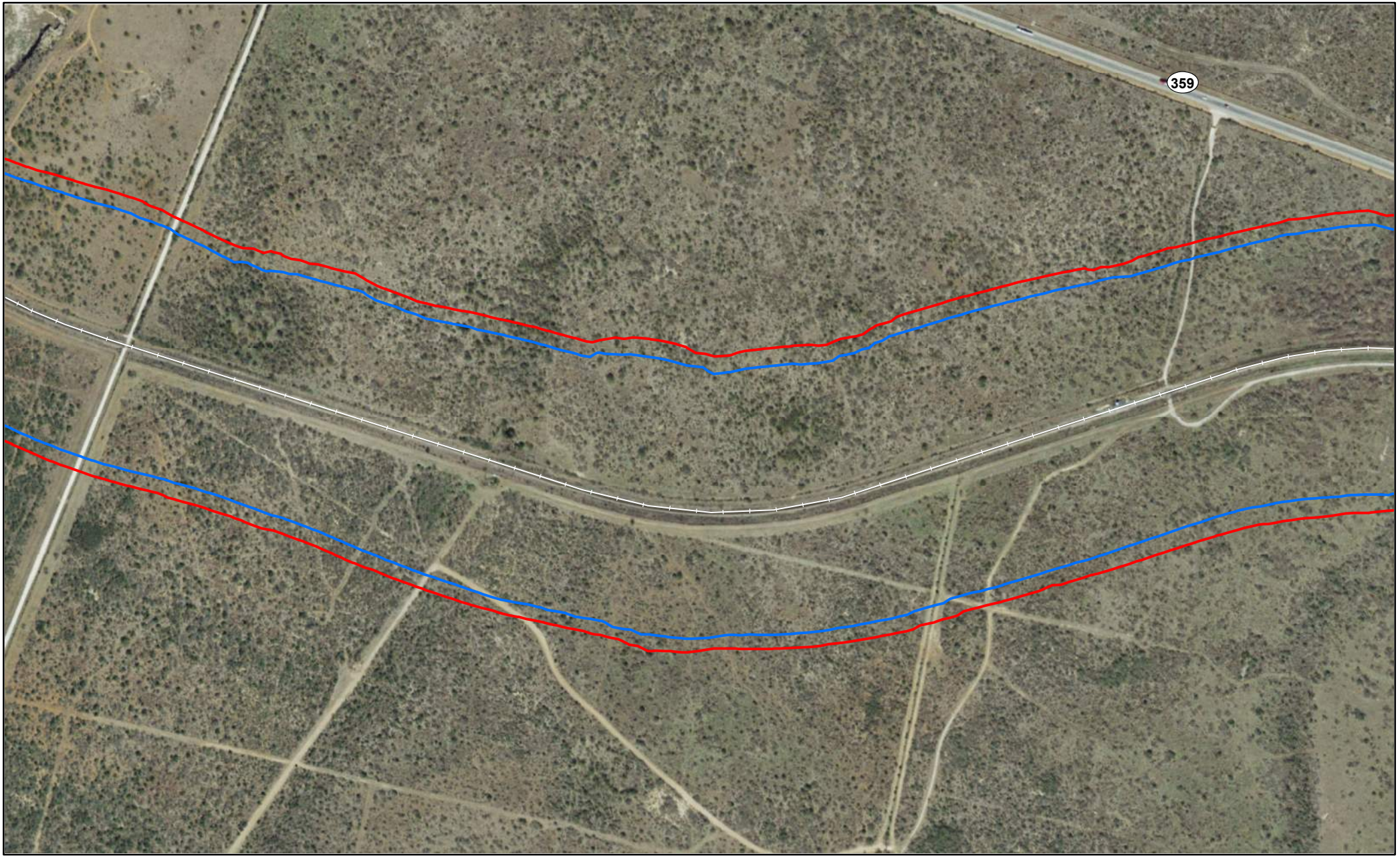
Tracks

Source: ESRI.



Noise Contours
Duval County, TX

Miles
0 0.05 0.1



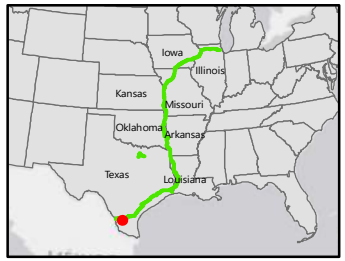
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



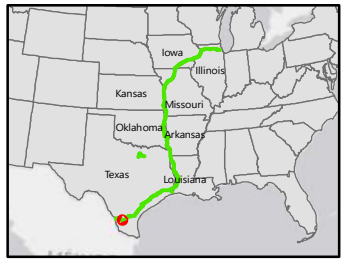
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

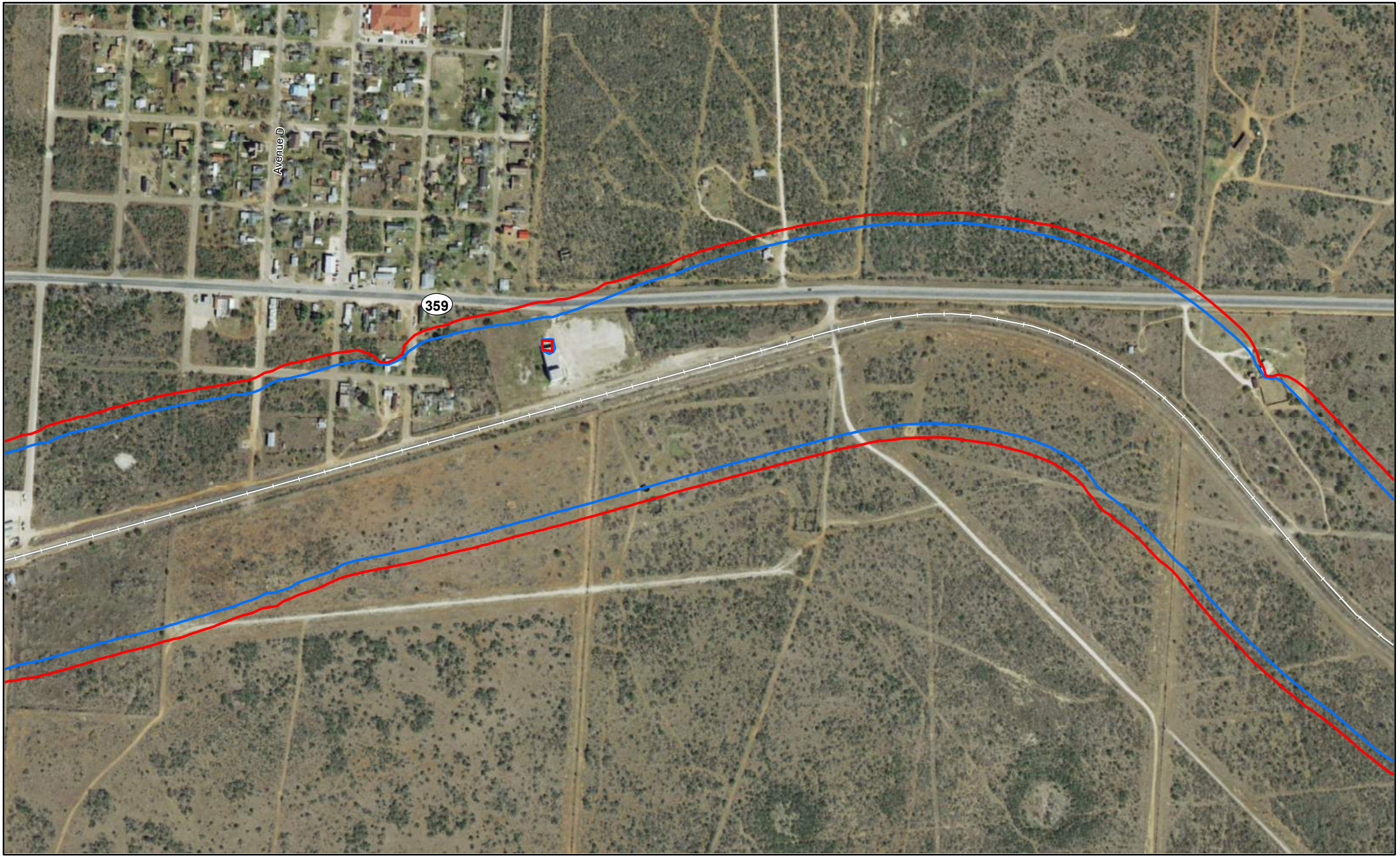
Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



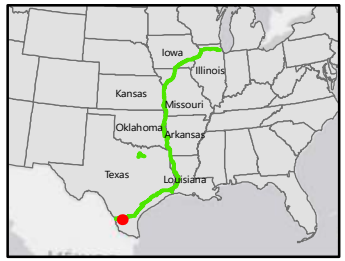
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

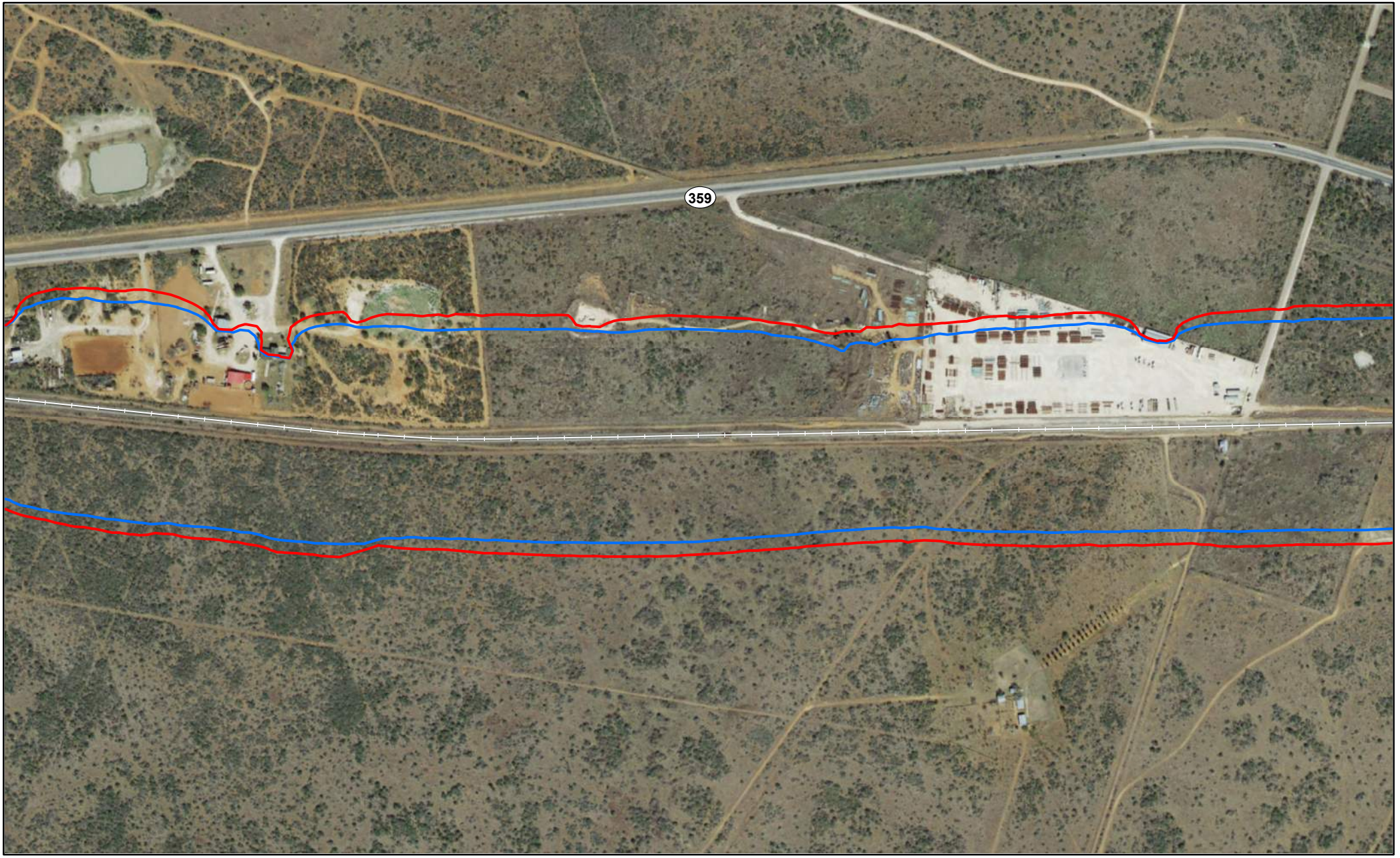
Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1



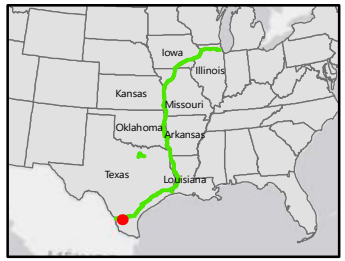
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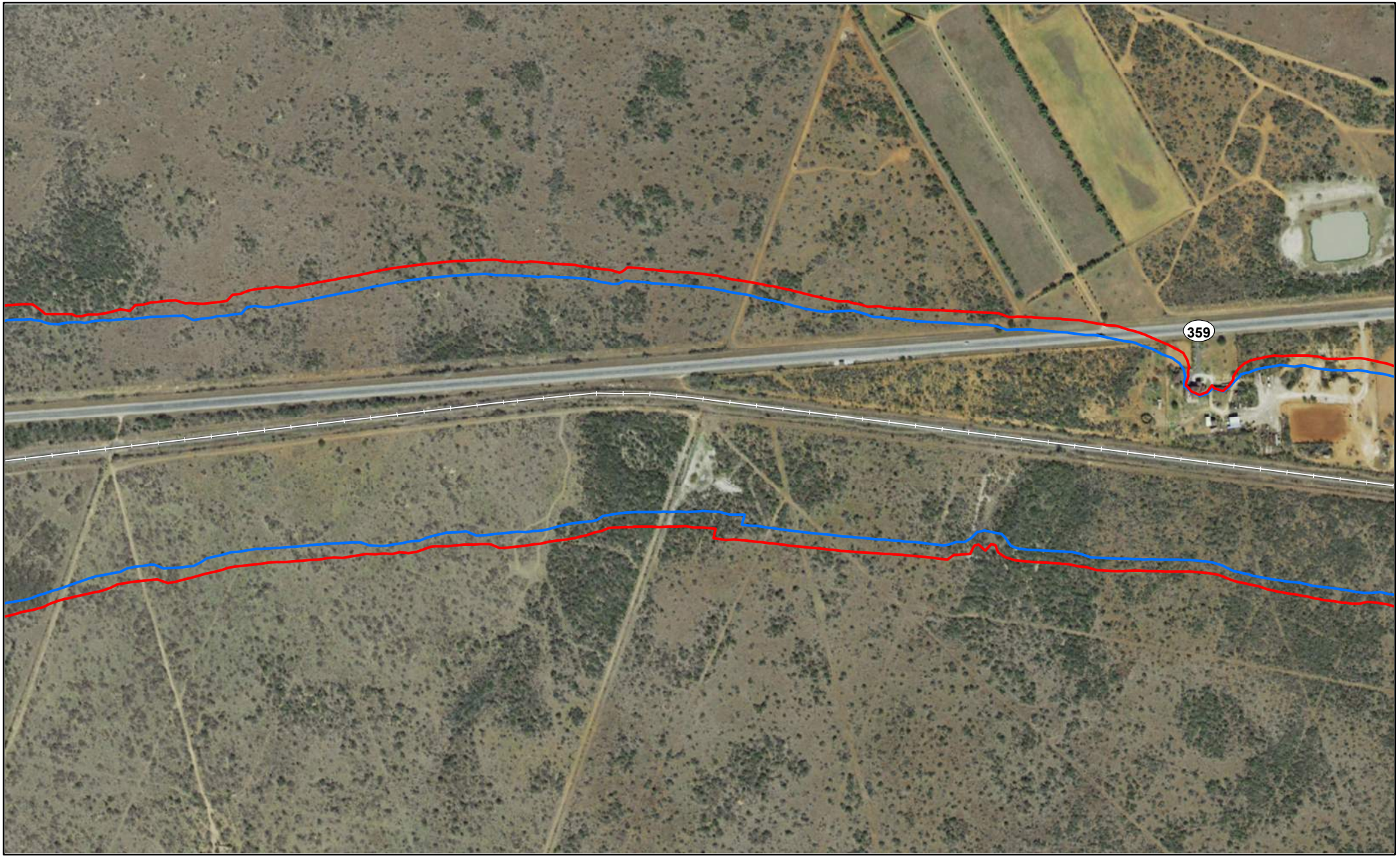
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Noise Contours
Webb County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



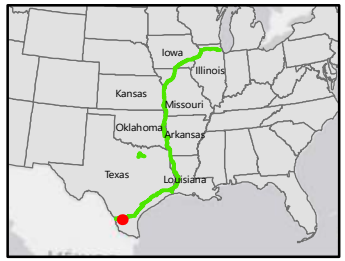
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Noise Contours
Webb County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



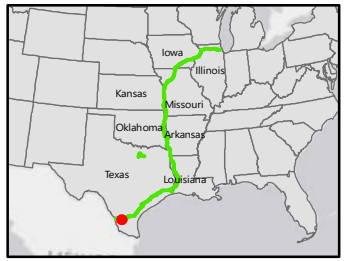
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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

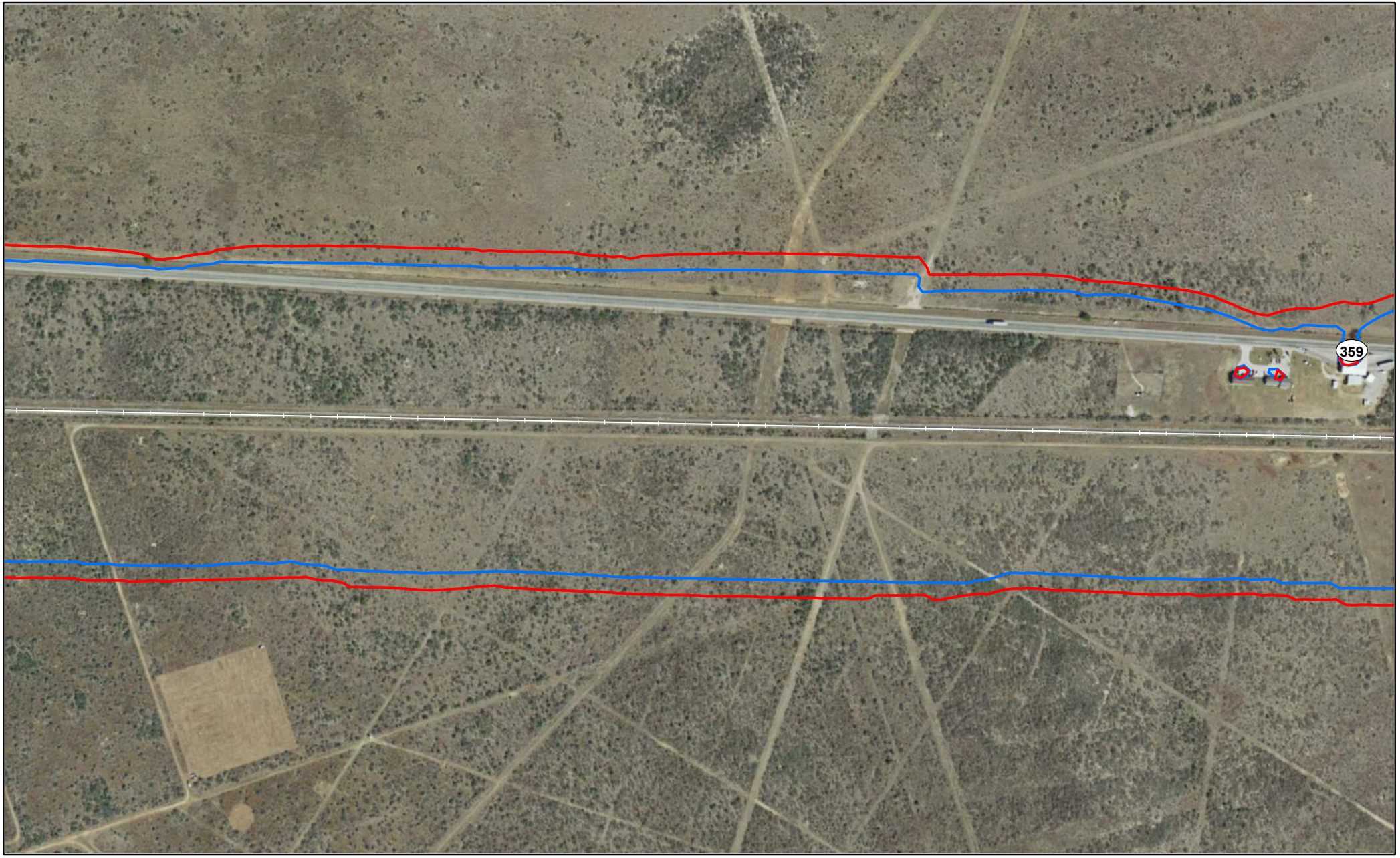
Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



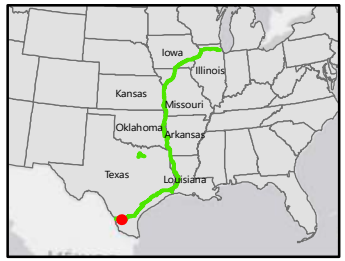
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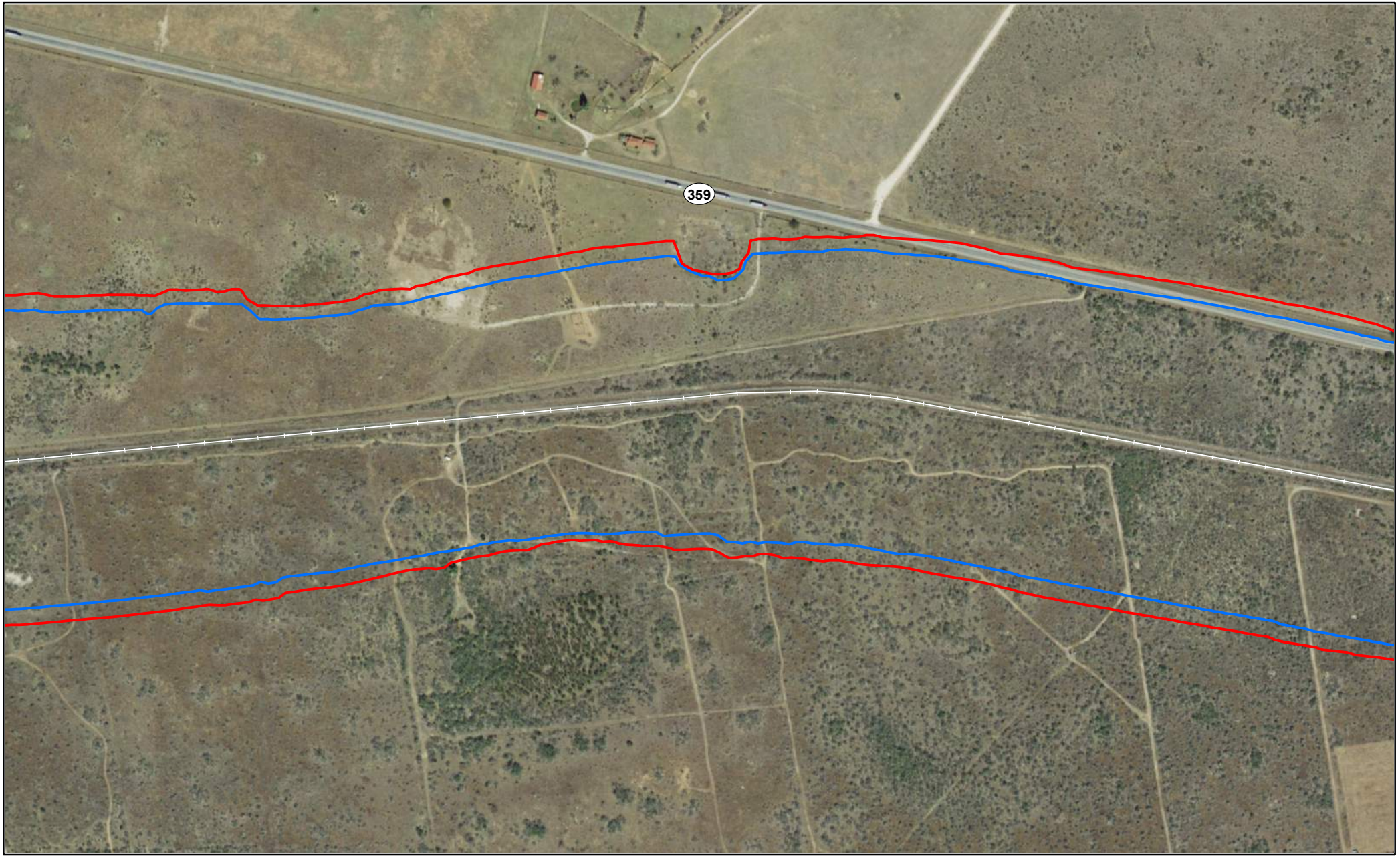
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Noise Contours
Webb County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



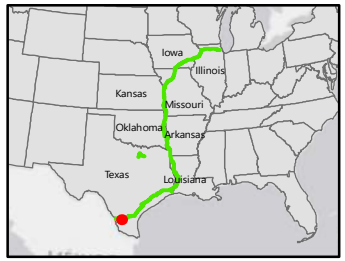
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Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1



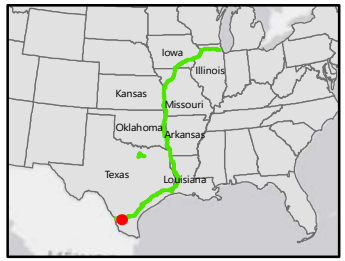
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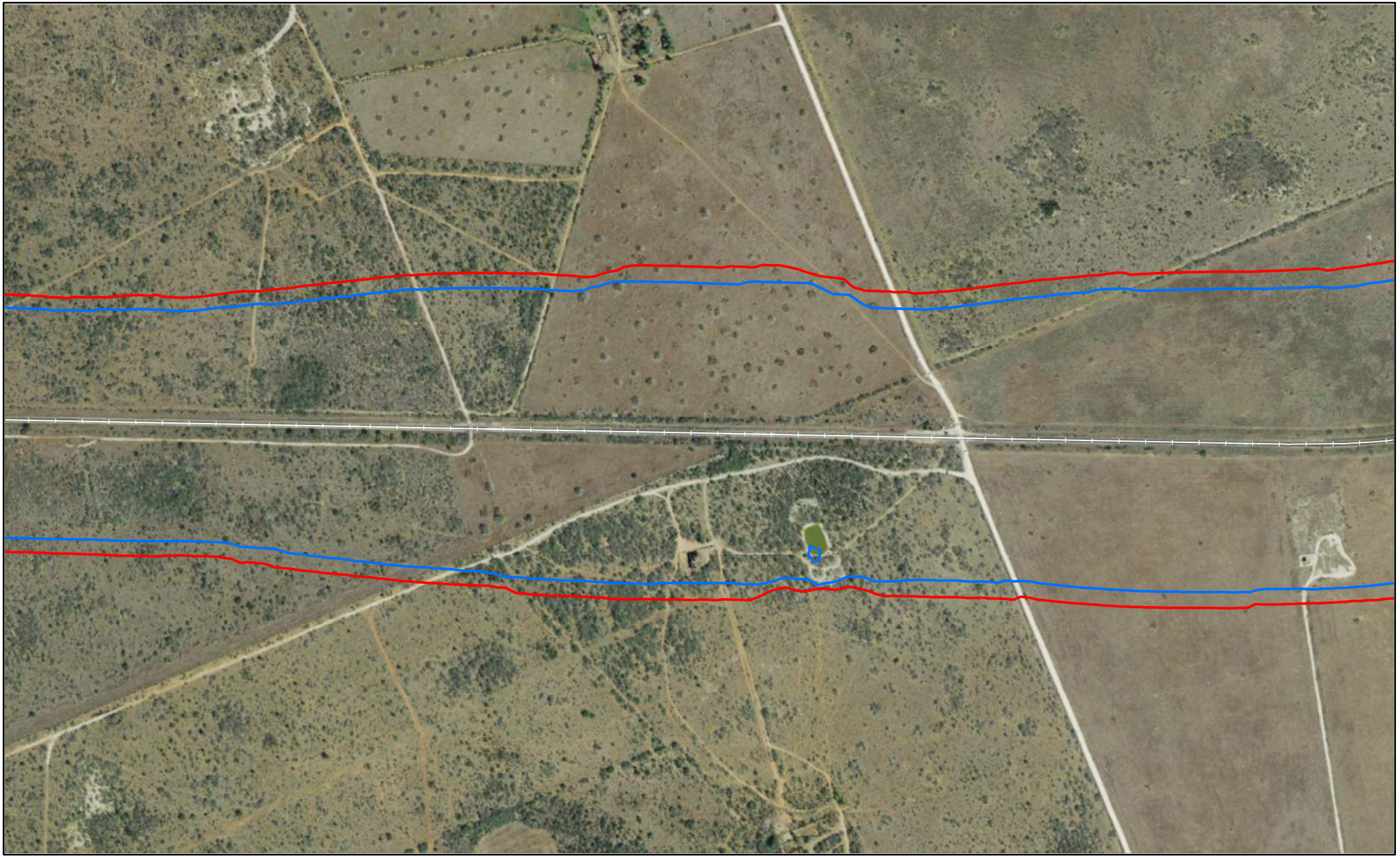
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Noise Contours
Webb County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



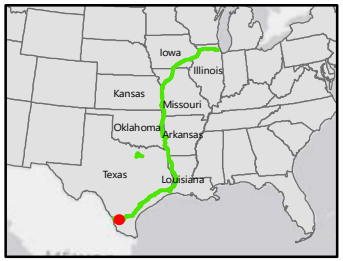
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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

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Noise Contours
Webb County, TX

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



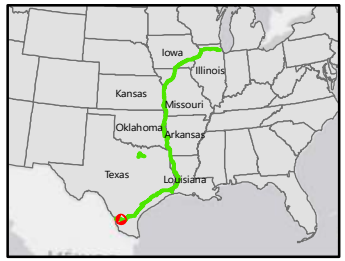
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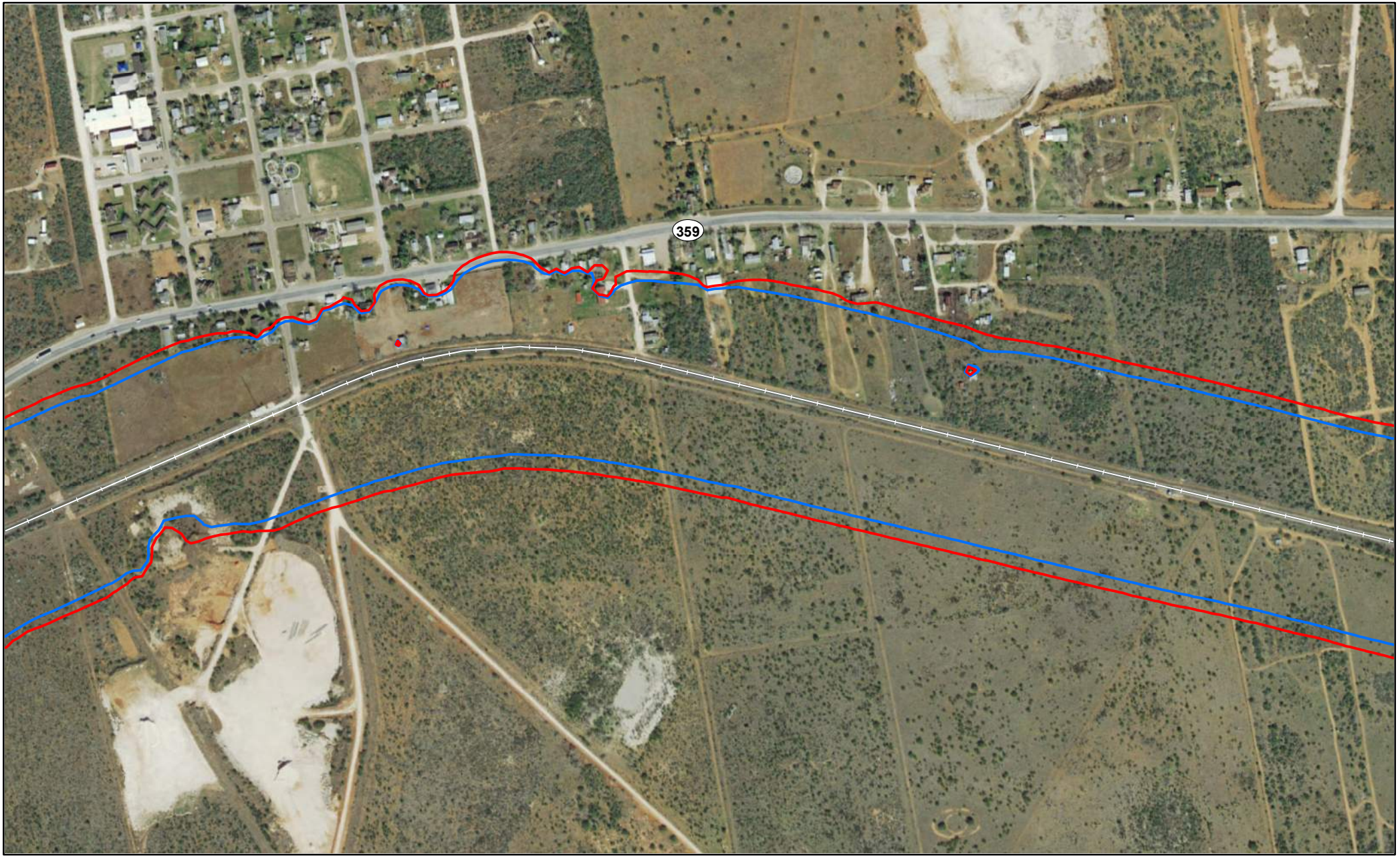
Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1



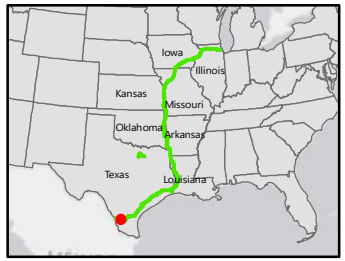
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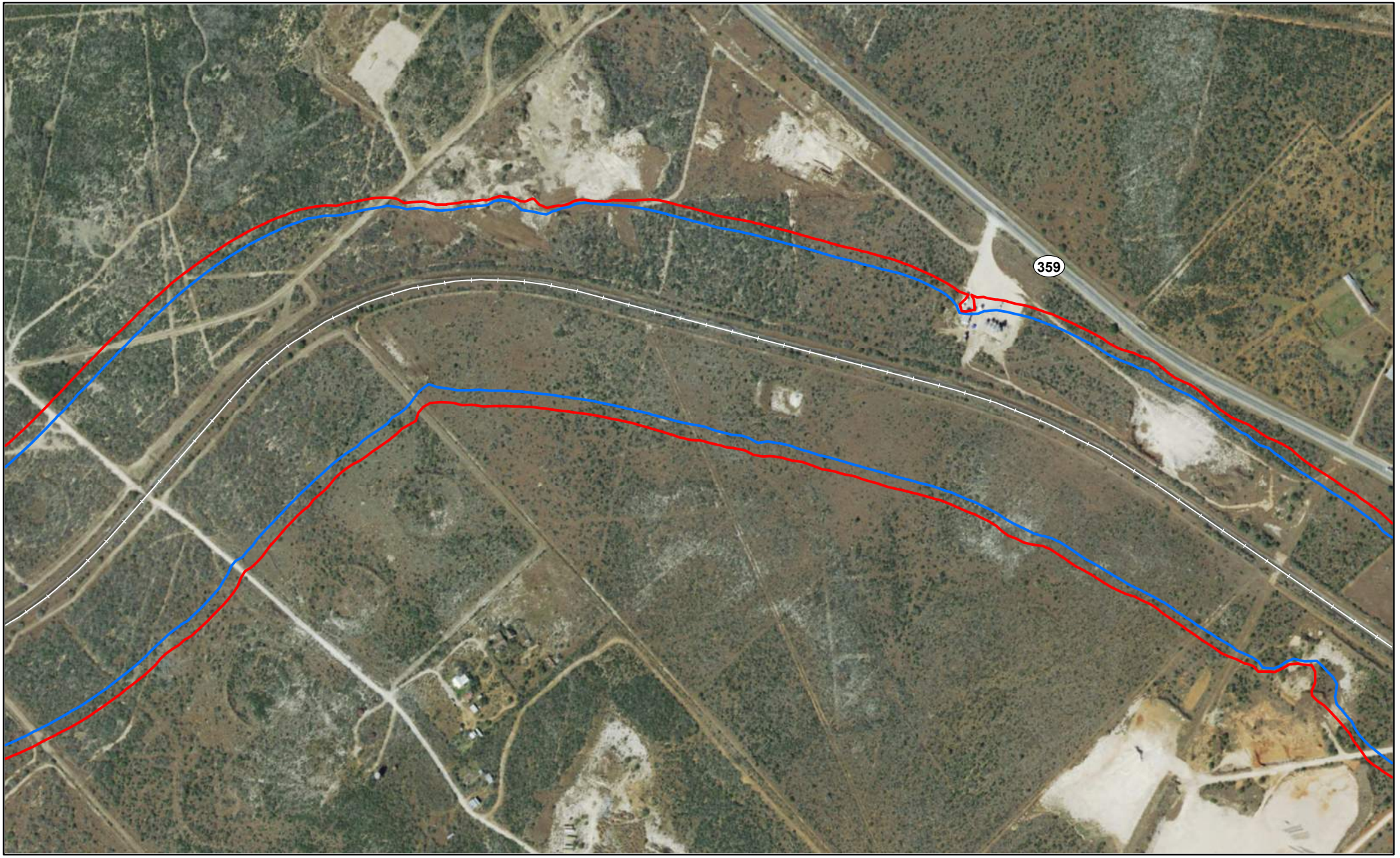
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Noise Contours
Webb County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



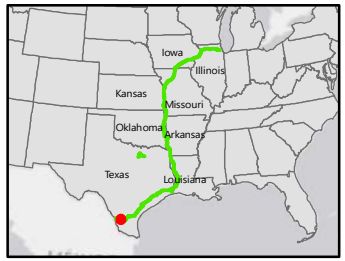
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Noise Contours
Webb County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



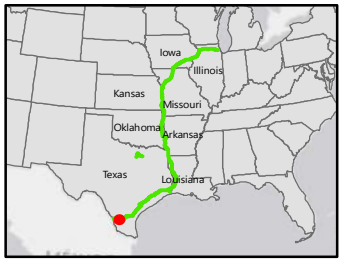
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Noise Contours
Webb County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



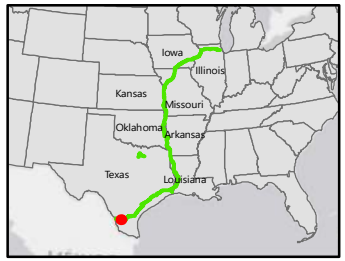
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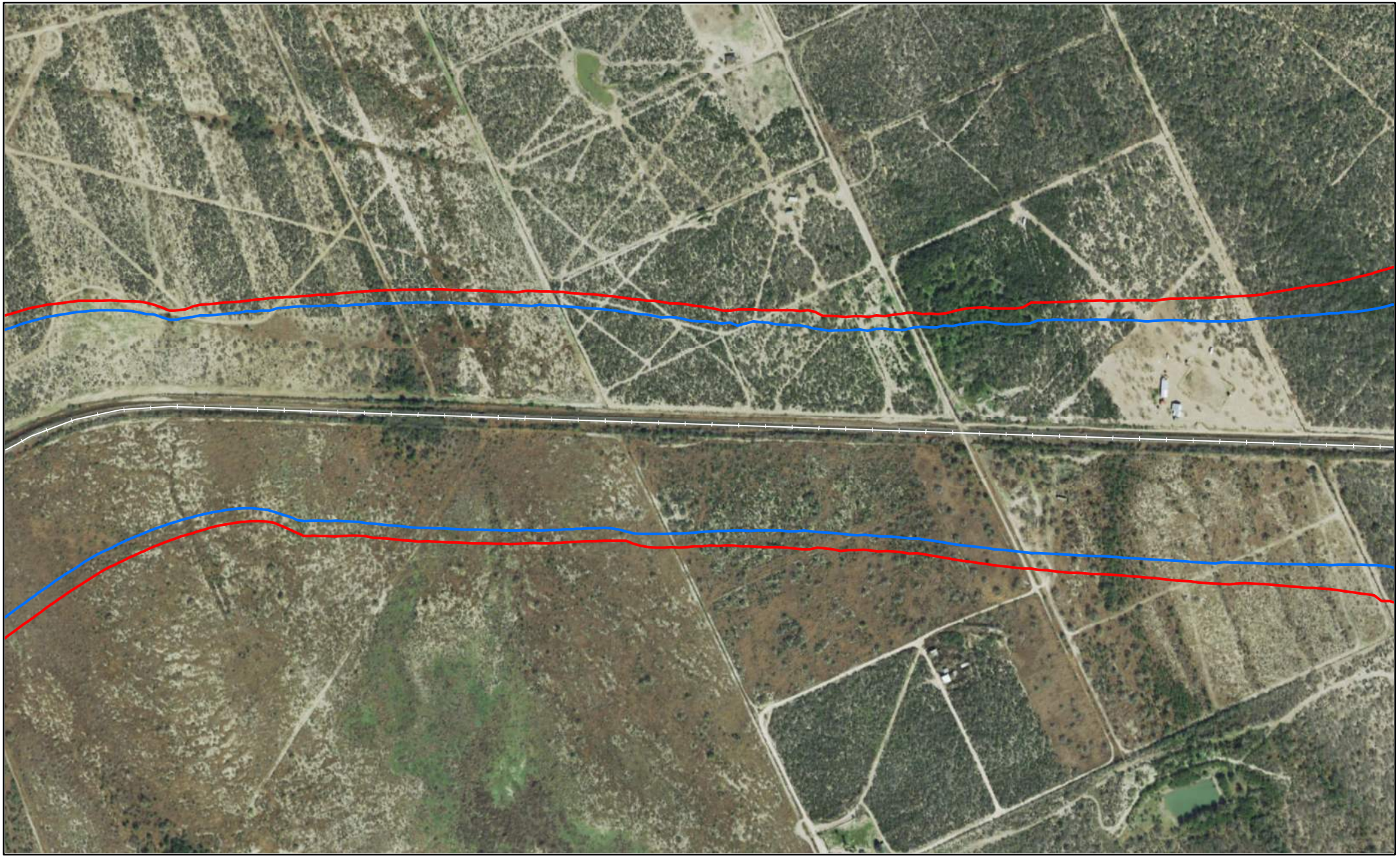
Tracks

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Noise Contours
Webb County, TX

Miles
0 0.05 0.1



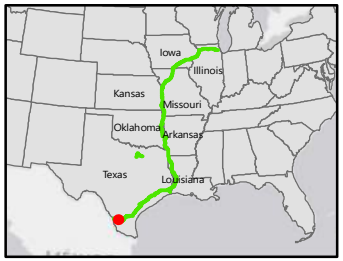
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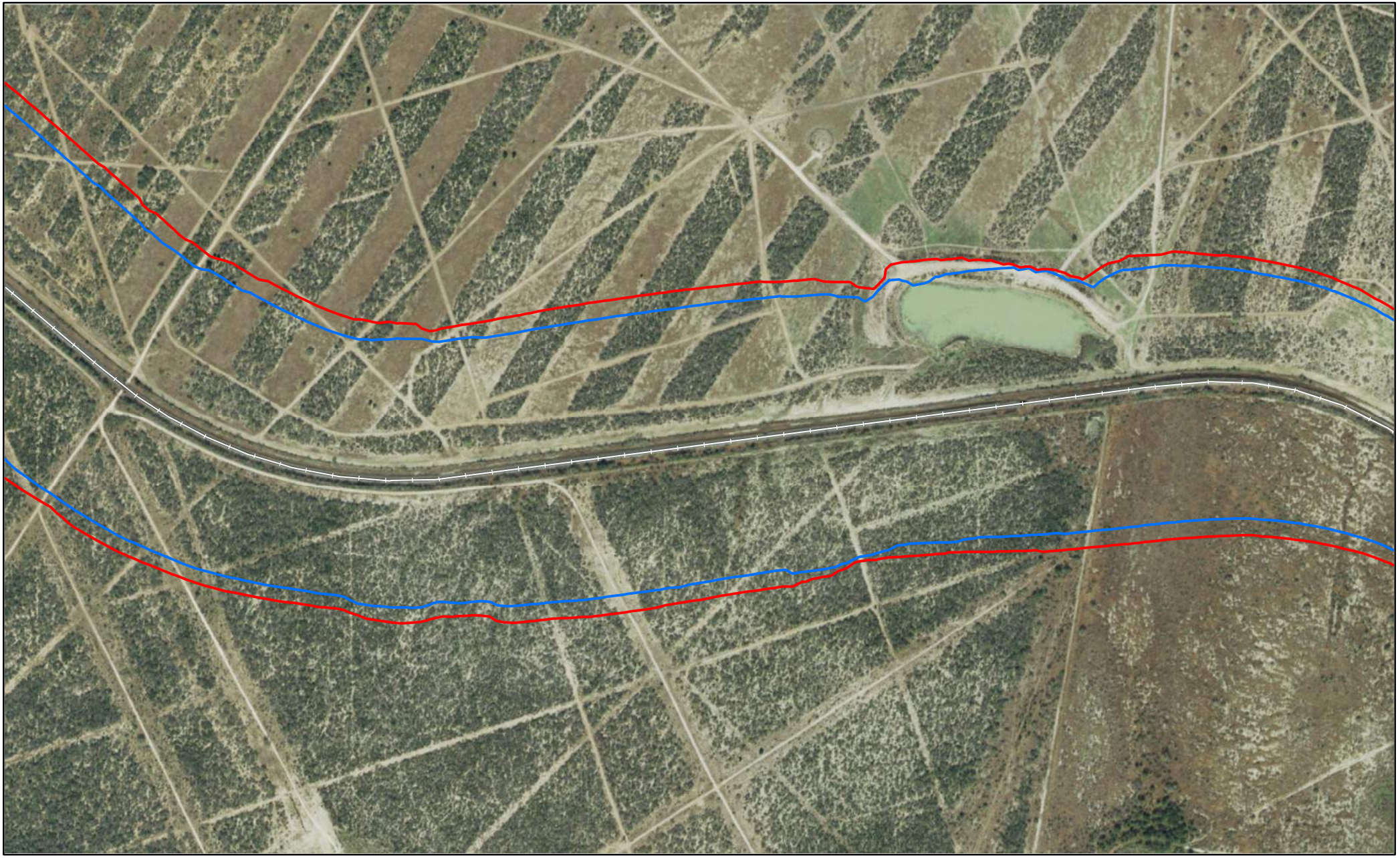
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Noise Contours
Webb County, TX

Miles
0 0.05 0.1

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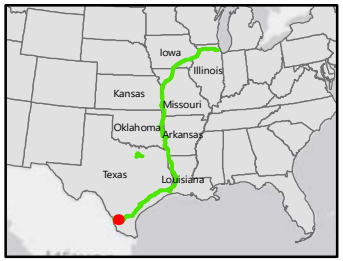
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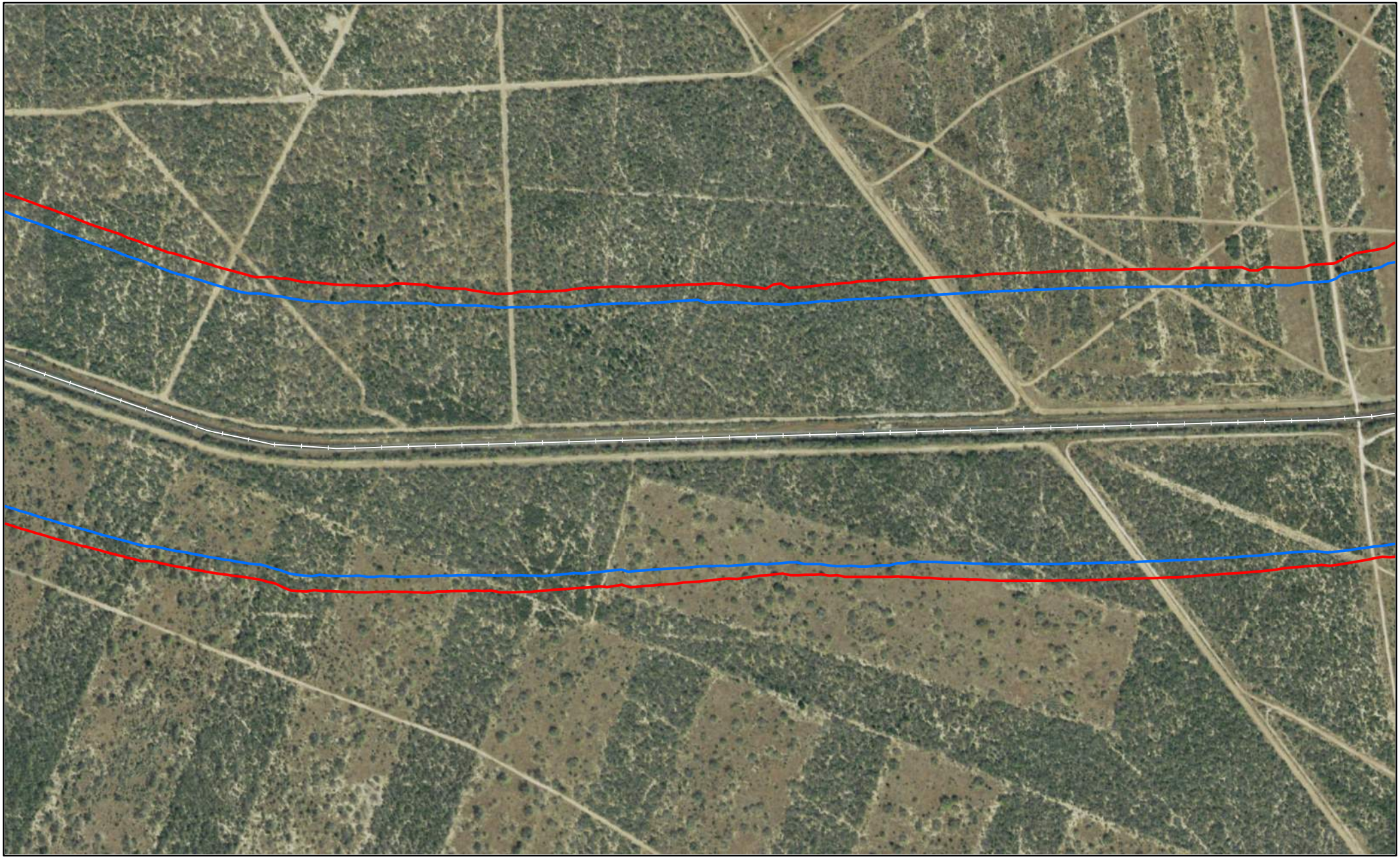
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Noise Contours
Webb County, TX

Miles
0 0.05 0.1



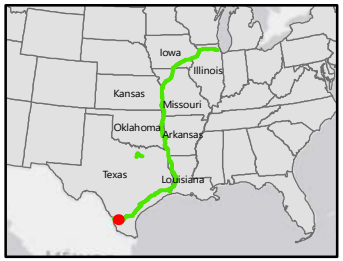
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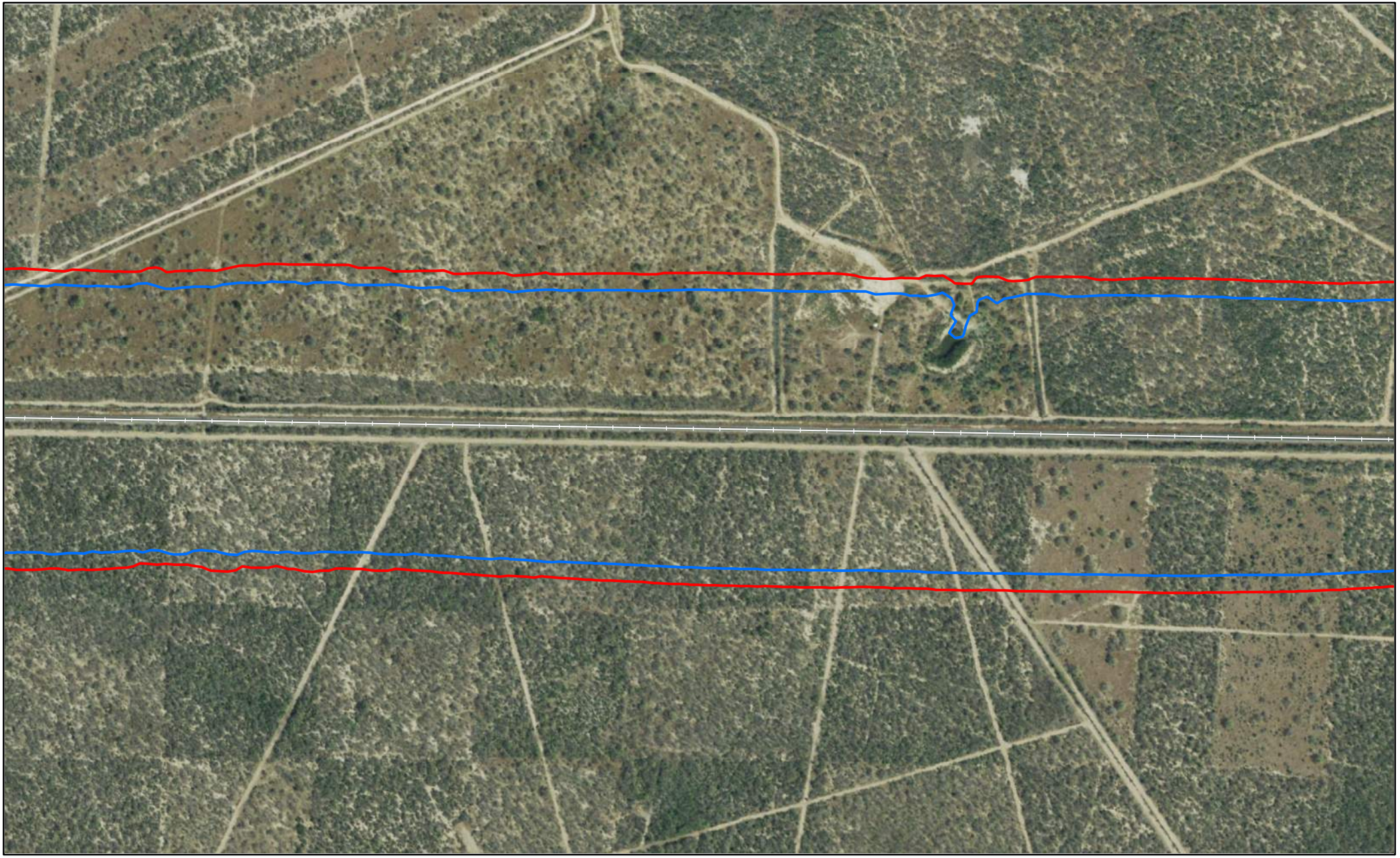
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Noise Contours
Webb County, TX

Miles
0 0.05 0.1



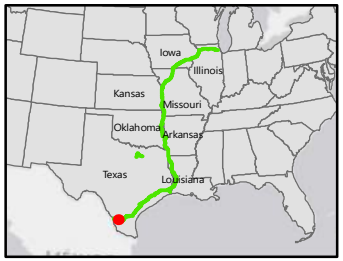
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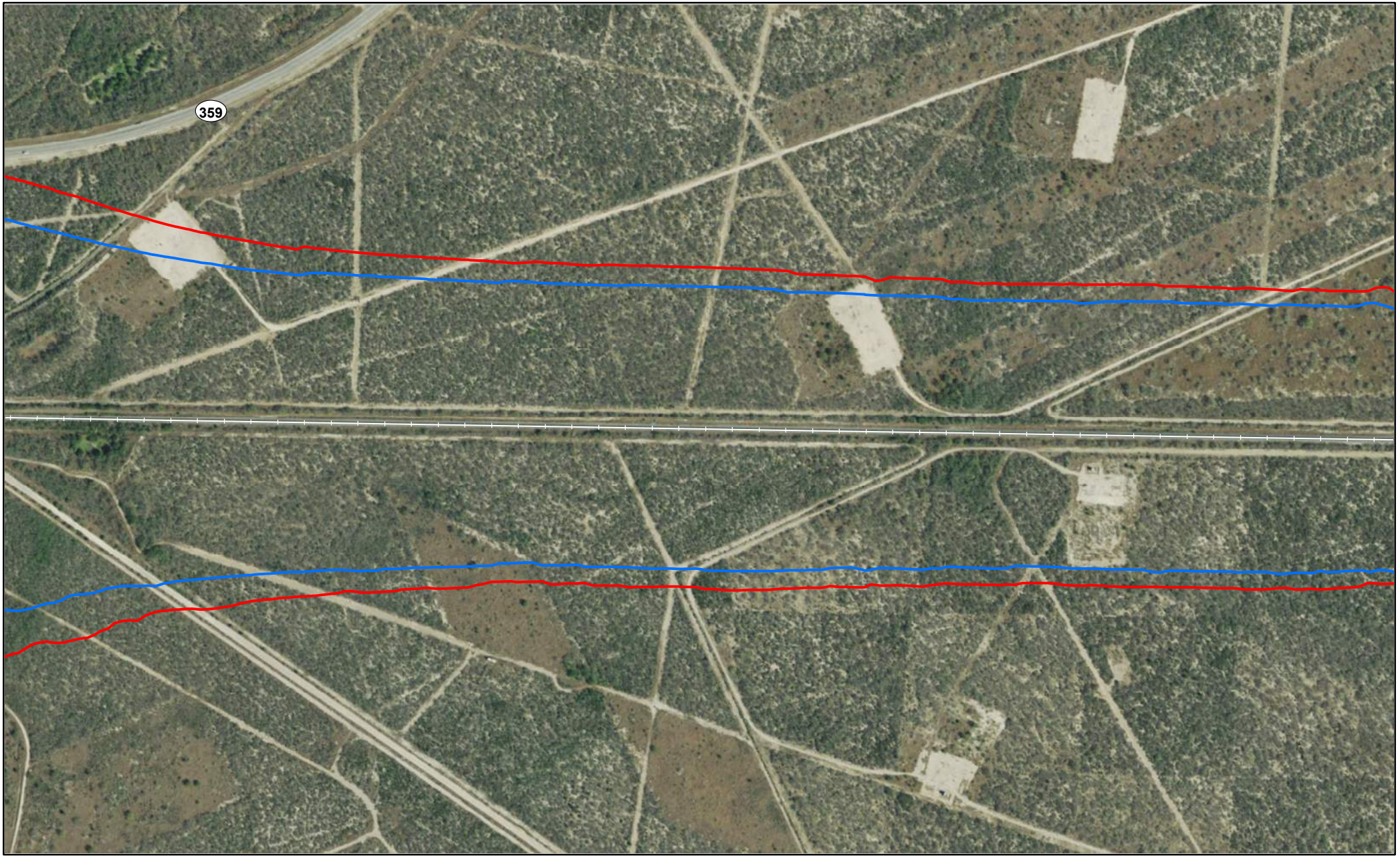
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Noise Contours
Webb County, TX

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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



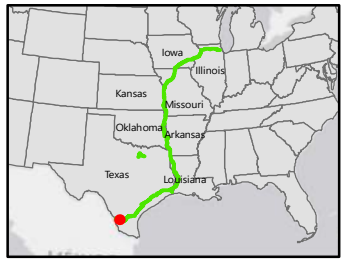
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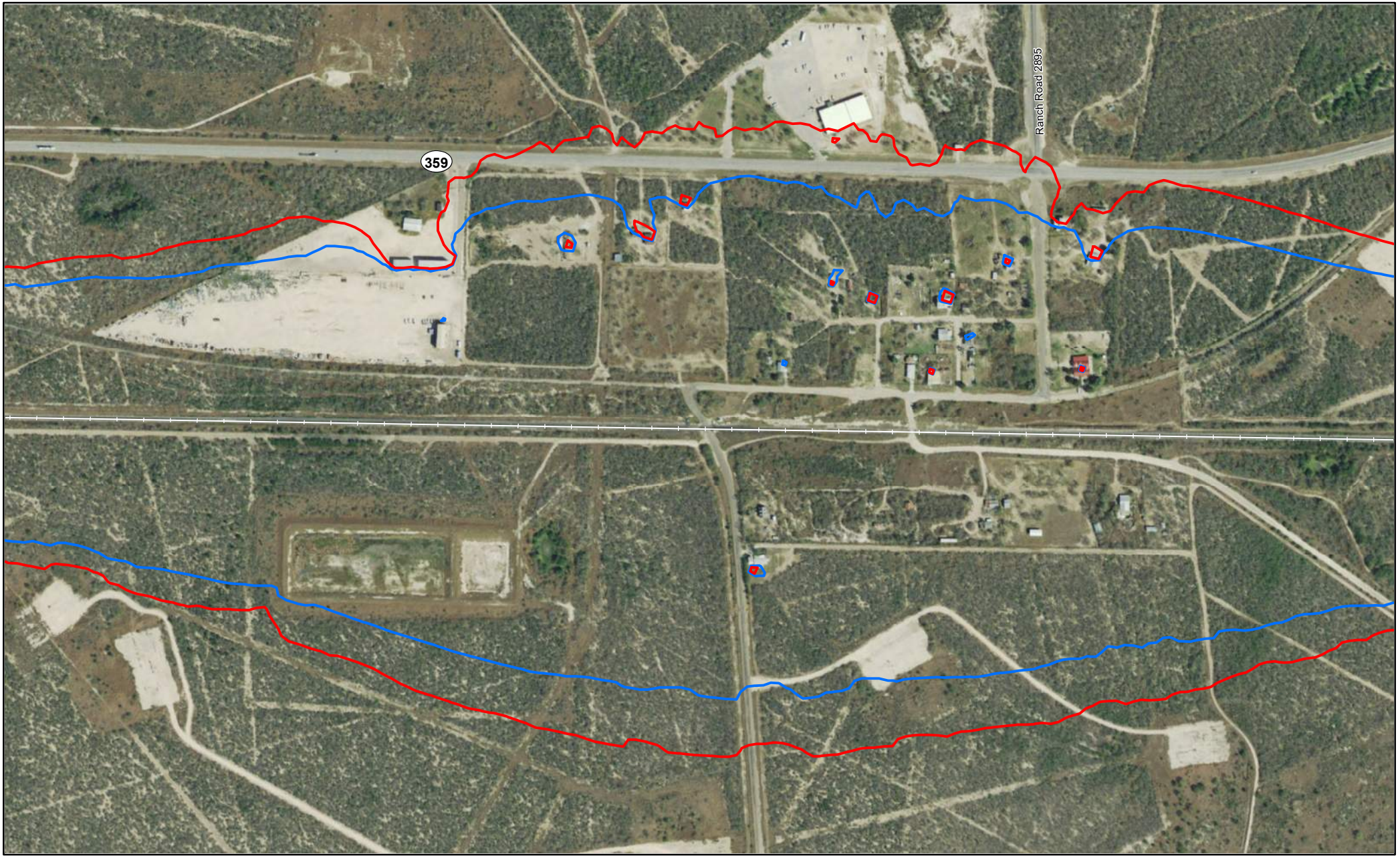
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Noise Contours
Webb County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



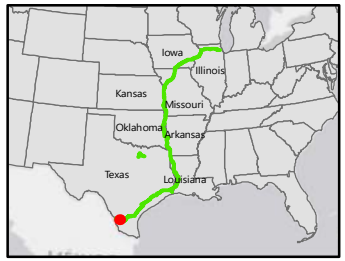
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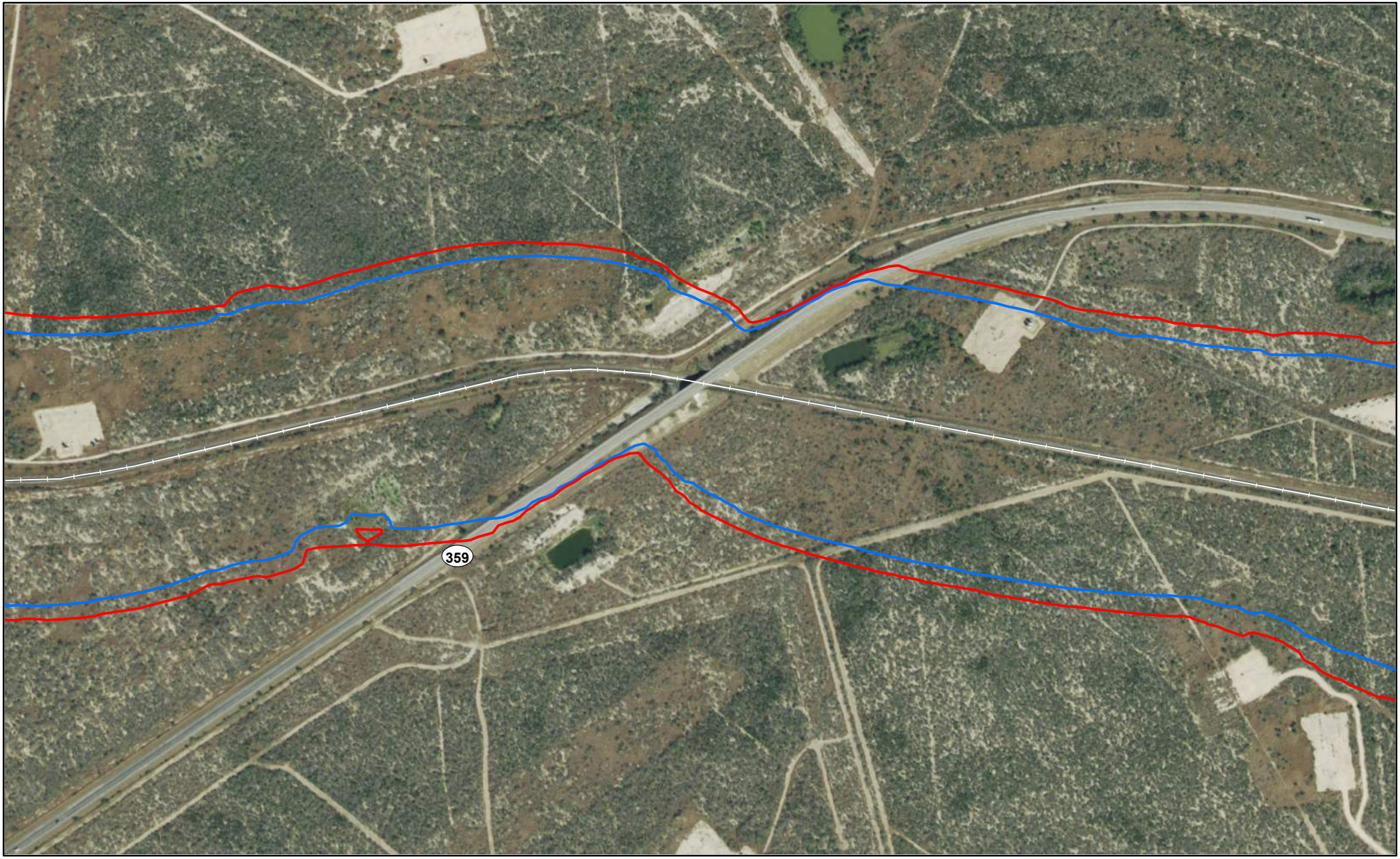
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Noise Contours
Webb County, TX

Miles
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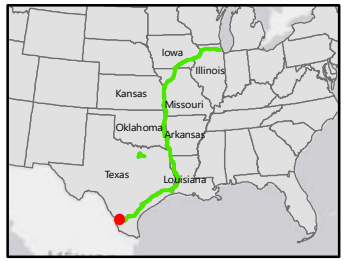
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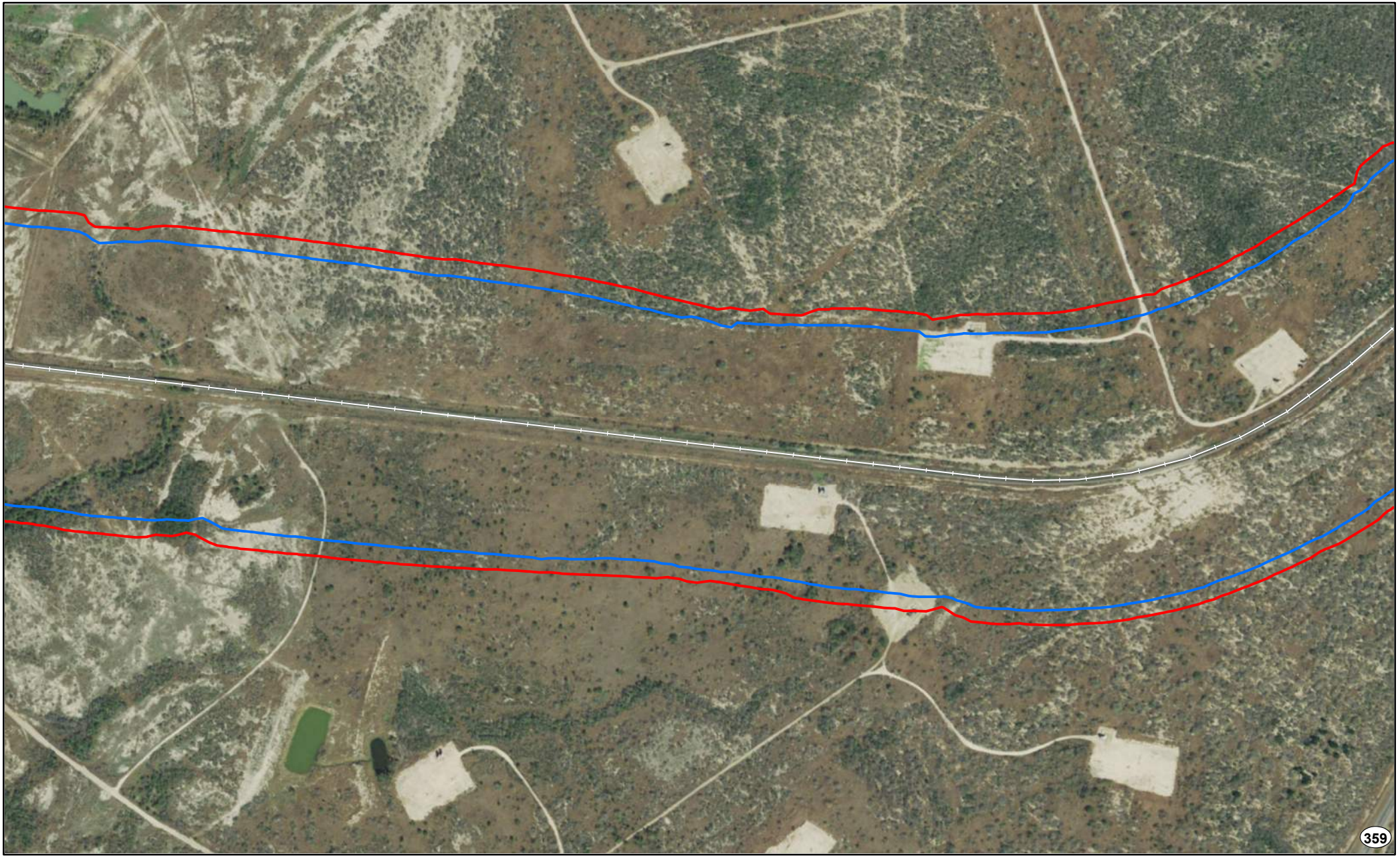
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Noise Contours
Webb County, TX

Miles
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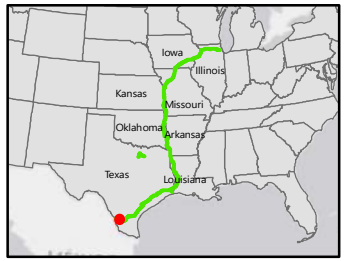
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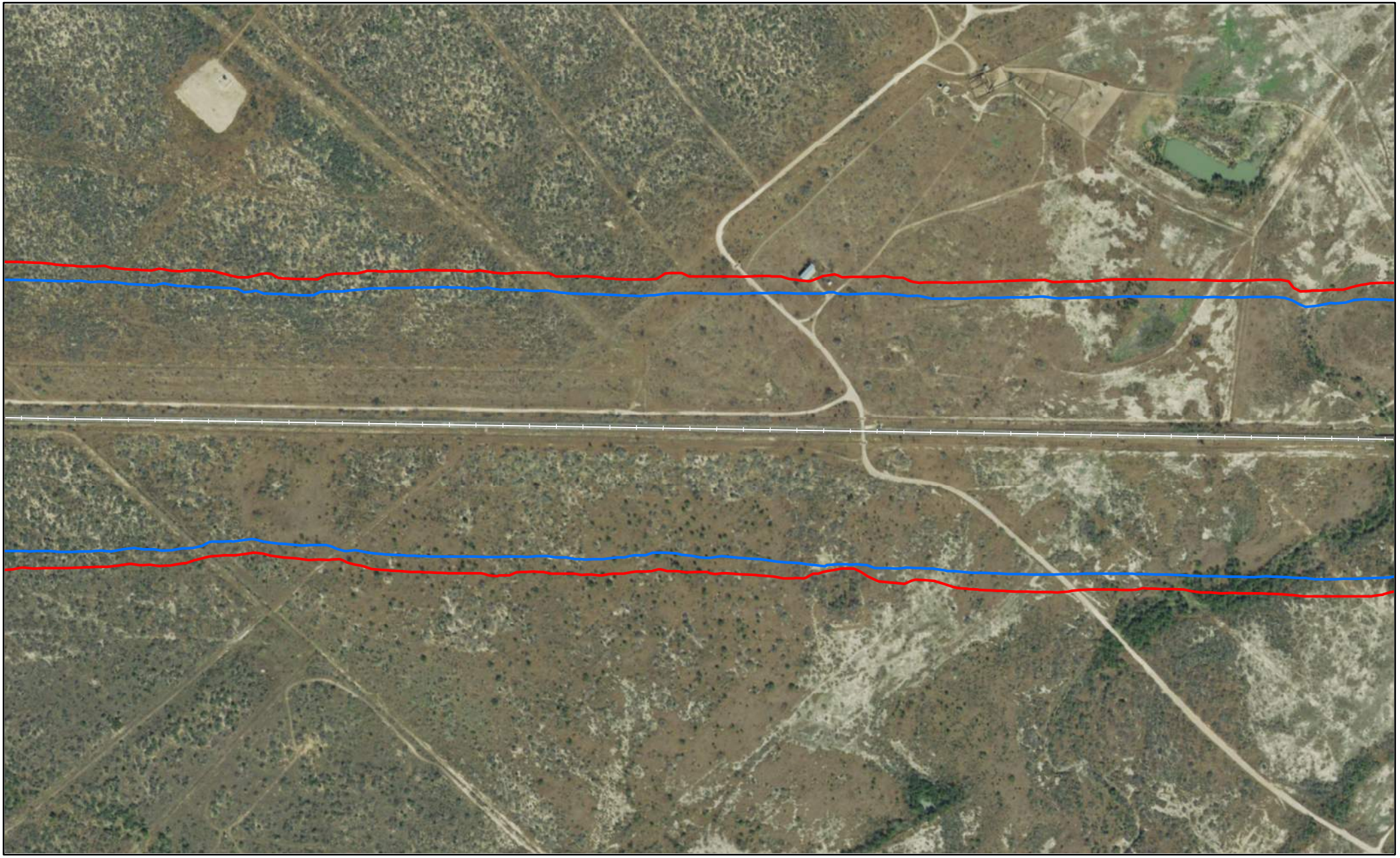
Source: ESRI.



Noise Contours
Webb County, TX

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Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Webb County, TX

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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

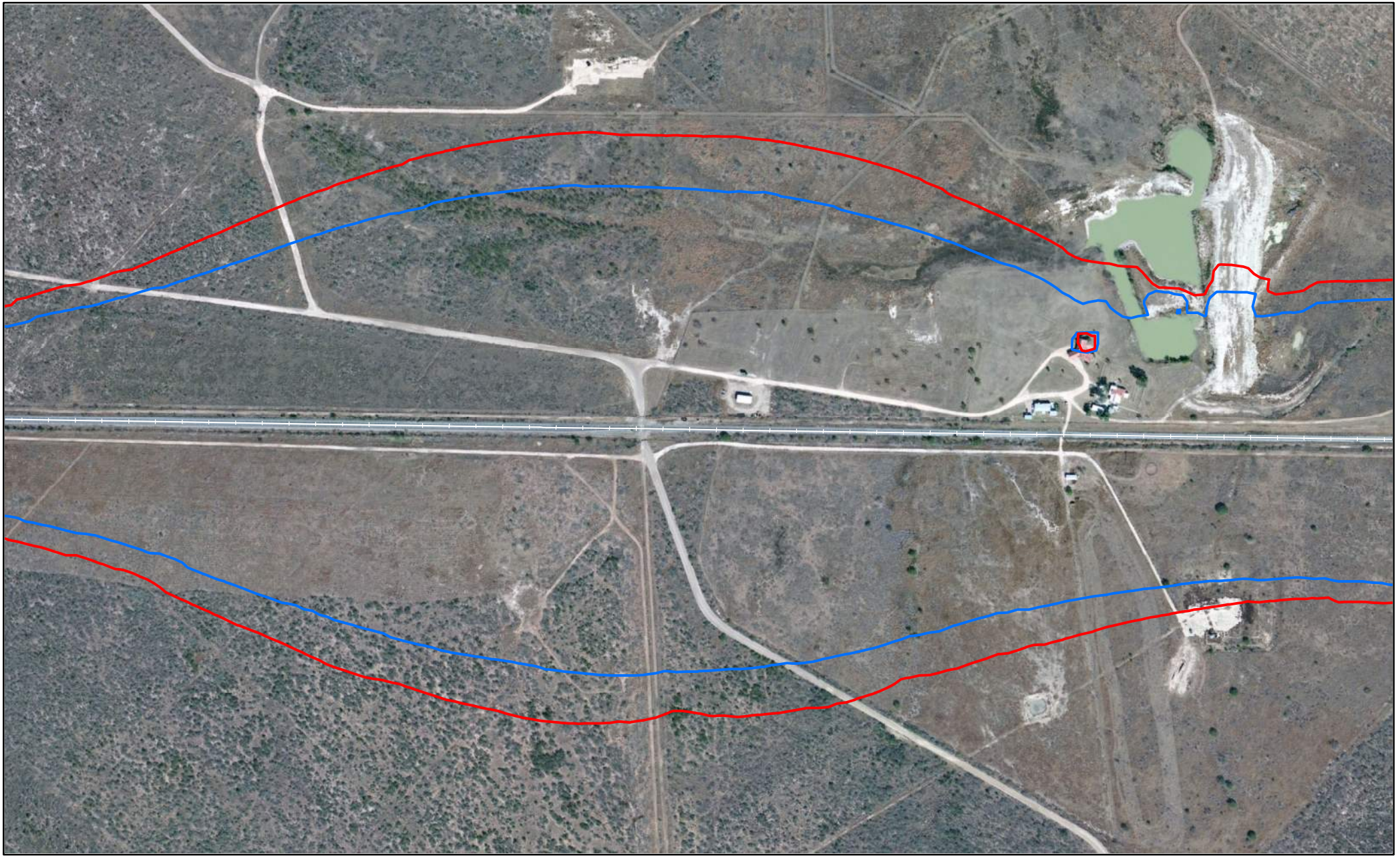
Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1



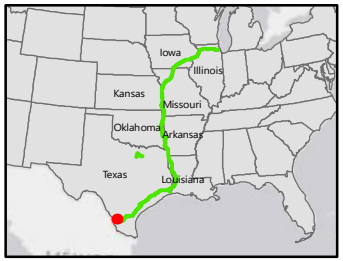
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

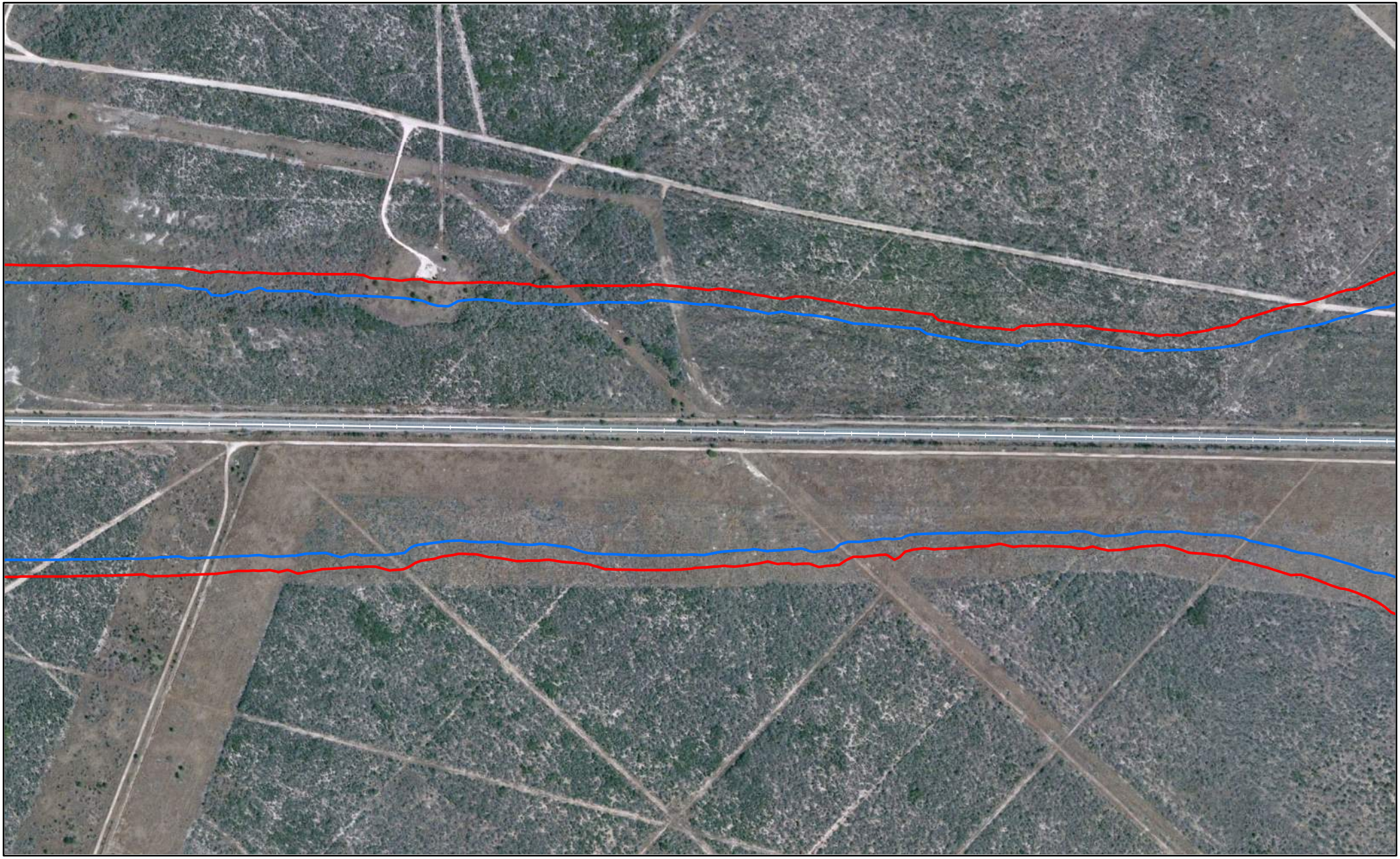
Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1



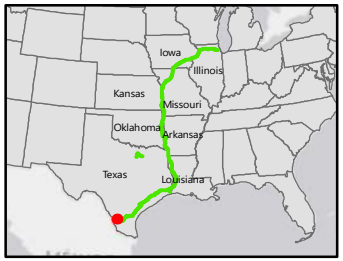
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

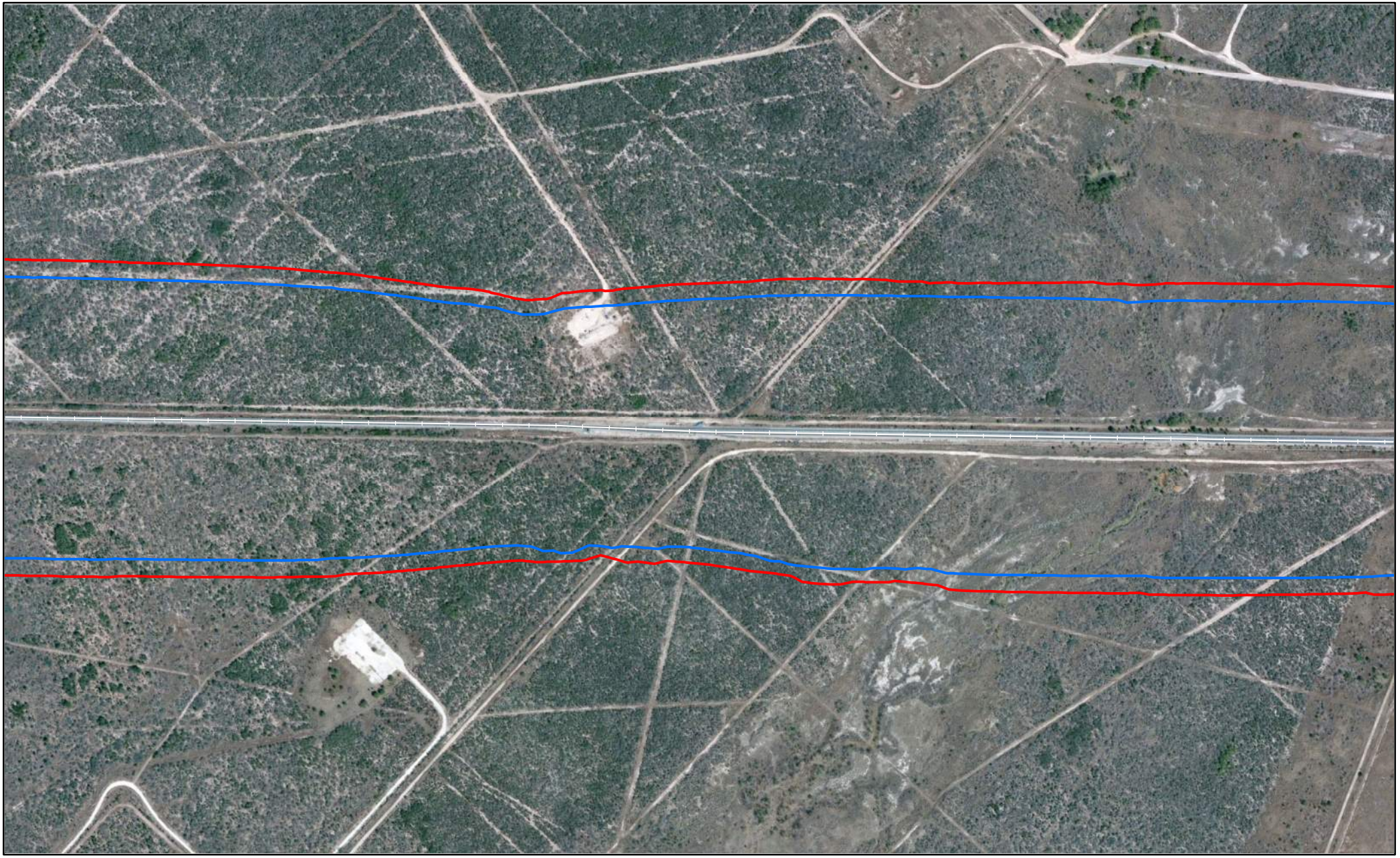
Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1



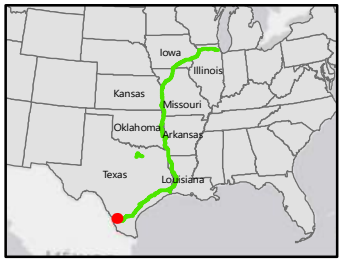
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

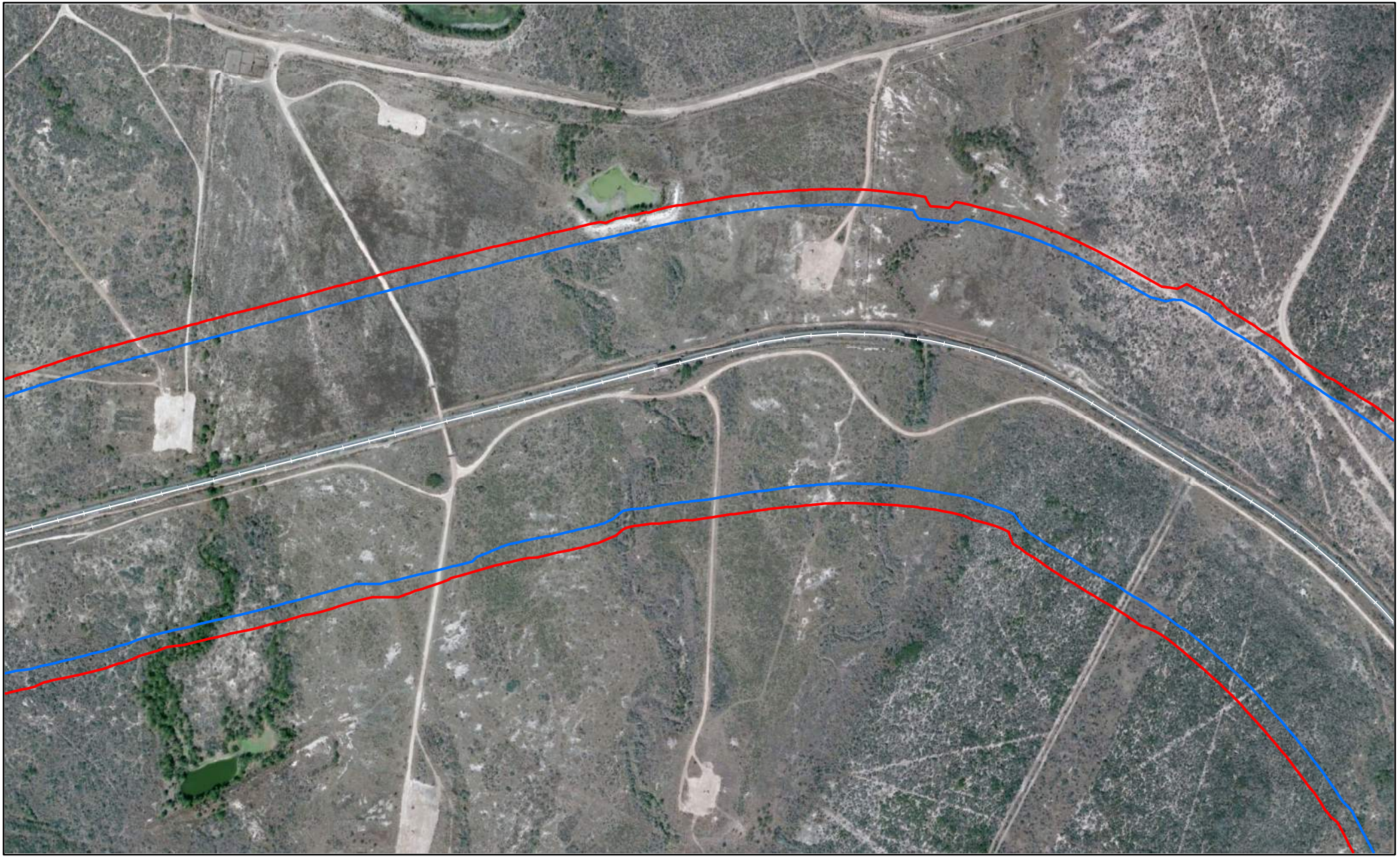
Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1



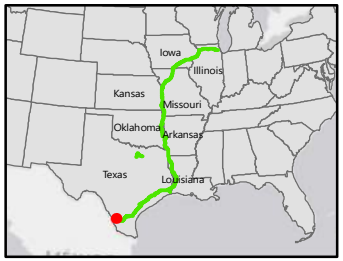
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

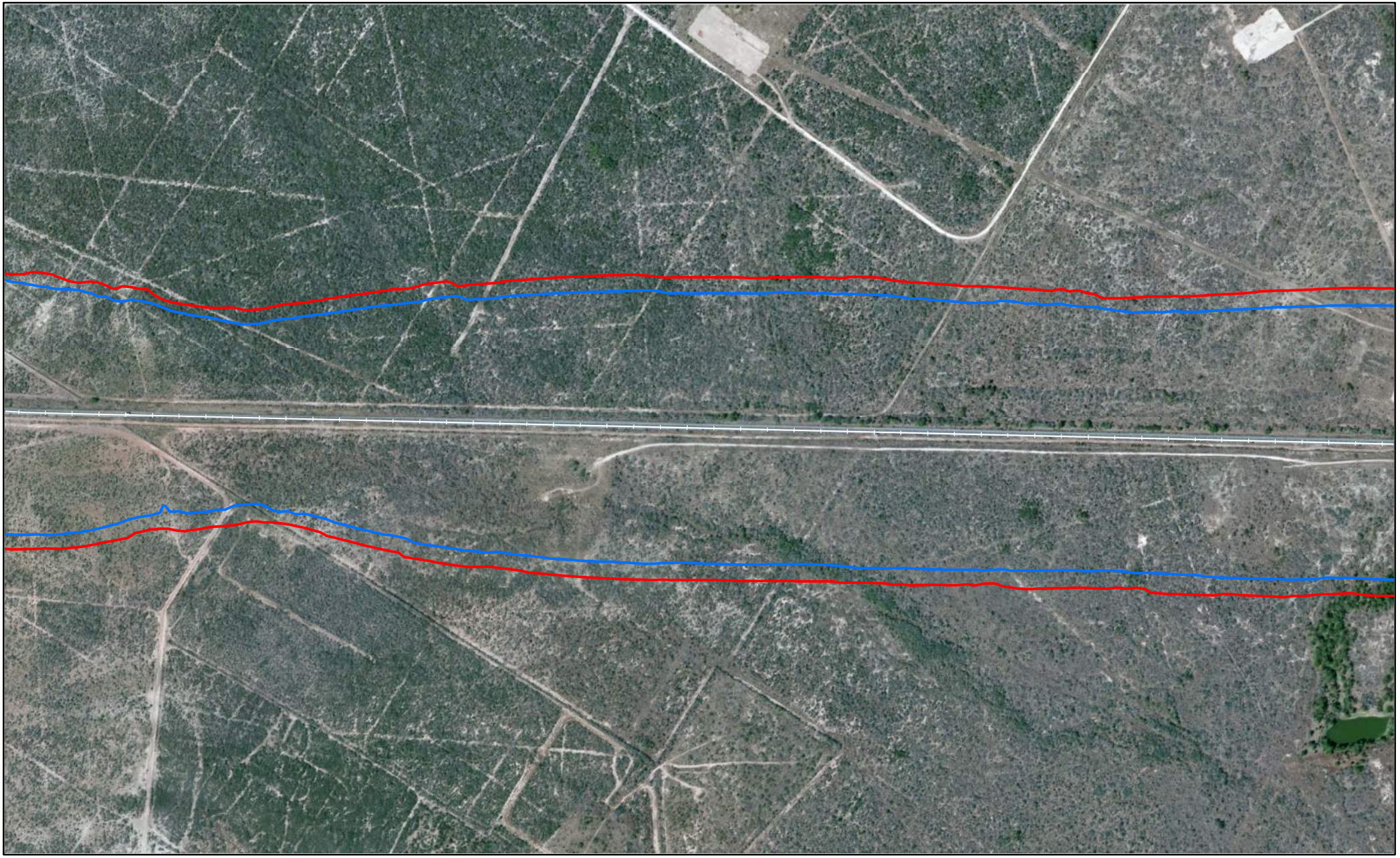
Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1



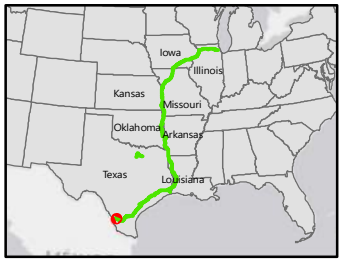
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

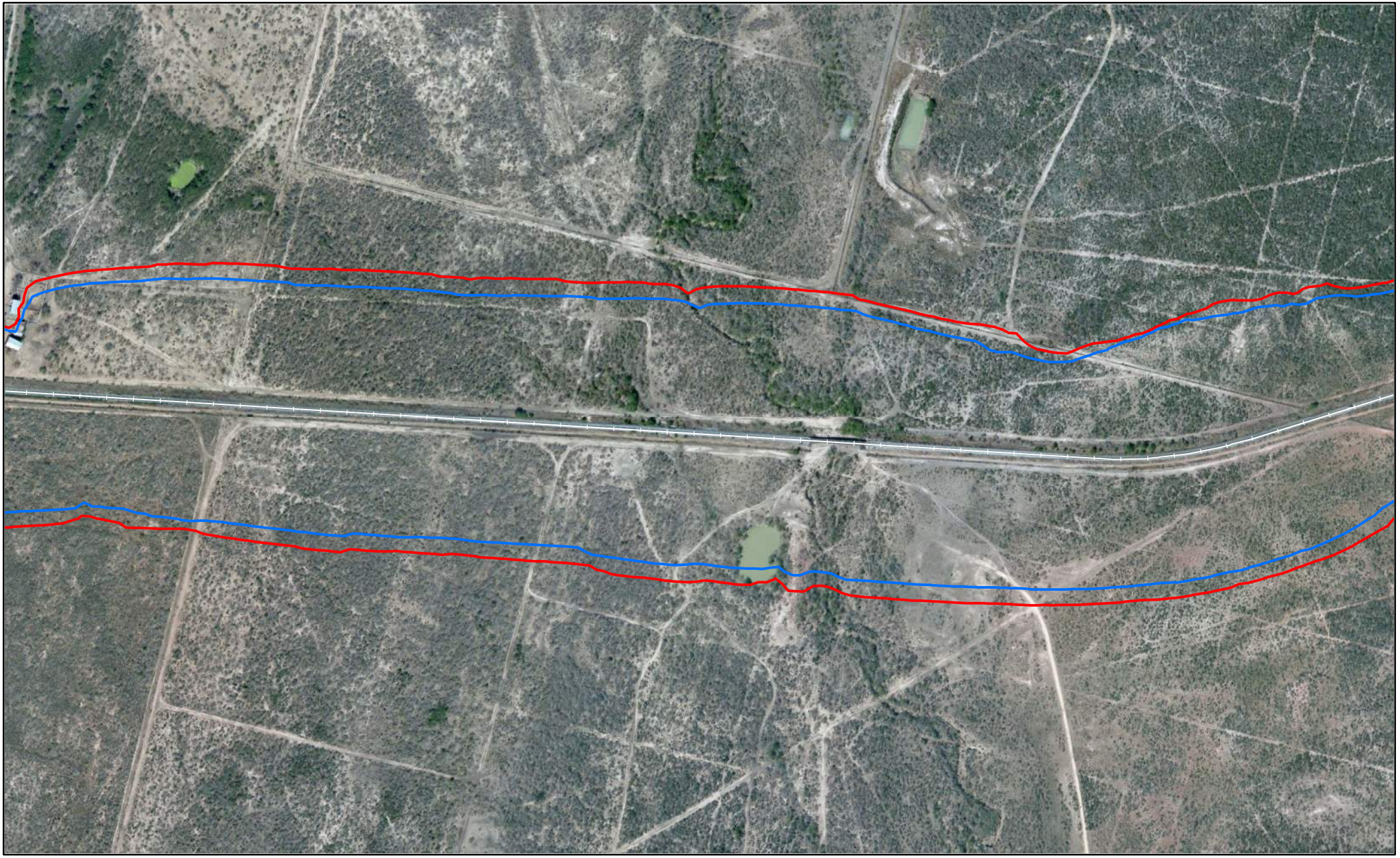
Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

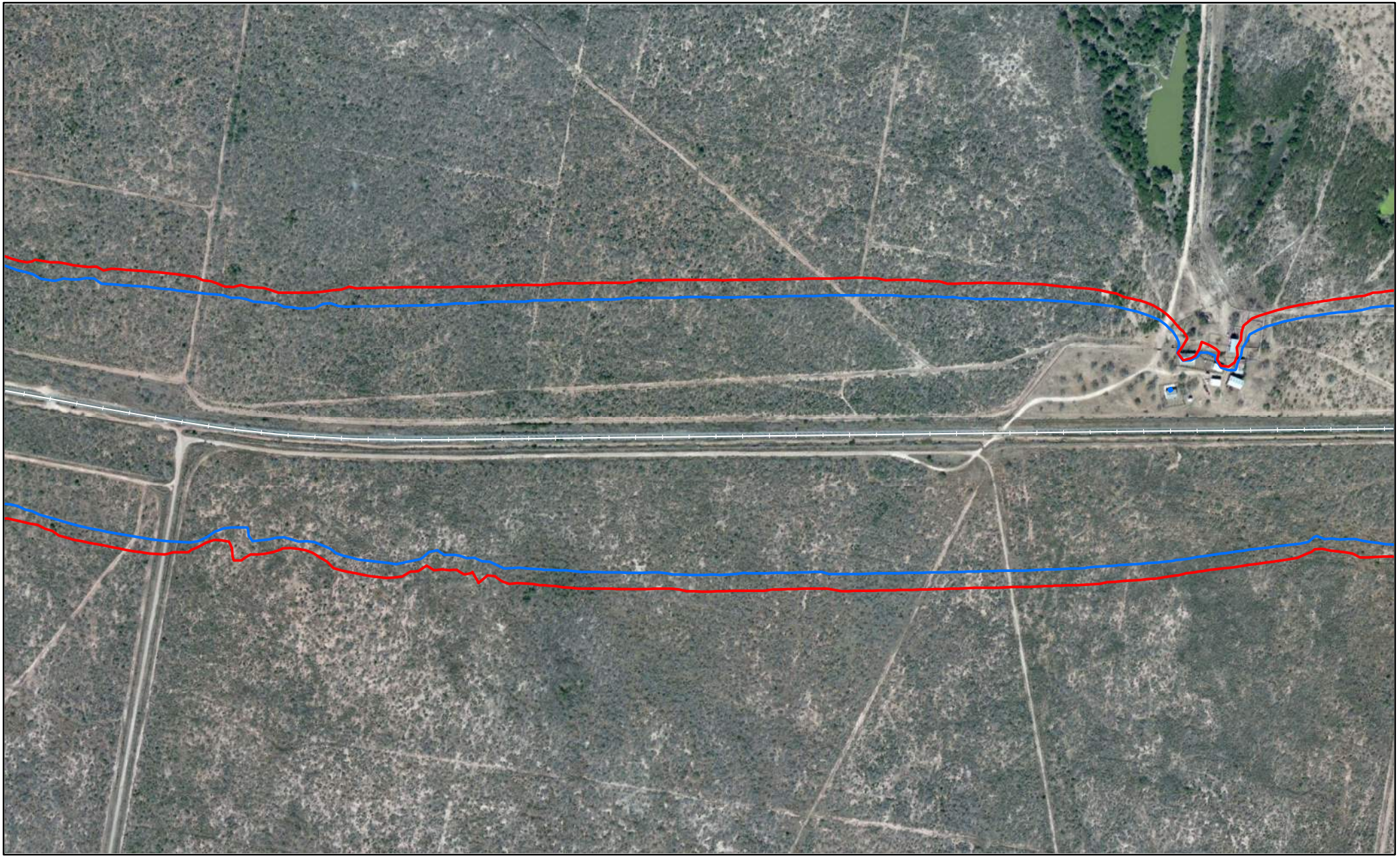
Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

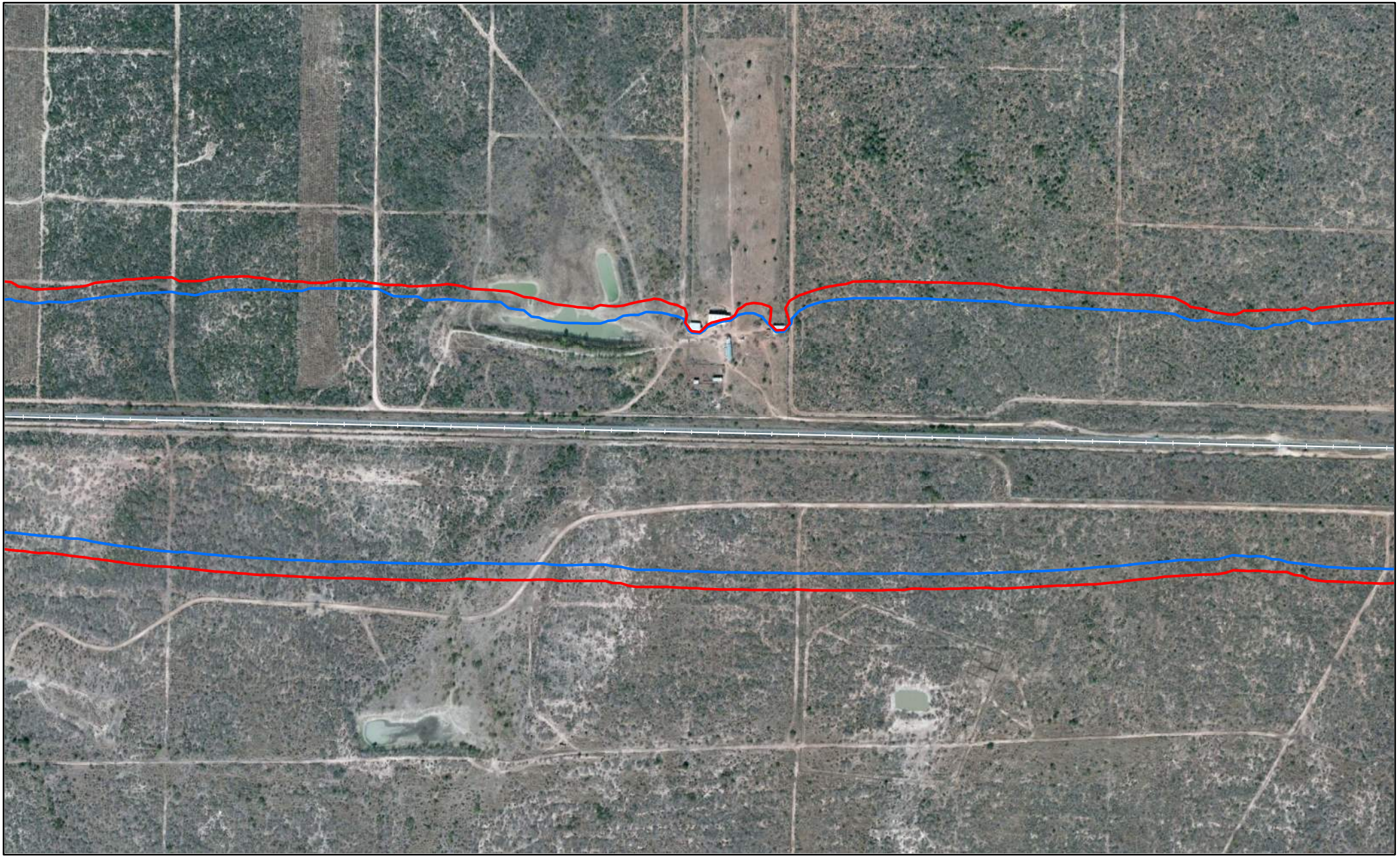
Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1



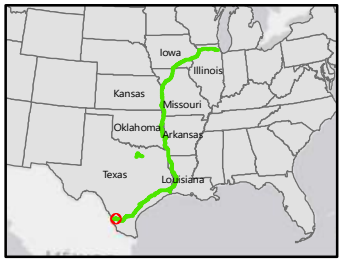
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

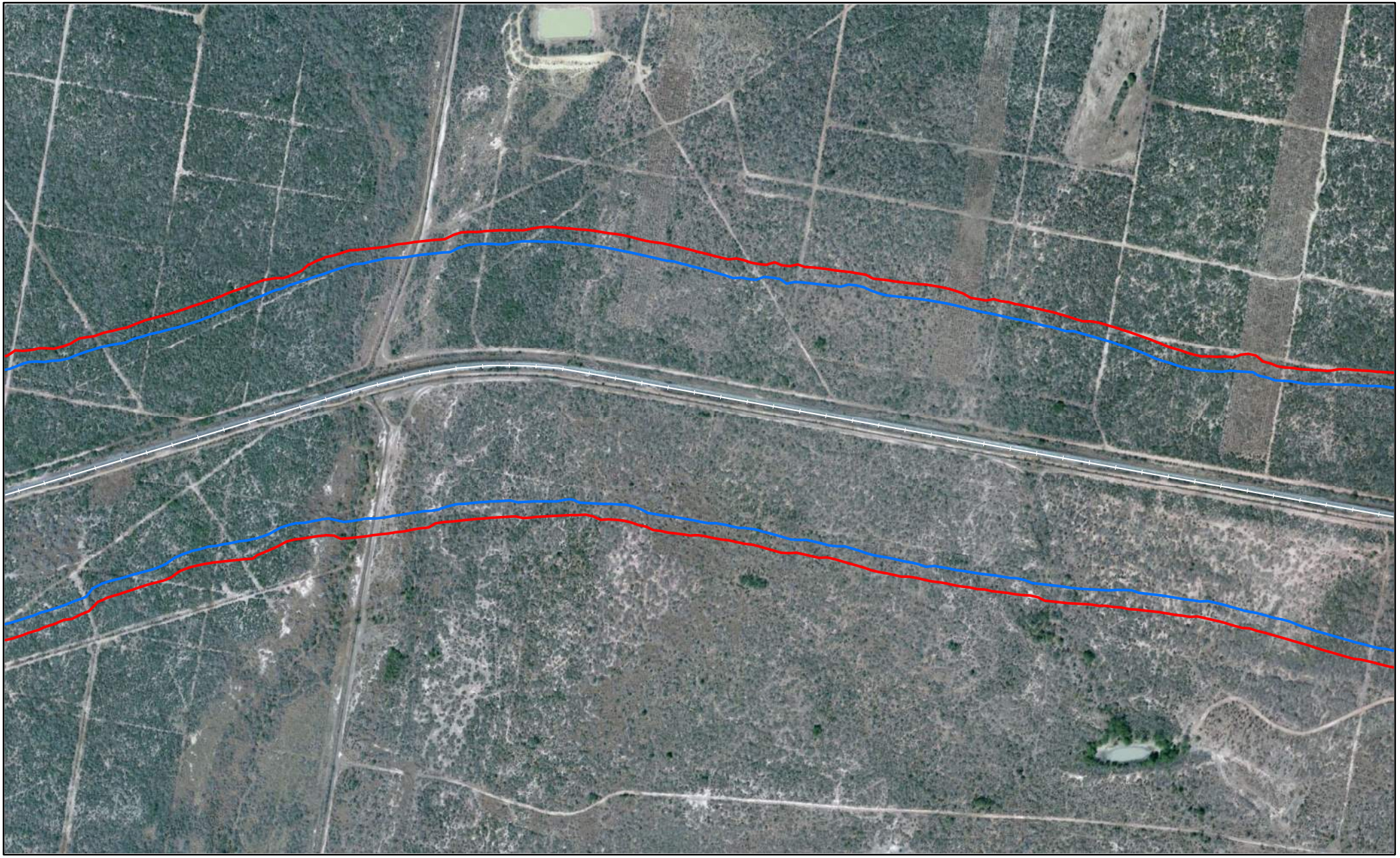


Noise Contours
Webb County, TX

Page 1573 of 1588

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



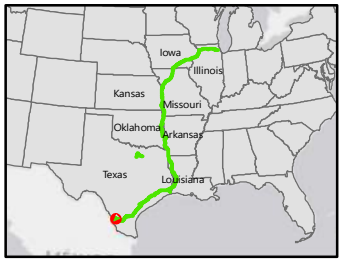
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

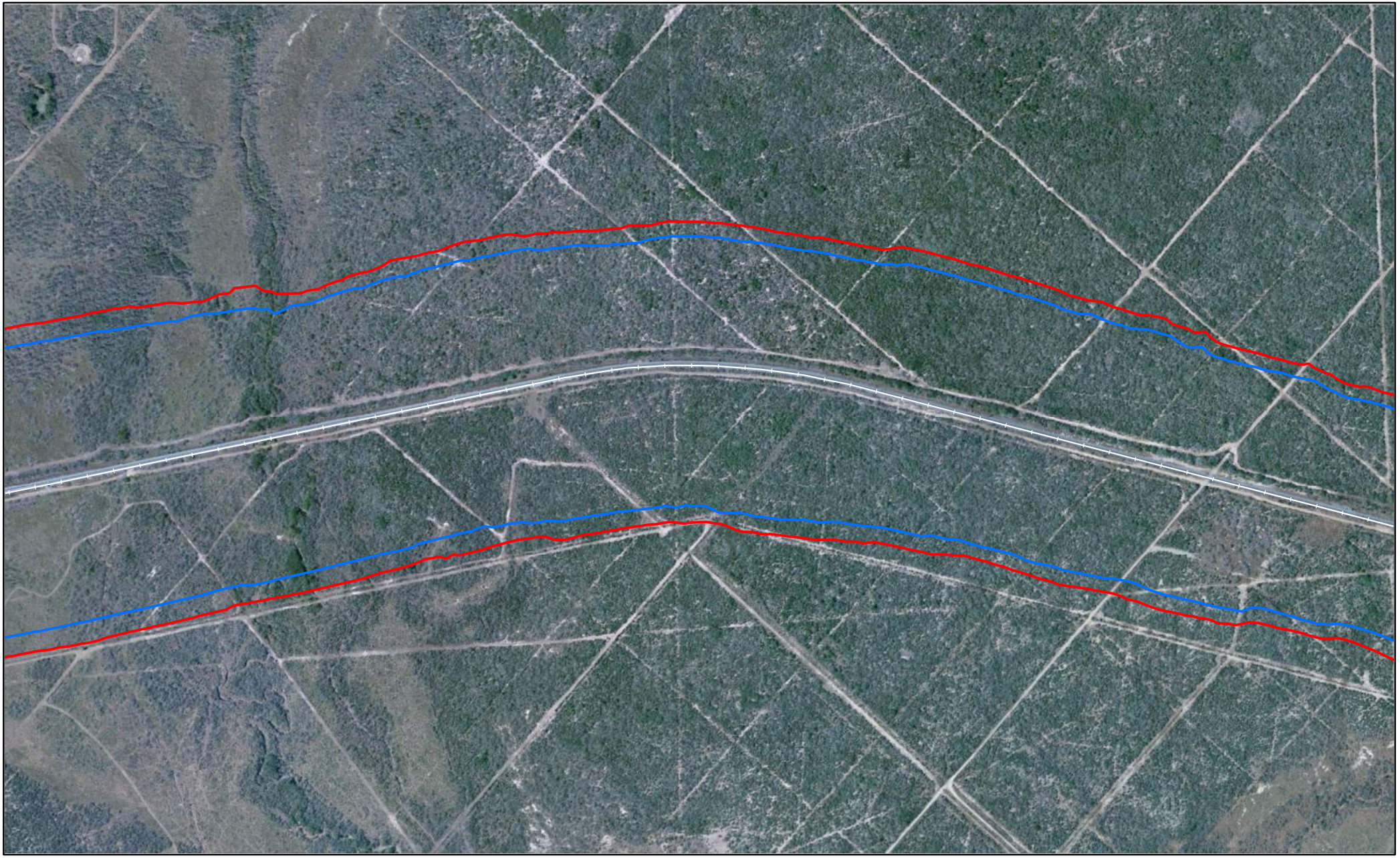
Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1



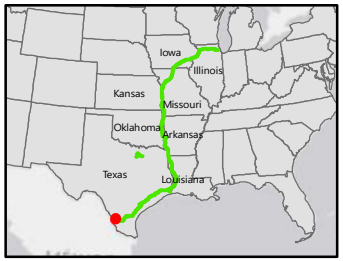
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

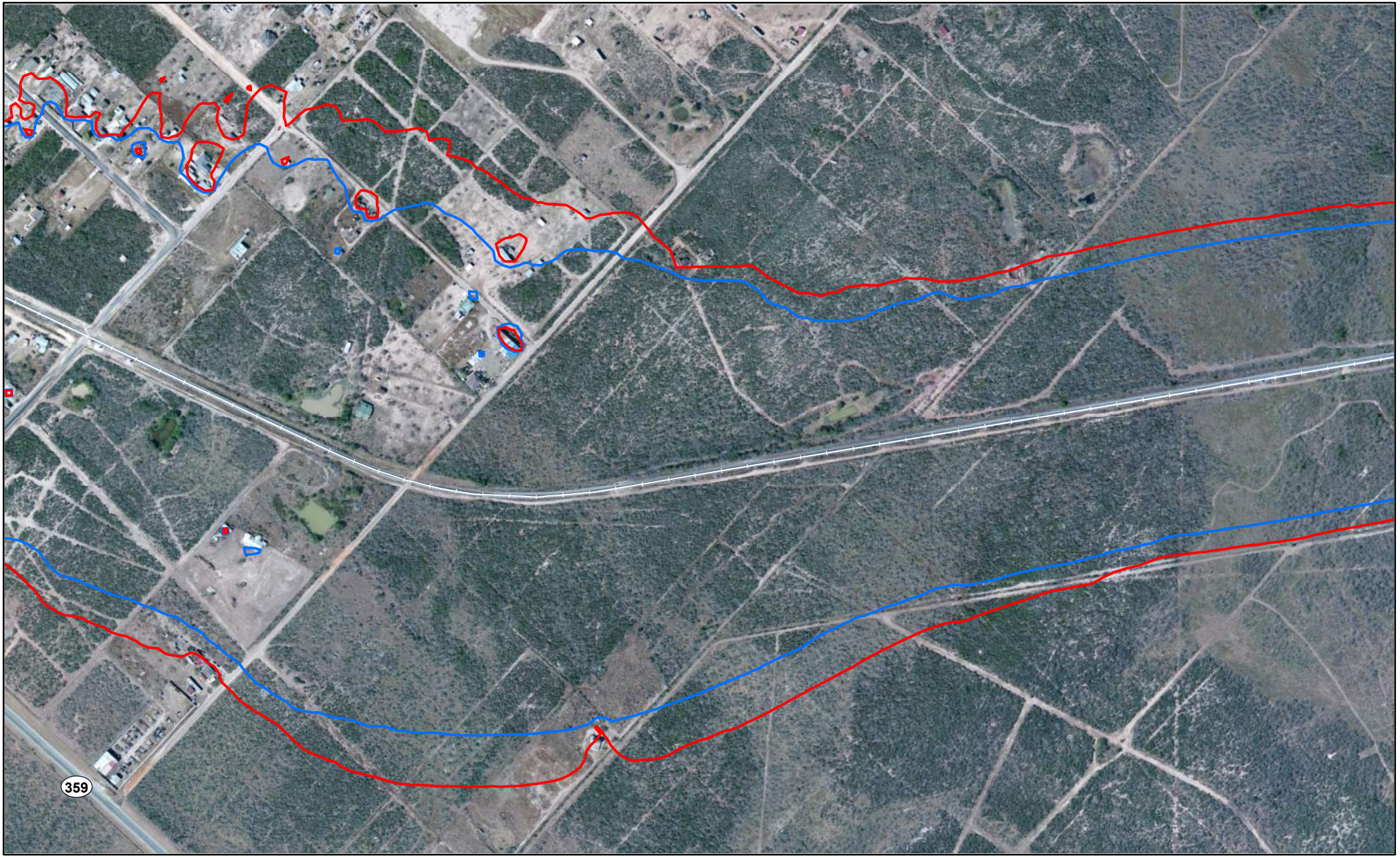
Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

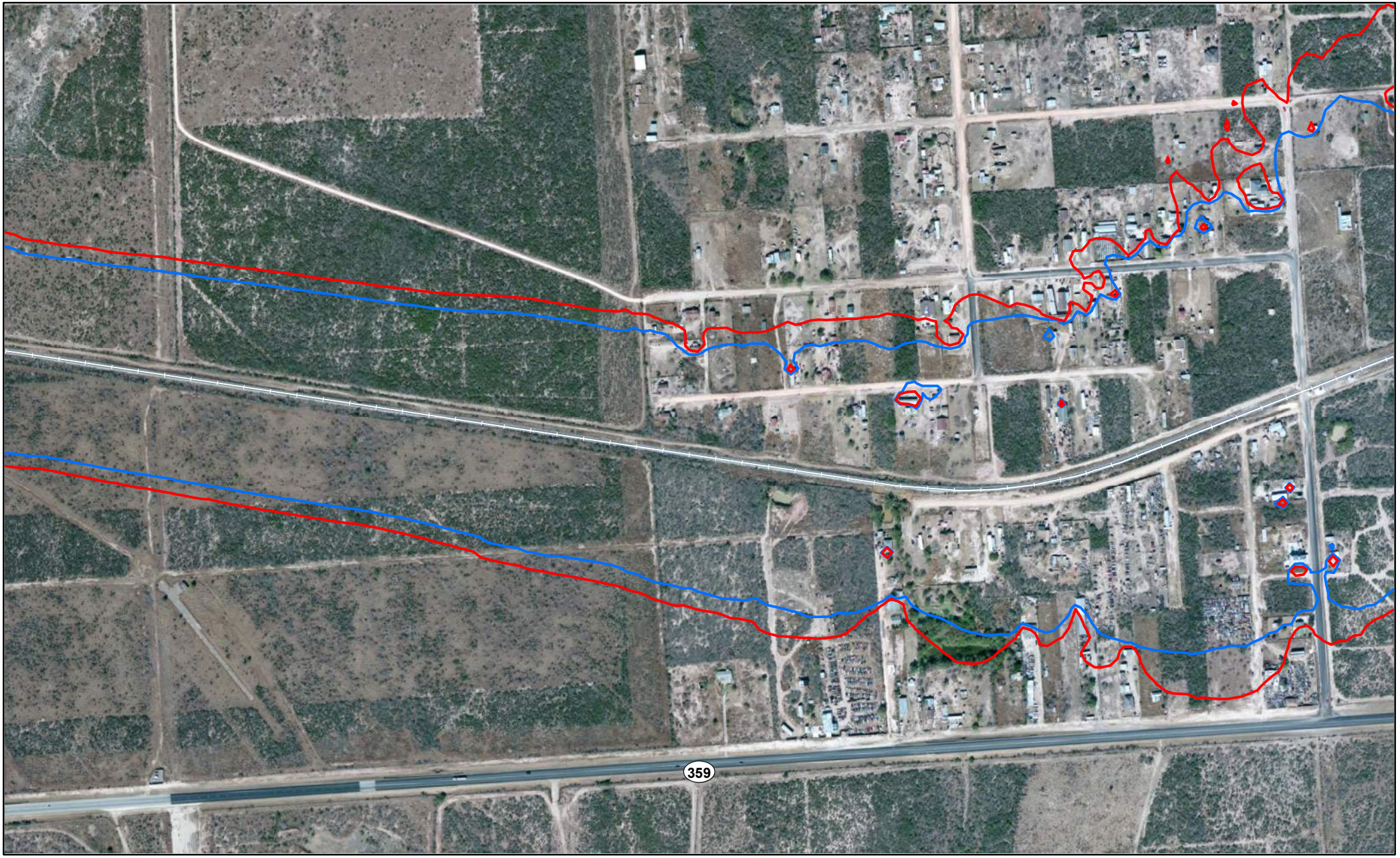
Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

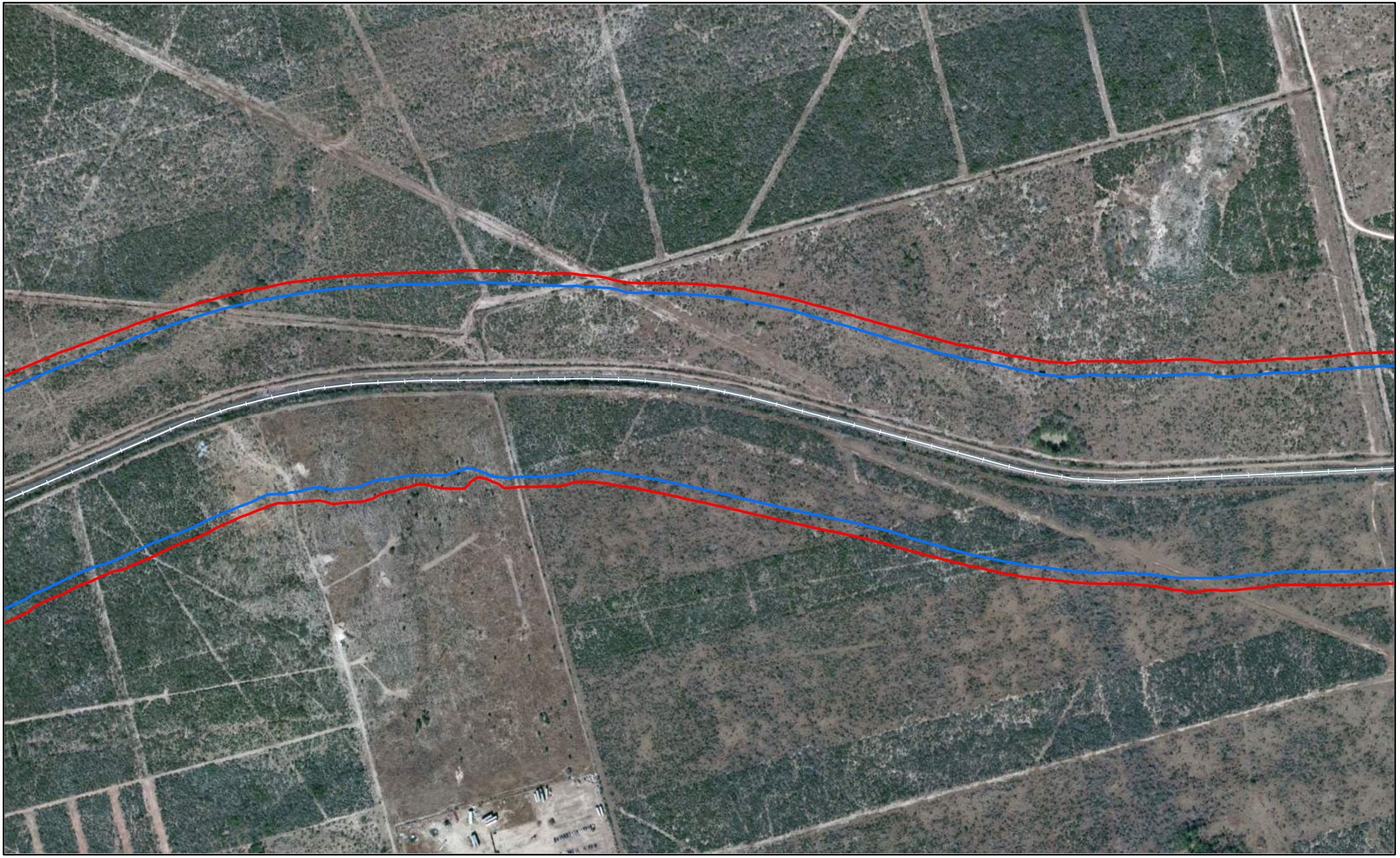
Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

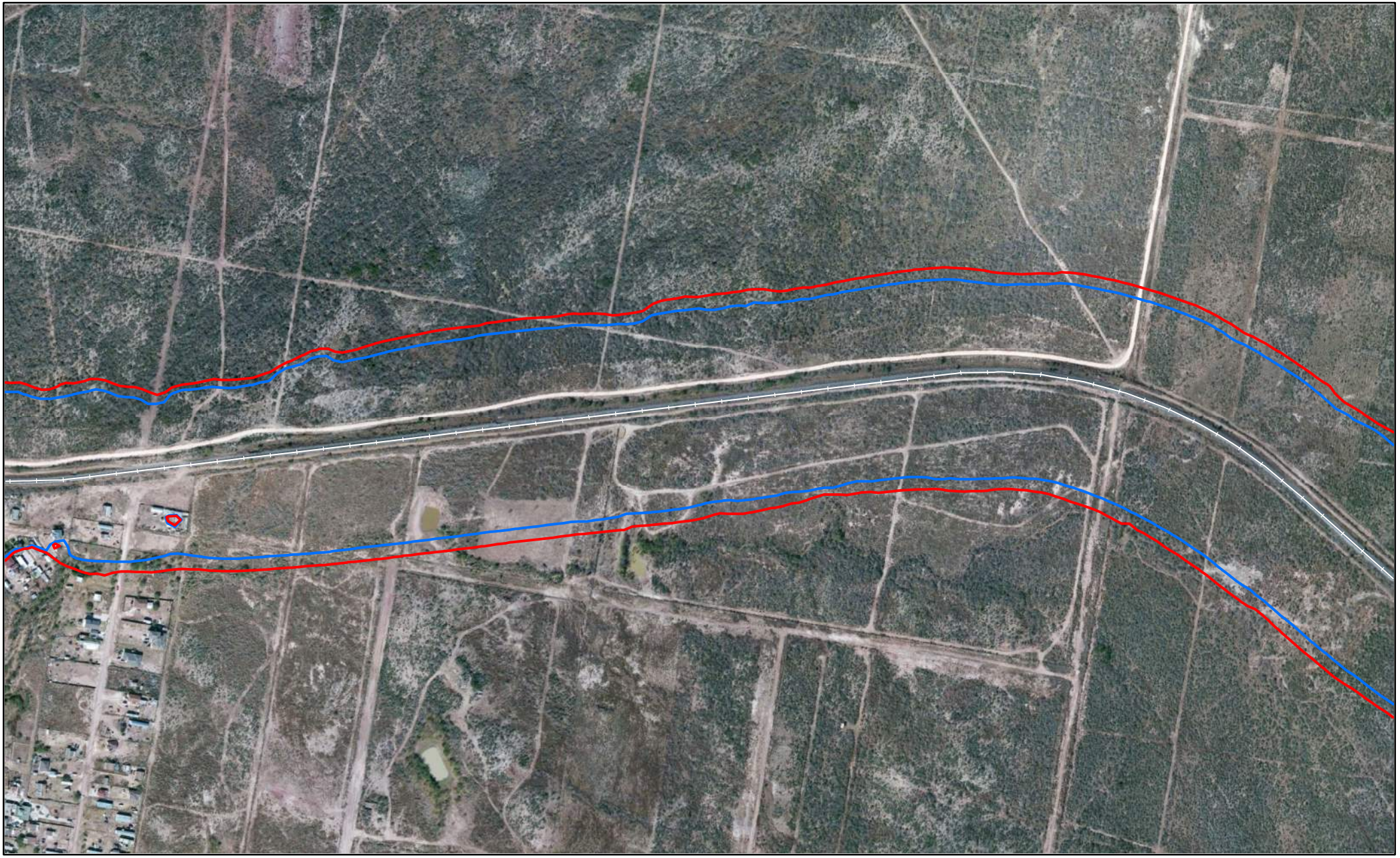
Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

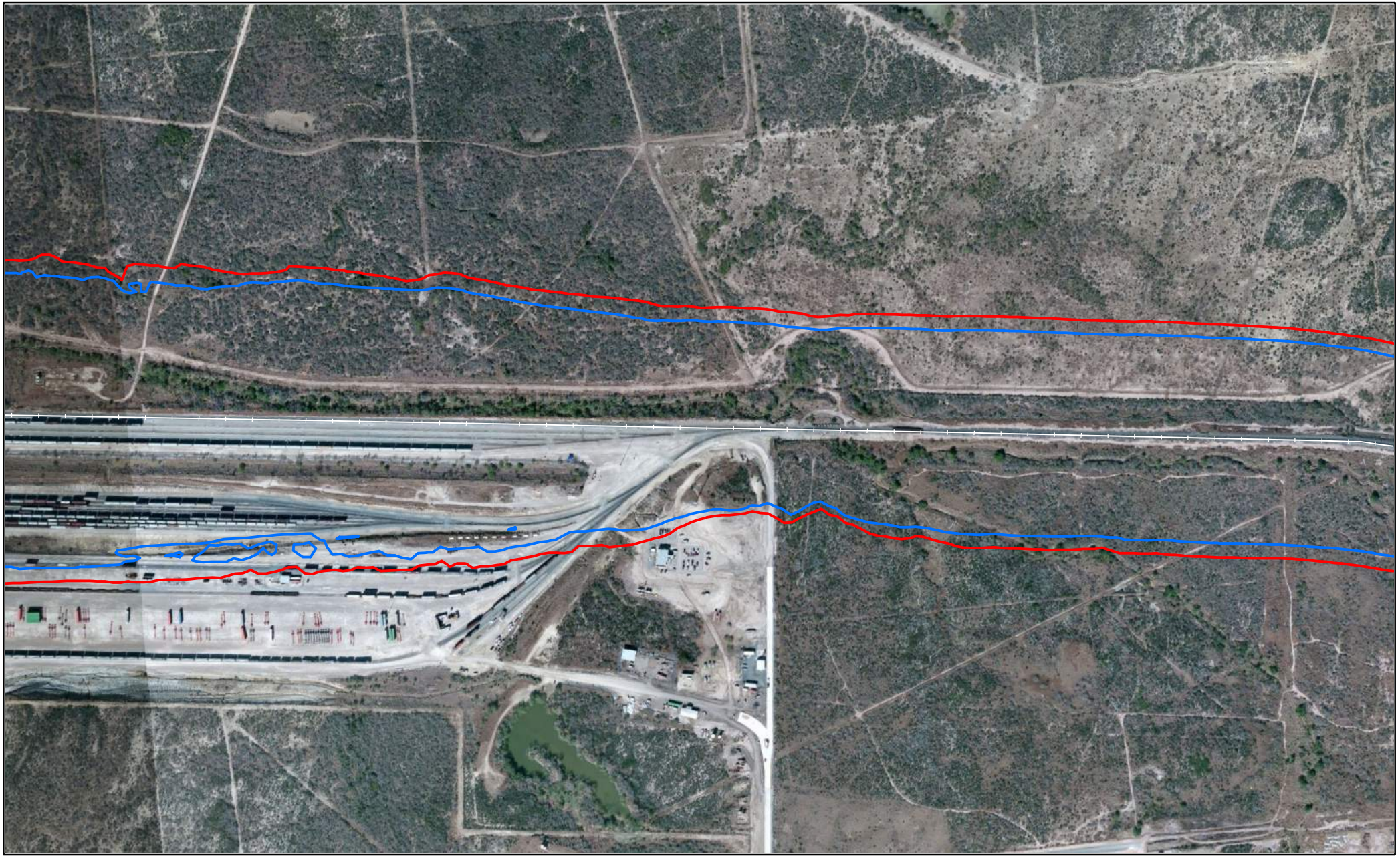
Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

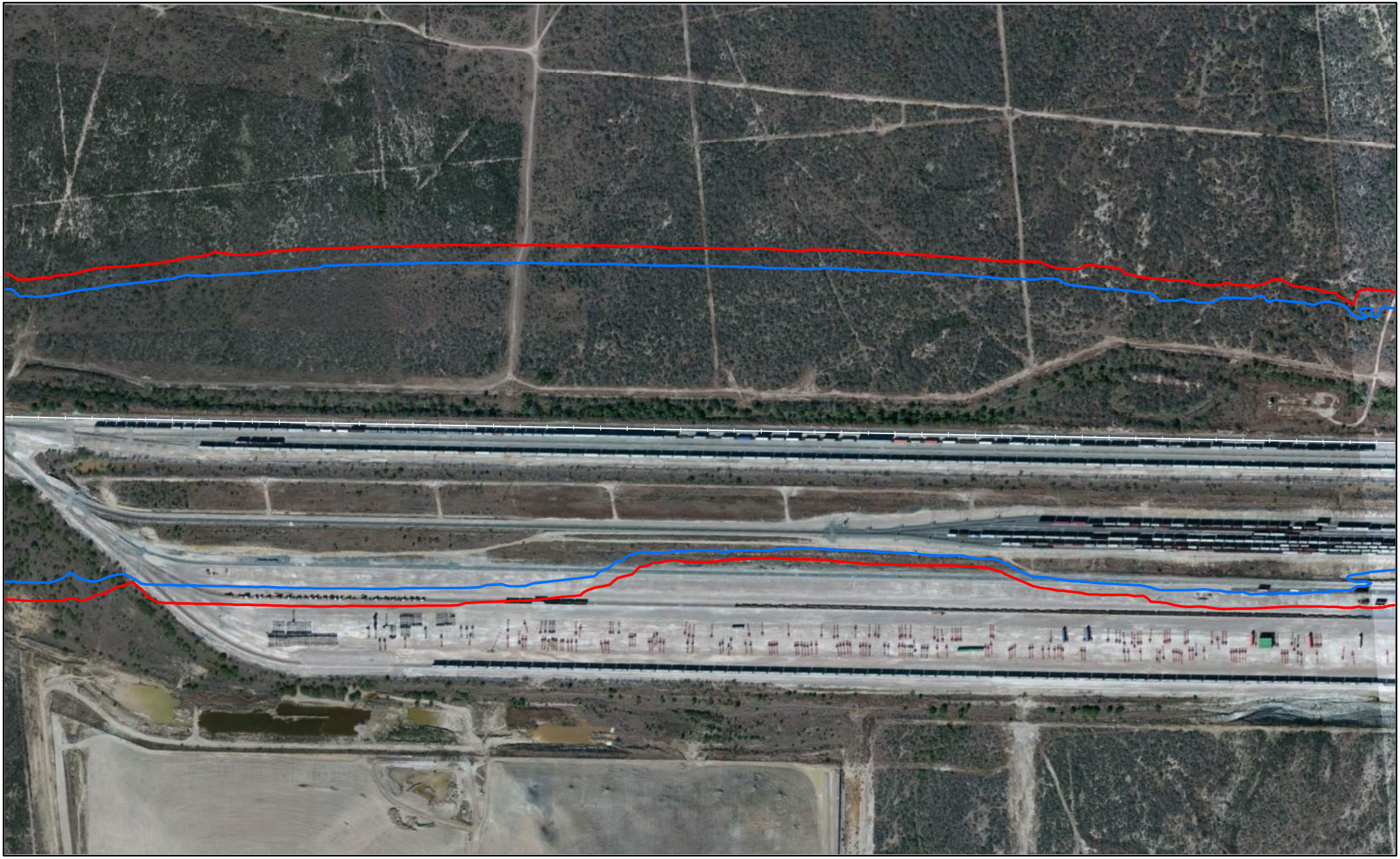
Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

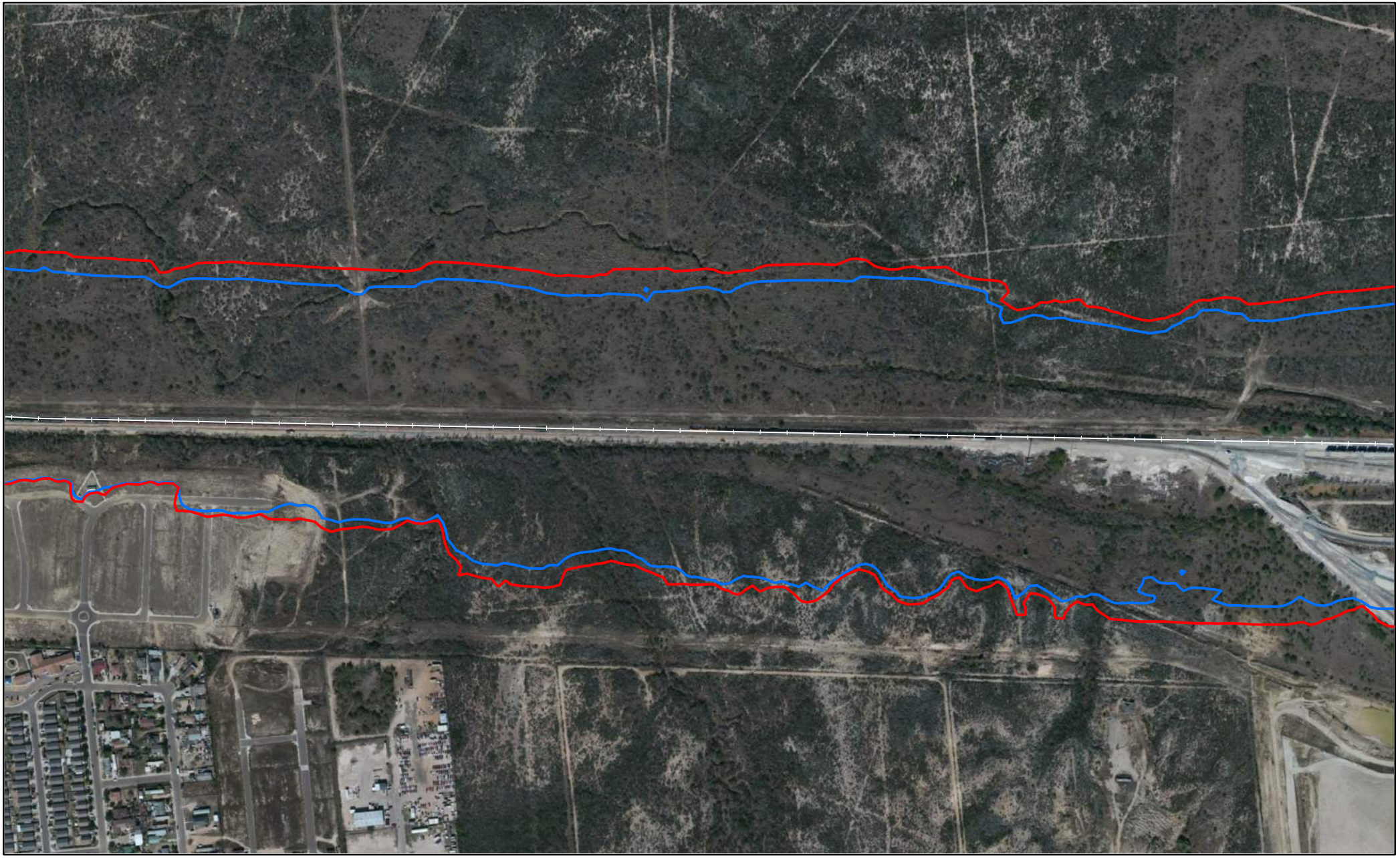
Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

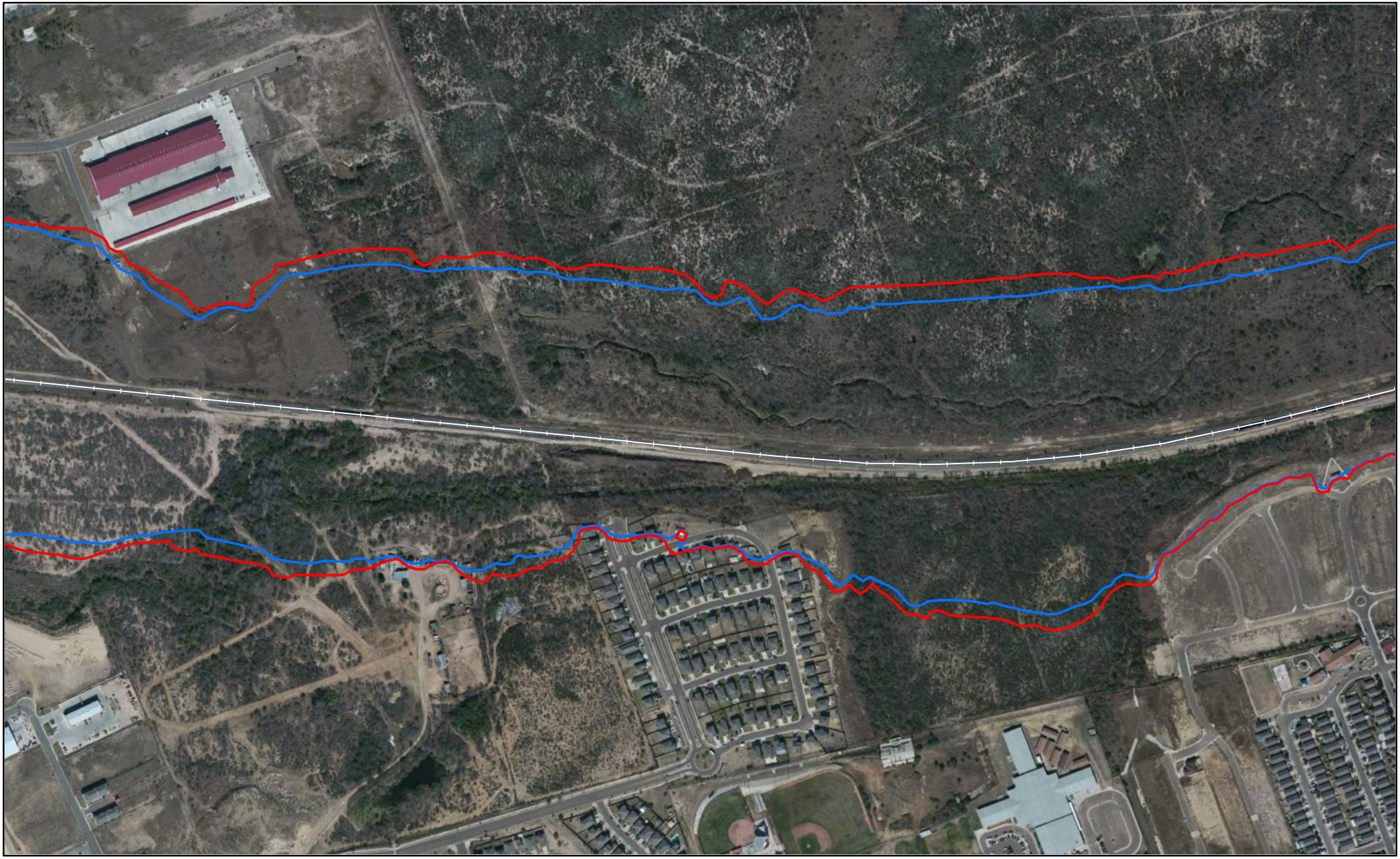
Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

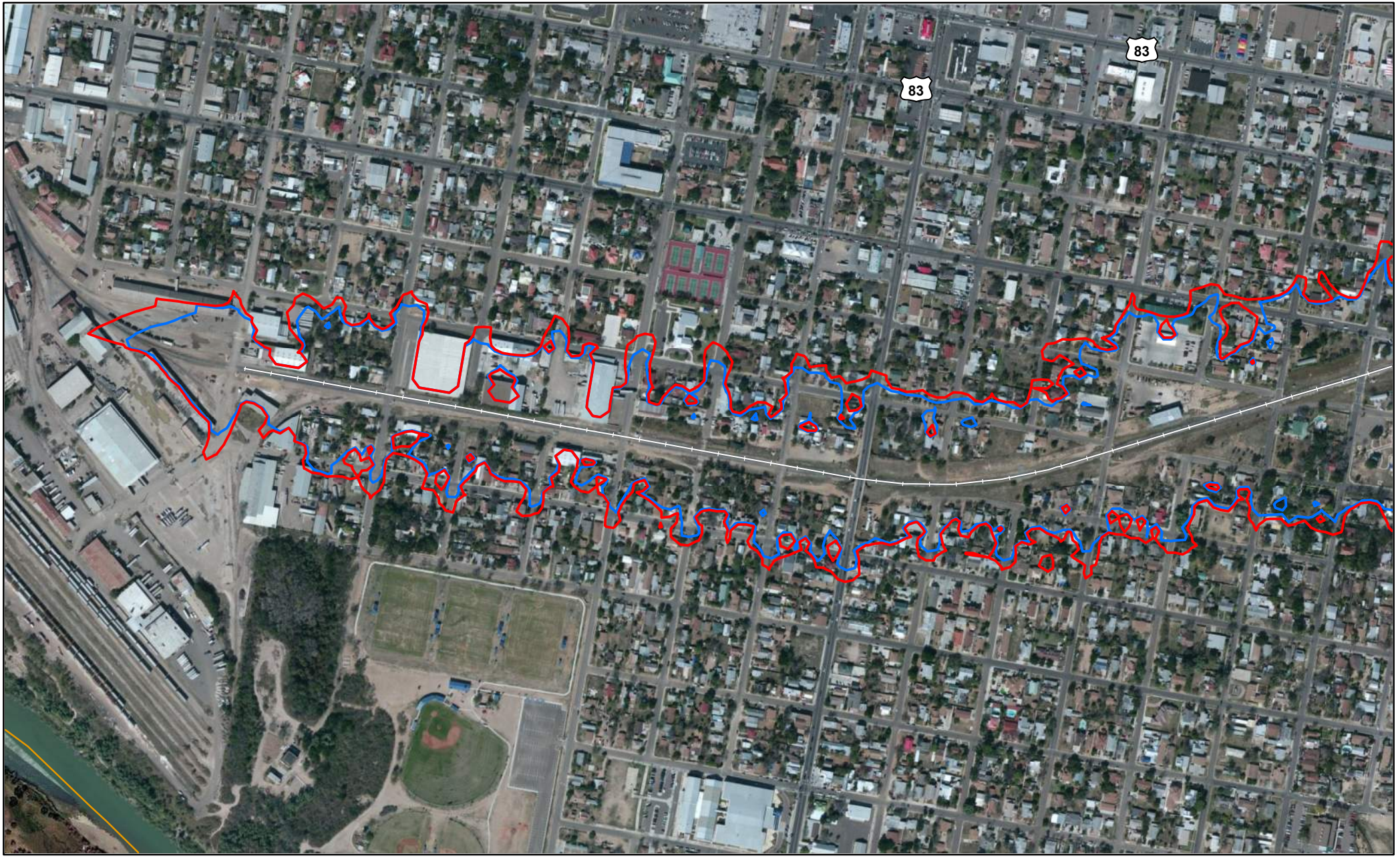
Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

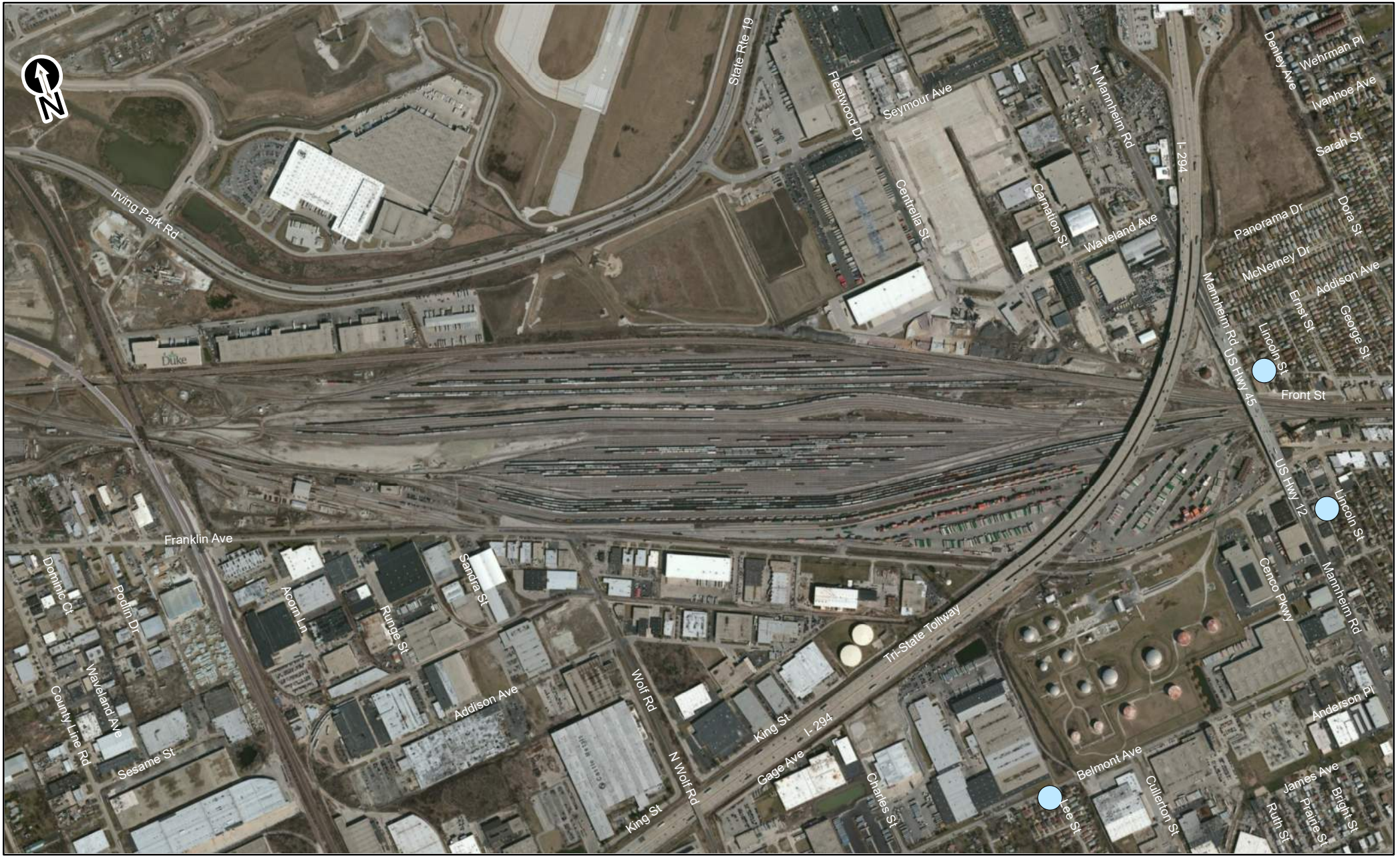
Source: ESRI.



Noise Contours
Webb County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



Noise Receptors

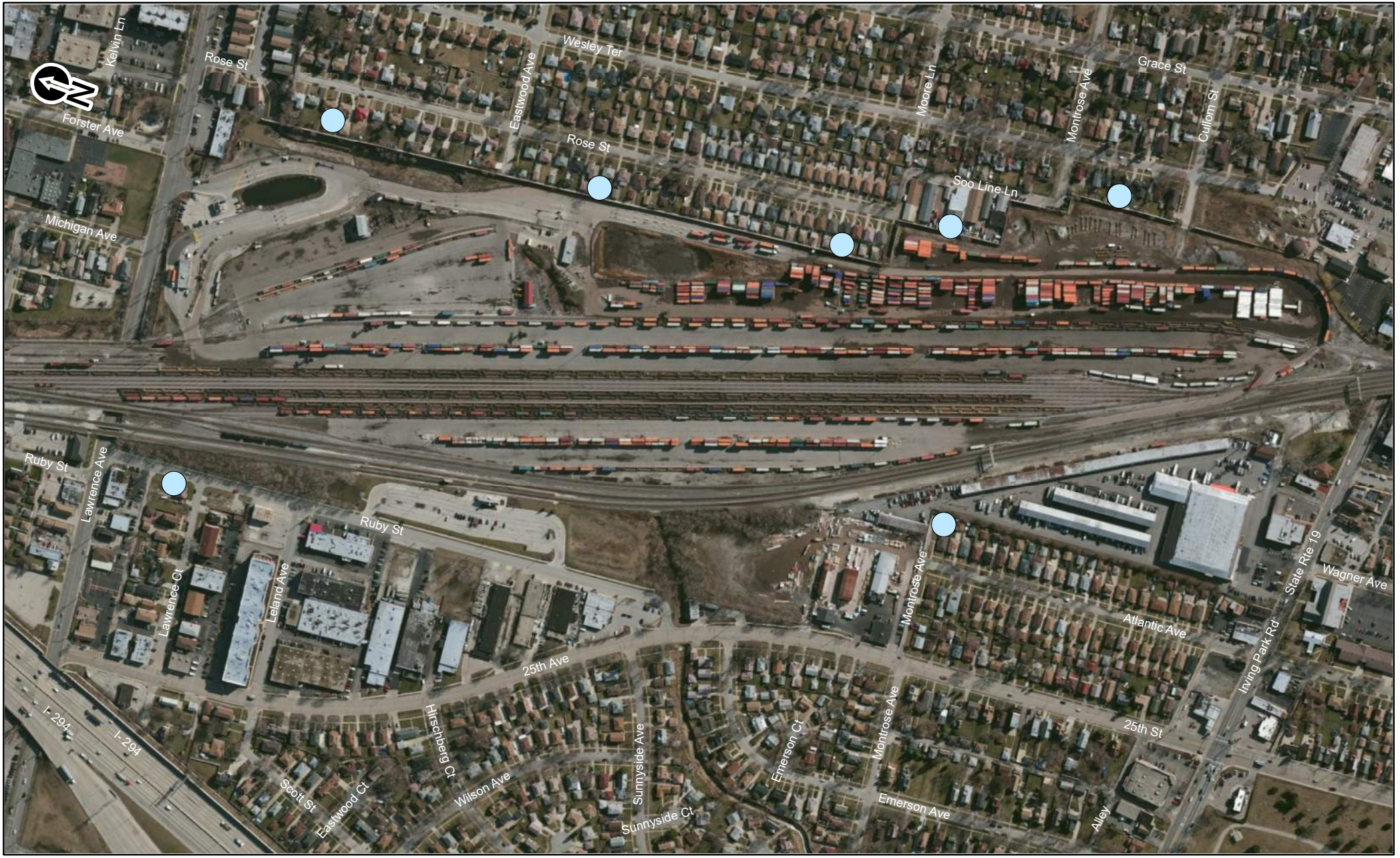
0 0.175 0.35 Miles

Source: ESRI, VHB.



Noise at Rail Yards and Intermodal Facilities
Bensenville
Franklin Park, IL

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



Noise Receptors

0 0.075 0.15 Miles

Source: ESRI, VHB.



Noise at Rail Yards and Intermodal Facilities
Schiller Park
Schiller Park, IL

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



Noise Receptors

0 0.225 0.45 Miles

Source: ESRI, VHB.



Noise at Rail Yards and Intermodal Facilities
International Freight Gateway
Kansas City, MO

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



Noise Receptors

0 0.175 0.35 Miles

Source: ESRI, VHB.



Noise at Rail Yards and Intermodal Facilities
Wylie
Wylie, TX

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



Noise Receptors

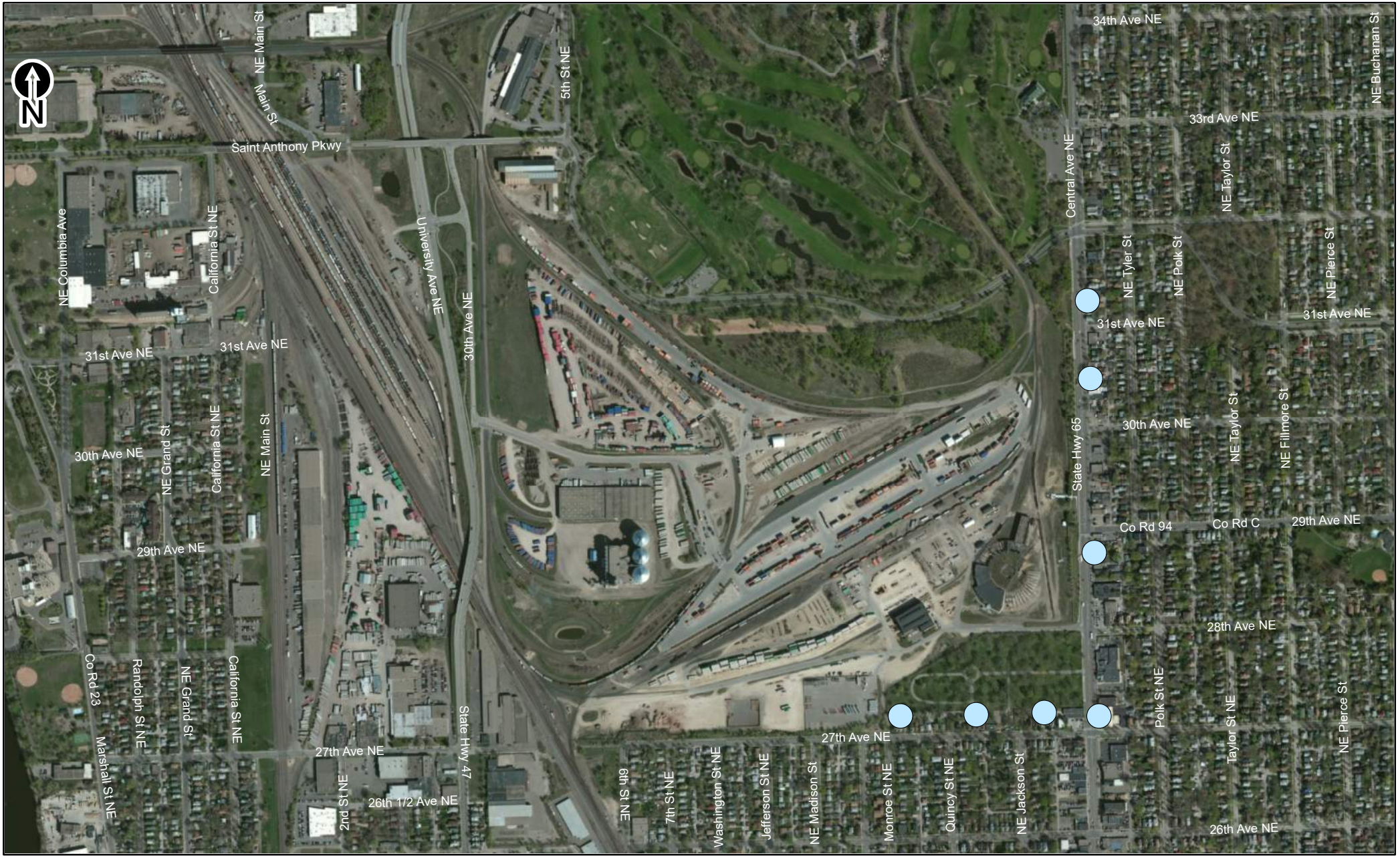
0 0.075 0.15 Miles

Source: ESRI, VHB.



Noise at Rail Yards and Intermodal Facilities
Detroit Intermodal Facility
Detroit, MI

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



Noise Receptors

0 0.15 0.3 Miles

Source: ESRI, VHB.



Noise at Rail Yards and Intermodal Facilities
Minneapolis Intermodal Facility
Minneapolis, MN

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



Noise Receptors

0 0.175 0.35 Miles

Source: ESRI, VHB.



Noise at Rail Yards and Intermodal Facilities
Wylie
Wylie, TX

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN

Appendix M – Attachment 8: Houston



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

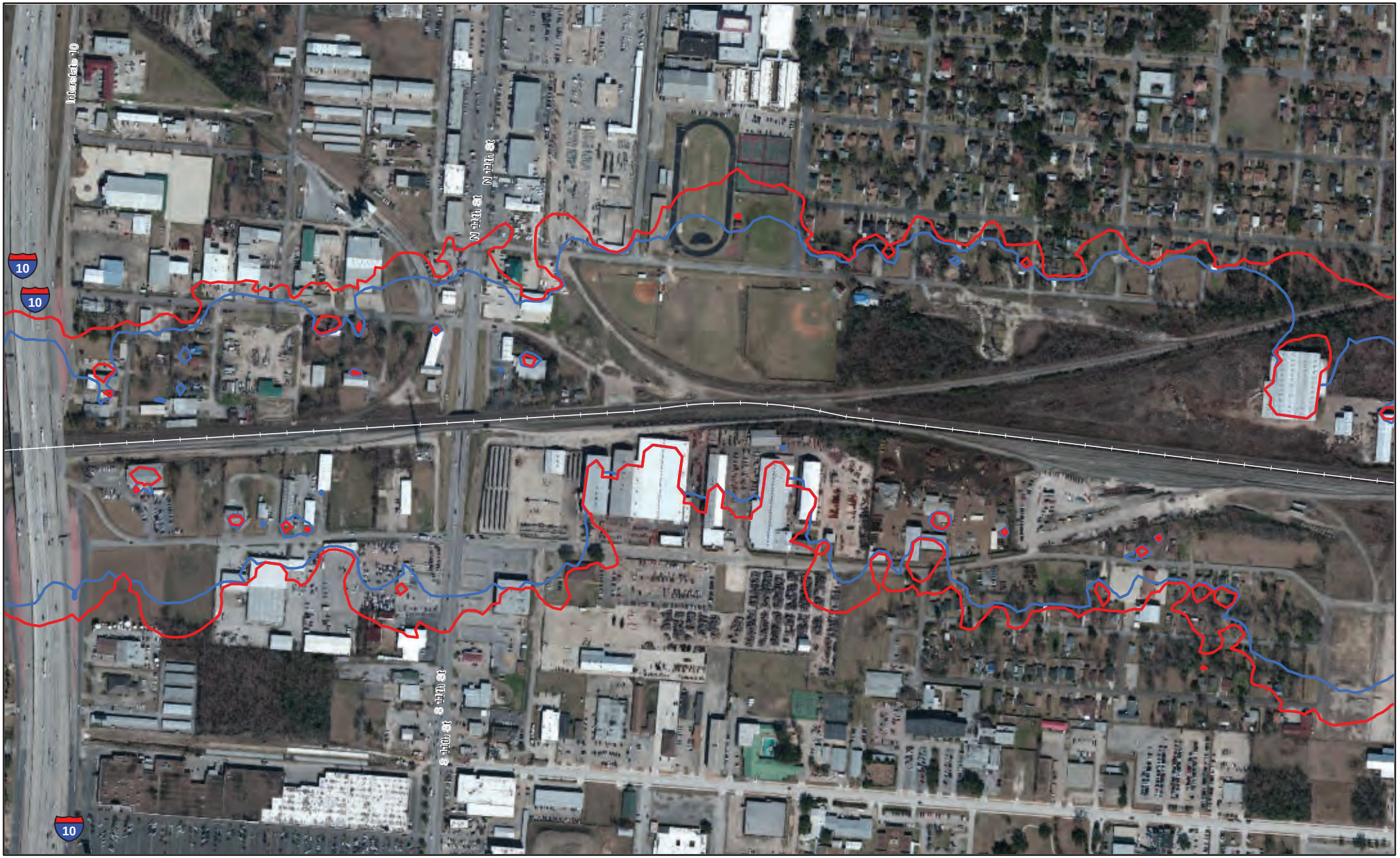


Noise Contours
Jefferson County, TX

Page H1 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jefferson County, TX

Page H2 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jefferson County, TX

Page H3 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

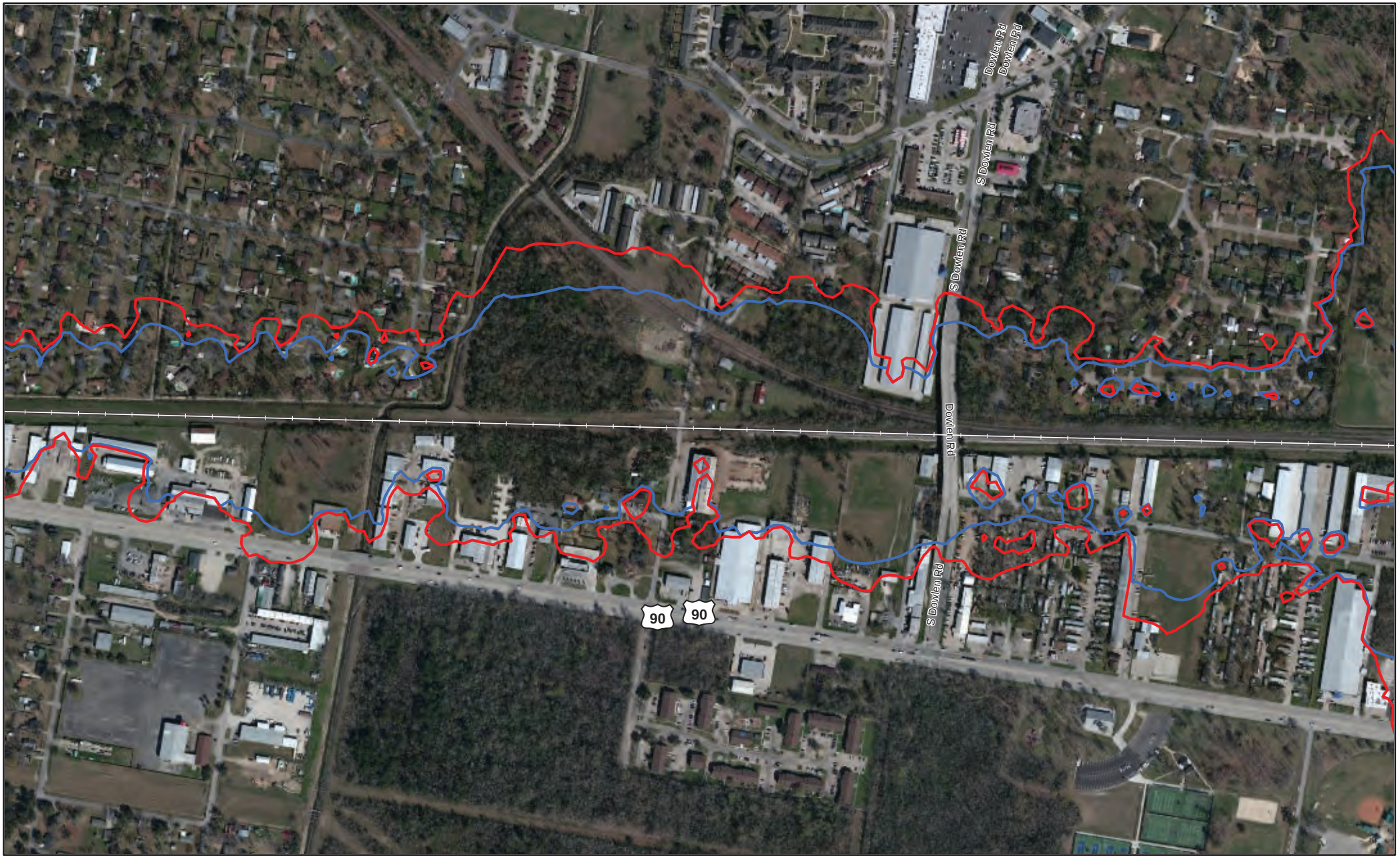
Source: ESRI.



Noise Contours
Jefferson County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



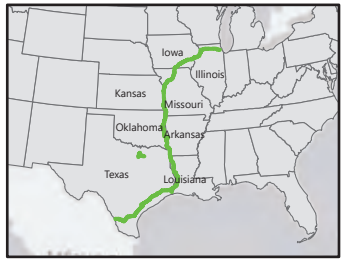
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

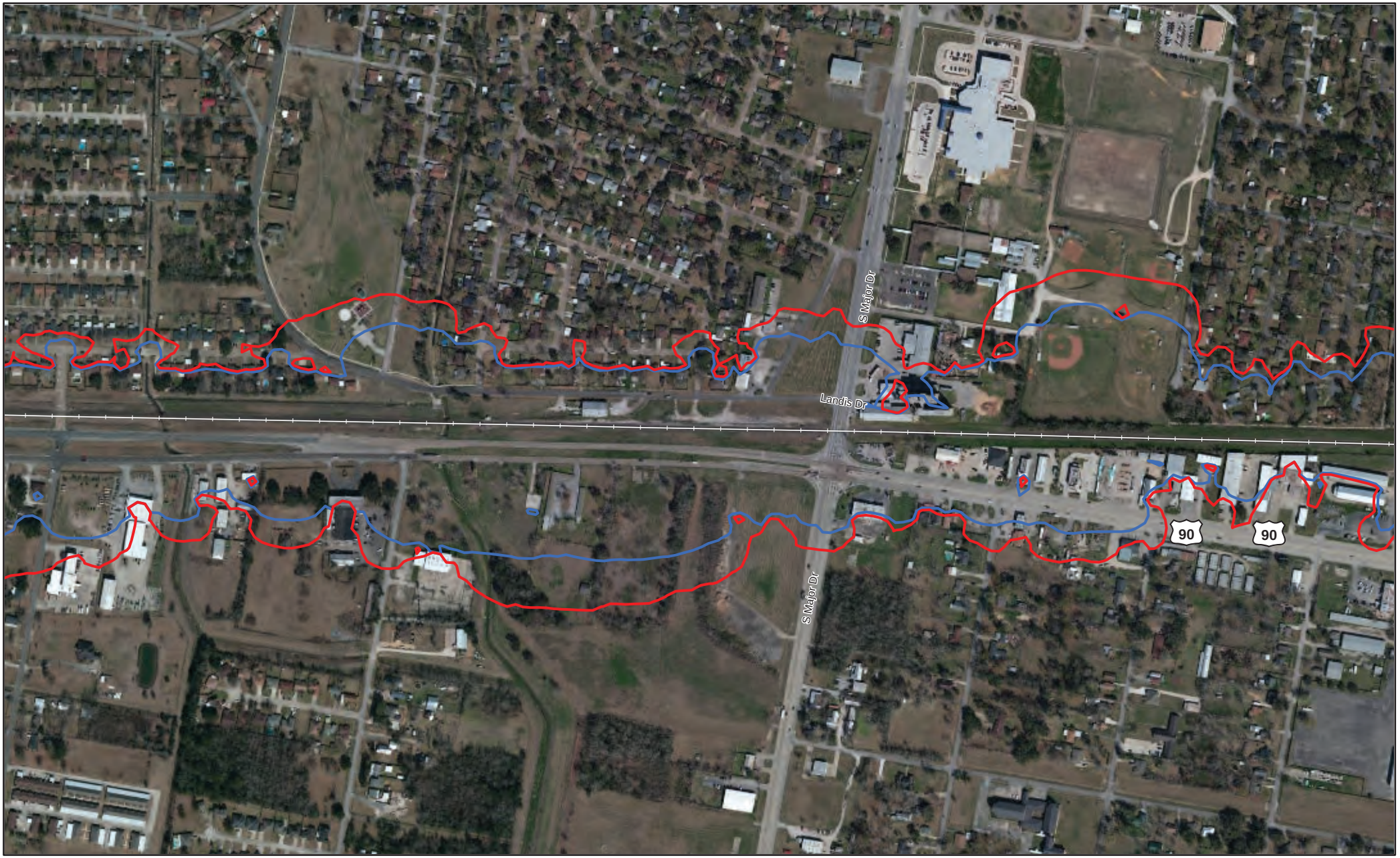


Noise Contours
Jefferson County, TX

Page H5 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

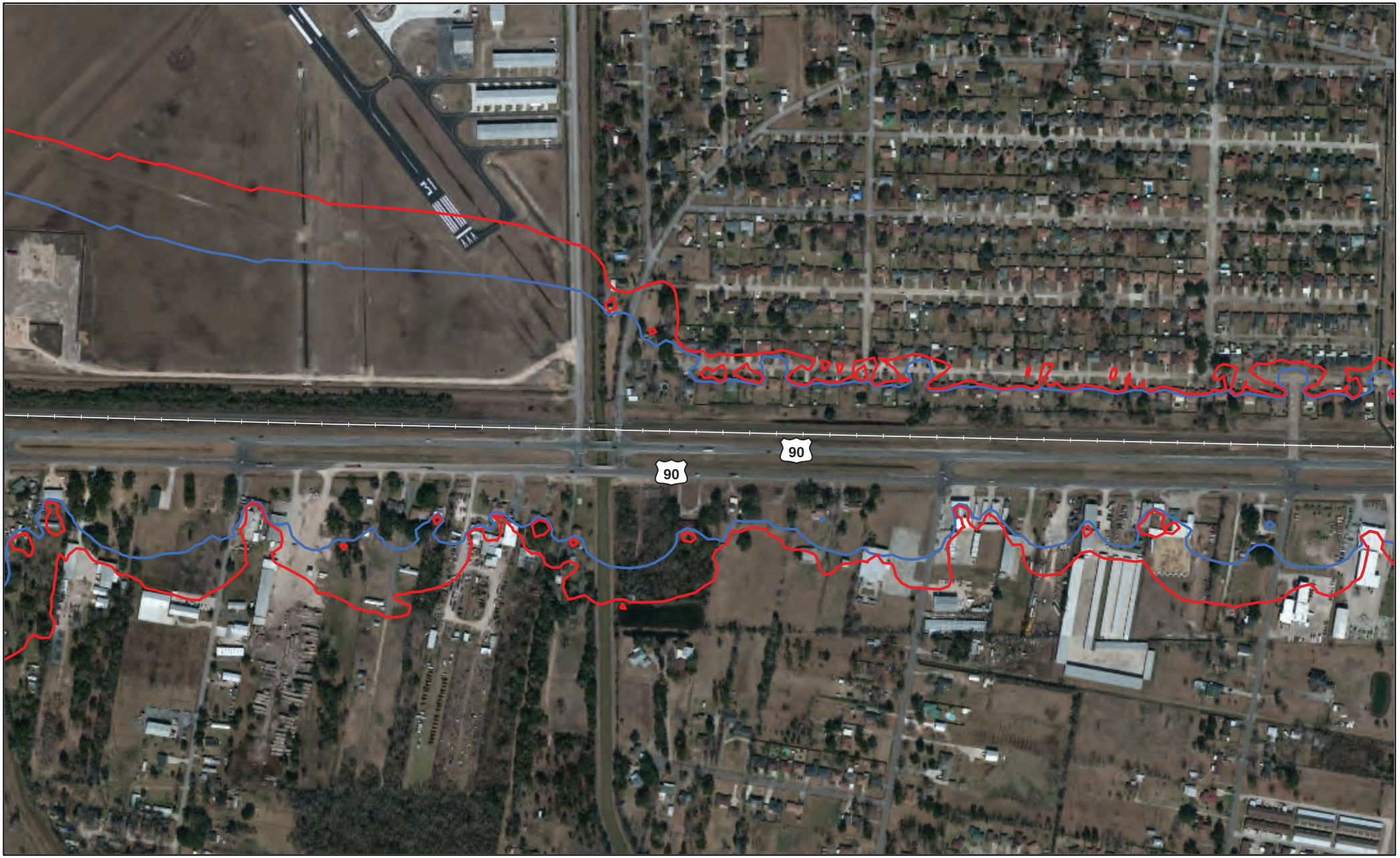
Source: ESRI.



Noise Contours
Jefferson County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

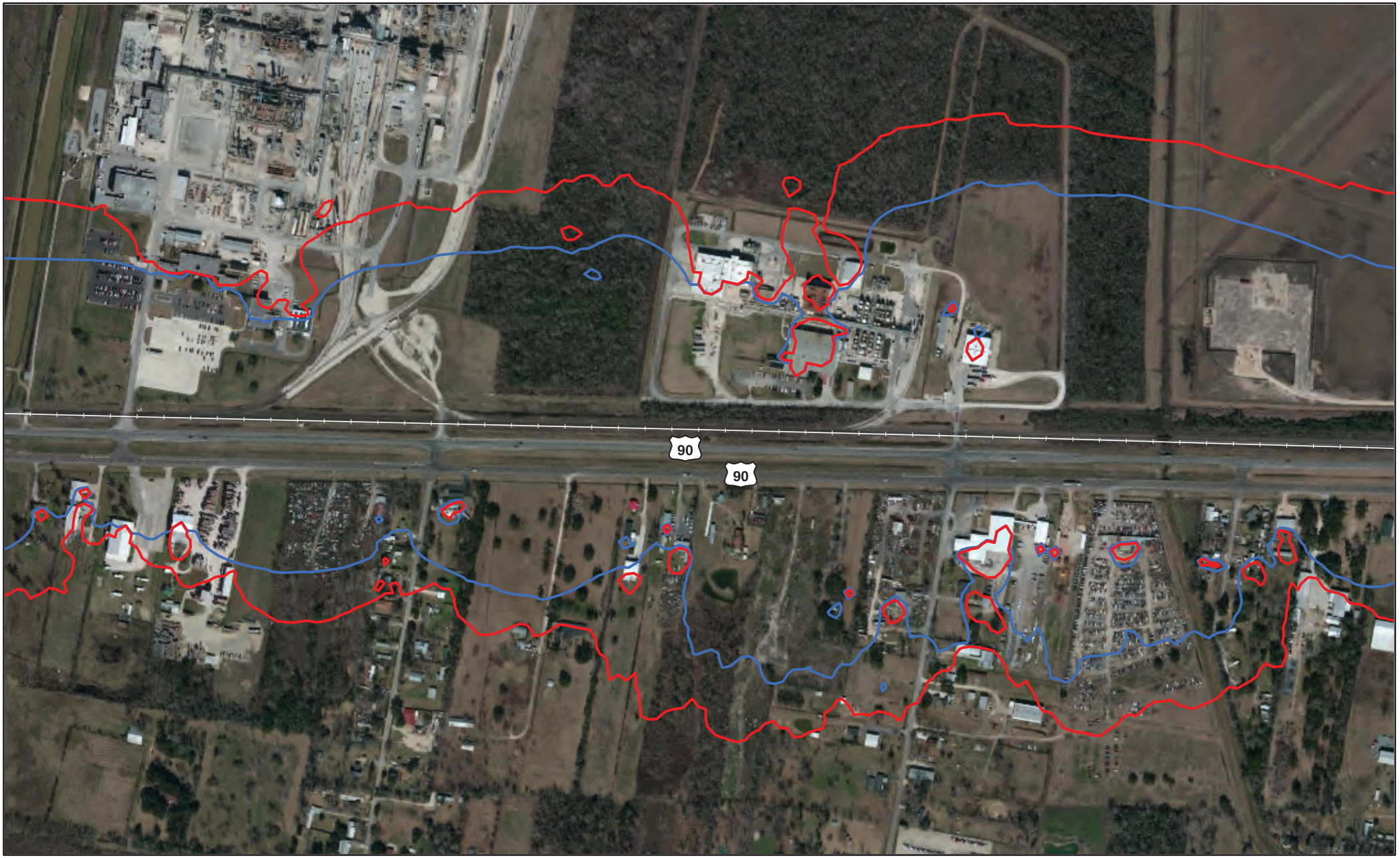
Source: ESRI.



Noise Contours
Jefferson County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

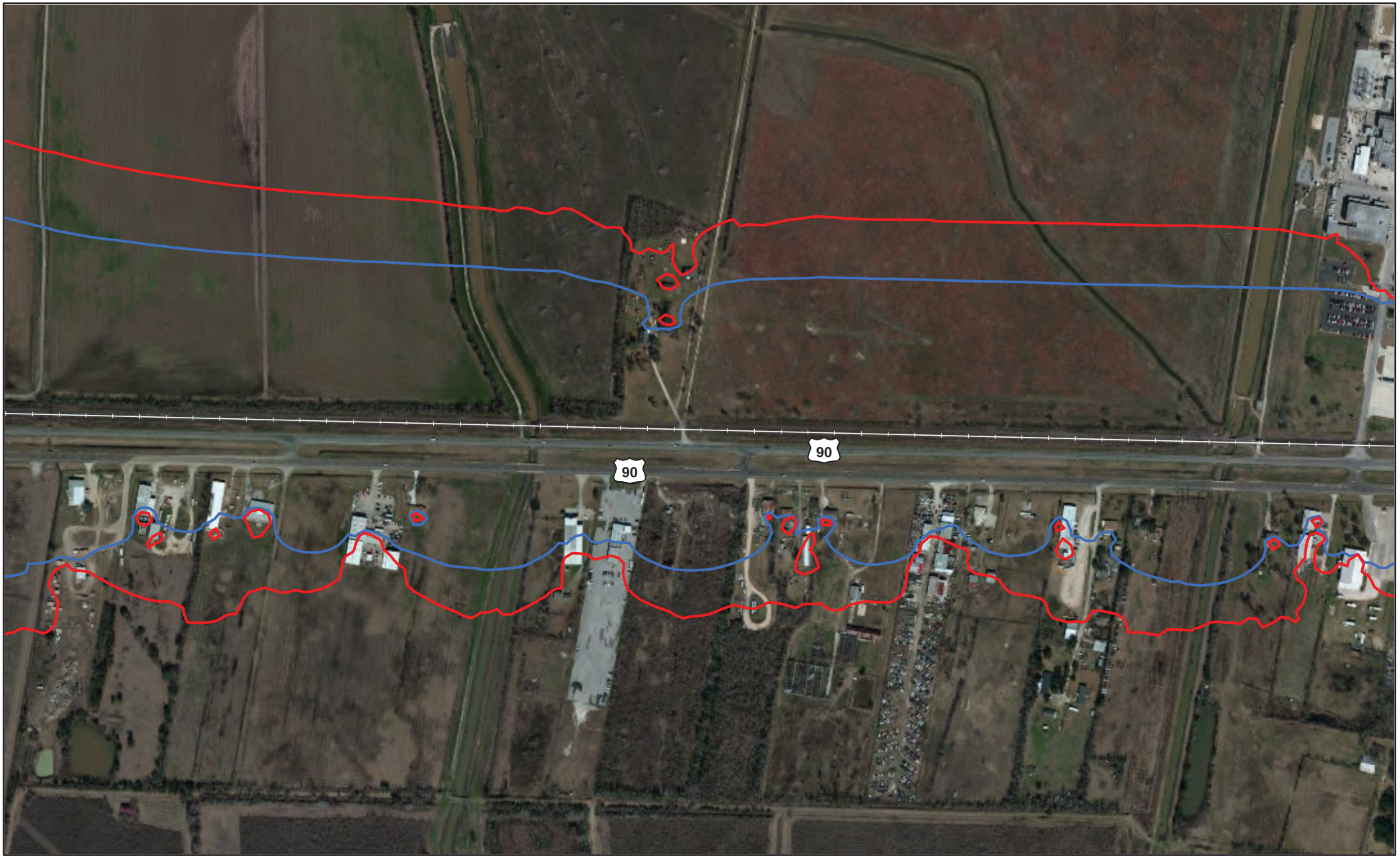


Noise Contours
Jefferson County, TX

Page H8 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jefferson County, TX

Page H9 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

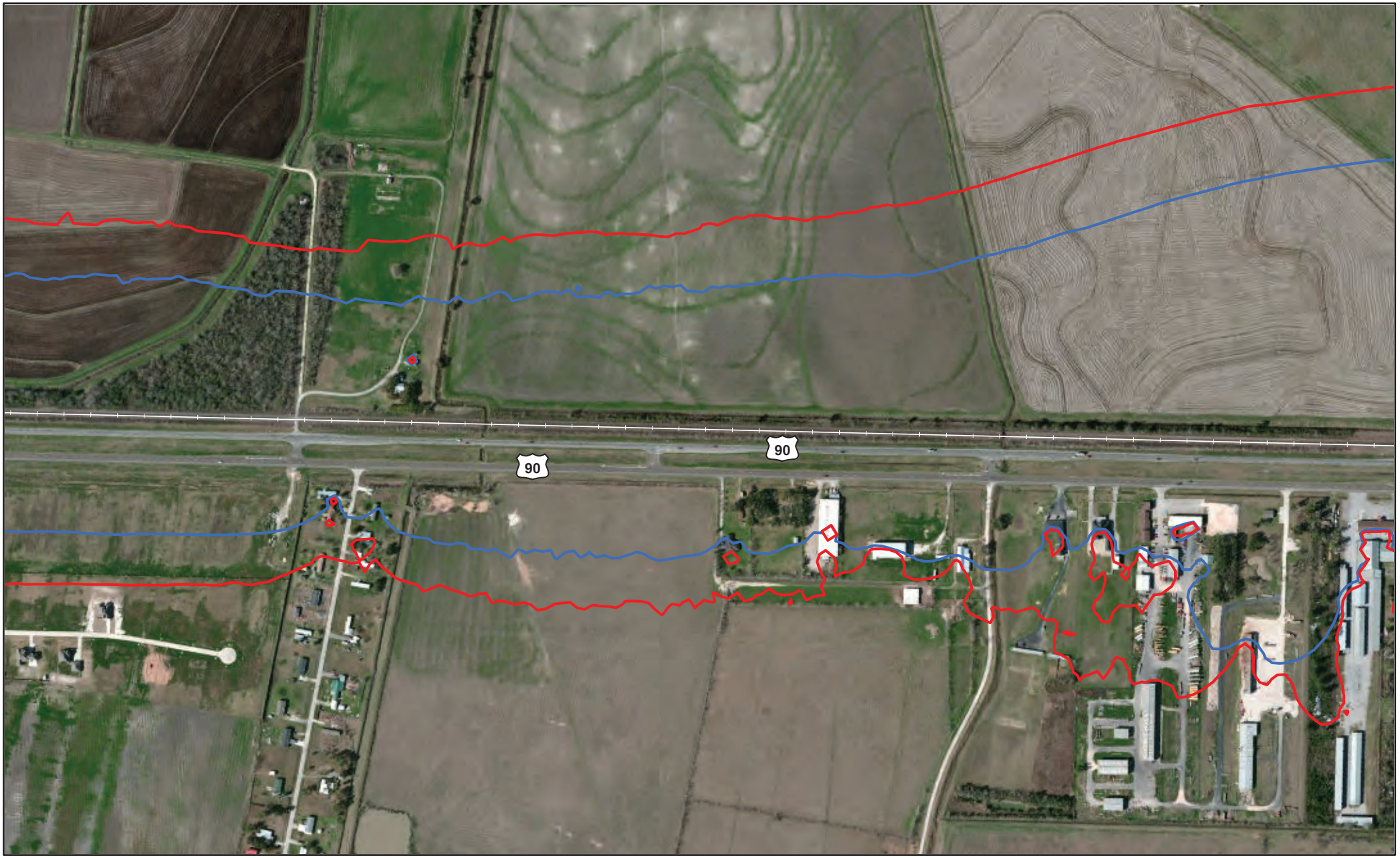
Source: ESRI.



Noise Contours
Jefferson County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jefferson County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jefferson County, TX

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jefferson County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jefferson County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



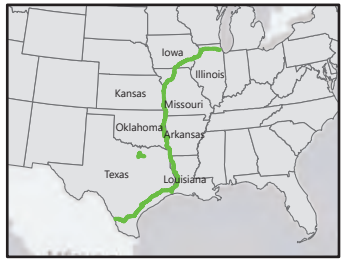
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jefferson County, TX

Page H15 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jefferson County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jefferson County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

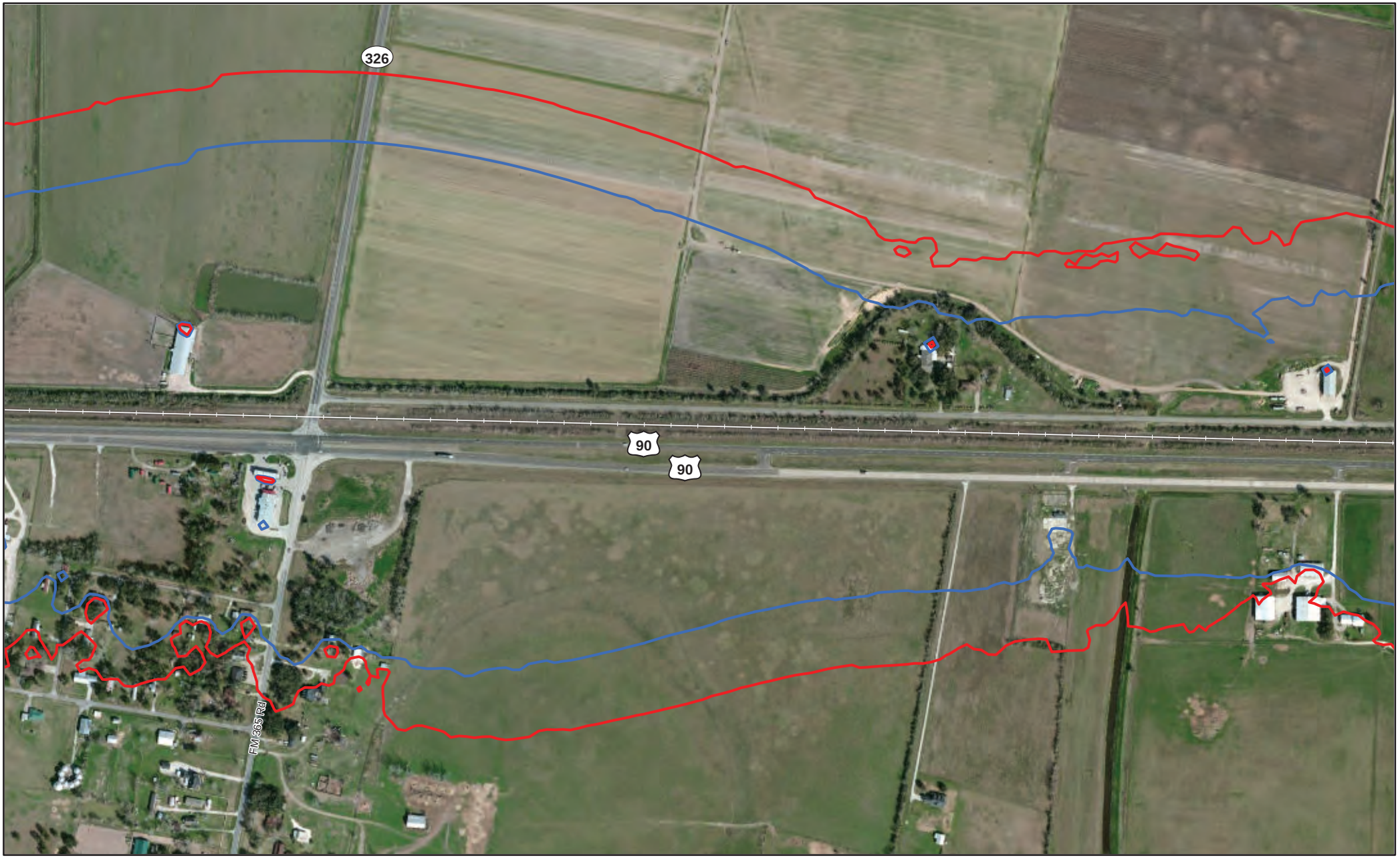


Noise Contours
Jefferson County, TX

Page H18 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

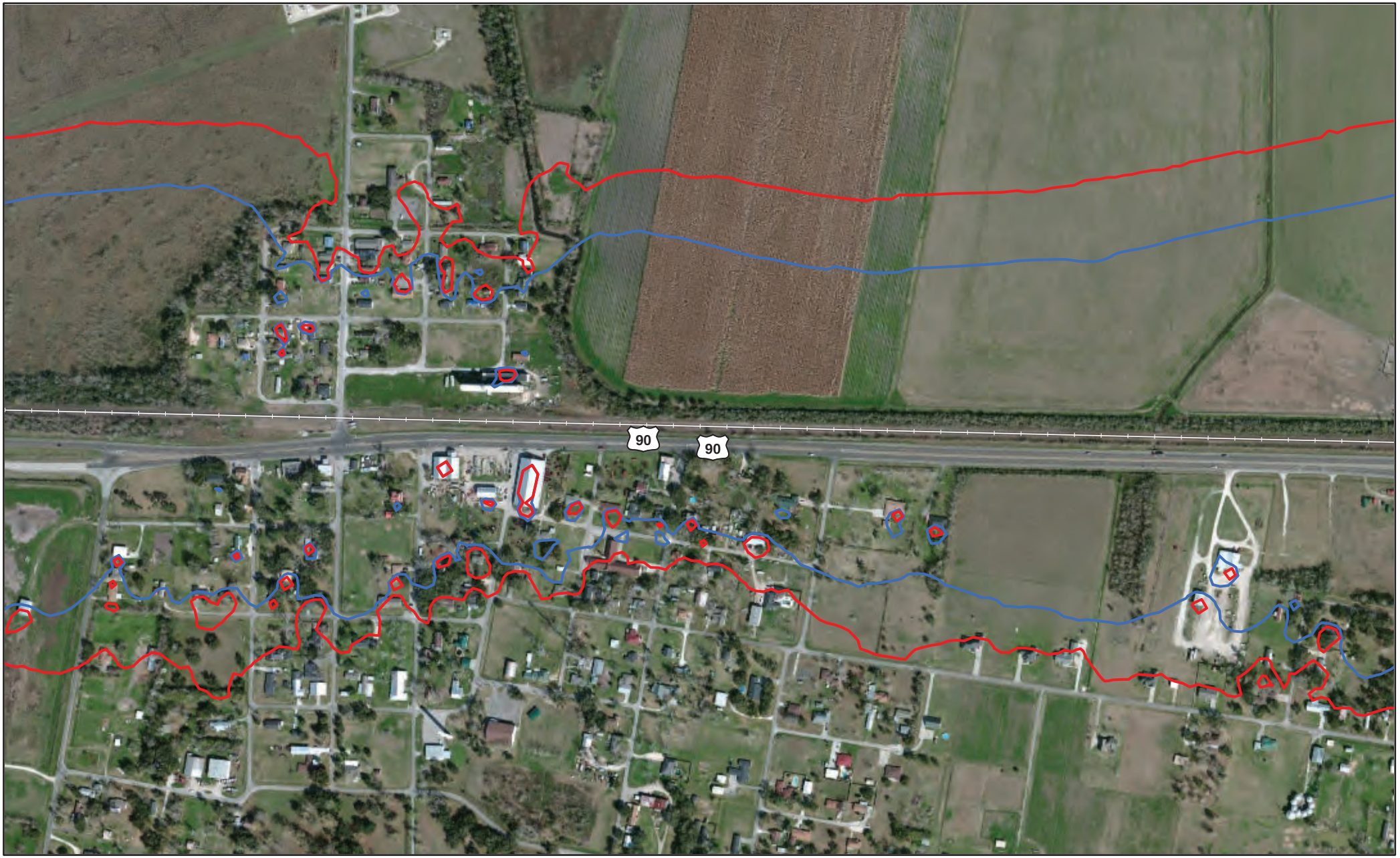
Source: ESRI.



Noise Contours
Jefferson County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

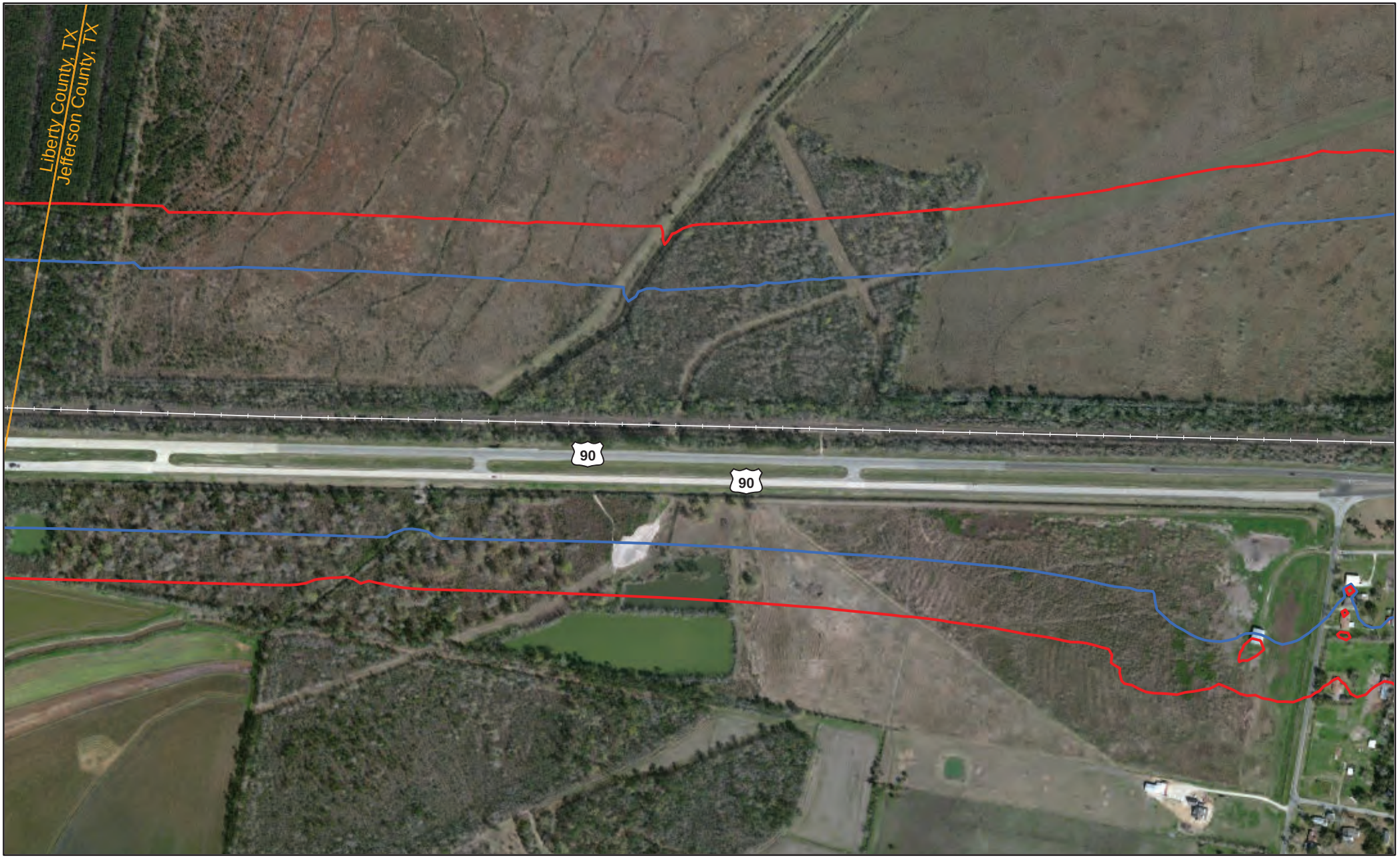
Tracks

Source: ESRI.



Noise Contours
Jefferson County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Jefferson County, TX

Page H21 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Page H22 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

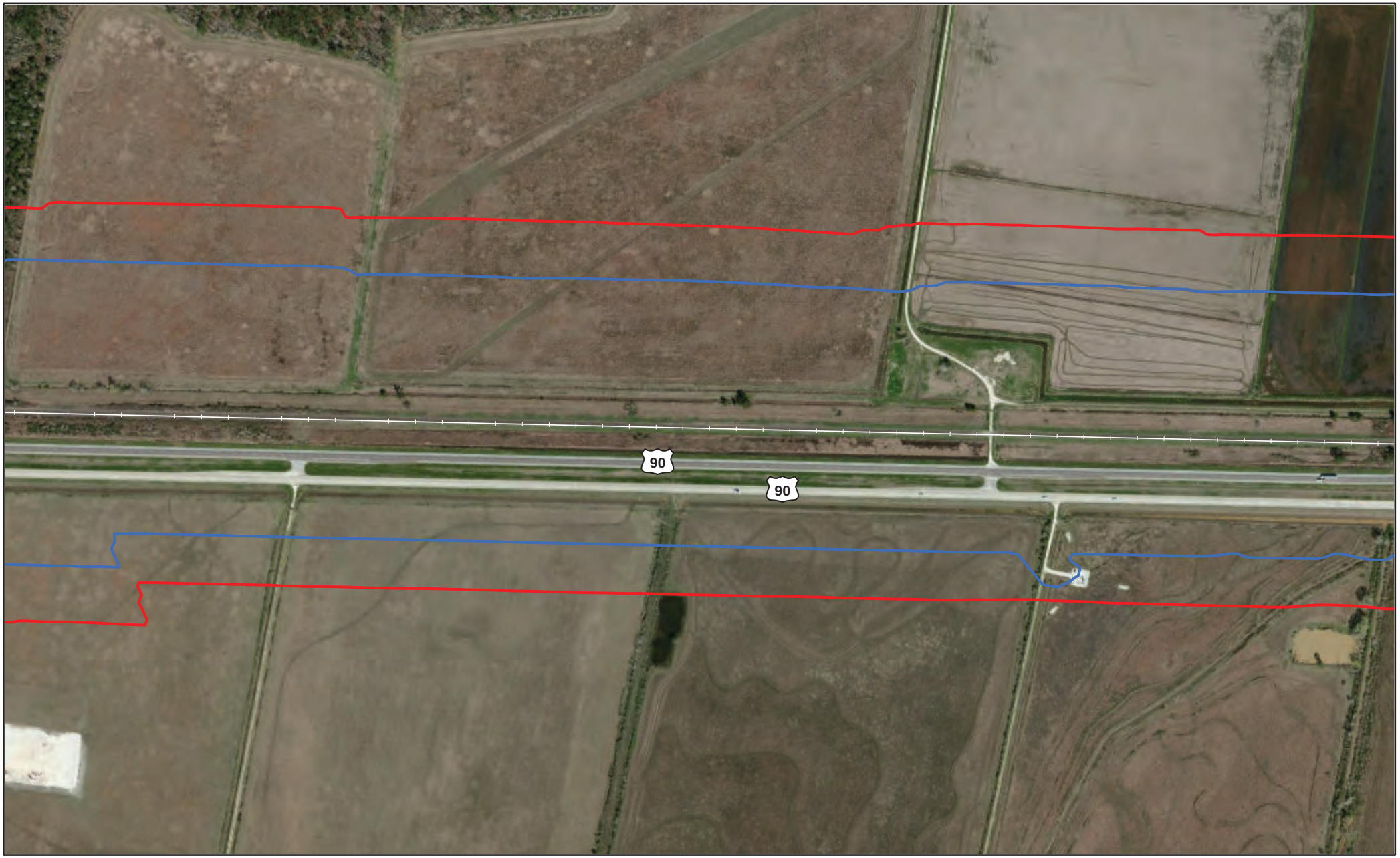
Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

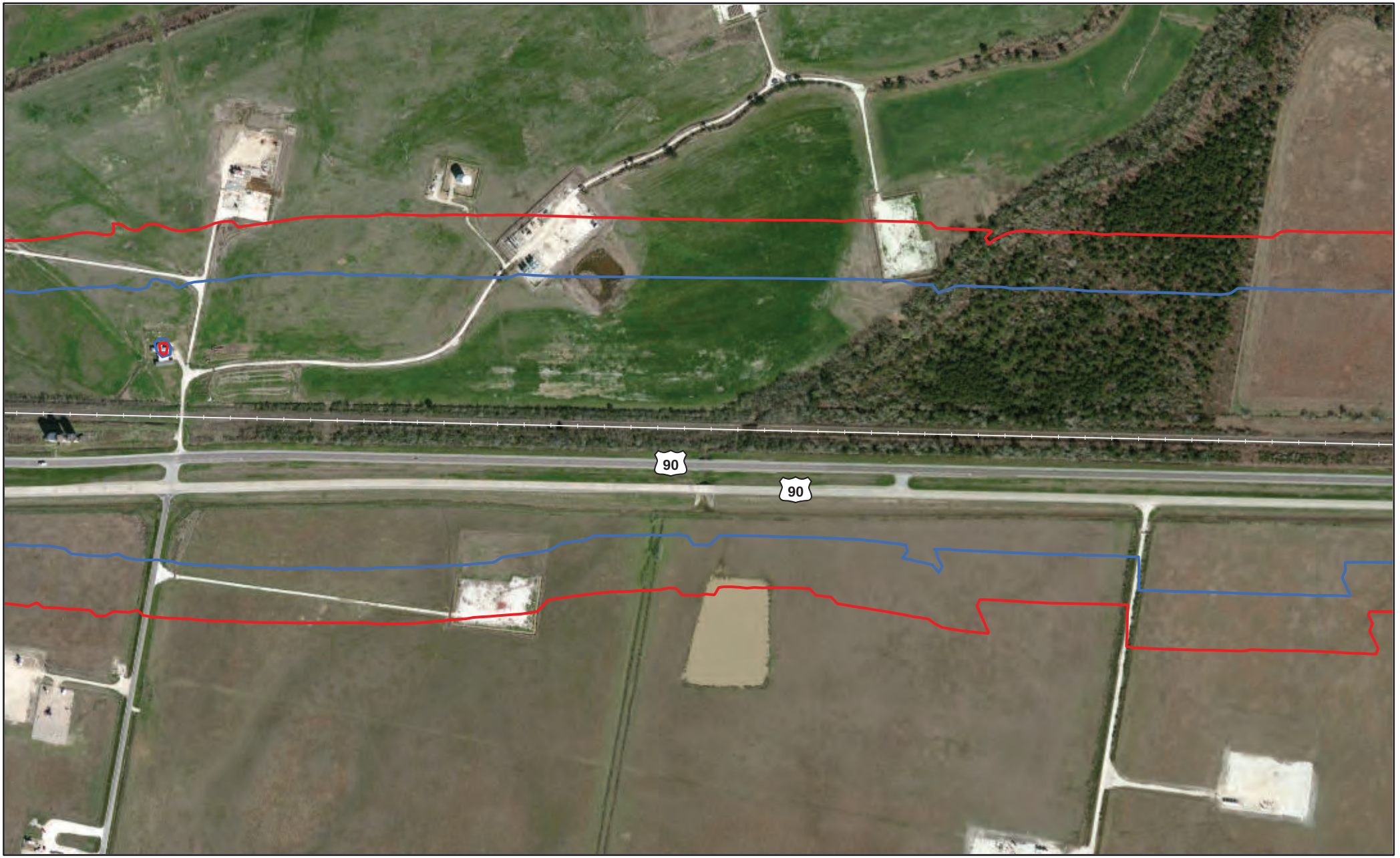
Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

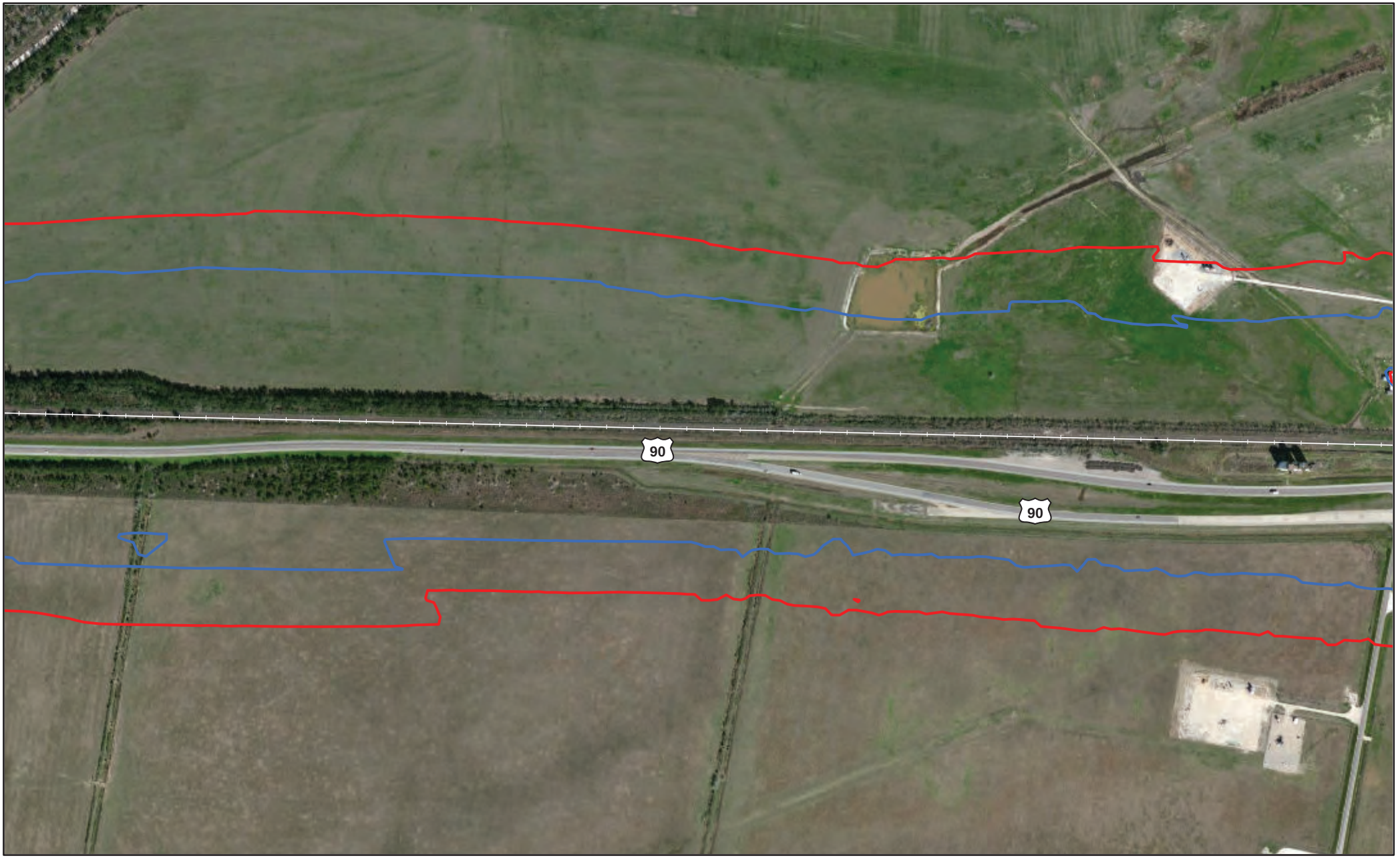
Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

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Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1



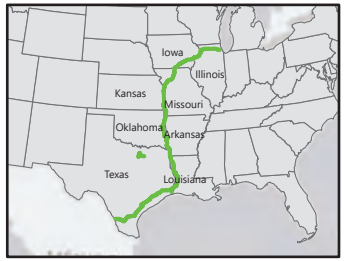
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

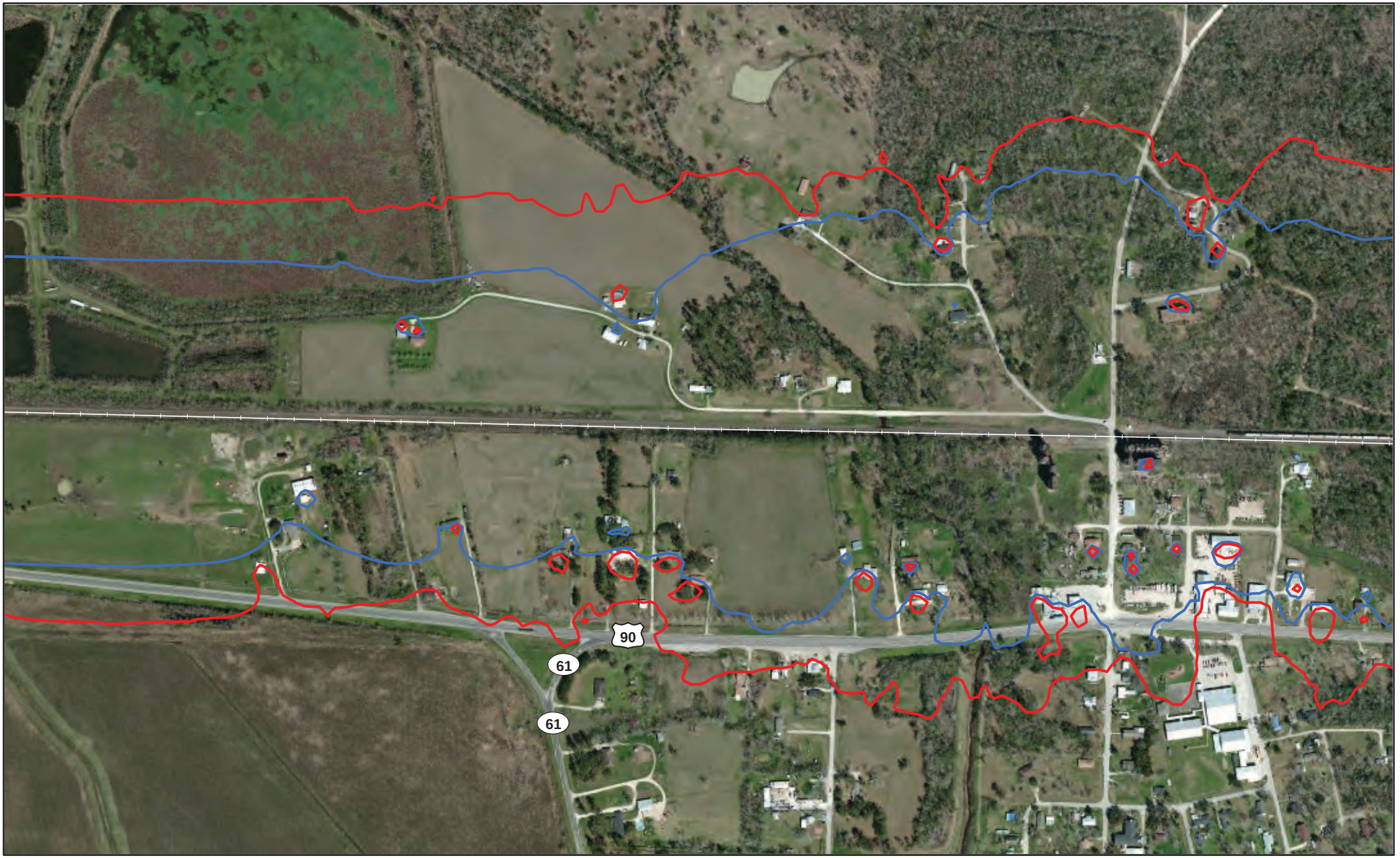
Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



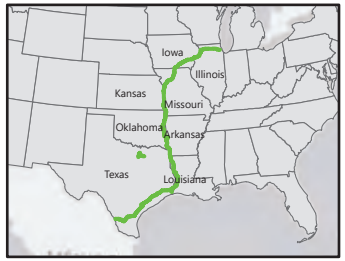
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

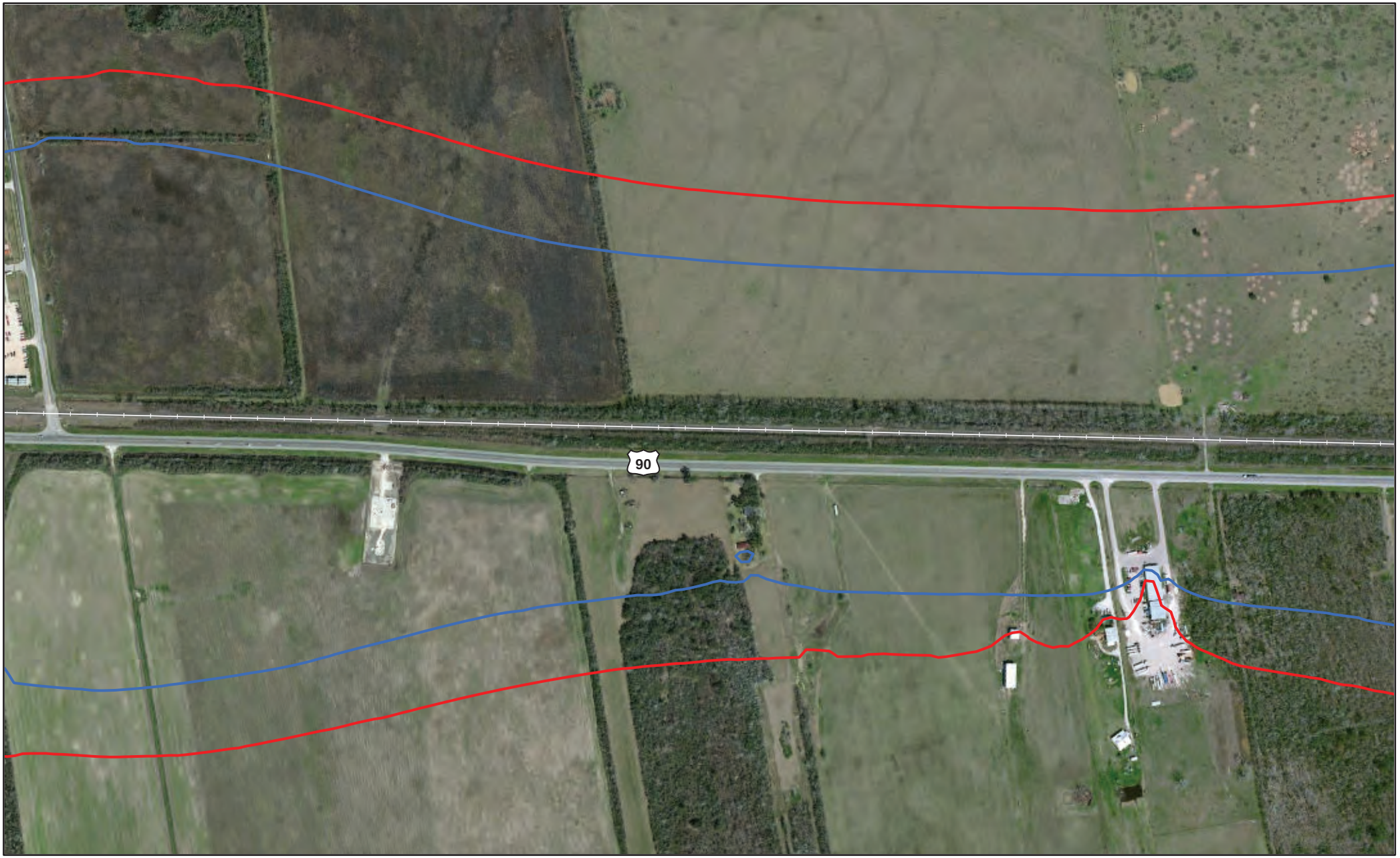
Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

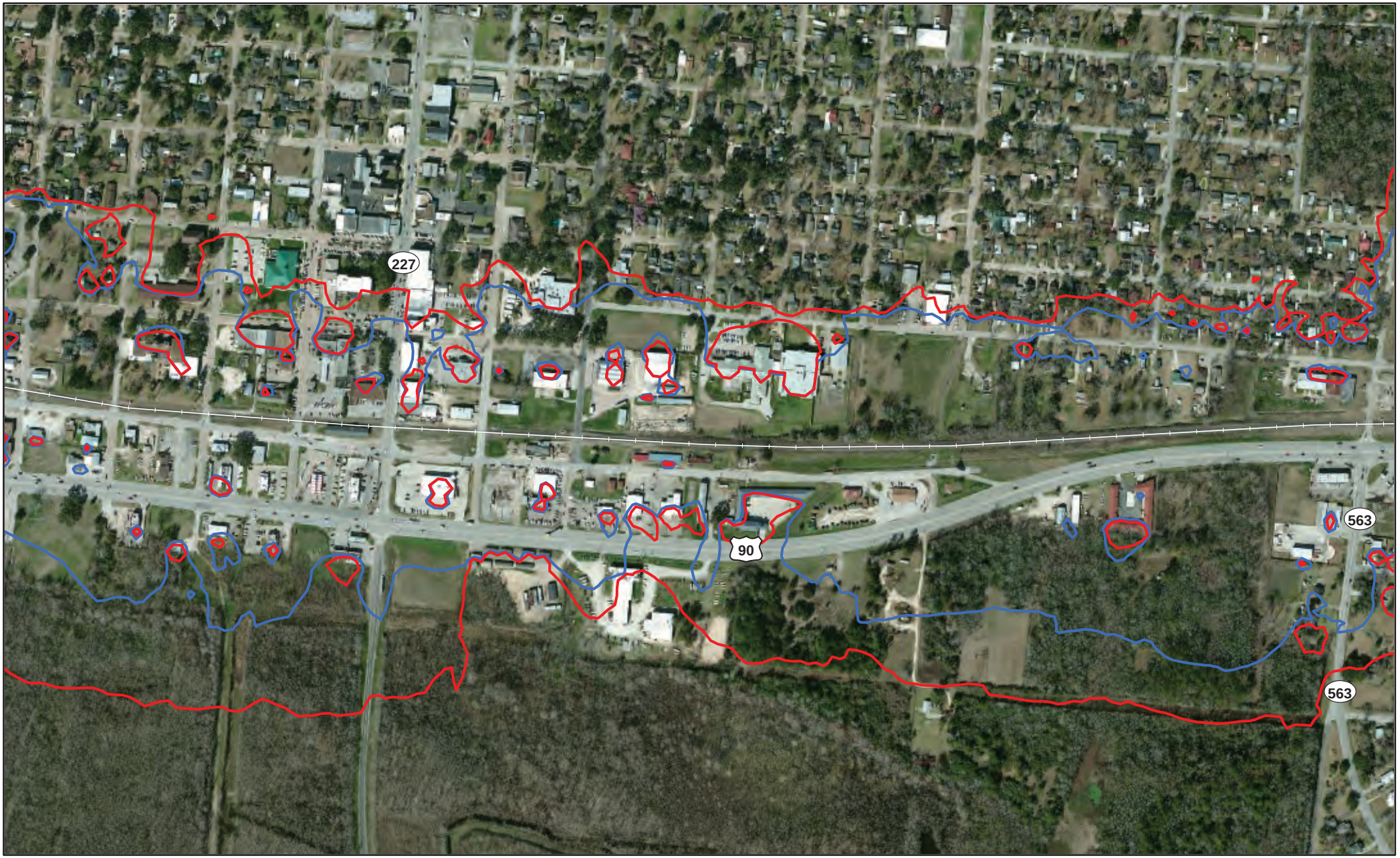


Noise Contours
Liberty County, TX

Page H42 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



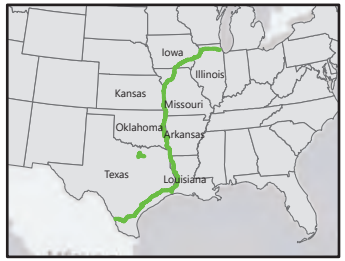
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

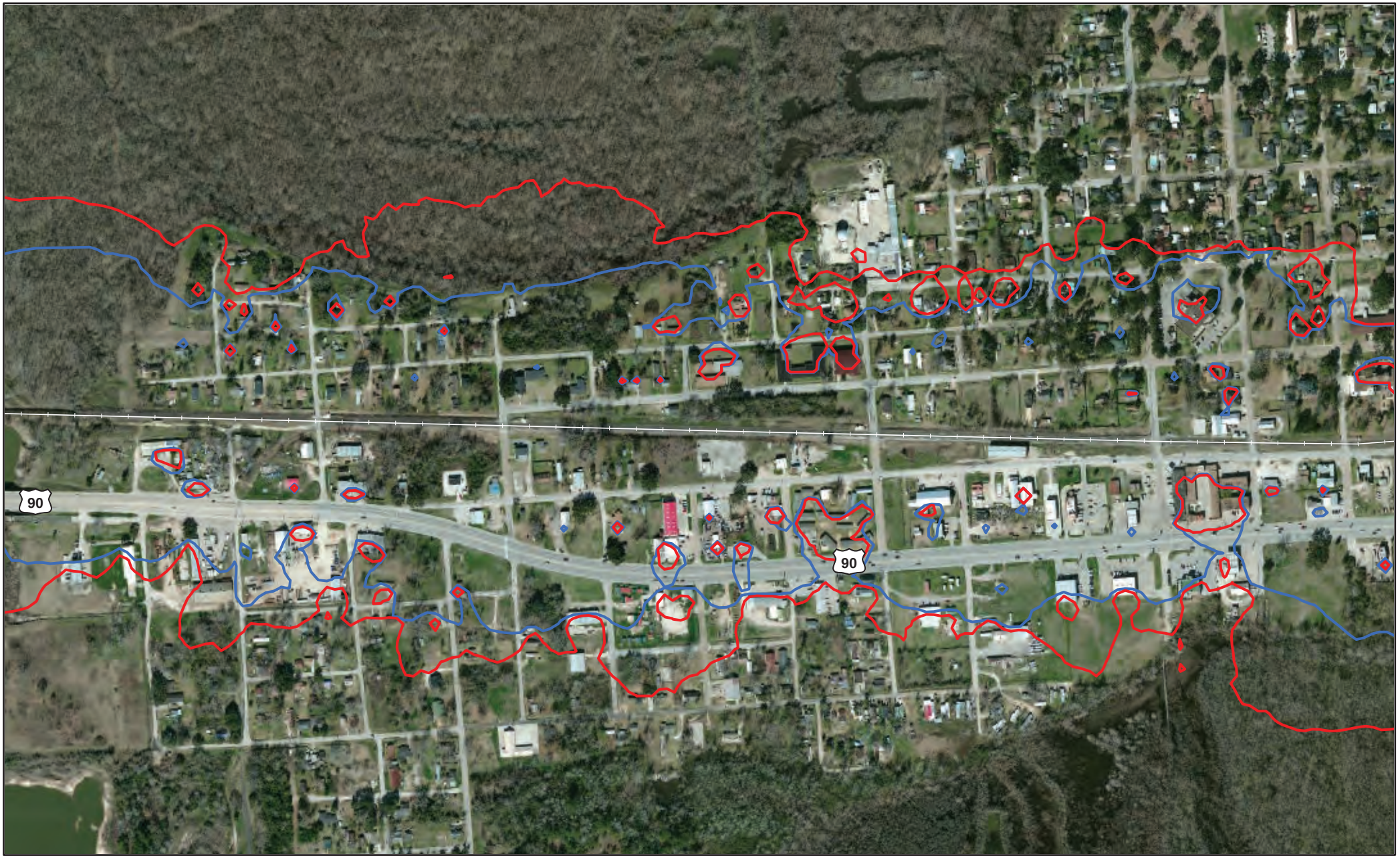


Noise Contours
Liberty County, TX

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

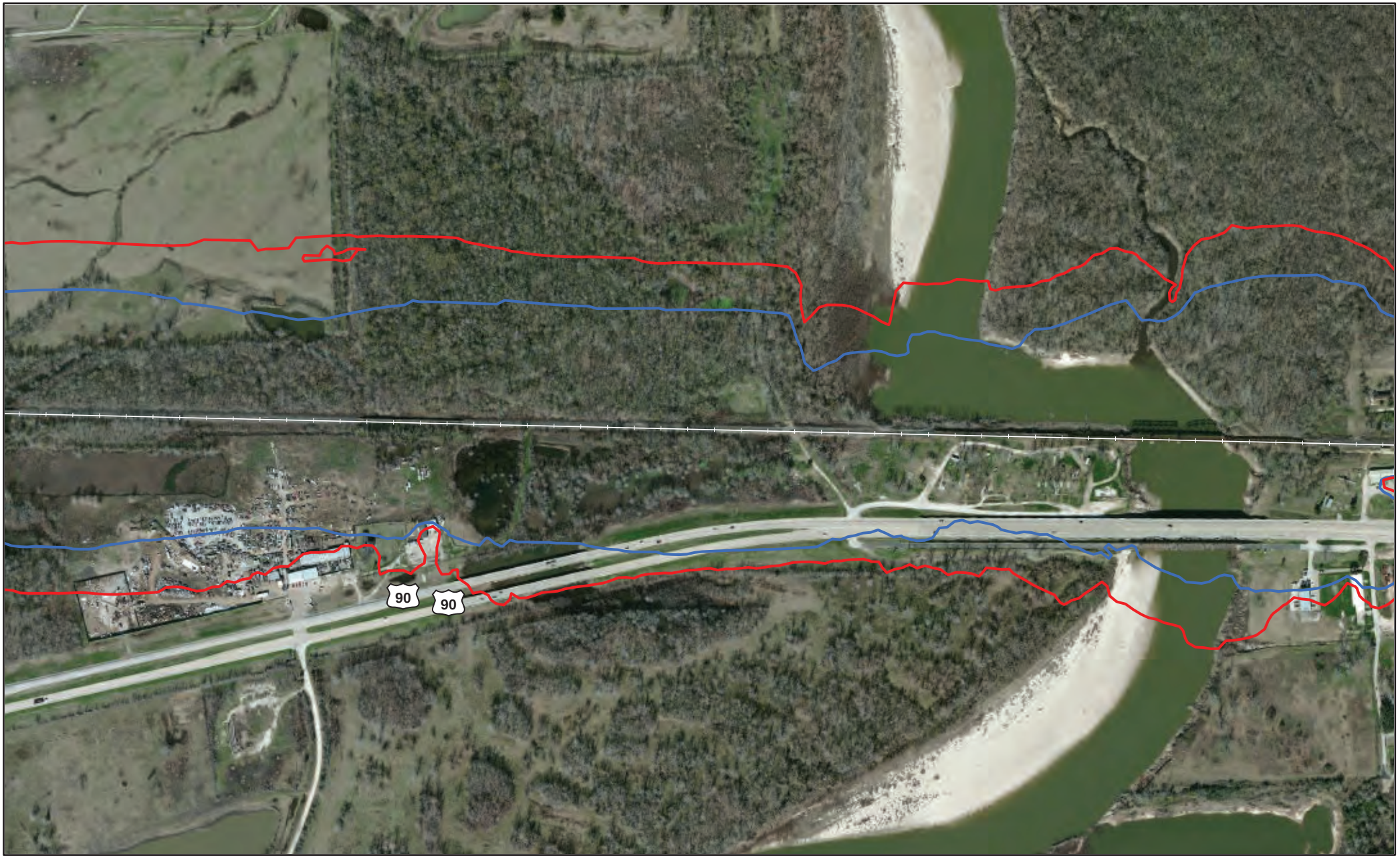
Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

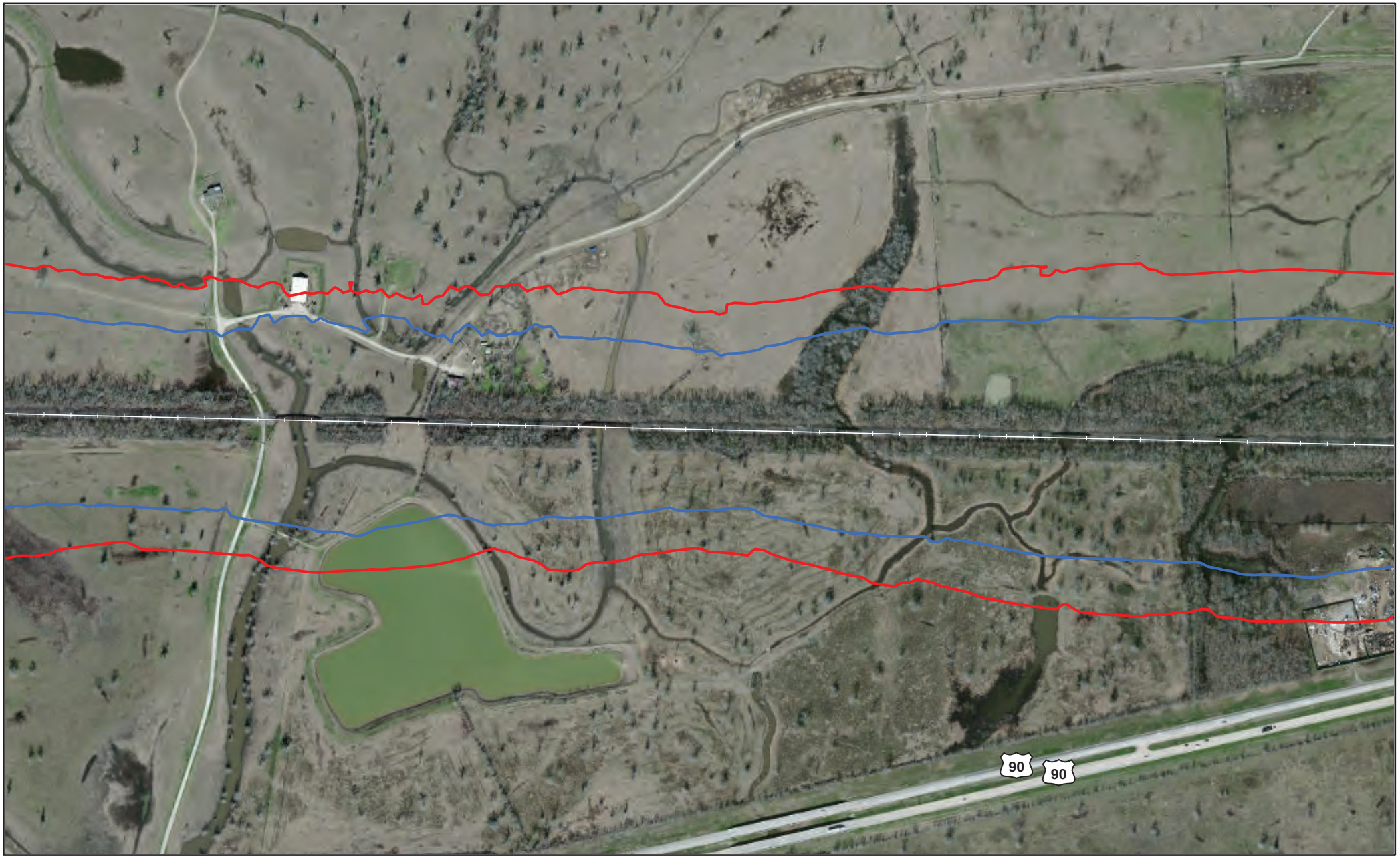
Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Page H47 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



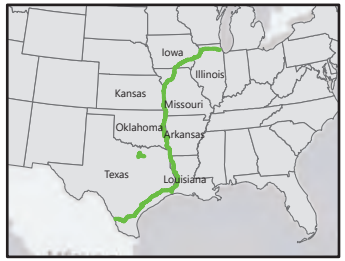
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

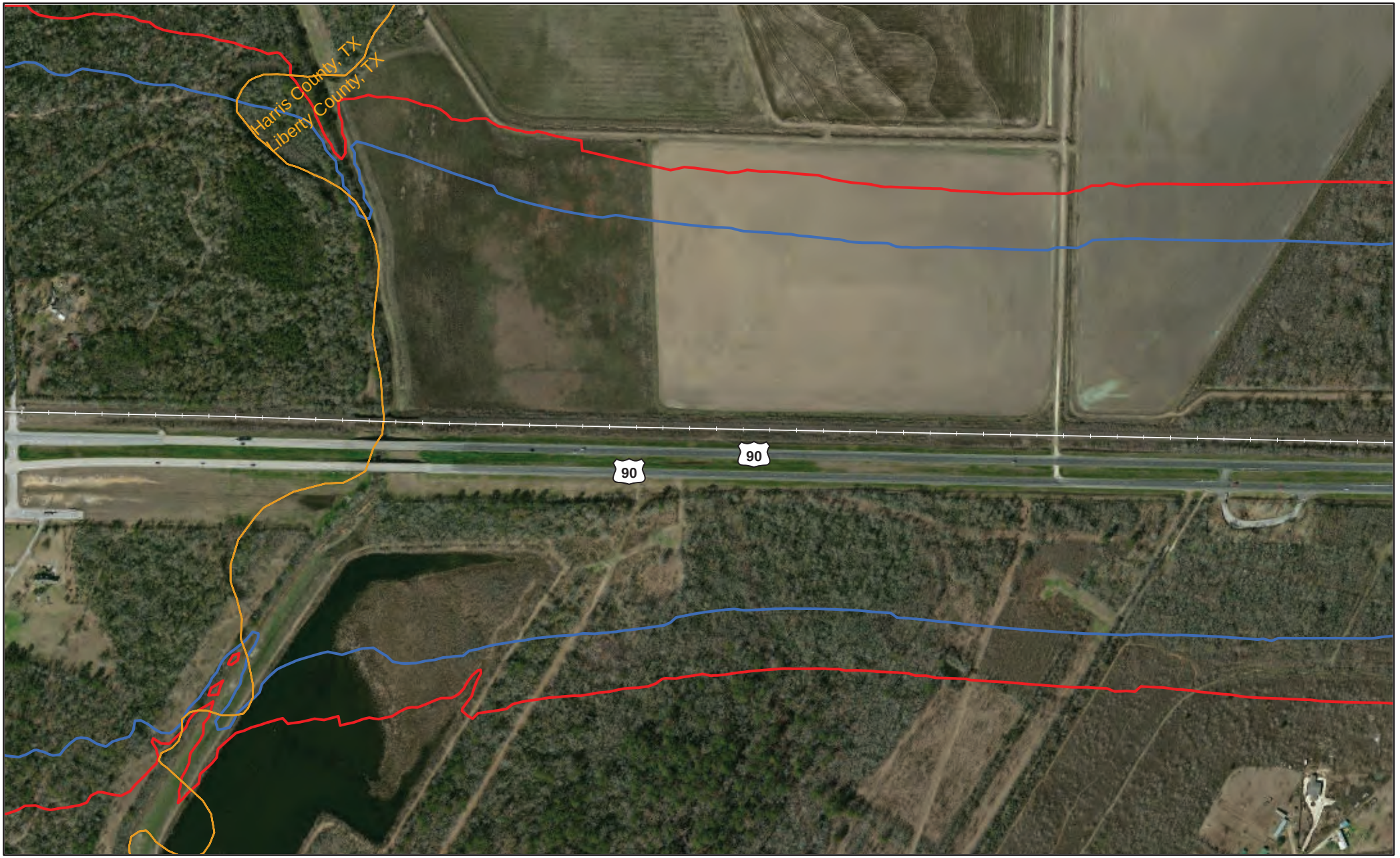
Source: ESRI.



Noise Contours
Liberty County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Liberty County, TX

Page H57 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

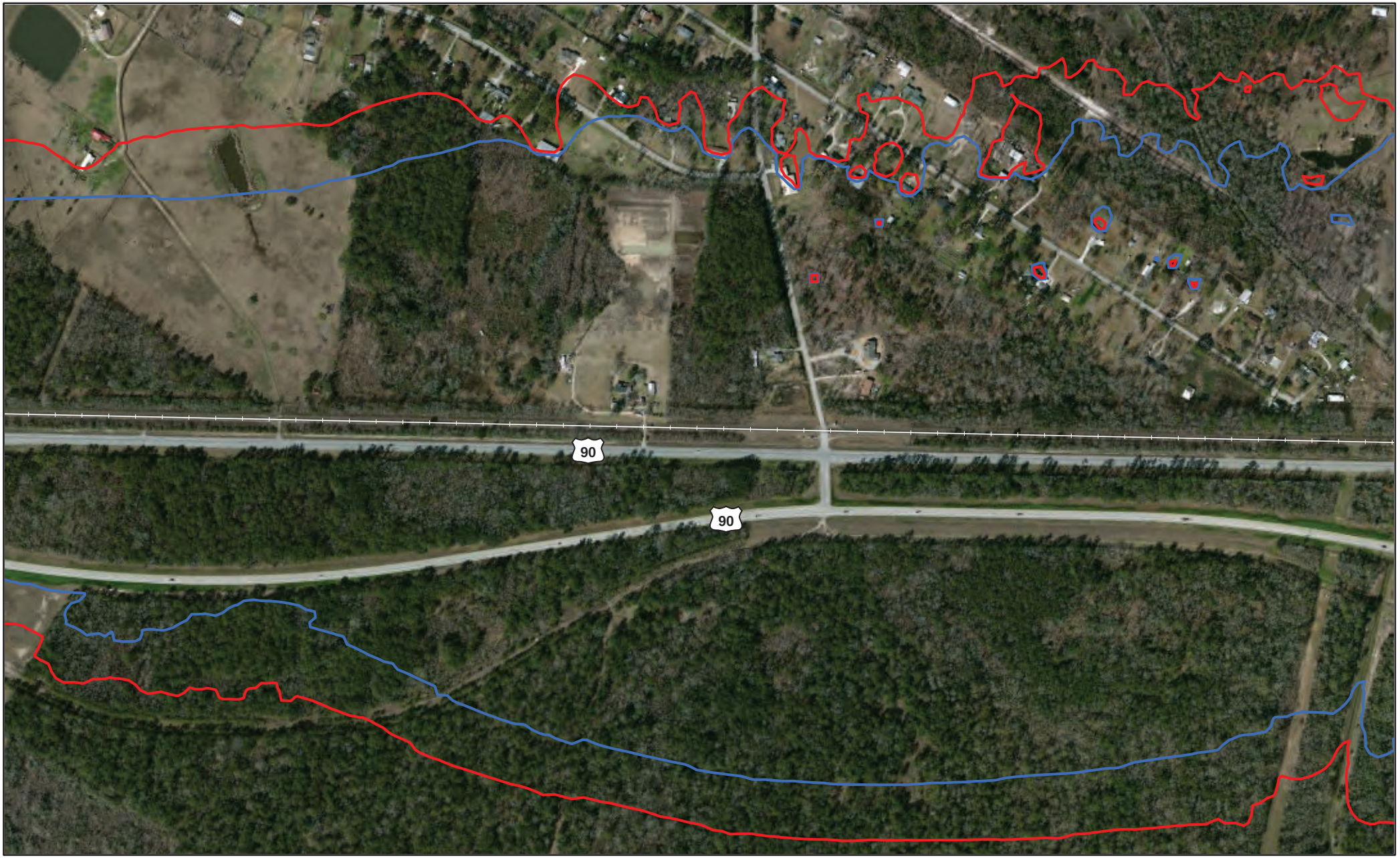
Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Page H61 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

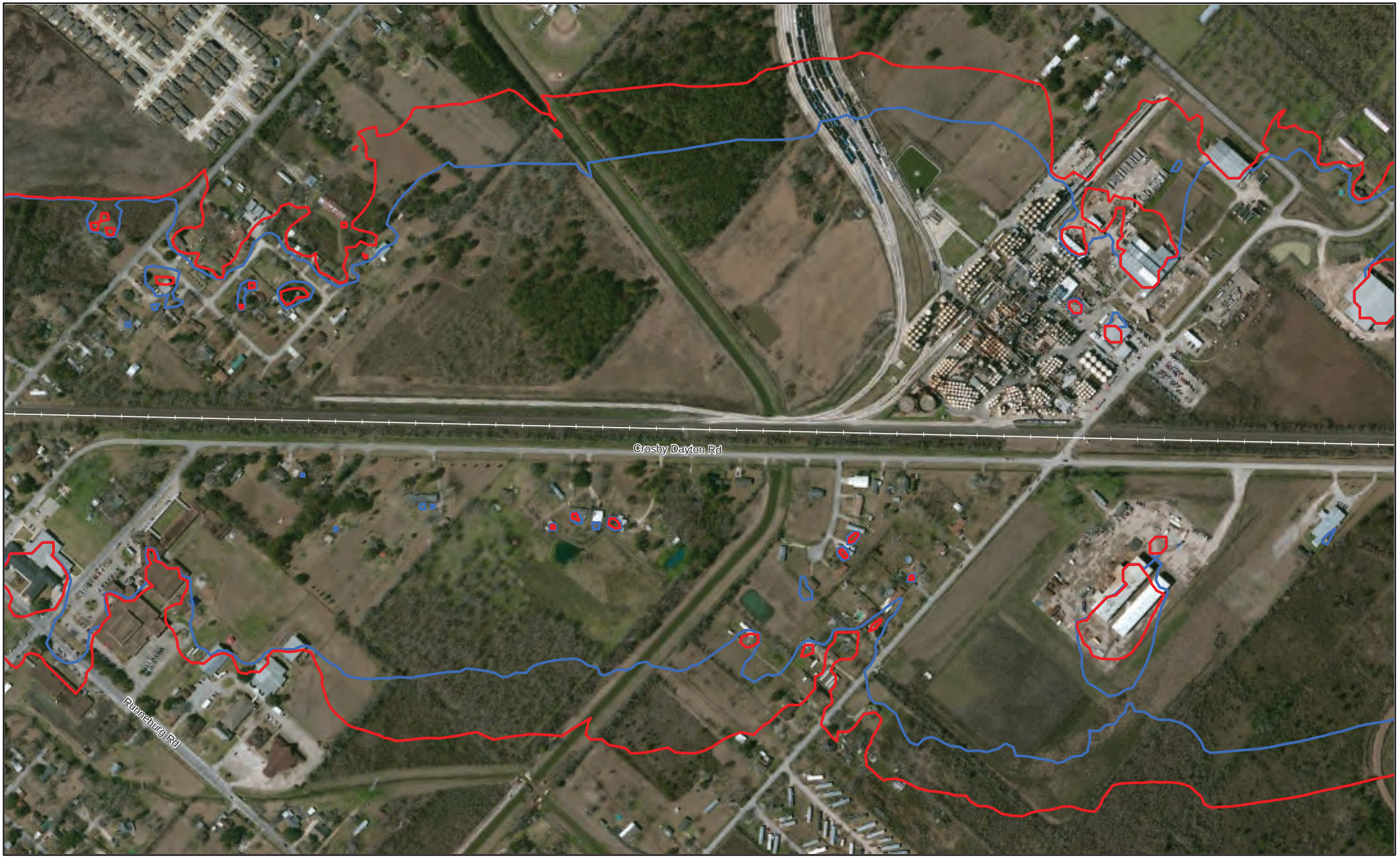


Noise Contours
Harris County, TX

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

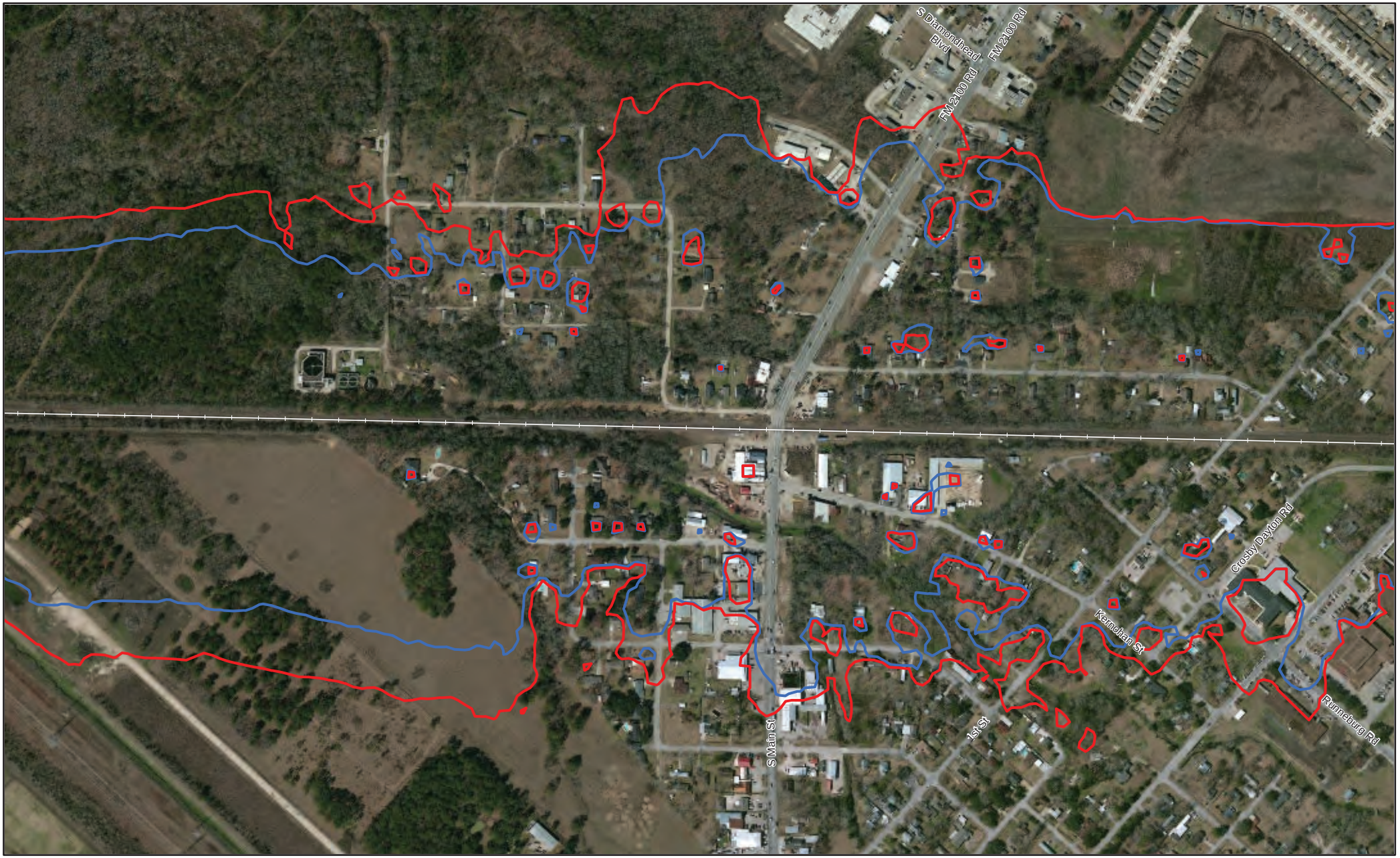
Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

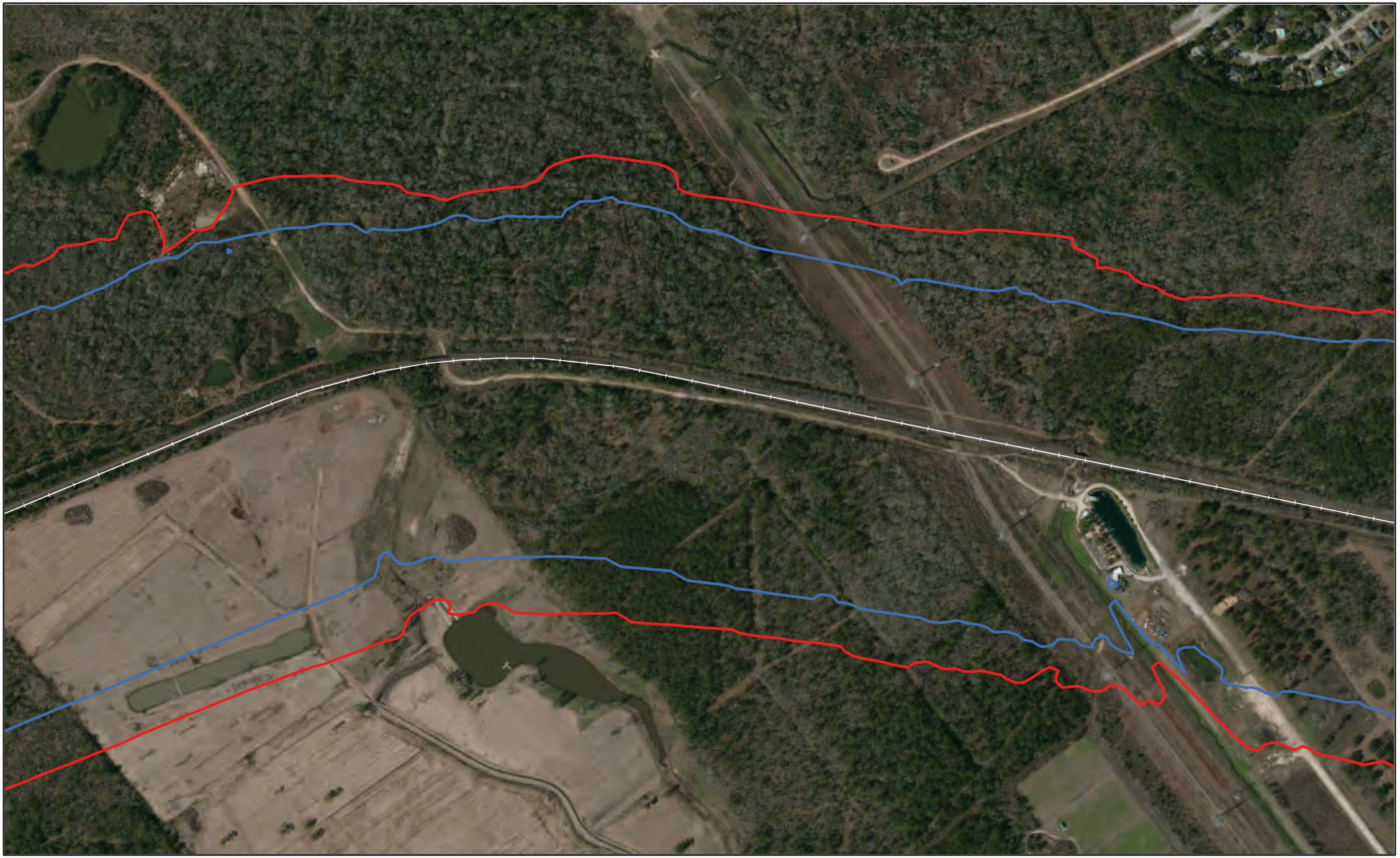
Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

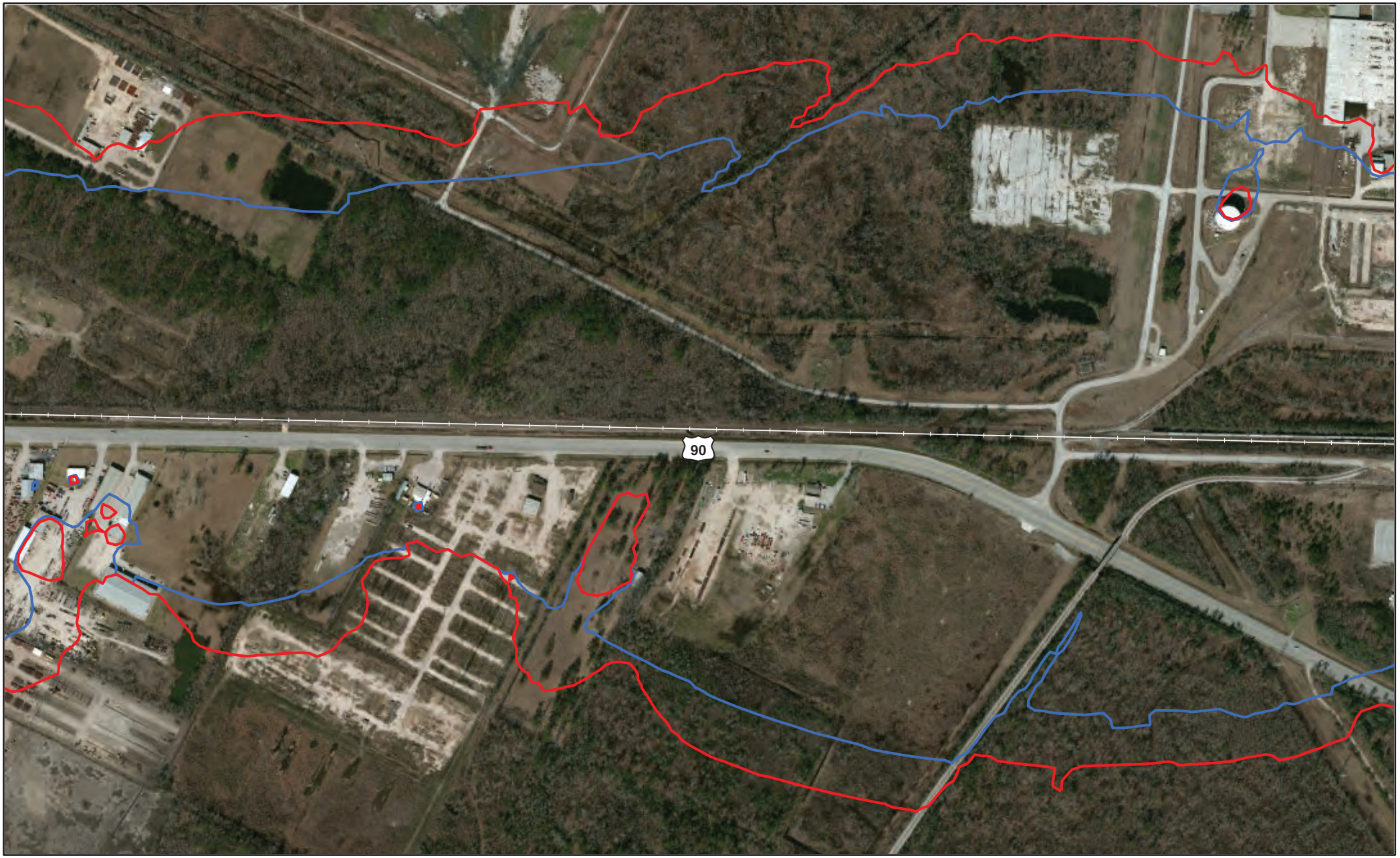
Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



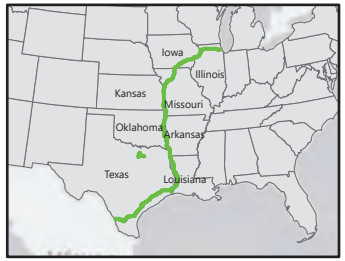
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Page H68 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

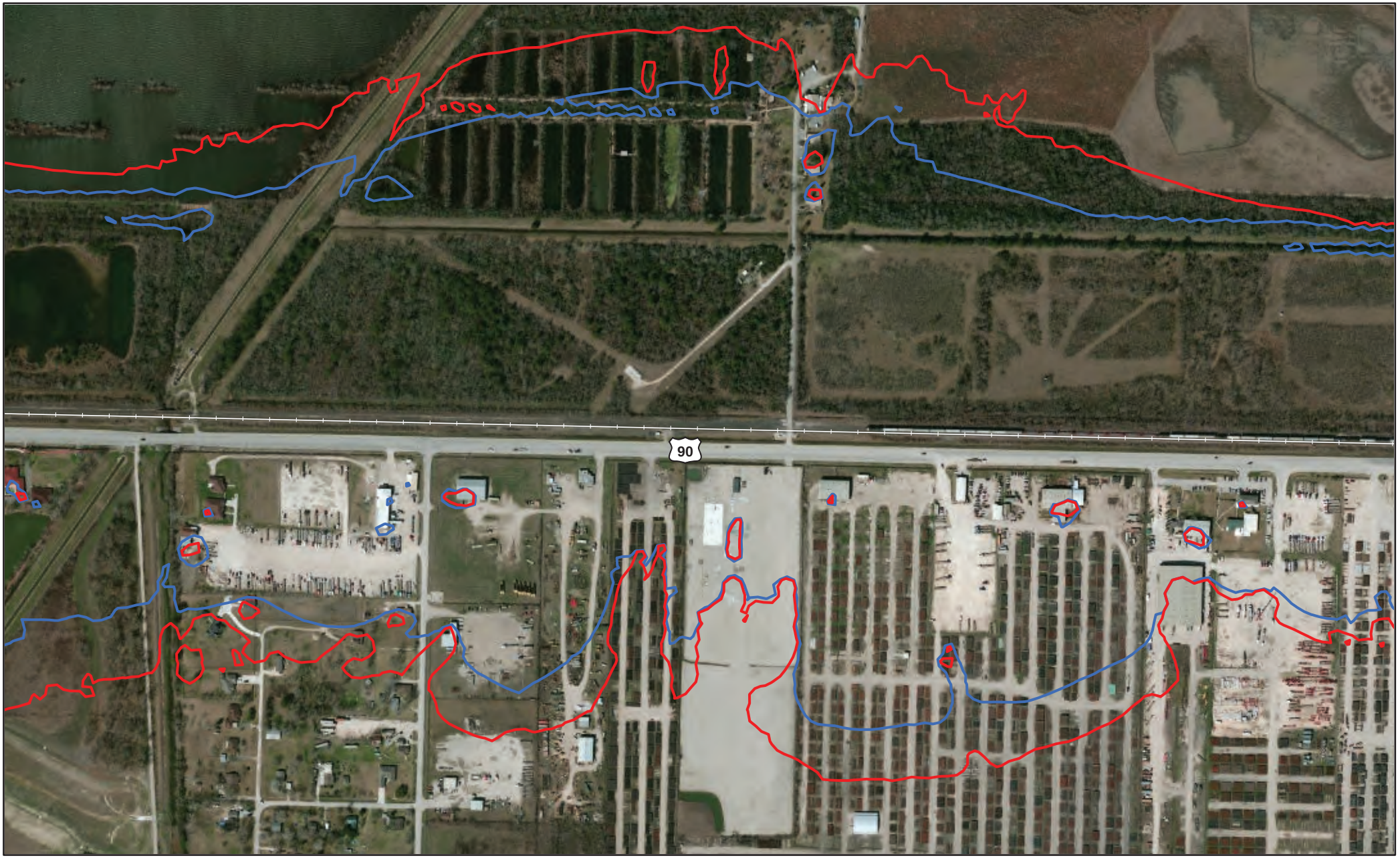
Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

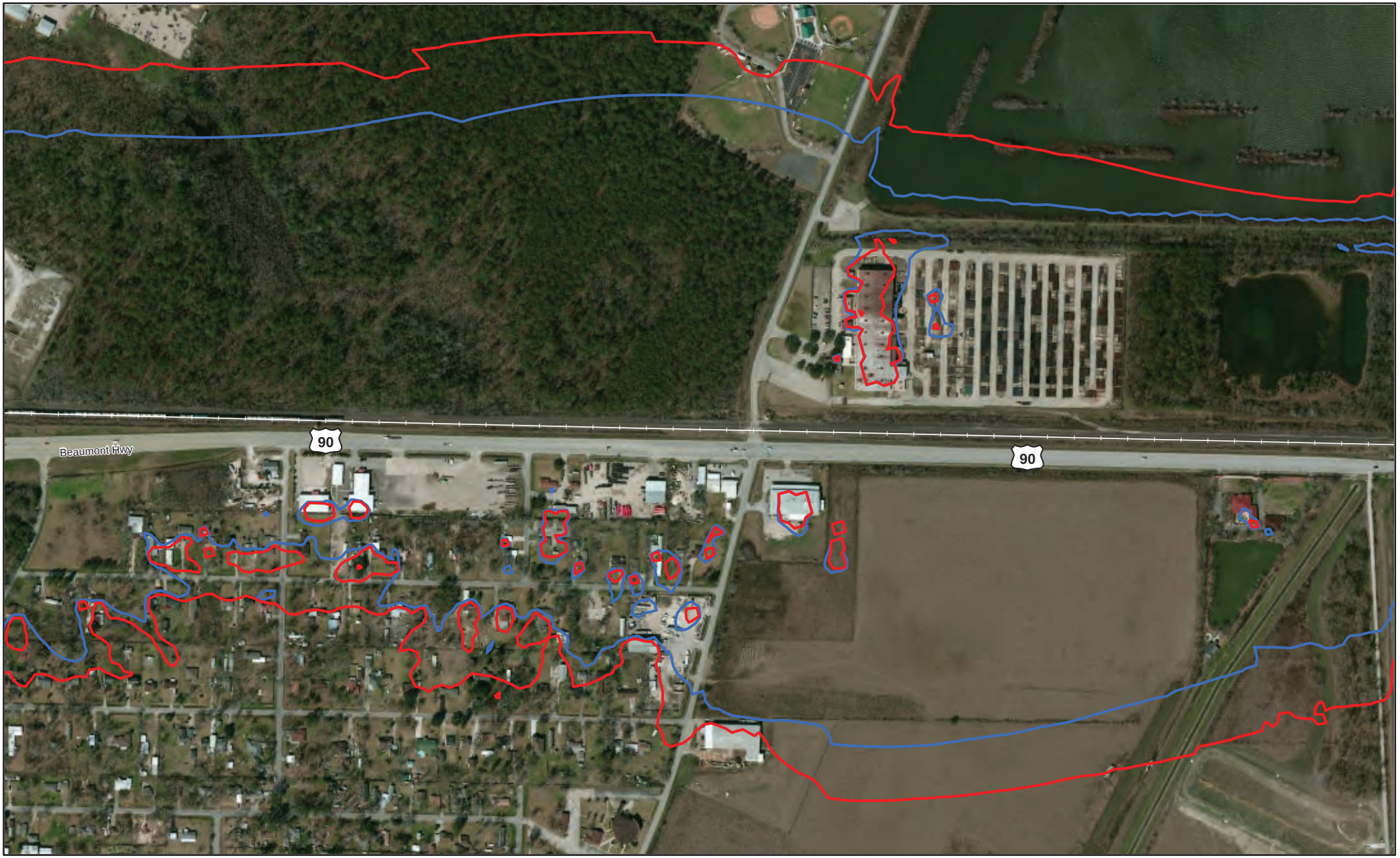
Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

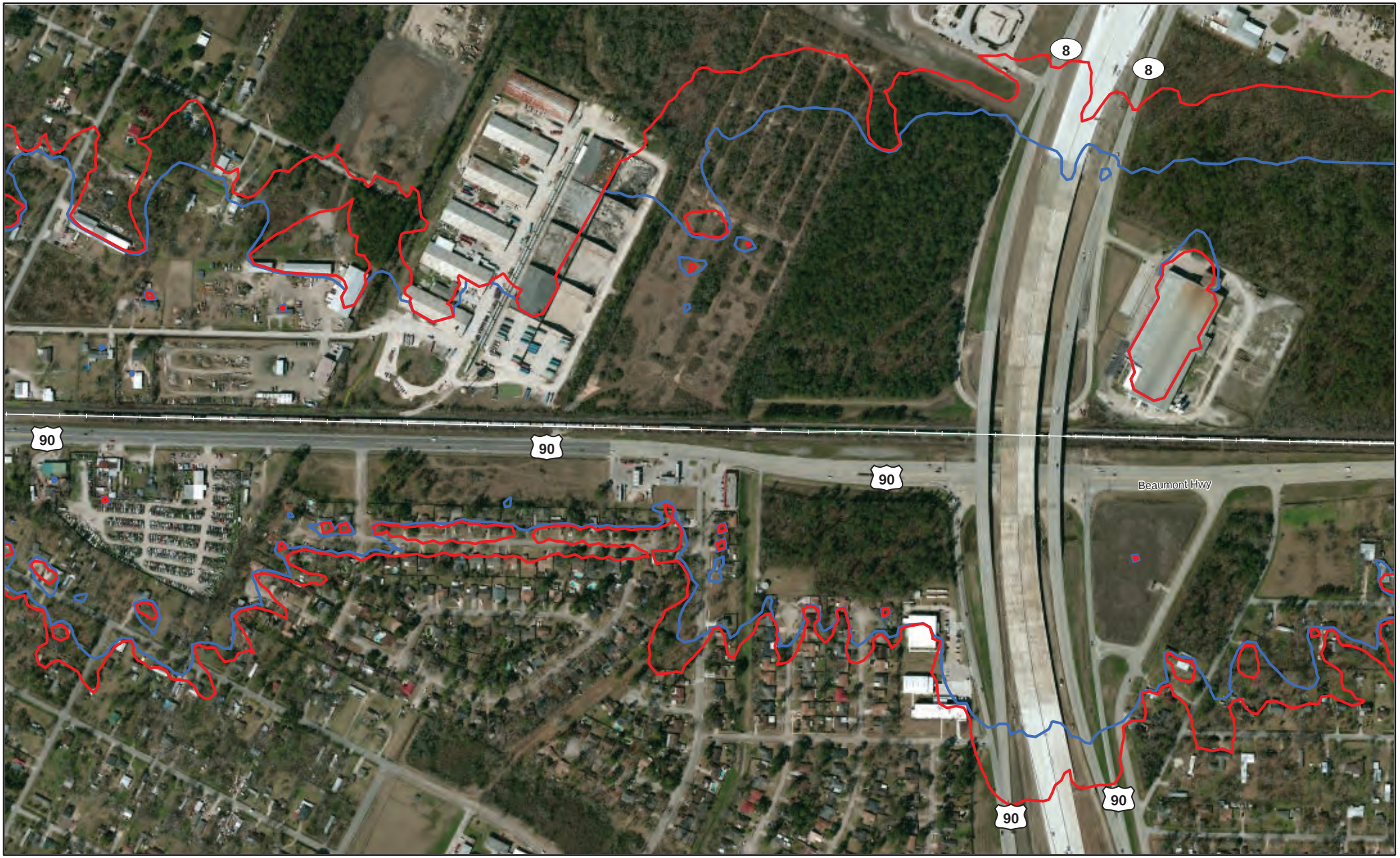
Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Page H74 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

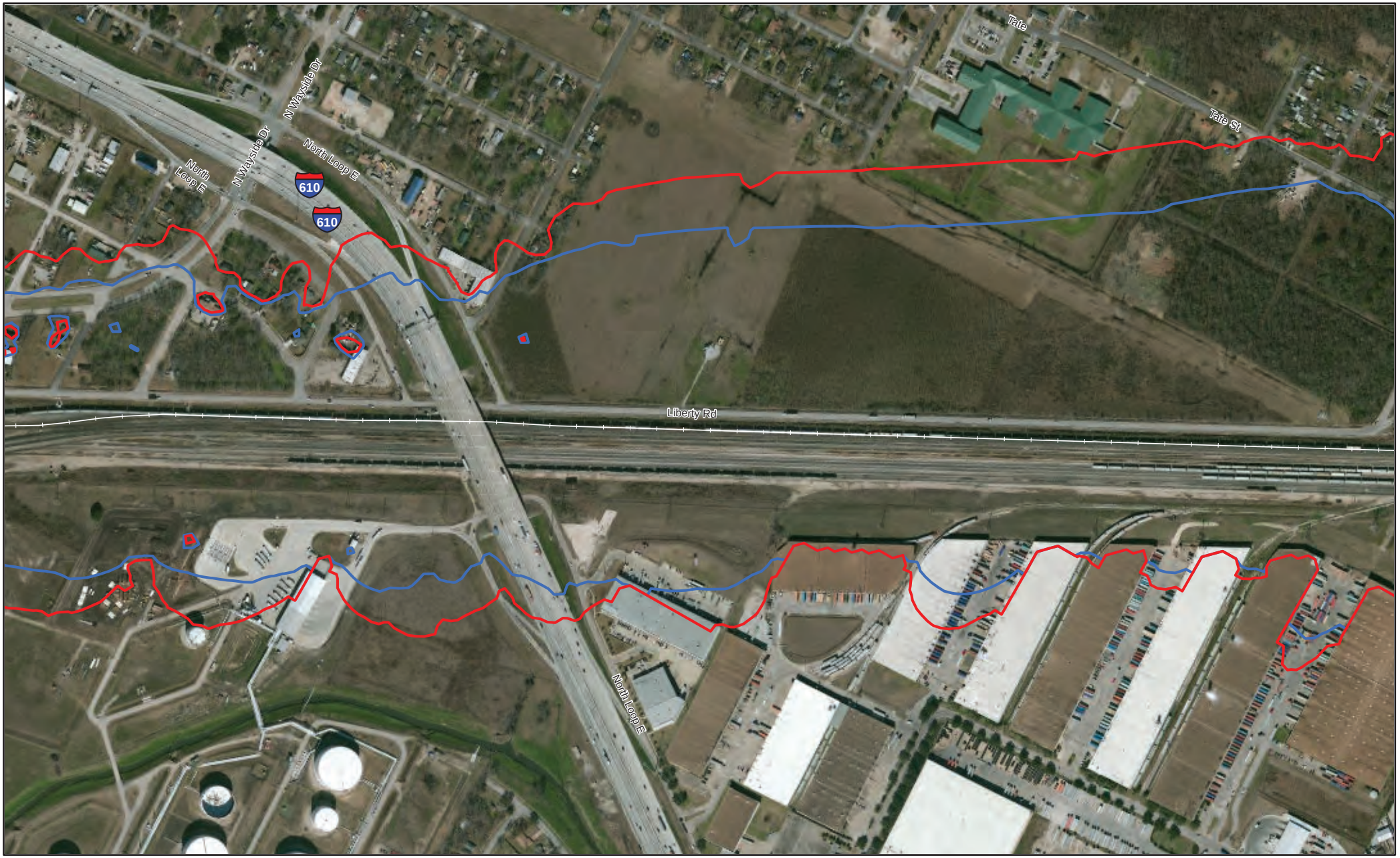
Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



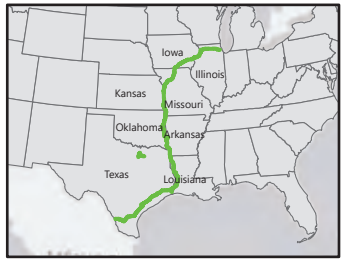
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

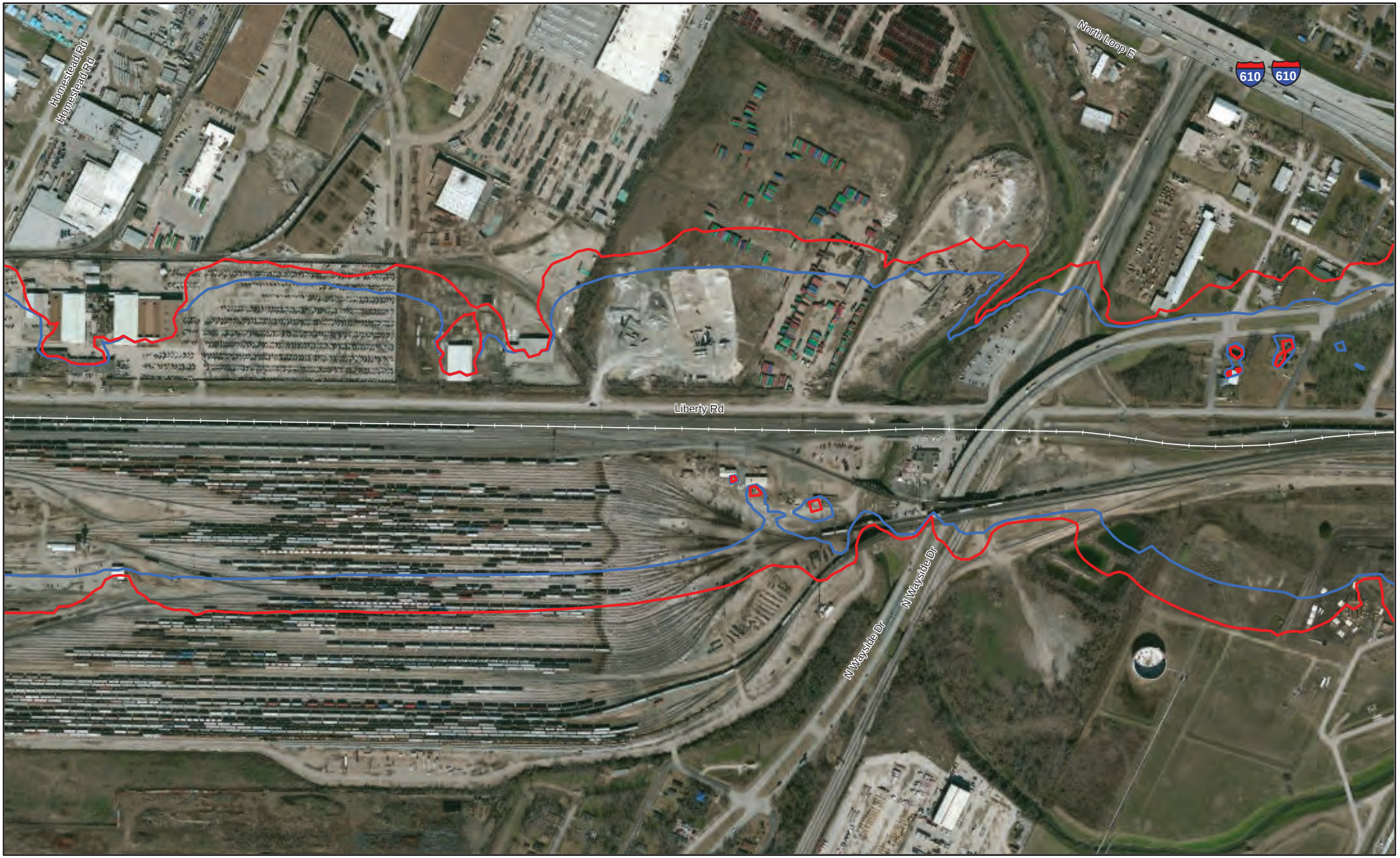
Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

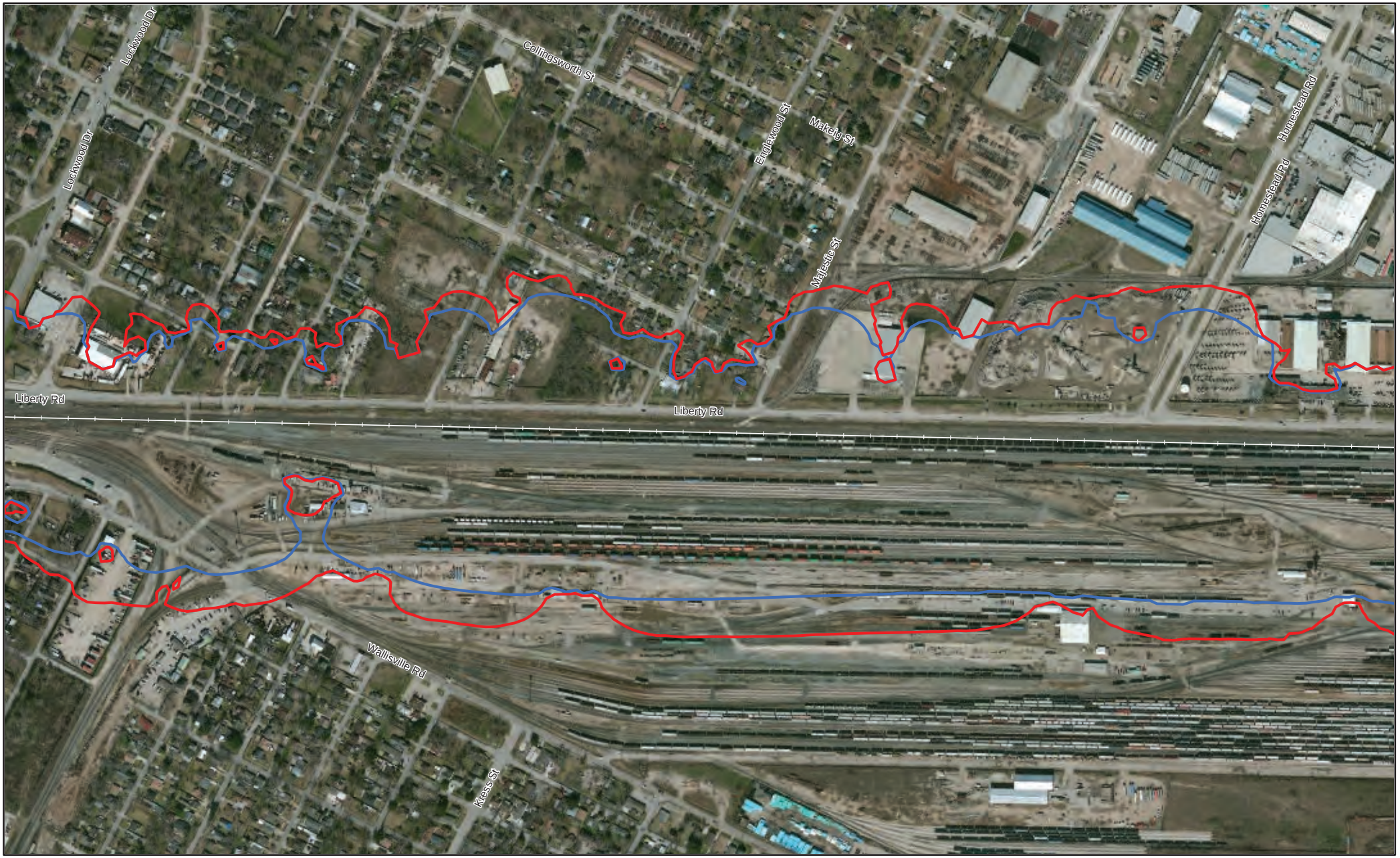
Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Page H81 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

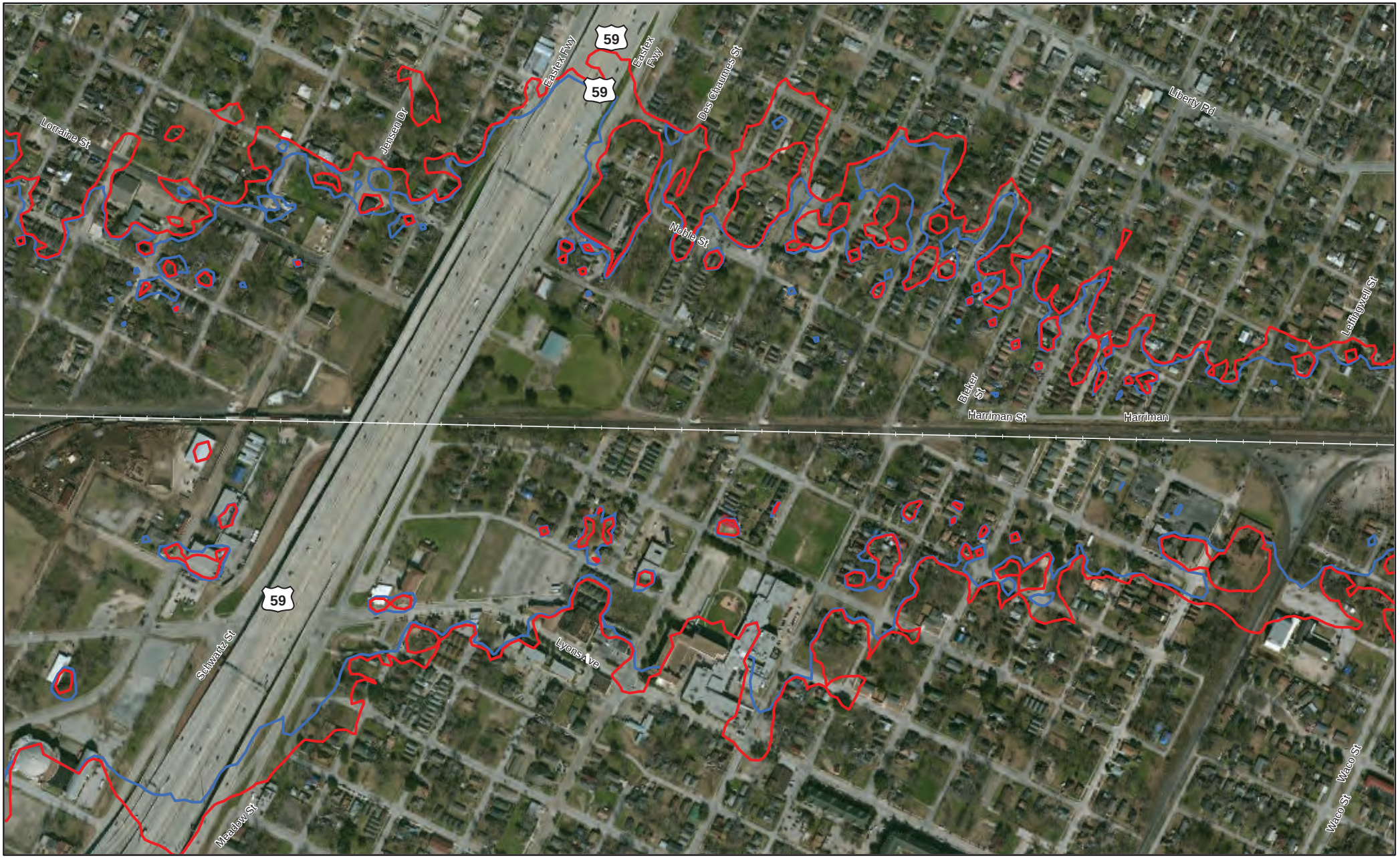
Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

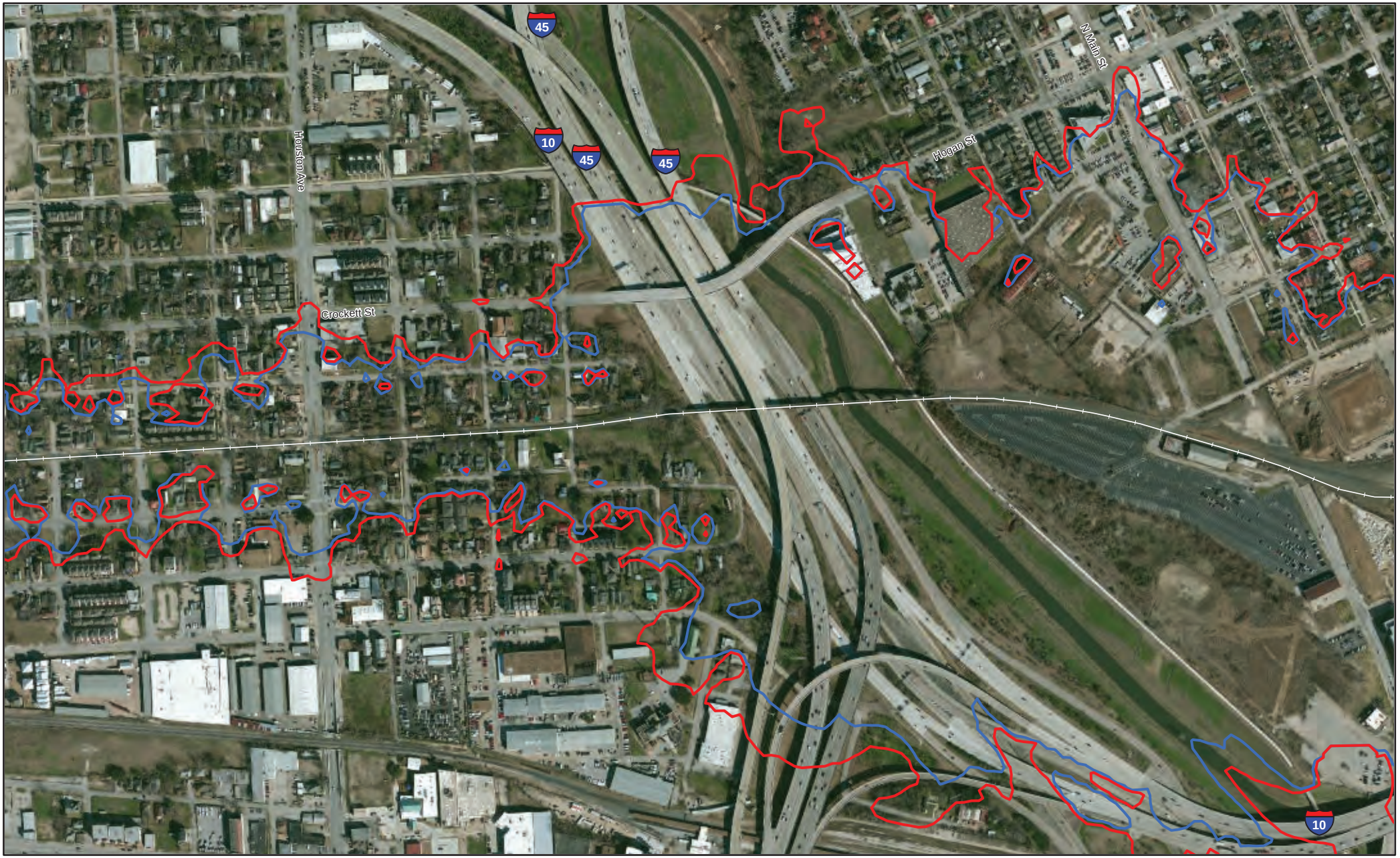


Noise Contours
Harris County, TX

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

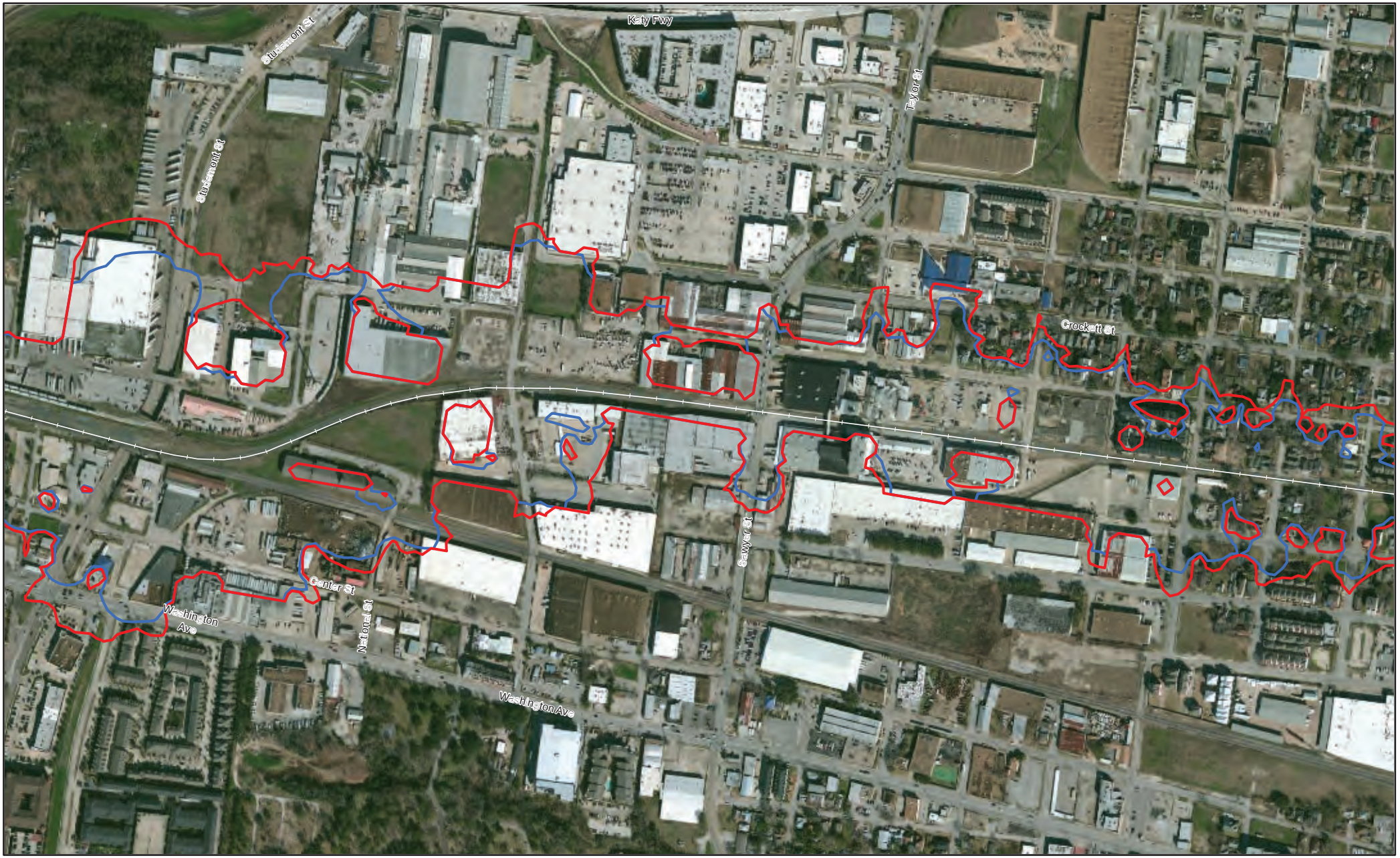


Noise Contours
Harris County, TX

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

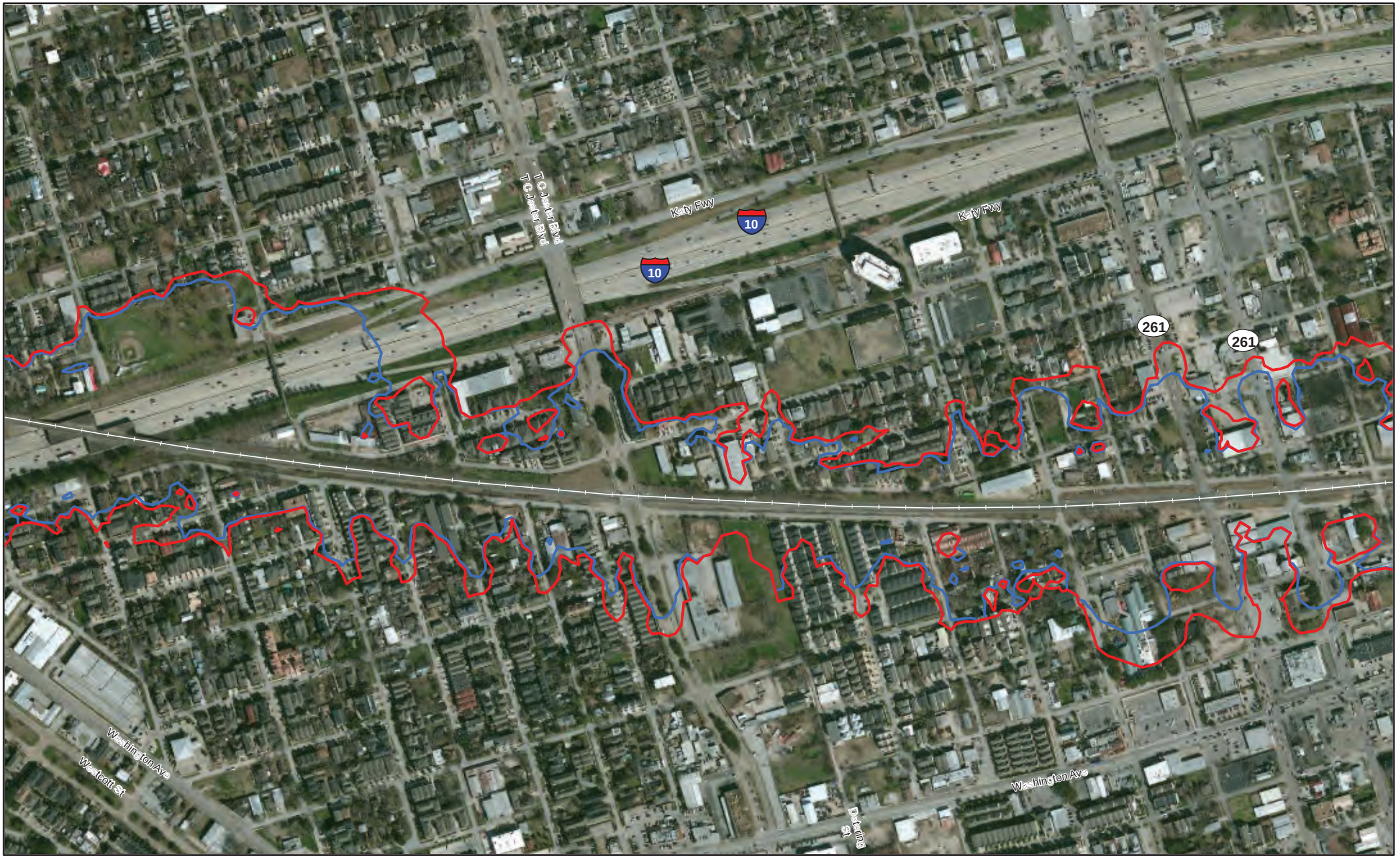


Noise Contours
Harris County, TX

Page H87 of H122

0 0.05 0.1 Miles

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

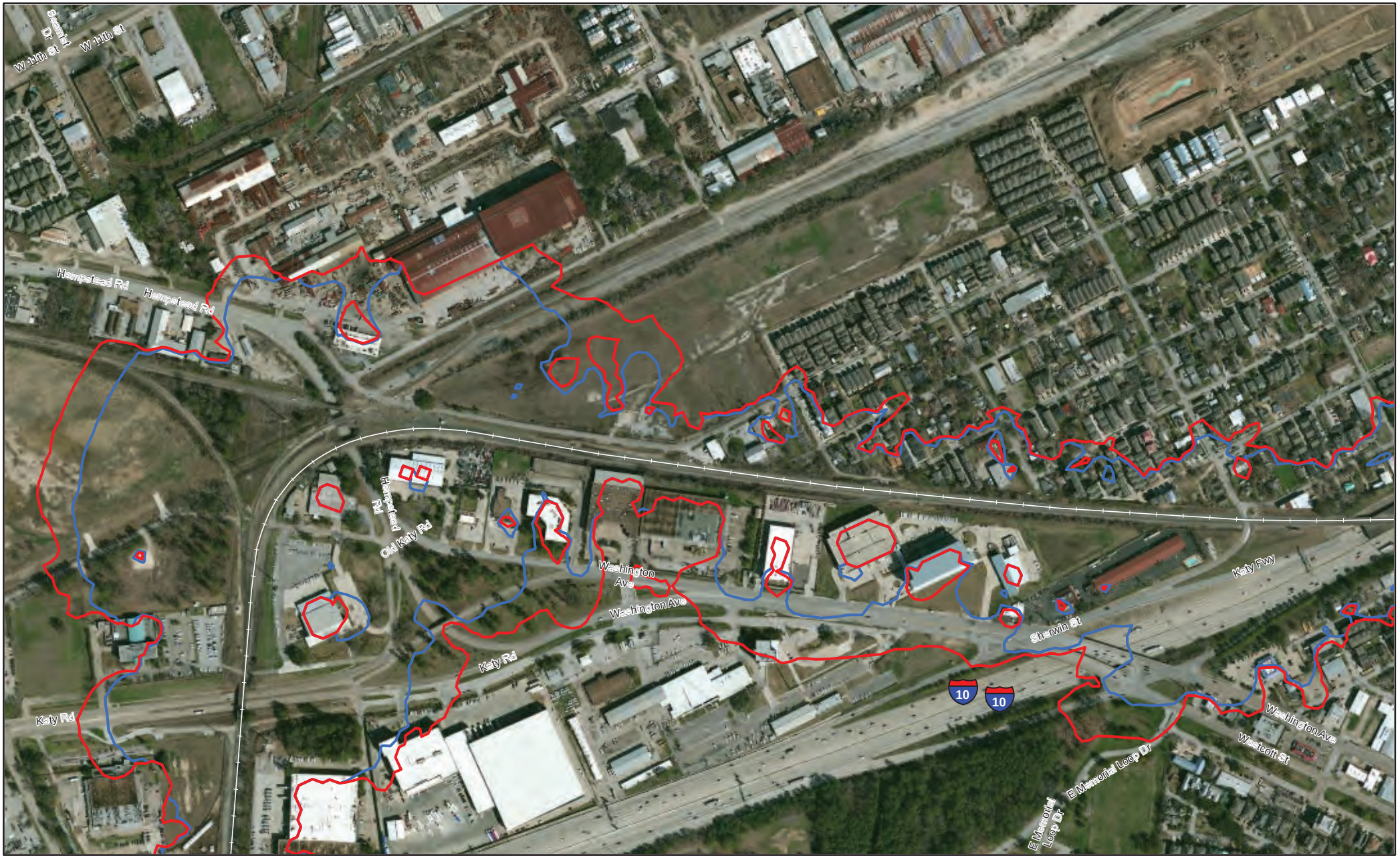


Noise Contours
Harris County, TX

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

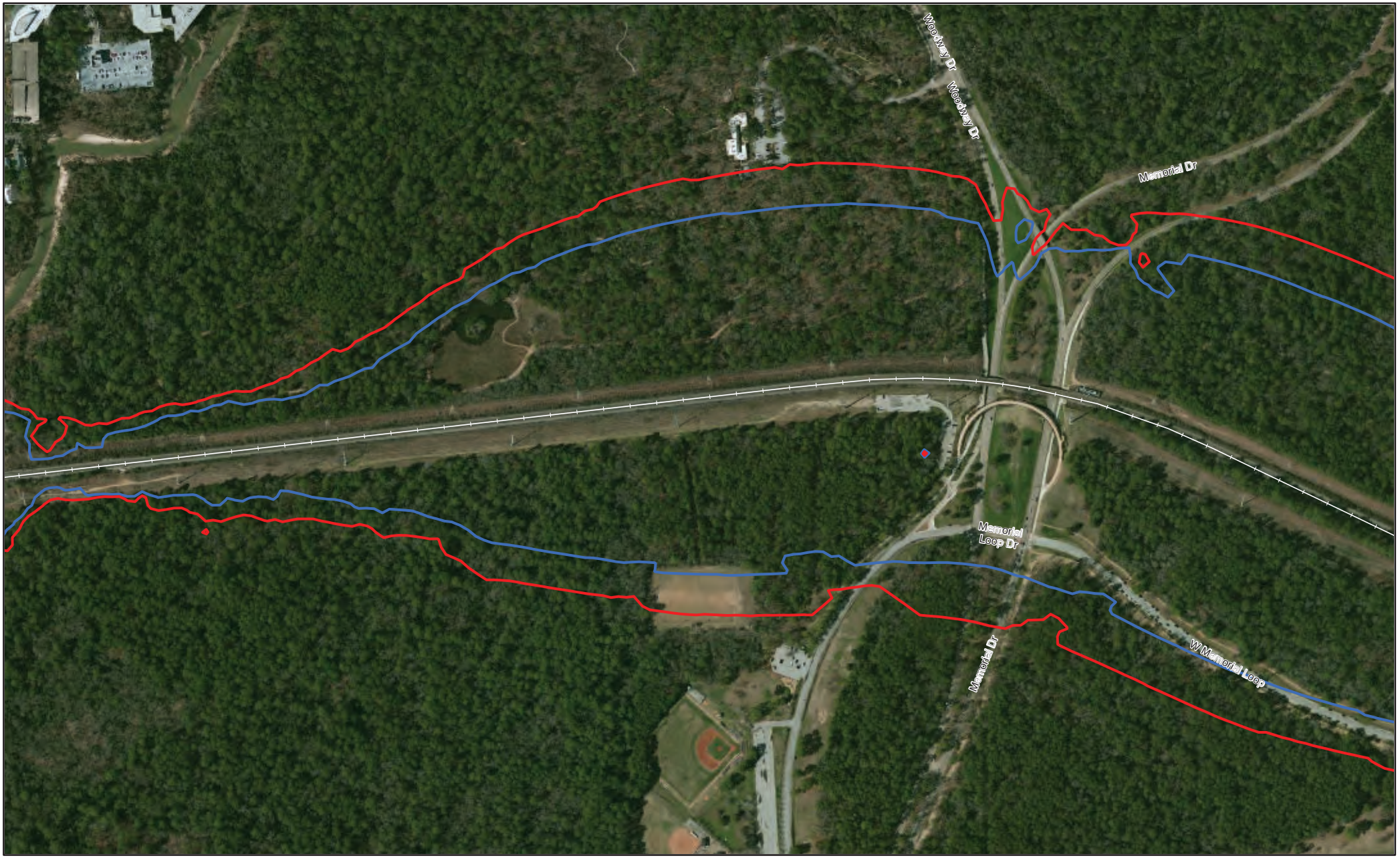


Noise Contours
Harris County, TX

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Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Page H91 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

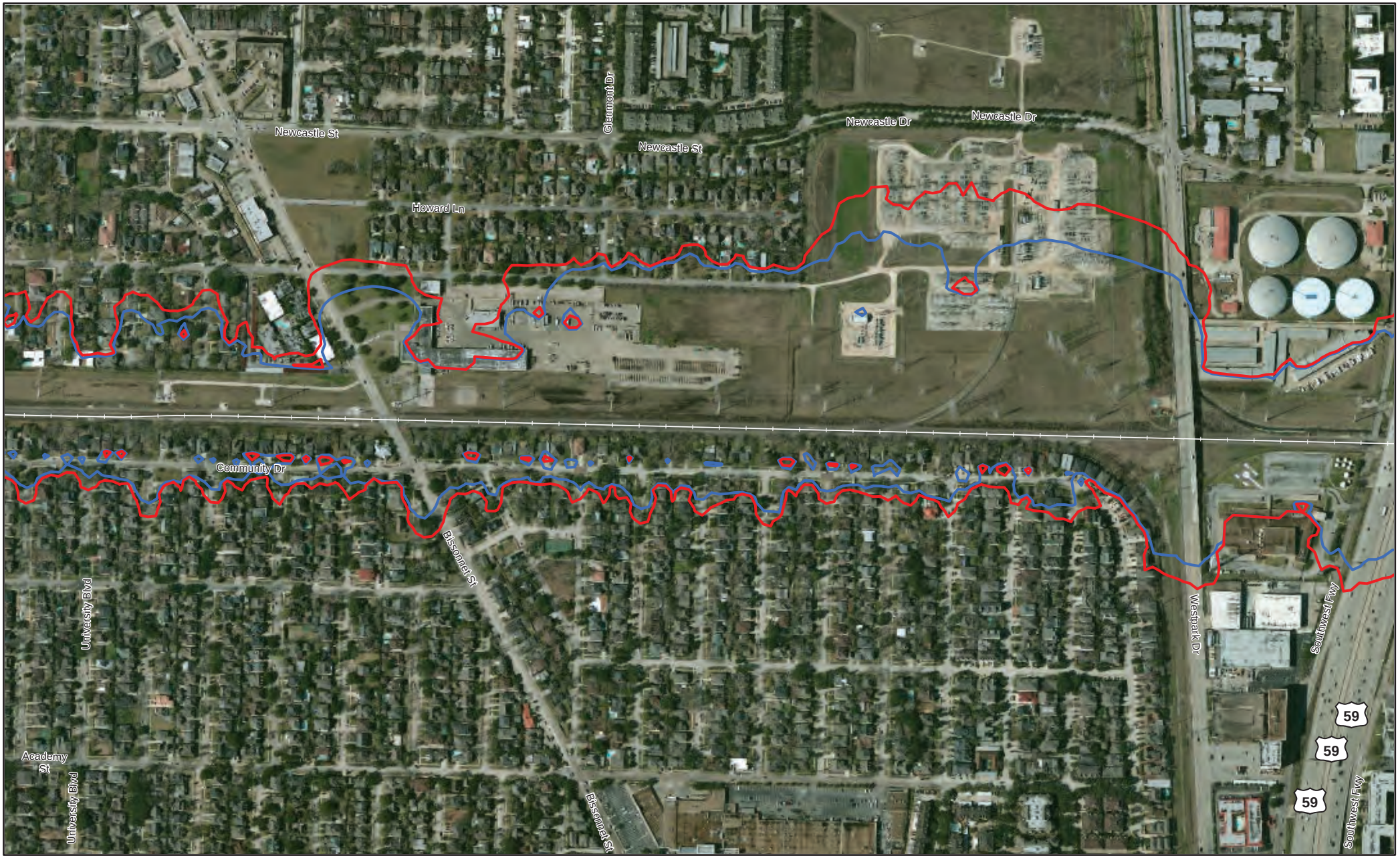


Noise Contours
Harris County, TX

Page H93 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

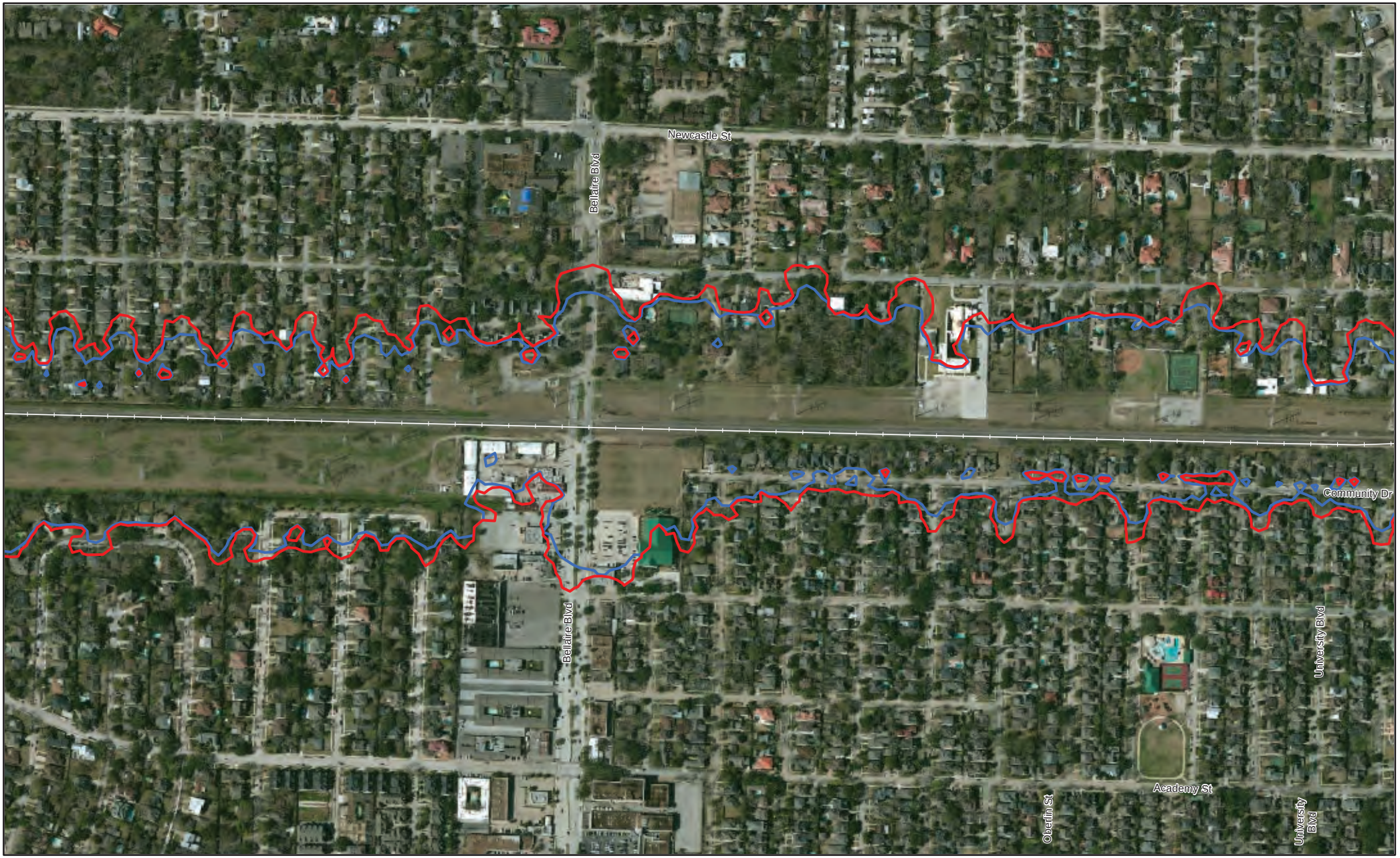


Noise Contours
Harris County, TX

Page H94 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.

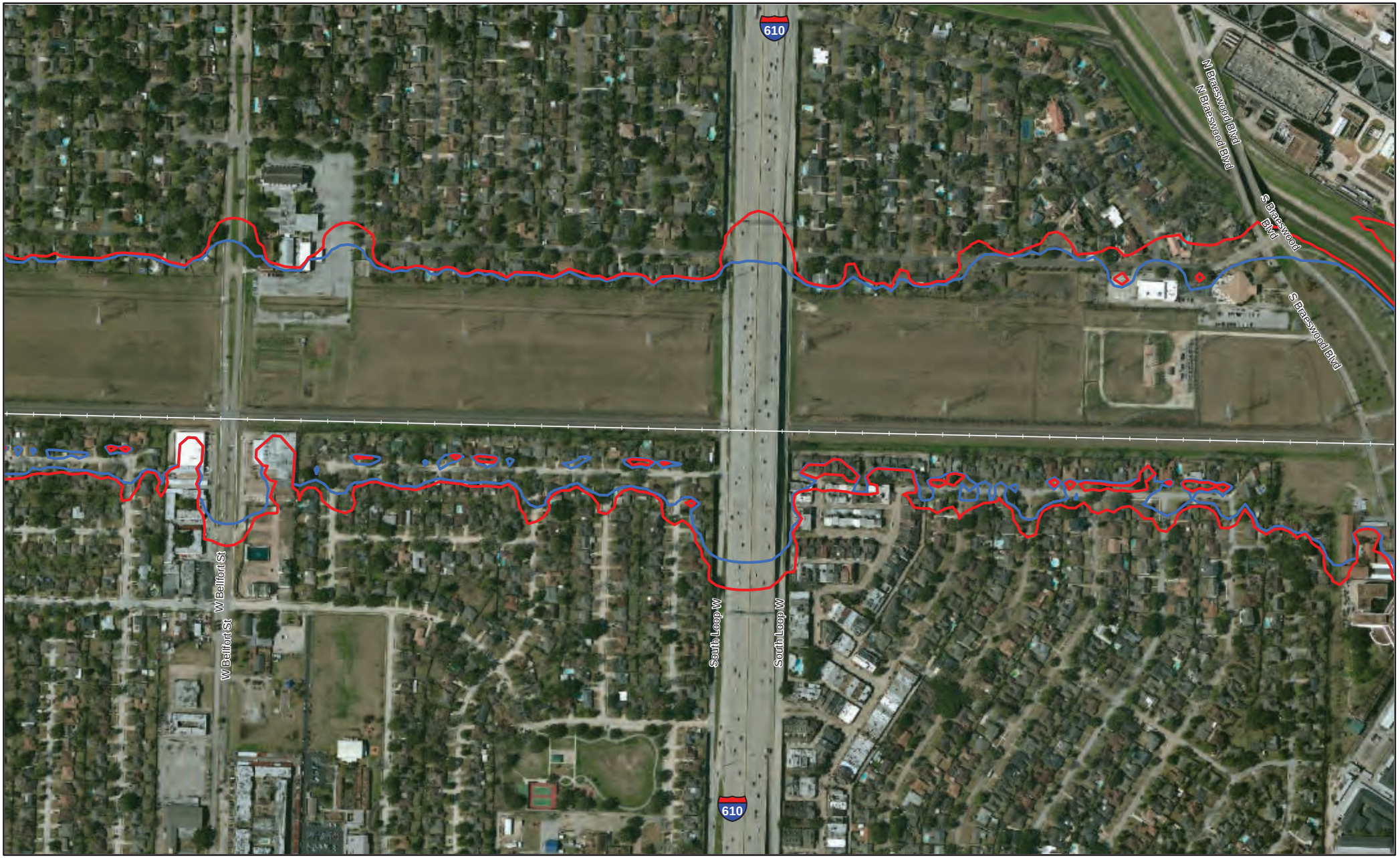


Noise Contours
Harris County, TX

Page H96 of H122

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

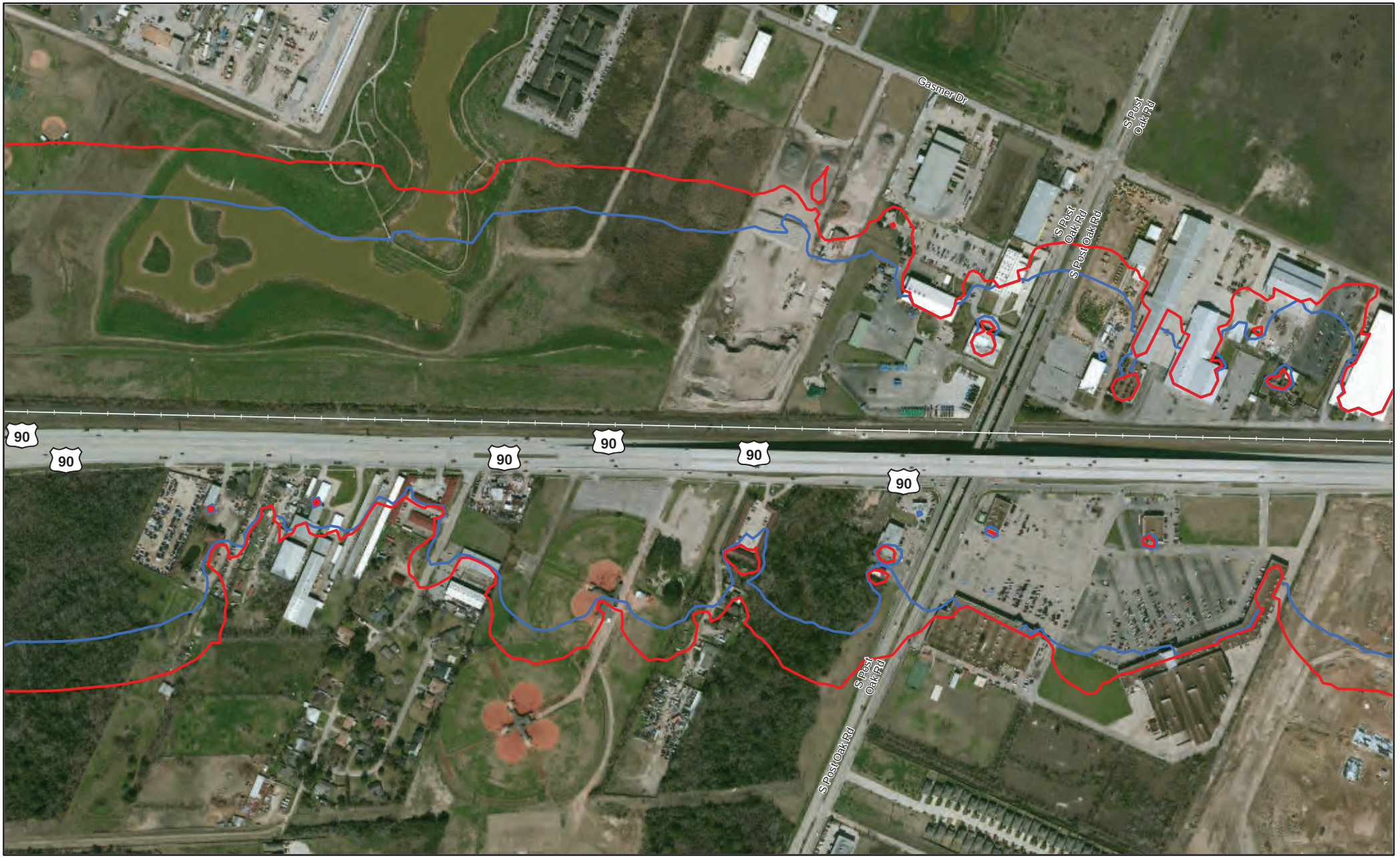
Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

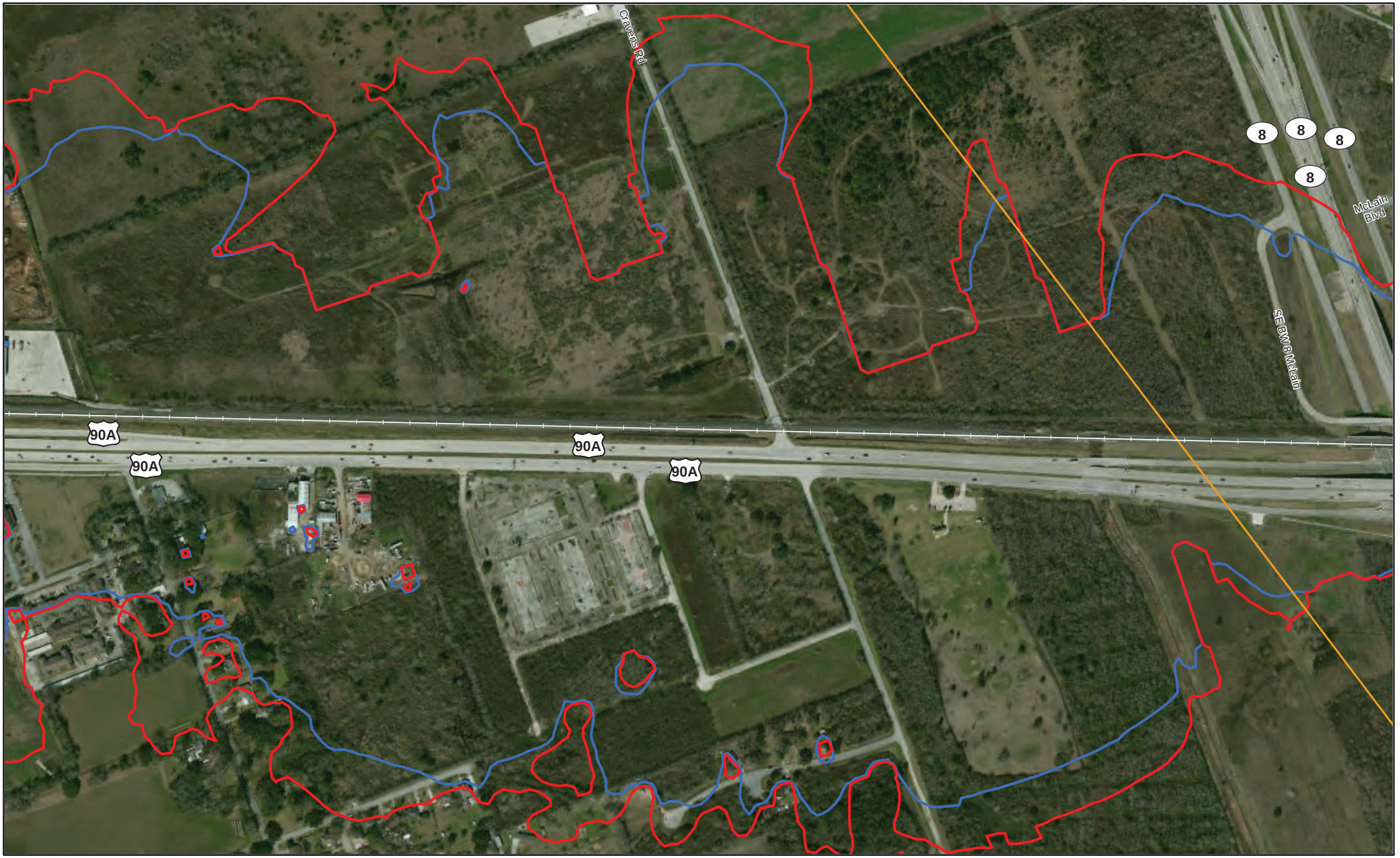
Source: ESRI.



Noise Contours
Harris County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

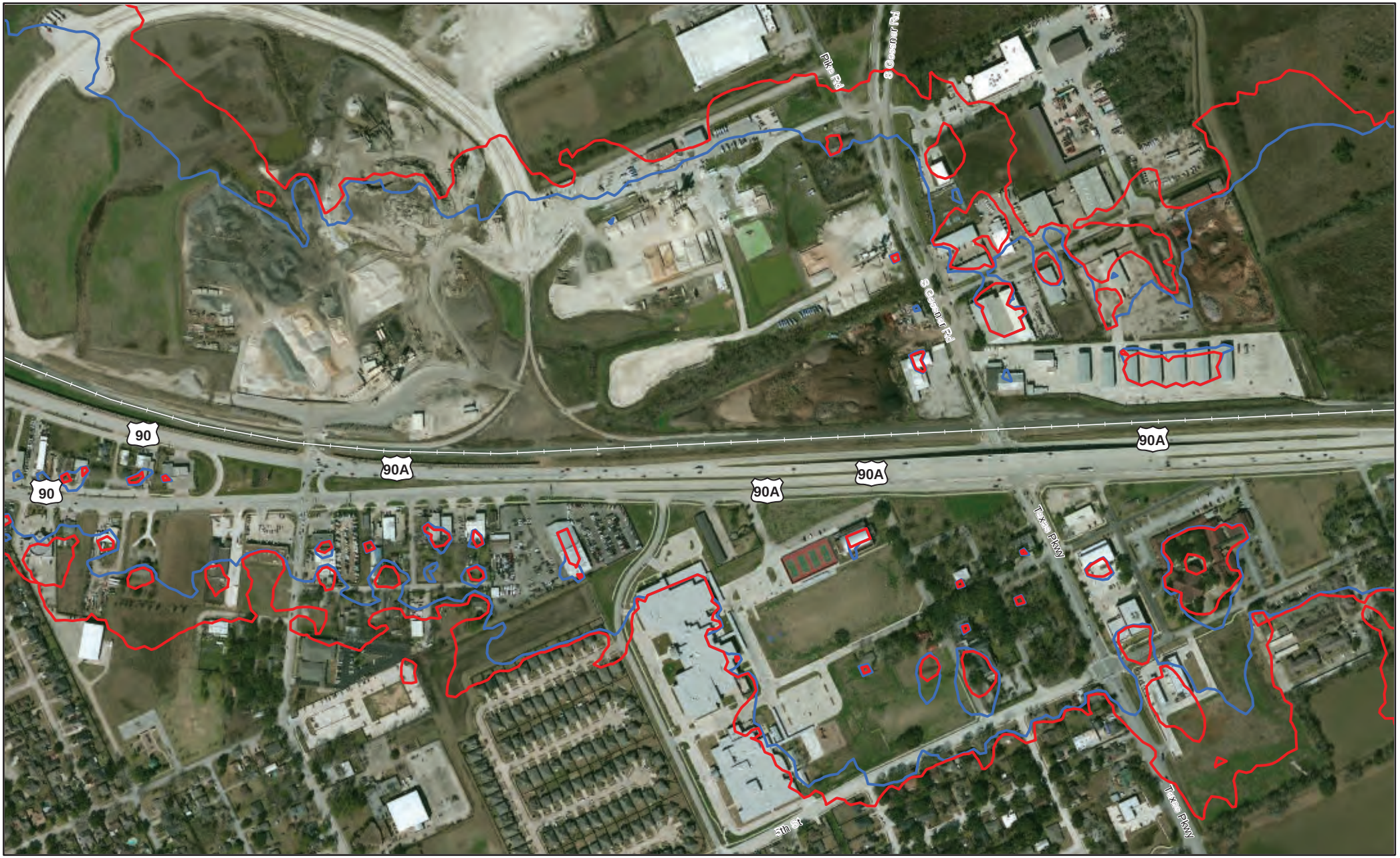
Source: ESRI.



Noise Contours
Fort Bend County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



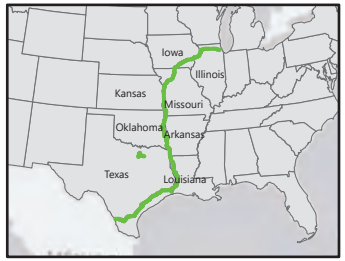
No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Fort Bend County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



No-Action Alternative Noise (65 Ldn)

Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Fort Bend County, TX

Miles
0 0.05 0.1

CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



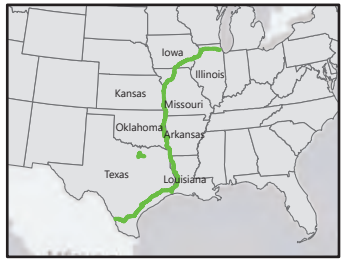
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Proposed Acquisition Noise (65 Ldn)

Noise Impact (65 Ldn and 3 dBA Increase)

Tracks

Source: ESRI.



Noise Contours
Fort Bend County, TX

Miles
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN



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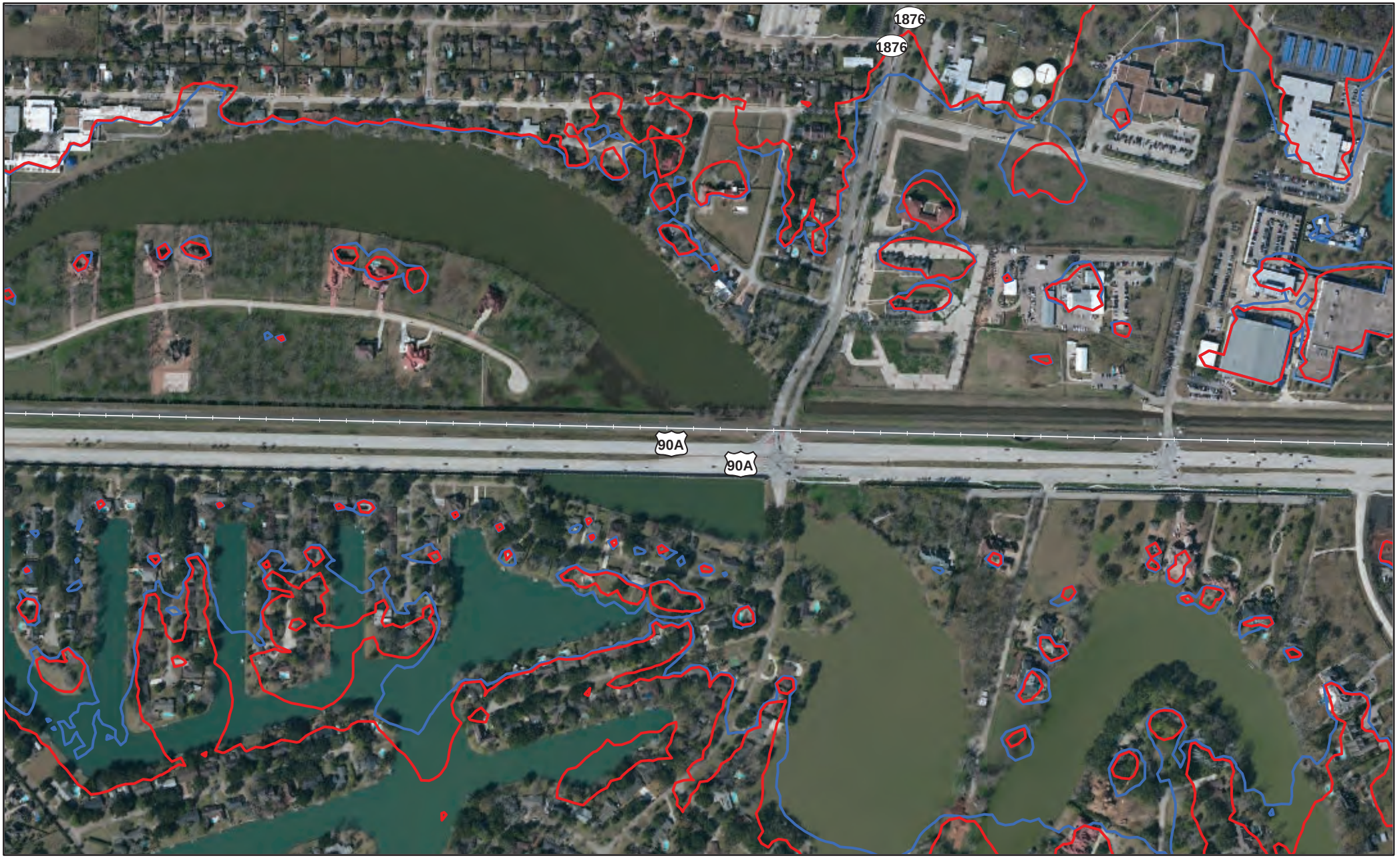
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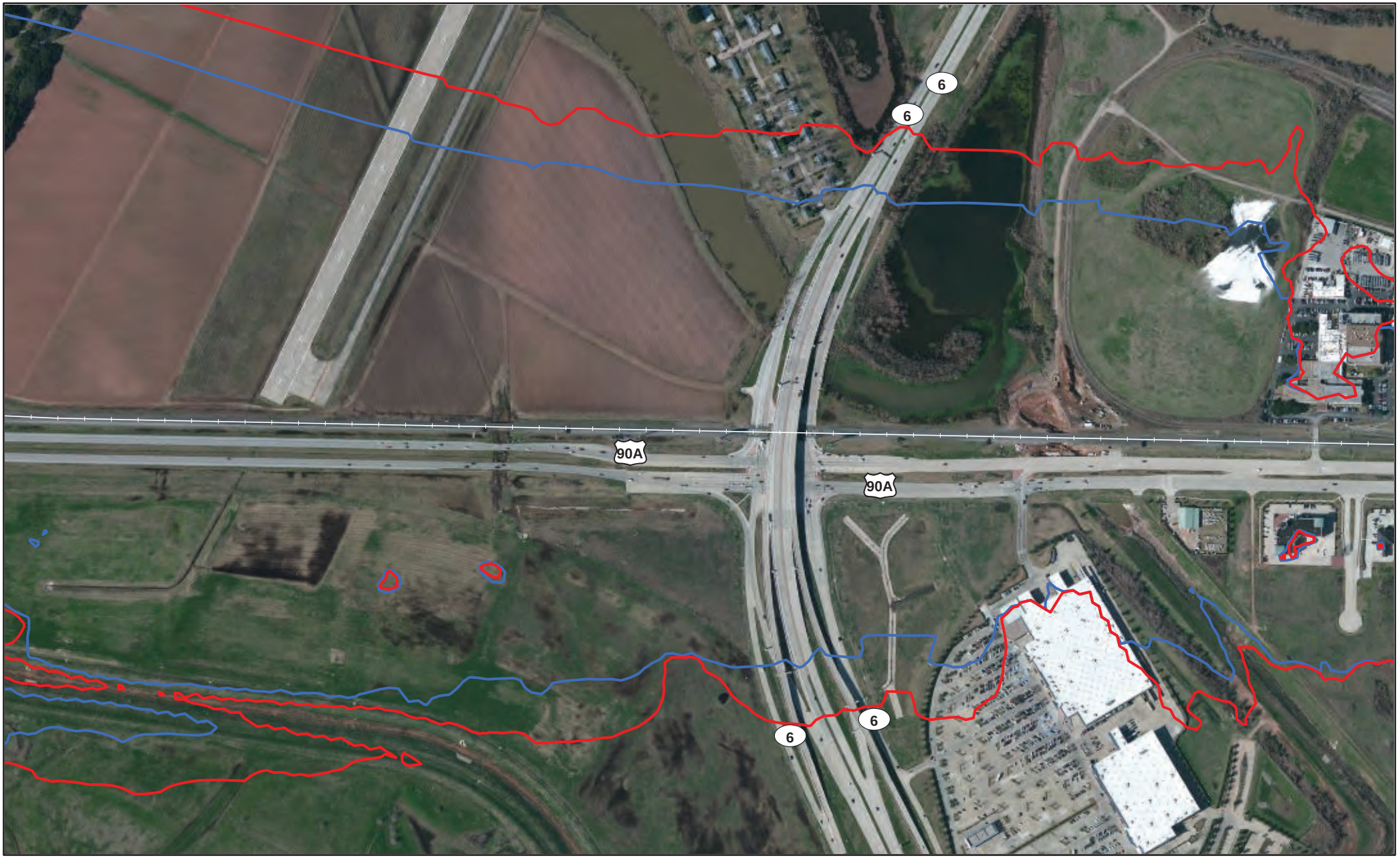
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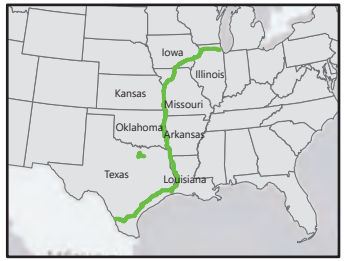
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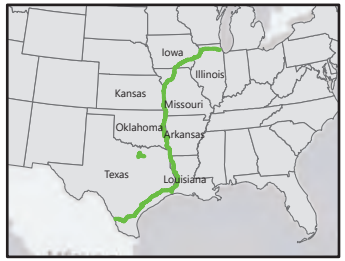
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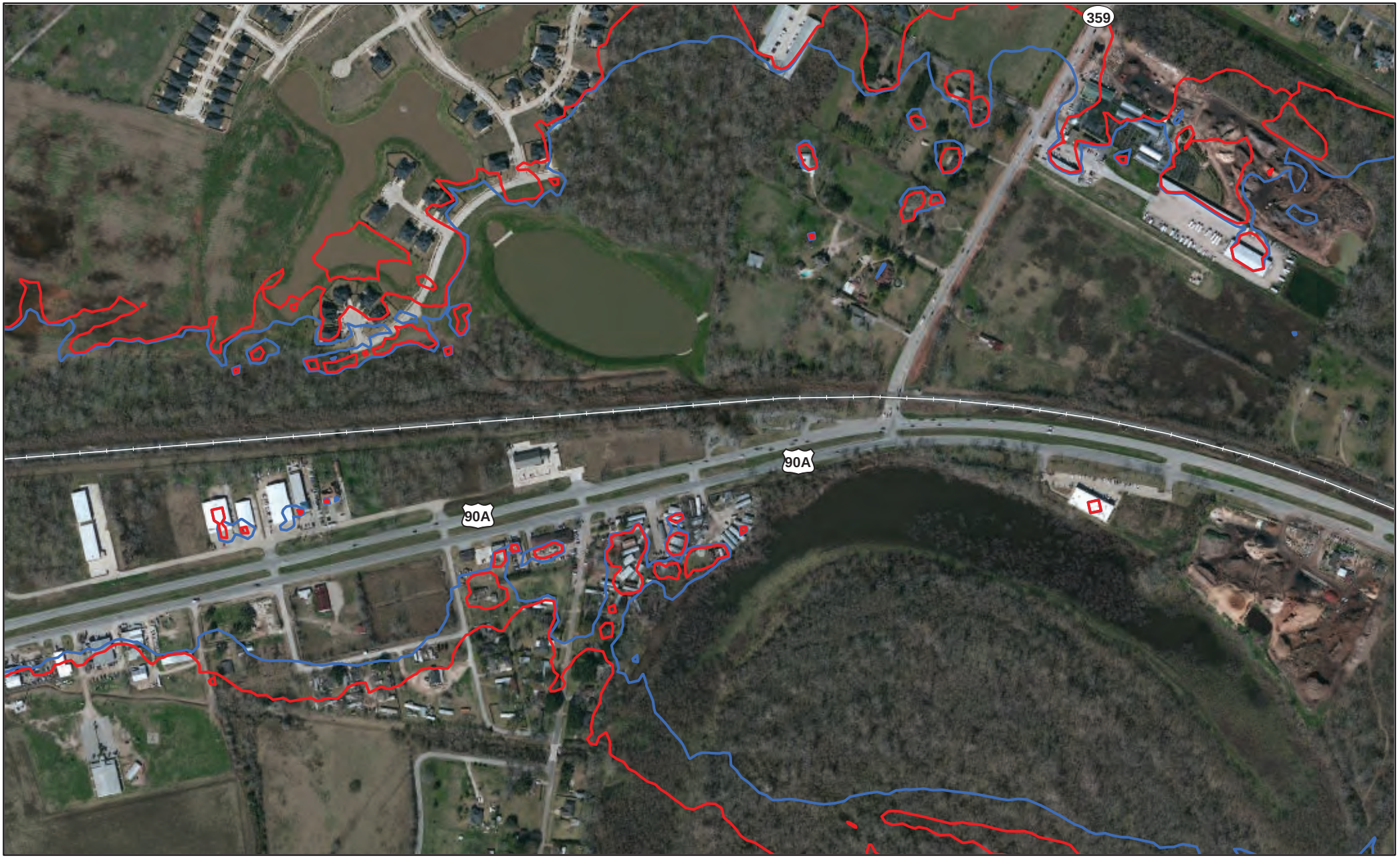
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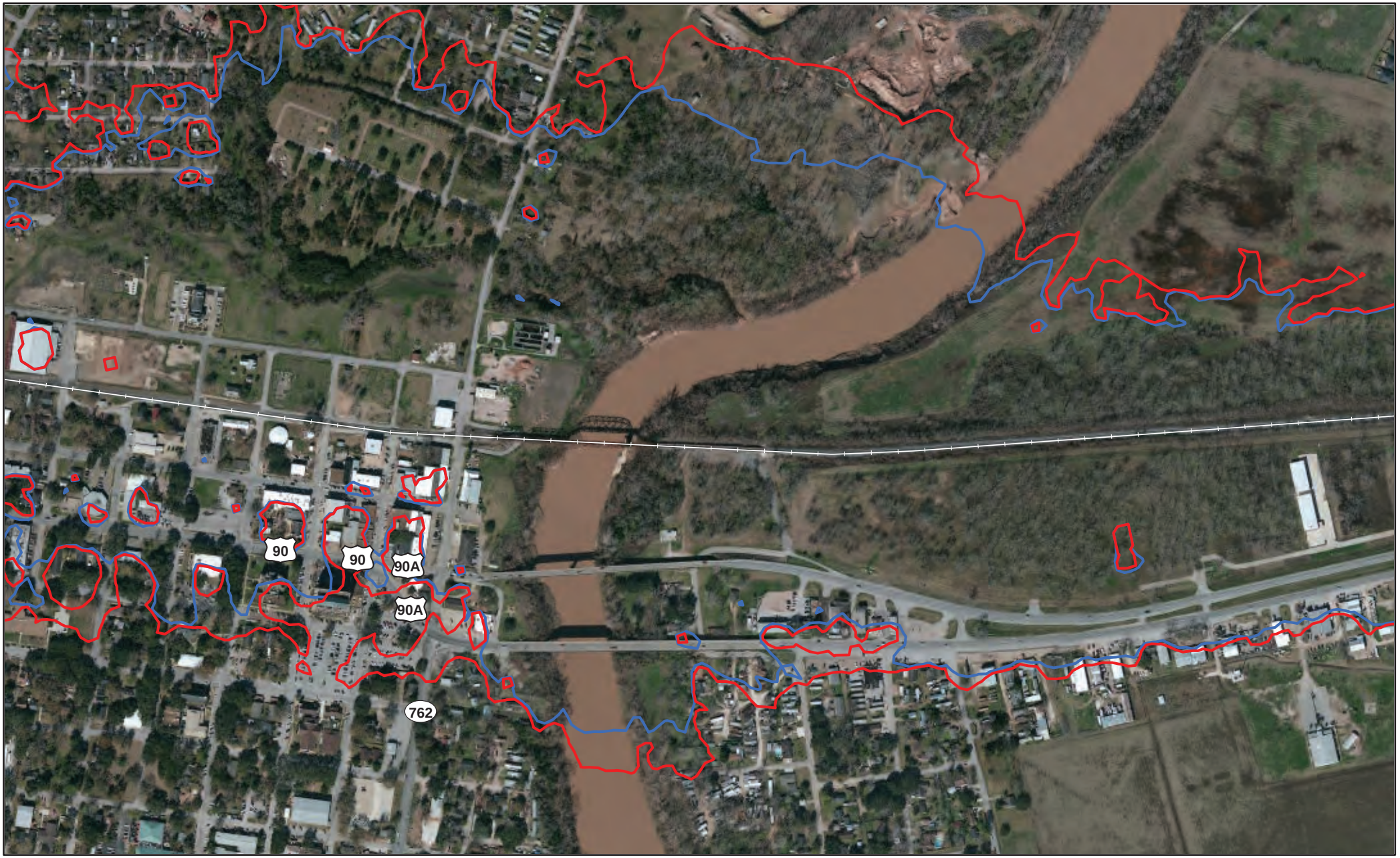
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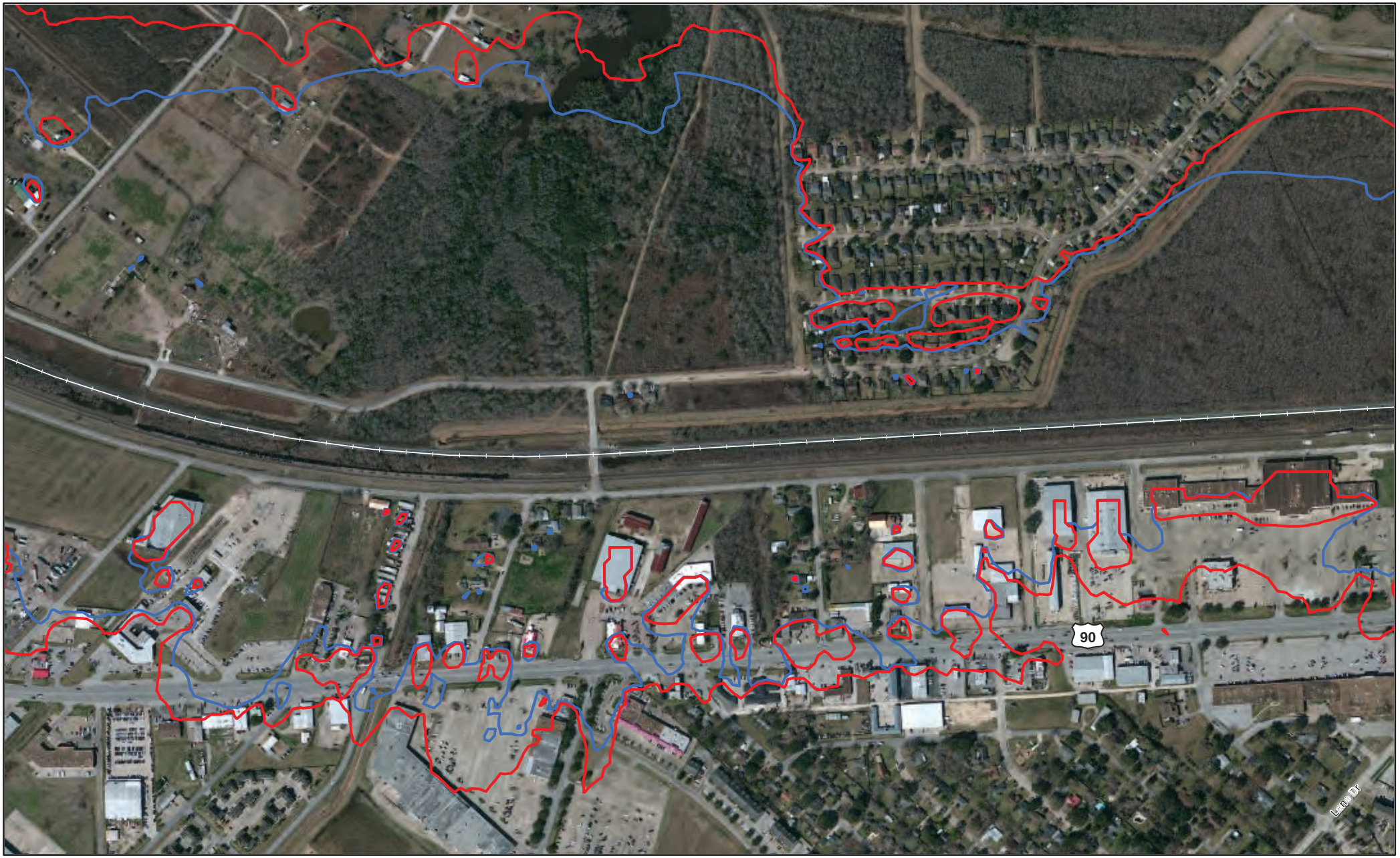
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CANADIAN PACIFIC ACQUISITION OF KANSAS CITY SOUTHERN

Appendix N

Energy

This appendix provides technical information on the approach and results used in the analysis of energy resources *(Chapter 3, Section 3.8)*.

N.1 Approach

Based on the Board's environmental regulations, 49 C.F.R. § 1105.7(e)(4), there are four factors for considering energy resources in NEPA analyses: (1) effects on transportation of energy resources; (2) effects on recyclable commodities; (3) increases or decreases in overall energy efficiency; and (4) effects on freight diversions from rail to motor carriage. The approach for each of these factors is described below. OEA did not analyze the effect of the Proposed Acquisition on recyclable commodities and freight diversions from rail to motor carriage because the Applicants' Operating Plan did not indicate any changes in those two areas.

Below are the approaches for the various analyses conducted for energy resources:

- Effects on Transportation of Energy Resources: OEA considered the Applicants' proposed Operating Plan and traffic studies, commodities transported by CP and KCS in 2019 during a normal operational year, gross ton miles (GTM) for 2019, and other data sources as necessary.
- Increases or Decreases in Overall Energy Efficiency: Energy efficiency and fuel consumption effects of the Proposed Acquisition were estimated for single-line service; truck-to-rail diversions; operations at intermodal facilities; and vehicle delays at roadway/rail at-grade crossings (grade crossings). Effects on freight diversions were evaluated as part of the energy efficiency analysis. The energy analysis is consistent with data, approaches, and assumptions used in *Section 3.4, Truck-to-Rail Diversions, Section 3.5, Intermodal Facility Traffic, and Section 3.7, Air Quality and Climate Change.*
- Single-Line Service: To determine the impact of single-line service on energy efficiency, OEA followed the data and methodology for rail segment divisions as described in *Section 3.7, Air Quality and Climate Change*, and used information provided in the Applicants' Operating Plan. Note that single-line service was estimated, but not included in the overall energy efficiency analysis because the increase in fuel consumption on the CPKC rail lines would likely be offset by a decrease in fuel consumption on the rail lines of competing railroads.
- Truck-to-Rail Diversions: To determine the impact of truck-to-rail diversions on energy efficiency, OEA followed the data and methodology for truck-to-rail diversions as

described in *Section 3.7, Air Quality and Climate Change*. Annual reduction in truck vehicle miles traveled (VMT) was provided by the Applicants and is consistent with the transportation analysis. Using the energy consumption factor of 0.018452369 metric million British thermal units (MMBtu) of energy used per mile, the VMT reduction was converted to a reduction in diesel energy consumption (MMBtu) per year. This energy value for diesel consumption was then converted to gallons of diesel using the conversion factor of 137,381 Btu per gallon as provided by the U.S. Energy Information Administration (2021).

To account for the increase in rail operations as a result of the anticipated mode shift from truck to rail, and therefore accurately offset the substantial decrease in fuel use from truck VMT reduction, OEA used accepted fuel efficiency factors for truck and rail transport to determine the increase in rail fuel consumption that would correspond to a truck fuel reduction of 10,795,150 gallons per year. To do this, OEA used a truck to rail fuel efficiency ratio of 4:1, indicating that rail transport is approximately four times more fuel efficient than trucks transporting the same amount of material. The resulting increase in fuel consumption on the CPKC rail line as a result of truck-to-rail diversions would be 2,698,787 gallons per year compared to the No-Action Alternative. Therefore, truck-rail-diversions would comprise 7.3 percent of the total increase (36,909,385 gallons per year) in fuel consumption on the combined CPKC rail lines, with the remaining 92.7 percent resulting from rail-to-rail diversions. The 2,698,787 increase was combined with the decrease in truck fuel consumption (-10,795,150 gallons) for an overall change of -8,096,362 gallons.

- Intermodal Facilities: OEA used the data and assumptions described below to estimate the change in fuel consumption from intermodal facility vehicles, including dray trucking and the use of lift equipment and yard trucks. Changes in fuel consumption from operational changes at intermodal facilities were analyzed with focus on operational changes that would result from truck-to-rail diversions of intermodal freight. The increased energy use at the Applicants' intermodal facilities from rail-to-rail diversions of freight would be offset by a corresponding reduction in energy use at intermodal facilities operated by other railroads.

  OEA used the following Over-the-Road (OTR) truck data:

  - The Applicants' estimated changes in OTR trucks per day at intermodal facilities.
  - The Applicants' estimated average time that an OTR truck is present in an intermodal facility, derived from market research and used in the Air Quality analysis.
  - OTR trucks' energy consumption of 0.0965 MMBtu per hour (0.7 gallons per hour) while in an intermodal facility, based on the Air Quality analysis.
  - Operating days per year for each intermodal facility based on current operating schedules.
  - Truck-to-rail diversions would account for 22.8 percent of the total change in intermodal freight on the integrated CPKC rail system. This ratio was developed using Applicant information on the number of diverted rail-to-rail containers and diverted truck-to-rail containers.

OEA used the following lift equipment data:

- The estimated change in the annual operating hours of lift equipment, which was derived from the estimated change in the number of primary lifts per year. The change in primary lifts per year was calculated from the change in primary lifts (origin/destination [O/D]+ switch lifts) per day that was provided by the Applicants and the operating days per year for each intermodal facility. The ratio of primary lifts to total lifts was estimated using an average of available data.
- Average lifts per hour, which were estimated for each intermodal facility based on 2019 handling data from the Applicants and current facility operating hours.
- Average fuel efficiency of lift equipment adapted from *Section 3.7, Air Quality and Climate Change* and converted to gallons per hour.
- Truck-to-rail diversions would account for 22.8 percent of the total change in intermodal freight on the integrated CPKC rail system.

OEA used the following yard truck data:

- Average fuel efficiency of yard trucks adapted from *Section 3.7, Air Quality and Climate Change* and converted to gallons per hour.
- Yard trucks make an average of 1.2 moves for each primary lift, using conservative values chosen for the Air Quality analysis.
- Yard trucks make an average of 4.5 moves per hour, based on yard work and rail work completed in an 8-hour shift in existing guidelines.
- Truck-to-rail diversions would account for 22.8 percent of the total change in intermodal freight on the integrated CPKC rail system.

- Vehicle Delays at Roadway/Rail At-Grade Crossings: The grade crossing analysis is consistent with the approach used in *Section 3.7, Air Quality and Climate Change*. OEA calculated total energy consumption (MMBtu) per year using the average vehicle delay and number of vehicles delayed per day for each Federal Railroad Administration crossing ID associated with the Proposed Acquisition. The total hours of delay were used to calculate total energy consumption based on the idle energy consumption conversion factor of 0.065596 MMBtu per hour, which was then converted to gallons of gasoline per year.

N.2 Results

Table N.2-1 through **Table N.2-4** below provide additional detailed information on changes in energy consumption.

Table N.2-1. Energy Changes from Truck-to-Rail Diversions

State	Annual Truck Reduction (VMT)[1]	Diesel Energy Reduction (MMBtu/year)[2]	Diesel Energy Reduction (gallons/year)[3]
Arizona	-606,268	-11,187	-81,431
Arkansas	-3,094,745	-57,105	-415,672

Table N.2-1. Energy Changes from Truck-to-Rail Diversions

State	Annual Truck Reduction (VMT)[1]	Diesel Energy Reduction (MMBtu/year)[2]	Diesel Energy Reduction (gallons/year)[3]
California	-257,799	-4,757	-34,626
Colorado	-225,090	-4,153	-30,233
Idaho	-91,499	-1,688	-12,290
Illinois	-8,637,622	-159,385	-1,160,165
Indiana	-2,393,629	-44,168	-321,501
Iowa	-5,243,207	-96,750	-704,243
Kansas	-3,204,537	-59,131	-430,418
Kentucky	-2,347,935	-43,325	-315,364
Michigan	-3,818,716	-70,464	-512,912
Minnesota	-2,099,572	-38,742	-282,005
Missouri	-12,228,607	-225,647	-1,642,489
Montana	-581,672	-10,733	-78,127
Nebraska	-130,578	-2,409	-17,539
Nevada	0	0	0
New Mexico	-1,206,426	-22,261	-162,041
New York	0	0	0
North Dakota	0	0	0
Ohio	-1,315,116	-24,267	-176,640
Oklahoma	-11,392,073	-210,211	-1,530,130
Oregon	-69,499	-1,282	-9,335
Pennsylvania	0	0	0
South Dakota	0	0	0
Tennessee	-768,071	-14,173	-103,164
Texas	-20,096,753	-370,833	-2,699,301
Utah	-13,853	-256	-1,861
Vermont	0	0	0
Washington	-77,567	-1,431	-10,418
Wisconsin	0	0	0
Wyoming	-470,876	-8,689	-63,246
Truck Reductions	-80,371,710	-1,483,048	-10,795,150
Rail Increases	-	-	2,698,787
TOTAL	**-**	**-**	**-8,096,362**

[1] Annual Truck VMT Reduction was provided from the transportation study which adapted analysis from the Verified Statement of Bengt Muten (2021).
[2] Diesel energy reduction calculated as part of *Section 3.7, Air Quality and Climate Change.*
[3] Conversion factor used for gallons of diesel from British thermal units (Btu) was 137,381 Btu for 1 U.S. gallon (U.S. Energy Information Administration 2021).

Table N.2-2. Changes in Energy Consumption at Intermodal Facilities, OTR Trucks

Facility	County	State	Change in OTR Trucks per Day	Operating Days/Year[1]	Average Time Truck Spends at Intermodal Facility (minutes/ truck)[2]	Hour/ Minute Conversion	OTR Truck Fuel Consumption at Intermodal Facility (MMBtu/ hour)[3]	OTR Truck Fuel Consumption at Intermodal Facility (gallons/ hour)[4]	Percentage of Total Change in Intermodal Freight from Truck-to-Rail Diversions[5]	Change in Fuel Consumption from OTR Trucks at Intermodal Facilities (gallons/ year)
Bensenville IMS	Cook	IL	315	365	34	0.0167	0.0965	0.7025	22.8%	10,439
Detroit Container Terminal	Wayne	MI	87	313	34	0.0167	0.0965	0.7025	22.8%	2,472
Minneapolis IMS	Hennepin	MN	53	313	34	0.0167	0.0965	0.7025	22.8%	1,506
Schiller East IMS	Cook	IL	134	365	34	0.0167	0.0965	0.7025	22.8%	4,441
Intl Freight Gateway	Jackson	MO	53	313	34	0.0167	0.0965	0.7025	22.8%	1,506
Wylie	Collin	TX	148	365	34	0.0167	0.0965	0.7025	22.8%	4,905
Total Change in Fuel Consumption from OTR Trucks at Intermodal Facilities (gallons/year)										25,269

[1] Annual Operating Days at each intermodal facility estimated based on the current operating schedules.
[2] Each truck assumed to dwell 34 minutes at the intermodal facility, based on Lindhjem (2008) and Souten and Lindhjem (2006).
[3] OTR Truck Fuel Consumption at Intermodal Facilities (MMBtu/hour) adapted from *Section 3.7, Air Quality and Climate Change* where MOVES total energy consumption rate used for combo long haul vehicles.
[4] Conversion factor used for gallons of diesel from Btu was 137,381 Btu for 1 U.S. gallon (U.S. Energy Information Administration 2021).
[5] Percentage of Total Change in Intermodal Freight from Truck-to-Rail Diversions calculated based on "Estimated Volume of Existing 2019 Rail Traffic Flows Diverted to CP/KCS" found in Table 1[3]: Summary of 2019 Rail-to-Rail Diversions Likely to Occur Due to CP/KCS Combination in the Applicants' Operating Plan (216,675 intermodal containers) and estimate from the Verified Statement of Bengt Muten (2021) regarding diverted truck-to-rail containers (64,018 intermodal containers). This total only considers truck-to-rail and rail-to-rail diversion effects on intermodal freight, not post-Acquisition changes in traffic patterns or investments by CPKC in growth opportunities made available by a combined CPKC network.

Table N.2-3. Changes in Energy Consumption at Intermodal Facilities, Lift Equipment

Facility	State	Lift Equipment Types	Change in Primary Lifts per Day	Operating Days/ Year[1]	Change in Primary Lifts per Year	Total Lifts per Primary Lift[2]	Avg Hourly Lifts (Lifts/ hour)[3]	Fuel Efficiency of Avg Lift Equip-ment (grams/ hour)[4]	Fuel Efficiency of Avg Lift Equip-ment (gallons/ hour)[5]	Percentage of Total Change in Intermodal Freight from Truck-to-Rail Diversions[6]	Change in Fuel Consumption from Lift Equipment at Intermodal Facilities (gallons/ year)
Bensenville IMS	IL	Forklifts/ Sideloaders	421	365	153,665	2.14	28.6	5,880.62	1.76	22.8%	4,626
Detroit Container Terminal	MI	Forklifts/ Sideloaders	92	313	28,796	2.14	9.1	5,880.18	1.76	22.8%	2,725
Minneapolis IMS	MN	Forklifts/ Sideloaders	86	313	26,918	2.14	15.5	5,879.47	1.76	22.8%	1,495
Schiller East IMS	IL	Forklifts/ Sideloaders	166	365	60,590	2.14	28.6	5,880.62	1.76	22.8%	1,824
Intl Freight Gateway	MO	Forklifts/ Sideloaders	101	313	31,613	2.14	6.8	5,880.70	1.76	22.8%	4,003
Wylie	TX	Aerial Lift Gantries	263	365	95,995	2.14	23.5	469.77	0.14	22.8%	281
Total Change in Fuel Consumption from Lift Equipment at Intermodal Facilities (gallons/year)											14,954

[1] Annual Operating Days at each intermodal facility estimated based on the current operating schedules.
[2] Ratio of Primary (O/D+Switch) Lifts to Total lifts estimated using an average of available data.
[3] Average Hourly Lifts estimated based on 2019 handling data in application and current facility operating hours.
[4] Fuel Efficiency of Average Lift Equipment (grams/hour) adapted from nonroad fuel consumption rate used at part of *Section 3.7, Air Quality and Climate Change*.
[5] Conversion factor used for gallons of diesel from grams was 100 grams Btu for 0.03 U.S. gallons (U.S. Department of Energy).
[6] Percentage of Total Change in Intermodal Freight from Truck-to-Rail Diversions calculated based on "Estimated Volume of Existing 2019 Rail Traffic Flows Diverted to CP/KCS" found in Table 1[3]: Summary of 2019 Rail-to-Rail Diversions Likely to Occur Due to CP/KCS Combination in the Applicants' Operating Plan [216,675 intermodal containers] and estimate from the Verified Statement of Bengt Muten (2021) regarding diverted truck-to-rail containers [64,018 intermodal containers]. This total only considers truck-to-rail and rail-to-rail diversion effects on intermodal freight, not post-Acquisition changes in traffic patterns or investments by CPKC in growth opportunities made available by a combined CPKC network.

Table N.2-4. Changes in Energy Consumption at Intermodal Facilities, Yard Trucks

Facility	County	State	Change in Primary Lifts per Year	Moves per Primary Lift[1]	Moves per Hour[2]	Fuel Efficiency of Avg Yard Truck/Terminal Tractor (grams/hour)[3]	Fuel Efficiency of Avg Yard Truck (gallons/hour)[4]	Percentage of Total Change in Intermodal Freight from Truck-to-Rail Diversions[5]	Change in Fuel Consumption from Yard Trucks at Intermodal Facilities (gallons/year)
Bensenville IMS	Cook	IL	153,665	1.2	4.5	9,726.60	2.918	22.8%	27,271
Det Con Term	Wayne	MI	28,796	1.2	4.5	9,726.40	2.918	22.8%	5,110
Minneapolis IMS	Hennepin	MN	26,918	1.2	4.5	9,729.39	2.919	22.8%	4,778
Schiller East IMS	Cook	IL	60,590	1.2	4.5	9,726.60	2.918	22.8%	10,753
Intl Freight Gateway	Jackson	MO	31,613	1.2	4.5	9,729.87	2.919	22.8%	5,612
Wylie	Collin	TX	95,995	1.2	4.5	9,727.03	2.918	22.8%	17,037
Total Change in Fuel Consumption from Yard Trucks at Intermodal Facilities (gallons/year)									70,561

[1] Truck moves per primary lift assumed to be 1.2 using conservative value in the range provided by Lindhjem (2008).
[2] Truck moves per hour assumed to be 4.5, estimated based on yard work and rail work completed in an 8-hour shift (The Port of Long Beach and The Port of Los Angeles 2017).
[3] Fuel Efficiency of Average Yard Truck (grams/hour) adapted from nonroad fuel consumption rate used at part of *Section 3.6, Air Quality and Climate Change*.
[4] Conversion factor used for gallons of diesel from grams was 100 grams Btu for 0.03 U.S. gallons (U.S. Department of Energy).
[5] Percentage of Total Change in Intermodal Freight from Truck-to-Rail Diversions calculated based on "Estimated Volume of Existing 2019 Rail Traffic Flows Diverted to CP/KCS" found in Table 1[3]: Summary of 2019 Rail-to-Rail Diversions Likely to Occur Due to CP/KCS Combination in the Applicants' Operating Plan [216,675 intermodal containers] and estimate from the Verified Statement of Bengt Muten (2021) regarding diverted truck-to-rail containers [64,018 intermodal containers]. This total only considers truck-to-rail and rail-to-rail diversion effects on intermodal freight, not post-Acquisition changes in traffic patterns or investments by CPKC in growth opportunities made available by a combined CPKC network.

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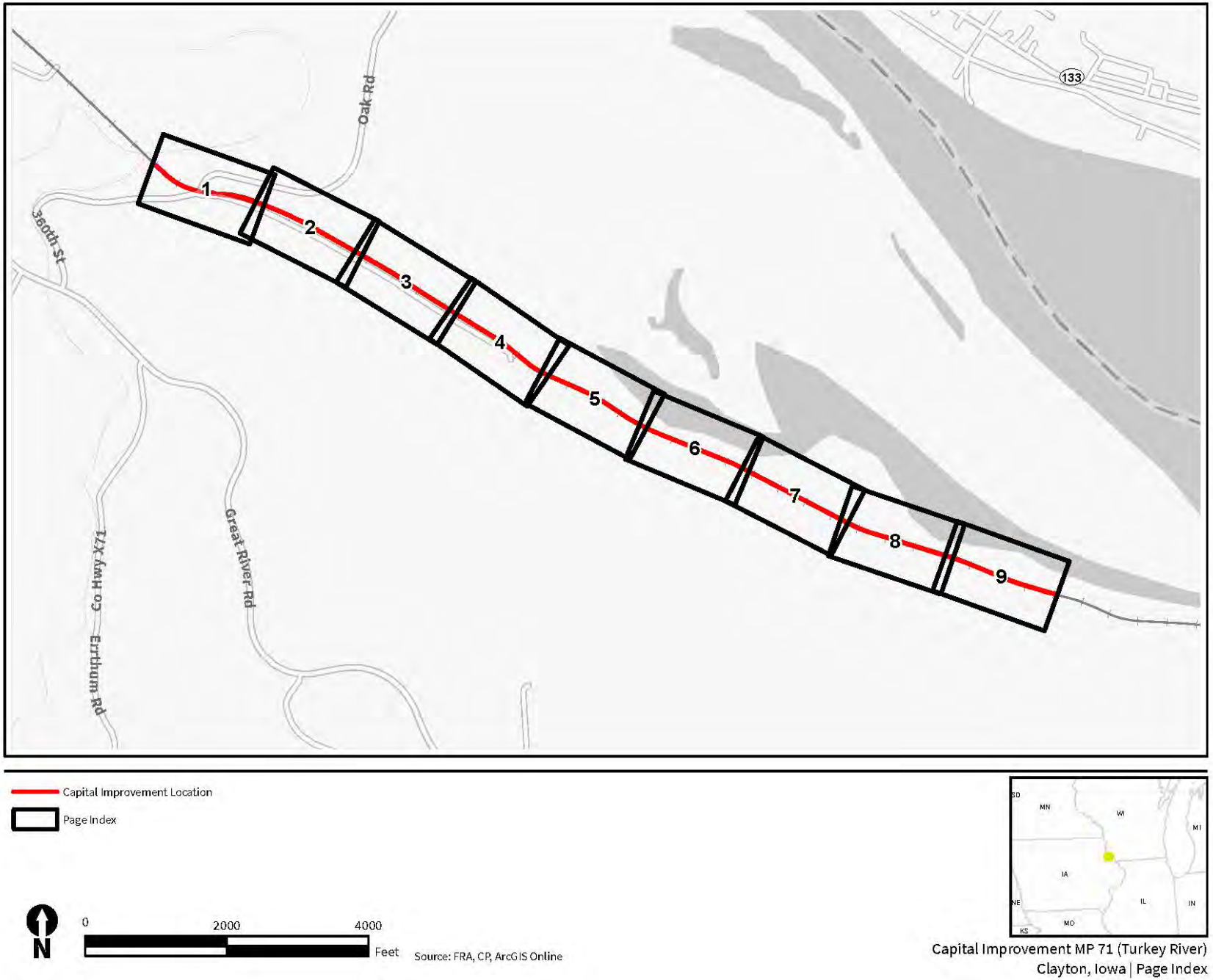
Appendix O

Biological Resources

Appendix O includes four sections. *Section O.1, Figures*, contains maps depicting the general habitat and land use and water resources at the planned capital improvements and maps depicting the suitable bat habitat at the planned capital improvements. *Section O.2, Special Status Species*, contains tables of the federally listed and state listed species by capital improvement site as well as a table of critical habitat located within 1 mile of the combined CPKC railroad network. *Section O.3, Field Work Data*, contains the field work data collected by OEA during the field work of the planned capital improvements. *Section O-4, Agency Consultation and Coordination*, contains documentation of U.S. Fish and Wildlife Service (USFWS) and state agency correspondence.

O.1 Figures

Figure O.1-1. Habitat/Land Use and Water





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Floodplains-Creeks-Rivers
FEMA 100-year floodplain



N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-4



Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Floodplains-Creeks-Rivers
FEMA 100-year floodplain

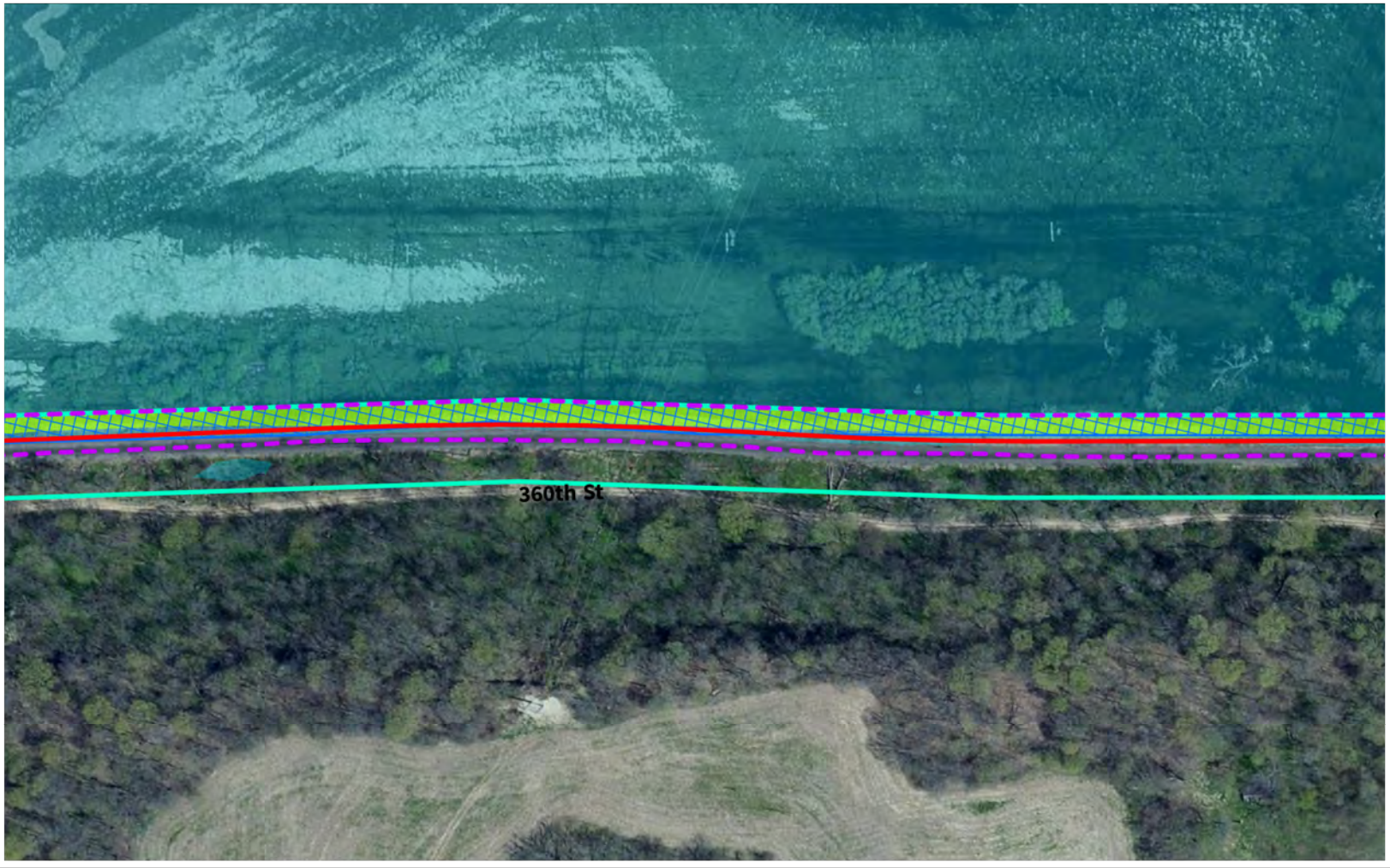


0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-5

Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Page 2 of 9



Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Floodplains-Creeks-Rivers
FEMA 100-year floodplain

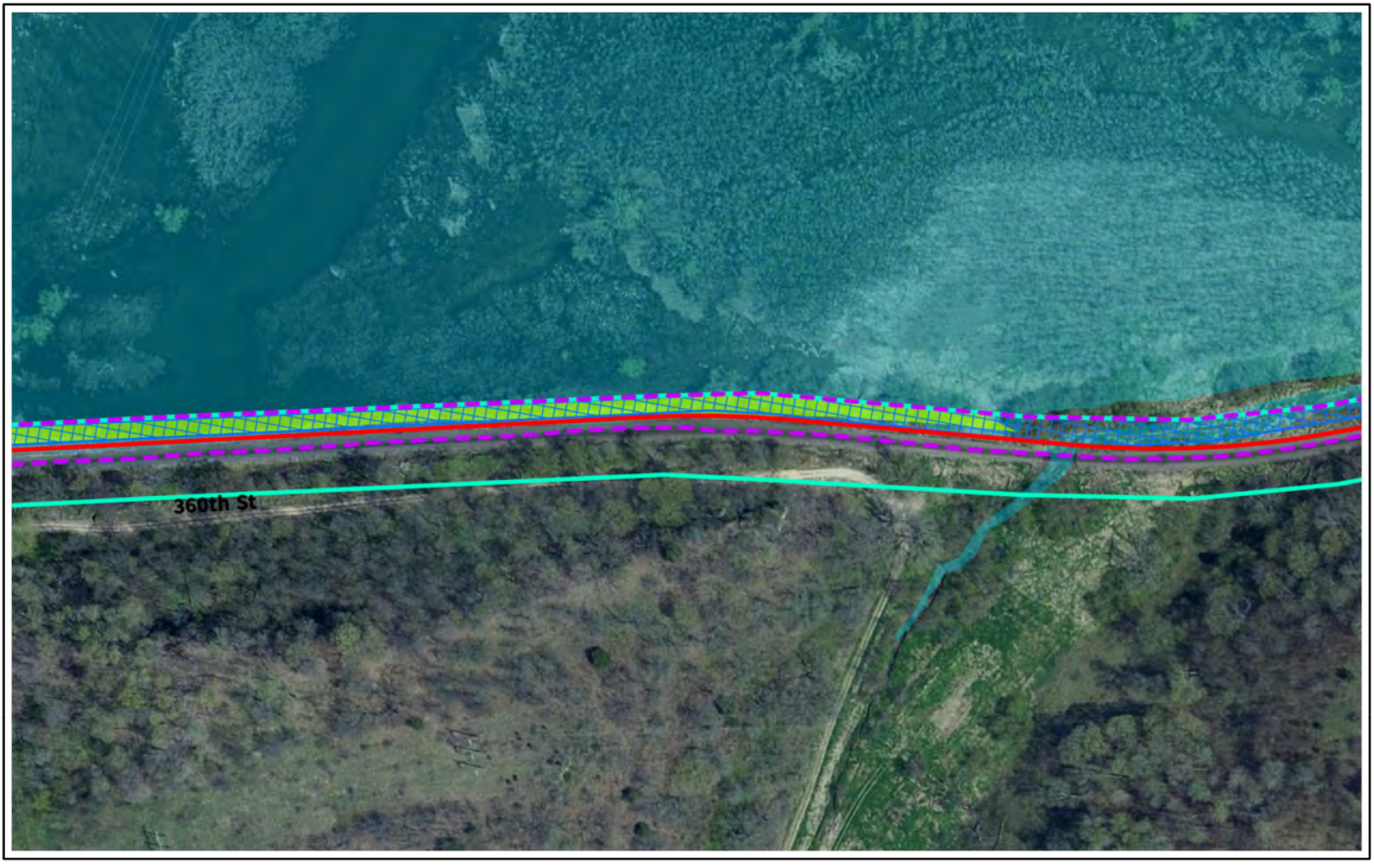


0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-6

Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Page 3 of 9



Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Floodplains-Creeks-Rivers
FEMA 100-year floodplain



0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-7

Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Page 4 of 9



Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Floodplains-Creeks-Rivers
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



O-8



Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Floodplains-Creeks-Rivers
FEMA 100-year floodplain



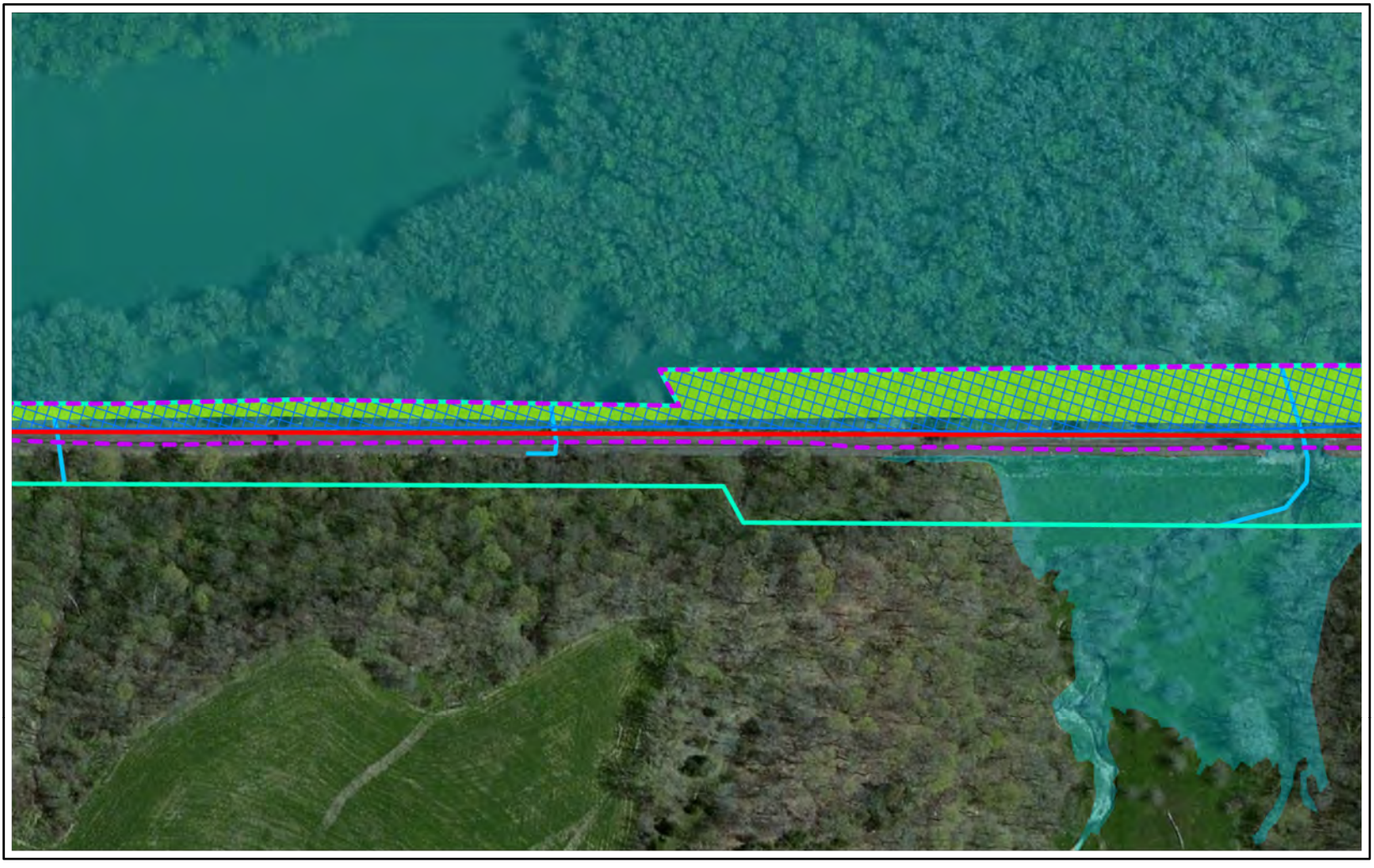
N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-9

Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Page 6 of 9



Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Floodplains-Creeks-Rivers
FEMA 100-year floodplain





0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-10



Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Floodplains-Creeks-Rivers
FEMA 100-year floodplain



N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-11

Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Page 8 of 9



Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Floodplains-Creeks-Rivers
FEMA 100-year floodplain

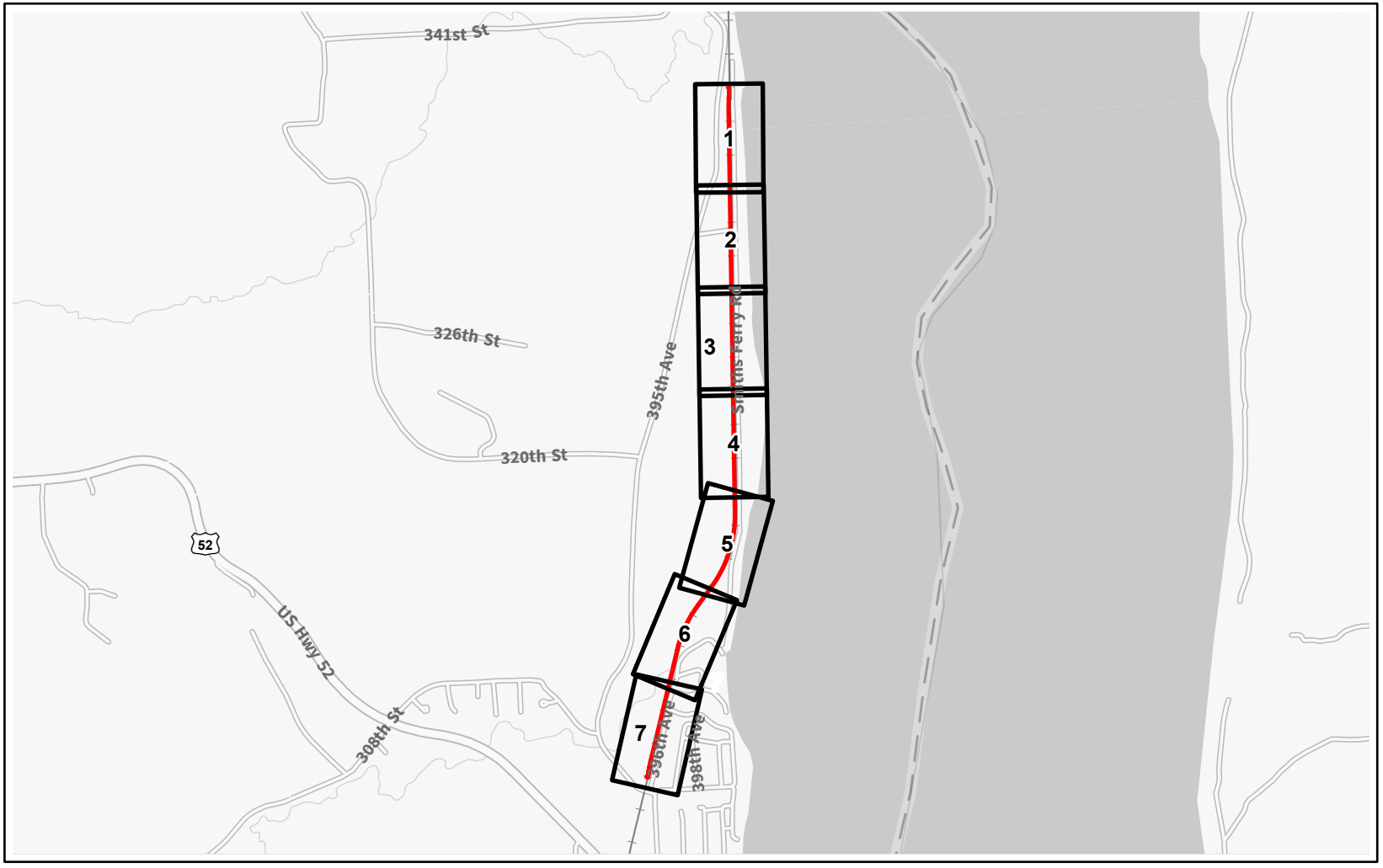


N

0 200 400 Feet

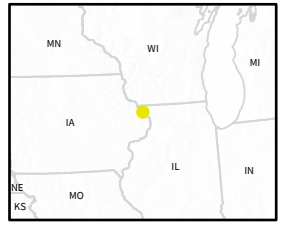
Source: FRA, CP, ArcGIS Online

O-12



Capital Improvement Location

Page Index



N

0 2500 5000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement MP 24 (Bellevue)
Jackson, Iowa | Page Index



Study Area
Capital Improvement Location
Existing Right-of-Way
Residential
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-14





Study Area
Capital Improvement Location
Existing Right-of-Way
Agricultural
Residential
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



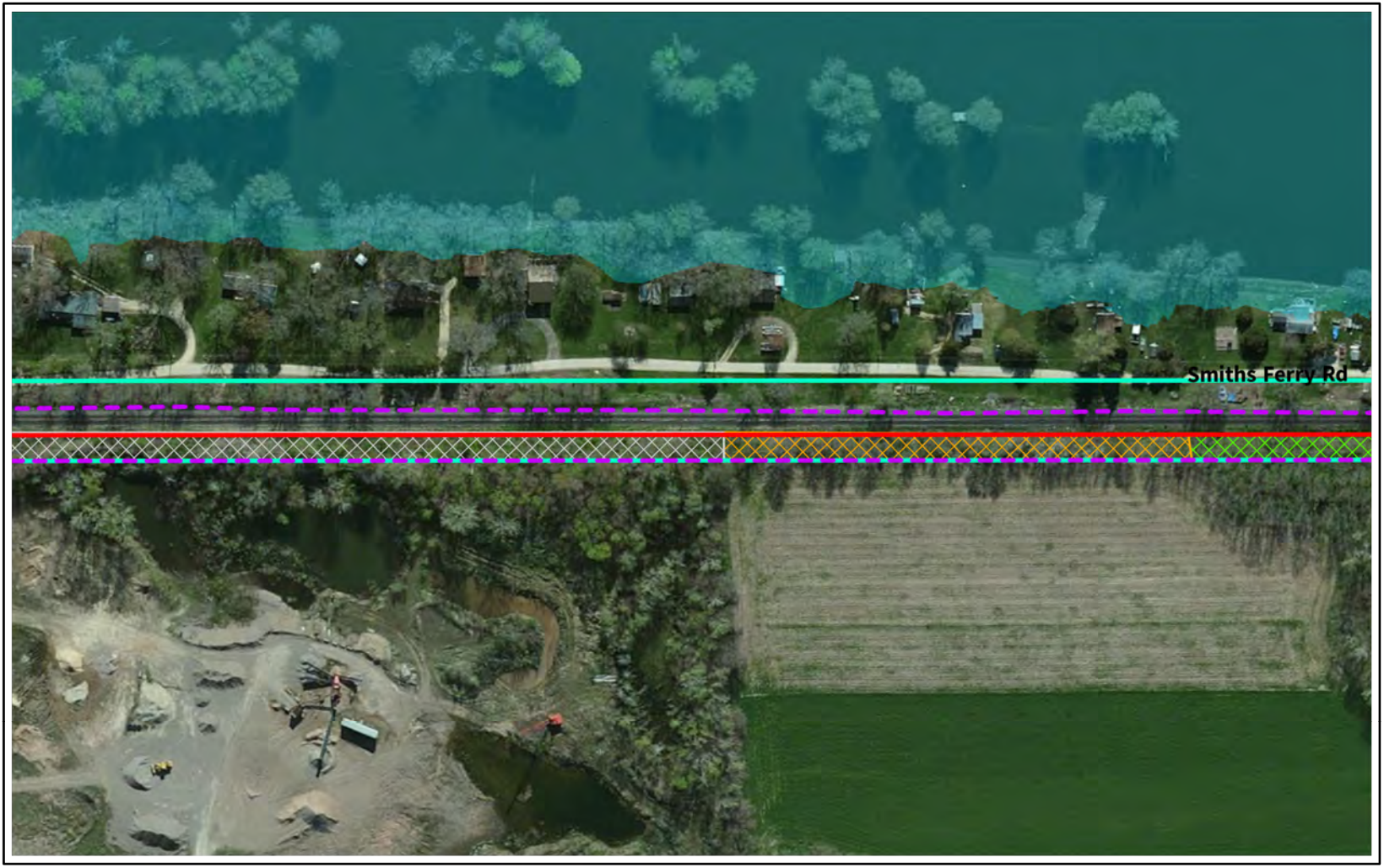


Study Area
Capital Improvement Location
Existing Right-of-Way
Industrial
Agricultural
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area
Capital Improvement Location
Existing Right-of-Way
Industrial
Agricultural
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



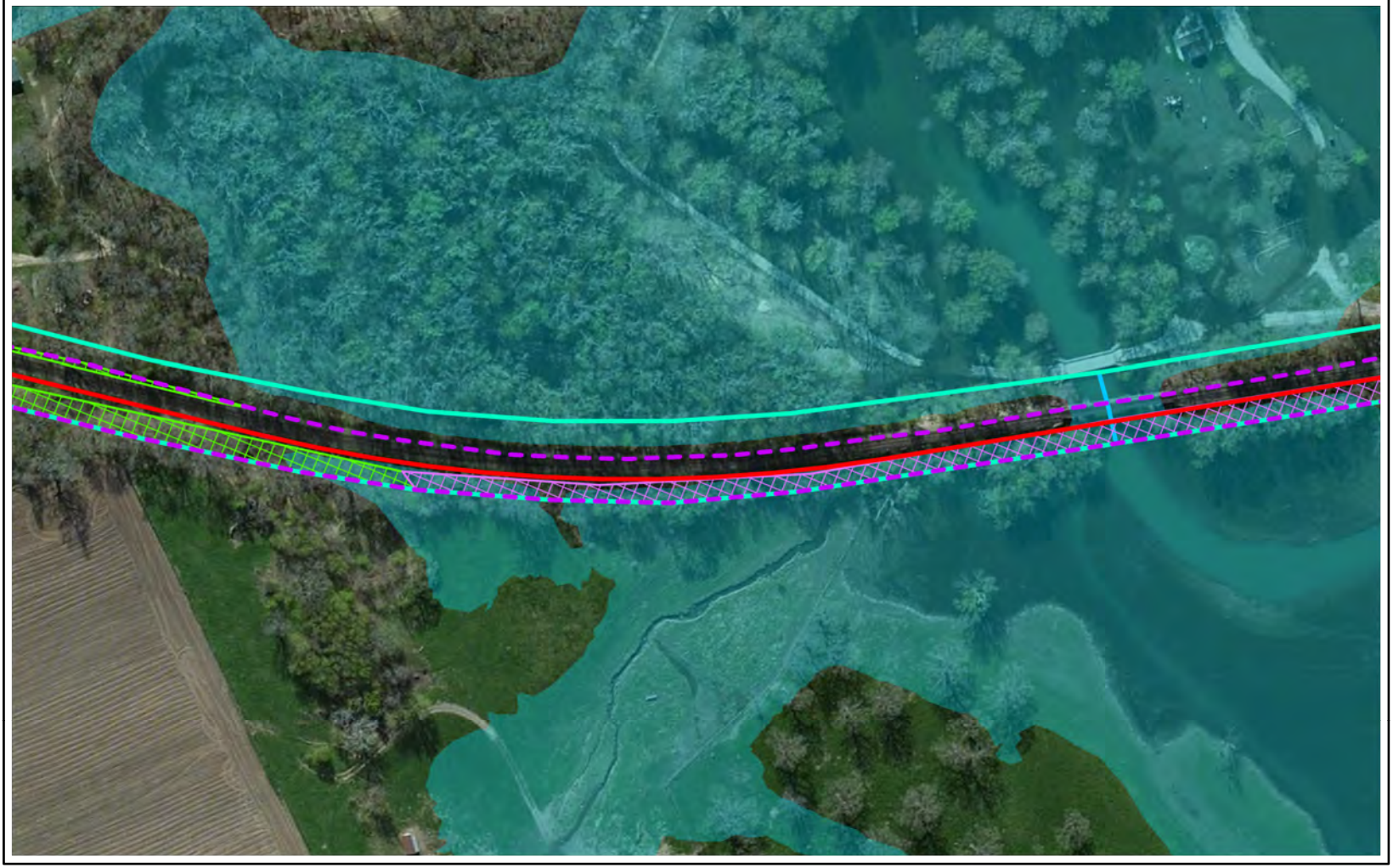


Study Area
Capital Improvement Location
Existing Right-of-Way
Residential
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





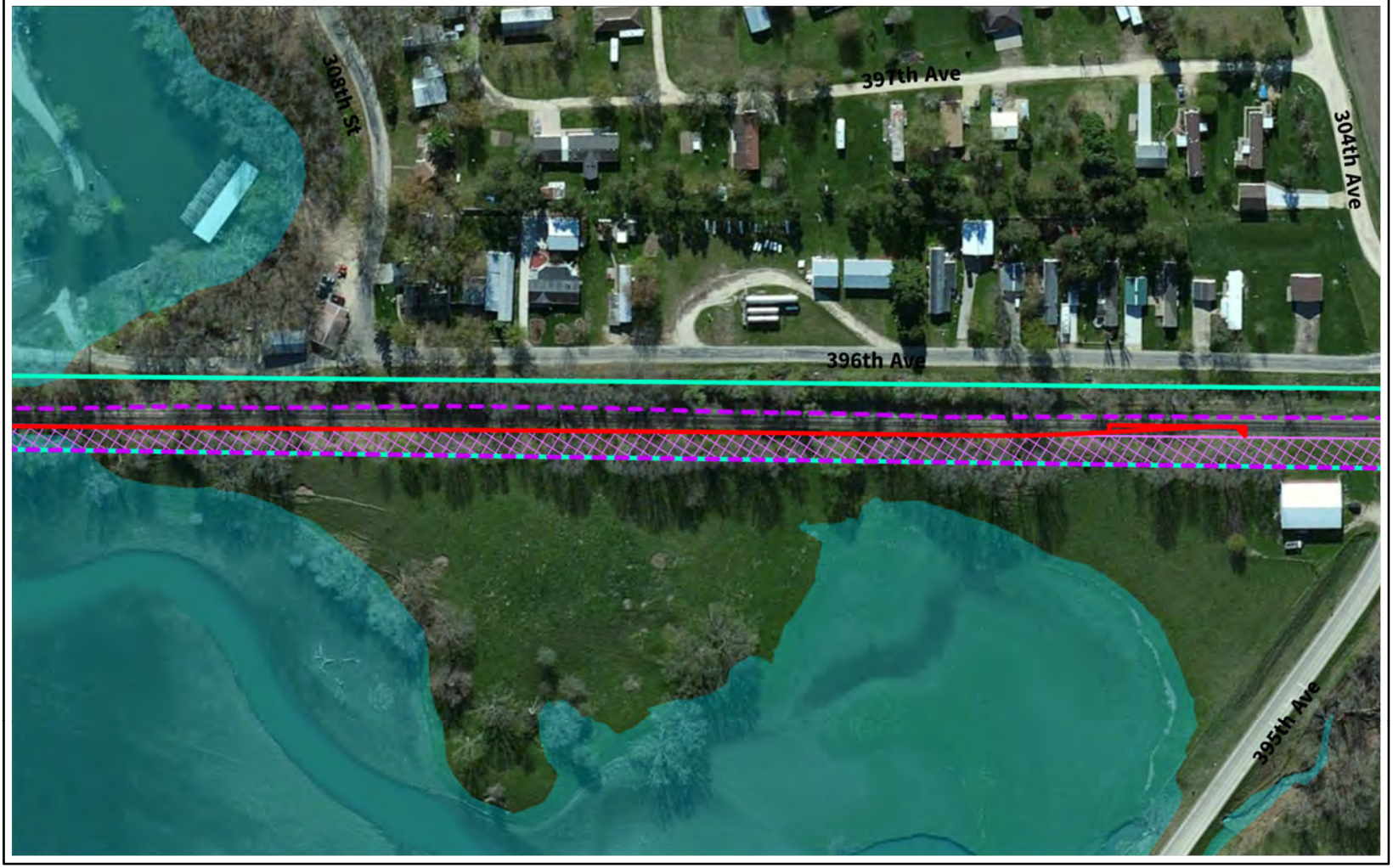
Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Fallow Field/Early Successional Habitat
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

Existing Right-of-Way

Fallow Field/Early Successional Habitat

FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Capital Improvement Location

Page Index

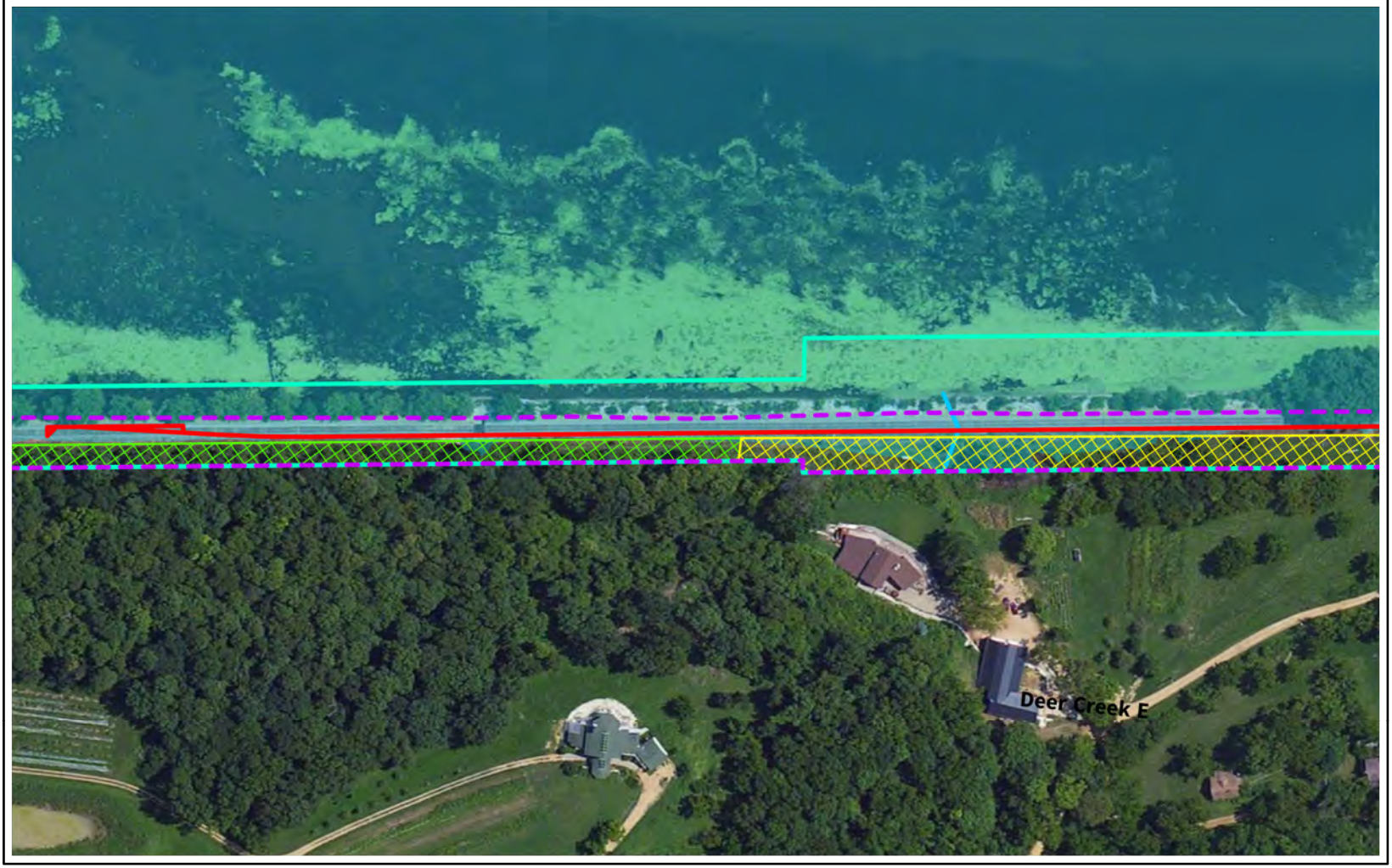


N

0 1500 3000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Deer Creek
Clinton, Iowa | Page Index



Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Residential
Mixed Hardwood Forest
FEMA 100-year floodplain

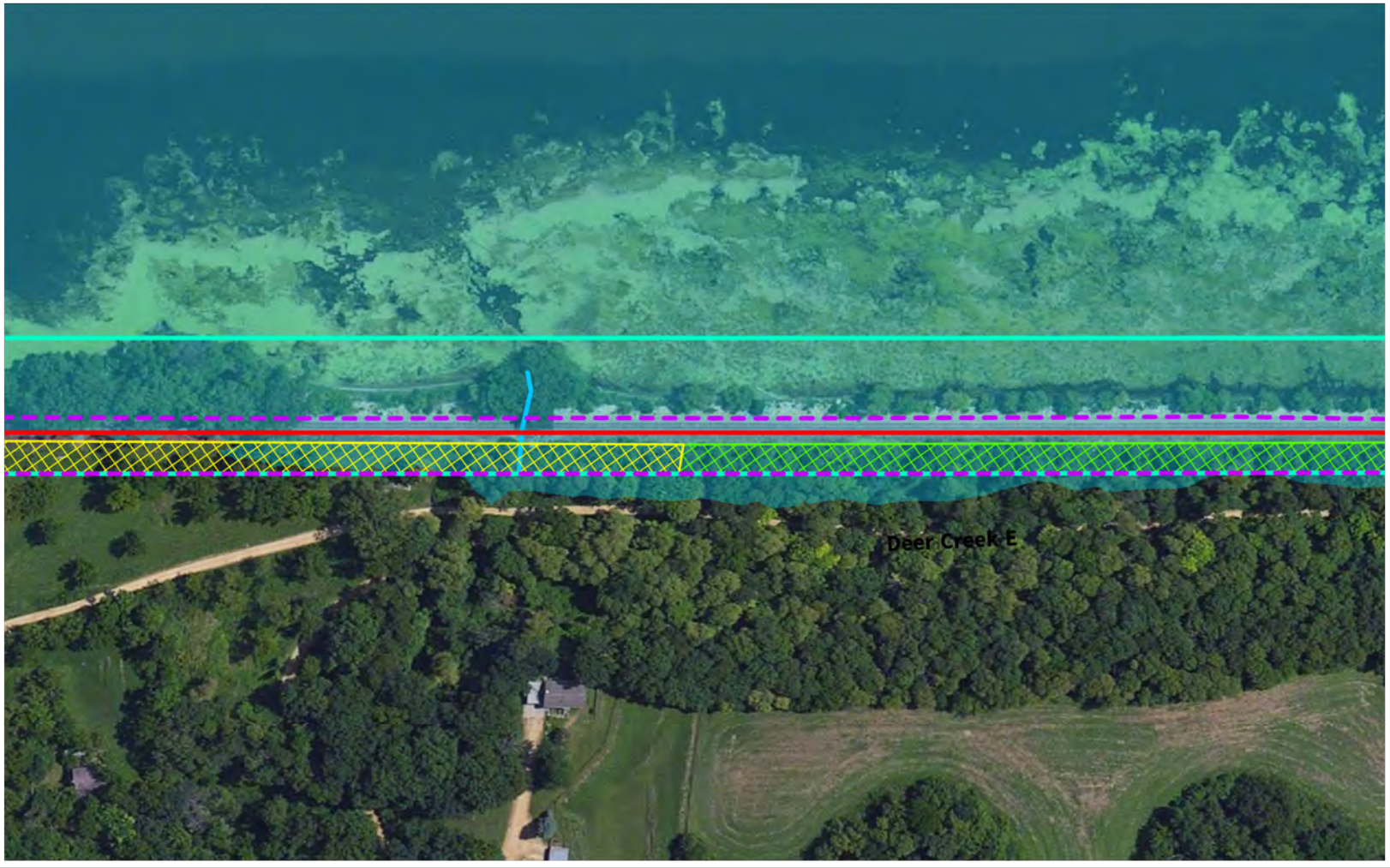
N
0
200
400
Feet

Source: FRA, CP, ArcGIS Online

O-22



Capital Improvement Deer Creek
Clinton, Iowa | Page 1 of 4



Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Residential
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





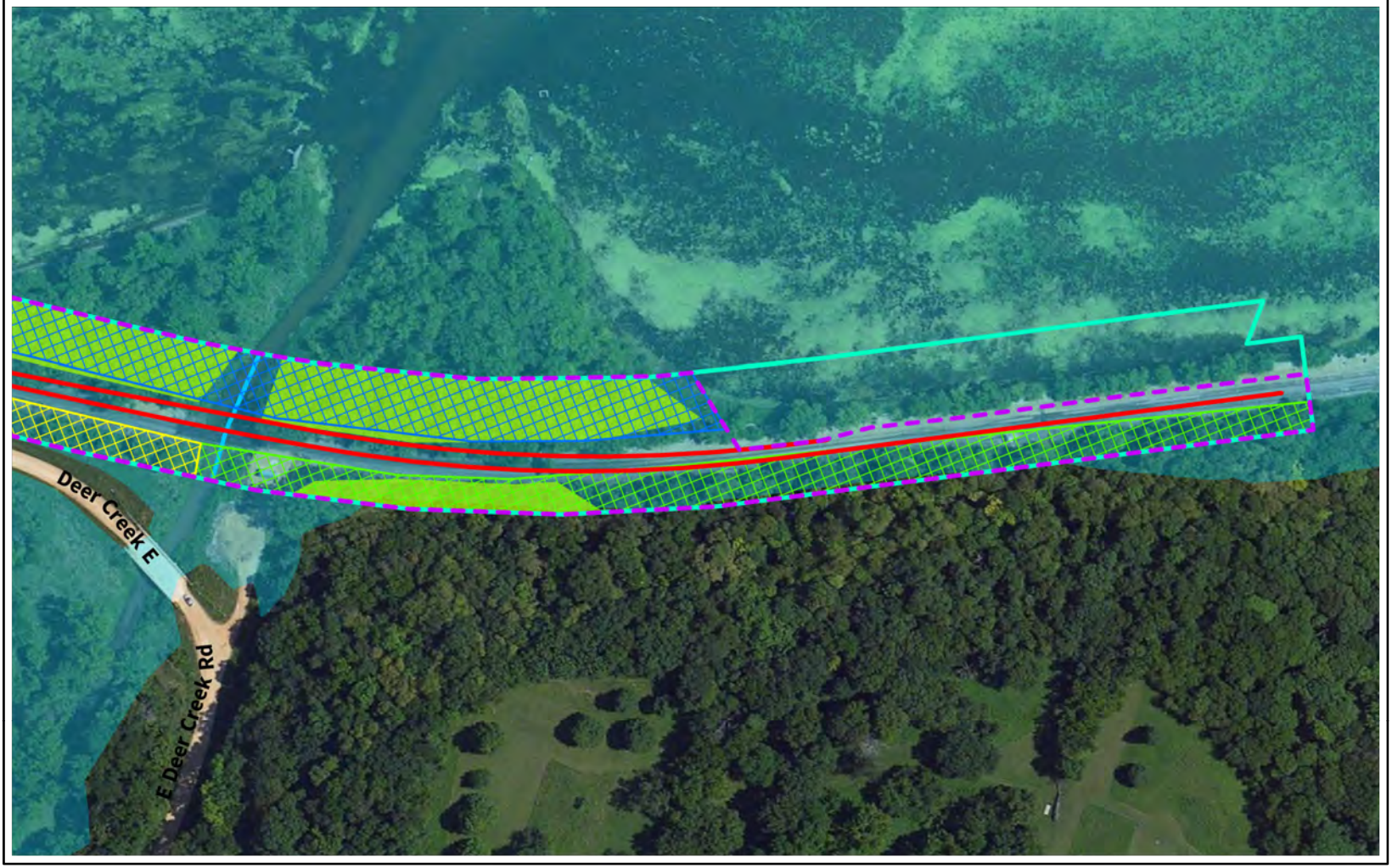
Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Floodplains-Creeks-Rivers
Residential
Mixed Hardwood Forest
FEMA 100-year floodplain

N
0
200
400
Feet

Source: FRA, CP, ArcGIS Online

O-24



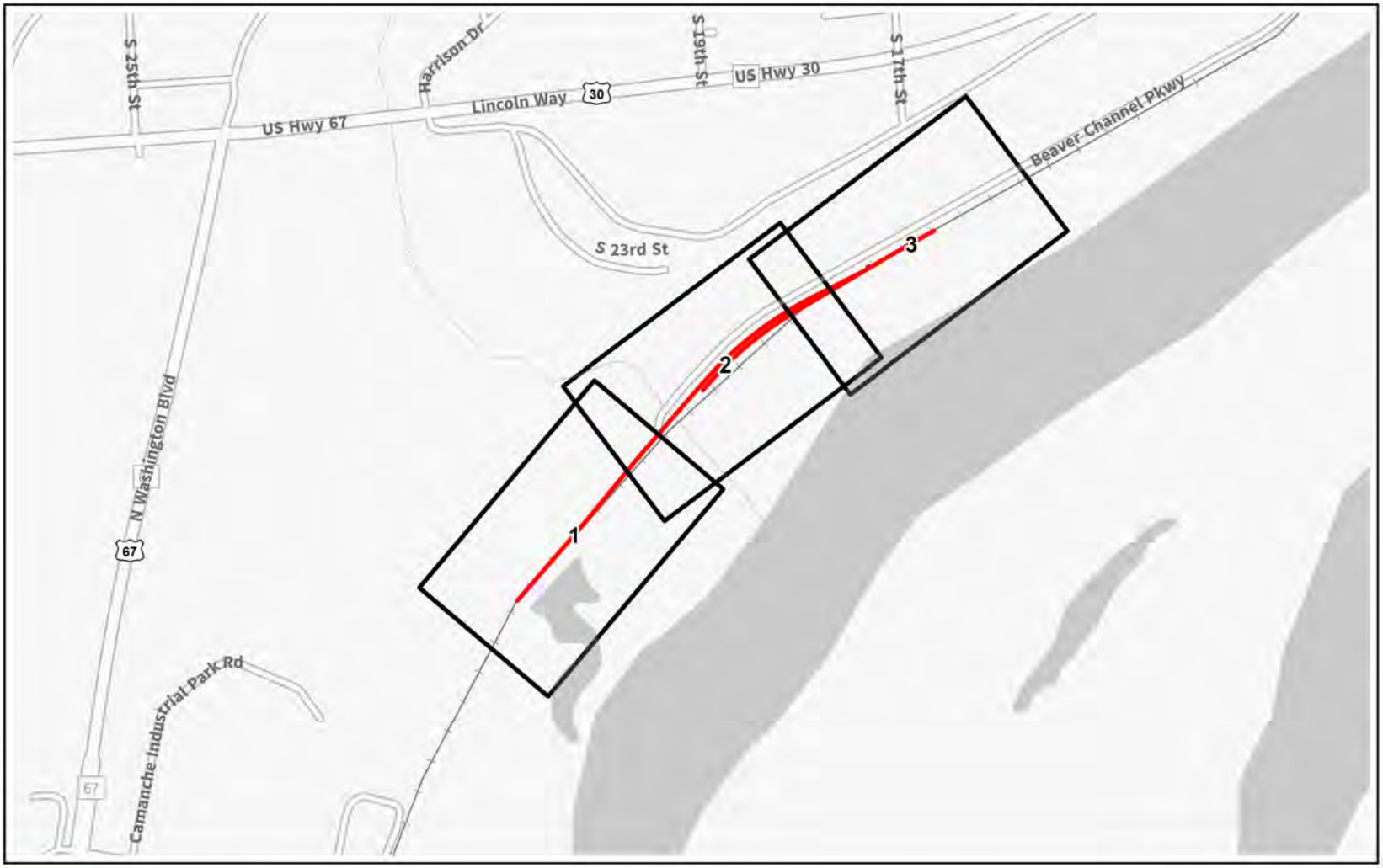


Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Floodplains-Creeks-Rivers
Residential
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Capital Improvement Location

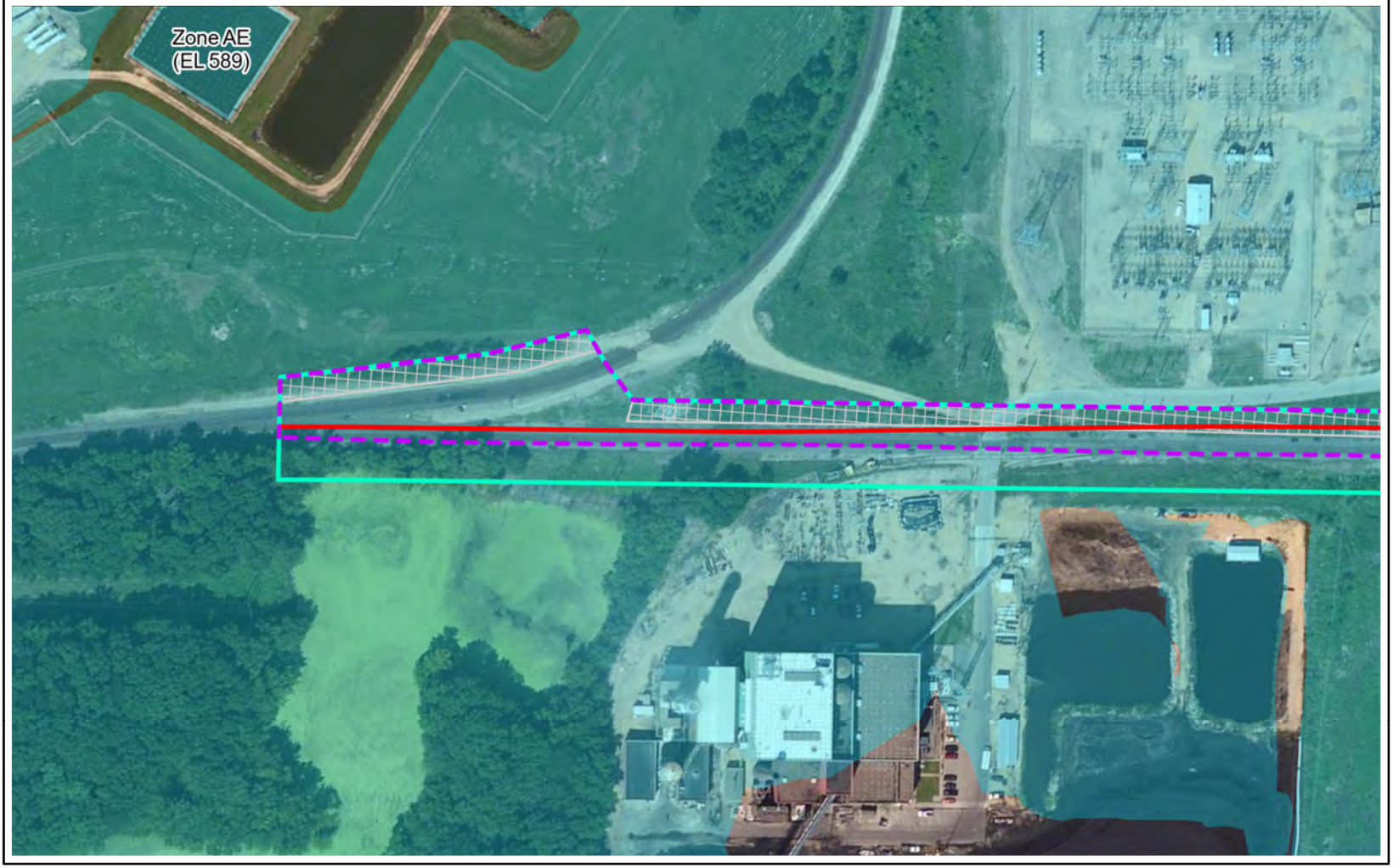
Page Index

0 1000 2000 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Camanche
Clinton, Iowa | Page Index



Study Area

Capital Improvement Location

Existing Right-of-Way

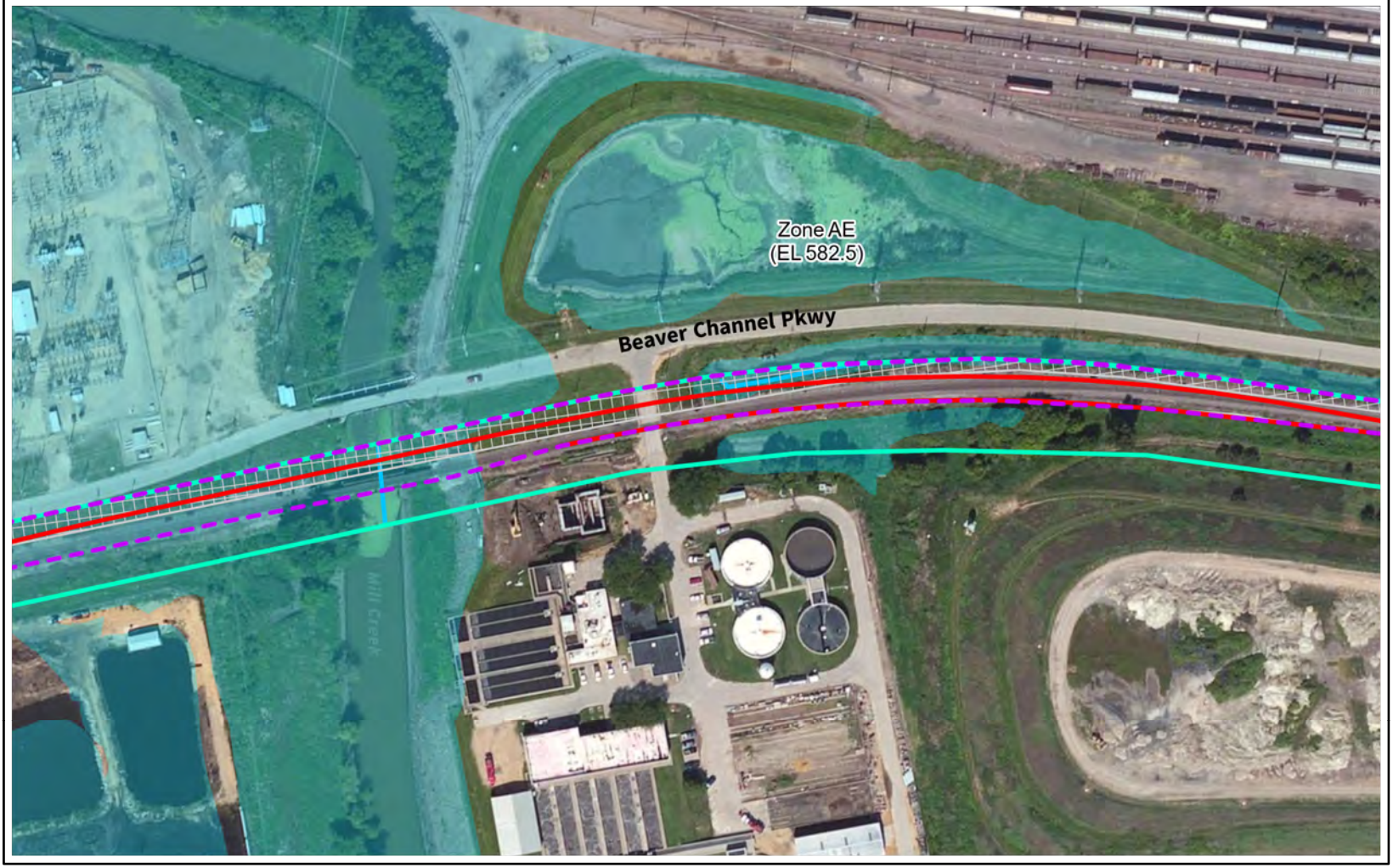
Industrial

FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Industrial
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-28





Study Area

Capital Improvement Location

Existing Right-of-Way

Industrial

FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Capital Improvement Location

Page Index

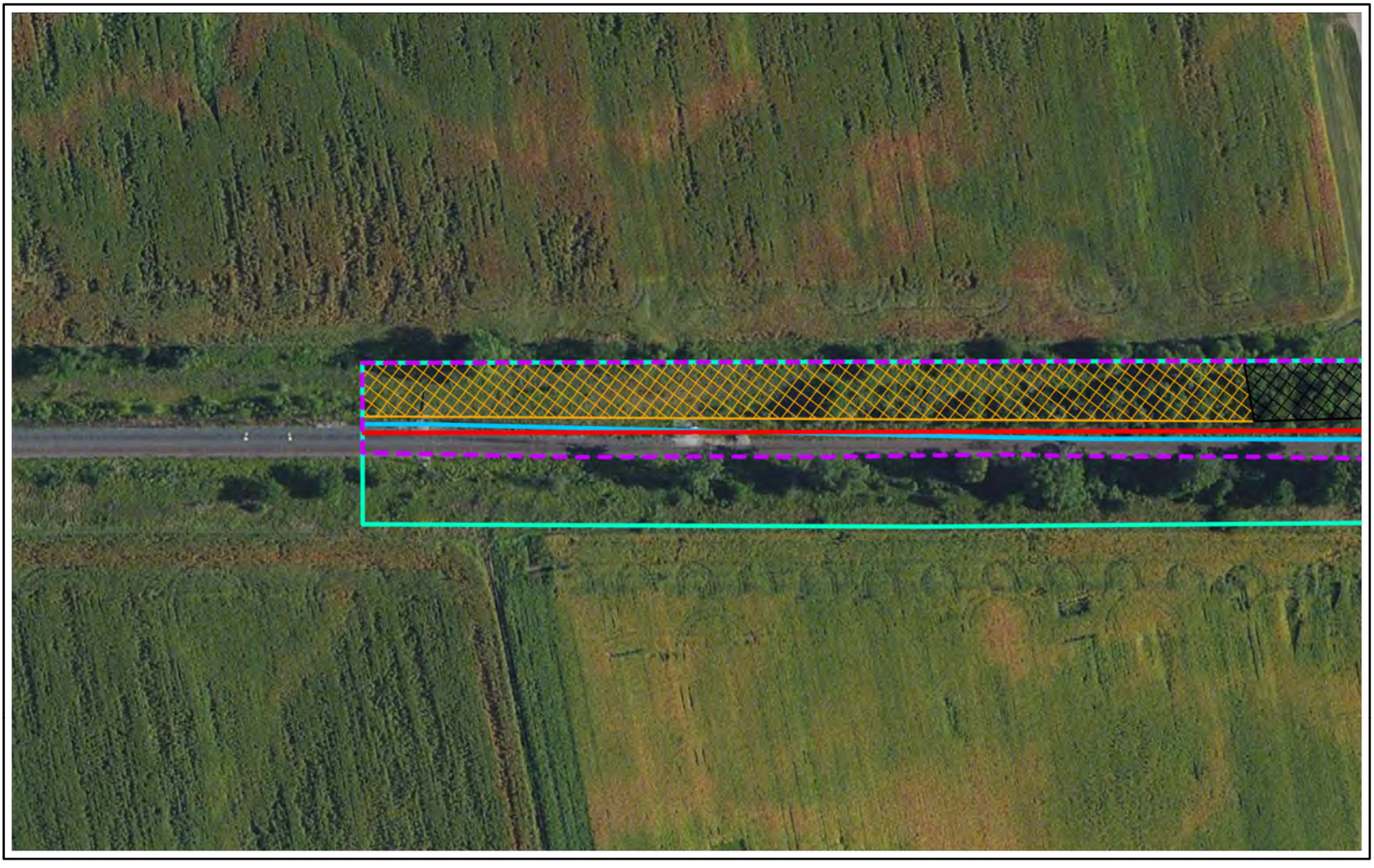


N

0 500 1000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Letts
Louisa, Iowa | Page Index



Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Maintained Roadway ROW
Agricultural

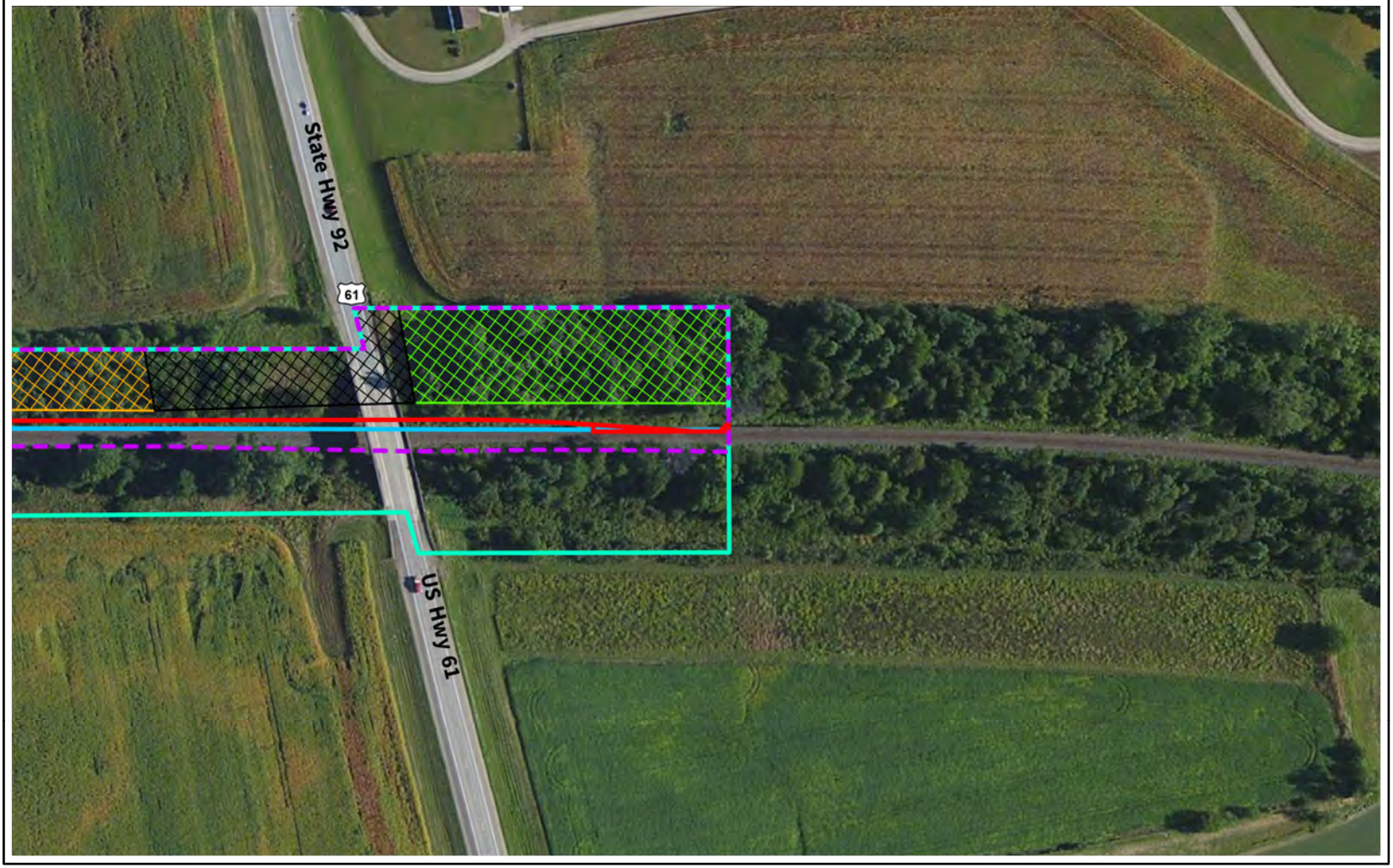
N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-31





Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Maintained Roadway ROW
Agricultural
Mixed Hardwood Forest

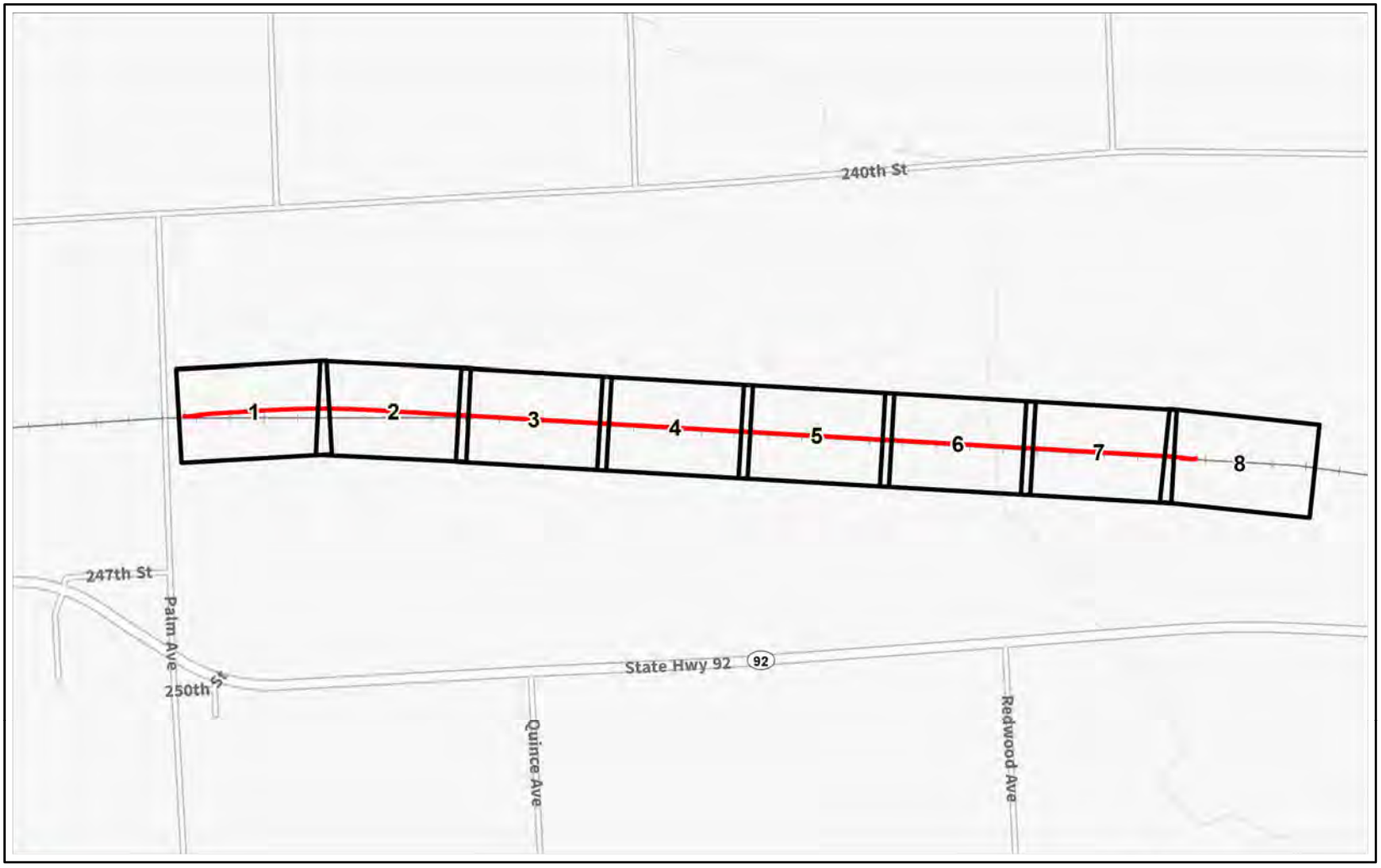
N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-32





Capital Improvement Location

Page Index

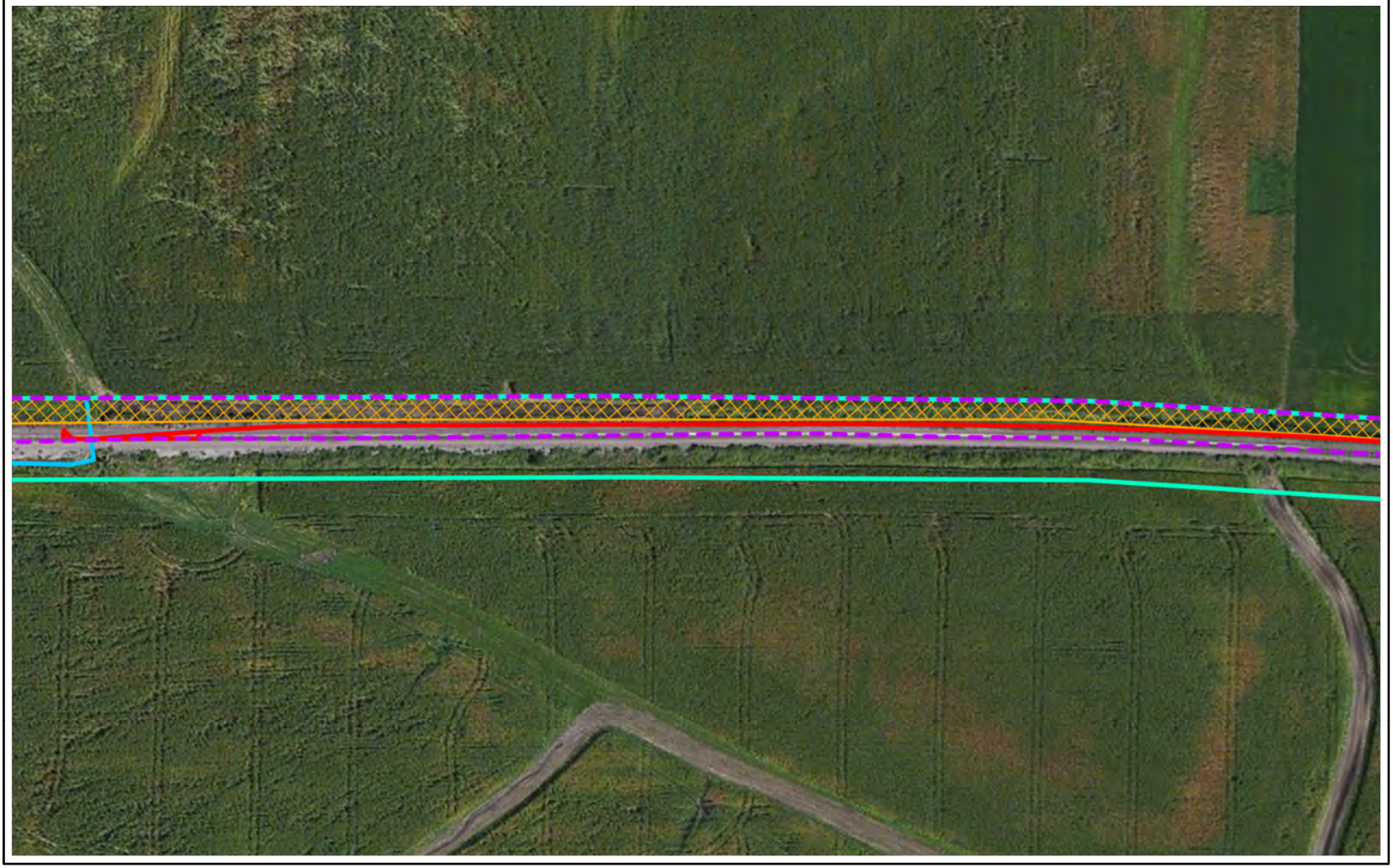


N

0 1800 3600 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement MP 255 (Washington)
Washington, Iowa | Page Index



Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Agricultural

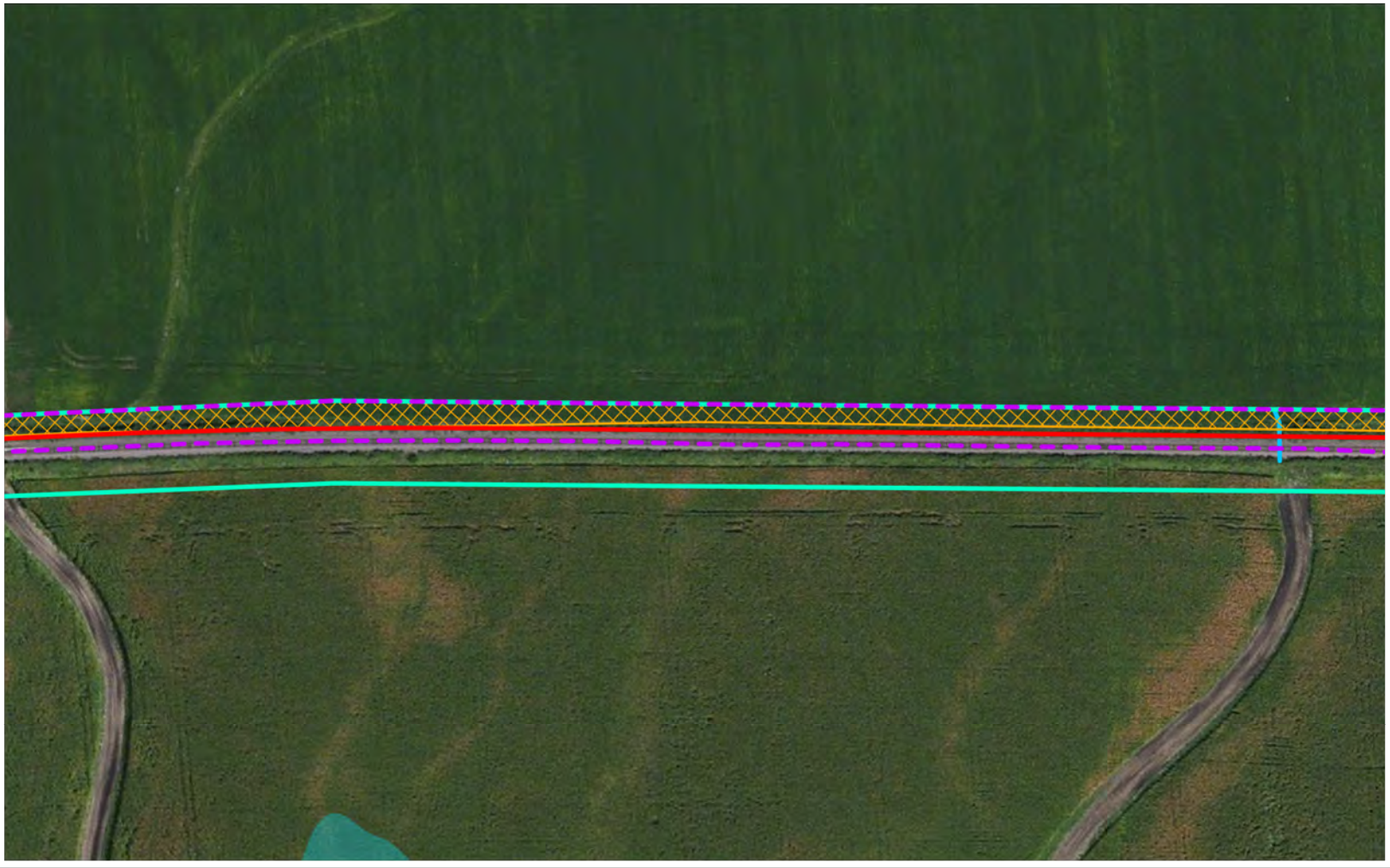


N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-34



Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Agricultural
FEMA 100-year floodplain

N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-35





Study Area

Capital Improvement Location

Existing Right-of-Way

Agricultural



N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-36



Study Area

Capital Improvement Location

Existing Right-of-Way

Agricultural

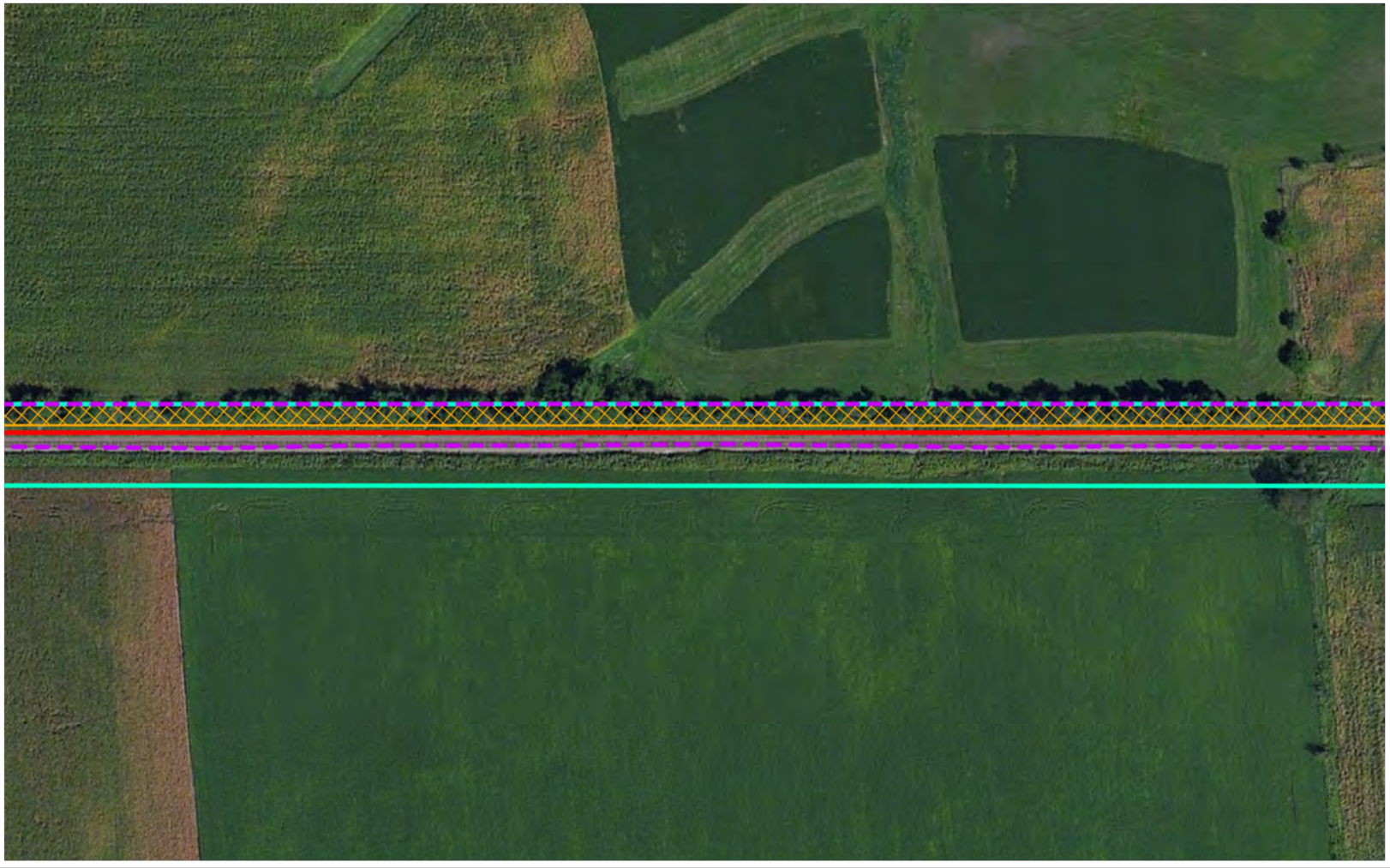
N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-37





Study Area

Capital Improvement Location

Existing Right-of-Way

Agricultural

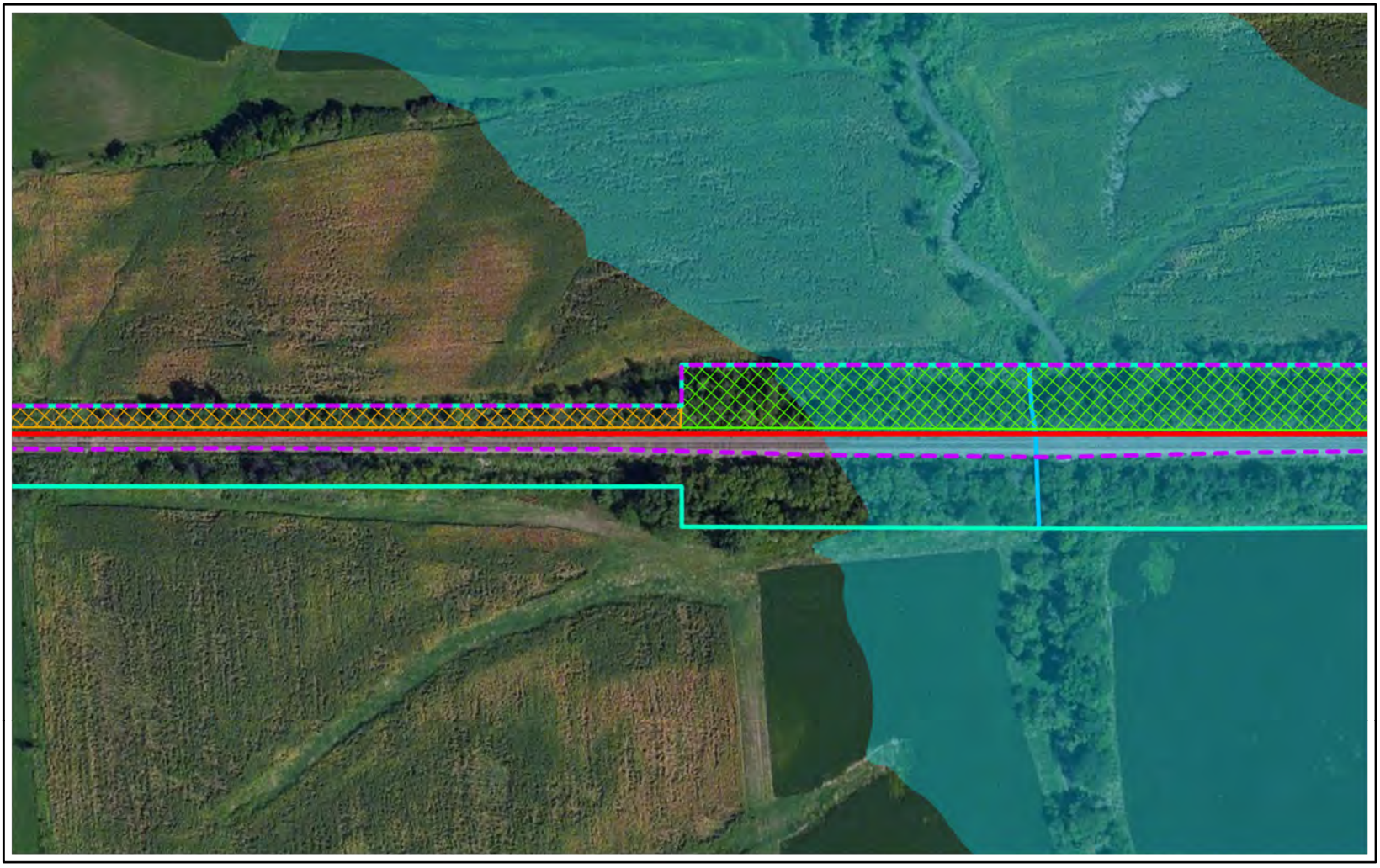


N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-38



Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Agricultural
Mixed Hardwood Forest
FEMA 100-year floodplain

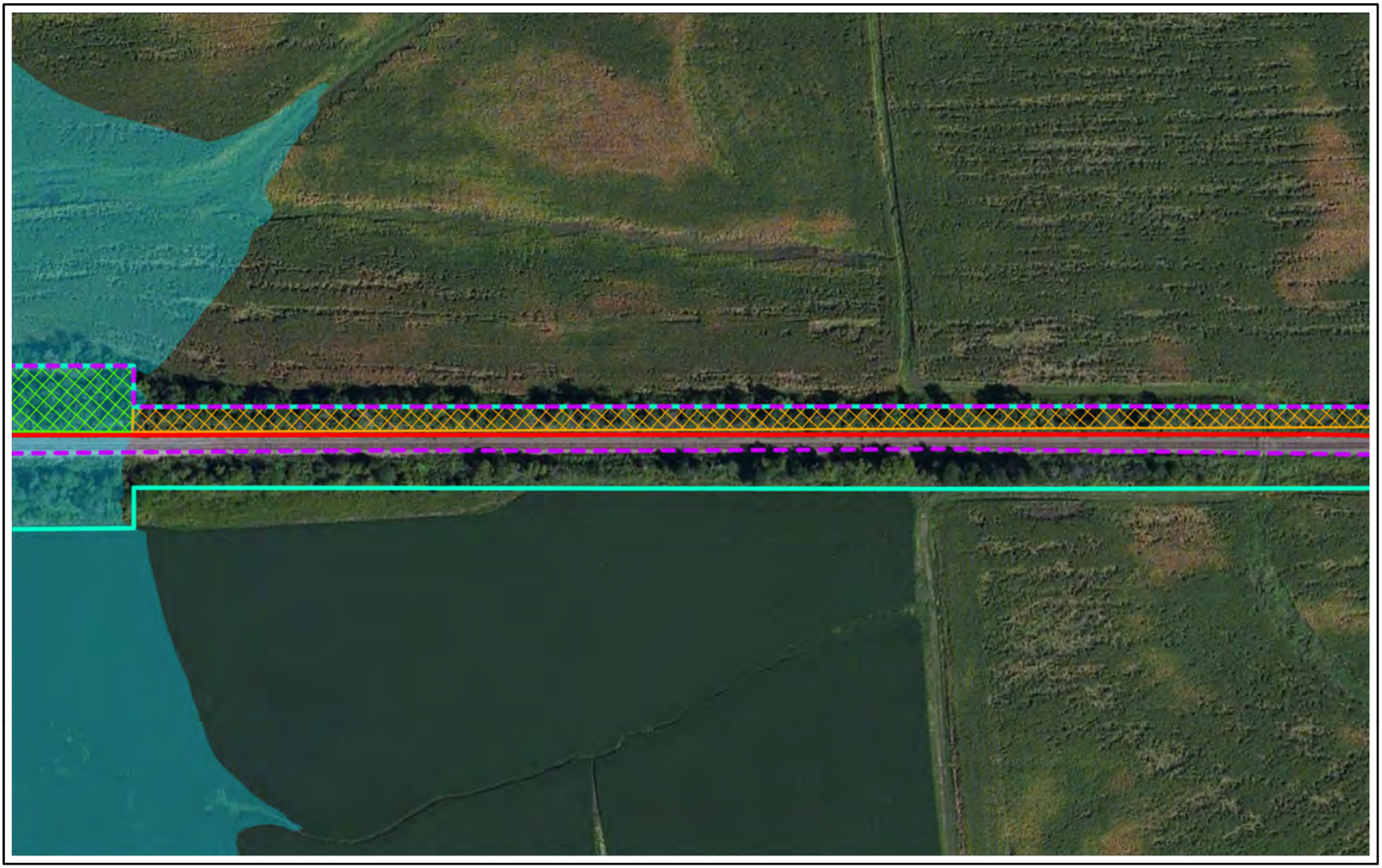


N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-39



Study Area
Capital Improvement Location
Existing Right-of-Way
Agricultural
Mixed Hardwood Forest
FEMA 100-year floodplain



N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-40



Study Area

Capital Improvement Location

Existing Right-of-Way

Agricultural

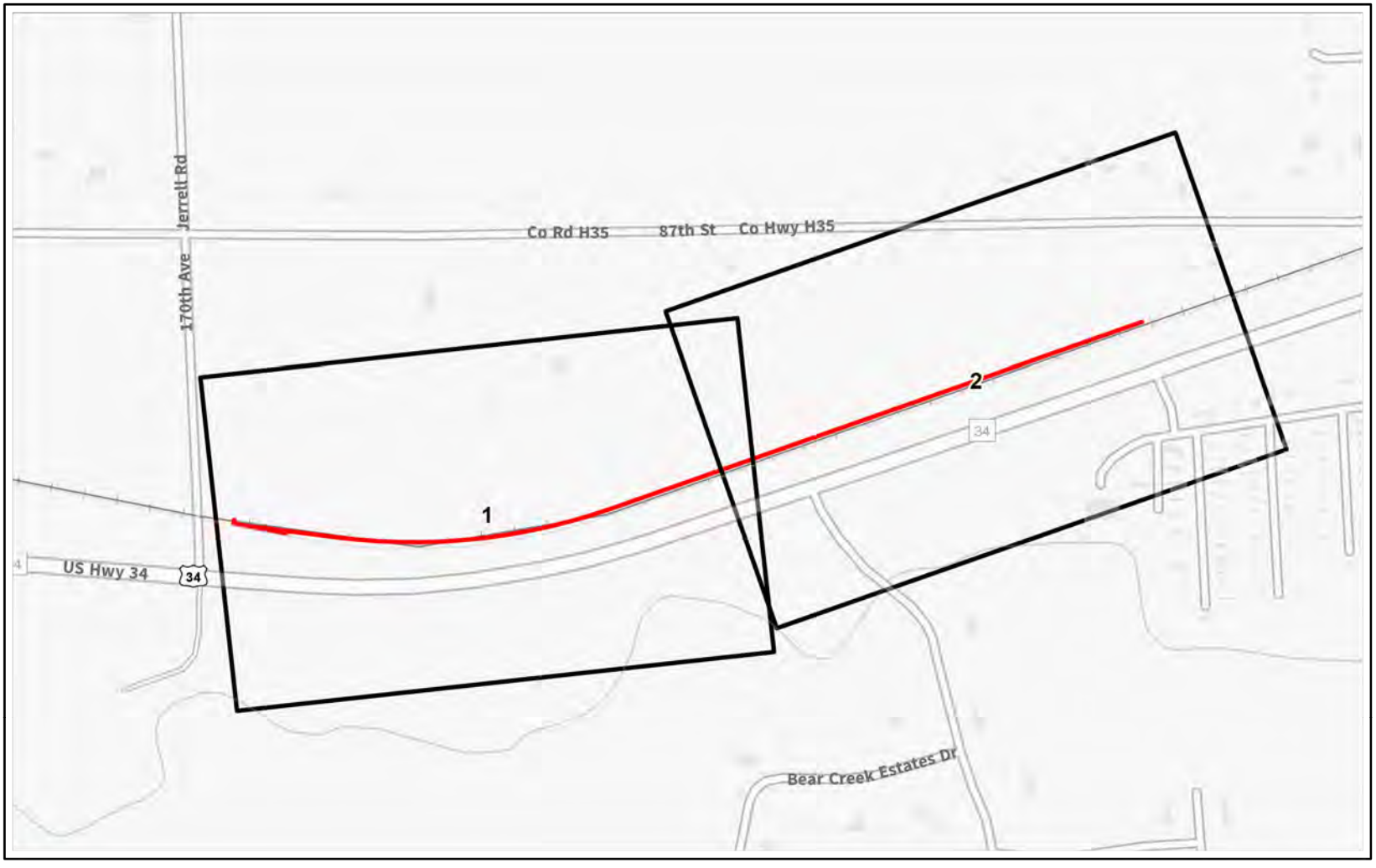
N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-41





Capital Improvement Location

Page Index

0 500 1000 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Ottumwa
Wapello, Iowa | Page Index



Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Industrial
Mixed Hardwood Forest
FEMA 100-year floodplain

N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-43





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Industrial
Agricultural
Mixed Hardwood Forest
FEMA 100-year floodplain

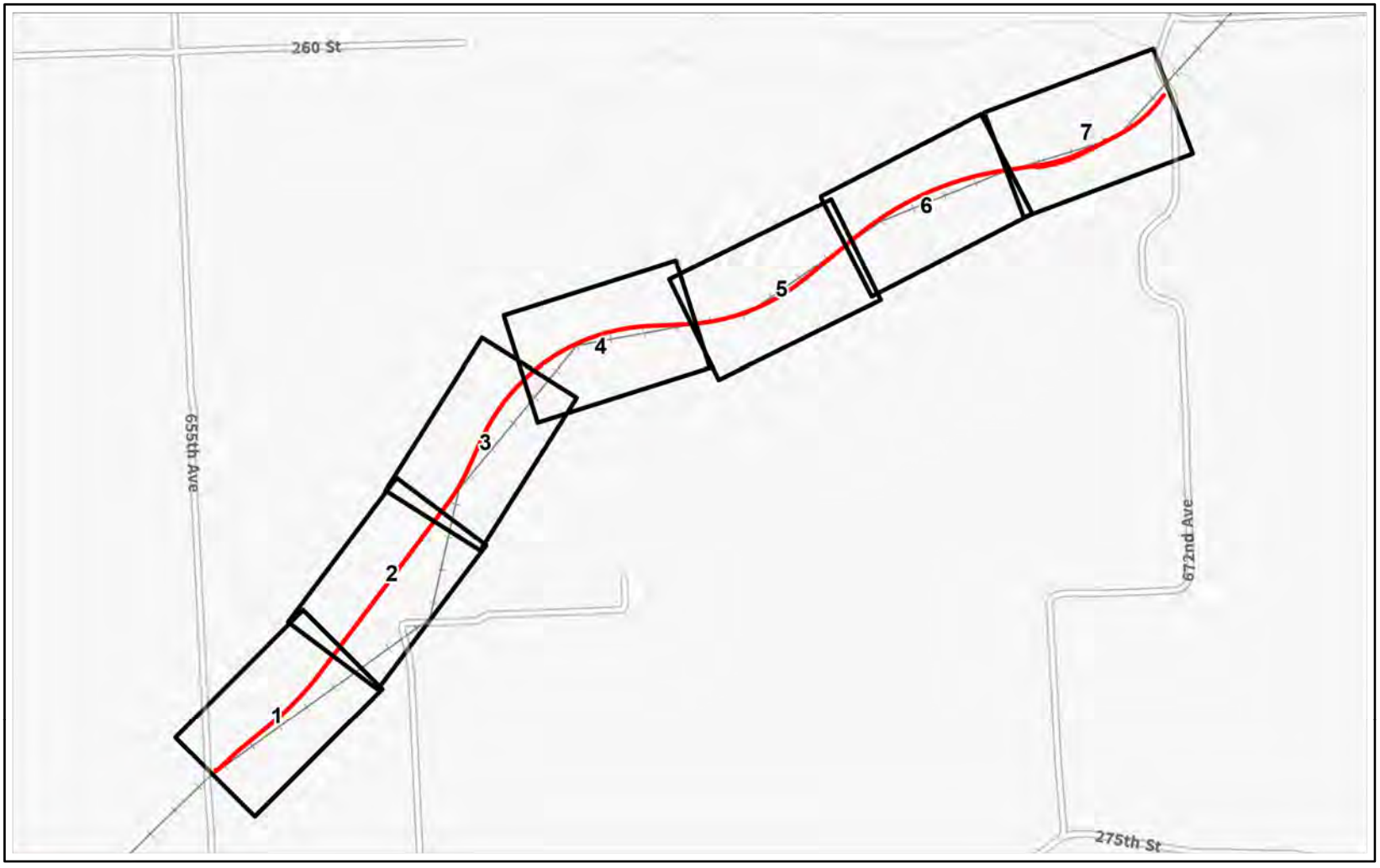
N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-44





Capital Improvement Location

Page Index

N

0 1500 3000 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Moravia
Monroe, Iowa | Page Index



Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Agricultural

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-46





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Agricultural



0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-47



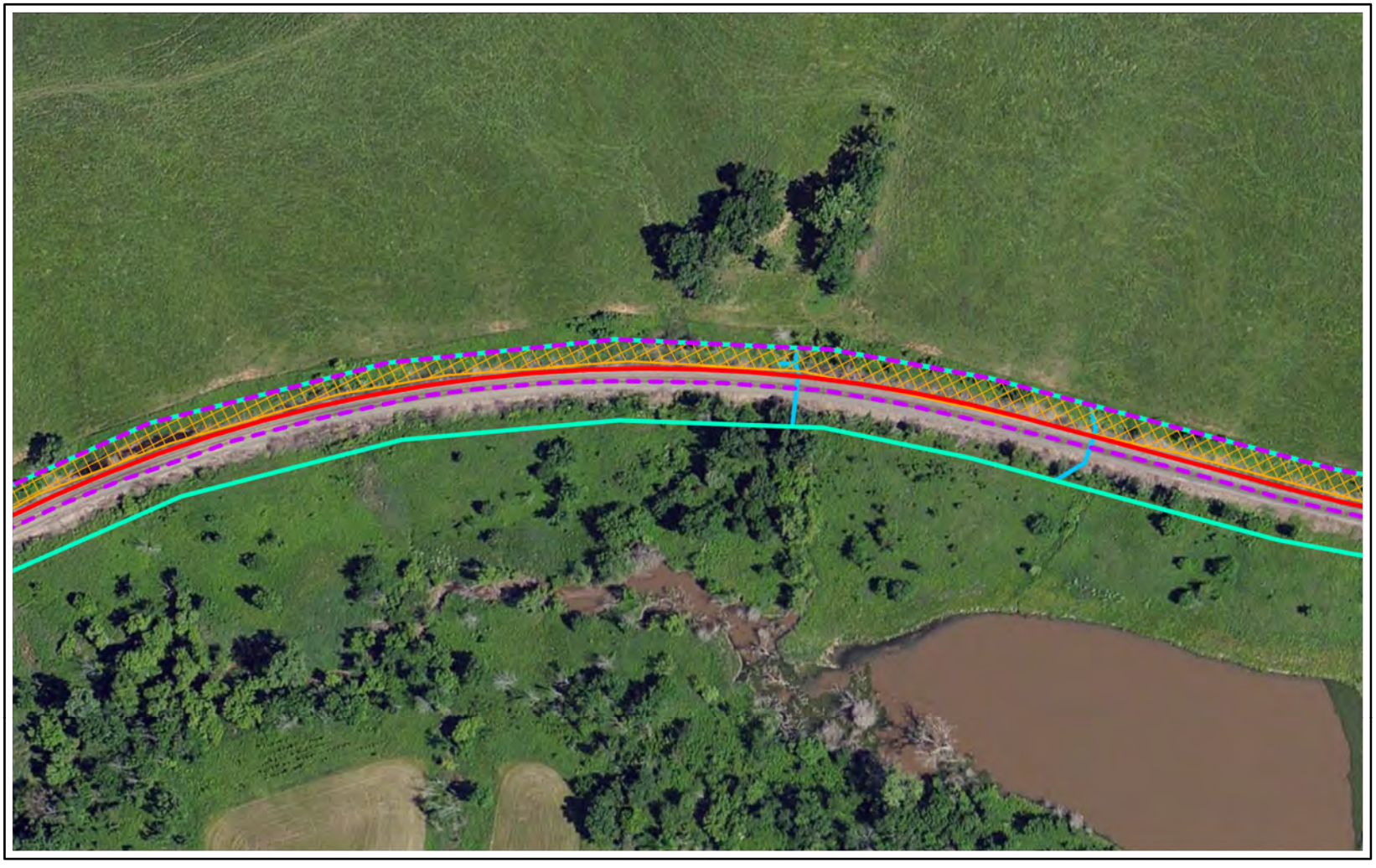
Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Agricultural

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-48





Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Agricultural



0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-49



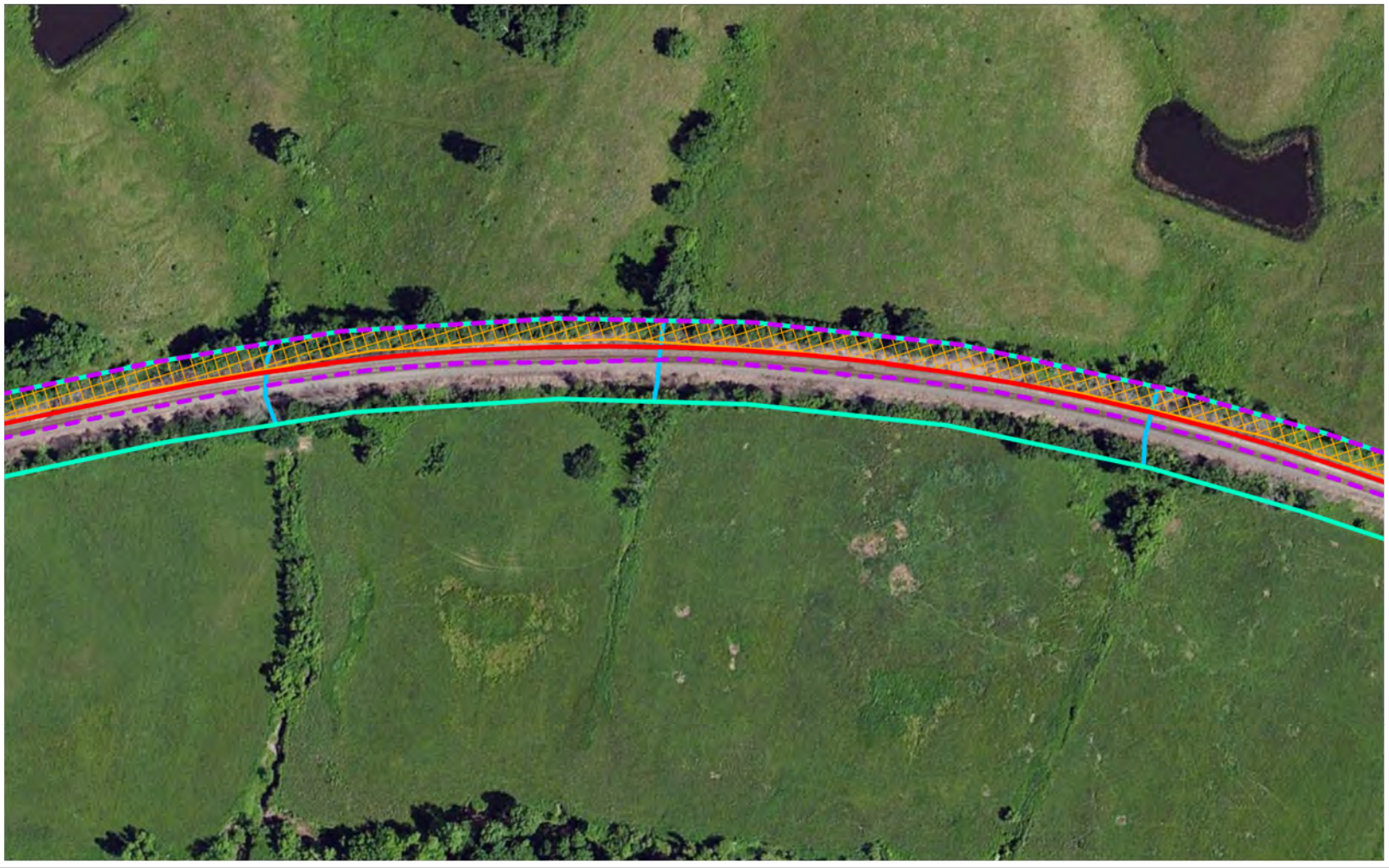
Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Agricultural

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-50





Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Agricultural

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-51





Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Agricultural
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-52





Capital Improvement Location

Page Index



N

0 800 1600 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Newtown
Sullivan, Missouri | Page Index

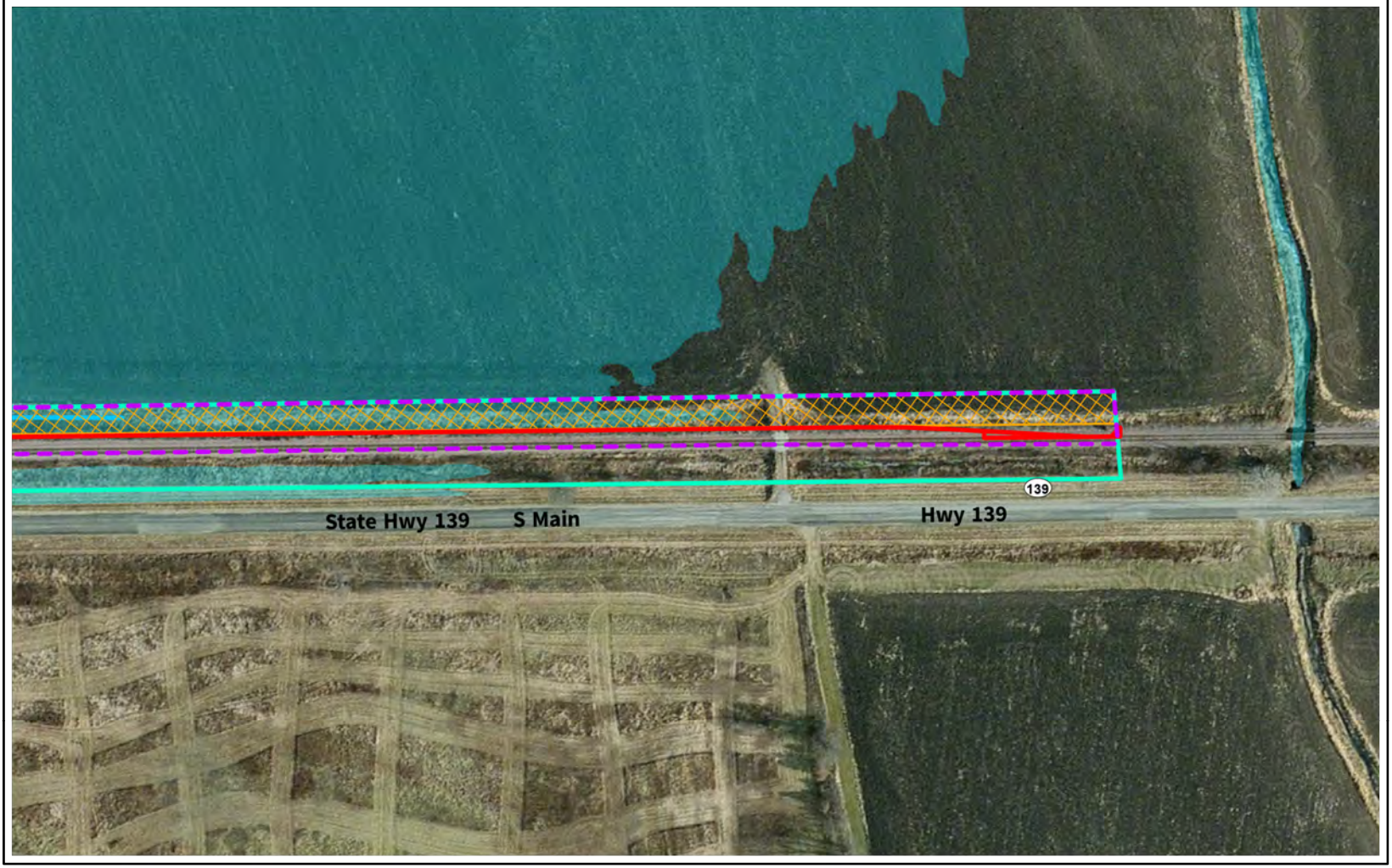


Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Agricultural
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online



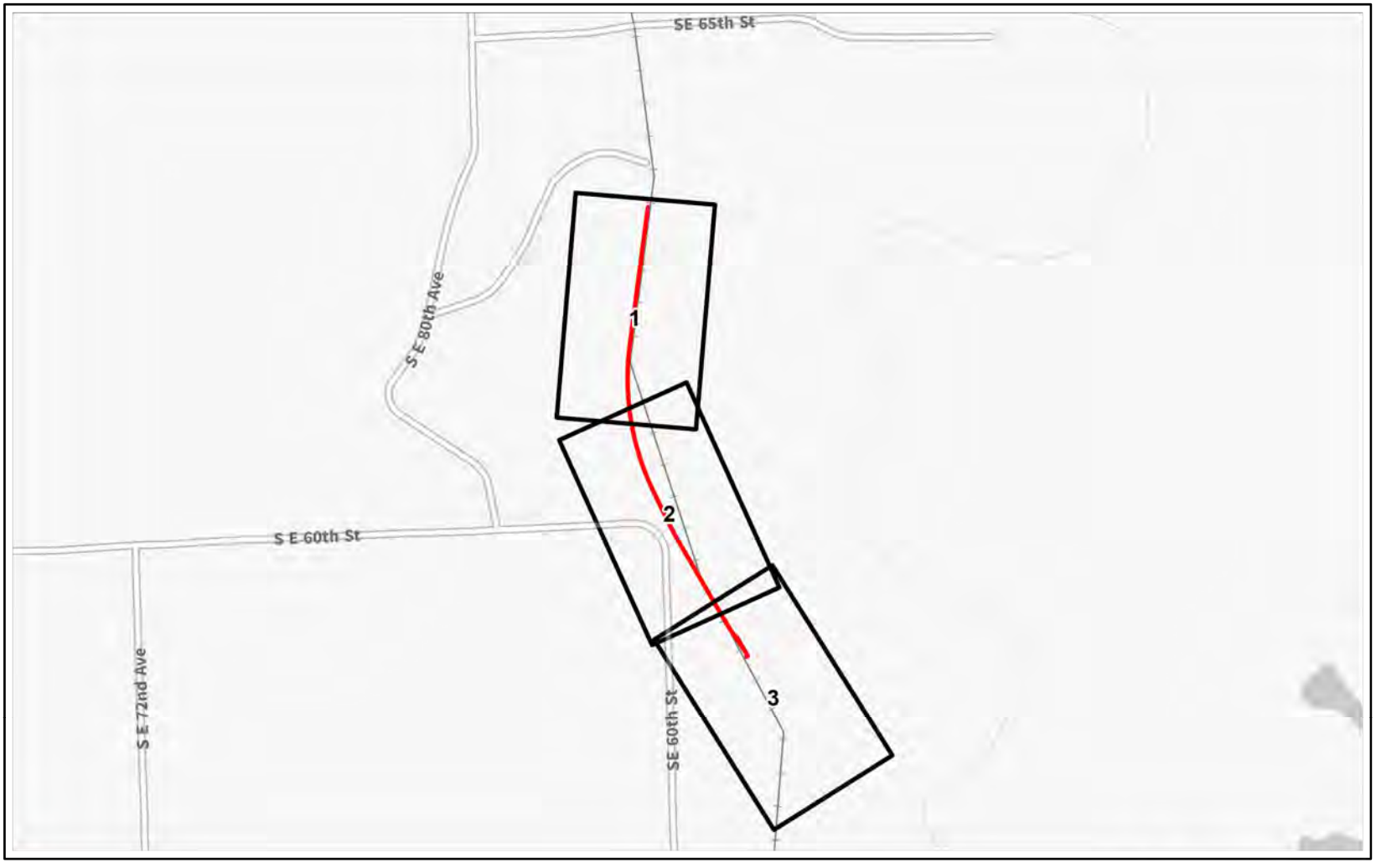


Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Agricultural
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Capital Improvement Location

Page Index

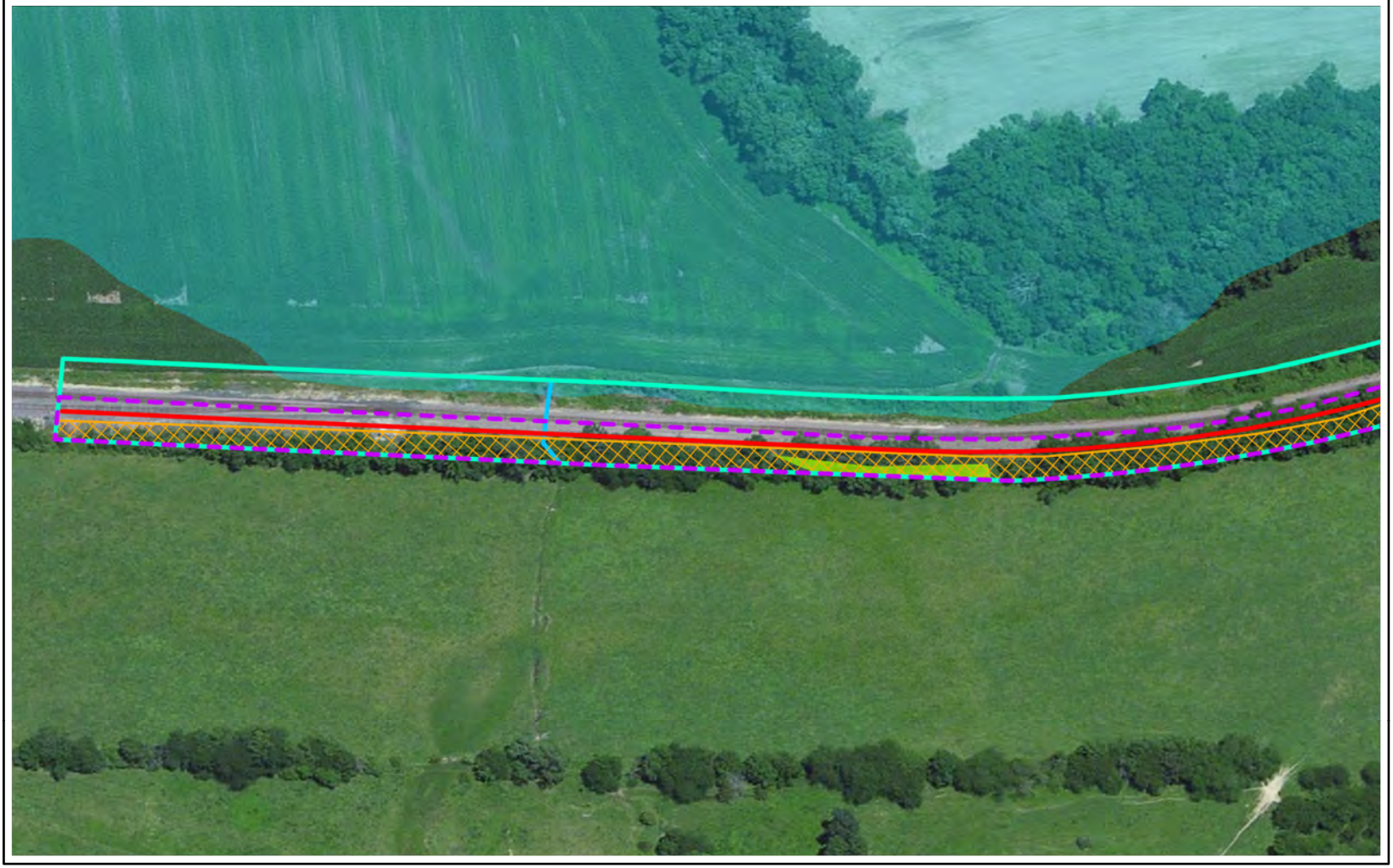
N

0 1200 2400 Feet

Source: FRA, CP, ArcGIS Online



Capital Improvement Laredo
Grundy, Missouri | Page Index



Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Agricultural
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-57





Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Agricultural
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-58





Study Area

Capital Improvement Location

Existing Right-of-Way

Agricultural

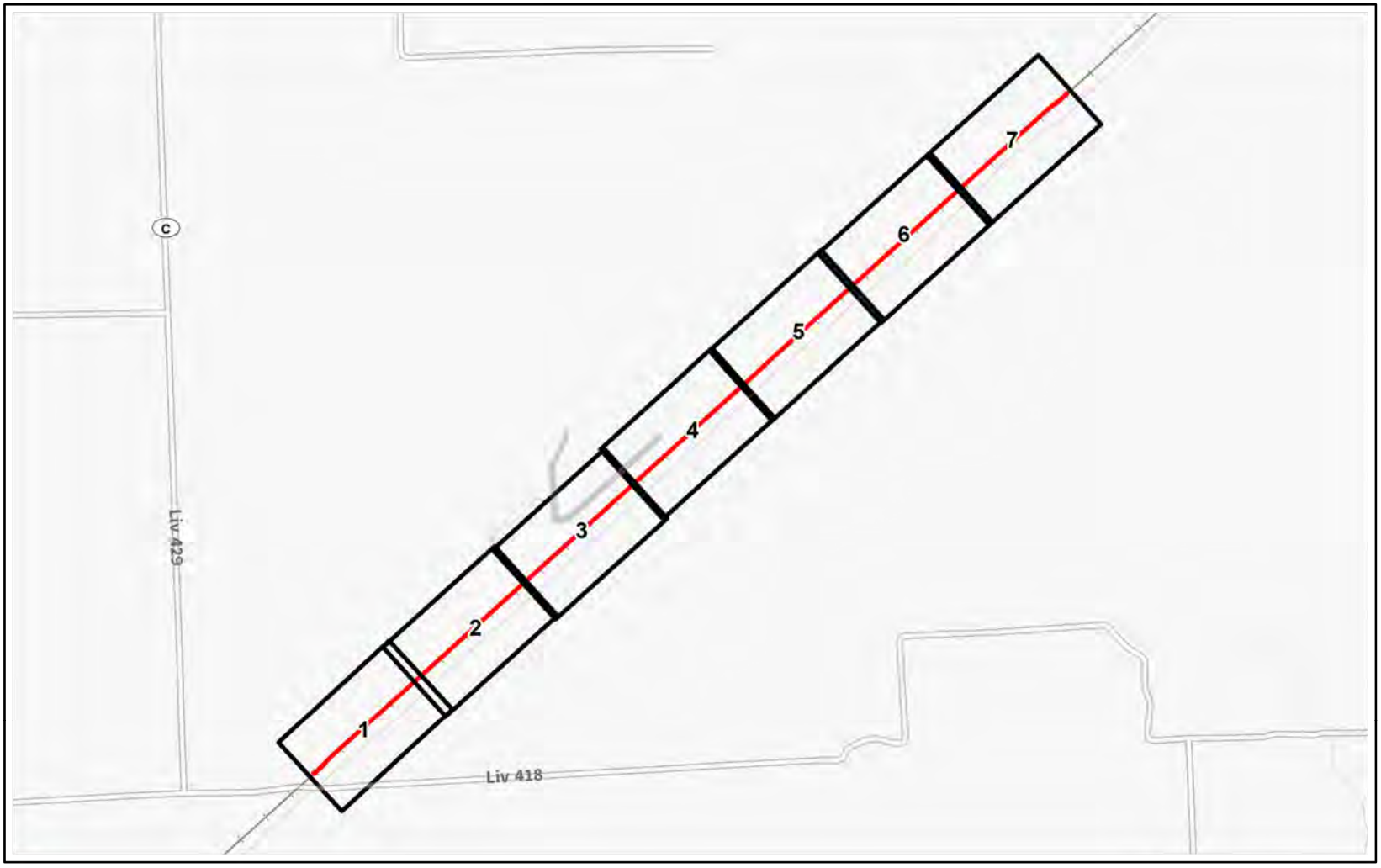
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-59





Capital Improvement Location

Page Index

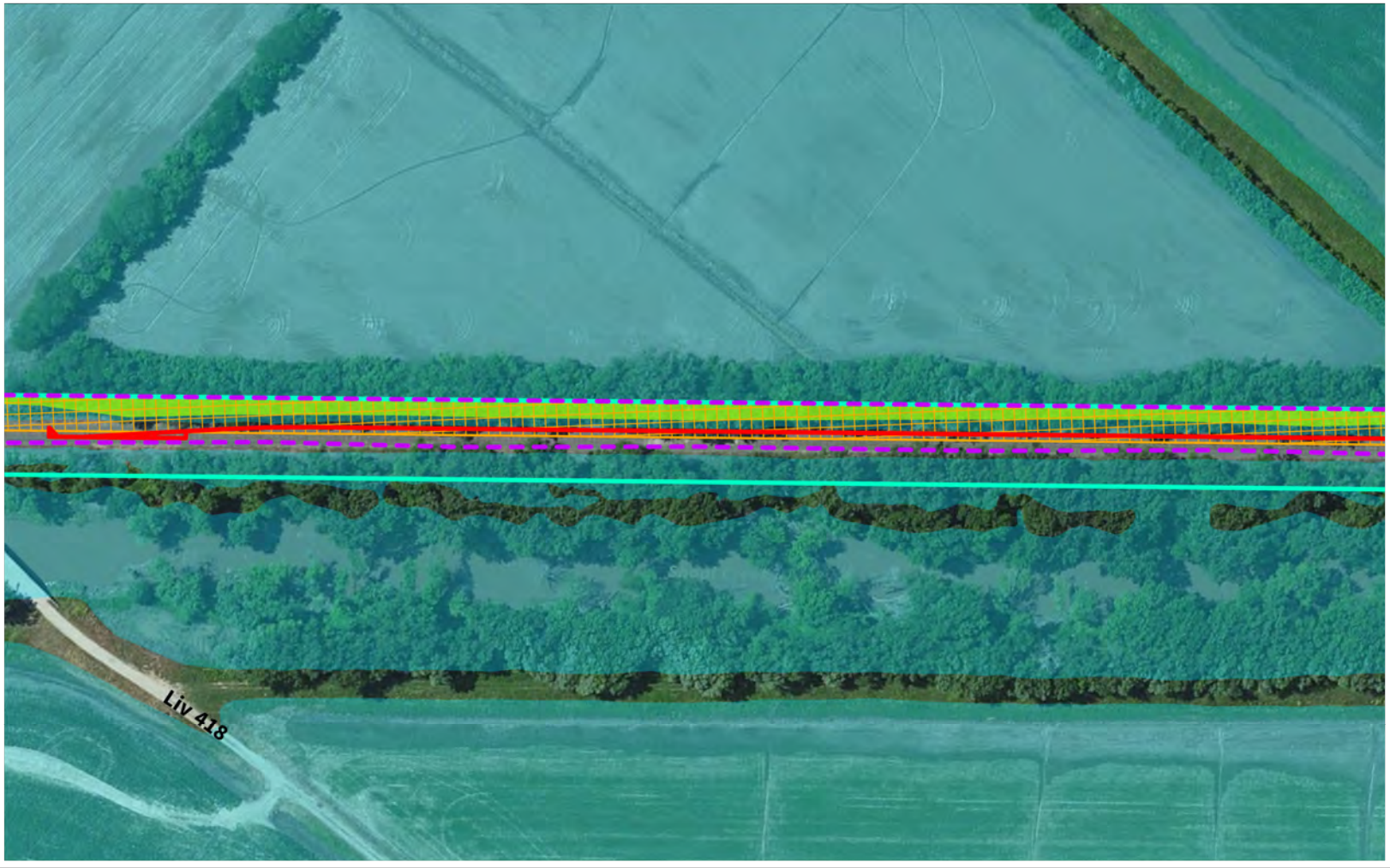


N

0 1800 3600 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement MP 431 (Dawn)
Livingston, Missouri | Page Index



Study Area

Capital Improvement Location

Existing Right-of-Way

Wetlands

Agricultural

FEMA 100-year floodplain

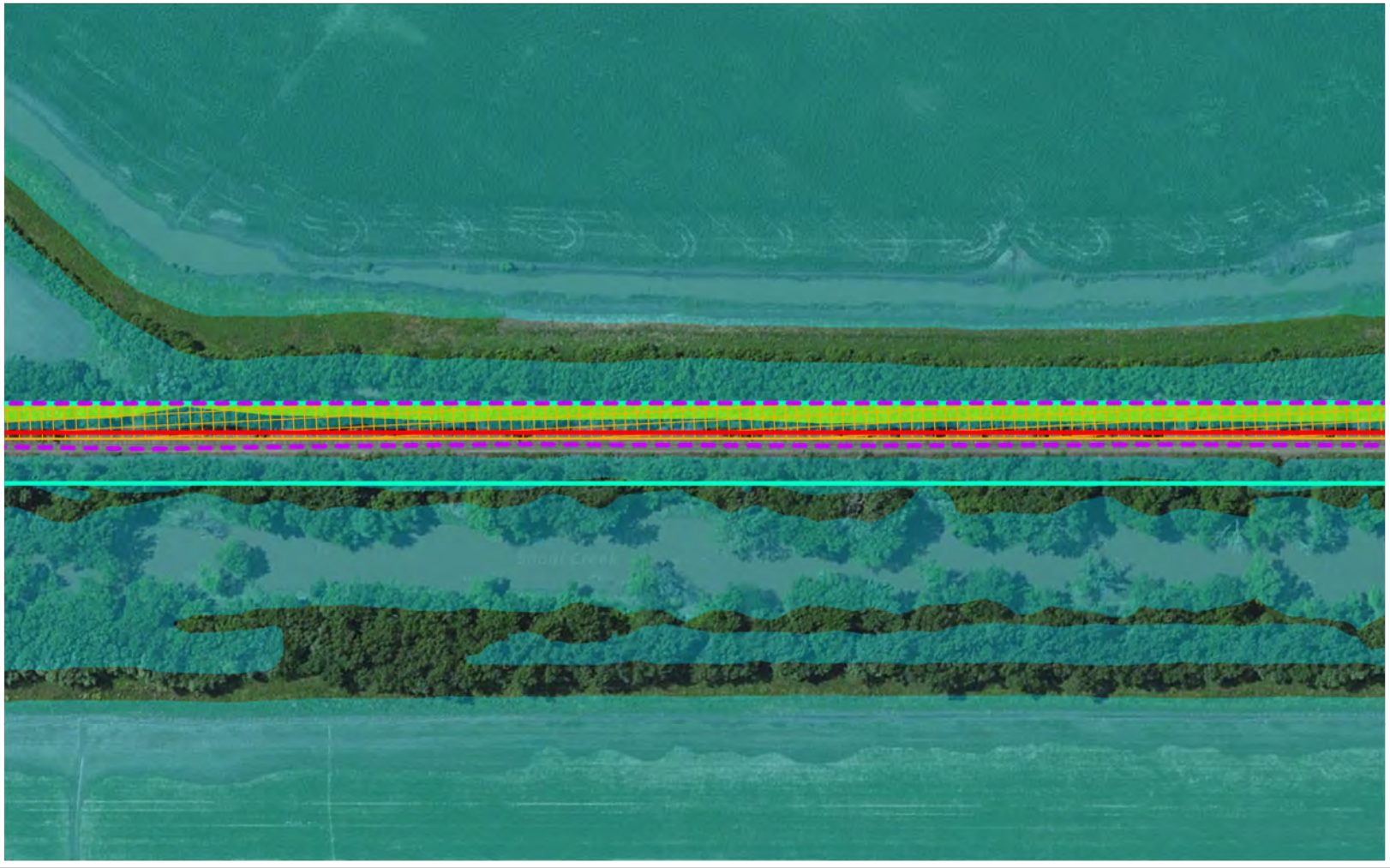


0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement MP 431 (Dawn)
Livingston, Missouri | Page 1 of 7



Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Agricultural
FEMA 100-year floodplain

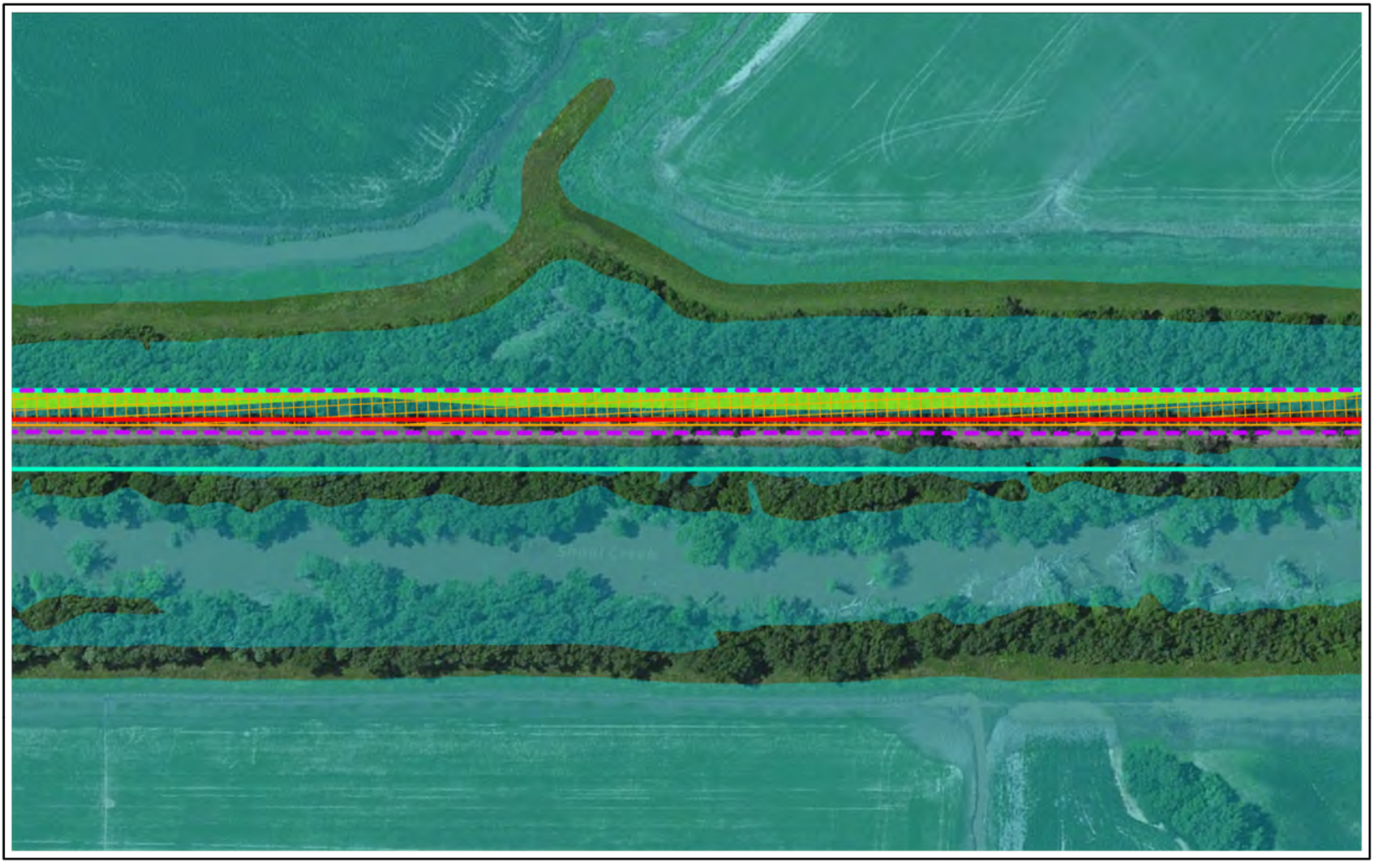


0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement MP 431 (Dawn)
Livingston, Missouri | Page 2 of 7



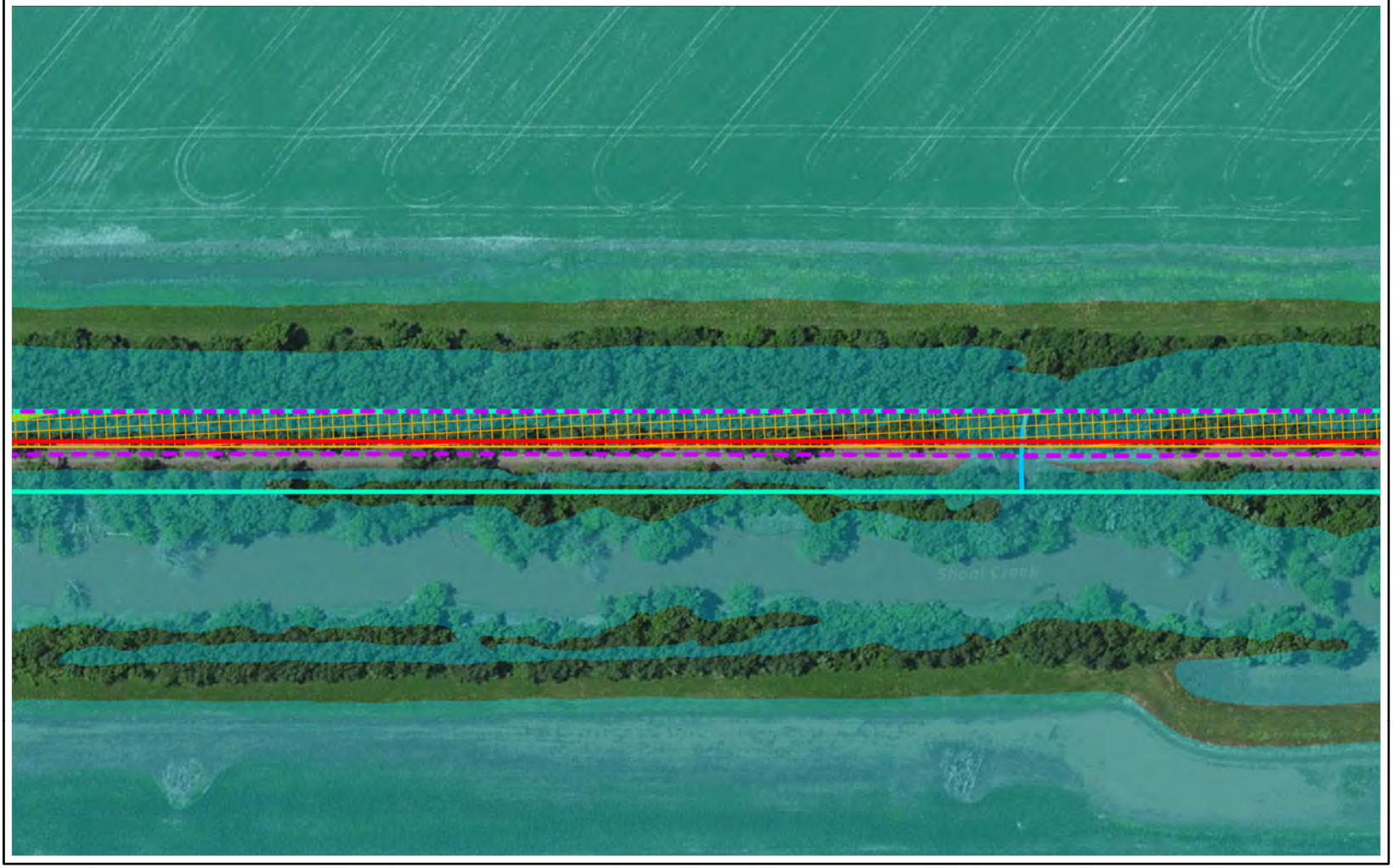
Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Agricultural
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-63





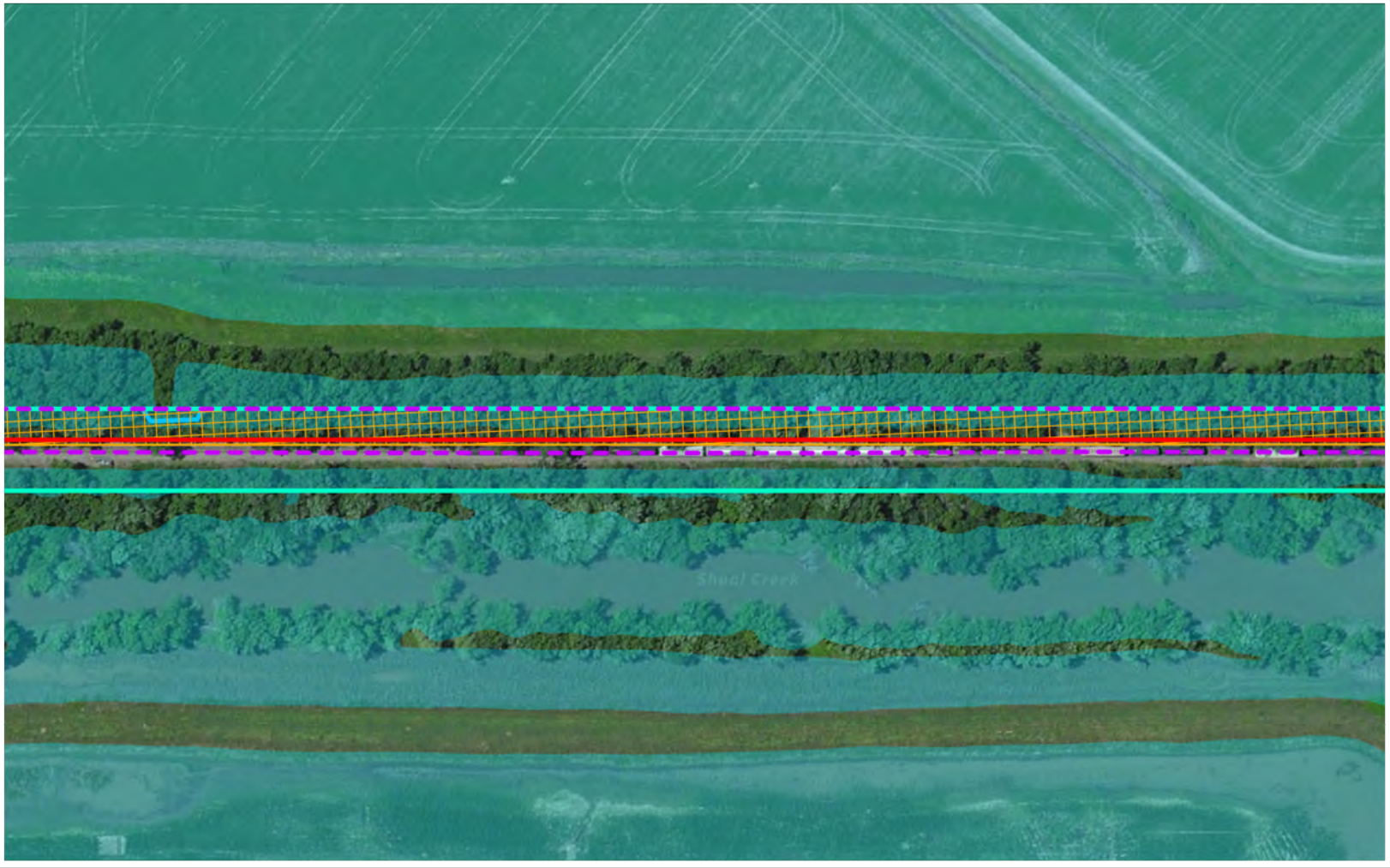
Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Agricultural
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-64





Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Agricultural
FEMA 100-year floodplain

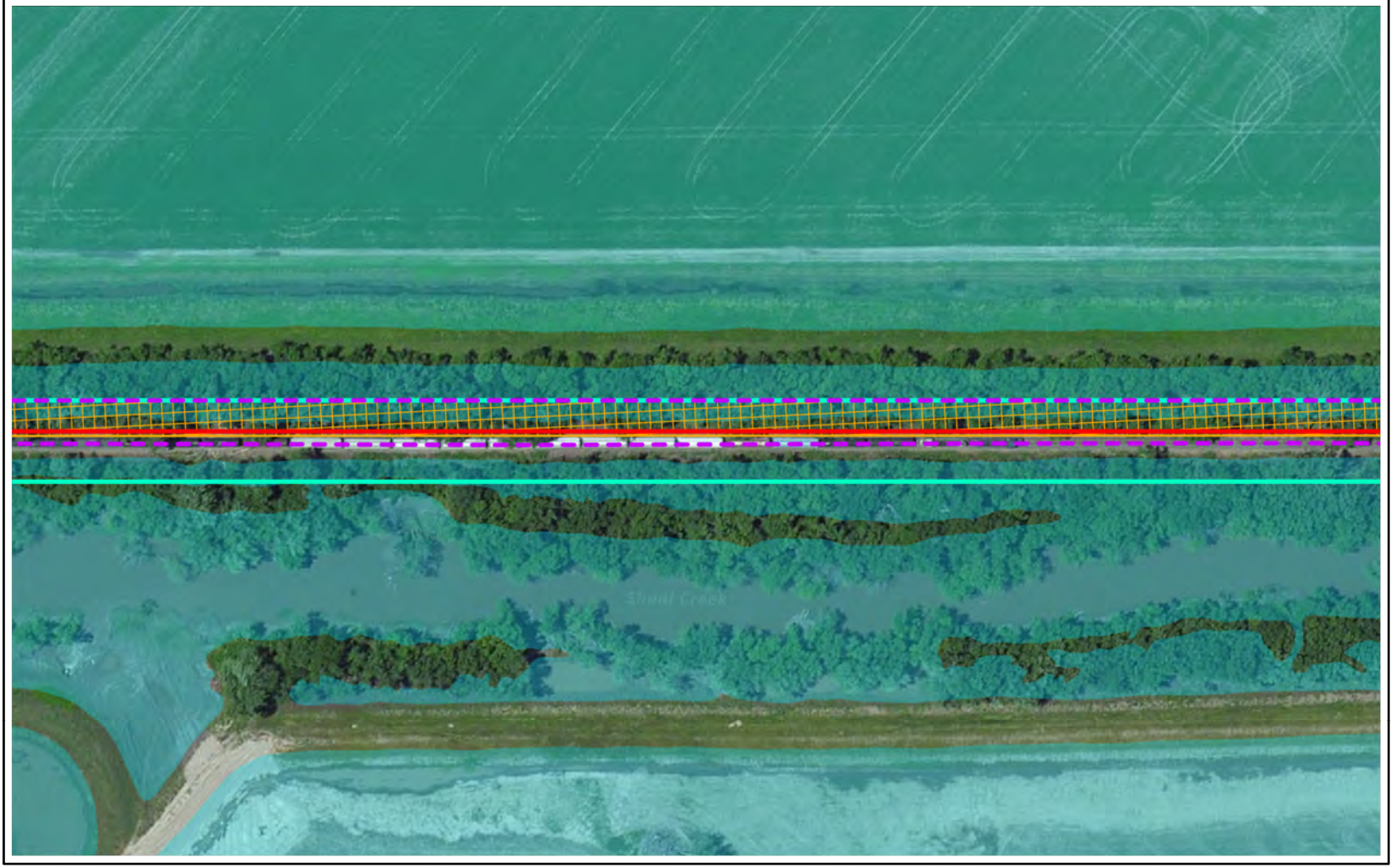
0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-65



Capital Improvement MP 431 (Dawn)
Livingston, Missouri | Page 5 of 7



Study Area

Capital Improvement Location

Existing Right-of-Way

Agricultural

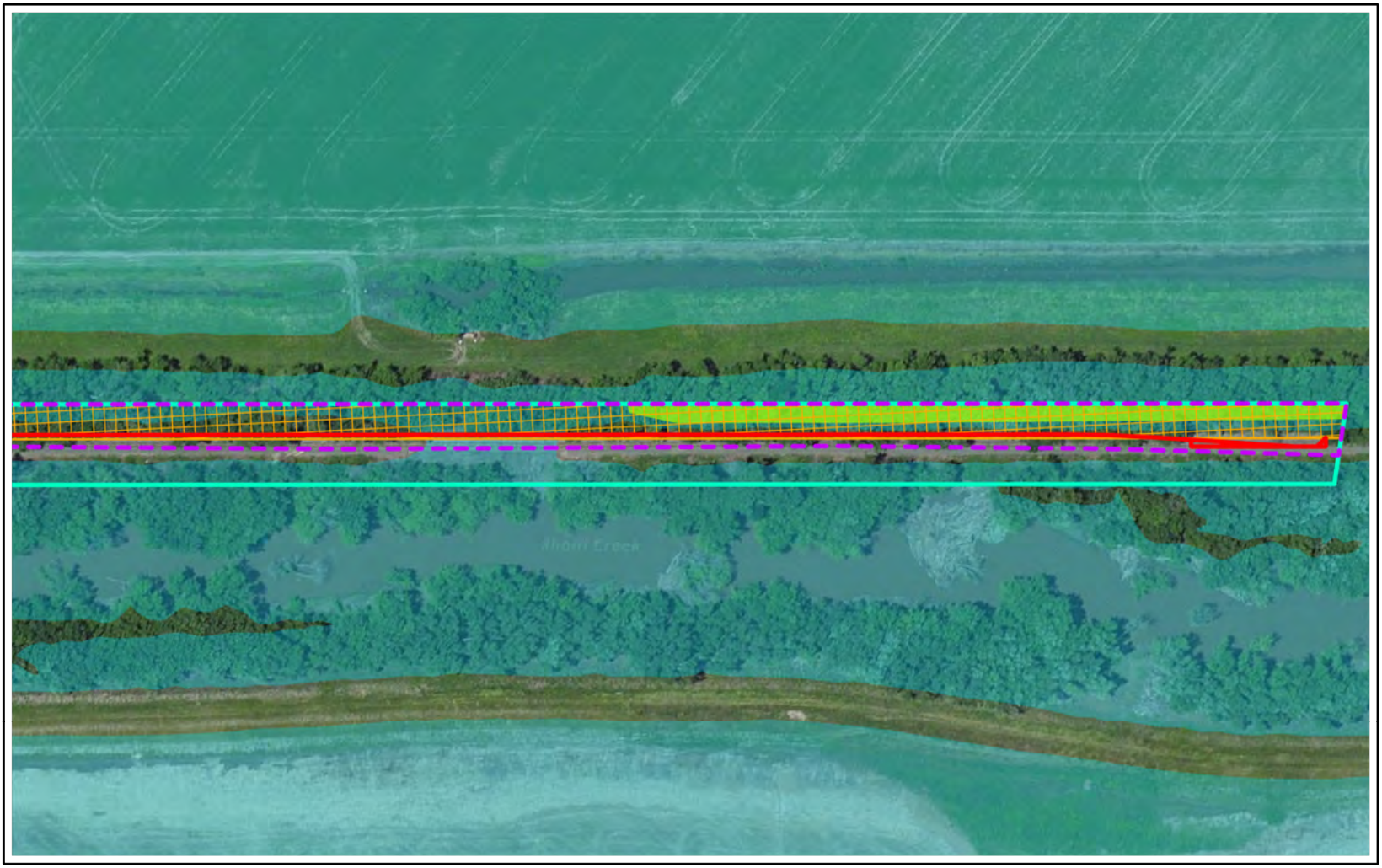
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

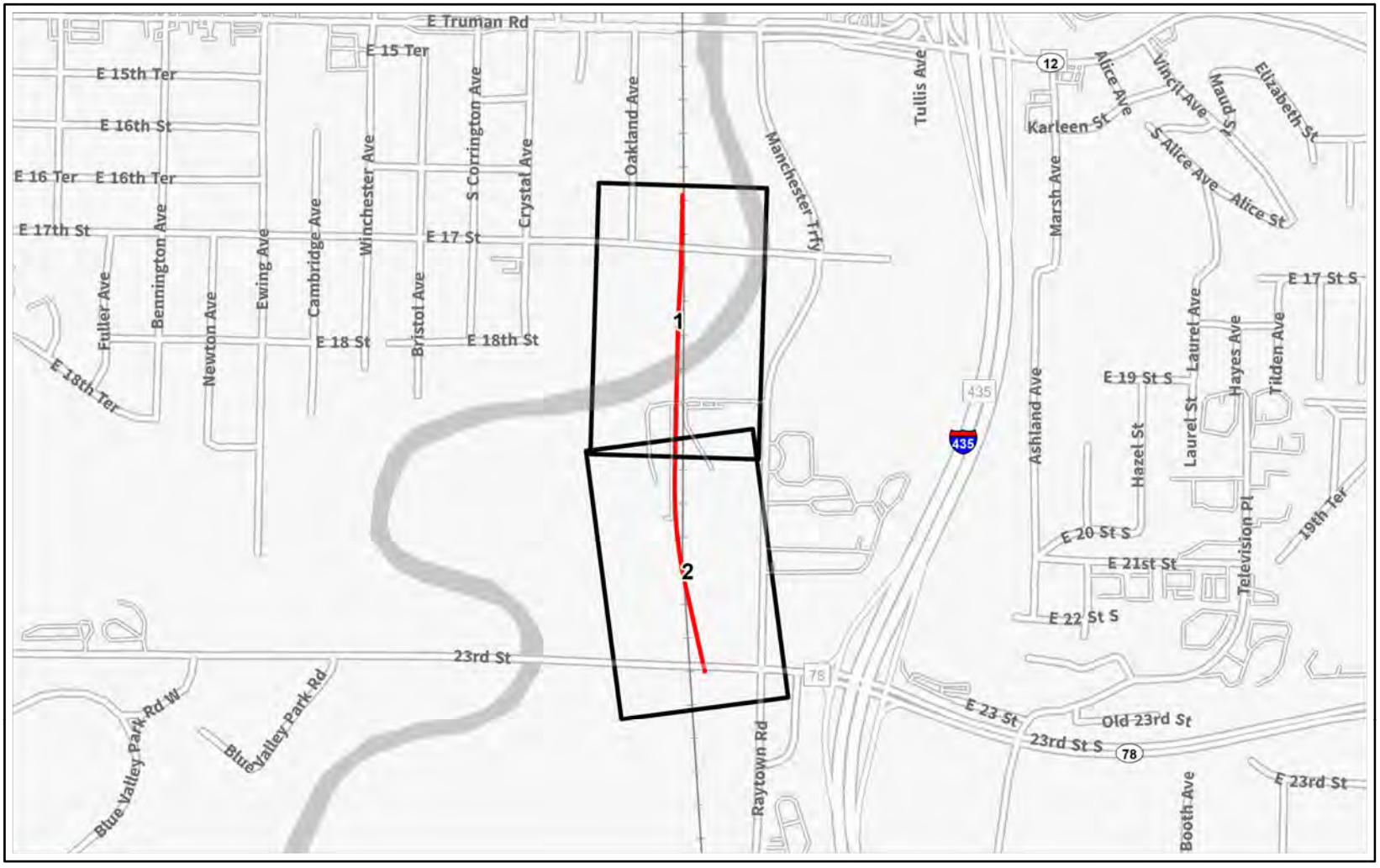
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Capital Improvement MP 431 (Dawn)
Livingston, Missouri | Page 7 of 7



Capital Improvement Location

Page Index

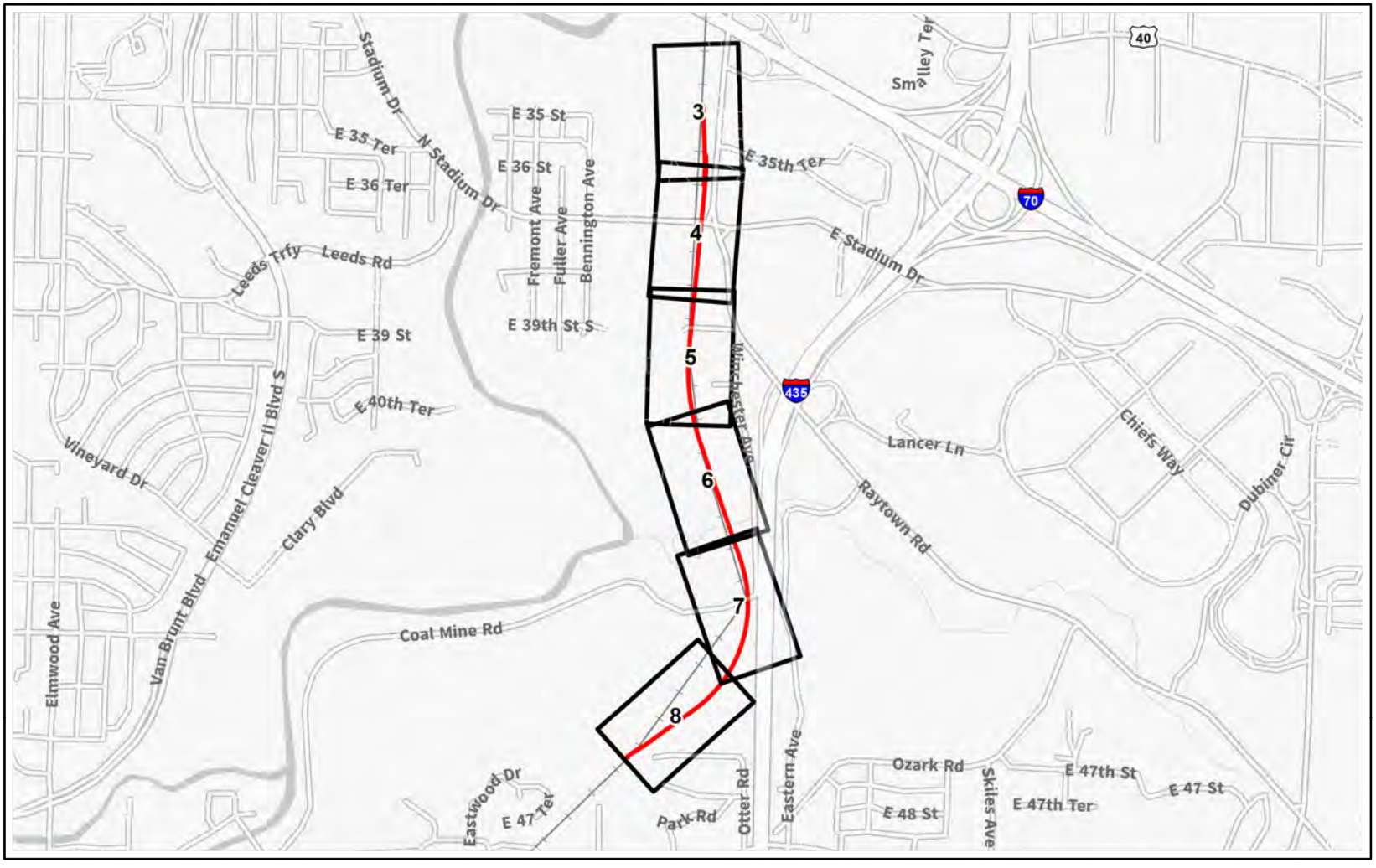


N

0 1000 2000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Blue Valley (North)
Jackson, Missouri | Page Index



Capital Improvement Location

Page Index

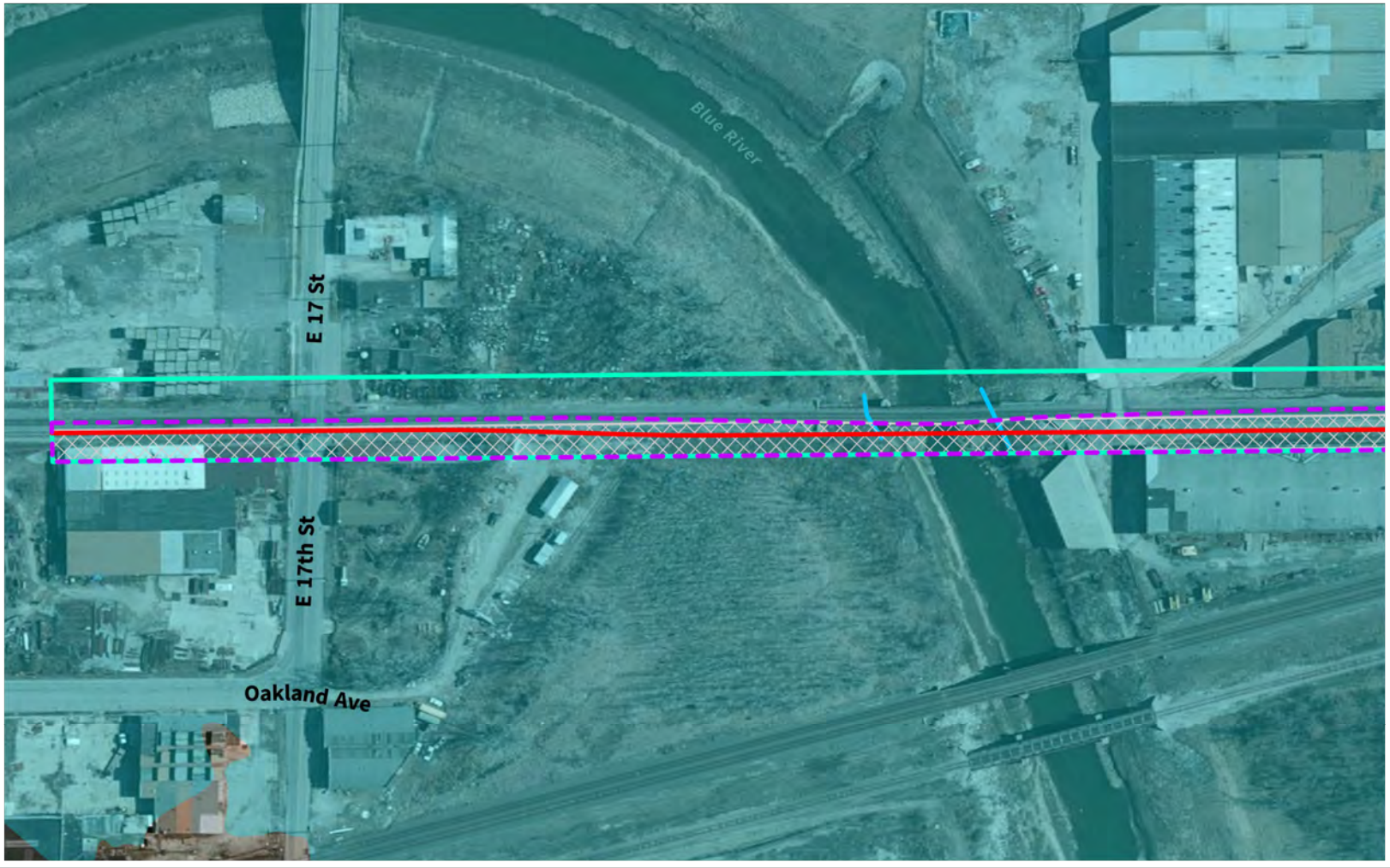


N

0 2000 4000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Blue Valley (South)
Jackson, Missouri | Page Index



Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Industrial
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-70





Study Area

Capital Improvement Location

Existing Right-of-Way

Industrial

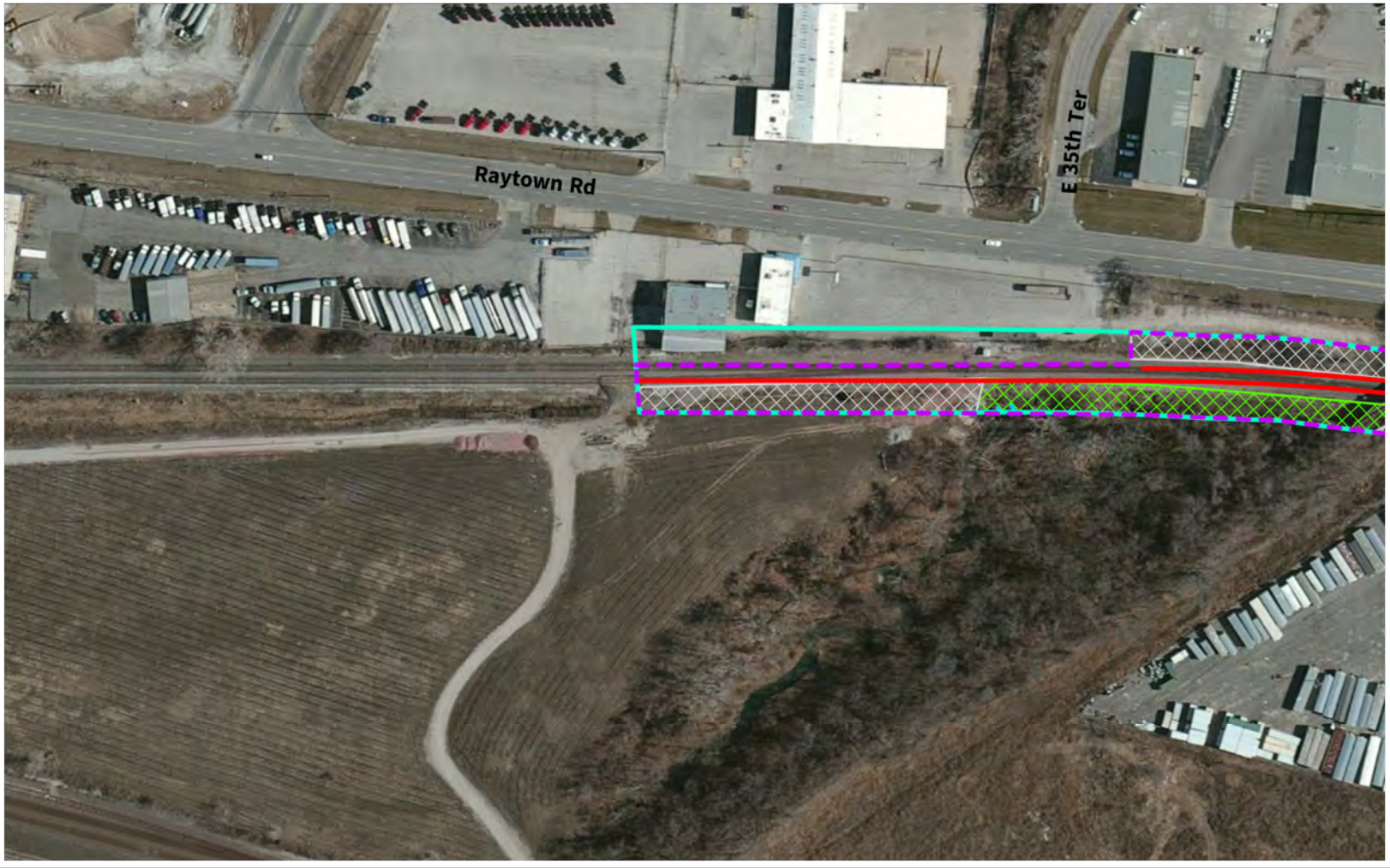
FEMA 100-year floodplain

N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Industrial
Mixed Hardwood Forest

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-72





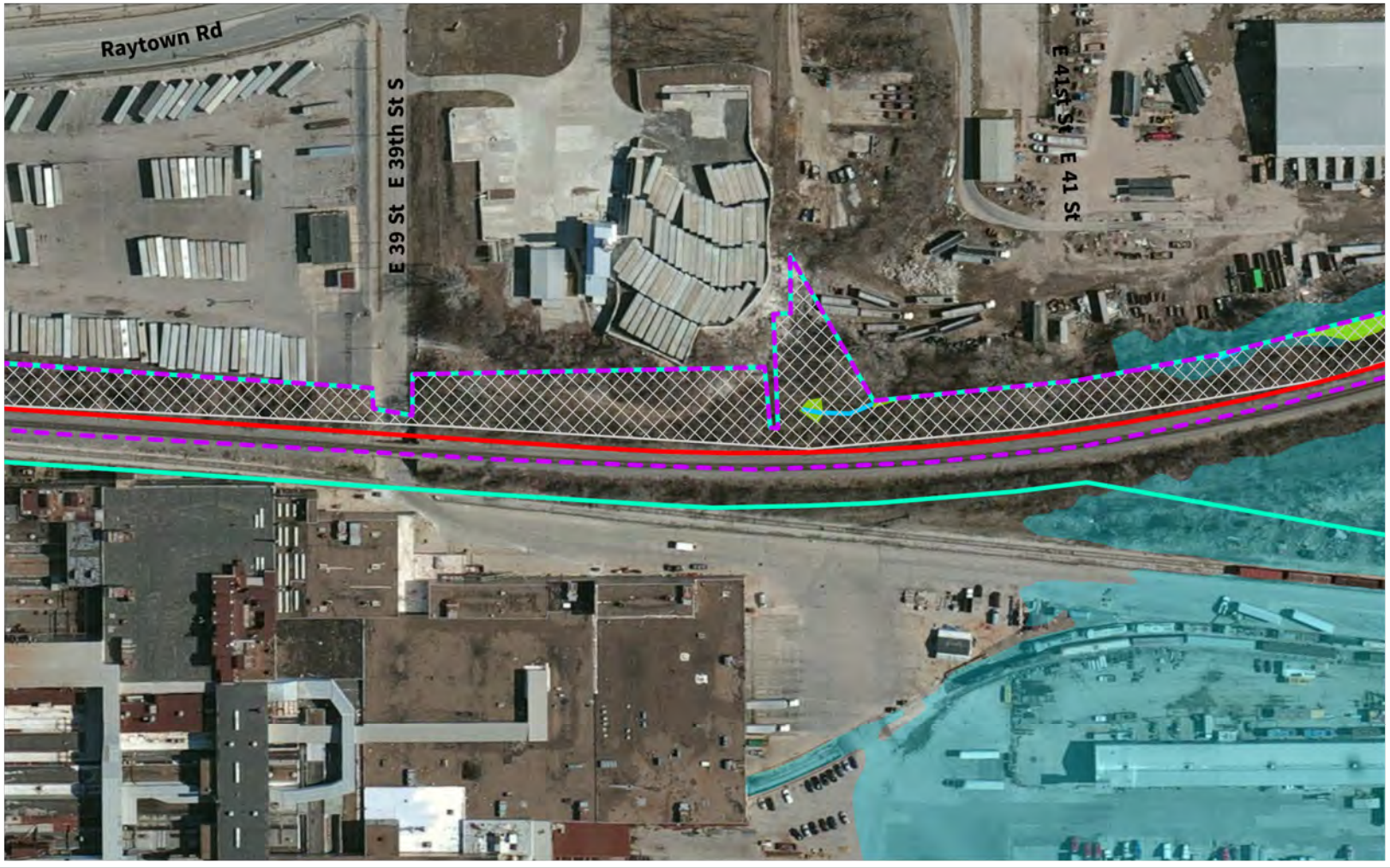
Study Area
Capital Improvement Location
Existing Right-of-Way
Maintained Roadway ROW
Industrial
Mixed Hardwood Forest

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-73





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Industrial
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Industrial
FEMA 100-year floodplain

N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-75



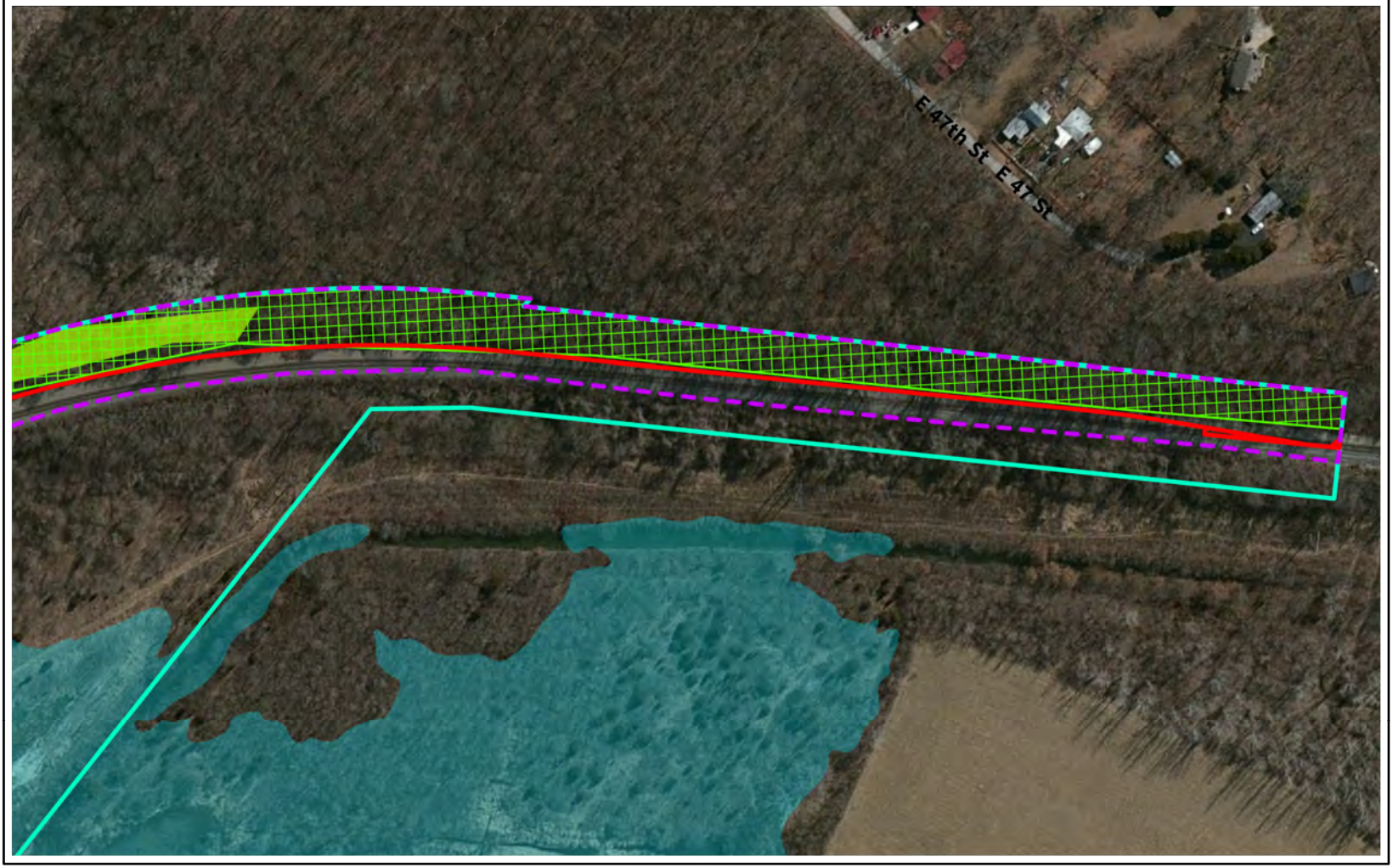


Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Maintained Roadway ROW
Industrial
Mixed Hardwood Forest
FEMA 100-year floodplain

N
0
200
400
Feet

Source: FRA, CP, ArcGIS Online





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-77





Capital Improvement Location

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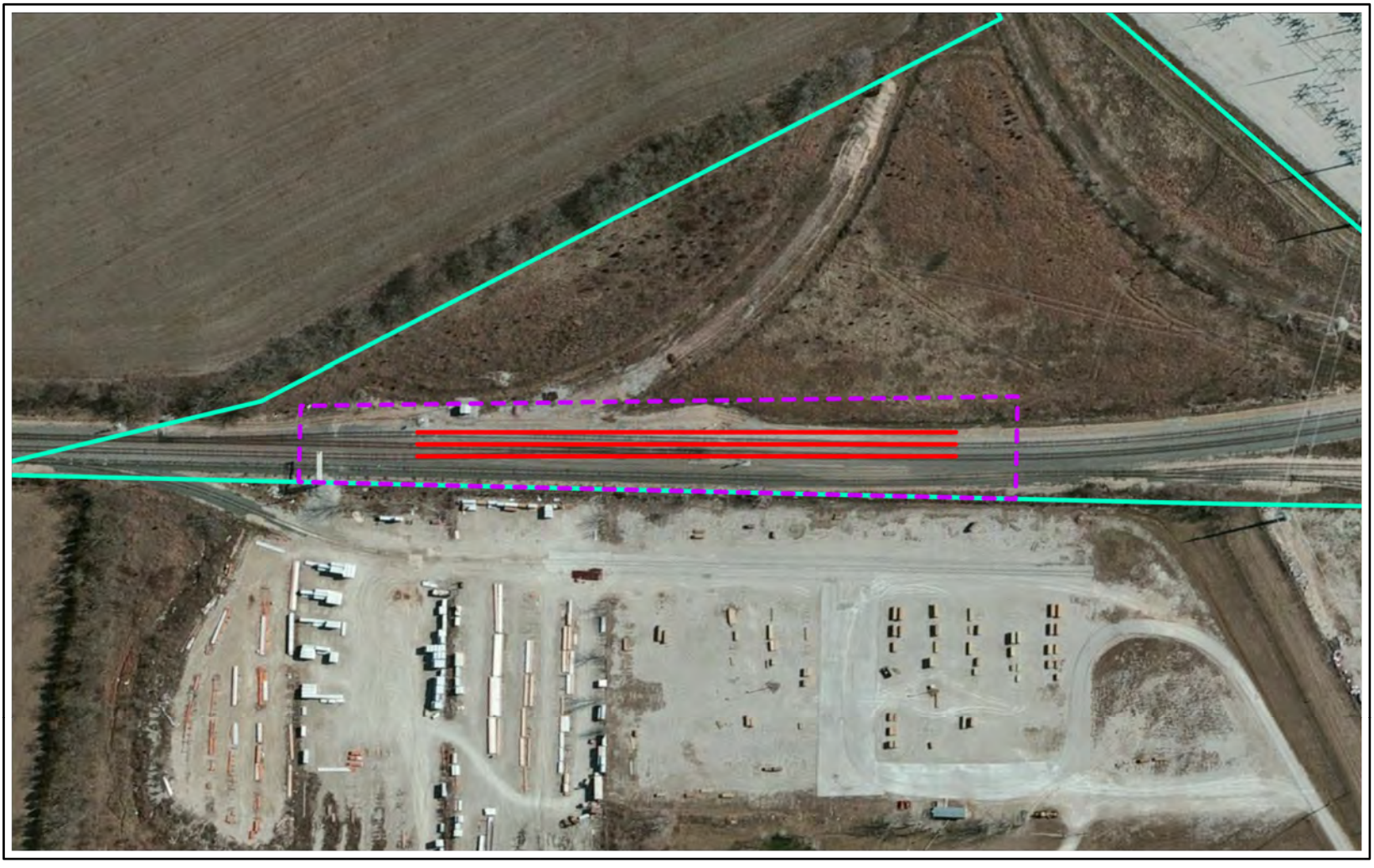


N

0 3500 7000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Grandview/IFG
Jackson/Cass, Missouri | Page Index



Study Area

Capital Improvement Location

Existing Right-of-Way

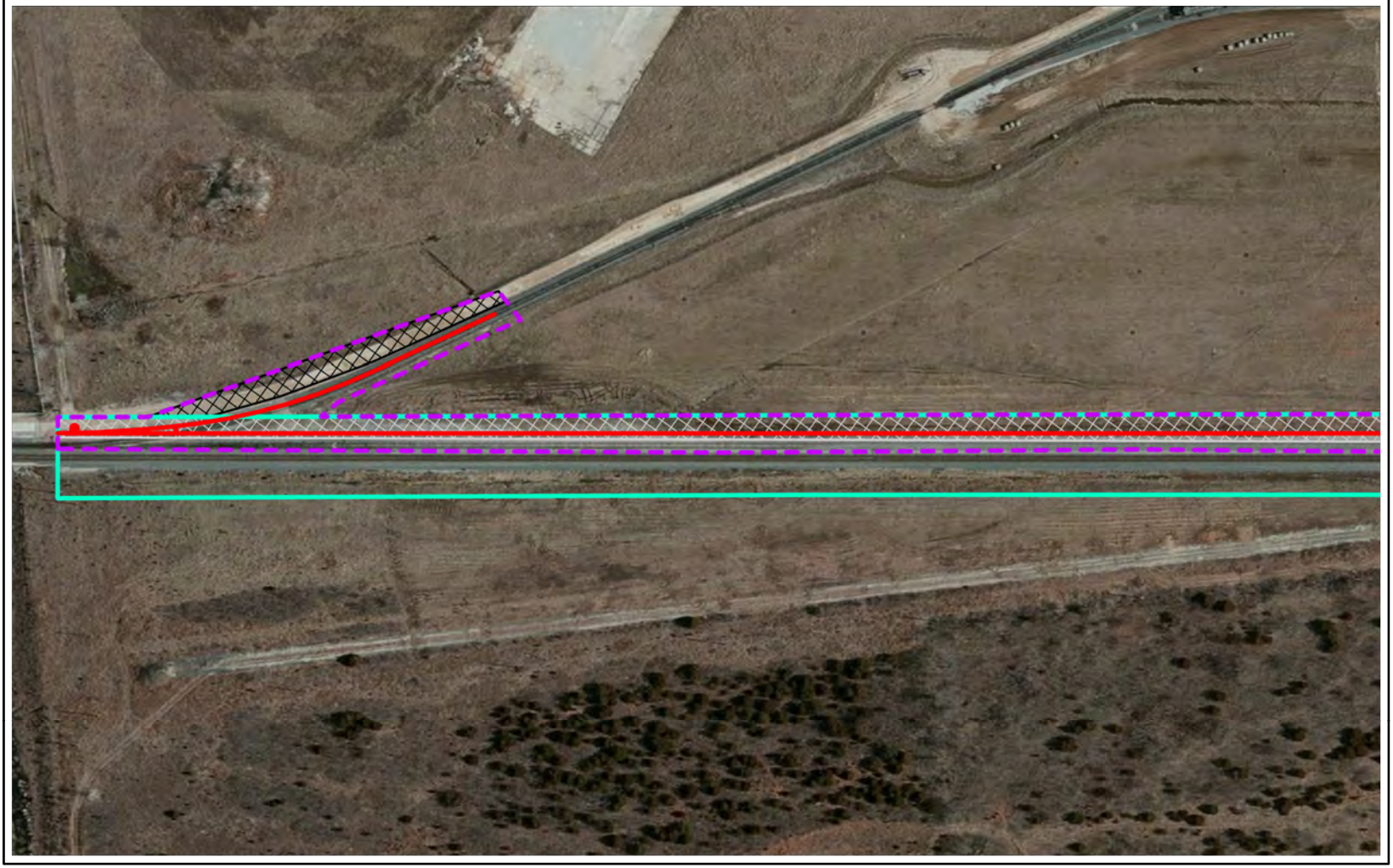


0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-79





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Maintained Roadway ROW
Industrial

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-80





Study Area

Capital Improvement Location

Existing Right-of-Way

Industrial

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

Capital Improvement Location

Existing Right-of-Way

Industrial

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

Capital Improvement Location

Existing Right-of-Way

Industrial

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-83





Study Area

Capital Improvement Location

Existing Right-of-Way

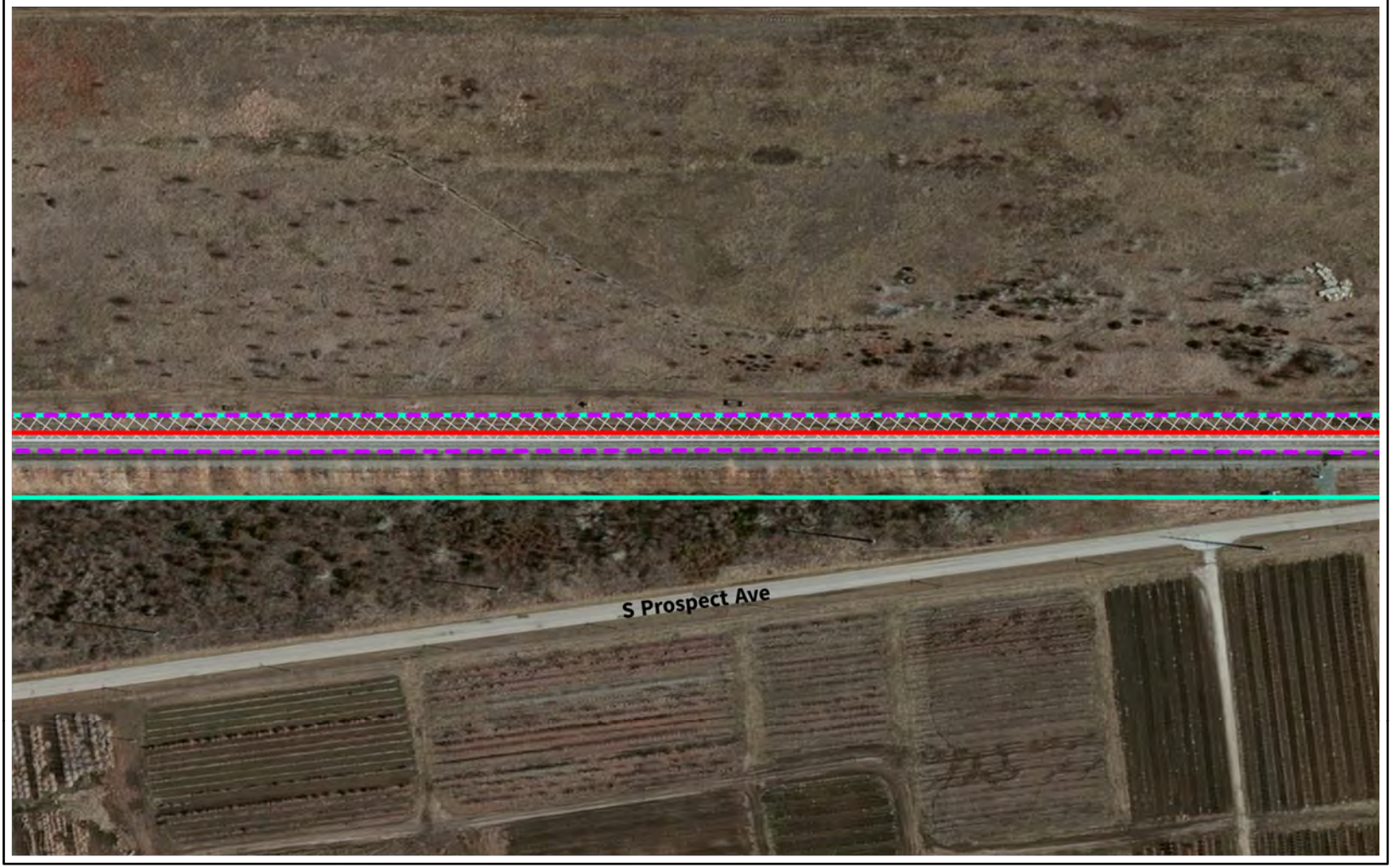
Wetlands

Industrial

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

Capital Improvement Location

Existing Right-of-Way

Industrial

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-85





Study Area

Capital Improvement Location

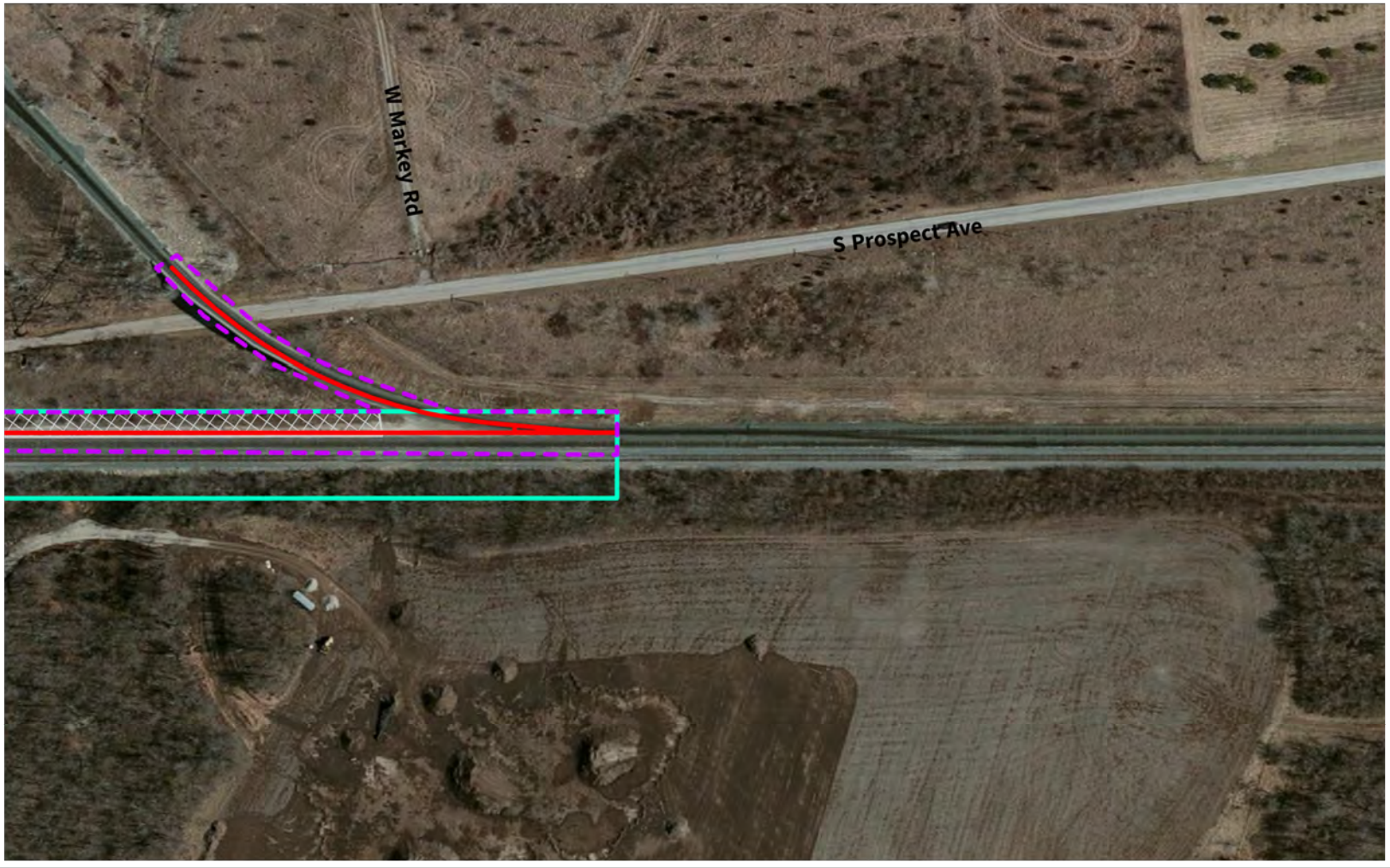
Existing Right-of-Way

Industrial

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Study Area

Capital Improvement Location

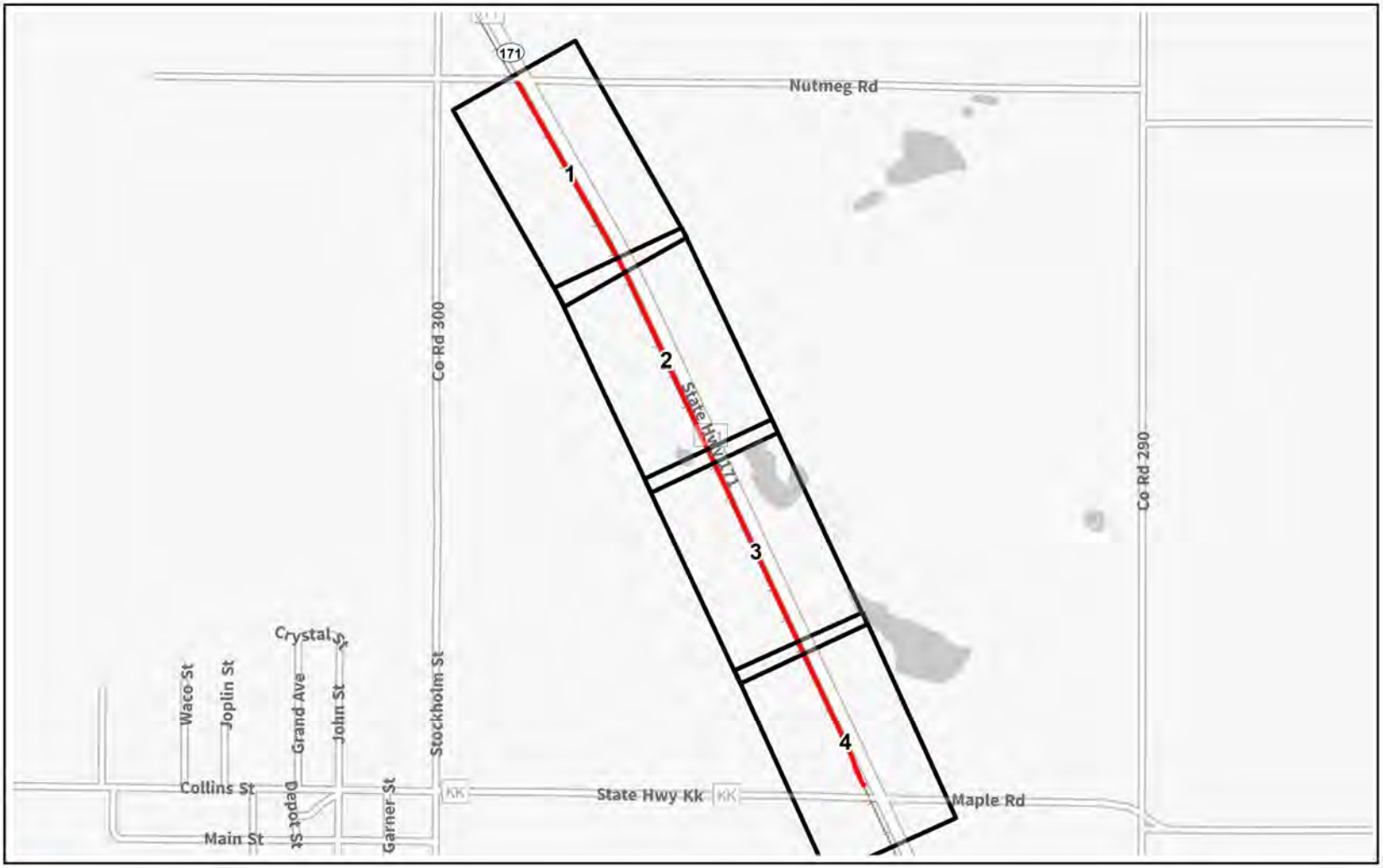
Existing Right-of-Way

Industrial

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





Capital Improvement Location

Page Index



N

0 1200 2400 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Asbury
Jasper, Missouri | Page Index



Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Maintained Roadway ROW

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-89





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Maintained Roadway ROW

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-90





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Maintained Roadway ROW

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-91





Study Area

Capital Improvement Location

Existing Right-of-Way

Maintained Roadway ROW

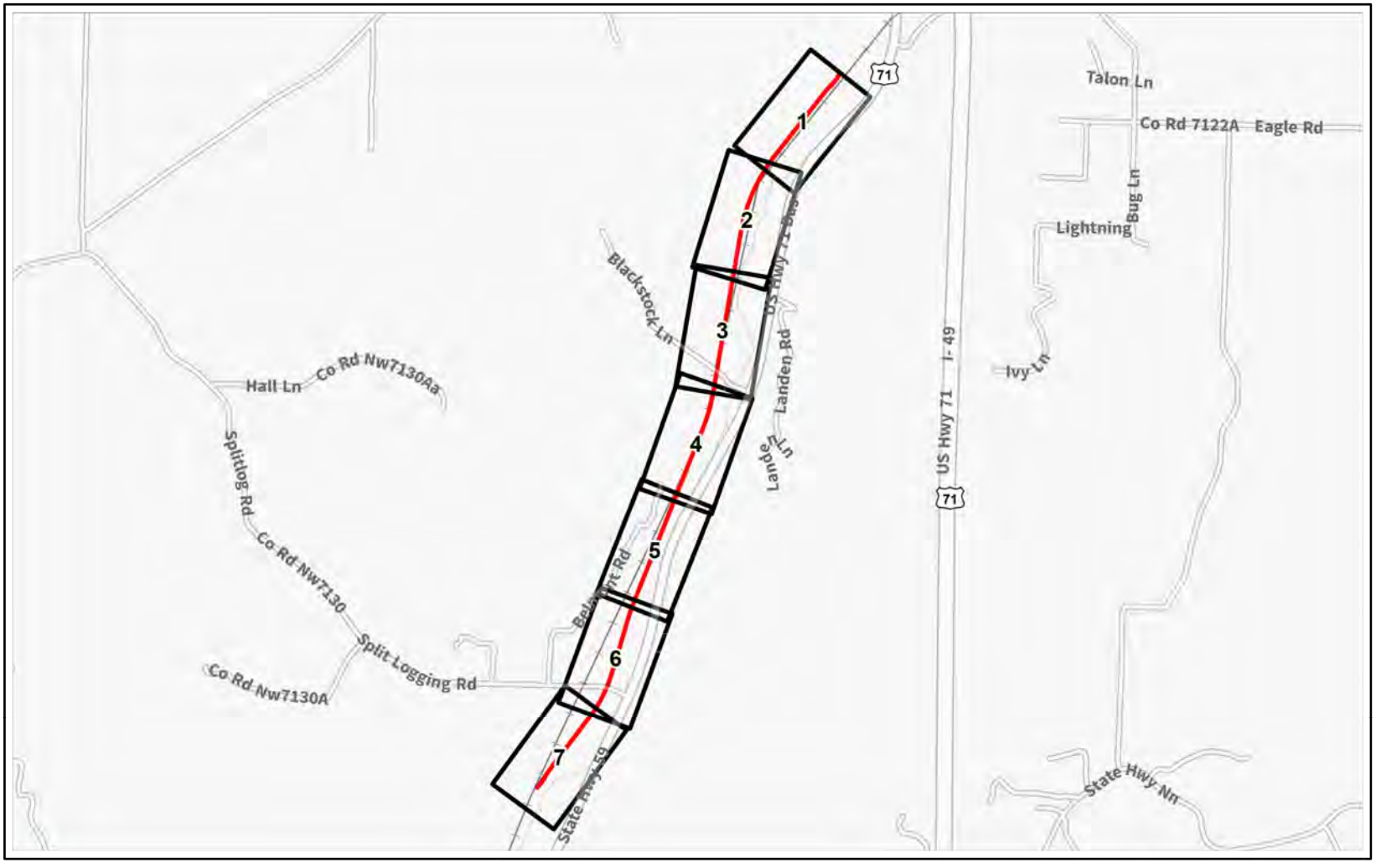
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-92





Capital Improvement Location

Page Index



N

0 2200 4400 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement MP 186
McDonald, Missouri | Page Index



Study Area

Capital Improvement Location

Existing Right-of-Way

Agricultural

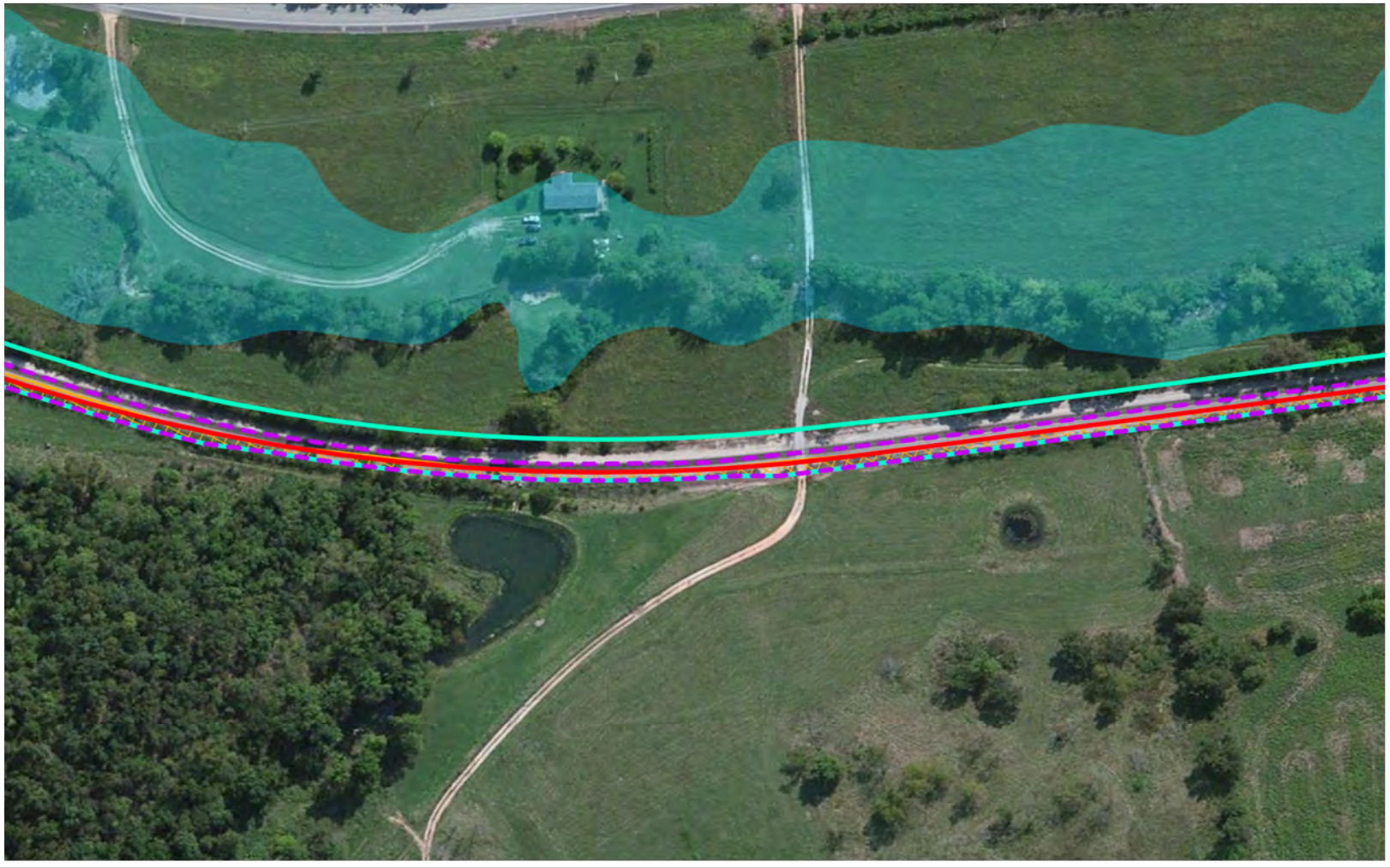
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-94





Study Area

Capital Improvement Location

Existing Right-of-Way

Agricultural

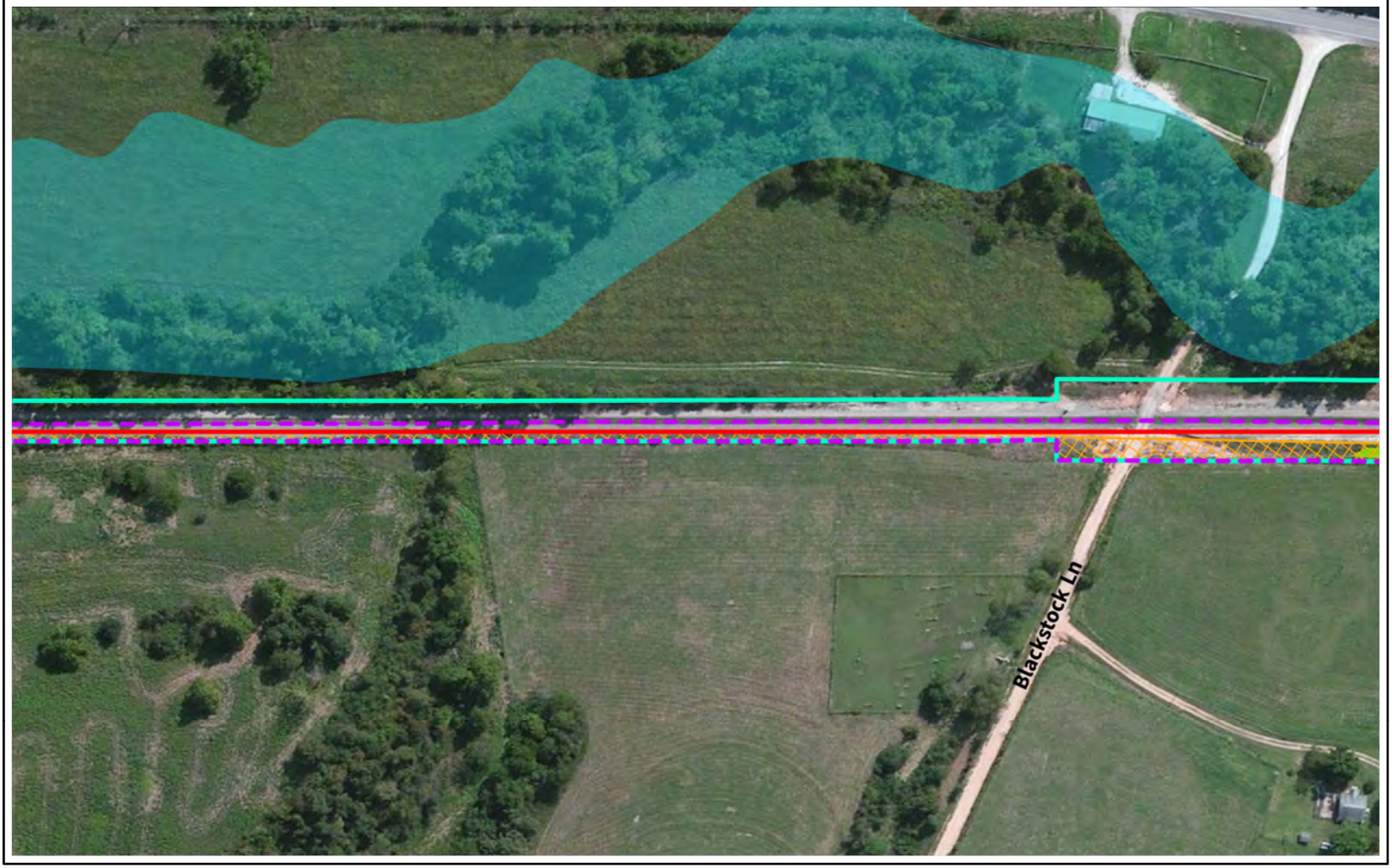
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-95





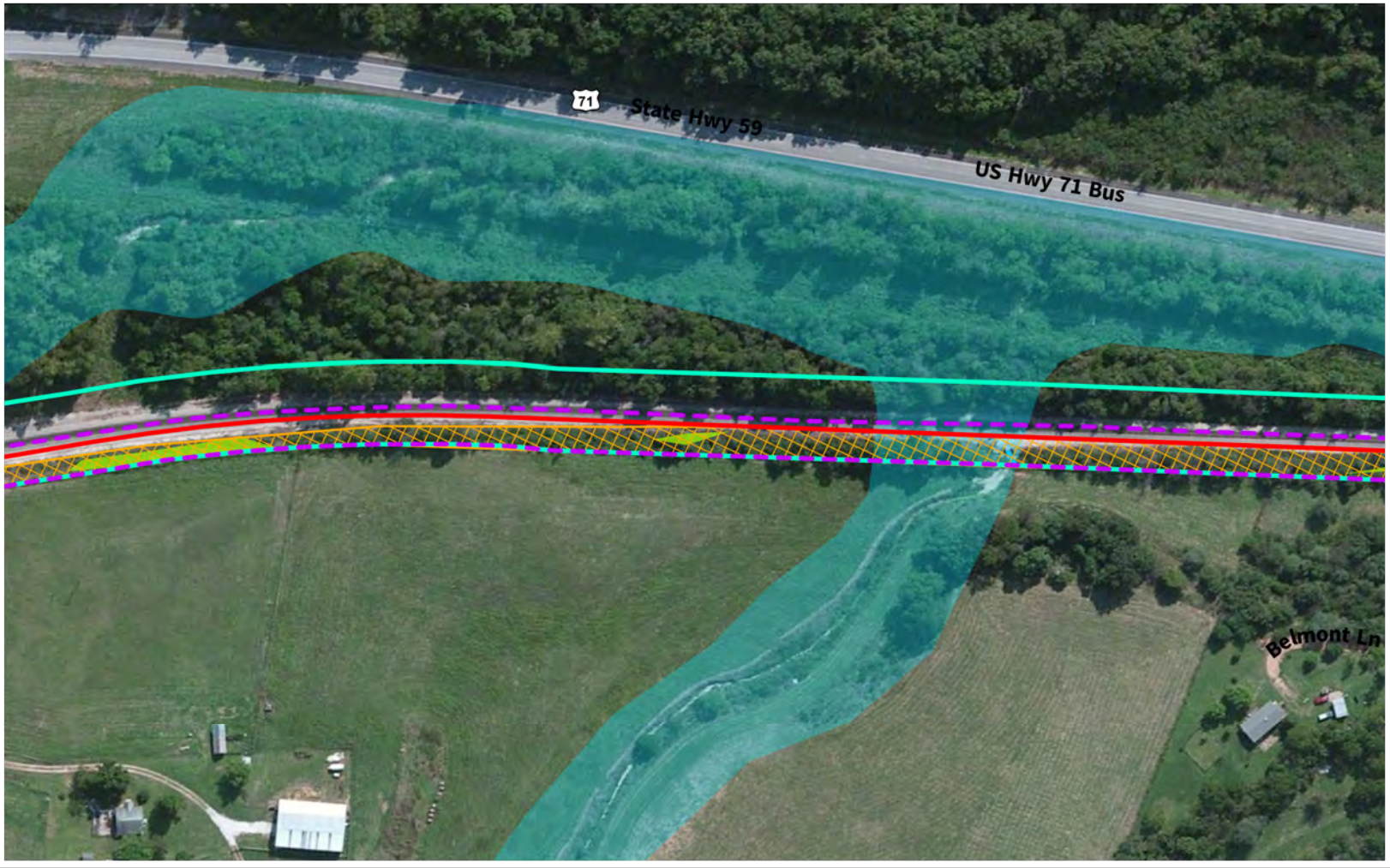
Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Agricultural
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-96





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Agricultural
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online





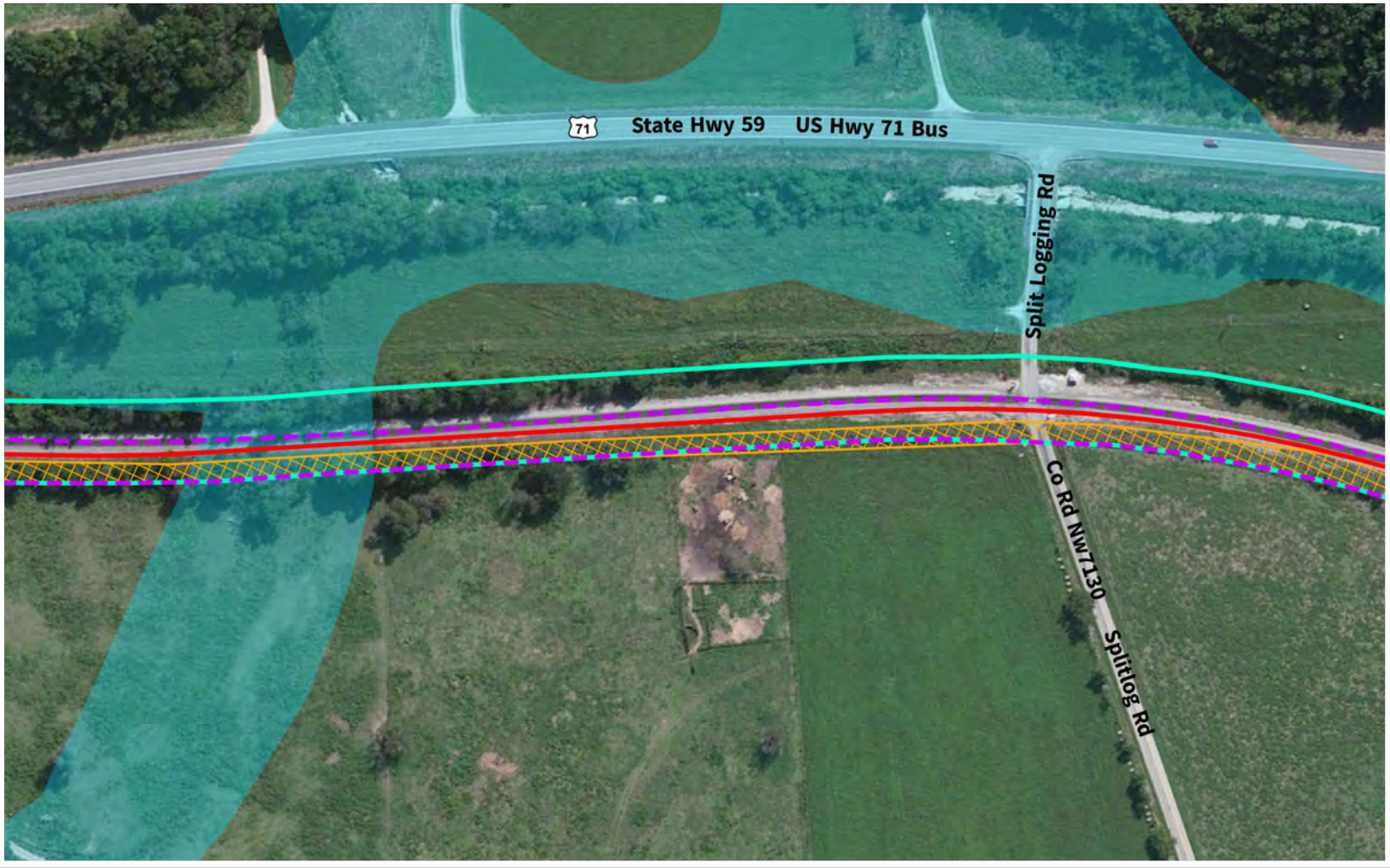
Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Agricultural
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-98





Study Area

Capital Improvement Location

Existing Right-of-Way

Agricultural

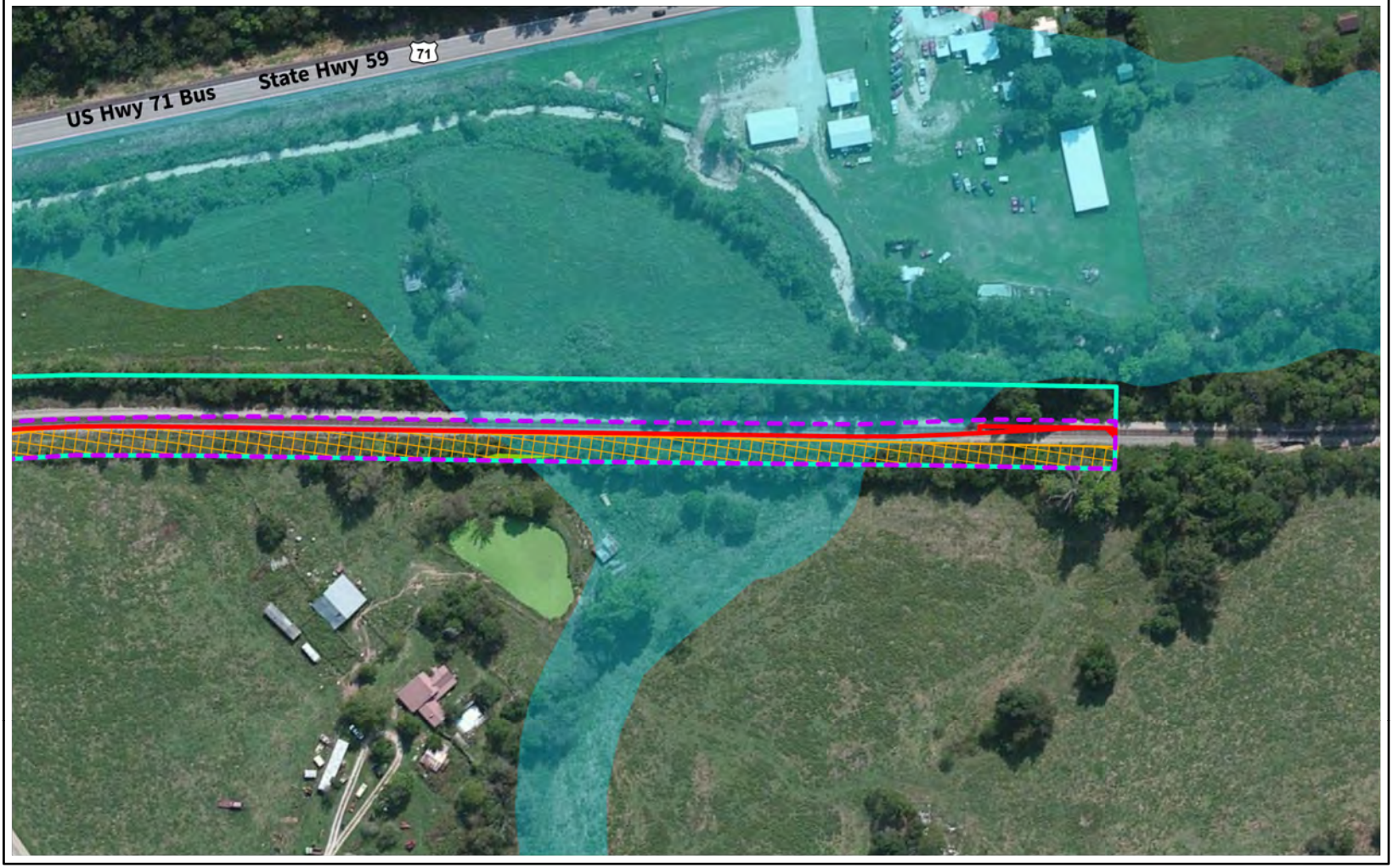
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-99





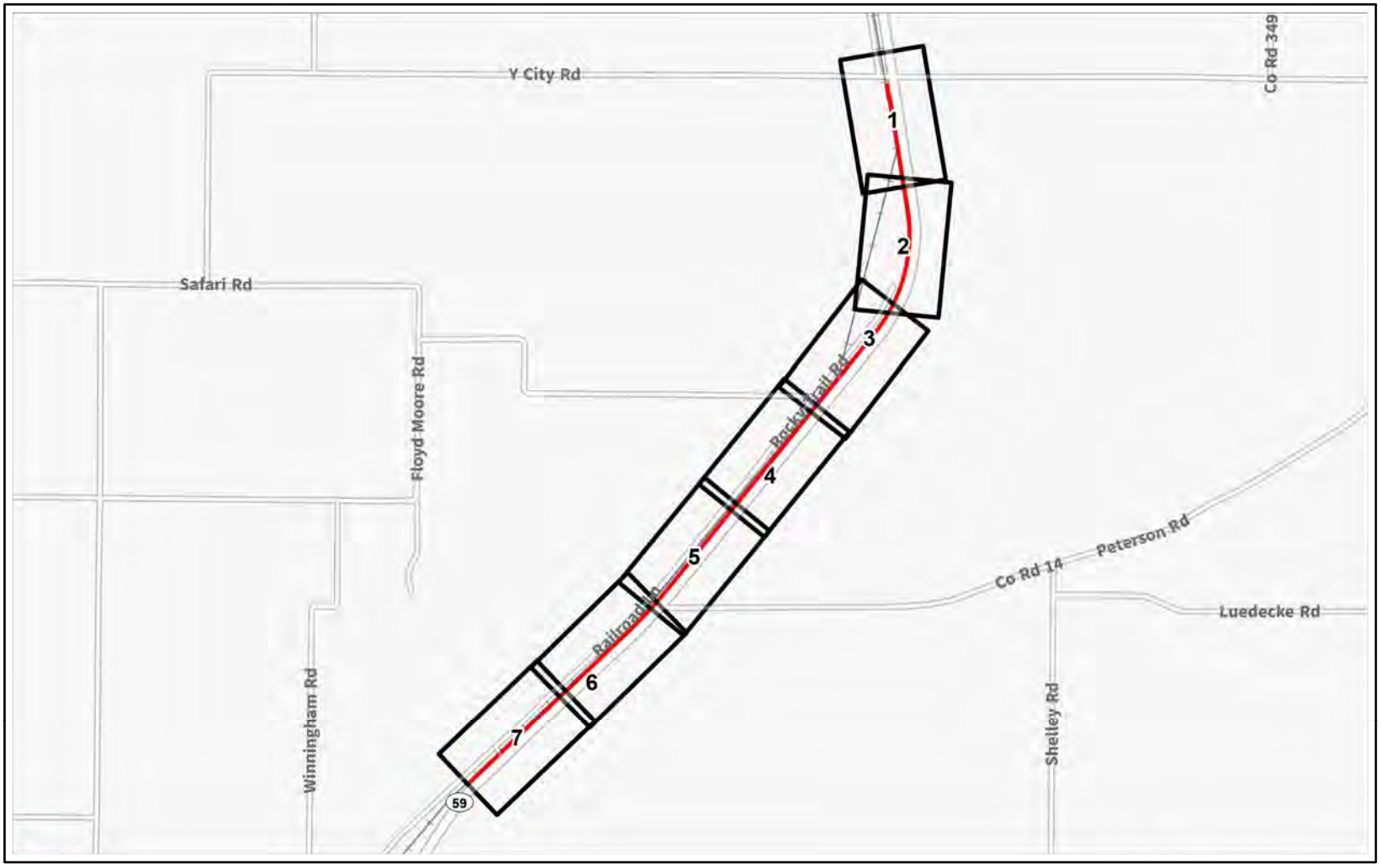
Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Agricultural
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-100





Capital Improvement Location

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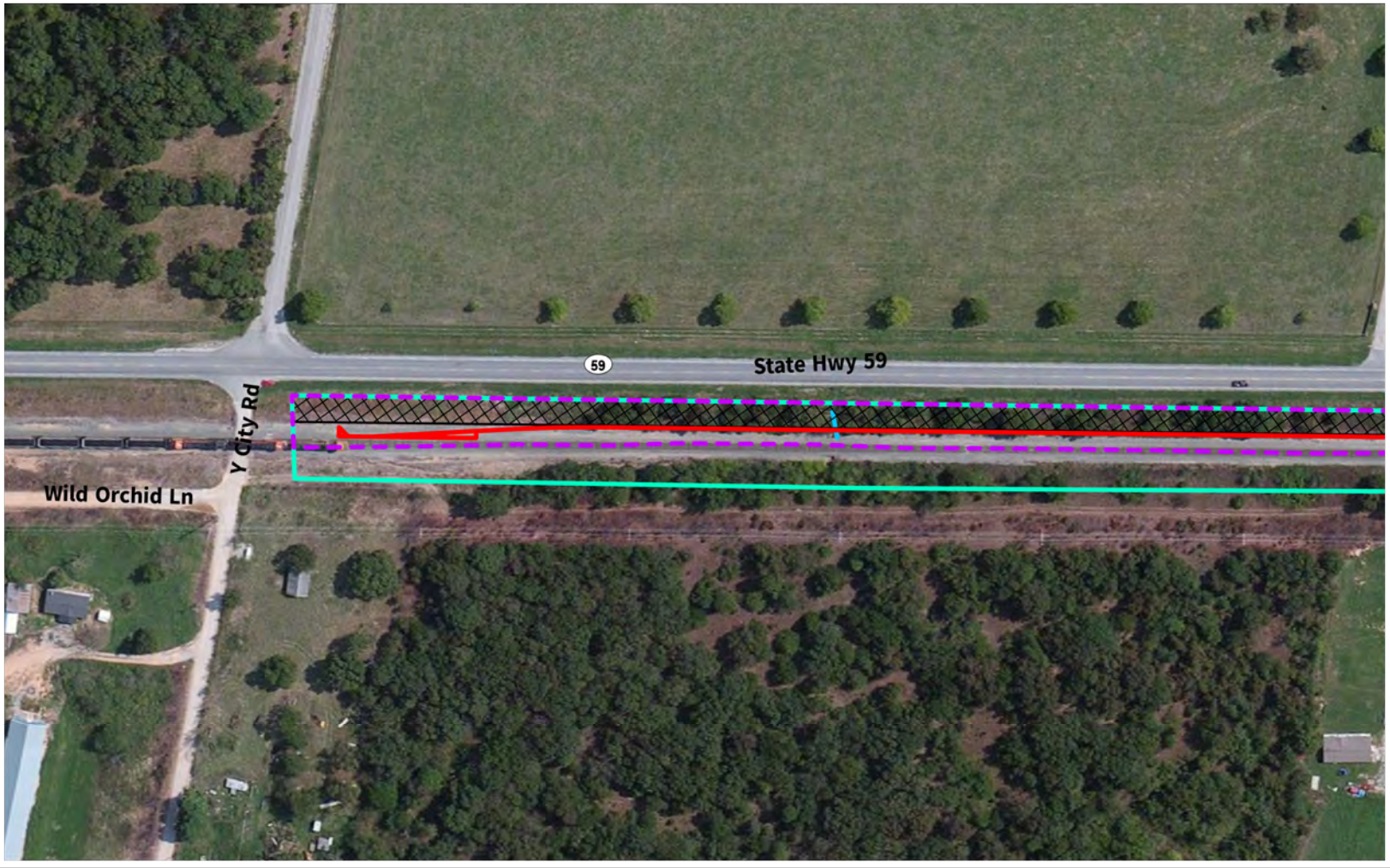
N

0 2000 4000 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Gentry
Benton, Arkansas | Page Index



Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Maintained Roadway ROW

N
0
200
400
Feet

Source: FRA, CP, ArcGIS Online

O-102





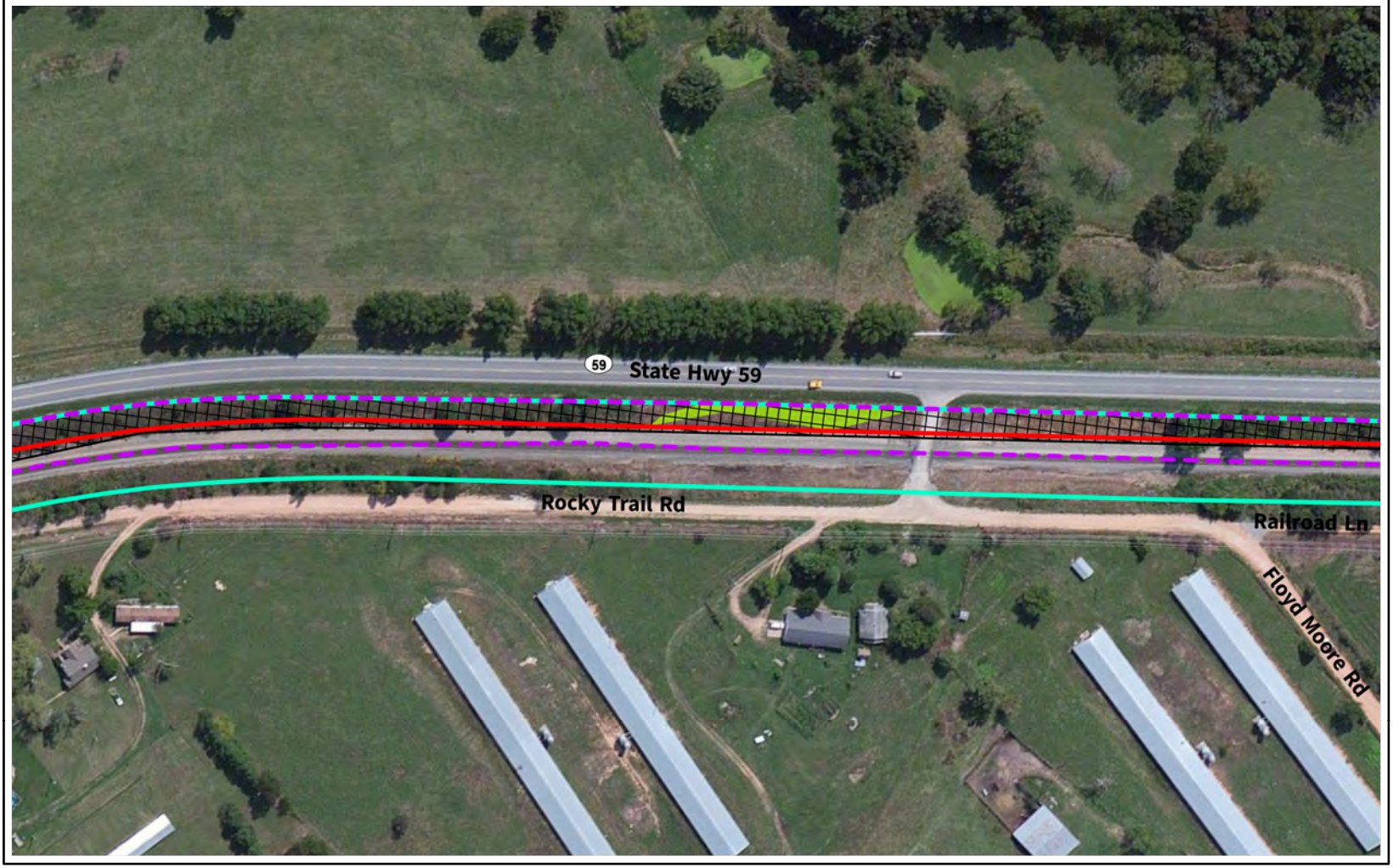
Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Maintained Roadway ROW

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-103





Study Area

Capital Improvement Location

Existing Right-of-Way

Wetlands

Maintained Roadway ROW

N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-104





Study Area

Capital Improvement Location

Existing Right-of-Way

Maintained Roadway ROW

N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-105





Study Area

Capital Improvement Location

Existing Right-of-Way

Maintained Roadway ROW

FEMA 100-year floodplain

N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-106





Study Area

Capital Improvement Location

Existing Right-of-Way

Wetlands

Maintained Roadway ROW

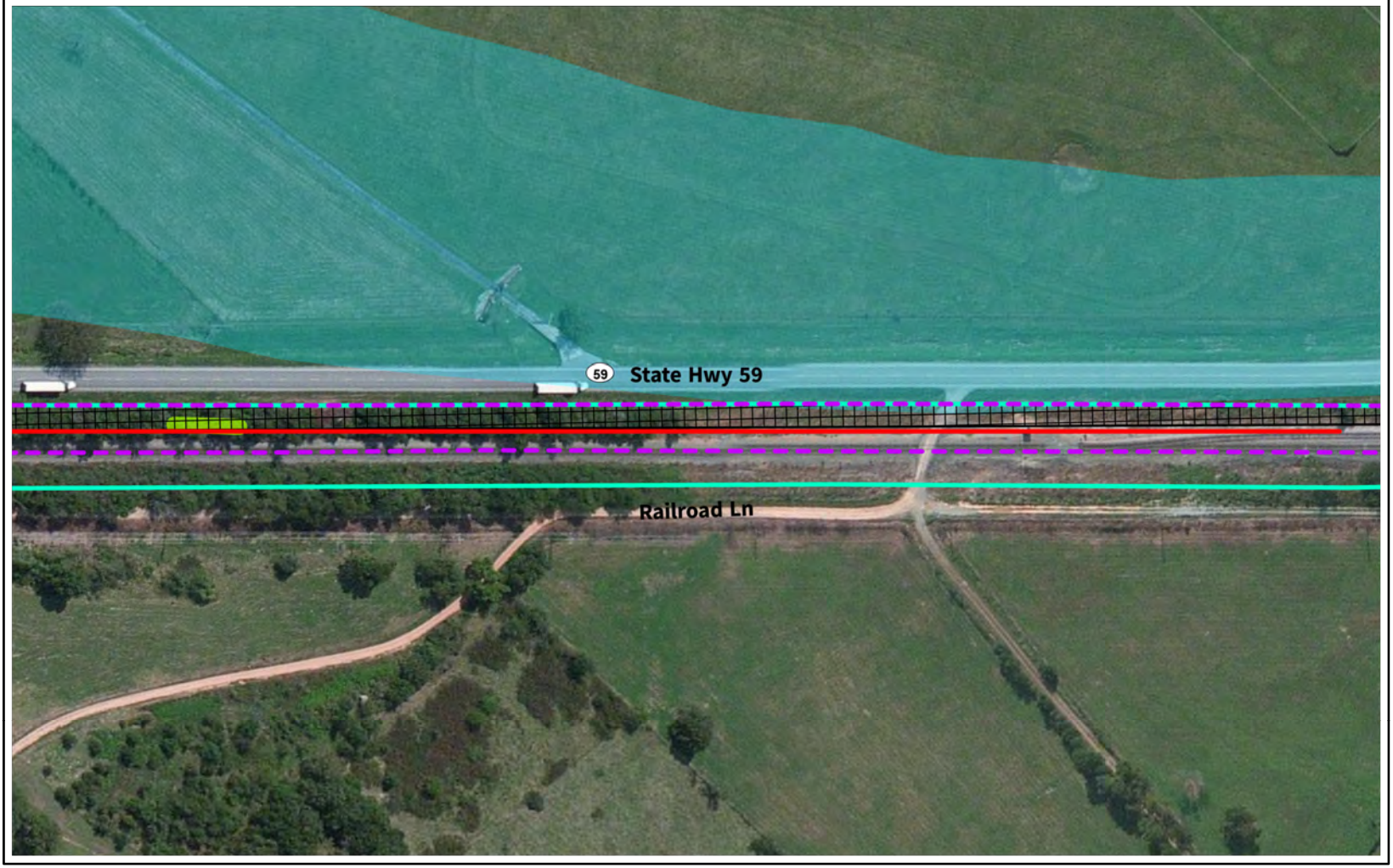
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-107





Study Area

Capital Improvement Location

Existing Right-of-Way

Wetlands

Maintained Roadway ROW

FEMA 100-year floodplain

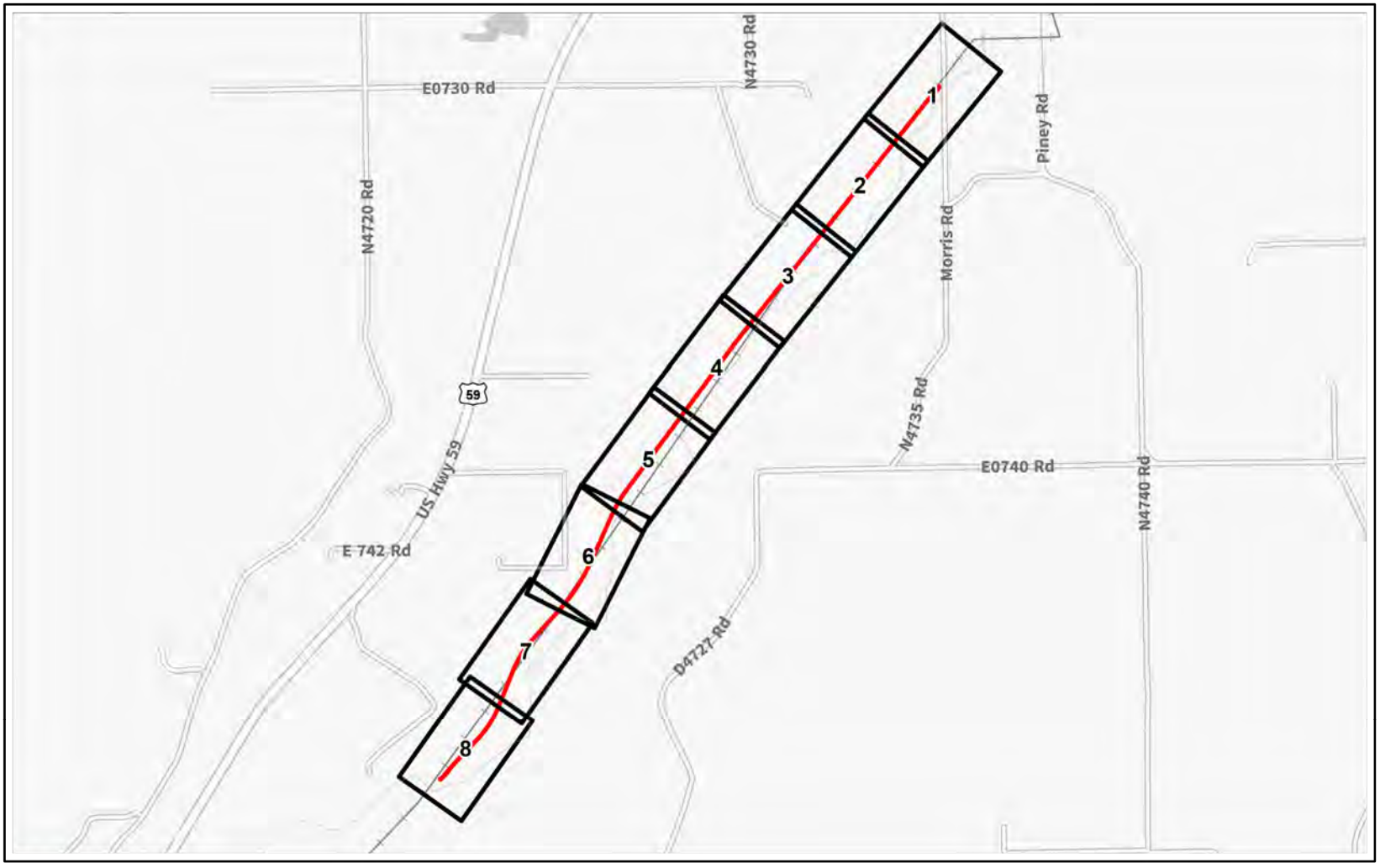
N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-108





Capital Improvement Location

Page Index

0 2200 4400 Feet

N

Source: FRA, CP, ArcGIS Online

O-109



Capital Improvement MP 247 (Baron)
Adair, Oklahoma | Page Index



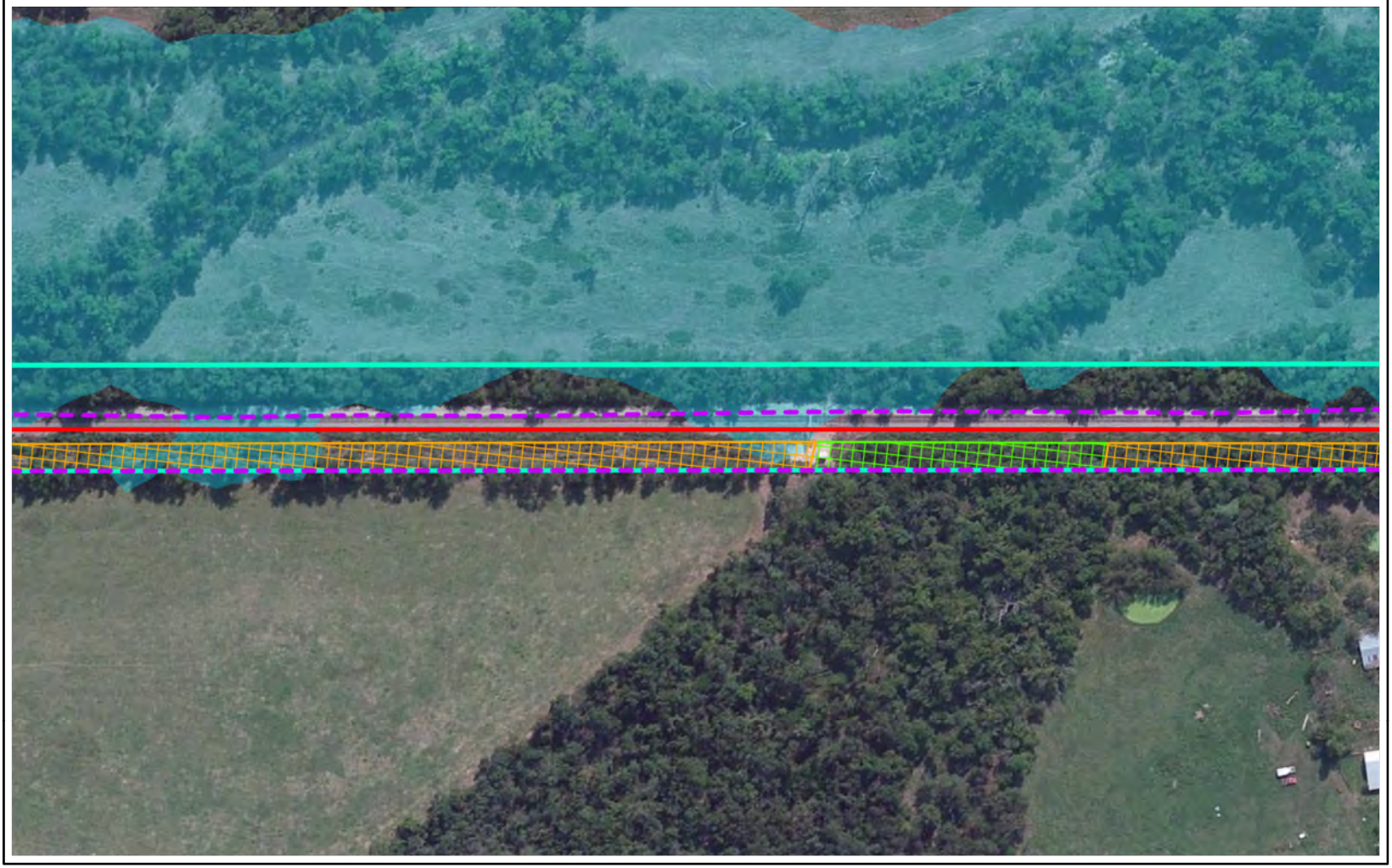
Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Agricultural
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-110





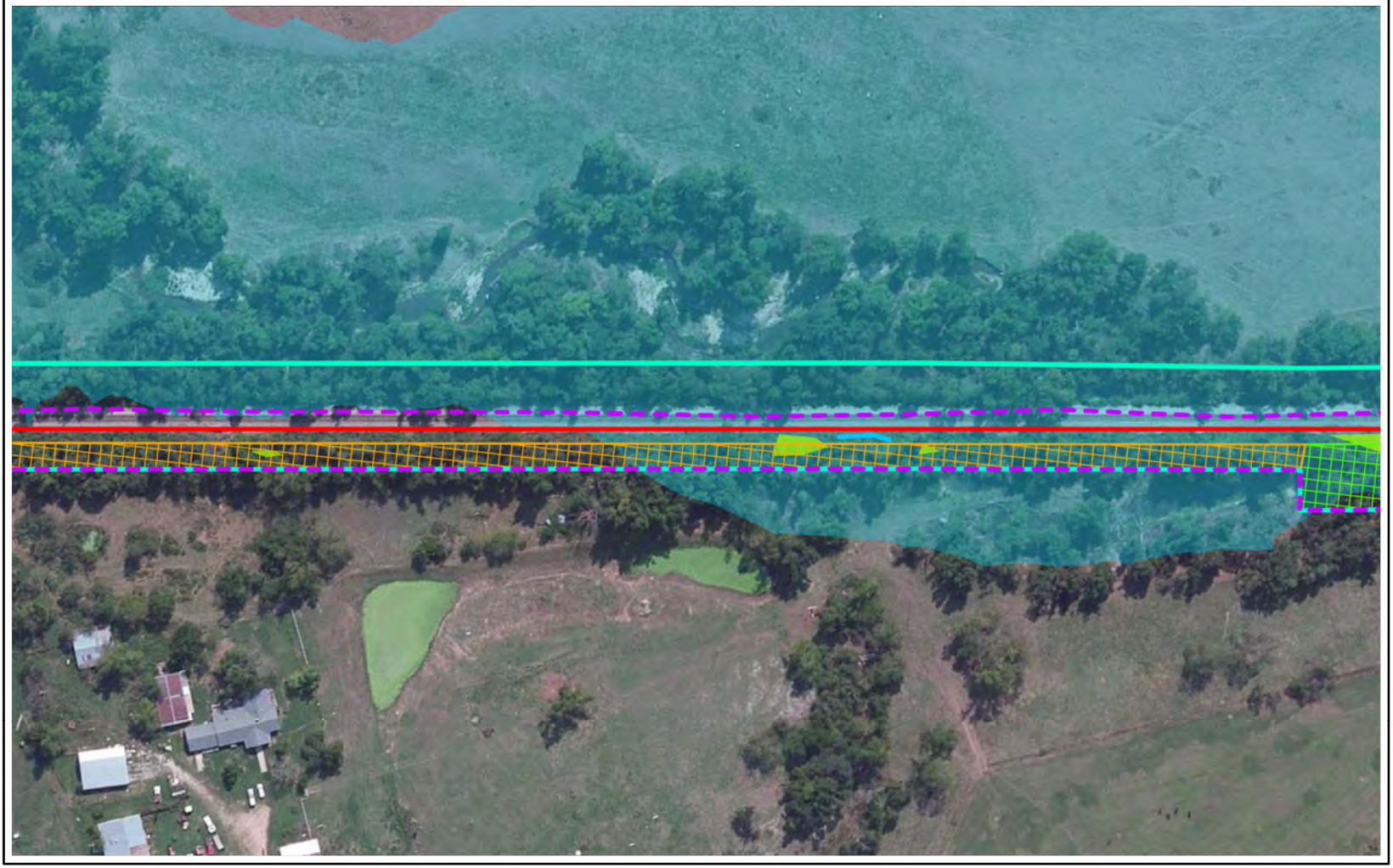
Study Area
Capital Improvement Location
Existing Right-of-Way
Agricultural
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-111





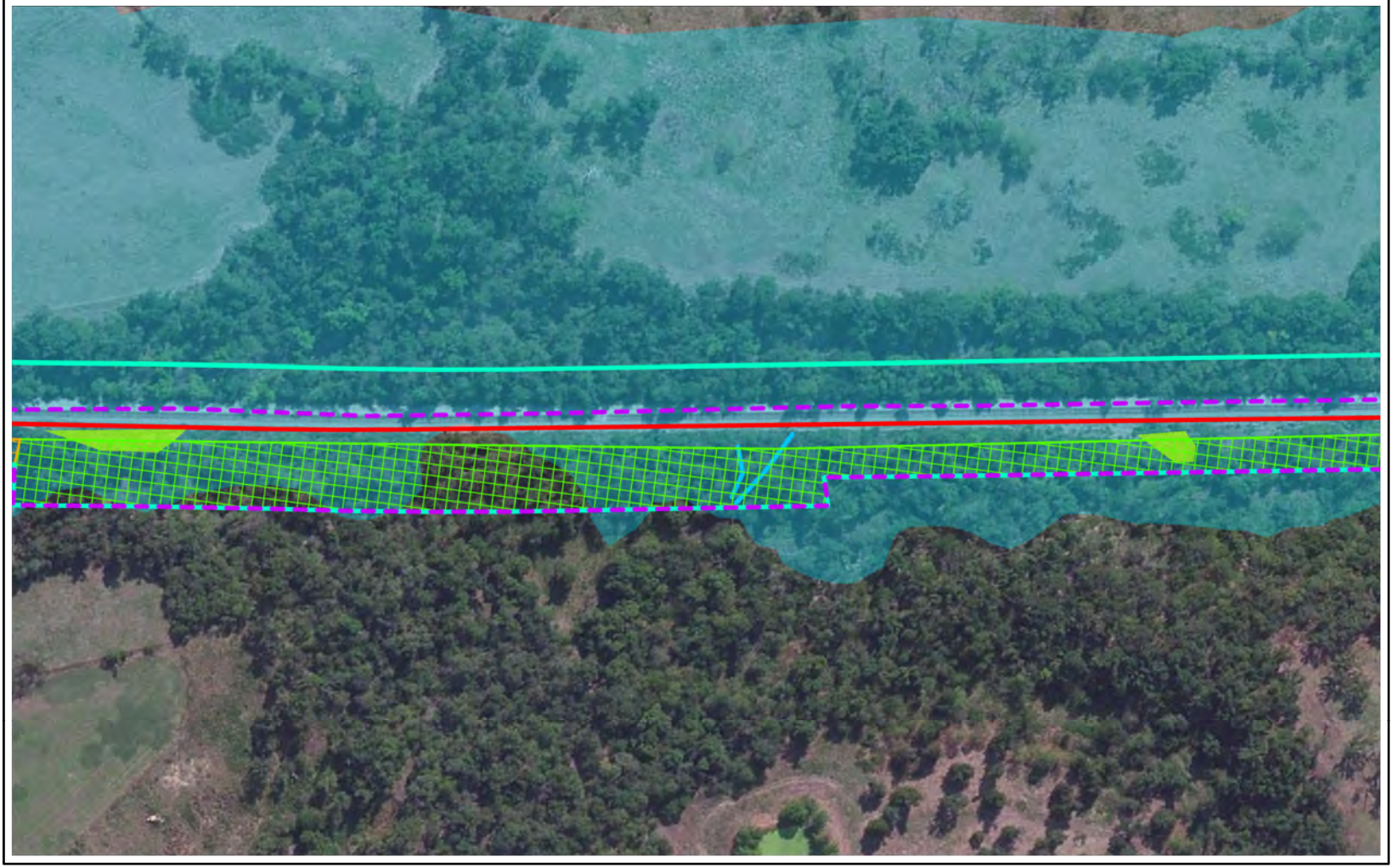
Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Agricultural
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-112





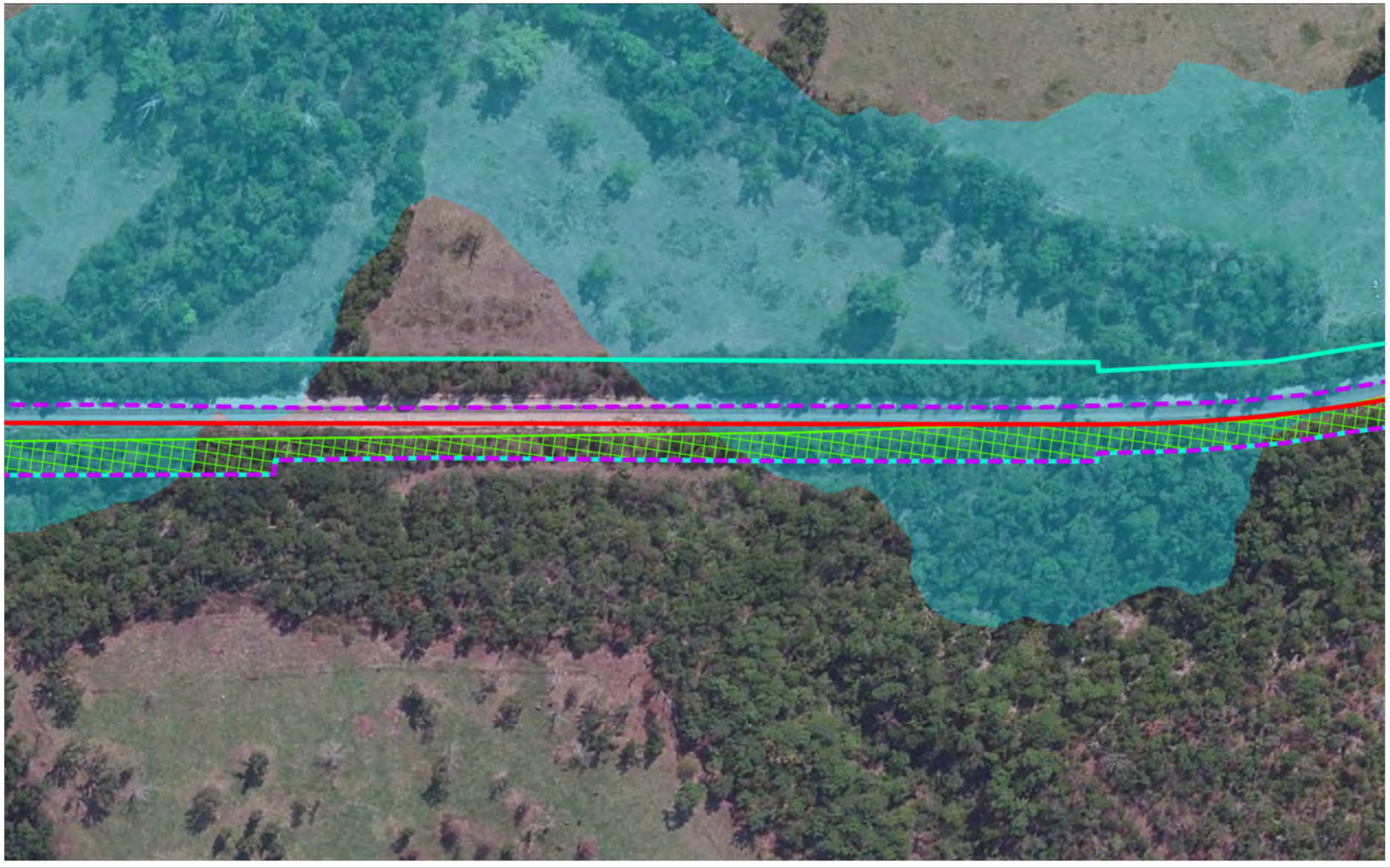
Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Agricultural
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-113





Study Area

Capital Improvement Location

Existing Right-of-Way

Mixed Hardwood Forest

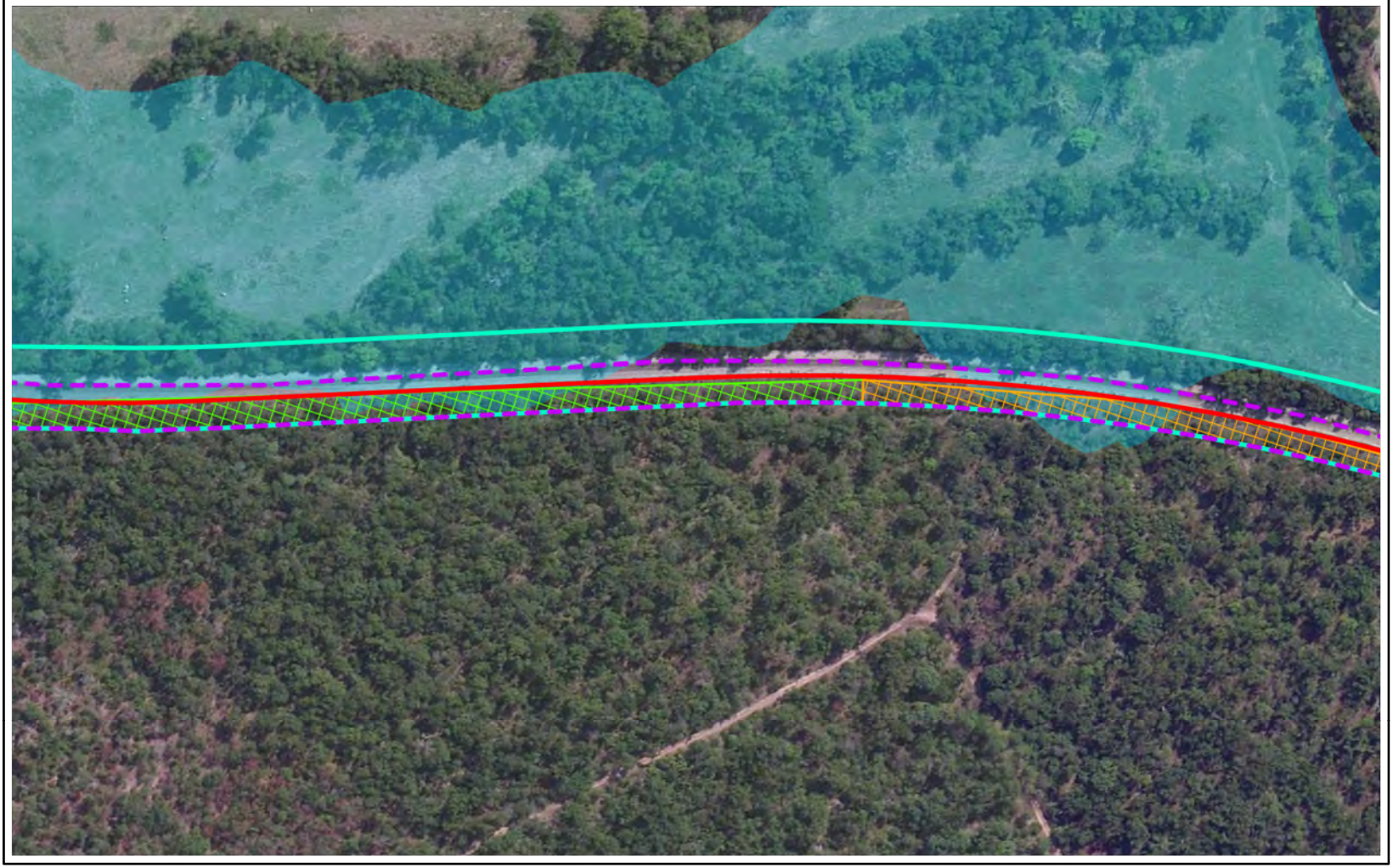
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-114





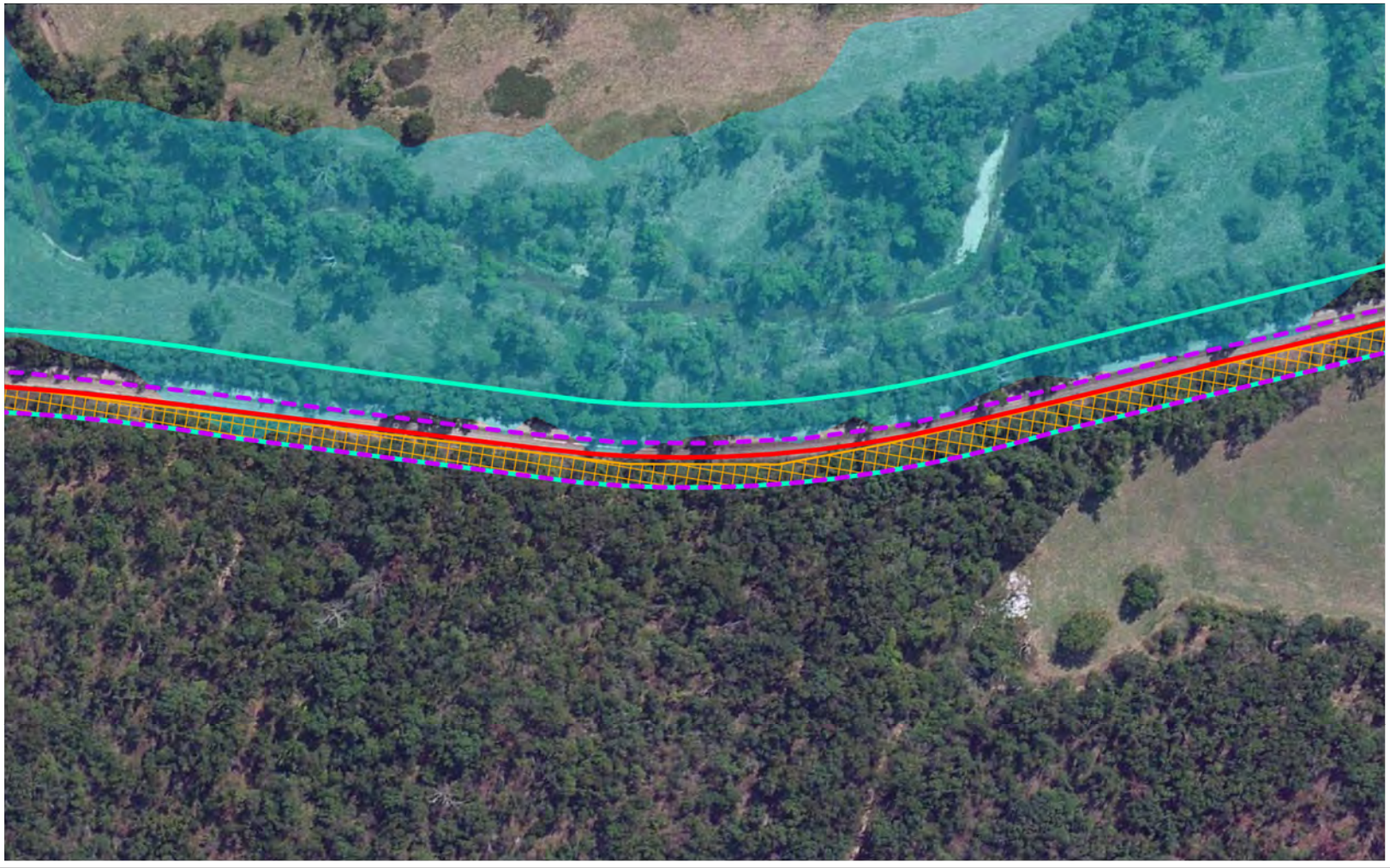
Study Area
Capital Improvement Location
Existing Right-of-Way
Agricultural
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-115





Study Area

Capital Improvement Location

Existing Right-of-Way

Agricultural

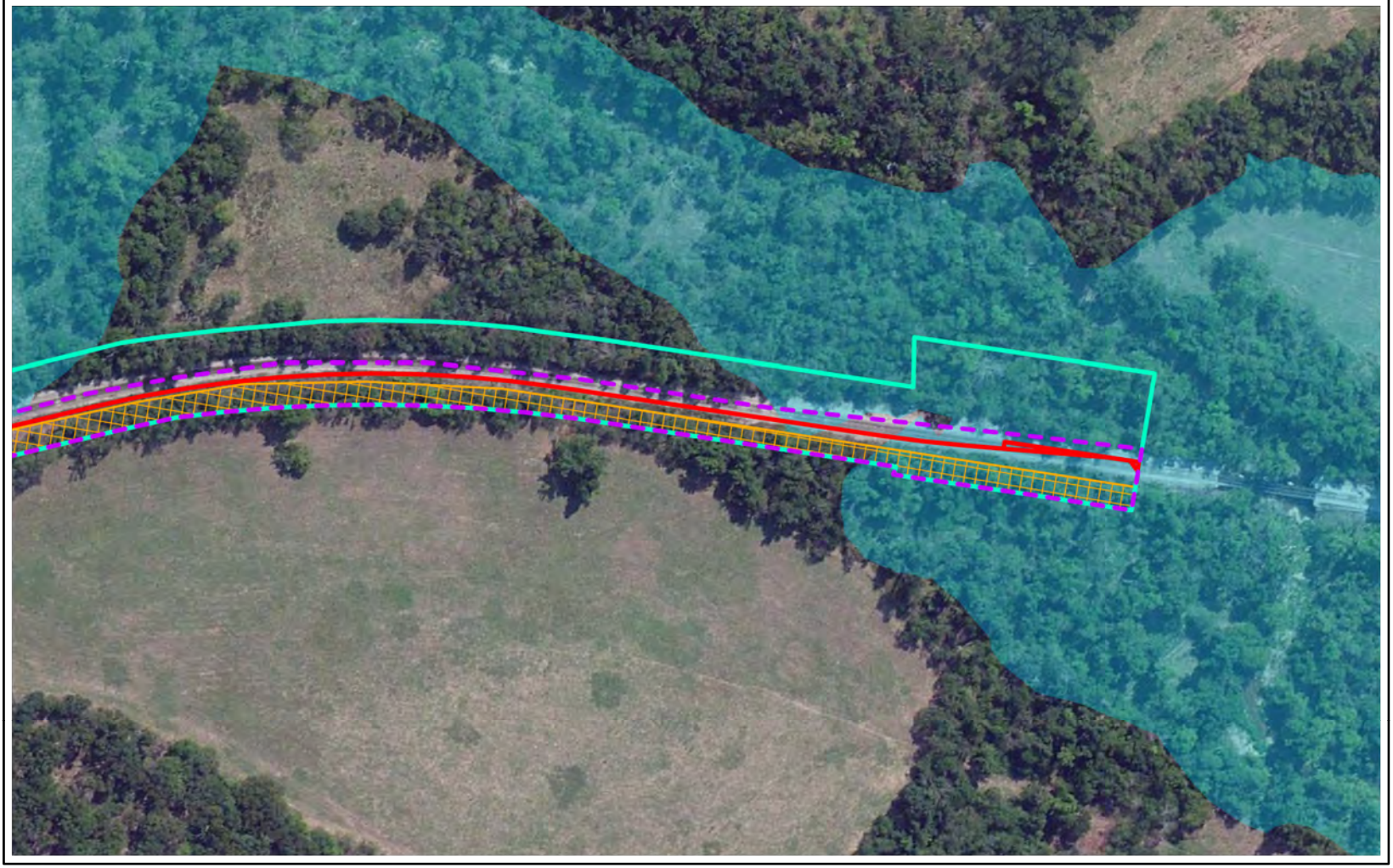
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-116





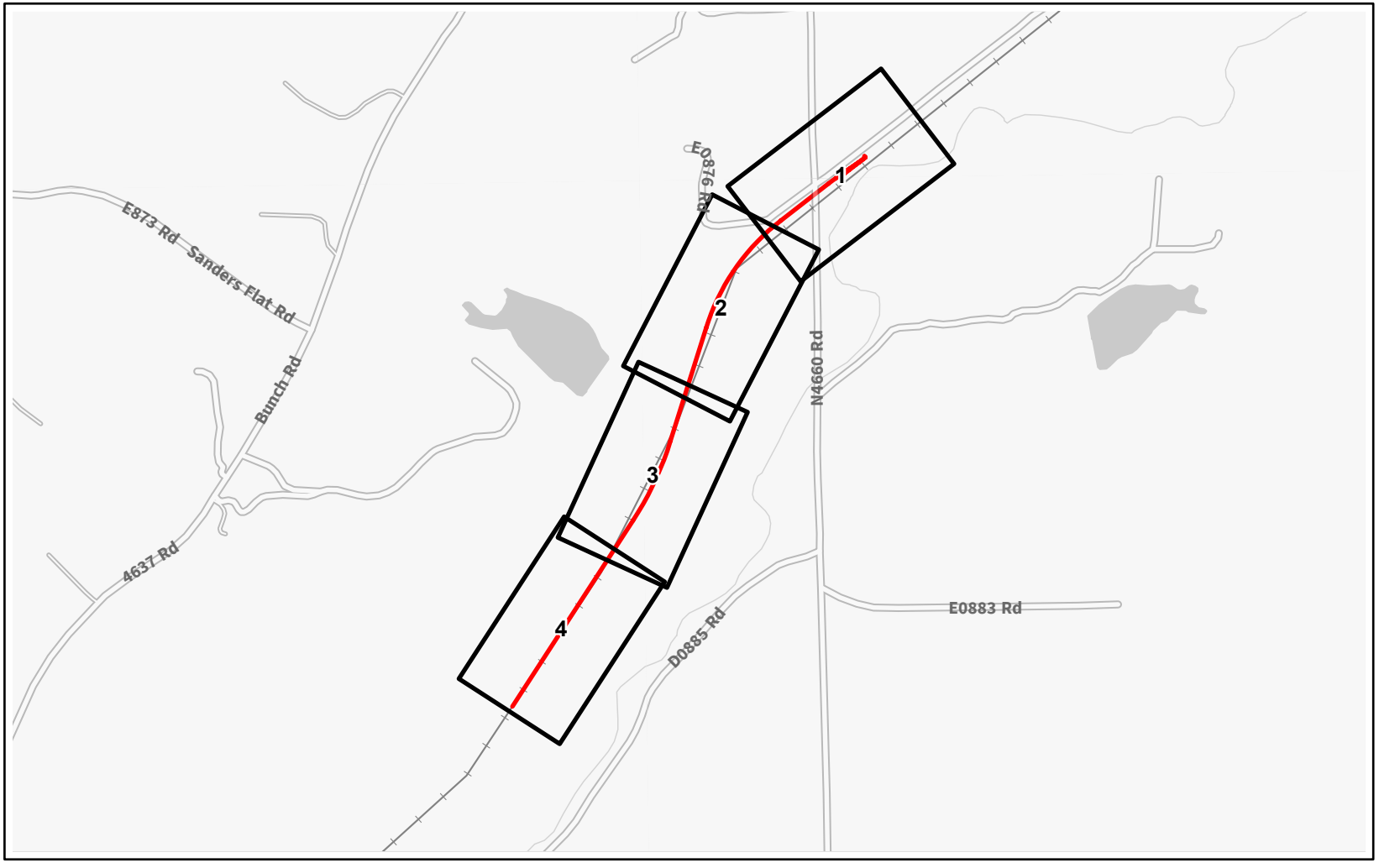
Study Area
Capital Improvement Location
Existing Right-of-Way
Agricultural
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

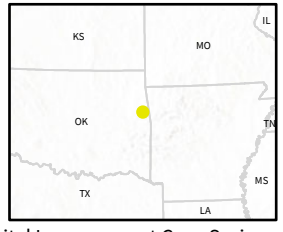
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Capital Improvement Location

Page Index



N

0 1400 2800 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Cave Springs
Adair, Oklahoma | Page Index



Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Cave Springs
Adair, Oklahoma | Page 1 of 4



Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Agricultural
Mixed Hardwood Forest
FEMA 100-year floodplain

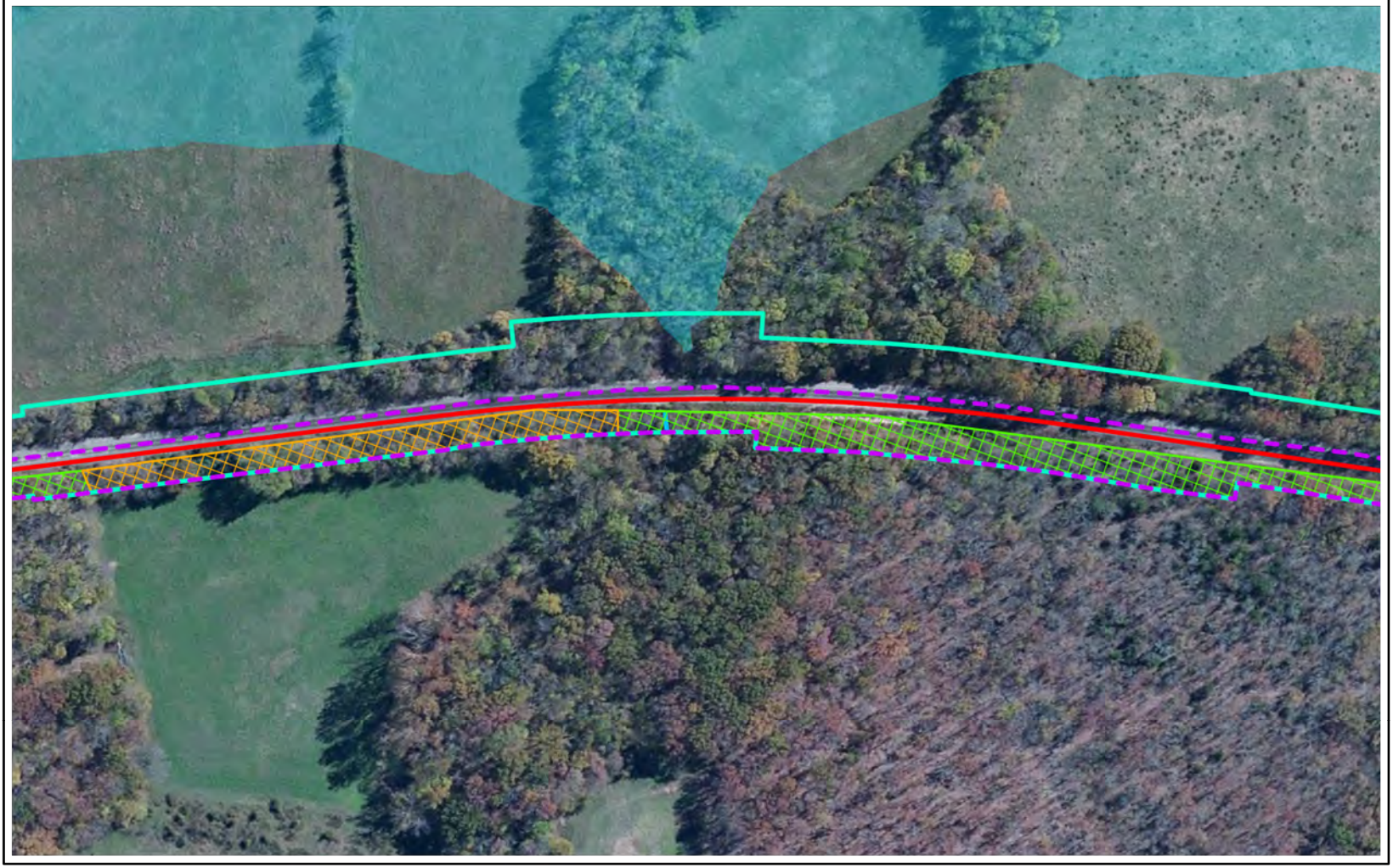


0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Cave Springs
Adair, Oklahoma | Page 2 of 4



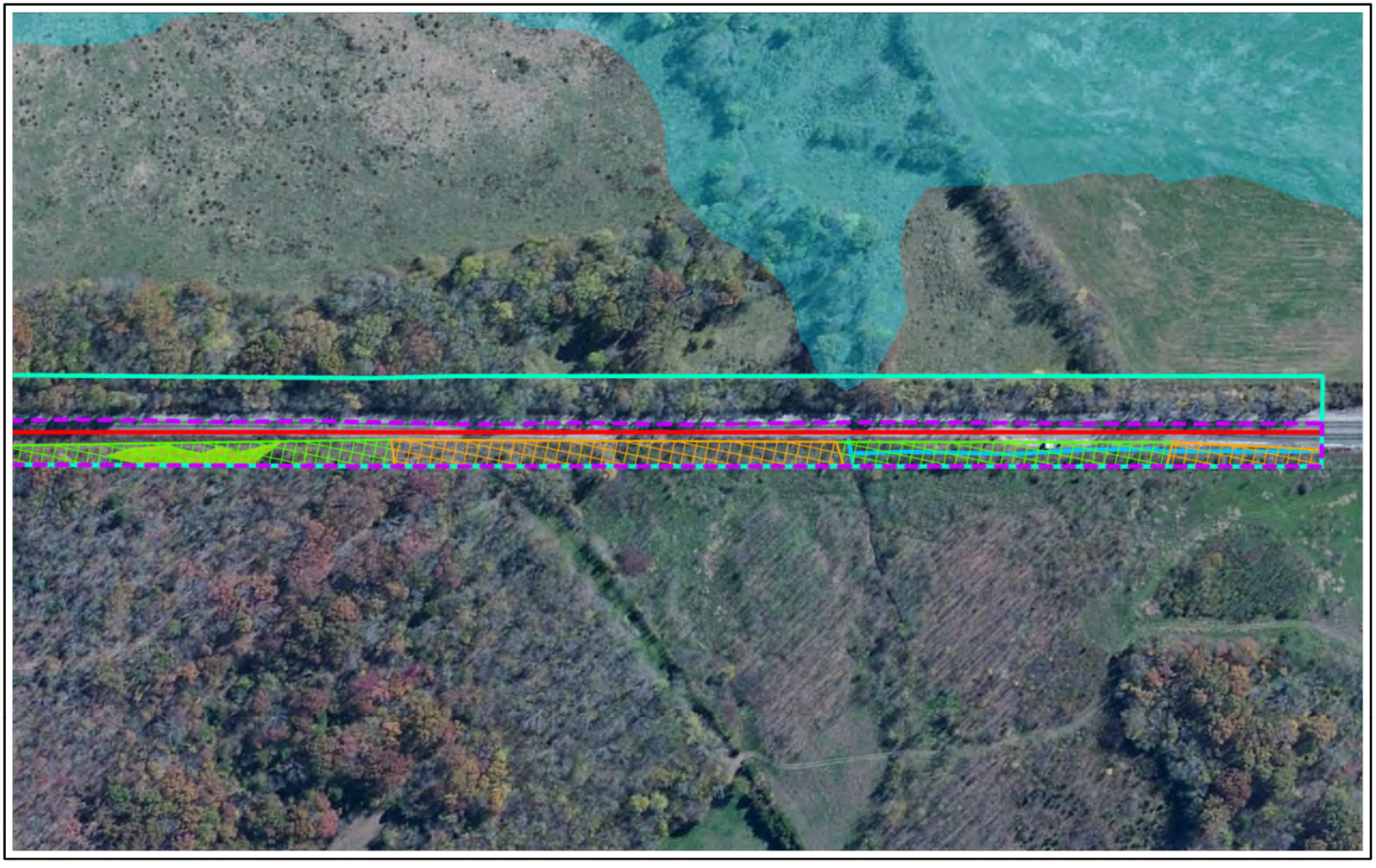
Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Agricultural
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-121





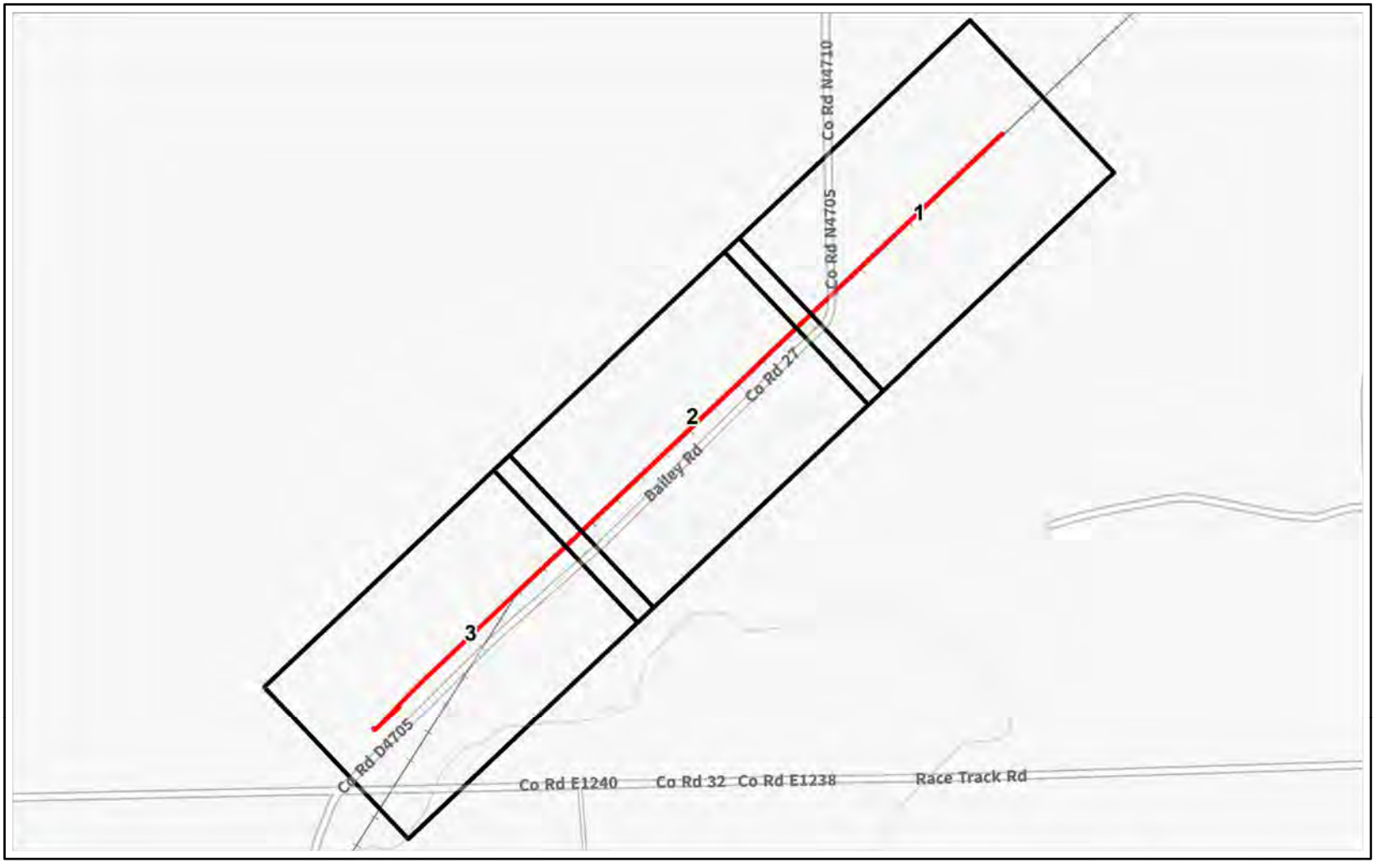
Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Agricultural
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-122





Capital Improvement Location

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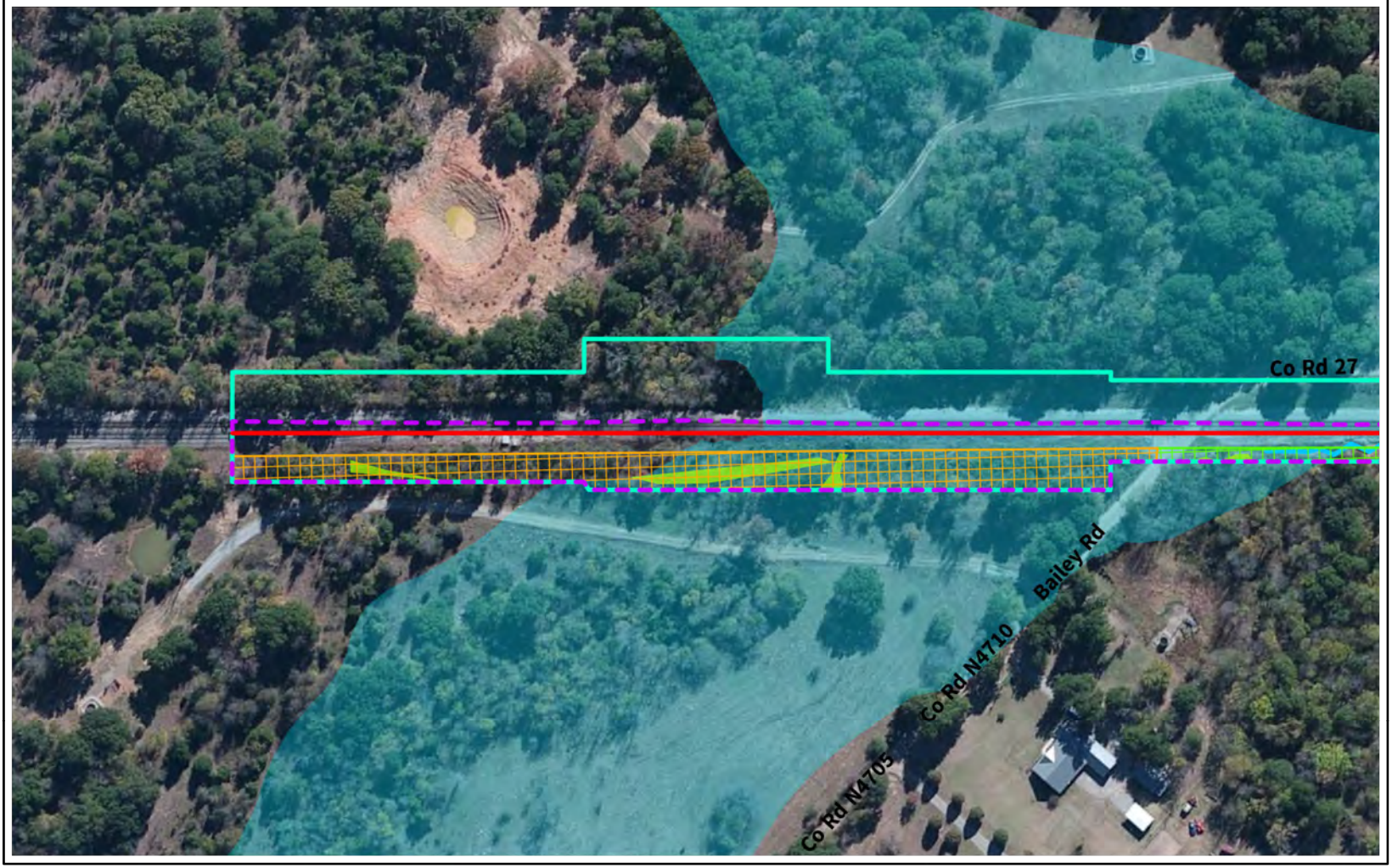
N

0 800 1600 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Spiro
Le Flore, Oklahoma | Page Index



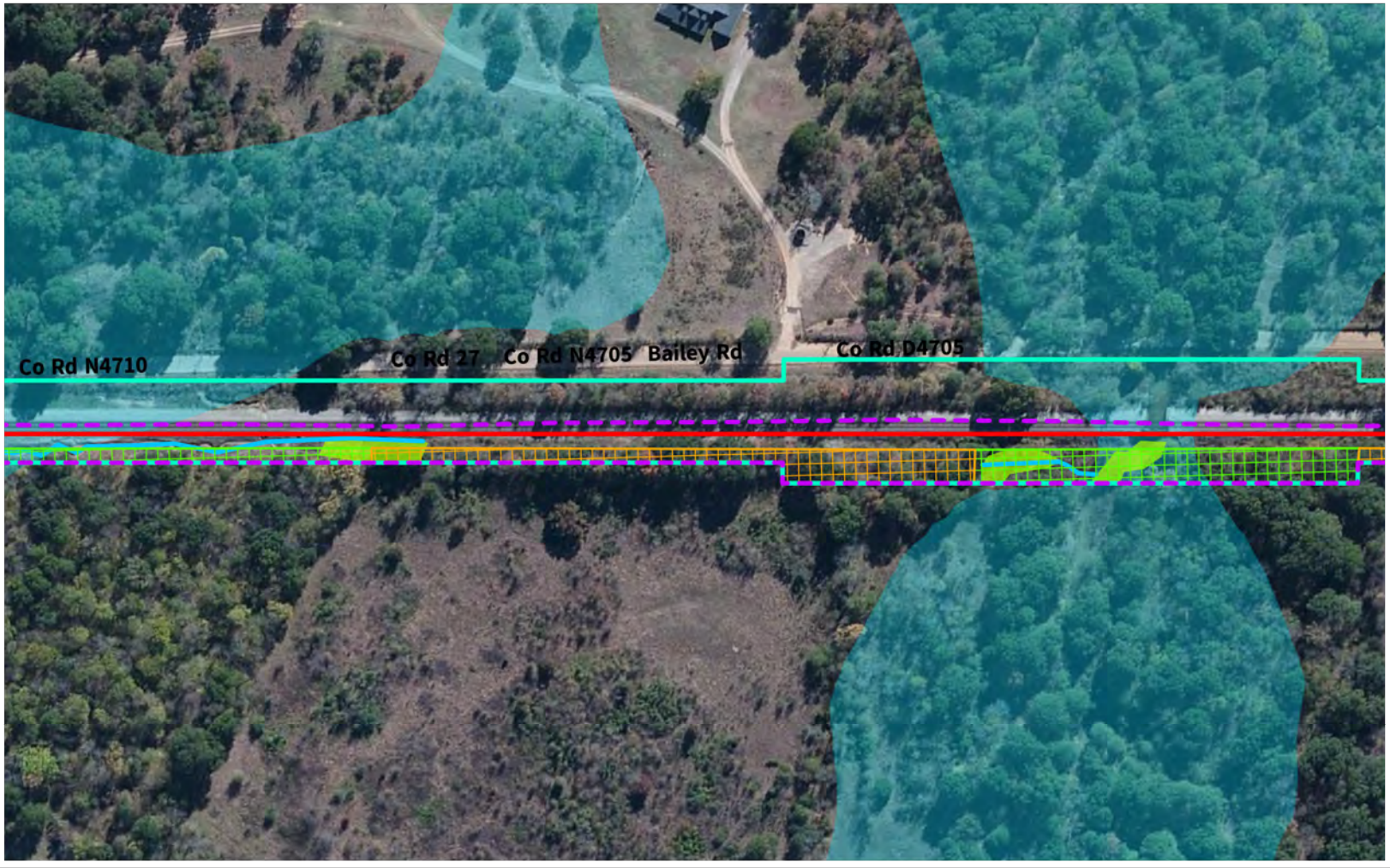
Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Agricultural
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-124





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Agricultural
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-125





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Agricultural
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Location

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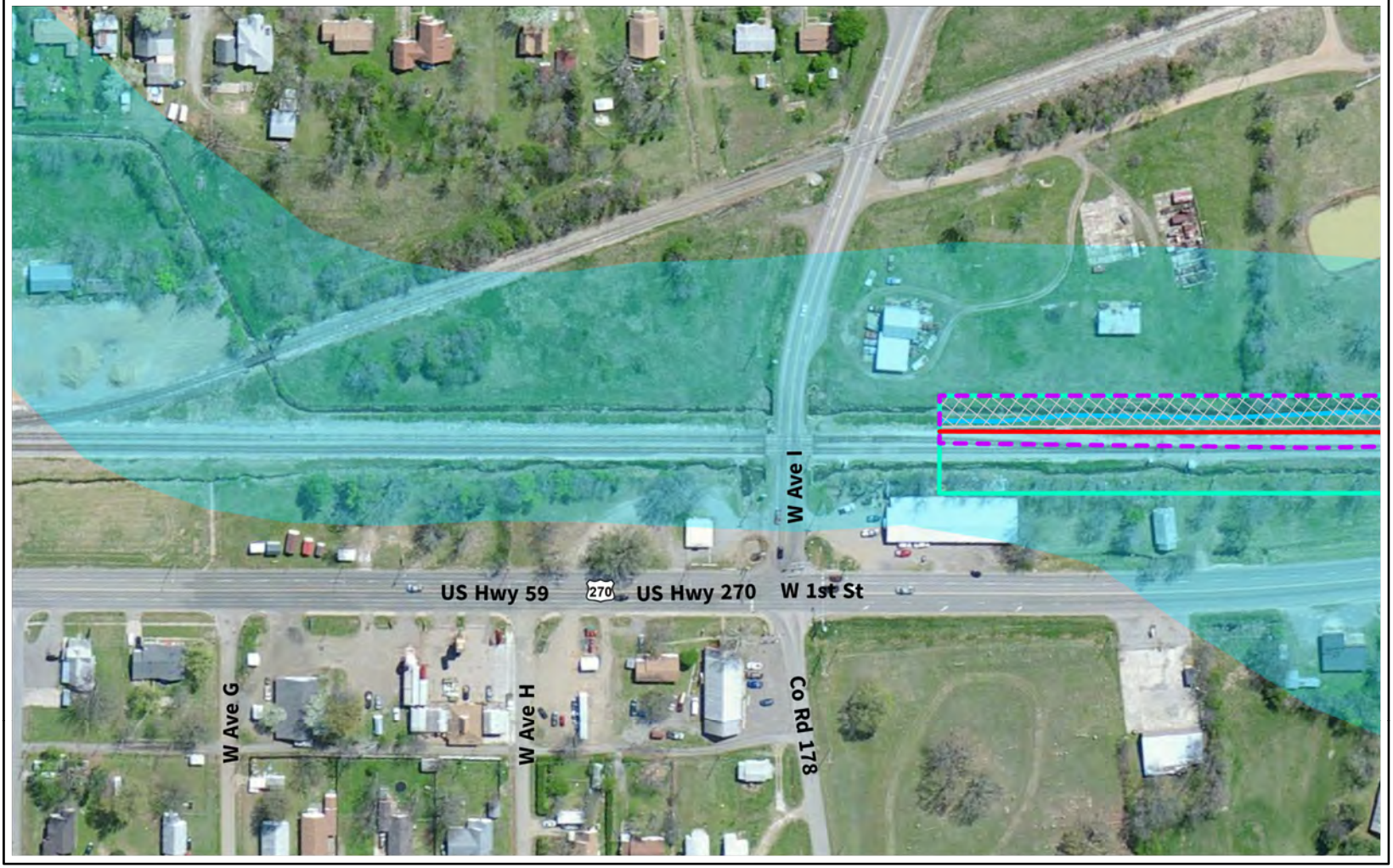


N

0 2500 5000 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement Heavener
Le Flore, Oklahoma | Page Index



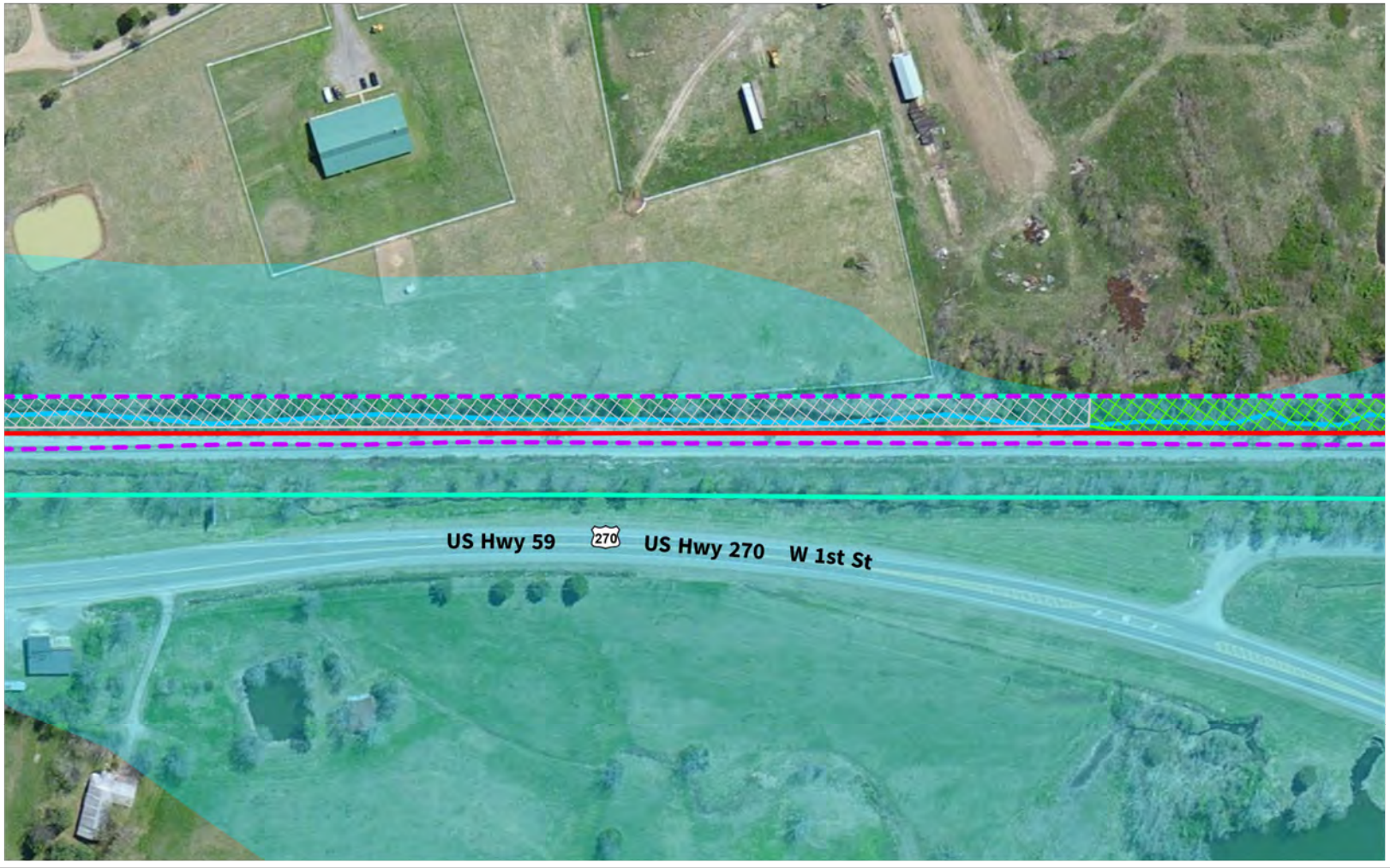
Study Area
Streams
Industrial
FEMA 100-year floodplain
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-128





Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Industrial
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-129





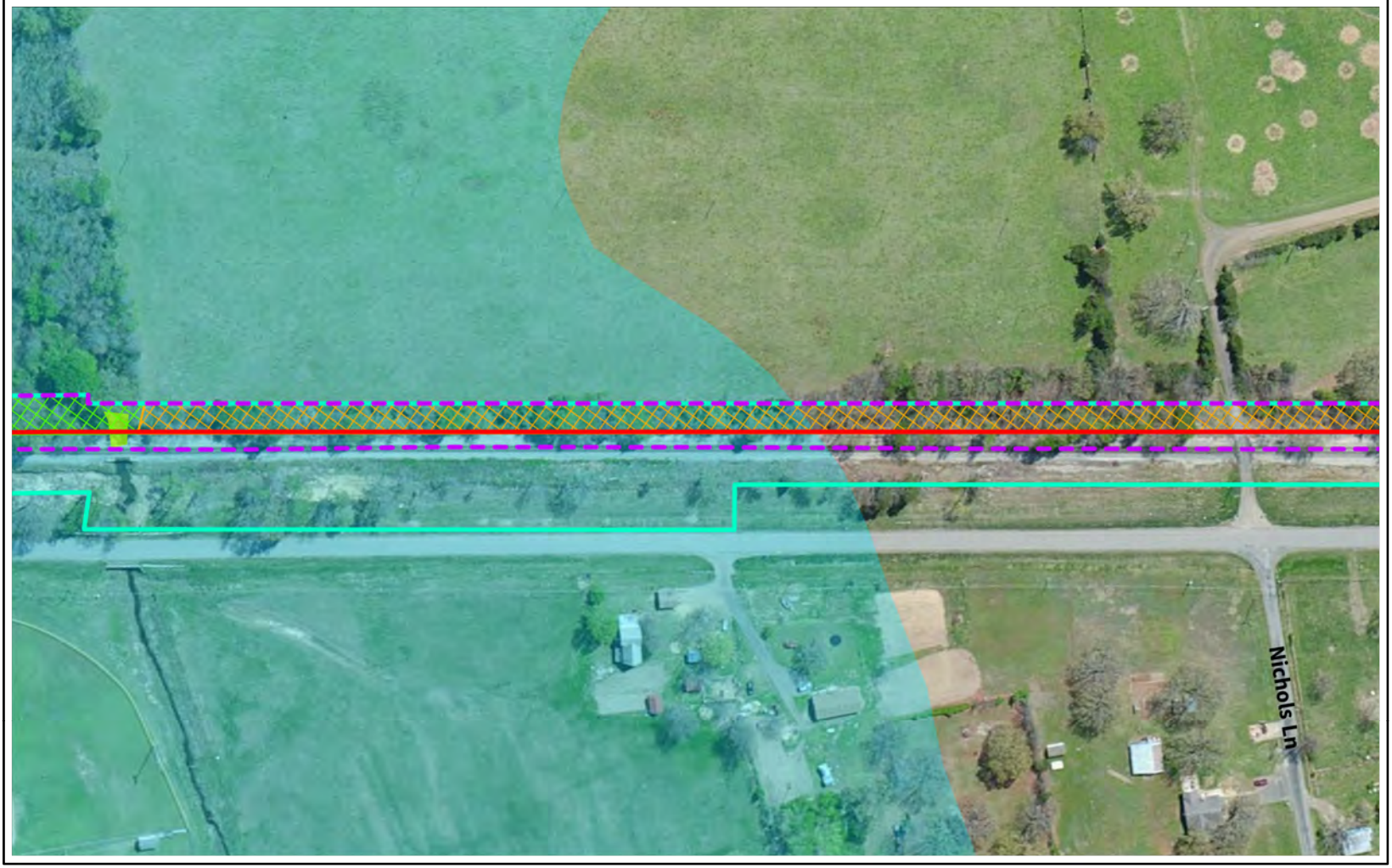
Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Mixed Hardwood Forest
FEMA 100-year floodplain



0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-130



Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Agricultural
Mixed Hardwood Forest
FEMA 100-year floodplain

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-131





Study Area
Capital Improvement Location
Existing Right-of-Way
Agricultural
Residential
Mixed Hardwood Forest

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-132





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Agricultural
Residential
Mixed Hardwood Forest

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-133





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Agricultural
FEMA 100-year floodplain

N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-134





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Agricultural
FEMA 100-year floodplain

N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-135





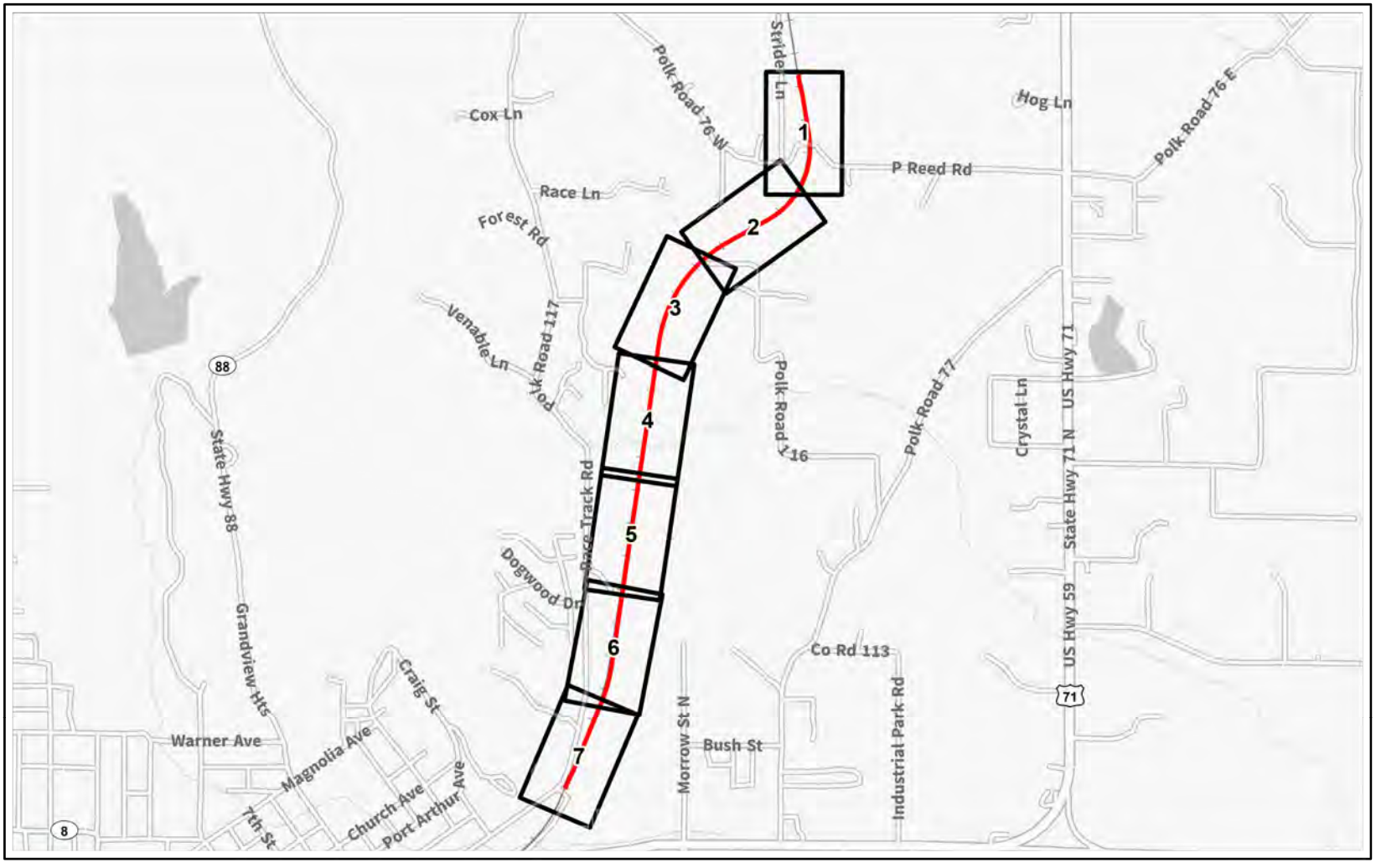
Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Agricultural
Mixed Hardwood Forest
FEMA 100-year floodplain



0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Location

Page Index



N

0 2200 4400 Feet

Source: FRA, CP, ArcGIS Online

Capital Improvement MP 377 (Mena)
Polk, Arkansas | Page Index



Study Area
Capital Improvement Location
Existing Right-of-Way
Streams
Agricultural
Mixed Hardwood Forest

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-138





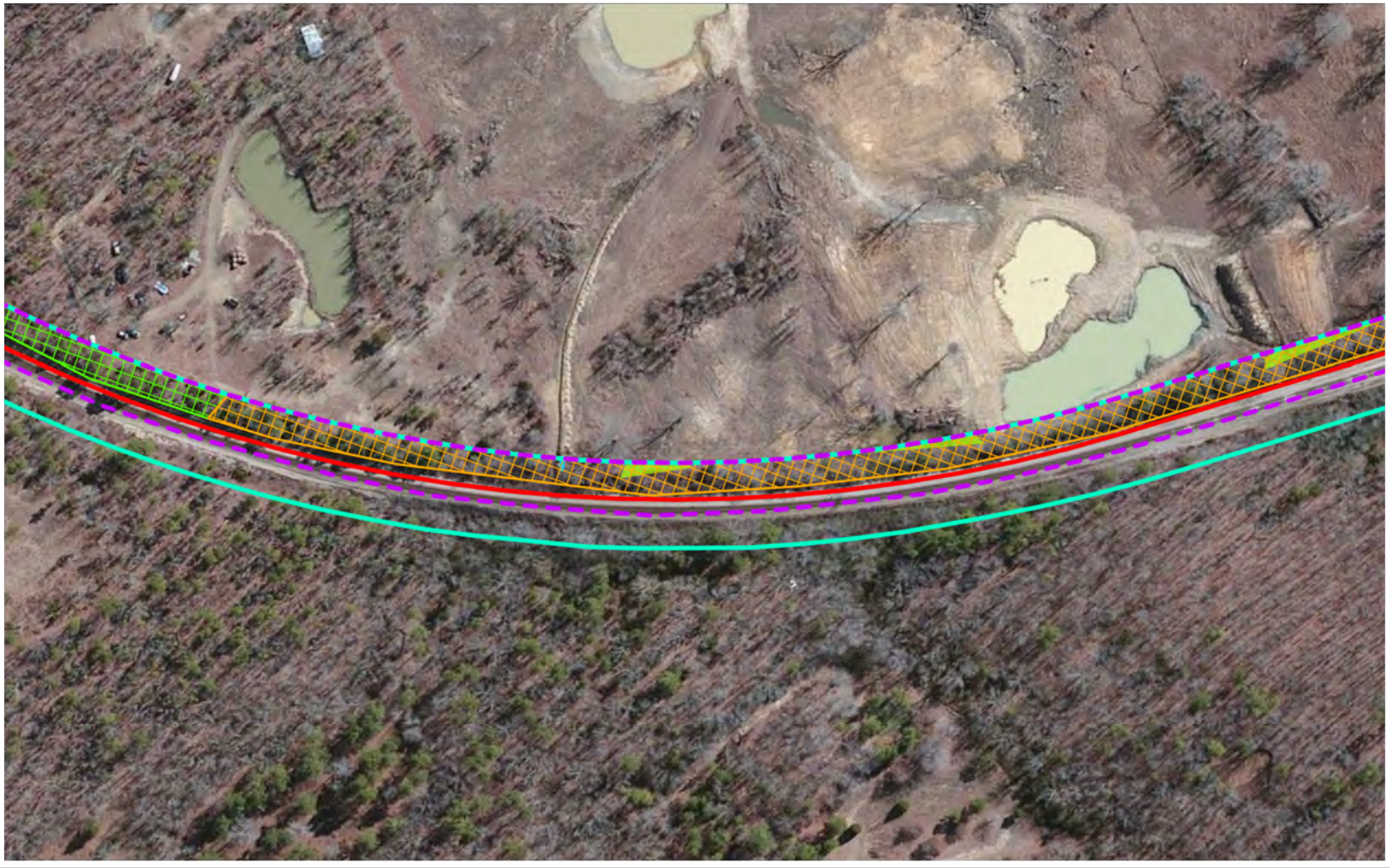
Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Agricultural
Mixed Hardwood Forest

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-139





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Agricultural
Mixed Hardwood Forest

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-140





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Agricultural
Mixed Hardwood Forest

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-141





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Fallow Field/Early Successional Habitat
Mixed Hardwood Forest

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-142





Study Area

Capital Improvement Location

Existing Right-of-Way

Wetlands

Industrial

Fallow Field/Early Successional Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-143





Study Area

Capital Improvement Location

Existing Right-of-Way

Industrial

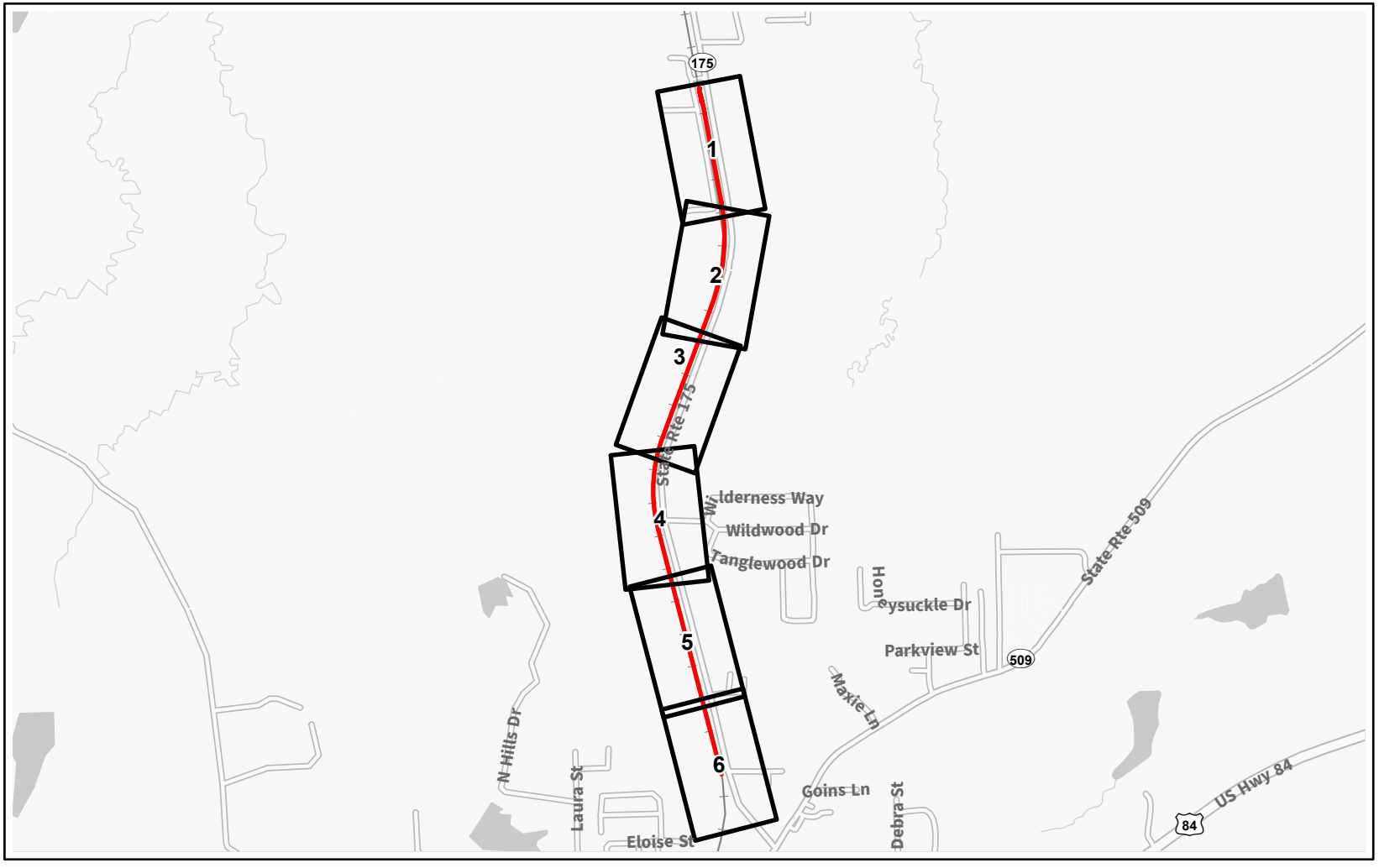
0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement MP 377 (Mena)
Polk, Arkansas | Page 7 of 7



Capital Improvement Location

Page Index



N

0 2000 4000 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Mansfield
De Soto, Louisiana | Page Index



Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Maintained Roadway ROW

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-146





Study Area

Capital Improvement Location

Existing Right-of-Way

Wetlands

Maintained Roadway ROW

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-147





Study Area

Capital Improvement Location

Existing Right-of-Way

Wetlands

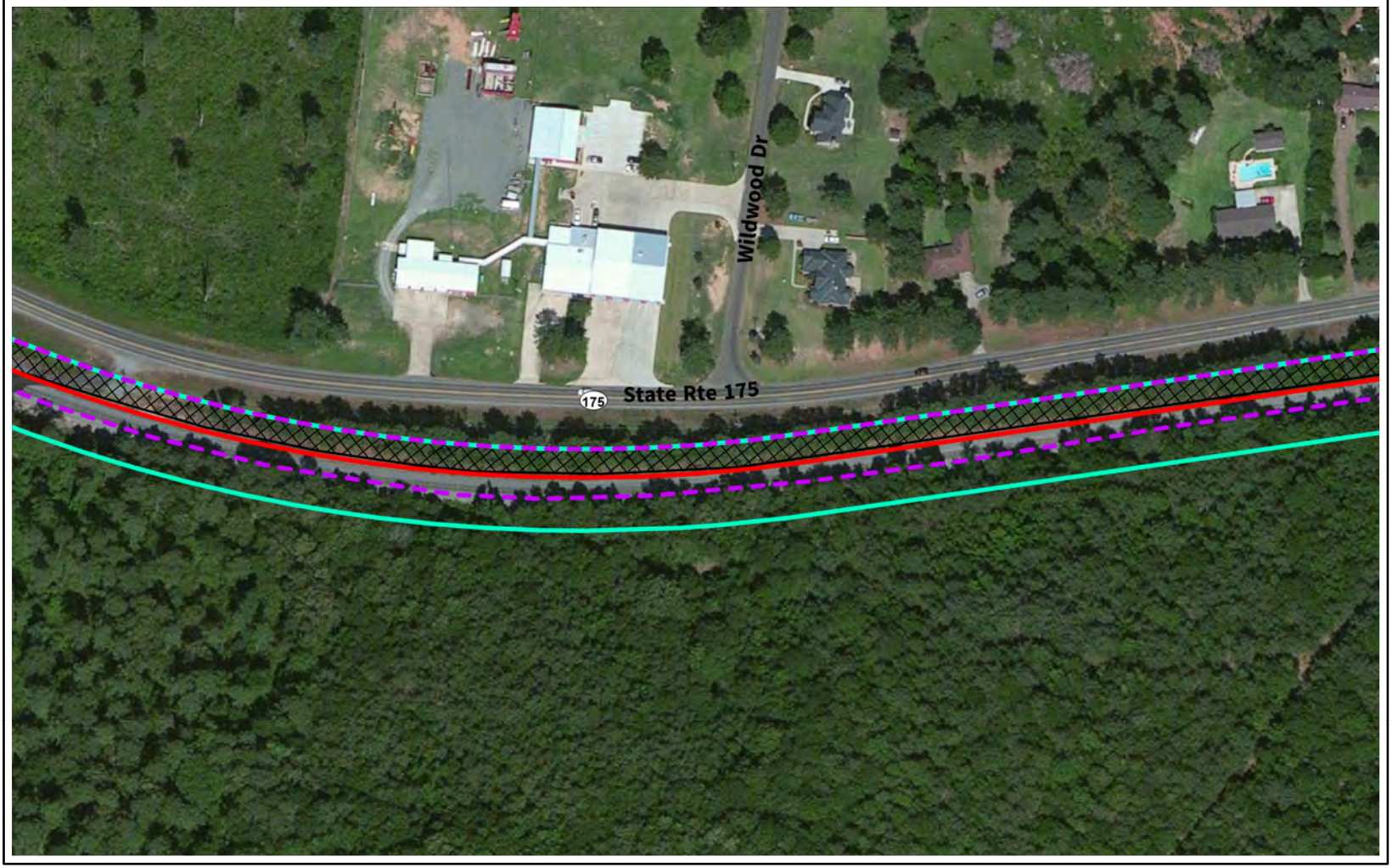
Maintained Roadway ROW

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Maintained Roadway ROW

Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-149





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Maintained Roadway ROW
FEMA 100-year floodplain

N
0
200
400
Feet

Source: FRA, CP, ArcGIS Online

O-150





Study Area

Capital Improvement Location

Existing Right-of-Way

Maintained Roadway ROW

FEMA 100-year floodplain

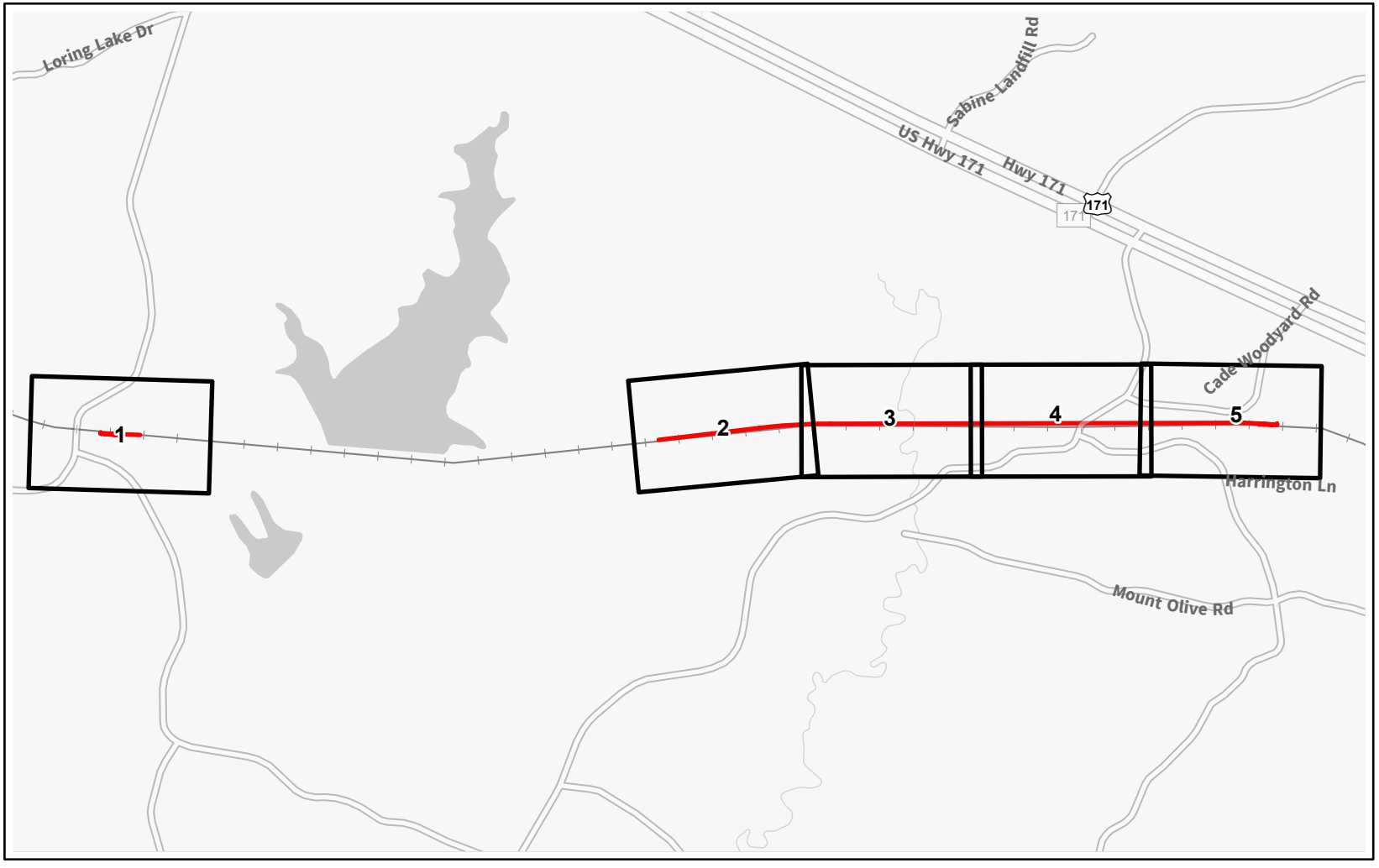
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0 200 400 Feet

Source: FRA, CP, ArcGIS Online

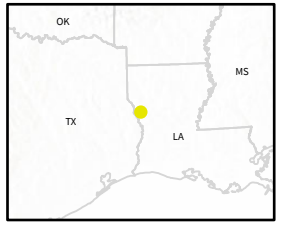
O-151





Capital Improvement Location

Page Index



N

0 1500 3000 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Loring Sabine, Louisiana | Page Index



Study Area

Capital Improvement Location

Existing Right-of-Way

N

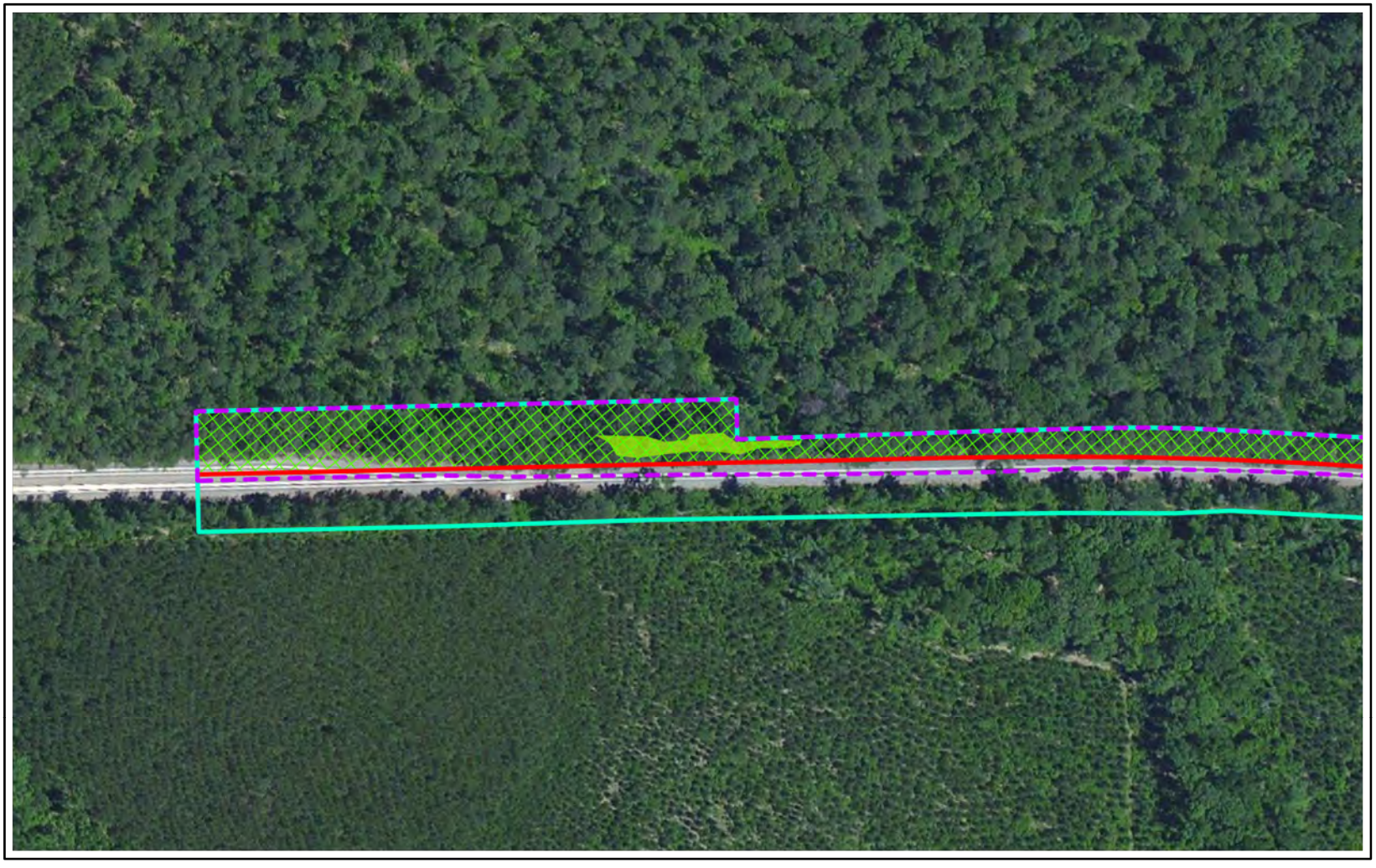
0 200 400

Feet

Source: FRA, CP, ArcGIS Online

O-153





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Mixed Hardwood Forest

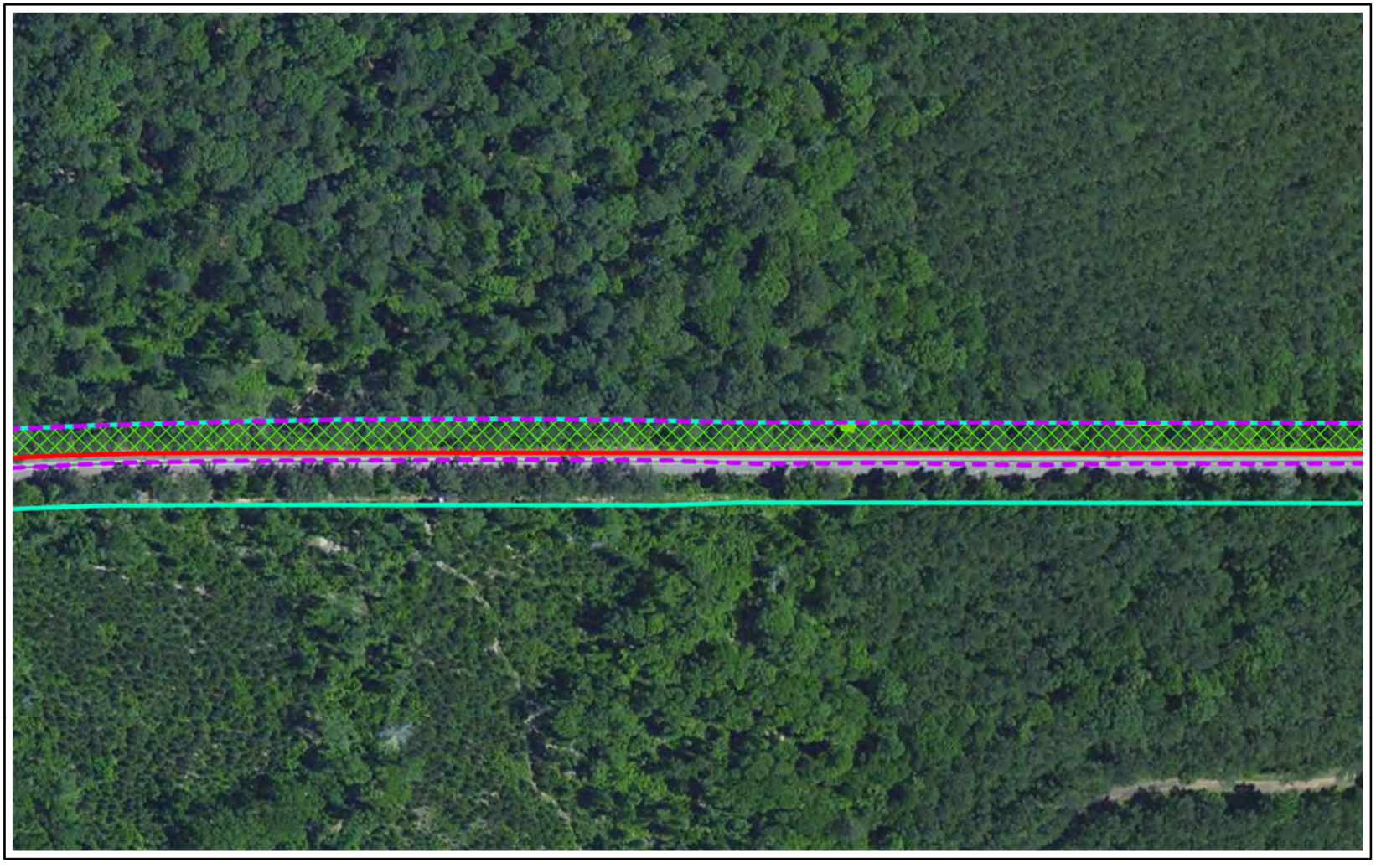
N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-154





Study Area

Capital Improvement Location

Existing Right-of-Way

Wetlands

Mixed Hardwood Forest

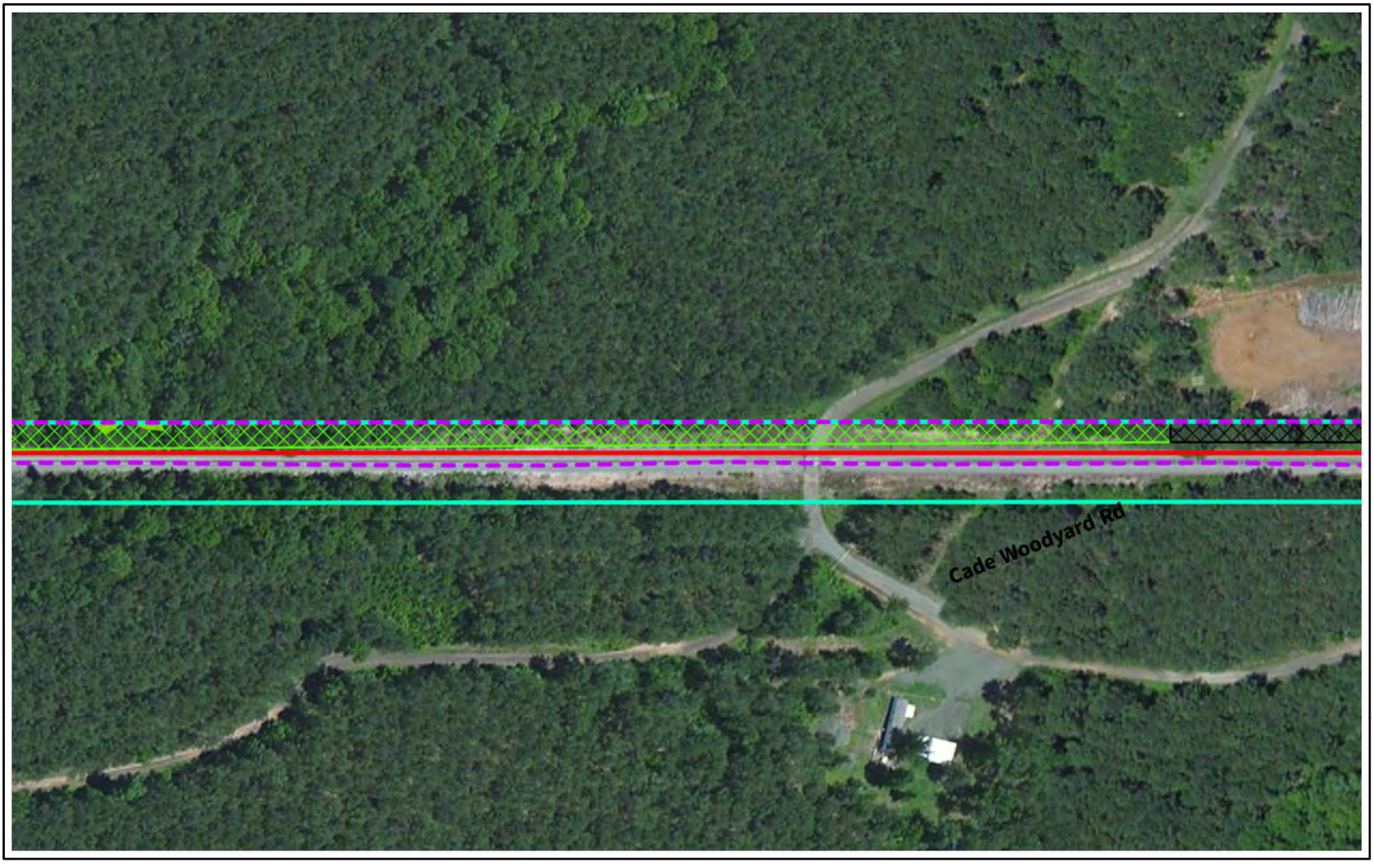
N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-155





Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Maintained Roadway ROW
Mixed Hardwood Forest

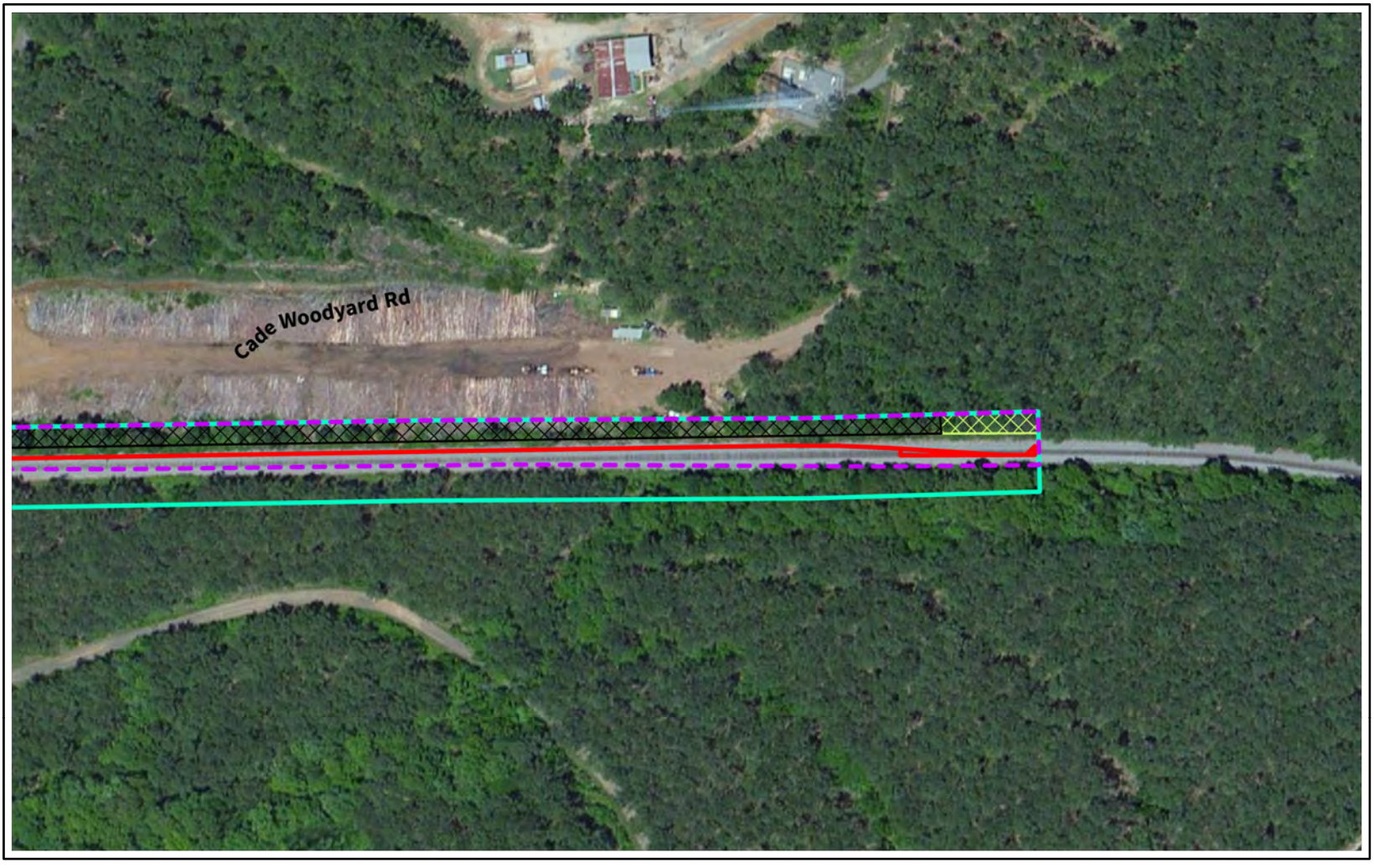


N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

Existing Right-of-Way

Maintained Roadway ROW

Mixed Hardwood Forest

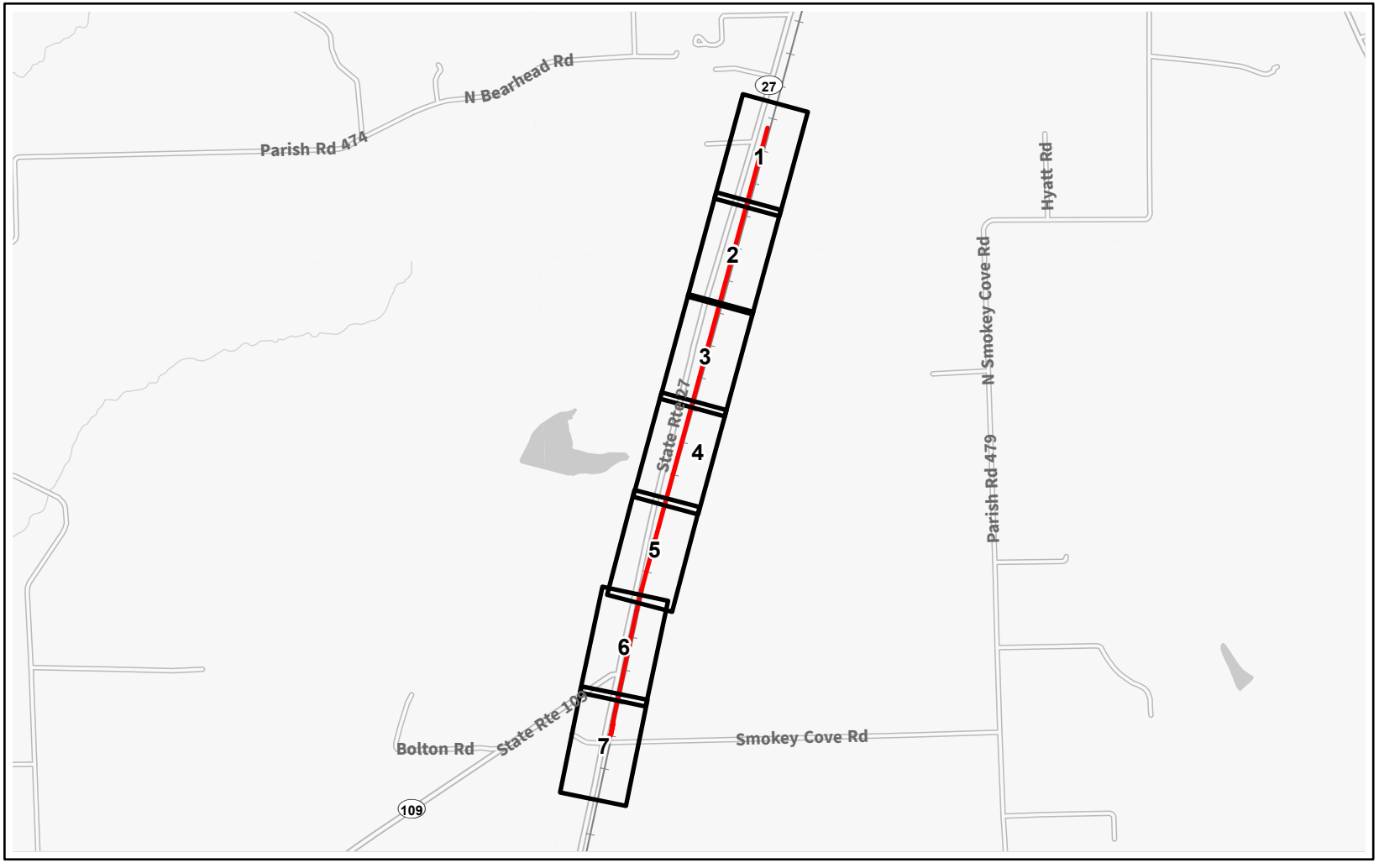
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0 200 400 Feet

Source: FRA, CP, ArcGIS Online

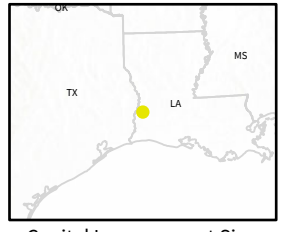
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Capital Improvement Location

Page Index



N

0 2500 5000 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Singer
Beauregard, Louisiana | Page Index



Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Maintained Roadway ROW

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Maintained Roadway ROW

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area
Wetlands
Maintained Roadway ROW
Capital Improvement Location
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Maintained Roadway ROW

Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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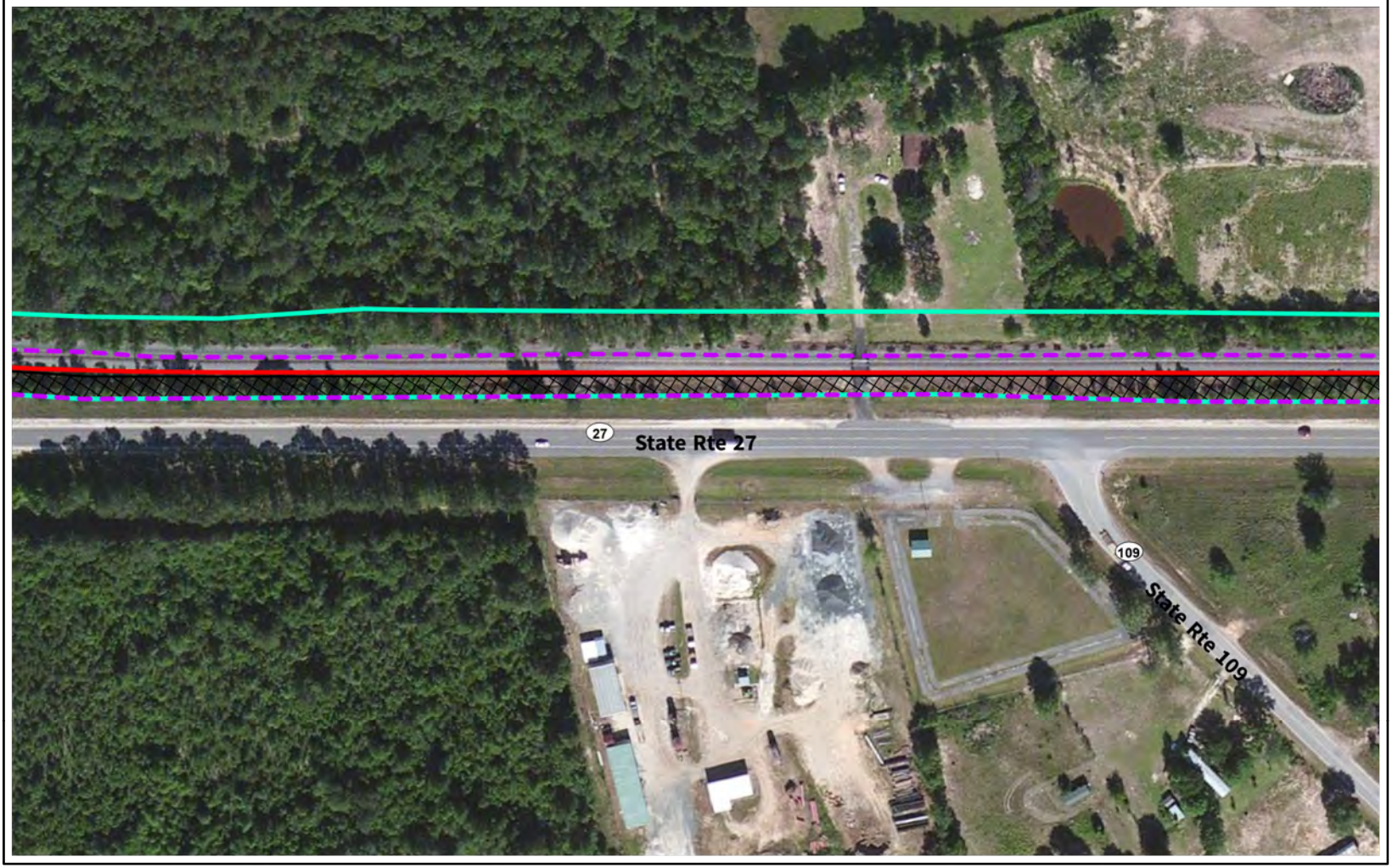
Study Area
Capital Improvement Location
Existing Right-of-Way
Wetlands
Streams
Maintained Roadway ROW

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

Existing Right-of-Way

Maintained Roadway ROW

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

Existing Right-of-Way

Maintained Roadway ROW

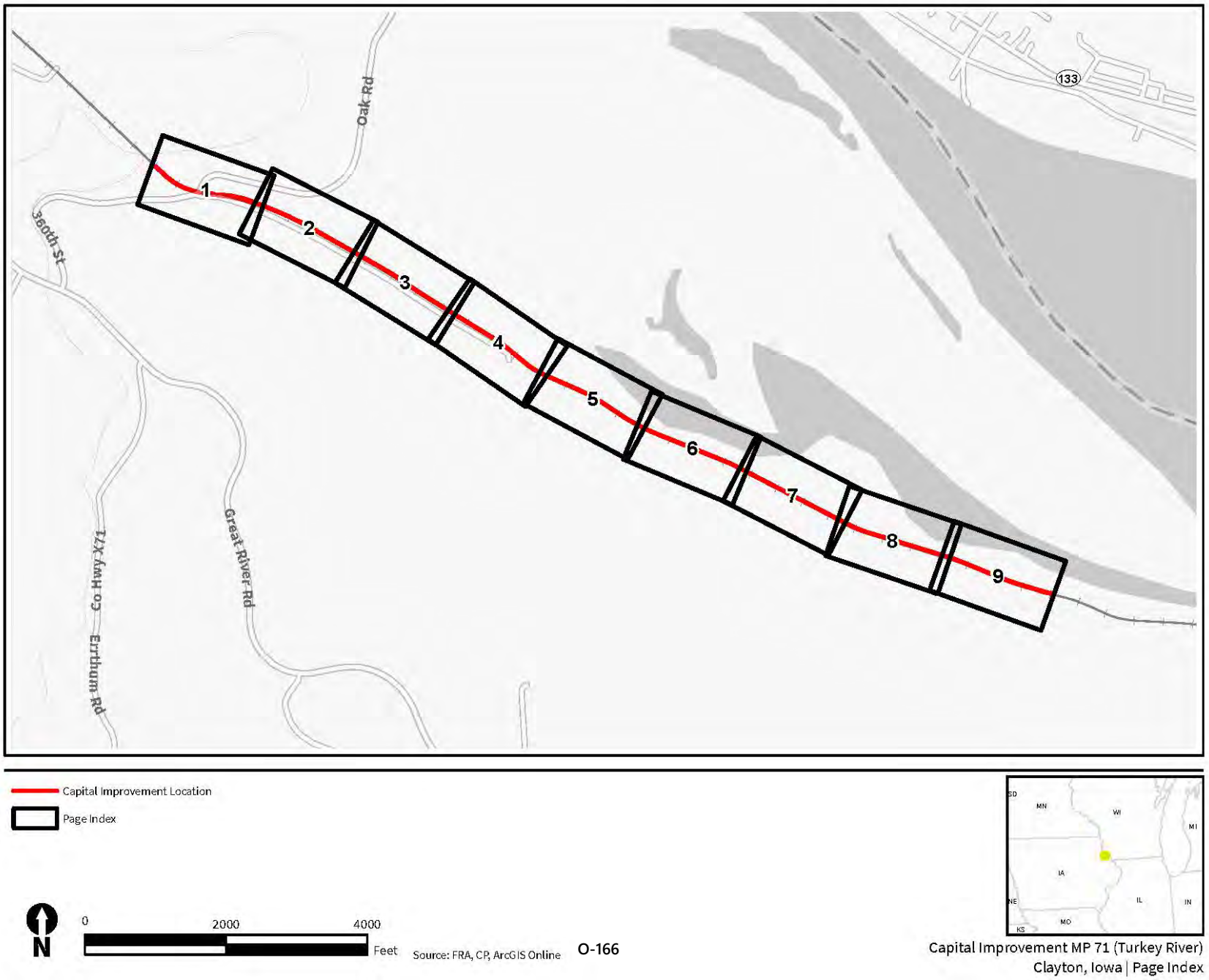


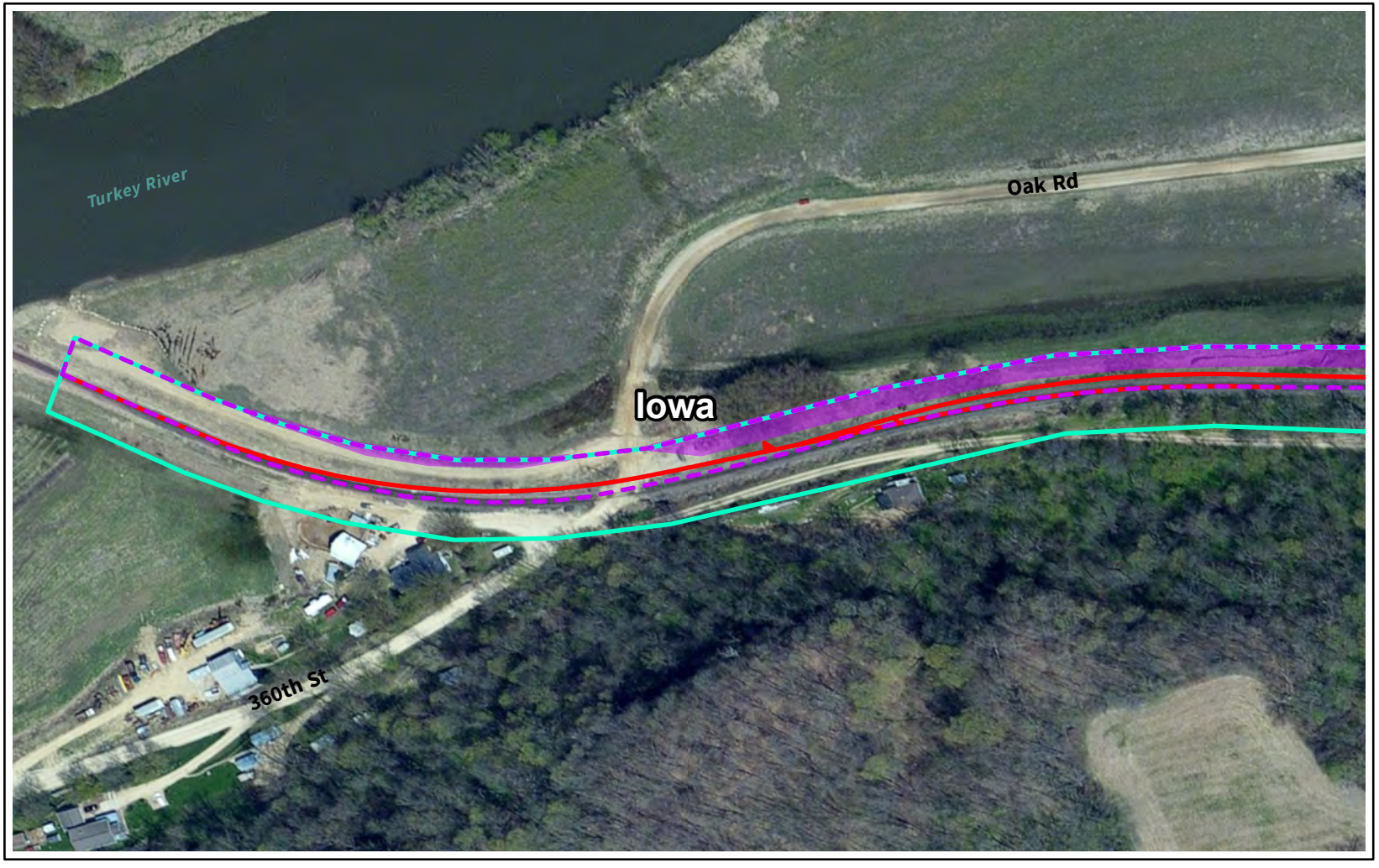
0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Figure O.1-2. Suitable Bat Habitat



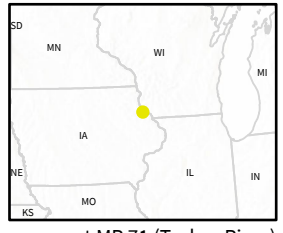


Study Area

Capital Improvement Location

Existing Right-of-Way

Suitable Forested Bat Habitat



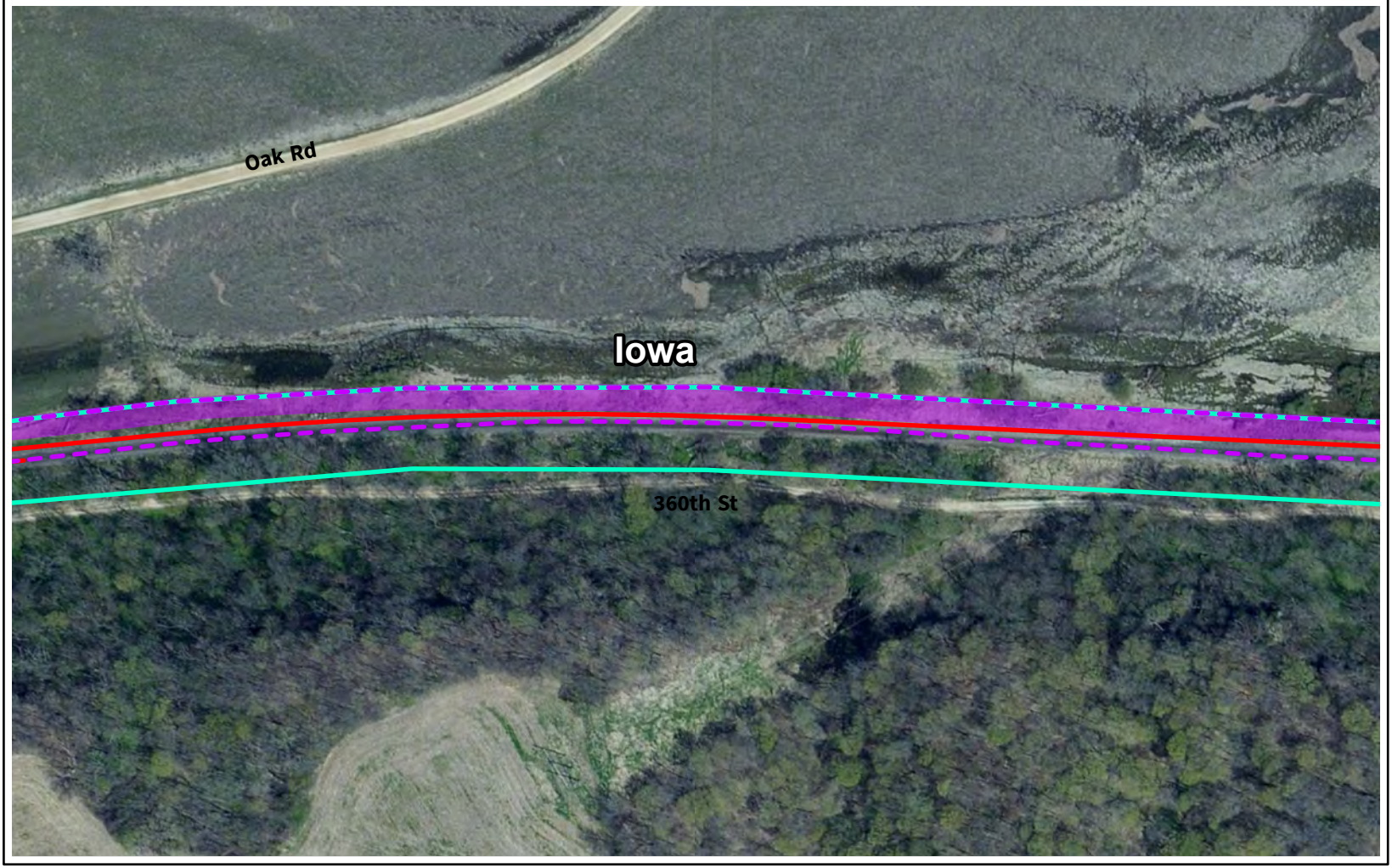
N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Page 1 of 9

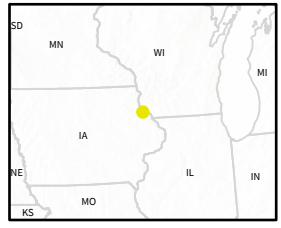


Study Area

Capital Improvement Location

Existing Right-of-Way

Suitable Forested Bat Habitat





Source: FRA, CP, ArcGIS Online

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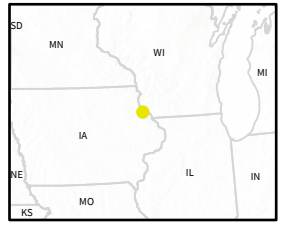


Study Area

Capital Improvement Location

Existing Right-of-Way

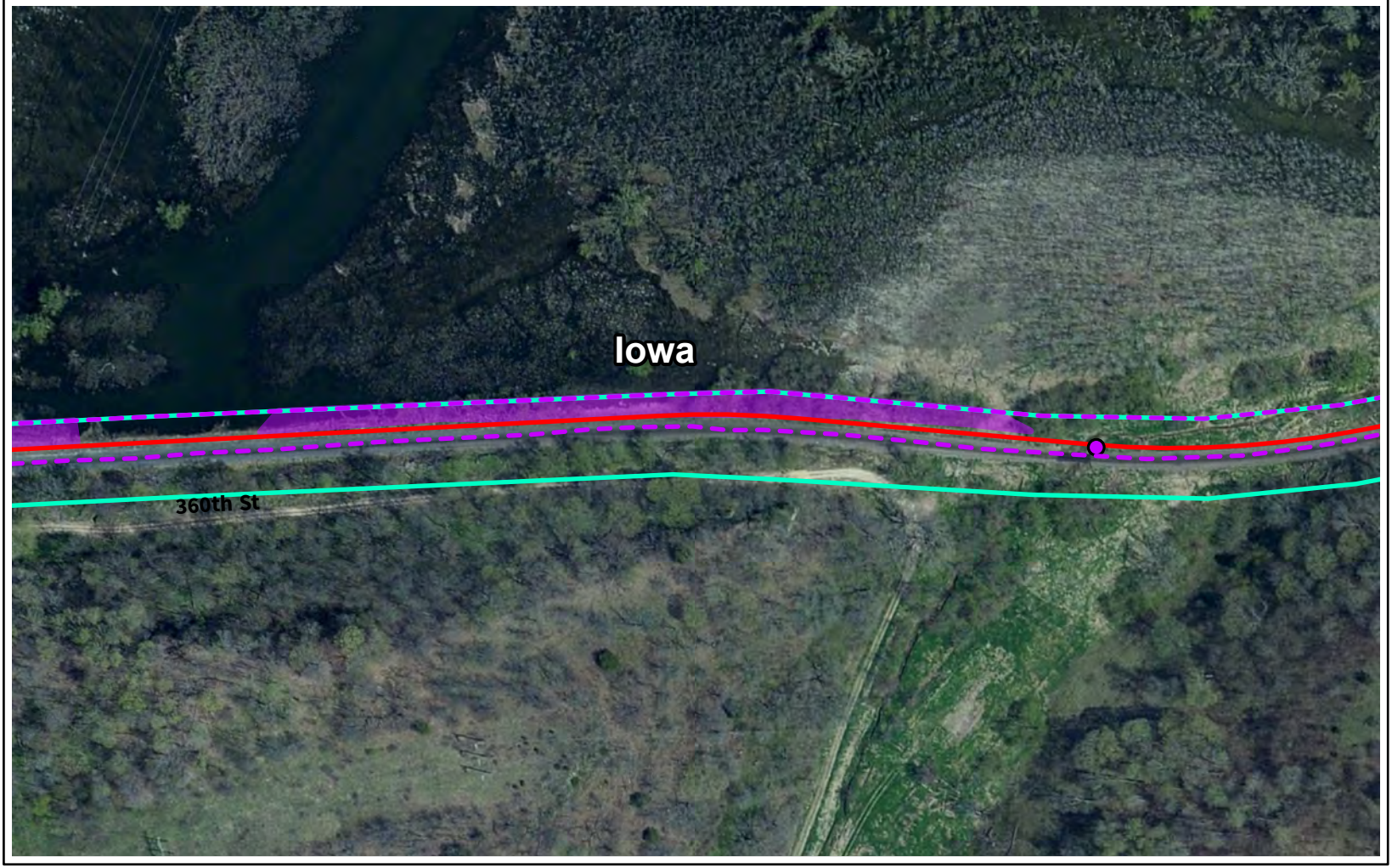
Suitable Forested Bat Habitat



0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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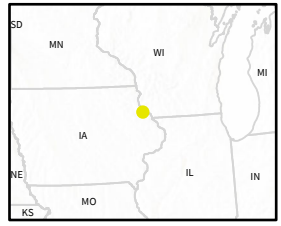


Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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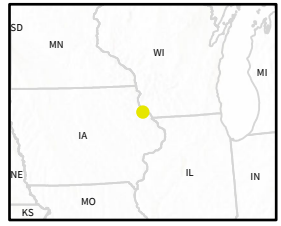


Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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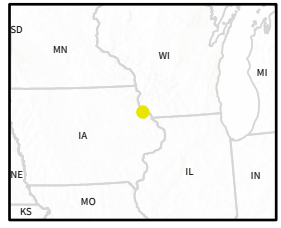


Study Area

Capital Improvement Location

Existing Right-of-Way

Suitable Forested Bat Habitat



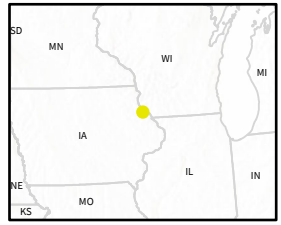


Source: FRA, CP, ArcGIS Online

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Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat



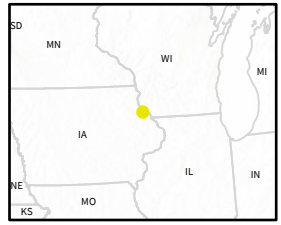
0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat



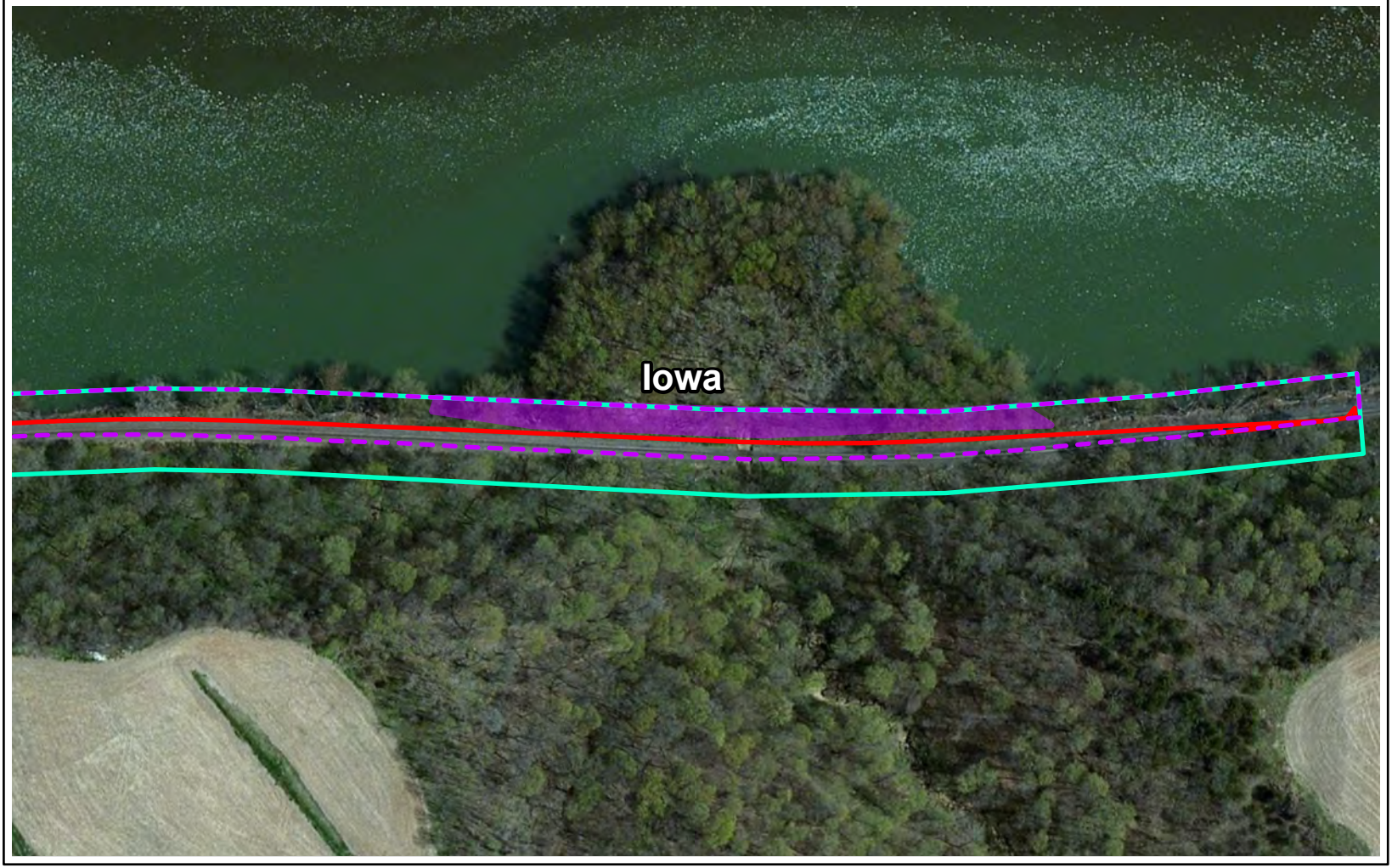
N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement MP 71 (Turkey River)
Clayton, Iowa | Page 8 of 9

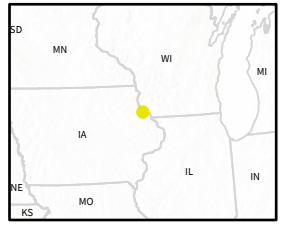


Study Area

Capital Improvement Location

Existing Right-of-Way

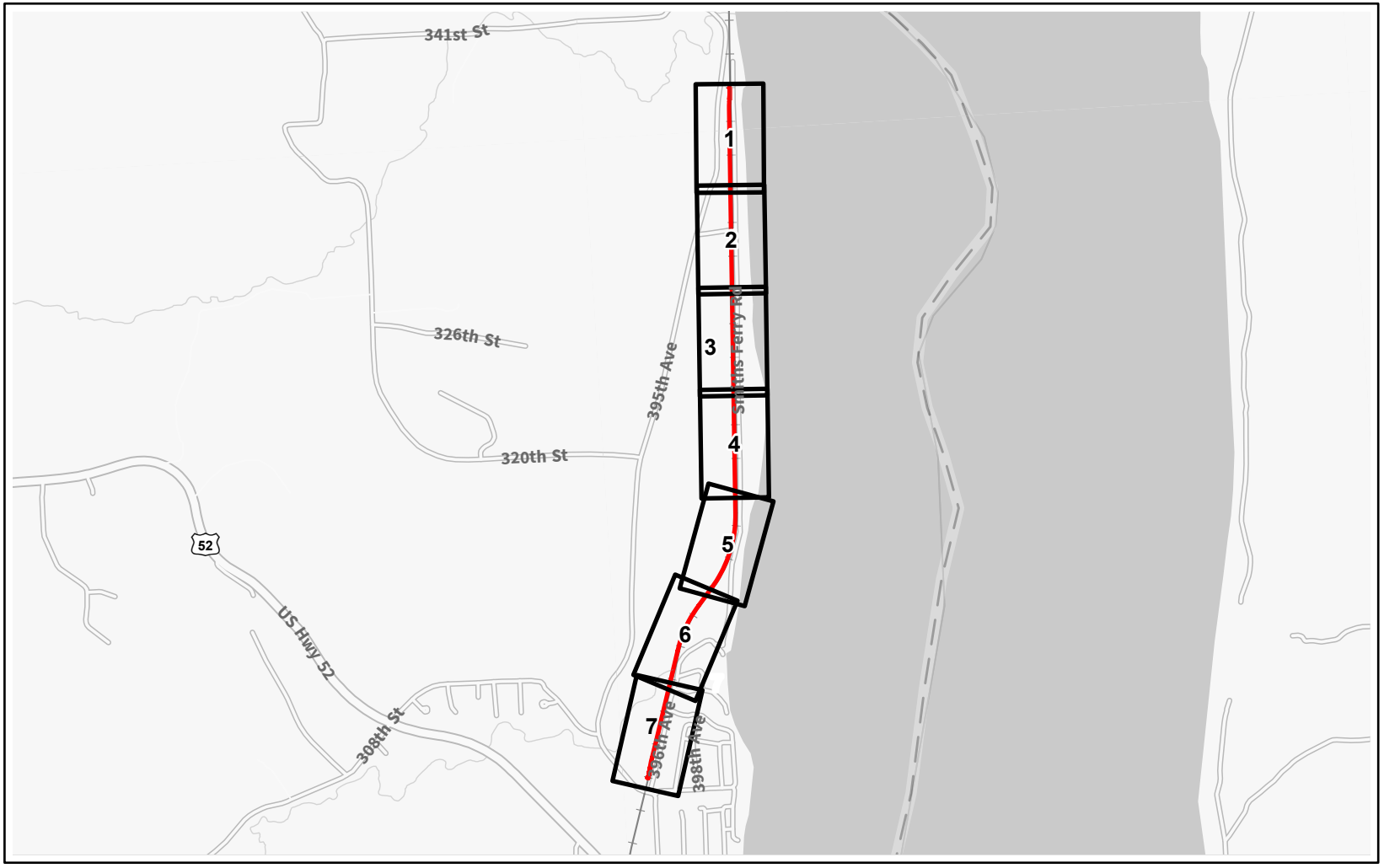
Suitable Forested Bat Habitat





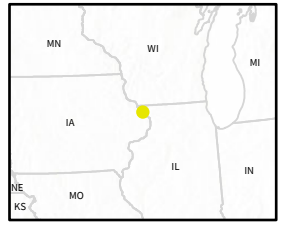
Source: FRA, CP, ArcGIS Online

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Capital Improvement Location

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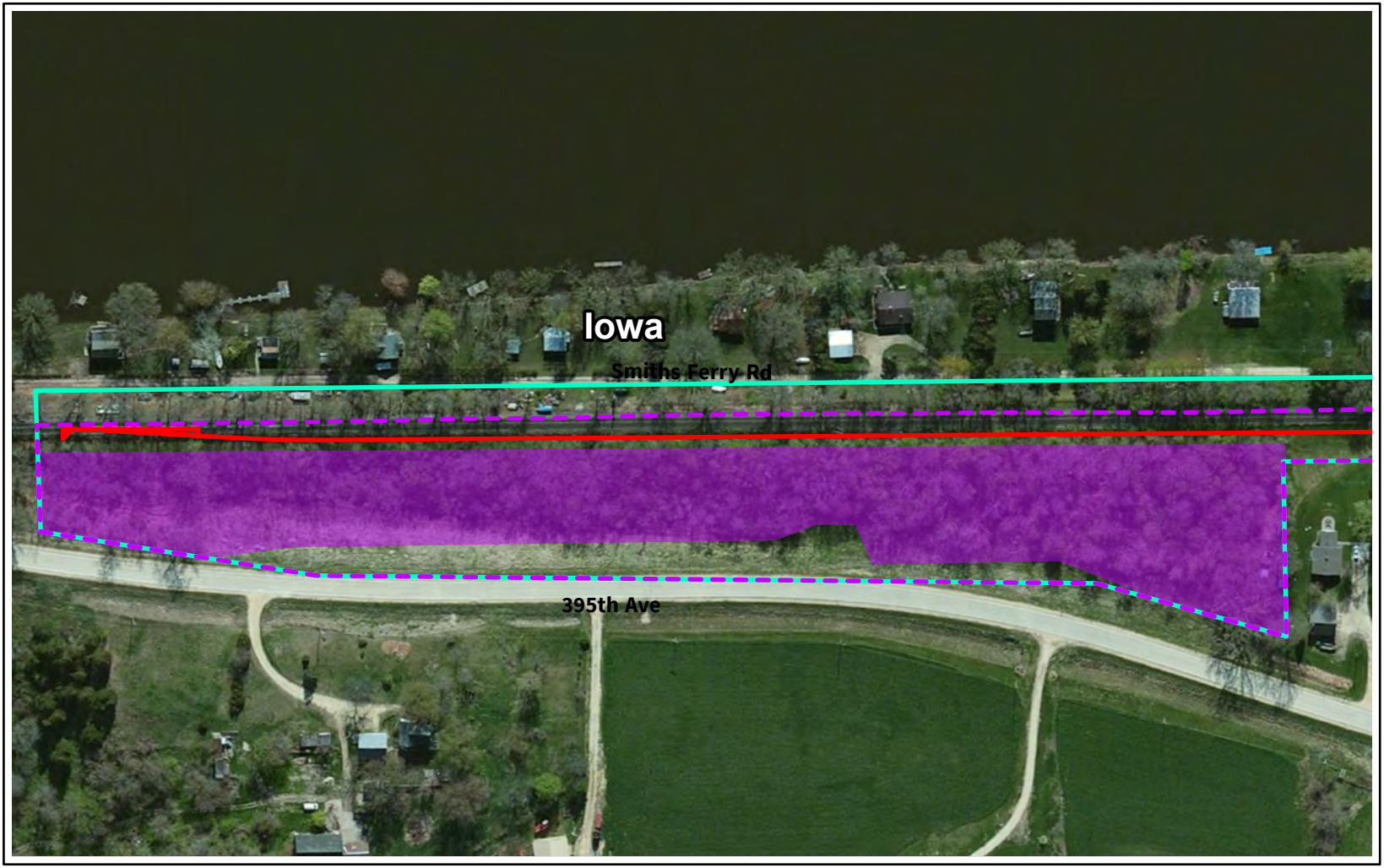
N

0 2500 5000 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement MP 24 (Bellevue)
Jackson, Iowa | Page Index



Study Area

Capital Improvement Location

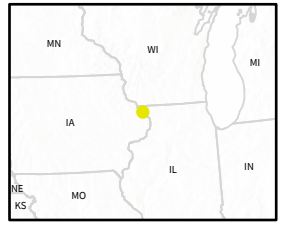
Existing Right-of-Way

Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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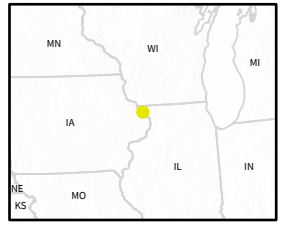


Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

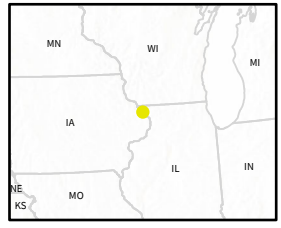
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

Existing Right-of-Way

Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

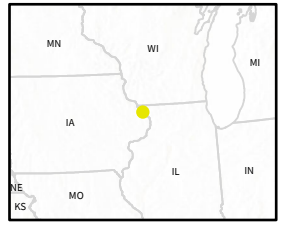
Existing Right-of-Way

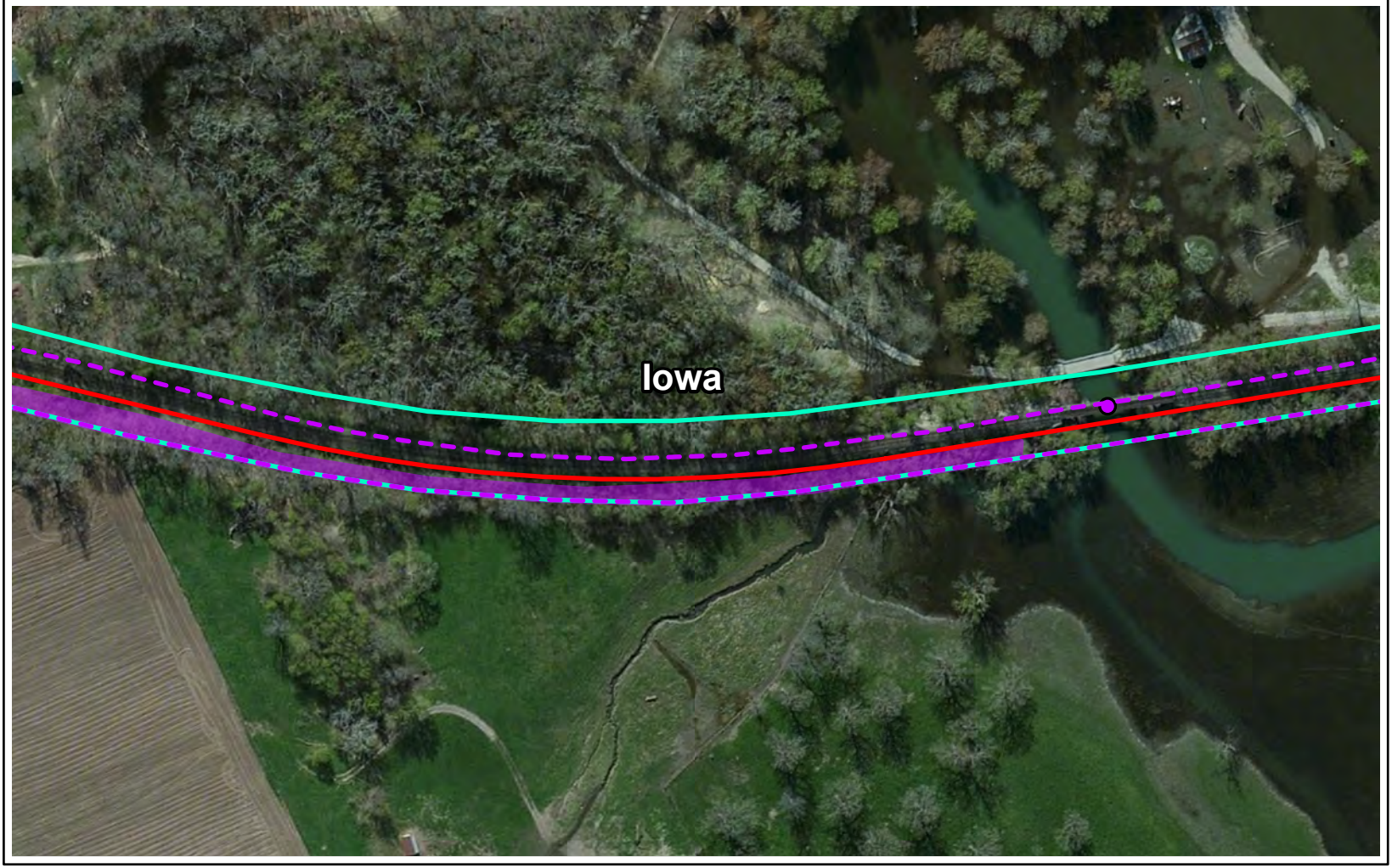
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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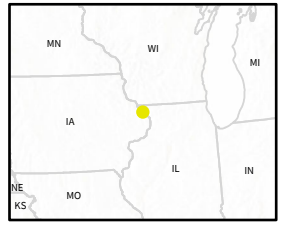


Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

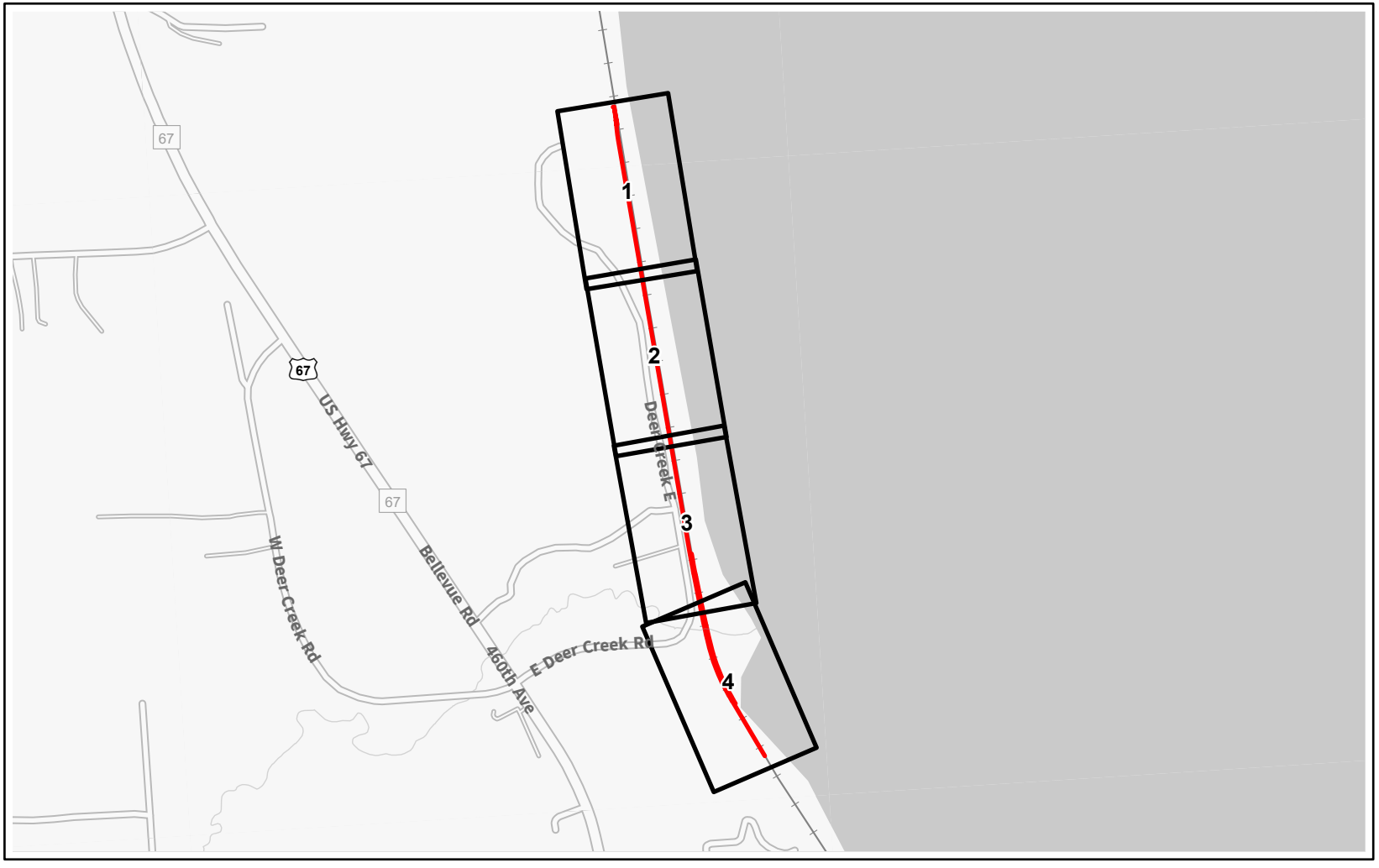
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Location

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N

0 1500 3000 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Deer Creek
Clinton, Iowa | Page Index



Study Area

Capital Improvement Location

Existing Right-of-Way

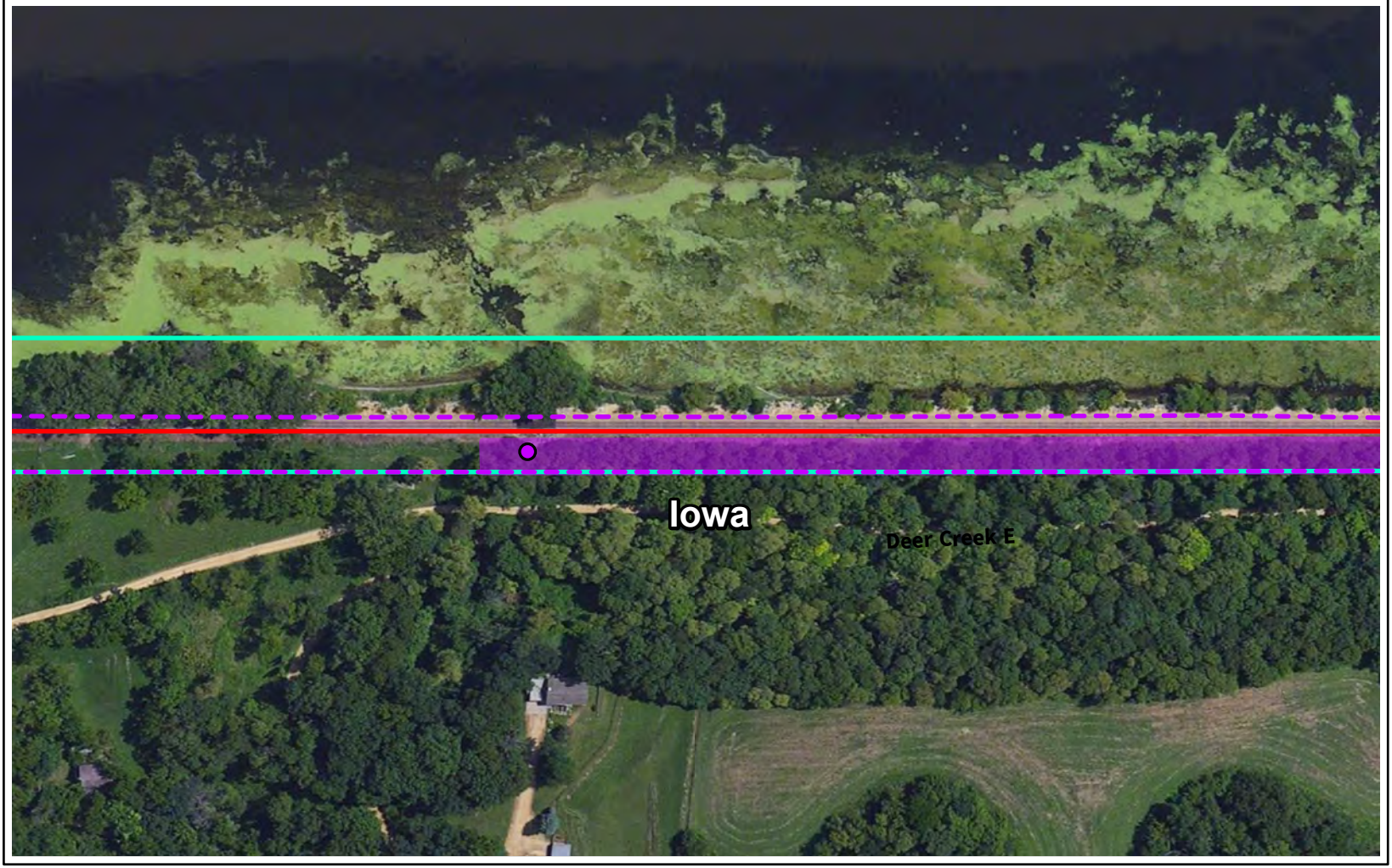
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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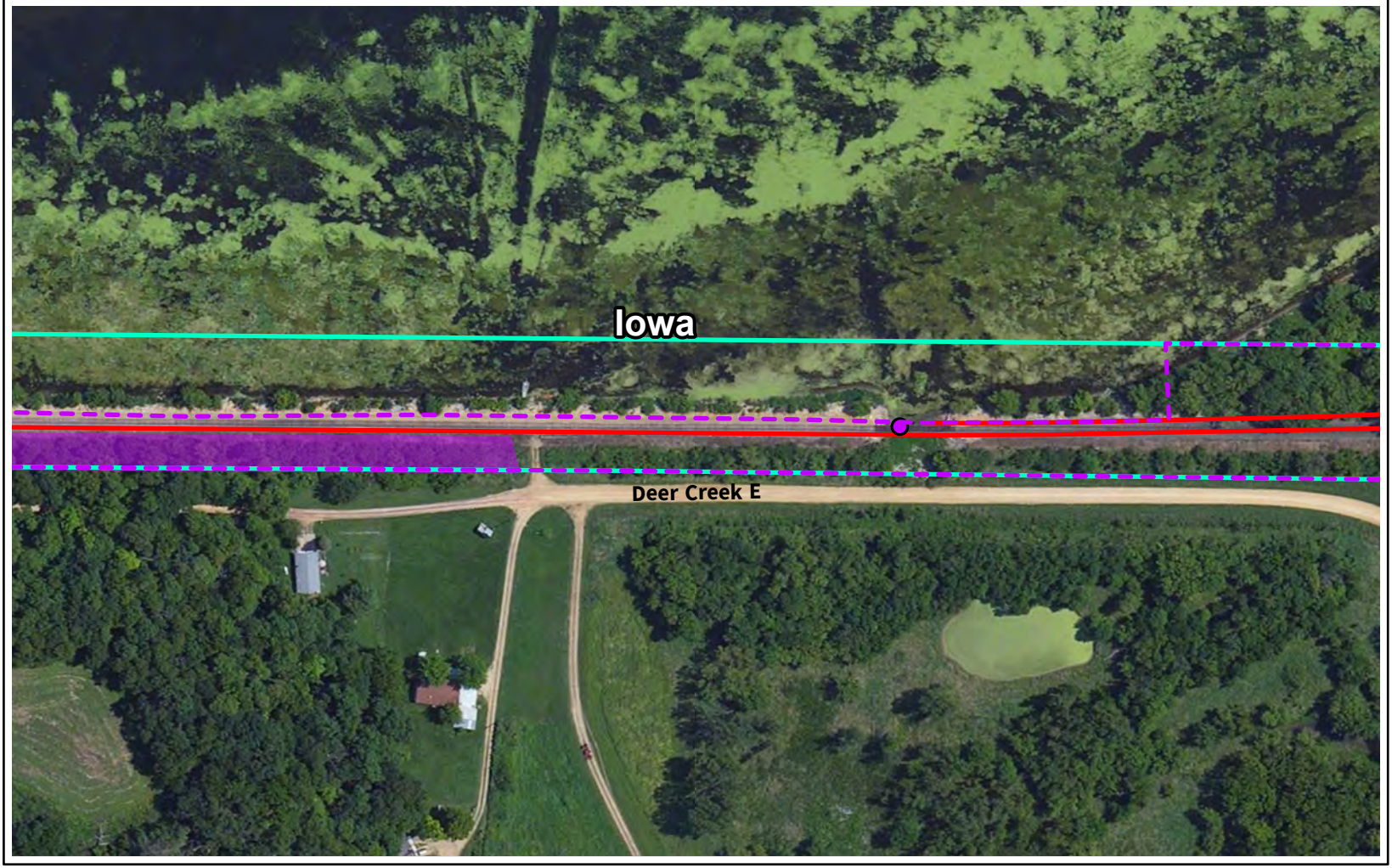
Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

N
0
200
400
Feet

Source: FRA, CP, ArcGIS Online

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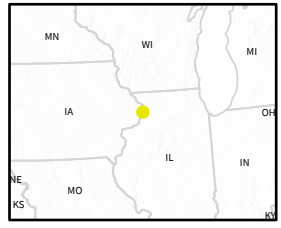


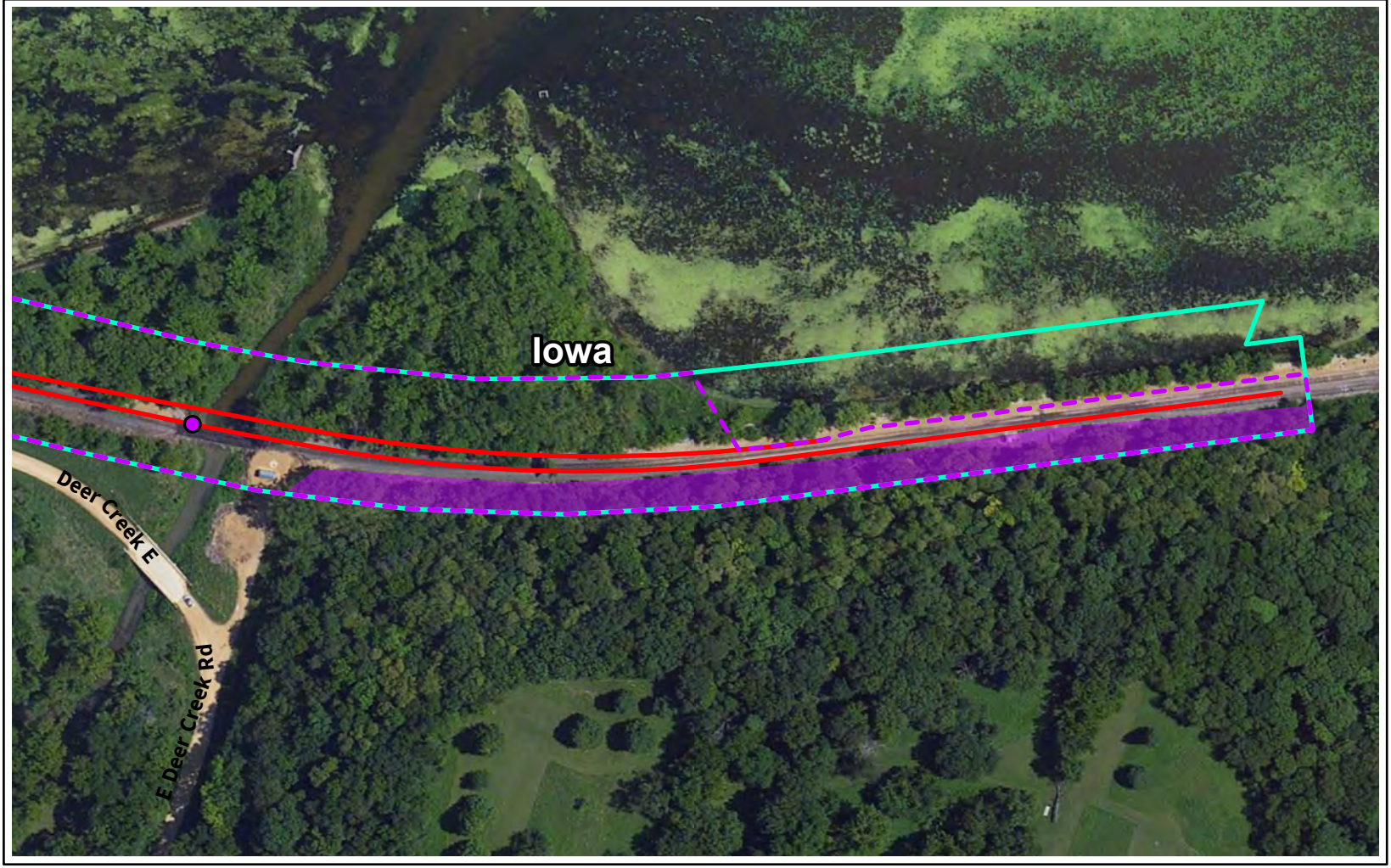
Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

N
0
200
400
Feet

Source: FRA, CP, ArcGIS Online

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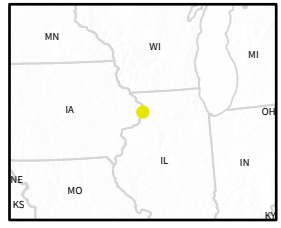


Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

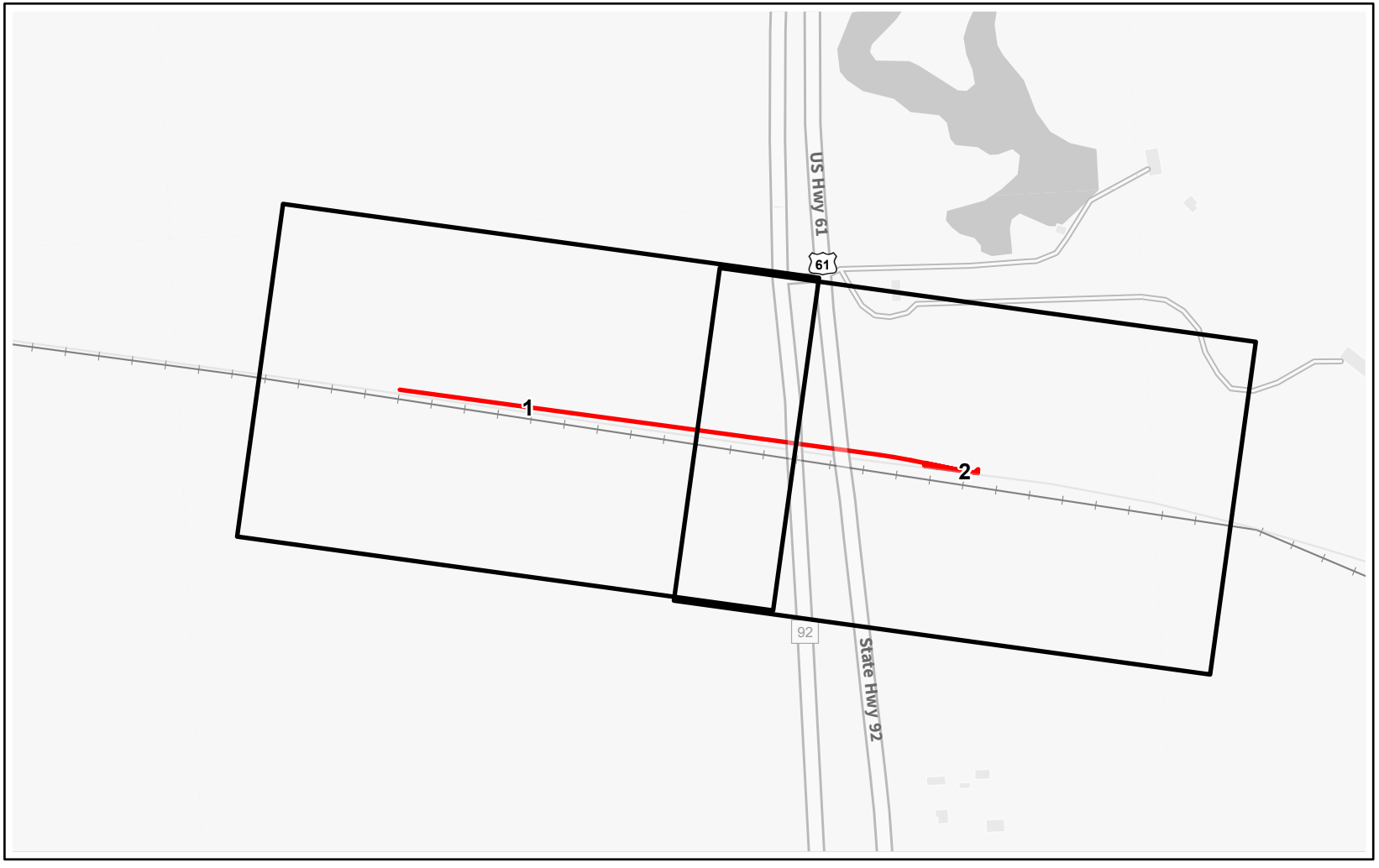
0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Deer Creek
Clinton, Iowa | Page 4 of 4



Capital Improvement Location

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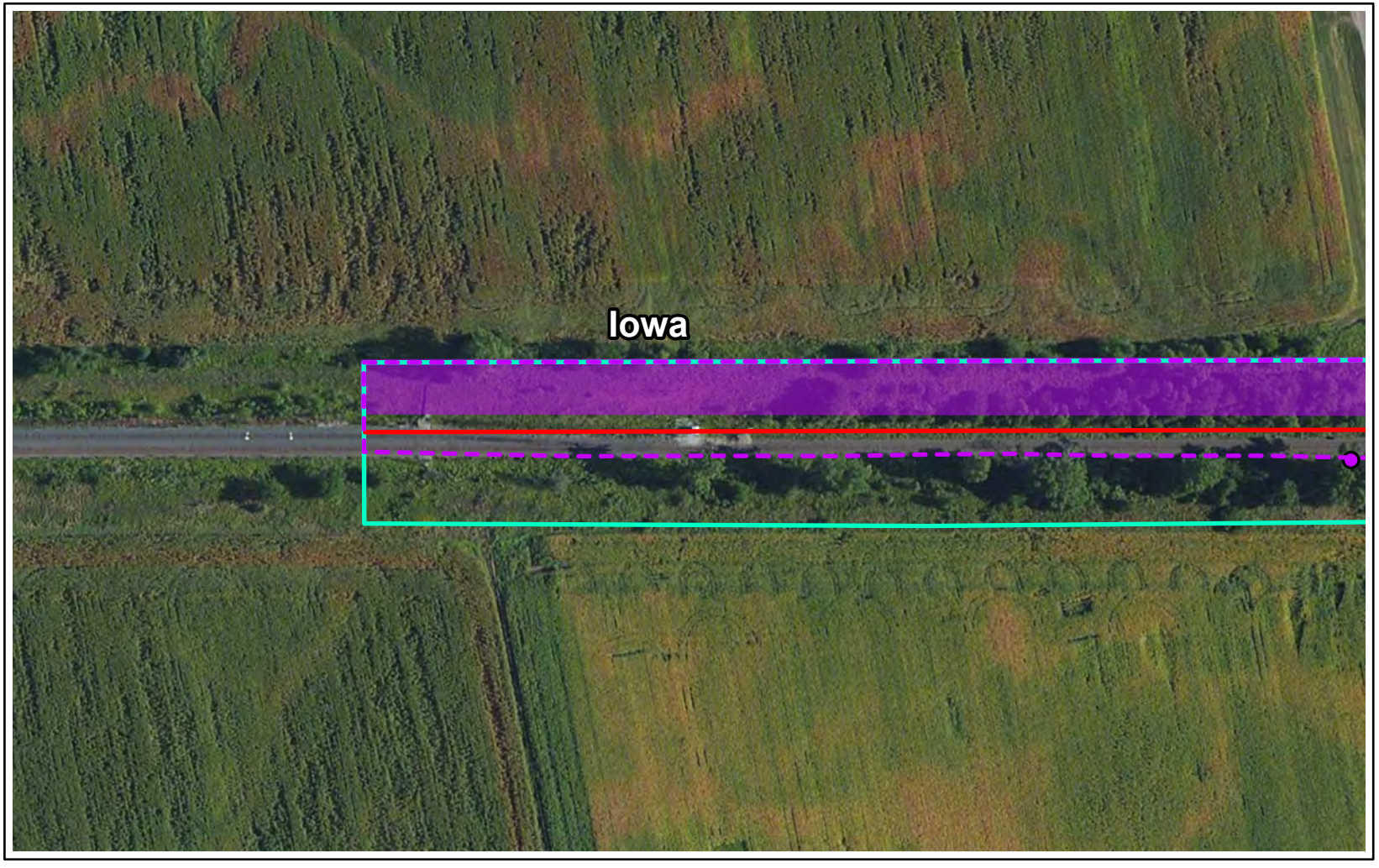
N

0 500 1000 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Letts
Louisa, Iowa | Page Index



Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

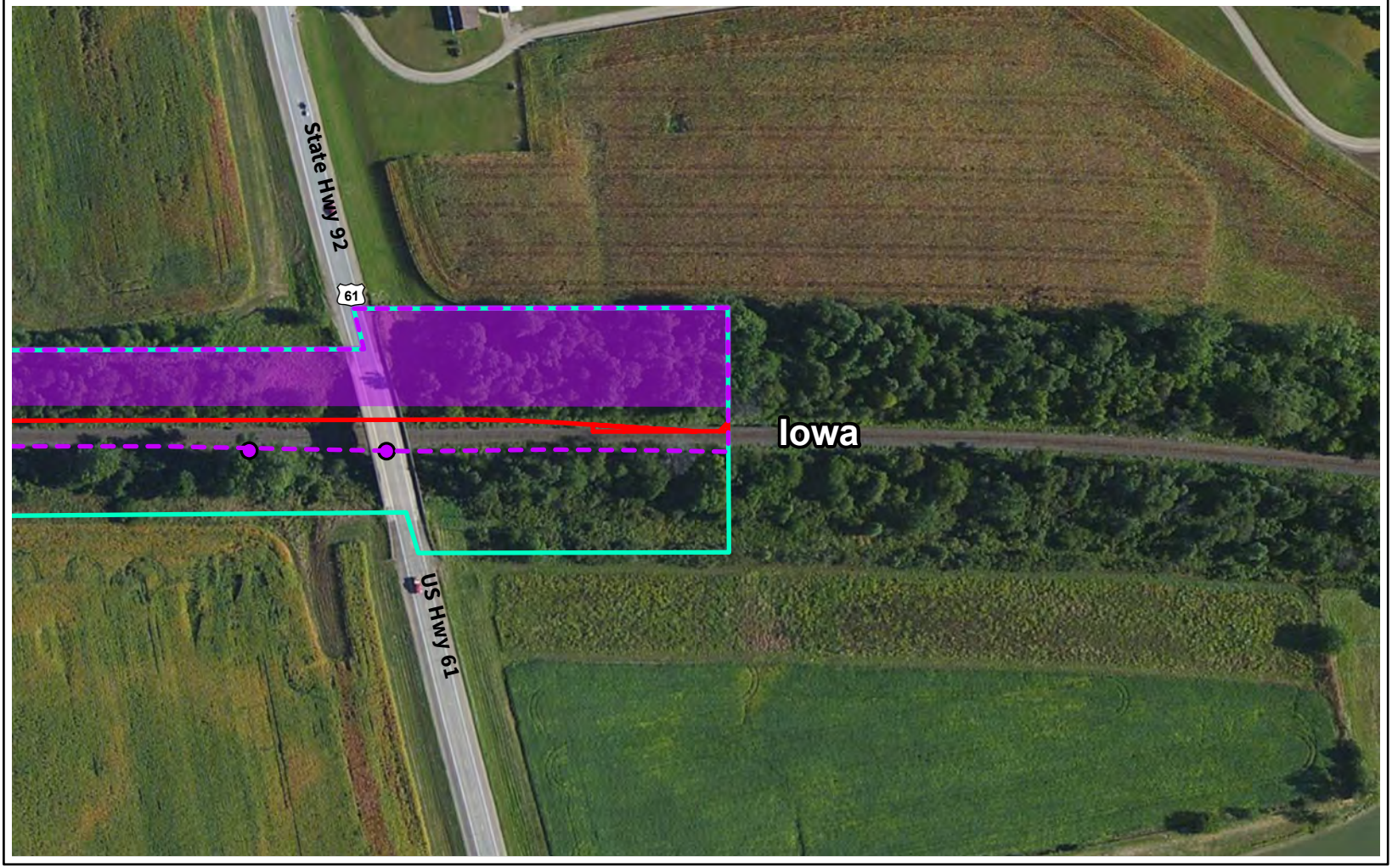


N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

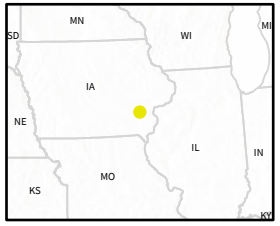
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Capital Improvement Location

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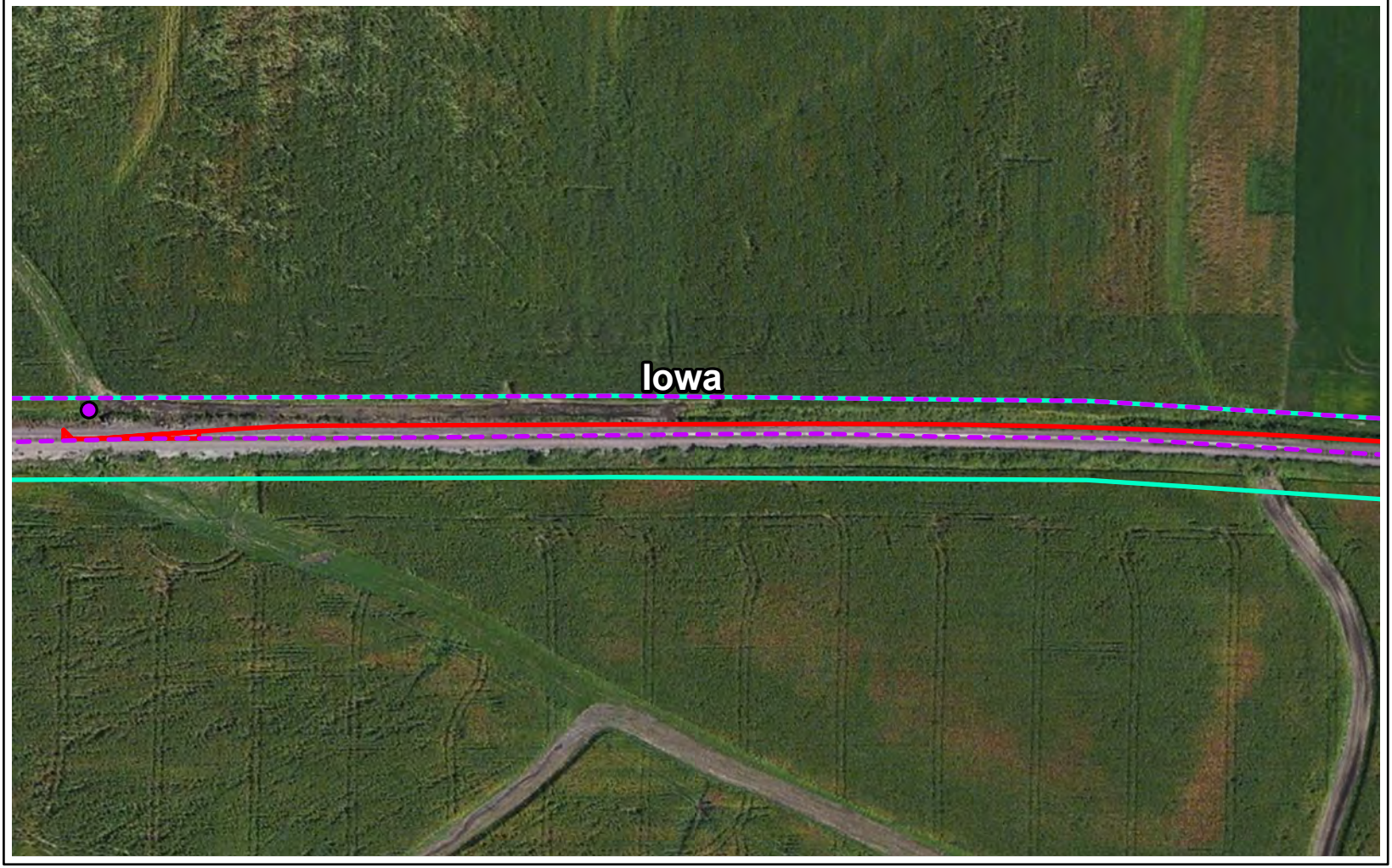
N

0 1800 3600 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement MP 255 (Washington)
Washington, Iowa | Page Index

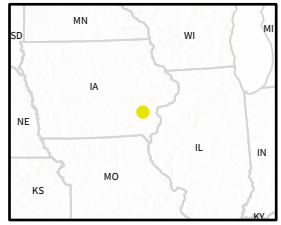


Study Area

Capital Improvement Location

Existing Right-of-Way

Suitable Bat Roosting Structure



N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

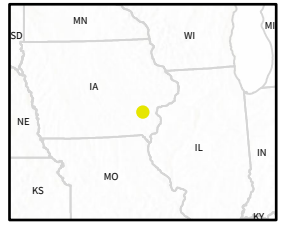
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Study Area

Capital Improvement Location

Existing Right-of-Way

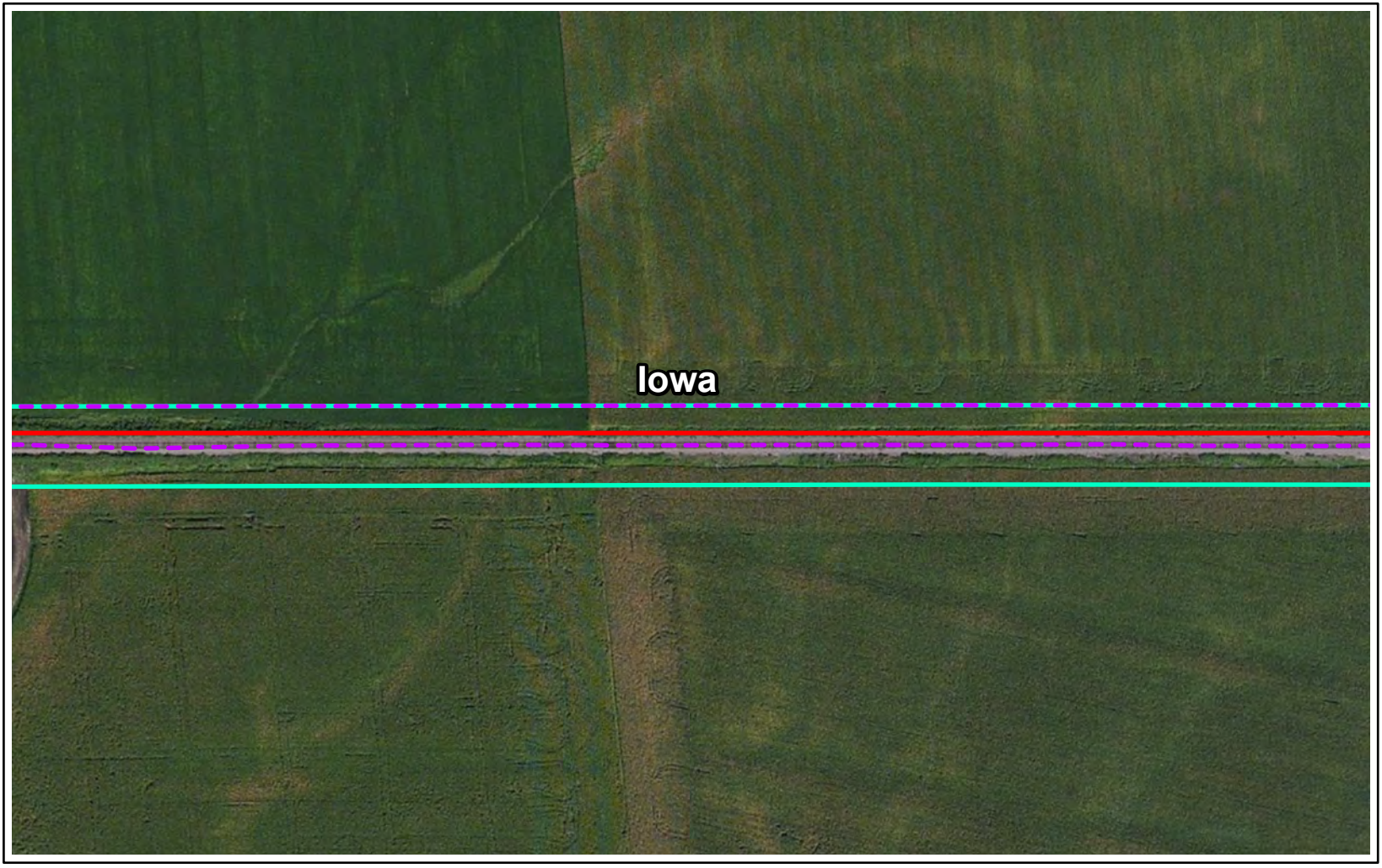


N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

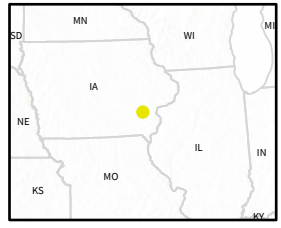
O-194



Study Area

Capital Improvement Location

Existing Right-of-Way



N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

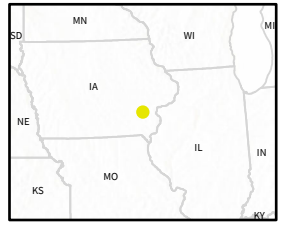
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Study Area

Capital Improvement Location

Existing Right-of-Way

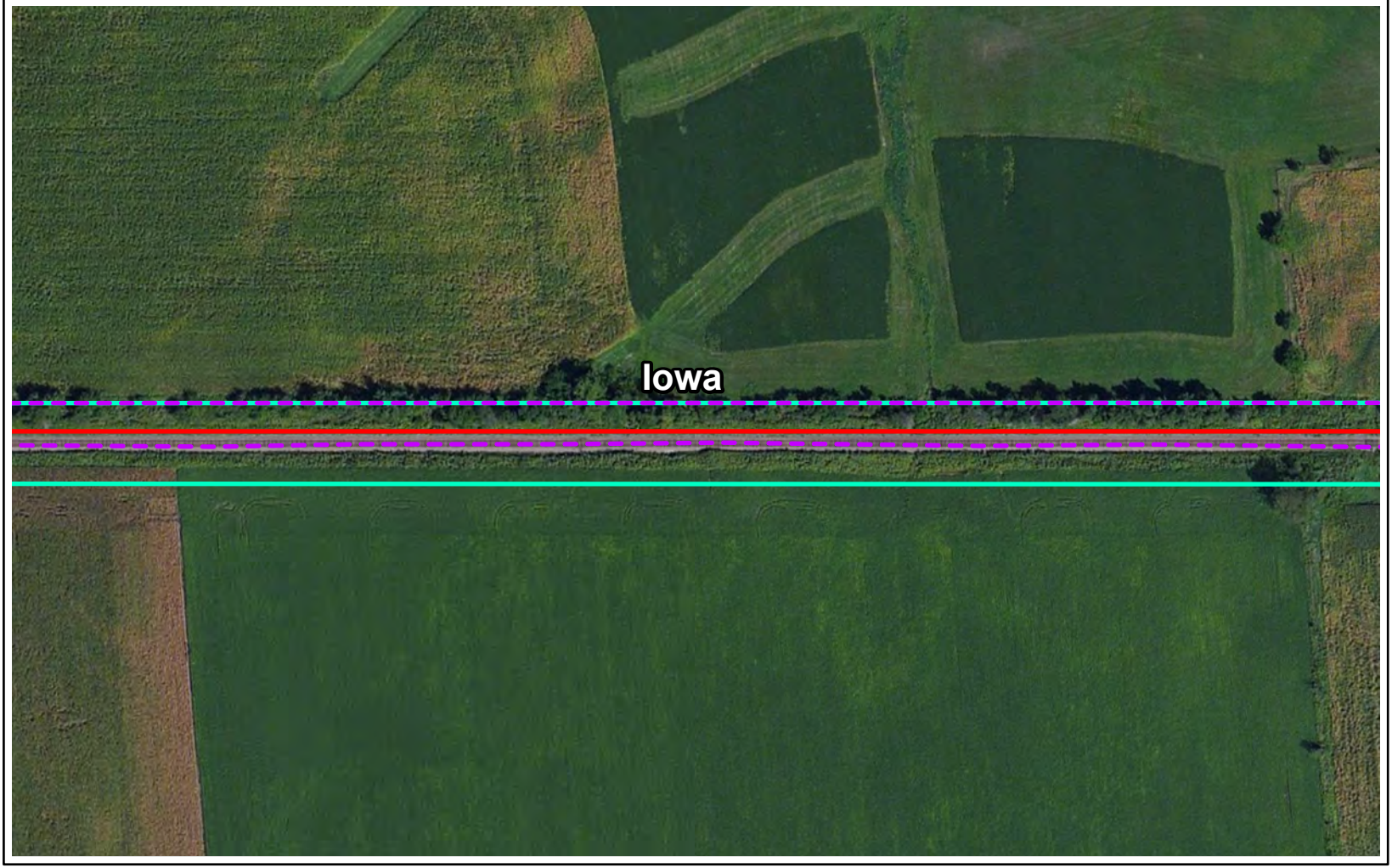


N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

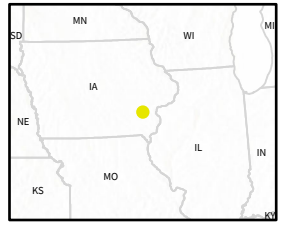
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Study Area

Capital Improvement Location

Existing Right-of-Way

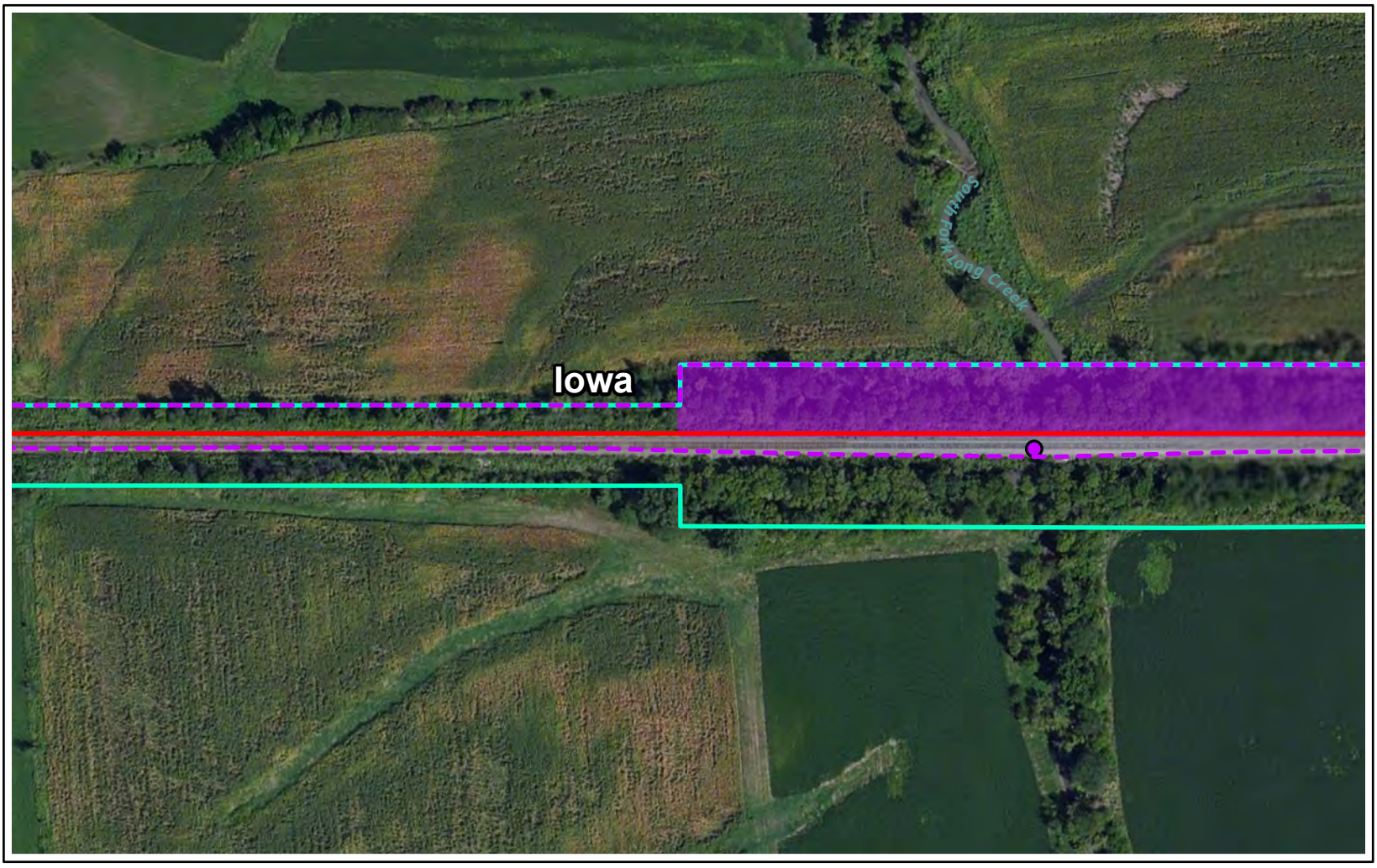


N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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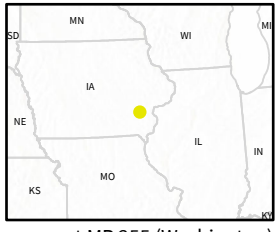
Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-198



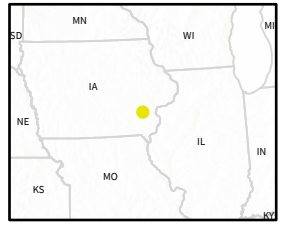


Study Area

Capital Improvement Location

Existing Right-of-Way

Suitable Forested Bat Habitat

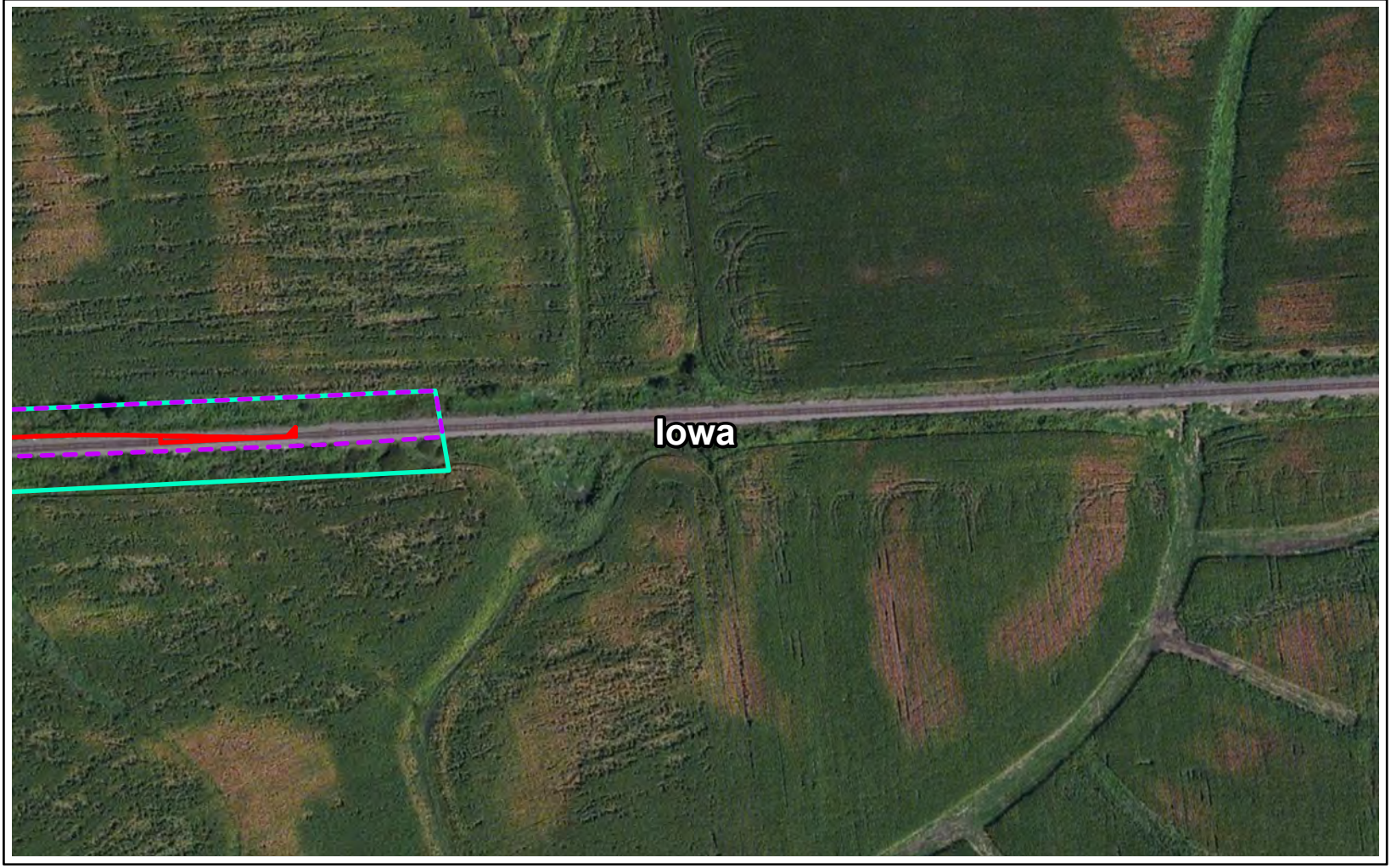


N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

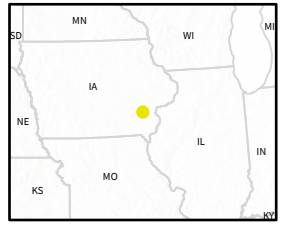
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Study Area

Capital Improvement Location

Existing Right-of-Way

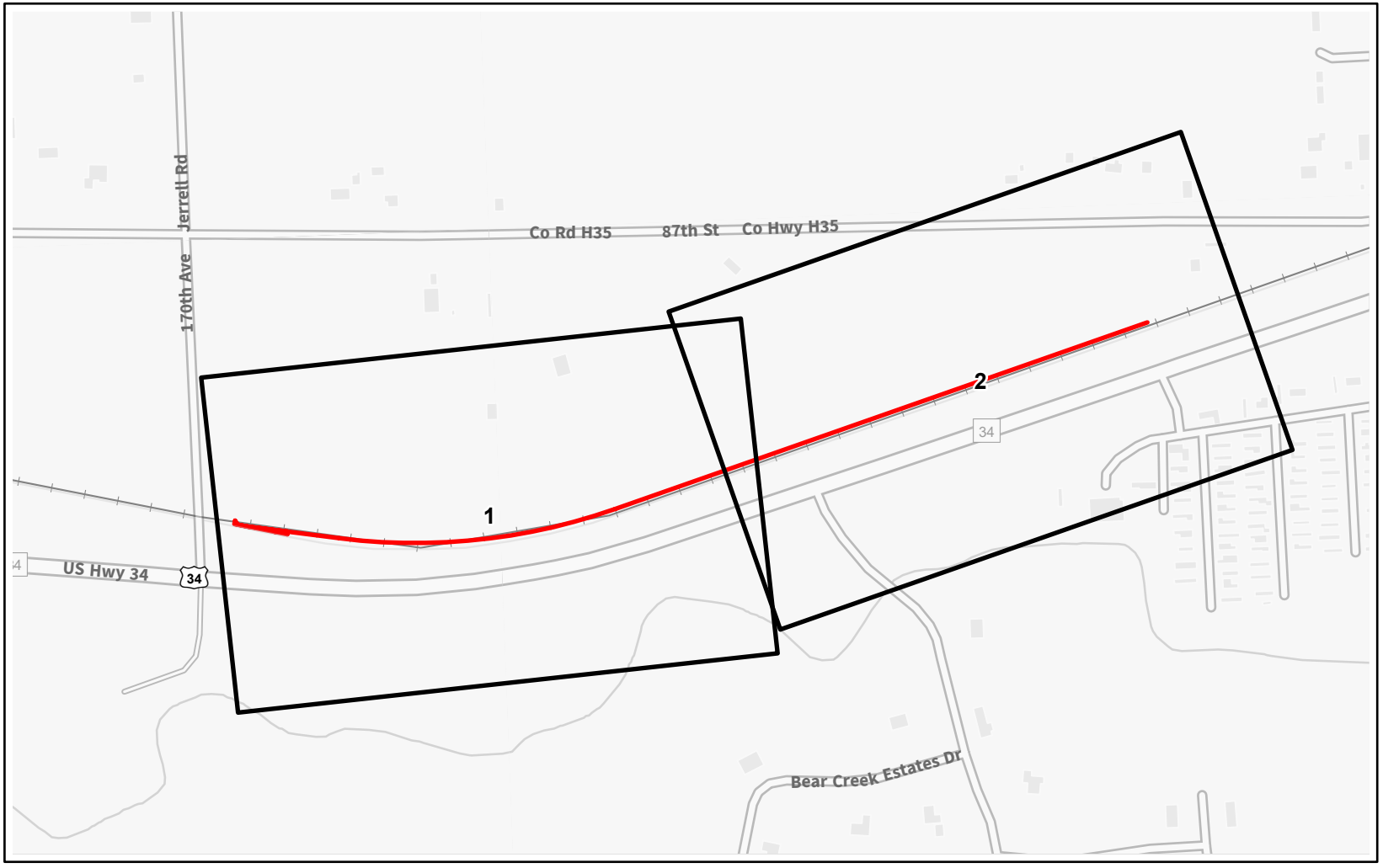


N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-200



Capital Improvement Location

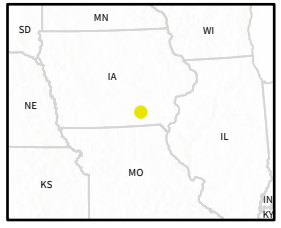
Page Index

N

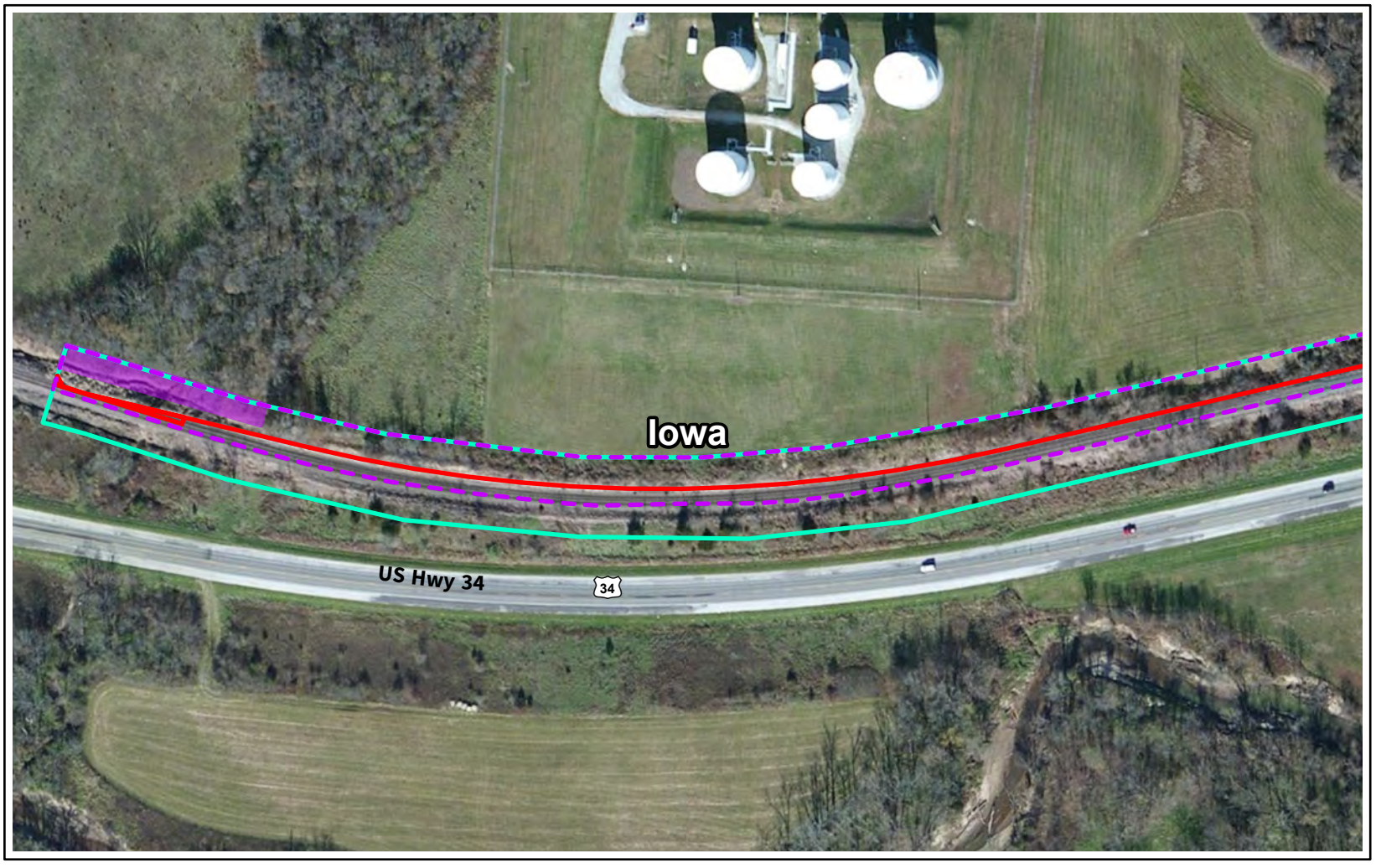
0 500 1000 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Ottumwa
Wapello, Iowa | Page Index



Study Area

Capital Improvement Location

Existing Right-of-Way

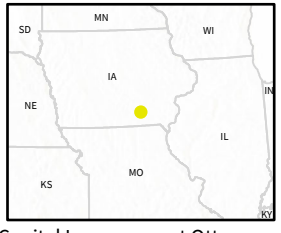
Suitable Forested Bat Habitat

N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-202





Study Area

Capital Improvement Location

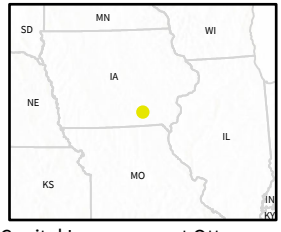
Existing Right-of-Way

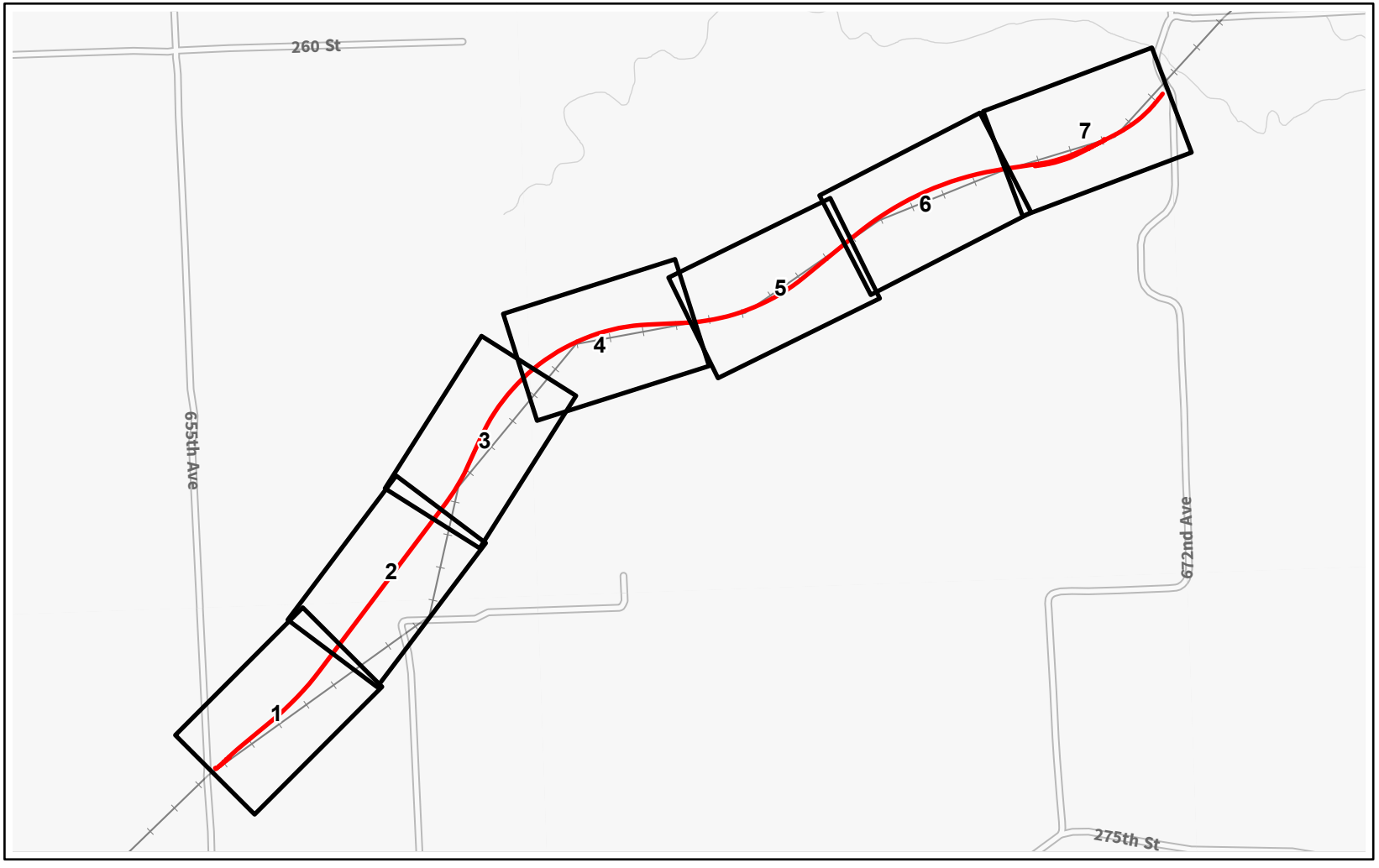
Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Location

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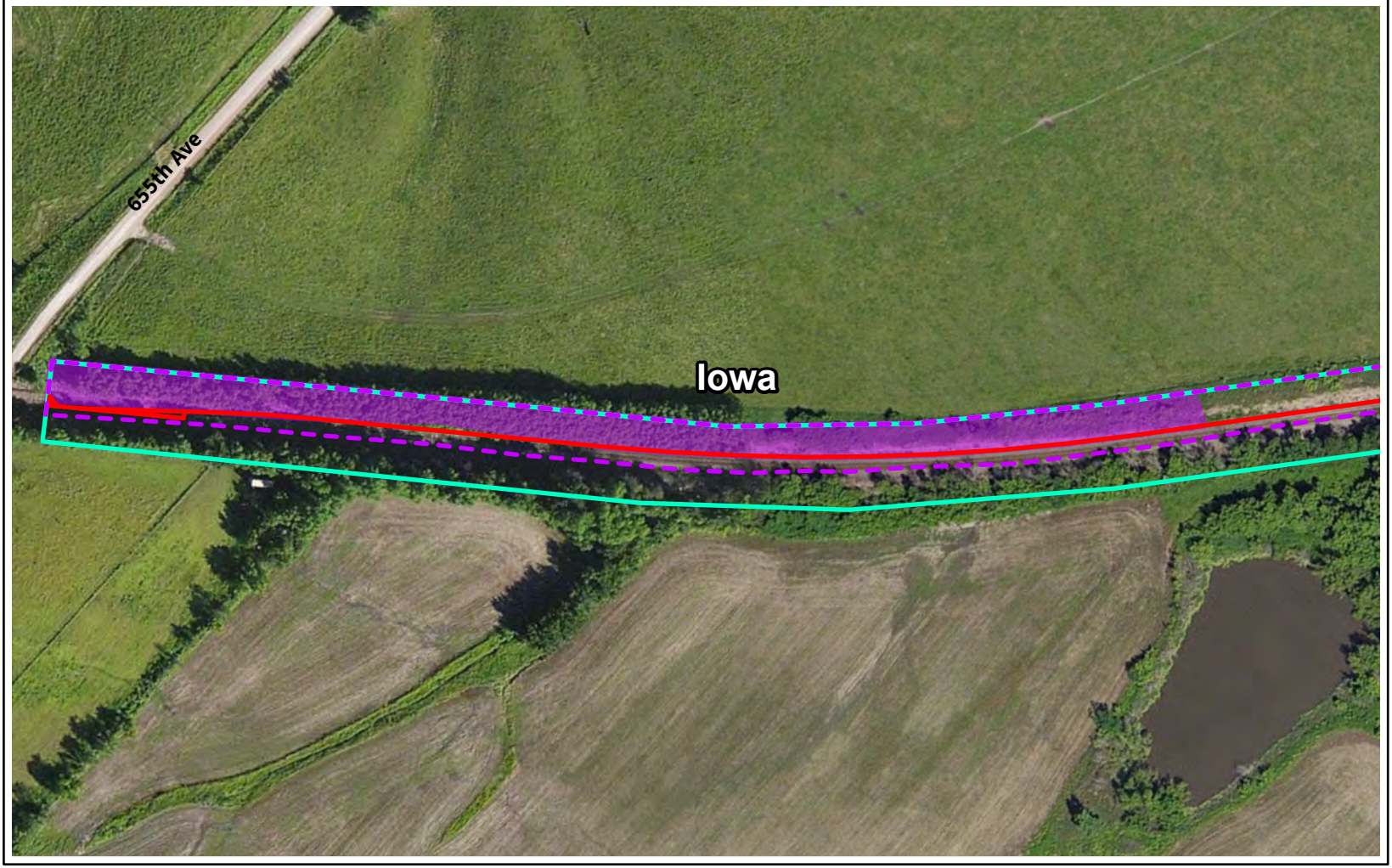
N

0 1500 3000 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Moravia
Monroe, Iowa | Page Index



Study Area

Capital Improvement Location

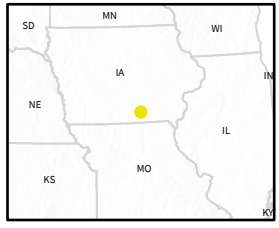
Existing Right-of-Way

Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-205





Study Area

Capital Improvement Location

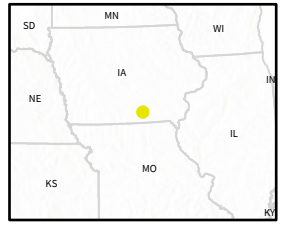
Existing Right-of-Way

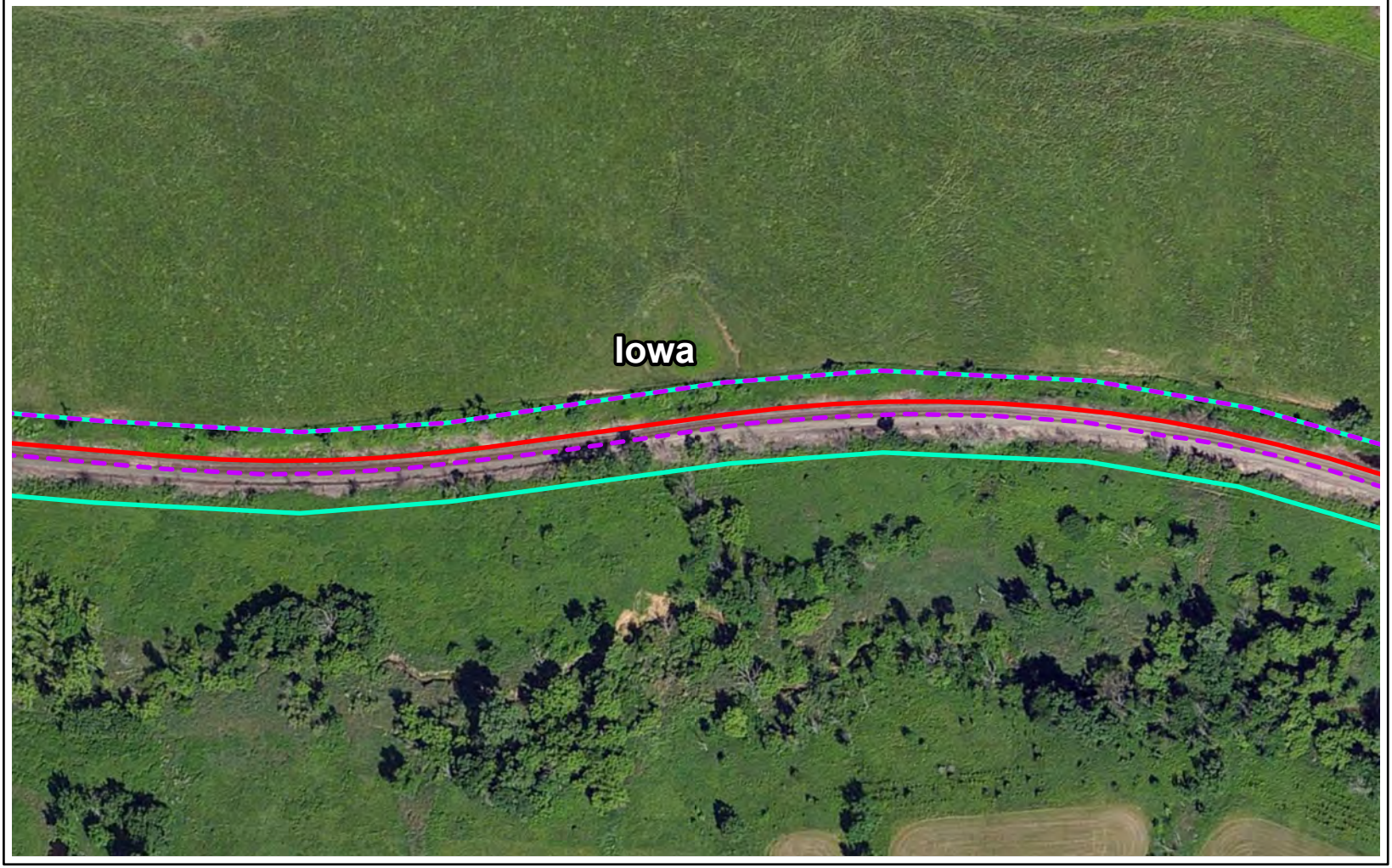
Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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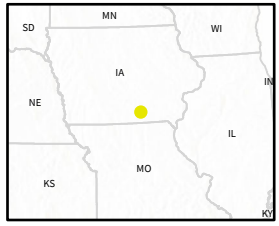




Study Area

Capital Improvement Location

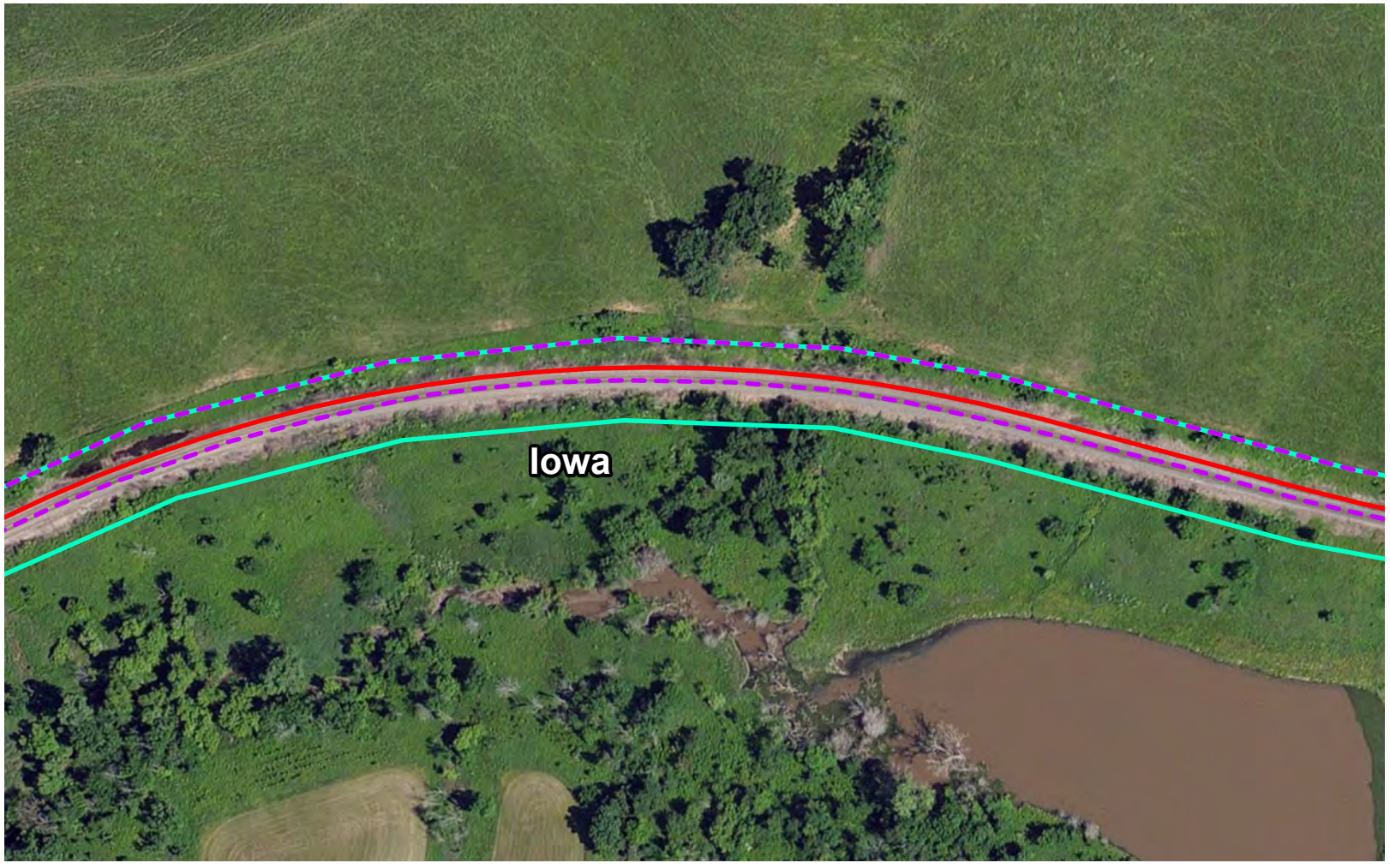
Existing Right-of-Way



0 200 400 Feet

Source: FRA, CP, ArcGIS Online

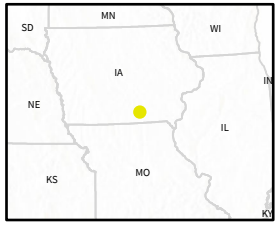
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Study Area

Capital Improvement Location

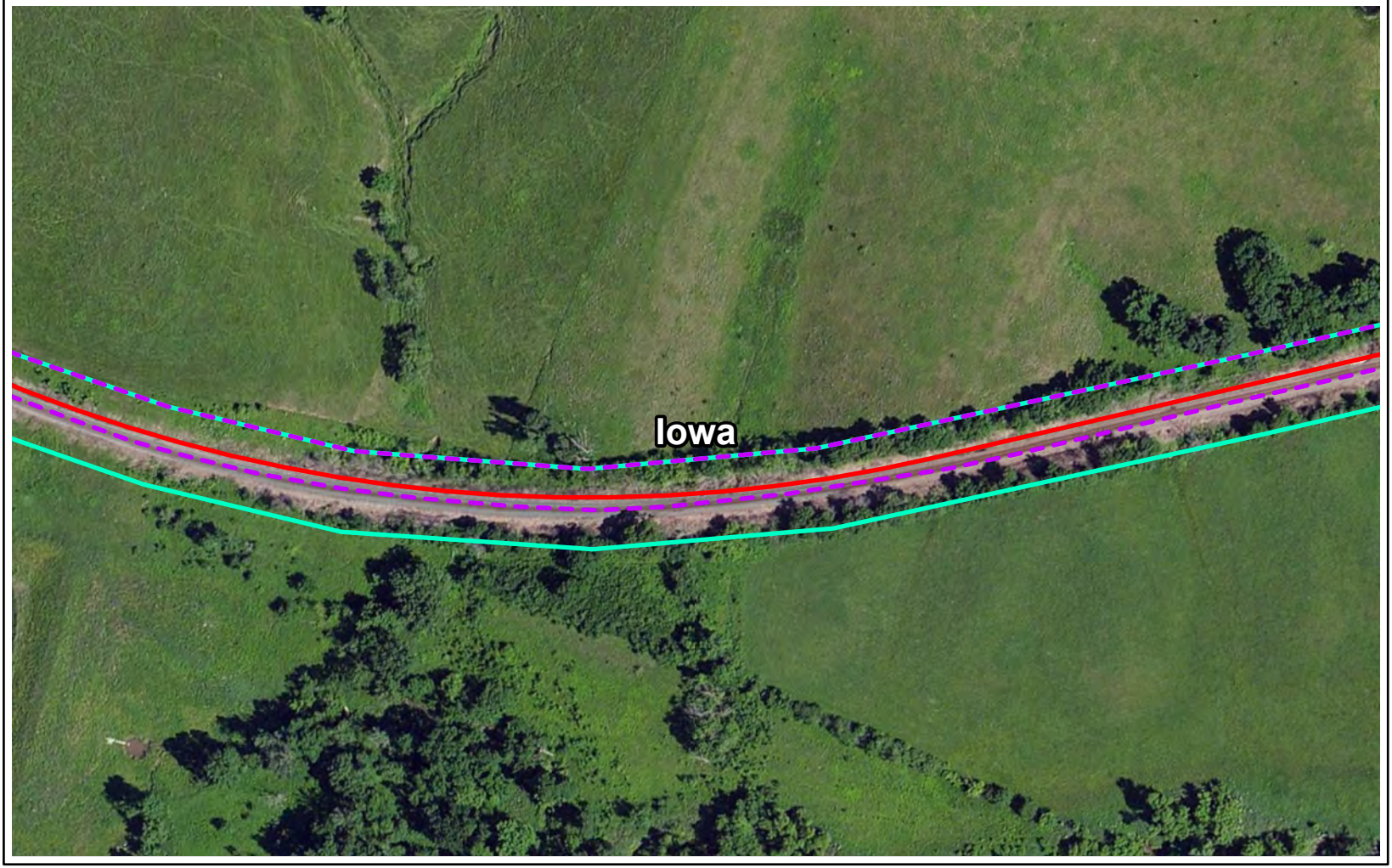
Existing Right-of-Way



0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

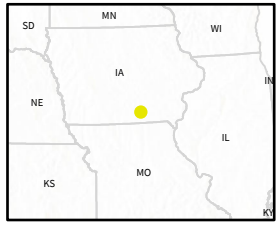
Capital Improvement Location

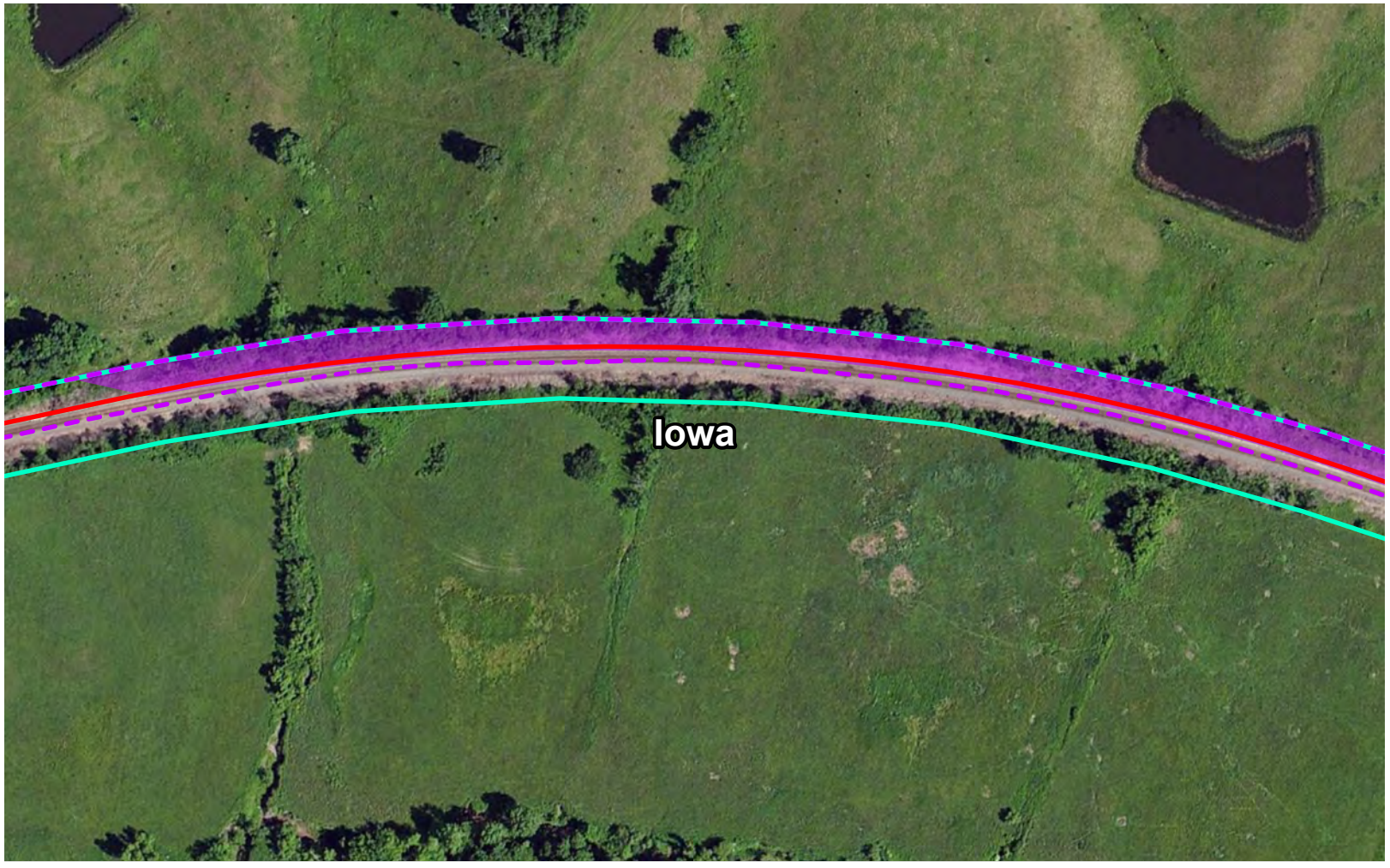
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

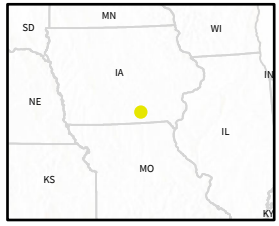
Existing Right-of-Way

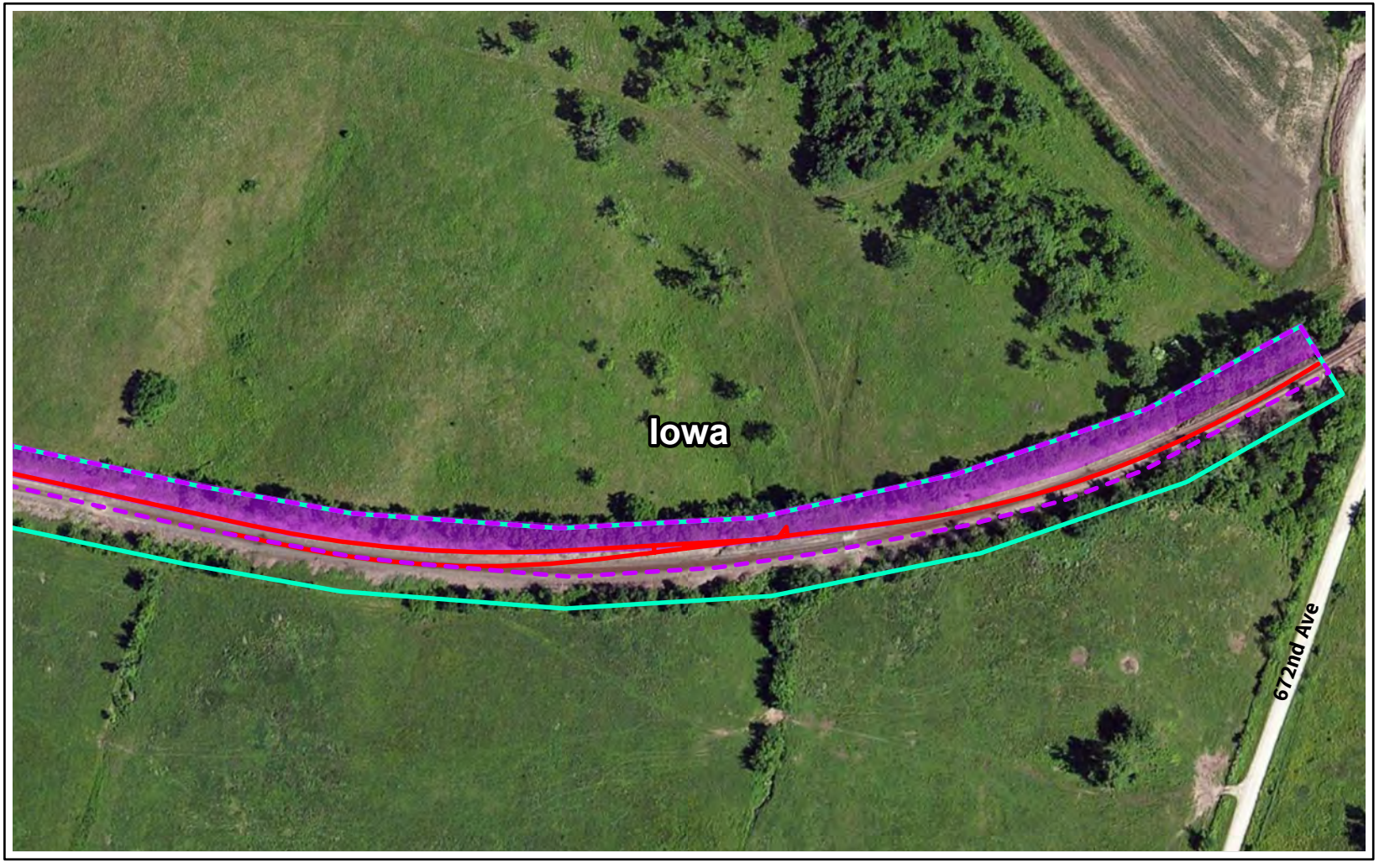
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

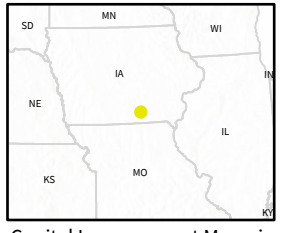
Existing Right-of-Way

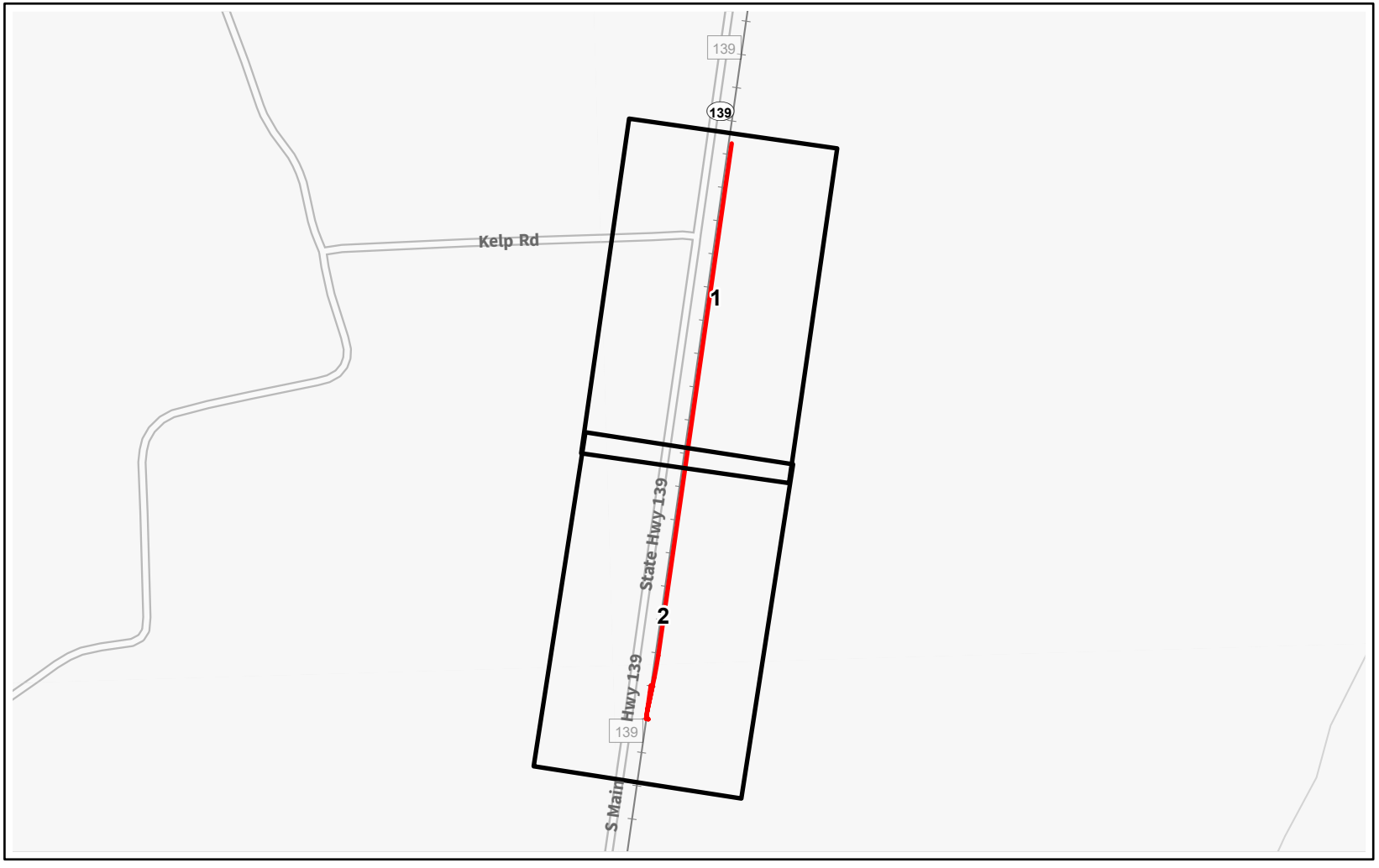
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Location

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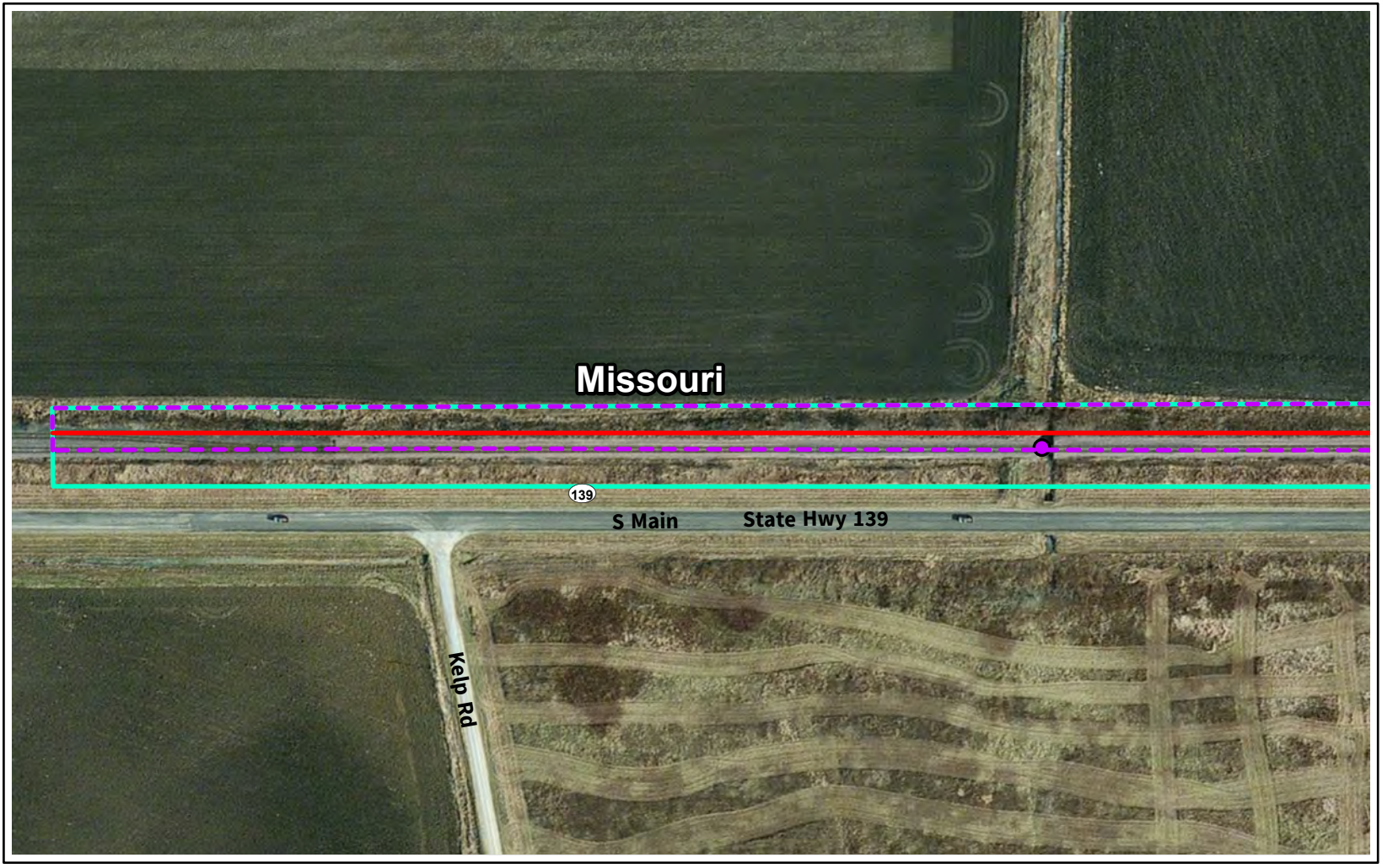
N

0 800 1600 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Newtown
Sullivan, Missouri | Page Index



Study Area

Capital Improvement Location

Existing Right-of-Way

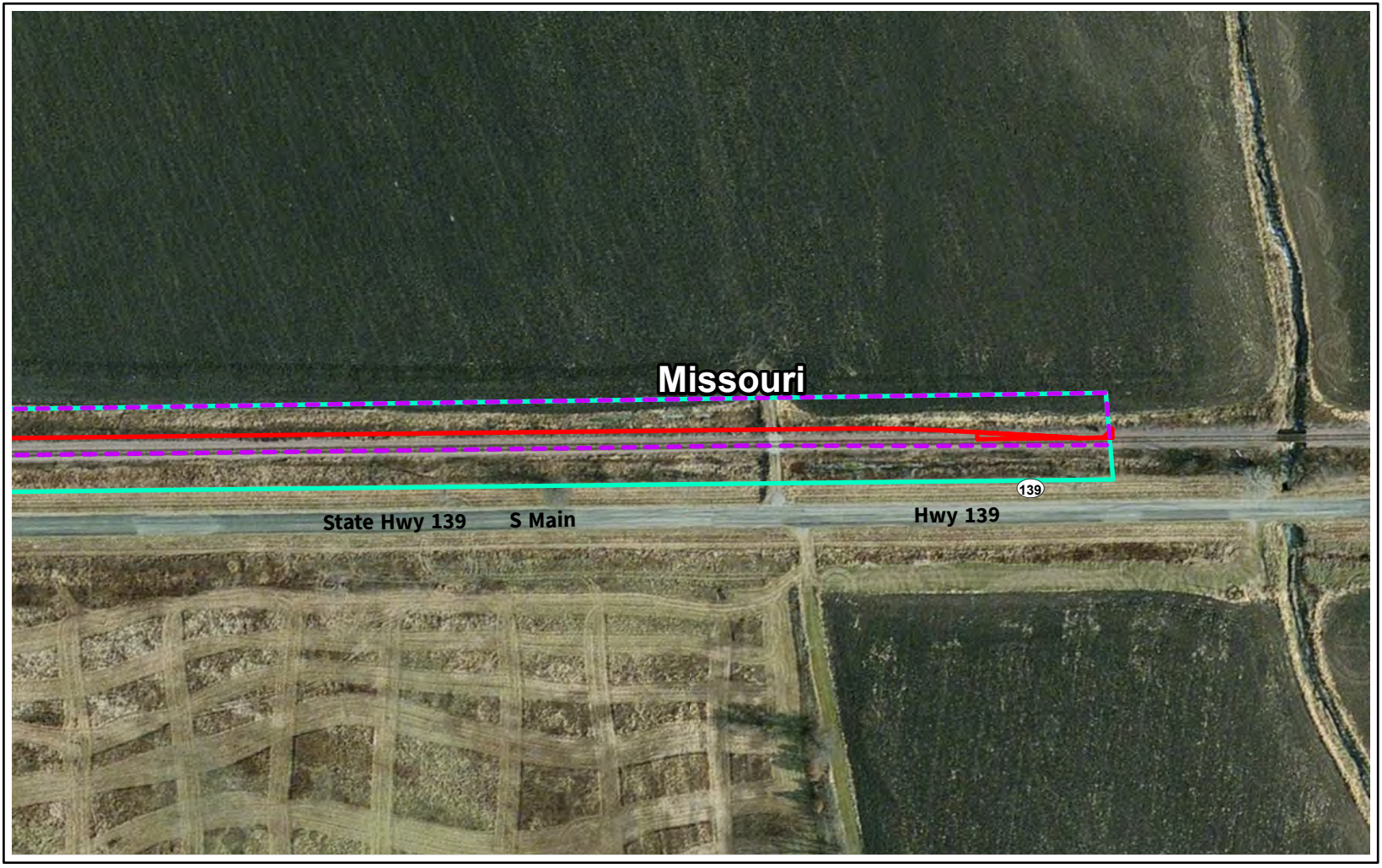
Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

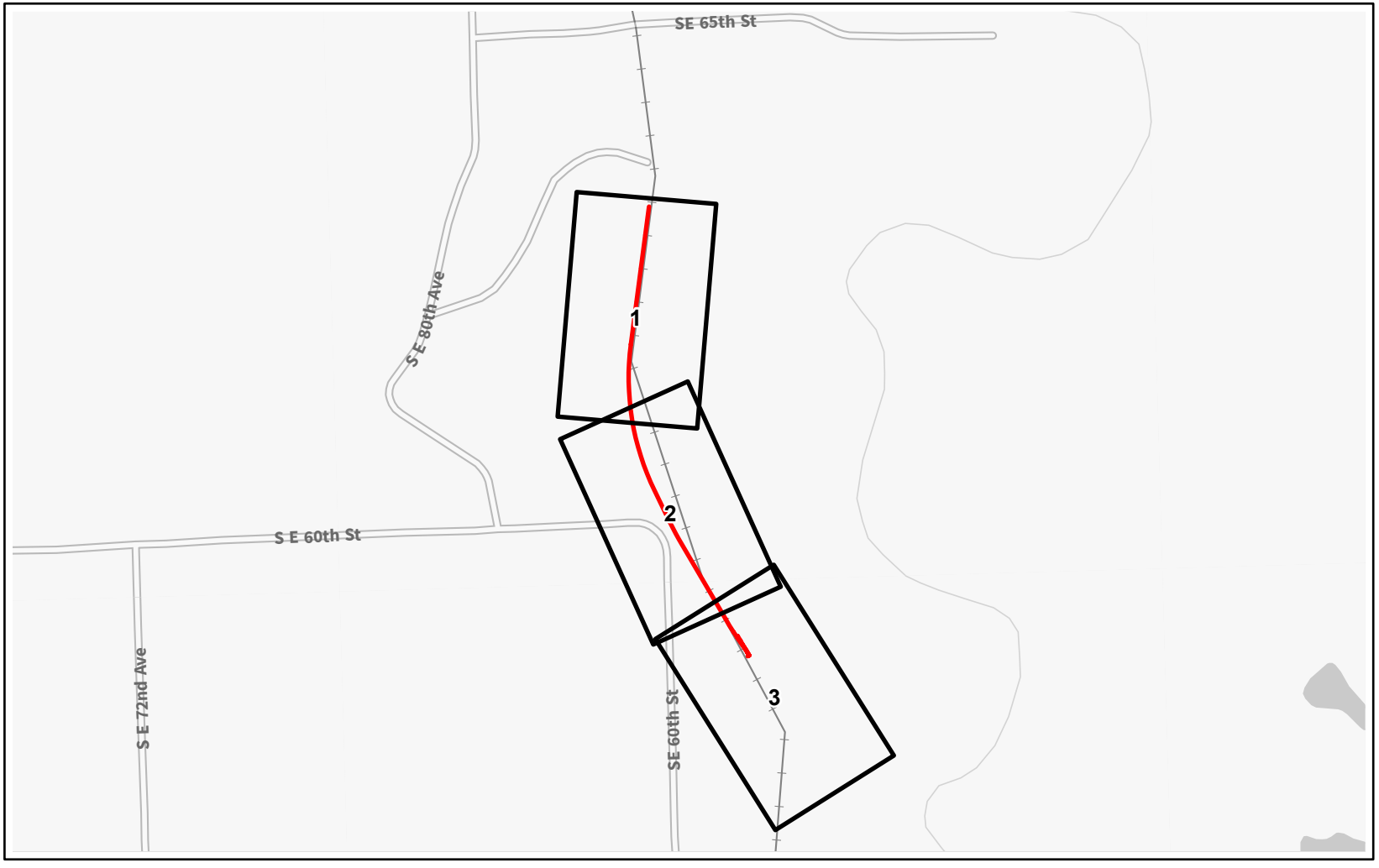
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Location

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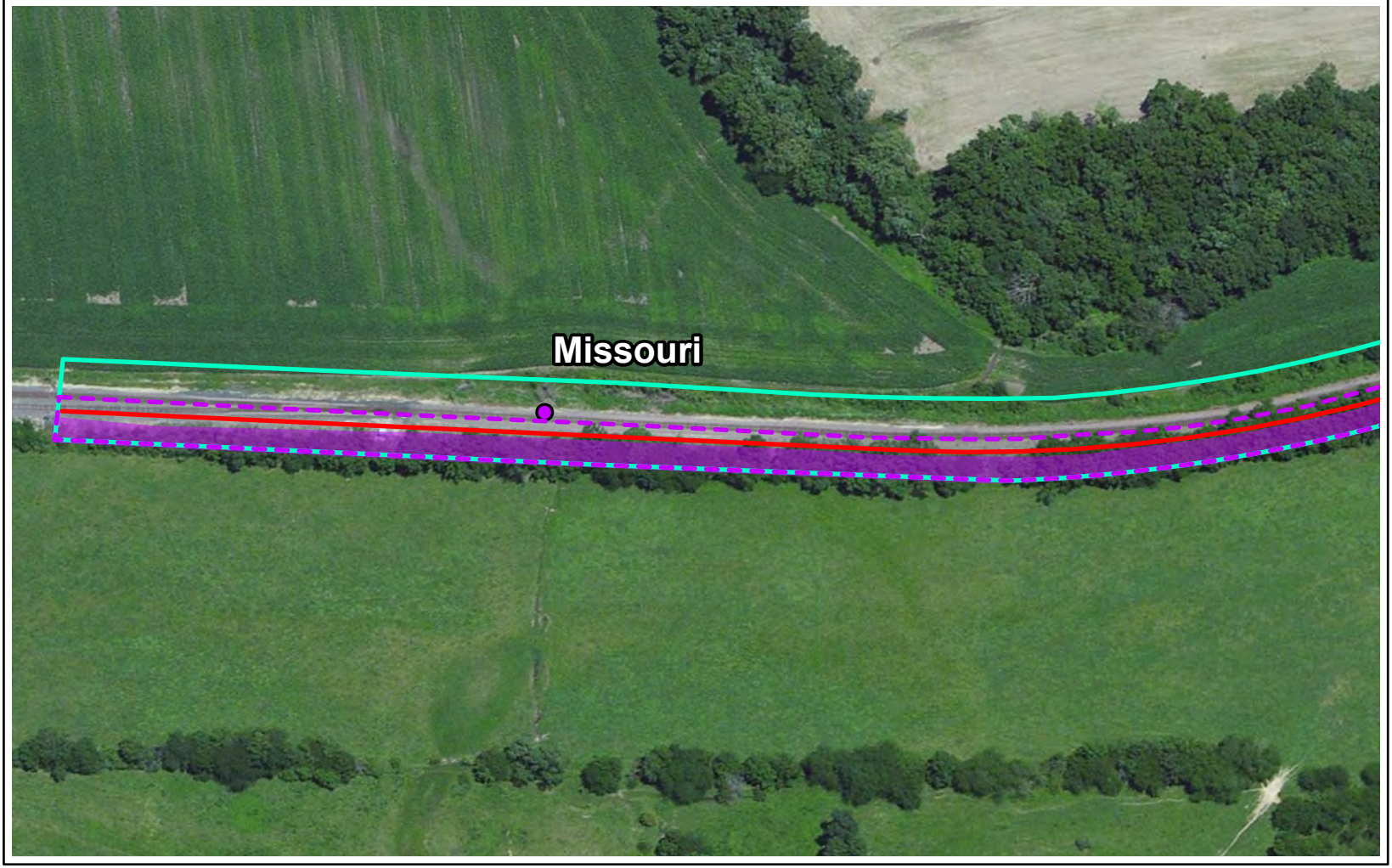
N

0 1200 2400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Laredo
Grundy, Missouri | Page Index



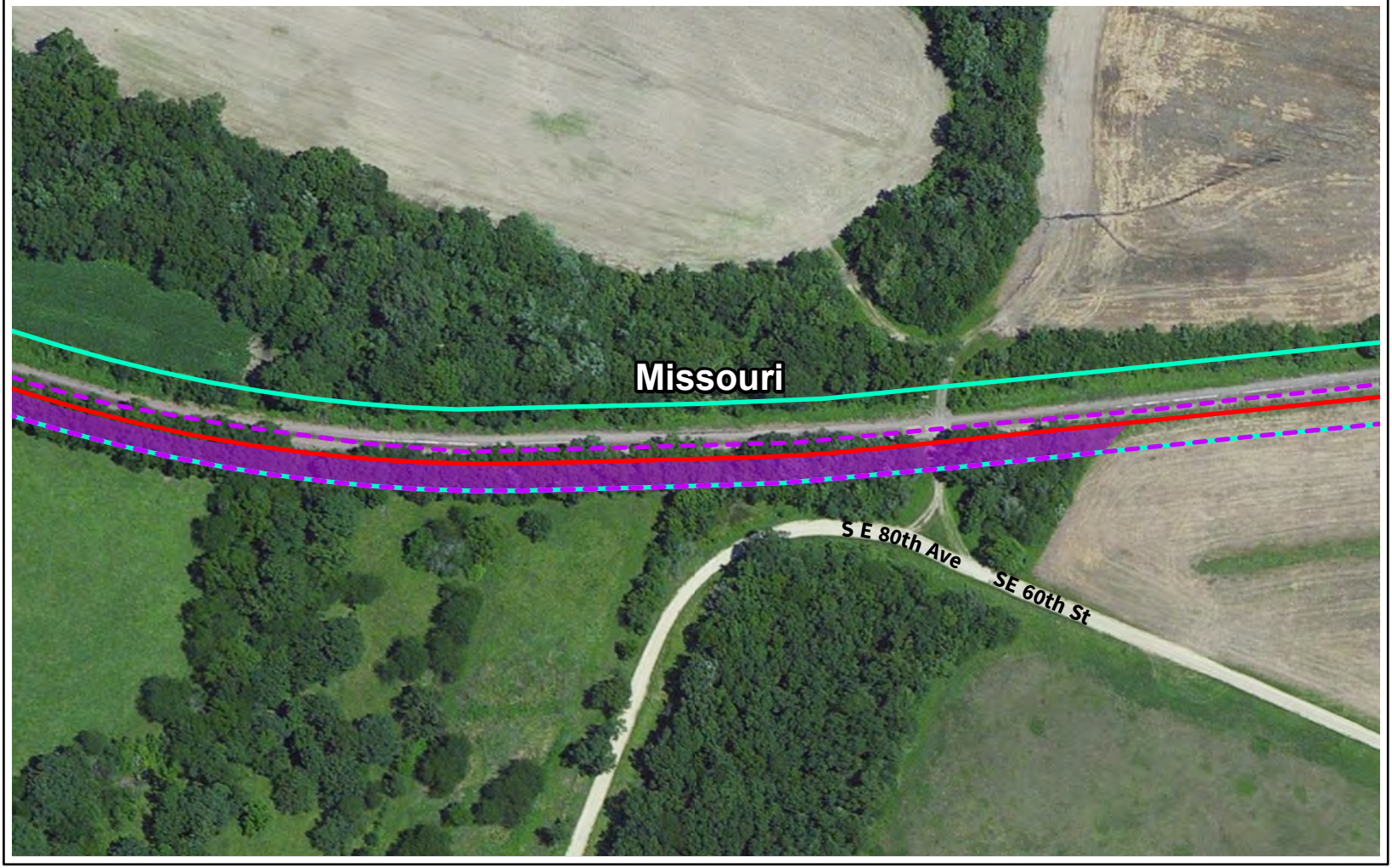
Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

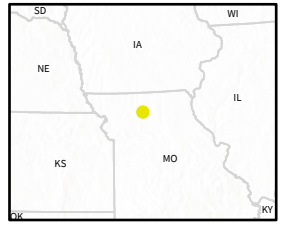
Existing Right-of-Way

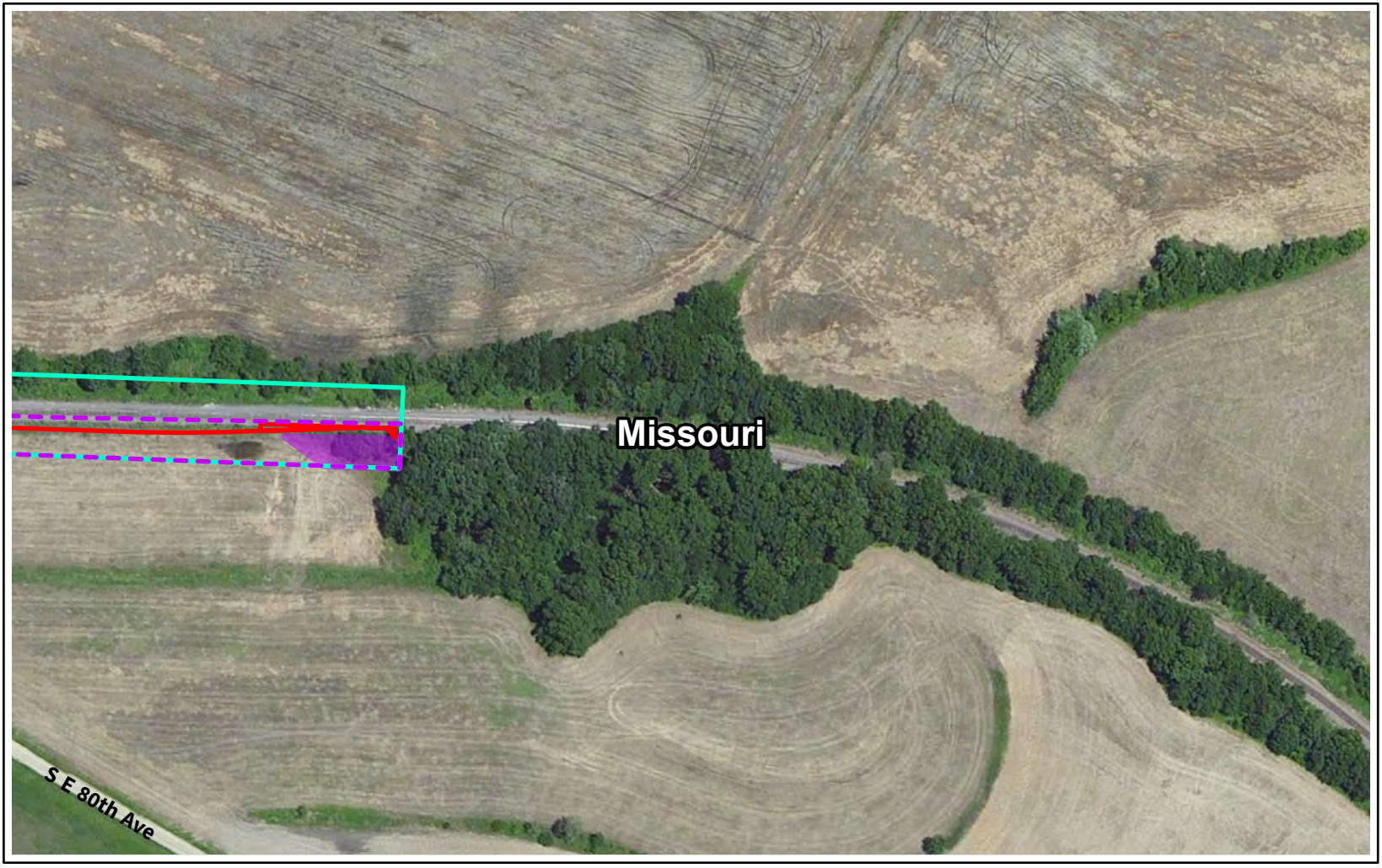
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Suitable Forested Bat Habitat

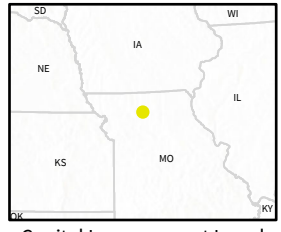
Capital Improvement Location

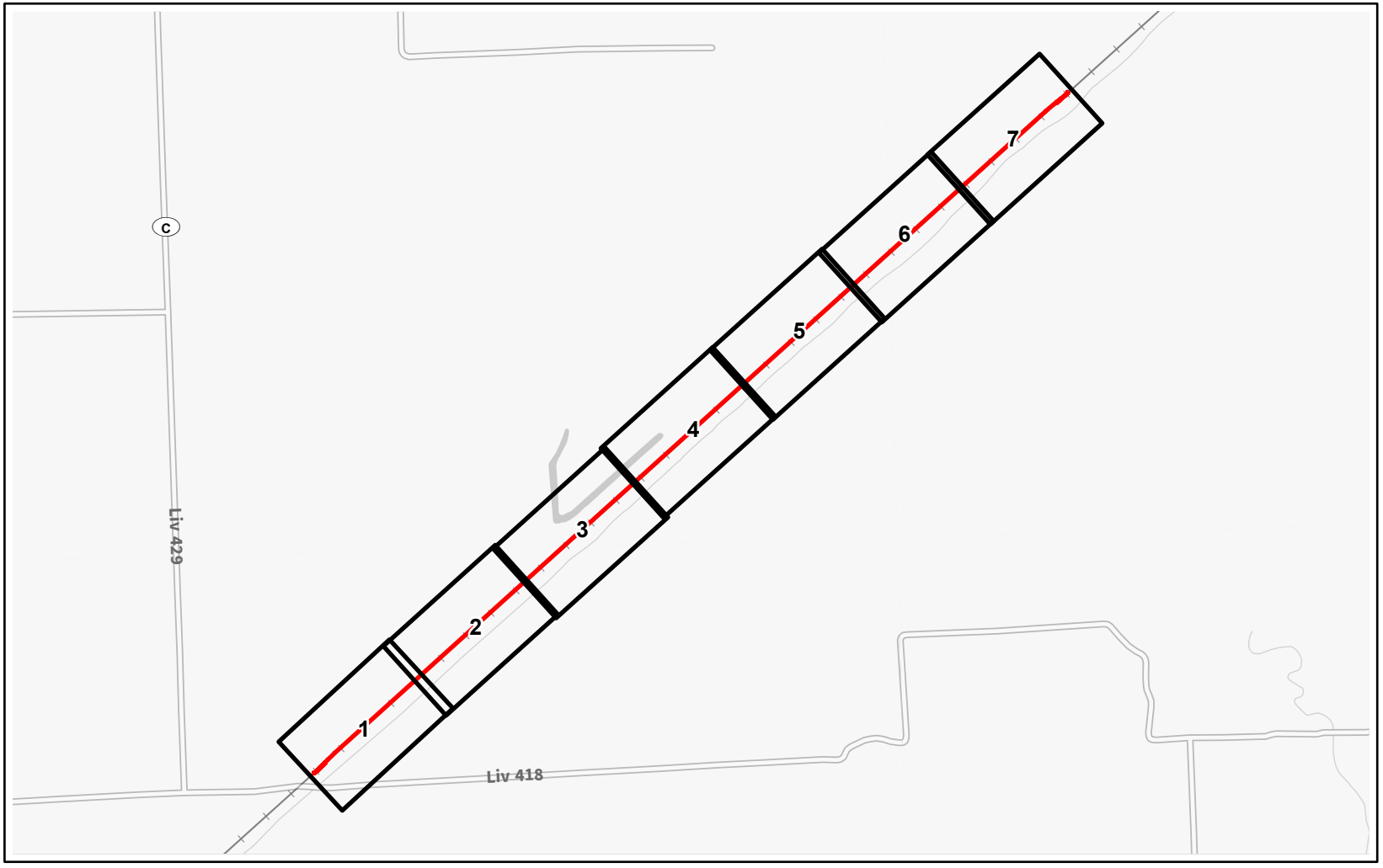
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

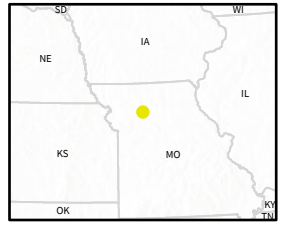
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Capital Improvement Location

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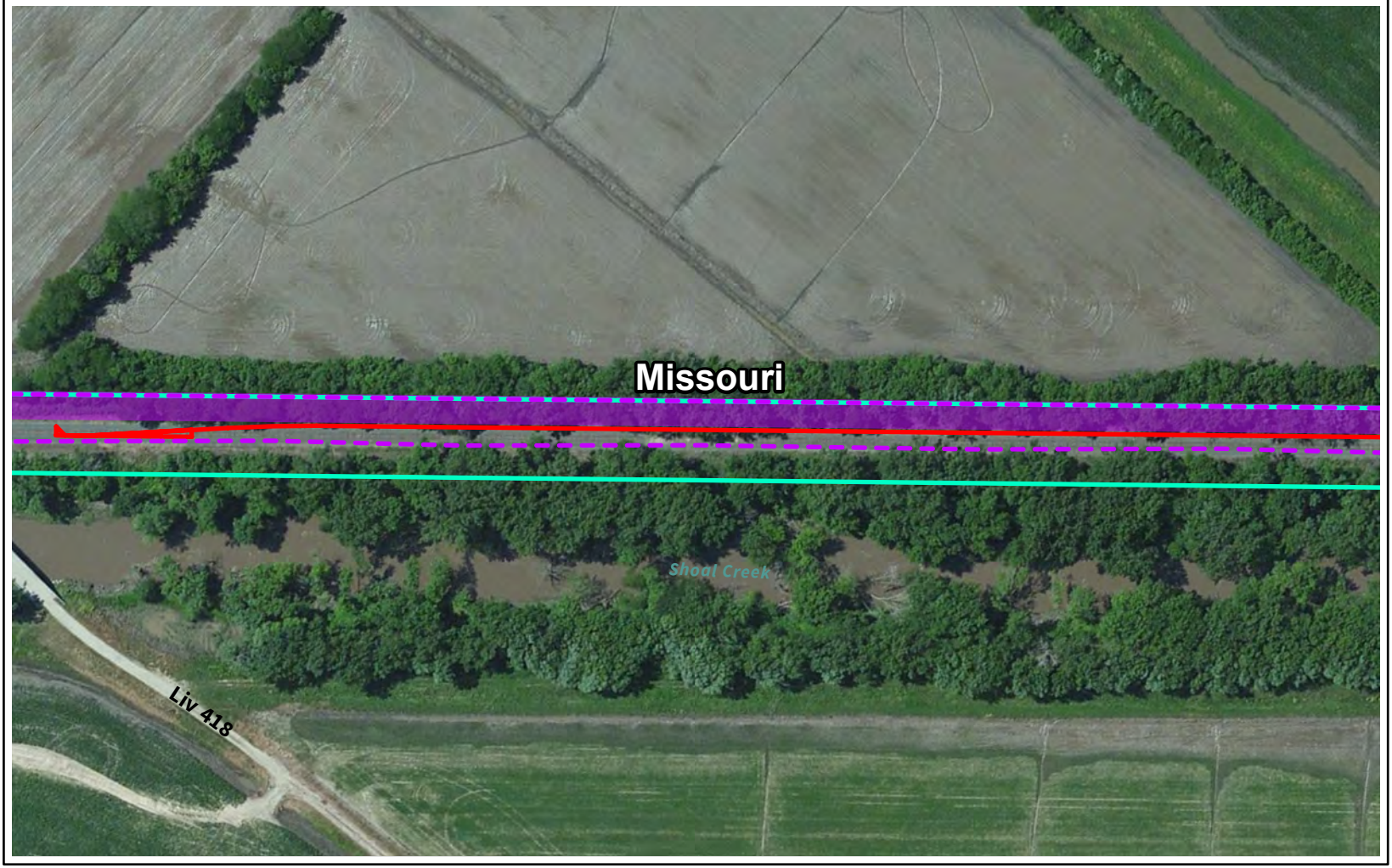
N

0 1800 3600 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement MP 431 (Dawn)
Livingston, Missouri | Page Index



Study Area

Capital Improvement Location

Existing Right-of-Way

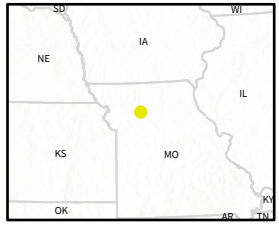
Suitable Forested Bat Habitat

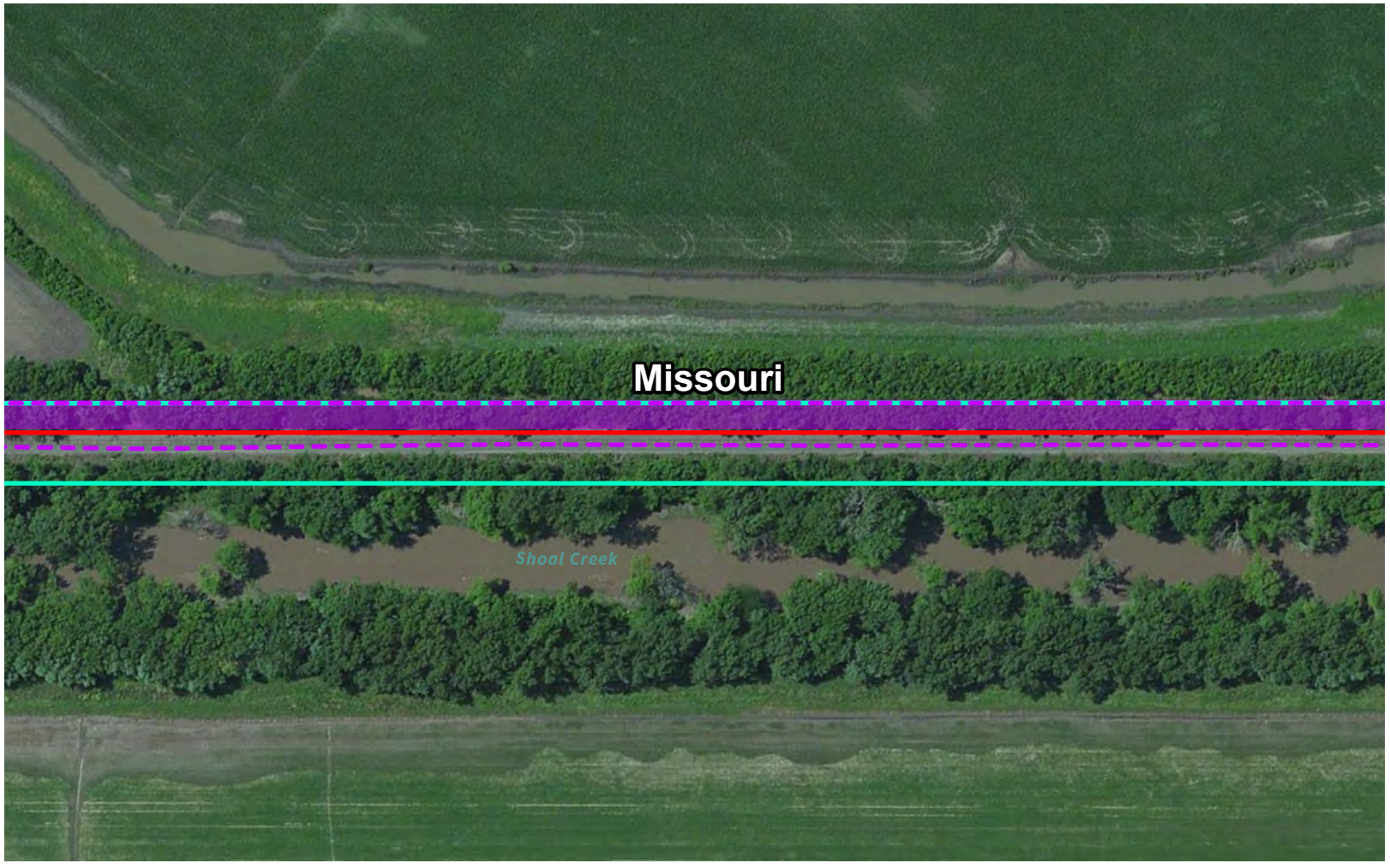


0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Suitable Forested Bat Habitat

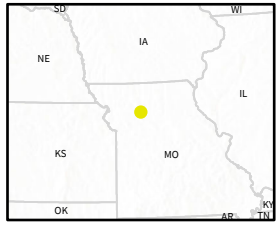
Capital Improvement Location

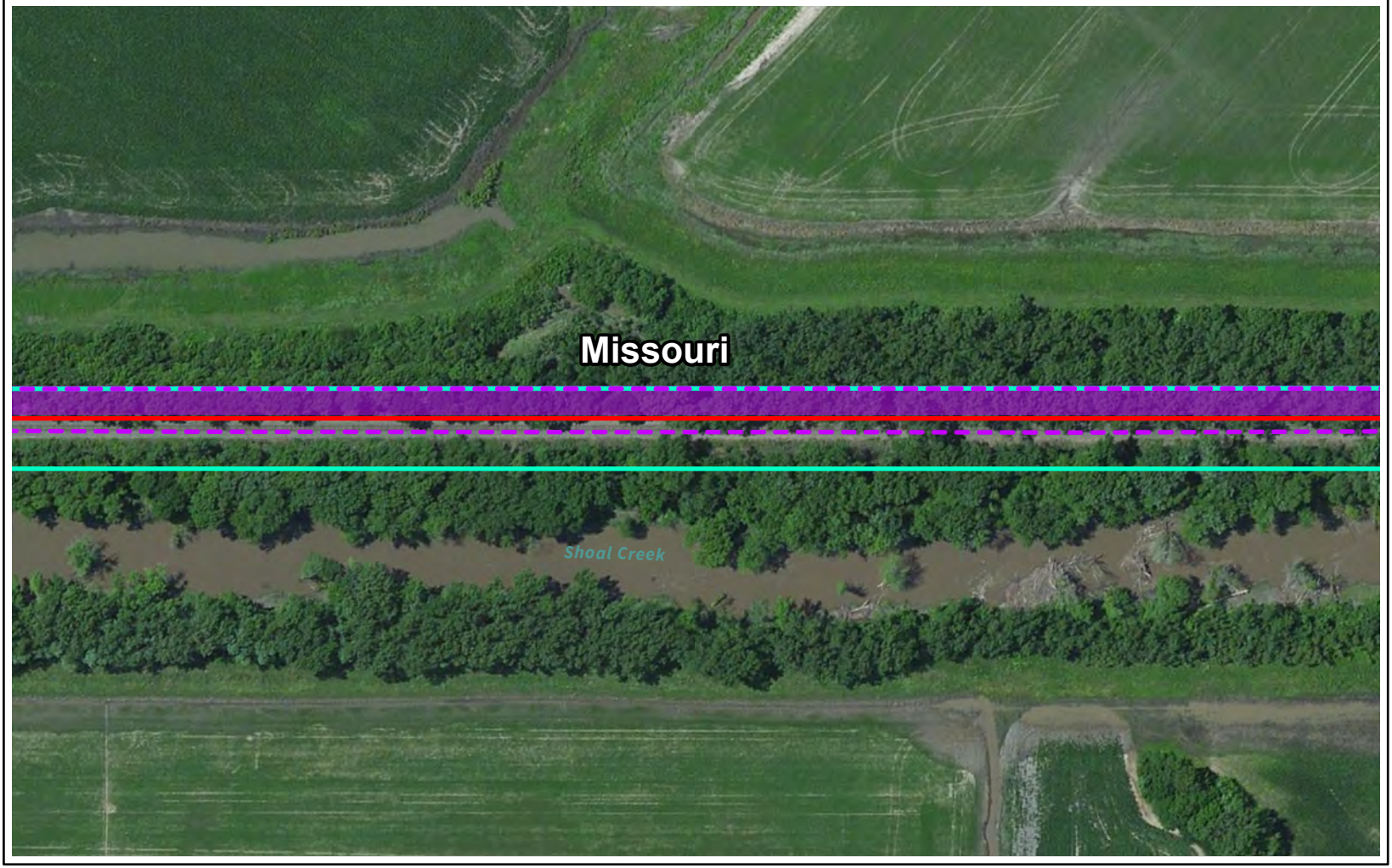
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

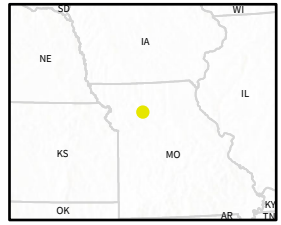
Existing Right-of-Way

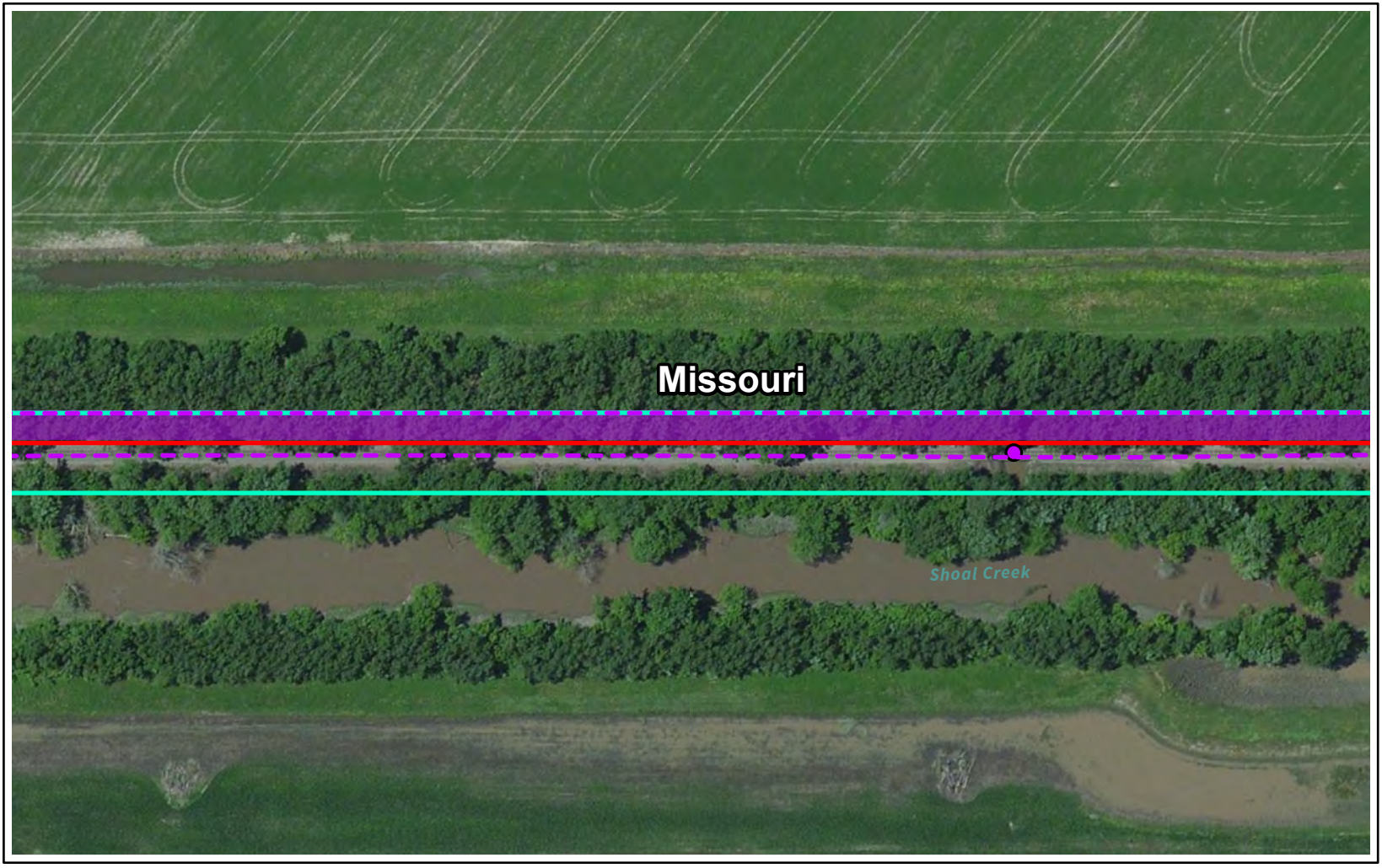
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

Existing Right-of-Way

Suitable Bat Roosting Structure

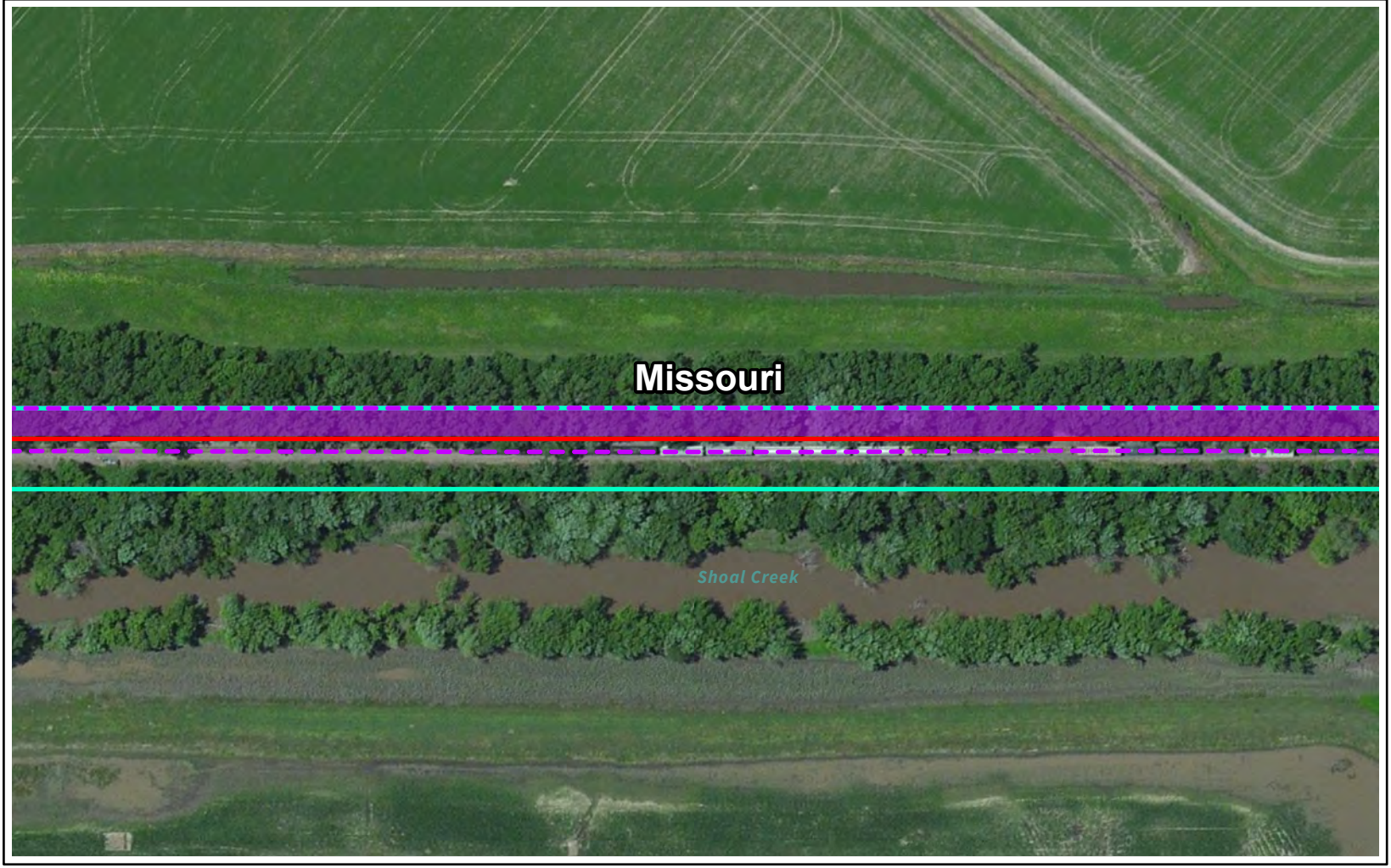
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

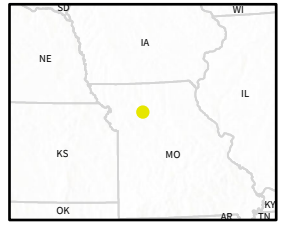
Existing Right-of-Way

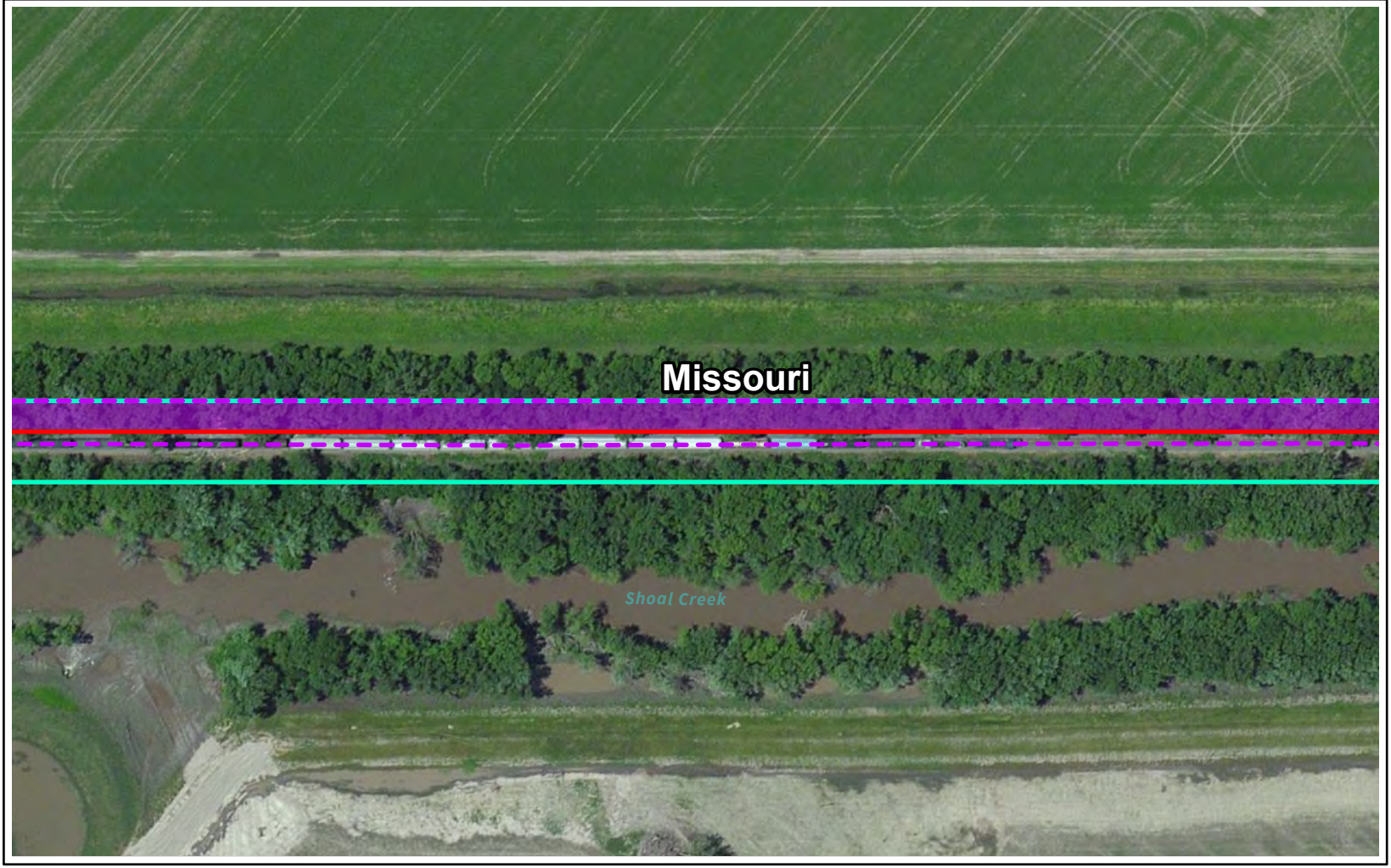
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Suitable Forested Bat Habitat

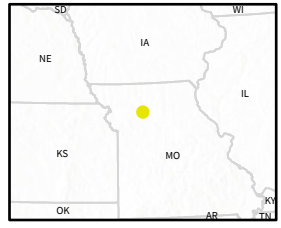
Capital Improvement Location

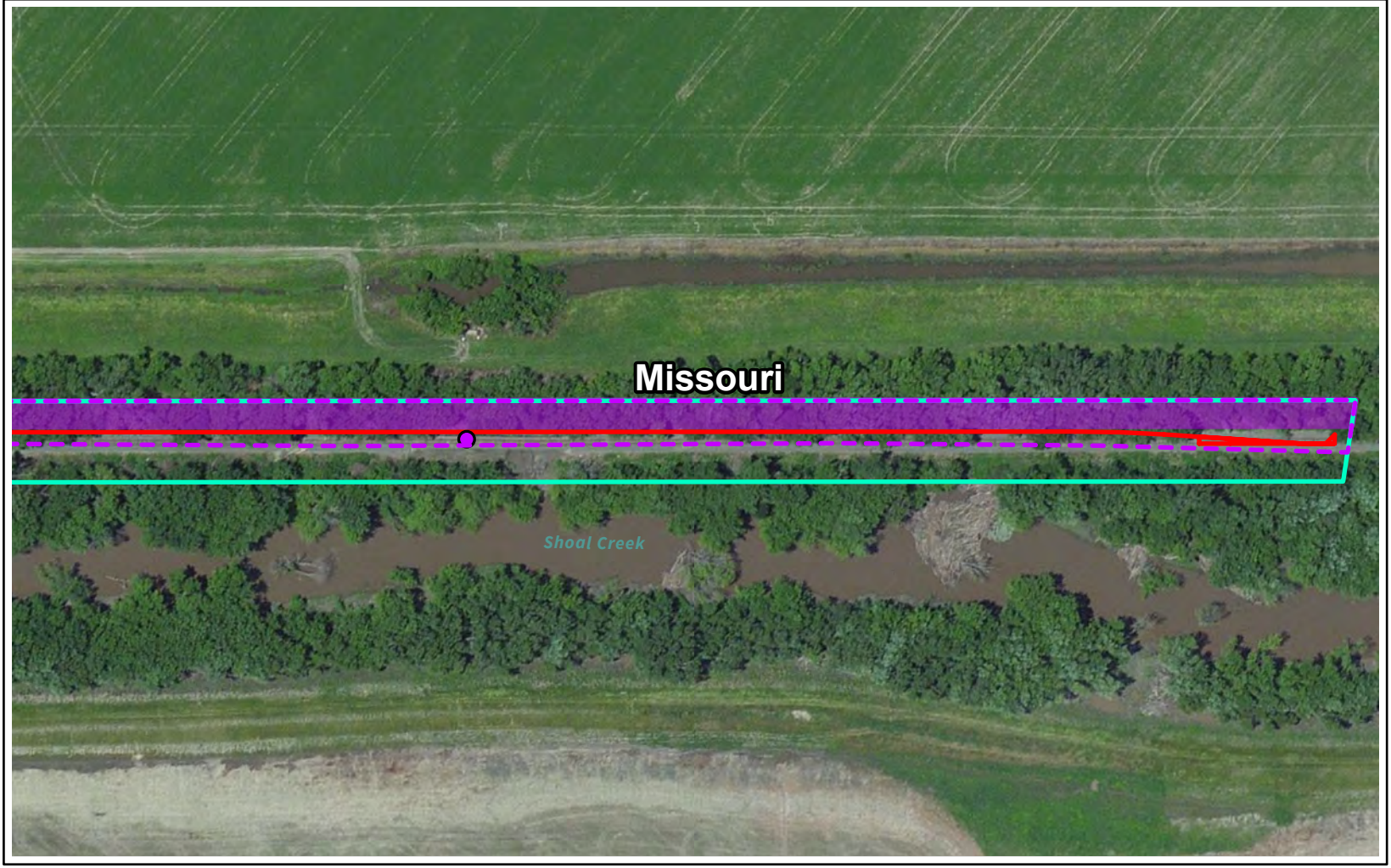
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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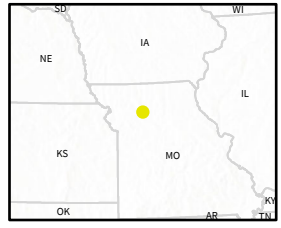


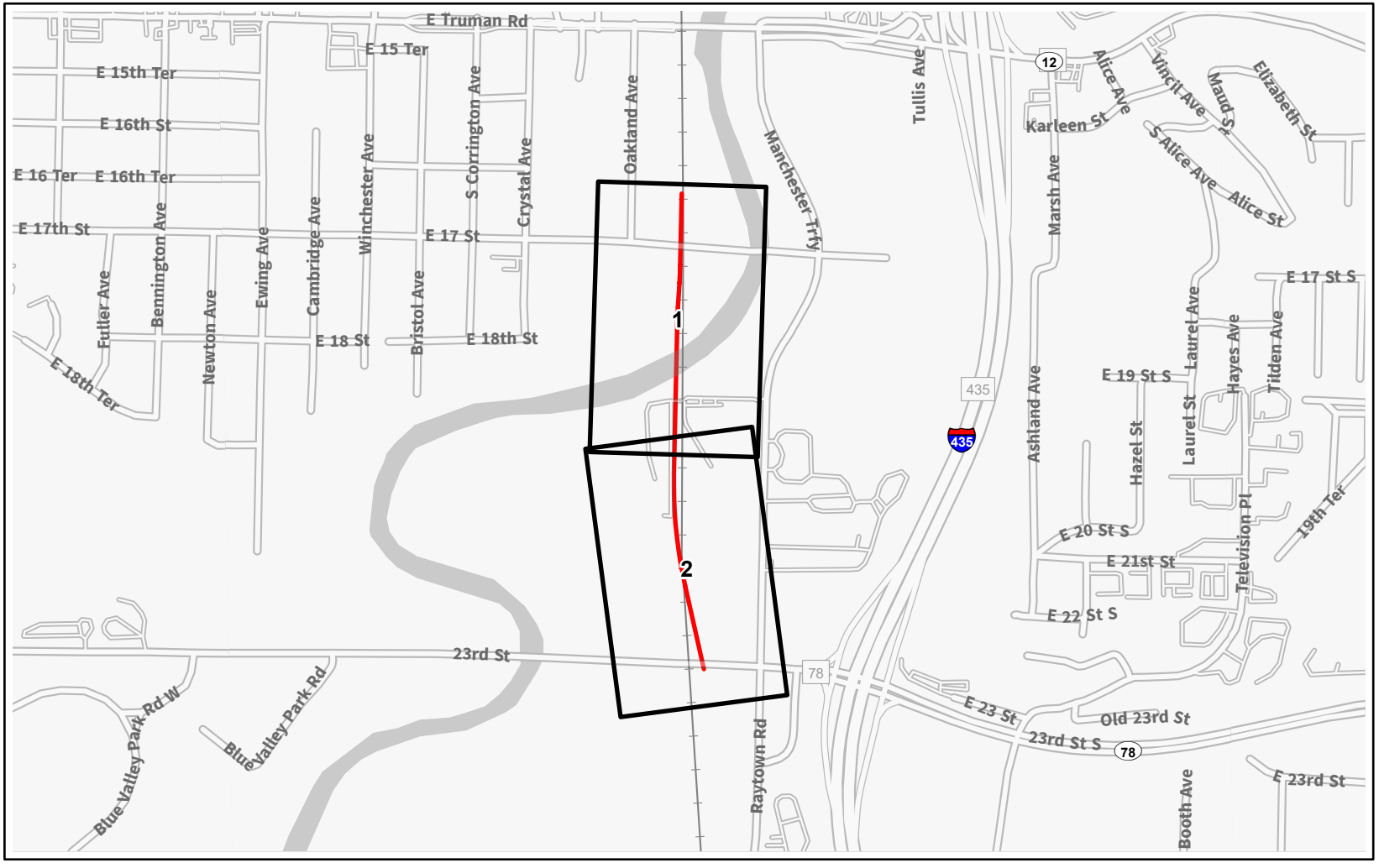
Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

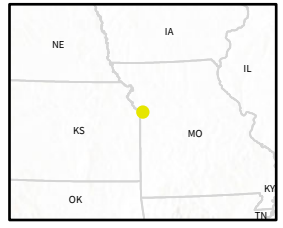
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Capital Improvement Location

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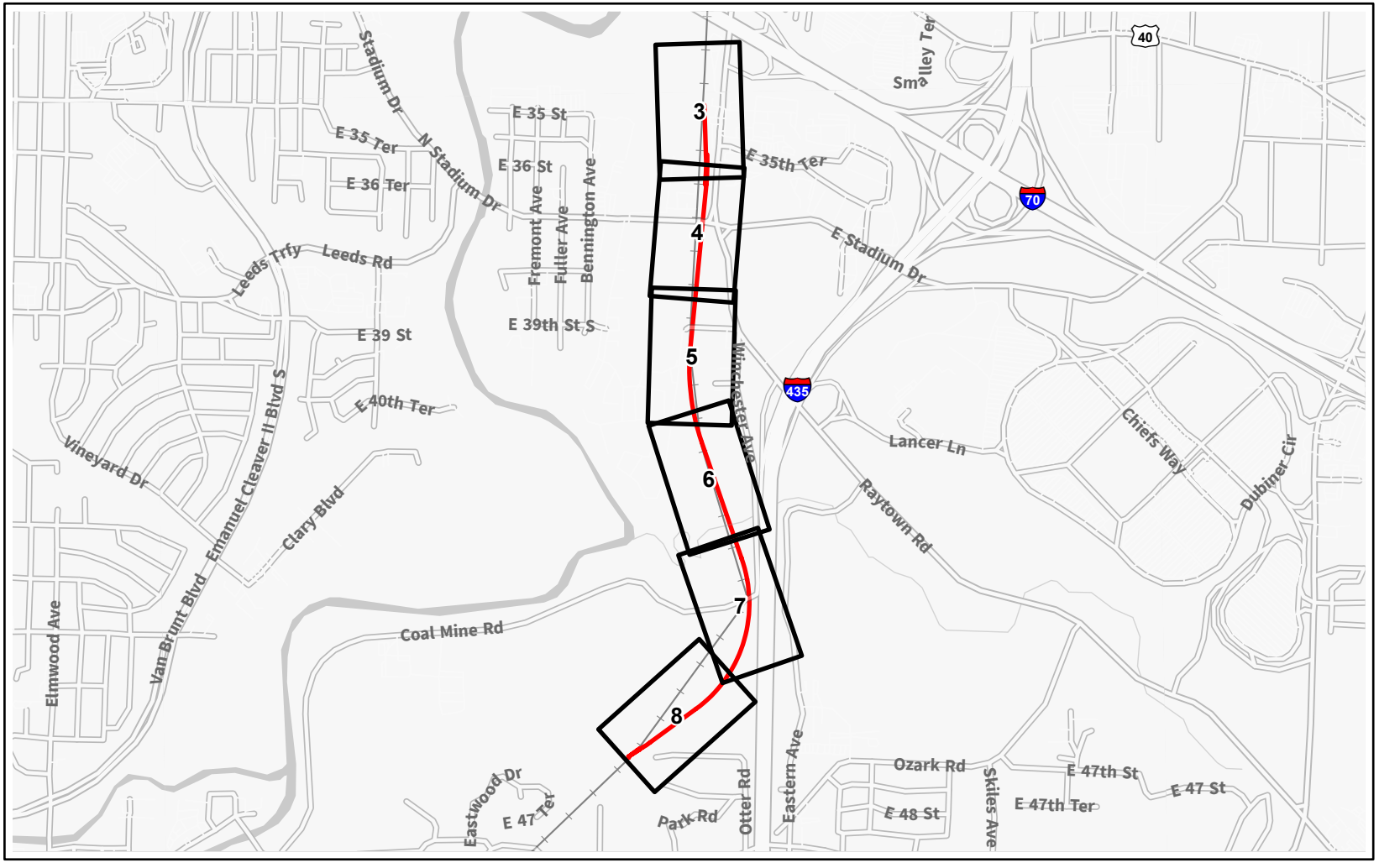
N

0 1000 2000 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Blue Valley (North)
Jackson, Missouri | Page Index



Capital Improvement Location

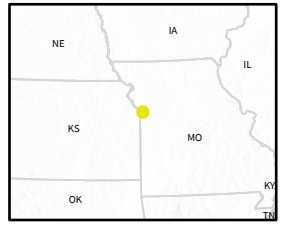
Page Index

N

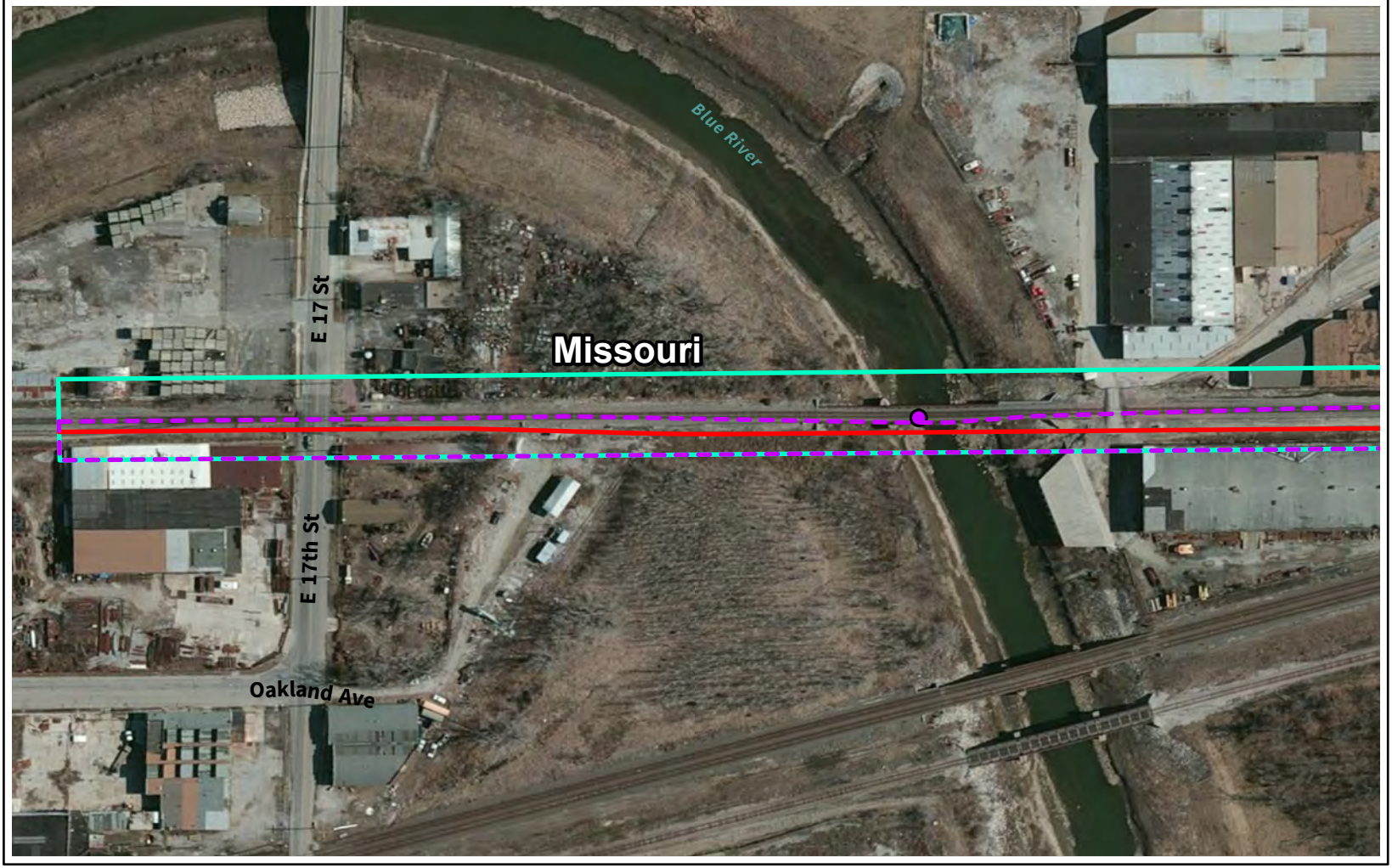
0 2000 4000 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Blue Valley (South)
Jackson, Missouri | Page Index



Study Area

Capital Improvement Location

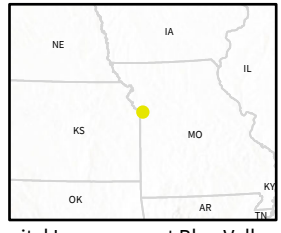
Existing Right-of-Way

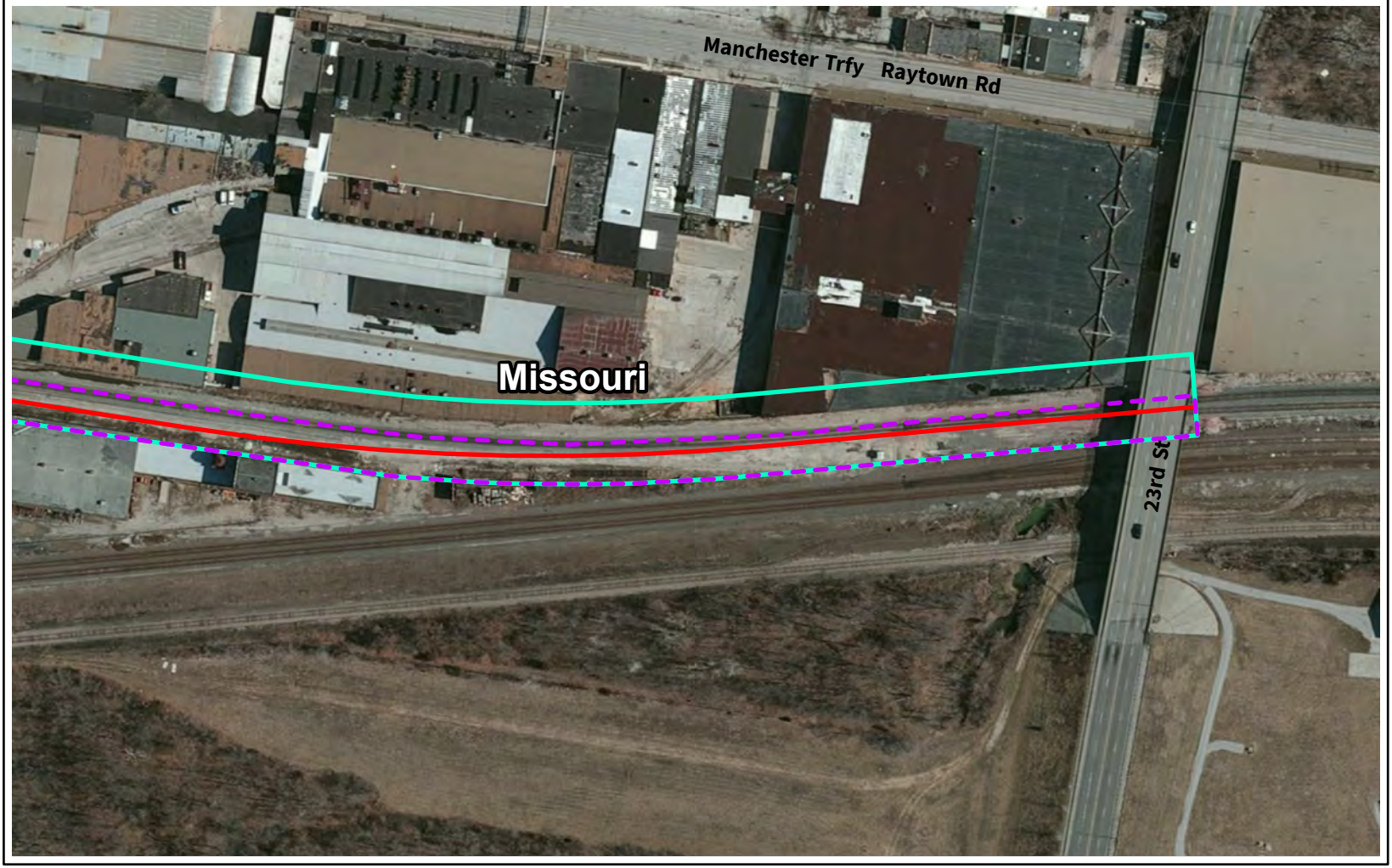
Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

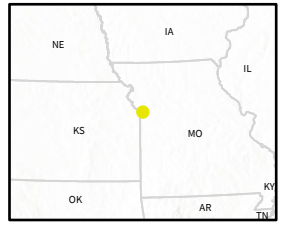
Capital Improvement Location

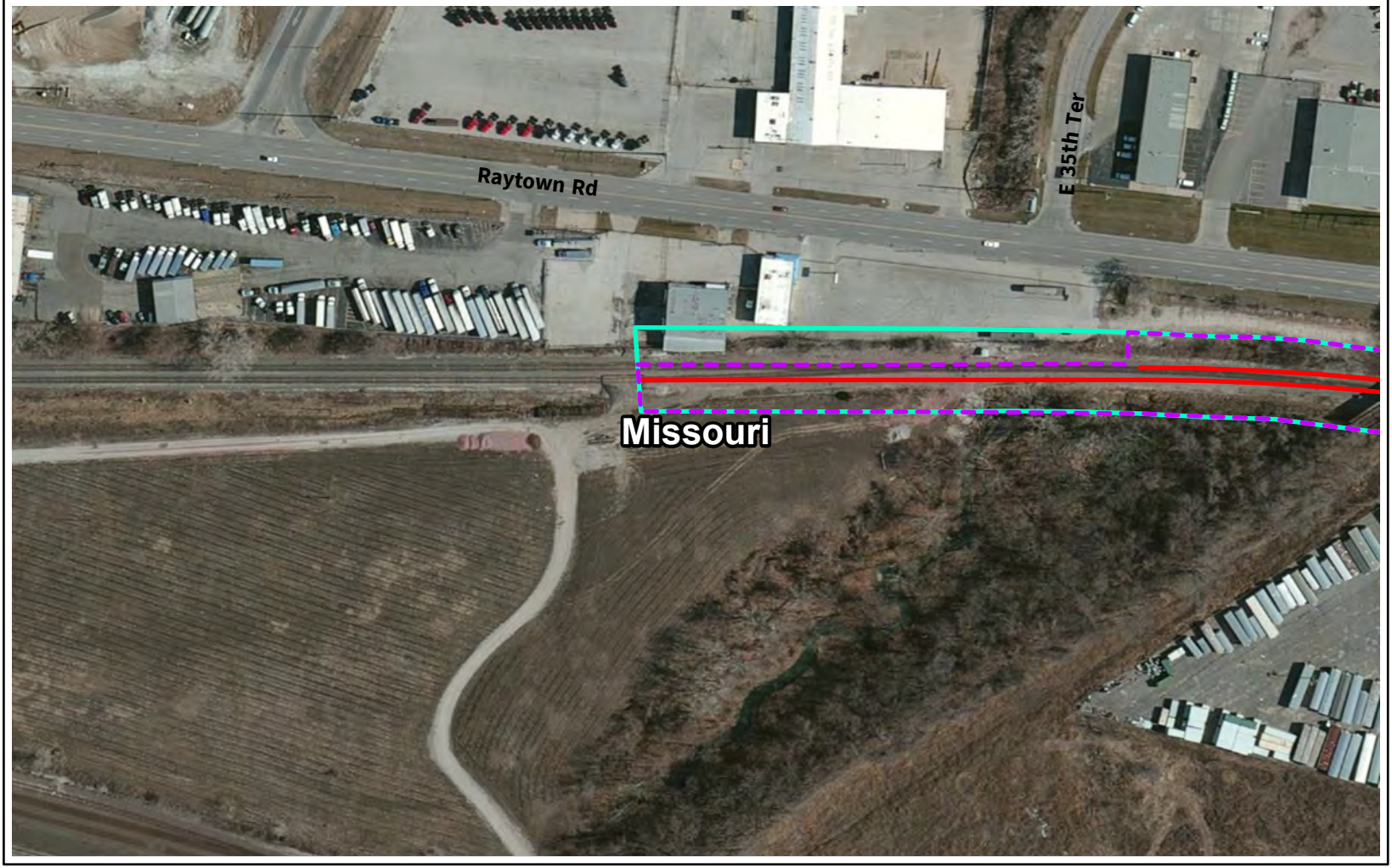
Existing Right-of-Way



Source: FRA, CP, ArcGIS Online

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Study Area

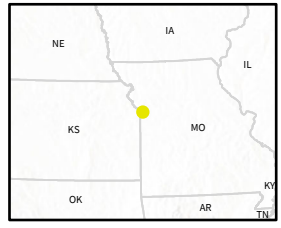
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

O-231





Study Area

Capital Improvement Location

Existing Right-of-Way

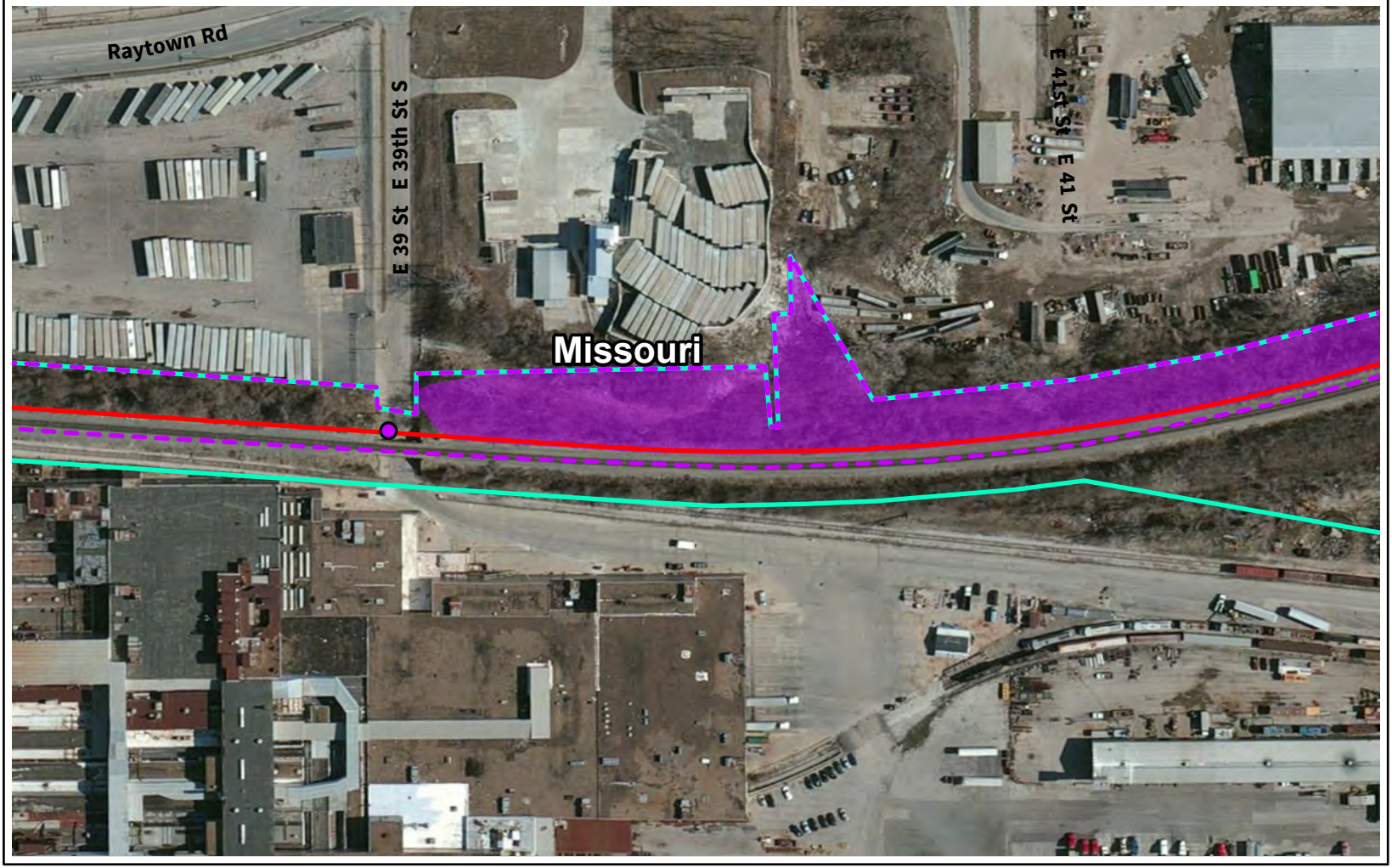
Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

Existing Right-of-Way

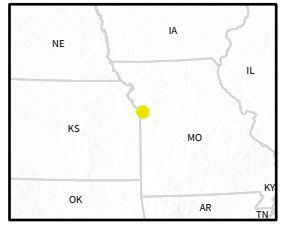
Suitable Bat Roosting Structure

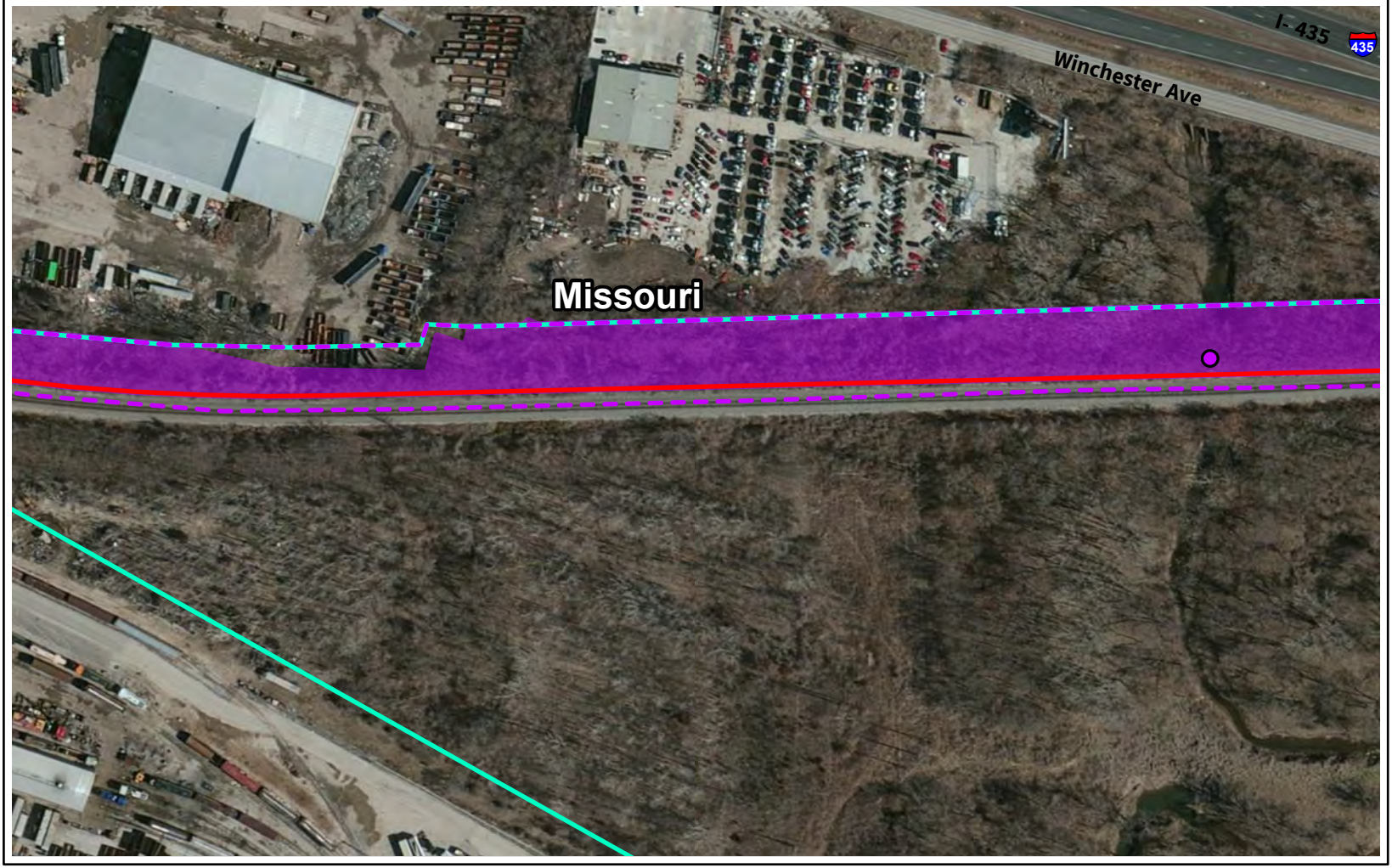
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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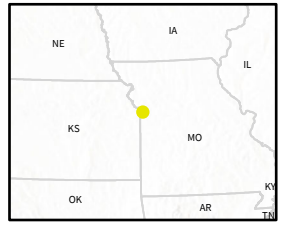


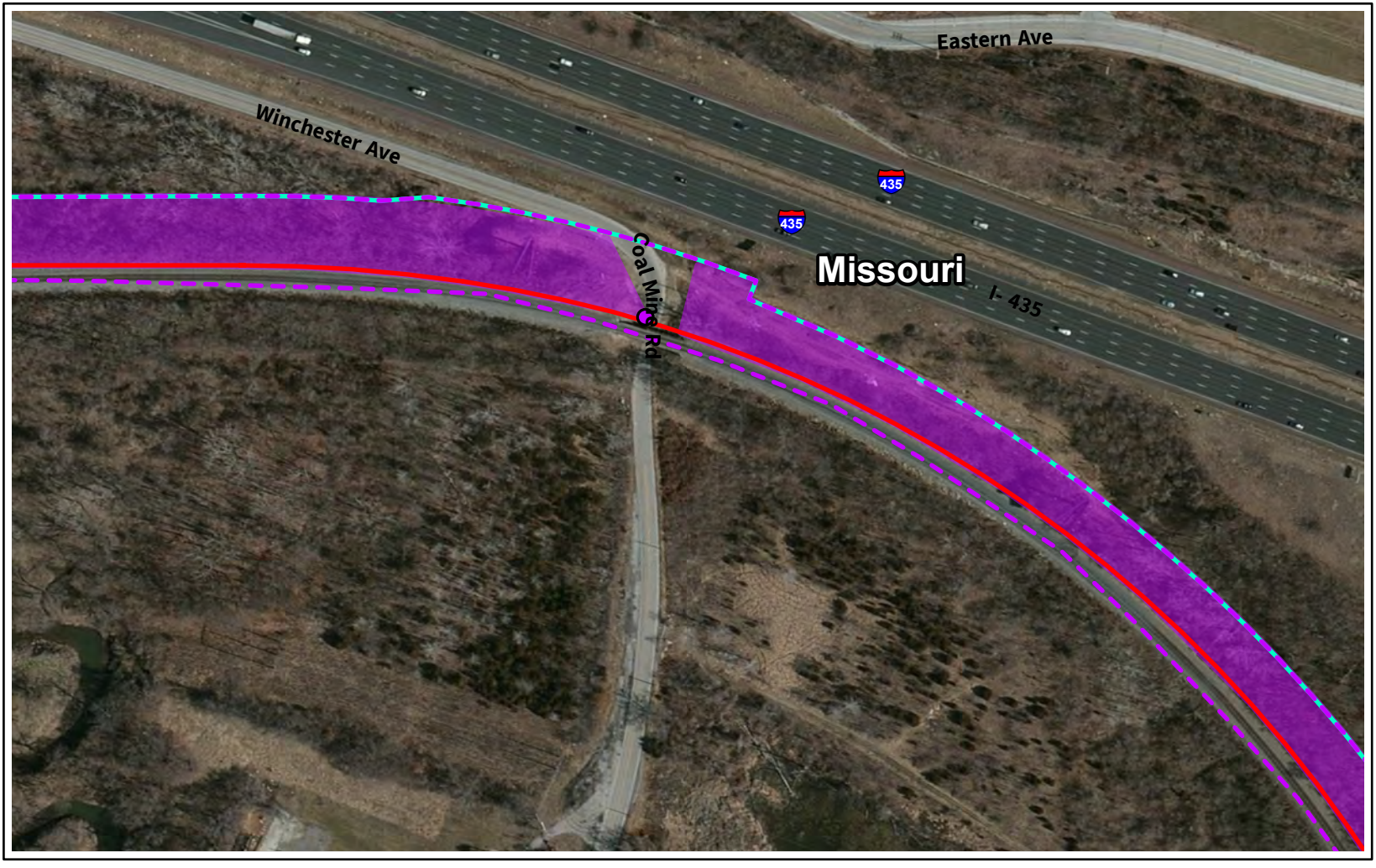
Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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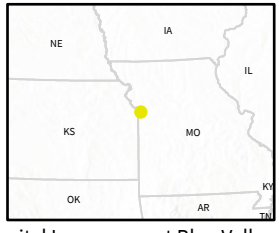


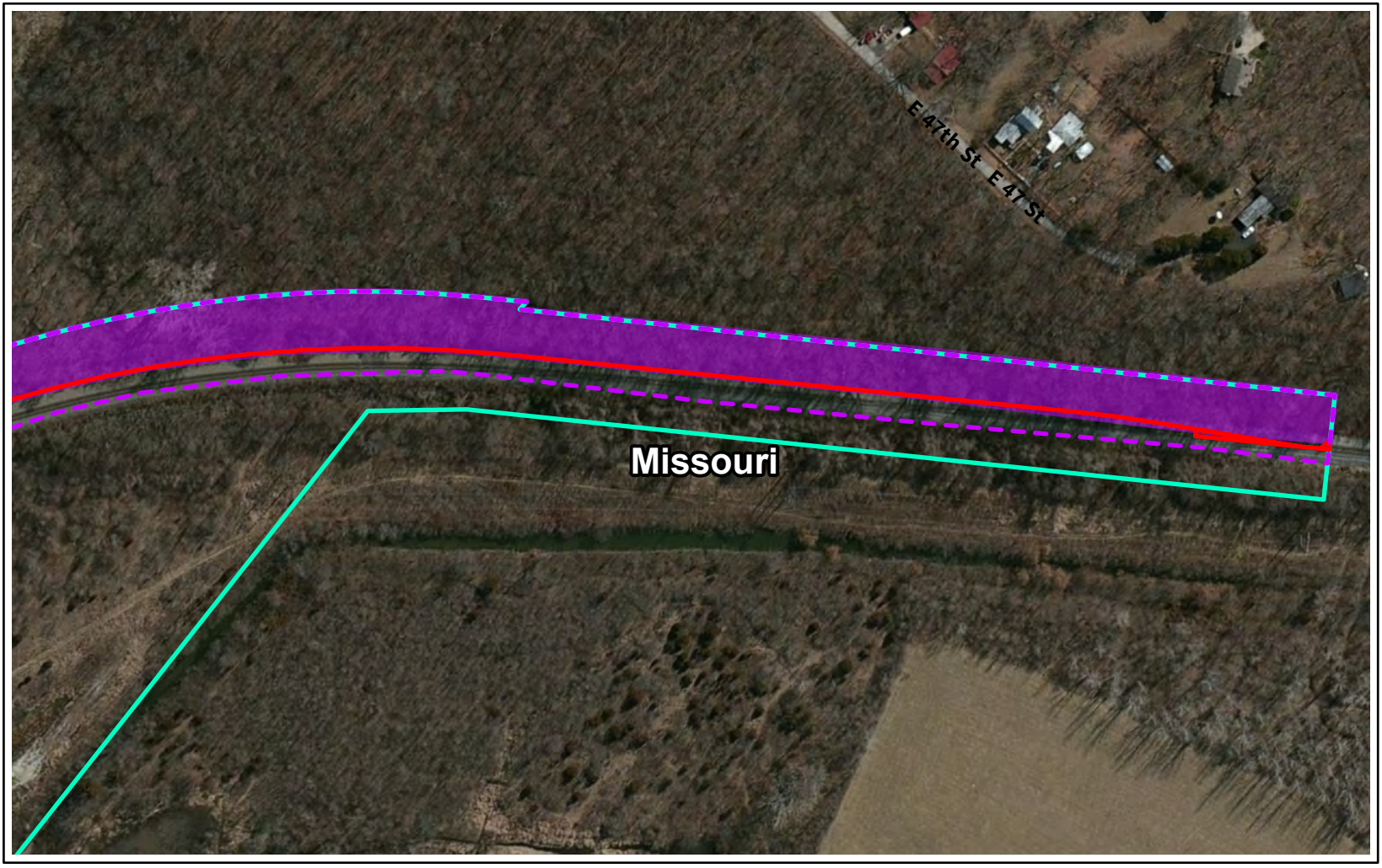
Study Area
Capital Improvement Location
Existing Right-of-Way
Suitable Bat Roosting Structure
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Suitable Forested Bat Habitat

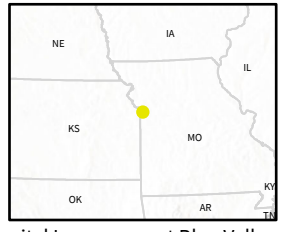
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

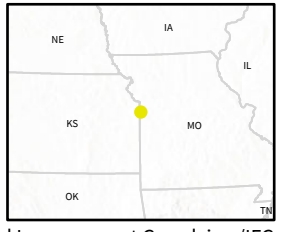
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Capital Improvement Location

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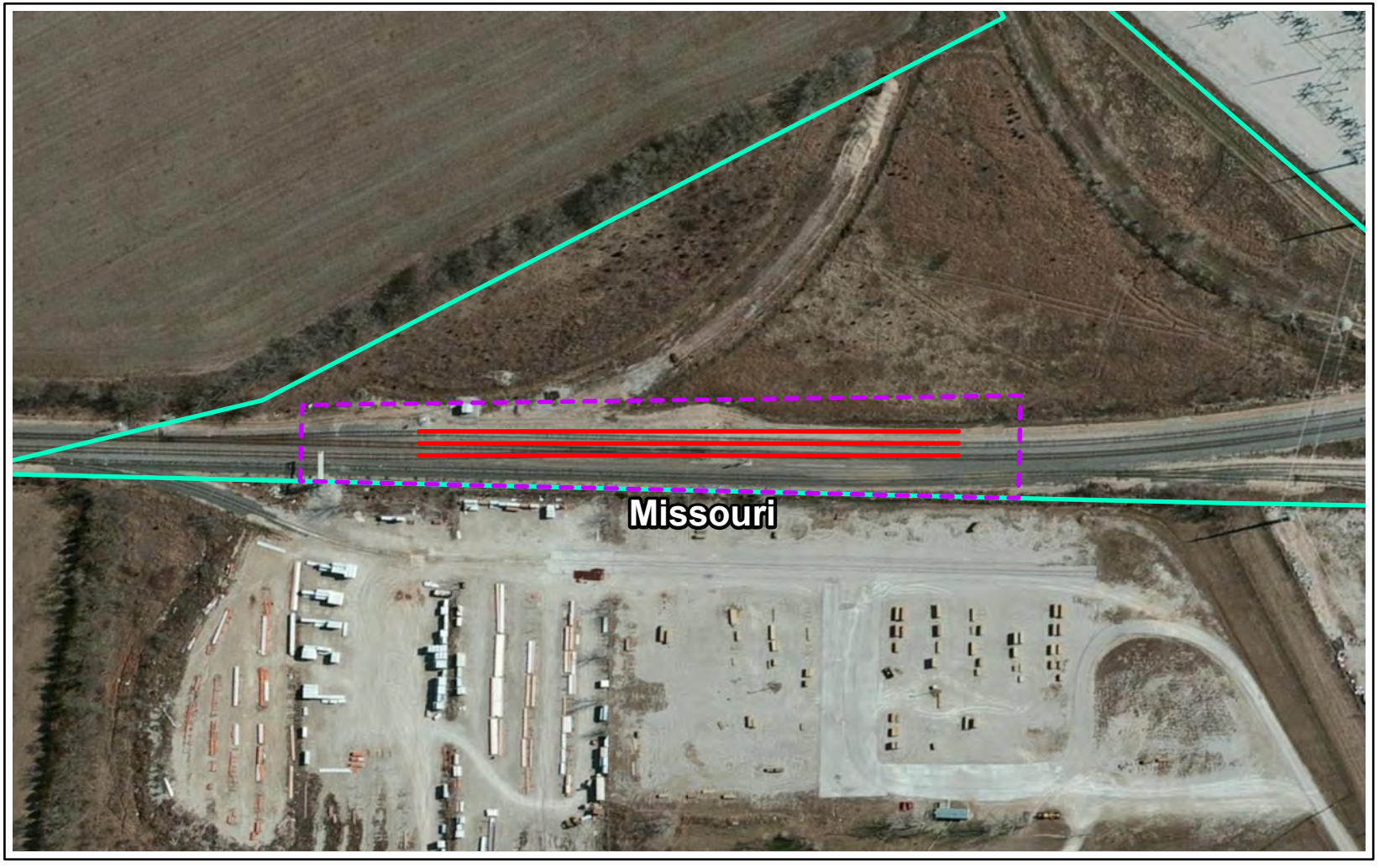
N

0 3500 7000 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Grandview/IFG
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Study Area

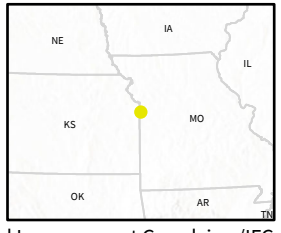
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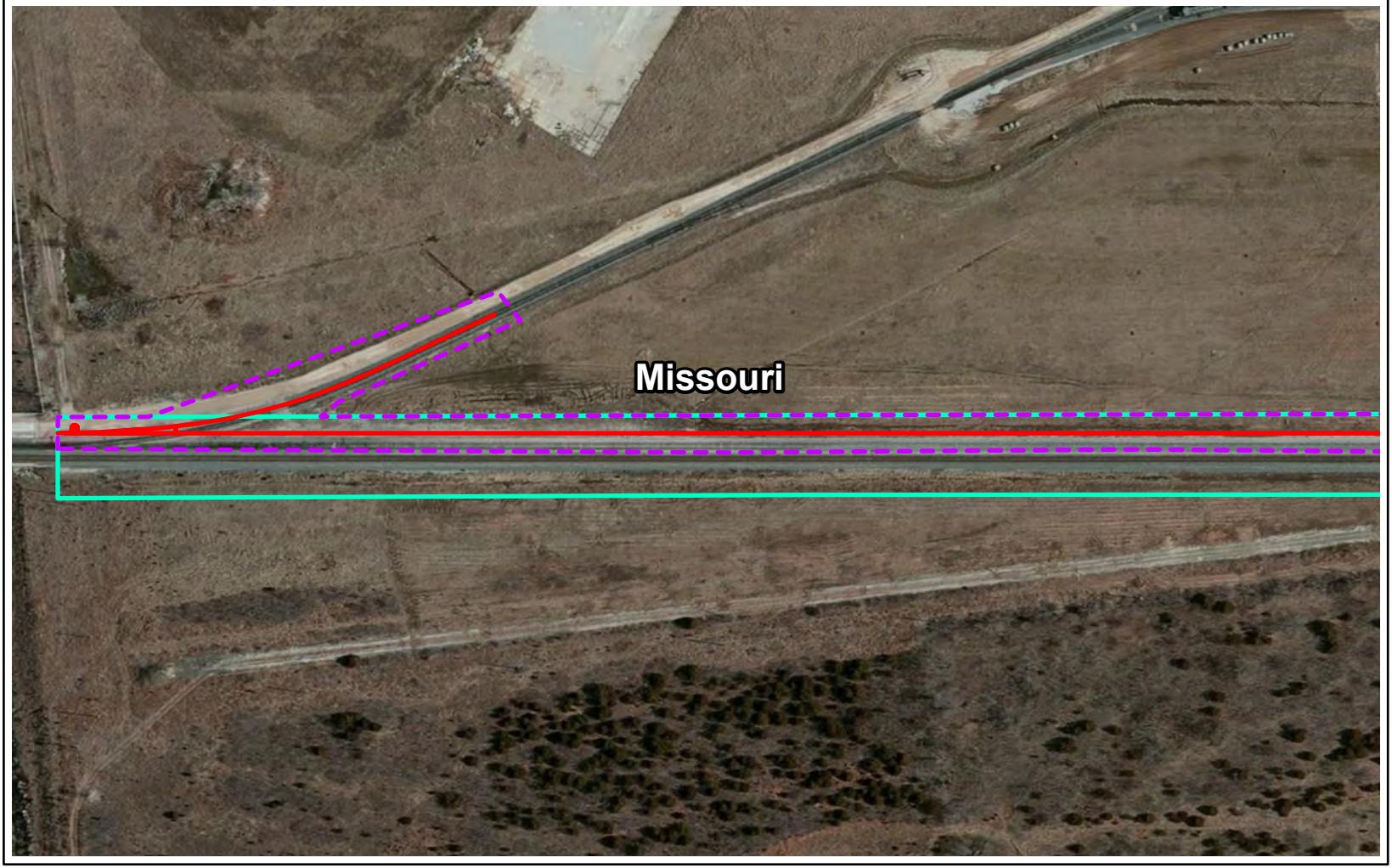
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

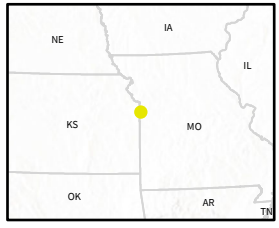
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

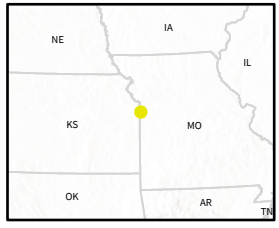
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

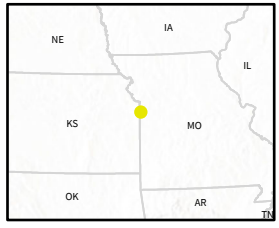
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

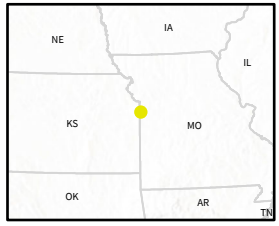
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

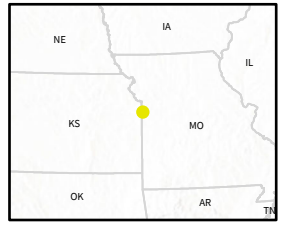
Capital Improvement Location

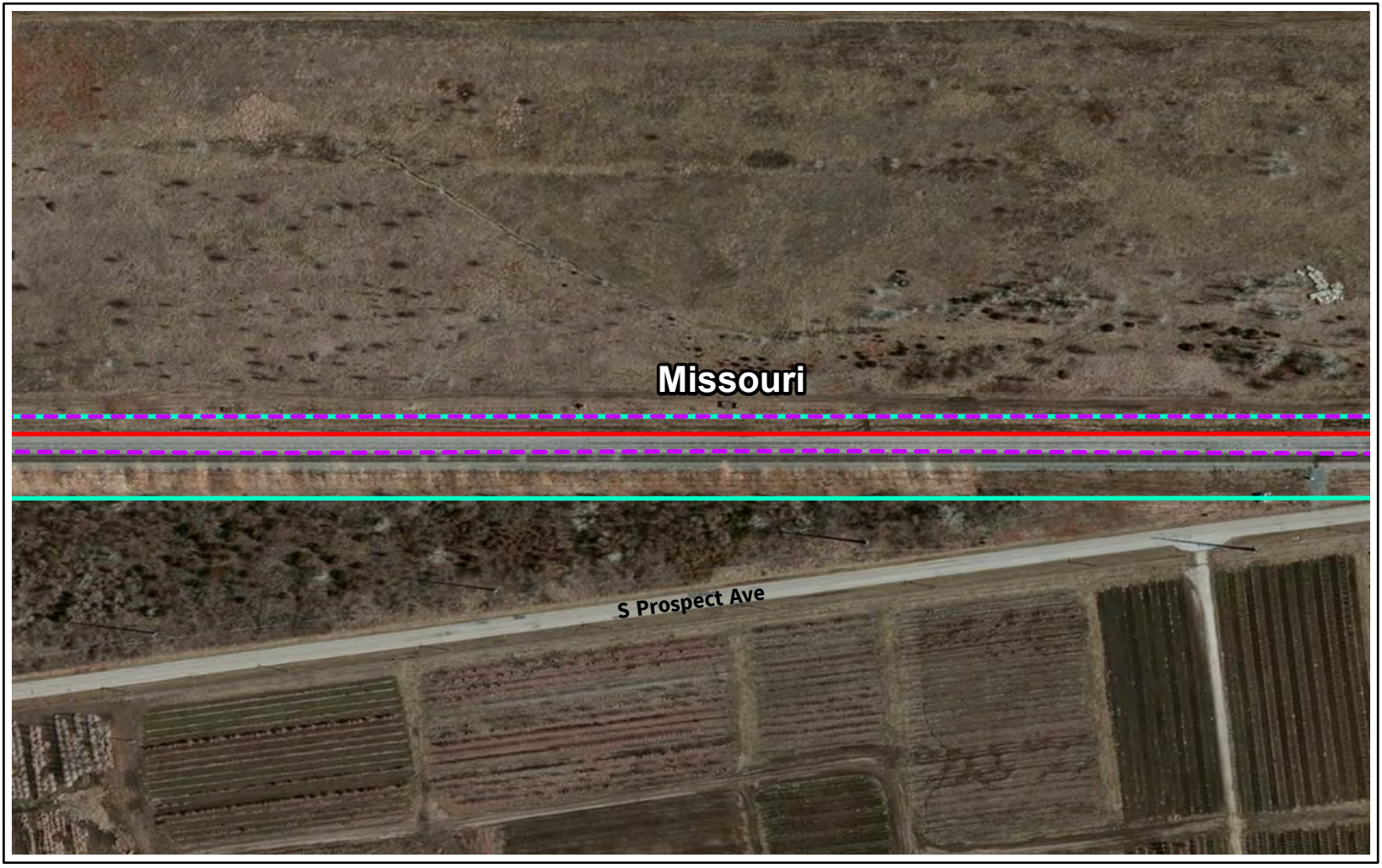
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

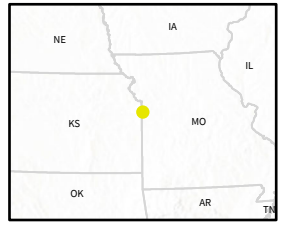
Capital Improvement Location

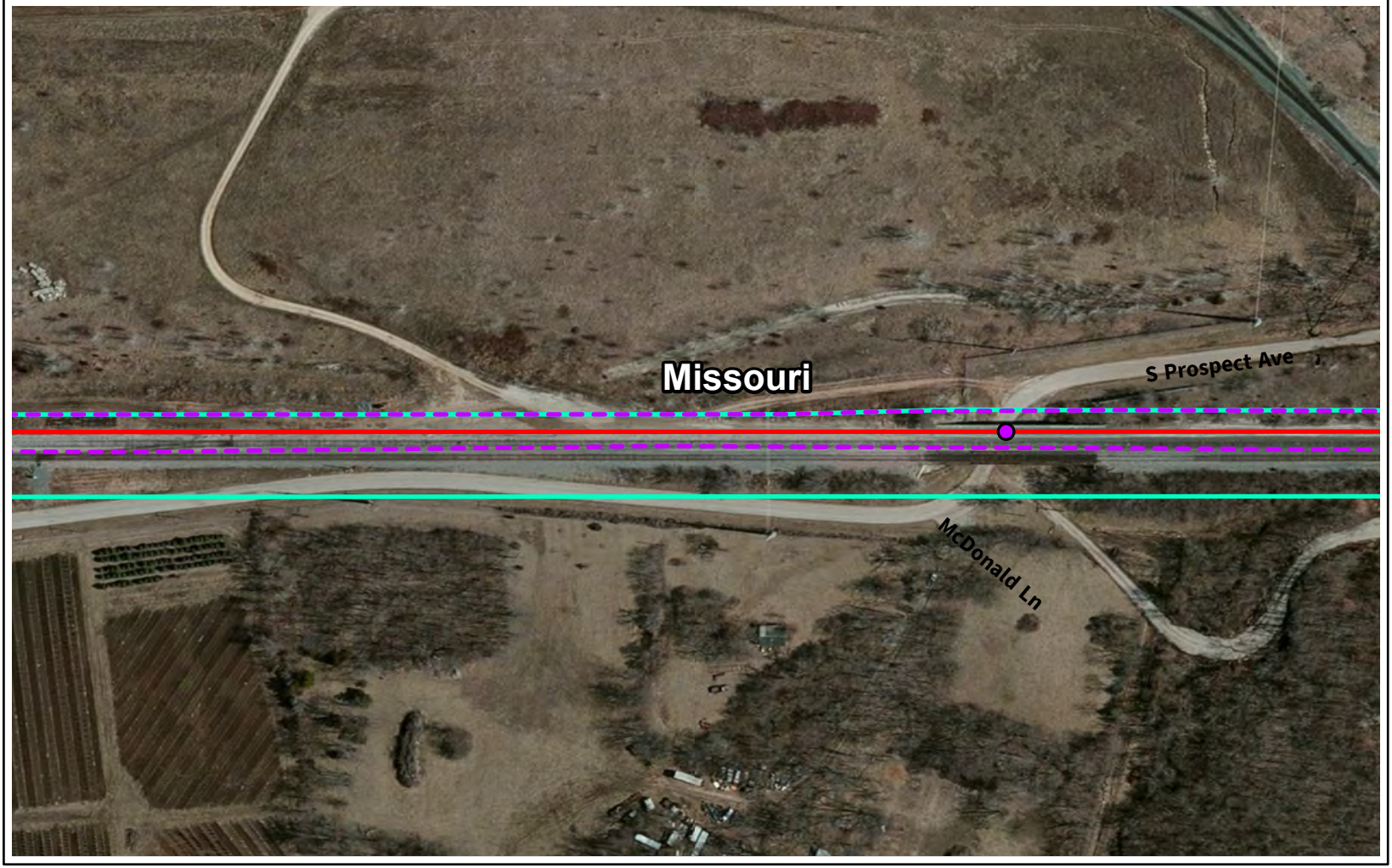
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

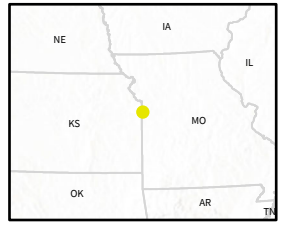
Existing Right-of-Way

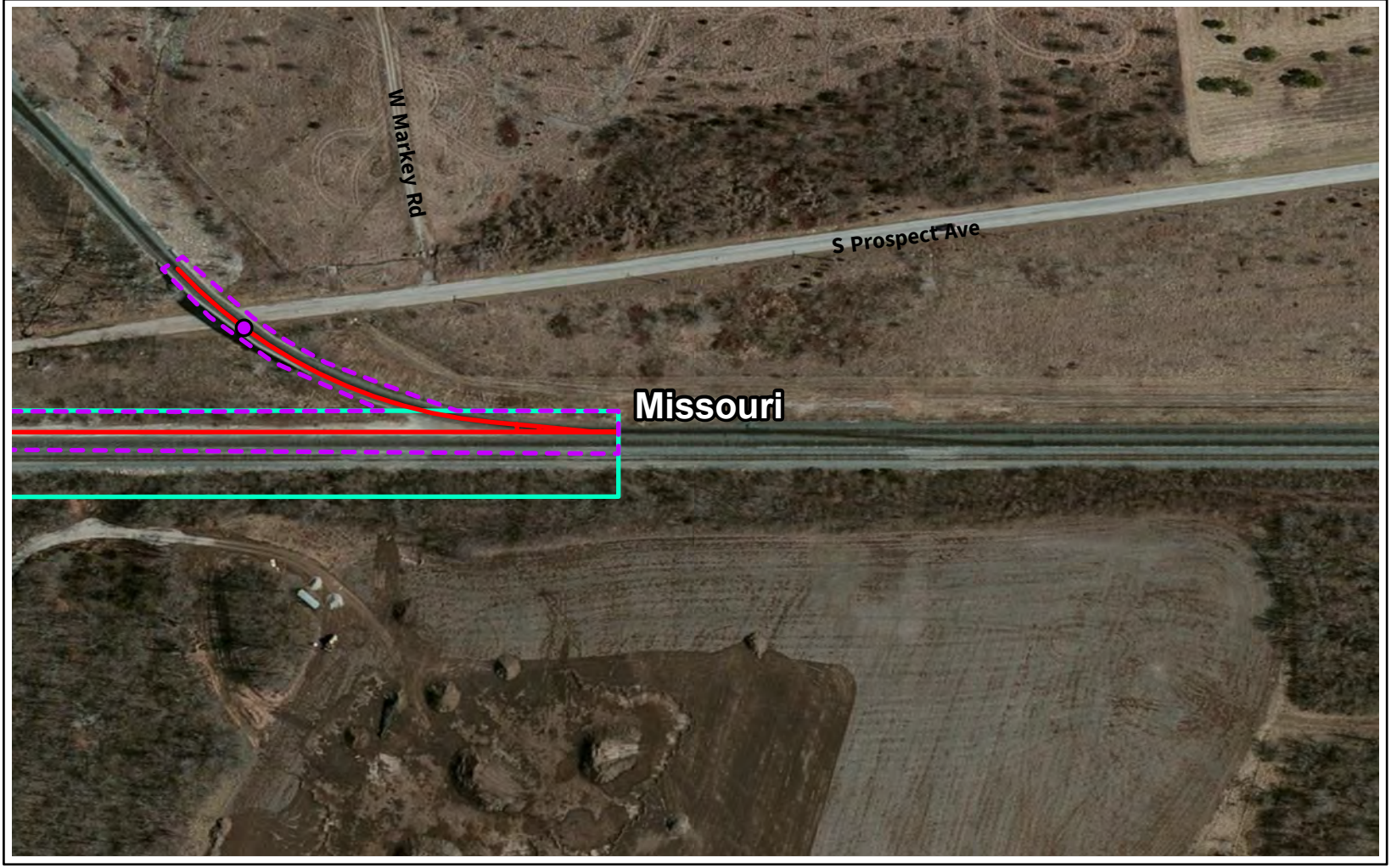
Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

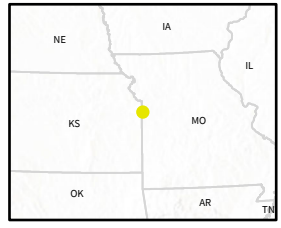
Existing Right-of-Way

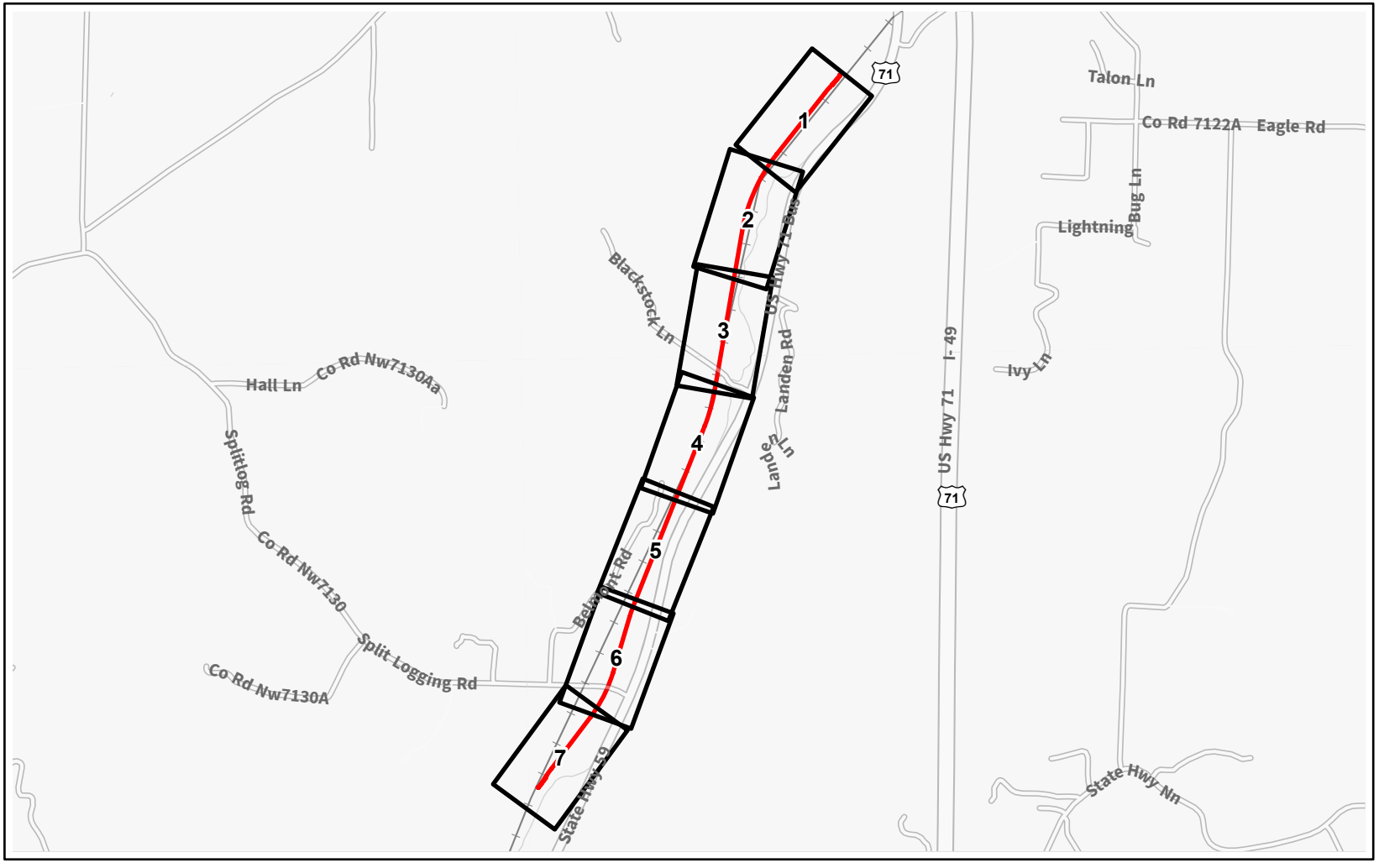
Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

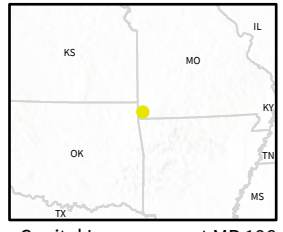
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Capital Improvement Location

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N

0 2200 4400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

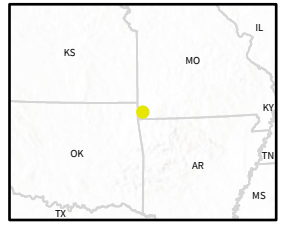
Capital Improvement Location

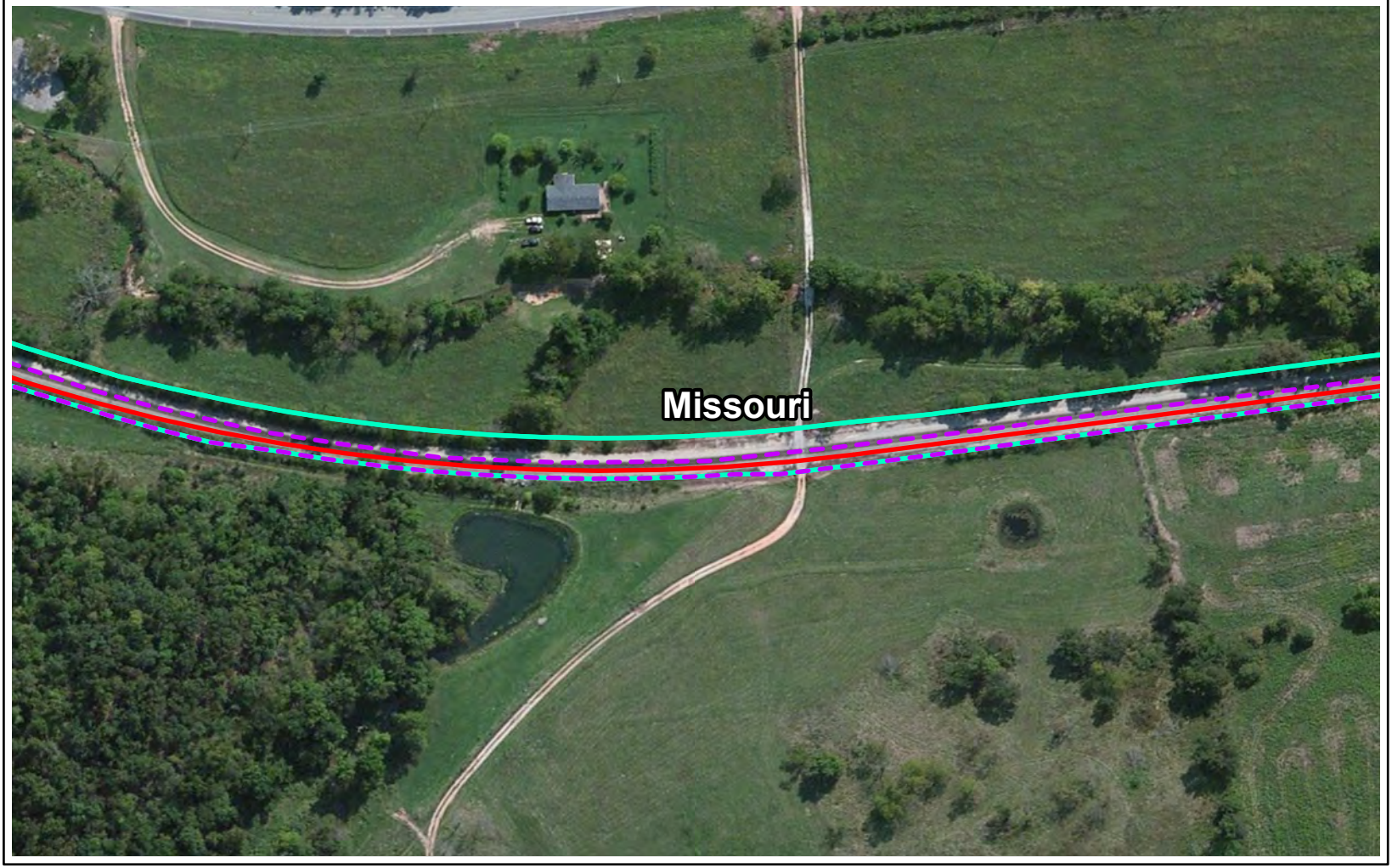
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

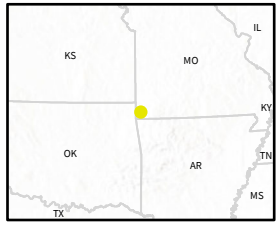
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

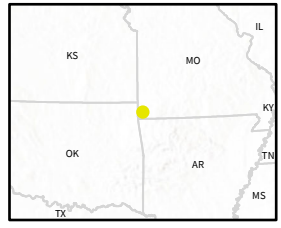
Capital Improvement Location

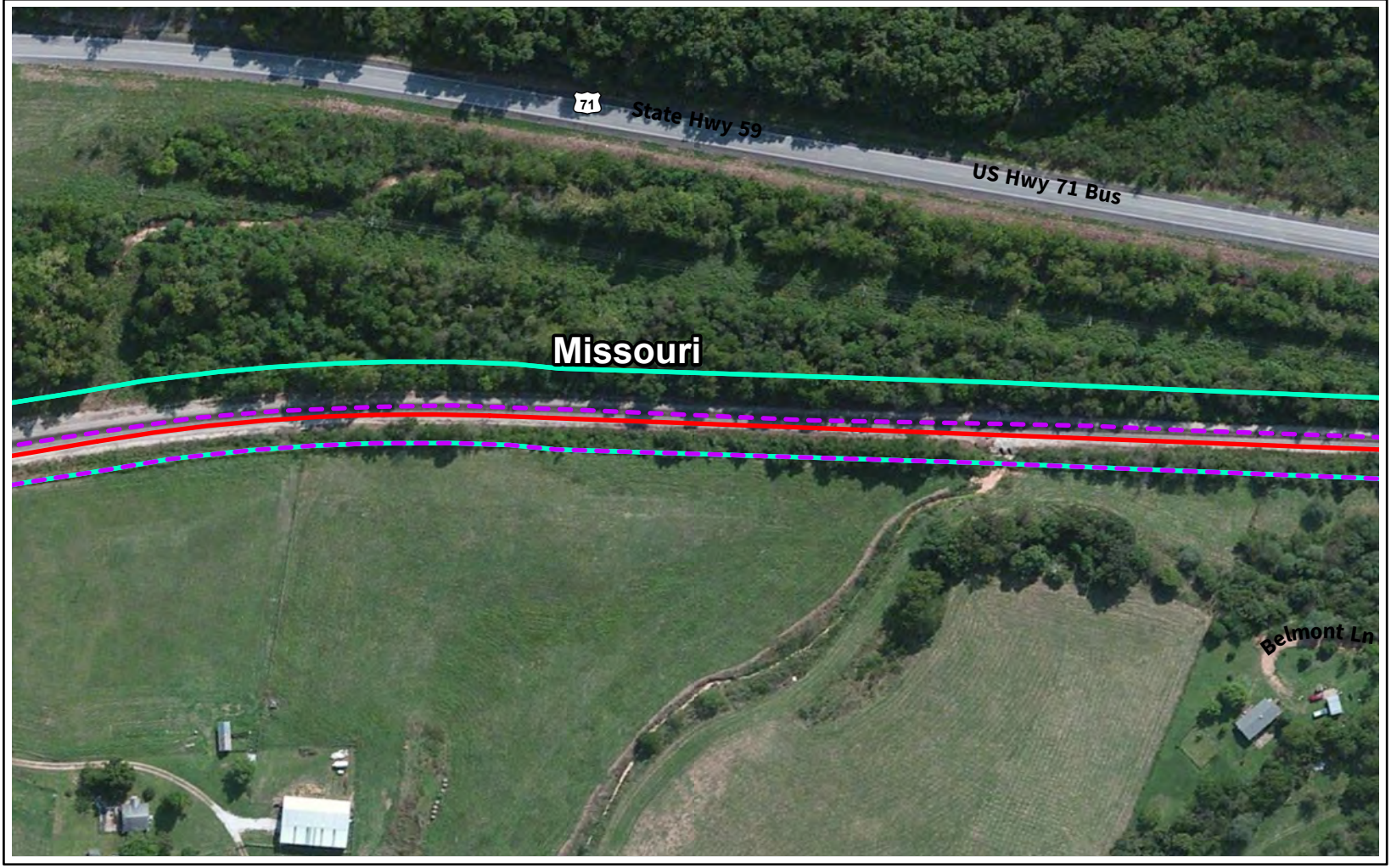
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

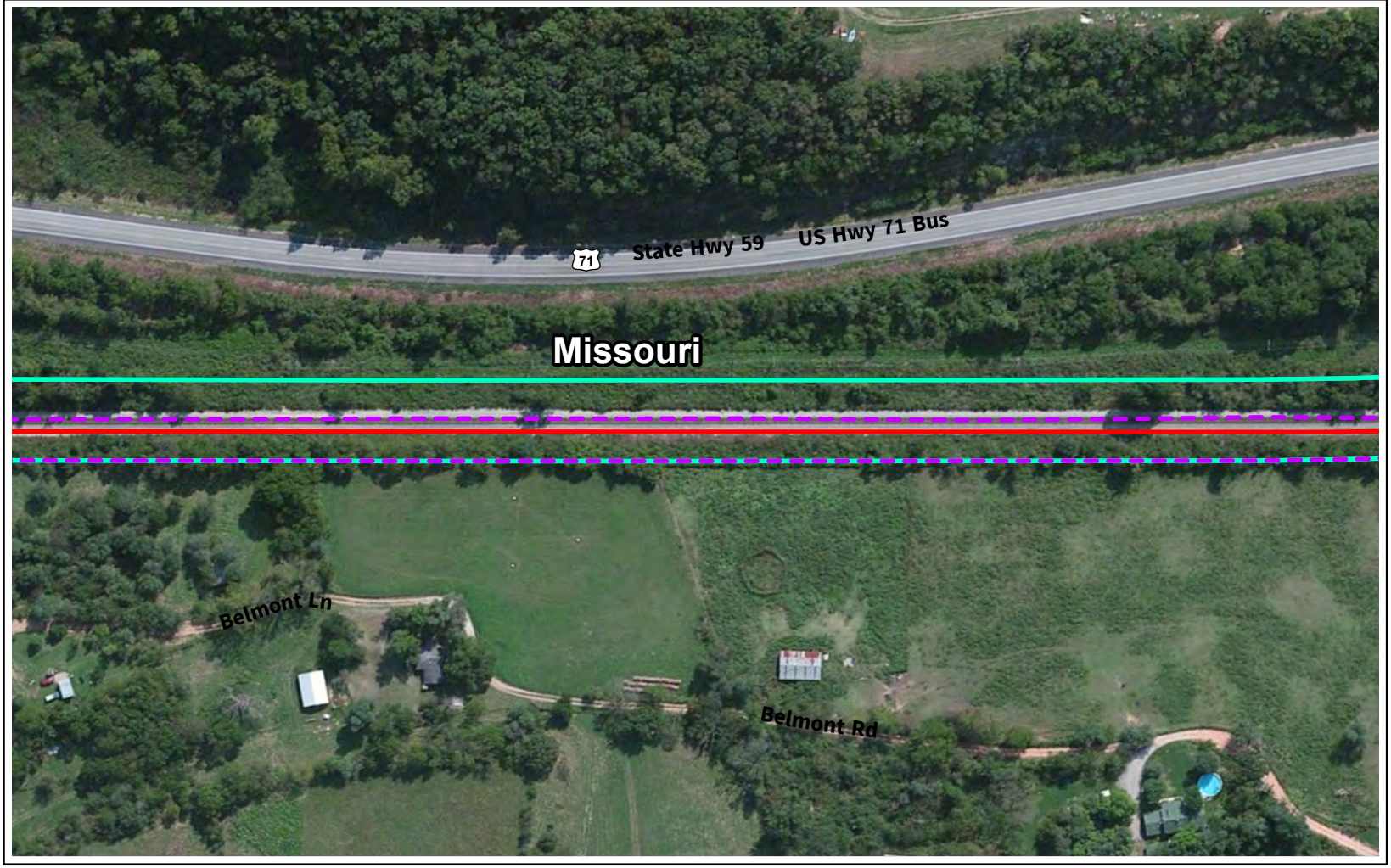
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

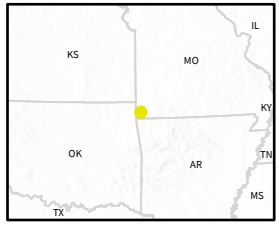
Capital Improvement Location

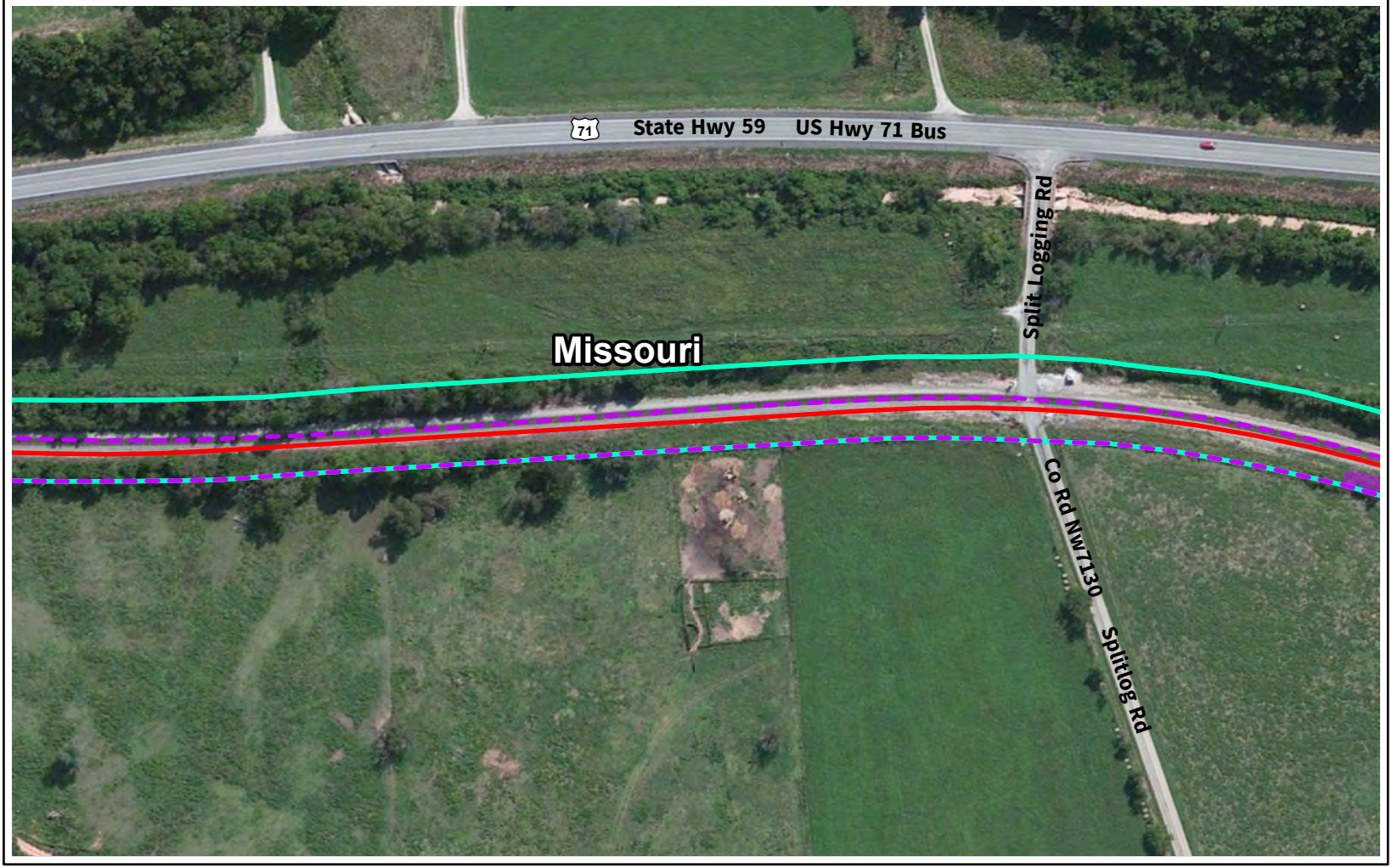
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

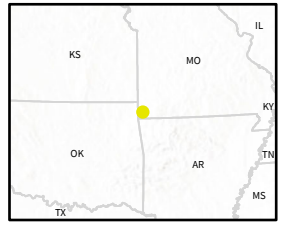
Existing Right-of-Way

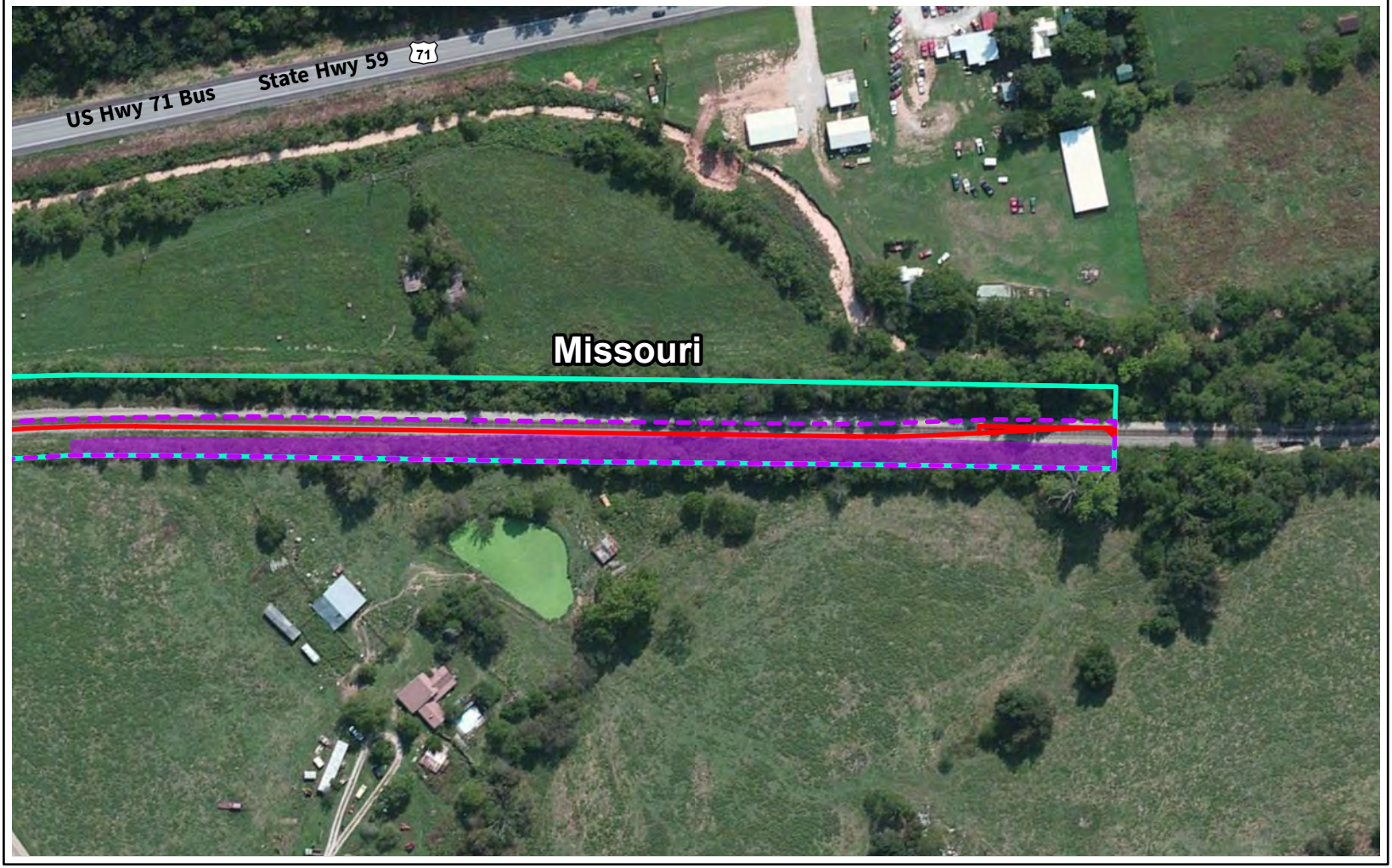
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

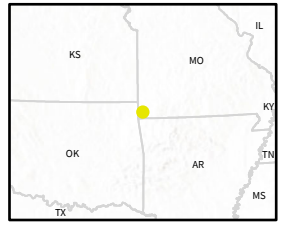
Existing Right-of-Way

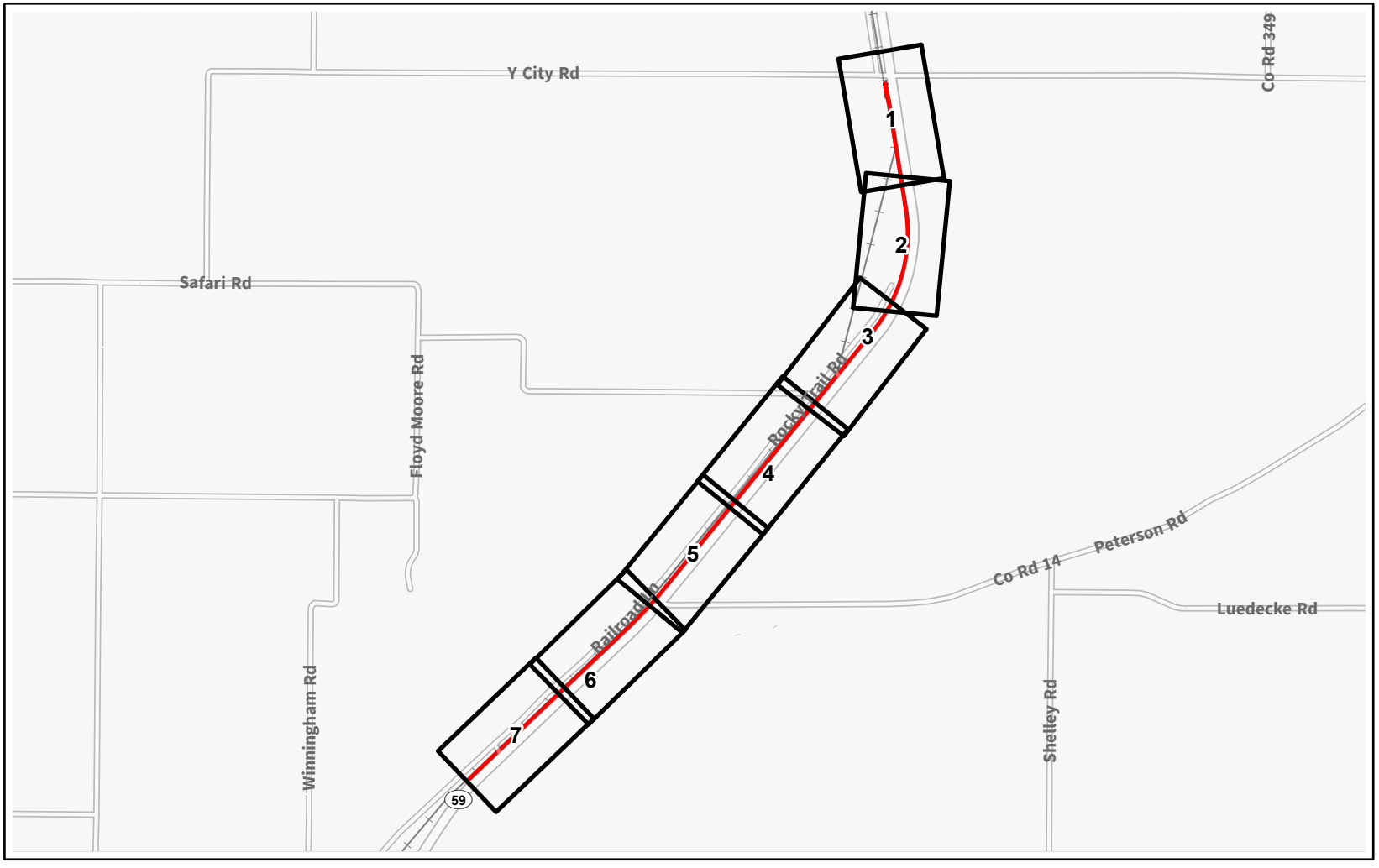
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Location

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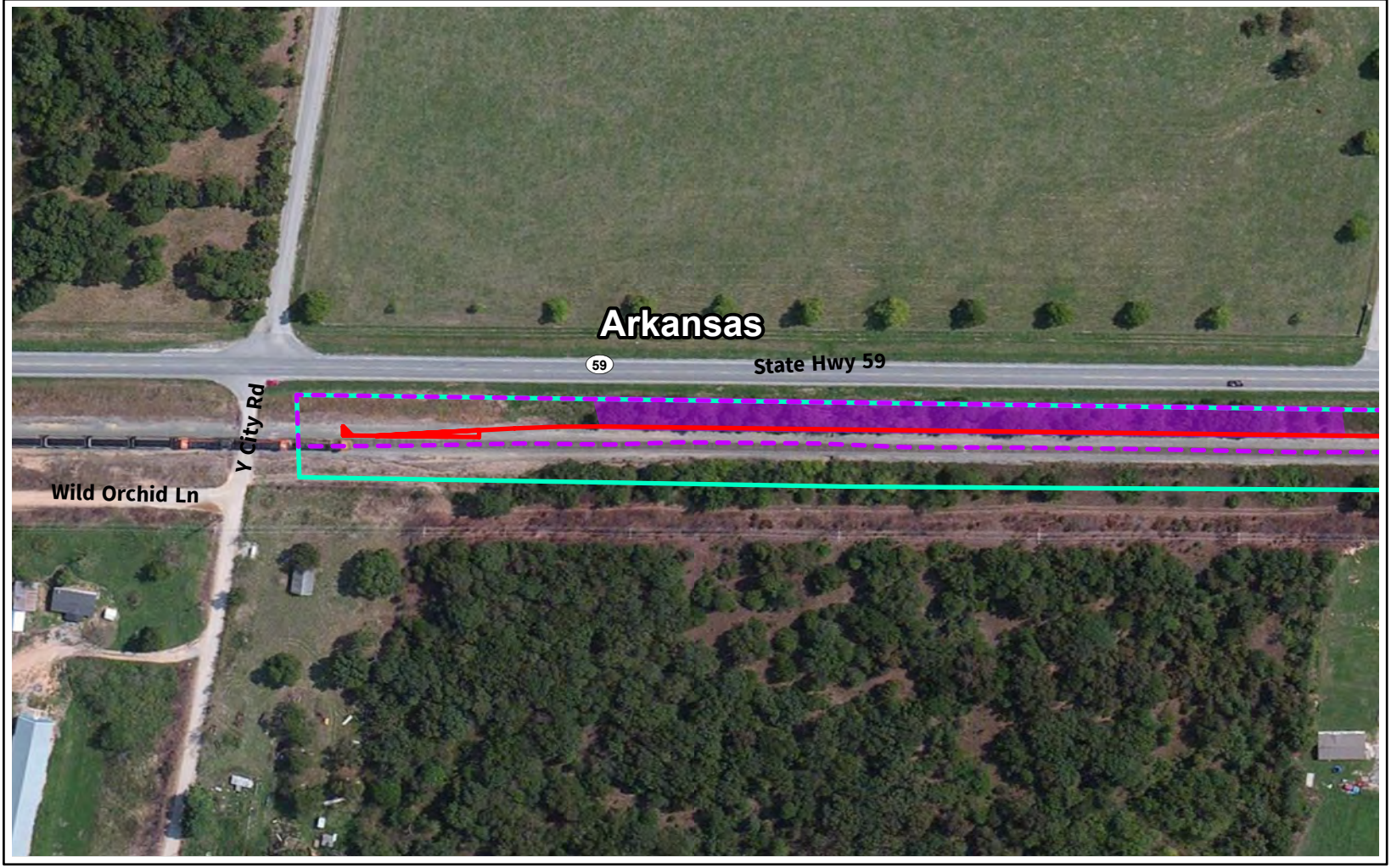
N

0 2000 4000 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

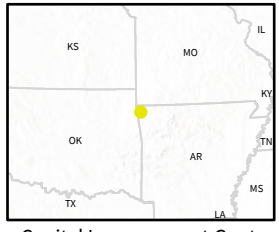
Existing Right-of-Way

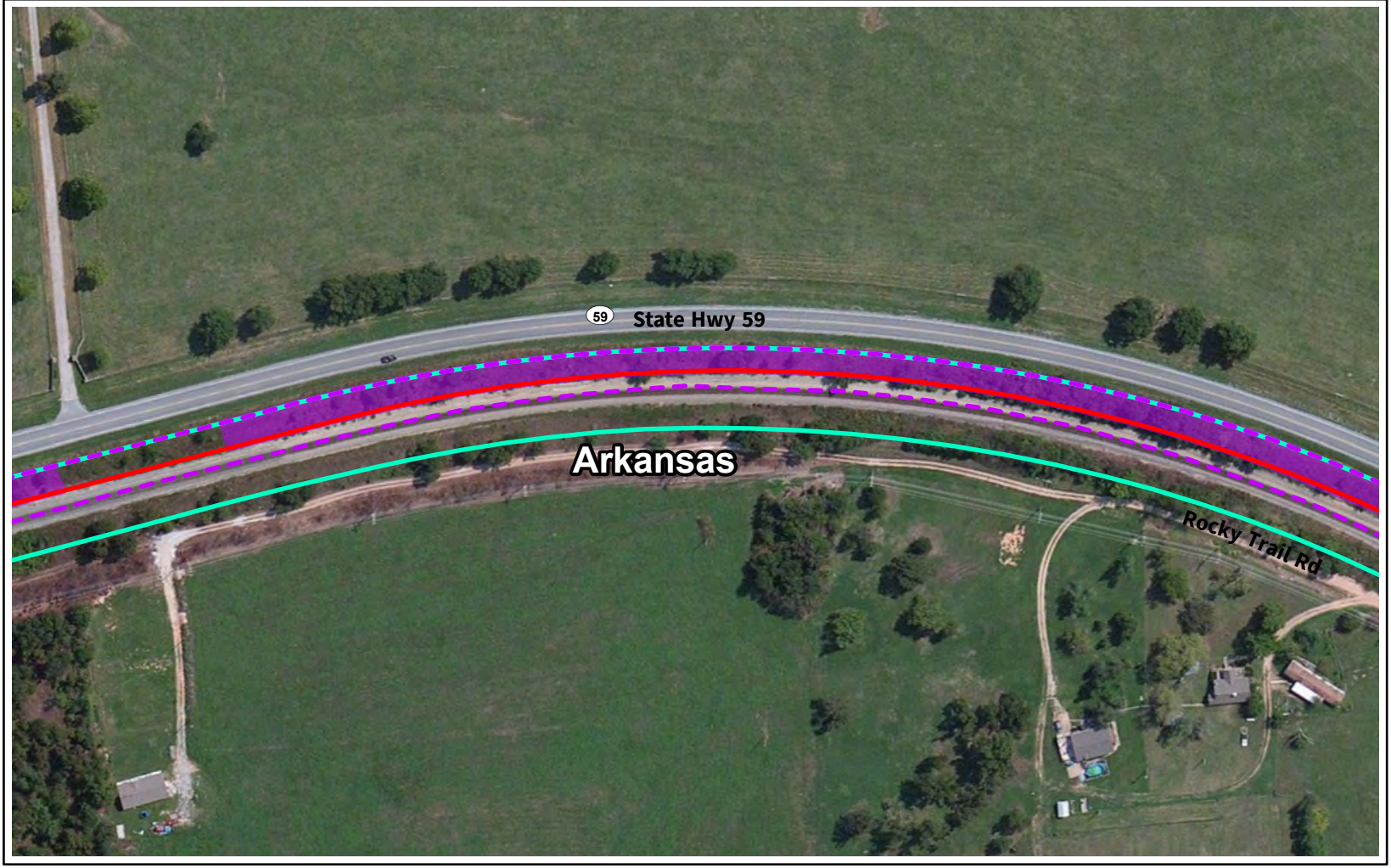
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

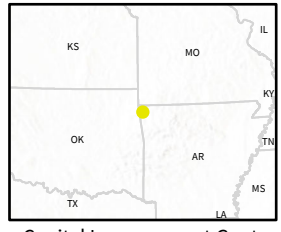
Existing Right-of-Way

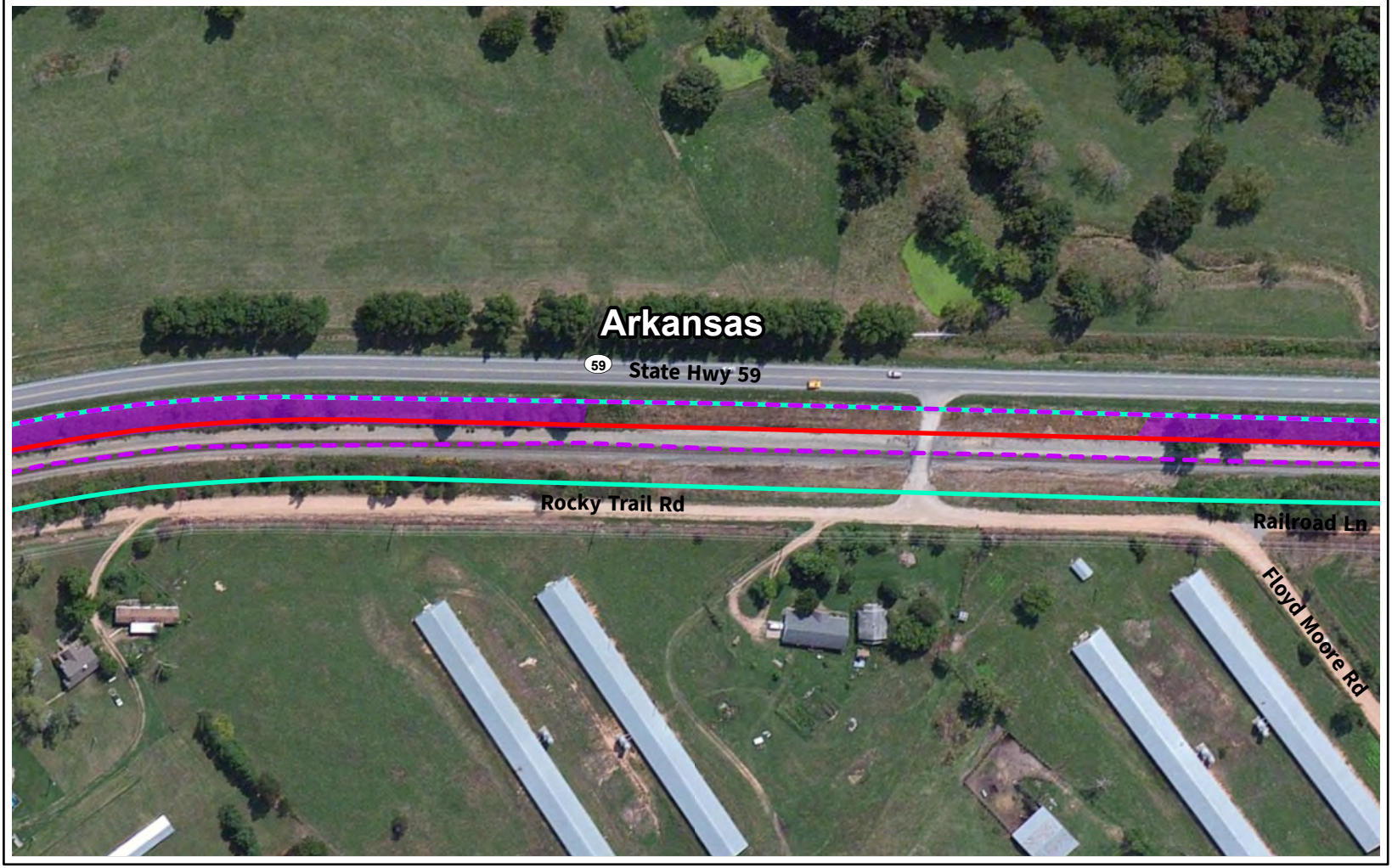
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Suitable Forested Bat Habitat

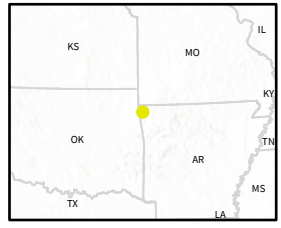
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

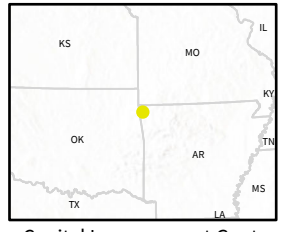
Existing Right-of-Way

Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

Existing Right-of-Way

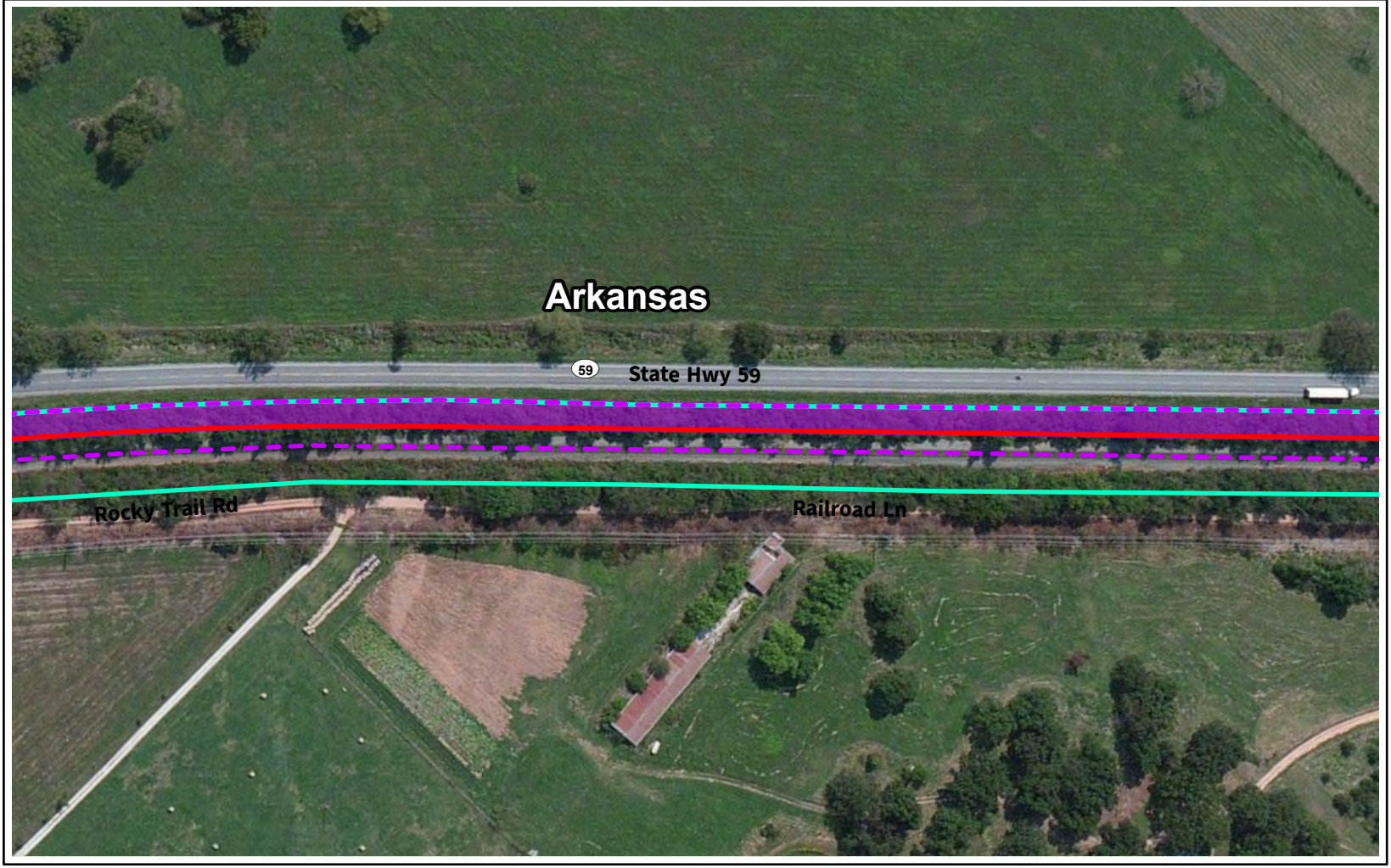
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

Existing Right-of-Way

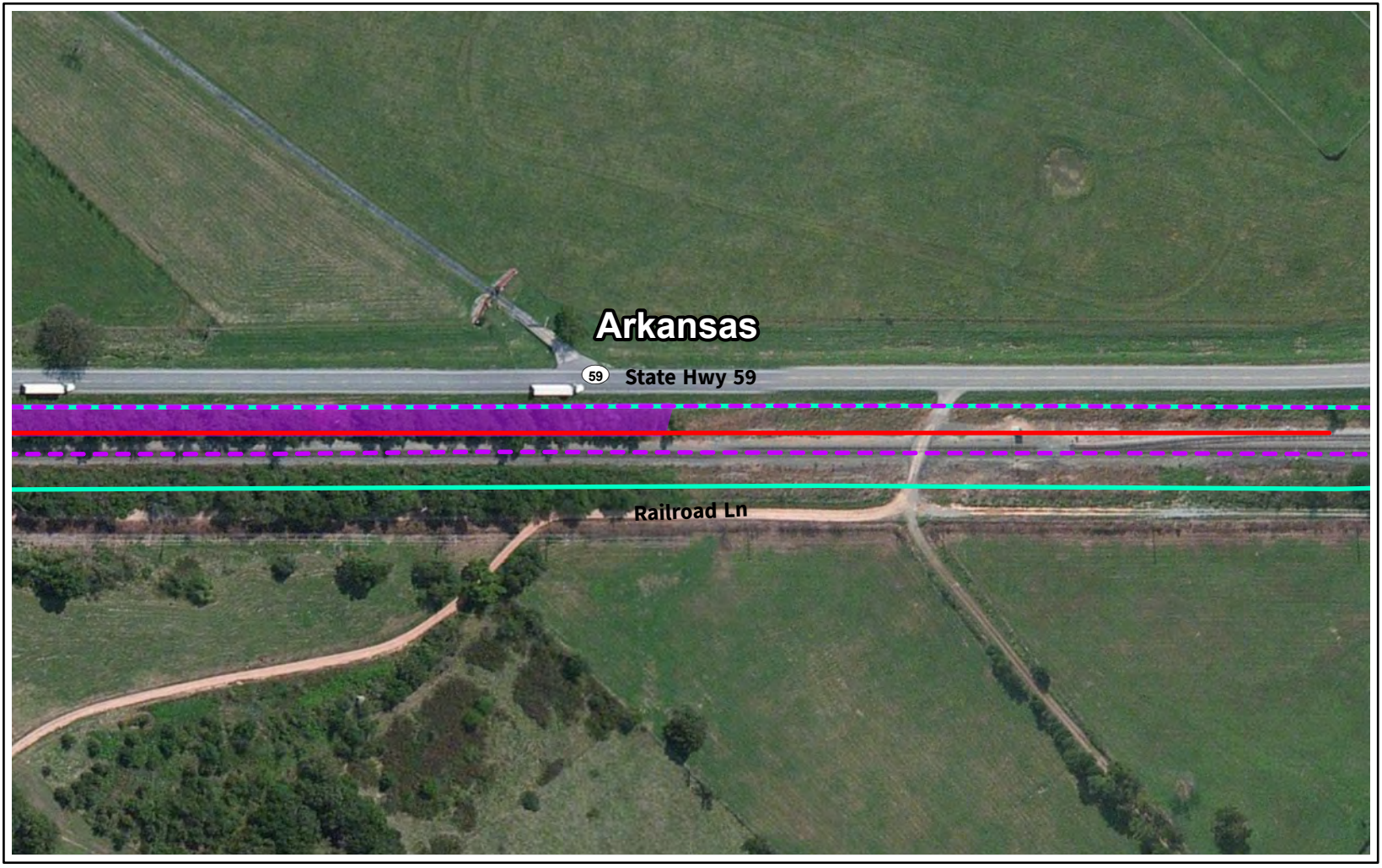
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

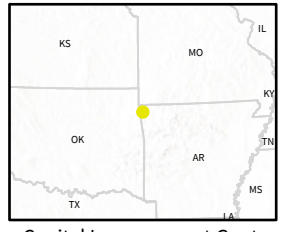
Existing Right-of-Way

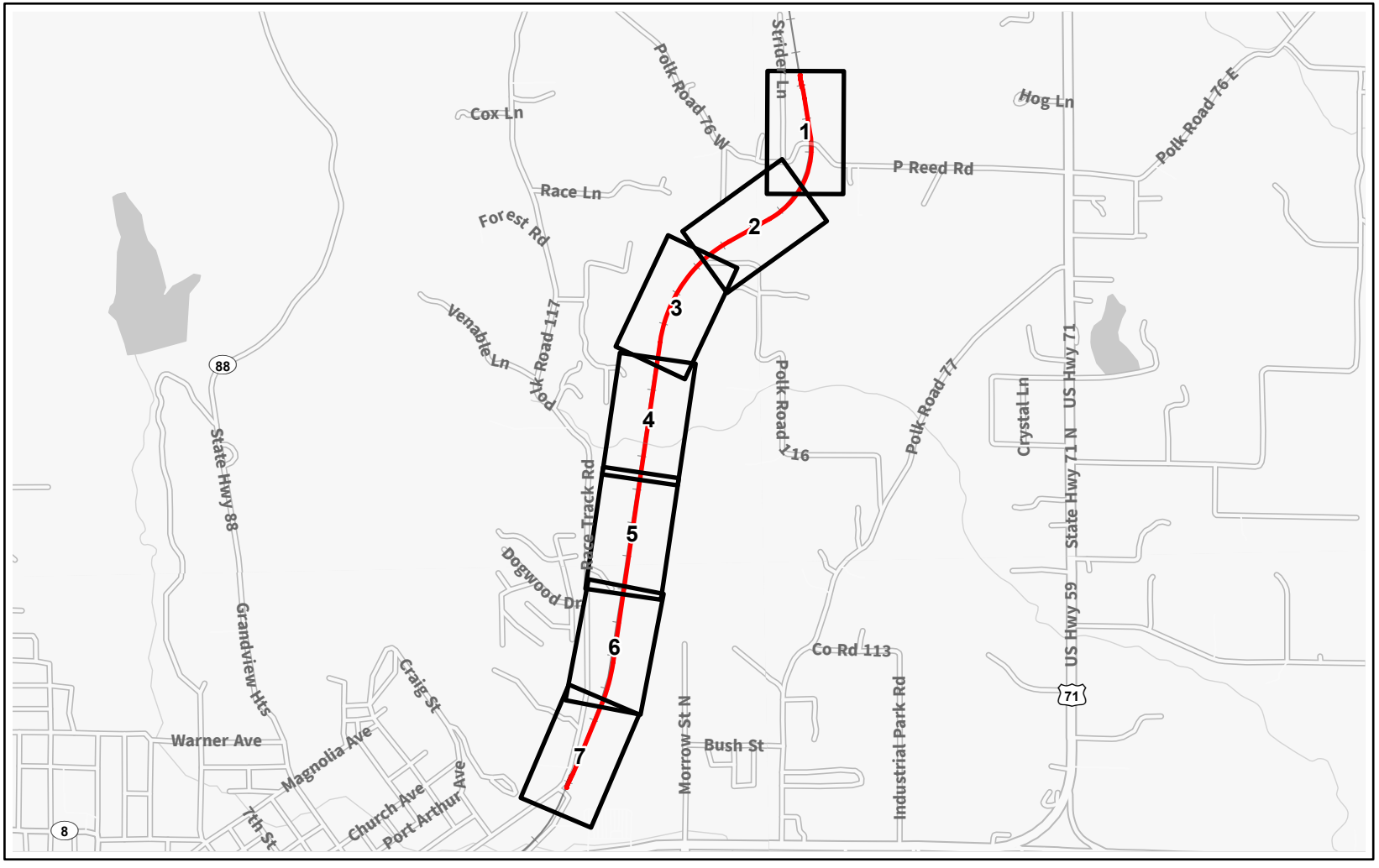
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

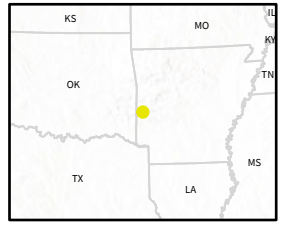
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Capital Improvement Location

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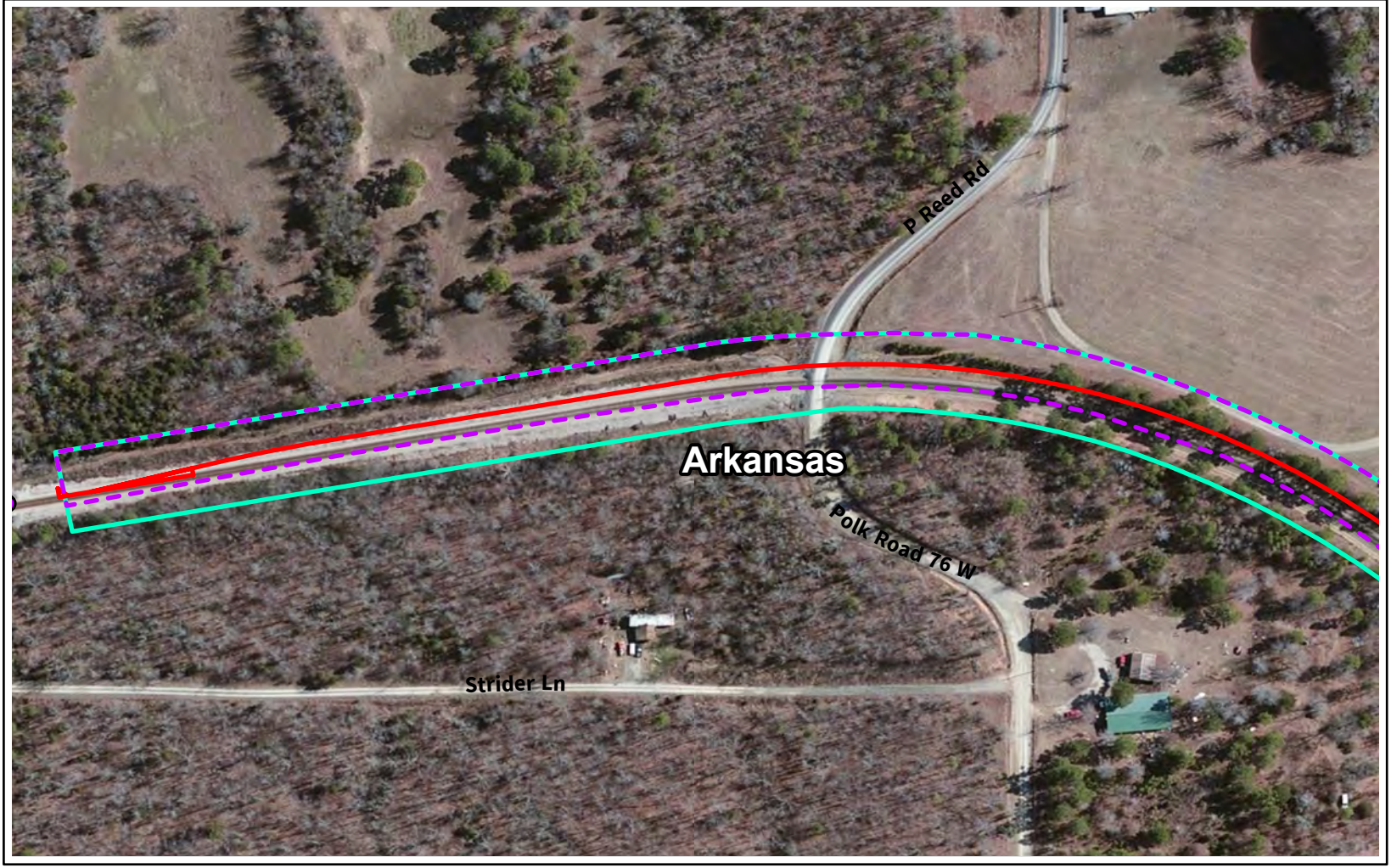
N

0 2200 4400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

Existing Right-of-Way

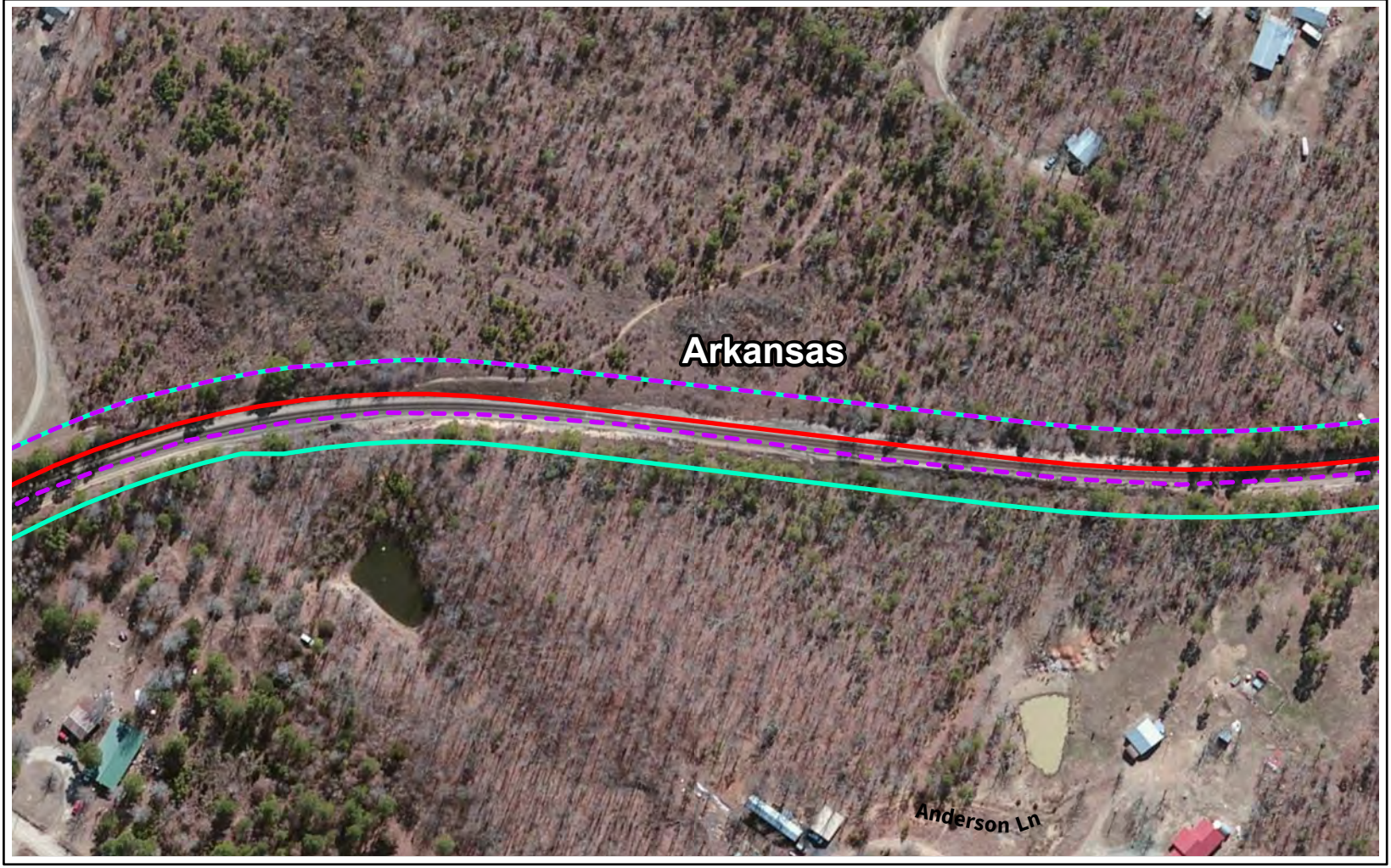
Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

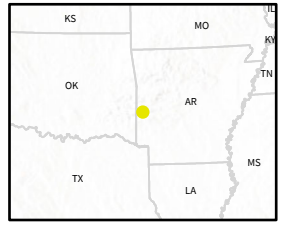
Capital Improvement Location

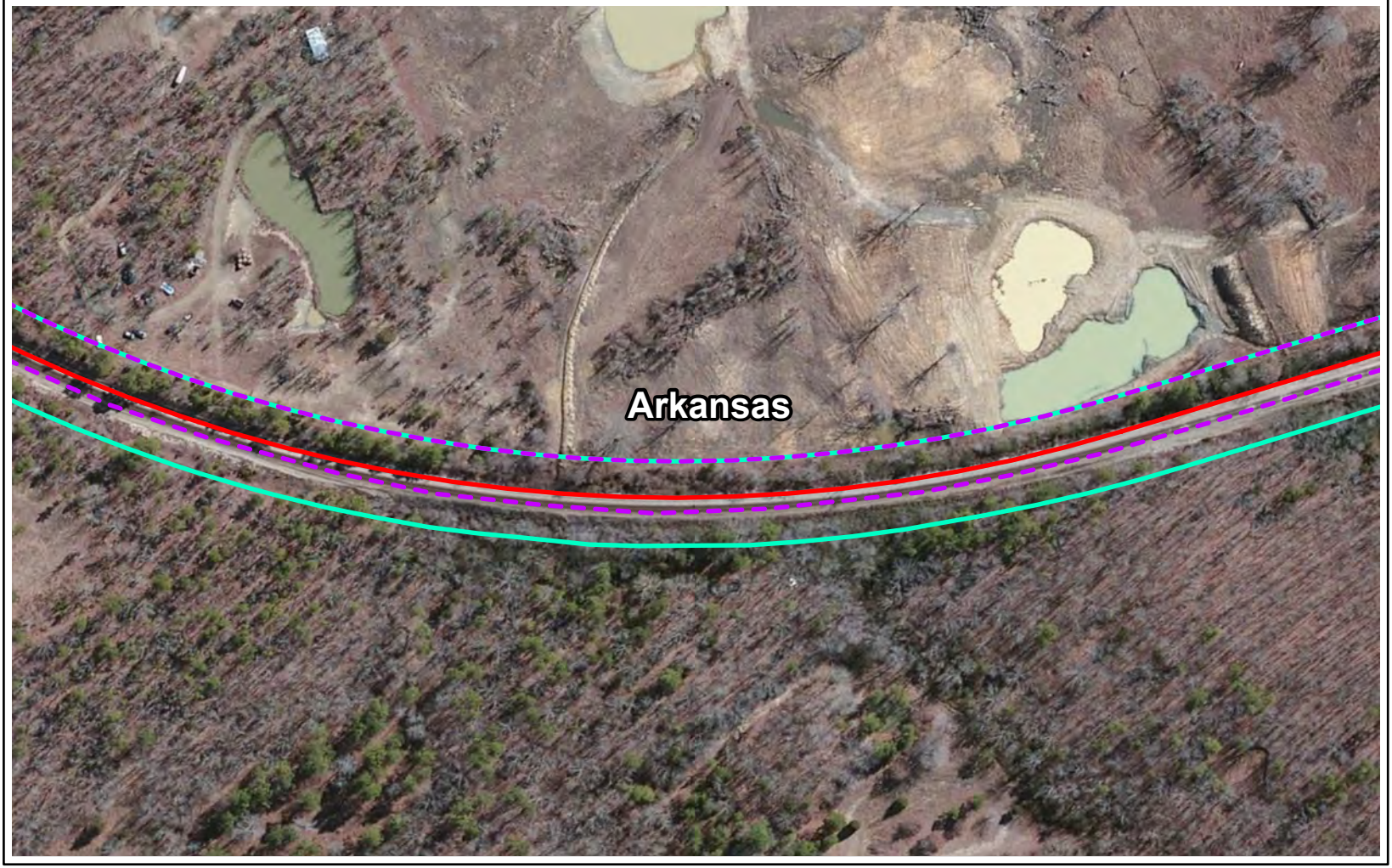
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

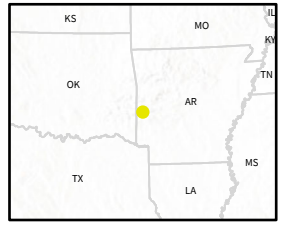
Capital Improvement Location

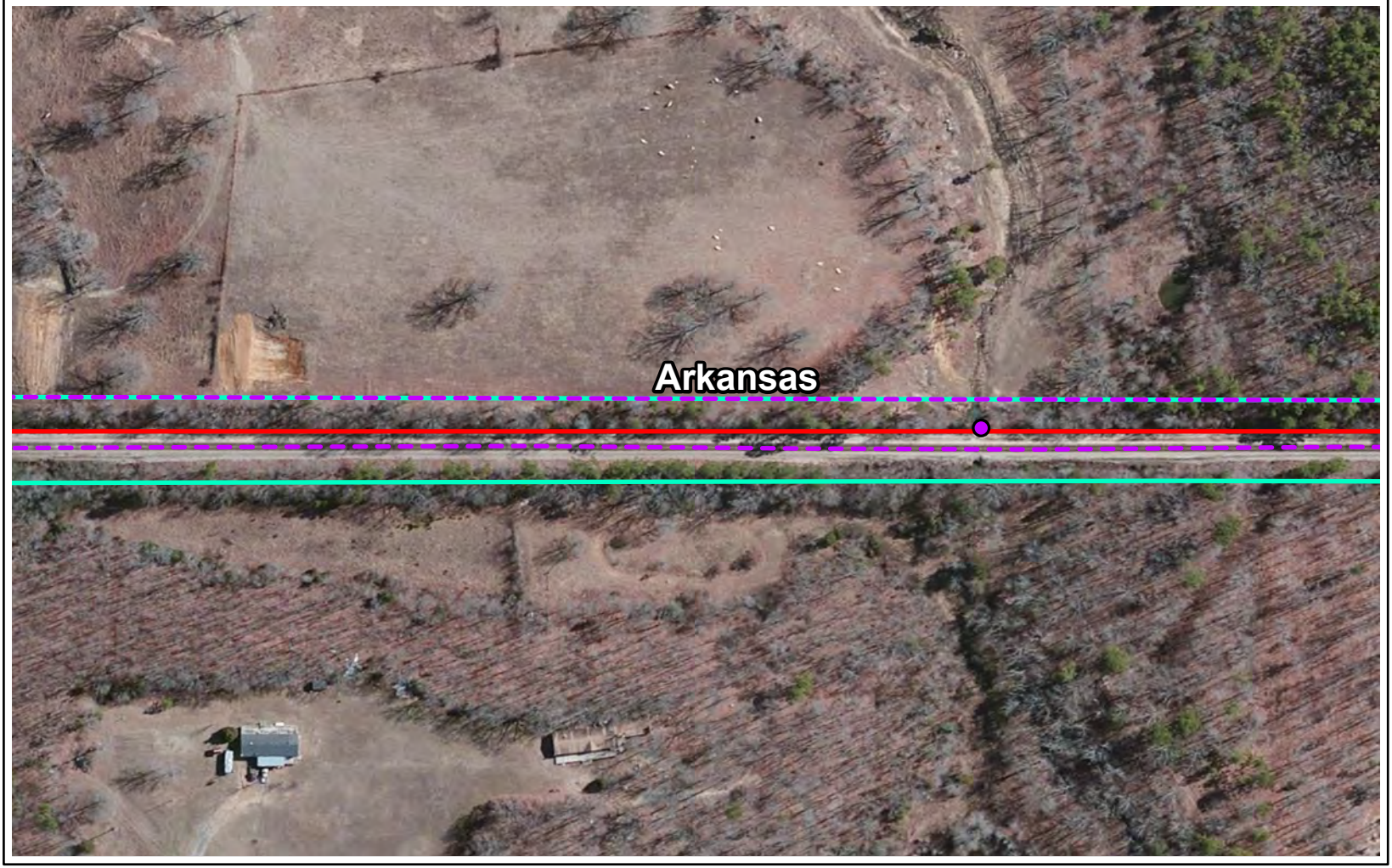
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

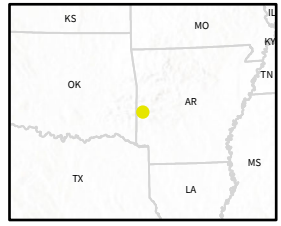
Existing Right-of-Way

Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

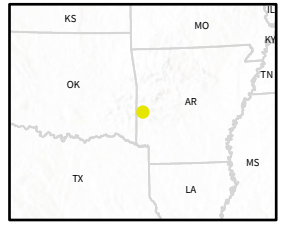
Capital Improvement Location

Existing Right-of-Way

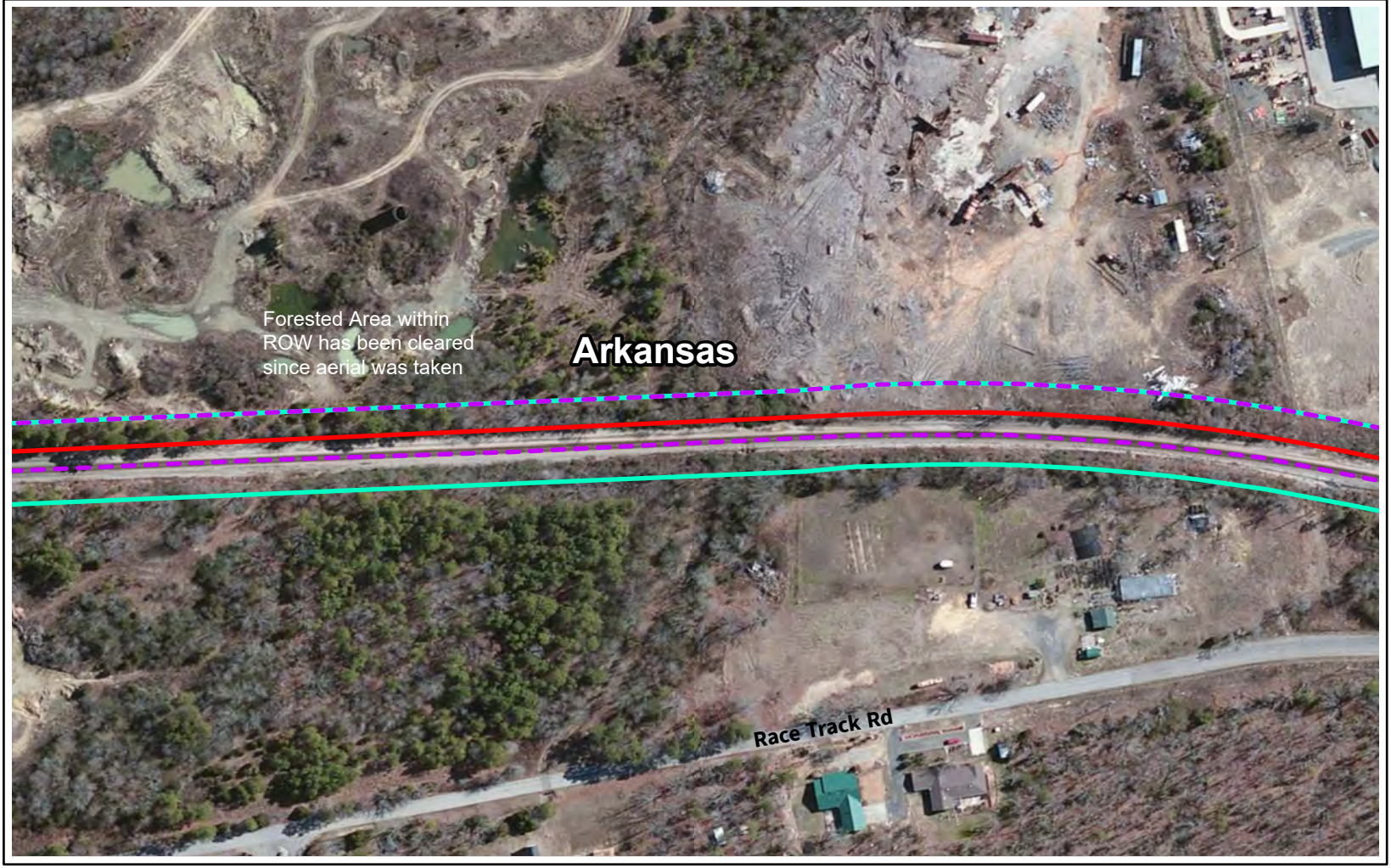
0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement MP 377 (Mena)
Polk, Arkansas | Page 5 of 7



Study Area

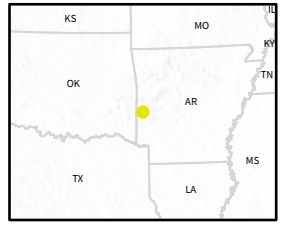
Capital Improvement Location

Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

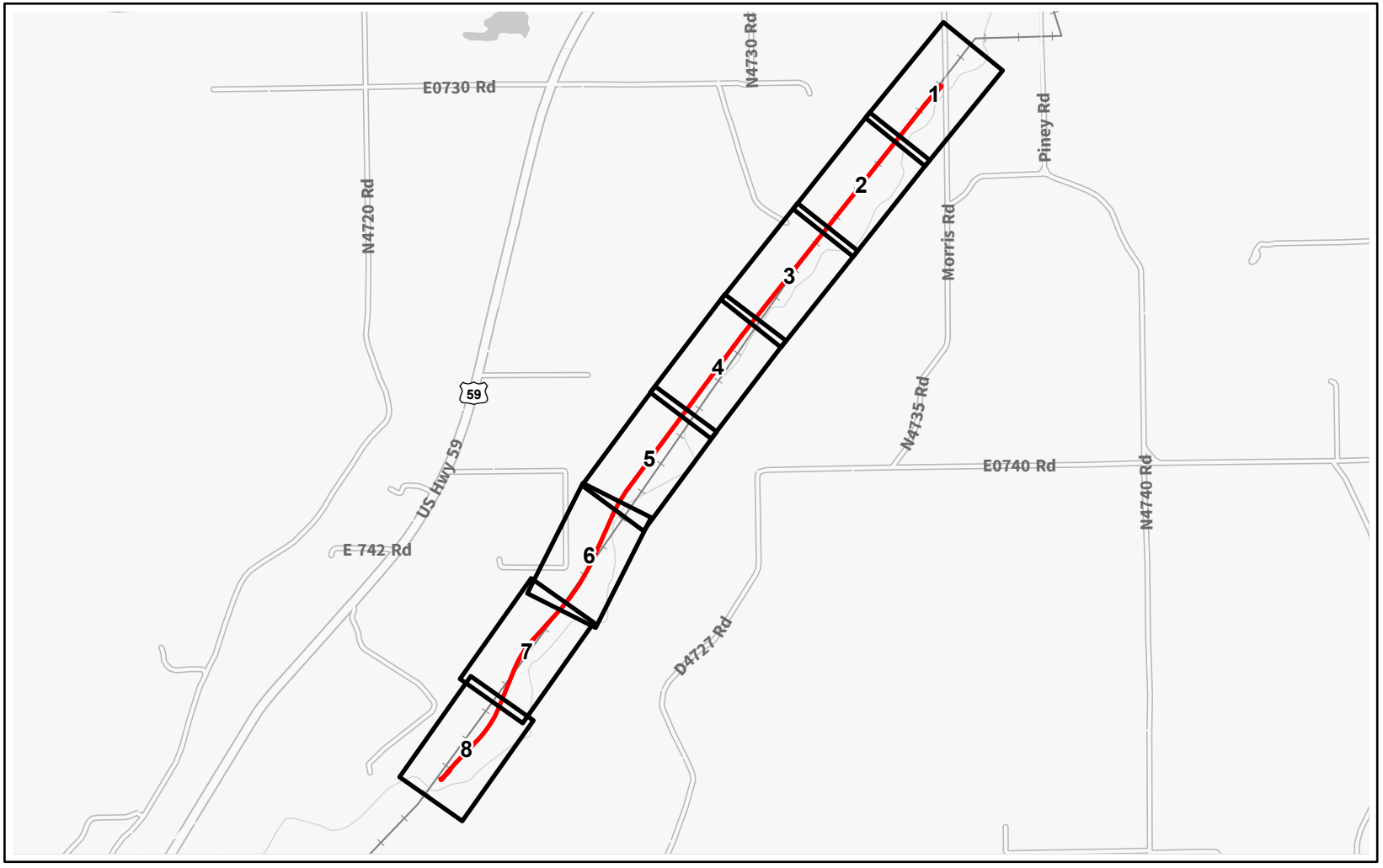
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

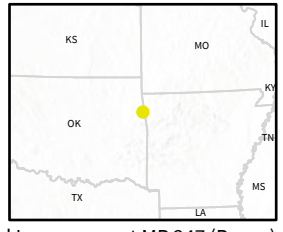
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Capital Improvement Location

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N

0 2200 4400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement MP 247 (Baron)
Adair, Oklahoma | Page Index



Study Area

Capital Improvement Location

Existing Right-of-Way

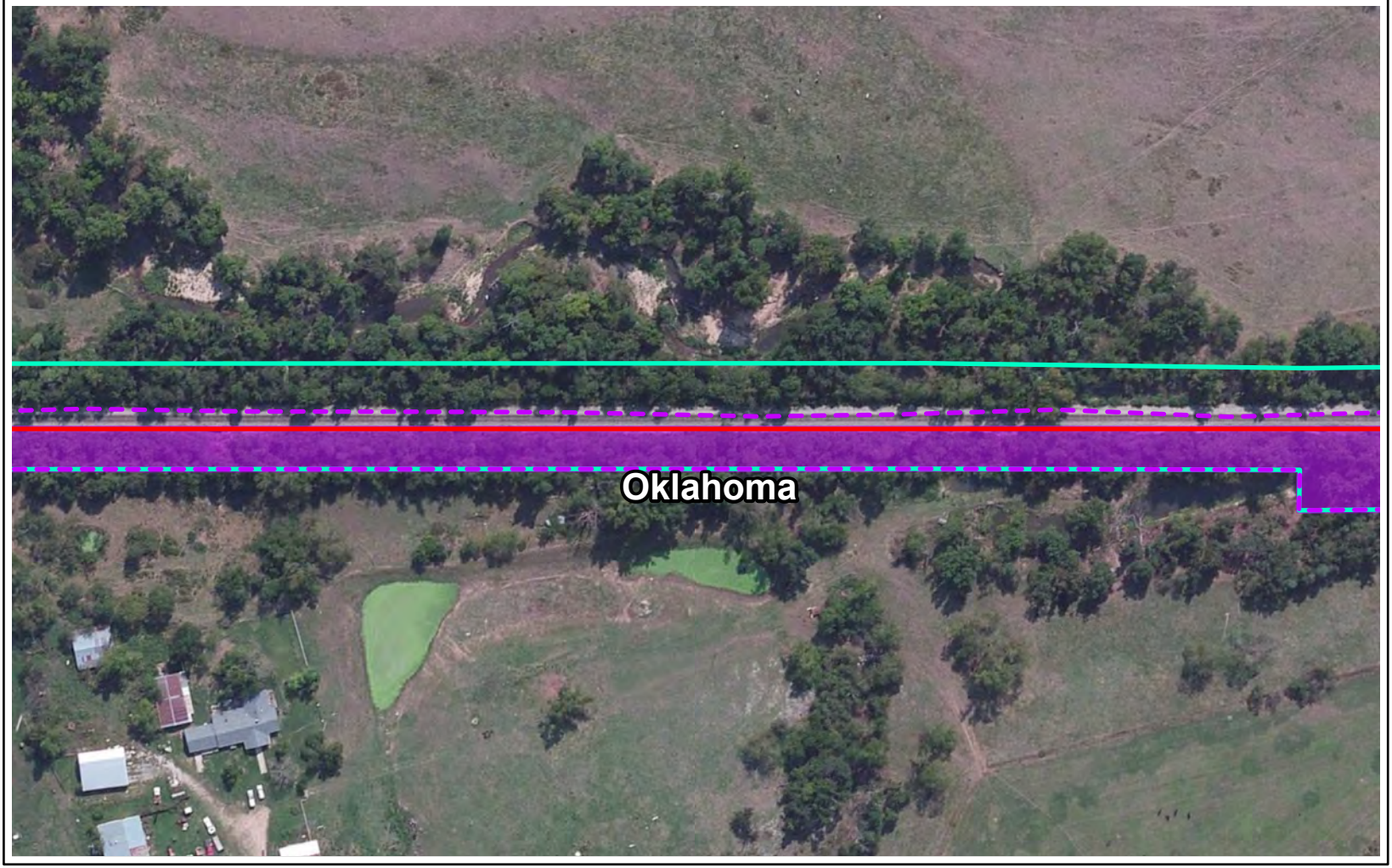
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

Existing Right-of-Way

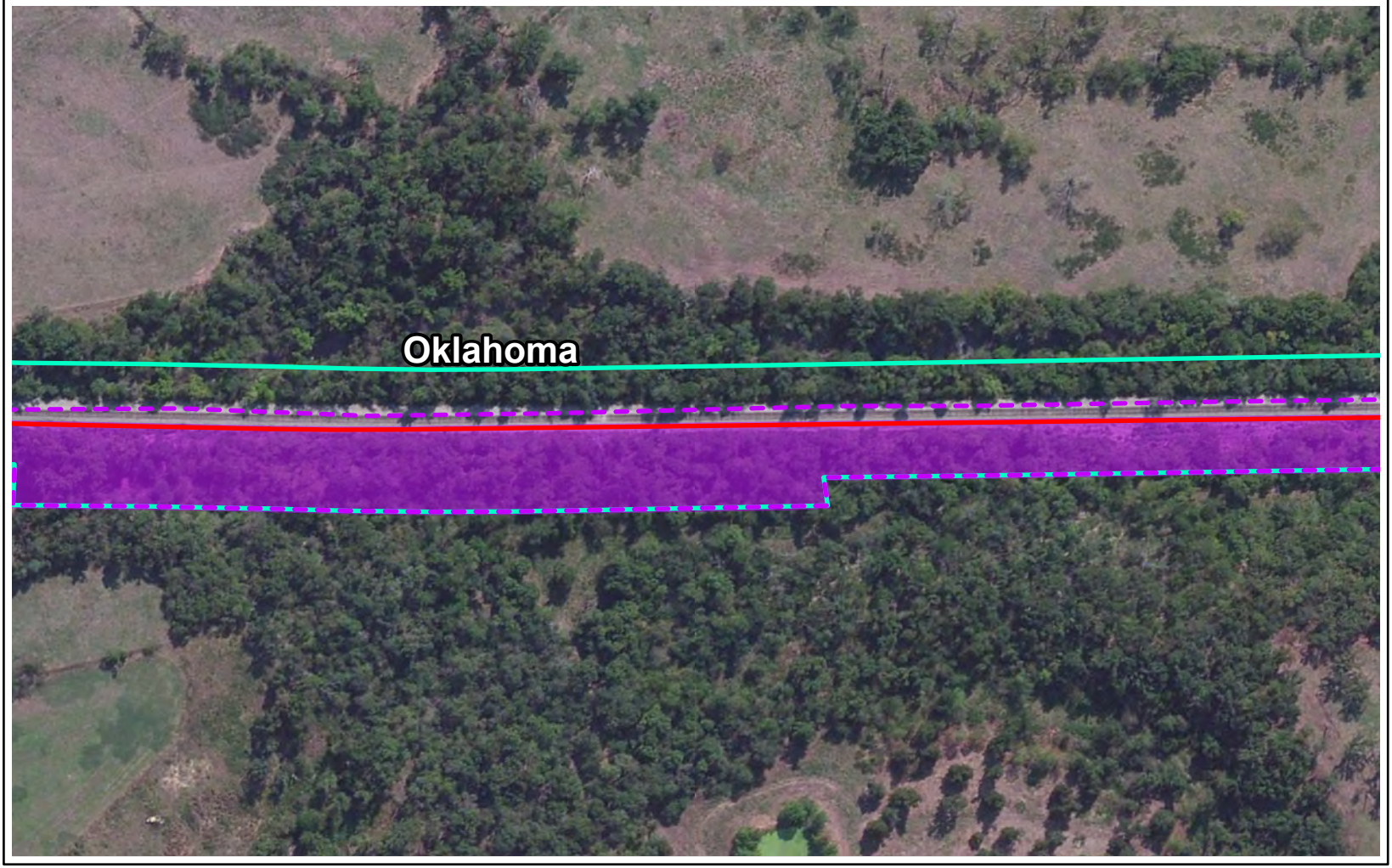
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

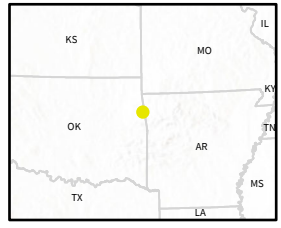
Existing Right-of-Way

Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

Existing Right-of-Way

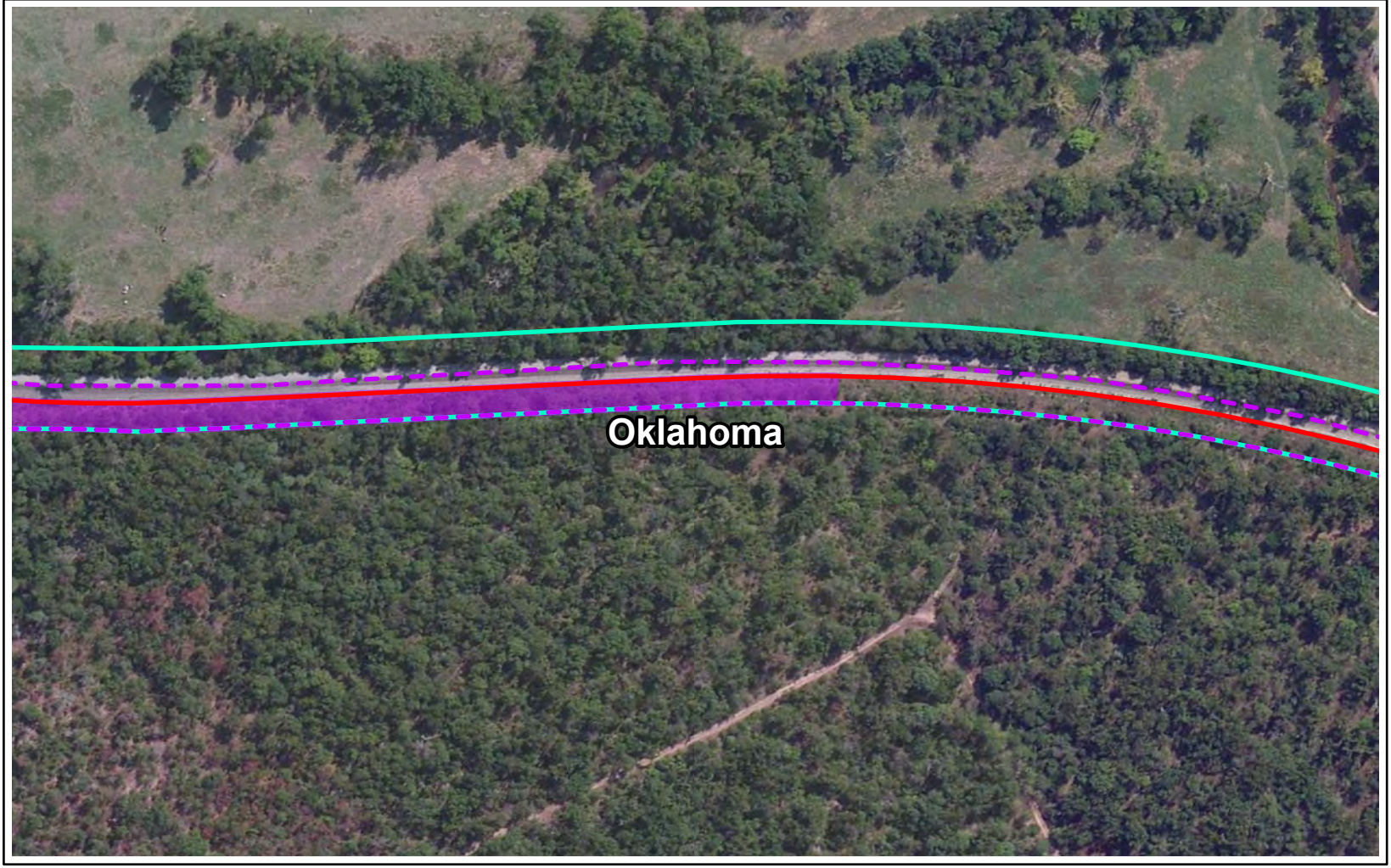
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

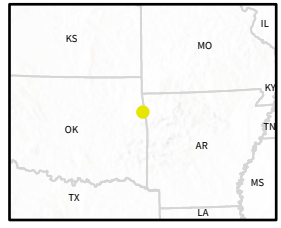
Existing Right-of-Way

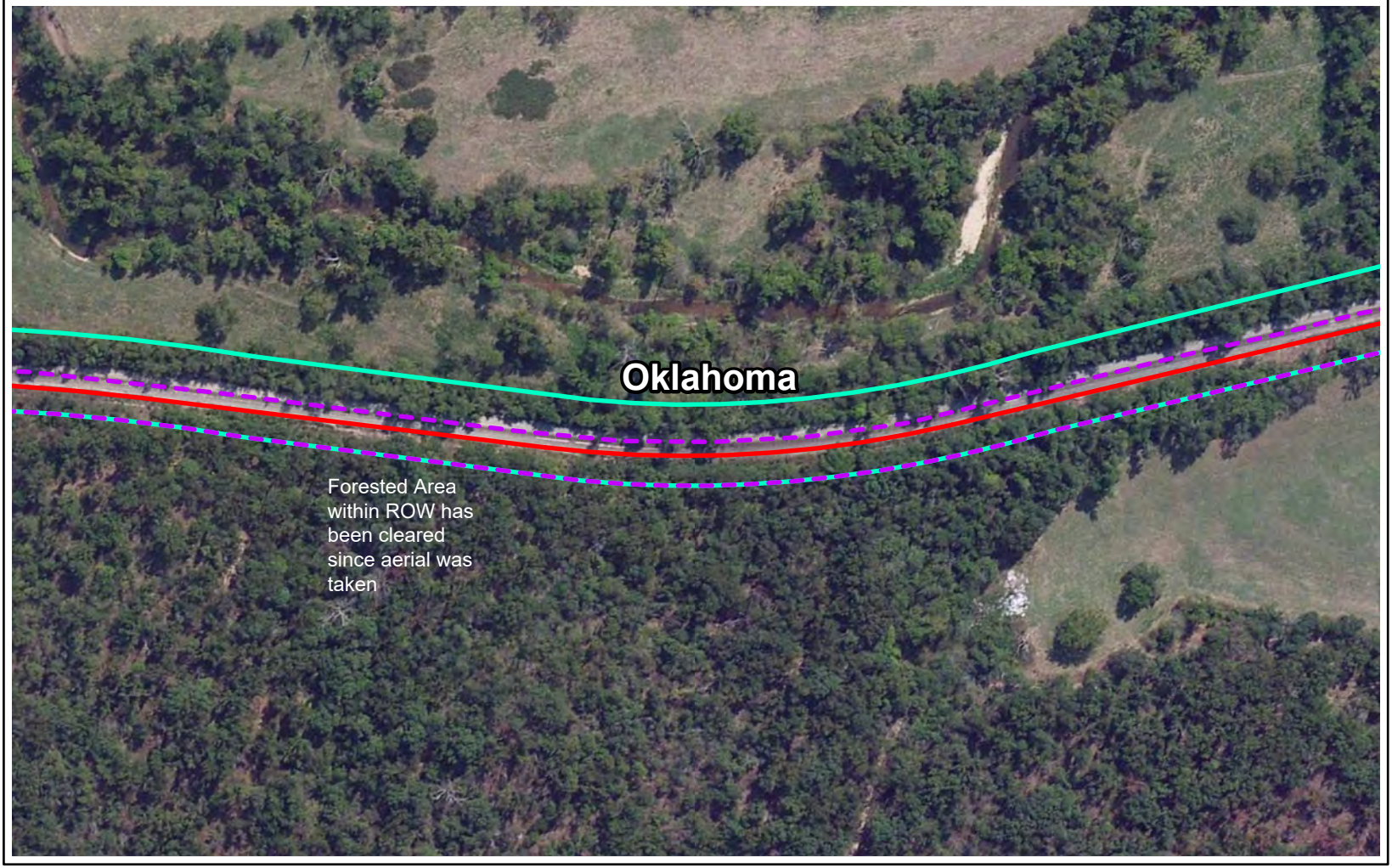
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

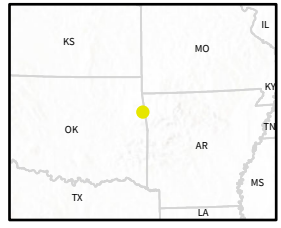
Capital Improvement Location

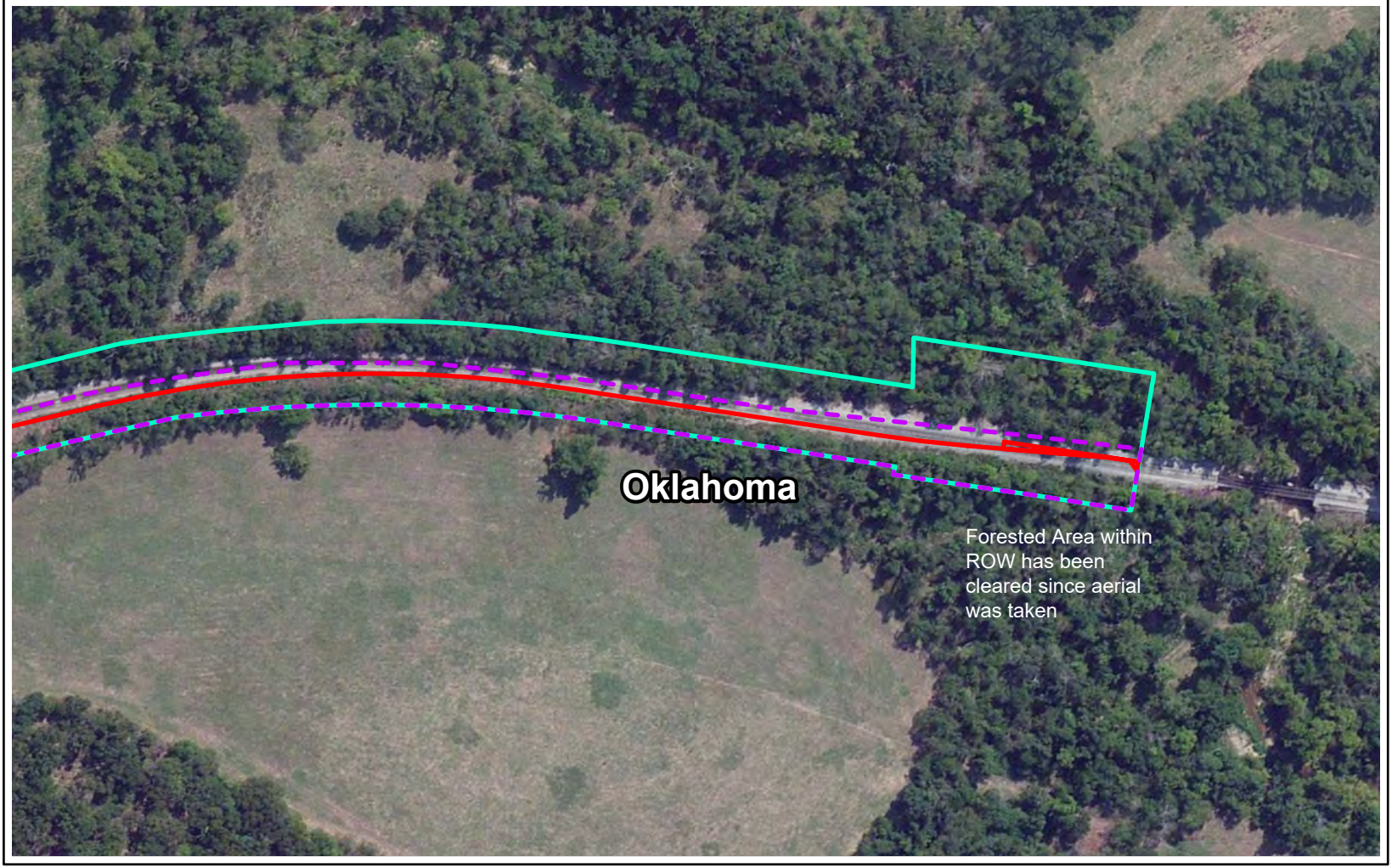
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

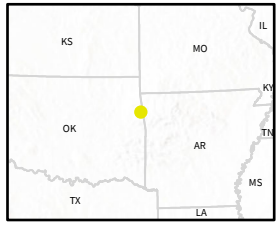
Capital Improvement Location

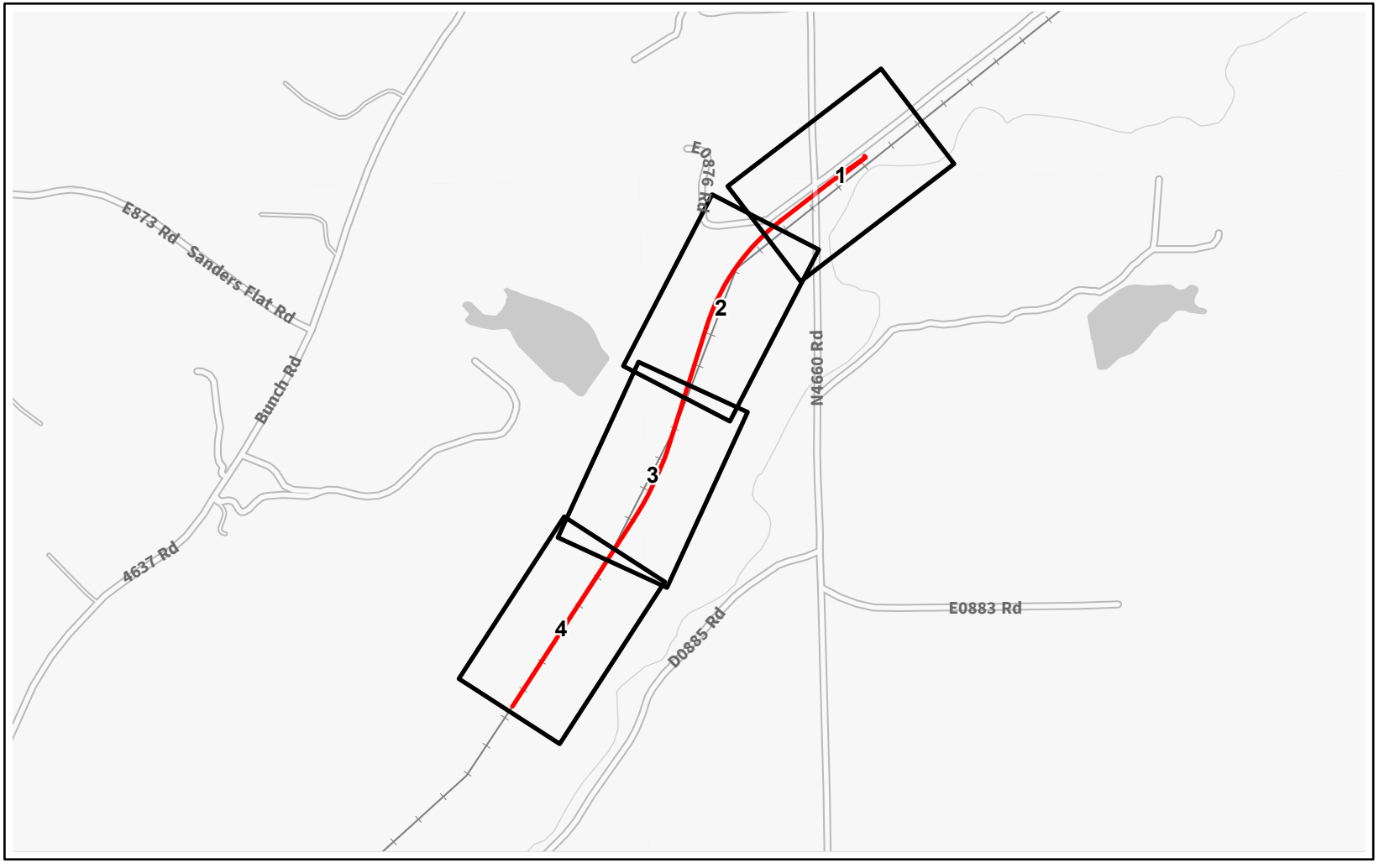
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

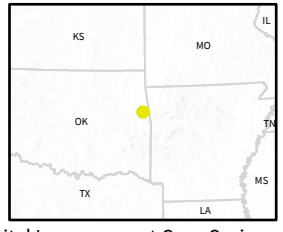
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Capital Improvement Location

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N

0 1400 2800 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Cave Springs
Adair, Oklahoma | Page Index



Study Area

Capital Improvement Location

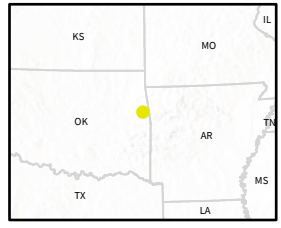
Existing Right-of-Way

Suitable Forested Bat Habitat

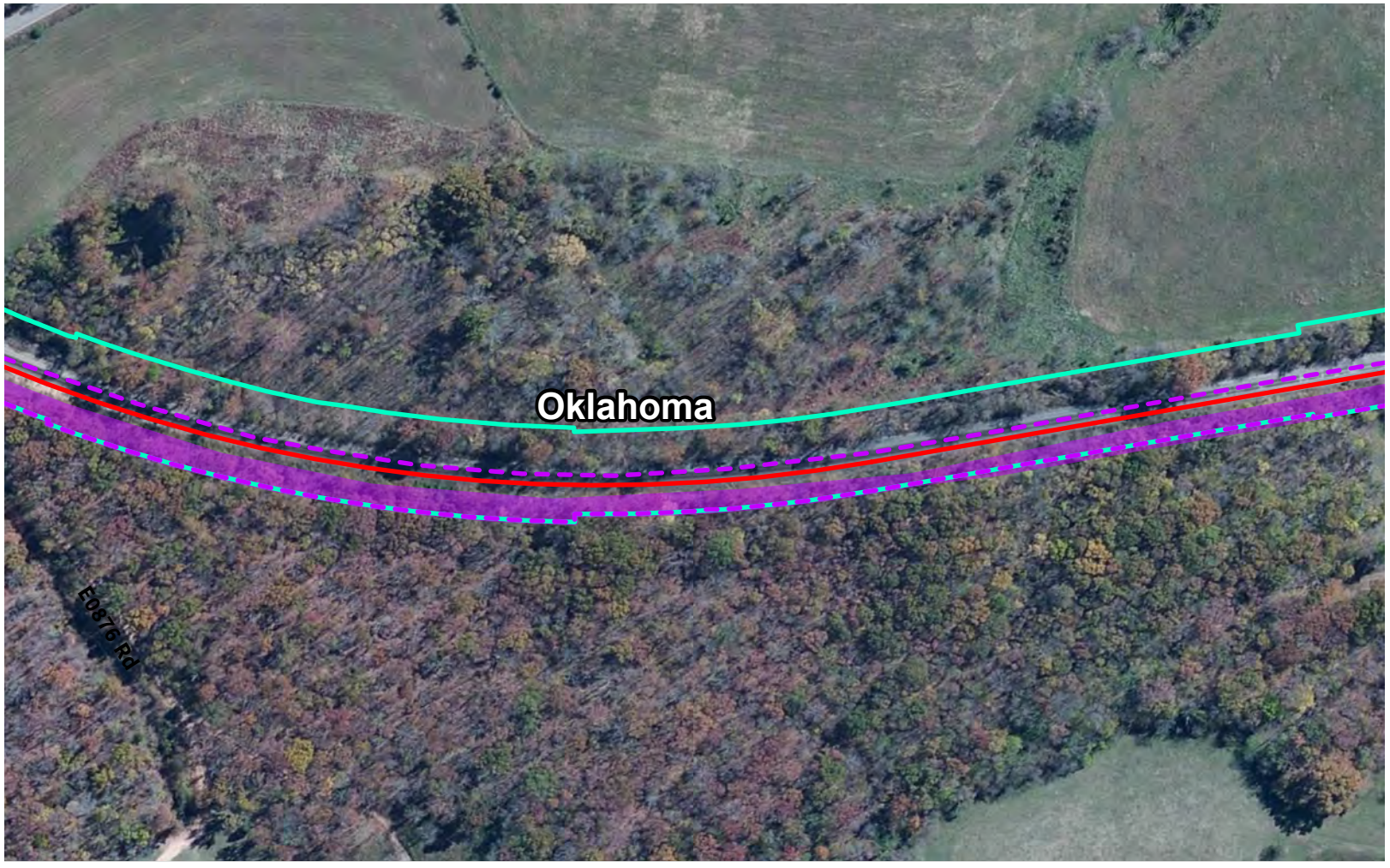
0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Cave Springs
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Study Area

Capital Improvement Location

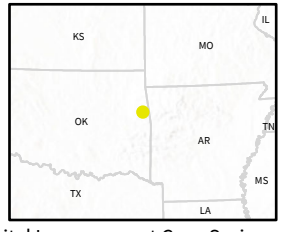
Existing Right-of-Way

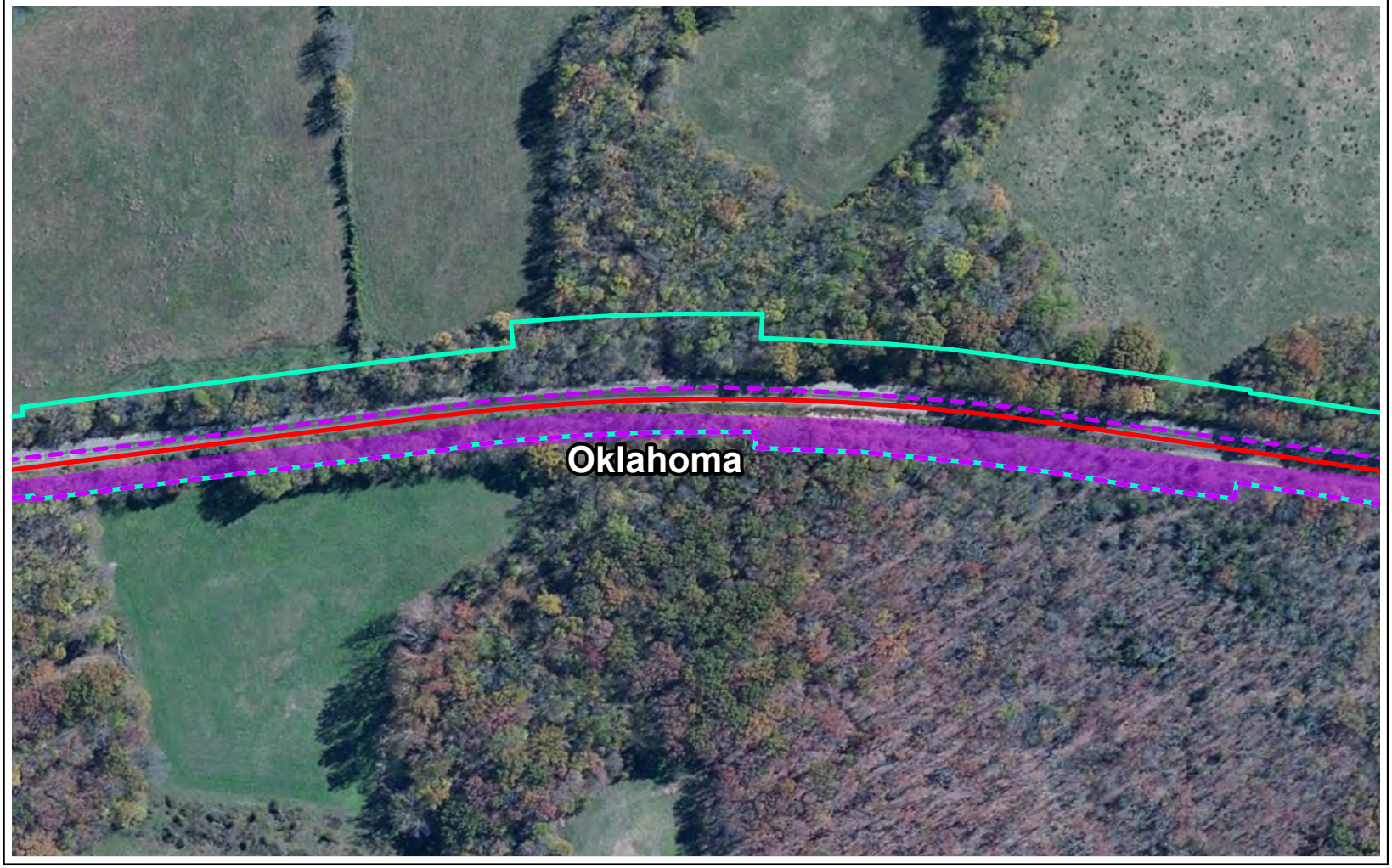
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

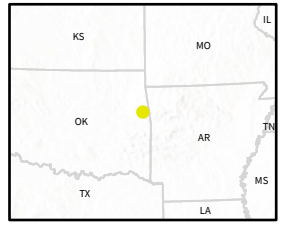
Existing Right-of-Way

Suitable Forested Bat Habitat

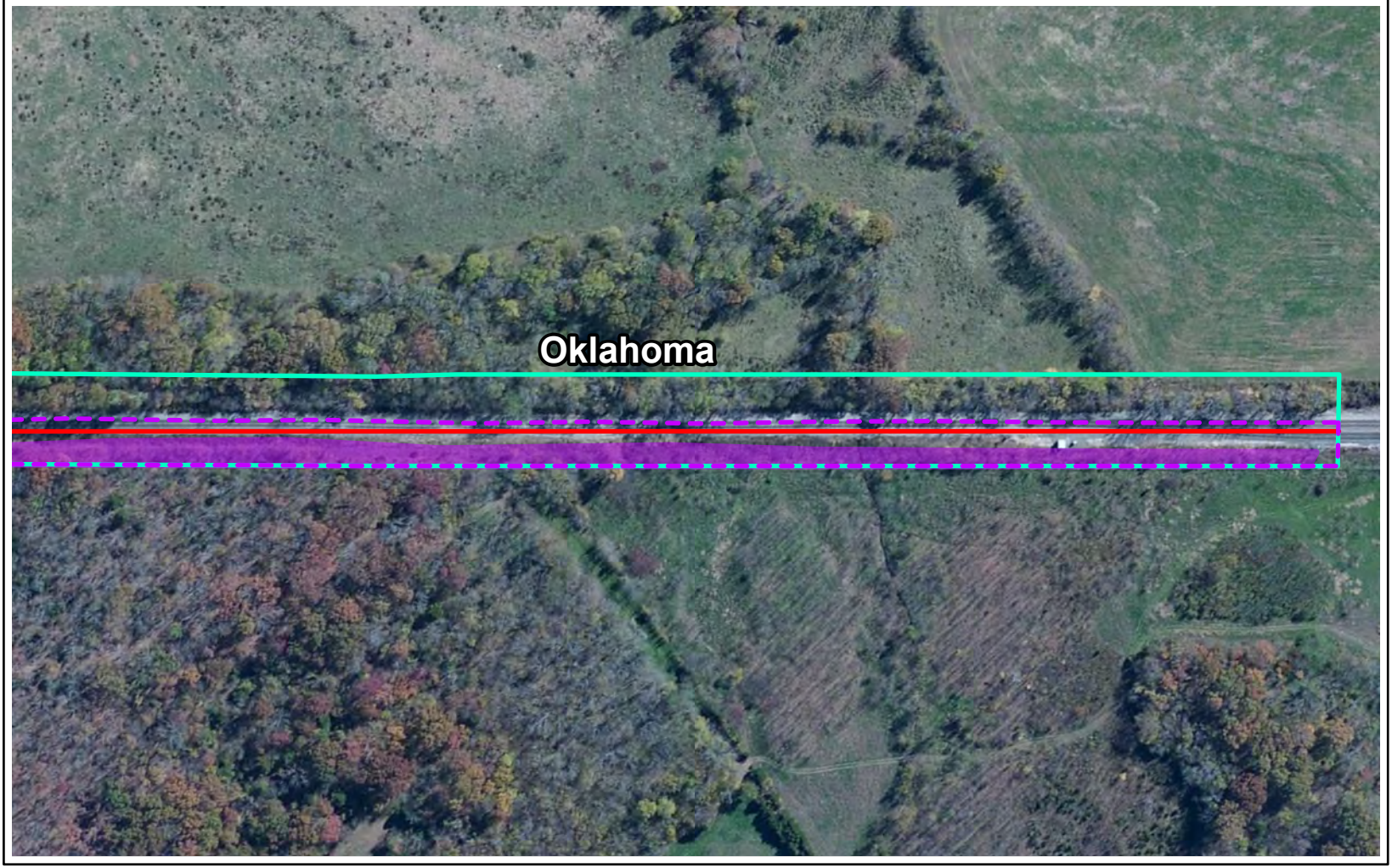
0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Cave Springs
Adair, Oklahoma | Page 3 of 4



Study Area

Capital Improvement Location

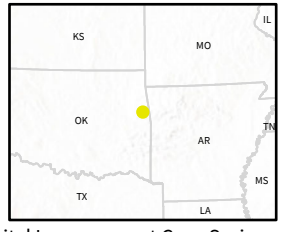
Existing Right-of-Way

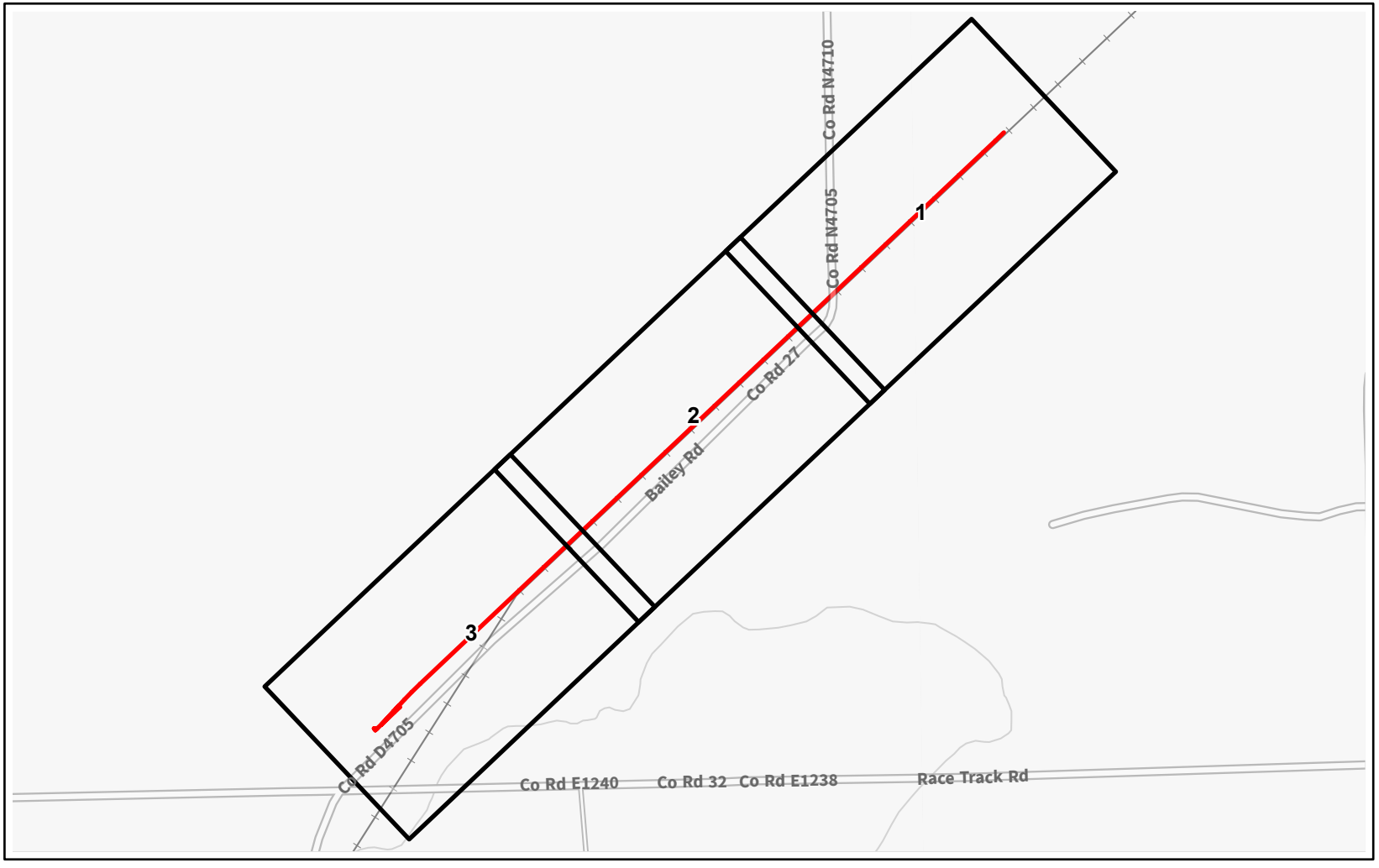
Suitable Forested Bat Habitat

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

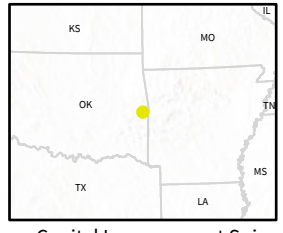
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Capital Improvement Location

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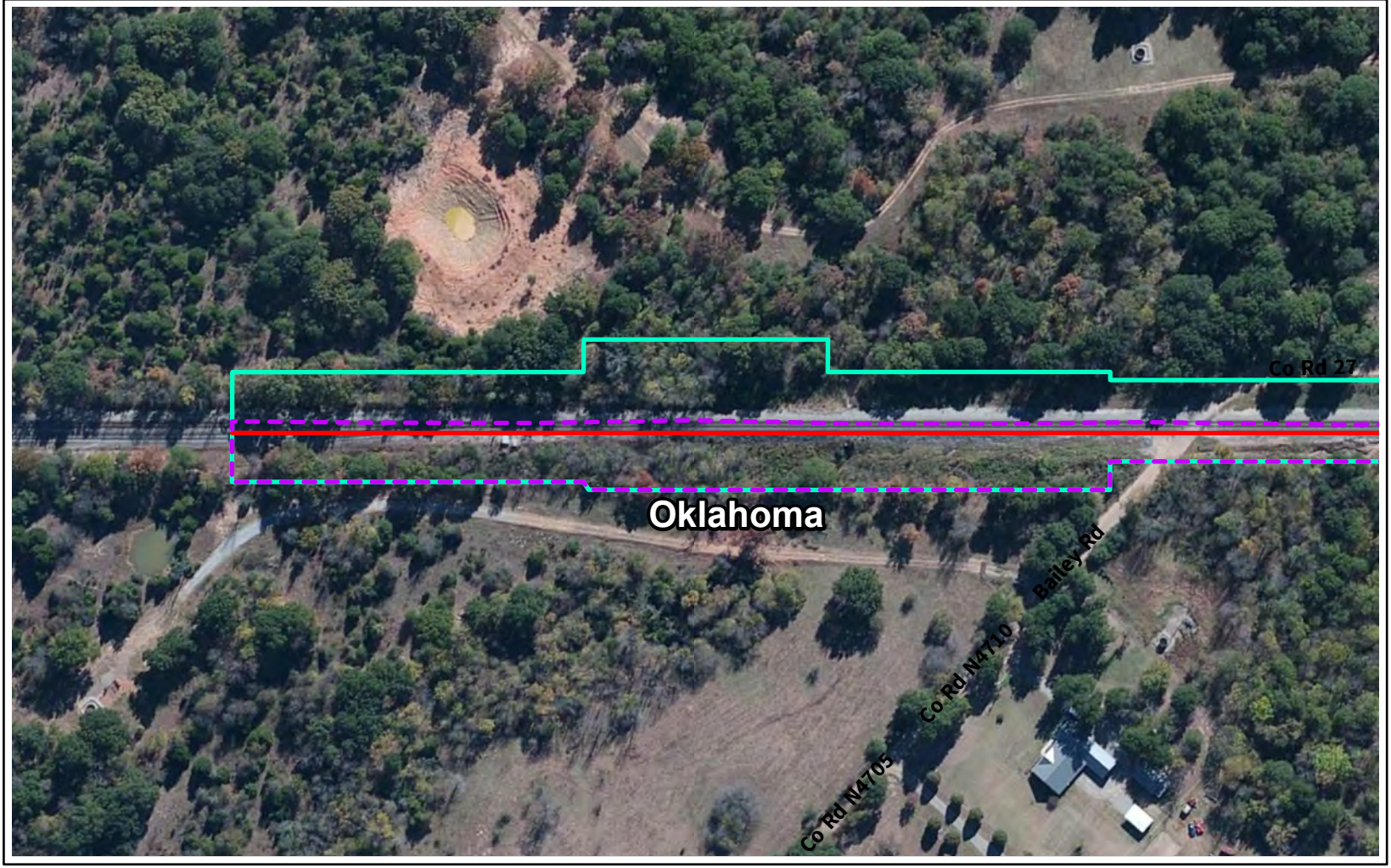
N

0 800 1600 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Spiro
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Study Area

Capital Improvement Location

Existing Right-of-Way

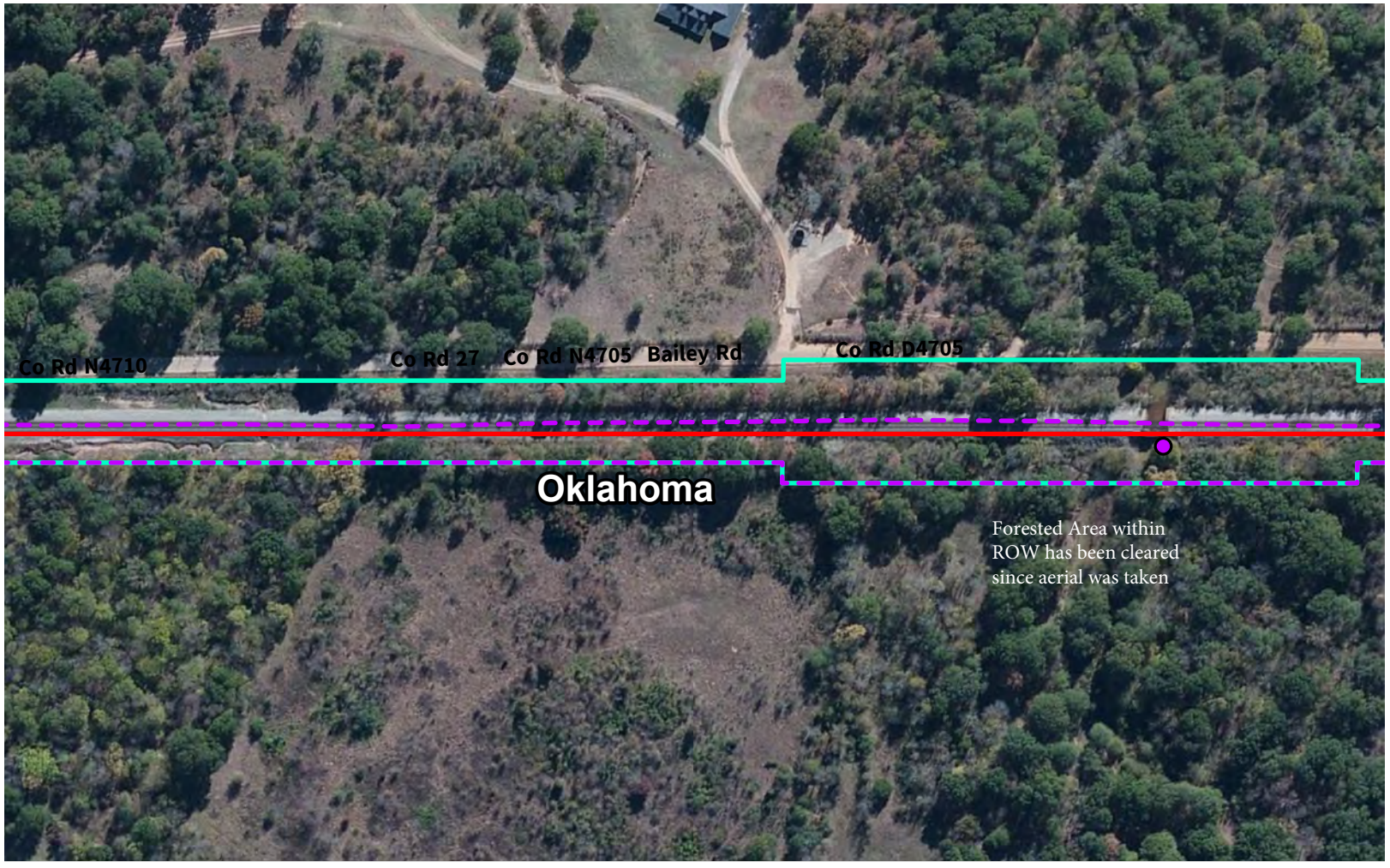
0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Spiro
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Study Area

Capital Improvement Location

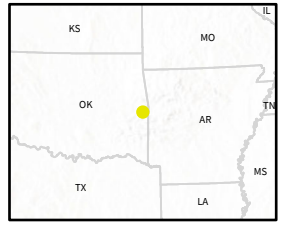
Existing Right-of-Way

Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

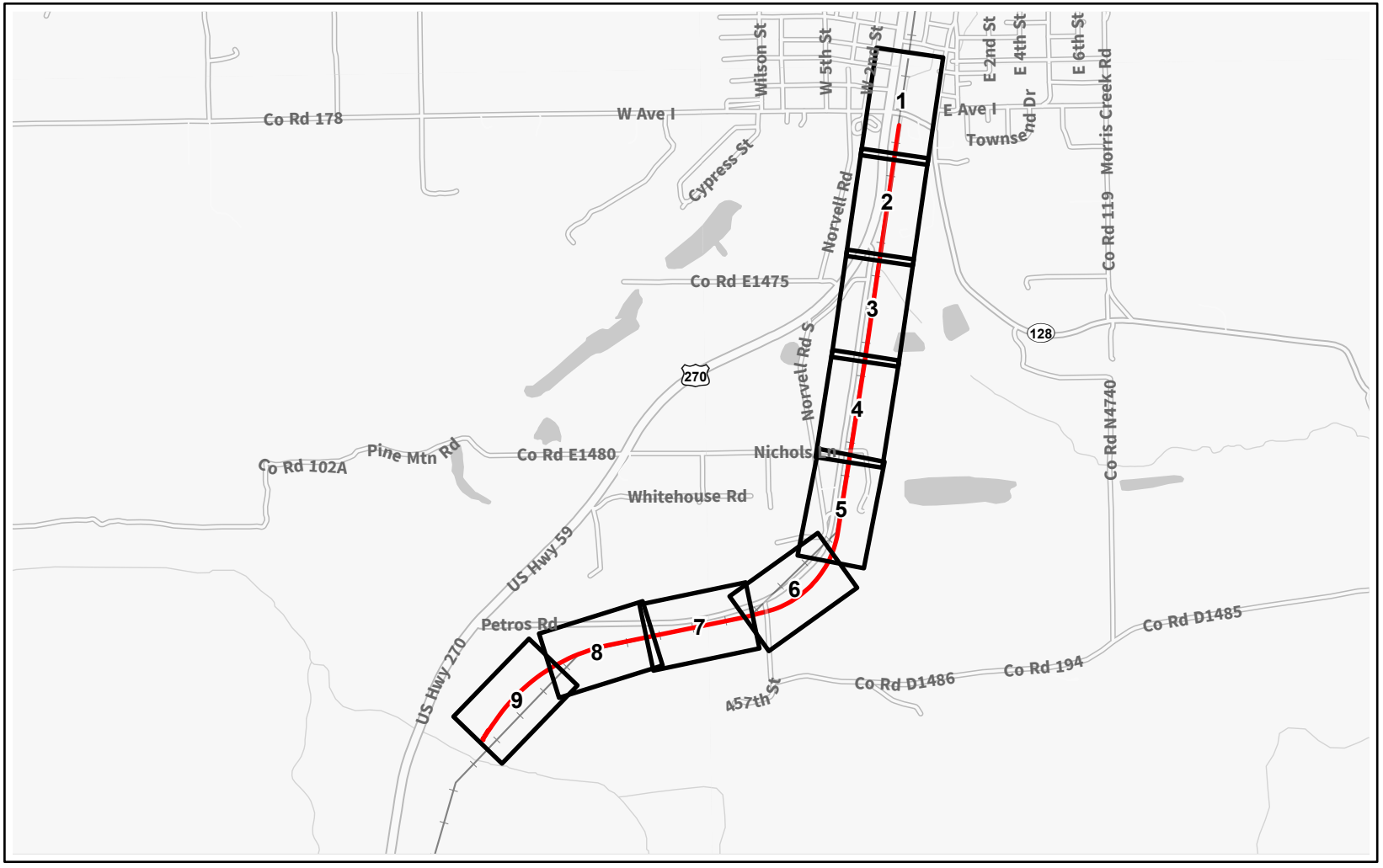
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Location

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0 2500 5000 Feet

Source: FRA, CP, ArcGIS Online

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Capital Improvement Heavener
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Study Area

Capital Improvement Location

Existing Right-of-Way

Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

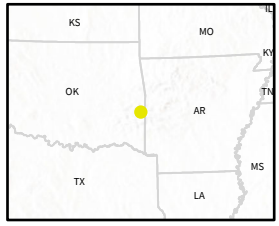
Capital Improvement Location

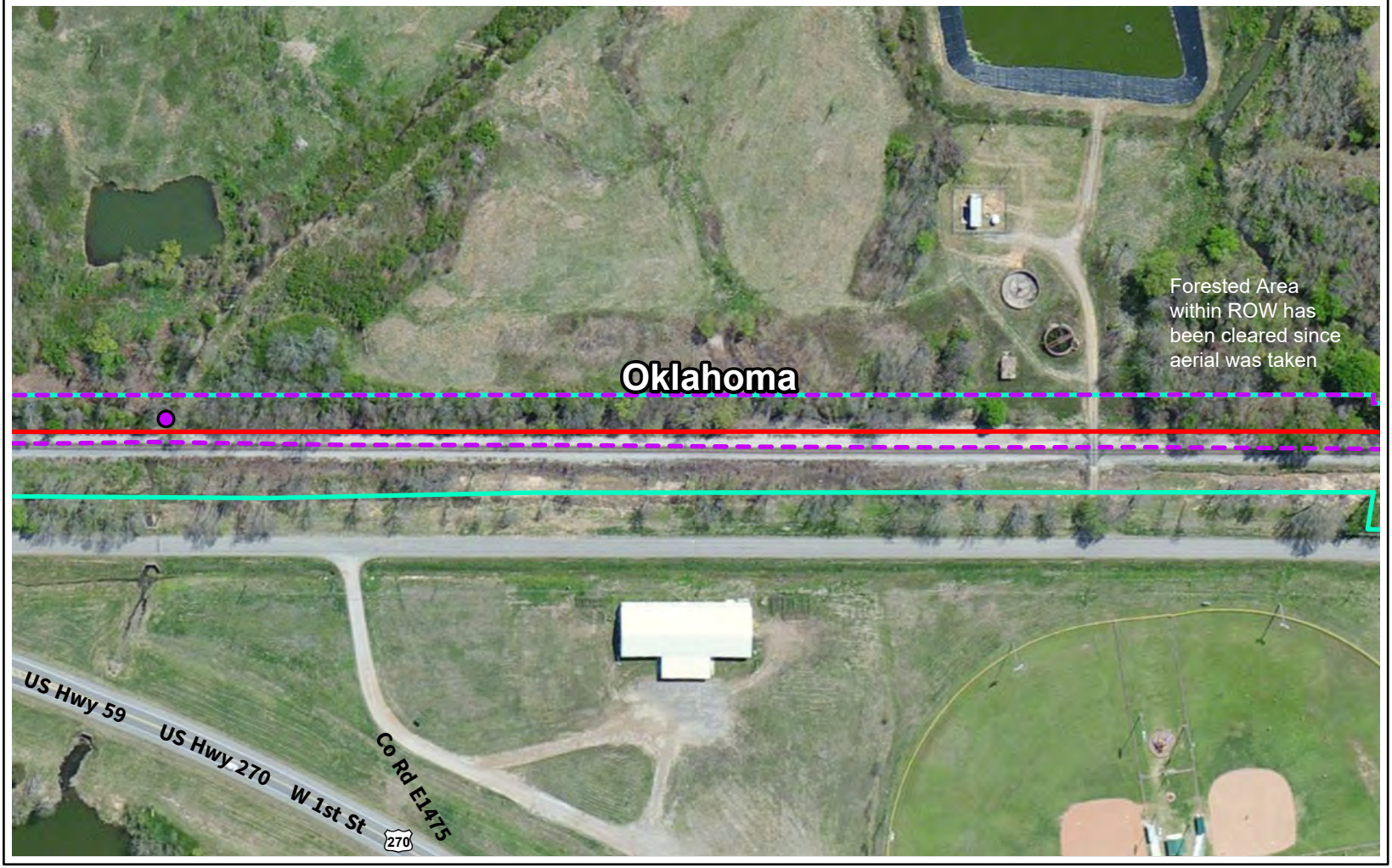
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

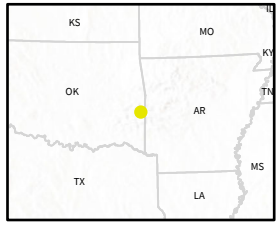
Existing Right-of-Way

Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

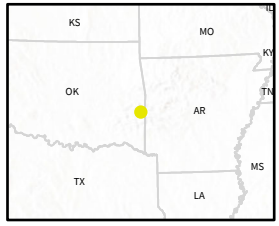
Capital Improvement Location

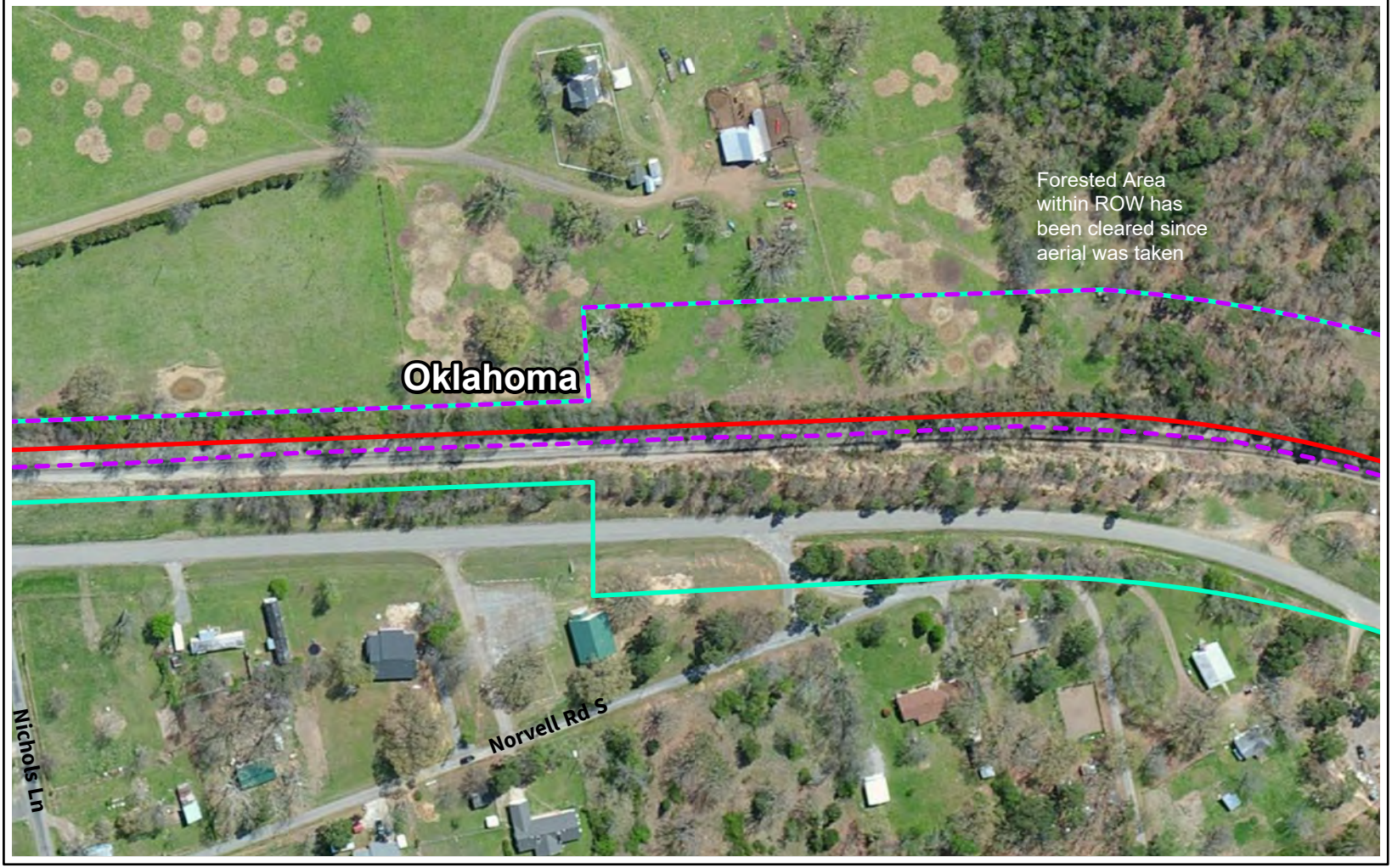
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

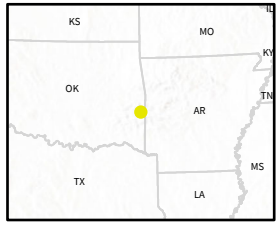
Capital Improvement Location

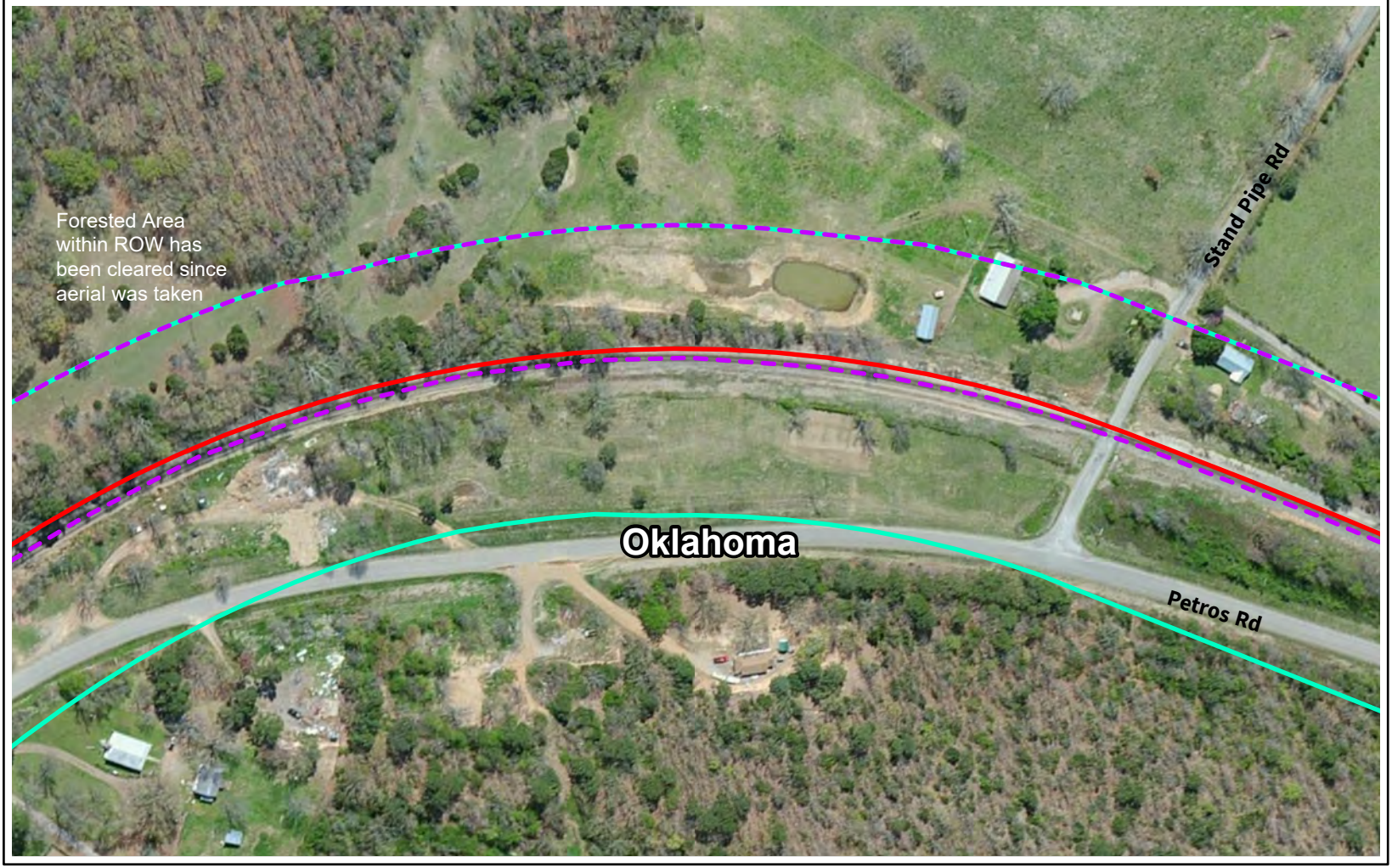
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

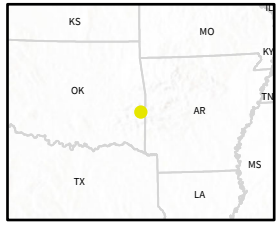
Capital Improvement Location

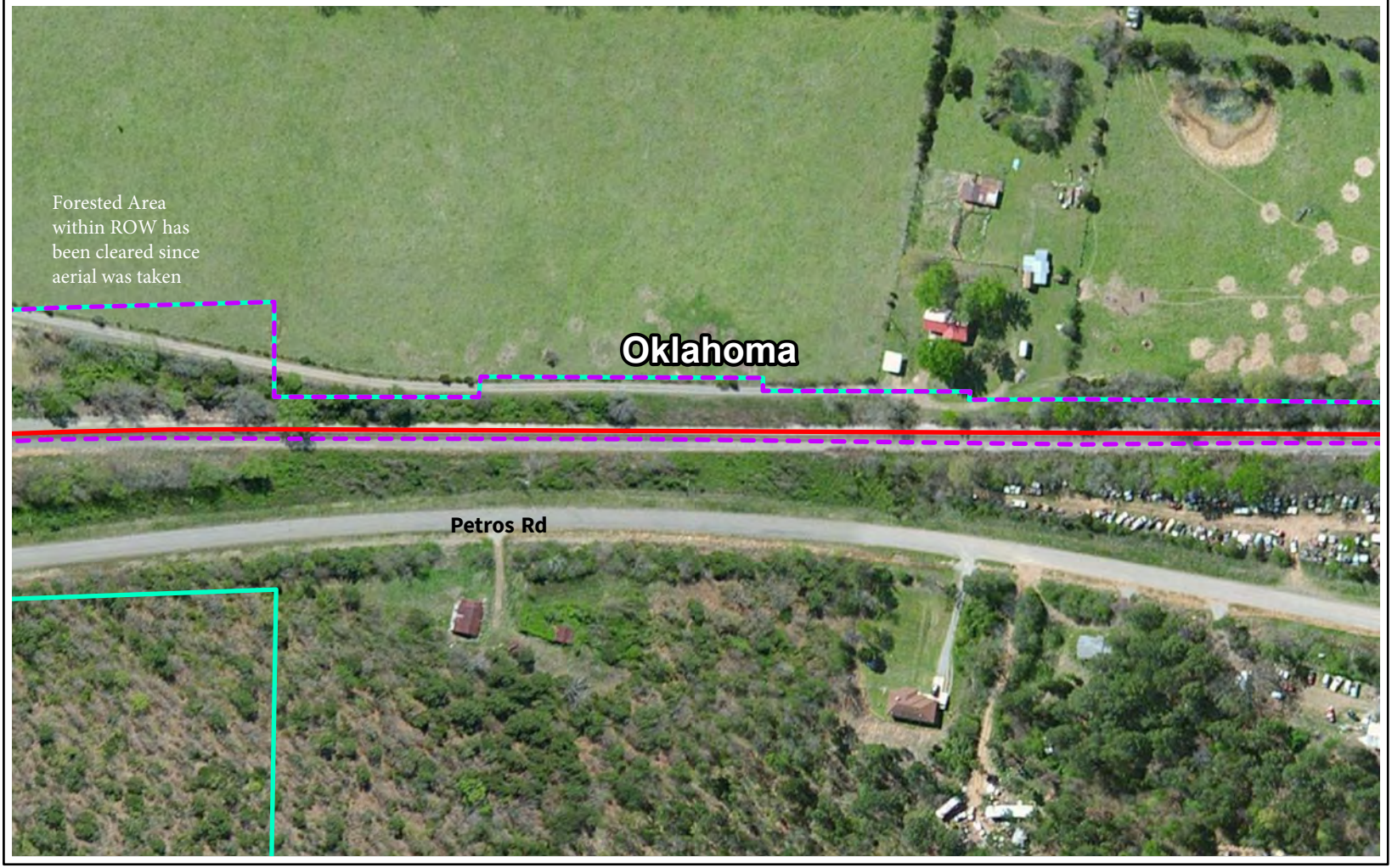
Existing Right-of-Way

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

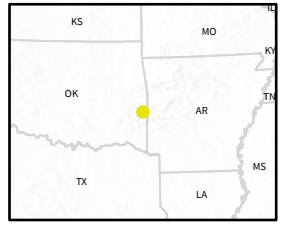
Existing Right-of-Way

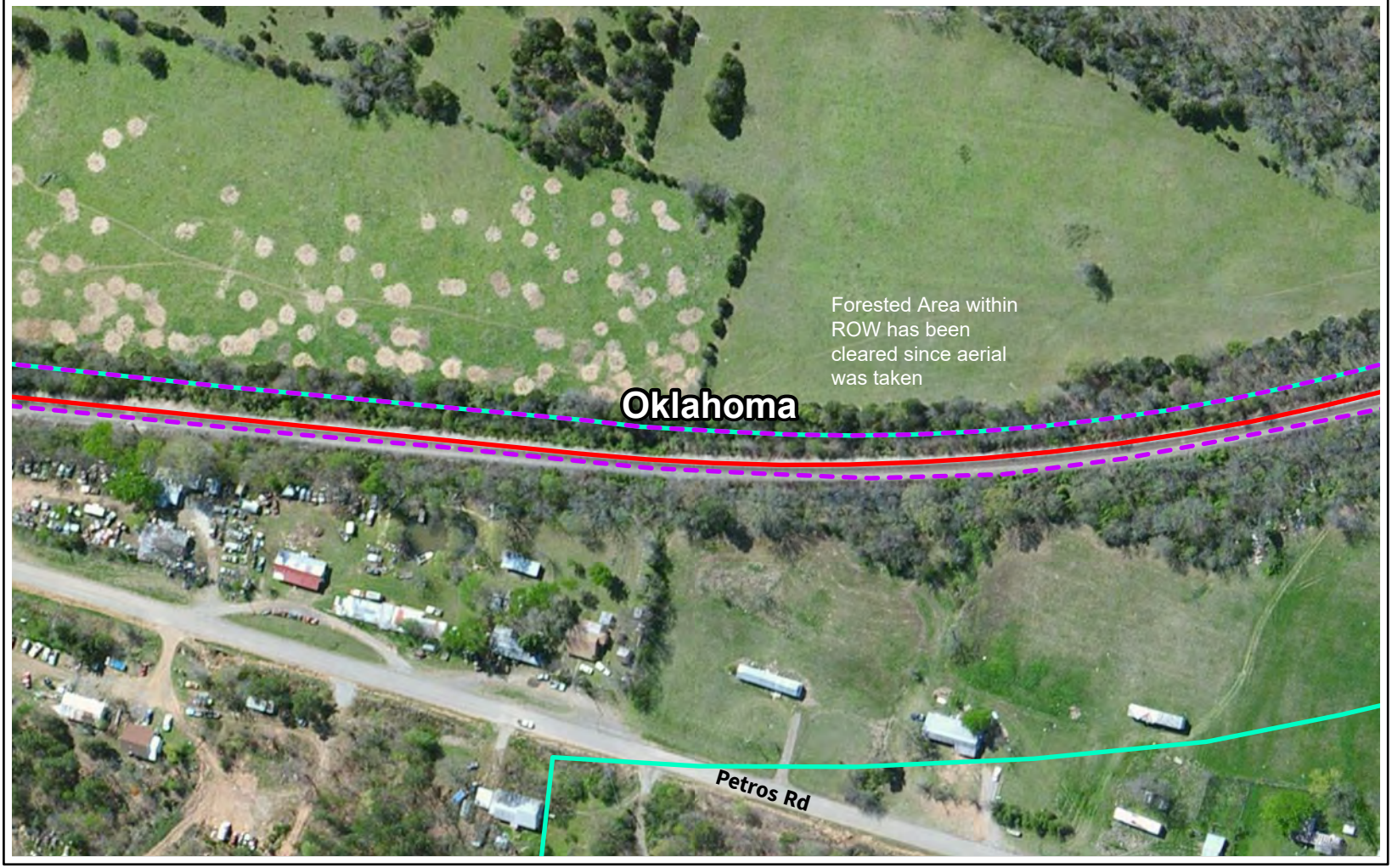
N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

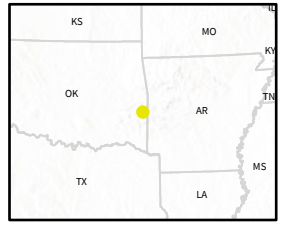
Existing Right-of-Way

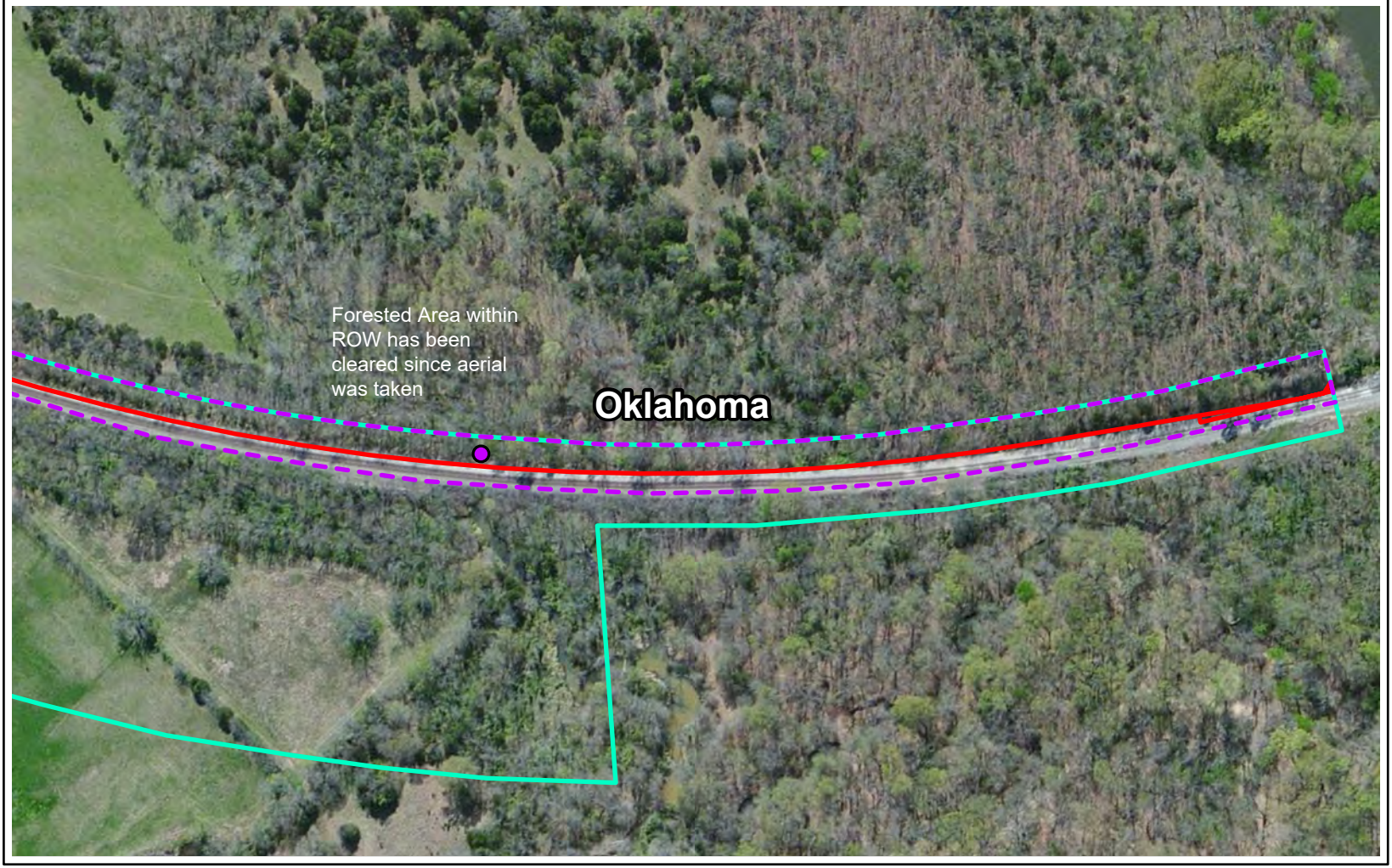
N

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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Study Area

Capital Improvement Location

Existing Right-of-Way

Suitable Bat Roosting Structure

0 200 400 Feet

Source: FRA, CP, ArcGIS Online

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O.2 Special Status Species

Table O.2-1. Federally listed species and their potential occurrence at planned capital improvement sites and presence of suitable habitat

Capital Improvement	Species	Federal Status	Suitable Habitat Present within the Study Area?
MP 71 (Turkey River), IA	Northern long-eared bat (*Myotis septentrionalis*)	Threatened (Proposed Endangered)	**Yes, multiple snags with small cavities and basal hollows along the study area provide suitable summer roosting habitat. Three bridges and one concrete box culvert with suitable cracks and crevices also provide suitable roosting habitat. The railroad right-of-way (ROW) and streams not only act as flight corridors, but along with the forested wetlands on-site, provide foraging habitat for bats.**
	Higgens eye (pearlymussel) (*Lampsilis higginsii*)	Endangered	No, OEA did not observe bodies of water in the study area suitable for the Higgens eye mussel due to the near lentic conditions observed in bodies of water that were not frozen over.
	Sheepnose mussel (*Plethobasus cyphyus*)	Endangered	No, stream crossings in the study area were small (<16' wide), extremely shallow (<2' deep), and with little flow, and therefore would not likely serve as suitable habitat. Open waters in the study area were frozen over at the time of the survey but likely have lentic conditions unsuitable for the Sheepnose mussel.
	Spectaclecase (mussel) (*Cumberlandia monodonta*)	Endangered	No, OEA did not observe large streams or rivers with suitable habitats bordering a main channel in the study area.
	Iowa pleistocene snail (*Discus macclintocki*)	Endangered	No, no talus slopes present within the study area.
	Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
	Eastern prairie fringed orchid (*Platanthera leucophaea*)	Threatened	No, no mesic prairies or wet sedge meadows present.
	Northern wild monkshood (*Aconitum noveboracense*)	Threatened	No, no talus slopes present.
	Prairie bush-clover (*Lespedeza leptostachya*)	Threatened	No, no prairies present.
	Western prairie fringed orchid (*Platanthera praeclara*)	Threatened	No, no prairies present.

Table O.2-1. Federally listed species and their potential occurrence at planned capital improvement sites and presence of suitable habitat

Capital Improvement	Species	Federal Status	Suitable Habitat Present within the Study Area?
MP 24 (Bellevue), IA	Northern Long-eared Bat (*Myotis septentrionalis*)	Threatened (Proposed Endangered)	**Yes, forested areas along the study area, the bridge over Spruce Creek bridge, and multiple culverts provide roosting habitat. Forested edges and the Spruce Creek riparian corridor provide also provide foraging habitat.**
	Higgens Eye Pearlymussel (*Lampsilis higginsii*)	Endangered	No, there are no large rivers with deep water and moderate current within the study area.
	Sheepnose Mussel *(Plethobasus cyphyus)*	Endangered	No, there are no large rivers or streams present within the study area.
	Iowa Pleistocene Snail (*Discus macclintocki*)	Endangered	No, there are no algific talus slopes within the study area.
	Monarch Butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
	Eastern Prairie Fringed Orchid (*Platanthera leucophaea*)	Threatened	No, there are no mesic prairies within the study area.
	Northern Wild Monkshood (*Aconitum noveboracense*)	Threatened	No, there are no algific talus slopes or partially shaded cliffs within the study area.
	Prairie Bush-clover (*Lespedeza leptostachya*)	Threatened	No, there are no prairies within the study area.
	Western Prairie Fringed Orchid (*Platanthera praeclara*)	Threatened	No, there are no prairies within the study area.
MP 75 (Monroe), IL	OEA did not conduct field work at the location of the planned new siding at MP 75 near Monroe Township in Ogle County, Illinois because the planned new siding would be located within the footprint of a previously removed second track and would therefore not result in any new impacts.		
Deer Creek, IA	Northern long-eared bat (*Myotis septentrionalis*)	Threatened (Proposed Endangered)	**Yes, forested areas provide suitable summer roosting habitat. Multiple snags with small cavities along the railroad edge provide suitable roosting habitat. Two bridges and one concrete box culvert with suitable cracks and crevices provide roosting bats. The railroad ROW and streams not only act as flight corridors, but along with the forested wetlands on-site, provide foraging habitat for bats.**

Table O.2-1. Federally listed species and their potential occurrence at planned capital improvement sites and presence of suitable habitat

Capital Improvement	Species	Federal Status	Suitable Habitat Present within the Study Area?
	Eastern massasauga (*Sistrurus catenatus*)	Threatened	No, there are no suitable wet prairies or low areas on the side of the mainline where the siding extension would be located.
	Higgens eye (pearlymussel) (*Lampsilis higginsii*)	Endangered	No, stream crossings in the study area were frozen over at the time of the survey but appeared to be too small (<30' wide).
	Iowa Pleistocene snail (*Discus macclintocki*)	Endangered	No, no talus slopes present within the study area.
	Monarch butterfly (*Danaus plexippus*)	Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
	Eastern prairie fringed orchid (*Platanthera leucophaea*)	Threatened	No, no mesic prairies or wet sedge meadows present.
	Prairie bush-clover (*Lespedeza leptostachya*)	Threatened	No, no prairies present.
	Western prairie fringed orchid (*Platanthera praeclara*)	Threatened	No, no prairies present.
Camanche, IA	Northern long-eared bat (*Myotis septentrionalis*)	Threatened (Proposed Endangered)	No, the study area is characterized by industrial land use and disturbed ROW. There are no suitable snags or live trees large enough for roosting bats. Though there are some bridges and culverts present, they provide poor quality roosting habitat with few to no cracks or crevices suitable for resting bats.
	Eastern massasauga (*Sistrurus catenatus*)	Threatened	No, the study area contained no suitable wet prairies or low areas.
	Higgens eye (pearlymussel) (*Lampsilis higginsii*)	Endangered	No, Mill Creek appeared to have a lentic flow regime, whereas the Higgens eye mussel prefers moderately flowing water. Mill Creek was covered in patches of ice at the time of the survey. The other stream was fragmented and too small (<10' wide) to support the Higgens eye mussel.
	Iowa Pleistocene snail (*Discus macclintocki*)	Endangered	No, no talus slopes present within the study area.
	Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.

Table O.2-1. Federally listed species and their potential occurrence at planned capital improvement sites and presence of suitable habitat

Capital Improvement	Species	Federal Status	Suitable Habitat Present within the Study Area?
	Eastern prairie fringed orchid (*Platanthera leucophaea*)	Threatened	No, no mesic prairies or wet sedge meadows present.
	Prairie bush-clover (*Lespedeza leptostachya*)	Threatened	No, no prairies present.
	Western prairie fringed orchid (*Platanthera praeclara*)	Threatened	No, no prairies present.
Letts, IA	Indiana Bat (*Myotis sodalis*)	Endangered	**Yes, forested areas provide suitable roosting habitat. Cracks and crevices on the US 61 NB and SB bridges over the CP rail line provide marginal roosting habitat. Forested edges along the study area provide suitable foraging habitat.**
	Northern Long-eared Bat (*Myotis septentrionalis*)	Threatened (Proposed Endangered)	**Yes, forested areas provide suitable roosting habitat. Cracks and crevices on the US 61 NB and SB bridges over the CP rail line provide marginal roosting habitat. Forested edges along the study area provide suitable foraging habitat.**
	Higgens Eye Pearlymussel (*Lampsilis higginsii*)	Endangered	No, there are no large rivers with deep water and moderate current within the study area.
	Sheepnose Mussel (*Plethobasus cyphyus*)	Endangered	No, there are no large rivers or streams present within the study area.
	Spectaclecase Mussel (*Cumberlandia monodonta*)	Endangered	No, there are no large rivers present within the study area.
	Monarch Butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
	Eastern Prairie Fringed Orchid (*Platanthera leucophaea*)	Threatened	No, there are no mesic prairies within the study area.
	Prairie Bush-clover (*Lespedeza leptostachya*)	Threatened	No, there are no prairies within the study area.
	Western Prairie Fringed Orchid (*Platanthera praeclara*)	Threatened	No, there are no prairies within the study area.

Table O.2-1. Federally listed species and their potential occurrence at planned capital improvement sites and presence of suitable habitat

Capital Improvement	Species	Federal Status	Suitable Habitat Present within the Study Area?
MP 255 (Washington), IA	Indiana bat (*Myotis sodalis*)	Endangered	**Yes, multiple structures and forested areas on the eastern end of the study area provide suitable summer roosting habitat is present. The railroad ROW and streams act as foraging or flight corridors.**
	Northern long-eared bat (*Myotis septentrionalis*)	Threatened (Proposed Endangered)	**Yes, multiple structures and forested areas on the eastern end of the study area provide suitable summer roosting habitat is present. The railroad ROW and streams act as foraging or flight corridors.**
	Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
	Eastern prairie fringed orchid (*Platanthera leucophaea*)	Threatened	No, no mesic prairies or wet sedge meadows present.
	Prairie bush-clover (*Lespedeza leptostachya*)	Threatened	No, no prairies present.
	Western prairie fringed orchid (*Platanthera praeclara*)	Threatened	No, no prairies present.
Ottumwa, IA	Indiana bat (*Myotis sodalis*)	Endangered	**Yes, roosting habitat present in edges of forested areas bordering railroad ROW. Cracks and crevices within a 4'x6' concrete box culvert provide marginal roosting habitat. Forested edges along the study area provide suitable foraging habitat.**
	Northern long-eared bat (*Myotis septentrionalis*)	Threatened (Proposed Endangered)	**Yes, roosting habitat present in edges of forested areas bordering railroad ROW. Cracks and crevices within a 4'x6' concrete box culvert provide marginal roosting habitat. Forested edges along the study area provide suitable foraging habitat.**
	Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
	Eastern prairie fringed orchid (*Platanthera leucophaea*)	Threatened	No, there are no mesic prairies within the study area.
	Prairie bush-clover (*Lespedeza leptostachya*)	Threatened	No, there are no prairies within the study area.

Table O.2-1. Federally listed species and their potential occurrence at planned capital improvement sites and presence of suitable habitat

Capital Improvement	Species	Federal Status	Suitable Habitat Present within the Study Area?
	Western prairie fringed orchid (*Platanthera praeclara*)	Threatened	No, there are no prairies within the study area.
Moravia, IA	Indiana bat (*Myotis sodalis*)	Endangered	**Yes, the study area provides scattered marginally suitable summer roosting habitat. Though most of the habitat adjacent to the railway had scattered trees in scrub/shrub habitat or was forested, these habitats are only 50 feet wide and directly abut cropland and livestock pastures. Additionally, all of the pipes carrying the rail line over streams were too small to provide suitable roosting habitat, though the one wooden rail bridge provided low-quality roosting habitat. The railroad ROW and streams act as flight and foraging corridors.**
	Northern long-eared bat (*Myotis septentrionalis*)	Threatened (Proposed Endangered)	**Yes, the study area provides scattered marginally suitable summer roosting habitat. Though most of the habitat adjacent to the railway had scattered trees in scrub/shrub habitat or was forested, these habitats are only 50 feet wide and directly abut cropland and livestock pastures. Additionally, all of the pipes carrying the rail line over streams were too small to provide suitable roosting habitat, though the one wooden rail bridge provided low-quality roosting habitat. The railroad ROW and streams act as flight and foraging corridors.**
	Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
	Eastern prairie fringed orchid (*Platanthera leucophaea*)	Threatened	No, no mesic prairies or wet sedge meadows present.
	Prairie bush-clover (*Lespedeza leptostachya*)	Threatened	No, no prairies present.
	Western prairie fringed orchid (*Platanthera praeclara*)	Threatened	No, no prairies present.
Newtown, MO	Gray Bat (*Myotis grisescens*)	Endangered	No, no caves are within the study area. The study area is heavily maintained and contains no forested areas. Mostly open edges of ROW and adjacent agricultural areas. No suitable foraging habitat is present.

Table O.2-1. Federally listed species and their potential occurrence at planned capital improvement sites and presence of suitable habitat

Capital Improvement	Species	Federal Status	Suitable Habitat Present within the Study Area?
	Indiana Bat (*Myotis sodalis*)	Endangered	**Yes, a wood/metal bridge provides marginal roosting habitat. The study area is heavily maintained and contains no forested areas. Mostly open edges of ROW and adjacent agricultural areas. No suitable foraging habitat.**
	Northern Long-eared Bat (*Myotis septentrionalis*)	Threatened (Proposed Endangered)	**Yes, a wood/metal bridge provides marginal roosting habitat. The study area is heavily maintained and contains no forested areas. Mostly open edges of ROW and adjacent agricultural areas. No suitable foraging habitat.**
	Tricolored Bat (*Perimyotis subflavu*s)	Proposed Endangered	**Yes, a wood/metal bridge provides marginal roosting habitat. The study area is heavily maintained and contains no forested areas. Mostly open edges of ROW and adjacent agricultural areas. No suitable foraging habitat.**
	Monarch Butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
	Mead's Milkweed (*Asclepias meadii*)	Threatened	No, no mesic tallgrass prairies present within the study area.
Laredo, MO	Gray Bat (*Myotis grisescens*)	Endangered	No, no caves were identified within or near the study area.
	Indiana Bat (*Myotis sodalis*)	Endangered	**Yes, the study area provides scattered marginally suitable summer roosting habitat. Though most of the habitat adjacent to the railway had scattered trees in scrub/shrub habitat or was forested, these habitats are only approximately 50 feet wide and directly abut cropland and livestock pastures. Additionally, all of the pipes carrying the rail line over streams were too small to provide suitable roosting habitat, though the one wooden rail bridge provided low-quality roosting habitat. The railroad ROW and streams act as flight and foraging corridors.**
	Northern Long-eared Bat (*Myotis septentrionalis*)	Threatened (Proposed Endangered)	**Yes, the study area provides scattered marginally suitable summer roosting habitat. Though most of the habitat adjacent to the railway had scattered trees in scrub/shrub habitat or was forested, these habitats are only approximately 50 feet wide and directly abut cropland and livestock pastures. Additionally, all of the pipes carrying the rail line over streams were too small to provide suitable roosting habitat, though the one wooden rail bridge provided low-quality roosting habitat. The railroad ROW and streams act as flight and foraging corridors.**

Table O.2-1. Federally listed species and their potential occurrence at planned capital improvement sites and presence of suitable habitat

	Tricolored Bat (*Perimyotis subflavus*)	Proposed Endangered	**Yes, the study area provides scattered marginally suitable summer roosting habitat. Though most of the habitat adjacent to the railway had scattered trees in scrub/shrub habitat or was forested, these habitats are only approximately 50 feet wide and directly abut cropland and livestock pastures. Additionally, all of the pipes carrying the rail line over streams were too small to provide suitable roosting habitat, though the one wooden rail bridge provided low-quality roosting habitat. The railroad ROW and streams act as flight and foraging corridors.**
	Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
	Eastern prairie fringed orchid (*Platanthera leucophaea*)	Threatened	No, no mesic prairies or wet sedge meadows present.
	Bald eagle (*Haliaeetus leucocephalus*)	None (BGEPA)	No, despite the occurrence record within one mile of the site, no suitable roost trees were identified within the study area. No typical foraging habitat such as large rivers, lakes, or marshes were present in the study area, though the Grand River is located approximately 0.25 miles to the east of the study area. OEA did not identify any nests at the time of the field survey.
MP 431 (Dawn), MO	Gray Bat (*Myotis grisescens*)	Endangered	No, no caves present within the study area. Foraging habitat is present along railroad corridor, forested edges of adjacent agricultural fields, and riparian corridor of adjacent stream (Shoal Creek).
	Indiana Bat (*Myotis sodalis*)	Endangered	**Yes, roosting habitat present in edges of forested areas bordering railroad ROW. Cracks and crevices on two concrete railroad bridges provide marginally suitable roosting habitat. Forested edges along the study area and the riparian corridor of the adjacent stream (Shoal Creek) provide suitable foraging habitat.**
	Northern Long-eared Bat (*Myotis septentrionalis*)	Threatened (Proposed Endangered)	**Yes, roosting habitat present in edges of forested areas bordering railroad ROW. Cracks and crevices on two concrete railroad bridges provide marginally suitable roosting habitat. Forested edges along the study area and the riparian corridor of the adjacent stream (Shoal Creek) provide suitable foraging habitat.**
	Tricolored Bat (*Perimyotis subflavus*)	Proposed Endangered	**Yes, roosting habitat present in edges of forested areas bordering railroad ROW. Cracks and crevices on two concrete railroad bridges provide marginally suitable roosting habitat. Forested edges along the study area and the riparian corridor of the adjacent stream (Shoal Creek) provide suitable foraging habitat.**

Table O.2-1. Federally listed species and their potential occurrence at planned capital improvement sites and presence of suitable habitat

Capital Improvement	Species	Federal Status	Suitable Habitat Present within the Study Area?
	Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
	Bald eagle (*Haliaeetus leucocephalus)*	None (BGEPA)	**Yes, OEA observed one bald eagle nest on site within study area and a solitary, perching eagle in the vicinity of the nest outside of the study area. OEA also observed foraging habitat in Shoal Creek, just outside the study area.**
Blue Valley, MO	Gray bat (*Myotis grisescens*)	Endangered	No, no caves present within the study area.
	Monarch Butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
	Northern long-eared bat (*Myotis septentrionalis)*	Threatened (Proposed Endangered)	**Yes, bridges and culvert provide suitable roosting habitat.**
	Tricolored Bat (*Perimyotis subflavu*s)	Proposed Endangered	**Yes, bridges and culvert provide suitable roosting habitat.**
	Indiana bat (*Myotis sodalis*)	Endangered	**Yes, bridges and culvert provide suitable roosting habitat.**

Table O.2-1. Federally listed species and their potential occurrence at planned capital improvement sites and presence of suitable habitat

Capital Improvement	Species	Federal Status	Suitable Habitat Present within the Study Area?
Grandview/IFG, MO	Gray bat (*Myotis grisescens*)	Endangered	No, no caves present within the study area.
	Mead's milkweed (*Asclepias meadii*)	Threatened	No, no mesic tallgrass prairies present within the study area.
	Monarch Butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
	Northern long-eared bat (*Myotis septentrionalis)*	Threatened (Proposed Endangered)	**Yes, bridges provide suitable roosting habitat.**
	Indiana bat (*Myotis sodalis*)	Endangered	**Yes, bridges provide suitable roosting habitat.**
	Tricolored Bat (*Perimyotis subflavu*s)	Proposed Endangered	**Yes, bridges provide suitable roosting habitat.**
Asbury, MO	Gray bat (*Myotis grisescens*)	Endangered	No, no caves present within study area.
	Northern long-eared bat (*Myotis septentrionalis)*	Threatened (Proposed Endangered)	No, no forested area or suitable roosting structures present within study area.
	Indiana bat (*Myotis sodalis*)	Endangered	No, no forested area or suitable roosting structures present within study area.
	Tricolored Bat (*Perimyotis subflavu*s)	Proposed Endangered	No, no forested area or suitable roosting structures present within study area.
	Neosho madtom (*Noturus placidus*)	Threatened	No, no rivers present within study area.
	Neosho mucket (*Lampsilis rafinesqueana*)	Endangered	No, no suitable streams with shallow riffles, gravel substrate or backwater areas are within study area.
	Rabbitsfoot (*Quadrula cylindrica cylindrica*)	Threatened	No, no suitable streams with gravel substrate are within study area.
	Monarch Butterfly *(Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.

Table O.2-1. Federally listed species and their potential occurrence at planned capital improvement sites and presence of suitable habitat

MP 186, MO	Gray bat (*Myotis grisescens*)	Endangered	No, no caves are present in the study area.
	Northern long-eared bat (*Myotis septentrionalis)*	Threatened (Proposed Endangered)	**Yes, forested areas provide suitable roosting habitat.**
	Indiana bat (*Myotis sodalis*)	Endangered	**Yes, forested areas provide suitable roosting habitat.**
	Tricolored Bat (*Perimyotis subflavu*s)	Proposed Endangered	**Yes, forested areas provide suitable roosting habitat.**
	Neosho Mucket (*Lampsilis rafinesqueana*)	Endangered	No, a perennial stream is present within the study area and contains gravel substrate; however, swift currents are not present.
	Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
Gentry, AR	Gray bat (*Myotis grisescens*)	Endangered	No, no caves are present within the study area.
	Indiana bat (*Myotis sodalis*)	Endangered	**Yes, potential suitable summer roosting habitat within forested areas.**
	Northern long-eared bat (*Myotis septentrionalis*)	Threatened (Proposed Endangered)	**Yes, potential suitable summer roosting habitat within forested areas.**
	Ozark big-eared bat (*Corynorhinus (=Plecotus) townsendii ingens)*	Endangered	No, no caves are present within the study area.
	Eastern black rail (*Laterallus jamaicensis spp. Jamaicensis*)	Threatened	No, no saltmarshes or brackish marshes with dense cover are present within the study area.
	Piping plover (*Charadrius melodus*)	Threatened	No, no beaches or suitable nesting habitat are present within the study area.
	Red knot (*Calidrus canutus rufa*)	Threatened	No, no elevated tundra areas are present within the study area.
	Ozark cavefish (*Amblyopsis rosae*)	Threatened	No, no caves are present within the study area.

Table O.2-1. Federally listed species and their potential occurrence at planned capital improvement sites and presence of suitable habitat

Capital Improvement	Species	Federal Status	Suitable Habitat Present within the Study Area?
	Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
	Benton County cave crayfish (*Cambarus aculabrum*)	Endangered	No, no caves are present within the study area.
	Missouri bladderpod (*Physaria filiformis*)	Threatened	No, no limestone glades are present within the study area.
MP 247 (Baron), OK	Gray bat (*Myotis grisescens*)	Endangered	No, no caves are present within the study area.
	Indiana bat (*Myotis sodalis*)	Endangered	**Yes, potential suitable summer roosting habitat within forested areas.**
	Northern long-eared bat (*Myotis septentrionalis)*	Threatened (Proposed Endangered)	**Yes, potential suitable summer roosting habitat within forested areas.**
	Tricolored Bat (*Perimyotis subflavu*s)	Proposed Endangered	**Yes, potential suitable summer roosting habitat within forested areas.**
	Ozark big-eared bat (*Corynorhinus (=Plecotus) townsendii ingens)*	Endangered	No, no caves are present within the study area.
	Piping plover (*Charadrius melodus*)	Threatened	No, wetlands are within the study area; however, given the high level of disturbance along the corridor the study area does not provide suitable habitat. There is no breeding habitat either.
	Red knot (*Calidrus canutus rufa*)	Threatened	No, there is no breeding or non-breeding habitat within the study area.
	Neosho mucket (*Lampsilis rafinesqueana)*	Endangered	No, there are no perennial streams located within the study area.
	Rabbitsfoot mussel (*Quadrula cylindrica cylindrica)*	Threatened	No, there are no perennial streams located within the study area.
	Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.

Table O.2-1. Federally listed species and their potential occurrence at planned capital improvement sites and presence of suitable habitat

Capital Improvement	Species	Federal Status	Suitable Habitat Present within the Study Area?
Cave Springs, OK	Gray bat (*Myotis grisescens*)	Endangered	No, no caves are present within the study area.
	Indiana bat (*Myotis sodalis*)	Endangered	**Yes, potential suitable summer roosting habitat within forested areas.**
	Northern long-eared bat (*Myotis septentrionalis)*	Threatened (Proposed Endangered)	**Yes, potential suitable summer roosting habitat within forested areas.**
	Tricolored Bat (*Perimyotis subflavu*s)	Proposed Endangered	**Yes, potential suitable summer roosting habitat within forested areas.**
	Ozark big-eared bat (*Corynorhinus (=Plecotus) townsendii ingens)*	Endangered	**Yes, no caves are present within the study; however, a cave is located 1.5 miles that is known to be occupied by the Ozark big-eared bat. Therefore, foraging habitat is present within forested areas.**
	Piping plover (*Charadrius melodus*)	Threatened	No, there is a small creek is within the study area; however, given the high level of disturbance along the corridor, the creek would not be suitable nesting habitat.
	Red knot (*Calidrus canutus rufa*)	Threatened	No, there is no breeding or non-breeding habitat within the study area.
	American burying beetle (*Nicrophorus americanu*s)	Threatened	No, oak and hickory forests are present, and a farm animal dump is present with substantial carrion within the study area; however, the American burying beetle prefers large intact areas with little to no human disturbance.
	Monarch Butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
	Bald eagle (*Haliaeetus leucocephalus)*	None (BGEPA)	No, no suitable nesting trees observed within the study area.
Spiro, OK	Indiana bat (*Myotis sodalis*)	Endangered	**Yes, bridge provides suitable roosting habitat.**
	Northern long-eared bat (*Myotis septentrionalis)*	Threatened (Proposed Endangered)	**Yes, bridge provides suitable roosting habitat.**
	Tricolored Bat (*Perimyotis subflavu*s)	Proposed Endangered	**Yes, bridge provides suitable roosting habitat.**

Table O.2-1. Federally listed species and their potential occurrence at planned capital improvement sites and presence of suitable habitat

	Piping plover (*Charadrius melodus*)	Threatened	No, there is a stream and wetlands within the study area; however, given the high level of disturbance along the corridor, these would not be suitable nesting habitats. There is no breeding habitat present within the study area.
	Red knot (*Calidrus canutus rufa*)	Threatened	No, there is no breeding or non-breeding habitat within the study area.
	Scaleshell mussel (*Leptodea leptodon*)	Endangered	No, the medium-sized perennial stream within the study area does not contain good water quality and has been excavated near the culvert.
	American burying beetle (*Nicrophorus americanu*s)	Threatened	No, grasslands and open understory oak hickory forests are not present within the study area. The study area is disturbed and has been cleared.
	Monarch Butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
Heavener, OK	Indiana bat (*Myotis sodalis*)	Endangered	**Yes, bridges and culverts provide suitable roosting habitat.**
	Northern long-eared bat (*Myotis septentrionalis)*	Threatened	**Yes, bridges and culverts provide suitable roosting habitat.**
	Tricolored Bat (*Perimyotis subflavu*s)	Proposed Endangered	**Yes, bridges and culverts provide suitable roosting habitat.**
	Piping plover (*Charadrius melodus*)	Threatened	No, there are streams and wetlands within the study area; however, given the high level of disturbance along the corridor, these would not be suitable nesting habitats. There is no breeding habitat present within the study area.
	Red knot (*Calidrus canutus rufa*)	Threatened	No, there is no breeding or non-breeding habitat within the study area.
	Scaleshell mussel (*Leptodea leptodon*)	Endangered	No, the perennial streams within the study area have been heavily disturbed and altered due to excavation and straightening.
	American burying beetle (*Nicrophorus americanu*s)	Threatened	No, grasslands and open understory oak hickory forests are not present within the study area. The study area is disturbed and has been cleared.
	Monarch Butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.

Table O.2-1. Federally listed species and their potential occurrence at planned capital improvement sites and presence of suitable habitat

Capital Improvement	Species	Federal Status	Suitable Habitat Present within the Study Area?
MP 377 (Mena), AR	Northern long-eared bat (*Myotis septentrionalis)*	Threatened (Proposed Endangered)	**Yes, culverts provide suitable roosting habitat.**
	Eastern black rail (*Laterallus jamaicensis* spp. *Jamaicensis*)	Threatened	No, sedge meadows with dense cover are not present within the study area.
	Piping plover (*Charadrius melodus*)	Threatened	No, there are streams and wetlands within the study area; however, given the high level of disturbance along the corridor, these would not be suitable nesting habitats. There is no breeding habitat present within the study area.
	Red knot (*Calidrus canutus rufa*)	Threatened	No, there is no breeding or non-breeding habitat within the study area.
	Red-cockaded woodpecker (*Picoides borealis*)	Threatened	No, there are no longleaf pine forests within the study area.
	Arkansas fatmucket (*Lampsilis powellii*)	Threatened	No, the streams within the study area have been heavily altered due to excavation and straightening and do not provide suitable habitat.
	Rabbitsfoot (*Quadrula cylindrica cylindrica*)	Threatened	No, the streams within the study area have been heavily altered due to excavation and straightening and do not provide suitable habitat.
	Monarch butterfly (*Danaus plexippu*s)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
Mansfield, LA	Northern long-eared bat (*Myotis septentrionalis)*	Threatened (Proposed Endangered)	No, there are no suitable forested areas and no suitable roosting structures.
	Red-cockaded woodpecker (*Picoides borealis*)	Threatened	No, there are no longleaf pine forests within the study area.

Table O.2-1. Federally listed species and their potential occurrence at planned capital improvement sites and presence of suitable habitat

Capital Improvement	Species	Federal Status	Suitable Habitat Present within the Study Area?
	Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
	Geocarpon (*Geocarpon minimum*)	Threatened	No, saline prairies are not present within the study area.
Loring, LA	Red-cockaded woodpecker (*Picoides borealis*)	Threatened	No, there are no longleaf pine forests within the study area.
	Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
Singer, LA	Red-cockaded woodpecker (*Picoides borealis*)	Federally Threatened	No, there are no longleaf pine forests within the study area.
	Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
	American chaffseed (*Schwalbea amwericana*)	Federally Endangered	No, fire-maintained longleaf pine flatwoods and savannas are not present in the study area.

Table O.2-2. State-listed species known to occur or potentially occur in or near the planned capital improvement sites

Capital Improvement	Species	State Status	Suitable Habitat Present within the Study Area?
MP 71 (Turkey River), IA	Review letter from the Iowa Department of Natural Resources stated no state species or rare community records were found in the study area.		
MP 24 (Bellevue), IA	Review letter from the Iowa Department of Natural Resources stated no state species or rare community records were found in the study area.		
MP 75 (Monroe), IL	OEA did not conduct field work at the location of the planned new siding at MP 75 near Monroe Township in Ogle County, Illinois because the planned new siding would be located within the footprint of a previously removed second track and would therefore not result in any new impacts.		
Deer Creek, IA	Review letter from the Iowa Department of Natural Resources stated no state species or rare community records were found in the study area.		
Camanche, IA	Review letter from the Iowa Department of Natural Resources stated no state species or rare community records were found in the study area.		
Letts, IA	Review letter from the Iowa Department of Natural Resources stated no state species or rare community records were found in the study area.		
MP 255 (Washington), IA	Review letter from the Iowa Department of Natural Resources stated no state species or rare community records were found in the study area.		
Ottumwa, IA	Review letter from the Iowa Department of Natural Resources stated no state species or rare community records were found in the study area.		
Moravia, IA	Review letter from the Iowa Department of Natural Resources stated no state species or rare community records were found in the study area.		
Newtown, MO	Review letter from the Missouri Department of Conservation stated no state species or rare community records were found in the study area.		
Laredo, MO	Bald eagle (*Haliaeetus leucocephalus*)	Bald & Golden Eagle Protection Act (BGEPA)	No, despite the occurrence record within one mile of the site, no suitable roost trees were identified within the study area. No typical foraging habitat such as large rivers, lakes, or marshes were present in the study area, though the Grand River is located approximately 0.25 miles to the east of the study area. No nests were identified at the time of the field survey.

Table O.2-2. State-listed species known to occur or potentially occur in or near the planned capital improvement sites

Capital Improvement	Species	State Status	Suitable Habitat Present within the Study Area?
MP 431 (Dawn), MO	Bald eagle (*Haliaeetus leucocephalus*)	Bald & Golden Eagle Protection Act (BGEPA)	**Yes, a nest on site within the study area and a solitary, perching eagle in the vicinity of the nest was observed outside of the study area. Shoal Creek provides suitable foraging habitat outside of the study area.**
Blue Valley, MO	Tri-colored bat (*Perimyotis subflavus*)	S2 (Imperiled)	**Yes, bridges and a culvert provide suitable roosting habitat.**
Grandview/IFG, MO	Bald eagle (*Haliaeetus leucocephalus*)	Bald & Golden Eagle Protection Act (BGEPA)	No, despite the occurrence record within three miles of the site, no suitable roost trees were identified within the study area. No typical foraging habitat such as large rivers, lakes, or marshes were present in the study area.
	Auriculate false foxglove (*Agalinis auriculata*)	S3 (Vulnerable)	No, despite the occurrence record less than one mile of the study area, no prairies or prairie remnants were identified during field work.
	Northern metalmark (*Calephelis borealis*)	S1 (Critically imperiled)	No, despite the occurrence record less than one mile of the study area, no streams were identified during field work.
	Great plains skink (*Plestiodon obsoletus*)	S2 (Imperiled)	No, despite the occurrence record less than two miles of the study area, no rocky outcrops, canyons, prairies, or grasslands were identified during field work.
	Regal fritillary (*Speyeria idalia*)	S3 (Vulnerable)	No, despite the occurrence record near the study area, no open sites such as damp meadows, marshes, wet fields, or mountain pastures were identified during field work.
	Northern Harrier (*Circus hudsonius*)	S2 (Imperiled)	No, fields surrounding the study area provide suitable habitat for this species, but not within the study area. As surveyors approached the capital improvement site, they observed several individuals of this species; however, surveyors did not see any individuals of this species in the study area along the ROW.

Table O.2-2. State-listed species known to occur or potentially occur in or near the planned capital improvement sites

Capital Improvement	Species	State Status	Suitable Habitat Present within the Study Area?
Asbury, MO	Prairie Mole Cricket (*Gryllotalpa major*)	S3 (Vulnerable)	**Yes, grassland and herbaceous vegetation within the study area provide suitable habitat for this species. Surveyors did not identify any individuals of this species during field work.**
	Northern Crawfish Frog (*Lithobates areolatus circulosus*)	S3 (Vulnerable)	**Yes, wetland-upland mosaic within and adjacent to the study area provides suitable habitat for this species. Surveyors did not identify any individuals of this species during field work.**
MP 186, MO	Review letter from the Missouri Department of Conservation stated no state species or rare community records were found in the study area.		
Gentry, AR	Review letter from the Arkansas Heritage Commission stated no state species records were found in the study area.		
MP 247 (Baron), OK	Review letter from the Oklahoma Natural Heritage Inventory stated no state species records were found in the study area.		
Cave Springs, OK	Review letter from the Oklahoma Natural Heritage Inventory stated no state species records were found in the study area.		
Spiro, OK	Review letter from the Oklahoma Natural Heritage Inventory stated no state species records were found in the study area.		
Heavener, OK	Review letter from the Oklahoma Natural Heritage Inventory stated no state species records were found in the study area.		
MP 377 (Mena), AR	Ringed salamander (*Ambystoma*	INV (Inventory Element)	No, despite the occurrence record of this species within the study area, surveyors did not identify habitat for this species during field work. The area outside the railway ROW consisted almost entirely of cattle pasture with some upland scrub-shrub habitat along the ridges

Table O.2-2. State-listed species known to occur or potentially occur in or near the planned capital improvement sites

Capital Improvement	Species	State Status	Suitable Habitat Present within the Study Area?
	annulatum)		
Mansfield, LA	Review letter from the Louisiana Wildlife and Fisheries Department stated no state species or rare community records were found in the study area.		
Loring, LA	Review letter from the Louisiana Wildlife and Fisheries Department stated no state species or rare community records were found in the study area.		
Singer, LA	Review letter from the Louisiana Wildlife and Fisheries Department stated no state species or rare community records were found in the study area.		

Table O.2-3. Critical Habitat within 1 Mile of the Combined CPKC Railroad Network

Species Name	Species Type	Status	State	Segment	Description of Critical Habitat
Neosho Mucket (*Lampsilis rafinesqueana*)	Mussel	Endangered	Missouri	K-HEAV-01	Within the Elk River 0.5 mile from the railroad Within Shoal Creek, the railroad crosses over the creek and the creek runs parallel to the railroad for 4.5 miles Within the Spring River, the railroad crosses over the river
			Oklahoma		Within the Illinois River, the railroad crosses over the river
Poweshiek skipperling (*Oarisma poweshiek*)	Butterfly	Endangered	Minnesota	C-ELLA-04	Native prairie 0.5 mile from the railroad
				C-DELA-02	Native prairie 0.8 mile from the railroad
Rabbitsfoot (Quadrula cylindrica)	Mussel	Threatened	Arkansas	K-SHRE-02	Within the Little River, the railroad crosses over the river
			Missouri	K-HEAV-01	Within the Spring River, the railroad crosses over the river
Texas fawnsfoot (*Truncilla macrodon*)	Mussel	Proposed Threatened	Texas	U-BEAU-01	Within the Brazos River, the railroad crosses over the river
				K-ROSE-01	Within the Brazos River; 0.4 mile from the railroad
				K-ROSE-02	Within the Colorado River; the railroad crosses over the river
Texas pimpleback (*Cyclonaias petrina*)	Mussel	Proposed Endangered	Texas	K-ROSE-02	Within the Colorado River; the railroad crosses over the river

O.3 Field Work Data

O.3.1 Capital Improvement Field Work Site Summaries

MP 71 (Turkey River), IA

Field Work Date: 1/24/2022

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Open Water (Mississippi Backwaters)	N/A	
Wetland (Forested)	N/A	
Open Water (Mississippi Backwaters)	N/A	
Intermittent Stream	4 feet	24” reinforced concrete pipe (RCP)
Wetland (Forested)	N/A	None
Perennial Stream	4 feet	24” corrugated metal pipe (CMP)
Perennial Stream	16 feet	Crosses under wooden rail bridge
Perennial Stream	4 feet	24” RCP
Ephemeral Channel	2 feet	36” RCP
Open Water (Mississippi Backwaters)	N/A	
Perennial Stream	6 feet	20” Concrete box culvert
Wetland (Forested)	N/A	
Perennial Stream	3 feet	
Intermittent Stream	3 feet	
Perennial Stream	4 feet	36” RCP
Wetland (Forested)	N/A	
Wetland (Scrub Shrub)	N/A	
Open Water (Mississippi Backwaters)	N/A	

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Wetland (Emergent)	N/A	
Wetland (Scrub Shrub)	N/A	
Perennial Stream	4 feet	24" RCP
Perennial Stream	6 feet	24" RCP
Wetland (Forested)	N/A	
Wetland (Forested)	N/A	

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Northern long-eared bat (*Myotis septentrionalis*)	Federally Threatened (Proposed Endangered)	Yes, suitable summer roosting habitat is present throughout the study area. Multiple snags with small cavities and basal hollows were present along the railroad edge and directly adjacent to the study area. Three bridges and one concrete box culvert with suitable cracks and crevices for roosting bats were also present. The railroad ROW and streams not only act as flight corridors, but along with the forested wetlands on-site, provide foraging habitat for bats.
Higgens eye (pearlymussel) (*Lampsilis higginsii*)	Federally Endangered	No, bodies of water in the study area were not suitable for the Higgens eye mussel due to the near lentic conditions observed in bodies of water that were not frozen over.
Sheepnose mussel (*Plethobasus cyphyus*)	Federally Endangered	No, stream crossings in the study area were small (<16' wide), extremely shallow (<2' deep), and with little flow, and therefore would not likely serve as suitable habitat. Open waters in the study area were frozen over at the time of the survey but likely have lentic conditions unsuitable for the Sheepnose mussel.
Spectaclecase (mussel) (*Cumberlandia monodonta*)	Federally Endangered	No, large streams or rivers with suitable habitats bordering a main channel were not observed in the study area.
Iowa pleistocene snail (*Discus macclintocki*)	Federally Endangered	No, no talus slopes present within the study area.
Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Eastern prairie fringed orchid (*Platanthera leucophaea*)	Federally Threatened	No, no mesic prairies or wet sedge meadows present.
Northern wild monkshood (*Aconitum noveboracense*)	Federally Threatened	No, no talus slopes present.
Prairie bush-clover (*Lespedeza leptostachya*)	Federally Threatened	No, no prairies present.
Western prairie fringed orchid (*Platanthera praeclara*)	Federally Threatened	No, no prairies present.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Wooden Bridge	No	No	No, no suitable cracks or crevices	
Wooden Bridge	No	No	Yes, but poor quality	
11 x 7 x 50 Double box culvert	Yes (1 barn swallow)	No	Yes, suitable cracks, crevices, and rough surfaces for roosting bats	High quality, cracks within the culvert are deep and open.
Concrete and steel bridge	No	No	Yes, roosting habitat within expansion joints, cracks, crevices, and rough surfaces	Bridge very low to ground, unable to fully survey due to safety concerns.

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- Wetlands: The most abundant habitat type across the site, wetlands were located directly adjacent to the railroad ROW, sloping gradually down to the backwaters of the Mississippi River. Wetland classifications include a mix of forested, scrub/shrub, and emergent wetlands.
- Rail/Transportation ROW – heavily maintained railroad corridor. Use of herbicides, mechanical clearing, and placement of ballast leaves most of this study area barren.
- Mississippi Backwaters – Consist of the "open waters" as delineated and described in the waters section. These are portions of the Mississippi River where the current does not reach, and the water is stagnant.

Representative Plant Species List		
Scientific Name	**Common Name**	**Status**
Acer saccharum	Sugar Maple	FACU
Agastache nepetoides	Yellow Giant-Hyssop	FACU
Alopecurus sp. or *Setaria* sp.	Foxtail	---
Amorpha canescens	Lead Plant	UPL

Representative Plant Species List		
Scientific Name	**Common Name**	**Status**
Chasmanthium latifolium	Indian wood oats	FACW
Cirsium vulgare	Bull Thistle	FACU*
Daucus carota	Queen Anne's-Lace	UPL
Fraxinus pennsylvanica	Green Ash	FACW
Gleditsia triacanthos	Honey-Locust	FAC
Juniperus virginiana	Eastern Red-Cedar	FACU
Paniucum sp.	Panic Grass	---
Populus deltoides	Eastern Cottonwood	FAC
Rhus typhina	Staghorn Sumac	UPL
Rubus occidentalis	Black Raspberry	---
Salix nigra	Black Willow	OBL
Solidago sp.	Goldenrod	UPL/FACU
Verbascum thapsus	Great Mullein	FACU
Vitis aestivalis	Summer Grape	FACU
Xanthium strumarium	Rough Cockleburr	FAC

** = Invasive; FACU = Facultative Upland, UPL = Upland, FACW = Facultative Wet, FAC = Facultative, UPL = Upland, OBL = Obligate/wetland*

MP 24 (Bellevue), IA

Field Work Date: January 24, 2021

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Perennial Stream	50-60 feet wide	Spruce Creek. Flowing east to west, towards Mississippi River; fed by two tributaries that are outside the project limits

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Northern Long-eared Bat (*Myotis septentrionalis*)	Federally Threatened (Proposed Endangered)	Yes, roosting habitat present in forested areas along edges of railroad ROW, on Spruce Creek bridge, and in multiple culverts along study area. Foraging habitat is present along forested edges of railroad ROW, adjacent roads, and Spruce Creek riparian corridor.
Higgens Eye Pearlymussel (*Lampsilis higginsii*)	Federally Endangered	No, there are no large rivers with deep water and moderate current within the study area.
Sheepnose Mussel *(Plethobasus cyphyus)*	Federally Endangered	No, there are no large rivers or streams present within the study area.
Iowa Pleistocene Snail (*Discus macclintocki*)	Federally Endangered	No, there are no algific talus slopes within the study area.
Monarch Butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
Eastern Prairie Fringed Orchid (*Platanthera leucophaea*)	Federally Threatened	No, there are no mesic prairies within the study area.
Northern Wild Monkshood (*Aconitum noveboracense*)	Federally Threatened	No, there are no algific talus slopes or partially shaded cliffs within the study area.
Prairie Bush-clover (*Lespedeza leptostachya*)	Federally Threatened	No, there are no prairies within the study area.
Western Prairie Fringed Orchid (*Platanthera praeclara*)	Federally Threatened	No, there are no prairies within the study area.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
6’ x 7’ Concrete Box Culvert	None	None	Suitable summer roosting habitat in crevices and rough surfaces	

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
30-inch RCP	None	None	Low roosting potential due to size	Snow covered
30-inch RCP	None	None	Low roosting potential due to size	Snow covered
Concrete Railroad Bridge	None	None	Suitable summer roosting habitat in crevices, expansion joints, and rough surfaces	Several bird nests

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- General Land Use/Habitat:
  - Residential – low density residential developments extending along most of the eastern side of the study area between CP line and Mississippi River
  - Agricultural – Agricultural fields extending along most of the western side of the study area between CP line and 395th Street
  - Spruce Creek Park – located in the southeastern portion of the study area along Spruce Creek between CP line and Mississippi River
  - Bottomland Forest – two small portions of bottomland forest. One is located just north of Spruce Creek Park and the other at the northern end of the study area. Both provide roosting and foraging habitat for federally protected bats
  - Railroad ROW – heavily maintained railroad corridor. Use of herbicides, mechanical clearing, and placement of ballast leaves most of this study area barren.

Representative Plant Species List		
Scientific Name	**Common Name**	**Status**
Acer negundo	Boxelder	FAC
Acer saccharinum	Silver maple	FACW
Daucus carota	Queen Ann's lace	UPL
Dipsacus fullonum	Fuller's teasel	FACU
Fraxinus americana	White ash	FACU
Juniperus virginiana	Eastern redcedar	FACU
Oxypolis rigidior	Stiff cowbane	OBL
Populus grandidentata	Bigtooth aspen	UPL
Quercus palustris	Pin oak	FACW
Quercus rubra	Northern red oak	FACU
Rubus armeniacus	Himalayan blackberry	UPL
Solidago canadensis	Canada goldenrod	FACU

** = Invasive; FACU = Facultative Upland, UPL = Upland, FACW = Facultative Wet, FAC = Facultative, UPL = Upland, OBL = Obligate/wetland*

Deer Creek, IA

Field Work Date: 1/25/2022

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Perennial Stream	6 feet	42" CMP
Perennial Stream	3 feet	5 ft x 3 ft concrete box culvert
Perennial Stream	10 feet	Concrete bridge
Wetland (Forested)	N/A	
Perennial Stream	30 feet	Concrete bridge
Wetland (Forested)	N/A	

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Northern long-eared bat (*Myotis septentrionalis*)	Federally Threatened (Proposed Endangered)	Yes, suitable summer roosting habitat is present throughout the study area. Multiple snags with small cavities were present along the railroad edge and directly adjacent to the study area. Two bridges and one concrete box culvert with suitable cracks and crevices for roosting bats were also present. The railroad ROW and streams not only act as flight corridors, but along with the forested wetlands on-site, provide foraging habitat for bats.
Eastern massasauga (*Sistrurus catenatus*)	Federally Threatened	No, side of impact contained no suitable wet prairies or low areas.
Higgens eye (pearlymussel) (*Lampsilis higginsii*)	Federally Endangered	No, stream crossings in the study area were frozen over at the time of the survey but appeared to be too small (<30' wide).
Iowa Pleistocene snail (*Discus macclintocki*)	Federally Endangered	No, no talus slopes present within the study area.
Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
Eastern prairie fringed orchid (*Platanthera leucophaea*)	Federally Threatened	No, no mesic prairies or wet sedge meadows present.
Prairie bush-clover (*Lespedeza leptostachya*)	Federally Threatened	No, no prairies present.

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Western prairie fringed orchid (*Platanthera praeclara*)	Federally Threatened	No, no prairies present.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
42" CMP	0	0	No	No suitable cracks, crevices, or surfaces for roosting bats. Appears to be flooded too regularly.
Concrete box culvert (5' x 3')	0	0	Yes	Interior of culvert not surveyed for bats due to unsafe conditions. Contains suitable cracks and crevices for roosting bats.
Concrete and steel bridge	0	0	Yes	Bridge not surveyed for bats from underneath due to unsafe conditions.
Concrete and steel bridge	0	0	Yes	Bridge not surveyed for bats from underneath due to unsafe conditions.

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- Upland Mixed Hardwood – This habitat type was present on the western side of the track, typically on relatively steep slopes. Characterized by hardwood overstory and scattered herbaceous species.
- Bottomland Hardwood – This habitat type was present on the eastern side of the rail towards the south of the site's boundary, sloping down to the Mississippi River. Majority of habitat type covered by a forested wetland.
- Rail/Transportation ROW – heavily maintained railroad corridor. Use of herbicides, mechanical clearing, and placement of ballast leaves most of this study area barren.
- Mississippi River – The Mississippi River dominates the eastern portion of the existing ROW, though is not in the area of the proposed construction.

Representative Plant Species List		
Scientific Name	**Common Name**	**Status**
Agastache nepetoides	Yellow Giant-Hyssop	FACU
Alopecurus sp. or *Setaria* sp.	Foxtail	---
Amorpha canescens	Lead Plant	---
Carya sp.	Hickory	FACU
Celtis occidentalis	Common Hackberry	FACU
Chasmanthium latifolium	Indian Wood Oats	FACW
Cirsium vulgare	Bull Thistle	FACU*
Daucus carota	Queen Anne's-Lace	UPL
Fraxinus pennsylvanica	Green Ash	FACW
Juniperus virginiana	Eastern Red-Cedar	FACU
Populus deltoides	Eastern Cottonwood	FAC
Rhus typhina	Staghorn Sumac	UPL
Rubus occidentalis	Black Raspberry	---
Silphium terebinthinaceum	Prairie Dock	FAC
Solidago sp.	Goldenrod	---
Ulmus americana	American Elm	FACW
Verbascum thapsus	Great Mullein	FACU
Vitis aestivalis	Summer Grape	FACU

** = Invasive; FACU = Facultative Upland, UPL = Upland, FACW = Facultative Wet, FAC = Facultative, UPL = Upland*

Camanche, IA

Field Work Date: 1/25/2022

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Perennial Stream	60 feet	Mill Creek, blue line stream flowing to Mississippi River, steel rail bridge.
Perennial Stream	10 feet	Drains from wastewater treatment area to pond. May be jurisdictional. 36" RCP leads out of study area to pond.

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Northern long-eared bat (*Myotis septentrionalis*)	Federally Threatened (Proposed Endangered)	No, the study area is characterized by industrial land use and disturbed ROW. There are no suitable snags or live trees large enough for roosting bats. Though there are some bridges and culverts present, they provide poor quality roosting habitat with few to no cracks or crevices suitable for resting bats.
Eastern massasauga (*Sistrurus catenatus*)	Federally Threatened	No, the study area contained no suitable wet prairies or low areas.
Higgens eye (pearlymussel) (*Lampsilis higginsii*)	Federally Endangered	No, Mill Creek appeared to have a lentic flow regime, whereas the Higgens eye mussel prefers moderately flowing water. Mill Creek was covered in patches of ice at the time of the survey. The other stream was fragmented and too small (<10' wide) to support the Higgens eye mussel.
Iowa Pleistocene snail (*Discus macclintocki*)	Federally Endangered	No, no talus slopes present within the study area.
Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
Eastern prairie fringed orchid (*Platanthera leucophaea*)	Federally Threatened	No, no mesic prairies or wet sedge meadows present.
Prairie bush-clover (*Lespedeza leptostachya*)	Federally Threatened	No, no prairies present.
Western prairie fringed orchid (*Platanthera praeclara*)	Federally Threatened	No, no prairies present.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Steel Rail Bridge	0	0	No	Not fully surveyed for bats due to unsafe conditions underneath the bridge.

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- Rail/Transportation ROW – heavily maintained railroad corridor. Use of herbicides, mechanical clearing, and placement of ballast leaves most of this study area barren.
- Industrial – Industrial complexes were present directly adjacent to the site, though only their paved and gravel parking lots were within the study area.
- Disturbed Scrub/Shrub – Early-successional habitats surrounding the perennial stream draining from the water treatment plant. Still maintained, but not as frequently as the rail/transportation ROW.

Representative Plant Species List		
Scientific Name	**Common Name**	**Status**
Acer sp.	Maple	---
Alopecurus sp. or *Setaria* sp.	Foxtail	---
Amorpha canescens	Lead Plant	---
Asclepias syriaca	Common Milkweed	FACU
Cirsium vulgare	Bull Thistle	FACU*
Daucus carota	Queen Anne's-Lace	UPL
Juniperus virginiana	Eastern Red-Cedar	FACU
Phragmites australis	Common Reed	FACW
Platanus occidentalis	American Sycamore	FACW
Rhus typhina	Staghorn Sumac	UPL
Solidago sp.	Goldenrod	---
Verbascum thapsus	Great Mullein	FACU
Viburnum sp.	Viburnum	---
Vitis aestivalis	Summer Grape	FACU

** = Invasive; FACU = Facultative Upland, UPL = Upland, FACW = Facultative Wet, FAC = Facultative, UPL = Upland*

Letts, IA

Field Work Date: 1/25/2022

Waters

Field Name	Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Railside Ditch (Object IDs: 822-829)	Ephemeral ditch running parallel to track for the length of the project	2-4 feet	Two culverts under railroad equipment – one 36" CMP, one 36" corrugated plastic pipe

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Indiana Bat (*Myotis sodalis*)	Federally Endangered	Yes, roosting habitat present in edges of forested areas bordering railroad ROW. Marginal roosting habitat present in cracks and crevices on US 61 NB and SB Bridges over CP rail line. Foraging habitat is present along railroad corridor and forested edges of adjacent agricultural field.
Northern Long-eared Bat (*Myotis septentrionalis*)	Federally Threatened (Proposed Endangered)	Yes, roosting habitat present in edges of forested areas bordering railroad ROW. Marginal roosting habitat present in cracks and crevices on US 61 NB and SB Bridges over CP rail line. Foraging habitat is present along railroad corridor and forested edges of adjacent agricultural field.
Higgens Eye Pearlymussel (*Lampsilis higginsii*)	Federally Endangered	No, there are no large rivers with deep water and moderate current within the study area.
Sheepnose Mussel (*Plethobasus cyphyus*)	Federally Endangered	No, there are no large rivers or streams present within the study area.
Spectaclecase Mussel (*Cumberlandia monodonta*)	Federally Endangered	No, there are no large rivers present within the study area.
Monarch Butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
Eastern Prairie Fringed Orchid (*Platanthera leucophaea*)	Federally Threatened	No, there are no mesic prairies within the study area.
Prairie Bush-clover (*Lespedeza leptostachya*)	Federally Threatened	No, there are no prairies within the study area.
Western Prairie Fringed Orchid (*Platanthera praeclara*)	Federally Threatened	No, there are no prairies within the study area.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Concrete Bridge (US 61 Southbound)		None	Yes, in cracks, crevices, and expansion joints	
Concrete Bridge (US 61 Northbound)		None	Yes, in cracks, crevices, and expansion joints	
36" Corrugated Plastic Pipe	None	None	No	Carrying rail side ditch under railroad equipment
36" CMP	None	None	No	Carrying rail side ditch under railroad equipment
24" CMP	None	None	No	Drainage from adjacent bridge abutment

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- General Land Use/Habitat:
  - Railroad ROW – heavily maintained railroad corridor. Use of herbicides, mechanical clearing, and placement of ballast leaves most of this study area barren. The railroad sits lower than the surrounding area and has wet ditches running along the sides. The northern ditch runs the full length of the study area and has multiple culverts. The southern ditch is intermittent and appears to have wet areas and dry areas.
  - Agricultural – entire length of project is surrounded by agricultural fields
  - Forested buffer zone – 80-120-foot-wide narrow strip of forest separating CP line and adjacent agricultural fields

Representative Plant Species List		
Scientific Name	**Common Name**	**Status**
Equisetum sp.	Horsetail	---
Fraxinus americana	White ash	FACU
Monarda fistulosa	Wild bergamot	FACU
Populus deltoides	Eastern cottonwood	FAC
Prunus serotina	Black cherry	FACU
Rhus glabra	Smooth sumac	---
Solidago sp.	Goldenrod	---
Ulmus americana	American elm	FAC

FACU = Facultative Upland, UPL = Upland, FAC = Facultative, UPL = Upland

MP 255 (Washington), IA

Field Work Date: 1/26/2022

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Perennial Stream	3 feet	42" CMP
Ephemeral Channel	3 feet	48" CMP
Perennial Stream	30 feet	Concrete arch culvert, blue line stream, South Fork Long Creek

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Indiana bat (*Myotis sodalis*)	Federally Endangered	Yes, suitable summer roosting habitat is present, but only within the various structures within the study area as well as within the mixed hardwood forest on the eastern end of the project. The railroad ROW and streams act as foraging or flight corridors.
Northern long-eared bat (*Myotis septentrionalis*)	Federally Threatened (Proposed Endangered)	Yes, suitable summer roosting habitat is present, but only within the various structures within the study area as well as within the mixed hardwood forest on the eastern end of the project. The railroad ROW and streams act as foraging or flight corridors.
Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
Eastern prairie fringed orchid (*Platanthera leucophaea*)	Federally Threatened	No, no mesic prairies or wet sedge meadows present.
Prairie bush-clover (*Lespedeza leptostachya*)	Federally Threatened	No, no prairies present.
Western prairie fringed orchid (*Platanthera praeclara*)	Federally Threatened	No, no prairies present.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Concrete arch culvert	0	0	Yes	Structure not surveyed completely for bats due to unsafe conditions within the culvert.
42" CMP	0	0	No	Culvert looks too short to support bats. Not fully surveyed for bats due to unsafe conditions.
48" CMP	0	0	No	Culvert looks too short to support bats. Not fully surveyed for bats due to unsafe conditions.
Concrete/Stone arch culvert	0	0	Yes	Not fully surveyed for bats due to unsafe conditions.
Concrete arch culvert	0	0	Yes	Not fully surveyed for bats due to unsafe conditions.

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- Agriculture – Agricultural fields with corn crops dominated the majority of the area within and directly adjacent to the study area for this site.
- Rail/Transportation ROW - heavily maintained railroad corridor. Use of herbicides, mechanical clearing, and placement of ballast leaves most of this study area barren.
- Scrub Shrub – Portions of scrub shrub habitat directly abut the rail ROW with larger sections on the eastern end of the project.
- Mixed Hardwood Forest – The mixed hardwood habitat is present on the eastern end of the project, especially in the riparian zone surrounding South Fork Long Creek. Though dominated by overstory trees, this forest was more cluttered with understory shrubs and saplings than other sites.

Representative Plant Species List		
Scientific Name	**Common Name**	**Status**
Acer saccharinum	Silver Maple	FACW
Alopecurus sp. or *Setaria* sp.	Foxtail	---
Asclepias syriaca	Common Milkweed	FACU
Coreopsis tripteris	Tall Tickseed	FAC
Daucus carota	Queen Anne's-Lace	UPL
Gleditsia triacanthos	Honey-Locust	FAC
Glycine max	Soybean	---
Phytolacca americana	American Pokeweed	FACU
Prunus serotina	Black Cherry	FACU
Quercus imbricaria	Shingle Oak	FAC
Rhus typhina	Staghorn Sumac	UPL

Representative Plant Species List		
Scientific Name	**Common Name**	**Status**
Silphium laciniatum	Compassplant	---
Silphium terebinthinaceum	Prairie Dock	FAC
Smilax sp.	Greenbrier	---
Verbascum thapsus	Great Mullein	FACU
Zea sp.	Corn	---

FACU = Facultative Upland, UPL = Upland, FACW = Facultative Wet, FAC = Facultative, UPL = Upland

Ottumwa, IA

Field Work Date: 1/26/2022

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Ephemeral channel – railside ditch	4 feet	Railside ditch flowing east
Ephemeral channel – agricultural drainage	3 feet	Draining adjacent agricultural field towards rail side ditch. Flowing south
Ephemeral channel – erosional ditch	4 feet	Draining adjacent forested area; flowing south
Ephemeral channel – railside ditch	4 feet	Railside ditch flowing northeast towards Stream 1
Wetland (Shrub-scrub). Riparian wetland surrounding Stream 1	N/A	Extends north outside of study area. PSS within study area, PFO to the north
Perennial Stream	4-6 feet	Flowing south through 5'x6' concrete box culvert. Draining adjacent wetland
Ephemeral channel – railside ditch	3 feet	Flowing southwest. Drains into wetland
Ephemeral channel – agricultural drainage	2 feet	Drainage for adjacent agricultural field. Flowing south
Ephemeral channel – railside ditch	2 feet	Flowing southwest along railway

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Indiana bat(*Myotis sodalis*)	Federally Endangered	Yes, roosting habitat present in edges of forested areas bordering railroad ROW. Marginal roosting habitat present in cracks and crevices within 5'x6' concrete box culvert. Foraging habitat present along railroad study area and forested edges of adjacent agricultural fields.
Northern long-eared bat (*Myotis septentrionalis*)	Federally Threatened (Proposed Endangered)	Yes, roosting habitat present in edges of forested areas bordering railroad ROW. Marginal roosting habitat present in cracks and crevices within 4'x6' concrete box culvert. Foraging habitat present along railroad study area and forested edges of adjacent agricultural fields.

Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
Eastern prairie fringed orchid (*Platanthera leucophaea*)	Federally Threatened	No, there are no mesic prairies within the study area.
Prairie bush-clover (*Lespedeza leptostachya*)	Federally Threatened	No, there are no prairies within the study area.
Western prairie fringed orchid (*Platanthera praeclara*)	Federally Threatened	No, there are no prairies within the study area.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
5'x6' Concrete Box Culvert	None	None	Marginal roosting habitat in cracks and crevices	
30" RCP	None	None	No – partially buried and snow covered	

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- General Land Use/Habitat:
  - Railroad ROW – heavily maintained railroad corridor. Use of herbicides, mechanical clearing, and placement of ballast leaves most of this study area barren
  - Agricultural – northern side of study area bordered by agricultural fields and an oil wholesaler – Buckeye Terminal
  - Bottomland Forest – two portions of riparian bottomland forest bordering drainages at the western end of the study area and in the center
  - Highway 34 ROW – maintained ROW corridor of adjacent roadway borders study area along the entire study area on the southern side

Representative Plant Species List		
Scientific Name	**Common Name**	**Status**
Acer saccharinum	Silver maple	FACW
Andropogon ternarius	Splitbeard bluestem	FACU
Betula nigra	River birch	FACW
Celtis occidentalis	Common hackberry	FAC
Eupatorium capillifolium	Dogfennel	FACU
Prunus serotina	Black cherry	FACU
Quercus macrocarpa	Bur oak	FAC
Ulmus americana	American elm	FAC
Verbascum thapsus	Common mullein	UPL

FACU = Facultative Upland, UPL = Upland, FACW = Facultative Wet, FAC = Facultative, UPL = Upland

Moravia, IA

Field Work Date: 1/27/2022

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Perennial Stream	3 feet	
Perennial Stream	4 feet	30” Cast Iron Pipe (CIP)
Wetland (Shrub-scrub)	N/A	None
Perennial Stream	4 feet	Wooden rail bridge
Ephemeral Channel	2 feet	20” CIP
Intermittent Stream	3 feet	20” CIP
Perennial Stream	4 feet	20” CIP
Intermittent Stream	3 feet	20” CIP
Perennial Stream	4 feet	20” CIP
Intermittent Stream	2 feet	30” CIP
Perennial Stream	4 feet	20” CIP
Intermittent Stream	2 feet	20” CIP
Intermittent Stream	1 foot	24” CIP
Intermittent Stream	1 foot	20” CIP
Intermittent Stream	3 feet	20” CIP

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Indiana bat (*Myotis sodalis*)	Federally Endangered	Yes, marginally suitable summer roosting habitat is scattered within study area. Though most of the habitat adjacent to the railway had scattered trees in scrub/shrub habitat or was forested, these habitats are only 50 feet wide and directly abut cropland and livestock pastures. Additionally, all of the pipes carrying the rail line over streams were too small to provide suitable roosting habitat, though the one wooden rail bridge provided low-quality roosting habitat. The railroad ROW and streams act as flight and foraging corridors.
Northern long-eared bat (*Myotis septentrionalis*)	Federally Threatened (Proposed Endangered)	Yes, marginally suitable summer roosting habitat is scattered within study area. Though most of the habitat adjacent to the railway had scattered trees in scrub/shrub habitat or was forested, these habitats are only 50 feet wide and directly abut cropland and livestock pastures. Additionally, all of the pipes carrying the rail line over streams were too small to provide suitable roosting habitat, though the one wooden rail bridge provided low-quality roosting habitat. The railroad ROW and streams act as flight and foraging corridors.
Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
Eastern prairie fringed orchid (*Platanthera leucophaea*)	Federally Threatened	No, no mesic prairies or wet sedge meadows present.
Prairie bush-clover (*Lespedeza leptostachya*)	Federally Threatened	No, no prairies present.
Western prairie fringed orchid (*Platanthera praeclara*)	Federally Threatened	No, no prairies present.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Wooden rail bridge	0	0	Yes	Low quality roosting habitat

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- Scrub Shrub – Scrub shrub habitat was most prevalent on the northern side of the rail line, directly abutting crop fields and livestock pastures up slope.
- Rail/Transportation ROW - heavily maintained railroad corridor. Use of herbicides, mechanical clearing, and placement of ballast leaves most of this study area barren.
- Mixed Hardwood Forest – Most prevalent on the northeastern side of the site, this habitat was characterized by overstory trees with a cluttered understory of shrubs and saplings.

Representative Plant Species List		
Scientific Name	**Common Name**	**Status**
Acer negundo	Boxelder	FAC
Acer sp.	Maple	---
Alopecurus sp. or *Setaria* sp.	Foxtail	---
Asparagus officinalis	Asparagus	FACU
Boehmeria cylindrica	Small-Spike False Nettle	FACW
Chasmanthium latifolium	Indian Wood Oats	FACW
Coreopsis tripteris	Tall Tickseed	FAC
Daucus carota	Queen Anne's-Lace	UPL
Gleditsia triacanthos	Honey-Locust	FAC
Juglans nigra	Black Walnut	FACU
Juniperus virginiana	Eastern Red-Cedar	FACU
Phytolacca americana	American Pokeweed	FACU
Prunus serotina	Black Cherry	FACU
Quercus imbricaria	Shingle Oak	FAC
Quercus macrocarpa	Burr Oak	FAC
Rhus typhina	Staghorn Sumac	UPL
Rubus occidentalis	Black Raspberry	---
Salix nigra	Black Willow	OBL
Silphium terebinthinaceum	Prarie Dock	FAC
Solanum carolinense	Carolina Horse-Nettle	FACU
Solidago sp.	Goldenrod	UPL/FACU
Verbascum thapsus	Great Mullein	FACU
Vitis aestivalis	Summer Grape	FACU

FACU = Facultative Upland, UPL = Upland, FACW = Facultative Wet, FAC = Facultative, UPL = Upland, OBL = Obligate/wetland

Newtown, MO

Field Work Date: 1/27/2022

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Perennial stream	8-10 feet wide	Flowing west to east under CP rail line
Ephemeral channel – rail side ditch	2-4 feet wide	Flowing south
Ephemeral channel – rail side ditch	2 feet	Flowing north

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Gray Bat (*Myotis grisescens*)	Federally Endangered	No, no caves are within the study area. The study area is heavily maintained and contains no forested areas. Mostly open edges of ROW and adjacent agricultural areas. No suitable foraging habitat is present.
Indiana Bat (*Myotis sodalis*)	Federally Endangered	Yes, marginal roosting habitat is present in wood/metal bridge. The study area is heavily maintained and contains no forested areas. Mostly open edges of ROW and adjacent agricultural areas. No suitable foraging habitat.
Northern Long-eared Bat (*Myotis septentrionalis*)	Federally Threatened (Proposed Endangered)	Yes, marginal roosting habitat is present in wood/metal bridge. The study area is heavily maintained and contains no forested areas. Mostly open edges of ROW and adjacent agricultural areas. No suitable foraging habitat.
Tricolored Bat (*Perimyotis subflavus*)	Federally Proposed Endangered	Yes, marginal roosting habitat is present in wood/metal bridge. The study area is heavily maintained and contains no forested areas. Mostly open edges of ROW and adjacent agricultural areas. No suitable foraging habitat.
Monarch Butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
Mead's Milkweed (*Asclepias meadii*)	Federally Threatened	No, no mesic tallgrass prairies present within the study area.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Wood/Metal Bridge	None	None	Marginal summer roosting habitat	Wooden bridge structure on east side

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- General Land Use/Habitat:
  - Railroad ROW – heavily maintained railroad corridor. Use of herbicides, mechanical clearing, and placement of ballast leaves most of this study area barren
  - Agricultural – eastern side of study area bordered by agricultural fields. Little to no woody buffer between CP line and agricultural fields
  - Highway 139 ROW – maintained ROW corridor of adjacent roadway borders study area along the entire study area on the western side. Little to no woody vegetation

Representative Plant Species List		
Scientific Name	**Common Name**	**Status**
Acer nigrum	Black maple	FACU
Erigeron sp.	Fleabane	--
Fraxinus pennsylvanica	Green ash	FACW
Populus deltoides	Eastern cottonwood	FAC
Quercus montana	Chestnut oak	FACU
Setaria faberi	Japanese bristlegrass	FACU

FACU = Facultative Upland, FACW = Facultative Wet, FAC = Facultative

Laredo, MO

Field Work Date: 1/28/2022

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Intermittent Stream	3 feet	Small iron pipe culvert
Wetland (Forested)	N/A	
Perennial Stream	4 feet	48" CIP

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Gray Bat (*Myotis grisescens*)	Federally Endangered	No, no caves were identified within or near the study area.
Indiana Bat (*Myotis sodalis*)	Federally Endangered	Yes, marginally suitable summer roosting habitat is scattered within the study area. Though most of the habitat adjacent to the railway had scattered trees in scrub/shrub habitat or was forested, these habitats are only approximately 50 feet wide and directly abut cropland and livestock pastures. Additionally, all of the pipes carrying the rail line over streams were too small to provide suitable roosting habitat, though the one wooden rail bridge provided low-quality roosting habitat. The railroad ROW and streams act as flight and foraging corridors.
Northern Long-eared Bat (*Myotis septentrionalis*)	Federally Threatened (Proposed Endangered)	Yes, marginally suitable summer roosting habitat is scattered within the study area. Though most of the habitat adjacent to the railway had scattered trees in scrub/shrub habitat or was forested, these habitats are only approximately 50 feet wide and directly abut cropland and livestock pastures. Additionally, all of the pipes carrying the rail line over streams were too small to provide suitable roosting habitat, though the one wooden rail bridge provided low-quality roosting habitat. The railroad ROW and streams act as flight and foraging corridors.

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Tricolored Bat (*Perimyotis subflavus*)	Federally Proposed Endangered	Yes, marginally suitable summer roosting habitat is scattered within the study area. Though most of the habitat adjacent to the railway had scattered trees in scrub/shrub habitat or was forested, these habitats are only approximately 50 feet wide and directly abut cropland and livestock pastures. Additionally, all of the pipes carrying the rail line over streams were too small to provide suitable roosting habitat, though the one wooden rail bridge provided low-quality roosting habitat. The railroad ROW and streams act as flight and foraging corridors.
Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.

Eastern prairie fringed orchid (*Platanthera leucophaea*)	Federally Threatened	No, no mesic prairies or wet sedge meadows present.
Bald eagle (*Haliaeetus leucocephalus*)	None (BGEPA)	No, despite the occurrence record within one mile of the site, no suitable roost trees were identified within the study area. No typical foraging habitat such as large rivers, lakes, or marshes were present in the study area, though the Grand River is located approximately 0.25 miles to the east of the study area. No nests were identified at the time of the field survey.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
48" CIP	0	0	No	The culvert is too small and too frequently inundated for roosting bats. Also, no suitable cracks or crevices are present.

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- Agricultural – Small parcel of agricultural land present on the southernmost portion of the study area.
- Rail/Transportation ROW - Areas on and around the rail line. These sections were clear and dominated by herbaceous and shrubby species. ROW maintained with mechanical clearing,

herbicides, and ballast placement.

- Mixed Hardwood Forest – Habitat was characterized by overstory trees with a cluttered understory of shrubs, saplings, and herbaceous species. On the side of the proposed re-alignment, this mixed hardwood habitat was only approximately 50 feet wide, directly abutting crop and pastureland. On the eastern side of the rail opposite of the proposed realignment, the hardwood forest was wider, with the largest portion along the riparian zone of a tributary stream to the Grand River.
- Scrub Shrub - Scrub shrub habitat was most prevalent on the western side of the rail line, directly abutting crop fields and livestock pastures.

Representative Plant Species List		
Scientific Name	**Common Name**	**Status**
Alopecurus sp. or *Setaria* sp.	Foxtail	---
Andropogon glomeratus	Bushy Bluestem	FACW
Andropogon virginicus	Broom-Sedge	FACU
Arctium minus	Lesser Burrdock	FACU
Boehmeria cylindrica	Small-Spike False Nettle	FACW
Celtis occidentalis	Common Hackberry	FACU
Cirsium vulgare	Bull Thistle	FACU*
Gleditsia triacanthos	Honey-Locust	FAC
Glycine max	Soybean	---
Juniperus virginiana	Eastern Red-Cedar	FACU
Maclura pomifera	Osage-Orange	UPL
Panicum virgatum	Wand Panic Grass	FAC
Phytolacca americana	American Pokeweed	FACU
Quercus macrocarpa	Burr Oak	FAC
Rubus occidentalis	Black Raspberry	---
Solidago sp.	Goldenrod	---
Symphoricarpos orbiculatus	Coralberry	FACU
Ulmus sp.	Elm	---
Verbascum thapsus	Great Mullein	FACU
Vitis aestivalis	Summer Grape	FACU
Xanthium strumarium	Rough Cockleburr	FAC
Zea sp.	Corn	---

** = Invasive; FACU = Facultative Upland, UPL = Upland, FACW = Facultative Wet, FAC = Facultative, UPL = Upland*

MP 431, MO

Field Work Date: 1/28/2022

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
PFO – forested wetland at toe of slope of railroad fill	N/A	Northwest of railroad
Ephemeral channel – ditch	10 feet	Ditch connecting wetland areas outside of study area
Perennial/Intermittent	12 feet	Drainage for adjacent wetland along toe of slope of railroad fill
PFO – forested wetland at toe of slope of railroad fill	N/A	Northwest of railroad

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Gray Bat (*Myotis grisescens*)	Federally Endangered	No, no caves present within the study area. Foraging habitat is present along railroad corridor, forested edges of adjacent agricultural fields, and riparian corridor of adjacent stream (Shoal Creek).
Indiana Bat (*Myotis sodalis*)	Federally Endangered	Yes, roosting habitat present in edges of forested areas bordering railroad ROW. Marginal roosting habitat present in cracks and crevices on two concrete railroad bridges. Foraging habitat is present along railroad corridor, forested edges of adjacent agricultural fields, and riparian corridor of adjacent stream (Shoal Creek).
Northern Long-eared Bat (*Myotis septentrionalis*)	Federally Threatened (Proposed Endangered)	Yes, roosting habitat present in edges of forested areas bordering railroad ROW. Marginal roosting habitat present in cracks and crevices on two concrete railroad bridges. Foraging habitat is present along railroad corridor, forested edges of adjacent agricultural fields, and riparian corridor of adjacent stream (Shoal Creek).
Tricolored Bat (*Perimyotis subflavus*)	Federally Proposed Endangered	Yes, roosting habitat present in edges of forested areas bordering railroad ROW. Marginal roosting habitat present in cracks and crevices on two concrete railroad bridges. Foraging habitat is present along railroad corridor, forested edges of adjacent agricultural fields, and riparian corridor of adjacent stream (Shoal Creek).

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
Bald eagle (*Haliaeetus leucocephalus)*	BGEPA	Yes, nest on site within study area and a solitary, perching eagle in the vicinity of the nest was observed outside of the study area. Foraging habitat is present in Shoal Creek, just outside the study area.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Concrete Bridge 1	None	None	Yes	
Concrete Bridge 2	None	None	Yes	

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- General Land Use/Habitat:
  - Railroad ROW – heavily maintained railroad corridor. Use of herbicides, mechanical clearing, and placement of ballast leaves most of this corridor barren
  - Bottomland Forest – northern side of CP line corridor bordered by lowland forested areas with intermittent wetland areas, wet railside ditches, and some low-lying mesic forested areas. Area dominated by tree and herbaceous layers
  - Riparian Corridor – southern side of CP line corridor bordered entirely by riparian zone for adjacent Shoal Creek. Dominated by trees and shrubs
  - Agricultural – agricultural fields border bottomland forest to the north and Shoal Creek to the south

Representative Plant Species List		
Scientific Name	**Common Name**	**Status**
Acer rubrum	Red maple	FAC
Celtis occidentalis	Common hackberry	FAC
Populus deltoides	Cottonwood	FAC
Quercus palustris	Pin oak	FACW
Smilax spp.	Smilax spp.	---
Ulmus amerciana	American elm	FACW

FACW = Facultative Wet, FAC = Facultative

Blue Valley, MO

Field Work Date**: 1/10/22**

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Perennial stream	140 ft	Ordinary High Water Mark (OHW) mapped for Blue River
Perennial stream	17 ft	Perennial stream- culverted under tracks
Perennial stream	17 ft	Perennial stream – culverted under tracks
Intermittent stream	4 ft	Channel from wetland 2022-101 to 2022-102
Wetland (Shrub-Scrub)	N/A	Shallow bedrock groundwater discharge to channel
Wetland (Shrub-Scrub)	N/A	Outwash wetland from channel 2022-SC-1
Wetland (Forested)	N/A	Wet forested swale
Wetland (Forested)	N/A	Wet forested bowl with standing water
Intermittent stream	3 ft	Ditch from wetland 2022-103 with standing water
Perennial stream	8 ft	Stream parallels tracks before joining 2022-OHW-103
Perennial stream	40 ft	OHW for perennial stream flowing through culvert under tracks
Intermittent stream	4 ft	Ditched stream emerging from wetland 2022-105
Wetland (Emergent)	N/A	Wetland between access road and toe of slope.

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Gray bat (*Myotis grisescens*)	Federally Endangered	No, no caves present within the study area.
Monarch Butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
Northern long-eared bat (*Myotis septentrionalis)*	Federally Threatened (Proposed Endangered)	Yes, bridges and culvert provide suitable roosting habitat.

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Indiana bat (*Myotis sodalis*)	Federally Endangered	Yes, bridges and culvert provide suitable roosting habitat.
Tri-colored bat (*Perimyotis subflavus*)	Federally Proposed Endangered State (S2)	Yes, bridges and culvert provide suitable roosting habitat.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Stormwater drain	No	No	No	
Bridge	No	No	Yes	
Culvert/ Bridge	No	No	Yes	
Rail over pass	No	No	Yes	

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- Part 1 (northern) surrounding ROW land use is industrial.
- Part 2 (southern) surrounding ROW land use is a mix of forest and industrial
- Suitable bat habitat restricted to structures
- Most of the ROW is ballast/gravel fill, but multiple limestone bedrock outcrops are present

Representative Plant Species List		
Scientific Name	**Common Name**	**Status**
Ailanthus altissima	Tree-of-heaven	FACU*
Asclepias syriaca	Common milkweed	FACU
Platanus occidentalis	American sycamore	FACW
Cirsium arvense	Canada thistle	FACU*
Erechtites hieraciifolius	American burnweed	---
Erigeron canadensis	Horseweed	FACU
Lemna minor	Duckweed	OBL
Persicaria sp.	Smartweed	OBL
Populus deltoides	Cottonwood	FAC
Populus grandidentata	Bigtooth aspen	FACU
Setaria faberi	Chinese foxtail	FACU*
Setaria pumila	Yellow foxtail	FAC*
Sorghum halepense	Johnsongrass	FACU*
Ulmus rubra	Slippery Elm	FAC
Verbascum thapsus	Common mullein	UPL

** = Invasive; FACU = Facultative Upland, UPL = Upland, FACW = Facultative Wet, FAC = Facultative, UPL = Upland, OBL = Obligate/wetland*

Grandview/IFG, MO

Field Work Date: **1/11/2022**

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Wetland (Emergent)	N/A	Small, wet depression between tracks
Wetland (Emergent)	N/A	Small cattail patch in swale
Wetland (Emergent)	N/A	Bowl fed by culvert outflow

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Gray bat (*Myotis grisescens*)	Federally Endangered	No, no caves present within the study area.
Mead's milkweed (*Asclepias meadii*)	Federally Threatened	No, no mesic tallgrass prairies present within the study area.
Monarch Butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
Northern long-eared bat (*Myotis septentrionalis)*	Federally Threatened (Proposed Endangered)	Yes, bridges provide suitable roosting habitat.
Indiana bat (*Myotis sodalis*)	Federally Endangered	Yes, bridges provide suitable roosting habitat.
Tricolored Bat (*Perimyotis subflavus*)	Federally Proposed Endangered	Yes, bridges provide suitable roosting habitat.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Control Point	No	No	No	
Culvert (1)	No	No	No	
Unknown	No	No	No	Old infrastructure leftover from airfield
Culvert (2)	No	No	No	36 inches
Culvert (3)	No	No	No	
Culvert (4)	No	No	No	
Culvert (5)	No	No	No	
Bridge (1)	No	No	Yes	
Bridge (2)	No	No	Yes	

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- Two-part study area, in the northern study area grading and fill already completed.
- Second section of site (southern) is near NSA facility and located on old flight facility land. Some leftover infrastructure is located within ROW from flight facility. Pasture on the west (non-survey side) of ROW.
- Not suitable habitat for Mead's milkweed (*Asclepias meadii*) because soil is disturbed and/or introduced and vegetation community is primarily non-native. *Apocynum* species observed, which provide nectar but not host habitat for Monarch butterflies.
- Suitable bat habitat restricted to structures; forested habitat not present.

Representative Plant Species List		
Scientific Name	**Common Name**	**Status**
Andropogon gerardi	Big bluestem	FAC
Bromus spp.	Brome spp.	---
Cichorium intybus	Chicory	FACU
Dipsacus laciniatus	Cut-leaf teasel	UPL
Gleditsia triacanthos	Honey locust	FACU
Helianthus tuberosus	Tuberous sunflower	FACU
Juniperus virginiana	Eastern redcedar	FACU
Lespedeza cuneata	Chinese bushclover	UPL*
Lonicera spp.	Honeysuckle spp.	---*
Panicum virgatum	Switchgrass	FAC
Platanus occidentalis	American sycamore	FACW
Schizachyrium scoparium	Little bluestem	FACU
Setaria pumila	Yellow foxtail	FAC*
Sorghum halepense	Johnsongrass	FACU
Verbascum thapsus	Common mullein	UPL

** = Invasive; FACU = Facultative Upland, UPL = Upland, FACW = Facultative Wet, FAC = Facultative, UPL = Upland*

Asbury, MO

Field Work Date**: 1/11/2022**

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Wetland (Emergent)	N/A	Wide swale between road and tracks with standing water
Ephemeral channel	1.5 ft	Natural ephemeral channel associated with culvert under tracks
Wetland (Emergent)	N/A	Cattail patch in swale
Wetland (Emergent)	N/A	Wide swale between road and tracks with culvert inlet and outlet to wetland complex across road
Perennial stream	15 ft	Culvert connects wetland 2022-112 to wetland/pond complex across road

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Gray bat (*Myotis grisescens*)	Federally Endangered	No, no caves present within study area.
Northern long-eared bat (*Myotis septentrionalis)*	Federally Threatened (Proposed Endangered)	No, no forested area or suitable roosting structures present within study area.
Indiana bat (*Myotis sodalis*)	Federally Endangered	No, no forested area or suitable roosting structures present within study area.
Tricolored Bat (*Perimyotis subflavus*)	Federally Proposed Endangered	No, no forested area or suitable roosting structures present within study area.
Neosho madtom (*Noturus placidus*)	Federally Threatened	No, no rivers present within study area.
Neosho mucket (*Lampsilis rafinesqueana*)	Federally Endangered	No, no suitable streams with shallow riffles, gravel substrate or backwater areas are within study area
Rabbitsfoot (*Quadrula cylindrica cylindrica*)	Federally Threatened	No, no suitable streams with gravel substrate are within study area.
Monarch Butterfly *(Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
Northern Harrier (*Circus hudsonius*)	State (S2)	No, several individuals of this species were seen driving towards the site but none seen along the ROW. ROW does not present suitable habitat for this species, but surrounding fields do.

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Prairie Mole Cricket (*Gryllotalpa major*)	State (S3)	Yes, grassland/herbaceous/savannah habitat present.
Northern Crawfish Frog (*Lithobates areolatus circulosus*)	State (S3)	Yes, wetland/upland mosaic landscape setting.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
None				

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- Northern Harriers were noted on way to site location, none seen when field work was conducted. ROW did not contain ideal habitat for Northern Harrier, abuts rail corridor and major roadway on the east side. The ROW also contains larger woody species instead of entirely non-woody grassland areas which Northern Harriers prefer.
- ROW is disturbed soil and/or fill. Outside ROW is grazed prairie.
- Suitable bat habitat is not present.

Representative Plant Species List		
Scientific Name	**Common Name**	**Status**
Campsis radicans	American trumpet vine	FACU
Juncus effusus	Lamp rush	OBL
Juniperus virginiana	Eastern red cedar	FACU
Penthorum sedoides	Ditch stonecrop	OBL
Rhus glabra	Smooth sumac	---
Schizachyrium scoparium	Little bluestem	FACU
Setaria pumila	Yellow foxtail	FACU*
Sorghum halepense	Johnsongrass	FACU
Typha latifolia	Broad-leaved cattail	OBL
Verbascum thapsus	Common mullein	UPL

** = Invasive; FACU = Facultative Upland, UPL = Upland, UPL = Upland, OBL = Obligate/wetland*

MP 186, MO

Field Work Date**: 1/12/2022**

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Perennial Stream	2 ft	Gravel
Wetland (Emergent)	N/A	Historic oxbow/river terrace at toe of slope
Wetland (Emergent)	N/A	Flat topography at toe of slope collects surface runoff and drains through culvert
Wetland (Emergent)	N/A	Wet swale at toe of slope
Perennial Stream	4 ft	Perennial stream, sand and cobble, drains to culvert
Wetland (Emergent)	N/A	Wet swale at toe of slope
Wetland (Emergent)	N/A	Wet swale at toe of slope

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Gray bat (*Myotis grisescens*)	Federally Endangered	No, no caves are present in the study area.
Northern long-eared bat (*Myotis septentrionalis)*	Federally Threatened (Proposed Endangered)	Yes, roosting habitat present in edges of forested areas bordering railroad ROW.
Indiana bat (*Myotis sodalis*)	Federally Endangered	Yes, roosting habitat present in edges of forested areas bordering railroad ROW.
Tricolored Bat (*Perimyotis subflavus*)	Federally Proposed Endangered	Yes, roosting habitat present in edges of forested areas bordering railroad ROW.
Neosho Mucket (*Lampsilis rafinesqueana*)	Federally Endangered	No, perennial stream is present within the study area and contains gravel substrate; however, swift currents are not present.
Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Culvert (1)	No	No	No	72 inches
Culvert (2)	No	No	No	72 inches
Culvert (3)	No	No	No	
Culvert (4)	No	No	No	

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Culvert (5)	No	No	No	
Culvert (6)	No	No	No	
Culvert (7)	No	No	No	74 inches
Culvert (8)	No	No	No	
Culvert (9)	No	No	No	
Culvert (10)	No	No	No	
Unknown Structure	No	No	No	2x2x2 metal box
Culvert (11)	No	No	No	72 inches
Culvert (12)	No	No	No	
Culvert (13)	No	No	No	
Culvert (14)	No	No	No	
Culvert (15)	No	No	No	
Culvert (16)	No	No	No	

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- Outside of ROW dominant land use is pasture.
- In the southern portion of the study area, and east of ROW there is a river complex that was very dry at the time of field work.
- Constructed ponds exist on east side of tracks with failing impoundments.

Representative Plant Species List		
Scientific Name	**Common Name**	**Status**
Anthriscus sylvestris	Wild chervil	---*
Campsis radicans	American trumpet vine	FACU
Daucus carota	Queen Anne's lace	UPL
Lamium amplexicaule	Henbit deadnettle	---
Lespedeza cuneata	Chinese bushclover	UPL*
Lonicera japonica	Japanese honeysuckle	FACU*
Schizachyrium scoparium	Little bluestem	FACU
Setaria pumila	Yellow foxtail	FAC*
Symphoricarpos orbiculatus	Coralberry	FACU
Verbascum thapsus	Common mullein	UPL

** = Invasive; FACU = Facultative Upland, UPL = Upland, FAC = Facultative, UPL = Upland*

Gentry, AR

Field Work Date**: 1/12/2022**

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Ephemeral channel	2.5 ft	Natural ephemeral drainage, connects to culvert
Ephemeral channel	2.5 ft	Flows from culvert to culvert. Gravel substrate
Wetland (Emergent)	N/A	Wet swale between road and tracks
Wetland (Forested)	N/A	Low bowl between road and tracks
Wetland (Forested)	N/A	Wet swale

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Gray bat (*Myotis grisescens*)	Federally Endangered	No, no caves are present within the study area.
Indiana bat (*Myotis sodalis*)	Federally Endangered	Yes, potential suitable summer roosting habitat within forested areas.
Northern long-eared bat (*Myotis septentrionalis*)	Federally Threatened (Proposed Endangered)	Yes, potential suitable summer roosting habitat within forested areas.
Ozark big-eared bat (*Corynorhinus (=Plecotus) townsendii ingens)*	Federally Endangered	No, no caves are present within the study area.
Eastern black rail (*Laterallus jamaicensis spp. Jamaicensis*)	Federally Threatened	No, no saltmarshes or brackish marshes with dense cover are present within the study area.
Piping plover (*Charadrius melodus*)	Federally Threatened	No, no beaches or suitable nesting habitat are present within the study area.
Red knot (*Calidrus canutus rufa*)	Federally Threatened	No, no elevated tundra areas are present within the study area.
Ozark cavefish (*Amblyopsis rosae*)	Federally Threatened	No, no caves are present within the study area.
Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
Benton County cave crayfish (*Cambarus aculabrum*)	Federally Endangered	No, no caves are present within the study area.
Missouri bladderpod (*Physaria filiformis*)	Federally Threatened	No, no limestone glades are present within the study area.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Culvert (1)	No	No	No	
Culvert (2)	No	No	No	
Culvert (3)	No	No	No	
Culvert (4)	No	No	No	
Culvert (5)	No	No	No	

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- ROW was northeast of rail trail and southwest of Highway 59.
- Large section of forested area adjacent to ROW in northern portion.
- Wetlands generally small and no open water habitat.
- No naturally tree-less areas present within ROW.
- No bedrock outcrops or caves observed.
- Soils within ROW very sandy.

Representative Plant Species List		
Scientific Name	**Common Name**	**Status**
Celtis occidentalis	Hackberry	FAC
Chasmanthium latifolium	Indian wood oats	FACW
Juniperus ashei	Ashe's juniper	---
Lespedeza cuneata	Chinese bushclover	UPL*
Ligustrum sinense	Chinese privet	FACU*
Lonicera japonica	Japanese honeysuckle	FACU*
Quercus marilandica	Blackjack oak	---
Quercus stellata	Post oak	FACU
Schizachyrium scoparium	Little bluestem	FACU
Setaria pumila	Yellow foxtail	FAC*
Symphoricarpos orbiculatus	Coralberry	FACU

** = Invasive; FACU = Facultative Upland, UPL = Upland, FACW = Facultative Wet, FAC = Facultative, UPL = Upland*

MP 247, OK

Field Work Date: **1/13/2022**

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Wetland (Emergent)	N/A	Small, disconnected depression
Wetland (Forested)	N/A	Small bowl with elms
Wetland (Forested)	N/A	Ditched and connects to ditch
Intermittent stream	1.5	Channel between wetlands 2022-128 and 2022-129
Wetland (Forested)	N/A	Depression on northwest side of track
Ephemeral channel	2.5 ft	Natural ephemeral channels flow into ROW from the northwest
Ephemeral channel	2.5 ft	Natural ephemeral channels flow into ROW from the northwest
Wetland (Emergent)	N/A	Depression on northwest side of track
Wetland (Forested)	N/A	Wet swale associated with ditch
Wetland (Emergent)	N/A	Depression/bowl where ditch hydrology collects

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Gray bat (*Myotis grisescens*)	Federally Endangered	No, no caves are present within the study area.
Indiana bat (*Myotis sodalis*)	Federally Endangered	Yes, Potential suitable summer roosting habitat within forested areas.
Northern long-eared bat (*Myotis septentrionalis)*	Federally Threatened (Proposed Endangered)	Yes, Potential suitable summer roosting habitat within forested areas.
Tricolored Bat (*Perimyotis subflavus*)	Federally Proposed Endangered	Yes, Potential suitable summer roosting habitat within forested areas.
Ozark big-eared bat (*Corynorhinus (=Plecotus) townsendii ingens)*	Federally Endangered	No, no caves are present within the study area.
Piping plover (*Charadrius melodus*)	Federally Threatened	No, wetlands are within the study area; however, given the high level of disturbance along the corridor the study area does not provide suitable habitat. There is no breeding habitat either.
Red knot (*Calidrus canutus rufa*)	Federally Threatened	No, there is no breeding or non-breeding habitat within the study area.
Neosho mucket (*Lampsilis rafinesqueana)*	Federally Endangered	No, there are no perennial streams located within the study area.

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Rabbitsfoot mussel (*Quadrula cylindrica cylindrica)*	Federally Threatened	No, there are no perennial streams located within the study area.
Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Bird nest	Yes, woven, open top, organic matter	No	No	Bird nest in shrub, 6 ft off the ground
Culvert (1)	No	No	No	
Bird nest	Yes, older nest	No	No	3 ft off the ground
Unknown	No	No	No	Likely electrical structure
Bird nest	Yes	No	No	Found in boxelder, 7 ft off the ground
Culvert (2)	No	No	No	
Culvert (3)	No	No	No	Stone culvert
Bird nest	Yes	No	No	Found in multiflora rose
Culvert (4)	No	No	No	

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- Surrounding land use in the north section of ROW is dominated by cow/horse pasture.
- There is limestone bedrock just north of the ROW. No caves were observed within the study area.
- Open upland forest slopes common adjacent to ROW.
- The southern portion of ROW is a very flat, sandy terrace.

Representative Plant Species List		
Scientific Name	**Common Name**	**Status**
Acer negundo	Box elder	FAC
Andropogon gerardi	Big bluestem	FAC
Carya ovata	Shagbark hickory	FACU
Celtis occidentalis	Hackberry	FACU
Chasmanthium latifolium	Inland wood oats	FACW
Juncus effusus	Lamp rush	OBL
Lamium amplexicaule	Henbit deadnettle	---
Lespedeza cuneata	Chinese bushclover	UPL*

Representative Plant Species List		
Scientific Name	**Common Name**	**Status**
Lonicera japonica	Japanese honeysuckle	FACU*
Platanus occidentalis	American sycamore	FACW
Rumex crispus	Curly-leaf dock	FAC
Schizachyrium scoparium	Little bluestem	FACU
Setaria faberi	Chinese foxtail	FACU*
Setaria pumila	Yellow foxtail	FAC*
Smilax spp.	Greenbrier species	---
Symphoricarpos orbiculatus	Coralberry	FACU
Ulmus alata	Winged elm	FACU
Ulmus americana	American elm	FACW
Rosa multiflora	Multiflora rose	---*
Verbascum thapsus	Common mullein	FACU

** = Invasive; FACU = Facultative Upland, UPL = Upland, FACW = Facultative Wet, FAC = Facultative, UPL = Upland, OBL = Obligate/wetland*

Cave Springs, OK

Field Work Date**: 1/13/2022**

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Intermittent Stream	3 ft	Sand gravel cobble bottom, leaf litter in stream, algae on rocks
Wetland (Forested)	N/A	From ephemeral channel outside ROW
Perennial Stream	15 ft	Perennial stream with gravel, algae and mussels present
Wetland (Forested)	N/A	
Perennial Stream	2.5 ft	Silt, gravel, cobble bottom, leaf litter in stream, algae on rocks

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Gray bat (*Myotis grisescens*)	Federally Endangered	No, no caves are present within the study area.
Indiana bat (*Myotis sodalis*)	Federally Endangered	Yes, potential suitable summer roosting habitat within forested areas.
Northern long-eared bat (*Myotis septentrionalis)*	Federally Threatened (Proposed Endangered)	Yes, potential suitable summer roosting habitat within forested areas.
Tricolored Bat (*Perimyotis subflavus*)	Federally Proposed Endangered	Yes, potential suitable summer roosting habitat within forested areas.
Ozark big-eared bat (*Corynorhinus (=Plecotus) townsendii ingens)*	Federally Endangered	Yes, no caves are present within the study; however, a cave is located 1.5 miles that is known to be occupied by the Ozark big-eared bat. Therefore, foraging habitat is present within forested areas.
Piping plover (*Charadrius melodus*)	Federally Threatened	No, there is a small creek within the study area; however, given the high level of disturbance along the corridor, the creek would not be suitable nesting habitat.
Red knot (*Calidrus canutus rufa*)	Federally Threatened	No, there is no breeding or non-breeding habitat within the study area.

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
American burying beetle (*Nicrophorus americanus*)	Federally Threatened	No, oak and hickory forests are present, and a farm animal dump is present with substantial carrion within the study area; however, the American burying beetle prefers large intact areas with little to no human disturbance.
Monarch Butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
Bald eagle (*Haliaeetus leucocephalus)*	BGEPA	No, no suitable nesting trees observed within the study area.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Culvert (1)	No	No	No	
Culvert (2)	No	No	No	
Control Point	No	No	No	
Culvert (3)	No	No	No	
Culvert (4)	No	No	No	
Culvert (5)	No	No	No	
Culvert (6)	No	No	No	
Culvert (7)	No	No	No	
Culvert (8)	No	No	No	Stone culvert
Culvert (9)	No	No	No	
Culvert (10)	No	No	No	
Culvert (11)	No	No	No	
Culvert (12)	No	No	No	
Control Point	No	No	No	

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- Surrounding land use is rural residential and agricultural.
- Small white shellfish observed within 2021-SC-131.
- Northern section consists of more forested ROW. The southern section of the study area opens up and grassland/agricultural becomes dominant land cover

Representative Plant Species List		
Latin Name	**Common Name**	**Status**
Acer negundo	Box elder	FAC
Andropogon gerardi	Big bluestem	FAC
Callitriche heterophylla	Large water-starwort	OBL
Juncus effusus	Lamp rush	OBL
Lamium amplexicaule	Henbit deadnettle	---

Representative Plant Species List		
Latin Name	**Common Name**	**Status**
Lespedeza cuneata	Chinese bushclover	UPL*
Lonicera japonica	Japanese honeysuckle	FACU*
Quercus macrocarpa	Bur oak	FAC
Rumex crispus	Curly-leaf dock	FAC
Schizachyrium scoparium	Little bluestem	FACU
Setaria faberi	Chinese foxtail	FACU*
Setaria pumila	Yellow foxtail	FAC*
Smilax spp.	Greenbrier spp.	---
Symphoricarpos orbiculatus	Coralberry	FACU
Ulmus americana	American elm	FACW

** = Invasive; FACU = Facultative Upland, UPL = Upland, FACW = Facultative Wet, FAC = Facultative, UPL = Upland, OBL = Obligate/wetland*

Spiro, OK

Field Work Date: 1/13/2022

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Wetland (Emergent)	N/A	Wetland seep located at base of railbed; Disturbed and composed of early successional species.
Perennial	12 ft	Perennial stream; flowing west through culvert under railbed; Channel is excavated adjacent to culvert.
Intermittent stream/Ephemeral channel	3 ft	Tributary to perennial stream; Lower channel intermittent stream; Upper channel is a wetland swale with no bed/bank structure; Channel formed in depression adjacent and parallel to railbed.
Wetland (Emergent)	N/A	Wetland seep located at base of railbed; Recently disturbed and composed of early successional species.
Wetland (Shrub-scrub/Emergent)	N/A	Stream side Shrub-scrub/Emergent wetland located within the depression adjacent to the railbed.
Intermittent stream	3 ft	Channel formed in depression adjacent and parallel to railbed; Upper end connects to a roadside ditch/swale that is obviously upland excavated for roadside drainage.
Wetland (Emergent)	N/A	Wetland seep located in depression between roadway, railbed, and adjacent cattle pasture; connects into roadway drainage system.
Wetland (Shrub-scrub)	N/A	Wetland seep located in depression between railbed and adjacent cattle pasture; connects into stream.

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Indiana bat (*Myotis sodalis*)	Federally Endangered	Yes, bridge provides suitable roosting habitat.
Northern long-eared bat (*Myotis septentrionalis)*	Federally Threatened (Proposed Endangered)	Yes, bridge provides suitable roosting habitat.

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Tricolored Bat (*Perimyotis subflavus*)	Federally Proposed Endangered	Yes, bridge provides suitable roosting habitat.
Piping plover (*Charadrius melodus*)	Federally Threatened	No, there is a stream and wetlands within the study area; however, given the high level of disturbance along the corridor, these would not be suitable nesting habitats. There is no breeding habitat present within the study area.
Red knot (*Calidrus canutus rufa*)	Federally Threatened	No, there is no breeding or non-breeding habitat within the study area.
Scaleshell mussel (*Leptodea leptodon*)	Federally Endangered	No, the medium-sized perennial stream within the study area does not contain good water quality and has been excavated near the culvert.
American burying beetle (*Nicrophorus americanus*)	Federally Threatened	No, grasslands and open understory oak hickory forests are not present within the study area. The study area is disturbed and has been cleared.
Monarch Butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Bridge	0	0	Yes	25 ft wide X 20 ft tall; Deep water prevented close examination, results from view with binoculars
Culvert	0	0	Poor	10 ft corrugated pipe; poor roosting habitat

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- The study area consists of disturbed, previously cleared habitat between the railbed and cattle pasture. All habitats whether upland or wetland consisted of early successional herbaceous vegetation with sparse shrubs and small saplings. One natural stream crosses the study area, and several streams formed in the depression between the streambed and adjacent cattle pasture that is a higher elevation.
- Generally, the land use is cattle pasture, with some residential. The study area/railroad ROW is fenced from the pasture.
- USGS karst map indicates karst geology is likely present along the Spiro segment.

Heavener, OK

Field Work Date: 1/13/2022

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Intermittent stream	3 ft	Small disturbed and dredged stream channel; From culvert through railbed; Flowing southeast.
Perennial stream	10-15 ft	Modified stream; flowing east from culvert through railbed.
Intermittent stream	5 ft	Modified stream; incorporated into the roadway drainage system.
Perennial stream	8 ft	Flowing west from culvert under railbed; Flows into Stream (Oil Branch).
Perennial stream	8-12 ft	Oil Branch; Altered stream (excavated and straightened to parallel railroad) and northern section has constructed stone walls; North end has two channel braids as it flows under the bridge.
Wetland (Forested)	N/A	Bottomland hardwood swamp; Beaver impoundment in center due to dam blocking culvert.
Wetland (Forested)	N/A	Bottomland hardwood swamp remnant along base of railroad bed.
Wetland (Shrub-scrub/Emergent)	N/A	Seep in depression at base of railbed; Disturbed and composed of early successional species.
Wetland (Emergent)	N/A	Seep in depression at base of railbed; Disturbed, cleared, and occasionally maintained.
Wetland (Emergent)	N/A	Seep in depression at base of railbed; Disturbed, cleared, and occasionally maintained.
Wetland (Shrub-scrub)	N/A	Stream side wetland; Seep in depression at base of railbed; incorporated into roadway drainage system.
Wetland (Forested/Shrub-scrub)	N/A	Seep in depression at base of railbed; Disturbed; Connected to nearby waters by upland cut ditches.

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Indiana bat (*Myotis sodalis*)	Federally Endangered	Yes, bridges and culverts provide suitable roosting habitat.
Northern long-eared bat (*Myotis septentrionalis)*	Federally Threatened (Proposed Endangered)	Yes, bridges and culverts provide suitable roosting habitat.
Tricolored Bat (*Perimyotis subflavus*)	Federally Proposed Endangered	Yes, bridges and culverts provide suitable roosting habitat.
Piping plover (*Charadrius melodus*)	Federally Threatened	No, there are streams and wetlands within the study area; however, given the high level of disturbance along the corridor, these would not be suitable nesting habitats. There is no breeding habitat present within the study area.
Red knot (*Calidrus canutus rufa*)	Federally Threatened	No, there is no breeding or non-breeding habitat within the study area.
Scaleshell mussel (*Leptodea leptodon*)	Federally Endangered	No, the perennial streams within the study area have been heavily disturbed and altered due to excavation and straightening.
American burying beetle (*Nicrophorus americanus*)	Federally Threatened	No, grasslands and open understory oak hickory forests are not present within the study area. The study area is disturbed and has been cleared.
Monarch Butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Bridge	0	0	Yes	Poteau River; Large bridge with good roosting habitat
Culvert	0	0	Yes	Wetland; Roosting habitat created by beaver dam
Culvert	0	0	No	Stream; Culvert is too small
Culvert	0	0	No	Stream; Culvert is too small

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Culvert	0	0	Yes	Stream; Abundant crevices with potential for bats/birds
Bridge	0	0	Yes	Stream; Smooth surfaces on ceiling and walls, poor bat habitat

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- South end of segment began immediately north of the Poteau River, and most of the south portion is bottomland hardwoods or remnants of bottomland hardwoods, both upland and wetland. Cleared areas outside of the study area consisted of wet prairie. In the central portion, north of the bottomlands, the study area consisted of early successional forested wetlands and uplands and cleared areas associated with residential, industrial, and agricultural land uses. Wetland and water features are primarily disturbed seeps at the base of the railbed, which are in various stages of early successional development. This portion extended to Oil Creek. At Oil Creek, the study area is composed primarily of the creek itself, which covered the study area from the base of the railbed to the outside boundary. At its southern end, Oil Creek turned away from the railbed to the southeast.
- Land use consists of disturbed bottomland hardwoods, cattle pasture, residential, and light industrial.
- USGS karst map indicates that karst geology is likely present along the Heavener segment.

MP 377 - Mena, AR

Field Work Date: 1/12/2022

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Perennial stream	7 ft	Culvert under railbed, approx. 10-12 ft wide; ditched and straightened stream in early successional forest
Intermittent stream	5 ft	From culvert under railbed; Altered stream channel, with vine overgrowth; Flows southeast
Wetland (Emergent)	N/A	Seep at base of railbed
Wetland (Shrub-scrub/Emergent)	N/A	Stream side wetland fringe
Intermittent stream	6 ft	Altered stream at edge of cattle pasture; From culvert through railbed; Deep pool east of culvert; Flows southeast
Intermittent stream	6 ft	Altered/straightened stream through cattle pasture; From culvert through railbed; Flows southeast into excavated cattle pond
Wetland (Shrub-scrub)	N/A	Seep in depression at base of railbed; Historically cleared composed of early successional species
Wetland (Shrub-scrub/Emergent)	N/A	Seep in depression at base of railbed; Historically cleared, composed of early successional species
Pond	N/A	Excavated pond in cattle pasture with little to no wetland fringe
Wetland (Shrub-scrub/Emergent)	N/A	Seep in depression at base of railbed; Historically cleared, composed of early successional species
Perennial stream	5 ft	Altered/straightened stream in cattle pasture
Wetland (Shrub-scrub/Emergent)	N/A	Seep in depression at base of railbed; Recently cleared, composed of early successional species
Wetland (Emergent)	N/A	Seep in depression at base of railbed; Recently cleared,

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
		composed of early successional species
Wetland (Shrub-scrub/Emergent)	N/A	Seep at base of railbed; some water input from culvert through railbed; Recently cleared
Wetland (Forested)	N/A	Stream associated wetland fringe in early successional forested wetland

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Northern long-eared bat (*Myotis septentrionalis)*	Federally Threatened (Proposed Endangered)	Yes, culverts provide suitable roosting habitat.
Eastern black rail (*Laterallus jamaicensis* spp. *Jamaicensis*)	Federally Threatened	No, sedge meadows with dense cover are not present within the study area.
Piping plover (*Charadrius melodus*)	Federally Threatened	No, there are streams and wetlands within the study area; however, given the high level of disturbance along the corridor, these would not be suitable nesting habitats. There is no breeding habitat present within the study area.
Red knot (*Calidrus canutus rufa*)	Federally Threatened	No, there is no breeding or non-breeding habitat within the study area.
Red-cockaded woodpecker (*Picoides borealis*)	Federally Threatened	No, there are no longleaf pine forests within the study area.
Arkansas fatmucket (*Lampsilis powellii*)	Federally Threatened	No, the streams within the study area have been heavily altered due to excavation and straightening and do not provide suitable habitat.
Rabbitsfoot (*Quadrula cylindrica cylindrica*)	Federally Threatened	No, the streams within the study area have been heavily altered due to excavation and straightening and do not provide suitable habitat.
Monarch butterfly (*Danaus plexippu*s)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
Ringed salamander (*Ambystoma annulatum*)	State (INV)	No, the study area was almost entirely cattle pasture with some upland scrub-shrub habitat on ridges with high disturbance.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Culvert	0	0	Yes	12ft wide, 10ft tall, Possible roosting site, some small crevices
Culvert	1/Swift or swallow	0	Yes	10ft wide, 15ft tall, no crevices, marginal bat roosting habitat

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- Northern portion of the site is located on a hillslope in primarily early successional scrub and upland forest, with a few wetland seeps in the hillside. Moving south, the terrain dropped into bottomland areas separated by low ridges. Each valley had a stream with some wetland, both generally modified, cleared, or otherwise disturbed. Much of the southernmost portion of the ROW had been recently cleared, and forested fragments consisted primarily of early successional trees and shrubs. Seeps were present in recently cleared depressions at the base of the railbed, and recent disturbance may be responsible for development of wetland hydrology.
- Land use consists primarily of cattle pasture with some industrial use at the south end of the segment.

Mansfield, LA

Field Work Date: 1/11/2022

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Wetland (Forested)	N/A	Depressional wetland; Disturbed; dominated by invasive species
Wetland (Shrub-scrub)	N/A	Disturbed (historically cleared); early successional shrub species and young saplings; within utility/road ROW
Wetland (Emergent)	N/A	Depression between railbed and roadway; Disturbed (historically cleared) with early successional species; within utility/road ROW
Wetland (Emergent)	N/A	Depression at base of railbed between ballast and adjacent roadway; Disturbed (historically cleared) with early successional species; utility/road ROW
Wetland (Emergent)	N/A	Depression at base of railbed between ballast and adjacent roadway; Disturbed (historically cleared); utility/road ROW
Wetland (Shrub-scrub/Emergent)	N/A	Disturbed (historically cleared); within utility/road ROW; at ballast edge; drains to east under adjacent roadway

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Northern long-eared bat (*Myotis septentrionalis)*	Federally Threatened (Proposed Endangered)	No, there are no suitable forested areas and no suitable roosting structures.
Red-cockaded woodpecker (*Picoides borealis*)	Federally Threatened	No, there are no longleaf pine forests within the study area.
Monarch butterfly (*Danaus plexippu*s)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
Geocarpon (*Geocarpon minimum*)	Federally Threatened	No, saline prairies are not present within the study area.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Culvert	0	0	No	Small culvert, ~18-24 inch, for road drainage

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- The study area is located between the railroad bed and a highway. A natural gas utility corridor runs through the center of the study area. The entire area had been historically cleared, and there were some areas of early successional forest that had been allowed to regenerate. The vast majority of the study area was cleared and occasionally to regularly maintained.
- Wetlands formed in depression between the elevated railroad and roadway.
- Land use included transportation corridors and utility ROWs.

Loring, LA

Field Work Date: 1/10/2022-1/11/2022

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Wetland (Forested)	N/A	Mature forest
Wetland (Forested)	N/A	Mature forest
Perennial stream	10-20 ft	Hurricane Creek; Flowing south through large culvert/bridge; culvert approximately 20 feet wide
Intermittent stream	5 ft	Tributary to Stream 2c; water in pools, but eastern portion does not exhibit bed and bank structure that would define it as a stream
Wetland (Forested)	N/A	Mature forest with signs of disturbance consisting of invasive exotics (typical edge effect)

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Red-cockaded woodpecker (*Picoides borealis*)	Federally Threatened	No, there are no longleaf pine forests within the study area.
Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Bridge/culvert	0	0	Yes	Approx. 20 feet wide

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- Habitat consists primarily of mature forest. Some signs of disturbance (edge effect) were present including vine overgrowth and stands of invasive exotic species, particularly *Ligustrum sinense*. Large stream (Hurricane Creek) flowing from north to south through the right-of-way. Stream is deeply incised with virtually vertical banks, and stream structure appeared to have reduced the hydrology within the floodplain. Signs of spoil are apparent along the top of bank along the length of the stream. Spoil piles were eroded and appeared very old, with mature vegetation growing on top of them.

Singer, LA

Field Work Date: 1/10/2022

Waters

Type (wetland, perennial stream, intermittent stream, ephemeral channel, other—describe)	Width (stream)	Other Notes
Wetland (Forested/Emergent)	N/A	Wetland at base of fill for railroad bed
Perennial stream	8 ft	Flowing west; culvert under road to east and culvert through railbed
Wetland (Shrub-scrub/Emergent)	N/A	Depression wetland at base of railbed; sparse vegetation with stained leaves
Wetland (Shrub-scrub/Emergent)	N/A	Depression between road and railbed; saturated with pools of water; separated from Wet 2d by spoil with early successional shrub species.
Wetland (Shrub-scrub/Emergent)	N/A	Depression parallels railbed; similar quality and composition to Wet 2c
Wetland (Forested)	N/A	Small depression with ponded water, perpendicular to railbed
Intermittent stream	5 ft	Flowing west; culverts under road and through rail bed

Federal and State Protected Species with Potential to Occur in Study Area

Species Name	Federal/State Protected	Suitable Habitat Present? If yes, please describe
Red-cockaded woodpecker (*Picoides borealis*)	Federally Threatened	No, there are no longleaf pine forests within the study area.
Monarch butterfly (*Danaus plexippus*)	Federal Candidate	No, though sunny right-of-way is present throughout the study area along the tracks, these areas are heavily maintained with herbicide or mechanical clearing, rending them unsuitable.
American chaffseed (*Schwalbea amwericana*)	Federally Endangered	No, fire-maintained longleaf pine flatwoods and savannas are not present in the study area.

Structures

Structure Type	Bird Nests Observed? (#/Type)	Bats Observed? (#/Type)	Suitable Bat Roosting Habitat?	Other Notes
Box culvert	0	0	Yes	6-8 ft wide
Pipe culvert	0	0	No	3 ft pipe

Other Notes (tree/plant species identified on-site, general land use/habitat identified, etc.)

- The site consists of a small strip of disturbed habitat between the railroad bed and a two-lane highway. Apparent disturbances include clearing and fill/spoil. Wetlands consisted primarily of wet prairie with some saplings and shrubs. Small areas of longleaf and loblolly pine and early successional hardwoods were scattered through right-of-way.
- Land use consists of transportation corridors and utility ROWs.

O.3.2 Capital Improvement Site Photographs

Habitat and Land Use Photos - General



Photograph 1: Agricultural Habitat | Newtown, Missouri | January 27, 2022



Photograph 2: Maintained ROW Habitat | Asbury, Missouri | January 11, 2022



Photograph 3: Industrial Habitat | Blue Valley, Missouri | January 10, 2022



Photograph 4: Floodplain/Rivers Habitat | MP 247 - Baron, Oklahoma | January 13, 2022



Photograph 5: Residential Habitat | MP 24 - Bellevue, Iowa | January 24, 2022



Photograph 6: Fallow Field/Early Successional Forest Habitat | MP 377 - Mena, Arkansas | January 12, 2022



Photograph 7: Mixed Pine/Hardwood Forest Habitat | MP 24 - Mansfield, Louisiana | January 11, 2022



Photograph 8: Mixed Hardwood Forest Habitat | Laredo, Missouri | January 28, 2022

MP 71 (Turkey River), IA



Photograph 9: Mixed Hardwood Forest | MP 71 - Turkey River | January 24, 2022



Photograph 10: Floodplains, Creeks, and Rivers Habitat | MP 71 - Turkey River | January 24, 2022



Photograph 11: Agricultural Habitat | MP 71 - Turkey River | January 24, 2022



Photograph 12: Suitable Bat Roosting Structure | MP 71 - Turkey River | January 24, 2022



Photograph 13: Migratory Bird Nest at Suitable Roosting Structure | MP 71 - Turkey River | January 24, 2022



Photograph 14: Suitable Bat Roosting Habitat Under Reinforced Concrete Box Culvert | MP 71 - Turkey River | January 24, 2022

MP 24 (Bellevue), IA



Photograph 15: Residential Habitat | MP 24 - Bellevue, Iowa | January 24, 2022



Photograph 16: Mixed Hardwood Forest and Suitable Bat Roosting Habitat | MP 24 - Bellevue, Iowa | January 24, 2022



Photograph 17: Agricultural Habitat | MP 24 - Bellevue | January 24, 2022



Photograph 18: Fallow Field/Early Succsessional Habitat | Bellevue, Iowa | January 24, 2022



Photograph 19: Suitable Bat Roosting Structure | MP 24 - Bellevue, Iowa | January 24, 2022



Photograph 20: Suitable Migratory Bird Roosting Structure over Spruce Creek | MP 24 - Bellevue, Iowa | January 24, 2022

Deer Creek, IA



Photograph 21: Residential Land Use | Deer Creek, Iowa | January 25, 2022



Photograph 22: Mixed Hardwood Forest Habitat | Deer Creek, Iowa | January 25, 2022



Photograph 23: Floodplains-Creeks-Rivers Habitat, double RCP | Deer Creek, Iowa | January 25, 2022



Photograph 24: Suitable Roosting/Nesting Structure | Deer Creek, Iowa | January 25, 2022

Camanche, IA



Photograph 25: Industrial Land Use | Camanche, Iowa | January 25, 2022



Photograph 26: Floodplains-Creeks-Rivers Habitat | Camanche, Iowa | January 25, 2022

Letts, IA



Photograph 27: Mixed Hardwood Forest and Suitable Roosting Habitat | Letts, Iowa | January 25, 2022



Photograph 28: Wet Ditch, frozen at time of survey | Letts, Iowa | January 25, 2022

MP 255 (Washington), IA



Photograph 29: Agricultural Land Use | MP 255 - Washington | January 26, 2022



Photograph 30: Mixed Hardwood Forest habitat | MP 255 - Washington | January 26, 2022

Ottumwa, IA



Photograph 31: Maintained Roadway ROW | Ottumwa, Iowa | January 26, 2022



Photograph 32: Industrial Land Use | Ottumwa, Iowa | January 26, 2022



Photograph 33: Mixed Hardwood Forest Habitat | Ottumwa, Iowa | January 26, 2022



Photograph 34: Agricultural Land Use | Ottumwa, Iowa | January 26, 2022



Photograph 35: Suitable Roosting Structure | Ottumwa, Iowa | January 26, 2022

Moravia, IA



Photograph 36: Agricultural Land Use | Moravia, Iowa | January 27, 2022



Photograph 37: Potentially suitable bat roosting habitat | Moravia, Iowa | January 27, 2022



Photograph 38: Suitable forested roosting habitat | Moravia, Iowa | January 27, 2022

Newtown, MO



Photograph 39: Agricultural Land Use | Newtown, Missouri | January 27, 2022



Photograph 40: Maintained Roadway ROW | Newtown, Missouri | January 27, 2022



Photograph 41: Stream and structure with potential roosting habitat | Newtown, Missouri | January 27, 2022

Laredo, MO



Photograph 42: Mixed Hardwood Forest | Laredo, Missouri | January 28, 2022



Photograph 43: Agricultural Land Use | Laredo, Missouri | January 28, 2022

MP 431, MO



Photograph 44: Floodplains-Creeks-Rivers Habitat | MP 431 - Dawn, Missouri | January 28, 2022



Photograph 45: Agricultural Land Use (outside project limits) | MP 431 - Dawn, Missouri | January 28, 2022



Photograph 46: Bald Eagle Nest | MP 431 - Dawn, Missouri | January 28, 2022



Photograph 47: Potentially suitable roosting and nesting structure | MP 431 - Dawn, Missouri | January 28, 2022

Blue Valley, MO



Photograph 48: Industrial Land Use | Blue Valley, Missouri | January 10, 2022



Photograph 49: Mixed Hardwood Forest Habitat | Blue Valley, Missouri | January 10, 2022



Photograph 50: Fallow field/early successional Habitat | Blue Valley, Missouri | January 10, 2022



Photograph 51: Potentially suitable bat roosting structure | Blue Valley, Missouri | January 10, 2022

Grandview/IFG, MO



Photograph 52: Industrial Land Use | Grandview/IFG, Missouri | January 11, 2022



Photograph 53: Fallow Field/Agricultural Habitat | Grandview/IFG, Missouri | January 11, 2022



Photograph 54: Agricultural Land Use | Grandview/IFG, Missouri | January 11, 2022



Photograph 55: Mixed Hardwood Forest Habitat | Grandview/IFG, Missouri | January 11, 2022



Photograph 56: Maintained ROW Land Use | Grandview/IFG, Missouri | January 11, 2022

Asbury, MO



Photograph 57: Maintained ROW | Asbury, Missouri | January 11, 2022



Photograph 58: Agricultural Land Use | Asbury, Missouri | January 11, 2022

MP 186, MO



Photograph 59: Agricultural Land Use | MP 186, Missouri | January 12, 2022



Photograph 60: Floodplains-Creeks-Rivers Habitat | MP 186, Missouri | January 12, 2022

Gentry, AR



Photograph 61: Maintained ROW | Gentry, Arkansas | January 12, 2022



Photograph 62: Mixed Hardwood Forest Habitat and Potentially Suitable Summer Bat Roosting Habitat | Gentry, Arkansas | January 12, 2022



Photograph 63: Agricultural Land Use | Gentry, Arkansas | January 12, 2022

MP 247, OK



Photograph 64: Mixed Hardwood Forest Habitat | MP 247, Oklahoma | January 13, 2022



Photograph 65: Agricultural Land Use | MP 247, Oklahoma | January 13, 2022

Cave Springs, OK



Photograph 66: Agricultural Land Use | Cave Springs, Oklahoma | January 13, 2022



Photograph 67: Mixed Hardwood Forest Habitat | Cave Springs, Oklahoma | January 13, 2022

Spiro, OK



Photograph 68: Agricultural Land Use | Spiro, Oklahoma | January 13, 2022



Photograph 69: Potentially Suitable Bat Roosting Structure | Spiro, Oklahoma | January 13, 2022

Heavener, OK



Photograph 70: Agricultural Land Use | Heavener, Oklahoma | January 13, 2022



Photograph 71: Residential Land Use | Heavener, Oklahoma | January 13, 2022



Photograph 72: Mixed Hardwood Forest Habitat | Heavener, Oklahoma | January 13, 2022



Photograph 73: Suitable Bat Roosting Structure | Heavener, Oklahoma | January 13, 2022

MP 377 - Mena, AR



Photograph 74: Fallow Field/Early Successional Habitat Adjacent to Maintained ROW | MP 377 - Mena, Arkansas | January 12, 2022



Photograph 75: Mixed Hardwood Forest Habitat | MP 377 - Mena, Arkansas | January 12, 2022



Photograph 76: Suitable Bat Roosting Structure | MP 377 - Mena, Arkansas | January 12, 2022

Mansfield, LA



Photograph 77: Maintained ROW | Mansfield, Louisiana | January 11, 2022



Photograph 78: Residential Land Use (outside survey limits) | Mansfield, Louisiana | January 11, 2022



Photograph 79: Mixed Hardwood-Pine Forest Habitat | Mansfield, Louisiana | January 11, 2022

Loring, LA



Photograph 80: Mixed Hardwood-Pine Forest | Loring, Louisiana | January 10 - 11, 2022



Photograph 81: Mixed Hardwood Forest | Loring, Louisiana | January 10 - 11, 2022



Photograph 82: Suitable Bat Roosting Structure | Loring, Louisiana | January 10 - 11, 2022



Photograph 83: Maintained ROW | Loring, Louisiana | January 10 - 11, 2022

Singer, LA



Photograph 84: Mixed Hardwood-Pine Forest | Singer, Louisiana | January 10, 2022



Photograph 85: Maintained ROW | Singer, Louisiana | January 10, 2022

O.4 Agency Consultation and Correspondence

O.4.1 USFWS Informal Consultation

SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

December 1, 2022

Josh Hundley
Field Supervisor
USFWS Missouri Ecological Services Field Office
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Columbia, MO 65203
Joshua_Hundley@fws.gov

Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern, et al.; **USFWS Informal Section 7 Consultation Tricolored Bat Update**

Dear Mr. Hundley:

As you may recall from my letter dated June 6, 2022, Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern, et al. (KCS) (collectively, Applicants) are seeking authorization from the Surface Transportation Board (Board) for CP to acquire KCS. The Board's Office of Environmental Analysis (OEA) determined that the proposed acquisition of KCS by CP may affect, but is not likely to adversely affect the northern long-eared bat (*Myotis septentrionalis*) and Indiana bat (*Myotis sodalis*). Since that time, the U.S. Fish and Wildlife Service (USFWS) proposed to list the tricolored bat (*Perimyotis subflavus*) as endangered under the Endangered Species Act (ESA), and the USWS' Information for Planning and Consultation (IPaC) species lists for planned capital improvements at Newtown, Laredo, MP 431, Blue Valley, Grandview/IFG, Asbury, and MP 186 now include the tricolored bat. No other changes have been made to the IPaC species lists. The purpose of this letter is to request your written concurrence of OEA's determination of effects for the proposed acquisition on the tricolored bat, in accordance with Section 7(a)(2) of ESA.

Based on habitat-level field work, OEA identified suitable roosting and foraging habitat within the existing ROW for the northern long-eared bat and Indiana bat at six of the seven planned capital improvements in Missouri. The same habitat would be suitable for the tricolored bat. The Applicants have proposed multiple measures to protect the northern long-eared and Indiana bat during the construction of the planned capital improvements, as detailed in Attachment A to this letter. These measures include commitments to conduct tree clearing and work on structures that provide suitable roosting habitat outside of the active season (April 1 to October 31), as well as measures related to installing lighting. OEA believes that these measures would also protect the tricolored bat. Therefore, OEA has determined that the Proposed Acquisition **may affect, but is not likely to adversely affect** the tricolored bat.

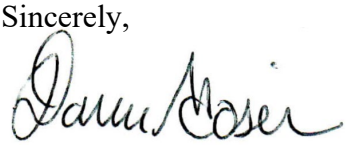
Table 1. Updated ESA-listed species with suitable habitat at the planned capital improvement locations in Missouri

Common and Scientific Name	Capital Improvement Location	Federal Status	Suitable Habitat	Recommended Effects Determination
Tricolored bat (*Perimyotis subflavus*)	Newtown (Sullivan County) Laredo (Grundy County) MP 431 (Livingston County) Blue Valley (Jackson County) Grandview/IFG (Jackson and Cass Counties) MP 186 (McDonald County)	Proposed Endangered	Suitable summer roosting and foraging habitat for the northern long-eared bat was present throughout the study area. Roosting habitat was identified in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. Foraging habitat was present in the canopy-enclosed flyways of forested edges of railroad ROW, adjacent roads, and throughout riparian corridors.	May affect, not likely to adversely affect
Northern long-eared bat (*Myotis septentrionalis*)	Newtown (Sullivan County) Laredo (Grundy County) MP 431 (Livingston County) Blue Valley (Jackson County) Grandview/IFG (Jackson and Cass Counties) MP 186 (McDonald County)	Threatened (Proposed Endangered)	Suitable roosting and foraging habitat for the northern long-eared bat was present throughout the study area. Roosting habitat was identified in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. Foraging habitat was present in the canopy-enclosed flyways of forested edges of railroad ROW, adjacent roads, and throughout riparian corridors.	May affect, not likely to adversely affect

Common and Scientific Name	Capital Improvement Location	Federal Status	Suitable Habitat	Recommended Effects Determination
Indiana bat (*Myotis sodalis*)	Newtown (Sullivan County) Laredo (Grundy County) MP 431 (Livingston County) Blue Valley (Jackson County) Grandview/IFG (Jackson and Cass Counties) MP 186 (McDonald County)	Endangered	Suitable summer roosting and foraging habitat for the Indiana bat was present throughout the study area. Summer roosting habitat was identified in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. Foraging habitat was present in the canopy-enclosed flyways of forested edges of railroad ROW, adjacent roads, and throughout riparian corridors.	May affect, not likely to adversely affect

We appreciate your review and assistance in the consultation process and look forward to hearing from you. For further information or questions, please contact Joshua Wayland at Joshua.Wayland@stb.gov or 202-245-0330. For further information about the Proposed Acquisition, you may also visit the Board-sponsored project website at www.CP-KCSMergerEIS.com.

Sincerely,



Danielle Gosselin
Director
Office of Environmental Analysis

Attachment

ATTACHMENT A: PROTECTED BAT VOLUNTARY MITIGATION MEASURES

Should the Surface Transportation Board (Board) authorize the proposed acquisition of Kansas City Southern et al. (KCS) by Canadian Pacific Railway et al. (CP), the Board's Office of Environmental Analysis (OEA) recommends that CP and KCS (collectively, Applicants) be required to implement the following measures to avoid impacts on northern long-eared bat, Indiana bat, and tricolored bat.

- The Applicants will not conduct construction-related tree removal for the planned capital improvements during the active season for the Indiana bat, the northern long-eared bat, and tricolored bat (April 1 to October 31).

- During the construction of the planned capital improvements, the Applicants will take steps to reduce the unnecessary removal of bat habitat outside of active bat season by limiting tree removal to only the areas necessary to safely construct and operate the new siding or second track, marking the limits of tree clearing through the use of flagging or fencing, and ensuring that construction contractors understand clearing limits and how they are marked in the field.

- Where practicable, the Applicants will conduct any culvert or bridge removal as part of the planned capital improvements outside of the roosting period of bat species, specific to each planned capital improvement location. Where practicable, if bridge or culvert removal is required during the bat roosting period where the individual planned capital improvement is located, the Applicants will consult with OEA and the local office of the U.S. Fish and Wildlife Service (USFWS) on appropriate methods to determine if bats are using the bridge or culvert as a roost.

- If construction of the planned capital improvements would require removal or alteration of bridges, culverts, or other structures that provide suitable habitat for the northern long-eared bat, the Indiana bat, or the tricolored bat during the active season for those species (April 1 to October 31), the Applicants will first conduct an inspection for the presence of or evidence of use by bats. The inspection will be completed by a qualified biologist. If the inspection finds bats or evidence of bats, then the Applicants will not commence work on the structure until coordinating with OEA and USFWS to determine appropriate follow-up or mitigative actions. The inspection must be completed during the same year that the work takes place.

- During construction of the planned capital improvements, the Applicants will direct any temporary lighting away from suitable habitat for the northern long-eared bat, the Indiana bat, or the tricolored bat during the active season for those species (April 1 to October 31). The Applicants will use downward-facing, full cut-off lens lights for any temporary lighting used during the construction of the planned capital improvements.

- If the planned capital improvements would involve installing any new, or replacing any existing, permanent lights, the Applicants will use downward-facing, full cut-off lens lights (with the same intensity or less for replacement lighting).

SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

December 1, 2022

Matt Fullerton
USFWS Oklahoma Ecological Services Field Office
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matthew_fullerton@fws.gov

Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern, et al.; **USFWS Informal Section 7 Consultation-Tricolored Bat Update**

Dear Mr. Fullerton:

As you may recall from my letter dated August 1, 2022, Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern, et al. (KCS) (collectively, Applicants) are seeking authorization from the Surface Transportation Board (Board) for CP to acquire KCS. The Board's Office of Environmental Analysis (OEA) determined that the proposed acquisition of KCS by CP, including capital improvements that the Applicants plan to make within the existing rail right-of-way, may affect, but is not likely to adversely affect the northern long-eared bat (*Myotis septentrionalis*) and Indiana bat (*Myotis sodalis*). Since that time, the U.S. Fish and Wildlife Service (USFWS) proposed to list the tricolored bat (*Perimyotis subflavus*) as endangered under the Endangered Species Act (ESA), and the USFWS' Information for Planning and Consultation (IPaC) species lists for the planned capital improvements at MP 247, Cave Springs, Spiro, and Heavener now include the tricolored bat. No other changes have been made to the IPaC species lists. The purpose of this letter is to request your written concurrence of OEA's determination of effects for the proposed acquisition on the tricolored bat, in accordance with Section 7(a)(2) of ESA.

Based on habitat-level field work, OEA identified suitable roosting and foraging habitat within the existing ROW for the northern long-eared bat and Indiana bat at all planned capital improvements in Oklahoma. The same habitat would be suitable for the tricolored bat. The Applicants have proposed multiple measures to protect the northern long-eared and Indiana bat during the construction of the planned capital improvements, as detailed in Attachment A to this letter. These measures include commitments to conduct tree clearing and work on structures that provide suitable roosting habitat outside of the active season (April 1 to October 31), as well as measures related to installing lighting. OEA believes that these measures would also protect the tricolored bat. Therefore, OEA has determined that the Proposed Acquisition **may affect, but is not likely to adversely affect** the tricolored bat.

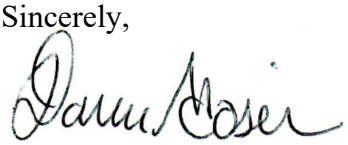
Table 1. Updated ESA-listed species with suitable habitat at the planned capital improvement locations in Oklahoma

Common and Scientific Name	Capital Improvement Location	Federal Status	Suitable Habitat	Recommended Effects Determination
Tricolored bat (*Perimyotis subflavus*)	MP 247 (Adair County) Cave Springs (Adair County) Spiro (Le Flore County) Heavener (Le Flore County)	Proposed Endangered	Suitable summer roosting and foraging habitat for the northern long-eared bat was present throughout the study area. Roosting habitat was identified in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. Foraging habitat was present in the canopy-enclosed flyways of forested edges of railroad ROW, adjacent roads, and throughout riparian corridors.	May affect, not likely to adversely affect
Northern long-eared bat (*Myotis septentrionalis*)	MP 247 (Adair County) Cave Springs (Adair County) Spiro (Le Flore County) Heavener (Le Flore County)	Threatened (Proposed Endangered)	Suitable summer roosting and foraging habitat for the northern long-eared bat was present throughout the study area. Roosting habitat was identified in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. Foraging habitat was present in the canopy-enclosed flyways of forested edges of railroad ROW, adjacent roads, and throughout riparian corridors.	May affect, not likely to adversely affect

Common and Scientific Name	Capital Improvement Location	Federal Status	Suitable Habitat	Recommended Effects Determination
Indiana bat (*Myotis sodalis*)	MP 247 (Adair County) Cave Springs (Adair County) Spiro (Le Flore County) Heavener (Le Flore County)	Endangered	Suitable summer roosting and foraging habitat for the Indiana bat was present throughout the study area. Summer roosting habitat was identified in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. Foraging habitat was present in the canopy-enclosed flyways of forested edges of railroad ROW, adjacent roads, and throughout riparian corridors.	May affect, not likely to adversely affect

We appreciate your review and assistance in the consultation process and look forward to hearing from you. For further information or questions, please contact Joshua Wayland at Joshua.Wayland@stb.gov or 202-245-0330. For further information about the Proposed Acquisition, you may also visit the Board-sponsored project website at www.CP-KCSMergerEIS.com.

Sincerely,



Danielle Gosselin
Director
Office of Environmental Analysis

ATTACHMENT A: PROTECTED BAT VOLUNTARY MITIGATION MEASURES

Should the Surface Transportation Board (Board) authorize the proposed acquisition of Kansas City Southern et al. (KCS) by Canadian Pacific Railway et al. (CP), the Board's Office of Environmental Analysis (OEA) recommends that CP and KCS (collectively, Applicants) be required to implement the following measures to avoid impacts on northern long-eared bat, Indiana bat, and tricolored bat.

- The Applicants will not conduct construction-related tree removal for the planned capital improvements during the active season for the Indiana bat, the northern long-eared bat, and tricolored bat (April 1 to October 31).

- During the construction of the planned capital improvements, the Applicants will take steps to reduce the unnecessary removal of bat habitat outside of active bat season by limiting tree removal to only the areas necessary to safely construct and operate the new siding or second track, marking the limits of tree clearing through the use of flagging or fencing, and ensuring that construction contractors understand clearing limits and how they are marked in the field.

- Where practicable, the Applicants will conduct any culvert or bridge removal as part of the planned capital improvements outside of the roosting period of bat species, specific to each planned capital improvement location. Where practicable, if bridge or culvert removal is required during the bat roosting period where the individual planned capital improvement is located, the Applicants will consult with OEA and the local office of the U.S. Fish and Wildlife Service (USFWS) on appropriate methods to determine if bats are using the bridge or culvert as a roost.

- If construction of the planned capital improvements would require removal or alteration of bridges, culverts, or other structures that provide suitable habitat for the northern long-eared bat, the Indiana bat, or the tricolored bat during the active season for those species (April 1 to October 31), the Applicants will first conduct an inspection for the presence of or evidence of use by bats. The inspection will be completed by a qualified biologist. If the inspection finds bats or evidence of bats, then the Applicants will not commence work on the structure until coordinating with OEA and USFWS to determine appropriate follow-up or mitigative actions. The inspection must be completed during the same year that the work takes place.

- During construction of the planned capital improvements, the Applicants will direct any temporary lighting away from suitable habitat for the northern long-eared bat, the Indiana bat, or the tricolored bat during the active season for those species (April 1 to October 31). The Applicants will use downward-facing, full cut-off lens lights for any temporary lighting used during the construction of the planned capital improvements.

- If the planned capital improvements would involve installing any new, or replacing any

existing, permanent lights, the Applicants will use downward-facing, full cut-off lens lights (with the same intensity or less for replacement lighting).

SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

June 6, 2022

Melvin Tobin
Field Supervisor
USFWS Arkansas Ecological Field Office
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Conway, AR 72032
Melvin_Tobin@fws.gov

Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern Railway, et al.; **USFWS Informal Section 7 Consultation**

Dear Mr. Tobin:

As you may recall from my letter dated November 12, 2021, Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern Railway et al. (KCS) have filed an application with the Surface Transportation Board (Board) under 49 U.S.C. §§ 11323-25 seeking the Board's approval of the acquisition of control of KCS by CP (Proposed Acquisition). If the Board authorizes the Proposed Acquisition, CP and KCS (collectively, the Applicants) would combine to form an integrated system to be known as Canadian Pacific Kansas City (CPKC). The Board's Office of Environmental Analysis (OEA) is currently preparing a Draft Environmental Impact Statement (EIS) that assesses the potential environmental impacts of the Proposed Acquisition, pursuant to the National Environmental Policy Act (NEPA) and related environmental laws. The purpose of this letter is to request your written concurrence of OEA's determination of effects for the Proposed Acquisition on federally listed species, in accordance with Section 7(a)(2) of the Endangered Species Act (ESA) of 1973.

The Applicants expect that the Proposed Acquisition would cause average rail traffic to increase on certain rail lines within the combined CPKC network because freight would be diverted from rail lines owned by other railroad companies and from truck transportation to rail transportation. To accommodate the projected increase in rail traffic, the Applicants plan to make certain capital improvements within the existing rail right-of-way (ROW) if the Board authorizes the Proposed Acquisition. In Arkansas, those planned capital improvements would include adding one new passing siding and extending one existing siding. Construction activities associated with those capital improvements have the potential to affect federally listed threatened or endangered species if any are present within the existing rail ROW at the planned capital improvement locations. Maps of the planned capital improvement locations in Arkansas are appended to this letter.

Although OEA is evaluating the potential environmental impacts of the planned capital improvements as effects of the Proposed Acquisition, the Applicants would only add the capital improvements as needed to support increased rail traffic. Therefore, the Applicants have not completed detailed design and engineering and would not do so until after the Board has issued its final decision on the Proposed Acquisition. Accordingly, OEA's analysis of the potential impacts from constructing the planned capital improvements is based on largely conceptual design information, as well as conservative assumptions about how construction would proceed. OEA expects that all construction activity associated with the planned capital improvements would take place within the existing rail ROW.

In Arkansas, the planned capital improvements would include extending one existing siding and adding one new siding adjacent to the existing rail line, which would involve tree clearing, grading, and filling within the existing rail ROW. To be conservative, OEA assumed that each planned capital improvement could affect the entire area extending from the existing tracks to the edge of the rail ROW (study area), but the actual affected area would likely be smaller. The planned capital improvements could also involve replacing or extending existing railroad bridges and culverts to accommodate the new or extended siding.

OEA conducted field work in January 2022 to characterize the existing habitat at each planned capital improvement location. Prior to conducting field work, OEA used the USFWS Information for Planning and Consultation tool and correspondence from the Arkansas Natural Heritage Commission to determine the species of concern for each planned capital improvement location. Based on habitat-level field work, OEA identified suitable roosting and foraging habitat within the existing ROW for the northern long-eared bat (*Myotis septentrionalis*) and Indiana bat (*Myotis sodalis*) at both planned capital improvements in Arkansas. The Applicants have proposed multiple measures to protect the northern long-eared and Indiana bat during the construction of the planned capital improvements, as detailed in Attachment A to this letter. These measures include commitments to conduct tree clearing and work on structures that provide suitable roosting habitat outside of the active season (April 1 to October 31), as well as measures related to installing lighting. Based on the Applicants' voluntary commitments, OEA has determined that the Proposed Acquisition **may affect, but is not likely to adversely affect** the northern long-eared bat and Indiana bat.

The following species do not have suitable habitat within the rail ROW at any of the planned capital improvement locations: Arkansas fatmucket (*Lampsilis powelli*), Eastern black rail (*Laterallus jamaicensis*), gray bat (*Myotis grisescens*), Missouri bladderpod (*Physaria filiformis*), monarch butterfly (*Danaus plexippus*), Ozark big-eared bat (*Corynorhinus townsendii ingens*), Ozark cavefish (*Amblyopsis rosae*), piping plover (*Charadrius melodus*), rabbitsfoot (*Quadrula cylindrica cylindrica*), red knot (*Calidris canutus*), and red-cockaded woodpecker (*Leuconotopicus borealis*). Therefore, OEA has determined that the Proposed Acquisition would have **no effect** on these species**.** There is no critical habitat within any of the planned capital improvement locations in Arkansas. If you agree with these recommended determinations, please send your written concurrence.

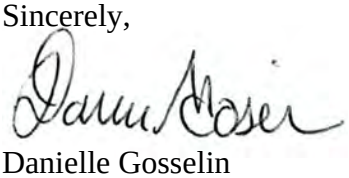
Please see **Table 1** below for a summary of ESA-listed species with suitable habitat and the attached maps showing suitable forested bat habitat and suitable bat roosting structures within the ROW of the planned capital improvement locations.

Table 1. ESA-listed species with suitable habitat at the planned capital improvement locations in Arkansas

Common and Scientific Name	Capital Improvement Location	Federal Status	Suitable Habitat	Recommended Effects Determination
Northern long-eared bat (*Myotis septentrionalis*)	Gentry (Benton County) MP 377 (Polk County)	Threatened (Proposed Endangered)	Suitable roosting and foraging habitat for the northern long-eared bat was present throughout the study area. Roosting habitat was identified in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. Foraging habitat was present in the canopy-enclosed flyways of forested edges of railroad ROW, adjacent roads, and throughout riparian corridors.	May affect, not likely to adversely affect
Indiana bat (*Myotis sodalis*)	Gentry (Benton County)	Endangered	Suitable summer roosting and foraging habitat for the Indiana bat was present throughout the study area. Summer roosting habitat was identified in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. Foraging habitat was present in the canopy-enclosed flyways of forested edges of railroad ROW, adjacent roads, and throughout riparian corridors.	May affect, not likely to adversely affect

We appreciate your review and assistance in the consultation process and look forward to hearing from you. For further information or questions, please contact Joshua Wayland at Joshua.Wayland@stb.gov or 202-245-0330. For further information about the Proposed Acquisition, you may also visit the Board-sponsored project website at www.CP-KCSMergerEIS.com.

Sincerely,



Danielle Gosselin
Director
Office of Environmental Analysis

ATTACHMENT A: NORTHERN LONG-EARED BAT AND INDIANA BAT VOLUNTARY MITIGATION MEASURES

Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern Railway et al. (KCS) (collectively, the Applicants) have voluntarily proposed the following measures to avoid impacts on northern long-eared bat and Indiana bat. If the Surface Transportation Board (Board) authorizes the Proposed Acquisition of KCS by CP, the Applicants, their employees, and their contractors would be required to strictly adhere to these measures during construction of planned capital improvements related to the Proposed Acquisition, as well as any additional mitigation measures recommended by the Board's Office of Environmental Analysis (OEA) and imposed by the Board in its final decision.

- The Applicants will not conduct construction-related tree removal for the planned capital improvements during the active season for the Indiana bat and the northern long-eared bat (April 1 to October 31).

- During the construction of the planned capital improvements, the Applicants will take steps to reduce the unnecessary removal of bat habitat outside of active bat season by limiting tree removal to only the areas necessary to safely construct and operate the new siding or second track, marking the limits of tree clearing through the use of flagging or fencing, and ensuring that construction contractors understand clearing limits and how they are marked in the field.

- Where practicable, the Applicants will conduct any culvert or bridge removal as part of the planned capital improvements outside of the roosting period of bat species, specific to each planned capital improvement location. Where practicable, if bridge or culvert removal is required during the bat roosting period where the individual planned capital improvement is located, the Applicants will consult with OEA and the local office of the U.S. Fish and Wildlife Service (USFWS) on appropriate methods to determine if bats are using the bridge or culvert as a roost.

- If construction of the planned capital improvements would require removal or alteration of bridges, culverts, or other structures that provide suitable habitat for the northern long-eared bat or the Indiana bat during the active season for those species (April 1 to October 31), the Applicants will first conduct an inspection for the presence of or evidence of use by bats. The inspection will be completed by a qualified biologist. If the inspection finds bats or evidence of bats, then the Applicants will not commence work on the structure until coordinating with OEA and USFWS to determine appropriate follow-up or mitigative actions. The inspection must be completed during the same year that the work takes place.

- During construction of the planned capital improvements, the Applicants will direct any temporary lighting away from suitable habitat for the northern long-eared bat or the

Indiana bat during the active season for those species (April 1 to October 31). The Applicants will use downward-facing, full cut-off lens lights for any temporary lighting used during the construction of the planned capital improvements.

- If the planned capital improvements would involve installing any new, or replacing any existing, permanent lights, the Applicants will use downward-facing, full cut-off lens lights (with the same intensity or less for replacement lighting).

SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

June 6, 2022

Aleshia Kenney
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Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern Railway, et al.; **USFWS Informal Section 7 Consultation**

Dear Ms. Kenney:

As you may recall from my letter dated November 12, 2021, Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern Railway et al. (KCS) have filed an application with the Surface Transportation Board (Board) under 49 U.S.C. §§ 11323-25 seeking the Board's approval of the acquisition of control of KCS by CP (Proposed Acquisition). If the Board authorizes the Proposed Acquisition, CP and KCS (collectively, the Applicants) would combine to form an integrated system to be known as Canadian Pacific Kansas City (CPKC). The Board's Office of Environmental Analysis (OEA) is currently preparing a Draft Environmental Impact Statement (EIS) that assesses the potential environmental impacts of the Proposed Acquisition, pursuant to the National Environmental Policy Act (NEPA) and related environmental laws. The purpose of this letter is to request your written concurrence of OEA's determination of effects for the Proposed Acquisition on federally listed species, in accordance with Section 7(a)(2) of the Endangered Species Act (ESA) of 1973.

The Applicants expect that the Proposed Acquisition would cause average rail traffic to increase on certain rail lines within the combined CPKC network because freight would be diverted from rail lines owned by other railroad companies and from truck transportation to rail transportation. To accommodate the projected increase in rail traffic, the Applicants plan to make certain capital improvements within the existing rail right-of-way (ROW) if the Board authorizes the Proposed Acquisition. In Iowa and Illinois, those planned capital improvements would include adding five new passing sidings and extending four existing sidings. Construction activities associated with those capital improvements have the potential to affect federally listed threatened or endangered species, if any are present within the existing rail ROW at the planned capital improvement locations. Maps of the planned capital improvement locations in Illinois and Iowa are appended to this letter.

Although OEA is evaluating the potential environmental impacts of the planned capital improvements as effects of the Proposed Acquisition, the Applicants would only add the capital improvements as needed to support increased rail traffic. Therefore, the Applicants have not completed detailed design and engineering and would not do so until after the Board has issued its final decision on the Proposed Acquisition. Accordingly, OEA's analysis of the potential impacts from constructing the planned capital improvements is based on largely conceptual design information, as well as conservative assumptions about how construction would proceed. OEA expects that all construction activity associated with the planned capital improvements would take place within the existing rail ROW.

In Iowa, the planned capital improvements would include extending four existing sidings and adding four new sidings adjacent to the existing rail line, which would involve tree clearing, grading, and filling within the existing rail ROW. To be conservative, OEA assumed that each planned capital improvement could affect the entire area extending from the existing tracks to the edge of the rail ROW (study area), but the actual affected area would likely be smaller. The planned capital improvements could also involve replacing or extending existing railroad bridges and culverts to accommodate the new or extended siding.

In Illinois, the single planned new siding would be located within the footprint of a second railroad track that used to extend adjacent to the mainline but has since been removed. Therefore, the planned new siding in Illinois would be located within a previously disturbed area and would not result in any new impacts on habitats, plants, or wildlife.

OEA conducted field work in January 2022 to characterize the existing habitat at each planned capital improvement location. Prior to conducting field work, OEA used the USFWS Information for Planning and Consultation tool and correspondence from the Iowa Department of Natural Resources and Illinois Department of Natural Resources to determine the species of concern for each planned capital improvement location. Based on habitat-level field work, OEA identified suitable roosting and foraging habitat within the existing ROW for the northern long-eared bat (*Myotis septentrionalis*) and Indiana bat (*Myotis sodalis*) at each of the eight planned capital improvements in Iowa. The Applicants have proposed multiple measures to protect the northern long-eared and Indiana bat during the construction of the planned capital improvements, as detailed in Attachment A to this letter. These measures include commitments to conduct tree clearing and work on structures that provide suitable roosting habitat outside of the active season (April 1 to October 31), as well as measures related to installing lighting. Based on the Applicants' voluntary commitments, OEA has determined that the Proposed Acquisition **may affect, but is not likely to adversely affect** the northern long-eared bat and Indiana bat.

The following species do not have suitable habitat within the rail ROW at any of the planned capital improvement locations: Eastern massasauga (*Sistrurus catenatus*), eastern prairie fringed orchid (*Platanthera leucophaea*), Higgins eye pearlymussel (*Lampsilis higginsii*), Iowa pleistocene snail (*Discus macclintocki*), monarch butterfly (*Danaus plexippus*), northern wild monkshood (*Aconitum noveboracense*), prairie bush-clover (*Lespedeza leptostachya*), sheepnose mussel (*Plethobasus cyphyus*), spectaclecase (*Cumberlandia monodonta*), and western prairie fringed orchid (*Platanthera praeclara*). Therefore, OEA has determined that the Proposed Acquisition would have **no effect** on these species**.** There is no critical habitat within any of the

planned capital improvement locations in Iowa and Illinois. If you agree with these recommended determinations, please send your written concurrence.

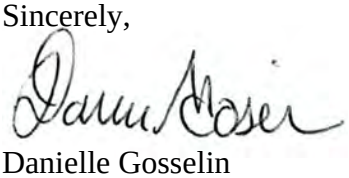
Please see **Table 1** below for a summary of ESA-listed species with suitable habitat and the attached maps showing suitable forested bat habitat and suitable bat roosting structures within the ROW of the planned capital improvement locations.

Table 1. ESA-listed species with suitable habitat at the planned capital improvement locations in Iowa

Common and Scientific Name	Capital Improvement Location	Federal Status	Suitable Habitat	Recommended Effects Determination
Northern long-eared bat (*Myotis septentrionalis*)	MP 71 (Clayton County) MP 24 (Jackson County) Deer Creek (Clinton County) Camanche (Clinton County) Letts (Louisa County) MP 255 (Washington County) Ottumwa (Wapello County) Moravia (Monroe County)	Threatened (Proposed Endangered)	Suitable roosting and foraging habitat for the northern long-eared bat was present throughout the study area. Roosting habitat was identified in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. Foraging habitat was present in the canopy-enclosed flyways of forested edges of railroad ROW, adjacent roads, and throughout riparian corridors.	May affect, not likely to adversely affect
Indiana bat (*Myotis sodalis*)	Letts (Louisa County) MP 255 (Washington County) Ottumwa (Wapello County) Moravia (Monroe County)	Endangered	Suitable summer roosting and foraging habitat for the Indiana bat was present throughout the study area. Summer roosting habitat was identified in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. Foraging habitat was present in the canopy-enclosed flyways of forested edges of railroad ROW, adjacent roads, and throughout riparian corridors.	May affect, not likely to adversely affect

We appreciate your review and assistance in the consultation process and look forward to hearing from you. For further information or questions, please contact Joshua Wayland at Joshua.Wayland@stb.gov or 202-245-0330. For further information about the Proposed Acquisition, you may also visit the Board-sponsored project website at www.CP-KCSMergerEIS.com.

Sincerely,



Danielle Gosselin
Director
Office of Environmental Analysis

ATTACHMENT A: NORTHERN LONG-EARED BAT AND INDIANA BAT VOLUNTARY MITIGATION MEASURES

Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern Railway et al. (KCS) (collectively, the Applicants) have voluntarily proposed the following measures to avoid impacts on northern long-eared bat and Indiana bat. If the Surface Transportation Board (Board) authorizes the Proposed Acquisition of KCS by CP, the Applicants, their employees, and their contractors would be required to strictly adhere to these measures during construction of planned capital improvements related to the Proposed Acquisition, as well as any additional mitigation measures recommended by the Board's Office of Environmental Analysis (OEA) and imposed by the Board in its final decision.

- The Applicants will not conduct construction-related tree removal for the planned capital improvements during the active season for the Indiana bat and the northern long-eared bat (April 1 to October 31).

- During the construction of the planned capital improvements, the Applicants will take steps to reduce the unnecessary removal of bat habitat outside of active bat season by limiting tree removal to only the areas necessary to safely construct and operate the new siding or second track, marking the limits of tree clearing through the use of flagging or fencing, and ensuring that construction contractors understand clearing limits and how they are marked in the field.

- Where practicable, the Applicants will conduct any culvert or bridge removal as part of the planned capital improvements outside of the roosting period of bat species, specific to each planned capital improvement location. Where practicable, if bridge or culvert removal is required during the bat roosting period where the individual planned capital improvement is located, the Applicants will consult with OEA and the local office of the U.S. Fish and Wildlife Service (USFWS) on appropriate methods to determine whether bats are using the bridge or culvert as a roost.

- If construction of the planned capital improvements would require removal or alteration of bridges, culverts, or other structures that provide suitable habitat for the northern long-eared bat or the Indiana bat during the active season for those species (April 1 to October 31), the Applicants will first conduct an inspection for the presence of or evidence of use by bats. The inspection will be completed by a qualified biologist. If the inspection finds bats or evidence of bats, then the Applicants will not commence work on the structure until coordinating with OEA and USFWS to determine appropriate follow-up or mitigative actions. The inspection must be completed during the same year that the work takes place.

- During construction of the planned capital improvements, the Applicants will direct any temporary lighting away from suitable habitat for the northern long-eared bat or the Indiana bat during the active season for those species (April 1 to October 31). The

Applicants will use downward-facing, full cut-off lens lights for any temporary lighting used during the construction of the planned capital improvements.

- If the planned capital improvements would involve installing any new, or replacing any existing, permanent lights, the Applicants will use downward-facing, full cut-off lens lights (with the same intensity or less for replacement lighting).

SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

June 6, 2022

Karen Herrington
Field Supervisor
USFWS Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203
Karen_Herrington@fws.gov

Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern Railway, et al.; **USFWS Informal Section 7 Consultation**

Dear Ms. Herrington:

As you may recall from my letter dated November 12, 2021, Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern Railway et al. (KCS) have filed an application with the Surface Transportation Board (Board) under 49 U.S.C. §§ 11323-25 seeking the Board's approval of the acquisition of control of KCS by CP (Proposed Acquisition). If the Board authorizes the Proposed Acquisition, CP and KCS (collectively, the Applicants) would combine to form an integrated system to be known as Canadian Pacific Kansas City (CPKC). The Board's Office of Environmental Analysis (OEA) is currently preparing a Draft Environmental Impact Statement (EIS) that assesses the potential environmental impacts of the Proposed Acquisition, pursuant to the National Environmental Policy Act (NEPA) and related environmental laws. The purpose of this letter is to request your written concurrence of OEA's determination of effects for the Proposed Acquisition on federally listed species, in accordance with Section 7(a)(2) of the Endangered Species Act (ESA) of 1973.

The Applicants expect that the Proposed Acquisition would cause average rail traffic to increase on certain rail lines within the combined CPKC network because freight would be diverted from rail lines owned by other railroad companies and from truck transportation to rail transportation. To accommodate the projected increase in rail traffic, the Applicants plan to make certain capital improvements within the existing rail right-of-way (ROW) if the Board authorizes the Proposed Acquisition. In Missouri, those planned capital improvements would include adding two new passing sidings, extending three existing sidings, adding a double track, and adding a facility working track. Construction activities associated with those capital improvements have the potential to affect federally listed threatened or endangered species, if any are present within the existing rail ROW at the planned capital improvement locations. Maps of the planned capital improvement locations in Missouri are appended to this letter.

Although OEA is evaluating the potential environmental impacts of the planned capital improvements as effects of the Proposed Acquisition, the Applicants would only add the capital improvements as needed to support increased rail traffic. Therefore, the Applicants have not completed detailed design and engineering and would not do so until after the Board has issued its final decision on the Proposed Acquisition. Accordingly, OEA's analysis of the potential impacts from constructing the planned capital improvements is based on largely conceptual design information, as well as conservative assumptions about how construction would proceed. OEA expects that all construction activity associated with the planned capital improvements would take place within the existing rail ROW.

In Missouri, the planned capital improvements would include adding two new passing sidings, extending three existing sidings, adding a double track, and adding a facility working track, which would involve tree clearing, grading, and filling within the existing rail ROW. To be conservative, OEA assumed that each planned capital improvement could affect the entire area extending from the existing tracks to the edge of the rail ROW (study area), but the actual affected area would likely be smaller. The planned capital improvements could also involve replacing or extending existing railroad bridges and culverts to accommodate the new or extended siding.

OEA conducted field work in January 2022 to characterize the existing habitat at each planned capital improvement location. Prior to conducting field work, OEA used the USFWS Information for Planning and Consultation tool and correspondence from the Missouri Department of Conservation to determine the species of concern for each planned capital improvement location. Based on habitat-level field work, OEA identified suitable roosting and foraging habitat within the existing ROW for the northern long-eared bat (*Myotis septentrionalis*) and Indiana bat (*Myotis sodalis*) at six of the seven planned capital improvements in Missouri. The Applicants have proposed multiple measures to protect the northern long-eared and Indiana bat during the construction of the planned capital improvements, as detailed in Attachment A to this letter. These measures include commitments to conduct tree clearing and work on structures that provide suitable roosting habitat outside of the active season (April 1 to October 31), as well as measures related to installing lighting. Based on the Applicants' voluntary commitments, OEA has determined that the Proposed Acquisition **may affect, but is not likely to adversely affect** the northern long-eared bat and Indiana bat.

OEA identified a bald eagle nest within the existing ROW of the MP 431 (Dawn) capital improvement site in Livingston County. If activities for the planned capital improvement requires the removal of the nest tree, the Applicant would obtain an Eagle Nest Take Permit (50 C.F.R. 22.27) prior to removing the nest tree. The following species do not have suitable habitat within the rail ROW at any of the planned capital improvement locations: Eastern prairie fringed orchid (*Platanthera leucophaea*), gray bat (*Myotis grisescens*), Mead's milkweed (*Asclepias meadii*), monarch butterfly (*Danaus plexippus*), Neosho madtom (*Noturus placidus*), Neosho mucket (*Lampsilis rafinesqueana*), Ozark cavefish (*Amblyopsis rosae*), and rabbitsfoot (*Quadrula cylindrica cylindrica*). Therefore, OEA has determined that the Proposed Acquisition would have **no effect** on these species**.** There is no critical habitat within any of the planned

capital improvement locations in Missouri. If you agree with these recommended determinations, please send your written concurrence.

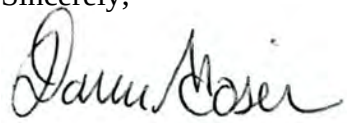
Please see **Table 1** below for a summary of ESA-listed species with suitable habitat and the attached maps showing suitable forested bat habitat and suitable bat roosting structures within the ROW of the planned capital improvement locations.

Table 1. ESA-listed species with suitable habitat at the planned capital improvement locations in Missouri

Common and Scientific Name	Capital Improvement Location	Federal Status	Suitable Habitat	Recommended Effects Determination
Northern long-eared bat (*Myotis septentrionalis*)	Newtown (Sullivan County) Laredo (Grundy County) MP 431 (Livingston County) Blue Valley (Jackson County) Grandview/IFG (Jackson and Cass Counties) MP 186 (McDonald County)	Threatened (Proposed Endangered)	Suitable roosting and foraging habitat for the northern long-eared bat was present throughout the study area. Roosting habitat was identified in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. Foraging habitat was present in the canopy-enclosed flyways of forested edges of railroad ROW, adjacent roads, and throughout riparian corridors.	May affect, not likely to adversely affect
Indiana bat (*Myotis sodalis*)	Newtown (Sullivan County) Laredo (Grundy County) MP 431 (Livingston County) Blue Valley (Jackson County) Grandview/IFG (Jackson and Cass Counties) MP 186 (McDonald County)	Endangered	Suitable summer roosting and foraging habitat for the Indiana bat was present throughout the study area. Summer roosting habitat was identified in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. Foraging habitat was present in the canopy-enclosed flyways of forested edges of railroad ROW, adjacent roads, and throughout riparian corridors.	May affect, not likely to adversely affect

We appreciate your review and assistance in the consultation process and look forward to hearing from you. For further information or questions, please contact Joshua Wayland at Joshua.Wayland@stb.gov or 202-245-0330. For further information about the Proposed Acquisition, you may also visit the Board-sponsored project website at www.CP-KCSMergerEIS.com.

Sincerely,



Danielle Gosselin
Director
Office of Environmental Analysis

ATTACHMENT A: NORTHERN LONG-EARED BAT AND INDIANA BAT VOLUNTARY MITIGATION MEASURES

Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern Railway et al. (KCS) (collectively, the Applicants) have voluntarily proposed the following measures to avoid impacts on northern long-eared bat and Indiana bat. If the Surface Transportation Board (Board) authorizes the Proposed Acquisition of KCS by CP, the Applicants, their employees, and their contractors would be required to strictly adhere to these measures during construction of planned capital improvements related to the Proposed Acquisition, as well as any additional mitigation measures recommended by the Board's Office of Environmental Analysis (OEA) and imposed by the Board in its final decision.

- The Applicants will not conduct construction-related tree removal for the planned capital improvements during the active season for the Indiana bat and the northern long-eared bat (April 1 to October 31).

- During the construction of the planned capital improvements, the Applicants will take steps to reduce the unnecessary removal of bat habitat outside of active bat season by limiting tree removal to only the areas necessary to safely construct and operate the new siding or second track, marking the limits of tree clearing through the use of flagging or fencing, and ensuring that construction contractors understand clearing limits and how they are marked in the field.

- Where practicable, the Applicants will conduct any culvert or bridge removal as part of the planned capital improvements outside of the roosting period of bat species, specific to each planned capital improvement location. Where practicable, if bridge or culvert removal is required during the bat roosting period where the individual planned capital improvement is located, the Applicants will consult with OEA and the local office of the U.S. Fish and Wildlife Service (USFWS) on appropriate methods to determine if bats are using the bridge or culvert as a roost.

- If construction of the planned capital improvements would require removal or alteration of bridges, culverts, or other structures that provide suitable habitat for the northern long-eared bat or the Indiana bat during the active season for those species (April 1 to October 31), the Applicants will first conduct an inspection for the presence of or evidence of use by bats. The inspection will be completed by a qualified biologist. If the inspection finds bats or evidence of bats, then the Applicants will not commence work on the structure until coordinating with OEA and USFWS to determine appropriate follow-up or mitigative actions. The inspection must be completed during the same year that the work takes place.

- During construction of the planned capital improvements, the Applicants will direct any temporary lighting away from suitable habitat for the northern long-eared bat or the Indiana bat during the active season for those species (April 1 to October 31). The

Applicants will use downward-facing, full cut-off lens lights for any temporary lighting used during the construction of the planned capital improvements.

- If the planned capital improvements would involve installing any new, or replacing any existing, permanent lights, the Applicants will use downward-facing, full cut-off lens lights (with the same intensity or less for replacement lighting).

SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

June 13, 2022

Susan Minnick
USFWS Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129
OKProjectReview@fws.gov
Susan_Minnick@fws.gov

Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern Railway, et al.; **USFWS Informal Section 7 Consultation**

Dear Ms. Minnick:

As you may recall from my letter dated November 12, 2021, Canadian Pacific Railway Limited, et al. (CP) and Kansas City Southern Railway et al. (KCS) have filed an application with the Surface Transportation Board (Board) under 49 U.S.C. §§ 11323-25 seeking the Board's approval of the acquisition of control of KCS by CP (Proposed Acquisition). If the Board authorizes the Proposed Acquisition, CP and KCS (collectively, the Applicants) would combine to form an integrated system to be known as Canadian Pacific Kansas City (CPKC). The Board's Office of Environmental Analysis (OEA) is currently preparing a Draft Environmental Impact Statement (EIS) that assesses the potential environmental impacts of the Proposed Acquisition, pursuant to the National Environmental Policy Act (NEPA) and related environmental laws. The purpose of this letter is to request your written concurrence of OEA's determination of effects for the Proposed Acquisition on federally listed species, in accordance with Section 7(a)(2) of the Endangered Species Act (ESA) of 1973.

The Applicants expect that the Proposed Acquisition would cause average rail traffic to increase on certain rail lines within the combined CPKC network because freight would be diverted from rail lines owned by other railroad companies and from truck transportation to rail transportation. To accommodate the projected increase in rail traffic, the Applicants plan to make certain capital improvements within the existing rail right-of-way (ROW) if the Board authorizes the Proposed Acquisition. In Oklahoma, those planned capital improvements would include adding two new passing sidings and extending two existing sidings. Construction activities associated with those capital improvements have the potential to affect federally listed threatened or endangered species, if any are present within the existing rail ROW at the planned capital improvement locations. Maps of the planned capital improvement locations in Oklahoma are appended to this letter.

Although OEA is evaluating the potential environmental impacts of the planned capital improvements as effects of the Proposed Acquisition, the Applicants would only add the capital improvements as needed to support increased rail traffic. Therefore, the Applicants have not completed detailed design and engineering and would not do so until after the Board has issued its final decision on the Proposed Acquisition. Accordingly, OEA's analysis of the potential impacts from constructing the planned capital improvements is based on largely conceptual design information, as well as conservative assumptions about how construction would proceed. OEA expects that all construction activity associated with the planned capital improvements would take place within the existing rail ROW.

In Oklahoma, the planned capital improvements would include extending two existing sidings and adding two new sidings adjacent to the existing rail line, which would involve tree clearing, grading, and filling within the existing rail ROW. To be conservative, OEA assumed that each planned capital improvement could affect the entire area extending from the existing tracks to the edge of the rail ROW (study area), but the actual affected area would likely be smaller. The planned capital improvements could also involve replacing or extending existing railroad bridges and culverts to accommodate the new or extended siding.

OEA conducted field work in January 2022 to characterize the existing habitat at each planned capital improvement location. Prior to conducting field work, OEA used the USFWS Information for Planning and Consultation tool and correspondence from the Oklahoma Natural Heritage Inventory to determine the species of concern for each planned capital improvement location. Based on habitat-level field work, OEA identified suitable roosting and foraging habitat within the existing ROW for the northern long-eared bat (*Myotis septentrionalis*) and Indiana bat (*Myotis sodalis*) at all planned capital improvements in Oklahoma. The Applicants have proposed multiple measures to protect the northern long-eared and Indiana bat during the construction of the planned capital improvements, as detailed in Attachment A to this letter. These measures include commitments to conduct tree clearing and work on structures that provide suitable roosting habitat outside of the active season (April 1 to October 31), as well as measures related to installing lighting. Based on the Applicants' voluntary commitments, OEA has determined that the Proposed Acquisition **may affect, but is not likely to adversely affect** the northern long-eared bat and Indiana bat.

The following species do not have suitable habitat within the rail ROW at any of the planned capital improvement locations: American burying beetle (*Nicrophorus americanus*), gray bat (*Myotis grisescens*), monarch butterfly (*Danaus plexippus*), Neosho mucket (*Lampsilis rafinesqueana*), Ozark big-eared bat (*Corynorhinus townsendii ingens*), piping plover (*Charadrius melodus*), rabbitsfoot (*Quadrula cylindrica cylindrica*), red knot (*Calidris canutus*), and scaleshell mussel (*Leptodea leptodon*). Therefore, OEA has determined that the Proposed Acquisition would have **no effect** on these species**.** There is no critical habitat within any of the planned capital improvement locations in Oklahoma. If you agree with these recommended determinations, please send your written concurrence.

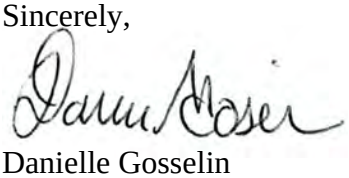
Please see **Table 1** below for a summary of ESA-listed species with suitable habitat and the attached maps showing suitable forested bat habitat and suitable bat roosting structures within the ROW of the planned capital improvement locations.

Table 1. ESA-listed species with suitable habitat at the planned capital improvement locations in Oklahoma

Common and Scientific Name	Capital Improvement Location	Federal Status	Suitable Habitat	Recommended Effects Determination
Northern long-eared bat (*Myotis septentrionalis*)	MP 247 (Adair County) Cave Springs (Adair County) Spiro (Le Flore County) Heavener (Le Flore County)	Threatened (Proposed Endangered)	Suitable roosting and foraging habitat for the northern long-eared bat was present throughout the study area. Roosting habitat was identified in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. Foraging habitat was present in the canopy-enclosed flyways of forested edges of railroad ROW, adjacent roads, and throughout riparian corridors.	May affect, not likely to adversely affect
Indiana bat (*Myotis sodalis*)	MP 247 (Adair County) Cave Springs (Adair County) Spiro (Le Flore County) Heavener (Le Flore County)	Endangered	Suitable summer roosting and foraging habitat for the Indiana bat was present throughout the study area. Summer roosting habitat was identified in the forested areas along edges of railroad ROW, under multiple bridges, and in multiple culverts throughout the study area. Foraging habitat was present in the canopy-enclosed flyways of forested edges of railroad ROW, adjacent roads, and throughout riparian corridors.	May affect, not likely to adversely affect

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Sincerely,



Danielle Gosselin
Director
Office of Environmental Analysis

ATTACHMENT A: NORTHERN LONG-EARED BAT AND INDIANA BAT VOLUNTARY MITIGATION MEASURES

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- The Applicants will not conduct construction-related tree removal for the planned capital improvements during the active season for the Indiana bat and the northern long-eared bat (April 1 to October 31).

- During the construction of the planned capital improvements, the Applicants will take steps to reduce the unnecessary removal of bat habitat outside of active bat season by limiting tree removal to only the areas necessary to safely construct and operate the new siding or second track, marking the limits of tree clearing through the use of flagging or fencing, and ensuring that construction contractors understand clearing limits and how they are marked in the field.

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Applicants will use downward-facing, full cut-off lens lights for any temporary lighting used during the construction of the planned capital improvements.

- If the planned capital improvements would involve installing any new, or replacing any existing, permanent lights, the Applicants will use downward-facing, full cut-off lens lights (with the same intensity or less for replacement lighting).

From: Hundley, Joshua T
To: Sydney Feldt
Subject: Re: [EXTERNAL] RE: CP/KCS Merger, STB Docket No. FD 36500, USFWS Updated Informal Consultation Letter-Missouri
Date: Tuesday, December 27, 2022 10:55:24 AM

Hi Sydney,

Thanks for the follow-up email, December has been busy and few emails are buried. So, technically under ESA we cannot consult on proposed species, mainly because the proposal can be withdrawn. That's never happened, but it is a possibility. Below is the language we were given to send out.

On September 14, 2022, the U.S. Fish and Wildlife Service (Service) published a proposal in the Federal Register to list the tricolored bat (Perimyotis subflavus) as endangered under the Endangered Species Act (ESA). The Service has up to 12-months from the date the proposal published to make a final determination, either to list the tricolored bat under the Act or to withdraw the proposal. The Service determined the bat faces extinction primarily due to the rangewide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across North America. Because tricolored bat populations have been greatly reduced due to WNS, surviving bat populations are now more vulnerable to other stressors such as human disturbance and habitat loss.

Species proposed for listing are not afforded protection under the Act; however, as soon as a listing becomes effective (typically 30 days after publication of the final rule in the Federal Register), the prohibitions against jeopardizing its continued existence and "take" will apply. Therefore, if your future or existing project has the potential to adversely affect tricolored bats after the potential new listing goes into effect, we recommend that the effects of the project on tricolored bat and their habitat be analyzed to determine whether authorization under ESA section 7 or 10 is necessary. Projects with an existing section 7 biological opinion may require reinitiation of consultation, and projects with an existing section 10 incidental take permit may require an amendment to provide uninterrupted authorization for covered activities. Contact your local U.S. Fish and Wildlife Service Ecological Services Office for assistance.

Hope this helps.

Josh Hundley
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Missouri Ecological Services Field Office
101 Park DeVille Drive, Suite A
Columbia, MO 65203-0057
573-234-5037 (office)

From: Fullerton, Matthew R <matthew_fullerton@fws.gov>
Sent: Wednesday, December 7, 2022 4:41 PM
To: Wayland, Joshua <Joshua.Wayland@stb.gov>
Subject: Re: [EXTERNAL] Docket No. FD 36500 CP/KCS Merger Informal Section 7 Consultation

Hi Josh,
Thank you for re-submitting the updated project documents for review with the addition of the federally-proposed tricolored bat. I concur with your determination for the species and have no further comments.

Please let me know if you need further input or have questions,

Matt Fullerton
Fish and Wildlife Biologist,
Threatened and Endangered Species

U.S. Fish and Wildlife Service
Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, Oklahoma 74129
Email: matthew_fullerton@fws.gov
Cell: (405) 434-2780
Office: (918) 382-4518

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Division of Ecological Services
9014 East 21st Street
Tulsa, Oklahoma 74129
918/581-7458 / (FAX) 918/581-7467

August 1, 2022

To:

Surface Transportation Board, Office of Environmental Anlaysis, Joshua Wayland, 395 E Street SW, Washington, DC 20423, 202-245-0330, Joshua.Wayland@stb.gov

Project Name:

Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern, et al.

Consultation Code:

MP 247/Baron: 02EKOK00-2022-SLI-0486
Cave Springs: 02EKOK00-2022-SLI-0487
Spiro: 02EKOK00-2022-SLI-0488
Heavener: 02EKOK00-2022-SLI-0489

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Oklahoma Ecological Services Field Office (ESFO) online project review process. By providing this letter in conjunction with your complete project review package, you are certifying that you have accurately completed the online project review process for the referenced project in accordance with all instructions provided, using the best available information to reach your conclusions. Concurrence with "not likely to adversely affect" determinations does not provide any exemption for violations of section 9 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA) or "take" of federally-listed species. The Federal action agency is ultimately responsible for ensuring compliance with the ESA and any take that occurs due to your proposed action would be considered a violation under section 9 of the ESA.

This letter and the enclosed project review package complete the review of your project in accordance with the ESA. This letter also provides information for your project review under the National Environmental Policy Act (National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C.4321-4347, 83 Stat. 852), as amended.

A copy of this letter and the project review package must be emailed to **okprojectreview@fws.gov** for this certification to be valid. This letter and the project review package will be maintained in Service records. **Please allow the Oklahoma ESFO 45 days to review your information. If the Oklahoma ESFO determines that the package is not complete, or that additional coordination is necessary, we will contact your office. If, after 45 days from the date of your email submittal of your project review package, the Oklahoma ESFO has not contacted your office, consider your section 7 consultation complete.**

The proposed action consists of:

Canadian Pacific (CP) et al. and Kansas City Southern (KCS) et al. have filed an application with the Surface Transportation Board (Board) under 49 U.S.C. §§ 11323-25 seeking the Board's approval of the acquisition of control of KCS by CP (Proposed Acquisition). If the Board authorizes the Proposed Acquisition, CP and KCS (collectively, the Applicants) would combine to form an integrated system to be known as Canadian Pacific Kansas City (CPKC). The Proposed Acquisition would cause average rail traffic to increase on certain rail lines within the combined CPKC network because freight would be diverted from rail lines owned by other railroad companies and from truck transportation to rail transportation. To accommodate the projected increase in rail traffic, the Applicants plan to make certain capital improvements within the existing rail right-of-way (ROW) if the Board authorizes the Proposed Acquisition. In Oklahoma, those planned capital improvements would include adding two new passing sidings and extending two existing sidings. Additional information and details can be found in the letter and maps attached. To be conservative, OEA assumed that each planned capital improvement could affect the entire area extending from the existing tracks to the edge of the rail ROW (study area), but the actual affected area would likely be smaller. The potential area of disturbance would likely be much smaller than the area of the ROW because the new sidings and siding extensions would be immediately adjacent to the mainline.

Project start and completion dates:

The Applicants would only add the capital improvements as needed to support increased rail traffic. Therefore, the Applicants have not provided a detailed schedule.

Federal agency or federal program providing a permit, grant, authorization, loan, etc. associated with the proposed project and how that agency is associated with your project:

The Surface Transportation Board is responsible for the approval of the merger. The Applicants (CP and KCS) would be responsible for permitting and funding the planned capital improvements if the merger is approved.

Federal Agency/Program Point of Contact (name, phone, and email address):

Joshua Wayland, 395 E Street SW, Washington, DC 20423, 202-245-0330, Joshua.Wayland@stb.gov

The species conclusions table in the enclosed project review package summarizes your ESA conclusions. These conclusions resulted in "not likely to adversely affect/modify" determinations for listed species and critical habitat in relation to potential effects of your proposed project. We certify that the use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with determinations of "not likely to adversely affect" for listed species and critical habitat reached by proper use of this process. For projects where this particular determination is reached, additional coordination with this office is not needed.

Candidate species are not legally protected pursuant to the ESA. However, the Service encourages efforts to avoid or minimize adverse impacts to them from project effects. Some federal agencies have standing policies that grant limited protections to candidate species. Conservation of candidate species now may

preclude future needs to federally list them as endangered or threatened, at which point their legal protection would become required. Please contact this office for additional coordination if your project action area contains candidate species.

Should project plans change or if additional information on the distribution of listed species or critical habitat becomes available, this determination may be reconsidered. You should re-visit the Service's Information, Planning, and Conservation (IPaC) website at http:/ecos/fws.gov/ipac/ within 90 days of project initiation to ensure species information is correct. If new species or critical habitat is identified, this letter is no longer valid and a new project package should be submitted to the Oklahoma ESFO.

Information about the online project review process including instructions and use, species information, and other information regarding project reviews within Oklahoma is available at our website: <http://www.fws.gov/southwest/es/oklahoma/ >. If you have any questions, please call 918-581-7458 or send an email message to OKProjectReview@fws.gov.

Sincerely,
/s/ Ken Collins
Field Supervisor
Oklahoma Ecological Services Field Office

Enclosures:

1) ENTIRE PROJECT REVIEW PACKAGE:
- ☒Species Conclusion Table
- ☒IPaC Species List and Action Area map
- ☒This letter (Online Concurrence Letter)
- ☒(Optional) Additional maps

2) Other relevant project data/documents

Surface Transportation Board Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern Railway, et al.; USFWS Informal Section 7 Consultation Letter

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Illinois - Iowa Field Office
1511 47th Avenue
Moline, Illinois 61265
Phone: (309) 757-5800 Fax: (309) 757-5807

July 28, 2022
Electronic Mail

Danielle Gosselin
Director
Surface Transportation Board
Office of Environmental Analysis

Dear Ms. Gosselin,

This transmits the U.S. Fish and Wildlife Service's (Service) concurrence for your "may affect, but not likely to adversely affect" determinations for the northern long-eared bat (*Myotis septentrionalis*) and Indiana bat (*Myotis sodalis*), as described in your memo received June 6, 2022. The project (Docket No. FD 36500) includes the proposed merging of Canadian Pacific Railway Limited and Kansas City Southern Railway to form the Canadian Pacific Kansas City system (CPKC).

The purpose of the proposed project is to combine America's two smallest but fastest-growing Class I railroads to build a more efficient and more competitive rail network. The proposed project would cause rail traffic to increase on certain rail lines within the CPKC network. To accommodate for the projected increase in rail traffic, capital improvements within the existing rail right-of-way (ROW) in both Illinois and Iowa are proposed. In Illinois, the improvements would be located within a previously disturbed area and would not result in any new impacts to habitats, plants, or wildlife. However, suitable roosting and foraging habitat within the existing ROW for the northern long-eared bat and Indiana bat were identified at seven of the eight proposed capital improvement locations in Iowa within the cities of Guttenberg, Bellevue, Clinton, Letts, Washington, Ottumwa, and Moravia.

These improvements include the addition of five new passing sidings and the extension of four existing sidings. This would involve tree clearing, grading, and filling within the existing rail ROW. Additionally, replacement or extension of the existing railroad bridges and culverts is proposed to accommodate the new or extended sidings. This informal consultation addresses potential effects to the species in accordance with section 7 of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 et seq.) and 50 CFR § 402 of our interagency regulations governing section 7 of the Act.

Threatened and Endangered Species

As described in your memo, nine federally listed species in addition to the northern long-eared bat and Indiana bat have ranges overlapping the project area. These species include the Eastern massasauga (*Sistrurus catenatus*), eastern prairie fringed orchid (*Platanthera leucophaea*), Higgins eye pearlymussel (*Lampsilis higginsii*), Iowa pleistocene snail (*Discus macclintocki*), northern wild monkshood (*Aconitum noveboracense*), prairie bush-clover (*Lespedeza leptostachya*), sheepnose mussel (*Plethobasus cyphyus*), spectaclecase (*Cumberlandia monodonta*), and western prairie fringed orchid (*Platanthera praeclara*), in addition to one candidate species, the monarch butterfly (*Danaus plexippus*). You made "may affect, but not likely to adversely affect" determinations for the northern long-eared bat and Indiana bat. Due to the lack of suitable habitat within the project area, you made "no effect" determinations for the remaining

species in the above list. The Illinois-Iowa Ecological Services Field Office has no regulatory or statutory authority for concurring with "no effect" determinations. However, we recommend you maintain a written record of your "no effect" determination and include it in your decision record.

Bats

The project, as proposed, includes the removal of potential northern long-eared bat and Indiana bat habitat and hibernaculum. As described in your memo dated June 6, 2022, all tree removal will occur outside the maternity roosting season, between October 1 and March 31. In addition, voluntary mitigation measures are proposed that include limiting tree removal where practical, conducting culvert and bridge removal or alterations outside of the roosting period when practical, conducting presence/absence surveys prior to culvert and bridge removal or alterations if required during the active season and coordination with OEA and Service if presence is found, directing temporary lighting away from suitable habitat during the active season, and using downward-facing full cut-off lens lights if permanent lighting is required. As a result of the conditions and conservation measures described above, we concur that the project as proposed “may affect, not likely to adversely affect” the northern long-eared bat and Indiana bat.

Migratory Birds and Eagles

The Service removed bald eagles from protection under the Endangered Species Act on August 8, 2007. However, they remain protected today under the Migratory Birds Treaty Act and the Bald and Golden Eagle Protection Act (Eagle Act). The Eagle Act prohibits take, which is defined as, “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb” (50 CFR 22.3). Disturb is defined in regulations as, “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, or 2) decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior.” In accordance with the avoidance measures described in the Eagle Act (16 U.S.C. 668-668c), any activities resulting in potential disturbance should be restricted within 660-ft of any identified active eagle nest to dates outside of the nesting season. Please contact the Region 3 Migratory Bird Office (https://www.fws.gov/midwest/eagle/contactus.html) should activities that have the potential to result in take or disturbance of eagles or their nests.

Conclusion

The above comments are provided in accordance with the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). This precludes the need for further action on this project as required under Section 7 of the Endangered Species Act of 1973, as amended. If project plans change or portions of the proposed project were not evaluated, consultation should be reinitiated. Thank you for the opportunity to provide comments. If you have any questions regarding these comments, please feel free to contact me at the email address below.

Thank you,

KRAIG MCPEEK

Digitally signed by KRAIG MCPEEK
Date: 2022.07.28 13:18:13 -05'00'

Kraig McPeek
Field Supervisor
U.S. Fish and Wildlife Service
Illinois - Iowa Field Office
1511 47th Avenue, Moline, IL 61265
kraig_mcpeek@fws.gov

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Arkansas Ecological Service Field Office
110 South Amity Road, Suite 300
Conway, Arkansas 72032

IN REPLY REFER TO:

June 7, 2022

Danielle Gosselin, Director
Office of Environmental Analysis
Surface Transportation Board
c/o Sydney Feldt
Vanasse Hangen Brustlin, Inc.
1355 Peachtree St, NE, Suite 100
Atlanta, Georgia 30309-3269

Re: Docket No. FD 36500, Canadian Pacific Railway Limited, et al. - Control of Kansas City Southern Railway, et al.; USFWS Informal Section 7 Consultation

Dear Ms. Gosselin:

The U.S. Fish and Wildlife Service (Service) has reviewed your assessment, determinations, and your written request for concurrence of OEA's determination of effects for the Proposed Acquisition on federally listed species, in accordance with Section 7(a)(2) of the Endangered Species Act (ESA) of 1973. We received your request on June 6, 2022.

Your letter stated the following (abbreviated):

> Based on habitat-level field work, Office of Environmental Analysis (OEA) identified suitable roosting and foraging habitat within the existing ROW for the Northern Long-eared Bat (*Myotis septentrionalis*) and Indiana Bat (*Myotis sodalis*) at both planned capital improvements in Arkansas. The Applicants have proposed multiple measures to protect the Northern Long-eared and Indiana Bat during the construction of the planned capital improvements, as detailed in Attachment A to this letter. These measures include commitments to conduct tree clearing and work on structures that provide suitable roosting habitat outside of the active season (April 1 to October 31), as well as measures related to installing lighting. Based on the Applicants' voluntary commitments, OEA has determined that the Proposed Acquisition **may affect, but is not likely to adversely affect** the Northern Long-eared Bat and Indiana Bat.
>
> The following species do not have suitable habitat within the rail ROW at any of the planned capital improvement locations: Arkansas Fatmucket (*Lampsilis powelli*), Eastern Black Rail (*Laterallus jamaicensis*), Gray Bat (*Myotis grisescens*), Missouri Bladderpod (*Physaria filiformis*), Monarch Butterfly (*Danaus plexippus*), Ozark Big-eared Bat (*Corynorhinus townsendii ingens*), Ozark Cavefish, (*Amblyopsis rosae*), Piping Plover (*Charadrius melodus*),

Rabbitsfoot (*Quadrula cylindrica cylindrica*), Red Knot (*Calidris canutus*), and Red-cockaded Woodpecker (*Leuconotopicus borealis*). Therefore, OEA has determined that the Proposed Acquisition would have **no effect** on these species**.** There is no critical habitat within any of the planned capital improvement locations in Arkansas. If you agree with these recommended determinations, please send your written concurrence.

The Service concurs with the "no effect" determinations for the listed species identified. No further consultation for this project is required for these species. Furthermore, due to the location of the area being affected occurring immediately adjacent to the existing railway, limited and poor habitat located immediately adjacent to the action area, ongoing constant noise and disturbance, inactive season only clearing restrictions for suitable habitat and bridges, commitment to perform bridge inspections prior to construction, the distance to known species locations, and the implementation of voluntary mitigation measures, the Service concurs with your determination of “may affect, but is not likely to adversely affect” the Indiana Bat and Northern Long-eared Bat. This concurrence concludes your ESA Section 7 responsibilities for this action.

The Service recommends that your agency contact the Arkansas Ecological Services Field Office or re-evaluate this key in IPaC if: 1) the scope, timing, duration, or location of the proposed project changes, 2) new information reveals the action may affect listed species or designated critical habitat; and 3) a new species is listed or critical habitat designated. If any of the above conditions occurs, additional consultation with the Arkansas Ecological Services Field Office should take place before project changes are final or resources committed.

For further assistance or if you have any questions, please contact Lindsey Lewis at (501) 513-4489 or lindsey_lewis@fws.gov.

Sincerely,



Melvin L. Tobin
Field Supervisor

cc: Project File
Read File
Filename: C:\Users\lilewis\Documents\PROJECTS\FY2022\ARDOT\CPKCS Merger, STB Docket No. FD 36500\20220607_Ltr_CPKCS_USFWS Informal Consultation_Concurrence Letter.docx

From: Hundley, Joshua T
To: Sydney Feldt
Subject: Re: [EXTERNAL] CP/KCS Merger, STB Docket No. FD 36500, USFWS Informal Consultation Letter-Missouri
Date: Friday, July 8, 2022 11:01:06 AM

Dear Ms. Feldt,

The U.S. Fish and Wildlife Service (Service) has reviewed the information provided in your June 6, 2022 letter regarding the proposed Canadian Pacific Railway Limited, et al. and Kansas City Southern Railway, et al. Capital Improvement Projects in Cass, Grundy, Jackson, Jasper, Livingston, McDonald, and Sullivan counties, Missouri. The Service offers the following comments pursuant to the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1544).

The Service concurs with your "may affect, but not likely to adversely affect" (NLAA) determination for the Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis sepentrionalis*).

Thank you for your interest in the conservation of threatened and endangered species.

Josh Hundley
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Missouri Ecological Services Field Office
101 Park DeVille Drive, Suite A
Columbia, MO 65203-0057
573-234-5037 (office)
573-540-3829 (cell)

_____

From: Sydney Feldt
Sent: Monday, June 6, 2022 1:01 PM
To: Herrington, Karen <karen_herrington@fws.gov>
Subject: [EXTERNAL] CP/KCS Merger, STB Docket No. FD 36500, USFWS Informal Consultation Letter-Missouri

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Good afternoon,

On behalf of the Surface Transportation Board's Office of Environmental Analysis, please find the attached informal consultation letter for Docket No. FD 36500, Canadian Pacific Railway Limited, et al.—Control of—Kansas City Southern Railway, et al.

Thank you,
Sydney

Sydney Feldt
Environmental Planner

Engineers | Scientists | Planners | Designers
www.vhb.com

VHB Viewpoints
Explore trends and critical issues with our thought leaders.

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O.4.2 USFWS IPaC Reports

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
Phone: (309) 757-5800 Fax: (309) 757-5807

In Reply Refer To:
Project Code: 2022-0010006
Project Name: MP 71 IA Railroad Siding

November 01, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat, if present, within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) **the accuracy of this species list should be verified after 90 days**. This verification can be completed formally or informally. You may verify the list by visiting the ECOSPHERE Information for Planning and Consultation (IPaC) website https://ipac.ecosphere.fws.gov at regular intervals during project planning and implementation and completing the same process you used to receive the attached list.

Section 7 Consultation

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the U.S. Fish and Wildlife Service (Service) if they determine their project “may affect” listed species or designated critical habitat. Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action may affect endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service to make "no effect" determinations. If you determine that your proposed action will have

no effect on threatened or endangered species or their respective designated critical habitat, you do not need to seek concurrence with the Service.

Note: For some species or projects, IPaC will present you with *Determination Keys*. You may be able to use one or more Determination Keys to conclude consultation on your action.

Technical Assistance for Listed Species

1. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain information on the species life history, species status, current range, and other documents by selecting the species from the thumbnails or list view and visiting the species profile page.

No Effect Determinations for Listed Species

1. If there are *no* species or designated critical habitats on the Endangered Species portion of the species list: conclude "no species and no critical habitat present" and document your finding in your project records. No consultation under ESA section 7(a)(2) is required if the action would result in no effects to listed species or critical habitat. Maintain a copy of this letter and IPaC official species list for your records.

2. If any species or designated critical habitat are listed as potentially present in the **action area** of the proposed project the project proponents are responsible for determining if the proposed action will have “no effect” on any federally listed species or critical habitat. No effect, with respect to species, means that no individuals of a species will be exposed to any consequence of a federal action or that they will not respond to such exposure.

3. If the species habitat is not present within the action area or current data (surveys) for the species in the action area are negative: conclude “no species habitat or species present” and document your finding in your project records. For example, if the project area is located entirely within a “developed area” (an area that is already graveled/paved or supports structures and the only vegetation is limited to frequently mowed grass or conventional landscaping, is located within an existing maintained facility yard, or is in cultivated cropland conclude no species habitat present. Be careful when assessing actions that affect: 1) rights-of-ways that contains natural or semi-natural vegetation despite periodic mowing or other management; structures that have been known to support listed species (example: bridges), and 2) surface water or groundwater. Several species inhabit rights-of-ways, and you should carefully consider effects to surface water or groundwater, which often extend outside of a project’s immediate footprint.

4. Adequacy of Information & Surveys - Agencies may base their determinations on the best evidence that is available or can be developed during consultation. Agencies must give the benefit of any doubt to the species when there are any inadequacies in the information. Inadequacies may include uncertainty in any step of the analysis. To provide adequate information on which to base a determination, it may be appropriate to conduct surveys to determine whether listed species or their habitats are present in the action area. Please contact our office for more information or see the survey guidelines that the Service has made available in IPaC.

May Effect Determinations for Listed Species

1. If the species habitat is present within the action area and survey data is unavailable or inconclusive: assume the species is present or plan and implement surveys and interpret results in coordination with our office. If assuming species present or surveys for the species are positive continue with the may affect determination process. May affect, with respect to a species, is the appropriate conclusion when a species might be exposed to a consequence of a federal action and could respond to that exposure. For critical habitat,

'may affect' is the appropriate conclusion if the action area overlaps with mapped areas of critical habitat and an essential physical or biological feature may be exposed to a consequence of a federal action and could change in response to that exposure.

2. Identify stressors or effects to the species and to the essential physical and biological features of critical habitat that overlaps with the action area. Consider all consequences of the action and assess the potential for each life stage of the species that occurs in the action area to be exposed to the stressors. Deconstruct the action into its component parts to be sure that you do not miss any part of the action that could cause effects to the species or physical and biological features of critical habitat. Stressors that affect species' resources may have consequences even if the species is not present when the project is implemented.

3. If no listed or proposed species will be exposed to stressors caused by the action, a 'no effect' determination may be appropriate – be sure to separately assess effects to critical habitat, if any overlaps with the action area. If you determined that the proposed action or other activities that are caused by the proposed action may affect a species or critical habitat, the next step is to describe the manner in which they will respond or be altered. Specifically, to assess whether the species/critical habitat is "not likely to be adversely affected" or "likely to be adversely affected."

4. Determine how the habitat or the resource will respond to the proposed action (for example, changes in habitat quality, quantity, availability, or distribution), and assess how the species is expected to respond to the effects to its habitat or other resources. Critical habitat analyses focus on how the proposed action will affect the physical and biological features of the critical habitat in the action area. If there will be only beneficial effects or the effects of the action are expected to be insignificant or discountable, conclude "may affect, not likely to adversely affect" and submit your finding and supporting rationale to our office and request concurrence.

5. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, check IPaC for species-specific Section 7 guidance and conservation measures to determine whether there are any measures that may be implemented to avoid or minimize the negative effects. If you modify your proposed action to include conservation measures, assess how inclusion of those measures will likely change the effects of the action. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, contact our office for assistance.

6. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

For additional information on completing Section 7 Consultation including a Glossary of Terms

used in the Section 7 Process, information requirements for completing Section 7, and example letters visit the Midwest Region Section 7 Consultations website at: https://www.fws.gov/library/collections/midwest-region-section-7-consultations.
You may find more specific information on completing Section 7 on communication towers and transmission lines on the following websites:

- Incidental Take Beneficial Practices: Power Lines - https://www.fws.gov/story/incidental-take-beneficial-practices-power-lines
- Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning. - https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation

Northern Long-eared Bat Update

Please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of NLEB after the new listing goes into effect this will first need to addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.
Other Trust Resources and Activities

Bald and Golden Eagles

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act, as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, please contact our office for further coordination. For more information on permits and other eagle information visit our website https://www.fws.gov/library/collections/bald-and-golden-eagle-management.
We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

Project Summary

Project Code: 2022-0010006
Project Name: MP 71 IA Railroad Siding
Project Type: Railroad - New Construction
Project Description: Installation of new railroad sidings along existing track.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.699656700000006,-91.01035765591782,14z



Counties: Clayton County, Iowa

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Higgins Eye (pearlymussel) *Lampsilis higginsii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5428	Endangered
Sheepnose Mussel *Plethobasus cyphyus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6903	Endangered
Spectaclecase (mussel) *Cumberlandia monodonta* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7867	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/601

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

The following FWS National Wildlife Refuge Lands and Fish Hatcheries lie fully or partially within your project area:

FACILITY NAME	ACRES
UPPER MISSISSIPPI RIVER NATIONAL WILDLIFE AND FISH REFUGE https://www.fws.gov/refuges/profiles/index.cfm?id=32579	25,165.939

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10

NAME	BREEDING SEASON
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler *Cardellina canadensis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Cerulean Warbler *Dendroica cerulea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 22 to Jul 20
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Eastern Whip-poor-will *Antrostomus vociferus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere
Golden-winged Warbler *Vermivora chrysoptera* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the

FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

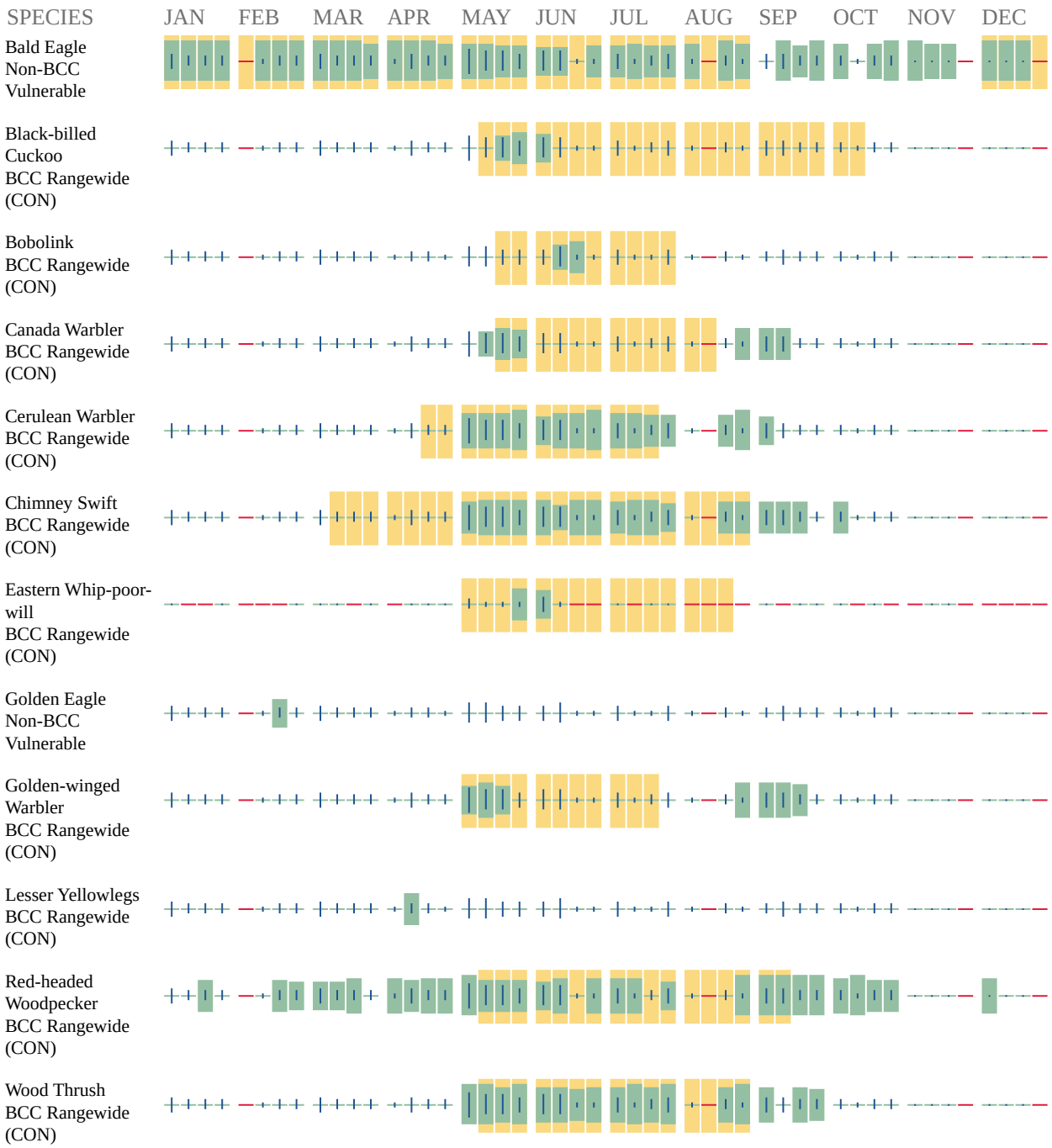
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort – no data



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point

within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no

data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

LAKE

- Lacustrine

FRESHWATER EMERGENT WETLAND

- Palustrine

RIVERINE

- Riverine

IPaC User Contact Information

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
Phone: (309) 757-5800 Fax: (309) 757-5807

In Reply Refer To:
Project Code: 2022-0010010
Project Name: MP 24 IA Railroad Siding

November 01, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat, if present, within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) **the accuracy of this species list should be verified after 90 days**. This verification can be completed formally or informally. You may verify the list by visiting the ECOSPHERE Information for Planning and Consultation (IPaC) website https://ipac.ecosphere.fws.gov at regular intervals during project planning and implementation and completing the same process you used to receive the attached list.

Section 7 Consultation

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the U.S. Fish and Wildlife Service (Service) if they determine their project “may affect” listed species or designated critical habitat. Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action may affect endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service to make "no effect" determinations. If you determine that your proposed action will have

no effect on threatened or endangered species or their respective designated critical habitat, you do not need to seek concurrence with the Service.

Note: For some species or projects, IPaC will present you with *Determination Keys*. You may be able to use one or more Determination Keys to conclude consultation on your action.

Technical Assistance for Listed Species

1. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain information on the species life history, species status, current range, and other documents by selecting the species from the thumbnails or list view and visiting the species profile page.

No Effect Determinations for Listed Species

1. If there are *no* species or designated critical habitats on the Endangered Species portion of the species list: conclude "no species and no critical habitat present" and document your finding in your project records. No consultation under ESA section 7(a)(2) is required if the action would result in no effects to listed species or critical habitat. Maintain a copy of this letter and IPaC official species list for your records.

2. If any species or designated critical habitat are listed as potentially present in the **action area** of the proposed project the project proponents are responsible for determining if the proposed action will have “no effect” on any federally listed species or critical habitat. No effect, with respect to species, means that no individuals of a species will be exposed to any consequence of a federal action or that they will not respond to such exposure.

3. If the species habitat is not present within the action area or current data (surveys) for the species in the action area are negative: conclude “no species habitat or species present” and document your finding in your project records. For example, if the project area is located entirely within a “developed area” (an area that is already graveled/paved or supports structures and the only vegetation is limited to frequently mowed grass or conventional landscaping, is located within an existing maintained facility yard, or is in cultivated cropland conclude no species habitat present. Be careful when assessing actions that affect: 1) rights-of-ways that contains natural or semi-natural vegetation despite periodic mowing or other management; structures that have been known to support listed species (example: bridges), and 2) surface water or groundwater. Several species inhabit rights-of-ways, and you should carefully consider effects to surface water or groundwater, which often extend outside of a project’s immediate footprint.

4. Adequacy of Information & Surveys - Agencies may base their determinations on the best evidence that is available or can be developed during consultation. Agencies must give the benefit of any doubt to the species when there are any inadequacies in the information. Inadequacies may include uncertainty in any step of the analysis. To provide adequate information on which to base a determination, it may be appropriate to conduct surveys to determine whether listed species or their habitats are present in the action area. Please contact our office for more information or see the survey guidelines that the Service has made available in IPaC.

May Effect Determinations for Listed Species

1. If the species habitat is present within the action area and survey data is unavailable or inconclusive: assume the species is present or plan and implement surveys and interpret results in coordination with our office. If assuming species present or surveys for the species are positive continue with the may affect determination process. May affect, with respect to a species, is the appropriate conclusion when a species might be exposed to a consequence of a federal action and could respond to that exposure. For critical habitat,

'may affect' is the appropriate conclusion if the action area overlaps with mapped areas of critical habitat and an essential physical or biological feature may be exposed to a consequence of a federal action and could change in response to that exposure.

2. Identify stressors or effects to the species and to the essential physical and biological features of critical habitat that overlaps with the action area. Consider all consequences of the action and assess the potential for each life stage of the species that occurs in the action area to be exposed to the stressors. Deconstruct the action into its component parts to be sure that you do not miss any part of the action that could cause effects to the species or physical and biological features of critical habitat. Stressors that affect species' resources may have consequences even if the species is not present when the project is implemented.

3. If no listed or proposed species will be exposed to stressors caused by the action, a 'no effect' determination may be appropriate – be sure to separately assess effects to critical habitat, if any overlaps with the action area. If you determined that the proposed action or other activities that are caused by the proposed action may affect a species or critical habitat, the next step is to describe the manner in which they will respond or be altered. Specifically, to assess whether the species/critical habitat is "not likely to be adversely affected" or "likely to be adversely affected."

4. Determine how the habitat or the resource will respond to the proposed action (for example, changes in habitat quality, quantity, availability, or distribution), and assess how the species is expected to respond to the effects to its habitat or other resources. Critical habitat analyses focus on how the proposed action will affect the physical and biological features of the critical habitat in the action area. If there will be only beneficial effects or the effects of the action are expected to be insignificant or discountable, conclude "may affect, not likely to adversely affect" and submit your finding and supporting rationale to our office and request concurrence.

5. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, check IPaC for species-specific Section 7 guidance and conservation measures to determine whether there are any measures that may be implemented to avoid or minimize the negative effects. If you modify your proposed action to include conservation measures, assess how inclusion of those measures will likely change the effects of the action. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, contact our office for assistance.

6. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

For additional information on completing Section 7 Consultation including a Glossary of Terms

used in the Section 7 Process, information requirements for completing Section 7, and example letters visit the Midwest Region Section 7 Consultations website at: https://www.fws.gov/library/collections/midwest-region-section-7-consultations.
You may find more specific information on completing Section 7 on communication towers and transmission lines on the following websites:

- Incidental Take Beneficial Practices: Power Lines - https://www.fws.gov/story/incidental-take-beneficial-practices-power-lines
- Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning. - https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation

Northern Long-eared Bat Update

Please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of NLEB after the new listing goes into effect this will first need to addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.
Other Trust Resources and Activities

Bald and Golden Eagles

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act, as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, please contact our office for further coordination. For more information on permits and other eagle information visit our website https://www.fws.gov/library/collections/bald-and-golden-eagle-management.
We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

Project Summary

Project Code: 2022-0010010
Project Name: MP 24 IA Railroad Siding
Project Type: Railroad - New Construction
Project Description: Installation of new railroad sidings along existing track.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.31205455,-90.4318760658156,14z



Counties: Jackson County, Iowa

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Higgins Eye (pearlymussel) *Lampsilis higginsii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5428	Endangered
Sheepnose Mussel *Plethobasus cyphyus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6903	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/601

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31
Black Tern *Chlidonias niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3093	Breeds May 15 to Aug 20

NAME	BREEDING SEASON
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere
Golden-winged Warbler *Vermivora chrysoptera* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Henslow's Sparrow *Ammodramus henslowii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds May 1 to Aug 31
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Western Grebe *aechmophorus occidentalis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

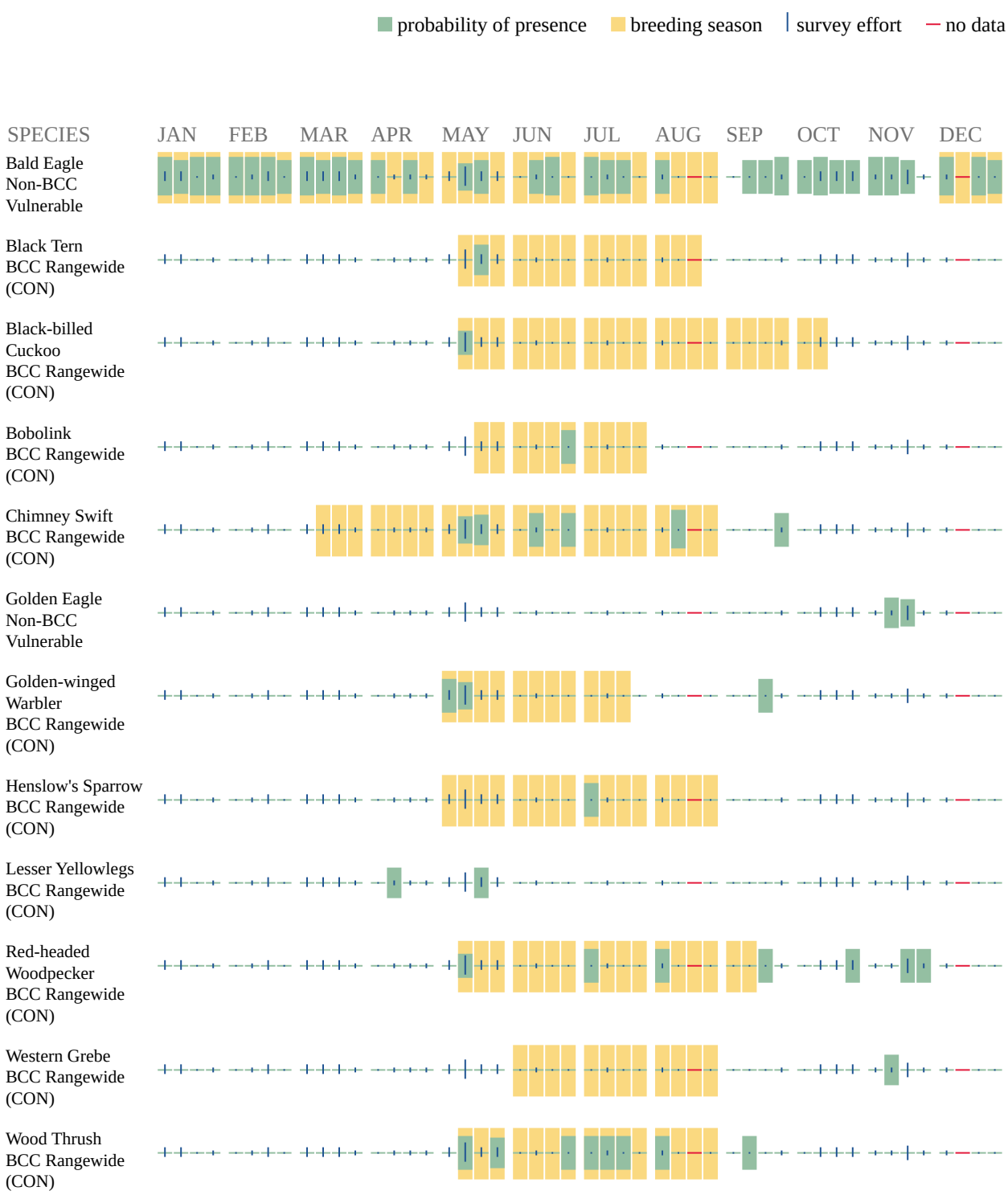
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and

how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER EMERGENT WETLAND

- Palustrine

RIVERINE

- Riverine

IPaC User Contact Information

Agency: VHB
Name: Sydney Feldt
Address: 1355 Peachtree Street NE
Address Line 2: Suite 100
City: Atlanta
State: GA
Zip: 30309
Email sfeldt@vhb.com
Phone: 4048000583

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
Phone: (309) 757-5800 Fax: (309) 757-5807

In Reply Refer To: November 01, 2022
Project Code: 2023-0010885
Project Name: Chicago MP 75 IL Railroad Siding - New

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat, if present, within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) **the accuracy of this species list should be verified after 90 days**. This verification can be completed formally or informally. You may verify the list by visiting the ECOSPHERE Information for Planning and Consultation (IPaC) website https://ipac.ecosphere.fws.gov at regular intervals during project planning and implementation and completing the same process you used to receive the attached list.

Section 7 Consultation

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the U.S. Fish and Wildlife Service (Service) if they determine their project “may affect” listed species or designated critical habitat. Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action may affect endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service to make "no effect" determinations. If you determine that your proposed action will have

no effect on threatened or endangered species or their respective designated critical habitat, you do not need to seek concurrence with the Service.

Note: For some species or projects, IPaC will present you with *Determination Keys*. You may be able to use one or more Determination Keys to conclude consultation on your action.

Technical Assistance for Listed Species

1. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain information on the species life history, species status, current range, and other documents by selecting the species from the thumbnails or list view and visiting the species profile page.

No Effect Determinations for Listed Species

1. If there are *no* species or designated critical habitats on the Endangered Species portion of the species list: conclude "no species and no critical habitat present" and document your finding in your project records. No consultation under ESA section 7(a)(2) is required if the action would result in no effects to listed species or critical habitat. Maintain a copy of this letter and IPaC official species list for your records.

2. If any species or designated critical habitat are listed as potentially present in the **action area** of the proposed project the project proponents are responsible for determining if the proposed action will have “no effect” on any federally listed species or critical habitat. No effect, with respect to species, means that no individuals of a species will be exposed to any consequence of a federal action or that they will not respond to such exposure.

3. If the species habitat is not present within the action area or current data (surveys) for the species in the action area are negative: conclude “no species habitat or species present” and document your finding in your project records. For example, if the project area is located entirely within a “developed area” (an area that is already graveled/paved or supports structures and the only vegetation is limited to frequently mowed grass or conventional landscaping, is located within an existing maintained facility yard, or is in cultivated cropland conclude no species habitat present. Be careful when assessing actions that affect: 1) rights-of-ways that contains natural or semi-natural vegetation despite periodic mowing or other management; structures that have been known to support listed species (example: bridges), and 2) surface water or groundwater. Several species inhabit rights-of-ways, and you should carefully consider effects to surface water or groundwater, which often extend outside of a project’s immediate footprint.

4. Adequacy of Information & Surveys - Agencies may base their determinations on the best evidence that is available or can be developed during consultation. Agencies must give the benefit of any doubt to the species when there are any inadequacies in the information. Inadequacies may include uncertainty in any step of the analysis. To provide adequate information on which to base a determination, it may be appropriate to conduct surveys to determine whether listed species or their habitats are present in the action area. Please contact our office for more information or see the survey guidelines that the Service has made available in IPaC.

May Effect Determinations for Listed Species

1. If the species habitat is present within the action area and survey data is unavailable or inconclusive: assume the species is present or plan and implement surveys and interpret results in coordination with our office. If assuming species present or surveys for the species are positive continue with the may affect determination process. May affect, with respect to a species, is the appropriate conclusion when a species might be exposed to a consequence of a federal action and could respond to that exposure. For critical habitat,

'may affect' is the appropriate conclusion if the action area overlaps with mapped areas of critical habitat and an essential physical or biological feature may be exposed to a consequence of a federal action and could change in response to that exposure.

2. Identify stressors or effects to the species and to the essential physical and biological features of critical habitat that overlaps with the action area. Consider all consequences of the action and assess the potential for each life stage of the species that occurs in the action area to be exposed to the stressors. Deconstruct the action into its component parts to be sure that you do not miss any part of the action that could cause effects to the species or physical and biological features of critical habitat. Stressors that affect species' resources may have consequences even if the species is not present when the project is implemented.

3. If no listed or proposed species will be exposed to stressors caused by the action, a 'no effect' determination may be appropriate – be sure to separately assess effects to critical habitat, if any overlaps with the action area. If you determined that the proposed action or other activities that are caused by the proposed action may affect a species or critical habitat, the next step is to describe the manner in which they will respond or be altered. Specifically, to assess whether the species/critical habitat is "not likely to be adversely affected" or "likely to be adversely affected."

4. Determine how the habitat or the resource will respond to the proposed action (for example, changes in habitat quality, quantity, availability, or distribution), and assess how the species is expected to respond to the effects to its habitat or other resources. Critical habitat analyses focus on how the proposed action will affect the physical and biological features of the critical habitat in the action area. If there will be only beneficial effects or the effects of the action are expected to be insignificant or discountable, conclude "may affect, not likely to adversely affect" and submit your finding and supporting rationale to our office and request concurrence.

5. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, check IPaC for species-specific Section 7 guidance and conservation measures to determine whether there are any measures that may be implemented to avoid or minimize the negative effects. If you modify your proposed action to include conservation measures, assess how inclusion of those measures will likely change the effects of the action. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, contact our office for assistance.

6. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

For additional information on completing Section 7 Consultation including a Glossary of Terms

used in the Section 7 Process, information requirements for completing Section 7, and example letters visit the Midwest Region Section 7 Consultations website at: https://www.fws.gov/library/collections/midwest-region-section-7-consultations.
You may find more specific information on completing Section 7 on communication towers and transmission lines on the following websites:

- Incidental Take Beneficial Practices: Power Lines - https://www.fws.gov/story/incidental-take-beneficial-practices-power-lines
- Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning. - https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation

Northern Long-eared Bat Update

Please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of NLEB after the new listing goes into effect this will first need to addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.
Other Trust Resources and Activities

Bald and Golden Eagles

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act, as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, please contact our office for further coordination. For more information on permits and other eagle information visit our website https://www.fws.gov/library/collections/bald-and-golden-eagle-management.
We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

Project Summary

Project Code: 2023-0010885
Project Name: Chicago MP 75 IL Railroad Siding - New
Project Type: Railroad - New Construction
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.09757925,-88.96752826524055,14z



Counties: DeKalb and Ogle counties, Illinois

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/601	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the

FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

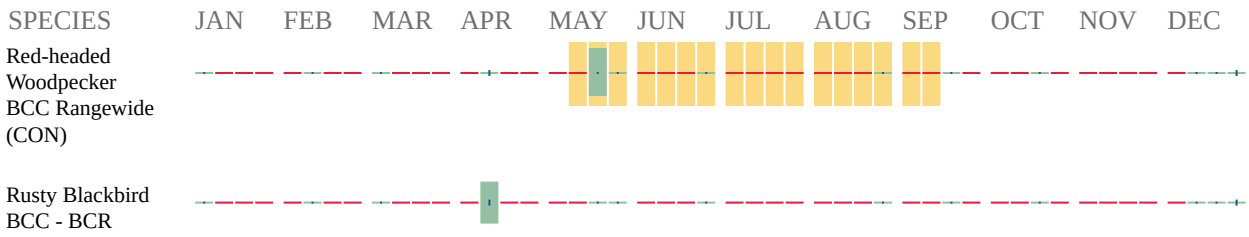
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort – no data



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- Riverine

IPaC User Contact Information

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

In Reply Refer To: November 01, 2022
Project Code: 2023-0010907
Project Name: Laredo MO Railroad Siding - Extension

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Threatened and Endangered Species

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).
New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. **Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days.** The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance

Refer to the Midwest Region S7 Technical Assistance website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects:

projects in developed areas, HUD, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

Federally Listed Bat Species

Indiana bats, gray bats, and northern long-eared bats occur throughout Missouri and the information below may help in determining if your project may affect these species.

Gray bats - Gray bats roost in caves or mines year-round and use water features and forested riparian corridors for foraging and travel. If your project will impact caves, mines, associated riparian areas, or will involve tree removal around these features – particularly within stream corridors, riparian areas, or associated upland woodlots –gray bats could be affected.
Indiana and northern long-eared bats - These species hibernate in caves or mines only during the winter. In Missouri the hibernation season is considered to be November 1 to March 31. During the active season in Missouri (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥5 inches diameter at breast height (dbh) for Indiana bat, and ≥3 inches dbh for northern long-eared bat, that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Tree species often include, but are not limited to, shellbark or shagbark hickory, white oak, cottonwood, and maple. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, Indiana bats or northern long-eared bats could be affected.
Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
- Trees found in highly-developed urban areas (e.g., street trees, downtown areas);
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees; and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of “There are no listed species found within the vicinity of the project,” then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see #3 below) – then project proponents can conclude the proposed activities **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species through the S7 Technical Assistance website.
3. If IPac returns a result that one or more federally listed bat species (Indiana bat, northern long-eared bat, or gray bat) are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** these bat species **IF** one or more of the following activities are proposed:
    a. Clearing or disturbing suitable roosting habitat, as defined above, at any time of year;
    b. Any activity in or near the entrance to a cave or mine;
    c. Mining, deep excavation, or underground work within 0.25 miles of a cave or mine;
    d. Construction of one or more wind turbines; or
    e. Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on listed bat species. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.
If any of the above activities are proposed in areas where one or more bat species may be present, project proponents can conclude the proposed activities **may affect** one or more bat species. We recommend coordinating with the Service as early as possible during project planning. If your project will involve removal of over 5 acres of suitable forest or woodland habitat, we recommend you complete a Summer Habitat Assessment prior to contacting our office to expedite the consultation process. The Summer Habitat Assessment Form is available in Appendix A of the most recent version of the Range-wide Indiana Bat Summer Survey Guidelines.

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA

to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

Next Steps

Should you determine that project activities **may affect** any federally listed species or trust resources described herein, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination, P. O. Box 180, Jefferson City, MO 65102) for information concerning Missouri Natural Communities and Species of Conservation Concern.
We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Karen Herrington

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

Project Summary

Project Code: 2023-0010907
Project Name: Laredo MO Railroad Siding - Extension
Project Type: Railroad - New Construction
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.9972256,-93.4417227539041,14z



Counties: Grundy County, Missouri

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ipac.ecosphere.fws.gov/project/ZBHLNCUT5NG3LBHBV3E26XWLYY/documents/generated/6868.pdf	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/ZBHLNCUT5NG3LBHBV3E26XWLYY/documents/generated/6868.pdf	Threatened
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/601

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- Riverine

IPaC User Contact Information

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

In Reply Refer To: November 01, 2022
Project Code: 2023-0010910
Project Name: MP 431 MO Railroad Siding - New

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

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New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. **Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days.** The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

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Refer to the Midwest Region S7 Technical Assistance website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects:

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Indiana and northern long-eared bats - These species hibernate in caves or mines only during the winter. In Missouri the hibernation season is considered to be November 1 to March 31. During the active season in Missouri (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥5 inches diameter at breast height (dbh) for Indiana bat, and ≥3 inches dbh for northern long-eared bat, that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Tree species often include, but are not limited to, shellbark or shagbark hickory, white oak, cottonwood, and maple. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, Indiana bats or northern long-eared bats could be affected.
Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
- Trees found in highly-developed urban areas (e.g., street trees, downtown areas);
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees; and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of “There are no listed species found within the vicinity of the project,” then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see #3 below) – then project proponents can conclude the proposed activities **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species through the S7 Technical Assistance website.
3. If IPac returns a result that one or more federally listed bat species (Indiana bat, northern long-eared bat, or gray bat) are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** these bat species **IF** one or more of the following activities are proposed:
    a. Clearing or disturbing suitable roosting habitat, as defined above, at any time of year;
    b. Any activity in or near the entrance to a cave or mine;
    c. Mining, deep excavation, or underground work within 0.25 miles of a cave or mine;
    d. Construction of one or more wind turbines; or
    e. Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on listed bat species. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.
If any of the above activities are proposed in areas where one or more bat species may be present, project proponents can conclude the proposed activities **may affect** one or more bat species. We recommend coordinating with the Service as early as possible during project planning. If your project will involve removal of over 5 acres of suitable forest or woodland habitat, we recommend you complete a Summer Habitat Assessment prior to contacting our office to expedite the consultation process. The Summer Habitat Assessment Form is available in Appendix A of the most recent version of the Range-wide Indiana Bat Summer Survey Guidelines.

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA

to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

Next Steps

Should you determine that project activities **may affect** any federally listed species or trust resources described herein, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination, P. O. Box 180, Jefferson City, MO 65102) for information concerning Missouri Natural Communities and Species of Conservation Concern.
We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Karen Herrington

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

Project Summary

Project Code: 2023-0010910
Project Name: MP 431 MO Railroad Siding - New
Project Type: Railroad - New Construction
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.71350995,-93.6071287159262,14z



Counties: Livingston County, Missouri

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ipac.ecosphere.fws.gov/project/L7YL65JMQVHBDOMQPNRVW66PGE/documents/generated/6868.pdf	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/L7YL65JMQVHBDOMQPNRVW66PGE/documents/generated/6868.pdf	Threatened
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- Riverine

FRESHWATER EMERGENT WETLAND

- Palustrine

IPaC User Contact Information

Agency: VHB
Name: Sydney Feldt
Address: 1355 Peachtree Street NE
Address Line 2: Suite 100
City: Atlanta
State: GA
Zip: 30309
Email sfeldt@vhb.com
Phone: 4048000583

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

In Reply Refer To: November 01, 2022
Project Code: 2023-0010931
Project Name: Blue Valley MO Railroad Siding - Double Track

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Threatened and Endangered Species

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).
New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. **Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days.** The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance

Refer to the Midwest Region S7 Technical Assistance website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects:

projects in developed areas, HUD, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

Federally Listed Bat Species

Indiana bats, gray bats, and northern long-eared bats occur throughout Missouri and the information below may help in determining if your project may affect these species.

Gray bats - Gray bats roost in caves or mines year-round and use water features and forested riparian corridors for foraging and travel. If your project will impact caves, mines, associated riparian areas, or will involve tree removal around these features – particularly within stream corridors, riparian areas, or associated upland woodlots –gray bats could be affected.
Indiana and northern long-eared bats - These species hibernate in caves or mines only during the winter. In Missouri the hibernation season is considered to be November 1 to March 31. During the active season in Missouri (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥5 inches diameter at breast height (dbh) for Indiana bat, and ≥3 inches dbh for northern long-eared bat, that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Tree species often include, but are not limited to, shellbark or shagbark hickory, white oak, cottonwood, and maple. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, Indiana bats or northern long-eared bats could be affected.
Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
- Trees found in highly-developed urban areas (e.g., street trees, downtown areas);
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees; and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of “There are no listed species found within the vicinity of the project,” then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see #3 below) – then project proponents can conclude the proposed activities **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species through the S7 Technical Assistance website.
3. If IPac returns a result that one or more federally listed bat species (Indiana bat, northern long-eared bat, or gray bat) are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** these bat species **IF** one or more of the following activities are proposed:
    a. Clearing or disturbing suitable roosting habitat, as defined above, at any time of year;
    b. Any activity in or near the entrance to a cave or mine;
    c. Mining, deep excavation, or underground work within 0.25 miles of a cave or mine;
    d. Construction of one or more wind turbines; or
    e. Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on listed bat species. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.
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Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

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to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

Next Steps

Should you determine that project activities **may affect** any federally listed species or trust resources described herein, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination, P. O. Box 180, Jefferson City, MO 65102) for information concerning Missouri Natural Communities and Species of Conservation Concern.
We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Karen Herrington

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

Project Summary

Project Code: 2023-0010931
Project Name: Blue Valley MO Railroad Siding - Double Track
Project Type: Railroad - New Construction
Project Description: Installation of double track as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.0634047,-94.50220406439199,14z



Counties: Jackson County, Missouri

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ipac.ecosphere.fws.gov/project/ADO5HAV53ZB5JDFOHNJZCUTDU4/documents/generated/6868.pdf	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/ADO5HAV53ZB5JDFOHNJZCUTDU4/documents/generated/6868.pdf	Threatened
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

IPaC User Contact Information

Agency: VHB
Name: Sydney Feldt
Address: 1355 Peachtree Street NE
Address Line 2: Suite 100
City: Atlanta
State: GA
Zip: 30309
Email sfeldt@vhb.com
Phone: 4048000583

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

In Reply Refer To: November 01, 2022
Project Code: 2023-0010937
Project Name: Grandview IFG MO Railroad Siding - Facility Working Track

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

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Consultation Technical Assistance

Refer to the Midwest Region S7 Technical Assistance website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects:

projects in developed areas, HUD, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

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Indiana bats, gray bats, and northern long-eared bats occur throughout Missouri and the information below may help in determining if your project may affect these species.

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Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
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Other Trust Resources and Activities

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Next Steps

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We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

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101 Park Deville Drive
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Project Summary

Project Code: 2023-0010937
Project Name: Grandview IFG MO Railroad Siding - Facility Working Track
Project Type: Railroad - New Construction
Project Description: Installation of facility working track as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.854088149999995,-94.5606920354588,14z



Counties: Cass and Jackson counties, Missouri

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ipac.ecosphere.fws.gov/project/KUGWRI2CT5DMTM2LDYDFKKGJPE/documents/generated/6868.pdf	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/KUGWRI2CT5DMTM2LDYDFKKGJPE/documents/generated/6868.pdf	Threatened
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Flowering Plants

NAME	STATUS
Mead's Milkweed *Asclepias meadii*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/8204

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- Riverine

FRESHWATER EMERGENT WETLAND

- Palustrine

IPaC User Contact Information

Agency: VHB
Name: Sydney Feldt
Address: 1355 Peachtree Street NE
Address Line 2: Suite 100
City: Atlanta
State: GA
Zip: 30309
Email sfeldt@vhb.com
Phone: 4048000583

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

In Reply Refer To:
Project Code: 2022-0017460
Project Name: Asbury, MO Capital Improvement

November 01, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Threatened and Endangered Species

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).
New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. **Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days.** The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance

Refer to the Midwest Region S7 Technical Assistance website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects:

projects in developed areas, HUD, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

Federally Listed Bat Species

Indiana bats, gray bats, and northern long-eared bats occur throughout Missouri and the information below may help in determining if your project may affect these species.

Gray bats - Gray bats roost in caves or mines year-round and use water features and forested riparian corridors for foraging and travel. If your project will impact caves, mines, associated riparian areas, or will involve tree removal around these features – particularly within stream corridors, riparian areas, or associated upland woodlots –gray bats could be affected.
Indiana and northern long-eared bats - These species hibernate in caves or mines only during the winter. In Missouri the hibernation season is considered to be November 1 to March 31. During the active season in Missouri (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥5 inches diameter at breast height (dbh) for Indiana bat, and ≥3 inches dbh for northern long-eared bat, that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Tree species often include, but are not limited to, shellbark or shagbark hickory, white oak, cottonwood, and maple. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, Indiana bats or northern long-eared bats could be affected.
Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
- Trees found in highly-developed urban areas (e.g., street trees, downtown areas);
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees; and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of “There are no listed species found within the vicinity of the project,” then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see #3 below) – then project proponents can conclude the proposed activities **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species through the S7 Technical Assistance website.
3. If IPac returns a result that one or more federally listed bat species (Indiana bat, northern long-eared bat, or gray bat) are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** these bat species **IF** one or more of the following activities are proposed:
    a. Clearing or disturbing suitable roosting habitat, as defined above, at any time of year;
    b. Any activity in or near the entrance to a cave or mine;
    c. Mining, deep excavation, or underground work within 0.25 miles of a cave or mine;
    d. Construction of one or more wind turbines; or
    e. Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on listed bat species. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.
If any of the above activities are proposed in areas where one or more bat species may be present, project proponents can conclude the proposed activities **may affect** one or more bat species. We recommend coordinating with the Service as early as possible during project planning. If your project will involve removal of over 5 acres of suitable forest or woodland habitat, we recommend you complete a Summer Habitat Assessment prior to contacting our office to expedite the consultation process. The Summer Habitat Assessment Form is available in Appendix A of the most recent version of the Range-wide Indiana Bat Summer Survey Guidelines.

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA

to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

Next Steps

Should you determine that project activities **may affect** any federally listed species or trust resources described herein, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination, P. O. Box 180, Jefferson City, MO 65102) for information concerning Missouri Natural Communities and Species of Conservation Concern.
We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Karen Herrington

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

Project Summary

Project Code: 2022-0017460
Project Name: Asbury, MO Capital Improvement
Project Type: Railroad - New Construction
Project Description: Siding extension constructed within existing railroad right-of-way
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@37.2539522,-94.58890011480179,14z



Counties: Jasper County, Missouri

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ipac.ecosphere.fws.gov/project/QBSHCXX7WFCVDDFY3CSZLV6XGA/documents/generated/6868.pdf	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/QBSHCXX7WFCVDDFY3CSZLV6XGA/documents/generated/6868.pdf	Threatened
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Fishes

NAME	STATUS
Neosho Madtom *Noturus placidus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2577	Threatened

Clams

NAME	STATUS
Neosho Mucket *Lampsilis rafinesqueana* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3788	Endangered
Rabbitsfoot *Quadrula cylindrica cylindrica* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5165	Threatened
Western Fanshell *Cyprogenia aberti* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/6895	Proposed Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- R5UBH

IPaC User Contact Information

Agency: VHB
Name: Sydney Feldt
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Address Line 2: Suite 100
City: Atlanta
State: GA
Zip: 30309
Email sfeldt@vhb.com
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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

In Reply Refer To: November 01, 2022
Project Code: 2023-0010939
Project Name: MP 186 MO Railroad Siding - New

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Threatened and Endangered Species

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).
New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. **Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days.** The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance

Refer to the Midwest Region S7 Technical Assistance website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects:

projects in developed areas, HUD, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

Federally Listed Bat Species

Indiana bats, gray bats, and northern long-eared bats occur throughout Missouri and the information below may help in determining if your project may affect these species.

Gray bats - Gray bats roost in caves or mines year-round and use water features and forested riparian corridors for foraging and travel. If your project will impact caves, mines, associated riparian areas, or will involve tree removal around these features – particularly within stream corridors, riparian areas, or associated upland woodlots –gray bats could be affected.
Indiana and northern long-eared bats - These species hibernate in caves or mines only during the winter. In Missouri the hibernation season is considered to be November 1 to March 31. During the active season in Missouri (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥5 inches diameter at breast height (dbh) for Indiana bat, and ≥3 inches dbh for northern long-eared bat, that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Tree species often include, but are not limited to, shellbark or shagbark hickory, white oak, cottonwood, and maple. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, Indiana bats or northern long-eared bats could be affected.
Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
- Trees found in highly-developed urban areas (e.g., street trees, downtown areas);
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees; and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of “There are no listed species found within the vicinity of the project,” then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see #3 below) – then project proponents can conclude the proposed activities **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species through the S7 Technical Assistance website.
3. If IPac returns a result that one or more federally listed bat species (Indiana bat, northern long-eared bat, or gray bat) are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** these bat species **IF** one or more of the following activities are proposed:
    a. Clearing or disturbing suitable roosting habitat, as defined above, at any time of year;
    b. Any activity in or near the entrance to a cave or mine;
    c. Mining, deep excavation, or underground work within 0.25 miles of a cave or mine;
    d. Construction of one or more wind turbines; or
    e. Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on listed bat species. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.
If any of the above activities are proposed in areas where one or more bat species may be present, project proponents can conclude the proposed activities **may affect** one or more bat species. We recommend coordinating with the Service as early as possible during project planning. If your project will involve removal of over 5 acres of suitable forest or woodland habitat, we recommend you complete a Summer Habitat Assessment prior to contacting our office to expedite the consultation process. The Summer Habitat Assessment Form is available in Appendix A of the most recent version of the Range-wide Indiana Bat Summer Survey Guidelines.

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA

to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

Next Steps

Should you determine that project activities **may affect** any federally listed species or trust resources described herein, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination, P. O. Box 180, Jefferson City, MO 65102) for information concerning Missouri Natural Communities and Species of Conservation Concern.
We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Karen Herrington

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

Project Summary

Project Code: 2023-0010939
Project Name: MP 186 MO Railroad Siding - New
Project Type: Railroad - New Construction
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.7046662,-94.42888411031643,14z



Counties: McDonald County, Missouri

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ipac.ecosphere.fws.gov/project/UDVBSE3D4RHWXCQVTLXQBQJZ6U/documents/generated/6868.pdf	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/UDVBSE3D4RHWXCQVTLXQBQJZ6U/documents/generated/6868.pdf	Threatened
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Clams

NAME	STATUS
Neosho Mucket *Lampsilis rafinesqueana*	Endangered

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/3788

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- Riverine

IPaC User Contact Information

Agency: VHB
Name: Sydney Feldt
Address: 1355 Peachtree Street NE
Address Line 2: Suite 100
City: Atlanta
State: GA
Zip: 30309
Email sfeldt@vhb.com
Phone: 4048000583

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arkansas Ecological Services Field Office
110 South Amity Suite 300
Conway, AR 72032-8975
Phone: (501) 513-4470 Fax: (501) 513-4480

In Reply Refer To:
Project Code: 2022-0045553
Project Name: Gentry AR Railroad Siding

November 01, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arkansas Ecological Services Field Office
110 South Amity Suite 300
Conway, AR 72032-8975
(501) 513-4470

Project Summary

Project Code: 2022-0045553
Project Name: Gentry AR Railroad Siding
Project Type: Railroad - New Construction
Project Description: Siding construction within the existing railroad right-of-way
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.29100085,-94.45494982436801,14z



Counties: Benton County, Arkansas

Endangered Species Act Species

There is a total of 11 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened
Ozark Big-eared Bat *Corynorhinus (=Plecotus) townsendii ingens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7245	Endangered

Birds

NAME	STATUS
Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477	Threatened
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Fishes

NAME	STATUS
Ozark Cavefish *Amblyopsis rosae* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6490	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Crustaceans

NAME	STATUS
Benton County Cave Crayfish *Cambarus aculabrum* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5011	Endangered

Flowering Plants

NAME	STATUS
Missouri Bladderpod *Physaria filiformis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5361	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: VHB
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City: Atlanta
State: GA
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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
Phone: (918) 581-7458 Fax: (918) 581-7467

In Reply Refer To:
Project Code: 2022-0074085
Project Name: MP 247 OK Railroad Siding - New

November 01, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
(918) 581-7458

Project Summary

Project Code: 2022-0074085
Project Name: MP 247 OK Railroad Siding - New
Project Type: Railroad - New Construction
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.945266000000004,-94.58810622717633,14z



Counties: Adair County, Oklahoma

Endangered Species Act Species

There is a total of 10 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened
Ozark Big-eared Bat *Corynorhinus (=Plecotus) townsendii ingens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7245	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Birds

NAME	STATUS
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Clams

NAME	STATUS
Neosho Mucket *Lampsilis rafinesqueana* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3788	Endangered
Rabbitsfoot *Quadrula cylindrica cylindrica* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5165	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Field Sparrow *Spizella pusilla* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 1 to Aug 15
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

NAME	BREEDING SEASON
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

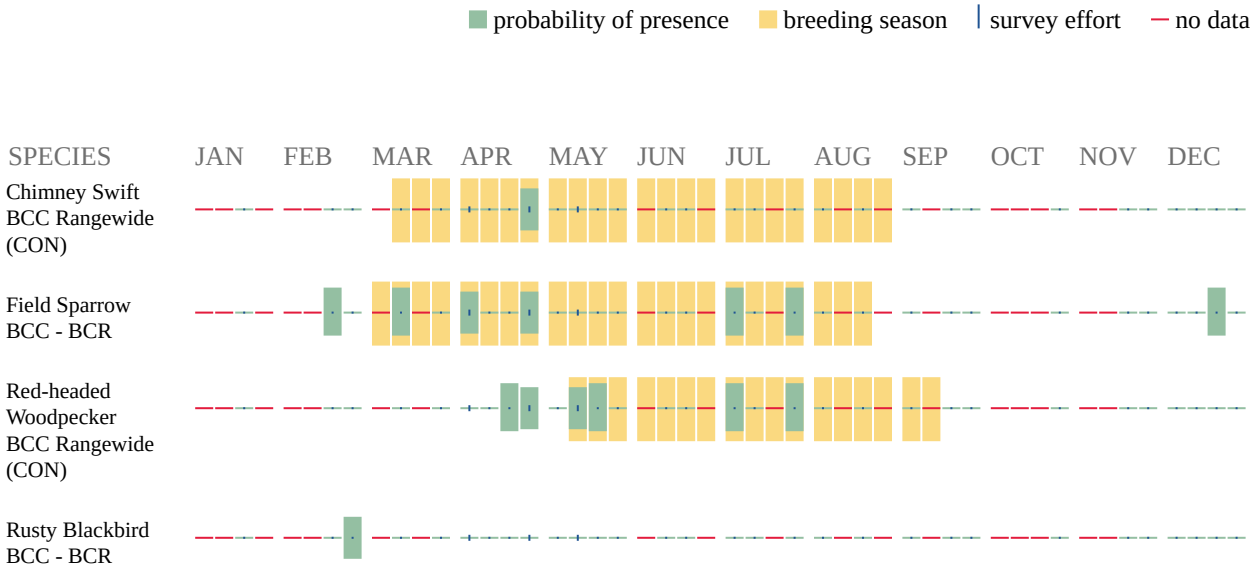
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.
Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and

3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell

me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER FORESTED/SHRUB WETLAND

- Palustrine

RIVERINE

- Riverine

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
Phone: (918) 581-7458 Fax: (918) 581-7467

In Reply Refer To: November 01, 2022
Project Code: 2022-0074084
Project Name: Cave Springs OK Railroad Siding - Extension

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
(918) 581-7458

Project Summary

Project Code: 2022-0074084
Project Name: Cave Springs OK Railroad Siding - Extension
Project Type: Railroad - New Construction
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.73656545,-94.72590687881953,14z



Counties: Adair County, Oklahoma

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened
Ozark Big-eared Bat *Corynorhinus (=Plecotus) townsendii ingens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7245	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Birds

NAME	STATUS
Piping Plover *Charadrius melodus*	Threatened
Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	
Red Knot *Calidris canutus rufa*	Threatened
There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	

Insects

NAME	STATUS
American Burying Beetle *Nicrophorus americanus*	Threatened
Population: Wherever found, except where listed as an experimental population No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/66	
Monarch Butterfly *Danaus plexippus*	Candidate
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Field Sparrow *Spizella pusilla* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 1 to Aug 15

NAME	BREEDING SEASON
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

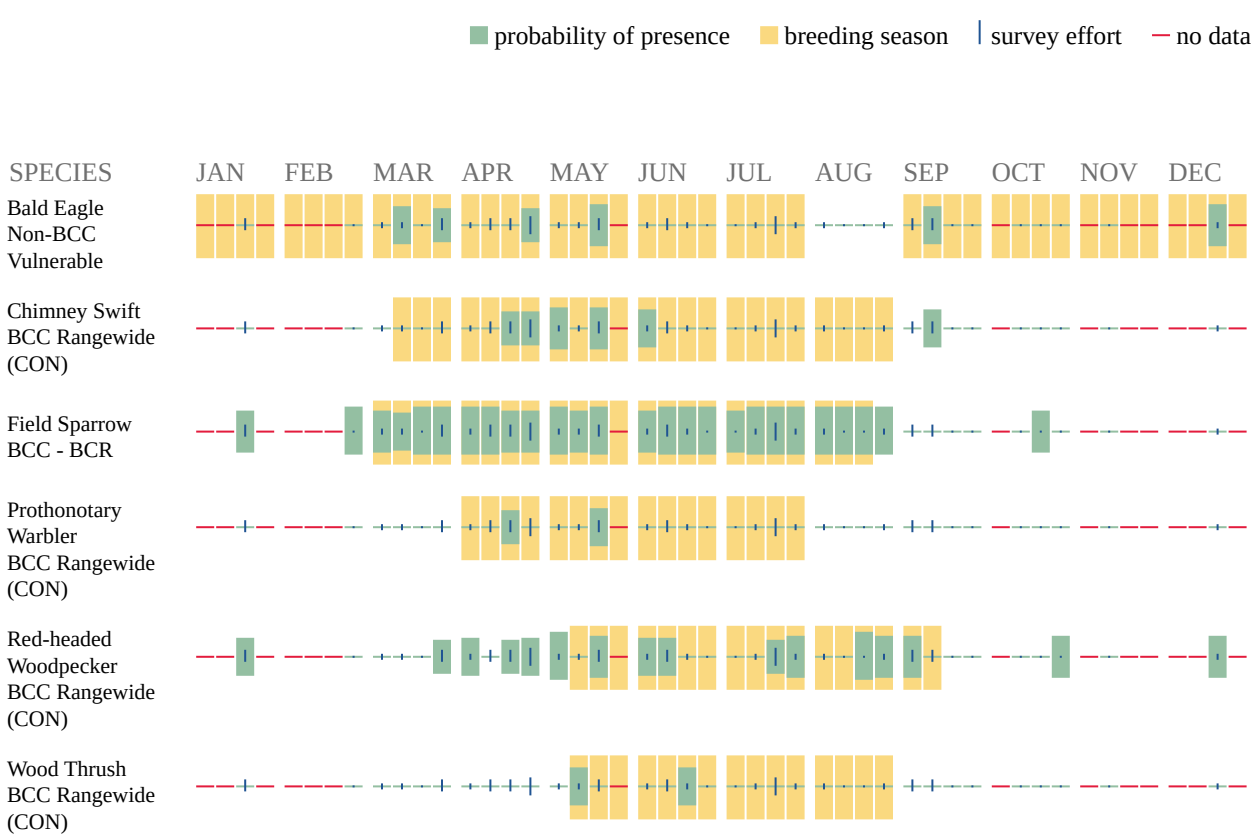
Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds

- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look

at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be

aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- Riverine

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
Phone: (918) 581-7458 Fax: (918) 581-7467

In Reply Refer To:
Project Code: 2022-0074081
Project Name: Spiro OK Railroad Siding - Extension

November 01, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
(918) 581-7458

Project Summary

Project Code: 2022-0074081
Project Name: Spiro OK Railroad Siding - Extension
Project Type: Railroad - New Construction
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.21976985,-94.64233700036402,14z



Counties: Le Flore County, Oklahoma

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Birds

NAME	STATUS
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Clams

NAME	STATUS
Scaleshell Mussel *Leptodea leptodon*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/5881

Insects

NAME	STATUS
American Burying Beetle *Nicrophorus americanus*	Threatened

Population: Wherever found, except where listed as an experimental population
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/66

Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Kestrel *Falco sparverius paulus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9587	Breeds Apr 1 to Aug 31
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

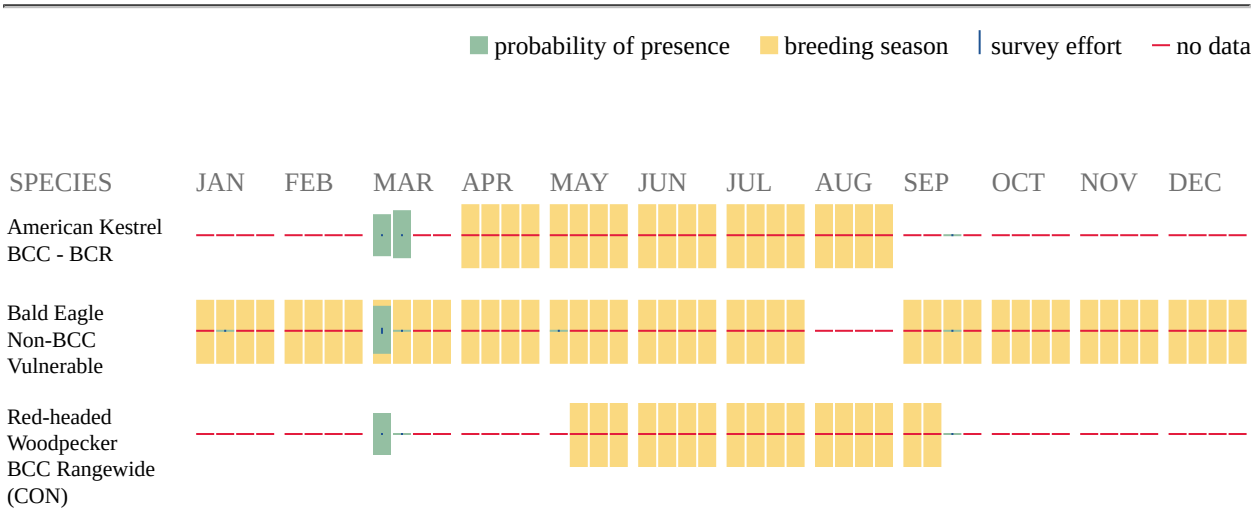
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- Riverine

FRESHWATER FORESTED/SHRUB WETLAND

- Palustrine

IPaC User Contact Information

Agency: VHB
Name: Sydney Feldt
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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
Phone: (918) 581-7458 Fax: (918) 581-7467

In Reply Refer To:
Project Code: 2022-0074072
Project Name: Heavener OK Railroad Siding - New

November 01, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
(918) 581-7458

Project Summary

Project Code: 2022-0074072
Project Name: Heavener OK Railroad Siding - New
Project Type: Railroad - New Construction
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@34.873141950000004,-94.60611363345602,14z



Counties: Le Flore County, Oklahoma

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Birds

NAME	STATUS
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Clams

NAME	STATUS
Scaleshell Mussel *Leptodea leptodon*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/5881

Insects

NAME	STATUS
American Burying Beetle *Nicrophorus americanus*	Threatened

Population: Wherever found, except where listed as an experimental population
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/66

Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Kestrel *Falco sparverius paulus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9587	Breeds Apr 1 to Aug 31
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31

NAME	BREEDING SEASON
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Kentucky Warbler *Oporornis formosus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

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1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

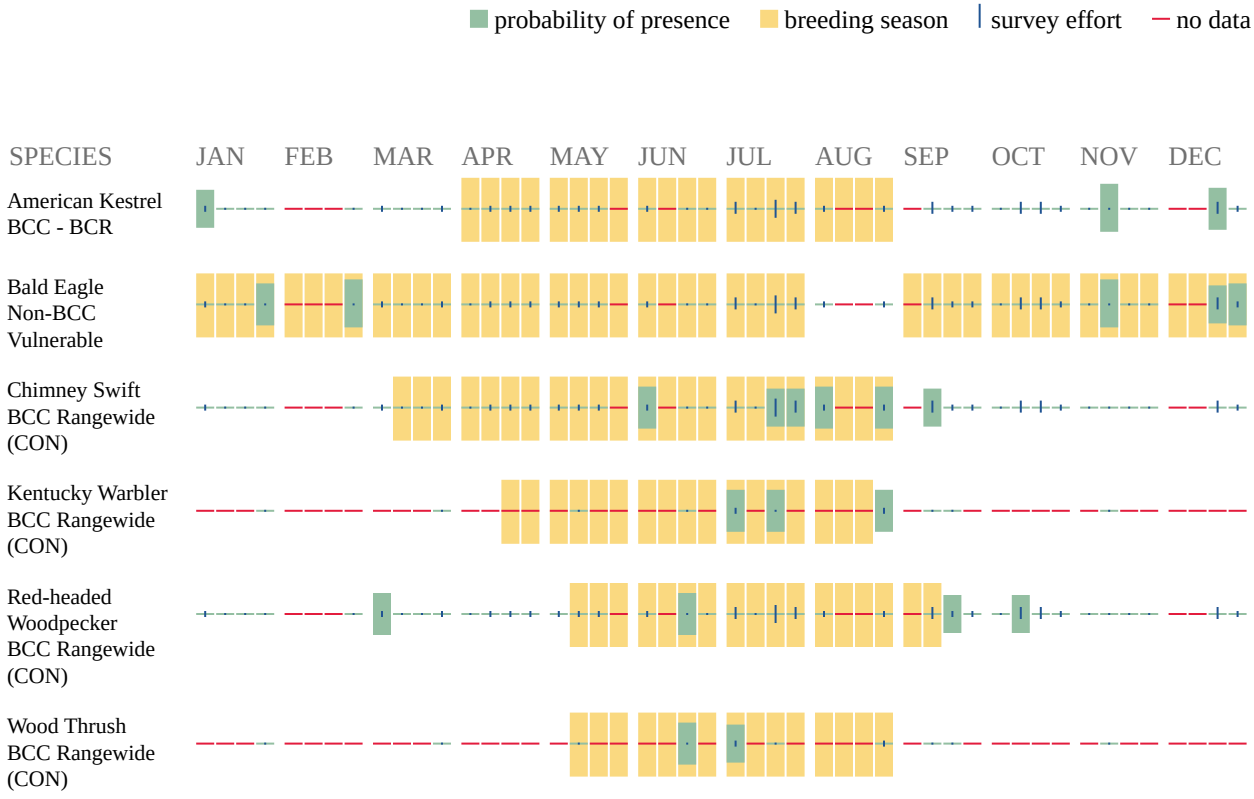
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and

how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- Riverine

FRESHWATER FORESTED/SHRUB WETLAND

- Palustrine

IPaC User Contact Information

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arkansas Ecological Services Field Office
110 South Amity Suite 300
Conway, AR 72032-8975
Phone: (501) 513-4470 Fax: (501) 513-4480

In Reply Refer To:
Project Code: 2023-0010954
Project Name: MP 377 AR Railroad Siding - New

November 01, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arkansas Ecological Services Field Office
110 South Amity Suite 300
Conway, AR 72032-8975
(501) 513-4470

Project Summary

Project Code: 2023-0010954
Project Name: MP 377 AR Railroad Siding - New
Project Type: Railroad - New Construction
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@34.6022879,-94.22390475419573,14z



Counties: Polk County, Arkansas

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis*	Threatened
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477	
Piping Plover *Charadrius melodus*	Threatened
Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	
Red Knot *Calidris canutus rufa*	Threatened
There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	
Red-cockaded Woodpecker *Picoides borealis*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	

Clams

NAME	STATUS
Arkansas Fatmucket *Lampsilis powellii*	Threatened
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2213	
Rabbitsfoot *Quadrula cylindrica cylindrica*	Threatened
There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5165	

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

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Name: Sydney Feldt
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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
Phone: (337) 291-3100 Fax: (337) 291-3139

In Reply Refer To: November 01, 2022
Project Code: 2023-0010955
Project Name: Mansfield LA Railroad Siding - Extension

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and candidate species, as well as designated and proposed critical habitat that may occur within the boundary of your proposed project and may be affected by your proposed project. The Fish and Wildlife Service (Service) is providing this list under section 7 (c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Changes in this species list may occur due to new information from updated surveys, changes in species habitat, new listed species and other factors. Because of these possible changes, feel free to contact our office (337-291-3109) for more information or assistance regarding impacts to federally listed species. The Service recommends visiting the ECOS-IPaC site or the Louisiana Ecological Services Field Office website (https://www.fws.gov/southeast/lafayette) at regular intervals during project planning and implementation for updated species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the habitats upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of Federal trust resources and to determine whether projects may affect Federally listed species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)).

Bald eagles have recovered and were removed from the List of Endangered and Threatened Species as of August 8, 2007. Although no longer listed, please be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668 et seq.).

The Service developed the National Bald Eagle Management (NBEM) Guidelines to provide landowners, land managers, and others with information and recommendations to minimize potential project impacts to bald eagles, particularly where such impacts may constitute "disturbance", which is prohibited by the BGEPA. A copy of the NBEM Guidelines is available at: https://www.fws.gov/migratorybirds/pdf/management/nationalbaldeaglenanagementguidelines.pdf

Those guidelines recommend: (1) maintaining a specified distance between the activity and the nest (buffer area); (2) maintaining natural areas (preferably forested) between the activity and nest trees (landscape buffers); and (3) avoiding certain activities during the breeding season. Onsite personnel should be informed of the possible presence of nesting bald eagles within the project boundary, and should identify, avoid, and immediately report any such nests to this office. If a bald eagle nest occurs or is discovered within or adjacent to the proposed project area, then an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: https://www.fws.gov/southeast/our-services/eagle-technical-assistance/. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary. The Division of Migratory Birds for the Southeast Region of the Service (phone: 404/679-7051, e-mail: SEmigratorybirds@fws.gov) has the lead role in conducting any necessary consultation.

Activities that involve State-designated scenic streams and/or wetlands are regulated by the Louisiana Department of Wildlife and Fisheries and the U.S. Army Corps of Engineers, respectively. We, therefore, recommend that you contact those agencies to determine their interest in proposed projects in these areas.

Activities that would be located within a National Wildlife Refuge are regulated by the refuge staff. We, therefore, recommend that you contact them to determine their interest in proposed projects in these areas.

Additional information on Federal trust species in Louisiana can be obtained from the Louisiana Ecological Services website at: https://www.fws.gov/southeast/lafayette

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
(337) 291-3100

Project Summary

Project Code: 2023-0010955
Project Name: Mansfield LA Railroad Siding - Extension
Project Type: Railroad - New Construction
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@32.0583289,-93.69610696510077,14z



Counties: De Soto County, Louisiana

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Red-cockaded Woodpecker *Picoides borealis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

IPaC User Contact Information

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Phone: 4048000583

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
Phone: (337) 291-3100 Fax: (337) 291-3139

In Reply Refer To:
Project Code: 2023-0010958
Project Name: Loring LA Railroad Siding - Extension

November 01, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and candidate species, as well as designated and proposed critical habitat that may occur within the boundary of your proposed project and may be affected by your proposed project. The Fish and Wildlife Service (Service) is providing this list under section 7 (c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Changes in this species list may occur due to new information from updated surveys, changes in species habitat, new listed species and other factors. Because of these possible changes, feel free to contact our office (337-291-3109) for more information or assistance regarding impacts to federally listed species. The Service recommends visiting the ECOS-IPaC site or the Louisiana Ecological Services Field Office website (https://www.fws.gov/southeast/lafayette) at regular intervals during project planning and implementation for updated species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the habitats upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of Federal trust resources and to determine whether projects may affect Federally listed species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)).

Bald eagles have recovered and were removed from the List of Endangered and Threatened Species as of August 8, 2007. Although no longer listed, please be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668 et seq.).

The Service developed the National Bald Eagle Management (NBEM) Guidelines to provide landowners, land managers, and others with information and recommendations to minimize potential project impacts to bald eagles, particularly where such impacts may constitute "disturbance", which is prohibited by the BGEPA. A copy of the NBEM Guidelines is available at: https://www.fws.gov/migratorybirds/pdf/management/nationalbaldeaglenanagementguidelines.pdf

Those guidelines recommend: (1) maintaining a specified distance between the activity and the nest (buffer area); (2) maintaining natural areas (preferably forested) between the activity and nest trees (landscape buffers); and (3) avoiding certain activities during the breeding season. Onsite personnel should be informed of the possible presence of nesting bald eagles within the project boundary, and should identify, avoid, and immediately report any such nests to this office. If a bald eagle nest occurs or is discovered within or adjacent to the proposed project area, then an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: https://www.fws.gov/southeast/our-services/eagle-technical-assistance/. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary. The Division of Migratory Birds for the Southeast Region of the Service (phone: 404/679-7051, e-mail: SEmigratorybirds@fws.gov) has the lead role in conducting any necessary consultation.

Activities that involve State-designated scenic streams and/or wetlands are regulated by the Louisiana Department of Wildlife and Fisheries and the U.S. Army Corps of Engineers, respectively. We, therefore, recommend that you contact those agencies to determine their interest in proposed projects in these areas.

Activities that would be located within a National Wildlife Refuge are regulated by the refuge staff. We, therefore, recommend that you contact them to determine their interest in proposed projects in these areas.

Additional information on Federal trust species in Louisiana can be obtained from the Louisiana Ecological Services website at: https://www.fws.gov/southeast/lafayette

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
(337) 291-3100

Project Summary

Project Code: 2023-0010958
Project Name: Loring LA Railroad Siding - Extension
Project Type: Railroad - New Construction
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@31.5894147,-93.5484028440243,14z



Counties: Sabine County, Louisiana

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Red-cockaded Woodpecker *Picoides borealis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

IPaC User Contact Information

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State: GA
Zip: 30309
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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
Phone: (337) 291-3100 Fax: (337) 291-3139

In Reply Refer To:
Project Code: 2023-0010961
Project Name: Singer LA Railroad Siding - Extension

November 01, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and candidate species, as well as designated and proposed critical habitat that may occur within the boundary of your proposed project and may be affected by your proposed project. The Fish and Wildlife Service (Service) is providing this list under section 7 (c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Changes in this species list may occur due to new information from updated surveys, changes in species habitat, new listed species and other factors. Because of these possible changes, feel free to contact our office (337-291-3109) for more information or assistance regarding impacts to federally listed species. The Service recommends visiting the ECOS-IPaC site or the Louisiana Ecological Services Field Office website (https://www.fws.gov/southeast/lafayette) at regular intervals during project planning and implementation for updated species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the habitats upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of Federal trust resources and to determine whether projects may affect Federally listed species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)).

Bald eagles have recovered and were removed from the List of Endangered and Threatened Species as of August 8, 2007. Although no longer listed, please be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668 et seq.).

The Service developed the National Bald Eagle Management (NBEM) Guidelines to provide landowners, land managers, and others with information and recommendations to minimize potential project impacts to bald eagles, particularly where such impacts may constitute "disturbance", which is prohibited by the BGEPA. A copy of the NBEM Guidelines is available at: https://www.fws.gov/migratorybirds/pdf/management/nationalbaldeaglenanagementguidelines.pdf

Those guidelines recommend: (1) maintaining a specified distance between the activity and the nest (buffer area); (2) maintaining natural areas (preferably forested) between the activity and nest trees (landscape buffers); and (3) avoiding certain activities during the breeding season. Onsite personnel should be informed of the possible presence of nesting bald eagles within the project boundary, and should identify, avoid, and immediately report any such nests to this office. If a bald eagle nest occurs or is discovered within or adjacent to the proposed project area, then an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: https://www.fws.gov/southeast/our-services/eagle-technical-assistance/. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary. The Division of Migratory Birds for the Southeast Region of the Service (phone: 404/679-7051, e-mail: SEmigratorybirds@fws.gov) has the lead role in conducting any necessary consultation.

Activities that involve State-designated scenic streams and/or wetlands are regulated by the Louisiana Department of Wildlife and Fisheries and the U.S. Army Corps of Engineers, respectively. We, therefore, recommend that you contact those agencies to determine their interest in proposed projects in these areas.

Activities that would be located within a National Wildlife Refuge are regulated by the refuge staff. We, therefore, recommend that you contact them to determine their interest in proposed projects in these areas.

Additional information on Federal trust species in Louisiana can be obtained from the Louisiana Ecological Services website at: https://www.fws.gov/southeast/lafayette

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
(337) 291-3100

Project Summary

Project Code: 2023-0010961
Project Name: Singer LA Railroad Siding - Extension
Project Type: Railroad - New Construction
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@30.64693585,-93.41501209493026,14z



Counties: Beauregard County, Louisiana

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Red-cockaded Woodpecker *Picoides borealis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
American Chaffseed *Schwalbea americana* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1286	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

IPaC User Contact Information

Agency: VHB
Name: Sydney Feldt
Address: 1355 Peachtree Street NE
Address Line 2: Suite 100
City: Atlanta
State: GA
Zip: 30309
Email sfeldt@vhb.com
Phone: 4048000583

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
Phone: (309) 757-5800 Fax: (309) 757-5807

In Reply Refer To:
Project Code: 2022-0010652
Project Name: Deer Creek IA Railroad Siding

November 01, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat, if present, within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) **the accuracy of this species list should be verified after 90 days**. This verification can be completed formally or informally. You may verify the list by visiting the ECOSPHERE Information for Planning and Consultation (IPaC) website https://ipac.ecosphere.fws.gov at regular intervals during project planning and implementation and completing the same process you used to receive the attached list.

Section 7 Consultation

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the U.S. Fish and Wildlife Service (Service) if they determine their project “may affect” listed species or designated critical habitat. Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action may affect endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service to make "no effect" determinations. If you determine that your proposed action will have

no effect on threatened or endangered species or their respective designated critical habitat, you do not need to seek concurrence with the Service.

Note: For some species or projects, IPaC will present you with *Determination Keys*. You may be able to use one or more Determination Keys to conclude consultation on your action.

Technical Assistance for Listed Species

1. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain information on the species life history, species status, current range, and other documents by selecting the species from the thumbnails or list view and visiting the species profile page.

No Effect Determinations for Listed Species

1. If there are *no* species or designated critical habitats on the Endangered Species portion of the species list: conclude "no species and no critical habitat present" and document your finding in your project records. No consultation under ESA section 7(a)(2) is required if the action would result in no effects to listed species or critical habitat. Maintain a copy of this letter and IPaC official species list for your records.

2. If any species or designated critical habitat are listed as potentially present in the **action area** of the proposed project the project proponents are responsible for determining if the proposed action will have “no effect” on any federally listed species or critical habitat. No effect, with respect to species, means that no individuals of a species will be exposed to any consequence of a federal action or that they will not respond to such exposure.

3. If the species habitat is not present within the action area or current data (surveys) for the species in the action area are negative: conclude “no species habitat or species present” and document your finding in your project records. For example, if the project area is located entirely within a “developed area” (an area that is already graveled/paved or supports structures and the only vegetation is limited to frequently mowed grass or conventional landscaping, is located within an existing maintained facility yard, or is in cultivated cropland conclude no species habitat present. Be careful when assessing actions that affect: 1) rights-of-ways that contains natural or semi-natural vegetation despite periodic mowing or other management; structures that have been known to support listed species (example: bridges), and 2) surface water or groundwater. Several species inhabit rights-of-ways, and you should carefully consider effects to surface water or groundwater, which often extend outside of a project’s immediate footprint.

4. Adequacy of Information & Surveys - Agencies may base their determinations on the best evidence that is available or can be developed during consultation. Agencies must give the benefit of any doubt to the species when there are any inadequacies in the information. Inadequacies may include uncertainty in any step of the analysis. To provide adequate information on which to base a determination, it may be appropriate to conduct surveys to determine whether listed species or their habitats are present in the action area. Please contact our office for more information or see the survey guidelines that the Service has made available in IPaC.

May Effect Determinations for Listed Species

1. If the species habitat is present within the action area and survey data is unavailable or inconclusive: assume the species is present or plan and implement surveys and interpret results in coordination with our office. If assuming species present or surveys for the species are positive continue with the may affect determination process. May affect, with respect to a species, is the appropriate conclusion when a species might be exposed to a consequence of a federal action and could respond to that exposure. For critical habitat,

'may affect' is the appropriate conclusion if the action area overlaps with mapped areas of critical habitat and an essential physical or biological feature may be exposed to a consequence of a federal action and could change in response to that exposure.

2. Identify stressors or effects to the species and to the essential physical and biological features of critical habitat that overlaps with the action area. Consider all consequences of the action and assess the potential for each life stage of the species that occurs in the action area to be exposed to the stressors. Deconstruct the action into its component parts to be sure that you do not miss any part of the action that could cause effects to the species or physical and biological features of critical habitat. Stressors that affect species' resources may have consequences even if the species is not present when the project is implemented.

3. If no listed or proposed species will be exposed to stressors caused by the action, a 'no effect' determination may be appropriate – be sure to separately assess effects to critical habitat, if any overlaps with the action area. If you determined that the proposed action or other activities that are caused by the proposed action may affect a species or critical habitat, the next step is to describe the manner in which they will respond or be altered. Specifically, to assess whether the species/critical habitat is "not likely to be adversely affected" or "likely to be adversely affected."

4. Determine how the habitat or the resource will respond to the proposed action (for example, changes in habitat quality, quantity, availability, or distribution), and assess how the species is expected to respond to the effects to its habitat or other resources. Critical habitat analyses focus on how the proposed action will affect the physical and biological features of the critical habitat in the action area. If there will be only beneficial effects or the effects of the action are expected to be insignificant or discountable, conclude "may affect, not likely to adversely affect" and submit your finding and supporting rationale to our office and request concurrence.

5. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, check IPaC for species-specific Section 7 guidance and conservation measures to determine whether there are any measures that may be implemented to avoid or minimize the negative effects. If you modify your proposed action to include conservation measures, assess how inclusion of those measures will likely change the effects of the action. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, contact our office for assistance.

6. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

For additional information on completing Section 7 Consultation including a Glossary of Terms

used in the Section 7 Process, information requirements for completing Section 7, and example letters visit the Midwest Region Section 7 Consultations website at: https://www.fws.gov/library/collections/midwest-region-section-7-consultations.
You may find more specific information on completing Section 7 on communication towers and transmission lines on the following websites:

- Incidental Take Beneficial Practices: Power Lines - https://www.fws.gov/story/incidental-take-beneficial-practices-power-lines
- Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning. - https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation

Northern Long-eared Bat Update

Please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of NLEB after the new listing goes into effect this will first need to addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.
Other Trust Resources and Activities

Bald and Golden Eagles

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act, as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, please contact our office for further coordination. For more information on permits and other eagle information visit our website https://www.fws.gov/library/collections/bald-and-golden-eagle-management.
We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

Project Summary

Project Code: 2022-0010652
Project Name: Deer Creek IA Railroad Siding
Project Type: Railroad - New Construction
Project Description: Installation of new railroad sidings along existing track.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.90934985,-90.180078365714,14z



Counties: Clinton County, Iowa

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Higgins Eye (pearlymussel) *Lampsilis higginsii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5428	Endangered
Sheepnose Mussel *Plethobasus cyphyus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6903	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/601

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

The following FWS National Wildlife Refuge Lands and Fish Hatcheries lie fully or partially within your project area:

FACILITY NAME	ACRES
UPPER MISSISSIPPI RIVER NATIONAL WILDLIFE AND FISH REFUGE https://www.fws.gov/refuges/profiles/index.cfm?id=32579	14,373.656

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Oct 15 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10

NAME	BREEDING SEASON
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere
Henslow's Sparrow *Ammodramus henslowii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds May 1 to Aug 31
Hudsonian Godwit *Limosa haemastica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the

FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

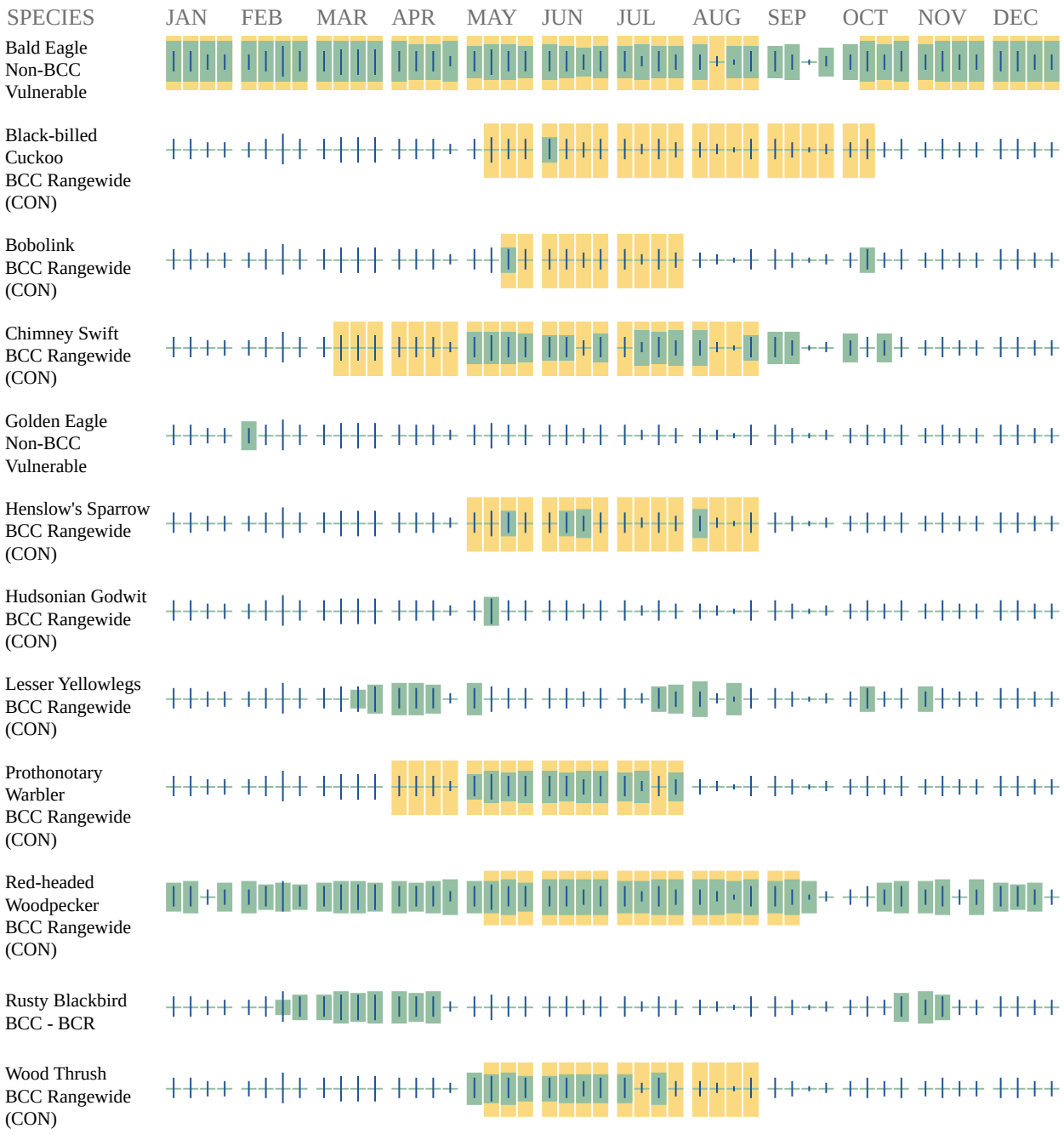
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort – no data



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point

within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no

data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER FORESTED/SHRUB WETLAND

- Palustrine

RIVERINE

- Riverine

IPaC User Contact Information

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
Phone: (309) 757-5800 Fax: (309) 757-5807

In Reply Refer To:
Project Code: 2022-0010651
Project Name: Camanche IA Railroad Siding

November 01, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat, if present, within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) **the accuracy of this species list should be verified after 90 days**. This verification can be completed formally or informally. You may verify the list by visiting the ECOSPHERE Information for Planning and Consultation (IPaC) website https://ipac.ecosphere.fws.gov at regular intervals during project planning and implementation and completing the same process you used to receive the attached list.

Section 7 Consultation

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the U.S. Fish and Wildlife Service (Service) if they determine their project “may affect” listed species or designated critical habitat. Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action may affect endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service to make "no effect" determinations. If you determine that your proposed action will have

no effect on threatened or endangered species or their respective designated critical habitat, you do not need to seek concurrence with the Service.

Note: For some species or projects, IPaC will present you with *Determination Keys*. You may be able to use one or more Determination Keys to conclude consultation on your action.

Technical Assistance for Listed Species

1. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain information on the species life history, species status, current range, and other documents by selecting the species from the thumbnails or list view and visiting the species profile page.

No Effect Determinations for Listed Species

1. If there are *no* species or designated critical habitats on the Endangered Species portion of the species list: conclude "no species and no critical habitat present" and document your finding in your project records. No consultation under ESA section 7(a)(2) is required if the action would result in no effects to listed species or critical habitat. Maintain a copy of this letter and IPaC official species list for your records.

2. If any species or designated critical habitat are listed as potentially present in the **action area** of the proposed project the project proponents are responsible for determining if the proposed action will have “no effect” on any federally listed species or critical habitat. No effect, with respect to species, means that no individuals of a species will be exposed to any consequence of a federal action or that they will not respond to such exposure.

3. If the species habitat is not present within the action area or current data (surveys) for the species in the action area are negative: conclude “no species habitat or species present” and document your finding in your project records. For example, if the project area is located entirely within a “developed area” (an area that is already graveled/paved or supports structures and the only vegetation is limited to frequently mowed grass or conventional landscaping, is located within an existing maintained facility yard, or is in cultivated cropland conclude no species habitat present. Be careful when assessing actions that affect: 1) rights-of-ways that contains natural or semi-natural vegetation despite periodic mowing or other management; structures that have been known to support listed species (example: bridges), and 2) surface water or groundwater. Several species inhabit rights-of-ways, and you should carefully consider effects to surface water or groundwater, which often extend outside of a project’s immediate footprint.

4. Adequacy of Information & Surveys - Agencies may base their determinations on the best evidence that is available or can be developed during consultation. Agencies must give the benefit of any doubt to the species when there are any inadequacies in the information. Inadequacies may include uncertainty in any step of the analysis. To provide adequate information on which to base a determination, it may be appropriate to conduct surveys to determine whether listed species or their habitats are present in the action area. Please contact our office for more information or see the survey guidelines that the Service has made available in IPaC.

May Effect Determinations for Listed Species

1. If the species habitat is present within the action area and survey data is unavailable or inconclusive: assume the species is present or plan and implement surveys and interpret results in coordination with our office. If assuming species present or surveys for the species are positive continue with the may affect determination process. May affect, with respect to a species, is the appropriate conclusion when a species might be exposed to a consequence of a federal action and could respond to that exposure. For critical habitat,

'may affect' is the appropriate conclusion if the action area overlaps with mapped areas of critical habitat and an essential physical or biological feature may be exposed to a consequence of a federal action and could change in response to that exposure.

2. Identify stressors or effects to the species and to the essential physical and biological features of critical habitat that overlaps with the action area. Consider all consequences of the action and assess the potential for each life stage of the species that occurs in the action area to be exposed to the stressors. Deconstruct the action into its component parts to be sure that you do not miss any part of the action that could cause effects to the species or physical and biological features of critical habitat. Stressors that affect species' resources may have consequences even if the species is not present when the project is implemented.

3. If no listed or proposed species will be exposed to stressors caused by the action, a 'no effect' determination may be appropriate – be sure to separately assess effects to critical habitat, if any overlaps with the action area. If you determined that the proposed action or other activities that are caused by the proposed action may affect a species or critical habitat, the next step is to describe the manner in which they will respond or be altered. Specifically, to assess whether the species/critical habitat is "not likely to be adversely affected" or "likely to be adversely affected."

4. Determine how the habitat or the resource will respond to the proposed action (for example, changes in habitat quality, quantity, availability, or distribution), and assess how the species is expected to respond to the effects to its habitat or other resources. Critical habitat analyses focus on how the proposed action will affect the physical and biological features of the critical habitat in the action area. If there will be only beneficial effects or the effects of the action are expected to be insignificant or discountable, conclude "may affect, not likely to adversely affect" and submit your finding and supporting rationale to our office and request concurrence.

5. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, check IPaC for species-specific Section 7 guidance and conservation measures to determine whether there are any measures that may be implemented to avoid or minimize the negative effects. If you modify your proposed action to include conservation measures, assess how inclusion of those measures will likely change the effects of the action. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, contact our office for assistance.

6. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

For additional information on completing Section 7 Consultation including a Glossary of Terms

used in the Section 7 Process, information requirements for completing Section 7, and example letters visit the Midwest Region Section 7 Consultations website at: https://www.fws.gov/library/collections/midwest-region-section-7-consultations.
You may find more specific information on completing Section 7 on communication towers and transmission lines on the following websites:

- Incidental Take Beneficial Practices: Power Lines - https://www.fws.gov/story/incidental-take-beneficial-practices-power-lines
- Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning. - https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation

Northern Long-eared Bat Update

Please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of NLEB after the new listing goes into effect this will first need to addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.
Other Trust Resources and Activities

Bald and Golden Eagles

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act, as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, please contact our office for further coordination. For more information on permits and other eagle information visit our website https://www.fws.gov/library/collections/bald-and-golden-eagle-management.
We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

Project Summary

Project Code: 2022-0010651
Project Name: Camanche IA Railroad Siding
Project Type: Railroad - New Construction
Project Description: Installation of new railroad sidings along existing track.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.809139099999996,-90.23394200178892,14z



Counties: Clinton County, Iowa

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Higgins Eye (pearlymussel) *Lampsilis higginsii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5428	Endangered
Sheepnose Mussel *Plethobasus cyphyus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6903	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/601

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Oct 15 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

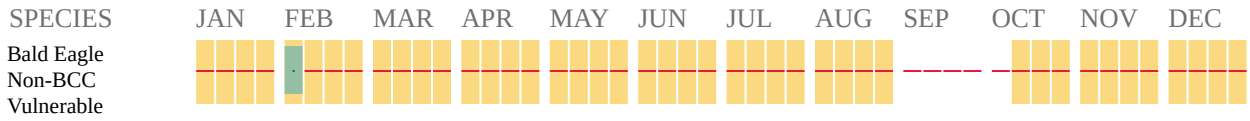
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort – no data



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

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Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- Riverine

FRESHWATER POND

- Palustrine

IPaC User Contact Information

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
Phone: (309) 757-5800 Fax: (309) 757-5807

In Reply Refer To:
Project Code: 2022-0010654
Project Name: Letts IA Railroad Siding

November 01, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat, if present, within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) **the accuracy of this species list should be verified after 90 days**. This verification can be completed formally or informally. You may verify the list by visiting the ECOSPHERE Information for Planning and Consultation (IPaC) website https://ipac.ecosphere.fws.gov at regular intervals during project planning and implementation and completing the same process you used to receive the attached list.

Section 7 Consultation

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the U.S. Fish and Wildlife Service (Service) if they determine their project “may affect” listed species or designated critical habitat. Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action may affect endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service to make "no effect" determinations. If you determine that your proposed action will have

no effect on threatened or endangered species or their respective designated critical habitat, you do not need to seek concurrence with the Service.

Note: For some species or projects, IPaC will present you with *Determination Keys*. You may be able to use one or more Determination Keys to conclude consultation on your action.

Technical Assistance for Listed Species

1. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain information on the species life history, species status, current range, and other documents by selecting the species from the thumbnails or list view and visiting the species profile page.

No Effect Determinations for Listed Species

1. If there are *no* species or designated critical habitats on the Endangered Species portion of the species list: conclude "no species and no critical habitat present" and document your finding in your project records. No consultation under ESA section 7(a)(2) is required if the action would result in no effects to listed species or critical habitat. Maintain a copy of this letter and IPaC official species list for your records.

2. If any species or designated critical habitat are listed as potentially present in the **action area** of the proposed project the project proponents are responsible for determining if the proposed action will have “no effect” on any federally listed species or critical habitat. No effect, with respect to species, means that no individuals of a species will be exposed to any consequence of a federal action or that they will not respond to such exposure.

3. If the species habitat is not present within the action area or current data (surveys) for the species in the action area are negative: conclude “no species habitat or species present” and document your finding in your project records. For example, if the project area is located entirely within a “developed area” (an area that is already graveled/paved or supports structures and the only vegetation is limited to frequently mowed grass or conventional landscaping, is located within an existing maintained facility yard, or is in cultivated cropland conclude no species habitat present. Be careful when assessing actions that affect: 1) rights-of-ways that contains natural or semi-natural vegetation despite periodic mowing or other management; structures that have been known to support listed species (example: bridges), and 2) surface water or groundwater. Several species inhabit rights-of-ways, and you should carefully consider effects to surface water or groundwater, which often extend outside of a project’s immediate footprint.

4. Adequacy of Information & Surveys - Agencies may base their determinations on the best evidence that is available or can be developed during consultation. Agencies must give the benefit of any doubt to the species when there are any inadequacies in the information. Inadequacies may include uncertainty in any step of the analysis. To provide adequate information on which to base a determination, it may be appropriate to conduct surveys to determine whether listed species or their habitats are present in the action area. Please contact our office for more information or see the survey guidelines that the Service has made available in IPaC.

May Effect Determinations for Listed Species

1. If the species habitat is present within the action area and survey data is unavailable or inconclusive: assume the species is present or plan and implement surveys and interpret results in coordination with our office. If assuming species present or surveys for the species are positive continue with the may affect determination process. May affect, with respect to a species, is the appropriate conclusion when a species might be exposed to a consequence of a federal action and could respond to that exposure. For critical habitat,

'may affect' is the appropriate conclusion if the action area overlaps with mapped areas of critical habitat and an essential physical or biological feature may be exposed to a consequence of a federal action and could change in response to that exposure.

2. Identify stressors or effects to the species and to the essential physical and biological features of critical habitat that overlaps with the action area. Consider all consequences of the action and assess the potential for each life stage of the species that occurs in the action area to be exposed to the stressors. Deconstruct the action into its component parts to be sure that you do not miss any part of the action that could cause effects to the species or physical and biological features of critical habitat. Stressors that affect species' resources may have consequences even if the species is not present when the project is implemented.

3. If no listed or proposed species will be exposed to stressors caused by the action, a 'no effect' determination may be appropriate – be sure to separately assess effects to critical habitat, if any overlaps with the action area. If you determined that the proposed action or other activities that are caused by the proposed action may affect a species or critical habitat, the next step is to describe the manner in which they will respond or be altered. Specifically, to assess whether the species/critical habitat is "not likely to be adversely affected" or "likely to be adversely affected."

4. Determine how the habitat or the resource will respond to the proposed action (for example, changes in habitat quality, quantity, availability, or distribution), and assess how the species is expected to respond to the effects to its habitat or other resources. Critical habitat analyses focus on how the proposed action will affect the physical and biological features of the critical habitat in the action area. If there will be only beneficial effects or the effects of the action are expected to be insignificant or discountable, conclude "may affect, not likely to adversely affect" and submit your finding and supporting rationale to our office and request concurrence.

5. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, check IPaC for species-specific Section 7 guidance and conservation measures to determine whether there are any measures that may be implemented to avoid or minimize the negative effects. If you modify your proposed action to include conservation measures, assess how inclusion of those measures will likely change the effects of the action. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, contact our office for assistance.

6. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

For additional information on completing Section 7 Consultation including a Glossary of Terms

used in the Section 7 Process, information requirements for completing Section 7, and example letters visit the Midwest Region Section 7 Consultations website at: https://www.fws.gov/library/collections/midwest-region-section-7-consultations.
You may find more specific information on completing Section 7 on communication towers and transmission lines on the following websites:

- Incidental Take Beneficial Practices: Power Lines - https://www.fws.gov/story/incidental-take-beneficial-practices-power-lines
- Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning. - https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation

Northern Long-eared Bat Update

Please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of NLEB after the new listing goes into effect this will first need to addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.
Other Trust Resources and Activities

Bald and Golden Eagles

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act, as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, please contact our office for further coordination. For more information on permits and other eagle information visit our website https://www.fws.gov/library/collections/bald-and-golden-eagle-management.
We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

Project Summary

Project Code: 2022-0010654
Project Name: Letts IA Railroad Siding
Project Type: Railroad - New Construction
Project Description: Installation of new railroad sidings along existing track.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.32559125,-91.20373538583992,14z



Counties: Louisa County, Iowa

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Higgins Eye (pearlymussel) *Lampsilis higginsii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5428	Endangered
Spectaclecase (mussel) *Cumberlandia monodonta* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7867	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/601

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Oct 15 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10

NAME	BREEDING SEASON
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Cerulean Warbler *Dendroica cerulea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 21 to Jul 20
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Kentucky Warbler *Oporornis formosus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

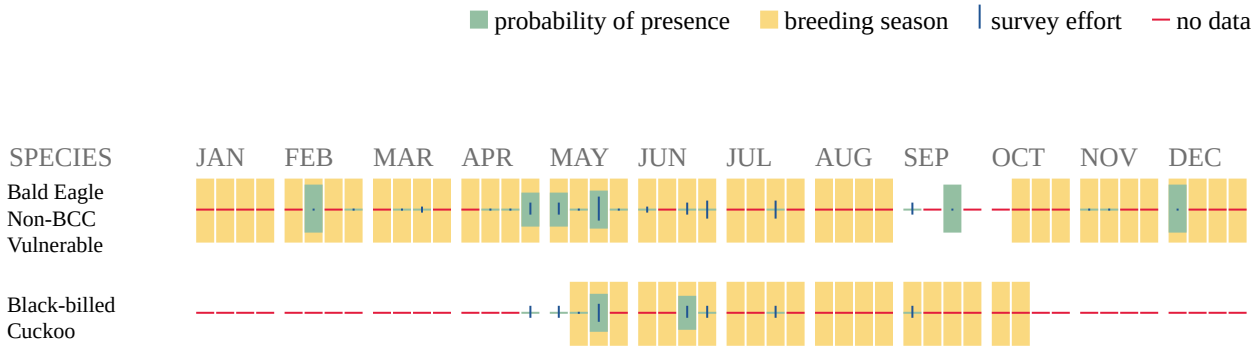
1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits

may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities,

should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

IPaC User Contact Information

Agency: VHB
Name: Sydney Feldt
Address: 1355 Peachtree Street NE
Address Line 2: Suite 100
City: Atlanta
State: GA
Zip: 30309
Email sfeldt@vhb.com
Phone: 4048000583

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
Phone: (309) 757-5800 Fax: (309) 757-5807

In Reply Refer To:
Project Code: 2022-0010655
Project Name: MP 255 IA Railroad Siding

November 01, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat, if present, within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) **the accuracy of this species list should be verified after 90 days**. This verification can be completed formally or informally. You may verify the list by visiting the ECOSPHERE Information for Planning and Consultation (IPaC) website https://ipac.ecosphere.fws.gov at regular intervals during project planning and implementation and completing the same process you used to receive the attached list.

Section 7 Consultation

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the U.S. Fish and Wildlife Service (Service) if they determine their project “may affect” listed species or designated critical habitat. Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action may affect endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service to make "no effect" determinations. If you determine that your proposed action will have

no effect on threatened or endangered species or their respective designated critical habitat, you do not need to seek concurrence with the Service.

Note: For some species or projects, IPaC will present you with *Determination Keys*. You may be able to use one or more Determination Keys to conclude consultation on your action.

Technical Assistance for Listed Species

1. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain information on the species life history, species status, current range, and other documents by selecting the species from the thumbnails or list view and visiting the species profile page.

No Effect Determinations for Listed Species

1. If there are *no* species or designated critical habitats on the Endangered Species portion of the species list: conclude "no species and no critical habitat present" and document your finding in your project records. No consultation under ESA section 7(a)(2) is required if the action would result in no effects to listed species or critical habitat. Maintain a copy of this letter and IPaC official species list for your records.

2. If any species or designated critical habitat are listed as potentially present in the **action area** of the proposed project the project proponents are responsible for determining if the proposed action will have “no effect” on any federally listed species or critical habitat. No effect, with respect to species, means that no individuals of a species will be exposed to any consequence of a federal action or that they will not respond to such exposure.

3. If the species habitat is not present within the action area or current data (surveys) for the species in the action area are negative: conclude “no species habitat or species present” and document your finding in your project records. For example, if the project area is located entirely within a “developed area” (an area that is already graveled/paved or supports structures and the only vegetation is limited to frequently mowed grass or conventional landscaping, is located within an existing maintained facility yard, or is in cultivated cropland conclude no species habitat present. Be careful when assessing actions that affect: 1) rights-of-ways that contains natural or semi-natural vegetation despite periodic mowing or other management; structures that have been known to support listed species (example: bridges), and 2) surface water or groundwater. Several species inhabit rights-of-ways, and you should carefully consider effects to surface water or groundwater, which often extend outside of a project’s immediate footprint.

4. Adequacy of Information & Surveys - Agencies may base their determinations on the best evidence that is available or can be developed during consultation. Agencies must give the benefit of any doubt to the species when there are any inadequacies in the information. Inadequacies may include uncertainty in any step of the analysis. To provide adequate information on which to base a determination, it may be appropriate to conduct surveys to determine whether listed species or their habitats are present in the action area. Please contact our office for more information or see the survey guidelines that the Service has made available in IPaC.

May Effect Determinations for Listed Species

1. If the species habitat is present within the action area and survey data is unavailable or inconclusive: assume the species is present or plan and implement surveys and interpret results in coordination with our office. If assuming species present or surveys for the species are positive continue with the may affect determination process. May affect, with respect to a species, is the appropriate conclusion when a species might be exposed to a consequence of a federal action and could respond to that exposure. For critical habitat,

'may affect' is the appropriate conclusion if the action area overlaps with mapped areas of critical habitat and an essential physical or biological feature may be exposed to a consequence of a federal action and could change in response to that exposure.

2. Identify stressors or effects to the species and to the essential physical and biological features of critical habitat that overlaps with the action area. Consider all consequences of the action and assess the potential for each life stage of the species that occurs in the action area to be exposed to the stressors. Deconstruct the action into its component parts to be sure that you do not miss any part of the action that could cause effects to the species or physical and biological features of critical habitat. Stressors that affect species' resources may have consequences even if the species is not present when the project is implemented.

3. If no listed or proposed species will be exposed to stressors caused by the action, a 'no effect' determination may be appropriate – be sure to separately assess effects to critical habitat, if any overlaps with the action area. If you determined that the proposed action or other activities that are caused by the proposed action may affect a species or critical habitat, the next step is to describe the manner in which they will respond or be altered. Specifically, to assess whether the species/critical habitat is "not likely to be adversely affected" or "likely to be adversely affected."

4. Determine how the habitat or the resource will respond to the proposed action (for example, changes in habitat quality, quantity, availability, or distribution), and assess how the species is expected to respond to the effects to its habitat or other resources. Critical habitat analyses focus on how the proposed action will affect the physical and biological features of the critical habitat in the action area. If there will be only beneficial effects or the effects of the action are expected to be insignificant or discountable, conclude "may affect, not likely to adversely affect" and submit your finding and supporting rationale to our office and request concurrence.

5. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, check IPaC for species-specific Section 7 guidance and conservation measures to determine whether there are any measures that may be implemented to avoid or minimize the negative effects. If you modify your proposed action to include conservation measures, assess how inclusion of those measures will likely change the effects of the action. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, contact our office for assistance.

6. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

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used in the Section 7 Process, information requirements for completing Section 7, and example letters visit the Midwest Region Section 7 Consultations website at: https://www.fws.gov/library/collections/midwest-region-section-7-consultations.
You may find more specific information on completing Section 7 on communication towers and transmission lines on the following websites:

- Incidental Take Beneficial Practices: Power Lines - https://www.fws.gov/story/incidental-take-beneficial-practices-power-lines
- Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning. - https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation

Northern Long-eared Bat Update

Please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of NLEB after the new listing goes into effect this will first need to addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.
Other Trust Resources and Activities

Bald and Golden Eagles

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act, as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, please contact our office for further coordination. For more information on permits and other eagle information visit our website https://www.fws.gov/library/collections/bald-and-golden-eagle-management.
We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

Project Summary

Project Code: 2022-0010655
Project Name: MP 255 IA Railroad Siding
Project Type: Railroad - New Construction
Project Description: Installation of new railroad sidings along existing track.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.30155405,-91.63456283114434,14z



Counties: Washington County, Iowa

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/601	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Oct 15 to Aug 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

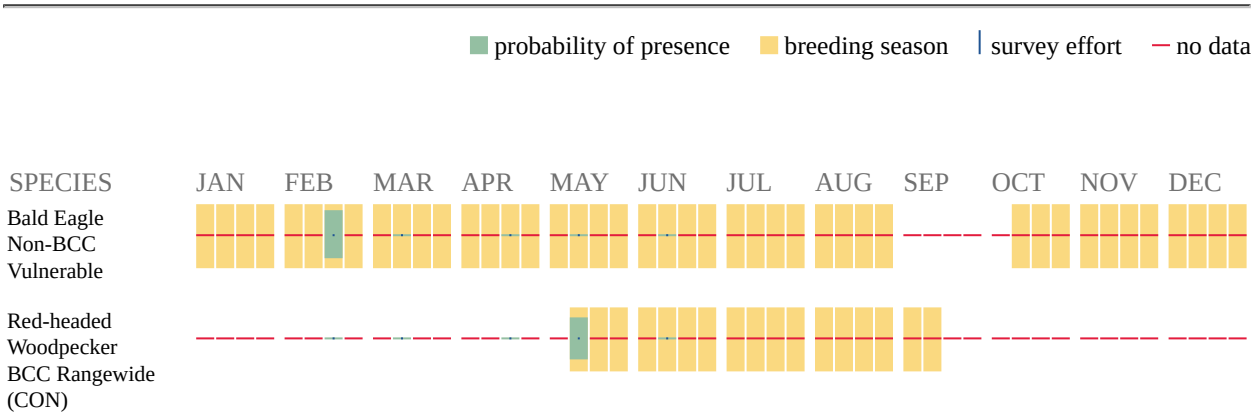
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as

warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- Riverine

IPaC User Contact Information

Agency: VHB
Name: Sydney Feldt
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Address Line 2: Suite 100
City: Atlanta
State: GA
Zip: 30309
Email sfeldt@vhb.com
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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
Phone: (309) 757-5800 Fax: (309) 757-5807

In Reply Refer To:
Project Code: 2022-0010653
Project Name: Ottumwa IA Railroad Siding

November 01, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat, if present, within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) **the accuracy of this species list should be verified after 90 days**. This verification can be completed formally or informally. You may verify the list by visiting the ECOSPHERE Information for Planning and Consultation (IPaC) website https://ipac.ecosphere.fws.gov at regular intervals during project planning and implementation and completing the same process you used to receive the attached list.

Section 7 Consultation

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the U.S. Fish and Wildlife Service (Service) if they determine their project “may affect” listed species or designated critical habitat. Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action may affect endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service to make "no effect" determinations. If you determine that your proposed action will have

no effect on threatened or endangered species or their respective designated critical habitat, you do not need to seek concurrence with the Service.

Note: For some species or projects, IPaC will present you with *Determination Keys*. You may be able to use one or more Determination Keys to conclude consultation on your action.

Technical Assistance for Listed Species

1. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain information on the species life history, species status, current range, and other documents by selecting the species from the thumbnails or list view and visiting the species profile page.

No Effect Determinations for Listed Species

1. If there are *no* species or designated critical habitats on the Endangered Species portion of the species list: conclude "no species and no critical habitat present" and document your finding in your project records. No consultation under ESA section 7(a)(2) is required if the action would result in no effects to listed species or critical habitat. Maintain a copy of this letter and IPaC official species list for your records.

2. If any species or designated critical habitat are listed as potentially present in the **action area** of the proposed project the project proponents are responsible for determining if the proposed action will have “no effect” on any federally listed species or critical habitat. No effect, with respect to species, means that no individuals of a species will be exposed to any consequence of a federal action or that they will not respond to such exposure.

3. If the species habitat is not present within the action area or current data (surveys) for the species in the action area are negative: conclude “no species habitat or species present” and document your finding in your project records. For example, if the project area is located entirely within a “developed area” (an area that is already graveled/paved or supports structures and the only vegetation is limited to frequently mowed grass or conventional landscaping, is located within an existing maintained facility yard, or is in cultivated cropland conclude no species habitat present. Be careful when assessing actions that affect: 1) rights-of-ways that contains natural or semi-natural vegetation despite periodic mowing or other management; structures that have been known to support listed species (example: bridges), and 2) surface water or groundwater. Several species inhabit rights-of-ways, and you should carefully consider effects to surface water or groundwater, which often extend outside of a project’s immediate footprint.

4. Adequacy of Information & Surveys - Agencies may base their determinations on the best evidence that is available or can be developed during consultation. Agencies must give the benefit of any doubt to the species when there are any inadequacies in the information. Inadequacies may include uncertainty in any step of the analysis. To provide adequate information on which to base a determination, it may be appropriate to conduct surveys to determine whether listed species or their habitats are present in the action area. Please contact our office for more information or see the survey guidelines that the Service has made available in IPaC.

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'may affect' is the appropriate conclusion if the action area overlaps with mapped areas of critical habitat and an essential physical or biological feature may be exposed to a consequence of a federal action and could change in response to that exposure.

2. Identify stressors or effects to the species and to the essential physical and biological features of critical habitat that overlaps with the action area. Consider all consequences of the action and assess the potential for each life stage of the species that occurs in the action area to be exposed to the stressors. Deconstruct the action into its component parts to be sure that you do not miss any part of the action that could cause effects to the species or physical and biological features of critical habitat. Stressors that affect species' resources may have consequences even if the species is not present when the project is implemented.

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This species list is provided by:

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1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

Project Summary

Project Code: 2022-0010653
Project Name: Ottumwa IA Railroad Siding
Project Type: Railroad - New Construction
Project Description: Installation of new railroad sidings along existing track.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.01501255,-92.46394960917422,14z



Counties: Wapello County, Iowa

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/601	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Oct 15 to Aug 31
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

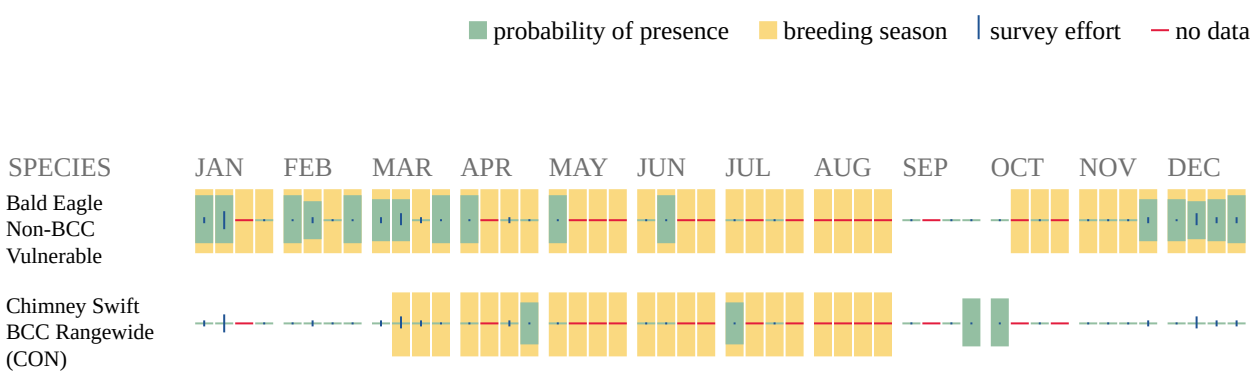
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act

requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- Riverine

FRESHWATER EMERGENT WETLAND

- Palustrine

IPaC User Contact Information

Agency: VHB
Name: Sydney Feldt
Address: 1355 Peachtree Street NE
Address Line 2: Suite 100
City: Atlanta
State: GA
Zip: 30309
Email sfeldt@vhb.com
Phone: 4048000583

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
Phone: (309) 757-5800 Fax: (309) 757-5807

In Reply Refer To:
Project Code: 2022-0010657
Project Name: Moravia MO Railroad Siding

November 01, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat, if present, within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) **the accuracy of this species list should be verified after 90 days**. This verification can be completed formally or informally. You may verify the list by visiting the ECOSPHERE Information for Planning and Consultation (IPaC) website https://ipac.ecosphere.fws.gov at regular intervals during project planning and implementation and completing the same process you used to receive the attached list.

Section 7 Consultation

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the U.S. Fish and Wildlife Service (Service) if they determine their project “may affect” listed species or designated critical habitat. Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action may affect endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service to make "no effect" determinations. If you determine that your proposed action will have

no effect on threatened or endangered species or their respective designated critical habitat, you do not need to seek concurrence with the Service.

Note: For some species or projects, IPaC will present you with *Determination Keys*. You may be able to use one or more Determination Keys to conclude consultation on your action.

Technical Assistance for Listed Species

1. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain information on the species life history, species status, current range, and other documents by selecting the species from the thumbnails or list view and visiting the species profile page.

No Effect Determinations for Listed Species

1. If there are *no* species or designated critical habitats on the Endangered Species portion of the species list: conclude "no species and no critical habitat present" and document your finding in your project records. No consultation under ESA section 7(a)(2) is required if the action would result in no effects to listed species or critical habitat. Maintain a copy of this letter and IPaC official species list for your records.

2. If any species or designated critical habitat are listed as potentially present in the **action area** of the proposed project the project proponents are responsible for determining if the proposed action will have “no effect” on any federally listed species or critical habitat. No effect, with respect to species, means that no individuals of a species will be exposed to any consequence of a federal action or that they will not respond to such exposure.

3. If the species habitat is not present within the action area or current data (surveys) for the species in the action area are negative: conclude “no species habitat or species present” and document your finding in your project records. For example, if the project area is located entirely within a “developed area” (an area that is already graveled/paved or supports structures and the only vegetation is limited to frequently mowed grass or conventional landscaping, is located within an existing maintained facility yard, or is in cultivated cropland conclude no species habitat present. Be careful when assessing actions that affect: 1) rights-of-ways that contains natural or semi-natural vegetation despite periodic mowing or other management; structures that have been known to support listed species (example: bridges), and 2) surface water or groundwater. Several species inhabit rights-of-ways, and you should carefully consider effects to surface water or groundwater, which often extend outside of a project’s immediate footprint.

4. Adequacy of Information & Surveys - Agencies may base their determinations on the best evidence that is available or can be developed during consultation. Agencies must give the benefit of any doubt to the species when there are any inadequacies in the information. Inadequacies may include uncertainty in any step of the analysis. To provide adequate information on which to base a determination, it may be appropriate to conduct surveys to determine whether listed species or their habitats are present in the action area. Please contact our office for more information or see the survey guidelines that the Service has made available in IPaC.

May Effect Determinations for Listed Species

1. If the species habitat is present within the action area and survey data is unavailable or inconclusive: assume the species is present or plan and implement surveys and interpret results in coordination with our office. If assuming species present or surveys for the species are positive continue with the may affect determination process. May affect, with respect to a species, is the appropriate conclusion when a species might be exposed to a consequence of a federal action and could respond to that exposure. For critical habitat,

'may affect' is the appropriate conclusion if the action area overlaps with mapped areas of critical habitat and an essential physical or biological feature may be exposed to a consequence of a federal action and could change in response to that exposure.

2. Identify stressors or effects to the species and to the essential physical and biological features of critical habitat that overlaps with the action area. Consider all consequences of the action and assess the potential for each life stage of the species that occurs in the action area to be exposed to the stressors. Deconstruct the action into its component parts to be sure that you do not miss any part of the action that could cause effects to the species or physical and biological features of critical habitat. Stressors that affect species' resources may have consequences even if the species is not present when the project is implemented.

3. If no listed or proposed species will be exposed to stressors caused by the action, a 'no effect' determination may be appropriate – be sure to separately assess effects to critical habitat, if any overlaps with the action area. If you determined that the proposed action or other activities that are caused by the proposed action may affect a species or critical habitat, the next step is to describe the manner in which they will respond or be altered. Specifically, to assess whether the species/critical habitat is "not likely to be adversely affected" or "likely to be adversely affected."

4. Determine how the habitat or the resource will respond to the proposed action (for example, changes in habitat quality, quantity, availability, or distribution), and assess how the species is expected to respond to the effects to its habitat or other resources. Critical habitat analyses focus on how the proposed action will affect the physical and biological features of the critical habitat in the action area. If there will be only beneficial effects or the effects of the action are expected to be insignificant or discountable, conclude "may affect, not likely to adversely affect" and submit your finding and supporting rationale to our office and request concurrence.

5. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, check IPaC for species-specific Section 7 guidance and conservation measures to determine whether there are any measures that may be implemented to avoid or minimize the negative effects. If you modify your proposed action to include conservation measures, assess how inclusion of those measures will likely change the effects of the action. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, contact our office for assistance.

6. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

For additional information on completing Section 7 Consultation including a Glossary of Terms

used in the Section 7 Process, information requirements for completing Section 7, and example letters visit the Midwest Region Section 7 Consultations website at: https://www.fws.gov/library/collections/midwest-region-section-7-consultations.
You may find more specific information on completing Section 7 on communication towers and transmission lines on the following websites:

- Incidental Take Beneficial Practices: Power Lines - https://www.fws.gov/story/incidental-take-beneficial-practices-power-lines
- Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning. - https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation

Northern Long-eared Bat Update

Please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of NLEB after the new listing goes into effect this will first need to addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.
Other Trust Resources and Activities

Bald and Golden Eagles

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act, as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, please contact our office for further coordination. For more information on permits and other eagle information visit our website https://www.fws.gov/library/collections/bald-and-golden-eagle-management.
We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

Project Summary

Project Code: 2022-0010657
Project Name: Moravia MO Railroad Siding
Project Type: Railroad - New Construction
Project Description: Installation of new railroad sidings along existing track.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@40.91660055,-92.79294540493856,14z



Counties: Monroe County, Iowa

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/601	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

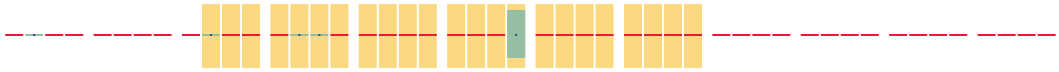
No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

▪ probability of presence ▪ breeding season | survey effort – no data

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Chimney Swift
BCC Rangewide
(CON)



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- Riverine

IPaC User Contact Information

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

In Reply Refer To: November 01, 2022
Project Code: 2023-0010902
Project Name: Newtown MO Railroad Siding - Extension

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Threatened and Endangered Species

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).
New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. **Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days.** The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance

Refer to the Midwest Region S7 Technical Assistance website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects:

projects in developed areas, HUD, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

Federally Listed Bat Species

Indiana bats, gray bats, and northern long-eared bats occur throughout Missouri and the information below may help in determining if your project may affect these species.

Gray bats - Gray bats roost in caves or mines year-round and use water features and forested riparian corridors for foraging and travel. If your project will impact caves, mines, associated riparian areas, or will involve tree removal around these features – particularly within stream corridors, riparian areas, or associated upland woodlots –gray bats could be affected.
Indiana and northern long-eared bats - These species hibernate in caves or mines only during the winter. In Missouri the hibernation season is considered to be November 1 to March 31. During the active season in Missouri (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥5 inches diameter at breast height (dbh) for Indiana bat, and ≥3 inches dbh for northern long-eared bat, that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Tree species often include, but are not limited to, shellbark or shagbark hickory, white oak, cottonwood, and maple. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, Indiana bats or northern long-eared bats could be affected.
Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
- Trees found in highly-developed urban areas (e.g., street trees, downtown areas);
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees; and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of “There are no listed species found within the vicinity of the project,” then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see #3 below) – then project proponents can conclude the proposed activities **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species through the S7 Technical Assistance website.
3. If IPac returns a result that one or more federally listed bat species (Indiana bat, northern long-eared bat, or gray bat) are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** these bat species **IF** one or more of the following activities are proposed:
    a. Clearing or disturbing suitable roosting habitat, as defined above, at any time of year;
    b. Any activity in or near the entrance to a cave or mine;
    c. Mining, deep excavation, or underground work within 0.25 miles of a cave or mine;
    d. Construction of one or more wind turbines; or
    e. Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on listed bat species. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.
If any of the above activities are proposed in areas where one or more bat species may be present, project proponents can conclude the proposed activities **may affect** one or more bat species. We recommend coordinating with the Service as early as possible during project planning. If your project will involve removal of over 5 acres of suitable forest or woodland habitat, we recommend you complete a Summer Habitat Assessment prior to contacting our office to expedite the consultation process. The Summer Habitat Assessment Form is available in Appendix A of the most recent version of the Range-wide Indiana Bat Summer Survey Guidelines.

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA

to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

Next Steps

Should you determine that project activities **may affect** any federally listed species or trust resources described herein, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination, P. O. Box 180, Jefferson City, MO 65102) for information concerning Missouri Natural Communities and Species of Conservation Concern.
We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Karen Herrington

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

Project Summary

Project Code: 2023-0010902
Project Name: Newtown MO Railroad Siding - Extension
Project Type: Railroad - New Construction
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@40.34974905,-93.33835675641826,14z



Counties: Sullivan County, Missouri

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ipac.ecosphere.fws.gov/project/VCPJDFYMVNF2XICYFC7J7FDO6Y/documents/generated/6868.pdf	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/VCPJDFYMVNF2XICYFC7J7FDO6Y/documents/generated/6868.pdf	Threatened
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Flowering Plants

NAME	STATUS
Mead's Milkweed *Asclepias meadii*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/8204

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- Riverine

FRESHWATER EMERGENT WETLAND

- Palustrine

IPaC User Contact Information

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
Phone: (309) 757-5800 Fax: (309) 757-5807

In Reply Refer To: December 06, 2021
Consultation Code: 03E18000-2022-SLI-0395
Event Code: 03E18000-2022-E-01027
Project Name: MP 71 IA Railroad Siding - New

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the Service if they determine their project "may affect" listed species or critical habitat.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally. You may verify the list by visiting the ECOS-IPaC website http://ecos.fws.gov/ipac/ at regular intervals during project planning and implementation and completing the same process you used to receive the attached list. As an alternative, you may contact this Ecological Services Field Office for updates.

Please use the species list provided and visit the U.S. Fish and Wildlife Service's Region 3 Section 7 Technical Assistance website at - http://www.fws.gov/midwest/endangered/section7/s7process/index.html. This website contains step-by-step instructions which will help you determine if your project will have an adverse effect on listed species and will help lead you through the Section 7 process.

For all wind energy projects, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.) and Migratory Bird Treaty Act (16 U.S.C. 703 et seq), as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at http://www.fws.gov/midwest/midwestbird/EaglePermits/index.html to help you determine if you can avoid impacting eagles or if a permit may be necessary.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

Project Summary

Consultation Code: 03E18000-2022-SLI-0395
Event Code: Some(03E18000-2022-E-01027)
Project Name: MP 71 IA Railroad Siding - New
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.6990713,-91.00949104073574,14z



Counties: Clayton County, Iowa

Endangered Species Act Species

There is a total of 10 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Higgins Eye (pearlymussel) *Lampsilis higginsii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5428	Endangered
Sheepnose Mussel *Plethobasus cyphyus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6903	Endangered
Spectaclecase (mussel) *Cumberlandia monodonta* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7867	Endangered

Snails

NAME	STATUS
Iowa Pleistocene Snail *Discus macclintocki* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/534	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/601	Threatened
Northern Wild Monkshood *Aconitum noveboracense* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1450	Threatened
Prairie Bush-clover *Lespedeza leptostachya* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4458	Threatened
Western Prairie Fringed Orchid *Platanthera praeclara* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1669	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

The following FWS National Wildlife Refuge Lands and Fish Hatcheries lie fully or partially within your project area:

FACILITY NAME	ACRES
UPPER MISSISSIPPI RIVER NATIONAL WILDLIFE AND FISH REFUGE https://www.fws.gov/refuges/profiles/index.cfm?id=32579	33,072.829

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
Phone: (309) 757-5800 Fax: (309) 757-5807

In Reply Refer To: December 06, 2021
Consultation Code: 03E18000-2022-SLI-0396
Event Code: 03E18000-2022-E-01029
Project Name: MP 24 IA Railroad Siding - New

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the Service if they determine their project “may affect” listed species or critical habitat.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally. You may verify the list by visiting the ECOS-IPaC website http://ecos.fws.gov/ipac/ at regular intervals during project planning and implementation and completing the same process you used to receive the attached list. As an alternative, you may contact this Ecological Services Field Office for updates.

Please use the species list provided and visit the U.S. Fish and Wildlife Service’s Region 3 Section 7 Technical Assistance website at - http://www.fws.gov/midwest/endangered/section7/s7process/index.html. This website contains step-by-step instructions which will help you determine if your project will have an adverse effect on listed species and will help lead you through the Section 7 process.

For all wind energy projects, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.) and Migratory Bird Treaty Act (16 U.S.C. 703 et seq), as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at http://www.fws.gov/midwest/midwestbird/EaglePermits/index.html to help you determine if you can avoid impacting eagles or if a permit may be necessary.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

Project Summary

Consultation Code: 03E18000-2022-SLI-0396
Event Code: Some(03E18000-2022-E-01029)
Project Name: MP 24 IA Railroad Siding - New
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.31345865,-90.43180405410173,14z



Counties: Jackson County, Iowa

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Higgins Eye (pearlymussel) *Lampsilis higginsii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5428	Endangered
Sheepnose Mussel *Plethobasus cyphyus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6903	Endangered

Snails

NAME	STATUS
Iowa Pleistocene Snail *Discus macclintocki* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/534	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/601	Threatened
Northern Wild Monkshood *Aconitum noveboracense* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1450	Threatened
Prairie Bush-clover *Lespedeza leptostachya* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4458	Threatened
Western Prairie Fringed Orchid *Platanthera praeclara* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1669	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

United States Department of the Interior

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In Reply Refer To: December 06, 2021
Consultation Code: 03E18000-2022-SLI-0397
Event Code: 03E18000-2022-E-01031
Project Name: Chicago MP 75 IL Railroad Siding - New

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the Service if they determine their project "may affect" listed species or critical habitat.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally. You may verify the list by visiting the ECOS-IPaC website http://ecos.fws.gov/ipac/ at regular intervals during project planning and implementation and completing the same process you used to receive the attached list. As an alternative, you may contact this Ecological Services Field Office for updates.

Please use the species list provided and visit the U.S. Fish and Wildlife Service's Region 3 Section 7 Technical Assistance website at - http://www.fws.gov/midwest/endangered/section7/s7process/index.html. This website contains step-by-step instructions which will help you determine if your project will have an adverse effect on listed species and will help lead you through the Section 7 process.

For all wind energy projects, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.) and Migratory Bird Treaty Act (16 U.S.C. 703 et seq), as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at http://www.fws.gov/midwest/midwestbird/EaglePermits/index.html to help you determine if you can avoid impacting eagles or if a permit may be necessary.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

Project Summary

Consultation Code: 03E18000-2022-SLI-0397
Event Code: Some(03E18000-2022-E-01031)
Project Name: Chicago MP 75 IL Railroad Siding - New
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.09757925,-88.96752826524055,14z



Counties: DeKalb and Ogle counties, Illinois

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/601	Threatened
Prairie Bush-clover *Lespedeza leptostachya* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4458	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

United States Department of the Interior

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In Reply Refer To: December 06, 2021
Consultation Code: 03E18000-2022-SLI-0398
Event Code: 03E18000-2022-E-01033
Project Name: Deer Creek IA Railroad Siding - Extension

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the Service if they determine their project “may affect” listed species or critical habitat.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally. You may verify the list by visiting the ECOS-IPaC website http://ecos.fws.gov/ipac/ at regular intervals during project planning and implementation and completing the same process you used to receive the attached list. As an alternative, you may contact this Ecological Services Field Office for updates.

Please use the species list provided and visit the U.S. Fish and Wildlife Service’s Region 3 Section 7 Technical Assistance website at - http://www.fws.gov/midwest/endangered/section7/s7process/index.html. This website contains step-by-step instructions which will help you determine if your project will have an adverse effect on listed species and will help lead you through the Section 7 process.

For all wind energy projects, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.) and Migratory Bird Treaty Act (16 U.S.C. 703 et seq), as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at http://www.fws.gov/midwest/midwestbird/EaglePermits/index.html to help you determine if you can avoid impacting eagles or if a permit may be necessary.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

Project Summary

Consultation Code: 03E18000-2022-SLI-0398
Event Code: Some(03E18000-2022-E-01033)
Project Name: Deer Creek IA Railroad Siding - Extension
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.9082681,-90.17993285611509,14z



Counties: Clinton County, Iowa

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Reptiles

NAME	STATUS
Eastern Massasauga (=rattlesnake) *Sistrurus catenatus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2202	Threatened

Clams

NAME	STATUS
Higgins Eye (pearlymussel) *Lampsilis higginsii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5428	Endangered

Snails

NAME	STATUS
Iowa Pleistocene Snail *Discus macclintocki* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/534	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/601	Threatened
Prairie Bush-clover *Lespedeza leptostachya* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4458	Threatened
Western Prairie Fringed Orchid *Platanthera praeclara* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1669	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

REFUGE INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

United States Department of the Interior

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In Reply Refer To: December 06, 2021
Consultation Code: 03E18000-2022-SLI-0399
Event Code: 03E18000-2022-E-01035
Project Name: Camanche IA Railroad Siding - Extension

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

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Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally. You may verify the list by visiting the ECOS-IPaC website http://ecos.fws.gov/ipac/ at regular intervals during project planning and implementation and completing the same process you used to receive the attached list. As an alternative, you may contact this Ecological Services Field Office for updates.

Please use the species list provided and visit the U.S. Fish and Wildlife Service's Region 3 Section 7 Technical Assistance website at - http://www.fws.gov/midwest/endangered/section7/s7process/index.html. This website contains step-by-step instructions which will help you determine if your project will have an adverse effect on listed species and will help lead you through the Section 7 process.

For all wind energy projects, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.) and Migratory Bird Treaty Act (16 U.S.C. 703 et seq), as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at http://www.fws.gov/midwest/midwestbird/EaglePermits/index.html to help you determine if you can avoid impacting eagles or if a permit may be necessary.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

Project Summary

Consultation Code: 03E18000-2022-SLI-0399
Event Code: Some(03E18000-2022-E-01035)
Project Name: Camanche IA Railroad Siding - Extension
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.80237395,-90.2399657849693,14z



Counties: Clinton County, Iowa

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Reptiles

NAME	STATUS
Eastern Massasauga (=rattlesnake) *Sistrurus catenatus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2202	Threatened

Clams

NAME	STATUS
Higgins Eye (pearlymussel) *Lampsilis higginsii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5428	Endangered

Snails

NAME	STATUS
Iowa Pleistocene Snail *Discus macclintocki* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/534	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/601	Threatened
Prairie Bush-clover *Lespedeza leptostachya* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4458	Threatened
Western Prairie Fringed Orchid *Platanthera praeclara* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1669	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

REFUGE INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
Phone: (309) 757-5800 Fax: (309) 757-5807

In Reply Refer To: December 06, 2021
Consultation Code: 03E18000-2022-SLI-0400
Event Code: 03E18000-2022-E-01037
Project Name: Letts IA Railroad Siding - Extension

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the Service if they determine their project “may affect” listed species or critical habitat.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally. You may verify the list by visiting the ECOS-IPaC website http://ecos.fws.gov/ipac/ at regular intervals during project planning and implementation and completing the same process you used to receive the attached list. As an alternative, you may contact this Ecological Services Field Office for updates.

Please use the species list provided and visit the U.S. Fish and Wildlife Service’s Region 3 Section 7 Technical Assistance website at - http://www.fws.gov/midwest/endangered/section7/s7process/index.html. This website contains step-by-step instructions which will help you determine if your project will have an adverse effect on listed species and will help lead you through the Section 7 process.

For all wind energy projects, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.) and Migratory Bird Treaty Act (16 U.S.C. 703 et seq), as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at http://www.fws.gov/midwest/midwestbird/EaglePermits/index.html to help you determine if you can avoid impacting eagles or if a permit may be necessary.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

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Moline, IL 61265-7022
(309) 757-5800

Project Summary

Consultation Code: 03E18000-2022-SLI-0400
Event Code: Some(03E18000-2022-E-01037)
Project Name: Letts IA Railroad Siding - Extension
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.325434,-91.20232795831511,14z



Counties: Louisa County, Iowa

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Higgins Eye (pearlymussel) *Lampsilis higginsii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5428	Endangered
Sheepnose Mussel *Plethobasus cyphyus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6903	Endangered
Spectaclecase (mussel) *Cumberlandia monodonta* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7867	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/601	Threatened
Prairie Bush-clover *Lespedeza leptostachya* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4458	Threatened
Western Prairie Fringed Orchid *Platanthera praeclara* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1669	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

United States Department of the Interior

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In Reply Refer To: December 06, 2021
Consultation Code: 03E18000-2022-SLI-0401
Event Code: 03E18000-2022-E-01039
Project Name: MP 255 IA Railroad Siding - New

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

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Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally. You may verify the list by visiting the ECOS-IPaC website http://ecos.fws.gov/ipac/ at regular intervals during project planning and implementation and completing the same process you used to receive the attached list. As an alternative, you may contact this Ecological Services Field Office for updates.

Please use the species list provided and visit the U.S. Fish and Wildlife Service's Region 3 Section 7 Technical Assistance website at - http://www.fws.gov/midwest/endangered/section7/s7process/index.html. This website contains step-by-step instructions which will help you determine if your project will have an adverse effect on listed species and will help lead you through the Section 7 process.

For all wind energy projects, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.) and Migratory Bird Treaty Act (16 U.S.C. 703 et seq), as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at http://www.fws.gov/midwest/midwestbird/EaglePermits/index.html to help you determine if you can avoid impacting eagles or if a permit may be necessary.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

Project Summary

Consultation Code: 03E18000-2022-SLI-0401
Event Code: Some(03E18000-2022-E-01039)
Project Name: MP 255 IA Railroad Siding - New
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.299634600000005,-91.61092964027384,14z



Counties: Washington County, Iowa

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea*	Threatened
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/601	
Prairie Bush-clover *Lespedeza leptostachya*	Threatened
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/4458	
Western Prairie Fringed Orchid *Platanthera praeclara*	Threatened
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/1669	

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

United States Department of the Interior

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Phone: (309) 757-5800 Fax: (309) 757-5807

In Reply Refer To: December 06, 2021
Consultation Code: 03E18000-2022-SLI-0402
Event Code: 03E18000-2022-E-01041
Project Name: Ottumwa IA Railroad Siding - Extension

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

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Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally. You may verify the list by visiting the ECOS-IPaC website http://ecos.fws.gov/ipac/ at regular intervals during project planning and implementation and completing the same process you used to receive the attached list. As an alternative, you may contact this Ecological Services Field Office for updates.

Please use the species list provided and visit the U.S. Fish and Wildlife Service's Region 3 Section 7 Technical Assistance website at - http://www.fws.gov/midwest/endangered/section7/s7process/index.html. This website contains step-by-step instructions which will help you determine if your project will have an adverse effect on listed species and will help lead you through the Section 7 process.

For all wind energy projects, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.) and Migratory Bird Treaty Act (16 U.S.C. 703 et seq), as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at http://www.fws.gov/midwest/midwestbird/EaglePermits/index.html to help you determine if you can avoid impacting eagles or if a permit may be necessary.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

Project Summary

Consultation Code: 03E18000-2022-SLI-0402
Event Code: Some(03E18000-2022-E-01041)
Project Name: Ottumwa IA Railroad Siding - Extension
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.016928699999994,-92.45757422794111,14z



Counties: Wapello County, Iowa

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

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See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea*	Threatened
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/601	
Prairie Bush-clover *Lespedeza leptostachya*	Threatened
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/4458	
Western Prairie Fringed Orchid *Platanthera praeclara*	Threatened
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/1669	

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

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United States Department of the Interior

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Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
Phone: (309) 757-5800 Fax: (309) 757-5807

In Reply Refer To: December 06, 2021
Consultation Code: 03E18000-2022-SLI-0403
Event Code: 03E18000-2022-E-01043
Project Name: Moravia MO Railroad Siding - New

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

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We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

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This species list is provided by:

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Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

Project Summary

Consultation Code: 03E18000-2022-SLI-0403
Event Code: Some(03E18000-2022-E-01043)
Project Name: Moravia MO Railroad Siding - New
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@40.91746245,-92.79231424922497,14z



Counties: Monroe County, Iowa

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea*	Threatened
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/601	
Prairie Bush-clover *Lespedeza leptostachya*	Threatened
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/4458	
Western Prairie Fringed Orchid *Platanthera praeclara*	Threatened
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/1669	

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

In Reply Refer To: December 06, 2021
Consultation Code: 03E14000-2022-SLI-0410
Event Code: 03E14000-2022-E-01325
Project Name: Newtown MO Railroad Siding - Extension

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.).

Threatened and Endangered Species

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. N**ote that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days.** The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance

Refer to the Midwest Region S7 Technical Assistance website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects: projects in developed areas, HUD, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

Federally Listed Bat Species

Indiana bats, gray bats, and northern long-eared bats occur throughout Missouri and the information below may help in determining if your project may affect these species.

Gray bats - Gray bats roost in caves or mines year-round and use water features and forested riparian corridors for foraging and travel. If your project will impact caves, mines, associated riparian areas, or will involve tree removal around these features – particularly within stream corridors, riparian areas, or associated upland woodlots –gray bats could be affected.

Indiana and northern long-eared bats - These species hibernate in caves or mines only during the winter. In Missouri the hibernation season is considered to be November 1 to March 31. During the active season in Missouri (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥5 inches diameter at breast height (dbh) for Indiana bat, and ≥3 inches dbh for northern long-eared bat, that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Tree species often include, but are not limited to, shellbark or shagbark hickory, white oak, cottonwood, and maple. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, Indiana bats or northern long-eared bats could be affected.

Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
- Trees found in highly-developed urban areas (e.g., street trees, downtown areas);
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees; and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of "There are no listed species found within the vicinity of the project," then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see #3 below) – then project proponents can conclude the proposed activities **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species through the S7 Technical Assistance website.

3. If IPac returns a result that one or more federally listed bat species (Indiana bat, northern long-eared bat, or gray bat) are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** these bat species **IF** one or more of the following activities are proposed:

   a. Clearing or disturbing suitable roosting habitat, as defined above, at any time of year;
   b. Any activity in or near the entrance to a cave or mine;
   c. Mining, deep excavation, or underground work within 0.25 miles of a cave or mine;
   d. Construction of one or more wind turbines; or
   e. Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on listed bat species. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

If any of the above activities are proposed in areas where one or more bat species may be present, project proponents can conclude the proposed activities **may affect** one or more bat species. We recommend coordinating with the Service as early as possible during project planning. If your project will involve removal of over 5 acres of suitable forest or woodland habitat, we recommend you complete a Summer Habitat Assessment prior to contacting our office to expedite the consultation process. The Summer Habitat Assessment Form is available in Appendix A of the most recent version of the Range-wide Indiana Bat Summer Survey Guidelines.

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area

please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

Next Steps

Should you determine that project activities **may affect** any federally listed species or trust resources described herein, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination, P. O. Box 180, Jefferson City, MO 65102) for information concerning Missouri Natural Communities and Species of Conservation Concern.

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Karen Herrington

Attachment(s):

- Official Species List

- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

Project Summary

Consultation Code: 03E14000-2022-SLI-0410
Event Code: Some(03E14000-2022-E-01325)
Project Name: Newtown MO Railroad Siding - Extension
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@40.34974905,-93.33835675641826,14z



Counties: Sullivan County, Missouri

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ecos.fws.gov/ipac/project/VCPJDFYMVNF2XICYFC7J7FDO6Y/documents/generated/6868.pdf	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ecos.fws.gov/ipac/project/VCPJDFYMVNF2XICYFC7J7FDO6Y/documents/generated/6868.pdf	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Mead's Milkweed *Asclepias meadii*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/8204

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

In Reply Refer To: December 06, 2021
Consultation Code: 03E14000-2022-SLI-0411
Event Code: 03E14000-2022-E-01327
Project Name: Laredo MO Railroad Siding - Extension

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.).

Threatened and Endangered Species

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. N**ote that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days.** The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance

Refer to the Midwest Region S7 Technical Assistance website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects: projects in developed areas, HUD, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

Federally Listed Bat Species

Indiana bats, gray bats, and northern long-eared bats occur throughout Missouri and the information below may help in determining if your project may affect these species.

Gray bats - Gray bats roost in caves or mines year-round and use water features and forested riparian corridors for foraging and travel. If your project will impact caves, mines, associated riparian areas, or will involve tree removal around these features – particularly within stream corridors, riparian areas, or associated upland woodlots –gray bats could be affected.

Indiana and northern long-eared bats - These species hibernate in caves or mines only during the winter. In Missouri the hibernation season is considered to be November 1 to March 31. During the active season in Missouri (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥5 inches diameter at breast height (dbh) for Indiana bat, and ≥3 inches dbh for northern long-eared bat, that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Tree species often include, but are not limited to, shellbark or shagbark hickory, white oak, cottonwood, and maple. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, Indiana bats or northern long-eared bats could be affected.

Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
- Trees found in highly-developed urban areas (e.g., street trees, downtown areas);
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees; and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of "There are no listed species found within the vicinity of the project," then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see #3 below) – then project proponents can conclude the proposed activities **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species through the S7 Technical Assistance website.

3. If IPac returns a result that one or more federally listed bat species (Indiana bat, northern long-eared bat, or gray bat) are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** these bat species **IF** one or more of the following activities are proposed:

   a. Clearing or disturbing suitable roosting habitat, as defined above, at any time of year;
   b. Any activity in or near the entrance to a cave or mine;
   c. Mining, deep excavation, or underground work within 0.25 miles of a cave or mine;
   d. Construction of one or more wind turbines; or
   e. Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on listed bat species. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

If any of the above activities are proposed in areas where one or more bat species may be present, project proponents can conclude the proposed activities **may affect** one or more bat species. We recommend coordinating with the Service as early as possible during project planning. If your project will involve removal of over 5 acres of suitable forest or woodland habitat, we recommend you complete a Summer Habitat Assessment prior to contacting our office to expedite the consultation process. The Summer Habitat Assessment Form is available in Appendix A of the most recent version of the Range-wide Indiana Bat Summer Survey Guidelines.

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area

please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

Next Steps

Should you determine that project activities **may affect** any federally listed species or trust resources described herein, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination, P. O. Box 180, Jefferson City, MO 65102) for information concerning Missouri Natural Communities and Species of Conservation Concern.

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Karen Herrington

Attachment(s):

- Official Species List

- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

Project Summary

Consultation Code: 03E14000-2022-SLI-0411
Event Code: Some(03E14000-2022-E-01327)
Project Name: Laredo MO Railroad Siding - Extension
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.9972256,-93.4417227539041,14z



Counties: Grundy County, Missouri

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	
Indiana Bat *Myotis sodalis*	Endangered
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ecos.fws.gov/ipac/project/ZBHLNCUT5NG3LBHBV3E26XWLYY/documents/generated/6868.pdf	
Northern Long-eared Bat *Myotis septentrionalis*	Threatened
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ecos.fws.gov/ipac/project/ZBHLNCUT5NG3LBHBV3E26XWLYY/documents/generated/6868.pdf	

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/601

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

In Reply Refer To: December 06, 2021
Consultation Code: 03E14000-2022-SLI-0412
Event Code: 03E14000-2022-E-01329
Project Name: MP 431 MO Railroad Siding - New

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.).

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New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. N**ote that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days.** The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance

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Federally Listed Bat Species

Indiana bats, gray bats, and northern long-eared bats occur throughout Missouri and the information below may help in determining if your project may affect these species.

Gray bats - Gray bats roost in caves or mines year-round and use water features and forested riparian corridors for foraging and travel. If your project will impact caves, mines, associated riparian areas, or will involve tree removal around these features – particularly within stream corridors, riparian areas, or associated upland woodlots –gray bats could be affected.

Indiana and northern long-eared bats - These species hibernate in caves or mines only during the winter. In Missouri the hibernation season is considered to be November 1 to March 31. During the active season in Missouri (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥5 inches diameter at breast height (dbh) for Indiana bat, and ≥3 inches dbh for northern long-eared bat, that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Tree species often include, but are not limited to, shellbark or shagbark hickory, white oak, cottonwood, and maple. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, Indiana bats or northern long-eared bats could be affected.

Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
- Trees found in highly-developed urban areas (e.g., street trees, downtown areas);
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees; and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of "There are no listed species found within the vicinity of the project," then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see #3 below) – then project proponents can conclude the proposed activities **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species through the S7 Technical Assistance website.

3. If IPac returns a result that one or more federally listed bat species (Indiana bat, northern long-eared bat, or gray bat) are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** these bat species **IF** one or more of the following activities are proposed:

   a. Clearing or disturbing suitable roosting habitat, as defined above, at any time of year;
   b. Any activity in or near the entrance to a cave or mine;
   c. Mining, deep excavation, or underground work within 0.25 miles of a cave or mine;
   d. Construction of one or more wind turbines; or
   e. Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on listed bat species. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

If any of the above activities are proposed in areas where one or more bat species may be present, project proponents can conclude the proposed activities **may affect** one or more bat species. We recommend coordinating with the Service as early as possible during project planning. If your project will involve removal of over 5 acres of suitable forest or woodland habitat, we recommend you complete a Summer Habitat Assessment prior to contacting our office to expedite the consultation process. The Summer Habitat Assessment Form is available in Appendix A of the most recent version of the Range-wide Indiana Bat Summer Survey Guidelines.

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area

please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

Next Steps

Should you determine that project activities **may affect** any federally listed species or trust resources described herein, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination, P. O. Box 180, Jefferson City, MO 65102) for information concerning Missouri Natural Communities and Species of Conservation Concern.

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Karen Herrington

Attachment(s):

- Official Species List

- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

Project Summary

Consultation Code: 03E14000-2022-SLI-0412
Event Code: Some(03E14000-2022-E-01329)
Project Name: MP 431 MO Railroad Siding - New
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.71350995,-93.6071287159262,14z



Counties: Livingston County, Missouri

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	
Indiana Bat *Myotis sodalis*	Endangered
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ecos.fws.gov/ipac/project/L7YL65JMQVHBDOMQPNRVW66PGE/documents/generated/6868.pdf	
Northern Long-eared Bat *Myotis septentrionalis*	Threatened
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ecos.fws.gov/ipac/project/L7YL65JMQVHBDOMQPNRVW66PGE/documents/generated/6868.pdf	

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

In Reply Refer To: December 06, 2021
Consultation Code: 03E14000-2022-SLI-0413
Event Code: 03E14000-2022-E-01331
Project Name: Blue Valley MO Railroad Siding - Double Track

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.).

Threatened and Endangered Species

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. N**ote that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days.** The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance

Refer to the Midwest Region S7 Technical Assistance website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects: projects in developed areas, HUD, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

Federally Listed Bat Species

Indiana bats, gray bats, and northern long-eared bats occur throughout Missouri and the information below may help in determining if your project may affect these species.

Gray bats - Gray bats roost in caves or mines year-round and use water features and forested riparian corridors for foraging and travel. If your project will impact caves, mines, associated riparian areas, or will involve tree removal around these features – particularly within stream corridors, riparian areas, or associated upland woodlots –gray bats could be affected.

Indiana and northern long-eared bats - These species hibernate in caves or mines only during the winter. In Missouri the hibernation season is considered to be November 1 to March 31. During the active season in Missouri (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥5 inches diameter at breast height (dbh) for Indiana bat, and ≥3 inches dbh for northern long-eared bat, that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Tree species often include, but are not limited to, shellbark or shagbark hickory, white oak, cottonwood, and maple. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, Indiana bats or northern long-eared bats could be affected.

Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
- Trees found in highly-developed urban areas (e.g., street trees, downtown areas);
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees; and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of "There are no listed species found within the vicinity of the project," then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see #3 below) – then project proponents can conclude the proposed activities **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species through the S7 Technical Assistance website.

3. If IPac returns a result that one or more federally listed bat species (Indiana bat, northern long-eared bat, or gray bat) are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** these bat species **IF** one or more of the following activities are proposed:

   a. Clearing or disturbing suitable roosting habitat, as defined above, at any time of year;
   b. Any activity in or near the entrance to a cave or mine;
   c. Mining, deep excavation, or underground work within 0.25 miles of a cave or mine;
   d. Construction of one or more wind turbines; or
   e. Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on listed bat species. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

If any of the above activities are proposed in areas where one or more bat species may be present, project proponents can conclude the proposed activities **may affect** one or more bat species. We recommend coordinating with the Service as early as possible during project planning. If your project will involve removal of over 5 acres of suitable forest or woodland habitat, we recommend you complete a Summer Habitat Assessment prior to contacting our office to expedite the consultation process. The Summer Habitat Assessment Form is available in Appendix A of the most recent version of the Range-wide Indiana Bat Summer Survey Guidelines.

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area

please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

Next Steps

Should you determine that project activities **may affect** any federally listed species or trust resources described herein, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination, P. O. Box 180, Jefferson City, MO 65102) for information concerning Missouri Natural Communities and Species of Conservation Concern.

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Karen Herrington

Attachment(s):

- Official Species List

- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

Project Summary

Consultation Code: 03E14000-2022-SLI-0413
Event Code: Some(03E14000-2022-E-01331)
Project Name: Blue Valley MO Railroad Siding - Double Track
Project Type: TRANSPORTATION
Project Description: Installation of double track as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.0634047,-94.50220406439199,14z



Counties: Jackson County, Missouri

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	
Indiana Bat *Myotis sodalis*	Endangered
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ecos.fws.gov/ipac/project/ADO5HAV53ZB5JDFOHNJZCUTDU4/documents/generated/6868.pdf	
Northern Long-eared Bat *Myotis septentrionalis*	Threatened
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ecos.fws.gov/ipac/project/ADO5HAV53ZB5JDFOHNJZCUTDU4/documents/generated/6868.pdf	

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

REFUGE INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

In Reply Refer To: December 06, 2021
Consultation Code: 03E14000-2022-SLI-0414
Event Code: 03E14000-2022-E-01333
Project Name: Grandview IFG MO Railroad Siding - Facility Working Track

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.).

Threatened and Endangered Species

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. N**ote that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days.** The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance

Refer to the Midwest Region S7 Technical Assistance website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects: projects in developed areas, HUD, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

Federally Listed Bat Species

Indiana bats, gray bats, and northern long-eared bats occur throughout Missouri and the information below may help in determining if your project may affect these species.

Gray bats - Gray bats roost in caves or mines year-round and use water features and forested riparian corridors for foraging and travel. If your project will impact caves, mines, associated riparian areas, or will involve tree removal around these features – particularly within stream corridors, riparian areas, or associated upland woodlots –gray bats could be affected.

Indiana and northern long-eared bats - These species hibernate in caves or mines only during the winter. In Missouri the hibernation season is considered to be November 1 to March 31. During the active season in Missouri (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥5 inches diameter at breast height (dbh) for Indiana bat, and ≥3 inches dbh for northern long-eared bat, that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Tree species often include, but are not limited to, shellbark or shagbark hickory, white oak, cottonwood, and maple. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, Indiana bats or northern long-eared bats could be affected.

Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
- Trees found in highly-developed urban areas (e.g., street trees, downtown areas);
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees; and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of "There are no listed species found within the vicinity of the project," then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see #3 below) – then project proponents can conclude the proposed activities **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species through the S7 Technical Assistance website.

3. If IPac returns a result that one or more federally listed bat species (Indiana bat, northern long-eared bat, or gray bat) are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** these bat species **IF** one or more of the following activities are proposed:

   a. Clearing or disturbing suitable roosting habitat, as defined above, at any time of year;
   b. Any activity in or near the entrance to a cave or mine;
   c. Mining, deep excavation, or underground work within 0.25 miles of a cave or mine;
   d. Construction of one or more wind turbines; or
   e. Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on listed bat species. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

If any of the above activities are proposed in areas where one or more bat species may be present, project proponents can conclude the proposed activities **may affect** one or more bat species. We recommend coordinating with the Service as early as possible during project planning. If your project will involve removal of over 5 acres of suitable forest or woodland habitat, we recommend you complete a Summer Habitat Assessment prior to contacting our office to expedite the consultation process. The Summer Habitat Assessment Form is available in Appendix A of the most recent version of the Range-wide Indiana Bat Summer Survey Guidelines.

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area

please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

Next Steps

Should you determine that project activities **may affect** any federally listed species or trust resources described herein, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination, P. O. Box 180, Jefferson City, MO 65102) for information concerning Missouri Natural Communities and Species of Conservation Concern.

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Karen Herrington

Attachment(s):

- Official Species List

- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

Project Summary

Consultation Code: 03E14000-2022-SLI-0414
Event Code: Some(03E14000-2022-E-01333)
Project Name: Grandview IFG MO Railroad Siding - Facility Working Track
Project Type: TRANSPORTATION
Project Description: Installation of facility working track as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.854088149999995,-94.5606920354588,14z



Counties: Cass and Jackson counties, Missouri

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	
Indiana Bat *Myotis sodalis*	Endangered
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ecos.fws.gov/ipac/project/KUGWRI2CT5DMTM2LDYDFKKGJPE/documents/generated/6868.pdf	
Northern Long-eared Bat *Myotis septentrionalis*	Threatened
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ecos.fws.gov/ipac/project/KUGWRI2CT5DMTM2LDYDFKKGJPE/documents/generated/6868.pdf	

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	

Flowering Plants

NAME	STATUS
Mead's Milkweed *Asclepias meadii*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/8204

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

In Reply Refer To: December 06, 2021
Consultation Code: 03E14000-2022-SLI-0415
Event Code: 03E14000-2022-E-01335
Project Name: Asbury MO KS Railroad Siding - Extension

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.).

Threatened and Endangered Species

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. N**ote that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days.** The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance

Refer to the Midwest Region S7 Technical Assistance website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects: projects in developed areas, HUD, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

Federally Listed Bat Species

Indiana bats, gray bats, and northern long-eared bats occur throughout Missouri and the information below may help in determining if your project may affect these species.

Gray bats - Gray bats roost in caves or mines year-round and use water features and forested riparian corridors for foraging and travel. If your project will impact caves, mines, associated riparian areas, or will involve tree removal around these features – particularly within stream corridors, riparian areas, or associated upland woodlots –gray bats could be affected.

Indiana and northern long-eared bats - These species hibernate in caves or mines only during the winter. In Missouri the hibernation season is considered to be November 1 to March 31. During the active season in Missouri (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥5 inches diameter at breast height (dbh) for Indiana bat, and ≥3 inches dbh for northern long-eared bat, that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Tree species often include, but are not limited to, shellbark or shagbark hickory, white oak, cottonwood, and maple. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, Indiana bats or northern long-eared bats could be affected.

Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
- Trees found in highly-developed urban areas (e.g., street trees, downtown areas);
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees; and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of "There are no listed species found within the vicinity of the project," then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see #3 below) – then project proponents can conclude the proposed activities **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species through the S7 Technical Assistance website.

3. If IPac returns a result that one or more federally listed bat species (Indiana bat, northern long-eared bat, or gray bat) are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** these bat species **IF** one or more of the following activities are proposed:

   a. Clearing or disturbing suitable roosting habitat, as defined above, at any time of year;
   b. Any activity in or near the entrance to a cave or mine;
   c. Mining, deep excavation, or underground work within 0.25 miles of a cave or mine;
   d. Construction of one or more wind turbines; or
   e. Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on listed bat species. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

If any of the above activities are proposed in areas where one or more bat species may be present, project proponents can conclude the proposed activities **may affect** one or more bat species. We recommend coordinating with the Service as early as possible during project planning. If your project will involve removal of over 5 acres of suitable forest or woodland habitat, we recommend you complete a Summer Habitat Assessment prior to contacting our office to expedite the consultation process. The Summer Habitat Assessment Form is available in Appendix A of the most recent version of the Range-wide Indiana Bat Summer Survey Guidelines.

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area

please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

Next Steps

Should you determine that project activities **may affect** any federally listed species or trust resources described herein, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination, P. O. Box 180, Jefferson City, MO 65102) for information concerning Missouri Natural Communities and Species of Conservation Concern.

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Karen Herrington

Attachment(s):

- Official Species List

- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

Project Summary

Consultation Code: 03E14000-2022-SLI-0415
Event Code: Some(03E14000-2022-E-01335)
Project Name: Asbury MO KS Railroad Siding - Extension
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@37.253815349999996,-94.58883330490121,14z



Counties: Jasper County, Missouri

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ecos.fws.gov/ipac/project/6LQNZ4B5XFDCJAS7ET4IGRFYZE/documents/generated/6868.pdf	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ecos.fws.gov/ipac/project/6LQNZ4B5XFDCJAS7ET4IGRFYZE/documents/generated/6868.pdf	Threatened

Fishes

NAME	STATUS
Neosho Madtom *Noturus placidus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2577	Threatened
Ozark Cavefish *Amblyopsis rosae* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6490	Threatened

Clams

NAME	STATUS
Neosho Mucket *Lampsilis rafinesqueana* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3788	Endangered
Rabbitsfoot *Quadrula cylindrica cylindrica* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5165	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

In Reply Refer To: December 06, 2021
Consultation Code: 03E14000-2022-SLI-0416
Event Code: 03E14000-2022-E-01337
Project Name: MP 186 MO Railroad Siding - New

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.).

Threatened and Endangered Species

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. N**ote that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days.** The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance

Refer to the Midwest Region S7 Technical Assistance website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects: projects in developed areas, HUD, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

Federally Listed Bat Species

Indiana bats, gray bats, and northern long-eared bats occur throughout Missouri and the information below may help in determining if your project may affect these species.

Gray bats - Gray bats roost in caves or mines year-round and use water features and forested riparian corridors for foraging and travel. If your project will impact caves, mines, associated riparian areas, or will involve tree removal around these features – particularly within stream corridors, riparian areas, or associated upland woodlots –gray bats could be affected.

Indiana and northern long-eared bats - These species hibernate in caves or mines only during the winter. In Missouri the hibernation season is considered to be November 1 to March 31. During the active season in Missouri (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥5 inches diameter at breast height (dbh) for Indiana bat, and ≥3 inches dbh for northern long-eared bat, that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Tree species often include, but are not limited to, shellbark or shagbark hickory, white oak, cottonwood, and maple. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, Indiana bats or northern long-eared bats could be affected.

Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
- Trees found in highly-developed urban areas (e.g., street trees, downtown areas);
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees; and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of "There are no listed species found within the vicinity of the project," then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see #3 below) – then project proponents can conclude the proposed activities **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species through the S7 Technical Assistance website.

3. If IPac returns a result that one or more federally listed bat species (Indiana bat, northern long-eared bat, or gray bat) are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** these bat species **IF** one or more of the following activities are proposed:

   a. Clearing or disturbing suitable roosting habitat, as defined above, at any time of year;
   b. Any activity in or near the entrance to a cave or mine;
   c. Mining, deep excavation, or underground work within 0.25 miles of a cave or mine;
   d. Construction of one or more wind turbines; or
   e. Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on listed bat species. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

If any of the above activities are proposed in areas where one or more bat species may be present, project proponents can conclude the proposed activities **may affect** one or more bat species. We recommend coordinating with the Service as early as possible during project planning. If your project will involve removal of over 5 acres of suitable forest or woodland habitat, we recommend you complete a Summer Habitat Assessment prior to contacting our office to expedite the consultation process. The Summer Habitat Assessment Form is available in Appendix A of the most recent version of the Range-wide Indiana Bat Summer Survey Guidelines.

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area

please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

Next Steps

Should you determine that project activities **may affect** any federally listed species or trust resources described herein, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination, P. O. Box 180, Jefferson City, MO 65102) for information concerning Missouri Natural Communities and Species of Conservation Concern.

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Karen Herrington

Attachment(s):

- Official Species List

- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

Project Summary

Consultation Code: 03E14000-2022-SLI-0416
Event Code: Some(03E14000-2022-E-01337)
Project Name: MP 186 MO Railroad Siding - New
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.7046662,-94.42888411031643,14z



Counties: McDonald County, Missouri

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	
Indiana Bat *Myotis sodalis*	Endangered
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ecos.fws.gov/ipac/project/UDVBSE3D4RHWXCQVTLXQBQJZ6U/documents/generated/6868.pdf	
Northern Long-eared Bat *Myotis septentrionalis*	Threatened
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ecos.fws.gov/ipac/project/UDVBSE3D4RHWXCQVTLXQBQJZ6U/documents/generated/6868.pdf	

Clams

NAME	STATUS
Neosho Mucket *Lampsilis rafinesqueana*	Endangered
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3788	

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

REFUGE INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arkansas Ecological Services Field Office
110 South Amity Suite 300
Conway, AR 72032-8975
Phone: (501) 513-4470 Fax: (501) 513-4480
http://www.fws.gov/arkansas-es

In Reply Refer To: January 04, 2022
Consultation Code: 04ER1000-2022-SLI-0387
Event Code: 04ER1000-2022-E-01171
Project Name: Gentry AR Railroad Siding

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies endangered, threatened, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). **This letter only provides an official species list and technical assistance; if you determine that listed species and/or designated critical habitat may be affected in any way by the proposed project, even if the effect is wholly beneficial, consultation with the Service will be necessary.**

If you determine that this project will have no effect on listed species and their habitat in any way, then you have completed Section 7 consultation with the Service and may use this letter in your project file or application.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found on our website.

Please visit our website at http://www.fws.gov/arkansas-es/IPaC/home.html for species-specific guidance to avoid and minimize adverse effects to federally endangered, threatened, proposed, and candidate species. Our web site also contains additional information on species life history and habitat requirements that may be useful in project planning.

If your project involves in-stream construction activities, oil and natural gas infrastructure, road construction, transmission lines, or communication towers, please review our project specific guidance at http://www.fws.gov/arkansas-es/IPaC/ProjSpec.html.

The karst region of Arkansas is a unique region that covers the **northern third of Arkansas** and we have specific guidance to conserve sensitive cave-obligate and bat species. **Please visit http://www.fws.gov/arkansas-es/IPaC/Karst.html to determine if your project occurs in the karst region and to view karst specific-guidance.** Proper implementation and maintenance of best management practices specified in these guidance documents is necessary to avoid adverse effects to federally protected species and often avoids the more lengthy formal consultation process.

If your species list includes any mussels, Northern Long-eared Bat, Indiana Bat, Yellowcheek Darter, Red-cockaded Woodpecker, or American Burying Beetle, your project may require a presence/absence and/or habitat survey prior to commencing project activities. Please check the appropriate species-specific guidance on our website to determine if your project requires a survey. We strongly recommend that you contact the appropriate staff species lead biologist (see office directory or species page) prior to conducting presence/absence surveys to ensure the appropriate level of effort and methodology.

Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service, to make "no effect" determinations. If you determine that your proposed action will have "no effect" on threatened or endangered species or their respective critical habitat, you do not need to seek concurrence with the Service. Nevertheless, it is a violation of Federal law to harm or harass any federally-listed threatened or endangered fish or wildlife species without the appropriate permit.

Through the consultation process, we will analyze information contained in a biological assessment that you provide. If your proposed action is associated with Federal funding or permitting, consultation will occur with the Federal agency under section 7(a)(2) of the ESA. Otherwise, an incidental take permit pursuant to section 10(a)(1)(B) of the ESA (also known as a habitat conservation plan) is necessary to harm or harass federally listed threatened or endangered fish or wildlife species. In either case, there is no mechanism for authorizing incidental take "after-the-fact." For more information regarding formal consultation and HCPs, please see the Service's Consultation Handbook and Habitat Conservation Plans at www.fws.gov/endangered/esa-library/index.html#consultations.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, **the accuracy of this species list should be verified after 90 days.** This verification can be completed formally or informally as desired. The Service recommends that verification be

completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. **Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.**

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arkansas Ecological Services Field Office
110 South Amity Suite 300
Conway, AR 72032-8975
(501) 513-4470

Project Summary

Consultation Code: 04ER1000-2022-SLI-0387
Event Code: Some(04ER1000-2022-E-01171)
Project Name: Gentry AR Railroad Siding
Project Type: TRANSPORTATION
Project Description: Siding construction within the existing railroad right-of-way
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.29100085,-94.45494982436801,14z



Counties: Benton County, Arkansas

Endangered Species Act Species

There is a total of 11 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened
Ozark Big-eared Bat *Corynorhinus (=Plecotus) townsendii ingens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7245	Endangered

Birds

NAME	STATUS
Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis*	Threatened
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477	
Piping Plover *Charadrius melodus*	Threatened
Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6039	
Red Knot *Calidris canutus rufa*	Threatened
There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1864	

Fishes

NAME	STATUS
Ozark Cavefish *Amblyopsis rosae*	Threatened
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6490	

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	

Crustaceans

NAME	STATUS
Benton County Cave Crayfish *Cambarus aculabrum*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5011	

Flowering Plants

NAME	STATUS
Missouri Bladderpod *Physaria filiformis*	Threatened
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5361	

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
Phone: (918) 581-7458 Fax: (918) 581-7467
http://www.fws.gov/southwest/es/Oklahoma/

In Reply Refer To: December 06, 2021
Consultation Code: 02EKOK00-2022-SLI-0486
Event Code: 02EKOK00-2022-E-01740
Project Name: MP 247 OK Railroad Siding - New

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Non-federal entities conducting activities that may result in take of listed species should consider seeking coverage under section 10 of the ESA, either through development of a Habitat Conservation Plan (HCP) or, by becoming a signatory to the General Conservation Plan (GCP) currently under development for the American burying beetle. Each of these mechanisms provides the means for obtaining a permit and coverage for incidental take of listed species during otherwise lawful activities.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit through our Project Review step-wise process http://www.fws.gov/southwest/es/oklahoma/OKESFO%20Permit%20Home.htm.

Attachment(s):

- Official Species List

- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

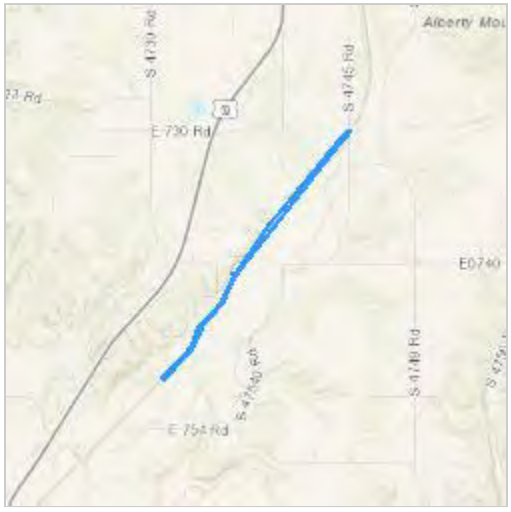
This species list is provided by:

Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
(918) 581-7458

Project Summary

Consultation Code: 02EKOK00-2022-SLI-0486
Event Code: Some(02EKOK00-2022-E-01740)
Project Name: MP 247 OK Railroad Siding - New
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.945266000000004,-94.58810622717633,14z



Counties: Adair County, Oklahoma

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened
Ozark Big-eared Bat *Corynorhinus (=Plecotus) townsendii ingens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7245	Endangered

Birds

NAME	STATUS
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Clams

NAME	STATUS
Neosho Mucket *Lampsilis rafinesqueana* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3788	Endangered
Rabbitsfoot *Quadrula cylindrica cylindrica* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5165	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

THERE ARE NO FWS MIGRATORY BIRDS OF CONCERN WITHIN THE VICINITY OF YOUR PROJECT AREA.

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical

Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
Phone: (918) 581-7458 Fax: (918) 581-7467
http://www.fws.gov/southwest/es/Oklahoma/

In Reply Refer To: December 06, 2021
Consultation Code: 02EKOK00-2022-SLI-0487
Event Code: 02EKOK00-2022-E-01747
Project Name: Cave Springs OK Railroad Siding - Extension

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Non-federal entities conducting activities that may result in take of listed species should consider seeking coverage under section 10 of the ESA, either through development of a Habitat Conservation Plan (HCP) or, by becoming a signatory to the General Conservation Plan (GCP) currently under development for the American burying beetle. Each of these mechanisms provides the means for obtaining a permit and coverage for incidental take of listed species during otherwise lawful activities.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit through our Project Review step-wise process http://www.fws.gov/southwest/es/oklahoma/OKESFO%20Permit%20Home.htm.

Attachment(s):

- Official Species List

- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
(918) 581-7458

Project Summary

Consultation Code: 02EKOK00-2022-SLI-0487
Event Code: Some(02EKOK00-2022-E-01747)
Project Name: Cave Springs OK Railroad Siding - Extension
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.73656545,-94.72590687881953,14z



Counties: Adair County, Oklahoma

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened
Ozark Big-eared Bat *Corynorhinus (=Plecotus) townsendii ingens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7245	Endangered

Birds

NAME	STATUS
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Insects

NAME	STATUS
American Burying Beetle *Nicrophorus americanus* Population: Wherever found, except where listed as an experimental population No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/66	Threatened
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

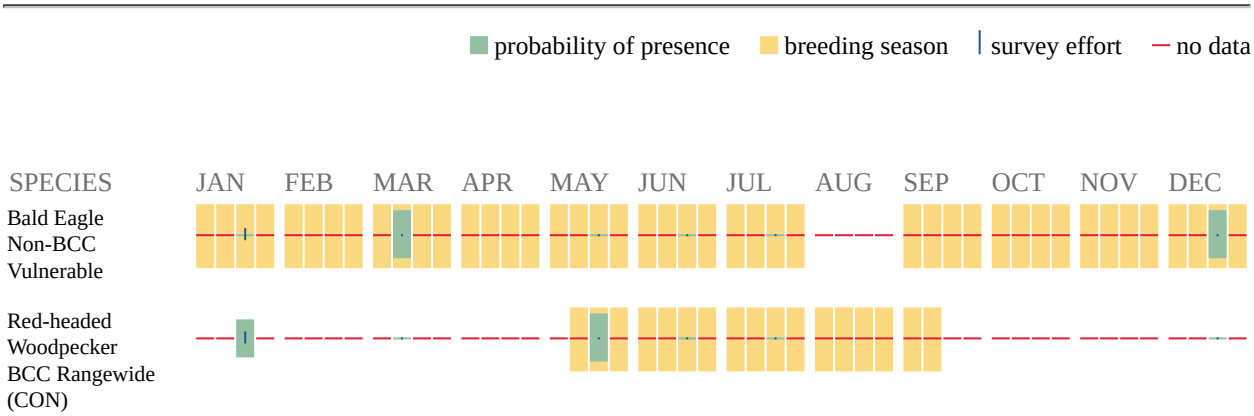
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
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Details about birds that are potentially affected by offshore projects
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If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

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For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

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United States Department of the Interior

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http://www.fws.gov/southwest/es/Oklahoma/

In Reply Refer To: December 06, 2021
Consultation Code: 02EKOK00-2022-SLI-0488
Event Code: 02EKOK00-2022-E-01749
Project Name: Spiro OK Railroad Siding - Extension

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

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Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit through our Project Review step-wise process http://www.fws.gov/southwest/es/oklahoma/OKESFO%20Permit%20Home.htm.

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This species list is provided by:

Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
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Project Summary

Consultation Code: 02EKOK00-2022-SLI-0488
Event Code: Some(02EKOK00-2022-E-01749)
Project Name: Spiro OK Railroad Siding - Extension
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.21976985,-94.64233700036402,14z



Counties: Le Flore County, Oklahoma

Endangered Species Act Species

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Clams

NAME	STATUS
Scaleshell Mussel *Leptodea leptodon*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/5881

Insects

NAME	STATUS
American Burying Beetle *Nicrophorus americanus*	Threatened

Population: Wherever found, except where listed as an experimental population
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/66

Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Kestrel *Falco sparverius paulus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9587	Breeds Apr 1 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

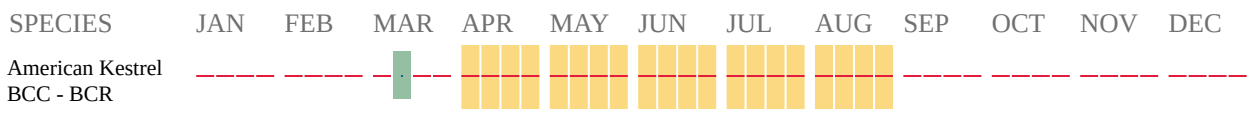
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort – no data



Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
Phone: (918) 581-7458 Fax: (918) 581-7467
http://www.fws.gov/southwest/es/Oklahoma/

In Reply Refer To: December 06, 2021
Consultation Code: 02EKOK00-2022-SLI-0489
Event Code: 02EKOK00-2022-E-01751
Project Name: Heavener OK Railroad Siding - New

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Non-federal entities conducting activities that may result in take of listed species should consider seeking coverage under section 10 of the ESA, either through development of a Habitat Conservation Plan (HCP) or, by becoming a signatory to the General Conservation Plan (GCP) currently under development for the American burying beetle. Each of these mechanisms provides the means for obtaining a permit and coverage for incidental take of listed species during otherwise lawful activities.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit through our Project Review step-wise process http://www.fws.gov/southwest/es/oklahoma/OKESFO%20Permit%20Home.htm.

Attachment(s):

- Official Species List

- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
(918) 581-7458

Project Summary

Consultation Code: 02EKOK00-2022-SLI-0489
Event Code: Some(02EKOK00-2022-E-01751)
Project Name: Heavener OK Railroad Siding - New
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@34.873141950000004,-94.60611363345602,14z



Counties: Le Flore County, Oklahoma

Endangered Species Act Species

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Clams

NAME	STATUS
Scaleshell Mussel *Leptodea leptodon*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/5881

Insects

NAME	STATUS
American Burying Beetle *Nicrophorus americanus*	Threatened

Population: Wherever found, except where listed as an experimental population
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/66

Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Kestrel *Falco sparverius paulus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9587	Breeds Apr 1 to Aug 31
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

NAME	BREEDING SEASON
Kentucky Warbler *Oporornis formosus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Prairie Warbler *Dendroica discolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

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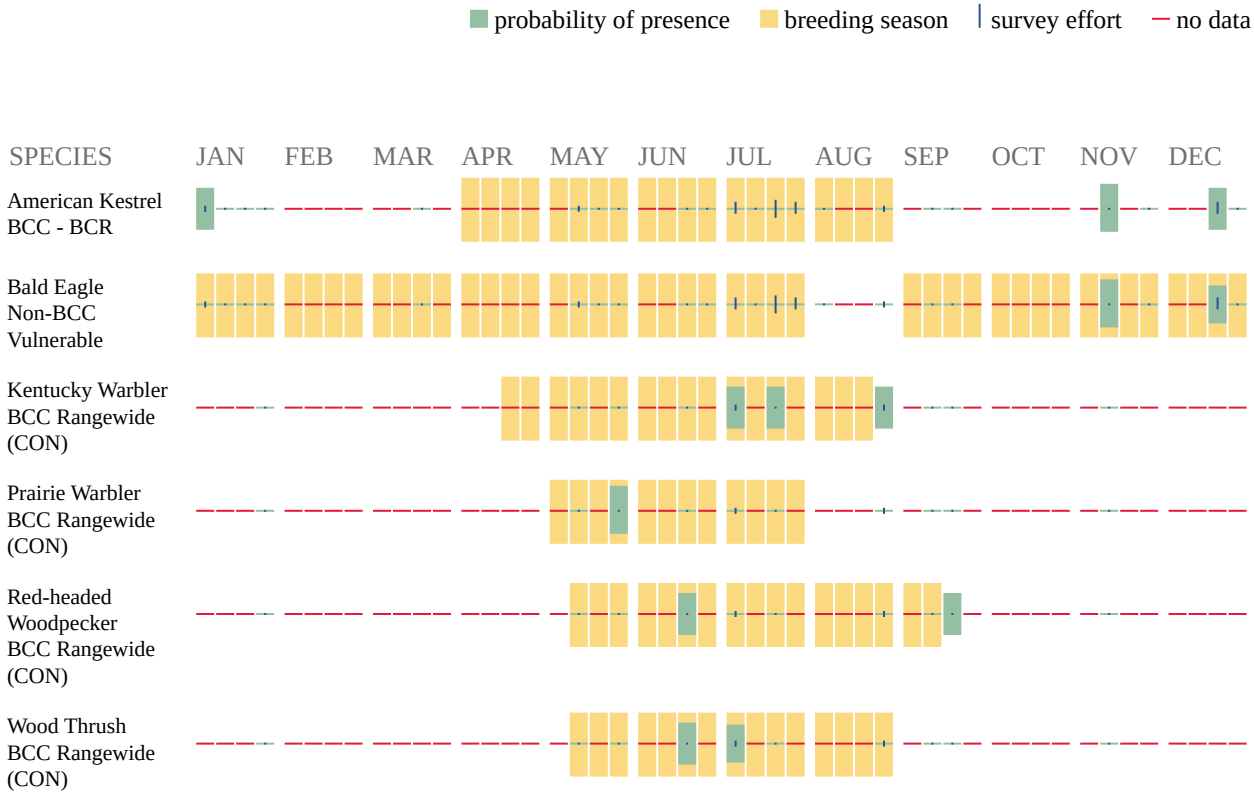
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Additional information can be found using the following links:

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- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

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Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arkansas Ecological Services Field Office
110 South Amity Suite 300
Conway, AR 72032-8975
Phone: (501) 513-4470 Fax: (501) 513-4480
http://www.fws.gov/arkansas-es

In Reply Refer To:
Consultation Code: 04ER1000-2022-SLI-0263
Event Code: 04ER1000-2022-E-00818
Project Name: MP 377 AR Railroad Siding - New

December 06, 2021

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies endangered, threatened, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). **This letter only provides an official species list and technical assistance; if you determine that listed species and/or designated critical habitat may be affected in any way by the proposed project, even if the effect is wholly beneficial, consultation with the Service will be necessary.**

If you determine that this project will have no effect on listed species and their habitat in any way, then you have completed Section 7 consultation with the Service and may use this letter in your project file or application.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found on our website.

Please visit our website at http://www.fws.gov/arkansas-es/IPaC/home.html for species-specific guidance to avoid and minimize adverse effects to federally endangered, threatened, proposed, and candidate species. Our web site also contains additional information on species life history and habitat requirements that may be useful in project planning.

If your project involves in-stream construction activities, oil and natural gas infrastructure, road construction, transmission lines, or communication towers, please review our project specific guidance at http://www.fws.gov/arkansas-es/IPaC/ProjSpec.html.

The karst region of Arkansas is a unique region that covers the **northern third of Arkansas** and we have specific guidance to conserve sensitive cave-obligate and bat species. **Please visit http://www.fws.gov/arkansas-es/IPaC/Karst.html to determine if your project occurs in the karst region and to view karst specific-guidance.** Proper implementation and maintenance of best management practices specified in these guidance documents is necessary to avoid adverse effects to federally protected species and often avoids the more lengthy formal consultation process.

If your species list includes any mussels, Northern Long-eared Bat, Indiana Bat, Yellowcheek Darter, Red-cockaded Woodpecker, or American Burying Beetle, your project may require a presence/absence and/or habitat survey prior to commencing project activities. Please check the appropriate species-specific guidance on our website to determine if your project requires a survey. We strongly recommend that you contact the appropriate staff species lead biologist (see office directory or species page) prior to conducting presence/absence surveys to ensure the appropriate level of effort and methodology.

Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service, to make “no effect” determinations. If you determine that your proposed action will have “no effect” on threatened or endangered species or their respective critical habitat, you do not need to seek concurrence with the Service. Nevertheless, it is a violation of Federal law to harm or harass any federally-listed threatened or endangered fish or wildlife species without the appropriate permit.

Through the consultation process, we will analyze information contained in a biological assessment that you provide. If your proposed action is associated with Federal funding or permitting, consultation will occur with the Federal agency under section 7(a)(2) of the ESA. Otherwise, an incidental take permit pursuant to section 10(a)(1)(B) of the ESA (also known as a habitat conservation plan) is necessary to harm or harass federally listed threatened or endangered fish or wildlife species. In either case, there is no mechanism for authorizing incidental take “after-the-fact.” For more information regarding formal consultation and HCPs, please see the Service’s Consultation Handbook and Habitat Conservation Plans at www.fws.gov/endangered/esa-library/index.html#consultations.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, **the accuracy of this species list should be verified after 90 days.** This verification can be completed formally or informally as desired. The Service recommends that verification be

completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. **Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.**

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arkansas Ecological Services Field Office
110 South Amity Suite 300
Conway, AR 72032-8975
(501) 513-4470

Project Summary

Consultation Code: 04ER1000-2022-SLI-0263
Event Code: Some(04ER1000-2022-E-00818)
Project Name: MP 377 AR Railroad Siding - New
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@34.6022879,-94.22390475419573,14z



Counties: Polk County, Arkansas

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477	Threatened
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Red-cockaded Woodpecker *Picoides borealis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Endangered

Clams

NAME	STATUS
Arkansas Fatmucket *Lampsilis powellii*	Threatened
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/2213	
Rabbitsfoot *Quadrula cylindrica cylindrica*	Threatened
There is **final** critical habitat for this species. The location of the critical habitat is not available.	
Species profile: https://ecos.fws.gov/ecp/species/5165	

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/9743	

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
Phone: (337) 291-3100 Fax: (337) 291-3139

In Reply Refer To: December 06, 2021
Consultation Code: 04EL1000-2022-SLI-0557
Event Code: 04EL1000-2022-E-01574
Project Name: Mansfield LA Railroad Siding - Extension

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

***Due to the Louisiana Governor's mandatory quarantine order for the coronavirus (COVID-19), and in order to keep our staff and the public safe, we are unable to accept or respond in a timely manner to consultation request or project review/concurrence that we receive through the U.S. Mail. Please submit your request electronically to lafayette@fws.gov or call 337-291-3100.**

The enclosed species list identifies threatened, endangered and candidate species, as well as designated and proposed critical habitat that may occur within the boundary of your proposed project and may be affected by your proposed project. The Fish and Wildlife Service (Service) is providing this list under section 7 (c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Changes in this species list may occur due to new information from updated surveys, changes in species habitat, new listed species and other factors. Because of these possible changes, feel free to contact our office (337/291-3126) for more information or assistance regarding impacts to federally listed species. The Service recommends visiting the ECOS-IPaC site or the Louisiana Ecological Services website (www.fws.gov/lafayette) at regular intervals during project planning and implementation for updated species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the habitats upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of Federal trust resources and to determine whether projects may affect Federally listed species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected (e.g. adverse, beneficial, insignificant or discountable) by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF or by contacting our office at the number above.

Bald eagles have recovered and were removed from the List of Endangered and Threatened Species as of August 8, 2007. Although no longer listed, please be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668 *et seq.*). The Service developed the National Bald Eagle Management (NBEM) Guidelines to provide landowners, land managers, and others with information and recommendations to minimize potential project impacts to bald eagles, particularly where such impacts may constitute "disturbance," which is prohibited by the BGEPA. A copy of the NBEM Guidelines is available at: http://www.fws.gov/southeast/es/baldeagle/NationalBaldEagleManagementGuidelines.pdf. Those guidelines recommend: (1) maintaining a specified distance between the activity and the nest (buffer area); (2) maintaining natural areas (preferably forested) between the activity and nest trees (landscape buffers); and (3) avoiding certain activities during the breeding season. On-site personnel should be informed of the possible presence of nesting bald eagles within the project boundary, and should identify, avoid, and immediately report any such nests to this office. If a bald eagle nest occurs or is discovered within or adjacent to the proposed project area, then an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: http://www.fws.gov/southeast/es/baldeagle. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary. The Division of Migratory Birds for the Southeast Region of the Service (phone: 404/679-7051, e-mail: SEmigratorybirds@fws.gov) has the lead role in conducting any necessary consultation. Should you need further assistance interpreting the guidelines or performing an on-line project evaluation, please contact this office.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g. cellular, digital television, radio and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm ; http://www.towerkill.com; and http://fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

Activities that involve State-designated scenic streams and/or wetlands are regulated by the Louisiana Department of Wildlife and Fisheries and the U.S. Army Corps of Engineers, respectively. We, therefore, recommend that you contact those agencies to determine their interest in proposed projects in these areas.

Activities that would be located within a National Wildlife Refuge are regulated by the refuge staff. We, therefore, recommend that you contact them to determine their interest in proposed projects in these areas.

Additional information on Federal trust species in Louisiana can be obtained from the Louisiana Ecological Services website at: www.fws.gov/lafayette or by calling 337/291-3100.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
(337) 291-3100

Project Summary

Consultation Code: 04EL1000-2022-SLI-0557
Event Code: Some(04EL1000-2022-E-01574)
Project Name: Mansfield LA Railroad Siding - Extension
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@32.0583289,-93.69610696510077,14z



Counties: De Soto County, Louisiana

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Red-cockaded Woodpecker *Picoides borealis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Geocarpon minimum No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7699	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
Phone: (337) 291-3100 Fax: (337) 291-3139

In Reply Refer To: December 06, 2021
Consultation Code: 04EL1000-2022-SLI-0558
Event Code: 04EL1000-2022-E-01576
Project Name: Loring LA Railroad Siding - Extension

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

***Due to the Louisiana Governor's mandatory quarantine order for the coronavirus (COVID-19), and in order to keep our staff and the public safe, we are unable to accept or respond in a timely manner to consultation request or project review/concurrence that we receive through the U.S. Mail. Please submit your request electronically to lafayette@fws.gov or call 337-291-3100.**

The enclosed species list identifies threatened, endangered and candidate species, as well as designated and proposed critical habitat that may occur within the boundary of your proposed project and may be affected by your proposed project. The Fish and Wildlife Service (Service) is providing this list under section 7 (c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Changes in this species list may occur due to new information from updated surveys, changes in species habitat, new listed species and other factors. Because of these possible changes, feel free to contact our office (337/291-3126) for more information or assistance regarding impacts to federally listed species. The Service recommends visiting the ECOS-IPaC site or the Louisiana Ecological Services website (www.fws.gov/lafayette) at regular intervals during project planning and implementation for updated species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the habitats upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of Federal trust resources and to determine whether projects may affect Federally listed species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected (e.g. adverse, beneficial, insignificant or discountable) by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF or by contacting our office at the number above.

Bald eagles have recovered and were removed from the List of Endangered and Threatened Species as of August 8, 2007. Although no longer listed, please be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668 *et seq.*). The Service developed the National Bald Eagle Management (NBEM) Guidelines to provide landowners, land managers, and others with information and recommendations to minimize potential project impacts to bald eagles, particularly where such impacts may constitute "disturbance," which is prohibited by the BGEPA. A copy of the NBEM Guidelines is available at: http://www.fws.gov/southeast/es/baldeagle/NationalBaldEagleManagementGuidelines.pdf. Those guidelines recommend: (1) maintaining a specified distance between the activity and the nest (buffer area); (2) maintaining natural areas (preferably forested) between the activity and nest trees (landscape buffers); and (3) avoiding certain activities during the breeding season. On-site personnel should be informed of the possible presence of nesting bald eagles within the project boundary, and should identify, avoid, and immediately report any such nests to this office. If a bald eagle nest occurs or is discovered within or adjacent to the proposed project area, then an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: http://www.fws.gov/southeast/es/baldeagle. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary. The Division of Migratory Birds for the Southeast Region of the Service (phone: 404/679-7051, e-mail: SEmigratorybirds@fws.gov) has the lead role in conducting any necessary consultation. Should you need further assistance interpreting the guidelines or performing an on-line project evaluation, please contact this office.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g. cellular, digital television, radio and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm ; http://www.towerkill.com; and http://fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

Activities that involve State-designated scenic streams and/or wetlands are regulated by the Louisiana Department of Wildlife and Fisheries and the U.S. Army Corps of Engineers, respectively. We, therefore, recommend that you contact those agencies to determine their interest in proposed projects in these areas.

Activities that would be located within a National Wildlife Refuge are regulated by the refuge staff. We, therefore, recommend that you contact them to determine their interest in proposed projects in these areas.

Additional information on Federal trust species in Louisiana can be obtained from the Louisiana Ecological Services website at: www.fws.gov/lafayette or by calling 337/291-3100.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
(337) 291-3100

Project Summary

Consultation Code: 04EL1000-2022-SLI-0558
Event Code: Some(04EL1000-2022-E-01576)
Project Name: Loring LA Railroad Siding - Extension
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@31.5894147,-93.5484028440243,14z



Counties: Sabine County, Louisiana

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Red-cockaded Woodpecker *Picoides borealis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
Phone: (337) 291-3100 Fax: (337) 291-3139

In Reply Refer To: December 06, 2021
Consultation Code: 04EL1000-2022-SLI-0559
Event Code: 04EL1000-2022-E-01578
Project Name: Singer LA Railroad Siding - Extension

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

***Due to the Louisiana Governor's mandatory quarantine order for the coronavirus (COVID-19), and in order to keep our staff and the public safe, we are unable to accept or respond in a timely manner to consultation request or project review/concurrence that we receive through the U.S. Mail. Please submit your request electronically to lafayette@fws.gov or call 337-291-3100.**

The enclosed species list identifies threatened, endangered and candidate species, as well as designated and proposed critical habitat that may occur within the boundary of your proposed project and may be affected by your proposed project. The Fish and Wildlife Service (Service) is providing this list under section 7 (c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Changes in this species list may occur due to new information from updated surveys, changes in species habitat, new listed species and other factors. Because of these possible changes, feel free to contact our office (337/291-3126) for more information or assistance regarding impacts to federally listed species. The Service recommends visiting the ECOS-IPaC site or the Louisiana Ecological Services website (www.fws.gov/lafayette) at regular intervals during project planning and implementation for updated species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the habitats upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of Federal trust resources and to determine whether projects may affect Federally listed species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected (e.g. adverse, beneficial, insignificant or discountable) by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF or by contacting our office at the number above.

Bald eagles have recovered and were removed from the List of Endangered and Threatened Species as of August 8, 2007. Although no longer listed, please be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668 *et seq.*). The Service developed the National Bald Eagle Management (NBEM) Guidelines to provide landowners, land managers, and others with information and recommendations to minimize potential project impacts to bald eagles, particularly where such impacts may constitute "disturbance," which is prohibited by the BGEPA. A copy of the NBEM Guidelines is available at: http://www.fws.gov/southeast/es/baldeagle/NationalBaldEagleManagementGuidelines.pdf. Those guidelines recommend: (1) maintaining a specified distance between the activity and the nest (buffer area); (2) maintaining natural areas (preferably forested) between the activity and nest trees (landscape buffers); and (3) avoiding certain activities during the breeding season. On-site personnel should be informed of the possible presence of nesting bald eagles within the project boundary, and should identify, avoid, and immediately report any such nests to this office. If a bald eagle nest occurs or is discovered within or adjacent to the proposed project area, then an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: http://www.fws.gov/southeast/es/baldeagle. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary. The Division of Migratory Birds for the Southeast Region of the Service (phone: 404/679-7051, e-mail: SEmigratorybirds@fws.gov) has the lead role in conducting any necessary consultation. Should you need further assistance interpreting the guidelines or performing an on-line project evaluation, please contact this office.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g. cellular, digital television, radio and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm ; http://www.towerkill.com; and http://fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

Activities that involve State-designated scenic streams and/or wetlands are regulated by the Louisiana Department of Wildlife and Fisheries and the U.S. Army Corps of Engineers, respectively. We, therefore, recommend that you contact those agencies to determine their interest in proposed projects in these areas.

Activities that would be located within a National Wildlife Refuge are regulated by the refuge staff. We, therefore, recommend that you contact them to determine their interest in proposed projects in these areas.

Additional information on Federal trust species in Louisiana can be obtained from the Louisiana Ecological Services website at: www.fws.gov/lafayette or by calling 337/291-3100.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
(337) 291-3100

Project Summary

Consultation Code: 04EL1000-2022-SLI-0559
Event Code: Some(04EL1000-2022-E-01578)
Project Name: Singer LA Railroad Siding - Extension
Project Type: TRANSPORTATION
Project Description: Installation/extension of railroad sidings as part of rail merger project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@30.64693585,-93.41501209493026,14z



Counties: Beauregard County, Louisiana

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Red-cockaded Woodpecker *Picoides borealis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
American Chaffseed *Schwalbea americana* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1286	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

O.4.3 State Agency Correspondence

From: seth.moore@dnr.iowa.gov
To: Kaitlyn Torrey
Subject: [External] 2021-2164 Environmental Review Request - MP 24 IA Railroad Siding
Date: Friday, November 19, 2021 5:11:17 PM

42.3126/-90.4318; Jackson County
Sec. 19/T87N/R05E

Thank you for inviting Department comment on the impact of this project. The Department has searched for records of rare species and significant natural communities in the project area and found no site-specific records that would be impacted by this project. However, these records and data are not the result of thorough field surveys. If listed species or rare communities are found during the planning or construction phases, additional studies and/or mitigation may be required.

This letter is a record of review for protected species, rare natural communities, state lands and waters in the project area, including review by personnel representing state parks, preserves, recreation areas, fisheries and wildlife but does not include comment from the Environmental Services Division of this Department. This letter does not constitute a permit. Other permits may be required from the Department or other state or federal agencies before work begins on this project.

If you have questions about this letter or require further information, please contact me at (515) 330-6432.

Environmental Review requests can be submitted electronically to: SLER@dnr.iowa.gov.

Sincerely,

Seth Moore | Environmental Specialist
Iowa Department of Natural Resources
P 515-330-6432 | F 515-725-8202 | 502 E. 9th St., Des Moines, IA 50319
www.iowadnr.gov

From: seth.moore@dnr.iowa.gov
To: Kaitlyn Torrey
Subject: [External] 2021-2161 Environmental Review Request - Chicago MP 75 IL Railroad siding
Date: Thursday, December 2, 2021 2:03:13 PM

42.6998/-91.0104; Clayton County
Sec. 12/T91N/R02W

Thank you for inviting Department comment on the impact of this project. The Department has searched for records of rare species and significant natural communities in the project area and found no site-specific records that would be impacted by this project. However, these records and data are not the result of thorough field surveys. If listed species or rare communities are found during the planning or construction phases, additional studies and/or mitigation may be required.

This letter is a record of review for protected species, rare natural communities, state lands and waters in the project area, including review by personnel representing state parks, preserves, recreation areas, fisheries and wildlife but does not include comment from the Environmental Services Division of this Department. This letter does not constitute a permit. Other permits may be required from the Department or other state or federal agencies before work begins on this project.

If you have questions about this letter or require further information, please contact me at (515) 330-6432.

Environmental Review requests can be submitted electronically to: SLER@dnr.iowa.gov.

Sincerely,

Seth Moore | Environmental Specialist
Iowa Department of Natural Resources
P 515-330-6432 | F 515-725-8202 | 502 E. 9th St., Des Moines, IA 50319
www.iowadnr.gov

Illinois Department of
Natural Resources
One Natural Resources Way Springfield, Illinois 62702-1271
http://dnr.state.il.us

JB Pritzker, Governor
Colleen Callahan, Director

November 30, 2021

Kaitlyn Torrey
Kaitlyn Torrey
1355 Peachtree St, NE
Suite 100
Atlanta, GA 30309 3269

RE: STB CPR KCS Merger EIS
Project Number(s): 2207101
County: DeKalb, Ogle

Dear Applicant:

This letter is in reference to the project you recently submitted for consultation. The natural resource review provided by EcoCAT identified protected resources that may be in the vicinity of the proposed action. The Department has evaluated this information and concluded that adverse effects are unlikely. Therefore, consultation under 17 Ill. Adm. Code Part 1075 is terminated.

This consultation is valid for two years unless new information becomes available that was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary.

The natural resource review reflects the information existing in the Illinois Natural Heritage Database at the time of the project submittal, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, you must comply with the applicable statutes and regulations. Also, note that termination does not imply IDNR's authorization or endorsement of the proposed action.

Please contact me if you have questions regarding this review.

Kyle Burkwald
Division of Ecosystems and Environment
217-785-5500

From: seth.moore@dnr.iowa.gov
To: Kaitlyn Torrey
Subject: [External] 2021-2167 Environmental Review Request - Deer Creek
Date: Friday, November 19, 2021 5:18:37 PM

41.9093/-90.1800; Clinton County
Sec. 17/T82N/R07E

Thank you for inviting Department comment on the impact of this project. The Department has searched for records of rare species and significant natural communities in the project area and found no site-specific records that would be impacted by this project. However, these records and data are not the result of thorough field surveys. If listed species or rare communities are found during the planning or construction phases, additional studies and/or mitigation may be required.

A Sovereign Lands Construction Permit pursuant to Chapter 461A of the Iowa Code will be required for this project if construction extends below the ordinary high water line of the Mississippi River. Information regarding this matter is available from the Department website:

http://www.iowadnr.gov/InsideDNR/RegulatoryLand/SovereignLandsPermits.aspx

This letter is a record of review for protected species, rare natural communities, state lands and waters in the project area, including review by personnel representing state parks, preserves, recreation areas, fisheries and wildlife but does not include comment from the Environmental Services Division of this Department. This letter does not constitute a permit. Other permits may be required from the Department or other state or federal agencies before work begins on this project.

If you have questions about this letter or require further information, please contact me at (515) 330-6432.

Environmental Review requests can be submitted electronically to: SLER@dnr.iowa.gov.

Sincerely,

Seth Moore | Environmental Specialist
Iowa Department of Natural Resources
P 515-330-6432 | F 515-725-8202 | 502 E. 9th St., Des Moines, IA 50319
www.iowadnr.gov

From: seth.moore@dnr.iowa.gov
To: Kaitlyn Torrey
Subject: [External] 2021-2166 Environmental Review Request - Camanchee
Date: Friday, November 19, 2021 5:14:38 PM

41.8092/-90.2340; Clinton County
Sec. 23/T81N/R06E

Thank you for inviting Department comment on the impact of this project. The Department has searched for records of rare species and significant natural communities in the project area and found no site-specific records that would be impacted by this project. However, these records and data are not the result of thorough field surveys. If listed species or rare communities are found during the planning or construction phases, additional studies and/or mitigation may be required.

This letter is a record of review for protected species, rare natural communities, state lands and waters in the project area, including review by personnel representing state parks, preserves, recreation areas, fisheries and wildlife but does not include comment from the Environmental Services Division of this Department. This letter does not constitute a permit. Other permits may be required from the Department or other state or federal agencies before work begins on this project.

If you have questions about this letter or require further information, please contact me at (515) 330-6432.

Environmental Review requests can be submitted electronically to: SLER@dnr.iowa.gov.

Sincerely,

Seth Moore | Environmental Specialist
Iowa Department of Natural Resources
P 515-330-6432 | F 515-725-8202 | 502 E. 9th St., Des Moines, IA 50319
www.iowadnr.gov

From: seth.moore@dnr.iowa.gov
To: Kaitlyn Torrey
Subject: [External] 2021-2169 Environmental Review Request - Letts
Date: Friday, November 19, 2021 5:20:09 PM

41.3256/-91.2037; Louisa County
Sec. 4/T75N/R03W

Thank you for inviting Department comment on the impact of this project. The Department has searched for records of rare species and significant natural communities in the project area and found no site-specific records that would be impacted by this project. However, these records and data are not the result of thorough field surveys. If listed species or rare communities are found during the planning or construction phases, additional studies and/or mitigation may be required.

This letter is a record of review for protected species, rare natural communities, state lands and waters in the project area, including review by personnel representing state parks, preserves, recreation areas, fisheries and wildlife but does not include comment from the Environmental Services Division of this Department. This letter does not constitute a permit. Other permits may be required from the Department or other state or federal agencies before work begins on this project.

If you have questions about this letter or require further information, please contact me at (515) 330-6432.

Environmental Review requests can be submitted electronically to: SLER@dnr.iowa.gov.

Sincerely,

Seth Moore | Environmental Specialist
Iowa Department of Natural Resources
P 515-330-6432 | F 515-725-8202 | 502 E. 9th St., Des Moines, IA 50319
www.iowadnr.gov

From: seth.moore@dnr.iowa.gov
To: Kaitlyn Torrey
Subject: [External] 2021-2170 Environmental Review Request - MP 255
Date: Friday, November 19, 2021 5:21:16 PM

41.3017/-91.6371; Washington County
Sec. 14/T75N/R07W

Thank you for inviting Department comment on the impact of this project. The Department has searched for records of rare species and significant natural communities in the project area and found no site-specific records that would be impacted by this project. However, these records and data are not the result of thorough field surveys. If listed species or rare communities are found during the planning or construction phases, additional studies and/or mitigation may be required.

This letter is a record of review for protected species, rare natural communities, state lands and waters in the project area, including review by personnel representing state parks, preserves, recreation areas, fisheries and wildlife but does not include comment from the Environmental Services Division of this Department. This letter does not constitute a permit. Other permits may be required from the Department or other state or federal agencies before work begins on this project.

If you have questions about this letter or require further information, please contact me at (515) 330-6432.

Environmental Review requests can be submitted electronically to: SLER@dnr.iowa.gov.

Sincerely,

Seth Moore | Environmental Specialist
Iowa Department of Natural Resources
P 515-330-6432 | F 515-725-8202 | 502 E. 9th St., Des Moines, IA 50319
www.iowadnr.gov

From: seth.moore@dnr.iowa.gov
To: Kaitlyn Torrey
Subject: [External] 2021-2171 Environmental Review Request - Ottumva
Date: Friday, November 19, 2021 5:22:14 PM

41.0142/-92.4690; Wapello County
Sec. 23/T72N/R14W

Thank you for inviting Department comment on the impact of this project. The Department has searched for records of rare species and significant natural communities in the project area and found no site-specific records that would be impacted by this project. However, these records and data are not the result of thorough field surveys. If listed species or rare communities are found during the planning or construction phases, additional studies and/or mitigation may be required.

This letter is a record of review for protected species, rare natural communities, state lands and waters in the project area, including review by personnel representing state parks, preserves, recreation areas, fisheries and wildlife but does not include comment from the Environmental Services Division of this Department. This letter does not constitute a permit. Other permits may be required from the Department or other state or federal agencies before work begins on this project.

If you have questions about this letter or require further information, please contact me at (515) 330-6432.

Environmental Review requests can be submitted electronically to: SLER@dnr.iowa.gov.

Sincerely,

Seth Moore | Environmental Specialist
Iowa Department of Natural Resources
P 515-330-6432 | F 515-725-8202 | 502 E. 9th St., Des Moines, IA 50319
www.iowadnr.gov

From: seth.moore@dnr.iowa.gov
To: Kaitlyn Torrey
Subject: [External] 2021-2172 Environmental Review Request - Moravia
Date: Monday, November 22, 2021 10:37:31 AM

40.9180/-92.7880; Monroe County
Sec. 27/T71N/R17W

Thank you for inviting Department comment on the impact of this project. The Department has searched for records of rare species and significant natural communities in the project area and found no site-specific records that would be impacted by this project. However, these records and data are not the result of thorough field surveys. If listed species or rare communities are found during the planning or construction phases, additional studies and/or mitigation may be required.

This letter is a record of review for protected species, rare natural communities, state lands and waters in the project area, including review by personnel representing state parks, preserves, recreation areas, fisheries and wildlife but does not include comment from the Environmental Services Division of this Department. This letter does not constitute a permit. Other permits may be required from the Department or other state or federal agencies before work begins on this project.

If you have questions about this letter or require further information, please contact me at (515) 330-6432.

Environmental Review requests can be submitted electronically to: SLER@dnr.iowa.gov.

Sincerely,

Seth Moore | Environmental Specialist
Iowa Department of Natural Resources
P 515-330-6432 | F 515-725-8202 | 502 E. 9th St., Des Moines, IA 50319
www.iowadnr.gov

Missouri Department of Conservation

Natural Heritage Review Report

November 23, 2021

Science Branch
P. O. Box 180
Jefferson City, MO 65102
Prepared by: Hannah Roos
NaturalHeritageReview@mdc.mo.gov
(573) 522 - 4115 ext. 3182

Kaitlyn Torrey
VHB
ktorrey@vhb.com

NHR ERT ID:	NA	NHR ERT Level:	
Project type:	Transportation		
Location/Scope:	T64N R22W S14		
County:	Sullivan		
Query reference:	CR-KCS passing sidings improvements Newtown		
Query received:	11/16/2021		

This NATURAL HERITAGE REVIEW is not a site clearance letter. Rather, it identifies public lands and records of sensitive resources located close to and/or potentially affected by the proposed project. If project plans or location change, this report may no longer be valid. On-site verification is the responsibility of the project. Natural Heritage records were identified at some time and location. This report considers records near but not necessarily at the project site. Animals move and, over time, so do plant communities. To say "there is a record" does not mean the species/habitat is still there. To say that "there is no record" does not mean a protected species will not be encountered. These records serve as one reference and additional information (e.g. wetland or soils maps, on-site inspections or surveys) should be considered. Look for additional information about the biological and habitat needs of records listed to avoid or minimize impacts. More information is at https://mdc.mo.gov/discover-nature/places/natural-areas and https://mdc12.mdc.mo.gov/applications/mofwis/mofwis_search1.aspx

Level 3: Records of federal-listed (also state-listed) species or critical habitats near the project site:

Natural Heritage records identify no wildlife preserves, no designated wilderness areas or critical habitats, and no federal-listed species records within the project area, or in the public land survey section or sections adjacent.

FEDERAL LIST species/habitats are protected under the Federal Endangered Species Act. Contact the U.S. Fish and Wildlife Service (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; 573-234-2132) for Endangered Species Act coordination and concurrence information).

Level 2: Records of state-listed (not federal-listed) endangered species AND / OR state-ranked (not state-listed endangered) species and natural communities of conservation concern. The Department tracks these species and natural communities due to population declines and/or apparent vulnerability.

Natural Heritage records identify no state-listed endangered species within the project area.

Natural Heritage records identify no state-ranked species/natural communities within the project area.

There are no regulatory requirements associated with this status, however we encourage voluntary stewardship to minimize the risk of further decline that could lead to listing.

STATE ENDANGERED species are protected under the Wildlife Code of Missouri (3CSR10-4.111). See https://mdc.mo.gov/sites/default/files/mo_nature/downloads/2021_SOCC.pdf for a complete list of species and communities of conservation concern.

General recommendations related to this project or site, or based on information about the historic range of species (unrelated to any specific Natural Heritage records):

- **Transportation:** Transportation related projects typically change the plants and animals that live on the right-of-way or in the vicinity. Minimize erosion and sedimentation/runoff to nearby streams

and lakes by carefully adhering to any "Clean Water Act Permit" conditions (Missouri DNR or US Army Corps of Engineers); and include design elements to manage stormwater so that present water discharge rates from the site to streams during heavy rain events are not increased. Revegetation of disturbed areas is recommended to minimize erosion, as is restoration with native plant species compatible with the local landscape and wildlife needs. Annuals like ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as Crown Vetch and Sericea lespedeza.

- **Stream Protection:** Streams in the area should be protected from soil erosion, water pollution and in-stream activities that modify or diminish aquatic habitats. Best management recommendations relating to streams and rivers may be found at https://live-mdcd8.pantheonsite.io/sites/default/files/2020-06/Streams.pdf

- **Indiana Bats and Northern Long-eared Bats** occur in Sulivan County and could occur in the project area. Indiana Bats *(Myotis sodalis*, federal and state-listed endangered) and Northern Long-eared Bats (*Myotis septentrionalis,* federal-listed threatened) hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana Bats and/or Northern Long-eared Bats, especially from September to April. **If any trees need to be removed by your project, please contact the U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 Ext. 100 for Ecological Services) for further coordination under the Endangered Species Act.**

- Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment, so inspect and clean equipment thoroughly before moving between project sites.
  - Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
  - Drain water from boats and machinery that has operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
  - When possible, wash and rinse equipment thoroughly with hard spray or HOT water (≥140° F, typically available at do-it-yourself carwash sites), and dry in the hot sun before using again.

These recommendations are ones project managers might prudently consider based on a general understanding of species needs and landscape conditions. Natural Heritage records largely reflect sites visited by specialists in the last 30 years. Many privately owned tracts have not been surveyed and could host remnants of species once but no longer common.

Missouri Department of Conservation

Natural Heritage Review Report

November 23, 2021

Science Branch
P. O. Box 180
Jefferson City, MO 65102
Prepared by: Hannah Roos
NaturalHeritageReview@mdc.mo.gov
(573) 522 - 4115 ext. 3182

Kaitlyn Torrey
VHB
ktorrey@vhb.com

NHR ERT ID:	NA	NHR ERT Level:	
Project type:	Transportation		
Location/Scope:	T60N R23W S24, 25		
County:	Grundy		
Query reference:	CR-KCS passing sidings improvements Laredo		
Query received:	11/16/2021		

This NATURAL HERITAGE REVIEW is not a site clearance letter. Rather, it identifies public lands and records of sensitive resources located close to and/or potentially affected by the proposed project. If project plans or location change, this report may no longer be valid. On-site verification is the responsibility of the project. Natural Heritage records were identified at some time and location. This report considers records near but not necessarily at the project site. Animals move and, over time, so do plant communities. To say "there is a record" does not mean the species/habitat is still there. To say that "there is no record" does not mean a protected species will not be encountered. These records serve as one reference and additional information (e.g. wetland or soils maps, on-site inspections or surveys) should be considered. Look for additional information about the biological and habitat needs of records listed to avoid or minimize impacts. More information is at https://mdc.mo.gov/discover-nature/places/natural-areas and https://mdc12.mdc.mo.gov/applications/mofwis/mofwis_search1.aspx

Level 3: Records of federal-listed (also state-listed) species or critical habitats near the project site:

Natural Heritage records indicate a Bald Eagle nest within 1 mile of the project area.

- **Bald Eagles:** Bald Eagles (*Haliaeetus leucocephalus*) nest near streams or water bodies in the project area. Nests are large and fairly easy to identify. While no longer listed as endangered, eagles continue to be protected by the federal government under the Bald and Golden Eagle Protection Act. Work managers should be alert for nesting areas within 1500 meters of project activities, and follow federal guidelines at: https://www.fws.gov/midwest/eagle/permits/index.html if eagle nests are seen.

Following USFWS Incidental Take Guidelines: To avoid the incidental take of bald eagles we recommend:

- a buffer of at least 660 feet between project activities and the nests (including active and inactive nests).
- If project activities are within 660 feet of the nest, please restrict activities to outside the nesting season. The nesting season in Missouri is January 1 – July 15.
- If these recommendations cannot be implemented, incidental take of bald eagles may occur and a permit from USFWS may be necessary.
- Do not clear nests or nest trees.

FEDERAL LIST species/habitats are protected under the Federal Endangered Species Act. Contact the U.S. Fish and Wildlife Service (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; 573-234-2132) for Endangered Species Act coordination and concurrence information).

Level 2: Records of state-listed (not federal-listed) endangered species AND / OR state-ranked (not state-listed endangered) species and natural communities of conservation concern. The Department tracks these species and natural communities due to population declines and/or apparent vulnerability.

Natural Heritage records identify no state-listed endangered species within the project area.

Natural Heritage records identify no state-ranked species/natural communities within the project area.

There are no regulatory requirements associated with this status, however we encourage voluntary stewardship to minimize the risk of further decline that could lead to listing.

STATE ENDANGERED species are protected under the Wildlife Code of Missouri (3CSR10-4.111). See https://mdc.mo.gov/sites/default/files/mo_nature/downloads/2021_SOCC.pdf for a complete list of species and communities of conservation concern.

General recommendations related to this project or site, or based on information about the historic range of species (unrelated to any specific Natural Heritage records):

- **Transportation:** Transportation related projects typically change the plants and animals that live on the right-of-way or in the vicinity. Minimize erosion and sedimentation/runoff to nearby streams and lakes by carefully adhering to any "Clean Water Act Permit" conditions (Missouri DNR or US Army Corps of Engineers); and include design elements to manage stormwater so that present water discharge rates from the site to streams during heavy rain events are not increased. Revegetation of disturbed areas is recommended to minimize erosion, as is restoration with native plant species compatible with the local landscape and wildlife needs. Annuals like ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as Crown Vetch and Sericea lespedeza.

- **Stream Protection:** Streams in the area should be protected from soil erosion, water pollution and in-stream activities that modify or diminish aquatic habitats. Best management recommendations relating to streams and rivers may be found at https://live-mdcd8.pantheonsite.io/sites/default/files/2020-06/Streams.pdf

- **Indiana Bats and/or Northern Long-eared Bats** occur in Grundy County and could occur in the project area. Indiana Bats *(Myotis sodalis*, federal and state-listed endangered) and Northern Long-eared Bats (*Myotis septentrionalis,* federal-listed threatened) hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana Bats and/or Northern Long-eared Bats, especially from September to April. **If any trees need to be removed by your project, please contact the U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 Ext. 100 for Ecological Services) for further coordination under the Endangered Species Act.**

- Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment, so inspect and clean equipment thoroughly before moving between project sites.
  - Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
  - Drain water from boats and machinery that has operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
  - When possible, wash and rinse equipment thoroughly with hard spray or HOT water (≥140° F, typically available at do-it-yourself carwash sites), and dry in the hot sun before using again.

These recommendations are ones project managers might prudently consider based on a general understanding of species needs and landscape conditions. Natural Heritage records largely reflect sites visited by specialists in the last 30 years. Many privately owned tracts have not been surveyed and could host remnants of species once but no longer common.

Missouri Department of Conservation

Natural Heritage Review Report

November 23, 2021

Science Branch
P. O. Box 180
Jefferson City, MO 65102
Prepared by: Hannah Roos
NaturalHeritageReview@mdc.mo.gov
(573) 522 - 4115 ext. 3182

Kaitlyn Torrey
VHB
ktorrey@vhb.com

NHR ERT ID:	NA	NHR ERT Level:	
Project type:	Transportation		
Location/Scope:	T57N R24W S28, 33, 32		
County:	Livingston		
Query reference:	CR-KCS passing sidings improvements MP341		
Query received:	11/16/2021		

This NATURAL HERITAGE REVIEW is not a site clearance letter. Rather, it identifies public lands and records of sensitive resources located close to and/or potentially affected by the proposed project. If project plans or location change, this report may no longer be valid. On-site verification is the responsibility of the project. Natural Heritage records were identified at some time and location. This report considers records near but not necessarily at the project site. Animals move and, over time, so do plant communities. To say "there is a record" does not mean the species/habitat is still there. To say that "there is no record" does not mean a protected species will not be encountered. These records serve as one reference and additional information (e.g. wetland or soils maps, on-site inspections or surveys) should be considered. Look for additional information about the biological and habitat needs of records listed to avoid or minimize impacts. More information is at https://mdc.mo.gov/discover-nature/places/natural-areas and https://mdc12.mdc.mo.gov/applications/mofwis/mofwis_search1.aspx

Level 3: Records of federal-listed (also state-listed) species or critical habitats near the project site:

Natural Heritage records identify no wildlife preserves, no designated wilderness areas or critical habitats, and no federal-listed species records within the project area, or in the public land survey section or sections adjacent.

FEDERAL LIST species/habitats are protected under the Federal Endangered Species Act. Contact the U.S. Fish and Wildlife Service (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; 573-234-2132) for Endangered Species Act coordination and concurrence information).

Level 2: Records of state-listed (not federal-listed) endangered species AND / OR state-ranked (not state-listed endangered) species and natural communities of conservation concern. The Department tracks these species and natural communities due to population declines and/or apparent vulnerability.

Natural Heritage records identify no state-listed endangered species within the project area.

Natural Heritage records identify no state-ranked species/natural communities within the project area.

There are no regulatory requirements associated with this status, however we encourage voluntary stewardship to minimize the risk of further decline that could lead to listing.

STATE ENDANGERED species are protected under the Wildlife Code of Missouri (3CSR10-4.111). See https://mdc.mo.gov/sites/default/files/mo_nature/downloads/2021_SOCC.pdf for a complete list of species and communities of conservation concern.

General recommendations related to this project or site, or based on information about the historic range of species (unrelated to any specific Natural Heritage records):

- **Transportation:** Transportation related projects typically change the plants and animals that live on the right-of-way or in the vicinity. Minimize erosion and sedimentation/runoff to nearby streams

and lakes by carefully adhering to any "Clean Water Act Permit" conditions (Missouri DNR or US Army Corps of Engineers); and include design elements to manage stormwater so that present water discharge rates from the site to streams during heavy rain events are not increased. Revegetation of disturbed areas is recommended to minimize erosion, as is restoration with native plant species compatible with the local landscape and wildlife needs. Annuals like ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as Crown Vetch and Sericea lespedeza.

- **Stream Protection:** Streams in the area should be protected from soil erosion, water pollution and in-stream activities that modify or diminish aquatic habitats. Best management recommendations relating to streams and rivers may be found at https://live-mdcd8.pantheonsite.io/sites/default/files/2020-06/Streams.pdf

- **Bald Eagles:** Bald Eagles (*Haliaeetus leucocephalus*) nest near streams or water bodies in the project area. Nests are large and fairly easy to identify. While no longer listed as endangered, eagles continue to be protected by the federal government under the Bald and Golden Eagle Protection Act. Work managers should be alert for nesting areas within 1500 meters of project activities, and follow federal guidelines at: https://www.fws.gov/midwest/eagle/permits/index.html if eagle nests are seen.

- **Indiana Bats and Northern Long-eared Bats** occur in Livingston County and could occur in the project area. Indiana Bats *(Myotis sodalis*, federal and state-listed endangered) and Northern Long-eared Bats (*Myotis septentrionalis,* federal-listed threatened) hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana Bats and/or Northern Long-eared Bats, especially from September to April. **If any trees need to be removed by your project, please contact the U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 Ext. 100 for Ecological Services) for further coordination under the Endangered Species Act.**

- Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment, so inspect and clean equipment thoroughly before moving between project sites.
  - Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
  - Drain water from boats and machinery that has operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
  - When possible, wash and rinse equipment thoroughly with hard spray or HOT water (≥140° F, typically available at do-it-yourself carwash sites), and dry in the hot sun before using again.

These recommendations are ones project managers might prudently consider based on a general understanding of species needs and landscape conditions. Natural Heritage records largely reflect sites visited by specialists in the last 30 years. Many privately owned tracts have not been surveyed and could host remnants of species once but no longer common.

Missouri Department of Conservation

Natural Heritage Review Report

November 23, 2021

Science Branch
P. O. Box 180
Jefferson City, MO 65102
Prepared by: Hannah Roos
NaturalHeritageReview@mdc.mo.gov
(573) 522 - 4115 ext. 3182

Kaitlyn Torrey
VHB
ktorrey@vhb.com

NHR ERT ID:	NA	NHR ERT Level:	
Project type:	Transportation		
Location/Scope:	T49N R33W S13, 18, 24, 25, 36		
County:	Jackson		
Query reference:	CR-KCS passing sidings improvements Blue Valley		
Query received:	11/16/2021		

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Level 3: Records of federal-listed (also state-listed) species or critical habitats near the project site:

The project crosses multiple streams connected to the Blue and the Missouri Rivers. Terrestrial projects that manage construction and include operation plans to avoid runoff of sediment or pollutants are unlikely to affect the aquatic species. See General Recommendations for additional information on minimizing impacts to aquatic resources.

- **Missouri River:** The Missouri River (together with its tributary mouths) is home to many aquatic species of federal and state concern, including federal-listed Pallid Sturgeon, state-listed Lake Sturgeon, Flathead Chub, and others. Bluffs, banks, and floodplains may also include habitat used by listed Gray bats, Indiana bats and Bald Eagles. All these are sampled at points but must be assumed to be present in suitable habitats through extended river reaches.
  - Terrestrial projects that manage construction and include operation plans to avoid runoff of sediment or pollutants are unlikely to affect the aquatic species.
  - Regulations enforced by other agencies to protect water quality and human health are generally adequate to protect the needs of wildlife as well.
  - Projects that place fill in or discharge water to the river are subject to federal permits, and strict observance of conditions required in those permits is important to minimize risk of damage to endangered species.

FEDERAL LIST species/habitats are protected under the Federal Endangered Species Act. Contact the U.S. Fish and Wildlife Service (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; 573-234-2132) for Endangered Species Act coordination and concurrence information).

Level 2: Records of state-listed (not federal-listed) endangered species AND / OR state-ranked (not state-listed endangered) species and natural communities of conservation concern. The Department tracks these species and natural communities due to population declines and/or apparent vulnerability.

Natural Heritage records identify no state-listed endangered species within the project area.

Natural Heritage records indicate Tri-colored bats (*Perimyotis subflavus*, S2 – Imperiled) occur near the project area.

There are no regulatory requirements associated with this status, however we encourage voluntary stewardship to minimize the risk of further decline that could lead to listing.

STATE ENDANGERED species are protected under the Wildlife Code of Missouri (3CSR10-4.111). See https://mdc.mo.gov/sites/default/files/mo_nature/downloads/2021_SOCC.pdf for a complete list of species and communities of conservation concern.

General recommendations related to this project or site, or based on information about the historic range of species (unrelated to any specific Natural Heritage records):

- **Transportation:** Transportation related projects typically change the plants and animals that live on the right-of-way or in the vicinity. Minimize erosion and sedimentation/runoff to nearby streams and lakes by carefully adhering to any "Clean Water Act Permit" conditions (Missouri DNR or US Army Corps of Engineers); and include design elements to manage stormwater so that present water discharge rates from the site to streams during heavy rain events are not increased. Revegetation of disturbed areas is recommended to minimize erosion, as is restoration with native plant species compatible with the local landscape and wildlife needs. Annuals like ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as Crown Vetch and Sericea lespedeza.

- **Stream Protection:** Streams in the area should be protected from soil erosion, water pollution and in-stream activities that modify or diminish aquatic habitats. Best management recommendations relating to streams and rivers may be found at https://live-mdcd8.pantheonsite.io/sites/default/files/2020-06/Streams.pdf

- **Karst:** Jackson County has known karst geologic features (e.g. caves, springs, and sinkholes, all characterized by subterranean water movement). Few karst features are recorded in Natural Heritage records, and ones not noted here may be encountered at the project site or affected by the project. Cave fauna (many of which are species of conservation concern) are influenced by changes to water quality, so check your project site for any karst features and make every effort to protect groundwater in the project area. See https://mdc.mo.gov/sites/default/files/2020-06/Karst.pdf for best management recommendations.

- **Indiana Bats and Northern Long-eared Bats** could occur in the project area. Indiana Bats *(Myotis sodalis*, federal and state-listed endangered) and Northern Long-eared Bats (*Myotis septentrionalis,* federal-listed threatened) hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana Bats and/or Northern Long-eared Bats, especially from September to April. **If any trees need to be removed by your project, please contact the U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 Ext. 100 for Ecological Services) for further coordination under the Endangered Species Act.**

- Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment, so inspect and clean equipment thoroughly before moving between project sites.

- Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
- Drain water from boats and machinery that has operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
- When possible, wash and rinse equipment thoroughly with hard spray or HOT water (≥140° F, typically available at do-it-yourself carwash sites), and dry in the hot sun before using again.

These recommendations are ones project managers might prudently consider based on a general understanding of species needs and landscape conditions. Natural Heritage records largely reflect sites visited by specialists in the last 30 years. Many privately owned tracts have not been surveyed and could host remnants of species once but no longer common.

Missouri Department of Conservation

Natural Heritage Review Report

November 23, 2021

Science Branch
P. O. Box 180
Jefferson City, MO 65102
Prepared by: Hannah Roos
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(573) 522 - 4115 ext. 3182

Kaitlyn Torrey
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NHR ERT ID:	NA	NHR ERT Level:	
Project type:	Transportation		
Location/Scope:	T47N R33W S14, 23, 22, 27, 34 T46N R33W S03, 09		
County:	Jackson/Cass		
Query reference:	CR-KCS passing sidings improvements Grandview		
Query received:	11/16/2021		

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Level 3: Records of federal-listed (also state-listed) species or critical habitats near the project site:

Natural Heritage records indicate several Bald Eagle nests within 3 miles of the project area.

- **Bald Eagles:** Bald Eagles (*Haliaeetus leucocephalus*) nest near streams or water bodies in the project area. Nests are large and fairly easy to identify. While no longer listed as endangered, eagles continue to be protected by the federal government under the Bald and Golden Eagle Protection Act. Work managers should be alert for nesting areas within 1500 meters of project activities, and follow federal guidelines at: https://www.fws.gov/midwest/eagle/permits/index.html if eagle nests are seen.

FEDERAL LIST species/habitats are protected under the Federal Endangered Species Act. Contact the U.S. Fish and Wildlife Service (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; 573-234-2132) for Endangered Species Act coordination and concurrence information).

Level 2: Records of state-listed (not federal-listed) endangered species AND / OR state-ranked (not state-listed endangered) species and natural communities of conservation concern. The Department tracks these species and natural communities due to population declines and/or apparent vulnerability.

Natural Heritage records identify no state-listed endangered species within the project area.

Natural Heritage records indicate the following state-ranked species near the project area:

Scientific Name	Common Name	State Rank	Proximity (miles)
Agalinis auriculata	Auriculate False Foxglove	S3	<1
Calephelis borealis	Northern Metalmark	S1	<1
Plestiodon obsoletus	Great Plains Skink	S2	<2

Speyeria idalia	Regal Fritillary	S3	<2

State Rank Definitions:

- S1: Critically imperiled in the state because of extreme rarity of or because of some factor(s) making it especially vulnerable to extirpation from the state. Typically, 5 or fewer occurrences or very few remaining individuals (<1,000).
- S2: Imperiled in the state because of rarity or because of some factor(s) making it very vulnerable to extirpation from the state (6 to 20 occurrences or few remaining individuals).
- S3: Vulnerable in the state either because rare and uncommon, or found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extirpation. Typically 21 to 100 occurrences or between 3,000 and 10,000 individuals.
- S4: Uncommon but not rare, and usually widespread in the nation or state. Possible cause of long-term concern. Usually more than 100 occurrences and more than 10,000 individuals.
- S#S#: Range Rank: A numeric range rank (e.g., S2S3) is used to indicate the range of uncertainty about the exact status.
- ?: Denotes inexact or uncertain numeric rank.

There are no regulatory requirements associated with this status, however we encourage voluntary stewardship to minimize the risk of further decline that could lead to listing.

STATE ENDANGERED species are protected under the Wildlife Code of Missouri (3CSR10-4.111). See https://mdc.mo.gov/sites/default/files/mo_nature/downloads/2021_SOCC.pdf for a complete list of species and communities of conservation concern.

General recommendations related to this project or site, or based on information about the historic range of species (unrelated to any specific Natural Heritage records):

- **Transportation:** Transportation related projects typically change the plants and animals that live on the right-of-way or in the vicinity. Minimize erosion and sedimentation/runoff to nearby streams and lakes by carefully adhering to any "Clean Water Act Permit" conditions (Missouri DNR or US Army Corps of Engineers); and include design elements to manage stormwater so that present water discharge rates from the site to streams during heavy rain events are not increased. Revegetation of disturbed areas is recommended to minimize erosion, as is restoration with native plant species compatible with the local landscape and wildlife needs. Annuals like ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as Crown Vetch and Sericea lespedeza.

- **Stream Protection:** Streams in the area should be protected from soil erosion, water pollution and in-stream activities that modify or diminish aquatic habitats. Best management recommendations relating to streams and rivers may be found at https://live-mdcd8.pantheonsite.io/sites/default/files/2020-06/Streams.pdf

- **Indiana Bats and Northern Long-eared Bats** could occur in the project area. Indiana Bats *(Myotis sodalis*, federal and state-listed endangered) and Northern Long-eared Bats (*Myotis septentrionalis,* federal-listed threatened) hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana Bats and/or Northern Long-eared Bats, especially from September to April. **If any trees need to be removed by your project, please contact the U.S.**

Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 Ext. 100 for Ecological Services) for further coordination under the Endangered Species Act.

- **Karst:** Jackson County and Cass County have known karst geologic features (e.g. caves, springs, and sinkholes, all characterized by subterranean water movement). Few karst features are recorded in Natural Heritage records, and ones not noted here may be encountered at the project site or affected by the project. Cave fauna (many of which are species of conservation concern) are influenced by changes to water quality, so check your project site for any karst features and make every effort to protect groundwater in the project area. See https://mdc.mo.gov/sites/default/files/2020-06/Karst.pdf for best management recommendations.

- Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment, so inspect and clean equipment thoroughly before moving between project sites.
  - Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
  - Drain water from boats and machinery that has operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
  - When possible, wash and rinse equipment thoroughly with hard spray or HOT water (≥140° F, typically available at do-it-yourself carwash sites), and dry in the hot sun before using again.

These recommendations are ones project managers might prudently consider based on a general understanding of species needs and landscape conditions. Natural Heritage records largely reflect sites visited by specialists in the last 30 years. Many privately owned tracts have not been surveyed and could host remnants of species once but no longer common.

Missouri Department of Conservation

Natural Heritage Review Report

November 23, 2021

Science Branch
P. O. Box 180
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Prepared by: Hannah Roos
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Kaitlyn Torrey
VHB
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NHR ERT ID:	NA	NHR ERT Level:	
Project type:	Transportation		
Location/Scope:	T29N R34W S03, 02		
County:	Jasper		
Query reference:	CR-KCS passing sidings improvements Asbury		
Query received:	11/16/2021		

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Level 3: Records of federal-listed (also state-listed) species or critical habitats near the project site:

Natural Heritage records identify no wildlife preserves, no designated wilderness areas or critical habitats, and no federal-listed species records within the project area, or in the public land survey section or sections adjacent.

FEDERAL LIST species/habitats are protected under the Federal Endangered Species Act. Contact the U.S. Fish and Wildlife Service (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; 573-234-2132) for Endangered Species Act coordination and concurrence information).

Level 2: Records of state-listed (not federal-listed) endangered species AND / OR state-ranked (not state-listed endangered) species and natural communities of conservation concern. The Department tracks these species and natural communities due to population declines and/or apparent vulnerability.

Natural Heritage records identify no state-listed endangered species within the project area.

Natural Heritage records indicate the following state-ranked species near the project area:

Scientific Name	Common Name	State Rank	Proximity (miles)
Circus hudsonius	Northern Harrier	S2	<2
Gryllotalpa major	Prairie Mole Cricket	S3	<1
Lithobates areolatus circulosus	Northern Crawfish Frog	S3	<2

State Rank Definitions:

- S1: Critically imperiled in the state because of extreme rarity of or because of some factor(s) making it especially vulnerable to extirpation from the state. Typically, 5 or fewer occurrences or very few remaining individuals (<1,000).

- S2: Imperiled in the state because of rarity or because of some factor(s) making it very vulnerable to extirpation from the state (6 to 20 occurrences or few remaining individuals).
- S3: Vulnerable in the state either because rare and uncommon, or found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extirpation. Typically 21 to 100 occurrences or between 3,000 and 10,000 individuals.
- S4: Uncommon but not rare, and usually widespread in the nation or state. Possible cause of long-term concern. Usually more than 100 occurrences and more than 10,000 individuals.
- S#S#: Range Rank: A numeric range rank (e.g., S2S3) is used to indicate the range of uncertainty about the exact status.
- ?: Denotes inexact or uncertain numeric rank.

There are no regulatory requirements associated with this status, however we encourage voluntary stewardship to minimize the risk of further decline that could lead to listing.

STATE ENDANGERED species are protected under the Wildlife Code of Missouri (3CSR10-4.111). See https://mdc.mo.gov/sites/default/files/mo_nature/downloads/2021_SOCC.pdf for a complete list of species and communities of conservation concern.

General recommendations related to this project or site, or based on information about the historic range of species (unrelated to any specific Natural Heritage records):

- **Transportation:** Transportation related projects typically change the plants and animals that live on the right-of-way or in the vicinity. Minimize erosion and sedimentation/runoff to nearby streams and lakes by carefully adhering to any "Clean Water Act Permit" conditions (Missouri DNR or US Army Corps of Engineers); and include design elements to manage stormwater so that present water discharge rates from the site to streams during heavy rain events are not increased. Revegetation of disturbed areas is recommended to minimize erosion, as is restoration with native plant species compatible with the local landscape and wildlife needs. Annuals like ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as Crown Vetch and Sericea lespedeza.

- **Stream Protection:** Streams in the area should be protected from soil erosion, water pollution and in-stream activities that modify or diminish aquatic habitats. Best management recommendations relating to streams and rivers may be found at https://live-mdcd8.pantheonsite.io/sites/default/files/2020-06/Streams.pdf

- **Greater Prairie Chicken:** The proposed project occurs in the historic range of Greater Prairie Chickens (*Tympanuchus cupido*), a bird on the state's list of endangered species. Populations have been in serious decline for decades, and have reached a point where Greater Prairie Chickens could be gone from Missouri within a few years. The dominant factor in their decline is conversion of native prairie habitats to other uses. Other prairie dependent species are also in serious decline for the same reason. Greater Prairie Chickens range over a broad territory perhaps nesting, breeding and foraging in grasslands several miles apart. Even if Greater Prairie Chickens are not present, it is important to conserve as much as possible any grasslands dominated by native plant cover in the project area. See https://mdc.mo.gov/sites/default/files/2020-06/GreaterPrairieChickenBMP.pdf for best management recommendations.

- **Karst:** Jasper County has known karst geologic features (e.g. caves, springs, and sinkholes, all characterized by subterranean water movement). Few karst features are recorded in Natural Heritage records, and ones not noted here may be encountered at the project site or affected by

the project. Cave fauna (many of which are species of conservation concern) are influenced by changes to water quality, so check your project site for any karst features and make every effort to protect groundwater in the project area. See https://mdc.mo.gov/sites/default/files/2020-06/Karst.pdf for best management recommendations.

- **Conservation Opportunity Areas:** The project is within Spring River Priority Watershed Conservation Opportunity Area. COAs are key landscapes that represent the greatest opportunities for sustainable conservation of the Missouri's diverse flora and fauna and the natural communities they depend upon, including: grasslands (including prairie and savanna), glades, forests and woodlands, wetlands, caves and karst, and rivers and streams. COAs have been identified based on several factors, including the diversity and rarity of species and natural communities present, and the comparative likelihood/importance of projects to maintain them in the area over time. COAs have no regulatory role, but do reflect interest as a planning tool from multiple government agencies, non-governmental organizations and citizen groups to facilitate conservation in the area. Maintenance of high quality natural terrestrial and aquatic communities will help provide important habitat for the COA's biodiversity. Funding might be available to manage for important habitats within the COA. Please contact Missouri Department of Conservation for more information.

- **Indiana Bats and Northern Long-eared Bats** could occur in the project area. Indiana Bats *(Myotis sodalis*, federal and state-listed endangered) and Northern Long-eared Bats (*Myotis septentrionalis,* federal-listed threatened) hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana Bats and/or Northern Long-eared Bats, especially from September to April. **If any trees need to be removed by your project, please contact the U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 Ext. 100 for Ecological Services) for further coordination under the Endangered Species Act.**

- Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment, so inspect and clean equipment thoroughly before moving between project sites.
  - Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
  - Drain water from boats and machinery that has operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
  - When possible, wash and rinse equipment thoroughly with hard spray or HOT water (≥140° F, typically available at do-it-yourself carwash sites), and dry in the hot sun before using again.

These recommendations are ones project managers might prudently consider based on a general understanding of species needs and landscape conditions. Natural Heritage records largely reflect sites visited by specialists in the last 30 years. Many privately owned tracts have not been surveyed and could host remnants of species once but no longer common.

Missouri Department of Conservation

Natural Heritage Review Report

November 23, 2021

Science Branch
P. O. Box 180
Jefferson City, MO 65102
Prepared by: Hannah Roos
NaturalHeritageReview@mdc.mo.gov
(573) 522 - 4115 ext. 3182

Kaitlyn Torrey
VHB
ktorrey@vhb.com

NHR ERT ID:	NA	NHR ERT Level:	
Project type:	Transportation		
Location/Scope:	T23N R32W S19, 30		
County:	McDonald		
Query reference:	CR-KCS passing sidings improvements MP186		
Query received:	11/16/2021		

This NATURAL HERITAGE REVIEW is not a site clearance letter. Rather, it identifies public lands and records of sensitive resources located close to and/or potentially affected by the proposed project. If project plans or location change, this report may no longer be valid. On-site verification is the responsibility of the project. Natural Heritage records were identified at some time and location. This report considers records near but not necessarily at the project site. Animals move and, over time, so do plant communities. To say "there is a record" does not mean the species/habitat is still there. To say that "there is no record" does not mean a protected species will not be encountered. These records serve as one reference and additional information (e.g. wetland or soils maps, on-site inspections or surveys) should be considered. Look for additional information about the biological and habitat needs of records listed to avoid or minimize impacts. More information is at https://mdc.mo.gov/discover-nature/places/natural-areas and https://mdc12.mdc.mo.gov/applications/mofwis/mofwis_search1.aspx

Level 3: Records of federal-listed (also state-listed) species or critical habitats near the project site:

Natural Heritage records indicate several aquatic species of conservation concern associated with nearby Indian Creek, including the federally endangered Neosho Mucket and the state endangered Slippershell Mussel. Terrestrial projects that manage construction and include operation plans to avoid runoff of sediment or pollutants are unlikely to affect the aquatic species.

- **Mussels:** Mussels are relatively immobile animals that are vulnerable to pollutants, sediment discharges, channel alterations and other activities destructive to mussel habitat. Activities that alter or destabilize stream bottoms or banks or introduce silt, chemical or organic pollutants should be avoided. Avoid crossing flowing water but, if unavoidable, minimize crossing distance and use temporary crossings that do not restrict water flow. See https://mdc.mo.gov/sites/default/files/2020-06/FreshwaterMusselsBMP.pdf for Best Management Practices regarding these animals.

- **Stream Protection:** Streams in the area should be protected from soil erosion, water pollution and in-stream activities that modify or diminish aquatic habitats. Best management recommendations relating to streams and rivers may be found at https://live-mdcd8.pantheonsite.io/sites/default/files/2020-06/Streams.pdf

FEDERAL LIST species/habitats are protected under the Federal Endangered Species Act. Contact the U.S. Fish and Wildlife Service (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; 573-234-2132) for Endangered Species Act coordination and concurrence information).

Level 2: Records of state-listed (not federal-listed) endangered species AND / OR state-ranked (not state-listed endangered) species and natural communities of conservation concern. The Department tracks these species and natural communities due to population declines and/or apparent vulnerability.

Natural Heritage records identify no state-listed endangered species within the project area.

Natural Heritage records identify no state-ranked species/natural communities within the project area.

There are no regulatory requirements associated with this status, however we encourage voluntary stewardship to minimize the risk of further decline that could lead to listing.

STATE ENDANGERED species are protected under the Wildlife Code of Missouri (3CSR10-4.111). See https://mdc.mo.gov/sites/default/files/mo_nature/downloads/2021_SOCC.pdf for a complete list of species and communities of conservation concern.

General recommendations related to this project or site, or based on information about the historic range of species (unrelated to any specific Natural Heritage records):

- **Transportation:** Transportation related projects typically change the plants and animals that live on the right-of-way or in the vicinity. Minimize erosion and sedimentation/runoff to nearby streams and lakes by carefully adhering to any "Clean Water Act Permit" conditions (Missouri DNR or US Army Corps of Engineers); and include design elements to manage stormwater so that present water discharge rates from the site to streams during heavy rain events are not increased. Revegetation of disturbed areas is recommended to minimize erosion, as is restoration with native plant species compatible with the local landscape and wildlife needs. Annuals like ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as Crown Vetch and Sericea lespedeza.

- **Gray Bats:** Gray Bats (*Myotis grisescens*, federal and state-listed endangered) occur in McDonald County and could occur in the project area, as they forage over streams, rivers, and reservoirs. Avoid entry or disturbance of any cave inhabited by gray bats and when possible retain forest vegetation along the stream and from the gray bat cave opening to the stream.

- **Indiana Bats and/or Northern Long-eared Bats** occur in McDonald County and could occur in the project area. Indiana Bats *(Myotis sodalis*, federal and state-listed endangered) and Northern Long-eared Bats (*Myotis septentrionalis,* federal-listed threatened) hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana Bats and/or Northern Long-eared Bats, especially from September to April. **If any trees need to be removed by your project, please contact the U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 Ext. 100 for Ecological Services) for further coordination under the Endangered Species Act.**

- **Karst:** McDonald County has known karst geologic features (e.g. caves, springs, and sinkholes, all characterized by subterranean water movement). Few karst features are recorded in Natural Heritage records, and ones not noted here may be encountered at the project site or affected by the project. Cave fauna (many of which are species of conservation concern) are influenced by changes to water quality, so check your project site for any karst features and make every effort to protect groundwater in the project area. See https://mdc.mo.gov/sites/default/files/2020-06/Karst.pdf for best management recommendations.

- Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment, so inspect and clean equipment thoroughly before moving between project sites.

- Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
- Drain water from boats and machinery that has operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
- When possible, wash and rinse equipment thoroughly with hard spray or HOT water (≥140° F, typically available at do-it-yourself carwash sites), and dry in the hot sun before using again.

These recommendations are ones project managers might prudently consider based on a general understanding of species needs and landscape conditions. Natural Heritage records largely reflect sites visited by specialists in the last 30 years. Many privately owned tracts have not been surveyed and could host remnants of species once but no longer common.

Asa Hutchinson
Governor

Stacy Hurst
Secretary

Date: December 3, 2021
Subject: Elements of Conservation Concern
Railroad Siding Locations
Benton and Polk Counties, Arkansas
Dorsey, MP 377
ANHC No.: P-CF..-21-090

Ms. Kaitlyn Torrey
VHB Environmental
1355 Peachtree St, NE
Suite 100
Atlanta, GA 30309-3269

Dear Ms. Torrey:

Staff members of the Arkansas Natural Heritage Commission have reviewed our files for records indicating the occurrence of rare plants and animals, outstanding natural communities, natural or scenic rivers, or other elements of special concern within or near the two proposed railroad siding locations in Benton (Dorsey) and Polk (MP377) Counties, Arkansas. The results of this review are provided as Geographic Information System (GIS) shapefiles. Documentation explaining the information in the shapefiles is included.

No elements of special concern have been recorded within the area delineated for the Dorsey site in Benton County, Arkansas. However, Wolf Creek appears to run along the west side of the railroad right-of-way. Wolf Creek is known to support the following species of state conservation concern approximately 0.5 – 1.0 mile upstream of the project site:

Faxonius macrus, Neosho Midget Crayfish
Nocomis asper, redspot chub

Efforts should be made to avoid and minimize impacts to Wolf Creek. Best Management Practices should be used and carefully monitored to maintain water quality and reduce sedimentation. It is also of note that the project falls within a Karst region of the state characterized by caves, springs, and sinkholes. These Karst ecosystems support a variety of rare species, including several that are listed by the U.S. Fish and Wildlife Service as Endangered or Threatened. Although your project is outside of any known cave recharge zones, I've provided a link to a U.S. Fish and Wildlife Service Document entitled "Community Growth Best Management Practices for Conservation of Karst Recharge Zones." This document provides useful recommendations on Best Management Practices within a Karst region:

https://www.fws.gov/arkansas-es/docs/General%20Karst%20big%20BMP%20packet.pdf

One species of state conservation concern has been mapped within the MP377 siding site:

Ambystoma annulatum, Ringed Salamander

This species occurs in Arkansas, Missouri and Oklahoma where it occupies hardwood and mixed hardwood-pine forests usually in damp areas near small, shallow ponds used for breeding. Loss of breeding ponds and degradation of forested habitat are the primary threats to this species. Efforts should be made to minimize impacts to forested habitat to the extent possible.

Benton and Polk County Element lists are enclosed for your reference. Represented on these lists are elements for which we have records in our database. The lists have been annotated to indicate those elements known to occur within a one and a five-mile radius of the project areas. A legend is enclosed to help you interpret the codes used on this list.

Please keep in mind that the siding sites may contain important natural features of which we are unaware. Staff members of the Arkansas Natural Heritage Commission have not conducted a field survey of these locations. Our review is based on data available to the program at the time of the request. It should not be regarded as a final statement on the elements or areas under consideration. Because our files are updated constantly, you may want to check with us again at a later time.

Thank you for consulting us. It has been a pleasure to work with you on this study.

Sincerely,

Cindy Osborne

Cindy Osborne
Data Manager/Environmental Review Coordinator

Enclosures: GIS shapefiles
Documentation for shapefiles
Benton and Polk County Element Lists (annotated
Legend
Invoice

Asa Hutchinson
Governor

Stacy Hurst
Secretary

Date: March 15, 2022
Subject: Elements of Conservation Concern
Railroad Siding Location
Gentry, Benton County, Arkansas
ANHC No.: P-CF..-22-019

Ms. Kaitlyn Torrey
VHB Environmental
1355 Peachtree St., NE
Suite 100
Atlanta, GA 30309-3269

Dear Ms. Torrey:

Staff members of the Arkansas Natural Heritage Commission have reviewed our files for records indicating the occurrence of rare plants and animals, outstanding natural communities, natural or scenic rivers, or other elements of special concern within or near the proposed railroad siding project in Gentry, Arkansas. We find no records at present time.

It is of note that the project site falls within an area that was likely open savanna historically, with pockets of prairie, and could harbor some remnant grassland flora including species of conservation concern (we are aware of several older records for sensitive species in the vicinity of this railroad right-of-way outside of the project area). However, because the strip is very narrow and has been highly impacted by past management, in its current condition, it is unlikely to support rare species in the long term. If the project presented the opportunity to enhance or support native prairie vegetation, it could offset some of the potential adverse impacts.

This portion of Benton County falls within a Karst region of the state characterized by caves, springs, and sinkholes. These Karst ecosystems support a variety of rare species, including several that are listed by the U.S. Fish and Wildlife Service as Endangered or Threatened. Although your project is outside of any known cave recharge zones, I've provided a link to a U.S. Fish and Wildlife Service Document entitled "Community Growth Best Management Practices for Conservation of Karst Recharge Zones." This document provides useful recommendations on Best Management Practices within a Karst region:

https://www.fws.gov/arkansas-es/docs/General%20Karst%20big%20BMP%20packet.pdf

A Benton County element list is enclosed for your reference. Represented on this list are elements for which we have records in our database. The list has been annotated to indicate

those elements known to occur within a one and a five-mile radius of the project area. A legend is enclosed to help you interpret the codes used on the list.

Please keep in mind that the siding site may contain important natural features of which we are unaware. Staff members of the Arkansas Natural Heritage Commission have not conducted a field survey of this location. Our review is based on data available to the program at the time of the request. It should not be regarded as a final statement on the elements or areas under consideration. Because our files are updated constantly, you may want to check with us again at a later time.

Thank you for consulting us. It has been a pleasure to work with you on this study.

Sincerely,

Cindy Osborne

Cindy Osborne
Data Manager/Environmental Review Coordinator

Enclosures: Benton County Element List (annotated)
Legend
Invoice

OBS Ref. 2021-667-BUS-VBH

Dear Ms. Torrey, Nov. 16, 2021

We have reviewed occurrence information on federal and state threatened, endangered or candidate species, as well as non-regulatory rare species and ecological systems of importance currently in the Oklahoma Natural Heritage Inventory database for the following location you provided:

Sec. 13 and 24-T17N-R25E and Sec. 18-T17N-R26E, Adair County

We found no occurrences of relevant species within the vicinity of the project location as described. However, absence from our database does not preclude such species from occurring in the area.

If you have any questions about this response, please send me an email, or call us at the number given below.

Although not specific to your project, you may find the following links helpful.

ONHI guide to ranking codes for endangered and threatened species:
http://www.oknaturalheritage.ou.edu/content/biodiversity-info/ranking-guide/

Information regarding the Oklahoma Natural Areas Registry:
https://okregistry.wordpress.com/

Todd Fagin
Oklahoma Natural Heritage Inventory
(405) 325-4700
tfagin@ou.edu

OBS Ref. 2021-668-BUS-VBH

Dear Ms. Torrey, Nov. 16, 2021

We have reviewed occurrence information on federal and state threatened, endangered or candidate species, as well as non-regulatory rare species and ecological systems of importance currently in the Oklahoma Natural Heritage Inventory database for the following location you provided:

Sec. 35-T15N-R24E, Adair County

We found 12 occurrence(s) of relevant species within the vicinity of the project location as described.

Species Name	Common Name	Federal Status
Myotis septentrionalis	**Northern Long-eared Bat**	**Threatened**
County	***TRS***	***Count***
Adair	Sec. 4-T14N-R24E	2
Adair	Sec. 30-T15N-R25E	1
Adair	Sec. 32-T15N-R25E	1
Corynorhinus townsendii ingens	**Ozark Big-eared Bat**	**Endangered**
County	***TRS***	***Count***
Adair	Sec. 4-T14N-R24E	1
Adair	Sec. 23-T15N-R24E	1
Adair	Sec. 31-T15N-R25E	1
Adair	Sec. 32-T15N-R25E	1
Myotis grisescens	**Gray Myotis**	**Endangered**
County	***TRS***	***Count***
Adair	Sec. 4-T14N-R24E	1
Adair	Sec. 22-T15N-R24E	1
Adair	Sec. 23-T15N-R24E	1
Haliaeetus leucocephalus	**Bald Eagle**	**Protected**
County	***TRS***	***Count***
Adair	Sec. 20-T15N-R25E	1

Additionally, absence from our database does not preclude such species from occurring in the area.

If you have any questions about this response, please send me an email, or call us at the number given below.

Although not specific to your project, you may find the following links helpful.

ONHI, guide to ranking codes for endangered and threatened species:
http://www.oknaturalheritage.ou.edu/content/biodiversity-info/ranking-guide/

Information regarding the Oklahoma Natural Areas Registry:
https://okregistry.wordpress.com/

Todd Fagin
Oklahoma Natural Heritage Inventory
(405) 325-4700
tfagin@ou.edu

OBS Ref. 2021-669-BUS-VBH

Dear Ms. Torrey, Nov. 16, 2021

We have reviewed occurrence information on federal and state threatened, endangered or candidate species, as well as non-regulatory rare species and ecological systems of importance currently in the Oklahoma Natural Heritage Inventory database for the following location you provided:

Sec. 36-T5N-R25E and Sec. 30 and 31-T5N-R26E, Le Flore County

We found 1 occurrence(s) of relevant species within the vicinity of the project location as described.

Species Name	Common Name	Federal Status
Nicrophorus americanus	**American burying beetle**	**Threatened**
County	***TRS***	***Count***
Le Flore	Sec. 9-T4N-R25E	1

Additionally, absence from our database does not preclude such species from occurring in the area.

If you have any questions about this response, please send me an email, or call us at the number given below.

Although not specific to your project, you may find the following links helpful.

ONHI, guide to ranking codes for endangered and threatened species:
http://www.oknaturalheritage.ou.edu/content/biodiversity-info/ranking-guide/

Information regarding the Oklahoma Natural Areas Registry:
https://okregistry.wordpress.com/

Todd Fagin
Oklahoma Natural Heritage Inventory
(405) 325-4700
tfagin@ou.edu

OBS Ref. 2021-670-BUS-VBH

Dear Ms. Torrey, Nov. 16, 2021

We have reviewed occurrence information on federal and state threatened, endangered or candidate species, as well as non-regulatory rare species and ecological systems of importance currently in the Oklahoma Natural Heritage Inventory database for the following location you provided:

Sec. 26 and 27-T9N-R25E, Le Flore County

We found 1 occurrence(s) of relevant species within the vicinity of the project location as described.

Species Name	Common Name	Federal Status
Nicrophorus americanus	**American burying beetle**	**Threatened**
County	***TRS***	***Count***
Le Flore	Sec. 9-T8N-R25E	1

Additionally, absence from our database does not preclude such species from occurring in the area.

If you have any questions about this response, please send me an email, or call us at the number given below.

Although not specific to your project, you may find the following links helpful.

ONHI, guide to ranking codes for endangered and threatened species:
http://www.oknaturalheritage.ou.edu/content/biodiversity-info/ranking-guide/

Information regarding the Oklahoma Natural Areas Registry:
https://okregistry.wordpress.com/

Todd Fagin
Oklahoma Natural Heritage Inventory
(405) 325-4700
tfagin@ou.edu

JOHN BEL EDWARDS
GOVERNOR

JACK MONTOUCET
SECRETARY

PO BOX 98000 | BATON ROUGE LA | 70898

Date	December 3, 2021
Name	Kaitlyn Torrey
Company	VHB
Street Address	1355 Peachtree St Suite 100
City, State Zip	Atlanta, GA 30309-3269
Project	CP & KCS: Mansfield, Loring & Singer
Project ID	
Invoice Number	21120308

Personnel of the Coastal & Nongame Resources Division have reviewed the preliminary data for the captioned project. After careful review of our database, no impacts to rare, threatened, or endangered species or critical habitats are anticipated for the proposed project. No state wildlife refuges, wildlife management areas, or scenic streams are known to occur at the specified site within Louisiana's boundaries.

The Wildlife Diversity Program (WDP) has compiled data on rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features throughout the state of Louisiana. WDP reports summarize the existing information known at the time of the request regarding the location in question. The quantity and quality of data collected by the WDP are dependent on the research and observations of many individuals. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Louisiana have not been surveyed. This report does not address the occurrence of wetlands at the site in question. WDP reports should not be considered final statements on the biological elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. WDP requires that this office be acknowledged in all reports as the source of all data provided here. If at any time WDP tracked species are encountered within the project area, please contact the WDP Data Manager at 225-763-3554. If you have any questions, or need additional information, please call 225-765-2357.

Sincerely,

for Carolyn Michon

Digitally signed by Carolyn Michon
Date: 2021.12.03 18:35:29 -06'00'

Nicole Lorenz, Program Manager
Wildlife Diversity Program

2000 QUAIL DRIVE | BATON ROUGE, LA 70808 | 225-765-2800 | WLF.LOUISIANA.GOV

Appendix P

Environmental Justice

This appendix provides a summary of the data OEA collected to evaluate the potential for the Proposed Acquisition to result in disproportionately high and adverse human health or environmental effects on potential Environmental Justice (EJ) populations.

P.1 System-wide Demographic Analysis

Table P.1-1 lists the census block groups (block group) that met the thresholds established for identifying potential minority populations. As described in *Section 3.13.1, Approach*, OEA assumed minority populations exist in the study area when either:

- At least 50 percent of the people in the block group self-identify as being of minority status; or
- The percentage of the population of minority status in the block group is at least 10 percentage points higher than for the entire county in which the population is located.

OEA identified a total of 49 block groups as areas with potential minority populations. This represented approximately 23 percent of the study area data set, which included 217 total block groups. The block groups identified as potential minority populations contained predominantly individuals who selected "Black or African American alone" on the U.S. census (approximately five percent of block groups in the data set), followed by "Asian alone" (three percent of the block groups in the data set), then "Some Other Race alone" (approximately two percent of the block groups in the data set). Approximately 14 percent of the block groups were identified as potential "Hispanic or Latino" populations.

Table P.1-2 lists the block groups that met the thresholds established for identifying potential low-income populations. As described in *Section 3.13.1, Approach*, OEA defined low-income to mean individuals with an income less than 200 percent of the federal poverty level (less than or equal to twice the federal poverty level). Consistent with the U.S. Environmental Protection Agency's guidance and OEA's practice in past railroad merger cases, OEA identified a block group as potentially containing low-income populations when one or both of the following conditions was met:

- At least 50 percent of the population for whom poverty status is determined in the block group qualifies as low-income; or
- The percentage of the population for whom poverty status is determined in the block group that qualifies as low-income is at least 10 percentage points higher than for the entire county in which the population is located.

OEA identified a total of 62 block groups as areas with potential low-income populations, which represents approximately 29 percent of the total block groups in the data set.

Table P.1-3 lists the census block groups in the study area that OEA identified as populations with comparatively high rates of limited English-speaking households. Although not a threshold applied to identify potential EJ populations, identifying potential populations in the study area who are limited in English proficiency enables OEA to facilitate meaningful engagement and informed participation, and to determine where it may be appropriate for OEA to provide interpretation and translation services. As described in *Section 3.13.1, Approach*, OEA identified potential block groups in the study area where limited English-speaking populations may exist by identifying block groups where:

- At least 50 percent of households in the census block group were limited English speaking; or
- The percentage of limited English-speaking households in the census block group was at least 10 percentage points higher than for the entire county in which the block group is located in.

OEA identified 12 block groups (approximately six percent of the total block groups) within the study area as potentially needing English language assistance. Among these block groups, the predominant language spoken is Spanish, with some concentrations of households speaking "Other Indo-European Languages" and "Asian and Pacific Island Languages." The block groups identified as limited English-speaking are located in Illinois (eight of the 12 block groups), Iowa (two of the 12 block groups), and Texas (two of the 12 block groups).

Bold and italicized font in **Table P.1-1** through **Table P.1-3** is used for emphasis in displaying which EJ thresholds are exceeded.

Table P.1-1. Census Block Groups in Study Area with Potential Minority Populations

2019: ACS 5-Year Estimates Data Profiles (2015-2019)	Percent Black or African American alone	Percent American Indian and Alaska Native alone	Percent Asian alone	Percent Native Hawaiian and Other Pacific Islander alone	Percent Some Other Race alone	Percent Minority (Non-White alone)	Percent Hispanic or Latino
Illinois	14.2%	0.3%	5.5%	0.0%	5.9%	25.9%	17.1%
Carroll County	1.2%	0.1%	0.8%	0.0%	0.4%	2.5%	3.7%
Block Group 4, Tract 9603	7.3%	0.0%	5.6%	0.0%	0.0%	**12.9%**	11.9%
Cook County	23.4%	0.3%	7.3%	0.0%	9.6%	40.7%	25.3%
Block Group 1, Tract 8044.06	7.8%	0.0%	17.1%	0.0%	19.5%	44.4%	**48.5%**
Block Group 1, Tract 8045.07	3.1%	0.0%	**22.0%**	0.0%	7.1%	32.2%	21.2%
Block Group 1, Tract 8045.11	6.4%	0.3%	17.1%	0.0%	17.9%	41.6%	**51.9%**
Block Group 1, Tract 8048.03	7.1%	4.4%	**18.2%**	0.0%	0.0%	29.7%	0.0%
Block Group 2, Tract 8048.04	13.1%	6.6%	**30.3%**	0.0%	2.4%	**52.4%**	4.9%
Block Group 4, Tract 8048.04	0.0%	1.3%	**21.7%**	0.0%	0.0%	23.0%	8.5%
DeKalb County	7.9%	0.1%	2.3%	0.0%	3.3%	13.6%	11.2%
Block Group 3, Tract 1	0.0%	0.0%	0.0%	0.0%	13.1%	13.1%	**30.6%**
DuPage County	4.8%	0.2%	11.9%	0.0%	3.4%	20.3%	14.3%
Block Group 4, Tract 8401.01	0.3%	5.4%	5.4%	8.8%	0.0%	19.9%	**27.8%**
Block Group 2, Tract 8408.02	1.1%	0.0%	4.1%	0.0%	**22.8%**	28.0%	**60.7%**
Block Group 3, Tract 8408.02	5.7%	0.0%	9.1%	0.0%	9.3%	24.1%	**42.1%**
Block Group 4, Tract 8411.02	11.8%	0.0%	**22.7%**	0.0%	0.0%	**34.6%**	4.1%
Block Group 2, Tract 8411.08	**21.5%**	0.0%	3.1%	0.0%	5.5%	30.1%	**26.9%**
Block Group 1, Tract 8413.15	14.1%	0.0%	19.1%	0.0%	0.0%	**33.1%**	17.0%
Block Group 2, Tract 8413.15	7.0%	0.6%	18.1%	0.0%	2.3%	28.0%	**29.1%**
Kane County	5.5%	0.5%	4.1%	0.0%	14.0%	24.1%	31.9%
Block Group 1, Tract 8510	4.2%	7.4%	**18.1%**	0.0%	7.2%	**36.9%**	41.5%
Block Group 2, Tract 8510	12.4%	0.0%	0.6%	0.0%	22.0%	**35.0%**	33.8%
Block Group 1, Tract 8515	3.2%	0.0%	2.5%	0.0%	**48.1%**	**53.7%**	**70.6%**
Block Group 3, Tract 8516	***17.1%***	0.0%	0.0%	0.0%	***45.5%***	***62.5%***	***58.4%***
Block Group 1, Tract 8519.10	0.0%	***16.4%***	3.0%	0.0%	9.2%	28.7%	***42.5%***

Table P.1-1. Census Block Groups in Study Area with Potential Minority Populations

2019: ACS 5-Year Estimates Data Profiles (2015-2019)	Percent Black or African American alone	Percent American Indian and Alaska Native alone	Percent Asian alone	Percent Native Hawaiian and Other Pacific Islander alone	Percent Some Other Race alone	Percent Minority (Non-White alone)	Percent Hispanic or Latino
Block Group 3, Tract 8519.10	8.8%	0.0%	1.5%	0.0%	***36.2%***	***46.6%***	***46.3%***
Block Group 3, Tract 8546	2.9%	1.6%	0.0%	0.0%	18.5%	23.0%	***70.3%***
Rock Island County	10.4%	0.4%	2.5%	0.0%	2.7%	16.1%	12.9%
Block Group 1, Tract 245	***21.8%***	4.4%	4.4%	0.0%	2.7%	***33.3%***	22.1%
Total Number of Block Groups in Illinois Data Set with Potential Minority Populations: 23	3	1	6	0	4	10	13
Iowa	3.7%	0.4%	2.4%	0.1%	1.2%	7.9%	6.0%
Clinton County	2.8%	0.3%	0.7%	0.0%	0.2%	4.1%	3.1%
Block Group 3, Tract 1	***15.1%***	0.0%	0.0%	0.0%	0.0%	***15.1%***	4.2%
Block Group 1, Tract 2	2.2%	0.0%	0.0%	0.0%	0.0%	2.2%	***19.7%***
Block Group 1, Tract 5	9.0%	0.0%	2.2%	0.0%	5.5%	***16.6%***	6.8%
Louisa County	1.1%	0.9%	3.4%	0.0%	3.4%	8.8%	15.8%
Block Group 2, Tract 4501	5.0%	0.0%	0.0%	0.0%	2.7%	7.7%	***34.0%***
Block Group 3, Tract 4502	3.0%	0.0%	9.7%	0.0%	2.5%	15.2%	***45.7%***
Muscatine County	2.5%	0.2%	0.9%	0.0%	3.2%	6.8%	17.9%
Block Group 2, Tract 507	0.0%	0.0%	2.3%	0.0%	0.0%	2.3%	***36.4%***
Block Group 1, Tract 509	1.8%	0.0%	1.3%	0.0%	1.4%	4.5%	***34.3%***
Block Group 1, Tract 510	0.6%	0.0%	0.6%	0.6%	3.7%	5.6%	***37.8%***
Scott County	7.5%	0.3%	2.7%	0.0%	0.7%	11.3%	6.7%
Block Group 1, Tract 106	***27.8%***	0.0%	0.0%	0.0%	0.0%	***27.8%***	3.1%
Block Group 2, Tract 106	***22.0%***	0.0%	1.2%	0.0%	0.0%	***23.2%***	4.6%
Block Group 1, Tract 109	***33.0%***	1.3%	2.8%	0.0%	1.4%	***38.4%***	9.1%
Block Group 2, Tract 109	13.7%	1.2%	4.5%	0.0%	0.0%	19.4%	***25.2%***
Block Group 2, Tract 110	***29.2%***	0.0%	0.0%	0.0%	0.8%	***30.1%***	8.5%

Table P.1-1. Census Block Groups in Study Area with Potential Minority Populations

2019: ACS 5-Year Estimates Data Profiles (2015-2019)		Percent Black or African American alone	Percent American Indian and Alaska Native alone	Percent Asian alone	Percent Native Hawaiian and Other Pacific Islander alone	Percent Some Other Race alone	Percent Minority (Non-White alone)	Percent Hispanic or Latino
Block Group 1, Tract 123		8.4%	0.0%	0.0%	0.0%	1.1%	9.5%	***20.1%***
Wapello County		3.6%	0.1%	1.2%	0.7%	5.1%	10.7%	10.8%
Block Group 3, Tract 9606		3.1%	0.0%	3.5%	0.0%	***21.6%***	***28.1%***	***30.6%***
Washington County		0.8%	0.3%	0.6%	0.0%	1.8%	3.4%	6.2%
Block Group 3, Tract 9603		0.0%	0.0%	0.0%	0.0%	11.0%	11.0%	***24.2%***
Block Group 4, Tract 9604		10.2%	0.0%	6.1%	0.0%	0.7%	***17.0%***	14.1%
Total Number of Block Groups in Iowa Data Set with Potential Minority Populations:	**17**	5	0	0	0	1	8	10
Louisiana		32.2%	0.6%	1.7%	0.0%	1.4%	36.0%	5.1%
Calcasieu Parish		24.9%	0.3%	1.4%	0.0%	1.0%	27.6%	3.6%
Block Group 5, Tract 24		***61.0%***	4.2%	0.0%	0.0%	0.0%	***65.3%***	0.0%
Total Number of Block Groups in Louisiana Data Set with Potential Minority Populations:	**1**	1	0	0	0	0	1	0
Missouri		11.5%	0.4%	2.0%	0.1%	1.2%	15.2%	4.2%
Clay County		6.1%	0.5%	2.2%	0.2%	1.8%	10.8%	6.8%
Block Group 2, Tract 214.03		8.5%	1.1%	0.7%	0.0%	3.1%	13.4%	***19.7%***
Jackson County		23.3%	0.4%	1.8%	0.3%	3.9%	29.8%	9.0%
Block Group 1, Tract 155		15.2%	0.0%	1.0%	0.0%	12.4%	28.7%	***21.4%***
Block Group 2, Tract 155		2.9%	0.0%	1.7%	0.0%	5.8%	10.4%	***54.6%***
Total Number of Block Groups in Missouri Data Set with Potential Minority Populations:	**3**	0	0	0	0	0	0	3

Table P.1-1. Census Block Groups in Study Area with Potential Minority Populations

2019: ACS 5-Year Estimates Data Profiles (2015-2019)		Percent Black or African American alone	Percent American Indian and Alaska Native alone	Percent Asian alone	Percent Native Hawaiian and Other Pacific Islander alone	Percent Some Other Race alone	Percent Minority (Non-White alone)	Percent Hispanic or Latino
Texas		12.1%	0.5%	4.8%	0.1%	5.8%	23.3%	39.3%
Jefferson County		33.7%	0.4%	3.8%	0.1%	2.1%	40.0%	20.7%
Block Group 1, Tract 17		***52.0%***	0.0%	0.0%	0.0%	0.9%	***52.9%***	19.8%
Block Group 1, Tract 19		18.2%	0.0%	4.3%	0.0%	11.0%	33.5%	***64.4%***
Block Group 2, Tract 117		22.8%	0.0%	0.0%	0.0%	0.1%	22.9%	***52.4%***
Orange County		8.7%	0.3%	1.2%	0.0%	0.7%	10.9%	7.7%
Block Group 1, Tract 218		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	***25.5%***
Block Group 2, Tract 220		0.0%	0.0%	0.2%	0.0%	2.0%	2.2%	***17.8%***
Total Number of Block Groups in Texas Data Set with Potential Minority Populations:	**5**	1	0	0	0	0	1	4
GRAND TOTAL NUMBER OF BLOCK GROUPS IN DATA SET WITH POTENTIAL MINORITY POPULATIONS:	**49**	**10**	**1**	**6**	**0**	**5**	**20**	**30**
Source: U.S. Census Bureau, American Community Survey, 5-Year Estimates Data Profiles (2015-2019).								

Table P.1-2. Census Block Groups in Study Area with Potential Low-Income Populations

2019: ACS 5-Year Estimates Data Profiles (2015-2019)	Individuals with Income Below 200% of Poverty Level	Total Population for Whom Poverty Status is Determined	Percent of Individuals with Income Below 200% of Poverty Level
Illinois	3,275,515	12,474,842	26.3%
Carroll County	4,003	14,070	28.5%
Block Group 4, Tract 9601	225	580	***38.8%***
Block Group 3, Tract 9603	307	688	***44.6%***
DuPage County	153,932	916,059	16.8%
Block Group 4, Tract 8401.01	688	1,657	***41.5%***
Block Group 2, Tract 8408.02	581	1,309	***44.4%***
Block Group 1, Tract 8409.01	526	1,674	***31.4%***
Block Group 2, Tract 8413.15	731	2,335	***31.3%***
Kane County	128,755	525,417	24.5%
Block Group 1, Tract 8510	1,060	2,685	***39.5%***
Block Group 1, Tract 8515	465	1,163	***40.0%***
Block Group 3, Tract 8516	289	774	***37.3%***
Block Group 3, Tract 8519.10	457	1,186	***38.5%***
Rock Island County	44,263	138,884	31.9%
Block Group 1, Tract 245	458	808	***56.7%***
Total Number of Census Block Groups in Illinois Data Set with Potential Low-Income Populations:			**11**
Iowa	859,137	3,040,184	28.3%
Appanoose County	4,730	12,294	38.5%
Block Group 3, Tract 9505	506	1,002	***50.5%***
Clinton County	14,744	45,776	32.2%
Block Group 1, Tract 1	825	1,249	***66.1%***
Block Group 3, Tract 1	458	648	***70.7%***
Block Group 1, Tract 2	191	228	***83.8%***
Block Group 3, Tract 2	503	1,026	***49.0%***
Block Group 4, Tract 4	359	510	***70.4%***
Block Group 3, Tract 7	669	975	***68.6%***
Block Group 2, Tract 8	793	1,344	***59.0%***
Louisa County	3,303	11,039	29.9%
Block Group 2, Tract 4501	388	697	***55.7%***
Block Group 3, Tract 4502	570	1,144	***49.8%***
Monroe County	2,108	7,681	27.4%
Block Group 2, Tract 702	464	1,097	***42.3%***
Muscatine County	12,836	42,090	30.5%
Block Group 1, Tract 504	733	1,772	***41.4%***

Table P.1-2. Census Block Groups in Study Area with Potential Low-Income Populations

2019: ACS 5-Year Estimates Data Profiles (2015-2019)	Individuals with Income Below 200% of Poverty Level	Total Population for Whom Poverty Status is Determined	Percent of Individuals with Income Below 200% of Poverty Level
Block Group 3, Tract 507	730	1,587	***46.0%***
Block Group 1, Tract 509	393	714	***55.0%***
Block Group 2, Tract 509	398	891	***44.7%***
Block Group 1, Tract 510	826	1,698	***48.6%***
Block Group 2, Tract 510	1,013	1,660	***61.0%***
Scott County	45,677	168,966	27.0%
Block Group 1, Tract 106	678	1,416	***47.9%***
Block Group 2, Tract 106	981	1,393	***70.4%***
Block Group 1, Tract 109	487	894	***54.5%***
Block Group 2, Tract 109	450	688	***65.4%***
Block Group 2, Tract 110	1,211	1,819	***66.6%***
Block Group 1, Tract 123	169	379	***44.6%***
Block Group 2, Tract 134	797	1,776	***44.9%***
Wapello County	13,464	34,348	39.2%
Block Group 2, Tract 9602	846	1,449	***58.4%***
Block Group 3, Tract 9606	873	1,469	***59.4%***
Washington County	6,383	21,709	29.4%
Block Group 4, Tract 9602	244	506	***48.2%***
Block Group 1, Tract 9603	617	1,412	***43.7%***
Block Group 3, Tract 9603	579	1,468	***39.4%***
Block Group 4, Tract 9604	453	834	***54.3%***
Wayne County	2,589	6,313	41.0%
Block Group 1, Tract 703	815	1,497	***54.4%***
Block Group 2, Tract 703	320	608	***52.6%***
Total Number of Census Block Groups in Iowa Data Set with Potential Low-Income Populations:			**32**
Louisiana	1,767,448	4,532,714	39.0%
Calcasieu Parish	74,095	198,097	37.4%
Block Group 2, Tract 24	803	1,222	***65.7%***
Block Group 3, Tract 24	512	935	***54.8%***
Total Number of Census Block Groups in Louisiana Data Set with Potential Low-Income Populations:			**2**
Missouri	1,903,266	5,922,570	32.1%
Clay County	53,641	239,395	22.4%
Block Group 5, Tract 216	443	1,075	***41.2%***
Block Group 1, Tract 217.01	624	1,592	***39.2%***

Table P.1-2. Census Block Groups in Study Area with Potential Low-Income Populations

2019: ACS 5-Year Estimates Data Profiles (2015-2019)	Individuals with Income Below 200% of Poverty Level	Total Population for Whom Poverty Status is Determined	Percent of Individuals with Income Below 200% of Poverty Level
Block Group 5, Tract 217.02	921	1,901	***48.4%***
Block Group 6, Tract 217.02	524	723	***72.5%***
Jackson County	224,782	684,855	32.8%
Block Group 1, Tract 155	413	691	***59.8%***
Block Group 2, Tract 155	290	584	***49.7%***
Livingston County	5,204	13,842	37.6%
Block Group 1, Tract 4803	239	485	***49.3%***
Block Group 2, Tract 4803	449	916	***49.0%***
Block Group 1, Tract 4805	1,195	1,732	***69.0%***
Total Number of Census Block Groups in Missouri Data Set with Potential Low-Income Populations:			**9**
Texas	9,491,111	27,637,858	34.3%
Jefferson County	90,190	237,578	38.0%
Block Group 1, Tract 17	324	560	***57.9%***
Block Group 1, Tract 19	708	1,054	***67.2%***
Block Group 2, Tract 117	692	1,394	***49.6%***
Newton County	6,348	13,743	46.2%
Block Group 2, Tract 9504	287	518	***55.4%***
Orange County	24,429	82,867	29.5%
Block Group 2, Tract 212	695	1,622	***42.8%***
Block Group 2, Tract 217	584	1,276	***45.8%***
Block Group 1, Tract 219	432	686	***63.0%***
Block Group 3, Tract 220	933	1,887	***49.4%***
Total Number of Census Block Groups in Texas Data Set with Potential Low-Income Populations:			**8**
GRAND TOTAL NUMBER OF CENSUS BLOCK GROUPS IN DATA SET WITH POTENTIAL LOW-INCOME POPULATIONS:			**62**

Source: U.S. Census Bureau, American Community Survey, 5-Year Estimates Data Profiles (2015-2019)

Table P.1-3. Census Block Groups in Study Area with Potential Limited-English Speaking Populations

2019: ACS 5-Year Estimates Data Profiles (2015-2019)	Total Number of Households	Limited English-Speaking Households Speaking Spanish	Limited English-Speaking Households Speaking Other Indo-European Languages	Limited English-Speaking Households Speaking Asian and Pacific Island Languages	Limited English-Speaking Households Speaking Other Languages	Total Number of Limited English-Speaking Households	Percent Limited English-Speaking Households
Illinois	4,846,134	106,366	63,909	36,368	10,029	216,672	4.5%
Cook County	1,972,108	70,657	48,465	23,788	8,005	150,915	7.7%
Block Group 1, Tract 8045.11	613	95	20	-	-	115	***18.8%***
Block Group 2, Tract 8048.04	1,051	16	62	137	-	215	***20.5%***
DeKalb County	38,150	526	102	118	86	832	2.2%
Block Group 3, Tract 1	1,019	141	-	-	-	141	***13.8%***
DuPage County	342,791	5,060	5,884	3,393	392	14,729	4.3%
Block Group 4, Tract 8401.01	534	68	27	-	-	95	***17.8%***
Block Group 2, Tract 8408.02	455	187	54	-	-	241	***53.0%***
Kane County	179,637	7,587	649	532	174	8,942	5.0%
Block Group 1, Tract 8515	384	58	-	-	3	61	***15.9%***
Block Group 3, Tract 8516	282	34	12	-	-	46	***16.3%***
Block Group 3, Tract 8546	244	53	-	-	-	53	***21.7%***
Total Number of Census Block Groups in Illinois Data Set with Potential Limited English-Speaking Households:							**8**
Iowa	1,265,473	11,067	4,055	6,547	2,831	24,500	1.9%
Louisa County	4,335	161	-	118	-	279	6.4%
Block Group 3, Tract 4502	423	86	-	36	-	122	***28.8%***
Washington County	8,832	67	22	28	-	117	1.3%
Block Group 4, Tract 9604	393	34	-	28	-	62	***15.8%***

Table P.1-3. Census Block Groups in Study Area with Potential Limited-English Speaking Populations

2019: ACS 5-Year Estimates Data Profiles (2015-2019)	Total Number of Households	Limited English-Speaking Households Speaking Spanish	Limited English-Speaking Households Speaking Other Indo-European Languages	Limited English-Speaking Households Speaking Asian and Pacific Island Languages	Limited English-Speaking Households Speaking Other Languages	Total Number of Limited English-Speaking Households	Percent Limited English-Speaking Households
Total Number of Census Block Groups in Iowa Data Set with Potential Limited English-Speaking Households:							**2**
Louisiana	1,739,497	20,171	6,347	6,004	952	33,474	1.9%
Total Number of Census Block Groups in Louisiana Data Set with Potential Limited English-Speaking Households:							**0**
Missouri	2,414,521	10,885	5,624	8,496	2,993	27,998	1.2%
Total Number of Census Block Groups in Missouri Data Set with Potential Limited English-Speaking Households:							**0**
Texas	9,691,647	630,078	28,689	73,917	16,527	749,211	7.7%
Jefferson County	92,988	3,779	230	693	20	4,722	5.1%
Block Group 1, Tract 19	321	45	-	5	-	50	***15.6%***
Block Group 2, Tract 117	469	115	-	-	-	115	***24.5%***
Total Number of Census Block Groups in Texas Data Set with Potential Limited English-Speaking Households:							**2**
GRAND TOTAL NUMBER OF CENSUS BLOCK GROUPS IN DATA SET WITH POTENTIAL LIMITED ENGLISH-SPEAKING HOUSEHOLDS:							**12**

Source: U.S. Census Bureau, American Community Survey, 5-Year Estimates Data Profiles (2015-2019).

P.2 Direct Outreach to Community Leaders

In addition to the public outreach during the scoping process for this EIS, OEA conducted direct outreach to local, county, and regional planning organizations, community-based organizations (for example, churches and civic groups), and government representatives to identify local concentrations of potential minority and low-income populations at the scale of neighborhoods or specific developments. Additionally, OEA conducted direct outreach to identify representatives of those groups in support of project notifications and engagements. **Table P.2-1** lists these locations, including their names, locations, and use types. After collecting contact information from the local, county, and regional planning organizations and government representatives, OEA conducted direct outreach to community leaders, which included representatives of community centers, food pantries, shelters, police stations, fire stations, worship leaders, principals and other school representatives within areas with minority and low-income populations. OEA attempted to contact 225 community leaders from Illinois to Texas. The aim of these engagements was to make sure they were familiar with the Proposed Acquisition, inform them of the environmental and comment process, and collect information on their concerns for use in the EJ analysis.

Table P.2-1. EJ Populations Provided by Community Leaders

Name	Address	City/Town/ Village	State	Zip Code	Type	Within Identified EJ Block Group from Desktop Analysis?	Within Noise Impact Area?
Cedar Heights Mobile Home Park	1720 S. Washington Blvd.	Camanche	IA	52730	Mobile Home Park	Yes	No
Spring Lake Mobile Home Estates	100 First Ave.	Bartlett	IL	60103	Mobile Home Park	No	No
Lindon Towers	24 S. Addison St.	Bensenville	IL	60106	Apartments	Yes	Yes
Pebblewood Court Apartments (11 buildings)	2290 Breezewood Ln.	Hanover Park	IL	60133	Apartments	Yes	No
Glendale Terrace Apartments	2360 Glendale Terrace	Hanover Park	IL	60133	Apartments	Yes	No
Mark Thomas Lane Apartment	2520 Mark Thomas Ln.	Hanover Park	IL	60133	Apartments	Yes	No
Orchard Hill Apartments	1920 Elm Court	Hanover Park	IL	60133	Apartments	Yes	No
South Westline Apartments	1700 Ontarioville Rd.	Hanover Park	IL	60133	Apartments	Yes	No
515-521 Main Street (Various apartment buildings)	519 W. Main St.	Bensenville	IL	60106	Apartments	Yes	Yes
Regents Park Apartments	930 Irving Park Rd.	Bensenville	IL	60106	Apartments	Yes	Yes
Oretta Community	291 North St.	Singer	LA	70660	Community	No	No
Persimmon Grove and Persimmon Heights	110 Persimmon Dr.	Excelsior Springs	MO	64024	Neighborhood of Single-Family Homes	Yes	Yes
Sylvan Heights	936 Williams St.	Excelsior Springs	MO	64024	Neighborhood of Single-Family Homes	No	Yes

Appendix Q
List of Preparers

Q.1 Surface Transportation Board, Office of Environmental Analysis

Danielle Gosselin	Director
David Navecky	Acting Deputy Director (Retired)
Joshua Wayland, PhD	Project Manager / Acting Deputy Director
Victoria Rutson	Attorney Advisor
Alan Tabachnick	Historic Preservation Specialist

Q.2 Contractors

VHB supported the Surface Transportation Board's Office of Environmental Analysis in the performance of its environmental analyses and preparation of this Environmental Impact Statement.

Name, Project Function	Qualifications
VHB Project Management	
Alan Summerville, Project Manager	M.A. City Planning, B.A. Economics and Political Science; 30 years of experience participating in and managing the preparation of National Environmental Policy Act (NEPA) reviews, including 25 years on STB projects.
Dan Belin, AICP, Deputy Project Manager (Final EIS), Energy, Cumulative Impacts	M.S. Forestry, B.A. Environmental Studies/History; 25 years of experience in energy analysis and NEPA.
Carmen Bernett, PhD, ENV SP, Deputy Project Manager (Draft EIS)	PhD Environmental Science and Policy, M.S. Biology, B.A. English Literature; 8 years of experience in managing the preparation of NEPA reviews, including 6 years reviewing rail infrastructure projects.
Candice Andre, AICP, Deputy Project Manager	M.A. Urban & Regional Planning, B.S. Zoology; 19 years of experience participating in and managing the preparation of NEPA reviews, including multiple rail infrastructure projects.
Ian Leidner, Data and Issue Management (Final EIS), Passenger Rail	Master of Urban Planning, B.A. Urban Studies; 7 years of professional transportation/urban planning experience.
Sydney Feldt, Data and Issue Management (Draft EIS), Biological Resources	M.A. Environmental Science, B.S. Biology; 5 years of experience in ecological assessments, environmental planning, and preparing NEPA reviews.

Name, Project Function	Qualifications
VHB Project Management	
VHB Project Staff	
Kathleen Arbogast, PE, Traffic and Roadway Systems	B.S. Civil Engineering; 8 years of experience in traffic engineering.
Mark Arnoldy, PE, Air Quality	B.S. Civil Engineering; 7 years of experience in air quality assessments.
Josh Bendyk, PE, Freight Rail Safety	B.S. Civil Engineering; 12 years of experience in rail operations and signals.
Nicole Benjamin-Ma, Cultural Resources	B.A. Anthropology; 22 years of cultural resources management experience identifying, recording, and evaluating cultural resources.
Kimberly Blossom, Climate and Greenhouse Gas	B.S. Biology, B.A. French; 18 years coordinating with federal, state, and local regulatory agencies in preparation of permit documents and NEPA reviews.
Paul Carbone, PE, Passenger Rail and Freight Rail Safety	B.S. Civil Engineering; 12 years of railroad engineering, rail operations planning and NEPA experience.
David Coate, Independent Consultant, Noise and Vibration Advisor	M.S. Energy Technology, B.A. Mathematics, Physics and Chemistry; 34 years of experience in acoustics, rail noise, and vibration, support for NEPA reviews, including 25 years on STB projects.
Paige Cornell, Hazardous Materials Waste Sites	B.S. Environmental Science; 8 years of experience in environmental due diligence and hazardous waste assessments.
Valarie Discafani, AICP, PP, Passenger and Freight Rail Safety	M.A. City Planning, B.A. Geography; 29 years of experience in rail planning and preparation of NEPA reviews.
Lee Farmer, AICP, Mitigation	Master of City and Regional Planning, M.Phil Irish Studies, B.A. History; 18 years of experience in preparation of NEPA reviews.
Donny Goris-Kolb, AICP, Environmental Justice, Energy	Master of Urban Planning, Urban and Regional Planning; 15 years of experience in preparation of NEPA reviews.
Frank Gross, PhD, PE, Grade Crossing Safety and Delay	PhD Civil Engineering, M.S. Civil Engineering, B.S. Civil Engineering; 20 years of experience in transportation engineering and safety.
John Hansel, NEPA Strategist, Compliance Reviewer	J.D. and B.A. Economics; 40 years of experience participating in NEPA reviews and delivering NEPA training.
Todd Hill, AICP, PP, Biological Resources, Water Resources	B.S. Marine Biology; 33 years of experience in ecological evaluations, 23 years of experience preparing NEPA reviews.
Katherine Kudzma, Hazardous Materials Waste Sites	M.S. Sustainability and Environmental Management, B.S. Environmental Geosciences; 14 years of experience in due diligence, hazardous waste site assessments.
Christine Mavrick, RPA, Cultural Resources and Archaeology	M.A. and B.S. Anthropology, M.A. Sustainable Development; 12 years of experience identifying, recording, and evaluating cultural resources.

Name, Project Function	Qualifications
VHB Project Management	
Ellie McCurdy, Purpose and Need, Proposed Acquisition and Alternatives, Summary, Mitigation	M.A. Transportation Policy, Operations, and Logistics, B.A. Journalism and Political Science; 7 years of experience, including NEPA reviews and transportation planning.
Jennifer Morrissey, Document Development	M.S. Natural Resource Planning, B.A. History; 20 years of experience preparing NEPA reviews.
Erin Murphy, Cultural Resources	Masters of Heritage Preservation; 16 years of experience identifying, recording, and evaluating cultural resources.
Kara Opel, Document Development, Climate Change	M.A. Sustainable Cities, B.A. Government and Politics; 7 years working with federal agencies on environmental initiatives, 3 years of experience preparing NEPA reviews.
Andrew Pappas, RPA, Cultural Resources and Archaeology	M.A. Classical Archaeology, B.A. Anthropology; 18 years of experience identifying, recording, evaluating, and assessing cultural and archaeological resources.
Stephanie Pelletier, GISP, Geographic Information Systems	B.S. Environmental Sciences and Geography; 7 years of professional experience in Geographic Information Systems.
Heidi Richards, PE, Air Quality	B.S. Civil Engineering; 25 years of experience working on air quality assessments for state and federal agencies, including for NEPA reviews.
Jason Ross, PE, Noise and Vibration	M.E. Acoustics, B.S. Mechanical Engineering; 24 years of experience conducting transit and rail noise and vibration studies, including for NEPA reviews.
Lara Seltzer, Freight Rail Safety	M.A. City & Regional Planning, B.A. American Studies and Sociology; 2 years of professional transportation planning and railroad operations experience.
Rebecca Shedd, Noise and Vibration	B.A. Engineering, B.S. Environmental Engineering; 3 years of experience working on air quality and noise impact assessments.
Darrell Smith, Freight Rail Safety	B.A. Urban Studies and Planning; 30 years of experience conducting railroad and transit operations analysis and planning.
Ian Smith, PE, Water	M.B.A., B.S. Civil Engineering; 28 years of experience in water resource mapping, design and permitting.
Eben Sweetser, Freight Rail Safety	B.S. Transportation; 6 years of experience in railroad operations, safety, emergency response, and emergency management.
Andrew Topp, PE, PTOE, Traffic and Roadway Systems	B.S. Civil Engineering, Master of Civil Engineering; 23 years of experience conducting traffic engineering/capacity analyses.
Lauren Triebert, PE, Quality Control	B.S. Civil Engineering; 12 years of experience preparing NEPA reviews.
Casey Venzon, LEED AP^{BD+C}, Environmental Justice	B.A. Economics & Business Administration; 14 years of experience preparing NEPA reviews for transportation projects and environmental and sustainability planning.

Name, Project Function	Qualifications
VHB Project Management	
Baohong Wan, PhD, PE, Traffic and Roadway Systems	PhD in Civil/Transportation Engineering; 22 years of experience in traffic engineering/capacity analysis.
Meghan Wrenn, Energy, Cumulative Impacts	M.A. Sustainability, B.S. Biology; 5 years of experience in sustainability and climate action planning.

Table P.2-1. EJ Populations Provided by Community Leaders

Name	Address	City/Town/ Village	State	Zip Code	Type	Within Identified EJ Block Group from Desktop Analysis?	Within Noise Impact Area?
Coates Country Estates	1011 Miss Belle Street	Excelsior Springs	MO	64024	Neighborhood of Single-Family Homes	Yes	Yes
Franklin Elementary School	201 W. Mill	Liberty	MO	64068	School	No	No
-	Between W. Mississippi St. and N. Morse Ave. and Gallatin St.	Liberty	MO	64068	Single Family	No	No
-	South of Mill St.	Liberty	MO	64068	Single Family	Yes	Yes

P.3 Community Analysis

OEA also examined the distribution of receptors that would experience adverse noise impacts as a result of the Proposed Acquisition at the community scale.[1] OEA identified a total of 70 incorporated areas within the EJ study area and then determined the percentage of adversely affected receptors in each of those 70 communities that were located within EJ block groups within. For some communities—including Bensenville, Elgin, Savanah, and Lanark in Illinois; Columbus Junction, Fredonia, Muscatine, Seymour, and Washington in Iowa; Chillicothe and Excelsior Springs in Missouri; and Deweyville, Rose City, and Vidor in Texas—most of the adversely affected receptors are located within EJ block groups. However, for the vast majority of communities (56 out of 70 communities or 80 percent of the total), most of the adversely affected receptors are located in non-EJ block groups. **Table P-3.1** provides a table showing the 70 communities with receptors subject to adverse noise impacts under the Proposed Acquisition and the distribution of adversely affected receptors within each community in EJ and non-EJ block groups.

[1] Incorporated areas were the unit of analysis in this community-based analysis; unincorporated areas were not included.

Table P.3-1. Communities in the Study Area with Receptors Subject to Adverse Noise Impacts (65 dBA Ldn and 3 dBA Increase) under the Proposed Acquisition (Receptors within (65 dBA Ldn) under Existing Conditions, No Action, and Proposed Acquisition Provided for Context)

	EXISTING CONDITIONS Receptors within 65 dBA (Ldn)				**NO ACTION Receptors within 65 dBA (Ldn)**				**PROPOSED ACQUISITION Receptors within 65 dBA (Ldn)**				**PROPOSED ACQUISITION Receptors Subject to an Adverse Noise Impact (65 dBA and 3 dBA Increase)**			
Community	**TOTAL**	**Within EJ Block Groups**	**Outside EJ Block Groups**	**Percent within EJ Block Groups**	**TOTAL**	**Within EJ Block Groups**	**Outside EJ Block Groups**	**Percent within EJ Block Groups**	**TOTAL**	**Within EJ Block Groups**	**Outside EJ Block Groups**	**Percent within EJ Block Groups**	**TOTAL**	**Within EJ Block Groups**	**Outside EJ Block Groups**	**Percent Within EJ Block Groups**
ILLINOIS													**1,187**	**185**	**1,002**	**16%**
Unincorpor.	***128***	*5*	*123*	*4%*	***156***	*5*	*151*	*3%*	***307***	*15*	*292*	*5%*	***290***	*15*	*275*	*5%*
Bartlett	**26**	12	14	46%	**36**	15	21	42%	**140**	41	99	29%	**1**	0	1	0%
Bensenville	**19**	19	0	100%	**28**	28	0	100%	**54**	54	0	100%	**50**	50	0	100%
Byron	**24**	0	24	0%	**29**	0	29	0%	**59**	0	59	0%	**44**	0	44	0%
Davis Junction	**59**	0	59	0%	**63**	0	63	0%	**97**	0	97	0%	**82**	0	82	0%
Elgin	**48**	47	1	98%	**60**	59	1	98%	**126**	124	2	98%	**9**	8	1	89%
Genoa	**28**	5	23	18%	**35**	8	27	23%	**93**	35	58	38%	**93**	35	58	38%
Hampshire	**19**	0	19	0%	**20**	0	20	0%	**52**	0	52	0%	**52**	0	52	0%
Hanover Park	**5**	0	5	0%	**8**	1	7	13%	**22**	4	18	18%	**22**	4	18	18%
Itasca	**11**	3	8	27%	**20**	3	17	15%	**53**	11	42	21%	**42**	3	39	7%
Kingston	**40**	0	40	0%	**48**	0	48	0%	**98**	0	98	0%	**98**	0	98	0%
Kirkland	**14**	0	14	0%	**24**	0	24	0%	**64**	0	64	0%	**64**	0	64	0%
Lanark	**34**	20	14	59%	**38**	22	16	58%	**80**	46	34	58%	**80**	46	34	58%
Leaf River	**29**	0	29	0%	**30**	0	30	0%	**48**	0	48	0%	**48**	0	48	0%
Monroe Center	**47**	0	47	0%	**50**	0	50	0%	**87**	0	87	0%	**87**	0	87	0%
Mount Carroll	**0**	0	0	0%	**0**	0	0	0%	**2**	0	2	0%	**2**	0	2	0%
Pingree Grove	**9**	0	9	0%	**25**	0	25	0%	**53**	0	53	0%	**53**	0	53	0%
Roselle	**30**	5	25	17%	**30**	5	25	17%	**44**	6	38	14%	**20**	6	14	30%
Savanna	**11**	11	0	100%	**16**	16	0	100%	**30**	29	1	97%	**19**	18	1	95%
Stillman Valley	**19**	0	19	0%	**20**	0	20	0%	**31**	0	31	0%	**31**	0	31	0%
IOWA													**3,351**	**990**	**2,361**	**30%**
Unincorpor.	***272***	*26*	*246*	*10%*	***334***	*30*	*304*	*9%*	***648***	*83*	*565*	*13%*	***616***	*83*	*533*	*13%*
Ainsworth	**35**	0	35	0%	**38**	0	38	0%	**80**	0	80	0%	**80**	0	80	0%
Bettendorf	**24**	3	21	13%	**39**	7	32	18%	**88**	35	53	40%	**88**	35	53	40%

Table P.3-1. Communities in the Study Area with Receptors Subject to Adverse Noise Impacts (65 dBA Ldn and 3 dBA Increase) under the Proposed Acquisition (Receptors within (65 dBA Ldn) under Existing Conditions, No Action, and Proposed Acquisition Provided for Context)

	EXISTING CONDITIONS Receptors within 65 dBA (Ldn)				**NO ACTION Receptors within 65 dBA (Ldn)**				**PROPOSED ACQUISITION Receptors within 65 dBA (Ldn)**				**PROPOSED ACQUISITION Receptors Subject to an Adverse Noise Impact (65 dBA and 3 dBA Increase)**			
Community	**TOTAL**	**Within EJ Block Groups**	**Outside EJ Block Groups**	**Percent within EJ Block Groups**	**TOTAL**	**Within EJ Block Groups**	**Outside EJ Block Groups**	**Percent within EJ Block Groups**	**TOTAL**	**Within EJ Block Groups**	**Outside EJ Block Groups**	**Percent within EJ Block Groups**	**TOTAL**	**Within EJ Block Groups**	**Outside EJ Block Groups**	**Percent Within EJ Block Groups**
Blakesburg	**14**	0	14	0%	**18**	0	18	0%	**67**	0	67	0%	**67**	0	67	0%
Buffalo	**36**	0	36	0%	**40**	0	40	0%	**62**	0	62	0%	**62**	0	62	0%
Camanche	**180**	2	178	1%	**194**	2	192	1%	**312**	7	305	2%	**312**	7	305	2%
Clinton	**133**	61	72	46%	**142**	65	77	46%	**260**	131	129	50%	**252**	123	129	49%
Columbus Junction	**5**	5	0	100%	**6**	6	0	100%	**21**	21	0	100%	**21**	21	0	100%
Cotter	**3**	0	3	0%	**4**	0	4	0%	**15**	0	15	0%	**15**	0	15	0%
Davenport	**7**	4	3	57%	**10**	4	6	40%	**66**	18	48	27%	**66**	18	48	27%
Fairport	**49**	0	49	0%	**49**	0	49	0%	**74**	0	74	0%	**74**	0	74	0%
Fredonia	**25**	25	0	100%	**27**	27	0	100%	**51**	51	0	100%	**51**	51	0	100%
Fruitland	**26**	0	26	0%	**30**	0	30	0%	**91**	0	91	0%	**91**	0	91	0%
Le Claire	**148**	0	148	0%	**175**	0	175	0%	**273**	0	273	0%	**273**	0	273	0%
Letts	**24**	0	24	0%	**30**	0	30	0%	**71**	0	71	0%	**71**	0	71	0%
Montpelier	**24**	0	24	0%	**25**	0	25	0%	**52**	0	52	0%	**52**	0	52	0%
Moravia	**28**	0	28	0%	**31**	0	31	0%	**72**	0	72	0%	**72**	0	72	0%
Muscatine	**111**	108	3	97%	**125**	122	3	98%	**329**	302	27	92%	**329**	302	27	92%
Mystic	**1**	0	1	0%	**2**	0	2	0%	**13**	0	13	0%	**13**	0	13	0%
Ottumwa	**42**	10	32	24%	**50**	11	39	22%	**117**	28	89	24%	**117**	28	89	24%
Princeton	**116**	0	116	0%	**128**	0	128	0%	**206**	0	206	0%	**206**	0	206	0%
Rathbun	**0**	0	0	0%	**0**	0	0	0%	**8**	0	8	0%	**8**	0	8	0%
Riverdale	**41**	0	41	0%	**45**	0	45	0%	**55**	0	55	0%	**55**	0	55	0%
Seymour	**47**	47	0	100%	**51**	51	0	100%	**154**	154	0	100%	**154**	154	0	100%
Washington	**42**	40	2	95%	**49**	47	2	96%	**206**	168	38	82%	**206**	168	38	82%
LOUISIANA													**198**	**0**	**198**	**0%**
Unincorpor.	***457***	*82*	*375*	*18%*	***608***	*109*	*499*	*18%*	***876***	*170*	*706*	*19%*	***17***	*0*	*17*	*0%*

Table P.3-1. Communities in the Study Area with Receptors Subject to Adverse Noise Impacts (65 dBA Ldn and 3 dBA Increase) under the Proposed Acquisition (Receptors within (65 dBA Ldn) under Existing Conditions, No Action, and Proposed Acquisition Provided for Context)

	EXISTING CONDITIONS Receptors within 65 dBA (Ldn)				**NO ACTION Receptors within 65 dBA (Ldn)**				**PROPOSED ACQUISITION Receptors within 65 dBA (Ldn)**				**PROPOSED ACQUISITION Receptors Subject to an Adverse Noise Impact (65 dBA and 3 dBA Increase)**			
Community	**TOTAL**	**Within EJ Block Groups**	**Outside EJ Block Groups**	**Percent within EJ Block Groups**	**TOTAL**	**Within EJ Block Groups**	**Outside EJ Block Groups**	**Percent within EJ Block Groups**	**TOTAL**	**Within EJ Block Groups**	**Outside EJ Block Groups**	**Percent within EJ Block Groups**	**TOTAL**	**Within EJ Block Groups**	**Outside EJ Block Groups**	**Percent Within EJ Block Groups**
DeQuincy	**112**	22	90	20%	**127**	28	99	22%	**203**	40	163	20%	**113**	0	113	0%
Starks	**31**	0	31	0%	**42**	0	42	0%	**68**	0	68	0%	**68**	0	68	0%
MISSOURI													**1,005**	**309**	**696**	**31%**
Unincorpor.	***283***	***46***	***237***	***16%***	***366***	***51***	***315***	***14%***	***581***	***86***	***495***	***15%***	***123***	***23***	***100***	***19%***
Birmingham	**0**	0	0	0%	**2**	0	2	0%	**28**	0	28	0%	**28**	0	28	0%
Braymer	**1**	0	1	0%	**2**	0	2	0%	**17**	0	17	0%	**17**	0	17	0%
Chillicothe	**33**	32	1	97%	**42**	41	1	98%	**127**	126	1	99%	**127**	126	1	99%
Chula	**0**	0	0	0%	**0**	0	0	0%	**10**	0	10	0%	**10**	0	10	0%
Cowgill	**12**	0	12	0%	**12**	0	12	0%	**29**	0	29	0%	**29**	0	29	0%
Elmira	**1**	0	1	0%	**3**	0	3	0%	**9**	0	9	0%	**9**	0	9	0%
Excelsior Estates	**0**	0	0	0%	**0**	0	0	0%	**1**	0	1	0%	**1**	0	1	0%
Excelsior Springs	**66**	44	22	67%	**91**	59	32	65%	**218**	138	80	63%	**218**	138	80	63%
Harris	**3**	0	3	0%	**3**	0	3	0%	**22**	0	22	0%	**22**	0	22	0%
Kansas City	**139**	128	11	92%	**234**	201	33	86%	**305**	257	48	84%	**6**	0	6	0%
Laredo	**2**	0	2	0%	**3**	0	3	0%	**12**	0	12	0%	**12**	0	12	0%
Lawson	**84**	0	84	0%	**100**	0	100	0%	**215**	0	215	0%	**215**	0	215	0%
Liberty	**19**	3	16	16%	**53**	8	45	15%	**121**	22	99	18%	**121**	22	99	18%
Lucerne	**2**	0	2	0%	**2**	0	2	0%	**9**	0	9	0%	**9**	0	9	0%
Ludlow	**4**	0	4	0%	**5**	0	5	0%	**16**	0	16	0%	**16**	0	16	0%
Mosby	**1**	0	1	0%	**1**	0	1	0%	**1**	0	1	0%	**1**	0	1	0%
Newtown	**1**	0	1	0%	**1**	0	1	0%	**10**	0	10	0%	**10**	0	10	0%
Osgood	**1**	0	1	0%	**1**	0	1	0%	**3**	0	3	0%	**3**	0	3	0%
Polo	**1**	0	1	0%	**3**	0	3	0%	**7**	0	7	0%	**7**	0	7	0%

Table P.3-1. Communities in the Study Area with Receptors Subject to Adverse Noise Impacts (65 dBA Ldn and 3 dBA Increase) under the Proposed Acquisition (Receptors within (65 dBA Ldn) under Existing Conditions, No Action, and Proposed Acquisition Provided for Context)

	EXISTING CONDITIONS Receptors within 65 dBA (Ldn)				**NO ACTION Receptors within 65 dBA (Ldn)**				**PROPOSED ACQUISITION Receptors within 65 dBA (Ldn)**				**PROPOSED ACQUISITION Receptors Subject to an Adverse Noise Impact (65 dBA and 3 dBA Increase)**			
Community	**TOTAL**	**Within EJ Block Groups**	**Outside EJ Block Groups**	**Percent within EJ Block Groups**	**TOTAL**	**Within EJ Block Groups**	**Outside EJ Block Groups**	**Percent within EJ Block Groups**	**TOTAL**	**Within EJ Block Groups**	**Outside EJ Block Groups**	**Percent within EJ Block Groups**	**TOTAL**	**Within EJ Block Groups**	**Outside EJ Block Groups**	**Percent Within EJ Block Groups**
Powersville	**5**	0	5	0%	**7**	0	7	0%	**19**	0	19	0%	**19**	0	19	0%
Prathersville	**0**	0	0	0%	**0**	0	0	0%	**2**	0	2	0%	**2**	0	2	0%
TEXAS													**566**	**290**	**276**	**51%**
Unincorpor.	***518***	*259*	*259*	*50%*	***657***	*337*	*320*	*51%*	***903***	*447*	*456*	*50%*	***101***	***14***	***87***	***14%***
Deweyville	**1**	1	0	100%	**1**	1	0	100%	**3**	3	0	100%	**3**	3	0	100%
Mauriceville	**17**	9	8	53%	**25**	11	14	44%	**40**	18	22	45%	**21**	10	11	48%
Rose City	**37**	37	0	100%	**41**	41	0	100%	**70**	70	0	100%	**64**	64	0	100%
Vidor	**199**	109	90	55%	**230**	128	102	56%	**392**	211	181	54%	**377**	199	178	53%

Appendix R

List of Agencies, Organizations, Tribes, and Persons to Whom Copies of the EIS Were Sent

Board regulations identify the types of agencies and officials to receive environmental documentation (49 Code of Federal Regulations [C.F.R.] Part 1105.7) for comment. In addition, Council on Environmental Quality (CEQ) regulations identify appropriate distribution (40 C.F.R. Parts 1500–1508). This appendix lists the agencies, officials, and other interested persons receiving the EIS for the Proposed Acquisition by CP of KCS. ~~OEA has provided specific information about how to comment on this Draft EIS. The Board has distributed and made the Draft EIS available on August 5, 2022.~~ The U.S. Environmental Protection Agency (EPA) will publish a Notice of Availability of the ~~Draft~~ Final EIS in the *Federal Register* on February 3~~August 12~~, 202~~2~~3. OEA has also made the ~~Draft~~ EIS available for viewing and downloading via the Board's website (www.stb.gov) and the Board-sponsored project website (www.CP-KCSMergerEIS.com).

OEA maintains an environmental distribution list composed of individuals with a specific role in the environmental process and individuals who have expressed an interest in the Proposed Acquisition. OEA has notified, by email or postcard, all parties on the environmental distribution list of the availability of the ~~Draft~~ EIS. In addition, OEA has notified the public through online advertising.

This appendix lists the federal, state, and local agencies; tribes; federal, state, and local elected officials; and other organizations that will receive or be notified of the availability of ~~this Draft~~the EIS. This appendix does not list the private individuals on the distribution list. Private individuals include people who attended public meetings, who requested to be put on the OEA distribution list through the project website, or who submitted scoping comments.

If you wish to receive a copy of the ~~Draft~~ EIS or have questions about where to find the ~~Draft~~ EIS, please call the toll-free phone number for the project at 1-888-319-2337 and leave your name, email address, and phone number.

R.1 Federal Agencies

ORGANIZATION/AGENCY	DEPARTMENT	CITY	STATE
National Resources Conservation Service (NRCS)	Arkansas Office	Little Rock	AR
U.S. Forest Service (USFS)	Ouachita National Forest	Hot Springs	AR
U.S. Army Corps of Engineers (USACE)	Little Rock District	Little Rock	AR
U.S. Army Corps of Engineers (USACE)	Kansas City District	Kansas City	MO
U.S. Fish and Wildlife Service (USFWS)	Arkansas Ecological Services	Conway	AR
USFWS	Pond Creek National Wildlife Refuge	Lockesburg	AR
National Park Service (NPS) Intermountain Region	Interior Regions 6, 7, and 8	Denver	CO
USFWS	Mountain Prairie Region	Lakewood	CO
Department of the Interior	Office of Environmental Policy and Compliance	Lakewood	CO
Federal Railroad Administration (FRA)	Environmental Division	Washington	DC
~~FRA~~	~~Environmental Division~~	~~Washington~~	~~DC~~
FRA	Region 4	Washington	DC
NPS Intermountain Region	Region 6	Washington	DC
U.S. Department of Commerce	Office of Legislative and Intergovernmental Affairs	Washington	DC
USFWS	Southeast Region	Atlanta	GA
NRCS	n/a	Des Moines	IA
EPA	Region 5	Chicago	IL
Federal Emergency Management Agency (FEMA) Region 5	Congressional/Intergovernmental	Chicago	IL
Amtrak	Government Affairs, Midwest Division	Chicago	IL
NRCS	Illinois Office	Champaign	IL
FEMA	Region 5	Chicago	IL
USACE	Chicago District	Chicago	IL
USACE	Rock Island District	Rock Island	IL
USFWS	Illinois-Iowa Ecological Services	Moline	IL
USFWS	Chicago Ecological Services	Chicago	IL
NRCS	Indiana Office	Indianapolis	IN
EPA	Region 7	Lenexa	KS
NRCS	Kansas Office	Salina	KS
USFWS	Kansas Ecological Services	Manhattan	KS
Amtrak	Government Affairs, South District	New Orleans	LA
NRCS	Louisiana Office	Alexandria	LA

R.1 Federal Agencies

ORGANIZATION/AGENCY	DEPARTMENT	CITY	STATE
USACE	New Orleans District	New Orleans	LA
USFWS	Ecological Services	Lafayette	LA
USACE	St. Paul District	St. Paul	MN
USFWS	Upper Mississippi River National Wildlife and Fish Refuge	Bloomington	MN
USFWS	Midwest Region	Bloomington	MN
USFWS	Minnesota Wisconsin Ecological Services	Bloomington	MN
FRA	Region 6	Kansas City	MO
FEMA	Region 7	Kansas City	MO
FEMA Region 7	FEMA Regional Tribal Liaison	Kansas City	MO
NRCS	Missouri Office	Columbia	MO
USACE	Kansas City District	Kansas City	MO
USFWS	Missouri Ecological Services	Columbia	MO
NPS	Midwest Region	Omaha	NE
NPS	Region 6	Omaha	NE
NPS Midwest Region	Regions 3, 4, and 5	Omaha	NE
USACE	Omaha District	Omaha	NE
USFWS	Region 2	Albuquerque	NM
USFWS	Native American Affairs	Albuquerque	NM
NRCS	Oklahoma Office	Stillwater	OK
NRCS	State Tribal Liaison	Stillwater	OK
USACE	Tulsa District	Tulsa	OK
USFWS	Oklahoma Ecological Services	Tulsa	OK
EPA	Region 6	Dallas	TX
FRA	Region 5	Fort Worth	TX
FEMA	Region 6, Enforcement and Compliance Assurance Division	Denton	TX
USACE	Fort Worth District	Fort Worth	TX
USACE	Galveston District	Galveston	TX
USFWS	Arlington Ecological Services	Arlington	TX
USFWS	Texas Coastal Ecological Services	Corpus Christi	TX
USFWS	Ecological Services - Alamo	Alamo	TX
FEMA Region 7	FEMA Regional Tribal Liaison	Kansas City	MO
Pipeline and Hazardous Materials Safety Administration (PHMSA)	Headquarters	Washington	DC
PHMSA	Central Region	Kansas City	MO

R.1 Federal Agencies

ORGANIZATION/AGENCY	DEPARTMENT	CITY	STATE
PHMSA	Southwest Region	Houston	TX
PHMSA	Southern Region	Atlanta	GA

R.2 Federal Elected Officials

FIRST-NAME	LAST-NAME	ORGANIZATION/ AGENCY	CONGRESSIONAL DISTRICT	STATE
Michael	Cloud	U.S. House of Representatives	27th	TX
Jesus	Garcia	U.S. House of Representatives	4th	IL
Lauren	Underwood	U.S. House of Representatives	14th	IL
Billy	Long	U.S. House of Representatives	7th	MO
Lizzie	Fletcher	U.S. House of Representatives	7th	TX
John	Cornyn	U.S. Senate	Statewide	TX
Sharice	Davids	U.S. House of Representatives	3rd	KS
Sean	Casten	U.S. House of Representatives	6th	IL
Ashley	Hinson	U.S. House of Representatives	1st	IA
Gary	Peters	U.S. Senate	Statewide	MI~~DC~~
Mariannette	Miller-Meeks	U.S. House of Representatives	2nd	IA
Ted	Cruz	U.S. Senate	Statewide	TX
Josh	Hawley	U.S. Senate	Statewide	MO
Vicky	Hartzler	U.S. House of Representatives	4th	MO
Emanuel	Cleaver II	U.S. House of Representatives	5th	MO
Joni	Ernst	U.S. Senate	Statewide	IA
Sylvia	Garcia	U.S. House of Representatives	29th	TX
Roy	Blunt	U.S. Senate	Statewide	MO
Jim	Inhofe	U.S. Senate	Statewide	OK
Amy	Klobuchar	U.S. Senate	Statewide	MN
Tom	Cotton	U.S. Senate	Statewide	AR
Troy	Nehls	U.S. House of Representatives	22nd	TX
Mike	Johnson	U.S. House of Representatives	4th	LA
Tina	Smith	U.S. Senate	Statewide	MN
Sheila	Jackson Lee	U.S. House of Representatives	18th	TX
John	Neely Kennedy	U.S. Senate	Statewide	LA
Jacob	LaTurner	U.S. House of Representatives	2nd	KS
Chuck	Grassley	U.S. Senate	Statewide	IA

R.2 Federal Elected Officials

FIRST-NAME	LAST-NAME	ORGANIZATION/ AGENCY	CONGRESSIONAL DISTRICT	STATE
Bruce	Westerman	U.S. House of Representatives	4th	AR
Dick	Durbin	U.S. Senate	Statewide	IL
Randy	Weber Sr	U.S. House of Representatives	14th	TX
Steve	Womack	U.S. House of Representatives	3rd	AR
Jerry	Moran	U.S. Senate	Statewide	KS
Sam	Graves	U.S. House of Representatives	6th	MO
Markwayne	Mullin	U.S. House of Representatives	2nd	OK
Tammy	Duckworth	U.S. Senate	Statewide	IL
Bill	Cassidy	U.S. Senate	Statewide	LA
Brian	Babin	U.S. House of Representatives	36th	TX
Julia	Letlow	U.S. House of Representatives	5th	LA
Vicente	Gonzalez	U.S. House of Representatives	15th	TX
Cori	Bush	U.S. House of Representatives	1st	MO
John	Boozman	U.S. Senate	Statewide	AR
Garret	Graves	U.S. House of Representatives	6th	LA
Mike	Quigley	U.S. House of Representatives	5th	IL
Darin ~~Adam~~	LaHood~~Kinzinger~~	U.S. House of Representatives	16th	IL
Cynthia	Axne	U.S. House of Representatives	3rd	IA
Randy	Feenstra	U.S. House of Representatives	4th	IA
Al	Green	U.S. House of Representatives	9th	TX
~~Open Seat~~ Brad	~~Open Seat~~Finstad	U.S. House of Representatives	1st	MN
Roger	Marshall	U.S. Senate	Statewide	KS
Troy	Carter	U.S. House of Representatives	2nd	LA
Raja	Krishnamoorthi	U.S. House of Representatives	8th	IL
Filemon	Vela	U.S. House of Representatives	34th	TX
James	Lankford	U.S. Senate	Statewide	OK
Debbie	Stabenow	U.S. Senate	Statewide	MI
Louie	Gohmert Jr	U.S. House of Representatives	1st	TX
Rashida	Tlaib	U.S. House of Representatives	13th	MI
Henry	Cueller	U.S. House of Representatives	28th	TX
Clay	Higgins	U.S. House of Representatives	3rd	LA
Betty	McCollum	U.S. House of Representatives	4th	MN

R.3 State Agencies

ORGANIZATION/AGENCY	DEPARTMENT	CITY	STATE
Department of Public Safety	Emergency Management	North Little Rock	AR
Department of Agriculture	Natural Resources Division	Little Rock	AR
Department of Energy and Environment	Environmental Quality	North Little Rock	AR
Arkansas Department of Transportation (ARDOT)	Environmental Division	Little Rock	AR
Department of Arkansas Heritage	State Historic Preservation	Little Rock	AR
Arkansas Archaeological Survey		Fayetteville	AR
Department of Commerce	Arkansas Economic Development Commission, Community Development	Little Rock	AR
Arkansas Department of Emergency Management (ADEM)	Emergency Management	North Little Rock	AR
Arkansas Department of Transportation	Transportation	Little Rock	AR
Iowa Department of Transportation	Directors Office	Ames	IA
Department of Public Safety	Public Safety	Des Moines	IA
Department of Cultural Affairs	Director's Office	Des Moines	IA
Economic Development Authority	Community Development	Des Moines	IA
Department of Natural Resources	Environmental Protection Commission	Des Moines	IA
Department of Agriculture and Land Stewardship	Agriculture	Des Moines	IA
Department of Commerce	Commerce	Des Moines	IA
Department of Natural Resources	Director's Office	Des Moines	IA
Iowa Department of Transportation (IDOT)	Location and Environmental Department	Ames	IA
Department of Natural Resources	Natural Resource Commission	Des Moines	IA
Iowa State Historic Preservation	Iowa Department of Cultural Affairs	Des Moines	IA
Iowa Mississippi River Parkway Commission		Ames	
Illinois Department of Natural Resources	Office of Realty and Capital Planning	Springfield	IL
Illinois Department of Natural Resources	Natural Heritage	Springfield	IL
Department of Natural Resources	Historic Preservation Division	Springfield	IL
Illinois Department of Commerce and Economic Opportunity	Commerce	Springfield	IL
Illinois Commerce Commission	Commerce	Springfield	IL

R.3 State Agencies

ORGANIZATION/AGENCY	DEPARTMENT	CITY	STATE
Illinois Department of Transportation	Office of Planning and Programming	Springfield	IL
Illinois Department of Agriculture	Environmental Programs Regional Office	DeKalb	IL
Illinois State Association of Counties	n/a	Springfield	IL
Bi-State Regional Commission	n/a	Rock Island	IL
Department of Commerce	Office of the Secretary	Topeka	KS
Department of Agriculture	Office of the Secretary	Manhattan	KS
Department of Agriculture	Division of Conservation	Manhattan	KS
Department of Health and Environment	Health and Environment	Topeka	KS
Department of Health and Environment	Southeast District Office	Chanute	KS
Department of Health and Environment	Northeast District Office	Lawrence	KS
Department of Agriculture	Office of the Secretary	Manhattan	KS
Kansas Historical Society	n/a	Topeka	KS
Department of Commerce	Community Development Division	Topeka	KS
Kansas Department of Transportation (KDOT)	Division of Planning and Development	Topeka	KS
Kansas Department of Health and Environment (KDHE)	Orphan Site Unit	Topeka	KS
Louisiana Department of Transportation	Transportation	Baton Rouge	LA
Department of Agriculture and Forestry	Agriculture and Environmental Science	Baton Rouge	LA
Louisiana Department of Natural Resources	State Energy Office	Baton Rouge	LA
Louisiana Department of Environmental Quality (DEQ)	Office of Environmental Assessment	Baton Rouge	LA
Department of Natural Resources	Conservation	Baton Rouge	LA
Governor's Office of Homeland Security and Emergency Preparedness	n/a	Baton Rouge	LA
Department of Wildlife and Fisheries	Minden Field Office	Baton Rouge	LA
Louisiana Board of Commerce and Industry	Business Development	Baton Rouge	LA
Department of Health	n/a	Baton Rouge	LA
Office of Cultural Development	Division of Historic Preservation	Baton Rouge	LA
Department of Transportation and Development	Environmental Engineer Administrator	Baton Rouge	LA

R.3 State Agencies

ORGANIZATION/AGENCY	DEPARTMENT	CITY	STATE
Michigan Department of Natural Resources	Executive Division	Lansing	MI
Michigan Department of Transportation	n/a	Lansing	MI
Department of Commerce	n/a	Saint Paul	MN
Department of Natural Resources	n/a	St. Paul	MN
Minnesota Department of Transportation	Environmental Stewardship Office	St. Paul	MN
Department of Public Safety	Homeland Security and Emergency Management	Saint Paul	MN
Environmental Review	n/a	Saint Paul	MN
Minnesota Department of Agriculture	n/a	Saint Paul	MN
Minnesota Department of Administration	State Historic Preservation Office	Saint Paul	MN
Missouri Department of Agriculture		Jefferson City	MO
Department of Natural Resources	Division of Environmental Quality	Jefferson City	MO
Missouri Department of Economic Development	n/a	Jefferson City	MO
Environmental Improvement and Energy Resource Authority	n/a	Jefferson City	MO
Missouri Department of Public Safety	State Emergency Management Agency	Jefferson City	MO
Missouri Department of Commerce and Insurance	n/a	Jefferson City	MO
Department of Conservation	n/a	Dexter	MO
Missouri Department of Transportation (MODOT)	Southwest District	Springfield	MO
State Historic Preservation Office	Section 106 Review	Jefferson City	MO
Oklahoma Corporation Commission	n/a	Oklahoma City	OK
OK Secretary of Energy and Environment	Environmental Quality	Oklahoma City	OK
Oklahoma DOT	Environmental Programs Division	Oklahoma City	OK
Oklahoma Historical Society	State Historic Preservation Office	Oklahoma City	OK
Oklahoma Archaeological Survey	Office of the State Archaeologist	Norman	OK
Land Commissioners	Agricultural Real Estate	Oklahoma City	OK
Commerce Department	n/a	Oklahoma City	OK
Department of Public Safety	Emergency Management	Oklahoma City	OK
Oklahoma DEQ	Environmental Reviews	Oklahoma City	OK
Conservation Commission	n/a	Oklahoma City	OK
OK Capital Investment Board	n/a	Oklahoma City	OK

R.3 State Agencies

ORGANIZATION/AGENCY	DEPARTMENT	CITY	STATE
Capitol Improvement Authority	n/a	Oklahoma City	OK
Department of Agriculture, Food, and Forestry	Division of Agricultural Environmental Management	Oklahoma City	OK
Department of Agriculture	Assistant Commissioner	Austin	TX
Natural Resources Conservation Service	Texas Office	Temple	TX
Texas Department of Transportation	Environmental Division	Austin	TX
Department of Economic Development	Business and Community Development	Austin	TX
Commission on Environmental Quality	Office of Compliance and Enforcement	Austin	TX
Department of Public Safety	Public Safety Commission	Houston	TX
Texas General Land Office (GLO) Natural Resource Trustee Program	n/a	Austin	TX
Texas Historical Commission	Archaeology, History Programs, Architecture	Austin	TX

R.4 State Elected Officials

FIRST-NAME	LAST-NAME	TITLE	CITY	STATE
Asa	Hutchinson	Governor	Little Rock	AR
DeAnn	Vaught	State Representative	Horatio	AR
Delia	Haak	State Representative	Centerton	AR
Gayla	Hendren McKenzie	State Representative	Gravette	AR
Jay	Richardson	State Representative	Fort Smith	AR
Jim	Hendren	State Senator	Gravette	AR
Jimmy	Hickey Jr	State Senator	Texarkana	AR
John	Maddox	State Representative	Mena	AR
Justin	Boyd	State Representative	Fort Smith	AR
Lane	Jean	State Representative	Magnolia	AR
Larry	Teague	State Senator	Nashville	AR
Mathew	Pitsch	State Senator	Fort Smith	AR
Marcus	Richmond	State Representative	Harvey	AR
Robin	Lundstrum	State Representative	Springdale	AR
Terry	Rice	State Senator	Waldron	AR
Kim	Reynolds	Governor	Des Moines	IA
Adrian	Dickey	State Senator	Packwood	IA

R.4 State Elected Officials

FIRST-NAME	LAST-NAME	TITLE	CITY	STATE
Amanda	Ragan	State Senator	Mason City	IA
Amy	Sinclair	State Senator	Allerton	IA
Anne	Osmundson	State Representative	Volga	IA
Carrie	Koelker	State Senator	Dyersville	IA
Charles	Isenhart	State Representative	Dubuque	IA
Cherielynn	Westrich	State Representative	Des Moines	IA
Chris	Cournoyer	State Senator	LeClaire	IA
Cindy	Winckler	State Representative	Davenport	IA
David	Kerr	State Representative	Morning Sun	IA
Dennis	Bush	State Representative	Cleghorn	IA
Dennis	Guth	State Senator	Klemme	IA
Gary	M. Mohr	State Representative	Bettendorf	IA
Henry	Stone	State Representative	Des Moines	IA
Holly	Brink	State Representative	Oskaloosa	IA
Jane	Bloomingdale	State Representative	Northwood	IA
Jarad	J. Klein	State Representative	Keota	IA
Jeff	Reichman	State Senator	Montrose	IA
Jeff	Taylor	State Senator	Sioux Center	IA
Jim	Lykam	State Senator	Davenport	IA
Joe	Mitchell	State Representative	Mount Pleasant	IA
Joel	Fry	State Representative	Osceola	IA
Ken	Rozenboom	State Senator	Oskaloosa	IA
Kevin	Kinney	State Senator	Oxford	IA
Lindsay	James	State Representative	Des Moines	IA
Mark	Cisneros	State Representative	Muscatine	IA
Mark	S. Lofgren	State Senator	Muscatine	IA
Mary	Lynn Wolfe	State Representative	Clinton	IA
Megan	Jones	State Representative	Sioux Rapids	IA
Michael	R. Bergan	State Representative	Dorchester	IA
Mike	Klimesh	State Senator	Spillville	IA
Monica	Kurth	State Representative	Davenport	IA
Norlin	Mommsen	State Representative	DeWitt	IA
Phyllis	Thede	State Representative	Bettendorf	IA
Roby	Smith	State Senator	Davenport	IA
Ross	C. Paustian	State Representative	Walcott	IA
Shannon	Latham	State Representative	Sheffield	IA

R.4 State Elected Officials

FIRST-NAME	LAST-NAME	TITLE	CITY	STATE
Shannon	Lundgren	State Representative	Peosta	IA
Sharon	Sue Steckman	State Representative	Mason City	IA
Steven	P. Bradley	State Representative	Cascade	IA
Terry	C. Baxter	State Representative	Garner	IA
Tim	Goodwin	State Senator	Burlington	IA
Todd	Prichard	State Representative	Charles City	IA
Waylon	Brown	State Senator	Osage	IA
Zach	Whiting	State Senator	Spirit Lake	IA
JB	Pritzker	Governor	Springfield	IL
Angelica	Guerrero-Cuellar	State Representative	Chicago	IL
Ann	M. Williams	State Representative	Chicago	IL
Maurice	A. West II	State Representative	Rockford	IL
Tim	Butler	State Representative	Springfield	IL
Andrew	S. Chesney	State Representative	Freeport	IL
CD	Davidsmeyer	State Representative	Jacksonville	IL
Tom	Demmer	State Representative	Rochelle	IL
Aaron	M. Ortiz	State Representative	Chicago	IL
Amy	Elik	State Representative	Alton	IL
Fred	Crespo	State Representative	Streamwood	IL
David	Friess	State Representative	Red Bud	IL
Bob	Morgan	State Representative	Highwood	IL
Delia	C. Ramirez	State Representative	Chicago	IL
Daniel	Didech	State Representative	Buffalo Grove	IL
Joyce	Mason	State Representative	Gurnee	IL
Lindsey	LaPointe	State Representative	Chicago	IL
Michael	J. Zalewski	State Representative	Riverside	IL
Jaime	M. Andrade Jr.	State Representative	Chicago	IL
Jonathan	Carroll	State Representative	Buffalo Grove	IL
Justin	Slaughter	State Representative	Chicago	IL
Kelly	M. Burke	State Representative	Oak Lawn	IL
Jeff	Keicher	State Representative	Sycamore	IL
Seth	Lewis	State Representative	Bartlett	IL
Mary	E. Flowers	State Representative	Chicago	IL
Tony	McCombie	State Representative	Savanna	IL
Mike	Murphy	State Representative	Springfield	IL
John	C. D'Amico	State Representative	Chicago	IL

R.4 State Elected Officials

FIRST-NAME	LAST-NAME	TITLE	CITY	STATE
Adriane	Johnson	State Senator	Waukegan	IL
Antonio	Muñoz	State Senator	Chicago	IL
Bill	Cunningham	State Senator	Chicago	IL
Brian	W. Stewart	State Senator	Freeport	IL
Celina	Villanueva	State Senator	Chicago	IL
Christopher	Belt	State Senator	East St. Louis	IL
Craig	Wilcox	State Senator	McHenry	IL
Cristina	H. Pacione-Zayas	State Senator	Chicago	IL
Cristina	Castro	State Senator	Elgin	IL
Curtis	J. Tarver II	State Representative	Chicago	IL
Dan	McConchie	State Senator	Lake Zurich	IL
Dave	Syverson	State Senator	Rockford	IL
Diane	Pappas	State Senator	Itasca	IL
Don	Harmon	State Senator	Oak Park	IL
Donald	P. DeWitte	State Senator	West Dundee	IL
Doris	Turner	State Senator	Carlinville	IL
Elgie	R. Sims Jr.	State Senator	Chicago	IL
Emil	Jones III	State Senator	Chicago	IL
Jacqueline	Y. Collins	State Senator	Chicago	IL
Jennifer	Gong-Gershowitz	State Representative	Glenview	IL
Joe	Sosnowski	State Representative	Rockford	IL
Julie	A. Morrison	State Senator	Deerfield	IL
Karina	Villa	State Senator	West Chicago	IL
Kimberly	A. Lightford	State Senator	Hillside	IL
Laura	Fine	State Senator	Glenview	IL
Laura	M. Murphy	State Senator	Des Plaines	IL
Mattie	Hunter	State Senator	Chicago	IL
Melinda	Bush	State Senator	Grayslake	IL
Napoleon	Harris III	State Senator	Dolton	IL
Neil	Anderson	State Senator	Moline	IL
Omar	Aquino	State Senator	Chicago	IL
Patricia	Van Pelt	State Senator	Chicago	IL
Rachelle	Crowe	State Senator	Maryville	IL
Ram	Villivalam	State Senator	Chicago	IL
Rita	Mayfield	State Representative	Waukegan	IL
Robert	Rita	State Representative	Blue Island	IL

R.4 State Elected Officials

FIRST-NAME	LAST-NAME	TITLE	CITY	STATE
Robert	F. Martwick	State Senator	Chicago	IL
Robert	Peters	State Senator	Chicago	IL
Sally	J. Turner	State Senator	Lincoln	IL
Sara	Feigenholtz	State Senator	Chicago	IL
Steve	Stadelman	State Senator	Rockford	IL
Steve	McClure	State Senator	Jacksonville	IL
Steven	M. Landek	State Senator	Burbank	IL
Terri	Bryant	State Senator	Murphysboro	IL
Thomas	Cullerton	State Senator	Villa Park	IL
William	Davis	State Representative	East Hazel Crest	IL
Lakesia	Collins	State Representative	Chicago	IL
Elizabeth	Hernandez	State Representative	Cicero	IL
Marcus	C. Evans Jr	State Representative	Chicago	IL
Maura	Hirschauer	State Representative	West Chicago	IL
Cyril	Nichols	State Representative	Burbank	IL
Dave	Vella	State Representative	Loves Park	IL
La Shawn	K Ford	State Representative	Chicago	IL
Frances	Ann Hurley	State Representative	Chicago	IL
Edgar	Gonzalez Jr	State Representative	Summit	IL
Michael	Halpin	State Representative	Rock Island	IL
Jay	Hoffman	State Representative	Belleville	IL
Thaddeus	Jones	State Representative	South Holland	IL
Sam	Yingling	State Representative	Round Lake Beach	IL
Nicholas	K. Smith	State Representative	Chicago	IL
Sonya	M. Harper	State Representative	Chicago	IL
Emanuel	Chris Welch	State Representative	Westchester	IL
Jawaharial	Williams	State Representative	Chicago	IL
Kathleen	Willis	State Representative	Northlake	IL
Camille	Y. Lilly	State Representative	Oak Park	IL
Eva-Dina	Delgado	State Representative	Chicago	IL
Robyn	Gabel	State Representative	Evanston	IL
LaToya	Greenwood	State Representative	East St. Louis	IL
Anna	Moeller	State Representative	Elgin	IL
Martin J	Moylan	State Representative	Des Plaines	IL
Michelle	Mussman	State Representative	Schaumburg	IL
Sue	Scherer	State Representative	Decatur	IL

R.4 State Elected Officials

FIRST-NAME	LAST-NAME	TITLE	CITY	STATE
Bradley	Stephens	State Representative	Chicago	IL
Dan	Ugaste	State Representative	St. Charles	IL
Tom	Weber	State Representative	Fox Lake	IL
Will	Guzzardi	State Representative	Chicago	IL
Laura	Kelly	Governor	Topeka	KS
Broderick	Henderson	State Representative	Kansas City	KS
Chuck	Smith	State Representative	Pittsburg	KS
David	Haley	State Senator	Kansas City	KS
Dennis	Pyle	State Senator	Hiawatha	KS
Ken	Collins	State Representative	Mulberry	KS
Larry	Alley	State Senator	Winfield	KS
Marci	Francisco	State Senator	Lawrence	KS
Mark	Steffen	State Senator	Hutchinson	KS
Michael	Houser	State Representative	Columbus	KS
Pam	Curtis	State Representative	Kansas City	KS
Richard	Wilborn	State Senator	McPherson	KS
Tom	Holland	State Senator	Baldwin City	KS
Trevor	Jacobs	State Representative	Fort Scott	KS
Valdenia	Winn	State Representative	Kansas City	KS
John Bel	Edwards	Governor	Baton Rouge	LA
Tony	Bacala	State Representative	Prairieville	LA
Larry	Bagley	State Representative	Stonewall	LA
Barbara	Carpenter	State Representative	Baton Rouge	LA
Raymond	Crews	State Representative	Bossier City	LA
Paula	Davis	State Representative	Baton Rouge	LA
Rick	Edmonds	State Representative	Homer	LA
Randal	Gaines	State Representative	LaPlace	LA
Cedric	Glover	State Representative	Shreveport	LA
Lance	Harris	State Representative	Alexandria	LA
Dodie	Horton	State Representative	Haughton	LA
Danny	McCormick	State Representative	Oil City	LA
Christopher	Turner	State Representative	Ruston	LA
Foy	Gadberry	State Representative	West Monroe	LA
Pat	Moore	State Representative	Monroe	LA
Jeremy	LaCombe	State Representative	Livonia	LA
C Travis	Travis Johnson	State Representative	Vidalia	LA

R.4 State Elected Officials

FIRST-NAME	LAST-NAME	TITLE	CITY	STATE
Gabe	Firment	State Representative	Pollock	LA
Rodney	Schamerhorn	State Representative	Hornbeck	LA
Ed	Larvadain III	State Representative	Alexandria	LA
Mike	Johnson	State Representative	East Pineville	LA
Daryl	Andrew Deshotel	State Representative	Marksville	LA
Charles	Owen	State Representative	Rosepine	LA
R Dewith	Dewith Carrier	State Representative	Oakdale	LA
Wilford	Carter Sr	State Representative	Lake Charles	LA
Brett	Geymann	State Representative	Lake Charles	LA
Phillip	Tarver	State Representative	Lake Charles	LA
Ryan	Bourriaque	State Representative	Abbeville	LA
Roy	Adams	State Representative	Jackson	LA
Larry	Selders	State Representative	Baton Rouge	LA
Scott	McKnight	State Representative	Baton Rouge	LA
Barbara	Freiberg	State Representative	Baton Rouge	LA
John	Illg Jr.	State Representative	River Ridge	LA
Laurie	Schlegel	State Representative	Metairie	LA
Kyle	Green Jr.	State Representative	Marrero	LA
Kathy	Edmonston	State Representative	Gonzales	LA
Patrick	Jefferson	State Representative	Homer	LA
Edmond	Jordan	State Representative	Baton Rouge	LA
Denise	Marcelle	State Representative	Baton Rouge	LA
Wayne	McMahen	State Representative	Minden	LA
Greg	Miller	State Representative	Norco	LA
Gregory	Miller	State Representative	Norco	LA
Barry	Milligan	State Senator	Shreveport	LA
Beth	Mizell	State Senator	Franklinton	LA
Bob	Hensgens	State Senator	Abbeville	LA
Cameron	Henry	State Senator	Metairie	LA
Cleo	Fields	State Senator	Baton Rouge	LA
Eddie	Lambert	State Senator	Gonzales	LA
Edward	J. Prince	State Senator	Gonzales	LA
Gary	Smith Jr.	State Senator	Norco	LA
Gerald	Boudreaux	State Senator	Lafayette	LA
Gregory	Tarver	State Senator	Shreveport	LA
Jay	Morris	State Senator	West Monroe	LA

R.4 State Elected Officials

FIRST-NAME	LAST-NAME	TITLE	CITY	STATE
Jay	Luneau	State Senator	Alexandria	LA
Jimmy	Harris	State Senator	New Orleans	LA
Karen	Peterson	State Senator	New Orleans	LA
Kirk	Talbot	State Senator	River Ridge	LA
Mack	White	State Senator	Baton Rouge	LA
Mike	Reese	State Senator	Leesville	LA
Patrick	Connick	State Senator	Marrero	LA
Patrick	McMath	State Senator	Covington	LA
Patrick	Cortez	State Senator	Lafayette	LA
Robert	Mills	State Senator	Minden	LA
Sharon	Hewitt	State Senator	Slidell	LA
Neil	Riser	State Representative	Columbia	LA
Clay	Schexnayder	State Representative	Gonzales	LA
Alan	Seabaugh	State Representative	Shreveport	LA
Joseph	Stagni	State Representative	Kenner	LA
Francis	Thompson	State Representative	Delhi	LA
Jack	McFarland	State Representative	Jonesboro	LA
Garlin	Gilchrist II	Lieutenant Governor	Lansing	MI
Gretchen	Whitmer	Governor	Lansing	MI
Helena	Scott	State Representative	Highland Park	MI
Adam	Hollier	State Senator	Detroit	MI
Tim	Walz	Governor	St. Paul	MN
Peggy	Flanagan	Lieutenant Governor	St. Paul	MN
Greg	Davids	State Representative	Preston	MN
Paul	Anderson	State Representative	Alexandria	MN
Jeremy	Miller	State Senator	Winona	MN
Michael	Parson	Governor	Jefferson City	MO
Emily	Weber	State Representative	Kansas City	MO
Ingrid	Burnett	State Representative	Kansas City	MO
Kent	Haden	State Representative	Mexico	MO
Mark	Ellebracht	State Representative	Claycomo	MO
Mark	Sharp	State Representative	Grandview	MO
Peggy	McGaugh	State Representative	Liberty	MO
Richard	Brown	State Representative	Raytown	MO
Rusty	Black	State Representative	Chillicothe	MO
Yolanda	Young	State Representative	Kansas City	MO

R.4 State Elected Officials

FIRST-NAME	LAST-NAME	TITLE	CITY	STATE
Annette	Turnbaugh	State Representative	Grandview	MO
Chad	Perkins	State Representative	Vandalia	MO
Cheri	Toalson Reisch	State Representative	Columbia	MO
Chris	Sander	State Representative	Blue Springs	MO
Chuck	Basye	State Representative	Columbia	MO
Dan	Stacy	State Representative	Blue Springs	MO
Danny	Busick	State Representative	Kirksville	MO
Doug	Richey	State Representative	Liberty	MO
Jeff	Coleman	State Representative	Grain Valley	MO
Jonathan	Patterson	State Representative	Lee's Summit	MO
Kurtis	Gregory	State Representative	Marshall	MO
Michael	Davis	State Representative	Belton	MO
Michael	Johnson	State Representative	Kansas City	MO
Barbara	Washington	State Senator	Kansas City	MO
Bill	White	State Senator	Oakland Park	MO
Caleb	Rowden	State Senator	Columbia	MO
Cindy	O'Laughlin	State Senator	Kirksville	MO
Dan	Hegeman	State Senator	Bethany	MO
Denny	Hoskins	State Senator	Chillicothe	MO
Greg	Razer	State Senator	Grandview	MO
Jeanie	Riddle	State Senator	Mexico	MO
John	Rizzo	State Senator	Independence	MO
Lauren	Arthur	State Senator	Liberty	MO
Mike	Cierpiot	State Senator	Blue Springs	MO
Mike	Moon	State Senator	Branston	MO
Rick	Brattin	State Senator	Nevada	MO
Randy	Railsback	State Representative	Lathrop	MO
Rasheen	Aldridge	State Representative	St. Louis	MO
Robert	Sauls	State Representative	Independence	MO
Rory	Rowland	State Representative	Independence	MO
Terry	Thompson	State Representative	Richmond	MO
Tim	Taylor	State Representative	Boonville	MO
Kevin	Stitt	Governor	Oklahoma City	OK
Blake	Stephens	State Senator	Wagoner	OK
David	Hardin	State Representative	Adair	OK
Eddy	Dempsey	State Representative	McCurtain	OK

R.4 State Elected Officials

FIRST-NAME	LAST-NAME	TITLE	CITY	STATE
George	Burns	State Senator	Le Flore	OK
Jim	Olsen	State Representative	Sequoyah	OK
Mark	Allen	State Senator	Sequoyah	OK
Randy	Randleman	State Representative	Haskell	OK
Rick	West	State Representative	Le Flore	OK
Greg	Abbott	Governor	Austin	TX
Abel	Herrero	State Representative	Robstown	TX
Ana	Hernandez	State Representative	Houston	TX
Ana-Maria	Ramos	State Representative	Dallas	TX
Angela	Paxton	State Senator	Allen	TX
Angie Chen	Button	State Representative	Richardson	TX
Armando	Walle	State Representative	Houston	TX
Beverly	Powell	State Senator	Fort Worth	TX
Bob	Hall	State Senator	Rockwall	TX
Borris	Miles	State Senator	Houston	TX
Brandon	Creighton	State Senator	Beaumont	TX
Bryan	Highes	State Senator	Texarkana	TX
Bryan	Slaton	State Representative	Sulphur Springs	TX
Carl	Sherman Sr.	State Representative	Lancaster	TX
Carol	Alvarado	State Senator	~~Lake Worth~~Houston	TX
Charlie	Geren	State Representative	Marshall	TX
~~Open Seat~~	~~Open Seat~~	~~State Representative~~	~~Arlington~~	~~TX~~
Chris	Turner	State Representative	Houston	TX
Christina	Morales	State Representative	Angleton	TX
Cody	Vasut	State Representative	Mount Pleasant	TX
Cole	Hefner	State Representative	Fort Worth	TX
Craig	Goldman	State Representative	Orange	TX
Dade	Phelan	State Representative	Mansfield	TX
David	Cook	State Representative	Weatherford	TX
Drew	Springer	State Senator	Harlingen	TX
Eddie	Lucio Jr.	State Senator	Pearland	TX
Eddie	Thompson	State Representative	Shepherd	TX
Ernest	Bailes	State Representative	Houston	TX
~~Open Seat~~Gary	~~Open Seat~~VanDeaver	State Representative	New Boston	TX
~~Gary~~Geanie W.	~~Vandeaver~~Morrison	State Representative	Victoria	TX
~~Geanie W.~~	~~Morrison~~	~~State Representative~~	~~Houston~~	~~TX~~

R.4 State Elected Officials

FIRST-NAME	LAST-NAME	TITLE	CITY	STATE
Gene	Wu	State Representative	Keller	TX
Giovanni	Capriglione	State Representative	Brownwood	TX
Glenn	Rogers	State Representative	League City	TX
Greg	Bonnen	State Representative	Houston	TX
Harold V.	Dutton Jr.	State Representative	Lake Worth	TX
Hubert	Vo	State Representative	Houston	TX
James	White	State Representative	Woodville	TX
Jane	Nelson	State Senator	Grapevine	TX
Jared	Patterson	State Representative	Frisco	TX
Jarvis	Johnson	State Representative	Houston	TX
Jasmine	Crockett	State Representative	Dallas	TX
Jay	Dean	State Representative	Longview	TX
Jeff	Cason	State Representative	Bedford	TX
Jessica	Gonzalez	State Representative	Dallas	TX
JM	Lozano	State Representative	Portland	TX
Joan	Huffman	State Senator	Houston	TX
Joe	Deshotel	State Representative	Port Arthur	TX
John	Turner	State Representative	Dallas	TX
Juan	Hinojosa	State Senator	Edinburg	TX
Judith	Zaffirini	State Senator	Laredo	TX
Julie	Johnson	State Representative	Carrollton	TX
Kelly	Hancock	State Senator	North Richland Hills	TX
Lacey	Hull	State Representative	Houston	TX
Larry	Taylor	State Senator	Pearland	TX
Lois	Kolkhorst	State Senator	Brenham	TX
Mary Ann	Perez	State Representative	Pasadena	TX
Matt	Krause	State Representative	Fort Worth	TX
Mayes	Middleton	State Representative	Wallisville	TX
Morgan	Meyer	State Representative	Dallas	TX
Nathan	Johnson	State Senator	Dallas	TX
Nicole	Collier	State Representative	Fort Worth	TX
Penny	Morales Shaw	State Representative	Houston	TX
Phil	King	State Representative	Weatherford	TX
Phil	Stephenson	State Representative	Rosenberg	TX
Rafael	Anchia	State Representative	Dallas	TX
Ramon	Romero Jr.	State Representative	Fort Worth	TX

R.4 State Elected Officials

FIRST-NAME	LAST-NAME	TITLE	CITY	STATE
Rhetta	Bowers	State Representative	Garland	TX
Richard	Raymond	State Representative	Laredo	TX
Robert	Nichols	State Senator	Jacksonville	TX
Ron	Reynolds	State Representative	Missouri City	TX
Royce	West	State Senator	Dallas	TX
Ryan	Guillen	State Representative	Rio Grande City	TX
Senfronia	Thompson	State Representative	Houston	TX
Shawn	Thierry	State Representative	Houston	TX
Stephanie	Klick	State Representative	North Richland Hills	TX
Terry	Meza	State Representative	Irving	TX
Todd	Hunter	State Representative	Corpus Christi	TX
Toni	Rose	State Representative	Dallas	TX
Tony	Tinderholt	State Representative	Arlington	TX
Valoree	Swanson	State Representative	Spring	TX
Victoria	Neave	State Representative	Mesquite	TX
Yvonne	Davis	State Representative	Dallas	TX

R.5 County and Local Government Organizations

ORGANIZATION/AGENCY	DEPARTMENT	CITY	STATE
Gentry	City Hall	Gentry	AR
City of Sulphur Springs	n/a	Sulphur Springs	AR
Little River County	Chamber of Commerce	Ashdown	AR
Sevier County	County Judge	De Queen	AR
City of Ashdown	n/a	Ashdown	AR
Miller County	Road Department	Fouke	AR
City of Decatur	Community Development	Decatur	AR
City of Ogden	Office of the Mayor	Ogden	AR
City of Wilton	Office of the Mayor	Wilton	AR
City of Winthrop	Office of the Mayor	Winthrop	AR
Town of Cove	Office of the Mayor	Cove	AR
Town of Grannis	Office of the Mayor	Grannis	AR
Town of Hatfield	Office of the Mayor	Hatfield	AR
City of Mena	Street Department	Mena	AR
City of Mena	Planning Commission	Mena	AR
Town of Gillham	Office of the Mayor	Gillham	AR
Polk County	n/a	Mena	AR
Wickes	City Hall	Wickes	AR
Benton County	Planning Department	Rogers	AR
City of Siloam Springs	Planning Commission/Board of Adjustment	Siloam Springs	AR
Gravette	Streets and Parks	Gravette	AR
City of De Queen	Office of the Mayor	De Queen	AR
Texarkana	Public Works	Texarkana	AR
Blakesburg	City Hall	Blakesburg	IA
Bettendorf	Engineering Department	Bettendorf	IA
Bettendorf	Department of Public Works	Bettendorf	IA
Camanche	City Administrator	Camanche	IA
Muscatine	Department of Public Works	Muscatine	IA
Louisa County	Zoning and Flood Plain	Wapello	IA
Louisa County	Department of Engineering	Wapello	IA
Louisa County	Emergency Management	Wapello	IA
Riverdale	City Administrator/City Clerk's Office	Riverdale	IA
Fruitland	City Clerk	Fruitland	IA
Moravia	City Clerk's Office	Moravia	IA
Clinton County	Conservation Board	Grand Mound	IA
Appanoose County	Department of Secondary Roads	Centerville	IA
Muscatine County	Conservation Board	Muscatine	IA
Princeton	City Clerk's Office	Princeton	IA

R.5 County and Local Government Organizations

ORGANIZATION/AGENCY	DEPARTMENT	CITY	STATE
Washington County	Department of Engineering and Secondary Roads	Washington	IA
Keokuk County	Engineer Department	Sigourney	IA
Muscatine County	Engineer's Office and Secondary Road Department	Muscatine	IA
Appanoose County	Department of Conservation	Centerville	IA
Jackson County	Department of Conservation	Maquoketa	IA
Muscatine	Department of Community Development	Muscatine	IA
Monroe County	Engineer's Office	Albia	IA
Wapello County	Planning/Zoning and Building Division	Ottumwa	IA
Washington County	Department of Environmental Health	Washington	IA
Keokuk County	Conservation Board	Sigourney	IA
Jackson County	Department of Planning and Zoning	Maquoketa	IA
Riverdale	Department of Zoning	Riverdale	IA
Le Claire	Public Works	LeClaire	IA
Washington	Chamber of Commerce	Washington	IA
Rathbun	n/a	Centerville	IA
Wayne County	Department of Environmental Health	Corydon	IA
Wayne County	Department of Engineering	Corydon	IA
Maine (Township)	City Clerk's Office	Cedar Rapids	IA
Mystic	n/a	Mystic	IA
Clinton	Street Department	Clinton	IA
Bellevue	City Administrator/City Clerk	Bellevue	IA
Columbus Junction	n/a	Columbus Junction	IA
Cotter	Mayor	Cotter	IA
Fredonia	n/a	Fredonia	IA
Buffalo	Department of Public Works	Buffalo	IA
Pleasant Valley	Clerk's Office	Pleasant Valley	IA
Riverdale	Department of Public Works	Riverdale	IA
Ottumwa	Department of Planning & Development	Ottumwa	IA
Ottumwa	Department of Public Works	Ottumwa	IA
Ottumwa	Engineering Department	Ottumwa	IA
City of Ainsworth	n/a	Ainsworth	IA
Seymour	Seymour Municipal Building	Seymour	IA
Letts	Fire District	Letts	IA
Montpelier	Fire Department	Montpelier	IA
Scott County	Planning and Development	Davenport	IA

R.5 County and Local Government Organizations

ORGANIZATION/AGENCY	DEPARTMENT	CITY	STATE
Princeton	Department of Public Works	Princeton	IA
Davenport	Department of Neighborhood Services	Davenport	IA
Davenport	Downtown Davenport Partnership	Davenport	IA
Wapello County	Conservation Board	Bloomfield	IA
Wayne County	n/a	Corydon	IA
City of Washington	n/a	Washington	IA
Jefferson County	Conservation Board	Fairfield	IA
Appanoose County	Department of Environmental Public Health	Moravia	IA
Washington County	Department of Planning and Development	Washington	IA
Washington County	Conservation Board	Ainsworth	IA
Cook County	Department of Transportation and Highways	Chicago	IL
City of Genoa	Economic Planning and Development	Genoa	IL
DuPage County	Building and Zoning Department	Wheaton	IL
Village of Roselle	Community Development	Roselle	IL
Village of Roselle	Police Department	Roselle	IL
Village of Roselle	Fire Department	Roselle	IL
Carroll County	Highway Department	Mt. Carroll	IL
DuPage County	Division of Transportation	Wheaton	IL
Village of Hampshire	Department of Public Works	Hampshire	IL
Chicago Metropolitan Agency for Planning	n/a	Chicago	IL
Northwest Illinois Economic Department	n/a	Hanover	IL
DeKalb County	Highway Department	DeKalb	IL
City of Genoa	Public Works	Genoa	IL
City of Wood Dale	Manager's Office	Wood Dale	IL
Village of Schaumburg	Transportation Department	Schaumburg	IL
City of Lanark	Mayor	Lanark	IL
Byron	Economic Development and Building and Zoning	Byron	IL
Village of Bensenville	Village Manager's Office	Bensenville	IL
City of Savanna	Economic Development Department	Savanna	IL
City of Mount Carroll	City Clerk	Mount Carroll	IL
City of Elgin	Department of Community Development	Elgin	IL
City of Elgin	City Manager’s Office	Elgin	IL
City of Elgin	Police Department	Elgin	IL
City of Elgin	Fire Department	Elgin	IL

R.5 County and Local Government Organizations

ORGANIZATION/AGENCY	DEPARTMENT	CITY	STATE
Ogle County	Department of Planning and Zoning	Oregon	IL
City of Savanna	Planning and Zoning Board	Savanna	IL
City of Chicago	Chicago Department of Transportation	Chicago	IL
Village of Franklin Park	Department of Development, Community, and Zoning	Franklin Park	IL
Village of Hanover Park	Village ~~Manager~~'~~s~~ President's Office	Hanover Park	IL
Village of Hanover Park	Department of Community and Economic Development	Hanover Park	IL
Village of Kingston	n/a	Kingston	IL
Village of Kirkland	n/a	Kirkland	IL
Village of Bartlett	Planning and Development Services, Planning and Zoning Division	Bartlett	IL
Village of Bartlett	Police Department	Bartlett	IL
Village of Bartlett	Office of the Village Administrator	Bartlett	IL
Village of Bartlett	Fire Department	Bartlett	IL
Village of Davis Junction	Planning and Zoning Commission	Davis Junction	IL
Village of Stillman Valley	n/a	Stillman Valley	IL
Monroe Center	n/a	Monroe Center	IL
Pingree Grove	Public Works	Pingree Grove	IL
Village of Bensenville	Community and Economic Development	Bensenville	IL
Kane County	Development and Community Services Department	Geneva	IL
Kane County	Environmental and Water Resources	Geneva	IL
Village of Itasca	Village Administrator	Itasca	IL
Village of Itasca	Community Development	Itasca	IL
Village of Itasca	Police Department	Itasca	IL
Village of Itasca	Fire Department	Itasca	IL
Village of Leaf River	Village Hall	Leaf River	IL
Cherokee County	Department of Road and Bridges	Columbus	KS
Cherokee County	Department of Road and Bridges	Columbus	KS
Cherokee County	Department of Economic Development	Columbus	KS
Pittsburg City	Streets and Highways	Pittsburg	KS
Crawford County	Department of Planning & Zoning	Girard	KS
Crawford County	Roads and Bridges Department	Girard	KS
Crawford County	Sheriff~~'~~s Office	Girard	KS
Crawford County	Environmental Health Department	Girard	KS
Frontenac City	City Council/City Administrator	Frontenac	KS
Frontenac City	City Clerk	Frontenac	KS
Frontenac City	City Hall	Frontenac	KS

R.5 County and Local Government Organizations

ORGANIZATION/AGENCY	DEPARTMENT	CITY	STATE
City of Shreveport	Department of Community Development	Shreveport	LA
Blanchard	n/a	Blanchard	LA
Vernon Parish	Public Works Department	Leesville	LA
Town of Vivian	Police Department	Vivian	LA
DeQuincy	DeQuincy City Hall	DeQuincy	LA
Calcasieu Parish	Department of Engineering and Public Works	Lake Charles	LA
Town of Rosepine	Public Works Department	Rosepine	LA
Beauregard Parish	n/a	DeRidder	LA
De Soto Parish	n/a	Baton Rouge	LA
City of De Ridder	Greater Beauregard Chamber of Commerce	Deridder	LA
City of De Ridder	Planning and Zoning Commission	Deridder	LA
Oil City	Town Hall	Oil City	LA
City of Mansfield	Public Works Department	Westlake	LA
City of Mansfield	Department of Planning and Zoning	Westlake	LA
Village of South Mansfield	n/a	Mansfield	LA
Town of Hornbeck	n/a	Leesville	LA
City of Leesville	Planning & Zoning Commission	Leesville	LA
City of Leesville	Public Works Department	Leesville	LA
Many	District Fire Station	Many	LA
Zwolle	Town Office	Zwolle	LA
Town of Mooringsport	Town Hall	Mooringsport	LA
Village of Rodessa	Library	Rodessa	LA
Calcasieu Parish	Department of Planning & Development	Lake Charles	LA
Sabine Parish	Parish Police Jury	Many	LA
Town of New Llano	n/a	New Llano	LA
Caddo Parish	Public Works	Shreveport	LA
Imperial Calcasieu Regional Planning	n/a	Lake Charles	LA
	Houston County Planning and Zoning	Caledonia	MN
Caledonia City Council	n/a	Caledonia	MN
Airport Drive	n/a	Joplin	MO
Barton County	Barton County Chamber of Commerce	Lamar	MO
Jasper County	Roads Department	Carthage	MO
Grandview	Community Development	Grandview	MO
Polo	Clerk	Polo	MO
City of Anderson	Public Works	Joplin	MO

R.5 County and Local Government Organizations

ORGANIZATION/AGENCY	DEPARTMENT	CITY	STATE
Drexel	n/a	Drexel	MO
Carl Junction Road District	Highway Department	Carl Junction	MO
Goodman	n/a	Goodman	MO
Cleveland	n/a	Cleveland	MO
Belton	Planning Department	Belton	MO
Grundy County	Clerk	Trenton	MO
Cass County	Building Codes, Zoning and Environmental Health	Harrisonville	MO
Liberty	Planning and Development	Liberty	MO
Jackson County	Public Works	Independence	MO
Hume	n/a	Hume	MO
	Highway Department, Carthage Special Road District	Carthage	MO
McDonald County	Road and Bridge Maintenance	Noel	MO
Newton County	County Office	Neosho	MO
	Planning Commission	Anderson	MO
City of Lanagan	City Hall	Lanagan	MO
City of Noel	n/a	Noel	MO
Village of Saginaw	Saginaw Municipal Building	Joplin	MO
Bates County	Bates County Surveyor	Butler	MO
Caldwell County	Planning & Zoning	Kingston	MO
	Road and Bridge	Kingston	MO
Putnam County	Clerk	Unionville	MO
Sullivan County	Clerk	Milan	MO
Vernon County	Clerk	Nevada	MO
Cowgill	Clerk	Cowgill	MO
Excelsior Springs	Planning and Zoning	Excelsior Springs	MO
Chillicothe	Industrial and Community Development	Chillicothe	MO
Chillicothe	Street Department	Chillicothe	MO
Mosby	City Hall	Mosby	MO
Asbury	Fire Protection District	Asbury	MO
Chula	Fire Department	Chula	MO
Powersville	Fire Department	Powersville	MO
Newtown	City Hall	Newtown	MO
Richards	Fire Department	Richardson	MO
Clay County	Planning and Zoning	Liberty	MO
Kansas City	City Planning and Development	Kansas City	MO

R.5 County and Local Government Organizations

ORGANIZATION/AGENCY	DEPARTMENT	CITY	STATE
Ray County	Clerk	Richmond	MO
Lawson	Clerk	Lawson	MO
Braymer	n/a	Braymer	MO
City of Joplin	Community Development	Joplin	MO
Birmingham	City Hall	Birmingham	MO
Livingston County	Zoning	Chillicothe	MO
City of Kansas City	Public Works Department	Kansas City	MO
Adair County	n/a	Stillwell	OK
City of Poteau	Chamber of Commerce	Poteau	OK
City of Sallisaw	Chamber of Commerce	Sallisaw	OK
City of Sallisaw	Chamber of Commerce	Sallisaw	OK
City of Sallisaw	City Manager	Sallisaw	OK
Le Flore County	County Treasurer	Poteau	OK
City of Poteau	Streets	Poteau	OK
Marble City	n/a	Marble City	OK
City of Sallisaw	Planning Commission	Sallisaw	OK
Heavener	Chairman of Planning Commission	Heavener	OK
Heavener	City Manager	Heavener	OK
Watts	Police Department	Watts	OK
Westville	City Clerk	Westville	OK
Howe	Town Hall	Howe	OK
Panama	City Hall	Panama	OK
Spiro	City Clerk	Spiro	OK
Gans	Town Hall	Gans	OK
Sequoyah County	n/a	Sallisaw	OK
City of Stillwell	Department of Streets and Sanitation	Stilwell	OK
City of Poteau	City Clerk	Poteau	OK
Highland Village	Planning and Zoning	Highland Village	TX
City of Port Arthur	Department of Public Works	Port Arthur	TX
Cass County	County Clerk	Linden	TX
City of Richardson	Capital Projects/Engineering Department	Richardson	TX
City of Richardson	Development Services	Richardson	TX
City of Richardson	Traffic Management Center	Richardson	TX
Wharton County	County Clerk	Wharton	TX
City of Alice	Department of Community Development	Alice	TX

R.5 County and Local Government Organizations

ORGANIZATION/AGENCY	DEPARTMENT	CITY	STATE
City of Plano	Engineering Department	Plano	TX
City of Odem	City Secretary	Odem	TX
City of Dallas	Department of Sustainable Development and Construction	Dallas	TX
City of Plano	Planning Department	Plano	TX
City of Denton	Community Maintenance Department	Denton	TX
Sinton	Planning	Sinton	TX
City of Sugar Land	City Engineering Department	Sugar Land	TX
Devers	n/a	Devers	TX
City of Carrollton	Department of Public Works	Carollton	TX
City of Liberty	Street, Storm Water & Solid Waste Department	Liberty	TX
City of Port Neches	Street and Drainage Department	Port Neches	TX
Fort Bend County	Road and Bridge	Richmond	TX
City of Denton	Development Services	Denton	TX
Collin County	Planning Board	McKinney	TX
City of Haslet	Department of Public Works	Haslet	TX
Town of Copper Canyon	Town Administrator	Copper Canyon	TX
City of Krum	Department of Development Services	Krum	TX
City of Plano	Environmental Health and Sustainability	Plano	TX
Harris County	Engineering Department	Houston	TX
Town of Northlake	Department of Public Works	Northlake	TX
City of Port Neches	Fire Department	Port Neches	TX
Town of Ponder	Department of Public Works	Ponder	TX
Fort Bend County	n/a	Richmond	TX
City of Houston	Department of Housing and Community Development	Houston	TX
Rosenberg	Planning Department	Rosenberg	TX
City of Haslet	Fire Department	Haslet	TX
Kendleton	n/a	Kendleton	TX
City of Wharton	Fire Department	Wharton	TX
Bellaire	Development Services	Bellaire	TX
Tarrant County	Community Development and Housing	Fort Worth	TX
City of Odem	City Administrator	Odem	TX
City of Murphy	Department of Community Development	Murphy	TX

R.5 County and Local Government Organizations

ORGANIZATION/AGENCY	DEPARTMENT	CITY	STATE
City of El Campo	Planning Department	El Campo	TX
City of Laredo	Department of Public Works	Laredo	TX
City of Laredo	Department of Environmental Services	Laredo	TX
Missouri City	Department of Planning and Zoning	Missouri City	TX
Nueces County	Public Works	Corpus Christi	TX
City of Dallas	Department of Transportation	Dallas	TX
City of El Campo	Department of Public Works	El Campo	TX
Texarkana	Planning and Zoning	Texarkana	TX
Victoria County	Commissioners Court	Victoria	TX
Town of Northlake	Denton County Emergency Services	Argyle	TX
Missouri City	Fire Department	Missouri City	TX
City of China	Mayor	China	TX
Victoria City	Planning Services	Victoria	TX
City of Rosenberg	Capital Improvement Projects	Rosenberg	TX
City of Dallas	Office of Historic Preservation	Dallas	TX
City of Dayton	Police Department	Dayton	TX
City of Corpus Christi	Department of Planning and Environmental Services	Corpus Christi	TX
City of China	City Secretary	China	TX
Bowie County	County Clerk	New Boston	TX
Collin County	Texas DOT Dallas District	Mesquite	TX
Denton County	Transportation and Engineering	Denton	TX
Duval County	Transportation	San Diego	TX
Jim Wells County	Emergency Management	Alice	TX
Liberty County	Engineering Department	Liberty	TX
Victoria County	Environmental Services	Victoria	TX
Victoria County	Historical Commission	Victoria	TX
Webb County	Road and Bridge	Laredo	TX
Webb County	Planning Department	Laredo	TX
Town of Bloomburg	City Secretary	Bloomburg	TX
City of Carrollton	Community Development	Carollton	TX
City of Carrollton	Transportation Engineering	Carollton	TX
Town of Copper Canyon	Town Secretary	Copper Canyon	TX
Town of Copper Canyon	Planning and Zoning Commission	Copper Canyon	TX
City of Fort Worth	Department of Transportation and Public Works	Fort Worth	TX

R.5 County and Local Government Organizations

ORGANIZATION/AGENCY	DEPARTMENT	CITY	STATE
City of Fort Worth	Department of Planning & Data Analytics	Fort Worth	TX
Town of Hebron	Mayor	Carollton	TX
City of Lewisville	Engineering Department	Lewisville	TX
City of Lewisville	Department of Planning and Zoning	Lewisville	TX
City of Benavides	Secretary	Benavides	TX
City of Beasley	Beasley Community Volunteer Fire Department	Beasley	TX
City of Richmond	Street and Drainage Department	Richmond	TX
City of Rosenberg	City Engineering Department	Rosenberg	TX
City of Edna	Planning and Zoning Commission	Edna	TX
City of Ganado	Mayor	Ganado	TX
City of Beaumont	Department of Public Works and Technology Services	Beaumont	TX
City of Nome	Mayor	Nome	TX
City of Ames	Mayor	Ames	TX
City of Dayton	Department of Public Works	Dayton	TX
City of Liberty	Fire Department	Liberty	TX
City of Robstown	Department of Public Works	Robstown	TX
City of Robstown	Planning and Zoning Department	Robstown	TX
Rose City	Mayor	Vidor	TX
Rose City	City Secretary	Vidor	TX
Town of Refugio	Mayor	Refugio	TX
Town of Woodsboro	Mayor	Woodsboro	TX
Town of Woodsboro	Department of Management and Planning	Corpus Christi	TX
City of Haslet	Planning and Zoning Department	Haslet	TX
City of Wharton	Department of Public Works	Wharton	TX
City of Wharton	Department of Community Development	Wharton	TX
Converse	Planning and Zoning Commission	Converse	TX
Oilton	Justice of the Peace Tri-City Substation	Oilton	TX
Aguilares	Justice of the Peace Tri-City Substation	Oilton	TX
Louise	Wharton County Justice Peace	Louise	TX
Placedo	Volunteer Fire Department	Placedo	TX
Inez	Fire Department	Inez	TX
San Diego	City Hall and Police Department	San Diego	TX
Jackson County	Jackson County Courthouse	Edna	TX

R.5 County and Local Government Organizations

ORGANIZATION/AGENCY	DEPARTMENT	CITY	STATE
Jefferson County	n/a	Beaumont	TX
Town of Northlake	Department of Development Services	Northlake	TX
City of Dallas	Office of Budget and Management Services, Community Development	Dallas	TX
San Patricio County	Floodplain Development and Permitting	Sinton	TX
City of Corpus Christi	City Manager	Corpus Christi	TX
Vidor	Streets-Drainage-Parks	Vidor	TX
Town of Flower Mound	Planning Department	Flower Mound	TX
City of Sugar Land	Planning Department	Sugar Land	TX
City of Wylie	Department of Planning and Zoning	Wylie	TX
Town of Flower Mound	Department of Public Works	Flower Mound	TX
City of Sugar Land	Department of Public Works	Sugar Land	TX
Missouri City	Public Works	Missouri City	TX
City of Laredo	Engineering Department	Laredo	TX
Refugio County	County Clerk	Refugio	TX
Orange County	Road and Bridge	Orange	TX
Fort Bend County	Environmental Health	Richmond	TX
City of Corpus Christi	Department of Public Works	Corpus Christi	TX
Tarrant County	Transportation	Fort Worth	TX
City of Nederland	Department of Public Works	Nederland	TX
City of Ames	City Secretary	Ames	TX
City of Plano	Sustainability and Environmental Education Division	Plano	TX
City of Sugar Land	Environmental & Neighborhood Services	Sugar Land	TX
Justin	Planning and Zoning	Justin	TX
City of Wylie	Engineering Department	Wylie	TX
Stafford	Planning and Zoning	Stafford	TX
City of Murphy	Department of Public Works	Murphy	TX
City of Port Neches	Department of Public Works	Port Neches	TX
City of Rosenberg	Department of Community Development	Rosenberg	TX
Jim Hogg County	County Clerk	Hebbronville	TX
Harris County	Attorney's Office	Houston	TX
Harris County	Pollution Control Services Department	Pasadena	TX
City of Appleton	Fire Department	Appleton	WI
Town of Campbell	Fire Department	La Crosse	WI
Town of Shelby	Fire Department	La Crosse	WI

R.5 County and Local Government Organizations

ORGANIZATION/AGENCY	DEPARTMENT	CITY	STATE
City of Milwaukee	Fire Department	Milwaukee	WI
City of Wauwatosa	Fire Department	Wauwatosa	WI
Sun Prairie	Fire Department	Sun Prairie	WI
City of Marinette	Fire Department	Marinette	WI

R.6 Local Elected Officials

FIRST-NAME	LAST-NAME	TITLE	ORGANIZATION/AGENCY	CITY	STATE
Allen	Brown	Mayor	City of Texarkana	Texarkana	AR
Betsy	Harrell	Secretary Quorum Court	Benton County	Bentonville	AR
Bob	Tharp	Mayor	City of Decatur	Decatur	AR
Cathy Hardin	Harrison	County Judge/County CEO	Miller County	Texarkana	AR
Dwight	Billings	Mayor	City of Grannis	Grannis	AR
Rhymond	French	Mayor	City of Wilton	Wilton	AR
Greg	Ray	County Judge	Sevier County	De Queen	AR
Heather	Long	Mayor	City of Winthrop	Winthrop	AR
Lester	Overturf	Mayor	City of Gillham	Gillham	AR
Kevin	Johnston	Mayor	City of Gentry	Gentry	AR
Kurt	Maddox	Mayor	City of Gravette	Gravette	AR
James	Sutton	Mayor	City of Ashdown	Ashdown	AR
Jeff	Brown	Mayor	City of De Queen	De Queen	AR
Seth	Smith	Mayor	City of Mena	Mena	AR
Judy	Nation	Mayor	City of Siloam Springs	Siloam Springs	AR
Brandon	Ellison	County Judge	P.O.lk County	Mena	AR
Terisia	Hartley	Mayor	City of Vandervoort	Vandervoort	AR
Deanna	Sivley	County Clerk	Little River County	Ashdown	AR
Sandra	Furlow	Mayor	City of Ogden	Ogden	AR
Shane	Weber	Mayor	City of Sulphur Springs	Sulphur Springs	AR
Joan	Headley	Mayor	City of Cove	Cove	AR
Linda	Denton	Mayor	City of Hatfield	Hatfield	AR
Sandra	Wilcher	Mayor	City of Wickes	Wickes	AR
Austin~~Trevor~~	~~Willis~~Pruett	Mayor	City of Camanche	Camanche	IA

R.6 Local Elected Officials

FIRST-NAME	LAST-NAME	TITLE	ORGANIZATION/AGENCY	CITY	STATE
Robert	Gallagher	Mayor	City of Bettendorf	Bettendorf	IA
Marty	Hills	Mayor	City of Fruitland	Fruitland	IA
Kellyann	Lekar	Chief Judge	Clayton County	Elkader	IA
Mary	Ann Brown	Chief Judge	Appanoose County	Mason City	IA
Marlita	Greve	Chief Judge	Clinton County	Clinton	IA
Marlita	Greve	Chief Judge	Jackson County	Maquoketa	IA
Mary	Ann Brown	Chief Judge	Jefferson County	Fairfield	IA
Mary	Ann Brown	Chief Judge	Keokuk County	Sigourney	IA
Mary	Ann Brown	Chief Judge	Louisa County	Wapello	IA
Mary	Ann Brown	Chief Judge	Monroe County	Albia	IA
Mary	Ann Brown	Chief Judge	Wapello County	Ottumwa	IA
Mary	Ann Brown	Chief Judge	Washington County	Washington	IA
Diana	L. Broderson	Mayor	City of Muscatine	Muscatine	IA
Marlita	Greve	Chief Judge	Scott County	Davenport	IA
Jason	Leffler	Mayor	City of Blakesburg	Blakesburg	IA
Jaron	Rosien	Mayor	City of Ainsworth	Washington	IA
Linda	Demry	Chairwoman	Appanoose County	Centerville	IA
Marlita	Greve	Chief Judge	Muscatine County	Muscatine	IA
Mike	Bawden	Mayor	City of Riverdale	Riverdale	IA
Jerry	Kirk	Mayor	City of Letts	Letts	IA
Kevin	Kernan	Mayor	City of Princeton	Princeton	IA
Mike	Matson	Mayor	City of Davenport	Davenport	IA
Caleb	Housh	Mayor	City of Seymour	Seymour	IA
Mark	Jay	Mayor	City of Cotter	Cotter	IA
Mark	Huston	Mayor	City of Columbus Junction	Columbus Junction	IA
Roger	Michels	Mayor	City of Bellevue	Bellevue	IA
Barbara	Milburn	Mayor	City of Rathbun	Centerville	IA
Interested	Party	Mayor	City of Buffalo	Buffalo	IA
Carl	Clark	Mayor	City of Mystic	Mystic	IA
Sue	Reid	Mayor	City of Fredonia	Fredonia	IA
Tom	X. Lazio	Mayor	City of Ottumwa	Ottumwa	IA
Ray	C. Allen	Mayor	Le Claire	LeClaire	IA
Roy	Miller	Mayor	City of Moravia	Moravia	IA
Ken	Beck	Board of Supervisors	Scott County	Davenport	IA
Ken	Croken	Board of Supervisors	Scott County	Davenport	IA

R.6 Local Elected Officials

FIRST-NAME	LAST-NAME	TITLE	ORGANIZATION/AGENCY	CITY	STATE
Andrew	Kida	Administrator	City of Camanche	Camanche	IA
Scott	Maddasion	Mayor	City of Clinton	Clinton	IA
Michael	Huppert	Chief Judge	Wayne County	Corydon	IA
David	Pileski	Mayor	Village of Roselle	Roselle	IL
Jonathon	Brust	Mayor	City of Genoa	Genoa	IL
John	Lynch	President	Village of Kingston	Kingston	IL
Kenneth	Viglietta	Mayor	City of Lanark	Lanark	IL
Kevin	Wallace	President	Village of Bartlett	Bartlett	IL
Lori	Lightfoot	Mayor	City of Chicago	Chicago	IL
David	Kaptain	Mayor	City of Elgin	Elgin	IL
Jeff	Pruyn	Mayor	Village of Itasca	Itasca	IL
Chris	Lain	Mayor	City of Savanna	Savanna	IL
Mike	Reid Jr.	President	Village of Hampshire	Hampshire	IL
Carl	R. Bates	Mayor	City of Mount Carroll	Mount Carroll	IL
Barrett	F. Pedersen	President	Village of Franklin Park	Franklin Park	IL
Sandie	Maahs	Clerk	Village of Davis Junction	Davis Junction	IL
Rodbney	S. Craig	President	Village of Hanover Park	Hanover Park	IL
Nunzio	Pulice	Mayor	City of Wood Dale	Wood Dale	IL
Martin	Typer	President	Village of Stillman Valley	Stillman Valley	IL
Ryan	Block	President	Village of Kirkland	Kirkland	IL
Steve	Wiedmeyer	President	Village of Pingree Grove	Pingree Grove	IL
Tom	Dailly	President	Village of Schaumburg	Schaumburg	IL
Frank	DeSimone	President	Village of Bensenville	Bensenville	IL
Andy-John	Kalkounos	Township Supervisor	Township of Palatine	Palatine	IL
Michael	Jenny	Village President	Village of Glenview	Glenview	IL
Chuck	Munsell	Mayor	Pittsburg City	Pittsburg	KS
Kyle	Rennie	County Clerk	Cherokee County	Columbus	KS
Donald	Pyle	County Clerk	Crawford County	Girard	KS
David	Fornelli	Mayor	Frontenac City	Frontenac	KS
Interested	Party	Clerk's Office	Unified Government of Wyandotte County	Kansas City	KS
Brian	Abshire	Parish President	Calcasieu Parish	Lake Charles	LA
Adrian	Perkins	Mayor	City of Shreveport	Shreveport	LA
Bryan	McReynolds	Parish Administrator	Beauregard Parish	DeRidder	LA

R.6 Local Elected Officials

FIRST-NAME	LAST-NAME	TITLE	ORGANIZATION/AGENCY	CITY	STATE
Glenna	Luther	City Council Clerk	City of De Ridder	DeRidder	LA
Reggie	Roe	Parish President	De Soto Parish	Mansfield	LA
Jim	Bonsal	Parish President	Webster Parish	Minden	LA
Donna W.	Duval	Mayor	City of Rosepine	Rosepine	LA
Ronny	Festavan	Mayor	Town of Vivian	Vivian	LA
Kim	Bradford	Clerk	City of South Mansfield	Mansfield	LA
Chester	Coffman	Mayor	Town of Mooringsport	Mooringsport	LA
Jim	Galambos	Mayor	City of Blanchard	Blanchard	LA
Paul W.	Lockard	Mayor	Village of Rodessa	Rodessa	LA
John H.	Mayweather Sr.	Mayor	City of Mansfield	Mansfield	LA
James T.	Sims	Mayor	Oil City	Oil City	LA
Rick	Allen	Mayor	City of Leesville	Leesville	LA
Riley	Smith	Mayor	City of DeQuincy	DeQuincy	LA
Lyndon	Johnson	Parish President	Caddo Parish	Shreveport	LA
Clarence	Beebe	Mayor	City of Hornbeck	Hornbeck	LA
Denis	Jordan	Mayor	City of New Llano	New Llano	LA
Mike	Duggan	Mayor	Mayor of Detroit	Detroit	MI
Mike	Poellinger	Mayor	City of La Crescent	La Crescent	MN
Marion	Greene	Chair	Hennepin County Board of Commissioners	Minneapolis	MN
Jim	Wheatley	Commissioner	Bates County	Butler	MO
William	J.P. Doubek	Mayor	City of Neosho	Neosho	MO
Tracy	Allen	Mayor	City of Polo	Polo	MO
Rusty	Wilson	Mayor	City of Anderson	Anderson	MO
Nick	McKelvey	Mayor	City of Drexel	Drexel	MO
Mark	Powers	Mayor	City of Carl Junction	Carl Junction	MO
Interested	Party	n/a	City of Cleveland	Cleveland	MO
Bill	Reiboldt	Commissioner	Newton County	Neosho	MO
Joe	Hardin	Commissioner	Vernon County	Nevada	MO
Phillip	Ray	Commissioner	Grundy County	Trenton	MO
CR Bud	Motsinger	Commissioner	Caldwell County	Kingston	MO
Frank	White Jr.	County Executive	Jackson County	Kansas City	MO
John	Bartosh	Commissioner	Jasper County	Carthage	MO
Matt	Nolker	City Administrator	City of Lawson	Lawson	MO
Jerry	Nolte	Commissioner	Clay County	Liberty	MO
Lyndell	Brenton	Mayor	City of Liberty	Liberty	MO

R.6 Local Elected Officials

FIRST-NAME	LAST-NAME	TITLE	ORGANIZATION/AGENCY	CITY	STATE
Leonard	Jones Jr.	Mayor	City of Grandview	Grandview	MO
Theresa	Kelly	Mayor	City of Chillicothe	Chillicothe	MO
J.R.	Fisher	Mayor	City of Goodman	Goodman	MO
Quinton	Lucas	Mayor	Kansas City	Kansas City	MO
Bob	Huston	Commissioner	Cass County	Harrisonville	MO
Interested	Party	n/a	City of Hume	Hume	MO
Mary	Williams	Mayor	City of Cowgill	Cowgill	MO
Robert	Munden	Commissioner	Putnam County	Unionville	MO
Joe	Hardin	Commissioner	Vernon County	Nevada	MO
Bill	Lant	Commissioner	McDonald County	Pineville	MO
Quinton	Lucas	Mayor	Kansas City	Kansas City	MO
Chris	May	Commissioner	Sullivan County	MILAN	MO
CR Bud	Motsinger	Commissioner	Caldwell County	Kingston	MO
Robert	Munden	Commissioner	Putnam County	Unionville	MO
Interested	Party	n/a	City of Lanagan	Lanagan	MO
Interested	Party	n/a	City of Noel	Noel	MO
Interested	Party	Mayor	City of Chillicothe	Chillicothe	MO
Greg	Taylor	Mayor	City of Lawson	Lawson	MO
Sharon	Powell	Mayor	City of Excelsior Springs	Excelsior Springs	MO
Norman K	Larkey Sr.	Mayor	City of Belton	Belton	MO
Bob	King	Commissioner	Ray County	Richmond	MO
Rick	Lett	Western Commissioner	McDonald County	Pineville	MO
Rick	Lett	Western Commissioner	City of Lanagan	Lanagan	MO
Rick	Lett	Western Commissioner	City of Noel	Noel	MO
Ryan	Stanley	Mayor	City of Joplin	Carl Junction	MO
Chris	May	Commissioner	Sullivan County	MILAN	MO
Jim	Paul	Chairman	Village of AirPort Drive	Joplin	MO
Michelle	Kelly	Mayor	City of Braymer	Braymer	MO
Interested	Party	n/a	City of Birmingham	Birmingham	MO
Ed	Douglas	Commissioner	Livingston County	Chillicothe	MO
Jean	Ann Wright	Mayor	City of Stillwell	Stilwell	OK
Troy	Dyer	Mayor	City of Heavener	Heavener	OK
Tamara	Hibbard	Mayor	Marble City	Marble City	OK
Ernie	Martens	Mayor	City of Sallisaw	Sallisaw	OK
Interested	Party	n/a	City of Greasy	Gans	OK

R.6 Local Elected Officials

FIRST-NAME	LAST-NAME	TITLE	ORGANIZATION/AGENCY	CITY	STATE
Interested	Party	n/a	City of Howe	Howe	OK
Interested	Party	n/a	City of Panama	Panama	OK
Interested	Party	n/a	City of Spiro	Spiro	OK
Interested	Party	n/a	Town of Cameron	Cameron	OK
Interested	Party	n/a	Town of Watts	Watts	OK
Interested	Party	n/a	City of Westville	Westville	OK
Scotty	White	Mayor	City Poteau	Poteau	OK
Andrew	Friedberg	Mayor	City of Bellaire	Bellaire	TX
Alice	Acuna	Executive Assistant	City of Corpus Christi	Corpus Christi	TX
Amy	Varnell	Clerk	Cass County	Linden	TX
André	Wimer	City Manager	City of Porth Neches	Port Neches	TX
Barbara	Svatek	County Clerk	Wharton County	Wharton	TX
Barbara	Fleming	Deputy Mayor Pro Tem	Town of Highland Village	Highland Village	TX
Rebecca	Haas	Mayor	City of Richmond	Richmond	TX
Bruce	Karbowski	County Commissioner	Liberty County	Liberty	TX
Becky	Veit	City Secretary	City of Odem	Odem	TX
Teneshia	Hudspeth	County Clerk	Harris County	Houston	TX
Laura	Richard	County Clerk	Fort Bend County	Richmond	TX
Laura	Richard	County Clerk	Fort Bend County	Richmond	TX
Tracy	Smith	County Clerk	Hopkins County	Sulphur Springs	TX
Chris	Duque	City Manager	City of Nederland	Nederland	TX
Chad	West	Mayor Pro Tem and City Council District 1	City of Dallas	Dallas	TX
Cathy	Duhart	City Secretary	City of Sinton	Sinton	TX
Edward	Adams	Mayor	City of Sinton	Sinton	TX
Christina	Flores	City Secretary	City of Kendleton	Kendleton	TX
Darryl	K. Humphrey Sr.	Mayor	City of Kendleton	Kendleton	TX
Issabelle N	Garcia	City Director	City of San Diego	San Diego	TX
Lee	Haidusek Chambers	County Clerk	Liberty County	Liberty	TX
Rodney	Ellis	County Commissioner	Harris County	Houston	TX
Robert	Gallegos	City Councilmember	City of Houston	Houston	TX
Sam	Young	Precinct 4 Commissioner	Franklin County	Mt. Vernon	TX

R.6 Local Elected Officials

FIRST-NAME	LAST-NAME	TITLE	ORGANIZATION/AGENCY	CITY	STATE
Mickey	Barker	County Commissioner	Hopkins County	Sulphur Springs	TX
Chris	Barbee	Mayor	City of El Campo	El Campo	TX
Austin	Petersen	Councilmember	City of Krum	Krum	TX
Betty	Crane	County Clerk	Franklin County	Mount Vernon	TX
Interested	Party		Orange County	Orange	TX
Jamie	Clark	County Clerk	City of Justin	Hemphill	TX
Becky	Landrum	County Clerk	Hunt County	Greenville	TX
Stacey	Kemp	County Clerk	Collins County	McKinney	TX
Charlotte	Wilcox	Mayor	Town of Highland Village	Highland Village	TX
Cecil	Willis	Mayor	City of Stafford	Stafford	TX
Cynthia	Carrasco	Mayor	City of Alice	Alice	TX
Robert	Hernandez	County Commissioner	Nueces County	Corpus Christi	TX
Steven	Horelica	Mayor	City of Devers	Devers	TX
Darrell	Hale	County Commissioner	Collins County	McKinney	TX
Gyna	Bivens	District 5 City Councilmember and Mayor Pro Tem	City of Fort Worth	Fort Worth	TX
Amy	Peck	District A	City of Houston	Houston	TX
David	Rettig	Mayor	Town of Northlake	Northlake	TX
Donna	Welsh	Town Administrator	Town of Copper Canyon	Copper Canyon	TX
Elodia	M. Garza	County Clerk	Duval County	San Diego	TX
Theresa	Goodness	County Clerk	Jefferson County	Beaumont	TX
Gerard	Hudspeth	Mayor	City of Denton	Denton	TX
Gracie	Alaniz Gonzales	County Clerk	San Patricio County	Sinton	TX
Gary	Hulsey	Mayor	City of Haslet	Haslet	TX
Glenn	Johnson	Mayor	City of Port Neches	Port Neches	TX
Grady	Prestage	County Commissioner	Fort Bend County	Richmond	TX
Gus	Ruiz	Commissioner of Precinct 4	Cameron County	La Feria	TX
Glenda	Alston	County Clerk	Hardin County	Kountze	TX
Janet	DePuy	Mayor Pro Tem/ Council Member Place 3	City of Richardson	Richardson	TX
Jeff	Bauknight	Mayor	City of Victoria	Victoria	TX

R.6 Local Elected Officials

FIRST-NAME	LAST-NAME	TITLE	ORGANIZATION/AGENCY	CITY	STATE
JC	Perez III	County Clerk	Jim Wells County	Alice	TX
Katherine	R. Brooks	County Clerk	Jackson County	Edna	TX
Juan Carlos	Guerra	County Judge	Jim Hogg County	Hebbronville	TX
James	Clark	Mayor Pro Tem	Sabine County	Justin,	TX
Jeff	Forrester	Mayor Pro Tem	City of Wylie	Wylie	TX
Jesús	A. Garza	City Manager	City of Victoria	Victoria	TX
JJ	Koch	County Commissioner	Dallas County	Dallas	TX
Janie	Martinez	City Administrator	City of Odem	Odem	TX
Joan	Newman	County Clerk	Titus County	Mt. Pleasant	TX
John	Cowen	City Commissioner	City of Brownsville	Brownsville	TX
Jose	Ollervides	Assistant to the Mayor	City of Laredo	Laredo	TX
James	Quin	City Administrator	City of Haslet	Haslet	TX
Johnny	Trahan	County Commissioner	Orange County	Orange	TX
Lina	Hidalgo	County Judge	Harris County	Houston	TX
Juli	Luke	County Clerk	Denton County	Denton	TX
Joe	Zimmerman	Mayor	City of Sugar Land	Sugar Land,	TX
Kayci	Prince	Mayor Pro Tem	City of Plano	Plano	TX
Ken	Oltmann	Mayor Pro Tem Place 4	City of Murphy	Murphy	TX
Kelley	Price	County Clerk	Wood County	Quitman	TX
Kevin	Raines	Mayor	City of Rosenberg	Rosenberg	TX
Joe	Soto	Mayor	City of South Houston	South Houston	TX
Lance	Avant	City Secretary	City of South Houston	South Houston	TX
Lisa	Ramirez	Administrative Assistant	Victoria County	Victoria	TX
Elizabeth	Woodall	Mayor	City of Justin	Justin,	TX
Lynn	Clouser	Councilmember	Missouri City	Missouri City	TX
Margie	Gonzalez	County Commissioner	Jim Wells County	Alice	TX
Matthew	Porter	Mayor	City of Wylie	Wylie	TX
Kevin	Falconer	Mayor	City of Carrollton	Carrollton	TX
Al	Suarez	Mayor	City of Converse	Converse	TX
Caroline	Wadzeck	Mayor	City of Dayton	Dayton	TX
Derek	France	Mayor	Town of Flower Mound	Flower Mound	TX
Sylvester	Turner	Mayor	City of Houston	Houston	TX
John	Muns	Mayor	City of Plano	Plano	TX

R.6 Local Elected Officials

FIRST-NAME	LAST-NAME	TITLE	ORGANIZATION/AGENCY	CITY	STATE
William	Sanders	Mayor	City of China	China	TX
Pete	Saenz	Mayor	City of Laredo	Laredo	TX
Lance	Smiga	Mayor	City of Edna	Edna	TX
Michael	Esparza	City Manager	City of Alice	Alice	TX
Mike	Lombardo	Mayor Pro Tem	Town of Highland Village	Highland Village	TX
Matthew	Poole	Mayor	Town of Ponder	Ponder	TX
Misty	Songe	Mayor	City of Vidor	Vidor	TX
Interested	Party	n/a	City of China	China	TX
Kristi	Ayers	City Secretary	City of Devers	Devers	TX
Kara	Sands	County Clerk	Nueces County	Corpus Christi	TX
Kerry	Abney	Mayor	City of Nome	Nome	TX
Gracie	Alaniz Gonzales	County Clerk	San Patricio County	Sinton	TX
Don	Albanese	Mayor	City of Nederland	Nederland	TX
Darrell	Apffel	County Commissioner	Galveston County	Bacliff	TX
Joan	Newman	County Clerk	Titus County	Mt. Pleasant	TX
Tim	Barker	Mayor	City of Wharton	Wharton	TX
Suzanne	Bishop	City Secretary	Town of Bloomburg	Bloomburg	TX
Rudy	Castillo	Deputy Mayor Pro Tem	Town of Copper Canyon	Copper Canyon	TX
Sijfredo	Chacho Flores	Mayor	City of Benavides	Benavides	TX
Roy	Charles Brooks	County Commissioner	Tarrant County	Fort Worth	TX
Kelly	Clem	Mayor	Town of Hebron	Carrollton	TX
Pam	Downs	City Clerk	Town of Avinger	Avinger	TX
Wanda	Dukes	Mayor	Town of Refugio	Refugio	TX
~~Rodney~~	~~Ellis~~	~~County Commissioner~~	~~Harris County~~	~~Houston~~	~~TX~~
John	F Warren	County Clerk	Dallas County	Dallas	TX
Debbie	Garcia	Secretary	City of Benavides	Benavides	TX
Theresa	Goodness	County Clerk	Jefferson County	Beaumont	TX
Pete	Guerra	County Commissioner	Duval County	San Diego	TX
Margie	Gonzalez	County Commissioner	Jim Wells County	Alice	TX
Mark	Hutchins	County Commissioner	Hunt County	Greenville	TX
Liz	James	County Clerk	Harrison County	Marshall	TX
Bruce	Karbowski	County Commissioner	Liberty County	Liberty	TX
Becky	Landrum	County Clerk	Hunt County	Greenville	TX

R.6 Local Elected Officials

FIRST-NAME	LAST-NAME	TITLE	ORGANIZATION/AGENCY	CITY	STATE
Sonia	Lopez	County Commissioner	San Patricio County	Sinton	TX
Jose	Luis Neira	Director	Webb County	Laredo	TX
Robin	Mouton	Mayor	City of Beaumont	Beaumont	TX
Donald	Mueller	Councilmember and Mayor Pro-Tem	City of Wharton	Wharton	TX
Mattie	Parker	Mayor	City of Forth Worth	Fort Worth	TX
Interested	Party	n/a	City of Dayton	Dayton	TX
Interested	Party	n/a	City of Woodsboro	Woodsboro	TX
Marvin	Parvino	Mayor	Town of Avinger	Avinger	TX
JC	Perez III	County Clerk	Jim Wells County	Alice	TX
Tina	Petty	Clerk	Cameron County	New Boston	TX
Carl	Pickett	Mayor	City of Liberty	Liberty	TX
Vernon	Pierce	County Commissioner	Jefferson County	Beaumont	TX
Grady	Prestage	County Commissioner	Fort Bend County	Richmond	TX
Kenneth	Reid	Mayor	City of Beasley	Beasley	TX
Ron	Robertson	Mayor	Town of Copper Canyon	Copper Canyon	TX
Kara	Sands	County Clerk	Nueces County	Corpus Christi	TX
Scott	Sartain	County Clerk	Morris County	Daingerfield	TX
Delores	Simmons	Mayor	Town of Bloomburg	Bloomburg	TX
Tracy	Smith	County Clerk	Hopkins County	Sulphur Springs	TX
Bonnie	Stephenson	Mayor	Rose City	Vidor	TX
Dwight	Sullivan	County Clerk	Galveston County	Galveston	TX
Dora	Tarbox	City Secretary	Rose City	Vidor	TX
Clinton	Tegeler	Mayor	City of Ganado	Ganado	TX
Margie	Ibarra	County Clerk	Webb County	Laredo	TX
Ryan	Williams	County Commissioner	Denton County	Denton	TX
Julie	Worster	City Secretary	City of Lewisville	Lewisville	TX
Jaime	Resendez	Deputy Mayor Pro Tem and City Council District 5	City of Dallas	Dallas	TX
Pat	Cochran	Mayor Pro Tem	City of Carrollton	Carrollton	TX
Paul	Meltzer	At Large Place 6 (Mayor Pro Tem)	City of Denton	Denton	TX
Paul	Voelker	Mayor	City of Richardson	Richardson	TX
Paulette	M. Guajardo	Mayor	City of Corpus Christi	Corpus Christi	TX

R.6 Local Elected Officials

FIRST-NAME	LAST-NAME	TITLE	ORGANIZATION/AGENCY	CITY	STATE
Chris	Jarmon	Assistant City Manager	City Manager	Liberty	TX
Peter	Zanoni	City Manager	City of Corpus Christi	Corpus Christi	TX
Paula	Favors	City Secretary	City of Wharton	Wharton	TX
Interested	Party	n/a	Town of Pecan Grove	Richmond	TX
Sandeep	Sharma	Deputy Mayor Pro Tem	Town of Flower Mound	Flower Mound	TX
Bob	Bruggeman	Mayor	City of Texarkana	Texarkana	TX
Ida	Ramirez	County Clerk	Refugio County	Refugio	TX
Ronald	Harris	Mayor	City of Krum	Krum	TX
Robbie	Hood	City Manager	City of Vidor	Vidor	TX
Robin	Elackatt	Mayor	Missouri City	Missouri City	TX
Margie	Ibarra	County Clerk	Webb County	Laredo	TX
Randy	Skinner	Director	Tarrant County	Fort Worth	TX
Sammy	Stone	County Commissioner	Bowie County	New Boston	TX
Scott	Bradley	Mayor	City of Murphy	Murphy	TX
Sheri	Clearman	n/a	Town of Ponder	Ponder	TX
Scott	Sartain	County Clerk	Morris County	Daingerfield	TX
Cornelius	Gilmore	Mayor	City of Ames	Ames	TX
Jennifer	Purnell	City Secretary	City of Ames	Ames	TX
Darrell	Apffel	County Commissioner	Galveston County	Bacliff	TX
Ronald	Burton	City Manager	City of Port Arthur	Port Arthur	TX
Sonia	Lopez	County Commissioner	San Patricio County	Sinton	TX
Sylvia	Garza Perez	County Clerk	Cameron County	Brownsville	TX
Thurman	Bill Bartie	Mayor	City of Port Arthur	Port Arthur	TX
Juan	Mendez	Mayor	City of Brownsville	Brownsville	TX
Heidi	Easley	County Clerk	Victoria County	Victoria	TX
Vikie	Smith	County Clerk	Marion County	Jefferson	TX
Vernon	Pierce	County Commissioner	Jefferson County	Beaumont	TX
William	D. Hatfield	County Commissioner	Harrison County	Waskom	TX

R.7 Tribal Governmental Organizations

TITLE	CITY	STATE	TRIBE
Chairman	Hollywood	FL	Seminole Tribe of Florida
Chairwoman	Tama	IA	Sac & Fox Tribe of the Mississippi in Iowa
Chairperson	White Cloud	KS	Iowa Tribe of Kansas and Nebraska
Chairman	Horton	KS	Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas
Chairperson	Mayetta	KS	Prairie Band Potawatomi Nation
Chairman	Reserve	KS	Sac & Fox Nation of Missouri in Kansas and Nebraska
Tribal Chairman	Charenton	LA	Chitimacha Tribe of Louisiana
Chairman	Elton	LA	Coushatta Tribe of Louisiana
Principal Chief	Jena	LA	Jena Band of Choctaw Indians
Chairman	Marksville	LA	Tunica-Biloxi Indian Tribe
Chairperson	Wilson	MI	Hannahville Indian Community, Michigan
President	Baraga	MI	Keweenaw Bay Indian Community, Michigan
Chairman	Watersmeet	MI	Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan
Chairperson	Harbor Springs	MI	Little Traverse Bay Bands of Odawa Indians, Michigan
Chairperson	Dowagiac	MI	Pokagon Band of Potawatomi Indians, Michigan and Indiana
Chairman	Nett Lake	MN	Bois Forte Band (Nett Lake) of the Minnesota Chippewa Tribe
Chairperson	Cloquet	MN	Fond du Lac Band of the Minnesota Chippewa Tribe
Chairwoman	Grand Portage	MN	Grand Portage Band of the Minnesota Chippewa Tribe
Chairman	Cass Lake	MN	Leech Lake Band of the Minnesota Chippewa Tribe
President	Morton	MN	Lower Sioux Indian Community in the State of Minnesota
Chief Executive	Onamia	MN	Mille Lacs Band of Ojibwe (The Mille Lacs Band of the Minnesota Chippewa Tribe Mille Lacs Band of Ojibwe)
President	Cass Lake	MN	Minnesota Chippewa Tribe
President	Welch	MN	Prairie Island Indian Community in the State of Minnesota
Chairperson	Red Lake	MN	Red Lake Band of Chippewa Indians, Minnesota
Chairperson	Prior Lake	MN	Shakopee Mdewakanton Sioux Community of Minnesota
Chairperson	Granite Falls	MN	Upper Sioux Community, Minnesota
Chairperson	White Earth	MN	White Earth Band of the Minnesota Chippewa Tribe
Chief	Choctaw	MS	Mississippi Band of Choctaw Indians

R.7 Tribal Governmental Organizations

TITLE	CITY	STATE	TRIBE
President	Harlem	MT	Fort Belknap Indian Community of the Fort Belknap Reservation of Montana
Chairwoman	Fort Totten	ND	Spirit Lake Tribe, North Dakota
Chairperson	Belcourt	ND	Turtle Mountain Band of Chippewa Indians of North Dakota
Chairperson	Macy	NE	Omaha Tribe of Nebraska
Chairperson	Niobrara	NE	Santee Sioux Nation, Nebraska
Chairperson	Winnebago	NE	Winnebago Tribe of Nebraska
President	Mescalero	NM	Mescalero Apache Tribe of the Mescalero Reservation, New Mexico
Chief	Wetumka	OK	Alabama-Quassarte Tribal Town
Chairman	Anadarko	OK	Apache Tribe of Oklahoma
Chairperson	Binger	OK	Caddo Nation of Oklahoma
Principal Chief	Tahlequah	OK	Cherokee Nation
Governor	Concho	OK	Cheyenne and Arapaho Tribes, Oklahoma
Chief	Durant	OK	Choctaw Nation of Oklahoma
Chairman	Shawnee	OK	Citizen Potawatomi Nation, Oklahoma
Chairman	Lawton	OK	Comanche Nation, Oklahoma
President	Anadarko	OK	Delaware Nation, Oklahoma
Chairman	Perkins	OK	Iowa Tribe of Oklahoma
Chair	Kaw City	OK	Kaw Nation, Oklahoma
Chairman	McLoud	OK	Kickapoo Tribe of Oklahoma
Chief	Miami	OK	Miami Tribe of Oklahoma
Principal Chief	Okmulgee	OK	Muscogee (Creek) Nation
Principal Chief	Pawhuska	OK	Osage Nation
Chairman	Red Rock	OK	Otoe-Missouria Tribe of Indians, Oklahoma
Chief	Miami	OK	Peoria Tribe of Indians of Oklahoma
Chairperson	Quapaw	OK	Quapaw Tribe of Indians
Principal Chief	Stroud	OK	Sac & Fox Nation, Oklahoma
President	Tonkawa	OK	Tonkawa Tribe of Indians of Oklahoma
Chief	Tahlequah	OK	United Keetoowah Band of Cherokee Indians in Oklahoma
President	Anadarko	OK	Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie), Oklahoma
Chairperson	Flandreau	SD	Flandreau Santee Sioux Tribe of South Dakota
Interim Chairperson	Agency Village	SD	Sisseton-Wahpeton Oyate of the Lake Traverse Reservation, South Dakota
Chairperson	Livingston	TX	Alabama-Coushatta Tribe of Texas

R.7 Tribal Governmental Organizations

TITLE	CITY	STATE	TRIBE
Chairman	Odanah	WI	Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin
Chairman	Crandon	WI	Forest County Potawatomi Community of Wisconsin
President	Black River Falls	WI	Ho-Chunk Nation of Wisconsin
President	Lac du Flambeau	WI	Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin
Chairwoman	Keshena	WI	Menominee Indian Tribe of Wisconsin
Chairperson	Bayfield	WI	Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin
Chairperson	Crandon	WI	Sokaogon Chippewa Community, Wisconsin

R.8 Tribal Historic Preservation Officers

TITLE	CITY	STATE	TRIBE
Tribal Historic Preservation Officer (THPO)	Clewiston	FL	Seminole Tribe of Florida
Chairwoman	Tama	IA	Sac and Fox Tribe of the Mississippi in Iowa
Director of Historic Preservation	Tama	IA	Sac and Fox Tribe of the Mississippi in Iowa
THPO	White Cloud	KS	Iowa Tribe of Kansas and Nebraska
Vice Chairman	White Cloud	KS	Iowa Tribe of Kansas and Nebraska
Chairman	Horton	KS	Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas
THPO	Mayetta	KS	Prairie Band Potawatomi Nation
Chairman	Reserve	KS	Sac & Fox Nation of Missouri in Kansas and Nebraska
THPO	Charenton	LA	Chitimacha Tribe of Louisiana
THPO	Elton	LA	Coushatta Tribe of Louisiana
THPO	Jena	LA	Jena Band of Choctaw Indians
Assistant THPO	Jena	LA	Jena Band of Choctaw Indians
Tribal Preservation Officer	Marksville	LA	Tunica-Biloxi Indian Tribe
Chairperson	Wilson	MI	Hannahville Indian Community, Michigan
THPO	Baraga	MI	Keweenaw Bay Indian Community, Michigan
THPO	Watersmeet	MI	Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan

R.8 Tribal Historic Preservation Officers

TITLE	CITY	STATE	TRIBE
THPO	Harbor Springs	MI	Little Traverse Bay Bands of Odawa Indians, Michigan
THPO	Dowagiac	MI	Pokagon Band of Potawatomi Indians, Michigan and Indiana
THPO	Tower	MN	Bois Forte Band (Nett Lake) of the Minnesota Chippewa Tribe
THPO	Cloquet	MN	Fond du Lac Band of the Minnesota Chippewa Tribe
THPO	Grand Portage	MN	Grand Portage Band of the Minnesota Chippewa Tribe
Tribal Historic Preservation Officer	Cass Lake	MN	Leech Lake Band of the Minnesota Chippewa Tribe
THPO	Morton	MN	Lower Sioux Indian Community in the State of Minnesota
Tribal Preservation Officer	Onamia	MN	Mille Lacs Band of Ojibwe (The Mille Lacs Band of the Minnesota Chippewa Tribe Mille Lacs Band of Ojibwe)
THPO (Grand Portage Band)	Grand Portage	MN	Minnesota Chippewa Tribe
THPO	Welch	MN	Prairie Island Indian Community in the State of Minnesota
Office Manager	Welch	MN	Prairie Island Indian Community in the State of Minnesota
THPO	Red Lake	MN	Red Lake Band of Chippewa Indians, Minnesota
THPO	Prior Lake	MN	Shakopee Mdewakanton Sioux Community of Minnesota
THPO	Granite Falls	MN	Upper Sioux Community, Minnesota
THPO and Native American Graves Protection and Repatriation Act (NAGPRA) Representative	White Earth	MN	White Earth Band of the Minnesota Chippewa Tribe
Chief	Choctaw	MS	Mississippi Band of Choctaw Indians
THPO	Harlem	MT	Fort Belknap Indian Community of the Fort Belknap Reservation of Montana
THPO	Fort Totten	ND	Spirit Lake Tribe, North Dakota
Tribal Historic Preservation Officer	Belcourt	ND	Turtle Mountain Band of Chippewa Indians of North Dakota
THPO	Macy	NE	Omaha Tribe of Nebraska
THPO	Niobrara	NE	Santee Sioux Nation, Nebraska
THPO	Winnebago	NE	Winnebago Tribe of Nebraska
Tribal Historic Preservation Officer	Mescalero	NM	Mescalero Apache Tribe of the Mescalero Reservation, New Mexico
THPO	Wetumka	OK	Alabama-Quassarte Tribal Town

R.8 Tribal Historic Preservation Officers

TITLE	CITY	STATE	TRIBE
Chairman	Anadarko	OK	Apache Tribe of Oklahoma
Chairperson	Binger	OK	Caddo Nation of Oklahoma
THPO	Tahlequah	OK	Cherokee Nation
THPO	Concho	OK	Cheyenne and Arapaho Tribes, Oklahoma
THPO	Durant	OK	Choctaw Nation of Oklahoma
Program Coordinator II & Section 106 Coordinator	Durant	OK	Choctaw Nation of Oklahoma
THPO	Shawnee	OK	Citizen Potawatomi Nation, Oklahoma
THPO	Lawton	OK	Comanche Nation, Oklahoma
Director of Historic Preservation	Anadarko	OK	Delaware Nation, Oklahoma
President	Anadarko	OK	Delaware Nation, Oklahoma
THPO	Perkins	OK	Iowa Tribe of Oklahoma
Chair	Kaw City	OK	Kaw Nation, Oklahoma
Chairman	McLoud	OK	Kickapoo Tribe of Oklahoma
NAGPRA	McLoud	OK	Kickapoo Tribe of Oklahoma
THPO	Miami	OK	Miami Tribe of Oklahoma
THPO	Okmulgee	OK	Muscogee (Creek) Nation
Director and THPO	Pawhuska	OK	Osage Nation
THPO	Red Rock	OK	Otoe-Missouria Tribe of Indians, Oklahoma
Chief	Miami	OK	Peoria Tribe of Indians of Oklahoma
Executive Administrative Assistant to the Chief	Miami	OK	Peoria Tribe of Indians of Oklahoma
THPO	Quapaw	OK	Quapaw Tribe of Indians
THPO/NAGPRA	Stroud	OK	Sac & Fox Nation, Oklahoma
THPO	Grove	OK	Seneca-Cayuga Nation
THPO	Tonkawa	OK	Tonkawa Tribe of Indians of Oklahoma
THPO	Tahlequah	Ok	United Keetoowah Band of Cherokee Indians in Oklahoma
THPO	Anadarko	OK	Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie), Oklahoma
THPO	Flandreau	SD	Flandreau Santee Sioux Tribe of South Dakota
THPO	Sisseton	SD	Sisseton-Wahpeton Oyate of the Lake Traverse Reservation, South Dakota
THPO	Livingston	TX	Alabama-Coushatta Tribe of Texas
THPO	Odanah	WI	Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Wisconsin

R.8 Tribal Historic Preservation Officers

TITLE	CITY	STATE	TRIBE
THPO	Crandon	WI	Forest County Potawatomi Community of Wisconsin
THPO	Black River Falls	WI	Ho-Chunk Nation of Wisconsin
Tribal Preservation Officer	Lac du Flambeau	WI	Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin
President	Lac du Flambeau	WI	Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin
Tribal Historic Preservation Officer	Keshena	WI	Menominee Indian Tribe of Wisconsin
THPO	Bayfield	WI	Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin
Chairperson	Crandon	WI	Sokaogon Chippewa Community, Wisconsin

R.9 State Historic Preservation Officers

OFFICER	TITLE	CITY	STATE
Arkansas State Historic Preservation Officer (SHPO)	Section 106 Manager	Little Rock	AR
Illinois SHPO	Cultural Resource Manager	Springfield	IL
Iowa SHPO	Interim SHPO	Des Moines	IA
Iowa SHPO	Archaeologist	Des Moines	IA
Iowa SHPO	Architectural Historian	Des Moines	IA
Kansas SHPO	Archaeologist	Topeka	KS
Kansas SHPO	Review and Compliance Coordinator	Topeka	KS
Louisiana SHPO	Section 106 Review and Compliance	Baton Rouge	LA
Minnesota SHPO	Environmental Review Program Manager	St. Paul	MN
Missouri SHPO	Architectural Historian	Jefferson City	MO
Missouri SHPO	Archaeologist	Jefferson City	MO
Oklahoma SHPO	Section 106 Coordinator	Oklahoma City	OK
Oklahoma SHPO	State Archaeologist	Oklahoma City	OK
Texas SHPO	Archaeology Division	Austin	TX

Texas SHPO	History Programs Division	Austin	TX

R.10 Community Organizations, Other

ORGANIZATION/AGENCY	TYPE	CITY	STATE
DeQueen/Mena Area Voc Center	School	Gillham	AR
Gentry Public Library	Library	Gentry	AR
Grannis Police Department	Police	Grannis	AR
Community Christian Fellowship	Place of worship	Siloam SPGS	AR
New Life Church	Place of worship	Siloam SPGS	AR
Penuel Assembly of God	Place of worship	Hatfield	AR
Ashdown Public Library	Library	Ashdown	AR
De Queen Police Department	Police	De Queen	AR
Wickes Elementary School	School	Wickes	AR
Sevier County Sheriff's Department	Police	De Queen	AR
South Central Arkansas Drug Task Force	Police	De Queen	AR
Iva Jane Peek Library HQ	Library	Decatur	AR
Gillham Branch Library	Library	Gillham	AR
Decatur Fire Station	Fire Station	Decatur	AR
Gentry Middle School	School	Gentry	AR
De Queen Library	Library	De Queen	AR
Tri-county Regional Library System	Library	De Queen	AR
Ouachita River School District	School	Mena	AR
Mena Regional Health System	Community Service	Mena	AR
Polk Co. Housing Authority	Community Service	Mena	AR
Quality Of Life Coalition	Community Service	Mena	AR
Ninth Street Ministries	Community Service	Mena	AR
God's Feeding Hand Ministry	Community Service	Mena	AR
Mena High School	School	Mena	AR
Mena Public Schools	School	Mena	AR
Cossatot River High School	School	Cove	AR
Cossatot River School District	School	Wickes	AR
Acorn High School	School	Mena	AR
Lillies Pad Food Distribution	Community Service	De Queen	AR
Board Camp Baptist Church Food Distribution Center	Place of worship	Mena	AR

R.10 Community Organizations, Other

ORGANIZATION/AGENCY	TYPE	CITY	STATE
Mena First Assembly of God Food Distribution Center	Place of worship	Mena	AR
Ashdown Fire Department Station 1	Fire department	Ashdown	AR
Domtar Industries Fire Department Ashdown Mill	Fire department	Ashdown	AR
Gentry Police Department	Police Station	Gentry	AR
Christian Motorcyclists Association Inc	Place of worship	Hatfield	AR
Assembly of God	Place of worship	Decatur	AR
Mena Fire Department Station 1	Fire department	Mena	AR
De Queen Fire Station	Fire department	De Queen	AR
Cove Volunteer Fire Station 3	Fire department	Cove	AR
Grannis Fire Station 1	Fire department	Grannis	AR
Hatfield Station Fire District 4	Fire department	Hatfield	AR
Wickes Fire Department	Fire department	Wickes	AR
Ashdown City Police Department	Police	Ashdown	AR
Decatur Police Department	Police	Decatur	AR
Faith Christian Church	Place of worship	Mena	AR
Pleasant Grove Church of the Nazarene	Place of worship	Cove	AR
Decatur United Methodist Church	Place of worship	Decatur	AR
Calvary	Place of worship	Gentry	AR
Mountain Springs Youth Camp Inc	Place of worship	Grannis	AR
Solid Rock Full Gospel Church	Place of worship	Horatio	AR
Church on the Rock - Polk County	Place of worship	Hatfield	AR
Wickes Church of the Nazarene	Place of worship	Wickes	AR
Hatfield Library	Library	Hatfield	AR
Bettendorf Fire Station 3	Fire department	Bettendorf	IA
Clinton County Sheriff's Department/Clinton County Jail	Police	Clinton	IA
First Presbyterian Church of Muscatine	Place of worship	Muscatine	IA
Victory Chapel Inc	Place of worship	Columbus Junction	IA
Victory Christian Center Inc	Place of worship	Columbus Junction	IA
Mystic Community Church	Place of worship	Mystic	IA
Clinton Public Library	Library	Clinton	IA
Faith Baptist Church	Place of worship	Washington	IA
Lamrim Kadampa Buddhist Center	Place of worship	Davenport	IA
River Church Assembly of God	Place of worship	Clinton	IA
Catholic Daughters of the Americas	Place of worship	Washington	IA
Clinton Police Department	Police	Clinton	IA

R.10 Community Organizations, Other

ORGANIZATION/AGENCY	TYPE	CITY	STATE
Blakesburg Public Library	Library	Blakesburg	IA
Columbus Junction Public Library	Library	Columbus Junction	IA
Lyons Branch	Library	Clinton	IA
National Spiritualist Association of Churches	Church	Davenport	IA
Bettendorf City Police Department	Police	Bettendorf	IA
Saint Paul Lutheran Church	Place of worship	Clinton	IA
Blakesburg Elementary	School	Blakesburg	IA
Temple of the Flowing Waters	Place of worship	Muscatine	IA
Young Men's Christian Association of Washington Iowa	Church	Washington	IA
Washington County Sheriff's Office	Police	Washington	IA
Al-Hira Community Center	Church	Bensenville	IL
Willard E. Schoppe Fire Station No.1	Fire Station	Bensenville	IL
Fenton High School	School	Bensenville	IL
North Elementary School	School	Franklin Park	IL
Savanna Police Department	Police	Savanna	IL
Wood Dale Police Department	Police	Wood Dale	IL
Wood Dale Fire Department	Fire	Wood Dale	IL
Wood Dale Community United Methodist Church	Church	Wood Dale	IL
Discovery Church Inc	Place of worship	Elgin	IL
River Grove Public Library District	Library	Grove City	IL
Ontarioville Elementary School	School	Hanover Park	IL
Living Water Ministries	Church	Elgin	IL
Transition Learning Center	School	Bensenville	IL
Hanover Park Police Department	Police	Hanover Park	IL
Hanover Park Fire Department	Fire Department	Hanover Park	IL
Philadelphia Holiness Full Gospel Baptist Church	Place of worship	Elgin	IL
Community of Hope Church	Church	Hanover Park	IL
Bensenville Police Department	Police	Bensenville	IL
Bensenville Fire Department	Fire Department	Bensenville	IL
Bensenville Community Library	Library	Bensenville	IL
Zion Evangelical Lutheran Church	Place of worship	Elgin	IL
Manav Seva Mandir	Place of worship	Bensenville	IL
Franklin Park Police Department	Police	Franklin Park	IL
Village-Franklin Park-Police	Police	Franklin Park	IL
St. Edward Central Catholic High School	Place of worship	Elgin	IL

R.10 Community Organizations, Other

ORGANIZATION/AGENCY	TYPE	CITY	STATE
New Creation International Church	Place of worship	Bensenville	IL
Third Day Christian Ministries	Place of worship	Elgin	IL
Abundant Life Christian Fellowship Inc	Place of worship	Elgin	IL
Mashetimoses Ministries	Place of worship	Elgin	IL
Faith Forward Inc	Place of worship	Elgin	IL
Nichiren Shoshu Academy Chicago West Chapter	Place of worship	Franklin Park	IL
St. Gertrude Church	Place of worship	Franklin Park	IL
St. Paul's Evangelical Covenant Church Franklin Park	Place of worship	Franklin Park	IL
Mount Calvary Lutheran Church	Place of worship	Franklin Park	IL
SELC District of LCMS	Place of worship	Franklin Park	IL
Next City Church	Place of worship	River Grove	IL
Word of Truth Deliverance Ministry	Place of worship	Wood Dale	IL
St. John's Latvian Evangelical Lutheran Church of Chicago	Place of worship	Wood Dale	IL
Gail Borden Public Library District	Library	Elgin	IL
Franklin Park Fire Department Station 3	Fire department	Franklin Park	IL
Sierra Club Eagle View Group	Non-profit	East Moline	IL
Davenport Public Library	Library	Davenport	IA
Columbus Junction Police Department	Police	Columbus Junction	IA
First Baptist Church	Place of worship	Washington	IA
Columbus Junction Fire and Rescue Department	Fire department	Columbus Junction	IA
Seymour Volunteer Fire Department	Fire department	Seymour	IA
Muscatine Foursquare Church	Place of worship	Bettendorf	IA
Reformed Baptist Fellowship	Place of worship	Bettendorf	IA
Muscatine South Foursquare Church	Place of worship	Bettendorf	IA
Trinity Baptist Church of Clinton Iowa	Place of worship	Clinton	IA
Greater True Love Missionary Baptist Church	Place of worship	Clinton	IA
Hope Bible Church	Place of worship	Columbus Junction	IA
Restoration Outreach Ministries	Place of worship	Davenport	IA
Hillcrest Baptist Church	Place of worship	Davenport	IA
Calvary Chapel of Davenport Iowa	Place of worship	Davenport	IA
Calvary Bible Church of the Quad Cities	Place of worship	Davenport	IA
Jerusalem Temple Apostolic Church	Place of worship	Davenport	IA
Muscatine Mission Church	Place of worship	Muscatine	IA
Calvary Full Gospel Ministries	Place of worship	Seymour	IA
Musser Public Library	Library	Muscatine	IA

R.10 Community Organizations, Other

ORGANIZATION/AGENCY	TYPE	CITY	STATE
Camanche Chief of Police	Police Station	Camanche	IA
Camanche Public Library	Library	Camanche	IA
Seymour Public Library	Library	Seymour	IA
Seymour Police Department	Police	Seymour	IA
Iowa Professional Firefighters	Professional Association	Des Moines	IA
Church of God of Prophecy	Place of worship	Pittsburg	KS
Antioch Baptist Church	Place of worship	Shreveport	LA
Bobby Leger Ministries, Inc.	Church	Deridder	LA
Vivian Police Department	Police Station	Vivian	LA
DeQuincy Volunteer Fire Department	Fire Station	DeQuincy	LA
Deridder Police Department	Police Station	Deridder	LA
Zwolle Elementary School	School	Zwolle	LA
Desoto Parish Library	Library	Mansfield	LA
Exousia Miracle Temple International Inc	Place of worship	Shreveport	LA
Beauregard Parish Library	Library	Deridder	LA
Calcasieu Parish Ward 6 Fire Protection District	Fire department	Dequincy	LA
First Assembly of God	Place of worship	Leesville	LA
Mary Evergreen Baptist Church CORE	Place of worship	Shreveport	LA
Mount Sinai Missionary Baptist Church	Place of worship	Shreveport	LA
Johnson Temple Church of God in Christ	Place of worship	Leesville	LA
Deridder Area Ministerial Alliance Inc.	Church	Deridder	LA
Caddo Fire District 2	Fire Station	Shreveport	LA
Caddo Parish Fire District 8	Fire Station	Vivian	LA
New Willow Baptist Church	Place of worship	Leesville	LA
Police Department	Police	Shreveport	LA
Shreveport Police Department	Police	Shreveport	LA
Shreveport Police Department District 7 Satellite Station	Police	Shreveport	LA
Sabine Parish Police Jury	Police	Many	LA
Shreve Memorial Library	Library	Vivian	LA
Rivers of Living Water School of the Spirit	Place of worship	Leesville	LA
Christian Living Fellowship	Place of worship	Leesville	LA
North Sabine Volunteer Fire Protection District	Fire department	Zwolle	LA
St. Mary Baptist Church Inc	Place of worship	Shreveport	LA
True Deliverance Worship Center	Place of worship	Mansfield	LA
Trinity Lutheran Church	Place of worship	Leesville	LA

R.10 Community Organizations, Other

ORGANIZATION/AGENCY	TYPE	CITY	STATE
Louisiana State University - Shreveport Health Sciences Center Police Department	Police	Shreveport	LA
Parish-Vernon-Police Jury Main	Police	Leesville	LA
Vernon Parish Police Jury	Police	Leesville	LA
De Soto Parish Fire District 8	Fire department	Mansfield	LA
Pleasant Hill Baptist Church	Place of worship	Leesville	LA
Martin Luther King Center	Community Center	Leesville	LA
Sabine Parish Sheriff's Department	Police	Many	LA
Vernon Parish Sheriff's Office	Police	Leesville	LA
De Quincy Police Department	Police Station	Dequincy	LA
Chief of Police Leesville	Police	Leesville	LA
Vivian Church of God of Prophecy	Place of worship	Vivian	LA
Zwolle City Police Department	Police Station	Zwolle	LA
Leesville Fire Department	Fire department	Leesville	LA
Zwolle High School	School	Zwolle	LA
Paul Laurence Dunbar Branch	Library	Leesville	LA
Sabine Parish Library Zwolle Branch	Library	Zwolle	LA
New Llano Police Department	Police	New Llano	LA
De Soto Parish Police Jury	Police	Mansfield	LA
Eighty-First Street ECE Center	School	Shreveport	LA
Senseless Favor Ministries Inc	Place of worship	Mansfield	LA
Full Gospel Church of Leesville Louisiana Inc	Place of worship	Leesville	LA
First Christian Church	Place of worship	Leesville	LA
Renewal Ministries Inc	Place of worship	Leesville	LA
Calcasieu Baptist Church	Place of worship	Leesville	LA
Mt. Olive Baptist Church	Place of worship	Leesville	LA
Resurrection Life Worship Center Inc	Place of worship	Leesville	LA
Bethlehem Missionary Baptist Church Inc	Place of worship	Mansfield	LA
Memorial Seventh Day Adventist Church	Place of worship	Mansfield	LA
St. John Baptist Church of Mansfield Louisiana Inc.	Place of worship	Mansfield	LA
Living Word Church of Mansfield Inc	Place of worship	Mansfield	LA
Park Avenue Church of Christ of De Soto	Place of worship	Mansfield	LA
New Oak Grove Baptist Church of Mansfield	Place of worship	Mansfield	LA
Faith Tabernacle Assembly of God	Place of worship	Mansfield	LA
Many Church of God of Prophecy	Place of worship	Many	LA
Faith Works in Caddo Bossier	Place of worship	Shreveport	LA

R.10 Community Organizations, Other

ORGANIZATION/AGENCY	TYPE	CITY	STATE
St. Augustine Missionary Baptist Church	Place of worship	Shreveport	LA
Spoken Word Prayer Center Ministries Inc	Place of worship	Shreveport	LA
Eightieth St Church of God in Christ	Place of worship	Shreveport	LA
First Bible Missionary Church of Shreveport Inc	Place of worship	Shreveport	LA
Lakeside Baptist Church of Shreveport	Place of worship	Shreveport	LA
Beauregard Parish Police Jury	Police Station	Deridder	LA
Leesville Police Department	Police Station	Leesville	LA
Shreveport Fire Department Station 9	Fire department	Shreveport	LA
Professional Fire Fighters Association of Louisiana	Professional Association	Baton Rouge	LA
Sierra Club Delta Chapter	Non-profit	New Orleans	LA
Michigan Environmental Council	Non-profit	Lansing	MI
~~Saint Paul Bicycle Coalition~~	~~Non-profit~~	~~St Paul~~	~~MN~~
Minnesota Professional Fire Fighters	Professional Association	St Louis Park	MN
Stark City Police Department	Police Station	Neosho	MO
Stella City Police Department	Police Station	Neosho	MO
Goodman Police Department	Police	Goodman	MO
Gospelaires Inc.	Place of worship	Lawson	MO
Lawson Fire and Rescue Protection District	Fire department	Lawson	MO
Goodman Area Fire Protection District	Fire department	Goodman	MO
Passion and Compassion Ministries International	Place of worship	Joplin	MO
American Rehabilitation Ministry Inc	Place of worship	Joplin	MO
Neosho Fire Department Station 2	Fire department	Neosho	MO
Schrage Christian Mission	Place of worship	Joplin	MO
Anderson Police Department	Police	Anderson	MO
Amsterdam Volunteer Fire Department	Fire department	Amsterdam	MO
Seth Wilson Library	Library	Joplin	MO
Hickman Mills Freshman Center	School	Kansas City	MO
Christ's Cornerstone Church	Place of worship	Lawson	MO
McDonald County Community Outreach	Place of worship	Anderson	MO
Grace-life Church	Place of worship	Anderson	MO
Hilltop Missions Inc.	Place of worship	Anderson	MO
Donna Ross Ministries	Place of worship	Anderson	MO
Abounding Grace Worship Center	Place of worship	Anderson	MO
Open Door Ministries	Place of worship	Chillicothe	MO
Independent Assemblies of God	Place of worship	Goodman	MO

R.10 Community Organizations, Other

ORGANIZATION/AGENCY	TYPE	CITY	STATE
Blessed Hope Church	Place of worship	Goodman	MO
Trinity Worship Center	Place of worship	Goodman	MO
Faith Ministries World Outreach Center	Place of worship	Grandview	MO
True Light of Jesus Christ	Place of worship	Grandview	MO
Gateway Moscow Inc	Place of worship	Joplin	MO
Crossroads Church of Joplin Inc	Place of worship	Joplin	MO
Joplin Church Alive	Place of worship	Joplin	MO
Grace Apostolic Church of Joplin Inc	Place of worship	Joplin	MO
United Family Fellowship	Place of worship	Joplin	MO
Master's Touch PCG	Place of worship	Joplin	MO
The Way Church Inc	Place of worship	Springfield	MO
Kansas City Public Schools (Superintendent)	School	Kansas City	MO
Millennium Baptist Church	Place of worship	Kansas City	MO
Impact Family Worship Center Church of God in Christ Inc	Place of worship	Kansas City	MO
God's Church of Love and Grace LLC	Place of worship	Lawson	MO
The Canopy	Place of worship	Neosho	MO
Church of Hope of Newtown County	Place of worship	Neosho	MO
St. Nicholas Episcopal Church Noel	Place of worship	Noel	MO
Centro Cristiano Emanuel Asamblea de Dios	Place of worship	Noel	MO
La Gracia De Dios/The Grace of God Inc	Place of worship	Noel	MO
Proclamation Ministries Inc	Place of worship	Noel	MO
Noel Islamic Center	Place of worship	Noel	MO
Templo Emanuel	Place of worship	Noel	MO
Immanuel Assembly of God	Place of worship	Noel	MO
Joplin Apostolic Church Inc	Place of worship	Joplin	MO
Noel Community Library	Library	Noel	MO
Marshal's Office	Police	Noel	MO
Bethel Family Worship Center	Place of worship	Kansas City	MO
Nation to Nation International	Place of worship	Carl Junction	MO
Spring River Baptist Association	Place of worship	Joplin	MO
Board of Police Kansas City	Police	Kansas City	MO
Grace Communion International Joplin	Place of worship	Joplin	MO
Goodman Banner Church of the Nazarene	Place of worship	Anderson	MO
Lawson Middle	School	Lawson	MO
Clay County African American Society	Community Service	Liberty	MO

R.10 Community Organizations, Other

ORGANIZATION/AGENCY	TYPE	CITY	STATE
Noel Primary School	School	Noel	MO
Noel Elementary	School	Noel	MO
Lawson High	School	Lawson	MO
Heartland Baptist Association Inc	Place of worship	Lawson	MO
New Vision Christian Center Assembly of God	Place of worship	Grandview	MO
City of Neosho Police Department	Police	Neosho	MO
Neosho Police Department	Police	Neosho	MO
Field Elementary	School	Chillicothe	MO
Community Chapel Church	Place of worship	Joplin	MO
Literature and Teaching Ministries Inc	Place of worship	Joplin	MO
Assembly of God	Place of worship	Lawson	MO
Lawson Police Department	Police	Lawson	MO
Field Early Childhood/Kindergarten Center	School	Neosho	MO
Goodman Elementary	School	Neosho	MO
Central Christian Center	Place of worship	Joplin	MO
Iron Works Church of the Nazarene	Place of worship	Anderson	MO
Anderson Volunteer Fire Department	Fire Station	Anderson	MO
Grace-Life Church	Church	Anderson	MO
North Joplin Christian Church	Church	Joplin	MO
Southwest Elementary	School	Lawson	MO
Compass Elementary	School	Kansas City	MO
Life Change Outreach	Church	Joplin	MO
Joplin Police Department	Police	Joplin	MO
Joplin Area Ministerial Alliance Inc	Place of worship	Joplin	MO
Ruskin High School	School	Kansas City	MO
United Christian and Presbyterian Church	Place of worship	Lawson	MO
Harvesters	Community Service	Kansas City	MO
Kansas City Parks & Recreation	Community Service	Kansas City	MO
First Baptist Church	Place of worship	Liberty	MO
Grand River Area Family YMCA	Community Service	Chillicothe	MO
Life Center Food Pantry Food Distribution Center	Community Service	Chillicothe	MO
Missouri State Council of Fire Fighters	Professional Organization	Kansas City	MO
Heavener Public Library	Library	Heavener	OK

R.10 Community Organizations, Other

ORGANIZATION/AGENCY	TYPE	CITY	STATE
New Beginning Family Ministry	Place of worship	Poteau	OK
Faith Community	Place of worship	Poteau	OK
Westville Police Department	Police	Westville	OK
Panama High School	School	Panama	OK
Panama Middle School	School	Panama	OK
Westville Elementary School	School	Westville	OK
Westville High School	School	Westville	OK
Watts Elementary School	School	Watts	OK
Watts High School	School	Watts	OK
Peavine Public School	School	Stilwell	OK
Spiro Public Library	Library	Spiro	OK
Watts Fire Department	Fire department	Watts	OK
Westville PH Church	Place of worship	Westville	OK
Heavener Police Department	Police	Heavener	OK
Adair County Sheriff's Office/Adair County Jail	Police	Stilwell	OK
Hodgen Volunteer Fire Department	Fire department	Hodgen	OK
Heavener Fire Department Eastside Station	Fire department	Heavener	OK
Heavener Fire Department West Side Station	Fire department	Heavener	OK
Marble City Fire Association Station 1	Fire department	Marble City	OK
Marble City Fire Association Station 2	Fire department	Marble City	OK
Panama Fire Department	Fire department	Panama	OK
Stilwell Fire Department	Fire department	Stilwell	OK
Stilwell Fire Department Station 2	Fire department	Stilwell	OK
Westville Fire Department Station 2	Fire department	Westville	OK
Town of Watts Police Department	Police	Watts	OK
Cave Springs Elementary School	School	Bunch	OK
Cave Springs High School	School	Bunch	OK
Cave Springs Middle School	School	Bunch	OK
Hodgen Public School	School	Hodgen	OK
Pansy Kidd Middle School	School	Poteau	OK
Maryetta School	School	Stilwell	OK
General Council of the Assemblies of God	Place of worship	Heavener	OK
Calvary Temple Full Gospel Church	Place of worship	Sallisaw	OK
Covenant Life Fellowship	Place of worship	Sallisaw	OK
Church of Christ Westville Oklahoma Inc	Place of worship	Westville	OK
Westville Assembly of God	Place of worship	Westville	OK

R.10 Community Organizations, Other

ORGANIZATION/AGENCY	TYPE	CITY	STATE
Jaybird Independent Assemblies Church	Place of worship	Westville	OK
Sallisaw Church of Christ	Place of worship	Sallisaw	OK
Oakridge Assembly of God Church	Place of worship	Sallisaw	OK
Stilwell Police Department	Police	Stilwell	OK
Marble City Police Department	Police	Marble City	OK
Quad City Volunteer Fire Department and Emergency Medical Services	Fire department	Bruni	TX
Alice Episcopal Church of The Advent	Place of worship	Alice	TX
Jackson County Sheriff's Department/Jackson County Jail	Police	Edna	TX
Wharton Police Department	Police	Wharton	TX
Expo Word Christian Ministries	Place of worship	Beaumont	TX
Martin Elementary School	School	Laredo	TX
Houston Fire Department Emergency Medical Services Station 19	Fire department	Houston	TX
House of Refuge Nondenominated	Place of worship	Houston	TX
Agape House Fellowship	Place of worship	Alice	TX
Robstown Fire Department	Fire department	Robstown	TX
Liberty Municipal Library	Library	Liberty	TX
Richmond Fire Department Station 1	Fire department	Richmond	TX
Beaumont Fire and Rescue Station 11	Fire department	Beaumont	TX
Beaumont Fire and Rescue Station 1	Fire department	Beaumont	TX
Jim Hogg County Fire Department Station 2	Fire department	Hebbronville	TX
Banquete Fire Station	Fire department	Banquete	TX
Benavides Fire Department	Fire department	Benavides	TX
Bloomington Volunteer Fire Department Edward E. Kocian Station	Fire department	Bloomington	TX
Kendleton Volunteer Fire Department	Fire department	Kendleton	TX
Jim Hogg County Public Library	Library	Hebbronville	TX
Robstown City Police Department	Police	Robstown	TX
Imani School	School	Houston	TX
Premier High School of Laredo	School	Laredo	TX
Universal Church of the Living God	Place of worship	Beaumont	TX
The Southeast Texas Buddhist Community Inc	Place of worship	Beaumont	TX
Kingdom Connection Outreach Church	Place of worship	Beaumont	TX
Iglesia Betania	Place of worship	Banquete	TX
Freedom Bible Research Institute	Place of worship	Banquete	TX
House of the Lord of Tyler Texas	Place of worship	Beaumont	TX

R.10 Community Organizations, Other

ORGANIZATION/AGENCY	TYPE	CITY	STATE
Independent Assemblies of God	Place of worship	Beaumont	TX
New Friendship Missionary Baptist Church	Place of worship	Beaumont	TX
Sunlight Baptist Church	Place of worship	Beaumont	TX
Iconium Missionary Baptist Church	Place of worship	Beaumont	TX
Abundant Life Christian Fellowship Inc	Place of worship	Beaumont	TX
Harvest for Lost Souls Outreach Ministry	Place of worship	Beaumont	TX
Word of Truth Church of Beaumont	Place of worship	Beaumont	TX
Simon Peter Ministries International Inc	Place of worship	Denton	TX
Liberty Full Gospel Church	Place of worship	Denton	TX
Full Gospel Churches International	Place of worship	Denton	TX
Lakeway Fellowship	Place of worship	Edna	TX
Trinity Full Gospel Church of Edna	Place of worship	Edna	TX
Christian Life Center of El Campo	Place of worship	El Campo	TX
Ambassadors for Christian Nondenominational Church	Place of worship	Houston	TX
Garifuna Mercy of God Church	Place of worship	Houston	TX
Olivet Missionary Baptist Church	Place of worship	Houston	TX
All Nations Church of the Lord Jesus Christ	Place of worship	Houston	TX
Northside Antioch Baptist Church of Houston	Place of worship	Houston	TX
Eastwood Civic Association	Community Association	Houston	TX
Oak Hill Missionary Baptist Church	Place of worship	Kendleton	TX
Kendleton Church of God	Place of worship	Kendleton	TX
Templo Vida Nueva Asambleas De Dios Inc	Place of worship	Laredo	TX
Eucharistic Society Inc	Place of worship	Laredo	TX
Expansion Ministries	Place of worship	Plano	TX
North Ridge Baptist Church of Plano Texas	Place of worship	Plano	TX
Chin Baptist Church	Place of worship	Plano	TX
Great Liberation City	Place of worship	Plano	TX
Glory House International Church Inc	Place of worship	Richmond	TX
Love Ministry	Place of worship	Richmond	TX
Golden Chain Ministry	Place of worship	Robstown	TX
Temple I Am	Place of worship	Robstown	TX
Templo Sion	Place of worship	Robstown	TX
Power of the Gospel Inc	Place of worship	Robstown	TX
Mixta Help of Charity and Mercy	Place of worship	Robstown	TX
Pentecostal Maranatha Temple Inc	Place of worship	Robstown	TX

R.10 Community Organizations, Other

ORGANIZATION/AGENCY	TYPE	CITY	STATE
Verdin Ministries International Inc	Place of worship	Robstown	TX
Iglesia Leon De Juda Internacional Inc	Place of worship	Rosenberg	TX
Filadelfia Cristo Es El Camino	Place of worship	Rosenberg	TX
New Day Ministries International Life	Place of worship	Rosenberg	TX
New Life Community Church	Place of worship	San Diego	TX
The Iglesia Nuevo Pacto de Cristo Evangelio Completo	Place of worship	Sinton	TX
Grace Church Assembly of God	Place of worship	Sinton	TX
Ocean of Love Church of God in Christ	Place of worship	Sinton	TX
Nations for Christ Ministries	Place of worship	Stafford	TX
Emmanuel Pentecostal Church of Houston	Place of worship	Stafford	TX
Polly Chapel Baptist Church	Place of worship	Texarkana	TX
Remnant Church Inc	Place of worship	Victoria	TX
Macedonia Missionary Baptist Church of Wharton Texas	Place of worship	Wharton	TX
Edna Police Department	Police Station	Edna	TX
Sinton Police Department	Police Station	Sinton	TX
New Deliverance Community Development Center Inc	Place of worship	Houston	TX
New Life Ministries of Houston Inc	Place of worship	Rosenberg	TX
First Pentecostal Church of Edna	Place of worship	Edna	TX
Community Radio Inc	Place of worship	Houston	TX
Templo Jerusalem Asambleas De Dios	Place of worship	Robstown	TX
Stafford Police Department	Police Station	Stafford	TX
Wesley Chapel AME Church	Place of worship	Houston	TX
Laredo Police Department - Precinct 3	Police	Laredo	TX
Banquete Elementary School	School	Banquete	TX
St Anthony's School	School	Robstown	TX
Accelerated Int Charter School	School	Houston	TX
Heights Elementary School	School	Laredo	TX
Alice Police Department	Police	Alice	TX
Ebenezer Baptist Church Fifth Ward	Place of worship	Houston	TX
Maurine Gray Literacy Center	Library	Beaumont	TX
Catholic Daughters of the Americas	Place of worship	Benavides	TX
Bernarda Jaimie Junior High	School	San Diego	TX
Collins-Parr Elementary	School	San Diego	TX
San Diego High School	School	San Diego	TX
Christian Witness for Nepal	Place of worship	Denton	TX

R.10 Community Organizations, Other

ORGANIZATION/AGENCY	TYPE	CITY	STATE
Fort Bend County Alternative School	School	Rosenberg	TX
Sheldon Intermediate School	School	Houston	TX
Demetrio D. Hachar Elementary	School	Laredo	TX
Borden Street Church of Christ	Place of worship	Sinton	TX
First Assembly of God	Place of worship	Edna	TX
Edna Presbyterian Church	Place of worship	Edna	TX
Meyerpark Elementary	School	Houston	TX
Family Worship Center of Beaumont	Place of worship	Beaumont	TX
Alice High School	School	Alice	TX
The Good Shepherd	Place of worship	Laredo	TX
Bruni High School	School	Bruni	TX
M L King Middle School	School	Beaumont	TX
High Point East	School	Houston	TX
First Macedonia Missionary Baptist Church	Place of worship	Houston	TX
New Beginnings Fellowship Sinton	Place of worship	Sinton	TX
Sehion Mar Thoma Church Dallas	Place of worship	Plano	TX
St. John Baptist Church	Place of worship	Beaumont	TX
Pleasant Grove Missionary Baptist Church	Place of worship	Houston	TX
Dogan Elementary	School	Houston	TX
Richmond Police Department	Police	Richmond	TX
Rosenberg Police Admin	Police	Rosenberg	TX
Nueces County Keach Family Library	Library	Robstown	TX
No Greater Love Outreach Ministries Church	Place of worship	Houston	TX
Laredo Fire Department	Fire department	Laredo	TX
Stafford Fire Department Station Number 1	Fire Station	Stafford	TX
Lyons Unity Missionary Baptist Church Inc	Place of worship	Houston	TX
Little Zion Missionary Baptist Church Kendleton	Place of worship	Kendleton	TX
Jesus is Alpha and Omega Ministries Inc	Place of worship	Houston	TX
Jefferson County J A E P	School	Beaumont	TX
Missouri City Fire and Rescue Services Station 2	Fire Station	Houston	TX
Texas Department of Public Safety - Highway Patrol Region 3 District A Seargent 0 Area 4	Police	Edna	TX
Texas Department of Public Safety - Highway Patrol Region 3 District A Seargent 0 Area 6	Police	Alice	TX
Child Outreach International	Place of worship	Robstown	TX
Mountain Top Ministries - MTM	Place of worship	Rosenberg	TX
Beaumont Police Department	Police	Beaumont	TX

R.10 Community Organizations, Other

ORGANIZATION/AGENCY	TYPE	CITY	STATE
Central Senior High School	School	Beaumont	TX
Charlton-Pollard Elementary	School	Beaumont	TX
Pathways Learning Center	School	Beaumont	TX
Holy Bible Faith Center	Place of worship	Beaumont	TX
Edna Fire Department	Fire Station	Edna	TX
El Campo Emergency Medical Services	Fire Station	El Campo	TX
Nueva Jerusalem Church	Church	Houston	TX
Vision of Deliverance Outreach Ministries	Church	Houston	TX
Lord's Kitchen, Inc.	Church	Rosenberg	TX
E. Merle Smith Middle School	School	Sinton	TX
Sinton Volunteer Fire Department	Fire Station	Sinton	TX
Mamie George Branch Library	Library	Stafford	TX
Victoria Fire Department Station 1	Fire Station	Victoria	TX
Odem Volunteer Fire Department	Fire department	Odem	TX
Odem Public Library	Library	Odem	TX
East Plano Islamic Center	Place of worship	Plano	TX
Beaumont Public Library System	Library	Beaumont	TX
Christian Bible Fellowship Church of Rosenberg	Place of worship	Richmond	TX
Banquete Junior High	School	Banquete	TX
Benavides Secondary School	School	Benavides	TX
Duval County Sheriff's Office/Duval County Jail	Police	San Diego	TX
Second Mt. Olive Missionary Baptist Church	Place of worship	Houston	TX
Port of Beaumont Port Authority Police Department	Police	Beaumont	TX
Sheldon Elementary	School	Houston	TX
Jim Hogg County Sheriff's Department/Jim Hogg County Jail	Police	Hebbronville	TX
Jefferson County Sheriff's Office	Police	Beaumont	TX
Grace River Chapel	Place of worship	Beaumont	TX
St. John Lutheran Church	Place of worship	Robstown	TX
Liberty Academy	School	Victoria	TX
Patti Welder Middle School	School	Victoria	TX
Catholic Daughters of the Americas	Church	Alice	TX
Texarkana Public Library	Library	Texarkana	TX
City of Texarkana	Police	Texarkana	TX
Tyrrell Historical Library	Library	Beaumont	TX
Houston Professional Fire Fighters Association Local 341	Professional Organization	Houston	TX

R.10 Community Organizations, Other

ORGANIZATION/AGENCY	TYPE	CITY	STATE
Amelia Elementary	School	Beaumont	TX
Community In-Power and Development Association	Non-profit	Port Arthur	TX
People Against Contaminated Environment	Community Association	Beaumont	TX
Environmental Defense Fund	Non-profit	Houston	TX
Air Alliance Houston	Non-profit	Houston	TX
US Development Group	Corporation	Houston	TX
Professional Fire Fighters of Wisconsin, Inc.	Professional Organization	Madison	WI

R.11 Parties of Record

- Administrative Law Judge Thomas McCarthy
- AEG Fuels LLC
- Agricultural Retailers Association
- Albatrans Canada Inc.
- Alberta Prairie Railway
- American Chemistry Council
- American Forest & Paper Association
- American Soybean Association
- American Train Dispatchers Association
- Americold
- Amy Koch
- APPRO Development, Inc.
- ArcelorMittal North America
- Archer Daniels Midland Company
- AV Terrace Bay
- ~~Bartlett Grain Co., LP~~
- Bartlett, a Savage Company
- Baton Rouge Area Foundation
- Bay and Bay Transportation
- Bayer CropScience LP
- Best Cartage Limited "Bestway"
- Bison Transport
- BMWED, BRS, SMART MD, NCFO, IBB, BLET
- BNSF Railway Company
- Border Chemical Company Limited
- Boss Lubricants
- Brookstone Specialty Service, Inc.
- Brotherhood of Maintenance of Way Employes Division/IBT, Brotherhood of Railroad Signalmen, International Association of Sheet Metal Air Rail and Transportation Workers, National Conference of Firemen and Oilers 32BJ/SEIU
- Byron Dorgan

- Caddo Parish Commission
- California Association of Port Authorities
- Canada Drayage Inc.
- Canadian Heartland Training Railway Services Inc.
- Canadian National Railway Company
- Canadian National Railway Company and Illinois Central Railroad Company
- Canadian National Railway Company, Grand Trunk Corporation, and CN's Rail Operating Subsidiaries
- Canadian Pacific Railway Limited
- Canadian Pacific Railway Limited, et al.
- Canadian Pacific Railway Ltd., Canadian Pacific Railway Company, and their U.S. rail carrier subsidiaries Soo Line Railroad Co., Central Maine & Quebec Railway US Inc., Dakota, Minnesota & Eastern Railroad Corp., and Delaware and Hudson Railway Co., Inc.
- Cando Rail & Terminals Ltd.
- Canpotex Limited
- Caravan Supply Chain Inc.
- Celtic International, LLC
- Centerville Produce LLC
- Ceres Global Ag Corp.
- CHS Inc.
- City of Camanche, Iowa
- City of Cleveland, Texas
- City of Dayton, Texas
- City of Gonzales
- City of Houston, City Council, District 1
- City of Liberty, Texas
- City of Lockport
- City of Saint Paul, Minn.--Dept. of Public Works
- Clayton County Recycling Inc.
- CMA CGM (America) LLC
- Coalition to Stop CPKC
- Commuter Rail Division of the Regional Transportation Authority d/b/a Metra
- Conagra Brands Canada Inc.
- Consolidated Fastfrate Inc.
- Continental Intermodal Group LP
- Continental Logistics Ltd.
- County of Liberty, Texas
- Crow Wing Recycling
- CSX Transportation, Inc.
- Custom Stud, Inc.
- Dakota, Missouri Valley and Western Railroad
- Daniel Lee Bennett
- Davenport Industrial Railroad
- Dead River Company, LLC
- District Lodge 19 of the International Association of Machinists and Aerospace Workers, AFL-CIO
- DP World - Americas
- ENX, Inc.
- Eurochem North America Corporation
- Evergy Metro, Inc.
- Federal Maritime Commission
- Fessenden Co-op Association

- Fisher Wavy Inc.
- FJ Robers Co Inc.
- Forest Products Association of Canada
- Forest River Bean Co., Inc.
- Freight Rail Customer Alliance
- Fullerton Farmers Elevator
- G. Thompson Livestock Co. Inc.
- GCT Global Container Terminals Inc.
- General Transport Inc.
- Genesee & Wyoming Inc.
- Glenview Action Committee
- Gopher Resource, LLC
- Grand Prix Inc.
- Great Sandhills Railway Ltd.
- Guanajuato Energy Terminal LLC
- Hapag-Lloyd (America) LLC
- Harris County, Tex.
- HCL Logistics Inc
- Hennepin County, MN and the Hennepin County Regional Railroad Authority
- ~~Honorable Eddie Bernice Johnson~~
- Honorable Friday Ellis
- ~~Honorable John Hoeven~~
- Honorable Katie Porter
- ~~Honorable Kelly Armstrong~~
- ~~Honorable Kevin Cramer~~
- ~~Honorable Marie Newman~~
- Honorable Michael Echols
- ~~Honorable Raja Krishnamoorthi~~
- Honorable Richard J. Durbin
- Honorable Ron Reynolds
- ~~Honorable Steve Cohen~~
- ~~Honorable Tammy Duckworth~~
- Horizon Grains Ltd.
- Houston-Galveston Area Council
- I-20 Corridor Council
- Independent Dispatch, Inc.
- Industrial Minerals Association - North America
- Ingredion Incorporated
- International Association of Sheet Metal, Air, Rail, and Transportation Workers, Transportation Division ~~and American Train Dispatchers Association~~
- International Brotherhood of Electrical Workers ("IBEW")
- International Brotherhood of Electrical Workers, AFL-CIO
- Iowa Interstate Railroad, LLC
- Iowa Traction Railway
- J.B. Hunt Transport, Inc.
- J.D. Iriving, Limited
- J.W. Scott Farm
- JGL Commodities
- Jim Donnan Companies
- K+S North America Corporation
- Kansas Association of Wheat Growers
- Kansas City Southern
- Kansas City Southern and its U.S. rail carrier subsidiaries The Kansas City Southern Railway Company, Gateway Eastern Railway Company, and The Texas Mexican

Railway~~Kansas City Southern, The Kansas City Southern Railway Company, Gateway Eastern Railway Company, and The Texas Mexican Railway Company~~

- Kaycan, Ltd.
- Keltic Transportation
- KP Building Products Ltd.
- La Coalition Rail Safety Campaign Woods and Wetlands Group - Sierra Club, IL Chapter
- La Milanaise, Inc.
- Lafarge Canada
- Lakeside Foods Inc.
- LC Logistics GPS
- Lee Container
- Liberty County Rural Rail District #1
- Logistics Alliance Inc.
- Lyondell Chemical Company; Equistar Chemicals, LP; LyondellBasell Acetyls, LLC; and LyondellBasell Advanced Polymers Inc.
- LyondellBasell
- Maddox Logistics Limited
- Maine Propane Distributors Inc.
- Meadowland Farmers Cooperative
- Michael LaRoque, Secretary/Treasurer for White Earth Reservation
- Michelle Solis Russell
- Midtown Greenway Coalition
- Minnesota Wheat Research and Promotion Board
- Mohawk Council of Kahnawake
- Move Minnesota
- Nahant Marsh Education Center
- National Association of Wheat Growers
- National Coal Transportation Association
- National Cold Chain
- National Corn Growers Association
- National Grain and Feed Association
- National Industrial Transportation League
- National Railroad Passenger Corporation ("Amtrak")
- Nebraska Wheat Board
- Nestle Canada Inc.
- New Orleans Public Belt Railroad Commission
- New Orleans Public Belt Railroad Commission for the Port of New Orleans
- New World Global LLC
- NFI Industries
- Norfolk Southern Railway Company
- North Dakota Grain Dealers Association
- North Dakota Wheat Commission
- Northern Plains Railroad Inc.
- Occidental Chemical Corporation and Oxy Vinyls, LP
- Office of Attorney General of the United States, c/o Assistant Attorney General, Antitrust Division

- Office of Congresswoman Ilhan Omar of the Fifth District of the State of Minnesota
- Oklahoma Wheat Commission
- Olin Corporation
- Olin Corporation; Iowa Interstate Railroad, LLC; Texas International Terminals; Port of Corpus Christi; and Evergy Metro, Inc.
- Ontario Southland Railway Inc.
- Pacific Northwest Waterways Association
- Pamela Fraser, Heather Dockrell, Edward Dockrell, Lorelei Desrochers, and Kaitlyn Timmerman
- Park Farm Grains, Ltd.
- Paterson GlobalFoods, Inc.
- Pattison Sand Company
- PFL Petroleum Services Limited
- Pleasant River Lumber
- Port Arthur Terminal LLC
- Port Authority of Kansas City, Missouri
- Port of Corpus Christi
- Private Railcar Food and Beverage Association
- Private Railcar Food and Beverage Association, Inc.
- Progressive Rail Incorporated
- Prospect Park Association Land Use Committee
- Railroad Workers United
- Ray-Carroll County Grain Growers, Inc.
- Re-Transportation
- RG Phillips Group of Companies Inc.
- Rhomberg Sersa North America
- Richardson International Limited
- Richardson international Limited and Italgrani U.S.A., Inc.
- Routes Transport Group
- Routes Transportation Group
- Saint Paul Bicycle Coalition
- Samuel J. Nasca, for and on behalf of SMART/Transportation Division, New York State Legislative Board
- Savage
- Sharp Base Shipping And Transport (Canada) Ltd.
- Sierra Club
- Smart Sand Inc.
- Solutionary Rail
- South West Terminal
- Southeast Louisiana Super Region
- Southern Rail Commission
- Sprague Operating Resources LLC
- SSAB Enterprises, LLC
- Standard Rail Corporation
- Stewart Southern Railway
- ~~Surface Transportation Board~~
- Target Transportation Ltd.
- TDWP Partners LLC
- Tepper Holdings Inc.
- Teresa L. Stickler

- Texas International Terminals Ltd.
- The American Chemistry Council and The Fertilizer Institute
- The American Chemistry Council, The Fertilizer Institute and The National Industrial Transportation League
- The Brotherhood of Locomotive Engineers and Trainmen
- The Chlorine Institute
- The City of Lake Forest
- The Coalition to Stop CPKC
- The Farmers Elevator Company of Honeyford North Dakota
- The Kansas City Southern Railway Company
- The National Grain and Feed Association
- The Secretary of the U.S. Department of Transportation
- The Transportation Division of the International Association of Sheet Metal, Air, Rail and Transportation Workers
- The Village of Green Oaks
- Timiron, LLC
- Transit Equity Team, Delta Chapter of the Sierra Club
- Transport Services and Logistics Canada Ltd.
- TYT Group Inc.
- U.S. Department Of Agriculture
- U.S. Department of Transportation
- U.S. Wheat Associates
- Unifor
- Union Pacific Railroad Company
- United States Army Military Surface Deployment and Distribution Command
- USD Group
- USD Group LLC
- USD Terminals Canada
- V Modal Mexicana, S.C.
- Valero Marketing and Supply Company
- VanKam Freightways Ltd.
- Veikle Grain Ltd.
- Village of Bannockburn
- Village of Barrington, Ill.
- Village of Deerfield
- Village of Glenview
- Village of Glenview, Illinois
- Village of Itasca, Ill., and Coalition to Stop CPKC
- Village of Manteno
- Village of Northbrook
- Villaume Industries, Inc.
- ~~Viterra Canada Inc.~~
- Vogelsberg Trucking, Inc.
- Watco
- Western Logistics Inc.
- Wheaton-Dumont Coop Elevator
- William E. Gluba
- Winona LaDuke, Honor the Earth
- XTL Transport Inc.

Service List Non-Parties

- Glenview Action Committee
- Honorable Amy Klobuchar

- Honorable Betty McCollum
- Honorable Eddie Bernice Johnson
- Honorable Emanuel Cleaver
- Honorable Ilhan Omar
- Honorable Jerry Moran
- Honorable John Hoeven
- Honorable Kelly Armstrong
- Honorable Kevin Cramer
- Honorable Marie Newman
- Honorable Paul Anderson
- Honorable Raja Krishnamoorthi
- Honorable Richard J. Durbin
- Honorable Roy Blunt
- Honorable Steve Cohen
- Honorable Tammy Duckworth
- Sunflower State Industrial Railway, LLC
- Surface Transportation Board