

DRAFT ENVIRONMENTAL ASSESSMENT APPENDICES

DOCKET NO. FD 36727

CSX Transportation, Inc.—Acquisition and Operation—Rail Line of Meridian & Bigbee Railroad, L.L.C.

DOCKET NO. FD 36732

Canadian Pacific Kansas City Limited and the Kansas City Southern Railway Company, D/B/A CPKC – Acquisition and Operation – Certain Rail Line of Meridian & Bigbee Railroad, L.L.C.

in Montgomery, Lowndes, Dallas, Wilcox, Marengo and Choctaw Counties, Alabama and Lauderdale County, Mississippi.



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Appendices

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Appendix E	Noise and Vibration
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Acronyms

AADT	Annual average daily traffic
ACS	American Community Survey
AGR	Alabama & Gulf Coast Railway
Amtrak	National Passenger Railroad Corporation
ANR	Average noise reduction
APE	Area of potential effects
AQRVs	Air quality related values
AREMA	American Railway Engineering and Maintenance-of-Way Association
Board	Surface Transportation Board of the United States
BTS	Bureau of Transportation Statistics
Btu	British thermal units
CAA	Clean Air Act
CASTNET	Clean Air Status and Trends Network
CCSP	U.S. Climate Change Science Program
CEQ	Council on Environmental Quality
C.F.R.	Code of Federal Regulations
CH ₄	Methane
CO	Carbon monoxide
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
Corps	U.S. Army Corps of Engineering
CPKC	Canadian Pacific Kansas City
CRCs	Comments and requests for conditions
CST	Central Standard Time
CSXT	CSX Transportation
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted decibel

DOT	Department of transportation
EDR	Environmental Data Resources, Inc.
EA	Environmental Assessment
EIS	Environmental Impact Assessment
EJ	Environmental Justice
EO	Executive Order
EPA	U.S. Environmental Protection Agency
FAQs	Frequently asked questions
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GIS	Geographic information systems
GHG	Greenhouse gas
GPS	Global positioning system
GTM	Gross ton-miles
ha	Hectare
HAPs	Hazardous air pollutants
Hazmat	Hazardous materials
HCM	Highway Capacity Manual
HPMS	Highway Performance Monitoring System
HUD	U.S. Department of Housing and Urban Development
Hz	Hertz
ICC	Interstate Commerce Commission
ICCTA	Interstate Commerce Commission Termination Act
IMPROVE	Interagency Monitoring of Protected Visual Environments
in/s	Inches per second
IPCC	Intergovernmental Panel on Climate Change
IR	Inconsistent and Responsive Applications
K-factor	Design hourly volume factors

KCS	Kansas City Southern
kg	Kilogram
Ldn	Day-night average noise levels
Leq	Energy-average noise level
Leq	Level equivalent
Lmax	Maximum instantaneous A-weighted noise level
LNG	Liquid natural gas
LOS	Level of Service
omGTs	Million gross tons
MM	Mitigation measure
MMBtu	Metric million British thermal units
MNBR	Meridian & Bigbee Railroad
MOVES	Motor Vehicle Emissions Simulator
MP	Milepost
mph	Miles per hour
NAAQS	National Ambient Air Quality Standards
NCA5	Fourth National Climate Assessment
NCA5	Fifth National Climate Assessment
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966
N2O	Nitrous oxide
NO2	Nitrogen dioxide
NOX	Nitrogen oxides
NOI	Notice of Intent
NRC	National Research Council
NRCS	Natural Resources Conservation Service
NS	Norfolk Southern Railway Company
NSRT	National Significant Risk Threshold
O3	Ozone
o/d	Origin/destination

OEA	Office of Environmental Analysis
OFCM	Office of the Federal Coordinator for Meteorological Services and Supporting Research
OSHA	Occupational Safety and Health Administration
PM	Particulate matter
PPV	Peak-particle velocity
PSD	Prevention of Significant Deterioration
PTC	Positive Train Control
kV	kilo-Volt
QZRI	Quiet Zone Risk Index
RA	Responsive Applications
RCP	Representative Concentration Pathway
RFP	Reasonable Further Progress
RMS	Root mean square
ROP	Rate of Progress
ROW	Right-of-way
RSIA	Rail Safety Improvement Act of 2008
RSIP	Residential Sound Insulation Program
SEL	Sound exposure level
SIP	Safety Integration Plan
SO ₂	Sulfur dioxide
SSM	Supplemental safety measure
SWPPP	Stormwater prevention pollution plan
TCFD	Task Force on Climate-related Financial Disclosures
TIP	Transportation improvement plan
USFWS	U.S. Fish and Wildlife Service
USDOT	U.S. Department of Transportation
v/c	Volume to capacity
VdB	Root mean square vibration velocity
VM	Voluntary measure
VMT	Vehicle miles traveled

Appendix A: Agency and Tribal Consultation and Public Involvement

Appendix A

Agency and Tribal Consultation and Public Involvement

A.1 Introduction

This appendix discusses consultation on the development of this Draft Environmental Assessment (EA) as well as public involvement. Consultation is described for two categories:

1. Agency Consultation (**A.2 Agency Consultation**)
2. Government-to-Government Tribal Consultation (**A.3 Government to Government Tribal Consultation**)

The Surface Transportation Board's (Board's) Office of Environmental Analysis (OEA) additionally requested comments from federal, state, and local elected officials with jurisdiction that overlaps with the Proposed Transactions, which is described in **A.4 Request for Comments from Elected Officials**. This appendix also lists the elected officials contacted and the community leaders notified as part of Draft EA distribution in **A.5 Public Notification Materials**.

A list of agencies and tribes that were contacted as part of the initial consultation for this Draft EA as well as elected officials from whom comment was requested and examples of the letters sent are provided as **Attachment 1** to this appendix. Other correspondence not included in this appendix can be found on the Board's website under environmental correspondence.

A.2 Agency Consultation

Agency consultation describes OEA's written correspondence with federal, state, and local agencies. OEA sent initial agency consultation letters to 40 federal, state, and local agencies between December 21st, 2023, and December 28th, 2023. These letters informed agencies and elected officials of the project and requested preliminary information and comments from the agencies about resources to consider in the environmental review. During the 30-day comment period following sending of initial consultation letters, OEA did not receive any agency responses (see **Table A.2-1**).

Table A.2-1. Agencies Consulted and Dates of Written Correspondence

Agency	Dates of Written Correspondence
Federal Agencies	
Federal Highway Administration (FHWA)	From OEA to FHWA 12/22/23
National Park Service (NPS)	From OEA to NPS 12/22/23
National Oceanic and Atmospheric Administration (NOAA)	From OEA to NOAA 12/22/23
U.S. Department of the Interior Bureau of Indian Affairs (BIA)	From OEA to BIA 12/22/23
U.S. Environmental Protection Agency (EPA)	From OEA to EPA 12/22/23
U.S. Housing and Urban Development (HUD)	From OEA to HUD 12/22/23
State Agencies	
Mississippi Department of Transportation (MSDOT)	From OEA MSDOT 12/21/23
Mississippi Attorney General's Office- Public Education and Community Engagement	From OEA to Mississippi Attorney General's Office 12/21/23
Mississippi Department of Environmental Quality (Mississippi DEQ)	From OEA to Mississippi DEQ 12/21/23
Mississippi Department of Environmental Quality- Community Engagement Division	From OEA to MS DEQ- Community Engagement Division 12/21/23
Mississippi Public Lands Division	From OEA to Mississippi Public Lands Division 12/22/23
Alabama Department of Transportation (ADOT)- Southeast and Southwest Regions	From OEA to ADOT 12/21/23
Alabama Department of Environmental Management (Alabama DEM)	From OEA to Alabama DEM 12/22/23
Local Agencies	
Lauderdale County Roads Department	From OEA to Lauderdale County Roads Department 12/22/23
Lauderdale County Department of Human Services	From OEA to Lauderdale County Department of Human Services 12/21/23
Lauderdale County Chancery Clerk	From OEA to Lauderdale County Chancery Clerk 12/22/23
Lauderdale County Sheriff's Office	From OEA to Lauderdale County Sheriff's Office 12/21/23
Marengo County Office of Revenue	From OEA to Marengo County Office of Revenue 12/21/23
Marengo County Economic Development Authority	From OEA to Marengo County Economic Development Authority 12/29/23
Marengo County Sheriff's Office	From OEA to Marengo County Sheriff's Office 12/21/23
Wilcox County Sheriff's Office	From OEA to Wilcox County Sheriff's Office 12/21/23
Montgomery County Office of Parks and Recreation	From OEA to Montgomery County Parks and Recreation 12/22/23

Agency	Dates of Written Correspondence
Montgomery County Department of Engineering	From OEA to Montgomery County Engineering 12/21/23
Montgomery County	From OEA to Montgomery County 12/22/23
Montgomery County Sherriff's Office	From OEA to Montgomery County Sherriff's Office 12/22/23
Dallas County Government, Environmental Services	From OEA to Dallas County Government 12/22/23
Lowndes County Government, Highway Department	From OEA to Lowndes County Government 12/22/23
Lowndes County Economic Development Commission	From OEA to Lowndes County Economic Development Commission 12/29/23
City of Montgomery Office of Planning	From OEA to Montgomery Office of Planning 12/22/23
City of Montgomery Department of Cultural Affairs	From OEA to Montgomery Department of Cultural Affairs 12/22/23
City of Montgomery Office of Traffic Engineering	From OEA to Montgomery Office of Traffic Engineering 12/22/23
City of Montgomery Office of Parks and Recreation	From OEA to Montgomery Office of Parks and Recreation 12/22/23
City of Montgomery Department of Community Development	From OEA to Montgomery Department of Community Development 12/22/23
City of Selma Public Works Department	From OEA to Selma Public Works Department 12/22/23
City of Selma Planning Department	From OEA to Selma Planning Department 12/22/23
City of Selma Parks and Recreation Department	From OEA to Selma Parks and Recreation 12/22/23
City of Selma Police Department	From OEA to Selma Police Department 12/22/23
City of Meridian Community Development Department	From OEA to Meridian Community Development Department 12/22/23
City of Meridian Parks and Recreation Department	From OEA to Meridian Parks and Recreation 12/22/23

A.2.1 U.S. Environmental Protection Agency (EPA)

EPA engages in the National Environmental Policy Act (NEPA) process through a range of statutes. EPA has broad oversight and implementing responsibility for federal environmental laws, including the Clean Air Act (42 U.S.C. §§ 7401-7671q), the Clean Water Act (33 U.S.C. §§ 1251-1387), the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. Chapter 103), the Toxic Substances Control Act (15 U.S.C. §§ 2601-2629), and the Resource Conservation and Recovery Act (40 U.S.C. §§ 6901-6992k). OEA sent an initial consultation letter to EPA Region 4 on December 22,

2023, during agency consultation in December 2023 and January 2024, to which OEA has received no response.

A.2.2 State and Local Agencies

The Proposed Transactions would affect two states, Alabama and Mississippi. OEA consulted with relevant state agencies including departments of transportation, environment, and conservation. *Section 1.6 Consultation and Outreach*, describes the agency consultation process in more detail.

A.3 Government to Government Tribal Consultation

OEA sent letters to federally recognized tribes pursuant to NEPA and Executive Order 13175 (see **Table A.3-1**). Executive Order 13175 requires that federal agencies conduct government-to-government consultations with federally recognized Indian tribes in the development of federal policies (including regulations, legislative comments or proposed legislation, and other policy statements or actions) that have tribal implications. OEA used the US Housing and Urban Development's Tribal Directory Assessment Tool to develop the below list of tribes that have ties to the counties where the Eastern and Western Lines are located in Alabama and Mississippi.

Table A.3-1. Government to Government Tribal Consultation

Tribe	Name, Title	Dates of Written Correspondence
Mississippi Band of Choctaw Indians	Cyrus Ben, Chief	From OEA to Mississippi Band of Choctaw Indians 12/22/23
Alabama-Coushatta Tribe of Texas	Rick Sylestine, Chairperson	From OEA to Alabama-Coushatta Tribe of Texas 12/22/23
Alabama-Quassarte Tribal Town	Wilson Yargee, Chief	From OEA to Alabama-Quassarte Tribal Town 12/22/23
Choctaw Nation of Oklahoma	Gary Batton, Chief	From OEA to Choctaw Nation of Oklahoma 12/22/23
Coushatta Tribe of Louisiana	Jonathan Cernek, Chairman	From OEA to Coushatta Tribe of Louisiana 12/22/23
Muscogee (Creek) Nation	David Hill, Principal Chief	From OEA to Muscogee (Creek) Nation 12/22/23
Eastern Shawnee Tribe of Oklahoma	Glenna Wallace, Chief	From OEA to Eastern Shawnee Tribe of Oklahoma 12/22/23
Cherokee Nation	Chuck Hoskin Jr., Principal Chief	From OEA to Cherokee Nation 12/22/23
Chickasaw Nation	Bill Anoatubby, Governor	From OEA to Chickasaw Nation 12/22/23
Eastern Band of the Cherokee Indians	Richard Sneed, Principal Chief	From OEA to Eastern Band of the Cherokee Indians 12/22/23
Miami Tribe of Oklahoma	Douglas G Lankford, Chief	From OEA to Miami Tribe of Oklahoma 12/22/23
Quapaw Nation	Wena Supernaw, Chairman	From OEA to Quapaw Nation 12/22/23

During the 30-day comment period following sending of initial consultation letters, OEA received responses from the following three tribes:

- Quapaw Nation (received 12/27/23)
- Chickasaw Nation (received 1/5/24)
- Choctaw Nation of Oklahoma (received 1/24/24)

Chickasaw Nation and Quapaw Nation stated that the Eastern and Western Lines are not located within either of their tribal areas of interest and requested that they be removed from future correspondence. Choctaw Nation stated that Lauderdale County, Mississippi, and Choctaw, Marengo, Wilcox, Dallas, and Lowndes counties, in Alabama, hold great significance within their area of historic interest. However, because the Proposed Transactions do not involve any new ground disturbance they ask only to consult if additional ground disturbance is anticipated or if intact, significant, unrecorded cultural resources have been located under railroad beds, buildings, parking lots and in other unexpected places.

A.4 Request for Comments from Elected Officials

OEA contacted federal, state, and local elected officials with jurisdictions that overlap with the Eastern and Western lines concurrently with agency and tribal consultation in December 2023. OEA sent notification letters by mail or by email to 67 elected officials that are listed in **Table A.4-1** below to request comment.

Table A.4-1 Initial Notification of Elected Officials

Federal Elected Officials	
Michael Guest, U.S. House of Representatives Mississippi District 3	From OEA to Representative Michael Guest 12/22/23
Barry Moore, US House of Representatives, Alabama District 2	From OEA to Representative Barry Moore 12/22/23
Terri Sewell, US House of Representatives, Alabama District 33	From OEA to Representative Terri Sewell 12/22/23
State Elected Officials	
Jeff Tate, Mississippi State Senate, District 33	From OEA to Representative Jeff Tate 12/22/23
Kirk Hatcher, Alabama State Senate, District 26	From OEA to Senator Hatcher 12/22/23
Robert Stewart, Alabama State Senate, District 23	From OEA to Senator Stewart 12/22/23
Bobby Singleton, Alabama State Senate, District 24	From OEA to Senator Singleton 12/22/23
Kenneth Paschal, Alabama House of Representatives, District 73	From OEA to Representative Paschal 12/22/23
Charlotte Meadows, Alabama House of Representatives, District 74	From OEA to Representative Meadows 12/22/23
Tashina Morris, Alabama House of Representatives, District 77	From OEA to Representative Morris 12/22/23
Kenyatte Hassell, Alabama House of Representatives, District 78	From OEA to Representative Hassell 12/22/23
Kelvin Lawrence, Alabama House of Representatives, District 69	From OEA to Representative Lawrence 12/22/23
Prince Chestnut, Alabama House of Representatives, District 67	From OEA to Representative Chestnut 12/22/23
Thomas Jackson, Alabama House of Representatives, District 68	From OEA to Representative Jackson 12/22/23
Artis McCampbell, Alabama House of Representatives, District 71	From OEA to Representative McCampbell 12/29/23
Brett Easterbrook, Alabama House of Representatives, District 65	From OEA to Representative Easterbrook 12/22/23
Local Elected Officials	
Dallas County Commission	From OEA to Dallas County Commission 12/22/23
Lowndes County Commission	From OEA to Lowndes County Commission 12/22/23

Chris Lafferty, Lauderdale County Administrator	From OEA to Chris Lafferty 12/22/23
Lauderdale County Board of Supervisors	From OEA to Lauderdale County Board of Supervisors 12/22/23
Marengo County Board of Commissioners	From OEA to Marengo County Board of Commissioners 12/21/23
Wilcox County Board of Commissioners	From OEA to Wilcox County Board of Commissioners 12/22/23
Montgomery County Board of Commissioners	From OEA to Montgomery County Board of Commissioners 12/22/23
Choctaw County Board of Commissioners	From OEA to Choctaw County Board of Commissioners 12/22/23
Mayor Steven L. Reed, City of Montgomery	From OEA to Mayor Reed 12/22/23
Montgomery City Council	From OEA to Montgomery City Council 12/22/23
Mayor Gwendolyn Rodgers, City of Linden	From OEA to Mayor Rodgers 12/21/23
Mayor James Perkins, City of Selma	From OEA to Mayor Perkins 12/22/23
Selma City Council	From OEA to Selma City Council 12/22/23
Mayor Elizabeth Davis, Town of White Hall	From OEA to Mayor Davis 12/22/23
White Hall Town Council	From OEA to White Hall Town Council 12/22/23
White Hall City Clerk's Office	From OEA to White Hall City Clerk's Office 12/22/23
Mayor Jimmie Smith, City of Meridian	From OEA to Mayor Smith 12/22/23
Meridian City Council	From OEA to Meridian City Council 12/22/23
Mayor Rudy Parker, Town of Thomaston	From OEA to Mayor Parker 12/21/23
Thomaston Town Council	From OEA to Thomaston Town Council 12/21/23
Mayor Louvenia Lumpkin, Town of Orrville	From OEA to Mayor Lumpkin 12/21/23

A.5 Public Notification Materials

OEA emailed and/or called the executive or highest ranking local elected official (e.g., mayor, county board chairperson), representing any county or locality where the Proposed Transactions are located during the week of February 5, 2024, the names and jurisdiction of which are listed in **Table A.5-1**. OEA asked these local elected officials to provide OEA with the names and contact information for community leaders (faith leaders, school principals, police chiefs, etc.) in those counties or localities. This notification was done in compliance with the CEQ regulations (40 C.F.R. § 1506.6), which state that agencies shall also “Provide public notice of NEPA-related hearings, public meetings, and other opportunities for public involvement, and the availability of environmental documents so as to inform those persons and agencies who may be interested or affected by their proposed actions.”

Table A.5-1. Local Elected Officials Contacted

Jurisdiction	Office/Agency	Name, Title
Montgomery County	Montgomery County Board of Commissioners	Doug Singleton, Commission Chairman
Dallas County	Dallas County Board of Commissioners	Jimmy Nunn, Commission Chairman
Lowndes County	Lowndes County Board of Commissioners	Charlie King, Jr., Commission Chairman
City of Montgomery	City of Montgomery	Steven L. Reed, Mayor
City of Selma	City of Selma Mayor's Office	James Perkins, Mayor
Town of White Hall	Town of White Hall Mayor's Office	Elizabeth Davis, Mayor
City of Meridian	City of Meridian Mayor's Office	Jimmie Smith, Mayor
Choctaw County	Choctaw County Board of Commissioners	Jason Sturdivant, Commission Chairman
Town of Thomaston	Town of Thomaston Mayor's Office	Rudy Parker, Mayor
Town of Orrville	Town of Orrville Mayor's Office	Louvenia Lumpkin, Mayor
Marengo County	Marengo County Board of Commissioners	Fred Armstead, Commission Chairman
Wilcox County	Wilcox County Board of Commissioners	Bill Albritton, Commission Chairman

A.5.1 Environmental Justice Community Leader Notification Outreach

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” requires enhanced outreach efforts to Environmental Justice (EJ) populations for public involvement opportunities. Because EJ populations were identified in the area of the Eastern and Western Lines, OEA conducted additional notification efforts to engage EJ communities, including the use of letters and postcards to community leaders.

OEA conducted desktop research to identify community leaders (faith leaders, school principals, police chiefs, etc.) in addition to those provided by the local elected officials listed in the section above. OEA used Google Maps and ArcGIS to determine the locations of community organizations and relevant government bodies within a half-mile of the Eastern and Western Lines.

Fact sheets were sent to these community leaders in cities, towns, and counties where the Eastern and Western Lines are located by mail or by email describing the Proposed Transactions and potential impacts and alerting them of Draft EA publication and where to find digital and hard copies. The list of community leaders contacted is listed in **Table A.5-2** below organized by the method by which they or their organization was identified.

Table A.5-2. Community Leaders Notified

Organization/Agency	City/County	State
Identified by OEA Desktop Research		
St. Andrew Kim Taegon Parish	Montgomery	AL
Montgomery Fire Station 2	Montgomery	AL
Clay Street Baptist Church	Montgomery	AL
Day Street Baptist Church - Food Distribution Center	Montgomery	AL
Ark of Safety	Montgomery	AL
Iglesia de Dios Pentecostal M.I.	Montgomery	AL
Thelma S. Morris Elementary School	Montgomery	AL
Lily Baptist Church	Montgomery	AL
Strong Tower at Washington Park	Montgomery	AL
United States Postal Service	Montgomery	AL
Trinity Memorial Baptist Church	Montgomery	AL
Montgomery Primitive Baptist Church	Montgomery	AL
Greater Bible Way Temple	Montgomery	AL
Saints In Action Christian Center	Montgomery	AL
New Generation Preschool in Montgomery	Montgomery	AL
Mt Olive Baptist Church	Montgomery	AL
Fannin Road Baptist Church	Montgomery	AL
Benton Baptist Church Cemetery	Benton	AL
Greater New Hope Baptist Church	Selma	AL
Old Craig Academic Building (Safe House East)	Selma	AL
Corrections Department Academy	Selma	AL
Selma Area Food Bank	Selma	AL
Bruce K Craig Elementary	Selma	AL
Southside Primary School	Selma	AL
Potter's Place Church - Potter's Enrichment Academy	Selma	AL
Barney Childcare And Learning Center	Selma	AL
Summer Grove Missionary Baptist Church	Selma	AL
Selmont Community Baptist Church	Selma	AL
Tipton Durant Middle School	Selma	AL
House Of Prayer	Selma	AL
Greater Peterson Chapel Holiness Church	Selma	AL
New Mission Church	Selma	AL
Idaho Street church of Christ	Selma	AL

Organization/Agency	City/County	State
Selma Memorial Stadium Office	Selma	AL
Byrd Elementary School	Selma	AL
Selma Dallas County Public Library	Selma	AL
USPS	Selma	AL
Shiloh Baptist Church	Selma	AL
Kids Zone Daycare LLC	Selma	AL
Selma Water Works Co	Selma	AL
Selma Distribution Department	Selma	AL
Brown Chapel AME Church	Selma	AL
Second Baptist Church	Selma	AL
Plain Truth Church	Selma	AL
Selma City School's Alternative Learning Center	Selma	AL
Thomas School	Selma	AL
Sophia P. Kingston Elementary School	Selma	AL
Selma Fire Department	Selma	AL
Unity Baptist Church	Selma	AL
Clark Elementary School	Selma	AL
First Baptist Church	Selma	AL
The Selma Housing Authority	Selma	AL
New Hope Community Center	Selma	AL
Green Street Baptist Church	Selma	AL
Dallas County Court Services	Selma	AL
Christian Outreach Alliance	Selma	AL
Reformed Presbyterian Church	Selma	AL
Tabernacle Baptist Church	Selma	AL
Saint Paul's Christian Methodist Episcopal Church	Selma	AL
Payne Elementary School	Selma	AL
Ward Chapel AME Church	Selma	AL
R. B. Hudson STEAM Academy	Selma	AL
Selma University	Selma	AL
West Trinity Baptist Church	Selma	AL
Houston Park Church of Christ	Selma	AL
Crosspoint Christian Church	Selma	AL
John T. Morgan Academy	Selma	AL
Temple Gate Seventh-day Adventist Church	Marion Junction	AL
Beloit Community Center	Marion Junction	AL

Organization/Agency	City/County	State
Greater Mt Calvary AME Church	Orrville	AL
Church of the Immaculate Conception	Orrville	AL
Orrville Baptist Church	Orrville	AL
Orrville United Methodist Church	Orrville	AL
ORRVILLE COMMUNITY CENTER	Orrville	AL
Orrville Town Office	Orrville	AL
Orrville Volunteer Fire Department	Safford	AL
Christian Light Cemetery	Thomaston	AL
Glovers Church	Thomaston	AL
AL DOT Transportation Department	Thomaston	AL
Thomaston Town Hall	Thomaston	AL
Thomaston Fire Department	Thomaston	AL
United States Postal Service	Thomaston	AL
St Paul AME Church	Linden	AL
Zaniyah school	Linden	AL
Marengo County Extension Office	Linden	AL
U.S. Army national guard	Linden	AL
Forest Hill Baptist Church	Linden	AL
Linden Baptist Church	Pennington	AL
Pennington City Hall	Pennington	AL
Bobby Community Center	Jachin	AL
United States Postal Service	Lisman	AL
Christian Fellowship Baptist Church	Lisman	AL
Yantley Fire Department	Lisman	AL
Pleasant Hill Cemetery	Lisman	AL
Concord Cemetery	Meridian	MS
Mississippi Children's Museum	Meridian	MS
Meridian Police Department	Meridian	MS
Meridian Housing Authority	Meridian	MS
Lauderdale County Government Center	Meridian	MS
Provided by Local Elected Officials		
Rosa Honor	Orville	AL
Keith Middle-High School	Orrville	AL
Salem Elementary School	Orville	AL
Dallas County Board of Education	Selma	AL
Dallas County Courthouse	Montgomery	AL

Appendix A – Attachment 1: Public Notification and Consultation Materials



SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

Initial Agency Distribution List

RE: Docket No. FD 36727, CSX Transportation, Inc.—Acquisition and Operation—Rail Line of Meridian & Bigbee Railroad, L.L.C. & Docket No. FD 36732, Canadian Pacific Kansas City Limited and the Kansas City Southern Railway Company, D/B/A CPKC – Acquisition and Operation – Certain Rail Line of Meridian & Bigbee Railroad, L.L.C., in Lauderdale County, Mississippi and Choctaw and Marengo Counties Alabama

This document lists all Federal, State, and local agencies contacted by the Office of Environmental Analysis (OEA) in connection with the above referenced Dockets No. FD 36727 and 36732.

Federal

- Susan Park, Director, Strategic Programs Office, EPA – Region 4
- Kim Thurman, Project Development Team Leader, FHWA – Mississippi Division
- Aaron Dawson, Planning & Program Management Team Leader, FHWA – Alabama Division
- Kimberly Bouchard, Regional Director, BIA – Eastern Region
- Adrenace Williams, Jackson Field Office Director, HUD – Region 4
- Juliana Blackwell, Director, NOAA – National Geodetic Survey

State

- Neil Patterson, District Engineer, Mississippi DOT – District 5
- Willie Patterson, Central District Commissioner, Mississippi DOT – Central Districts (3 & 5)
- Johanna Beeland, Director, Mississippi Attorney General's Office – Public Education and Community Engagement
- Bill Cheney, Assistant to Secretary of State, Public Lands Division, Mississippi Public Lands Division
- Hal Dixon, Environmental Scientist III, Mississippi Department of Environmental Quality – Central Regional Office
- Taaka Bailey, Mississippi Department of Environmental Quality, Community Engagement Division
- Steven Graben, Regional Engineer, Alabama DOT – Southeast Region
- David Bohannon, Montgomery Area Operations Engineer, Alabama DOT – Southeast Region

- Matthew Ericksen, Regional Engineer, Alabama DOT – Southeast Region
- Daniel Ganus, Grover Hill Location Operations Engineer, Alabama DOT – Southeast Region
- Clethes Stallworth, Environmental Services, Alabama Department of Environmental Management – Land Division

County

- Rush Mayatt, Lauderdale County Roads Department
- Lauderdale County Department of Human Resources
- Carolyn Mooney, Chancery Clerk, Lauderdale County Chancery Clerk
- Billy Sollie, Sheriff, Lauderdale County Sheriff's Office
- Sharon B. Hilbish, ACTA, Commissioner of Revenue, Marengo County Office of Revenue
- Jo Ellen Martin, Director, Marengo County Economic Development Authority
- Richard E. Ben Bates, Marengo County Sheriff's Office
- Earnest Ivey Evans, Sheriff, Wilcox, County Sheriff's Office
- James Williams, Director, Montgomery County Department of Parks and Recreation
- Montgomery County Department of Engineering
- Ken Ward, Manager of Public Affairs, Montgomery County,
- Derrick Cunningham, Sheriff, Montgomery County Sheriff's Office
- John Creel, Director, Dallas County Government – Environmental Services
- David Butts, Engineer, Lowndes County Government – Highway Department
- Thomas Ellis, President, Lowndes County Economic Development Commission

Local

- Robert E. Smith Jr., Director, City of Montgomery Department of Planning
- Jamyla Philyaw, Interim Director, City of Montgomery Department of Cultural Affairs
- Wesley Cox, Director, City of Montgomery Office of Traffic Engineering
- David Card, Director, City of Montgomery Office of Parks and Recreation
- City of Montgomery Department of Community Development
- Henry Hicks, Director, City of Selma Public Works Department
- Danielle Wooten, Director, City of Selma Planning Department
- Dr. Denisha Perkins, Director, City of Selma Parks and Recreation Department
- Kenta Fulford, Chief of Police, City of Selma Police Department
- Community Development Director, City of Meridian
- Parks and Recreation Director, City of Meridian



SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

[Date TBD], 2023

First Name Last Name

Title

Agency

Address 1

Address 2

City, State Zip Code

By email at Email

RE: Docket No. FD 36727, CSX Transportation, Inc.—Acquisition and Operation—Rail Line of Meridian & Bigbee Railroad, L.L.C. & Docket No. FD 36732, Canadian Pacific Kansas City Limited and the Kansas City Southern Railway Company, D/B/A CPKC – Acquisition and Operation – Certain Rail Line of Meridian & Bigbee Railroad, L.L.C., in Lauderdale County, Miss. and Choctaw and Marengo Counties Ala.

First Name Last Name:

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According to CSXT and CPKC, approval and implementation of the proposed contiguous transactions would create a direct interchange between CPKC and CSXT at Myrtlewood that would expand shipping options for CSXT and CPKC for intermodal, automotive, and other traffic moving between the Southeastern United States and the Southwestern United States or Mexico. Following implementation of the proposed transactions, CPKC expects the addition of one new roundtrip train per day over its section of the MNBR line (two trains, one in each direction), consisting of approximately 70 cars per train, which would handle traffic moving

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Request for Comments

OEA requests any comments that your agency might have on these two transactions by January 24, 2024. All filings and other submissions can be submitted electronically through the Board's website at <https://stb.gov>. To submit a comment, select "File an Environmental Comment" (below the "Need Assistance?" button) on the Board's home page. Please make sure to refer to Docket No. FD 36727 and/or FD 36732 in all correspondence, including e-filings, addressed to the Board. Brief comments can be typed in the comment field provided, and lengthier comments can be attached as Word, Adobe Acrobat, or other file formats. Commenters are strongly encouraged to submit filings via the Board's e-filing system.

You may also send your written comments to OEA's Project Managers, by mail to Diana Wood regarding FD 36727 and Elizabeth Webster regarding FD 36732:

Surface Transportation Board
395 E Street SW
Washington, DC 20423

We look forward to hearing from your agency. If you have any questions, please feel free to contact Diana Wood at 202-934-0388 or by email at Diana.Wood@stb.gov or Elizabeth Webster at 202-360-0742 or by email at Elizabeth.Webster@stb.gov.

Sincerely,

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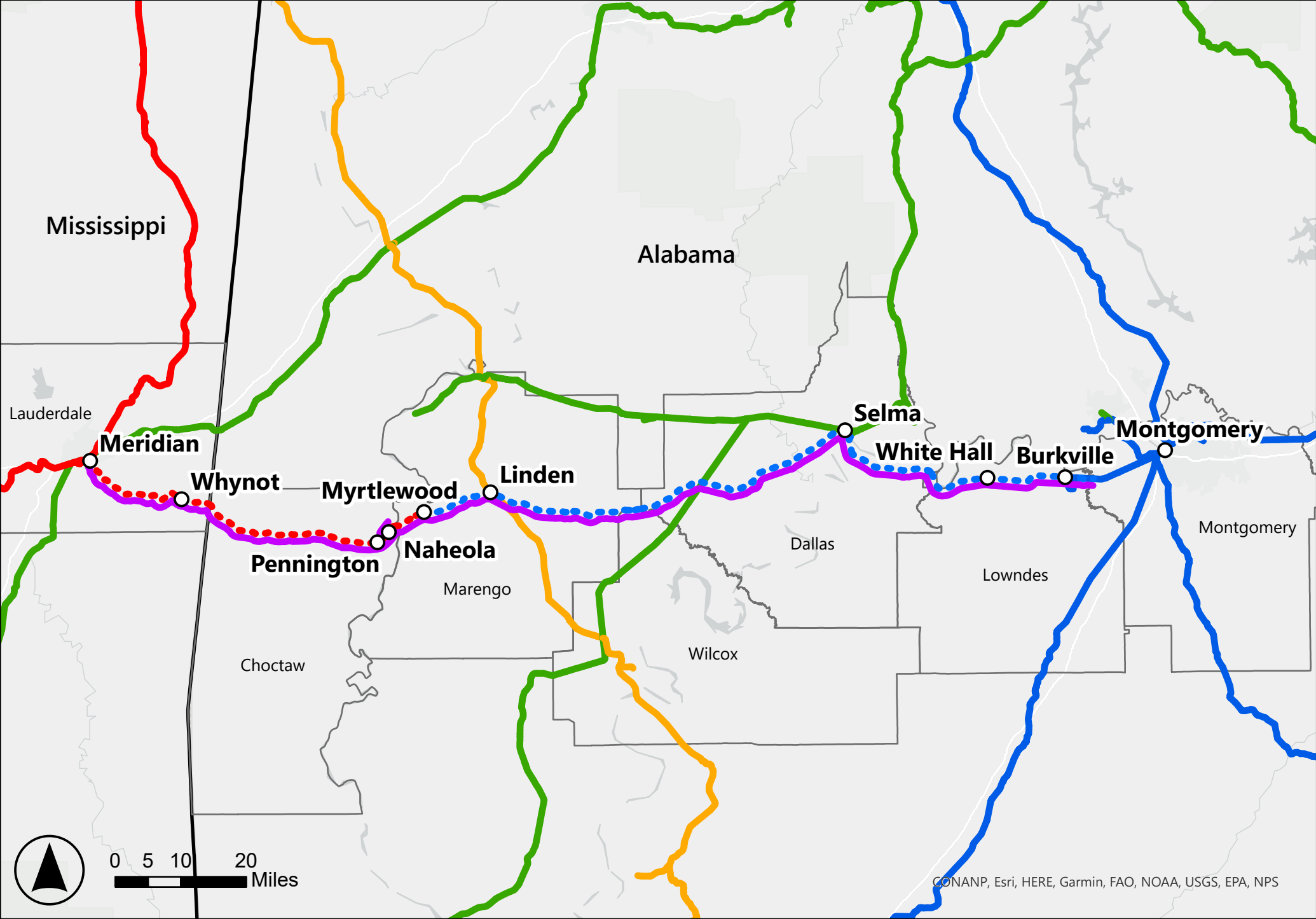
Danielle Gosselin

Director

Office of Environmental Analysis

Enclosures:

Attachment 1: Project Location Map



- | | | |
|-----------------------|------|----------------------|
| ● Eastern Line (CSXT) | CPKC | AGR |
| ● Western Line (CPKC) | CSXT | ○ Segment End Points |
| MNBR | NS | □ Counties |

Attachment 1: Project Location Map
FD 36727 (CSXT) & FD 36732 (CPKC)



SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

Initial Elected Officials Distribution List

RE: Docket No. FD 36727, CSX Transportation, Inc.—Acquisition and Operation—Rail Line of Meridian & Bigbee Railroad, L.L.C. & Docket No. FD 36732, Canadian Pacific Kansas City Limited and the Kansas City Southern Railway Company, D/B/A CPKC – Acquisition and Operation – Certain Rail Line of Meridian & Bigbee Railroad, L.L.C., in Lauderdale County, Mississippi and Choctaw and Marengo Counties Alabama

This document lists all Federal, State, and local elected officials contacted by the Office of Environmental Analysis (OEA) in connection with the above referenced Dockets No. FD 36727 and 36732.

Federal

- United States Representative Barry Moore
- United States Representative Terri Sewell
- United States Representative Michael Guest

State

- Mississippi State Senator Jeff Tate
- Alabama State Senator Kirk Hatcher
- Alabama State Senator Robert Stewart
- Alabama State Senator Bobby Singleton
- Alabama State Representative Kenneth Paschal
- Alabama State Representative Charlotte Meadows
- Alabama State Representative TaShina Morris
- Alabama State Representative Kenyatte Hassel
- Alabama State Representative Kelvin Lawrence
- Alabama State Representative Prince Chesnut
- Alabama State Representative Thomas Jackson
- Alabama State Representative Artis McCampbell
- Alabama State Representative Brett Easterbrook

Local

- Lauderdale County Administrator Chris Lafferty
- Jonathan Wells, Lauderdale County Board of Supervisors, District 1
- Wayman Newell, Lauderdale County Board of Supervisors, District 2
- Josh Todd, Lauderdale County Board of Supervisors, District 3

- Joe Norwood, Lauderdale County Board of Supervisor, District 4
- Kyle Rutledge, Lauderdale County Board of Supervisors, District 5
- Freddie Armstead, Jr., Marengo County Board of Commissioners, District 1
- Jason Windham, Marengo County Board of Commissioners, District 2
- John Crawford, Jr., Marengo County Board of Commissioners, District 3
- Calvin Martin, Marengo County Board of Commissioners, District 4
- Patrick Champion, Marengo County Board of Commissioners, District 5
- Michael Cook, Wilcox County Board of Commissioners, Director
- Carolyn Posey, 4th Judicial Circuit Court of Alabama
- Daniel Harris, Jr., Montgomery County Board of Commissioners, District 1
- Carmen Moore-Zeigler, Montgomery County Board of Commissioners, District 2
- Ronda Walker, Montgomery County Board of Commissioners, District 3
- Isaiah Sankey, Montgomery County Board of Commissioners, District 4
- Doug Singleton, Montgomery County Board of Commissioners, District 5
- Florence Cauthen, Montgomery County Board of Commissioners, County Administrator
- Tony L. Cherry, Choctaw County Board of Commissioners, District 1
- Connel Towns, Dallas County Commission, District 1
- Vivian Rogers, Dallas County Commission, District 2
- Curtis Williams, Dallas County Commission, District 3
- Jan Justice, Dallas County Commission, District 4
- Robert Harris, Lowndes County Commission, District 1
- Charlie King, Jr., Lowndes County Commission, District 2
- Mayor Steven L. Reed, City of Montgomery
- Cornelius Calhoun, Montgomery City Council, President
- Mayor Gwendolyn Rodgers, City of Linden
- Mayor James Perkins, City of Selma
- Warren “Billy” Young, City of Selma City Council, President
- Mayor Elizabeth Davis, Town of White Hall
- Ceodis Baker, Town of White Hall, Council Member
- Joyce Barnfeild, Town of White Hall, Council Member
- Delmartre Bethel, Town of White Hall, Council Member
- Ruby Rudolph, Town of White Hall, Council Member
- Eli Seaborn, Town of White Hall, Council Member
- Bertha White, Town of White Hall, City Clerk
- Mayor Jimmie Smith, City of Meridian
- George M. Thomas, Meridian City Council, Ward 1
- Dwayne Davis, Meridian City Council, Ward 2
- Joseph Norwood, Meridian City Council, Ward 3
- Romande Gail Walker, Meridian City Council, Ward 4
- Tyeasha Bell Lindsey, Meridian City Council, Ward 5
- Mayor Rudy Parker, Town of Thomaston
- Peggy Pritchett, Town of Thomaston, Council Member
- Jason Stokes, Town of Thomaston, Council Member

- W.L. Drake, Town of Thomaston, Council Member
- Bernard Cade, Town of Thomaston, Council Member
- Alton Shields, Town of Thomaston, Council Member
- Mayor Louvenia Lumpkin, Town of Orrville



SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

[Date TBD], 2023

First Name Last Name

Title

Agency

Address 1

Address 2

City, State Zip Code

By email at Email

RE: Docket No. FD 36727, CSX Transportation, Inc.—Acquisition and Operation—Rail Line of Meridian & Bigbee Railroad, L.L.C. & Docket No. FD 36732, Canadian Pacific Kansas City Limited and the Kansas City Southern Railway Company, D/B/A CPKC – Acquisition and Operation – Certain Rail Line of Meridian & Bigbee Railroad, L.L.C., in Lauderdale County, Miss. and Choctaw and Marengo Counties Ala.

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Request for Comments

OEA requests any comments that you might have on these two transactions by January 24, 2024. All filings and other submissions can be submitted electronically through the Board's website at <https://stb.gov>. To submit a comment, select "File an Environmental Comment" (below the "Need Assistance?" button) on the Board's home page. Please make sure to refer to Docket No. FD 36727 and/or FD 36732 in all correspondence, including e-filings, addressed to the Board. Brief comments can be typed in the comment field provided, and lengthier comments can be attached as Word, Adobe Acrobat, or other file formats. Commenters are strongly encouraged to submit filings via the Board's e-filing system.

You may also send your written comments to OEA's Project Managers, by mail to Diana Wood regarding FD 36727 and Elizabeth Webster regarding FD 36732:

Surface Transportation Board
395 E Street SW
Washington, DC 20423

We look forward to hearing from you. If you have any questions, please feel free to contact Diana Wood at 202-934-0388 or by email at Diana.Wood@stb.gov or Elizabeth Webster at 202-360-0742 or by email at Elizabeth.Webster@stb.gov.

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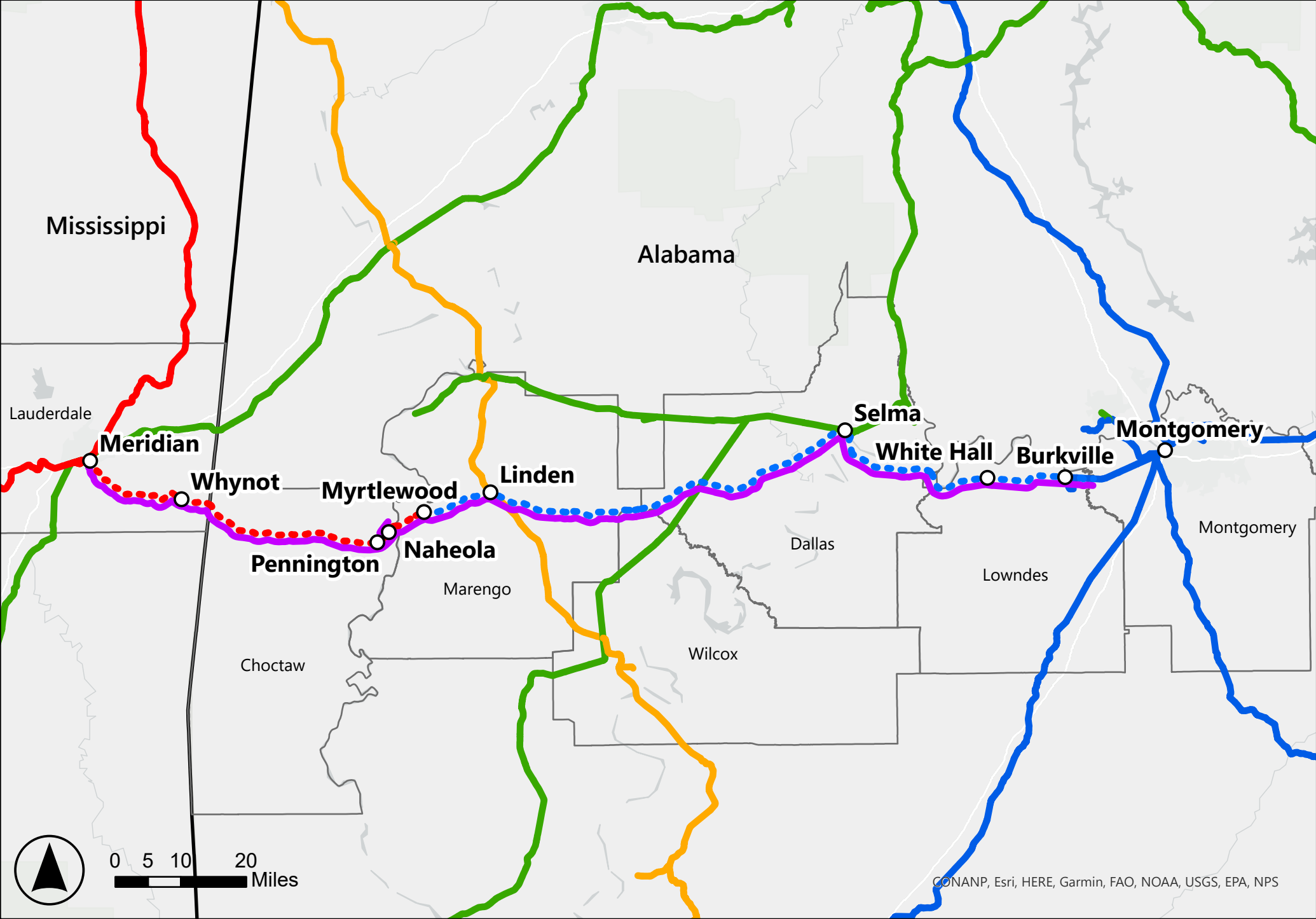
Danielle Gosselin

Director

Office of Environmental Analysis

Enclosures:

Attachment 1: Project Location Map



- | | | |
|---------------------|------|--------------------|
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| Western Line (CPKC) | CSXT | Segment End Points |
| MNBR | NS | Counties |

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SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

Initial Tribal Distribution List

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This document lists all Tribal Nations contacted by the Office of Environmental Analysis (OEA) in connection with the above referenced Dockets No. FD 36727 and 36732.

- Cyrus Ben, Chief, Mississippi Band of Choctaw Indians
- Rick Sylestine, Chairperson, Alabama-Coushatta Tribe of Texas
- Wilson Yargee, Chief, Alabama-Quassarte Tribal Town
- Gary Batton, Chief, Choctaw Nation of Oklahoma
- Jonathan Cernek, Chairman, Coushatta Tribe of Louisiana
- David Hill, Principal Chief, Muscogee (Creek) Nation
- Glenna Wallace, Chief, Eastern Shawnee Tribe of Oklahoma
- Chuck Hoskin Jr., Principal Chief, Cherokee Nation
- Bill Anoatubby, Governor, Chickasaw Nation
- Richard Sneed, Principal Chief, Eastern Band of the Cherokee Indians
- Douglas G. Lankford, Chief, Miami Tribe of Oklahoma
- Wena Supernaw, Chairman, Quapaw Nation



SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

[Date TBD], 2023

First Name Last Name

Title

Agency

Address 1

Address 2

City, State Zip Code

By email at Email

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First Name Last Name:

The purpose of this letter is to determine your tribe's interest in formal government-to-government consultations with the Surface Transportation Board (Board) regarding the above-referenced project.

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OEA is interested in knowing your tribe's interest in consulting with OEA regarding the broader range of impacts assessed under NEPA including those to tribal lands and resources. To assist you in your response, OEA has attached a comment card regarding any future involvement your tribe may want in the overall NEPA process (see Attachment 1: Consultation Questionnaire). I respectfully request that you complete the card and return it to Diana Wood or Elizabeth Webster of my staff at your earliest convenience.

The EA Process

Under the Board's environmental regulations, an acquisition under 49 U.S.C. § 11323 generally requires the preparation of an EA where certain thresholds would be exceeded. See 49 C.F.R. § 1105.6(b)(4). The thresholds for assessing environmental impacts from increased rail traffic on rail lines in acquisitions are an increase in rail traffic of at least 100% (measured in gross ton miles annually)² or an increase of at least eight trains per day. 49 C.F.R. § 1105.7(e)(5). For air quality impacts, rail lines located in areas classified as being in "nonattainment" areas under the Clean Air Act (42 U.S.C. §§ 7401-7671q) are also assessed if

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Contact Information

If you have any questions or would like to discuss the project in more detail please do not hesitate to contact Diana Wood at 202-934-0388 or by email at Diana.Wood@stb.gov or Elizabeth Webster at 202-360-0742 or by email at Elizabeth.Webster@stb.gov. We look forward to hearing from you.

Sincerely,



Danielle Gosselin

Director

Office of Environmental Analysis

Enclosures:

Attachment 1: Consultation Questionnaire

Attachment 2: Project Location Map

ATTACHMENT 1: CONSULTATION QUESTIONNAIRE

TRIBE NAME

RE: Docket No. FD 36727, CSX Transportation, Inc.—Acquisition and Operation—Rail Line of Meridian & Bigbee Railroad, L.L.C. & Docket No. FD 36732, Canadian Pacific Kansas City Limited and the Kansas City Southern Railway Company, D/B/A CPKC – Acquisition and Operation – Certain Rail Line of Meridian & Bigbee Railroad, L.L.C., in Lauderdale County, Mississippi and Choctaw and Marengo Counties Alabama

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

- ☐ We have no interests associated with the proposed project and further consultation with our Tribe is not required.
- ☐ We want to continue to receive project information by mail and participate in the public involvement process.
- ☐ We have an interest in proposed project and want to participate in government-to-government consultation.

Name of the TRIBE NAME designated contact for the proposed project:

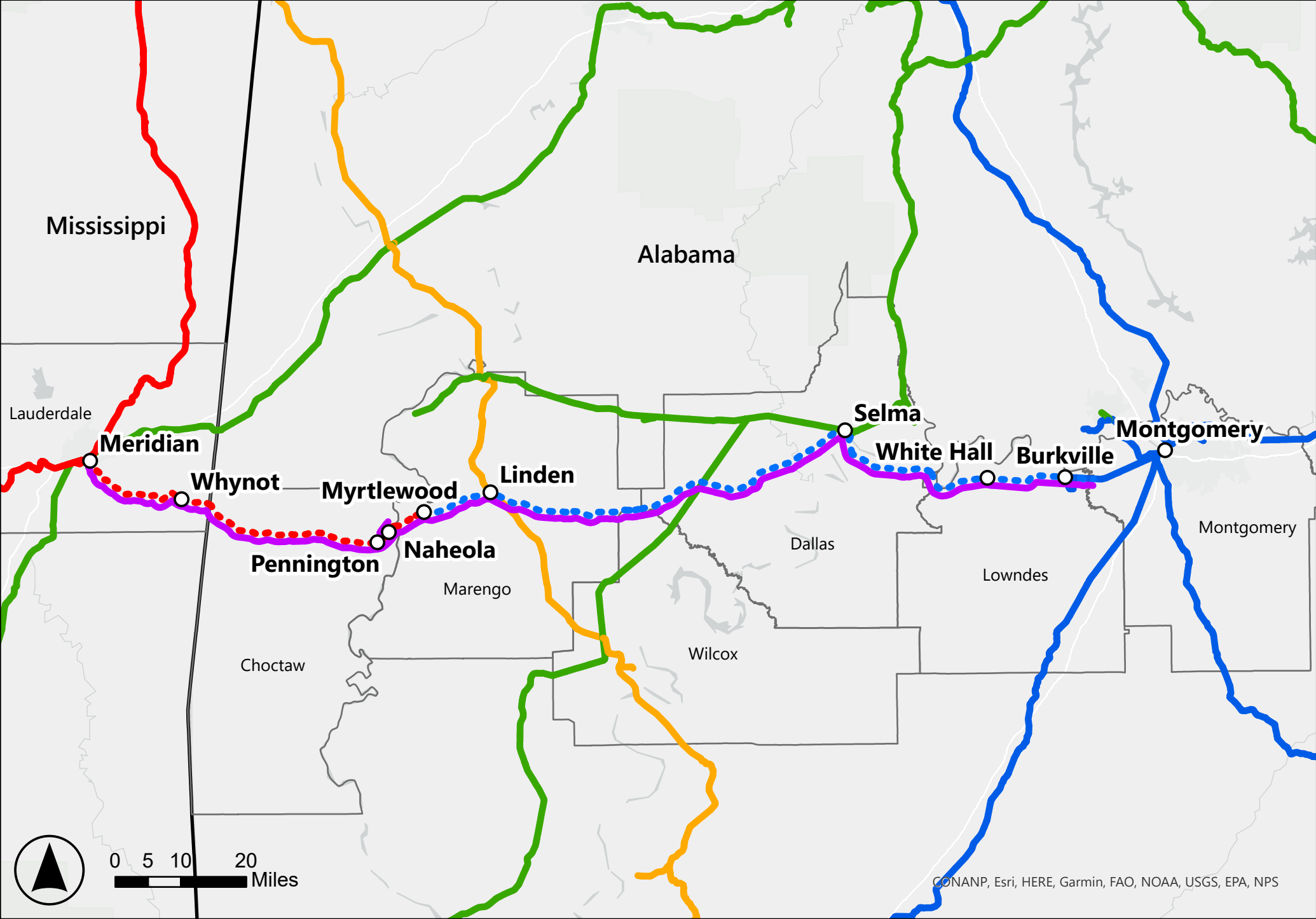
Please print

Phone: _____
e-mail: _____

Signed: _____ Date: _____

Please mail to: Diana Wood (Docket No. FD 36727) or Elizabeth Webster (Docket No. FD 36732)
Surface Transportation Board
395 E Street SW
Washington, DC 20423

Or Email to: Diana.Wood@stb.gov or Elizabeth.Webster@stb.gov



- | | | |
|-----------------------|--------|----------------------|
| ● Eastern Line (CSXT) | — CPKC | — AGR |
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Attachment 2: Project Location Map
FD 36727 (CSXT) & FD 36732 (CPKC)

Appendix B: Rail Line Segments

Appendix B

Rail Line Segments

B.1 Introduction

This appendix provides a table for the rail line segments where the Proposed Transactions would cause rail traffic or operational activities to exceed the environmental thresholds established by the Board's regulations at 49 C.F.R. § 1105.7(e). **Table B-1** identifies the rail line segments on the Eastern and Western Lines and contains data from Applicants. The table contains No-Action Alternative and Proposed Transactions traffic densities. All segments would trip the Board's thresholds for environmental analysis based on GTMs.

Table B-1. Rail Line Segments

Segment Description					Trains/Day			Tonnage- Gross Ton Miles (GTM) per Year			
Segment Begin to Segment End	Eastern/Western Line	Current Owner	Post-Transactions Owner	Length (Miles)	2029 No Action	2029 Proposed Transactions	Transactions-Related Change	2029 No Action	2029 Proposed Transactions	Transactions-Related Change	Transactions-Related Change Percentage
Montgomery, AL to Burkville, AL	Eastern	CSXT	CSXT	14.1	2.86	3.43	0.57	55,041,268	113,234,731	58,193,463	106%
Burkville, AL to White Hall, AL	Eastern	MNBR	CSXT	10.3	1.43	3.43	2	31,870,146	75,205,704	43,335,558	136%
White Hall, AL to Selma, AL	Eastern	MNBR	CSXT	23.5	1.43	2.00	0.57	67,328,004	158,539,035	91,211,031	135%
Selma, AL to Linden, AL	Eastern	MNBR	CSXT	50.6	1.43	2.00	0.57	121,834,051	332,733,766	210,899,715	173%
Linden, AL to Myrtlewood, AL	Eastern	MNBR	CSXT	10.3	2.86	3.43	0.57	37,011,269	74,981,472	37,970,203	103%
Myrtlewood, AL to Naheola, AL	Western	MNBR	CPKC	4.3	2	4	2	5,876,664	18,620,584	12,743,920	217%
Naheola, AL to Pennington, AL	Western	MNBR	CPKC	2.4	1.43	2.86	1.43	4,871,539	10,603,208	5,731,669	118%
Pennington, AL to Whynot, MS	Western	MNBR	CPKC	27.4	1.43	2.86	1.43	17,146,707	117,359,233	100,212,526	584%
Whynot, MS to Meridian, MS	Western	MNBR	CPKC	15.5	1.43	2.86	1.43	11,146,722	64,487,885	53,341,163	479%

Appendix C: Grade Crossing Delay

Appendix C

Grade Crossing Delay

C.1 Grade Crossing Delay Approach

For grade crossing delay, the analyses are based on future conditions under the No-Action Alternative and the Proposed Transactions. Specifically, the No-Action Alternative analysis was conducted for 2029, the future condition of five years after the anticipated year of the Board's final decision. The No-Action condition reflects the projected train and vehicle traffic levels in the analysis year 2029 without the Proposed Transactions. The Proposed Transactions analysis was also conducted for 2029, accounting for projected train traffic levels as a result of the Proposed Transactions. The following data sources serve as the basis for the grade crossing delay analysis.

AADT data are from the FRA database (FRA 2024) with updates from state and local transportation agencies where available. The AADT values are based on data that represent years ranging from 1986 to 2022. As such, there is a need to normalize the AADT values to a common year and then grow the values to the analysis year of 2029. The general approach used to estimate 2029 AADT values was to identify the most recent available AADT value, adjust that value to a common base year of 2024, and then grow all values to the analysis year of 2029. Based on prior Board practice in environmental reviews of mergers and acquisitions, the specific approaches used to adjust historical AADT values to 2024 and to grow 2024 AADT values to 2029 include:

If two years of historical traffic data are available and the volume for the more recent year is greater than the volume for the earlier year, then straight line growth is used to adjust the most recent AADT value to 2024.

If two years of historical traffic data are available and the volume for the more recent year is equal to or less than the volume for the earlier year, then a growth rate of 0% is used to adjust the most recent AADT value to 2024 (assume most recent AADT as 2024 AADT).

If one year of historical traffic data is available, then data from the United States Census Bureau (Decennial Census data and American Community Survey data) are used to develop growth factors. The growth factor from the most recent year with available AADT to 2022 is based on the ratio of trips to work by car, truck, or van in 2022 (the most recent year of estimates) compared to the corresponding year of AADT data. Data from the United States Census Bureau (Decennial Census data and American Community Survey data) are also used to develop growth factors to grow the 2022 AADT estimates to 2024. This was only applicable to two sites in Dallas County, Alabama. For these two sites, the growth rate from 2022 to 2024 is 0% (assume 2022 AADT as 2024 AADT) since the 5-year and most recent 1-year growth rates are close to zero or negative.

A two percent annual growth rate is used to grow the AADT values to 2029, starting with 2024 AADT values.

Current and future train traffic (average number of trains per day, average train length, train speed) are based on estimates by CSXT and CPKC (**Section 2.2.1, Changes in Rail Operations**). Maximum authorized speed is used for this analysis. The average train length used in this analysis is the maximum train length on each track segment as provided by CSXT and CPKC.

C.1.1 Grade Crossing Delay Analysis Methods

The grade crossing delay analysis includes the two general components, one focused on individual train crossings and one focused on cumulative events over an entire day. The performance measures for individual train crossings include blocked crossing time per train, crossing delay per stopped vehicle, and maximum vehicle queue. The performance measures for cumulative events over an entire day include number of vehicles delayed per day, average delay for all vehicles, and level of service (LOS) for vehicular traffic. For simplification purposes, it is assumed that both rail and road traffic are uniform throughout the day.

The blocked crossing time per train (T) includes the time for the train to pass and the time for any warning device to engage and disengage as shown in Equation (4) (FRA 2019). The blocked crossing time per train is based on Equation (9).

$$T = T_W + \frac{L}{V * 88} \quad (9)$$

Where:

T = Blocked crossing time per train (minutes);

T_W = Lead time (assumed 0.6 minutes for gate closing and opening as well as for passive crossings at which point motorists would not venture a crossing);

L = Average train length (feet);

V = Average train speed (miles per hour); and

88 = Conversion factor from miles per hour to feet per minute.

The number of vehicles delayed per day (N_V) is the number of vehicles that would be stopped for trains in a 24-hour period as shown in Equation (10).

$$N_V = \frac{T}{1,440} N * AADT \quad (10)$$

Where:

N_V = Number of vehicles delayed per day;

T = Blocked crossing time per train (minutes);

1,440 = Factor to convert vehicles per day to vehicles per minute;

N = Number of trains per day; and

AADT = Annual average daily traffic (vehicles per day).

The average delay per vehicle in a 24-hour period (D_V) is shown in Equation (11).

$$D_V = \frac{N_V}{AADT} * \frac{T * \frac{R_D}{R_D - R_A}}{2} \quad (11)$$

Where:

D_V = Average delay per vehicle in a 24-hour period (minutes);

N_V = Number of vehicles delayed per day;

T = Blocked crossing time per train (minutes);

R_D = Vehicle departure rate (vehicles per minute per lane), which can vary by location;

R_A = Vehicle arrival rate (vehicles per minute per lane), which is based on AADT data from the FRA database with updates from state and local transportation agencies where available;

AADT = annual average daily traffic volume for the highway at the grade crossing (in vehicles per day), which is based on AADT data from the FRA database with updates from state and local transportation agencies where available; and

2 = Averaging factor to account for vehicles that do not experience delays from the entire time the train blocks the crossing.

Total vehicle delay (D) is the product of average delay per vehicle (D_V) and the AADT as shown in Equation (12).

$$D = D_V * AADT \quad (12)$$

Where:

D = Total vehicle delay (minutes);

D_V = Average delay per vehicle in a 24-hour period (minutes); and

AADT = annual average daily traffic volume for the highway at the grade crossing (in vehicles per day), which is based on AADT data from the FRA database with updates from state and local transportation agencies where available.

The LOS for vehicular traffic in this analysis is based on the average delay per vehicle at each grade crossing and the LOS criteria for signalized intersections from the 2016

Highway Capacity Manual (Transportation Research Board 2016). LOS is a qualitative measure of motor vehicle traffic flow, indicated by letters from A to F, where A represents free flow conditions and F indicates extreme congestion. **Table C-1** presents the LOS categories along with the applicable ranges of average delay per vehicle and general descriptions.

Table C-1. Level of Service Designations		
LOS	Average Delay per Vehicle (DV) (seconds/vehicle)	General Description
A	$DV \leq 10$	Free flow
B	$10 < DV \leq 20$	Stable flow (slight delays)
C	$20 < DV \leq 35$	Stable flow (acceptable delays)
D	$35 < DV \leq 55$	Approaching unstable flow
E	$55 < DV \leq 80$	Unstable flow
F	$80 < DV$	Forced flow (congested and queues fail to clear)
Source: Highway Capacity Manual, Sixth Edition: A Guide for Multimodal Mobility Analysis. (Transportation Research Board 2016)		

The maximum vehicle queue (Q) is the estimated length of the longest line of vehicles expected to occur at the grade crossing. It is assumed that the maximum vehicle queue would occur during the peak hour for vehicle traffic and that the peak hour traffic represents 10 percent of the AADT. The calculation is given by Equation (13).

$$Q = AADT * \frac{0.1*0.6}{60} * \frac{T}{NL/2} \quad (13)$$

Where:

Q = Maximum vehicle queue length (in number of vehicles);

AADT = annual average daily traffic volume for the highway at the grade crossing (in vehicles per day), which is based on AADT data from the FRA database with updates from state and local transportation agencies where available;

0.1 = Factor to convert AADT (in vehicles per day) to peak hour traffic (in vehicles per hour);

0.6 = Factor to convert two-way traffic to peak direction traffic, assuming traffic is split 60/40 during the peak hour;

60 = Factor to convert vehicles per hour to vehicles per minute;

T = Blocked crossing time per train (minutes);

NL = Number of highway lanes at the grade crossing, which was obtained from the FRA database; and

2 = Factor to convert total lanes to lanes in peak direction.

C.1.1.2 Emergency Vehicle Delay

OEA analyzed the gate down time at all 96 grade crossings in the study area. Table C-2 presents the estimated gate down time for freight trains using the estimated length and maximum train speed as provided by CSXT and CPKC. **Attachment 1** to this appendix show maps of emergency service facilities, including hospitals, fire stations, and police stations, in relation to grade crossings and grade separated crossings throughout the study area. The table and corresponding maps are intended to be used simultaneously to provide context for reviewers.

Under normal conditions, trains are moving and, as shown in **Table C-2**, the average gate down time is relatively short. As such emergency vehicles would typically wait for the train to pass. Although a rare occurrence, a grade crossing can become blocked when a train comes to a stop before clearing the crossing. While also rare, it is possible that an emergency could occur at the same time that a stopped train blocks a grade crossing. These simultaneous events are rare but represent a potentially serious situation. Therefore, OEA analyzed 68 of the 96 grade crossings in greater detail for potential impacts of stopped trains on emergency response vehicles. These include all grade crossings in the study area with an AADT of 2,500 vehicles per day or greater, as well as grade crossings with an AADT less than 2,500 vehicles per day that are “isolated” because they are more than 2 miles from a grade separated crossing and more than 2 miles from a grade crossing with an AADT of 2,500 or higher. For the 68 grade crossings that met these criteria, **Table C-3** reports the length of the closest alternative route that an emergency vehicle could take in the unlikely event that a freight train were to block the grade crossing (length varies from 3,600 feet to 8,530 feet).

In identifying alternative routes, OEA made two conservative assumptions to estimate the length of the alternative route. First, vehicles arriving at the grade crossing do not know how far in each direction along the tracks the freight train extends, so this analysis assumes all adjacent crossings are blocked simultaneously within a distance equal to the maximum freight train length as measured along the tracks and extending in both directions away from the crossing. This represents approximately twice the distance a single freight train could block grade crossings. Alternative routes could be shorter for many grade crossings depending on where a train is stopped.

Second, OEA calculated the length of the alternative route as the distance from one side of the grade crossing to the opposite side of the tracks at the same grade crossing, using only grade separated crossings or crossings more than the length of a freight train away. The alternative route lengths reported in **Appendix C** represent the upper limit of the additional mileage that a vehicle would travel to go around a train blocking one or more adjacent grade crossings.

Within **Table C-2** for the alternate route analysis, grade crossings are indicated as “--” if they were excluded from the analysis and as “NVA” if there was no viable alternate route (dead-end roads). Negative values for average delay per delayed vehicle indicate a reduction in average delay, while positive values indicate an increase in delay.

Table C-2. Emergency Vehicle Alternative Route Analysis

			Proposed Transactions		Alternative Route		Proposed Transactions-related Change in Delay		
<i>State/ City</i>	<i>Street</i>	<i>Crossing ID</i>	<i>Train Length (feet)</i>	<i>Gate Down Time (minutes)</i>	<i>Grade Separated (Yes/No)</i>	<i>Distance (miles)</i>	<i>Total Delay per Day (seconds)</i>	<i>Average Delay per Delayed Vehicle (seconds)</i>	<i>Total Gate Down Time per Day (minutes)</i>
Mississippi									
MERIDIAN	NORTH FRONTAGE RD	840837U	4240	2.8	yes	3.1	0	-48	2.1
MERIDIAN	SOUTH FRONTAGE RD	840839H	4240	2.8	yes	1.4	-402	-48	2.1
MERIDIAN	VIRGINIA DR	840842R	4240	2.8	--	--	0	-42	2.1
MERIDIAN	JAMES RIVERWAY RD	840843X	4240	2.8	--	--	0	-36	2.1
MERIDIAN	SHILOH VIMVILLE RD	840848G	4240	2.8	--	--	0	-42	2.1
MERIDIAN	RUSSELL CAMP RD	840850H	4240	2.8	--	--	0	-42	2.1
MERIDIAN	RUSSELL CAMP RD	853198R	4240	2.8	--	--	-6	-42	2.1
MERIDIAN	RUSSELL CAMP RD	853199X	4240	2.8	--	--	6	-42	2.1
MERIDIAN	EARL HANEY RD	853201W	4240	2.8	--	--	6	-42	2.1
MERIDIAN	OLD HIGHWAY 19	853203K	4240	2.8	--	--	0	-42	2.1
MERIDIAN	PONDS RD	853205Y	4240	2.5	no	3.5	30	-18	2.7
MERIDIAN	ALAMUCHA WHYNOT RD	853206F	4240	2.5	no	3.5	12	-18	2.7
Alabama									
SELMONT	CR 56	349098Y	8530	4.5	--	--	1188	30	3.9
SELMA	MULBERRY ST	349099F	8530	4.5	--	--	342	30	3.9
SELMA	WATER ST	349100X	8530	4.5	no	7.4	1320	30	3.9
SELMA	ALABAMA AVE	349101E	8530	4.5	--	--	222	30	3.9

			Proposed Transactions		Alternative Route		Proposed Transactions-related Change in Delay		
<i>State/ City</i>	<i>Street</i>	<i>Crossing ID</i>	<i>Train Length (feet)</i>	<i>Gate Down Time (minutes)</i>	<i>Grade Separated (Yes/No)</i>	<i>Distance (miles)</i>	<i>Total Delay per Day (seconds)</i>	<i>Average Delay per Delayed Vehicle (seconds)</i>	<i>Total Gate Down Time per Day (minutes)</i>
SELMA	SELMA AVE	349102L	8530	4.5	--	--	840	24	3.9
SELMA	ST ANN ST	349104A	8530	4.5	--	--	972	30	3.9
SELMA	JEFF DAVIS AVE	349105G	8530	4.5	no	8	1950	30	3.9
SELMA	LAPSLEY ST	349106N	7678	4.1	no	4.1	1782	18	2.9
SELMA	OLD CAHABA RD	349107V	7678	4.1	no	4.2	2100	12	2.9
SELMA	HOOPER DR	349110D	7678	4.1	no	5.1	1296	12	2.9
SELMA	CRESCENT HILL DR	349112S	7678	4.1	--	--	660	18	2.9
LINDEN	SHILOH ST	350270N	7678	4.1	--	--	354	12	2.9
LINDEN	SR 69 / US 43 / MAIN ST	350271V	7678	4.1	no	22.3	2040	12	2.9
LINDEN	RAILROAD ST	350272C	7678	4.1	NVA	NVA	18	12	2.9
SELMA	VAUGHAN MEMORIAL DR	350292N	7678	4.1	--	--	366	12	2.9
SELMA	CHILSOM DR	350294C	7678	4.1	no	3.5	1350	12	2.9
SELMA	WHITMAN RD	350295J	7678	4.1	--	--	24	12	2.9
SELMA	LANDLINE RD/HWY 219	350296R	7678	4.1	--	--	726	12	2.9
SELMA	FAIRVIEW RD	350297X	7678	4.1	NVA	NVA	18	12	2.9
SELMA	DOE RUN RD	350298E	7678	4.1	no	10.7	24	12	2.9
SELMA	CR 347	350300D	7678	4.1	no	13.6	0	12	2.9
ORRVILLE	CR 189	350303Y	7678	4.1	no	12	90	12	2.9
ORRVILLE	CR 45	350308H	7678	4.1	no	8.2	102	12	2.9
ORRVILLE	CR 165	350309P	7678	4.1	no	6.5	0	12	2.9
ORRVILLE	J T MOORE ST	350310J	7678	4.1	no	6.5	252	12	2.9
ORRVILLE	CR 11	350312X	7678	4.1	no	12.5	42	12	2.9

			Proposed Transactions		Alternative Route		Proposed Transactions-related Change in Delay		
<i>State/ City</i>	<i>Street</i>	<i>Crossing ID</i>	<i>Train Length (feet)</i>	<i>Gate Down Time (minutes)</i>	<i>Grade Separated (Yes/No)</i>	<i>Distance (miles)</i>	<i>Total Delay per Day (seconds)</i>	<i>Average Delay per Delayed Vehicle (seconds)</i>	<i>Total Gate Down Time per Day (minutes)</i>
ORRVILLE	CR 21	350314L	7678	4.1	no	11.2	0	12	2.9
ORRVILLE	CR 109	350315T	7678	4.1	no	11.1	12	12	2.9
ORRVILLE	CR 109	350319V	7678	4.1	no	8.4	12	12	2.9
ORRVILLE	SR 66	350320P	7678	4.1	no	8.4	168	12	2.9
ORRVILLE	CR 108	350321W	7678	4.1	NVA	NVA	12	12	2.9
THOMASTON	SR 28	350324S	7678	4.1	no	23.5	204	12	2.9
THOMASTON	CR 79	350327M	7678	4.1	no	8.4	48	12	2.9
THOMASTON	CR 53	350329B	7678	4.1	no	8.4	36	12	2.9
THOMASTON	WALKES GROVE LN	350330V	7678	4.1	NVA	NVA	0	12	2.9
THOMASTON	SR 25	350331C	7678	4.1	no	25.5	390	12	2.9
THOMASTON	SANDY RD	350334X	7678	4.1	NVA	NVA	24	12	2.9
THOMASTON	CR 33	350337T	7678	4.1	no	22.4	36	12	2.9
LOWNDESBORO	LAKEBERRY RD	831355V	5505	3.1	no	3.8	324	-6	5.8
LOWNDESBORO	CR 40	831356C	5505	3.1	no	7.6	150	-6	5.8
LOWNDESBORO	CR 29	831361Y	5505	3.1	no	7.6	312	-6	5.8
LOWNDESBORO	PINE ST	831366H	5505	3.1	no	17.3	24	-6	5.8
WHITE HALL	FREEDOM RD	831367P	8530	4.5	no	16.5	402	30	3.9
WHITE HALL	BENTON RD	831368W	8530	4.5	no	7.4	66	30	3.9
WHITE HALL	LOUIS DR	831369D	8530	4.5	no	5.4	18	30	3.9
WHITE HALL	LANEVILLE RD	831373T	8530	4.5	no	5.4	96	30	3.9
BENTON	MARKET ST	831374A	8530	4.5	NVA	NVA	18	30	3.9
BENTON	CR 459	831380D	8530	4.5	no	12.3	24	30	3.9
TYLER	CR 7	831381K	8530	4.5	no	9.6	60	30	3.9
TYLER	CR 69	831383Y	8530	4.5	no	9.5	96	30	3.9

			Proposed Transactions		Alternative Route		Proposed Transactions-related Change in Delay		
<i>State/ City</i>	<i>Street</i>	<i>Crossing ID</i>	<i>Train Length (feet)</i>	<i>Gate Down Time (minutes)</i>	<i>Grade Separated (Yes/No)</i>	<i>Distance (miles)</i>	<i>Total Delay per Day (seconds)</i>	<i>Average Delay per Delayed Vehicle (seconds)</i>	<i>Total Gate Down Time per Day (minutes)</i>
SELMA	WOODLAND DR	831384F	8530	4.5	--	--	66	30	3.9
SELMONT	OLD MONTGOMERY HWY	831386U	8530	4.5	no	5	1428	30	3.9
SELMONT	CR 75	831389P	8530	4.5	--	--	114	30	3.9
YANTLEY	CONCORD RD	853214X	4240	2.5	no	6.2	0	-18	2.7
YANTLEY	CR 1	853215E	4240	2.5	no	3.9	12	-18	2.7
YANTLEY	CR 32	853217T	4240	2.5	no	3.9	120	-18	2.7
CROMWELL	CR 45	853220B	4240	2.5	no	13	18	-18	2.7
CROMWELL	LITTLE HOPE RD	853221H	4240	2.5	no	12.1	12	-18	2.7
CROMWELL	CR 7	853226S	4240	2.5	no	12.1	6	-18	2.7
CROMWELL	CR 9	853227Y	4240	2.5	no	13	72	-18	2.7
JACHIN	SR 17	853231N	4240	2.5	no	24.1	132	-18	2.7
CHOCTAW	HYMN RD	853236X	4240	2.5	NVA	NVA	-6	-18	2.7
CHOCTAW	COVE RD	853237E	4240	2.5	NVA	NVA	-6	-18	2.7
PENNINGTON	MARZETTE RD	853238L	4240	2.5	NVA	NVA	4884	48	5.8
PENNINGTON	SR 114	853240M	4240	2.5	no	6.1	204	42	5.8
PENNINGTON	OLD LOCK 2 RD	853241U	4240	2.5	--	--	1842	48	5.8
MYRTLEWOOD	OLD NAHEOLA RD	853243H	3600	2.5	no	6	24	42	5.8
PENNINGTON	IDA DR	853249Y	4240	2.5	--	--	1548	48	5.8
SELMONT	SR 8 /US 80/SELMA BYPASS	903936U	8530	4.5	no	4.6	2142	48	5.8
LOWNDESBORO	MANACK RD	831354N	5505	3.1	no	3.7	624	42	5.8
SELMA	LAWRENCE STREET	727611B	8530	4.5	--	--	5394	48	5.8

			Proposed Transactions		Alternative Route		Proposed Transactions-related Change in Delay		
<i>State/ City</i>	<i>Street</i>	<i>Crossing ID</i>	<i>Train Length (feet)</i>	<i>Gate Down Time (minutes)</i>	<i>Grade Separated (Yes/No)</i>	<i>Distance (miles)</i>	<i>Total Delay per Day (seconds)</i>	<i>Average Delay per Delayed Vehicle (seconds)</i>	<i>Total Gate Down Time per Day (minutes)</i>
SELMA	FRANKLIN STREET	727612H	8530	4.5	no	7.2	0	-18	2.7
SELMA	M L KING STREET SYLVAN	727610U	8530	4.5	--	--	-2514	-132	-2.4
SELMA	CHURCH STREET	727615D	7678	4.1	no	6.7	-1938	-126	-2.4
SELMA	UNION STREET	727616K	7678	4.1	--	--	-222	-150	-5.2
SELMA	BROAD STREET	727614W	7678	4.1	no	7	-42	-126	-2.4
MONTGOMERY	AIR BASE BLVD	831344H	5505	3.1	no	5.3	4860	36	3.9
MONTGOMERY	CANTELOU RD	831351T	5505	3.1	--	--	210	-6	5.8
MONTGOMERY	HUNTER LOOP RD	831346W	5505	3.1	no	5.9	108	30	3.9
MONTGOMERY	KEELIE HALL RD	831349S	5505	3.1	--	--	2682	30	3.9
MONTGOMERY	MITCHELL YOUNG RD	831350L	5505	3.1	no	5.3	684	24	3.9
MONTGOMERY	OLD SELMA RD	831347D	5505	3.1	no	3.1	3126	18	2.9
MONTGOMERY	SCHLEY ST	831343B	5505	3.1	--	--	72	12	2.9
MONTGOMERY	WEST BLVD	831345P	5505	3.1	no	5.3	3336	18	2.9

Table C-3 presents the number of grade crossings designated as NVA within the emergency vehicle alternative route analysis data set. In total, there were nine NVA grade crossings. These crossings are all in rural communities in Alabama and are distributed along the study area. Of the nine total NVA grade crossings, seven serve fewer than 10 residences. An example of an NVA grade crossing is shown for reference in **Figure C-1**.

Table C-3. Summary of Emergency Vehicle Routes with No Viable Alternative

State	City	Crossing ID
Alabama	Linden	350272C
Alabama	Selma	350297X
Alabama	Orrville	350321W
Alabama	Thomaston	350330V
Alabama	Thomaston	350334X
Alabama	Benton	831374A
Alabama	Choctaw	853236X
Alabama	Choctaw	853237E
Alabama	Pennington	853238L

Figure C-1. Example NVA Crossing

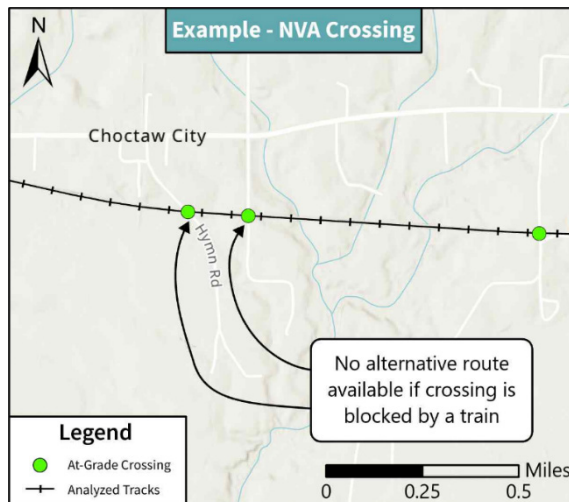


Table C-4 and **Table C-5** also show the Proposed Transactions-related increase or decrease in three measures of delay: total delay per day, average delay per delayed vehicle, and total gate down time per day. Comparing the Proposed Transactions to the No-Action Alternative for the 96 grade crossings, the total gate down time per day is expected to remain the same with an average of 0.0 minutes per grade crossing and the average delay per delayed vehicle is expected to increase by 0.2 seconds. Comparing the Proposed Transactions to the No-Action Alternative for the nine NVA grade crossings, the total gate down time per day would increase by an average of 0.1 minutes and the average delay per delayed vehicle would increase by 0.2 seconds.

C.1.2 Grade Crossing Delay Results

Table C-4 and **Table C-5** show the grade crossing delay results by individual crossing, organized by state and city. The AADT and number of roadway lanes represent the expected 2029 conditions common to both the No-Action Alternative and the Proposed Transactions. The trains per day, train speed, train length, and delay-related performance measures represent the expected conditions and estimated performance in 2029 for the No-

Action Alternative and Proposed Transactions. The final two columns indicate the expected change in average delay per vehicle and level of service, representing the expected impact of the Proposed Transactions compared to the No-Action Alternative.

Table C-4. Grade Crossing Delay by State and City – 2029 No-Action Alternative

					2029 No-Action Alternative							
State/ City	Street	Crossing ID	AADT	Number of Roadway Lanes	Trains Per Day	Train Speed (mph)	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (minutes)	Level of Service	Maximum Queue (vehicles)
Mississippi												
MERIDIAN	NORTH FRONTAGE RD	840837U	7949	2	1.43	17.3	5400	32.4	0.6	79.5	A	33
MERIDIAN	SOUTH FRONTAGE RD	840839H	3975	2	1.43	17.3	5400	16.2	0.6	39.8	A	16
Alabama												
LINDEN	SR 69 / US 43 / MAIN ST	350271V	5109	2	1.43	20.0	5400	18.8	0.4	34.1	A	19
MONTGOMERY	MITCHELL YOUNG RD	831350L	3107	2	2.86	25.0	2500	10.5	0.2	10.4	A	5
MONTGOMERY	OLD SELMA RD	831347D	4274	2	2.86	25.0	2500	14.4	0.2	14.2	A	7
MONTGOMERY	HUNTER LOOP RD	831346W	3674	2	2.86	25.0	2500	12.4	0.2	12.2	A	6
MONTGOMERY	WEST BLVD	831345P	10782	5	2.86	25.0	2500	36.4	0.2	35.9	A	7
MONTGOMERY	AIR BASE BLVD	831344H	9760	4	2.86	25.0	2500	33.0	0.2	32.5	A	8
PENNINGTON	SR 114	853240M	2512	2	1.43	10.0	5400	16.7	1.4	58.6	A	17

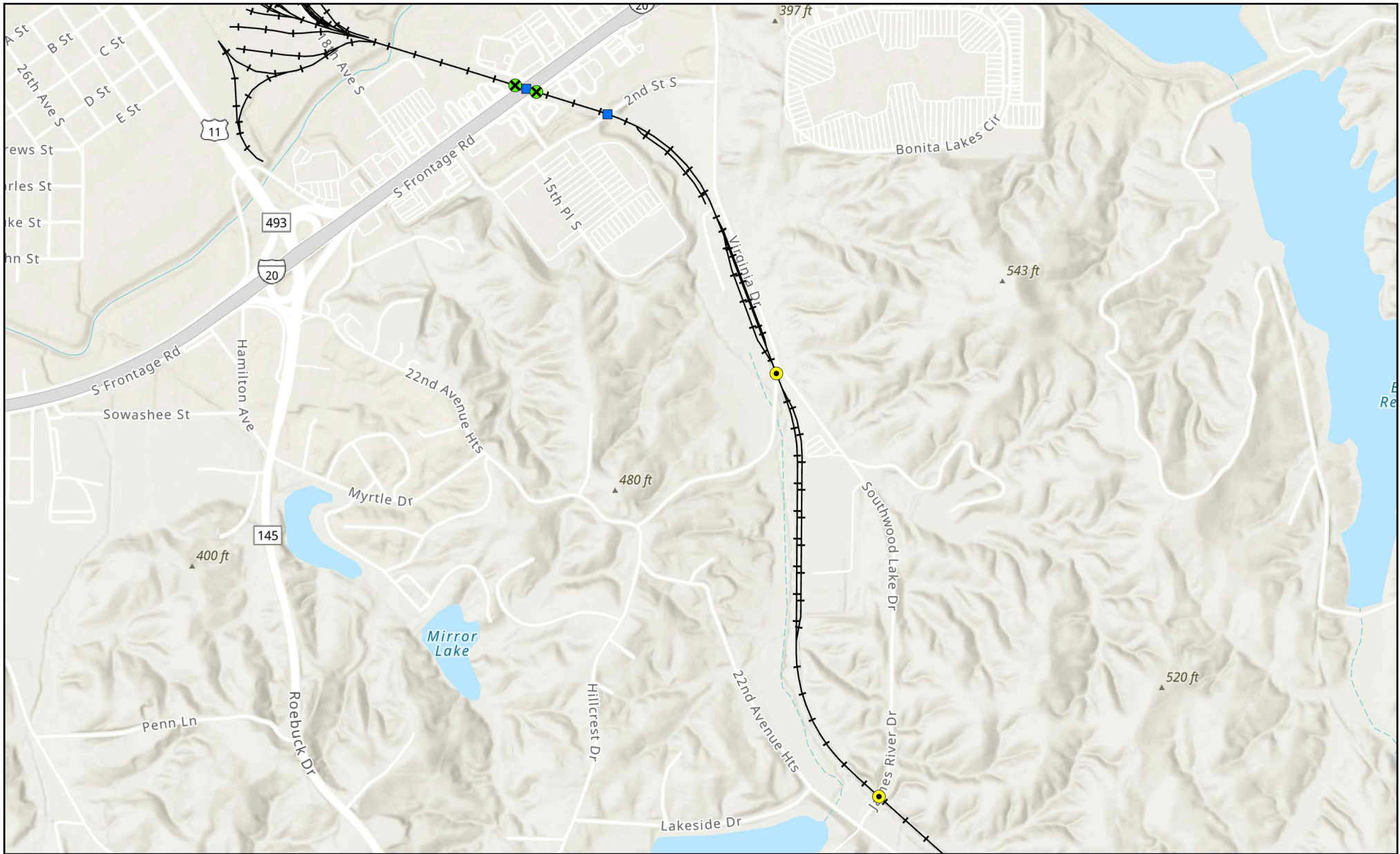
					2029 No-Action Alternative							
State/ City	Street	Crossing ID	AADT	Number of Roadway Lanes	Trains Per Day	Train Speed (mph)	Train Length (feet)	Number of Stopped Vehicles Delayed Per Day	Average Delay per Vehicle in 24-hour Period (seconds)	Total Delay in 24-hour Period (minutes)	Level of Service	Maximum Queue (vehicles)
SELMA	BROAD ST	727614W	11130	4	1.43	20.0	5400	40.9	0.5	92.8	A	21
SELMA	CHILSOM DR	350294C	3386	2	1.43	20.0	5400	12.4	0.4	22.6	A	13
SELMA	CHURCH ST	727615D	7816	2	1.43	20.0	5400	28.7	0.5	65.1	A	29
SELMA	FRANKLIN ST	727612H	4468	2	1.43	20.2	5400	16.0	0.4	29.8	A	16
SELMA	HOOVER DR	349110D	4330	2	1.43	20.0	5400	15.9	0.5	36.1	A	16
SELMA	JEFF DAVIS AVE	349105G	3897	2	1.43	20.2	5400	13.9	0.4	26.0	A	14
SELMA	LAPSLEY ST	349106N	5930	2	1.43	20.0	5400	21.8	0.5	49.4	A	22
SELMA	OLD CAHABA RD	349107V	6988	2	1.43	20.0	5400	25.7	0.5	58.2	A	26
SELMA	WATER ST	349100X	2642	2	1.43	20.2	5400	9.4	0.4	17.6	A	10
SELMONT	OLD MONTGOMERY HWY	831386U	2858	2	1.43	20.2	5400	10.2	0.4	19.1	A	10
SELMONT	SR 8 /US 80/SELMA BYPASS	903936U	8097	2	1.43	20.2	5400	28.9	0.4	54.0	A	29
Average (All 20 Grade Crossings)									0.4			

Table C-5. Grade Crossing Delay by State and City – 2029 Proposed Transactions

					2029 Proposed Transactions								Change	
<i>State/ City</i>	<i>Street</i>	<i>Crossing ID</i>	<i>AADT</i>	<i>Number of Roadway Lanes</i>	<i>Trains Per Day</i>	<i>Train Speed (mph)</i>	<i>Train Length (feet)</i>	<i>Number of Stopped Vehicles Delayed Per Day</i>	<i>Average Delay per Vehicle in 24-hour Period (seconds)</i>	<i>Total Delay in 24-hour Period (minutes)</i>	<i>Level of Service</i>	<i>Maximum Queue (vehicles)</i>	<i>Average Delay per Vehicle (seconds)</i>	<i>Level of Service</i>
Mississippi														
MERIDIAN	NORTH FRONTAGE RD	840837U	7949	2	2.86	22.1	4240	44.2	0.6	79.5	A	22	0.0	A to A
MERIDIAN	SOUTH FRONTAGE RD	840839H	3975	2	2.86	22.1	4240	22.1	0.5	33.1	A	11	-0.1	A to A
Alabama														
LINDEN	SR 69 / US 43 / MAIN ST	350271V	5109	2	2.00	25.0	7678	29.1	0.8	68.1	A	21	0.4	A to A
MONTGOMERY	MITCHELL YOUNG RD	831350L	3107	2	3.43	25.0	5505	22.9	0.7	36.2	A	10	0.5	A to A
MONTGOMERY	OLD SELMA RD	831347D	4274	2	3.43	25.0	5505	31.6	0.7	49.9	A	13	0.5	A to A
MONTGOMERY	HUNTER LOOP RD	831346W	3674	2	3.43	25.0	5505	27.1	0.7	42.9	A	11	0.5	A to A
MONTGOMERY	WEST BLVD	831345P	10782	5	3.43	25.0	5505	79.6	0.7	125.8	A	13	0.5	A to A
MONTGOMERY	AIR BASE BLVD	831344H	9760	4	3.43	25.0	5505	72.1	0.7	113.9	A	15	0.5	A to A
PENNINGTON	SR 114	853240M	2512	2	2.86	25.0	4240	12.5	0.4	16.7	A	6	-1.0	A to A
SELMA	BROAD S	727614W	11130	4	2.00	25.0	7678	63.4	0.8	148.4	A	23	0.3	A to A

					2029 Proposed Transactions								Change	
<i>State/ City</i>	<i>Street</i>	<i>Crossing ID</i>	<i>AADT</i>	<i>Number of Roadway Lanes</i>	<i>Trains Per Day</i>	<i>Train Speed (mph)</i>	<i>Train Length (feet)</i>	<i>Number of Stopped Vehicles Delayed Per Day</i>	<i>Average Delay per Vehicle in 24-hour Period (seconds)</i>	<i>Total Delay in 24-hour Period (minutes)</i>	<i>Level of Service</i>	<i>Maximum Queue (vehicles)</i>	<i>Average Delay per Vehicle (seconds)</i>	<i>Level of Service</i>
SELMA	CHILSOM DR	350294C	3386	2	2.00	25.0	7678	19.3	0.8	45.1	A	14	0.4	A to A
SELMA	CHURCH S	727615D	7816	2	2.00	25.0	7678	44.5	0.9	117.2	A	32	0.4	A to A
SELMA	FRANKLIN ST	727612H	4468	2	2.00	25.0	8530	27.9	1.0	74.5	A	20	0.6	A to A
SELMA	HOOPER DR	349110D	4330	2	2.00	25.0	7678	24.7	0.8	57.7	A	18	0.3	A to A
SELMA	JEFF DAVIS AVE	349105G	3897	2	2.00	25.0	8530	24.4	0.9	58.5	A	18	0.5	A to A
SELMA	LAPSLEY ST	349106N	5930	2	2.00	25.0	7678	33.8	0.8	79.1	A	24	0.3	A to A
SELMA	OLD CAHABA RD	349107V	6988	2	2.00	25.0	7678	39.8	0.8	93.2	A	29	0.3	A to A
SELMA	WATER ST	349100X	2642	2	2.00	25.0	8530	16.5	0.9	39.6	A	12	0.5	A to A
SELMONT	OLD MONTGOMERY HWY	831386U	2858	2	2.00	25.0	8530	17.9	0.9	42.9	A	13	0.5	A to A
SELMONT	SR 8 /US 80/SELMA BYPASS	903936U	8097	2	2.00	25.0	8530	50.6	1.0	135.0	A	36	0.6	A to A
Average (All 20 Grade Crossings)									0.8				0.3	

Appendix C – Attachment 1: Emergency Services Routing Analysis



Legend

Crossing Position

- Grade Separated Crossing
- At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- At-Grade Crossing (Closed)
- X Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- 🚒 Fire Station
- 📡 EMS Dispatch
- 🏥 Hospital
- 👮 Police



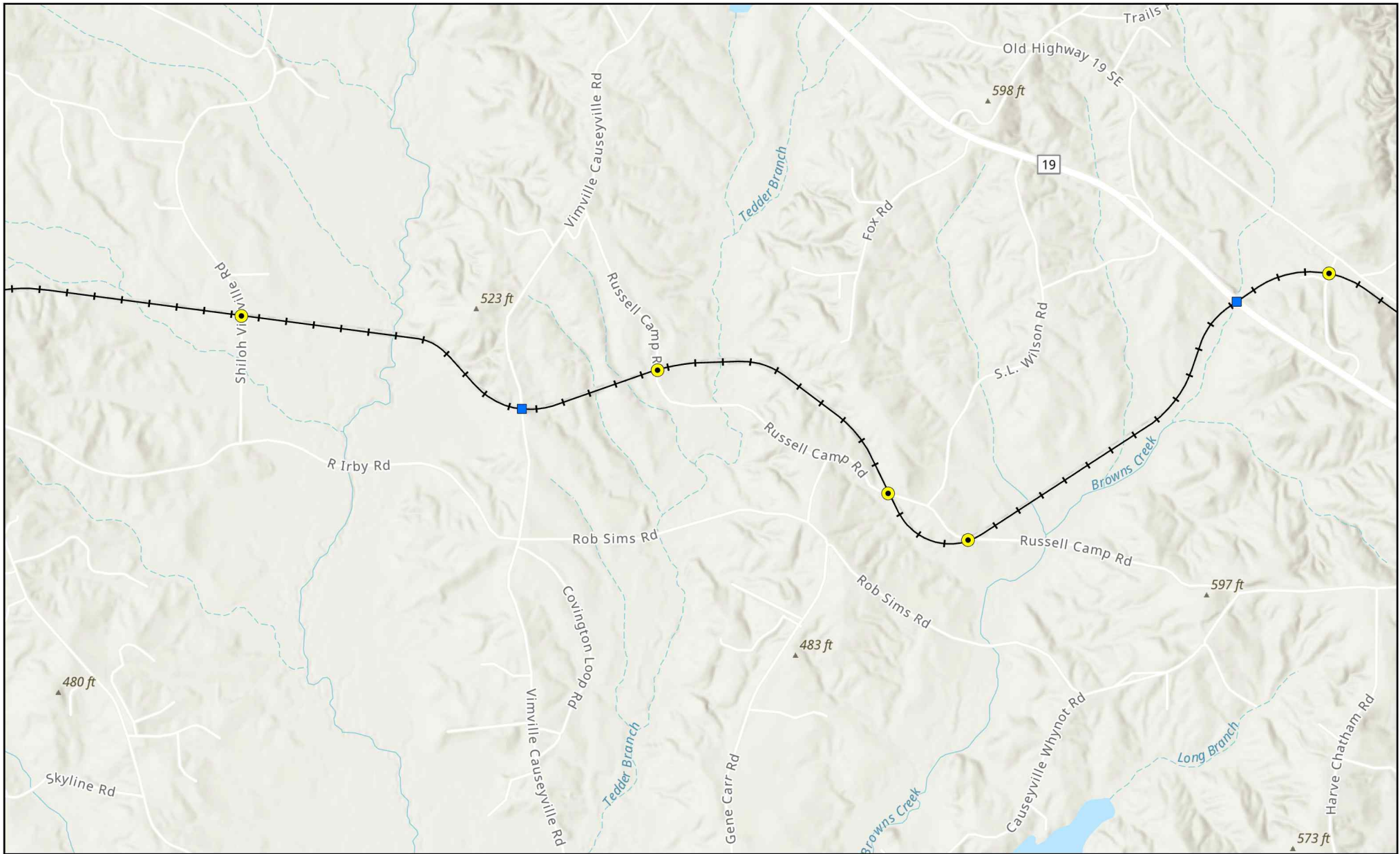
Emergency Services Routing Analysis

Meridian, Mississippi

Page 1 of 25

Scale: 1 inch equals 0.25 miles





Legend

Crossing Position

- Grade Separated Crossing
- ⊗ Or ● At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- ⬢ At-Grade Crossing (Closed)
- ✕ Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- +— Analyzed Tracks
- +— Other Tracks
- 🚒 Fire Station
- 🚑 EMS Dispatch
- 🏥 Hospital
- 🚔 Police



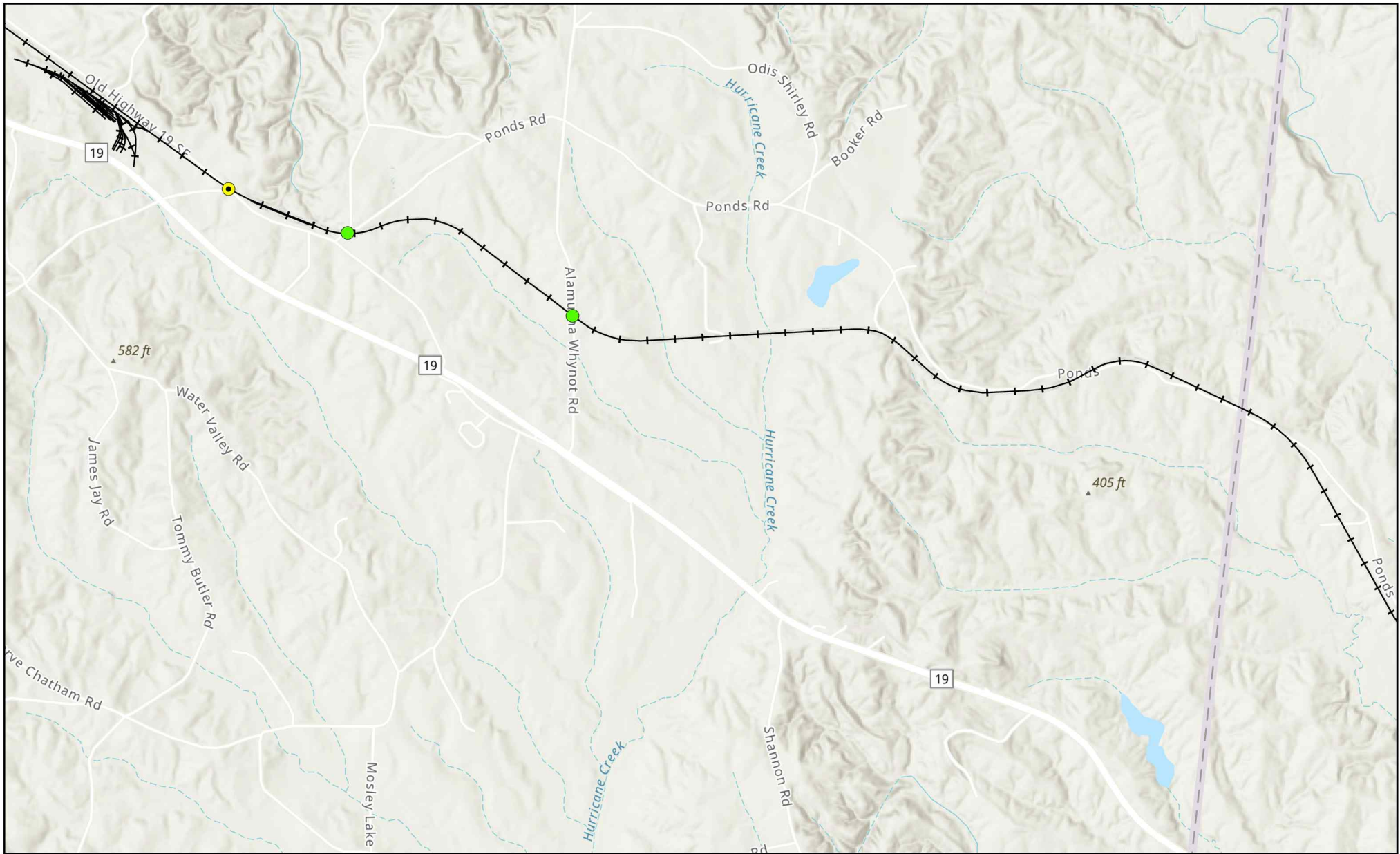
Emergency Services Routing Analysis

Whynot, Mississippi

Page 2 of 25

Scale: 1 inch equals 0.5 miles





Legend

Crossing Position

- Grade Separated Crossing
- At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- At-Grade Crossing (Closed)
- ✕ Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- +— Analyzed Tracks
- +— Other Tracks
- 🚒 Fire Station
- 🚑 EMS Dispatch
- 🏥 Hospital
- 🚔 Police



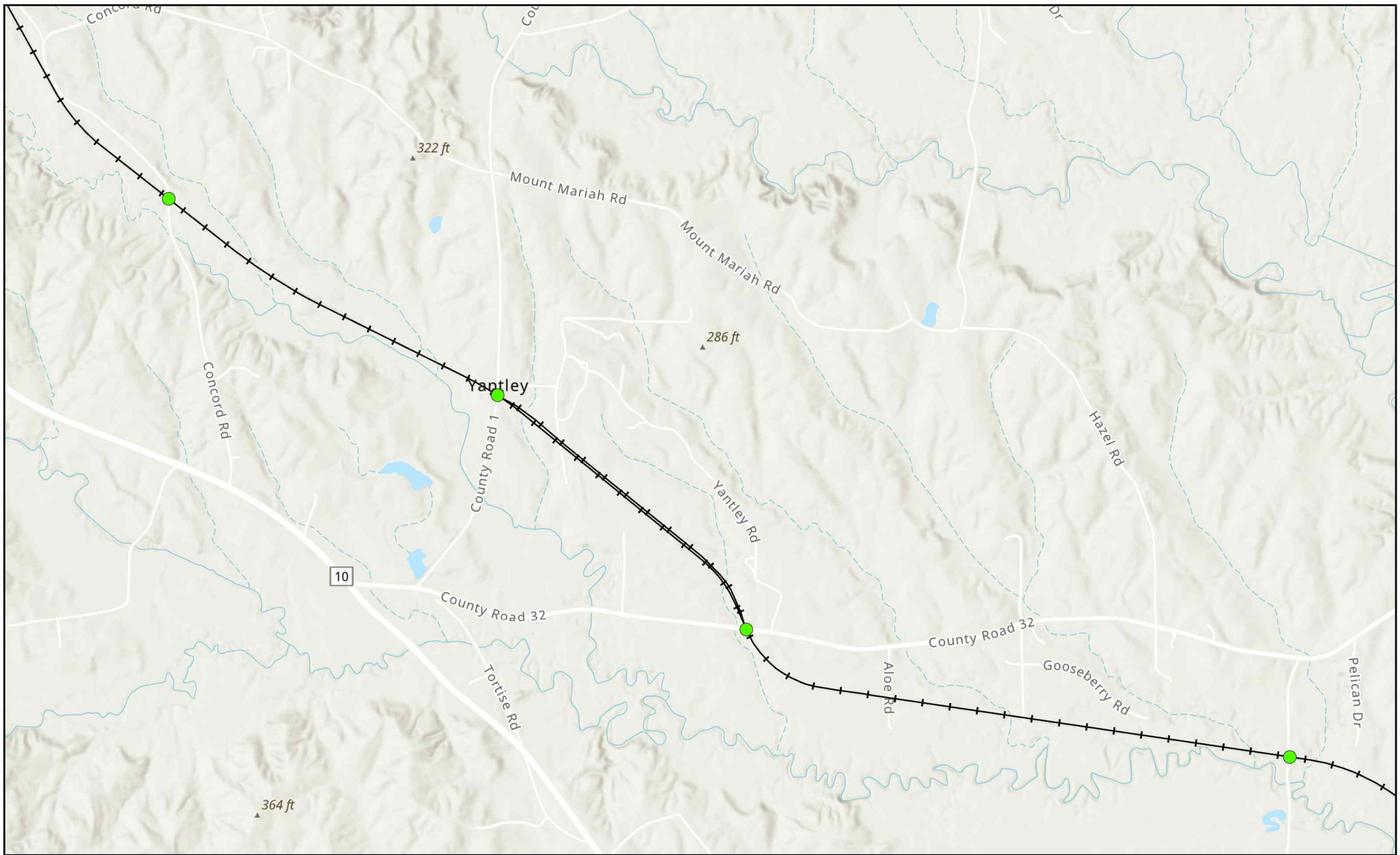
Emergency Services Routing Analysis

Whynot, Mississippi

Page 3 of 25

Scale: 1 inch equals 0.5 miles





Legend

Crossing Position

- Grade Separated Crossing
- At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- At-Grade Crossing (Closed)
- ✕ Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- +— Analyzed Tracks
- +— Other Tracks
- 🚒 Fire Station
- 🚑 EMS Dispatch
- 🏥 Hospital
- 🚓 Police



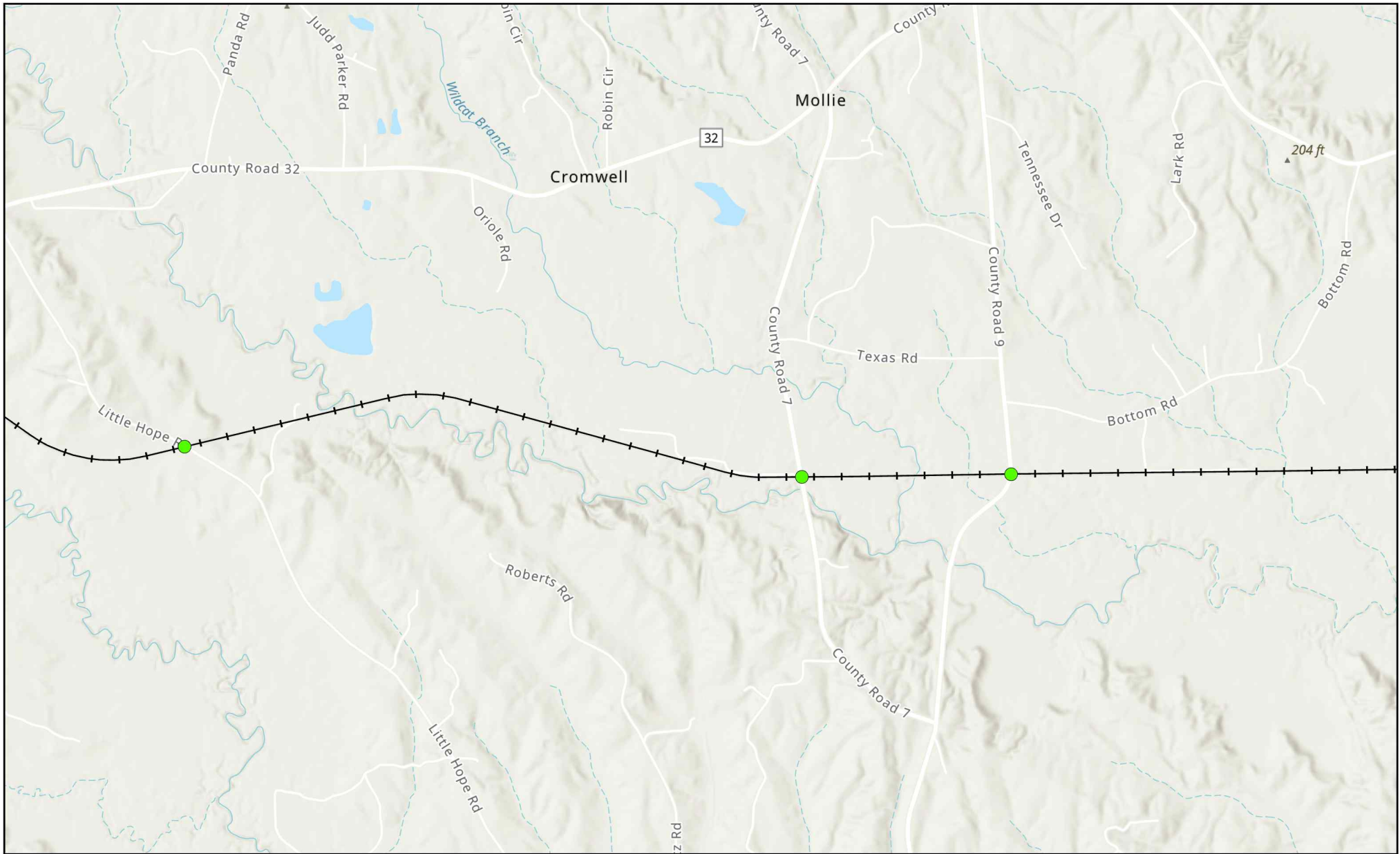
Emergency Services Routing Analysis

Yantley, Alabama

Page 4 of 25

Scale: 1 inch equals 0.5 miles





Legend

Crossing Position

- Grade Separated Crossing
- At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- At-Grade Crossing (Closed)
- ✕ Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- +— Analyzed Tracks
- +— Other Tracks
- 🚒 Fire Station
- 🚑 EMS Dispatch
- 🏥 Hospital
- 🚔 Police



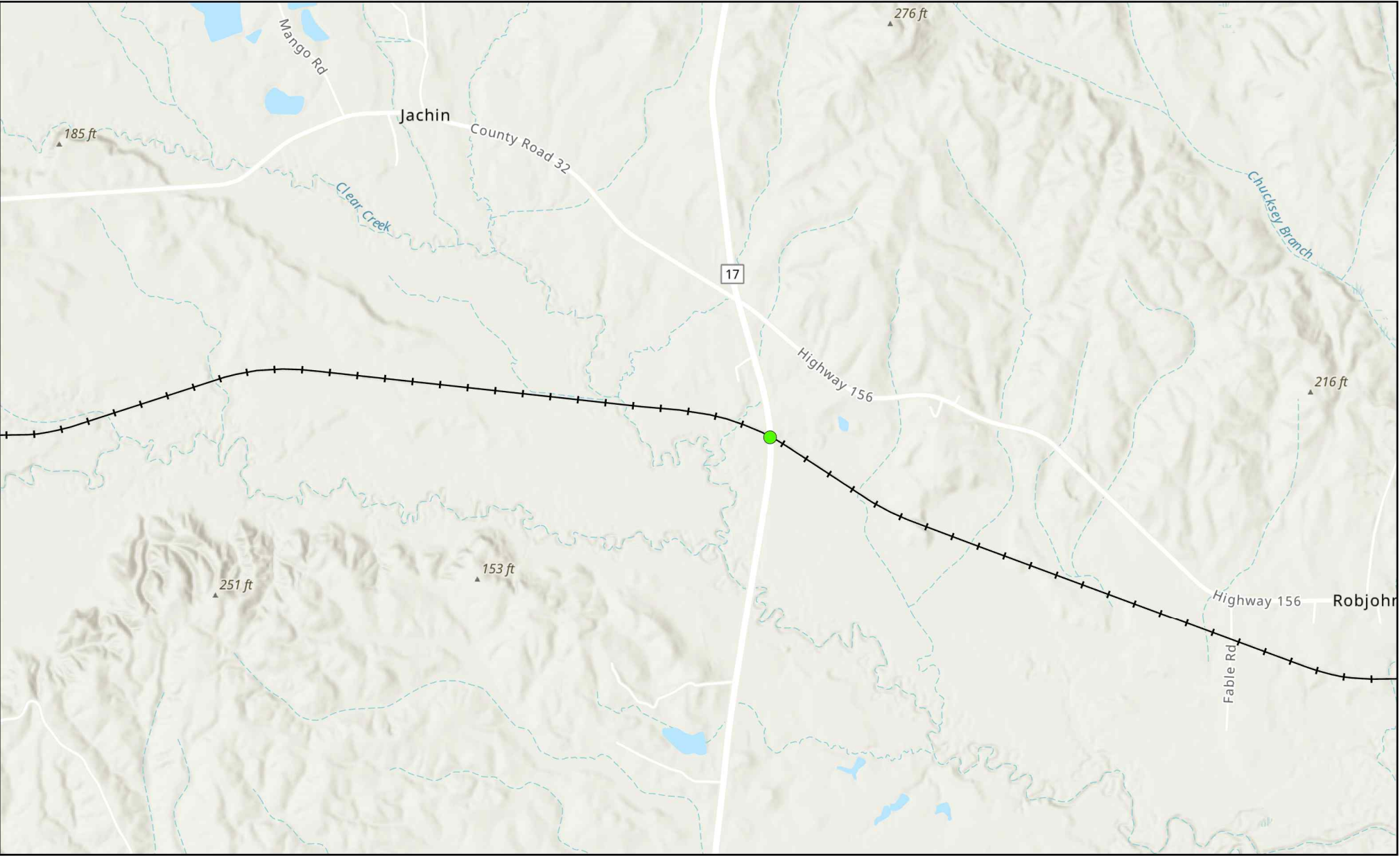
Emergency Services Routing Analysis

Cromwell, Alabama

Page 5 of 25

Scale: 1 inch equals 0.5 miles





Legend

Crossing Position

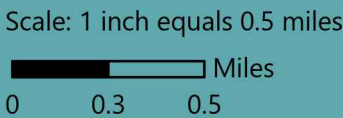
- Grade Separated Crossing
- At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- At-Grade Crossing (Closed)
- Crossings Analyzed for Delay Impacts (20 Total)

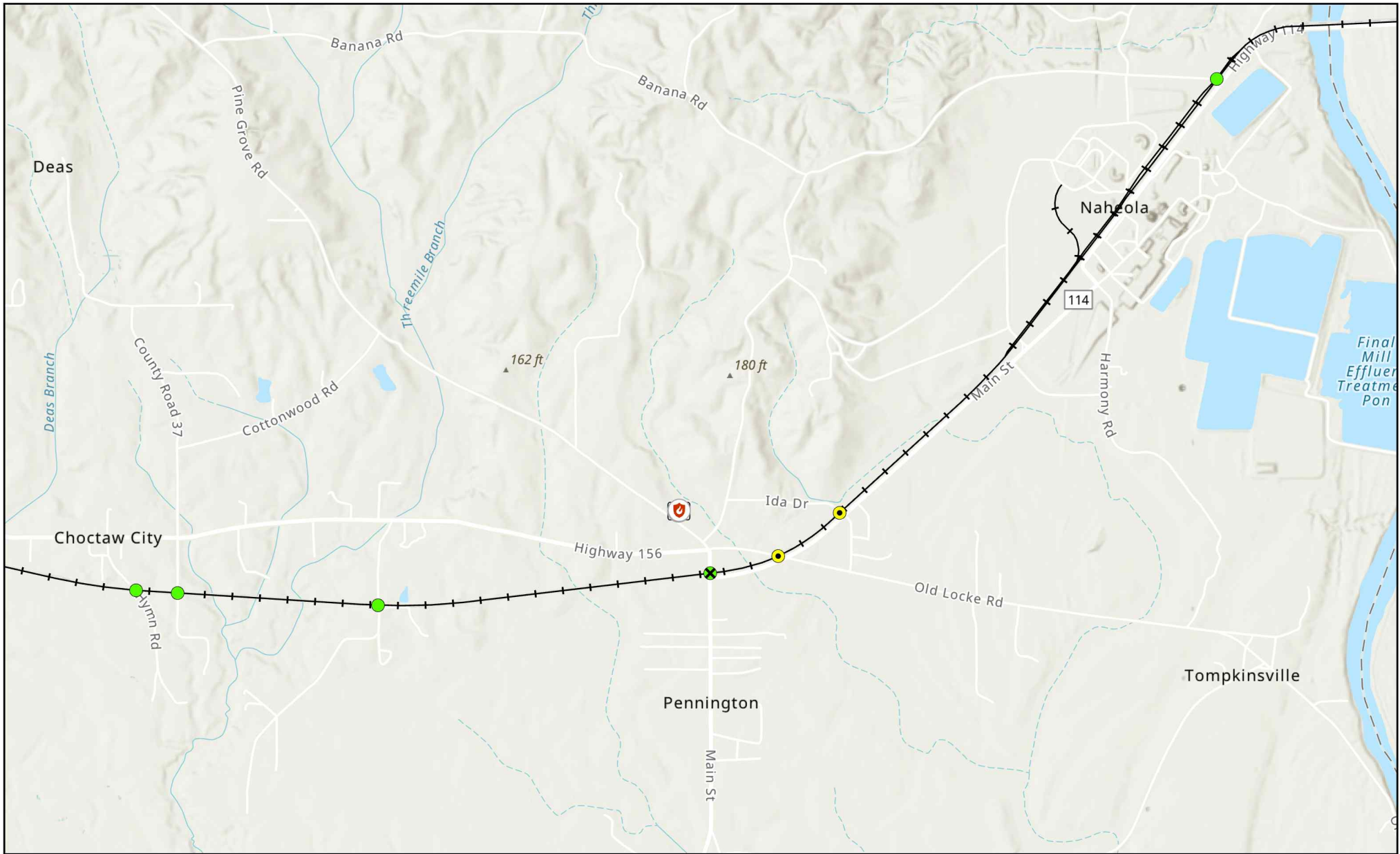
Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



Emergency Services Routing Analysis
Jachin, Alabama
Page 6 of 25





Legend

Crossing Position

- Grade Separated Crossing
- ⊗ Or ● At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- ⬢ At-Grade Crossing (Closed)
- × Crossings Analyzed for Delay Impacts (20 Total)

Other

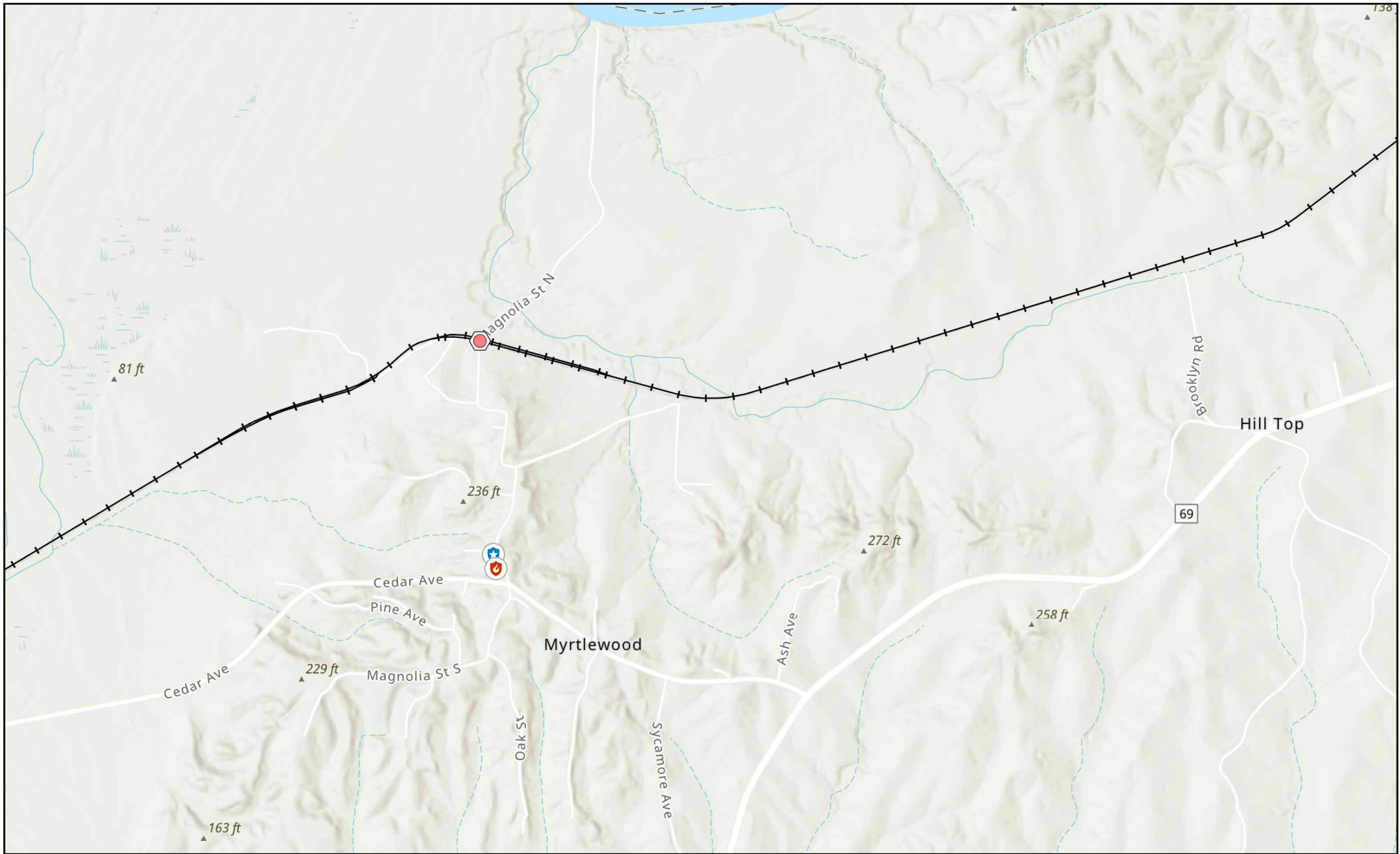
- Key Map: Analyzed Tracks
- +— Analyzed Tracks
- +— Other Tracks
- ⬢ Fire Station
- ⊞ EMS Dispatch
- ⬢ Hospital
- ⬢ Police



Emergency Services Routing Analysis Pennington and Naheola, Alabama Page 7 of 25

Scale: 1 inch equals 0.5 miles





Legend

Crossing Position

- Grade Separated Crossing
- ⊗ Or ● At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- ⊗ At-Grade Crossing (Closed)
- ✕ Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- +— Analyzed Tracks
- +— Other Tracks
- ⬮ Fire Station
- ⬮ EMS Dispatch
- ⬮ Hospital
- ⬮ Police



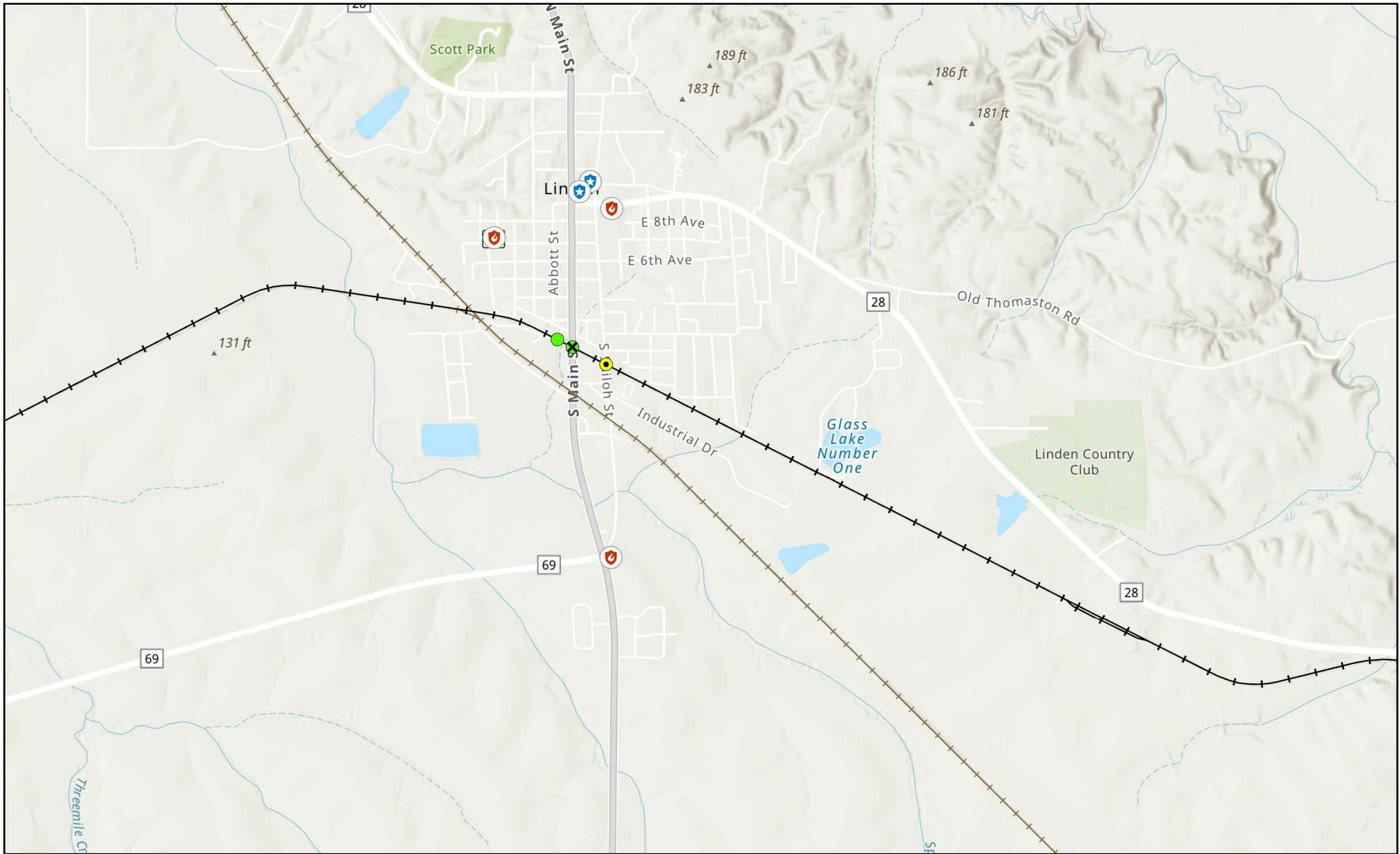
Emergency Services Routing Analysis

Myrtlewood, Alabama

Page 8 of 25

Scale: 1 inch equals 0.5 miles





Legend

Crossing Position

- Grade Separated Crossing
- ⊗ Or ● At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- ⬢ At-Grade Crossing (Closed)
- × Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- ⬢ Fire Station
- ⊞ EMS Dispatch
- ⬢ Hospital
- ⬢ Police



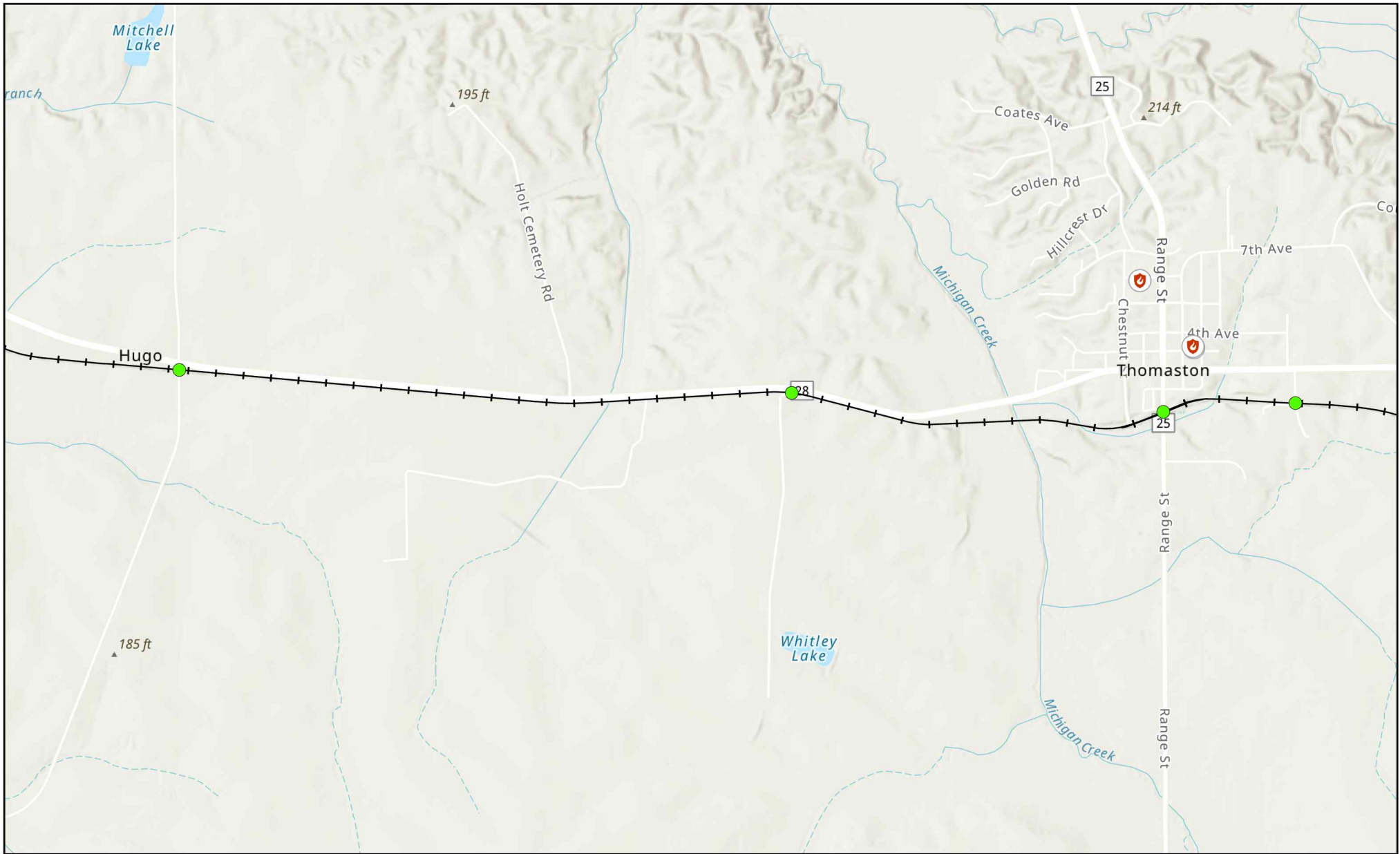
Emergency Services Routing Analysis

Linden, Alabama

Page 9 of 25

Scale: 1 inch equals 0.5 miles





Legend

Crossing Position

- Grade Separated Crossing
- At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- At-Grade Crossing (Closed)
- ✕ Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- Fire Station
- EMS Dispatch
- Hospital
- Police



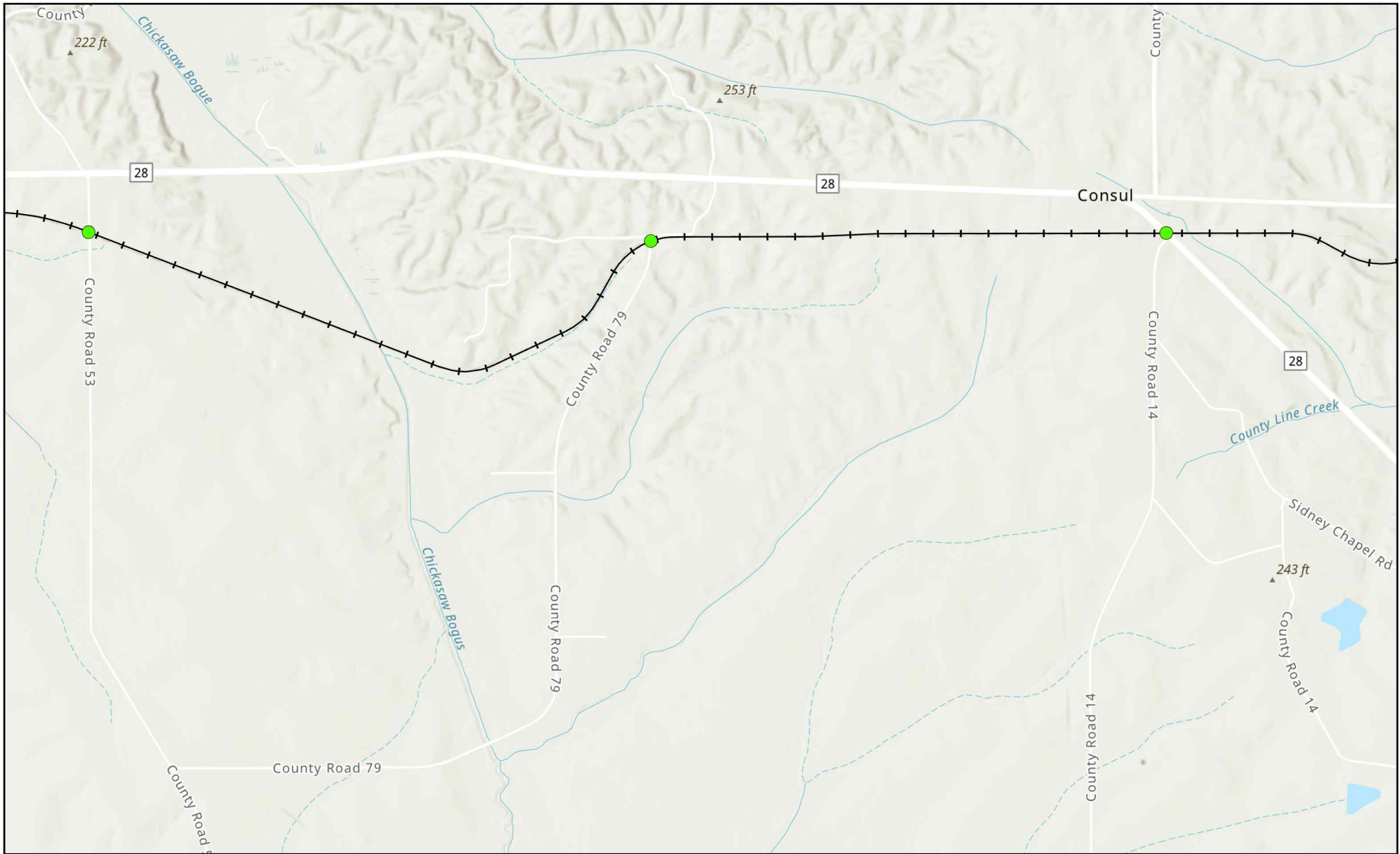
Emergency Services Routing Analysis

Thomaston, Alabama

Page 10 of 25

Scale: 1 inch equals 0.5 miles





Legend

Crossing Position

- Grade Separated Crossing
- At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- At-Grade Crossing (Closed)
- ✕ Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- +— Analyzed Tracks
- +— Other Tracks
- ⬮ Fire Station
- ⬮ EMS Dispatch
- ⬮ Hospital
- ⬮ Police



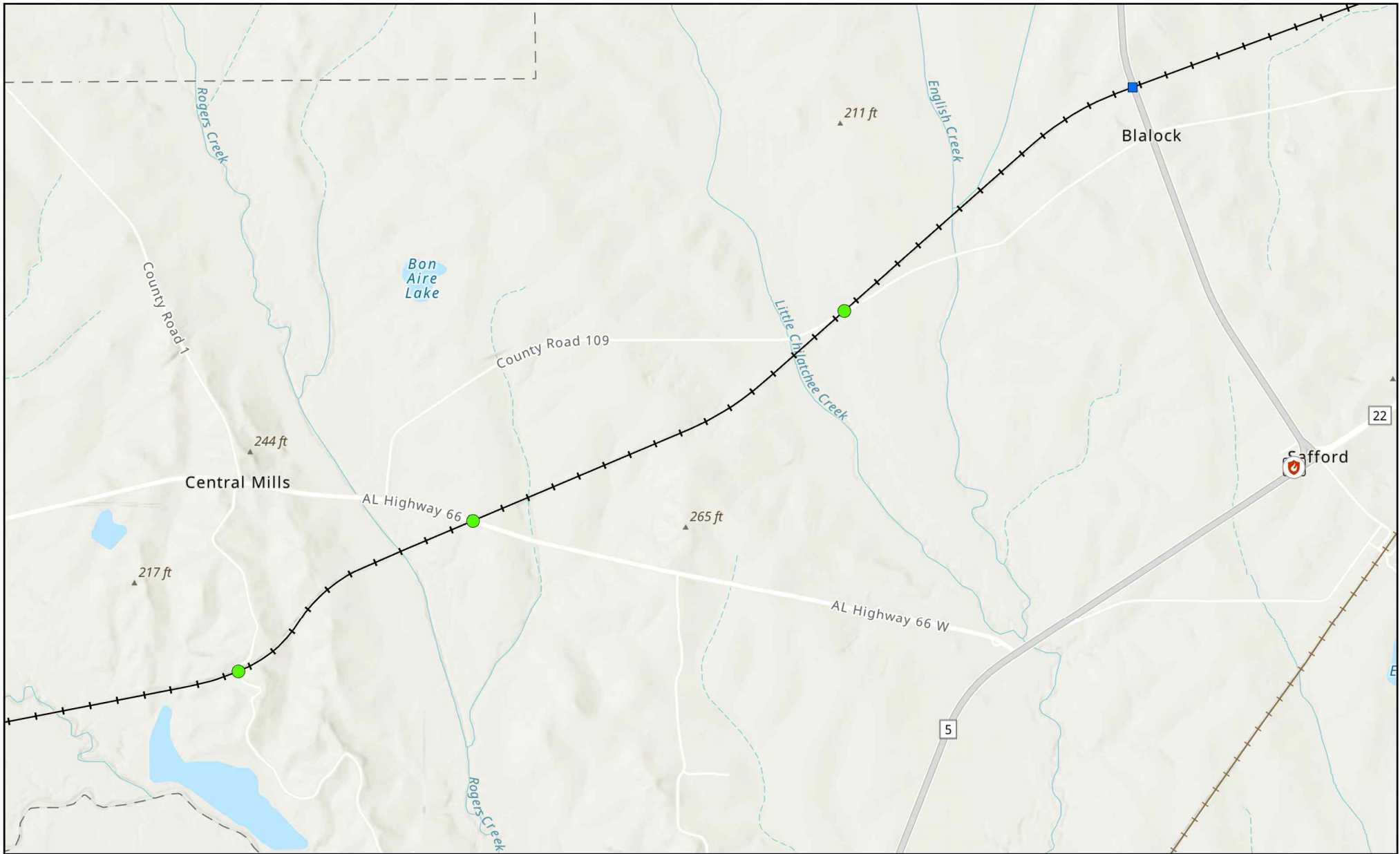
Emergency Services Routing Analysis

East of Thomaston, Alabama

Page 11 of 25

Scale: 1 inch equals 0.5 miles





Legend

Crossing Position

- Grade Separated Crossing
- At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- At-Grade Crossing (Closed)
- ✕ Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- ⬮ Fire Station
- ⬮ EMS Dispatch
- ⬮ Hospital
- ⬮ Police



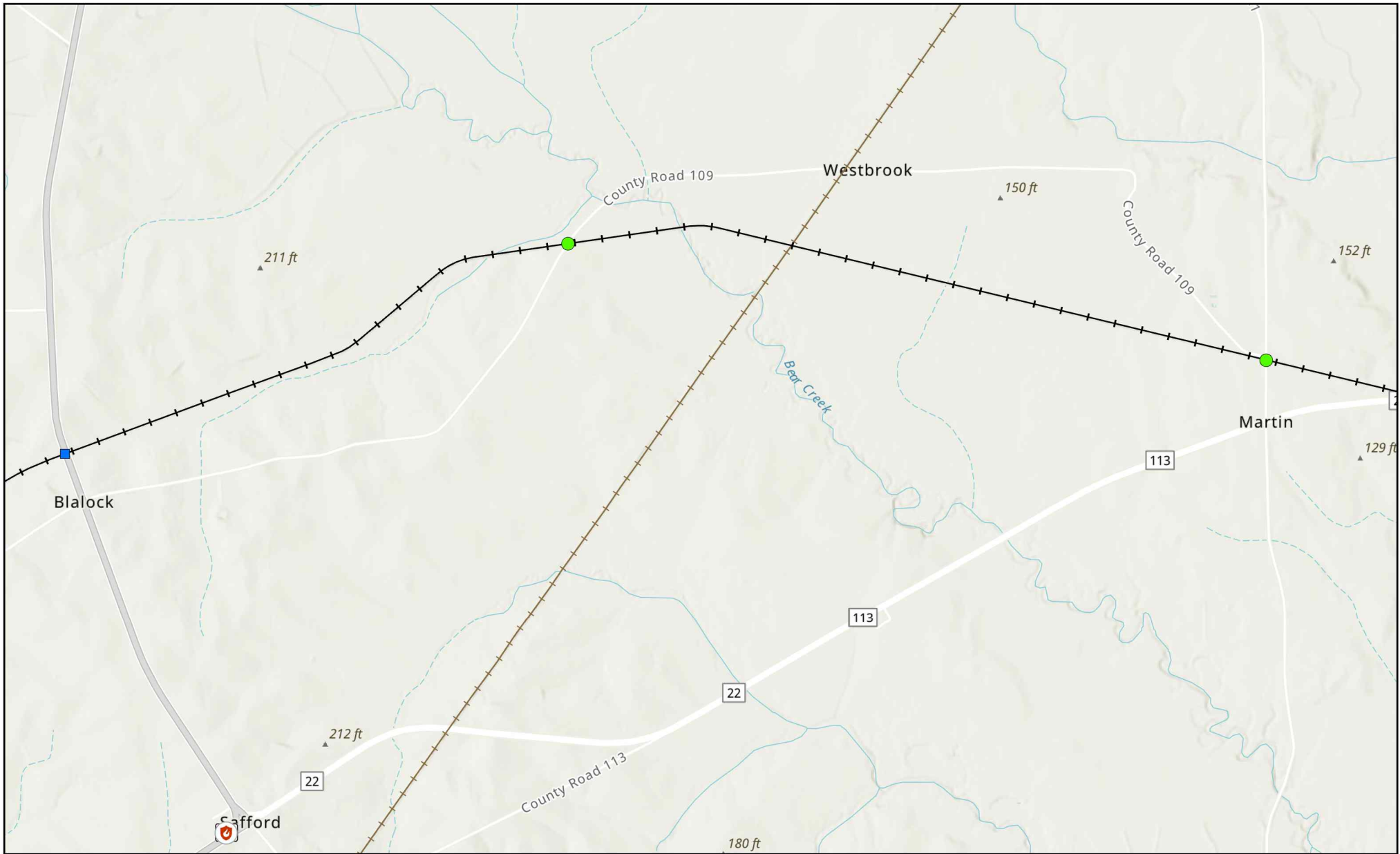
Emergency Services Routing Analysis

West of Orrville, Alabama

Page 12 of 25

Scale: 1 inch equals 0.5 miles





Legend

Crossing Position

- Grade Separated Crossing
- At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- At-Grade Crossing (Closed)
- ✕ Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- +— Analyzed Tracks
- +— Other Tracks
- ⬮ Fire Station
- ⬮ EMS Dispatch
- ⬮ Hospital
- ⬮ Police



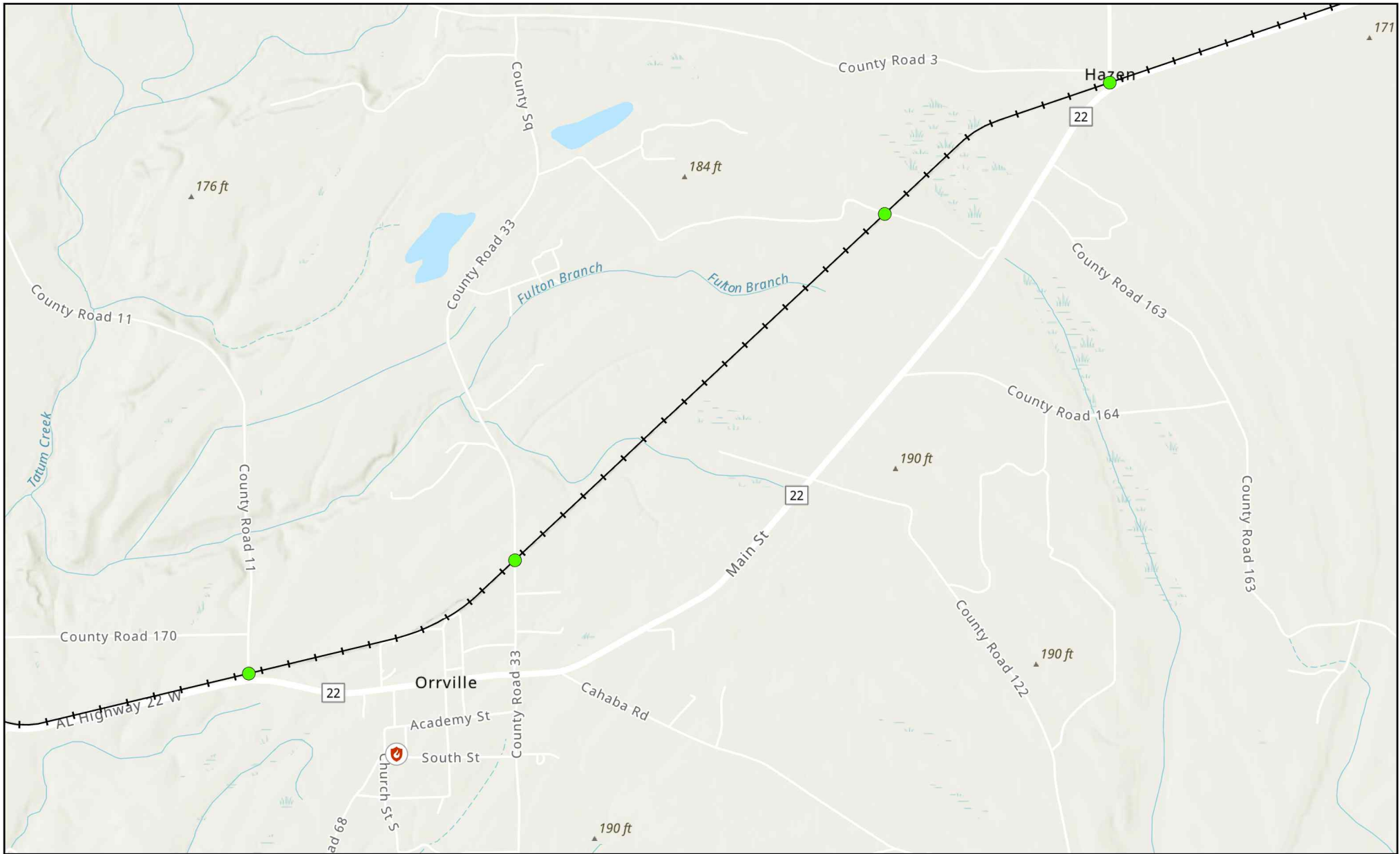
Emergency Services Routing Analysis

West of Orrville, Alabama

Page 13 of 25

Scale: 1 inch equals 0.5 miles





Legend

Crossing Position

-  Grade Separated Crossing
-  Or  At-Grade Crossing
-  At-Grade Crossing (Excluded from EMS Analysis)
-  At-Grade Crossing (Closed)
-  Crossings Analyzed for Delay Impacts (20 Total)

Other

-  Key Map: Analyzed Tracks
-  Analyzed Tracks
-  Other Tracks
-  Fire Station
-  EMS Dispatch
-  Hospital
-  Police



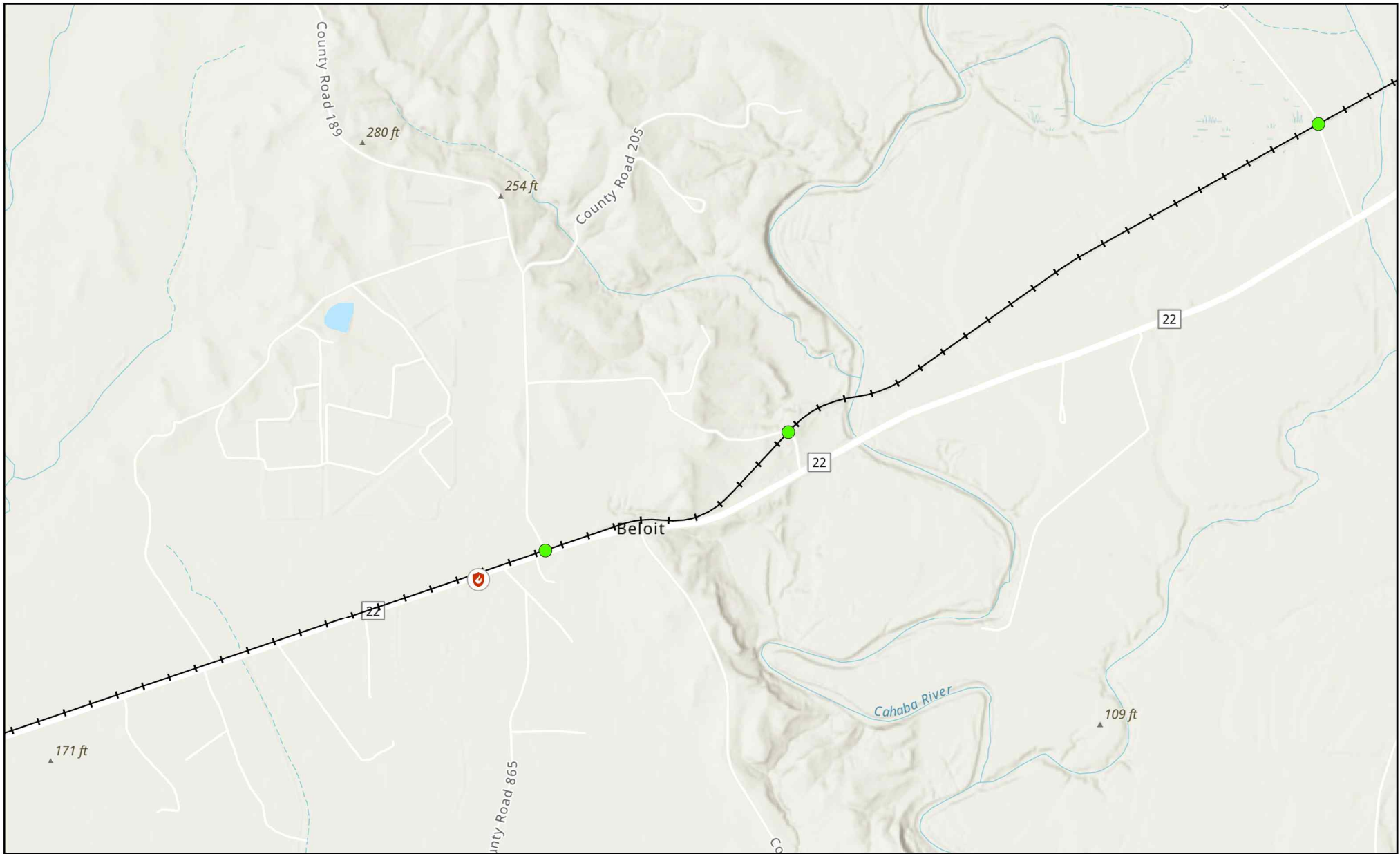
Emergency Services Routing Analysis

Orrville, Alabama

Page 14 of 25

Scale: 1 inch equals 0.5 miles





Legend

Crossing Position

- Grade Separated Crossing
- Or ● At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- At-Grade Crossing (Closed)
- ✕ Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- + Analyzed Tracks
- + Other Tracks
- ⬮ Fire Station
- ⬮ EMS Dispatch
- ⬮ Hospital
- ⬮ Police



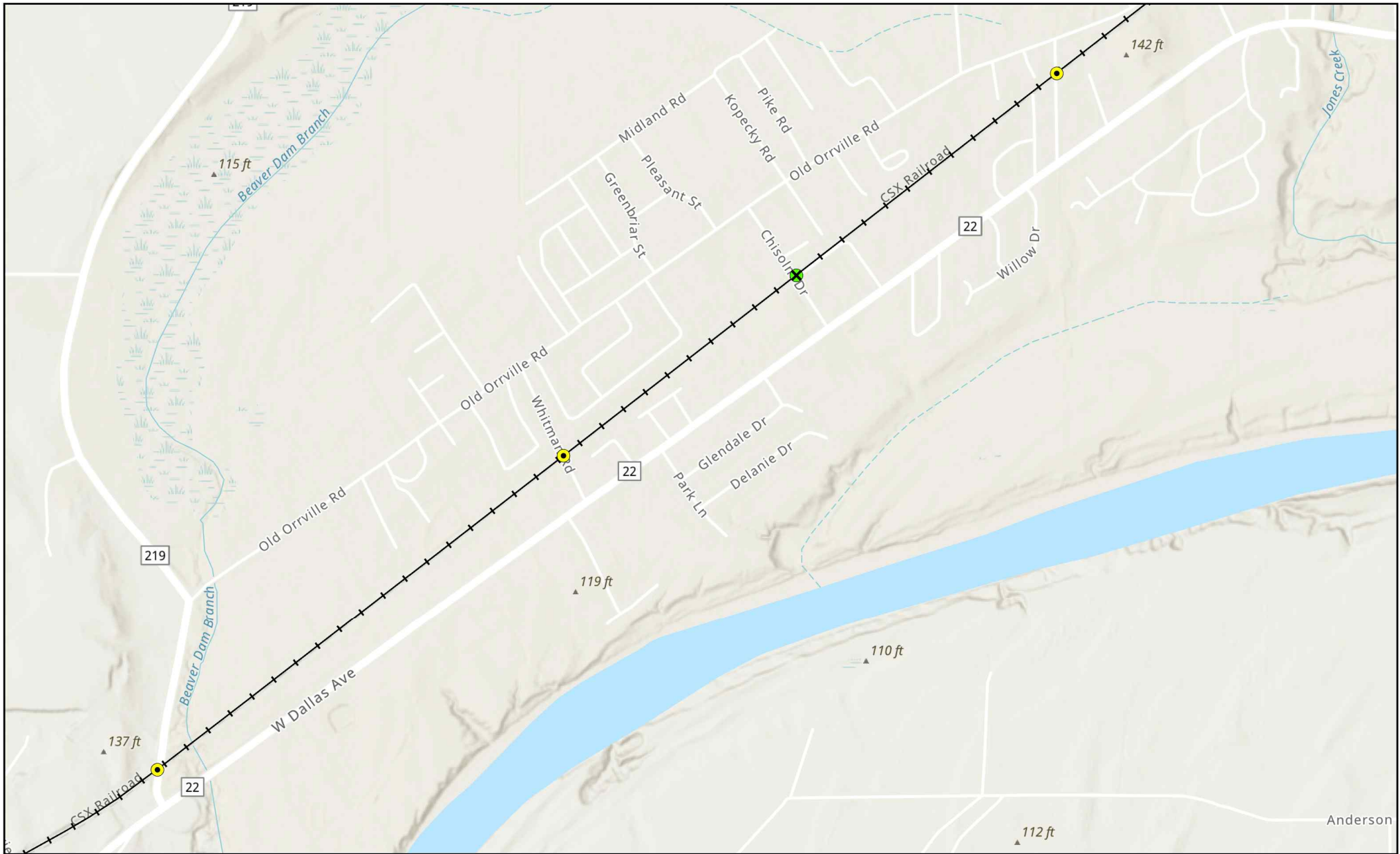
Emergency Services Routing Analysis

East of Orrville, Alabama

Page 15 of 25

Scale: 1 inch equals 0.5 miles





Legend

Crossing Position

- Grade Separated Crossing
- At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- At-Grade Crossing (Closed)
- ✕ Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- +— Analyzed Tracks
- +— Other Tracks
- 🚒 Fire Station
- 🚑 EMS Dispatch
- 🏥 Hospital
- 🚓 Police



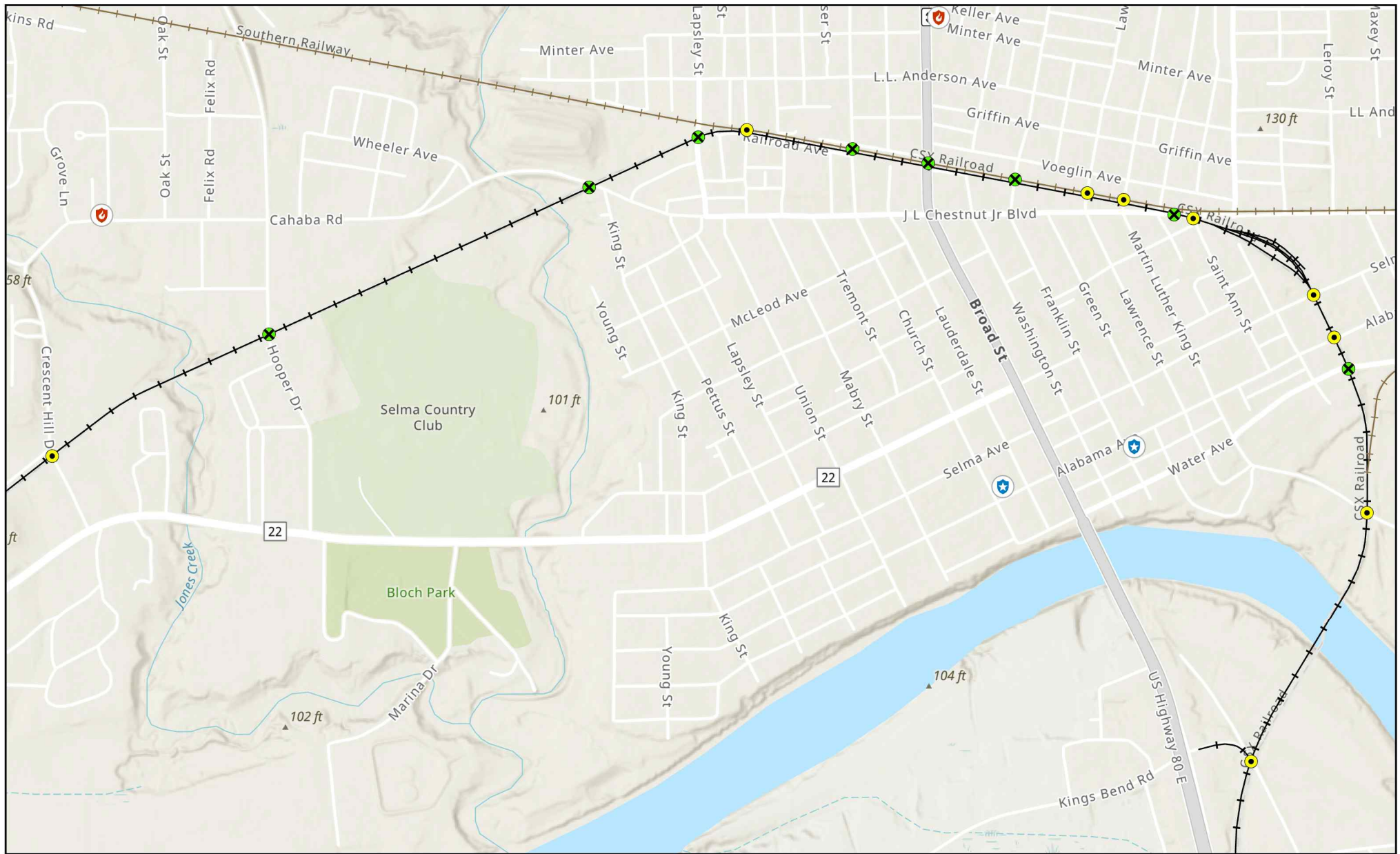
Emergency Services Routing Analysis

Selma, Alabama

Page 16 of 25

Scale: 1 inch equals 0.25 miles





Legend

Crossing Position

- Grade Separated Crossing
- At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- At-Grade Crossing (Closed)
- X Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- 🚒 Fire Station
- 🚑 EMS Dispatch
- 🏥 Hospital
- 🚔 Police



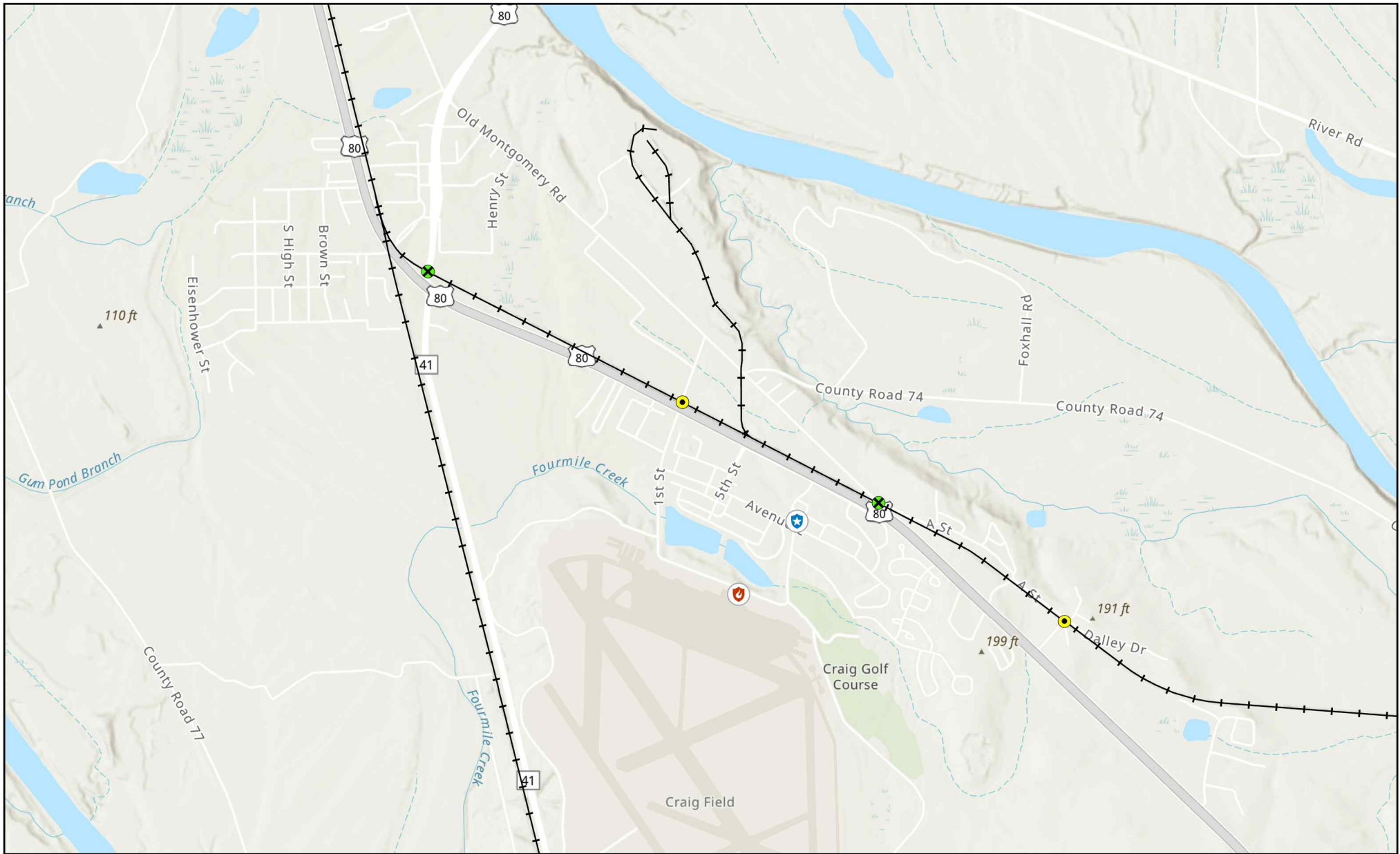
Emergency Services Routing Analysis

Selma, Alabama

Page 17 of 25

Scale: 1 inch equals 0.25 miles





Legend

Crossing Position

- Grade Separated Crossing
- ✕ Or ● At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- ⬢ At-Grade Crossing (Closed)
- ✕ Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- ⬢ Fire Station
- ⬢ EMS Dispatch
- ⬢ Hospital
- ⬢ Police



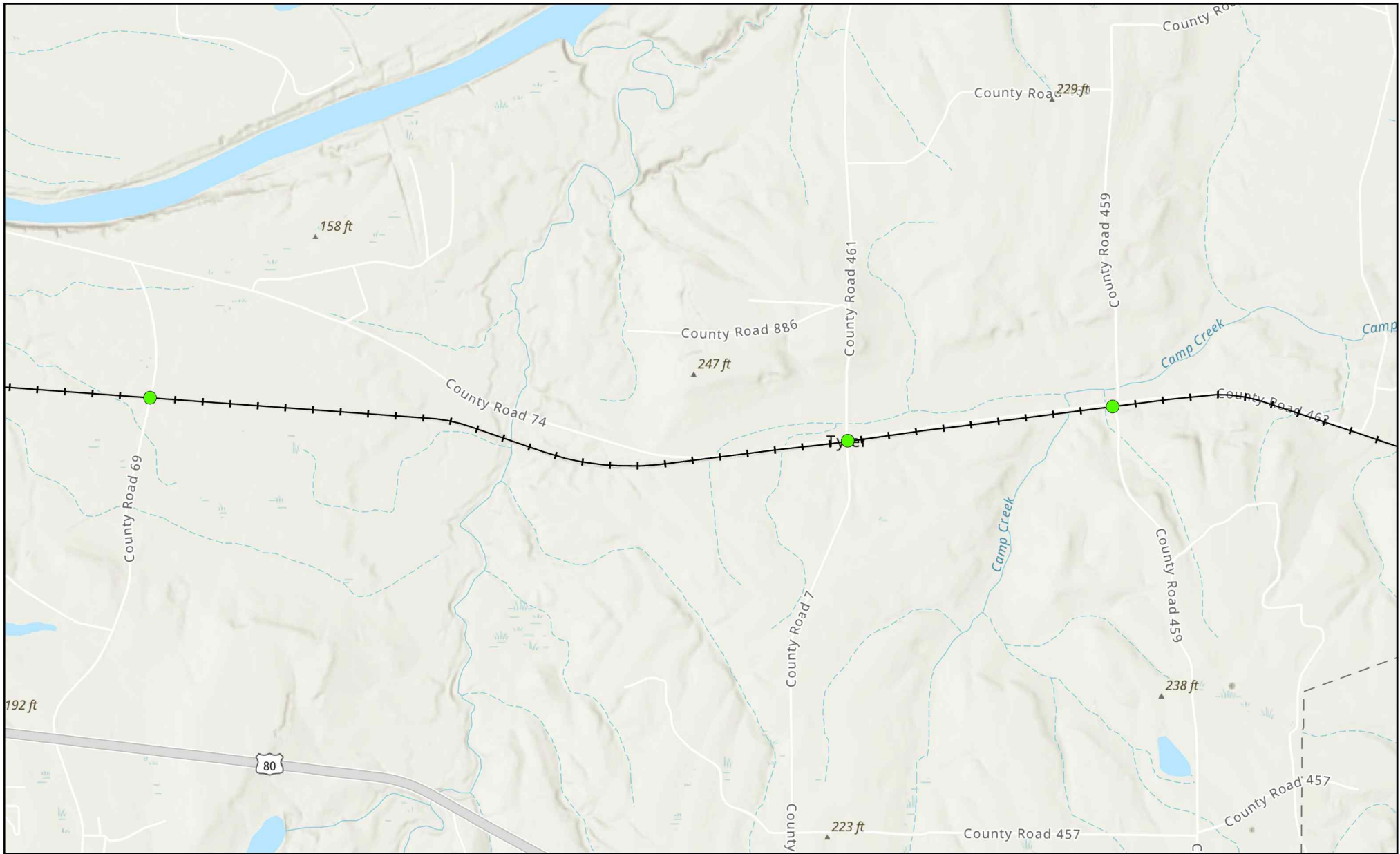
Emergency Services Routing Analysis

Southeast of Selma, Alabama

Page 18 of 25

Scale: 1 inch equals 0.5 miles





Legend

Crossing Position

- Grade Separated Crossing
- At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- At-Grade Crossing (Closed)
- ✕ Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- +— Analyzed Tracks
- +— Other Tracks
- 🚒 Fire Station
- 🚑 EMS Dispatch
- 🏥 Hospital
- 🚓 Police



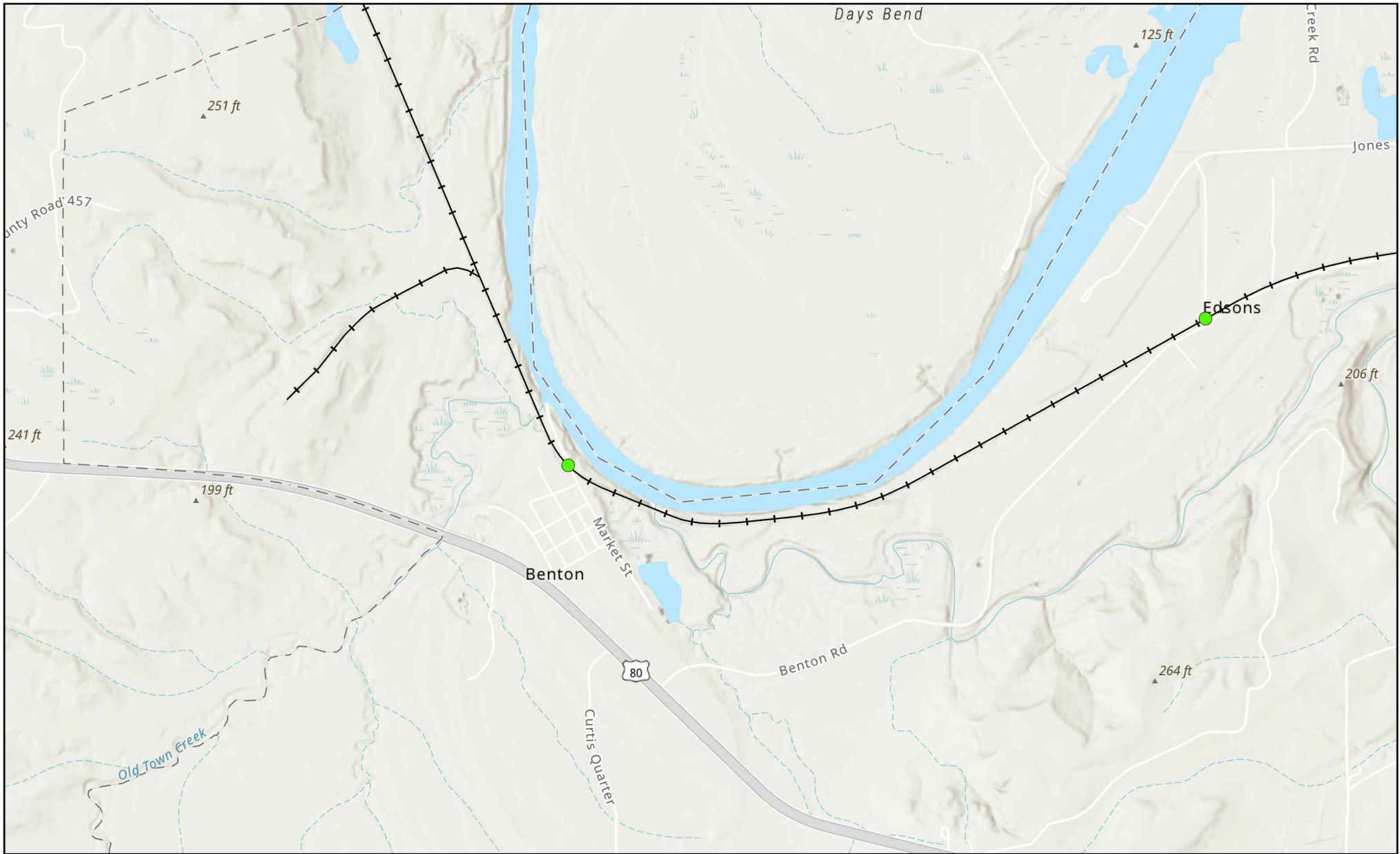
Emergency Services Routing Analysis

Southeast of Selma, Alabama

Page 19 of 25

Scale: 1 inch equals 0.5 miles





Legend

Crossing Position

- Grade Separated Crossing
- At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- At-Grade Crossing (Closed)
- ✕ Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- +— Analyzed Tracks
- +— Other Tracks
- ⛔ Fire Station
- ⛔ EMS Dispatch
- ⛔ Hospital
- ⛔ Police



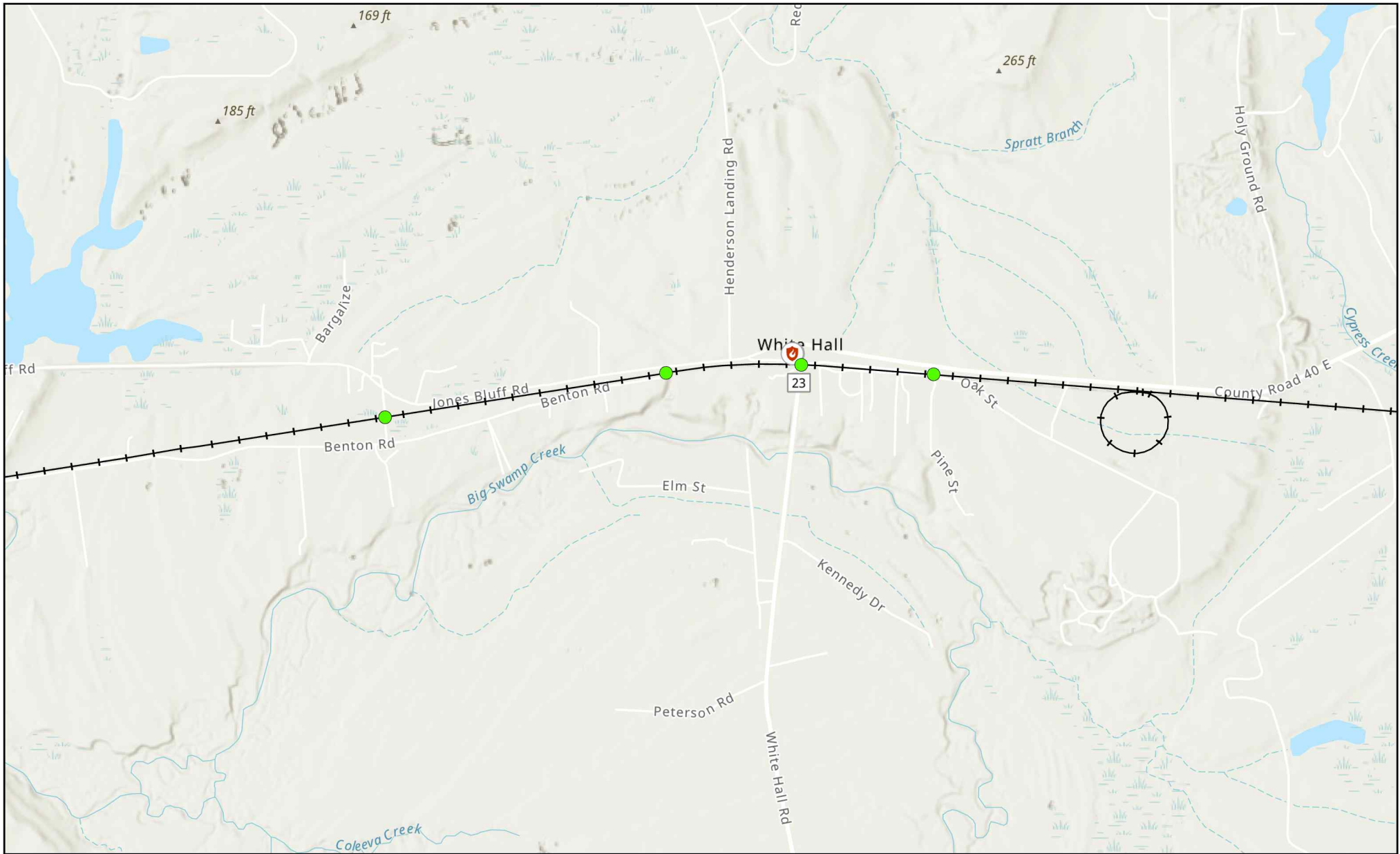
Emergency Services Routing Analysis

West of White Hall, Alabama

Page 20 of 25

Scale: 1 inch equals 0.5 miles





Legend

Crossing Position

- Grade Separated Crossing
- At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- At-Grade Crossing (Closed)
- ✕ Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- +— Analyzed Tracks
- +— Other Tracks
- ⬮ Fire Station
- ⬮ EMS Dispatch
- ⬮ Hospital
- ⬮ Police



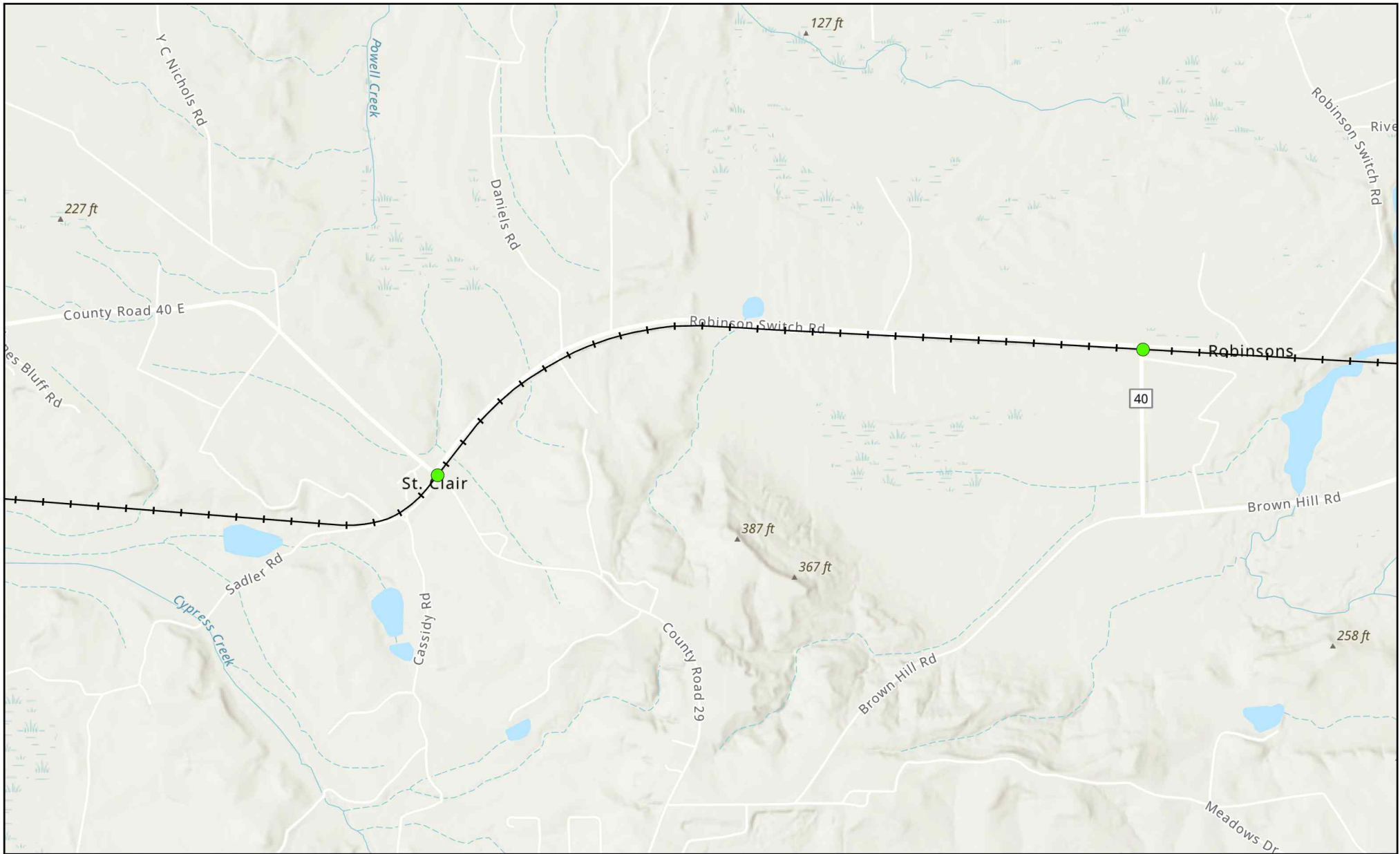
Emergency Services Routing Analysis

White Hall, Alabama

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Scale: 1 inch equals 0.5 miles





Legend

Crossing Position

- Grade Separated Crossing
- At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- At-Grade Crossing (Closed)
- ✕ Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- +— Analyzed Tracks
- +— Other Tracks
- 🚒 Fire Station
- 🚑 EMS Dispatch
- 🏥 Hospital
- 🚔 Police



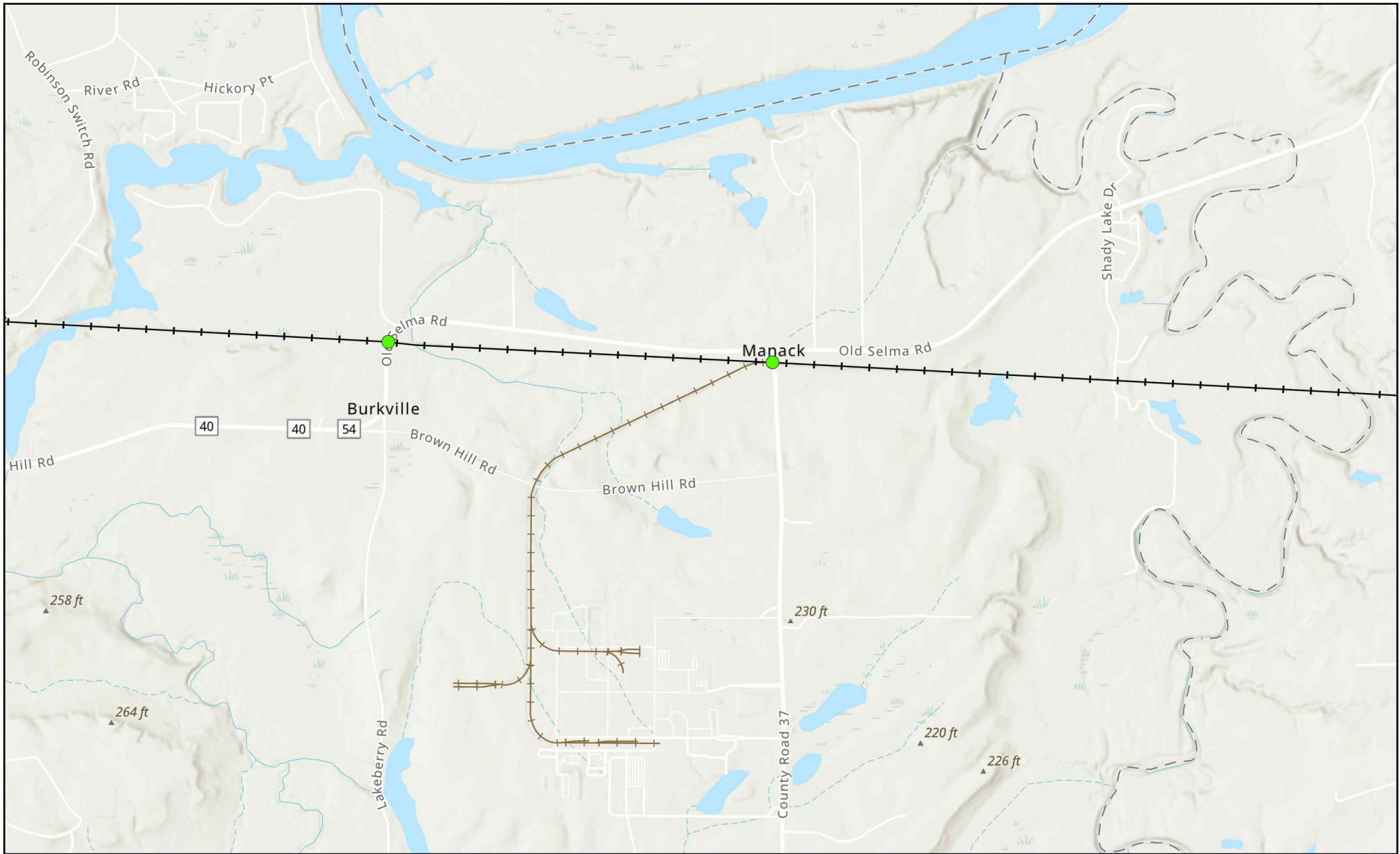
Emergency Services Routing Analysis

West of Burkville, Alabama

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Scale: 1 inch equals 0.5 miles





Legend

Crossing Position

- Grade Separated Crossing
- At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- At-Grade Crossing (Closed)
- ✕ Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- ⬮ Fire Station
- ⬮ EMS Dispatch
- ⬮ Hospital
- ⬮ Police



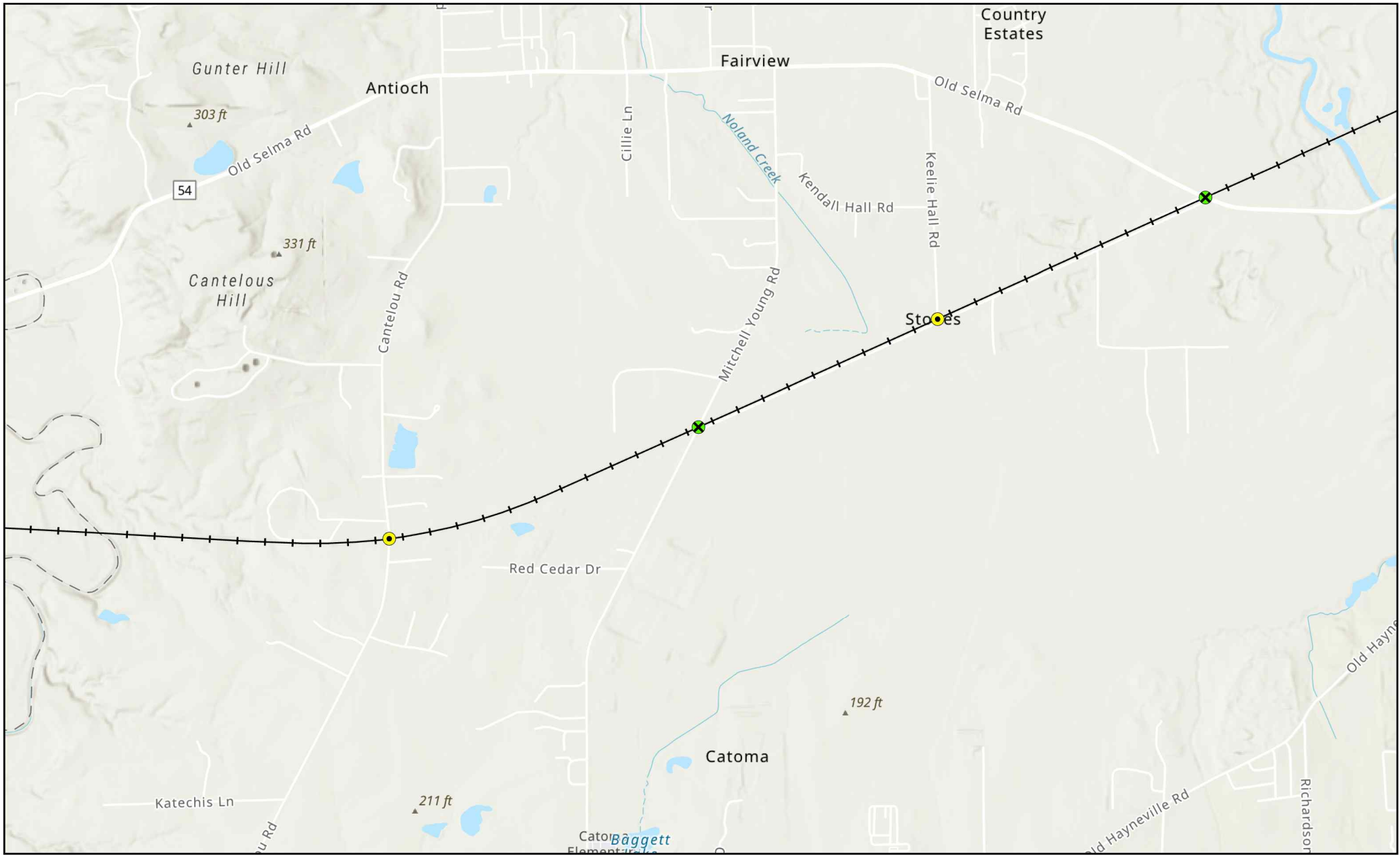
Emergency Services Routing Analysis

Burkville, Alabama

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Scale: 1 inch equals 0.5 miles





Legend

Crossing Position

- Grade Separated Crossing
- X Or ● At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- At-Grade Crossing (Closed)
- X Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- 🚒 Fire Station
- 🚑 EMS Dispatch
- 🏥 Hospital
- 🚔 Police



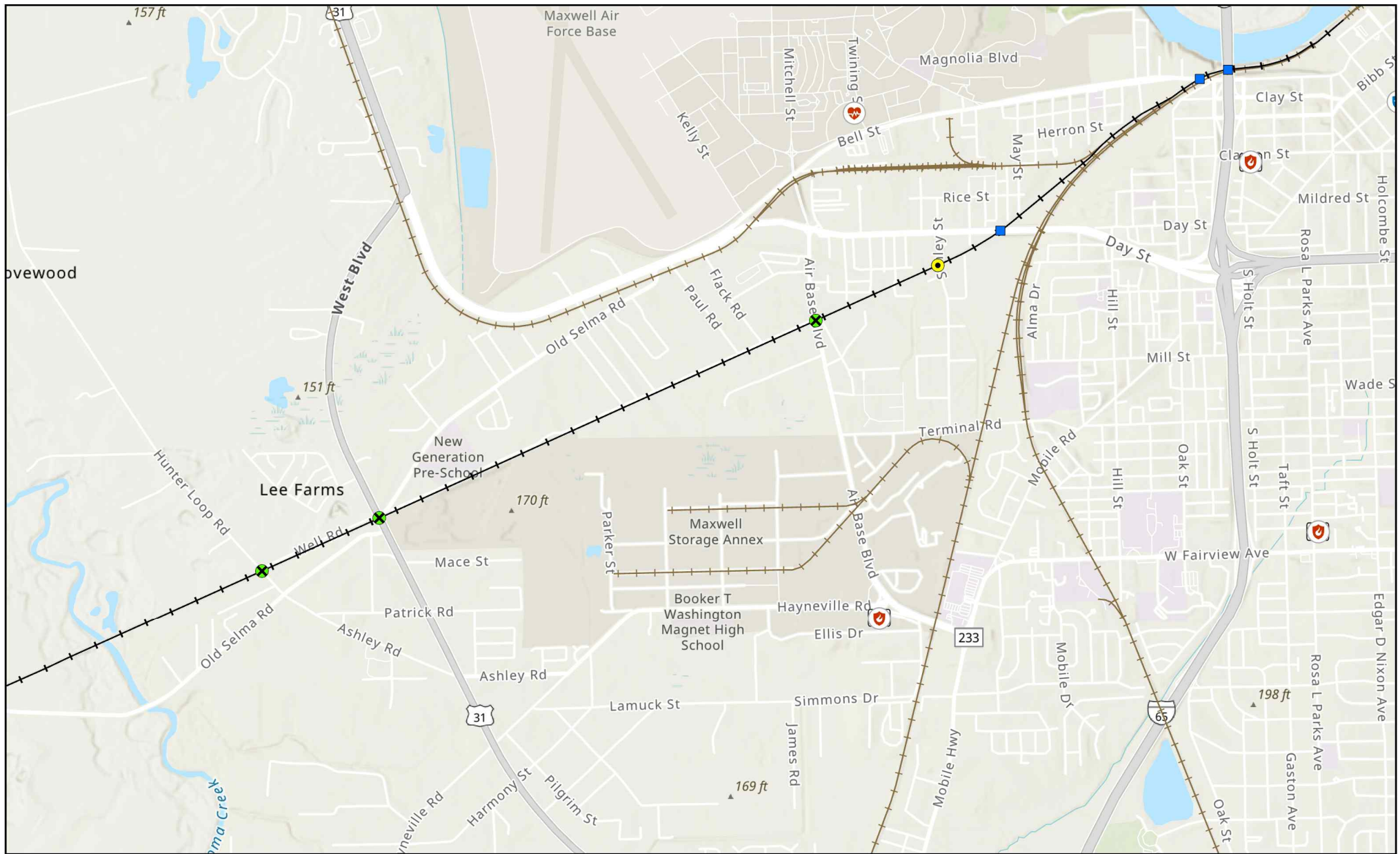
Emergency Services Routing Analysis

Southwest of Montgomery, AL

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Scale: 1 inch equals 0.5 miles





Legend

Crossing Position

- Grade Separated Crossing
- Or ⊗ At-Grade Crossing
- At-Grade Crossing (Excluded from EMS Analysis)
- ⊗ At-Grade Crossing (Closed)
- × Crossings Analyzed for Delay Impacts (20 Total)

Other

- Key Map: Analyzed Tracks
- Analyzed Tracks
- Other Tracks
- ⬮ Fire Station
- ⬮ EMS Dispatch
- ⬮ Hospital
- ⬮ Police



Emergency Services Routing Analysis

Montgomery, AL

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Scale: 1 inch equals 0.5 miles



Appendix D: Air Quality

Appendix D

Air Quality

This appendix provides technical information on the approach and results used in the analysis of air quality (*Chapter 3, Section 3.3 Air Quality and Climate Change*).

D.1 Approach

OEA measured the air quality and greenhouse gas impacts of the proposed CSXT and CPKC acquisition of the Eastern and Western Lines by assessing the air quality changes for those project elements that meet or exceed the Board's thresholds and require an air quality assessment. The assessment includes the operational impacts.

OEA assessed air quality and greenhouse gases at the county level for rail line segments and Grade Crossings to determine operational impacts. OEA reviewed potential changes in activity levels at rail yards and intermodal facilities and found they did not meet the thresholds for analysis. OEA conducted a study area wide inventory that is comprised of all the elements in the operational impacts assessments.

D.2 Regulatory Context

The Clean Air Act (CAA) amendments, issued by the U.S. Environmental Protection Agency (EPA), set forth guidelines for agencies to follow to achieve attainment of the National Ambient Air Quality Standards (NAAQS). The goal of the regulation is to improve air quality across the United States to protect public health and welfare. The following sections describe CAA components, including the NAAQS and General Conformity.

D.2.1 National Ambient Air Quality Standards

The CAA requires EPA to set NAAQS (40 C.F.R. Part 50) for six air pollutants known as the criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM₁₀ and PM_{2.5}), and sulfur dioxide (SO₂). NAAQS standards are based on human health criteria for the protection of public health (primary standards) and on environmental criteria to prevent environmental and property damage and for the protection of public welfare (secondary standards). **Table D-1** presents the current NAAQS.

Table D-1. National Ambient Air Quality Standards

Pollutant	Primary or Secondary	Averaging Time	Level	Form
Carbon Monoxide	Primary	8 hours	9 ppm	Not to be exceeded more than once per year
		1 hour	35 ppm	
Lead	Primary and Secondary	Rolling 3-month Average	0.15 µg/m ³	Not to be exceeded
Nitrogen Dioxide	Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations; averaged over 3 years
	Primary and Secondary	1 year	53 ppb	Annual Mean
Ozone	Primary and Secondary	8 hours	0.070 ppm	Annual 4th highest daily maximum 8-hour concentration; averaged over 3 years
Particulate Matter 2.5	Primary	1 year	12.0 µg/m ³	Annual mean, averaged over 3 years
	Secondary	1 year	15.0 µg/m ³	Annual mean, averaged over 3 years
	Primary and Secondary	24 hours	35 µg/m ³	98th percentile; averaged over 3 years
Particulate Matter 10	Primary and Secondary	24 hours	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide	Primary	1 hour	75 ppb	99th percentile of 1-hour daily maximum concentrations; averaged over 3 years
	Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

Source: EPA 2023c

Note: ppm = parts per million; ppb = parts per billion; µg/m³ = micrograms per cubic meter

In consultation with EPA, OEA has determined that emissions related to projected increases in rail operations on rail lines resulting from Board decisions are not subject to General Conformity because the Board does not exercise continuing program responsibility over and cannot practically control rail operations on rail lines (STB 2021).

EPA has established de minimis emission levels under 40 C.F.R. Part 93, Subpart B (presented in **Table D-2**). EPA uses the term de minimis across a variety of contexts to describe impacts that are too small or trivial for consideration by regulatory authorities. OEA would typically compare to de minimis levels any project-related construction for Conformity purposes or any operational emissions for context. Since there are no

construction projects related to the Proposed Transactions and since all study area counties are attainment, the de minimis levels are not used in this analysis.

Table D-2. De Minimis Levels

Pollutant	Tons per Year	Area Type
Ozone (VOC or NO _x)	50	Serious Nonattainment
	25	Severe Nonattainment
	10	Extreme Nonattainment
	100	Other Areas Outside an Ozone Transport Region ¹
Ozone (NO _x)	100	Marginal and Moderate Nonattainment Inside an Ozone Transport Region ¹
	100	Maintenance
Ozone (VOC)	50	Marginal and Moderate Nonattainment Inside an Ozone Transport Region ¹
	50	Maintenance Within an Ozone Transport Region ¹
	100	Maintenance Outside an Ozone Transport Region ¹
Carbon Monoxide (CO), Sulfur Dioxide (SO ₂) and Nitrogen Dioxide (NO ₂)	100	All Nonattainment and Maintenance
Particulate Matter 10 (PM ₁₀)	70	Serious Nonattainment
	100	Moderate Nonattainment and Maintenance
Particulate Matter 2.5 (PM _{2.5}) ²	70	Serious Nonattainment
	100	Moderate Nonattainment and Maintenance
Lead (Pb)	25	All Nonattainment and Maintenance

Source: EPA 2023a

The Ozone Transport Region is composed of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and the District of Columbia.

Direct emissions, SO₂, NO_x, (unless determined not to be a significant precursor), VOC, or ammonia (if determined to be a significant precursor)

D.2.2 Pollutant Descriptions and Effects

OEA identified pollutants in the affected environment and their effects on human health and the environment from publicly available regulations and databases provided by EPA. The following sections describe the various pollutants that OEA analyzed in this study and their potential effects on health or the environment.

Criteria Pollutants

Air pollution is of concern because of its demonstrated effects on human health. Of particular concern are the respiratory effects of the criteria pollutants for which the NAAQS are set, as described in **Table D-3**.

Table D-3. Criteria Pollutant Summary

Pollutant	Description
Ozone (O ₃)	O ₃ is a highly reactive compound of oxygen. At very high concentrations O ₃ appears blue in color, is a highly unstable gas and is pungent in odor. At ambient concentrations, O ₃ is colorless and odorless. O ₃ is not emitted directly into the atmosphere by pollutant sources, but instead is produced by an atmospheric reaction of NO _x and VOCs. Generally, this reaction is most favorable during the warmer summer months when sunlight is stronger. Exposure to O ₃ may impair lung function and cause respiratory difficulties to sensitive populations (for example a person with asthma, emphysema or reduced lung capacity).
Sulfur Dioxide (SO ₂)	SO ₂ emissions are the main components of the “oxides of sulfur,” a group of highly reactive gases from fossil fuel combustion at power plants, other industrial facilities, industrial processes, and burning of high sulfur containing fuels by large ships and non-road equipment. High concentrations of SO ₂ lead to formation of other sulfur oxides. By reducing the SO ₂ emissions, other forms of sulfur oxides are also expected to decrease. When oxides of sulfur react with other compounds in the atmosphere, small particles that can affect the lungs can be formed. This can lead to respiratory disease and aggravate existing heart disease.
Particulate Matter (PM ₁₀ and PM _{2.5})	Particulate matter is comprised of small solid particles and liquid droplets. PM ₁₀ refers to particulate matter with a nominal aerodynamic diameter of 10 micrometers or less, and PM _{2.5} refers to particulate matter with an aerodynamic diameter of 2.5 micrometers or less. Particulates can enter the body through the respiratory system. Particulates over 10 micrometers in size are generally captured in the nose and throat and are readily expelled from the body. Particles smaller than 10 micrometers, and especially particles smaller than 2.5 micrometers, can reach the air ducts (bronchi) and the air sacs (alveoli) in the lungs. Particulates are associated with increased incidence of respiratory diseases, cardiopulmonary disease, and cancer.

Table D-3. Criteria Pollutant Summary

Pollutant	Description
Carbon Monoxide (CO)	CO is a colorless and odorless gas that is a product of incomplete combustion. CO is absorbed by the lungs and reacts with hemoglobin to reduce the oxygen carrying capacity of the blood. At low concentrations, CO has been shown to aggravate the symptoms of cardiovascular disease. It can cause headaches, nausea, and at sustained high concentration levels, can lead to coma and death.
Nitrogen Dioxide (NO ₂)	When combustion temperatures are extremely high, such as in engines, atmospheric nitrogen gas may combine with oxygen gas to form various oxides of nitrogen. Of these, nitric oxide (NO) and NO ₂ are the most significant air pollutants. This group of pollutants is generally referred to as NOX. Nitric oxide is relatively harmless to humans but quickly converts to NO ₂ . NO ₂ has been found to be a lung irritant and can lead to respiratory illnesses. Nitrogen oxides, along with VOCs, are also precursors to ozone formation.
Lead (Pb)	Pb is a heavy metal that can affect the nervous system, kidneys, immune system, reproductive system and cardiovascular system when exposed to substantial doses. Pb is emitted through some heavy industrial manufacturing processes, especially those associated with metal processing. The addition of Pb to fuel increases engine performance and reduces valve wear; however, general use of Pb as a fuel additive has been phased out for on-road vehicles in the United States. Since this phase out, Pb concentrations in ambient air are often low. States with no significant lead emitting sources typically do not measure Pb at their ambient air monitoring stations.

Hazardous Air Pollutants

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that EPA regulate 188 air toxics, also known as hazardous air pollutants (HAPs). EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37), and identified a group of 93 compounds emitted from mobile sources, listed in their Integrated Risk Information System (EPA 2024a). In addition, EPA identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 2011 National Air Toxics Assessment (EPA 2023d). The nine compounds are called mobile source air toxics (MSAT) and are typically associated with transportation sources including motor vehicles, construction equipment, and locomotives. These are 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter. OEA considered these nine compounds in the emissions assessment.

Greenhouse Gases

In nature, carbon dioxide (CO₂) is exchanged continually between the atmosphere, plants, and animals through processes of photosynthesis, respiration, and decomposition, and between the atmosphere and ocean through gas exchange. Oceans and living biomass (i.e., sinks) absorb billions of tons of carbon in the form of CO₂ and emit it to the atmosphere annually through natural and man-made processes (i.e., sources). CO₂, however, constitutes less than 1/10th of a percent of the total atmosphere gases. Similar to the glass in a greenhouse, certain gases, primarily CO₂, nitrous oxide (N₂O), and methane (CH₄) absorb heat that the surface of the Earth radiates. Increases in the atmospheric concentrations of these gases can cause the Earth to warm by trapping more heat. The common term for this phenomenon is the “greenhouse effect,” and these gases are typically referred to as “greenhouse gases.” GHG emissions have effects at the regional and global scale and are thus reviewed at a regional scale. In 2007, the Supreme Court determined that GHGs are anticipated to endanger public health and therefore are part of EPA’s responsibility to regulate under the CAA. In 2009, EPA signed an endangerment finding in the CAA that stated the current and projected concentrations of the six key GHGs in the atmosphere could threaten the public health and welfare of current and future generations.

EPA has not established ambient air standards for GHGs like the criteria pollutants have under the NAAQS. However, the Council on Environmental Quality has created interim guidelines for conducting GHG and climate change analyses in NEPA Documents (88 FR 1196, “CEQ Guidance”) released on January 9, 2023. The CEQ guidance states that where feasible, federal agencies should include a quantitative analysis of potential GHG emissions from a proposed action and use methods to provide additional context of GHG emissions. When tools, methodologies, or data inputs are not reasonably available, a qualitative evaluation should be provided. This analysis should consider direct, indirect, and cumulative emissions. It should evaluate both short- and long-term effects of proposed action and alternatives. When appropriate, mitigation should be considered to avoid, minimize, and compensate for increased GHG emissions.

D.3 Affected Environment

The affected environment for air quality is determined by the attainment status of the counties in the Study Area and by identifying proximate Class I Areas. All affected counties with project elements that exceed the Board’s thresholds for environmental analyses are in attainment of all NAAQS. **Table D-4** presents the affected counties and their attainment status for all pollutants.

Table D-4. Attainment Statuses of Affected Counties

State	County	Criteria Pollutants						
		O3	SO2	PM2.5	PM10	CO	NO2	Pb
Alabama	Choctaw	-	-	-	-	-	-	-

Table D-4. Attainment Statuses of Affected Counties

State	County	Criteria Pollutants						
		O3	SO2	PM2.5	PM10	CO	NO2	Pb
Alabama	Dallas	-	-	-	-	-	-	-
Alabama	Lowndes	-	-	-	-	-	-	-
Alabama	Marengo	-	-	-	-	-	-	-
Alabama	Montgomery	-	-	-	-	-	-	-
Alabama	Wilcox	-	-	-	-	-	-	-
Mississippi	Lauderdale	-	-	-	-	-	-	-

Source: EPA 2023e

Note: - = Attainment; M = Maintenance; NA = Nonattainment; O3 = Ozone; NO2 = Nitrogen Dioxide; PM10 = Particulate Matter 10 microns or less in diameter; PM2.5 = Particulate Matter 2.5 microns or less in diameter; SO2 = Sulfur Dioxide; CO = Carbon Monoxide; Pb = Lead.

Study-Area Wide Emissions

Transaction-Wide Emissions

OEA created a transaction area-wide emissions inventory by summing all the emissions in the county-level analysis. **Table D-5** presents the transaction-wide summary.

Table D-5. Transaction Wide Emissions Analysis Summary

Source	Acquisition-Related Criteria Emissions (tons/year)							Acquisition-Related HAP Emissions (tons/year)							
	NOX	VOC	PM10	PM2.5	SO2	CO	CO2e	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
Rail Segment	-42.56	-2.82	-1.82	-1.77	0.02	6.74	2592.51	-0.22	-0.05	-0.06	-0.01	-0.01	-0.63	-0.01	-0.01
Grade Crossing	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions Subtotal	-42.56	-2.82	-1.82	-1.77	0.02	6.74	2592.59	-0.22	-0.05	-0.06	-0.01	-0.01	-0.63	-0.01	-0.01

Note: See individual analyses tables for further information on emissions analyses and assumptions.

County Level Emissions

County-Level Emissions

OEA analyzed a county-level emissions inventory for all project elements that exceeded the Board's thresholds for analysis. OEA conducted county-level emissions analyses for rail line segments and grade crossings. OEA estimated emissions for Nitrogen Oxides (NOX), Volatile Organic Compounds (VOC), Particulate Matter (PM): PM10, and PM2.5, Sulfur Dioxide (SO2), Carbon Monoxide (CO), Carbon Monoxide equivalents (CO2e), Methane (CH4), Nitrogen Dioxide (N2O), and Hazardous Air Pollutants (HAPs). OEA calculated CO2e by deriving CO2, CH4, and N2O emissions and applying global warming potentials (EPA 2023b). **Table D-6** presents criteria pollutant emissions and **Table D-7** presents HAPs.

Table D-6. County Level Emissions Analysis Summary-Criteria Pollutants and GHG

State	County	Attainment	Pollutant	Source	Acquisition-Related Criteria Emissions (tons/year)						
					NOX	VOC	PM10	PM2.5	SO2	CO	CO2e
Mississippi	Lauderdale	Attainment	-	Rail Segment	10.97	0.45	0.28	0.27	0.01	2.20	847.99
				Grade Crossing	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				County Total	10.97	0.45	0.28	0.27	0.01	2.20	847.99
Alabama	Choctaw	Attainment	-	Rail Segment	15.00	0.61	0.38	0.37	0.01	3.04	1171.23
				Grade Crossing	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				County Total	15.00	0.61	0.38	0.37	0.01	3.04	1171.23
Alabama	Marengo	Attainment	-	Rail Segment	-14.02	-0.84	-0.54	-0.52	0.00	0.96	369.20
				Grade Crossing	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				County Total	-14.02	-0.84	-0.54	-0.52	0.00	0.96	369.20
Alabama	Dallas	Attainment	-	Rail Segment	-26.21	-1.49	-0.96	-0.93	0.00	0.73	282.43
				Grade Crossing	0.00	0.00	0.00	0.00	0.00	0.00	0.05
				County Total	-26.21	-1.49	-0.96	-0.93	0.00	0.73	282.48
Alabama	Lowndes	Attainment	-	Rail Segment	-18.01	-0.99	-0.63	-0.62	0.00	-0.07	-26.83
				Grade Crossing	-	-	-	-	-	-	-
				County Total	-18.01	-0.99	-0.63	-0.62	0.00	-0.07	-26.83
Alabama	Montgomery	Attainment	-	Rail Segment	-9.73	-0.53	-0.34	-0.33	0.00	-0.16	-62.09
				Grade Crossing	0.00	0.00	0.00	0.00	0.00	0.00	0.03
				County Total	-9.73	-0.53	-0.34	-0.33	0.00	-0.16	-62.06
Alabama	Wilcox	Attainment	-	Rail Segment	-0.57	-0.03	-0.02	-0.02	0.00	0.03	10.58
				Grade Crossing	-	-	-	-	-	-	-
				County Total	-0.57	-0.03	-0.02	-0.02	0.00	0.03	10.58

Note: See individual analyses tables for further information on emissions analyses and assumptions.

Table D-7. County Level HAPS Summary

State	County	Source	Acquisition-Related HAP Emissions (tons/year)							
			Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
Mississippi	Lauderdale	Rail Segment	3.5E-02	7.2E-03	1.0E-02	8.3E-04	1.7E-03	1.0E-01	1.2E-03	1.2E-03
		Grade Crossing	4.0E-09	4.2E-10	4.6E-09	1.8E-10	2.0E-09	6.3E-09	2.7E-10	7.1E-12
		County Total	3.5E-02	7.2E-03	1.0E-02	8.3E-04	1.7E-03	1.0E-01	1.2E-03	1.2E-03
Alabama	Choctaw	Rail Segment	4.8E-02	9.7E-03	1.4E-02	1.1E-03	2.3E-03	1.4E-01	1.7E-03	1.7E-03
		Grade Crossing	-8.8E-09	-9.1E-10	-1.0E-08	-3.8E-10	-4.3E-09	-1.4E-08	-6.0E-10	-1.6E-11
		County Total	4.8E-02	9.7E-03	1.4E-02	1.1E-03	2.3E-03	1.4E-01	1.7E-03	1.7E-03
Alabama	Marengo	Rail Segment	-6.5E-02	-1.3E-02	-1.9E-02	-1.6E-03	-3.2E-03	-1.9E-01	-2.3E-03	-2.4E-03
		Grade Crossing	7.6E-09	7.8E-10	8.6E-09	3.3E-10	3.7E-09	1.2E-08	5.1E-10	1.3E-11
		County Total	-6.5E-02	-1.3E-02	-1.9E-02	-1.6E-03	-3.2E-03	-1.9E-01	-2.3E-03	-2.4E-03
Alabama	Dallas	Rail Segment	-1.2E-01	-2.4E-02	-3.4E-02	-2.8E-03	-5.7E-03	-3.3E-01	-4.1E-03	-4.2E-03
		Grade Crossing	1.0E-07	1.1E-08	1.2E-07	4.4E-09	5.0E-08	1.6E-07	7.0E-09	1.8E-10
		County Total	-1.2E-01	-2.4E-02	-3.4E-02	-2.8E-03	-5.7E-03	-3.3E-01	-4.1E-03	-4.2E-03
Alabama	Lowndes	Rail Segment	-7.7E-02	-1.6E-02	-2.2E-02	-1.8E-03	-3.8E-03	-2.2E-01	-2.7E-03	-2.8E-03
		Grade Crossing	-	-	-	-	-	-	-	-
		County Total	-7.7E-02	-1.6E-02	-2.2E-02	-1.8E-03	-3.8E-03	-2.2E-01	-2.7E-03	-2.8E-03
Alabama	Montgomery	Rail Segment	-4.1E-02	-8.4E-03	-1.2E-02	-9.8E-04	-2.0E-03	-1.2E-01	-1.4E-03	-1.5E-03
		Grade Crossing	6.8E-08	7.0E-09	7.7E-08	3.0E-09	3.3E-08	1.1E-07	4.6E-09	1.2E-10
		County Total	-4.1E-02	-8.4E-03	-1.2E-02	-9.8E-04	-2.0E-03	-1.2E-01	-1.4E-03	-1.5E-03
Alabama	Wilcox	Rail Segment	-2.6E-03	-5.3E-04	-7.4E-04	-6.1E-05	-1.3E-04	-7.3E-03	-9.0E-05	-9.3E-05
		Grade Crossing	-	-	-	-	-	-	-	-
		County Total	-2.6E-03	-5.3E-04	-7.4E-04	-6.1E-05	-1.3E-04	-7.3E-03	-9.0E-05	-9.3E-05

Note: See individual analyses tables for further information on emissions analyses and assumptions.

Rail Segment Analysis

Rail Segment Analysis

OEA conducted an analysis of the emissions changes from locomotives on rail line segments that would meet or exceed the Board's thresholds for environmental analysis. Applicants provided rail segments that exceeded the Board's analysis thresholds. OEA subdivided these segments into "sub-segments" at county lines. Applicants provided No-Action and Proposed Transactions annual gross tons miles for each segment. OEA obtained the lengths of the sub-segments using GIS processing and used them to proportion the total segment gross ton miles to annual gross ton miles for each sub-segment.

OEA converted the gross ton mileage for each sub-segment to fuel usage using the fleet-wide fuel efficiency factors. Fuel efficiency factors for each railroad operating in the study area were provided by applicants. OEA obtained emission factors for calculating locomotive emissions using EPA methodology (EPA 2009). OEA obtained the mix of emissions tier standards for the various locomotive fleets from Applicants. OEA used this mix to create composite fleet-wide emission factors by pollutant for the rail segment analysis. OEA converted emission factors into a grams per gallon format using EPA provided conversion factor from brake horsepower-hours to gallons (EPA 2009). OEA estimated HAPs emission rates by applying speciation profiles to the VOC or PM emission rates (EPA 2021). OEA combined the above No-Action and Proposed Transactions fuel usages with the emission factors to calculate the emissions inventory for each sub-segment. OEA conservatively estimated emissions using current locomotive fleet information. It is expected that the fleet would become cleaner over the coming years as Applicants continue remanufacturing older locomotives into more fuel-efficient units. Emerging technologies such as hydrogen and battery-electric locomotives may also contribute to cleaner fleet with reduced emissions.

OEA grouped sub-segments by county to create a county-level emissions inventory. OEA calculated the difference between the Proposed Transactions and No-Action inventories to determine the Project-Related Emissions.

Tables D-8 and D-9 summarize the rail segment analysis. **Tables D-10 through D-16** show analysis by sub-segment. **Table D-17** shows the locomotive emissions factors.

Table D-8. Rail Segment Analysis- Criteria Pollutant Summary

					Acquisition-Related Criteria Emissions (tons/year)						
State	County	Attainment	NA Pollutant	Sub Segment ID	NOX	VOC	PM10	PM2.5	SO2	CO	CO2e
Mississippi	Lauderdale	Attainment	-	SEG-01-01	8.5	0.3	0.2	0.2	0.0	1.7	665
				SEG-02-01	2.4	0.1	0.1	0.1	0.0	0.5	183
				Total	11.0	0.4	0.3	0.3	0.0	2.2	848
Alabama	Choctaw	Attainment	-	SEG-02-02	14.7	0.6	0.4	0.4	0.0	2.9	1,107
				SEG-03-01	-0.2	0.0	0.0	0.0	0.0	0.1	31
				SEG-04-01	0.5	0.0	0.0	0.0	0.0	0.1	33
				Total	15.0	0.6	0.4	0.4	0.0	3.0	1,171
Alabama	Marengo	Attainment	-	SEG-04-02	1.9	0.1	0.0	0.0	0.0	0.4	137
				SEG-05-01	-5.9	-0.3	-0.2	-0.2	0.0	0.1	45
				SEG-06-01	-9.6	-0.6	-0.4	-0.3	0.0	0.5	180
				SEG-06-03	-0.4	0.0	0.0	0.0	0.0	0.0	8
				Total	-14.0	-0.8	-0.5	-0.5	0.0	1.0	369
Alabama	Wilcox	Attainment	-	SEG-06-02	-0.6	0.0	0.0	0.0	0.0	0.0	11
				Total	-0.6	0.0	0.0	0.0	0.0	0.0	11
Alabama	Dallas	Attainment	-	SEG-06-04	-15.4	-0.9	-0.6	-0.6	0.0	0.7	287
				SEG-07-01	-10.8	-0.6	-0.4	-0.4	0.0	0.0	-5
				Total	-26.2	-1.5	-1.0	-0.9	0.0	0.7	282
Alabama	Lowndes	Attainment	-	SEG-07-02	-6.4	-0.4	-0.2	-0.2	0.0	0.0	-3
				SEG-08-01	-8.1	-0.4	-0.3	-0.3	0.0	0.0	-2
				SEG-09-01	-3.5	-0.2	-0.1	-0.1	0.0	-0.1	-22
				Total	-18.0	-1.0	-0.6	-0.6	0.0	-0.1	-27
Alabama	Montgomery	Attainment	-	SEG-09-02	-9.7	-0.5	-0.3	-0.3	0.0	-0.2	-62
				Total	-9.7	-0.5	-0.3	-0.3	0.0	-0.2	-62

Table D-9. Rail Segment Analysis- HAPS Summary

			Acquisition-Related HAP Emissions (tons/year)							
State	County	Sub Segment ID	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
Mississippi	Lauderdale	SEG-01-01	2.7E-02	5.5E-03	7.8E-03	6.4E-04	1.3E-03	7.7E-02	9.5E-04	9.6E-04
		SEG-02-01	7.9E-03	1.6E-03	2.3E-03	1.9E-04	3.9E-04	2.2E-02	2.7E-04	2.8E-04
		Total	3.5E-02	7.2E-03	1.0E-02	8.3E-04	1.7E-03	1.0E-01	1.2E-03	1.2E-03
Alabama	Choctaw	SEG-02-02	4.8E-02	9.7E-03	1.4E-02	1.1E-03	2.3E-03	1.4E-01	1.7E-03	1.7E-03
		SEG-03-01	-1.5E-03	-3.0E-04	-4.2E-04	-3.5E-05	-7.2E-05	-4.2E-03	-5.1E-05	-5.2E-05
		SEG-04-01	1.5E-03	3.1E-04	4.3E-04	3.6E-05	7.3E-05	4.3E-03	5.2E-05	5.3E-05
		Total	4.8E-02	9.7E-03	1.4E-02	1.1E-03	2.3E-03	1.4E-01	1.7E-03	1.7E-03
Alabama	Marengo	SEG-04-02	6.2E-03	1.3E-03	1.8E-03	1.5E-04	3.0E-04	1.8E-02	2.1E-04	2.2E-04
		SEG-05-01	-2.6E-02	-5.3E-03	-7.4E-03	-6.1E-04	-1.3E-03	-7.4E-02	-9.0E-04	-9.3E-04
		SEG-06-01	-4.4E-02	-8.9E-03	-1.3E-02	-1.0E-03	-2.1E-03	-1.2E-01	-1.5E-03	-1.6E-03
		SEG-06-03	-2.0E-03	-4.1E-04	-5.8E-04	-4.8E-05	-9.8E-05	-5.7E-03	-7.0E-05	-7.2E-05
		Total	-6.5E-02	-1.3E-02	-1.9E-02	-1.6E-03	-3.2E-03	-1.9E-01	-2.3E-03	-2.4E-03
Alabama	Wilcox	SEG-06-02	-2.6E-03	-5.3E-04	-7.4E-04	-6.1E-05	-1.3E-04	-7.3E-03	-9.0E-05	-9.3E-05
		Total	-2.6E-03	-5.3E-04	-7.4E-04	-6.1E-05	-1.3E-04	-7.3E-03	-9.0E-05	-9.3E-05
Alabama	Dallas	SEG-06-04	-7.0E-02	-1.4E-02	-2.0E-02	-1.7E-03	-3.4E-03	-2.0E-01	-2.4E-03	-2.5E-03
		SEG-07-01	-4.7E-02	-9.6E-03	-1.3E-02	-1.1E-03	-2.3E-03	-1.3E-01	-1.6E-03	-1.7E-03
		Total	-1.2E-01	-2.4E-02	-3.4E-02	-2.8E-03	-5.7E-03	-3.3E-01	-4.1E-03	-4.2E-03
Alabama	Lowndes	SEG-07-02	-2.8E-02	-5.6E-03	-7.9E-03	-6.6E-04	-1.4E-03	-7.9E-02	-9.6E-04	-9.9E-04
		SEG-08-01	-3.5E-02	-7.2E-03	-1.0E-02	-8.4E-04	-1.7E-03	-1.0E-01	-1.2E-03	-1.3E-03
		SEG-09-01	-1.5E-02	-3.0E-03	-4.2E-03	-3.5E-04	-7.2E-04	-4.2E-02	-5.1E-04	-5.3E-04
		Total	-7.7E-02	-1.6E-02	-2.2E-02	-1.8E-03	-3.8E-03	-2.2E-01	-2.7E-03	-2.8E-03
Alabama	Montgomery	SEG-09-02	-4.1E-02	-8.4E-03	-1.2E-02	-9.8E-04	-2.0E-03	-1.2E-01	-1.4E-03	-1.5E-03
		Total	-4.1E-02	-8.4E-03	-1.2E-02	-9.8E-04	-2.0E-03	-1.2E-01	-1.4E-03	-1.5E-03

Table D-10. Rail Segment Analysis- Gross Ton Mileage and Fuel Usage by Subsegment

SubCode	Code	County	State	Attainment	NA Pollutant	SubSeg Length	Segment Gross Ton Miles					Sub-Segment Gross Ton Miles by Railroad					Sub-Segment Fuel Use Gallons by Railroad									
							NA GTM	WA GTM	NA Total	NA MNBR	NA AGR	NA CSXT	WA Total	WA MNBR	WA CPKC	WA CSXT	WA AGR	NA MNBR	NA AGR	NA CSXT	NA Total	WA MNBR	WA CPKC	WA CSXT	WA AGR	WA Total
SEG-01-01	SEG-01	Lauderdale	MS	Attainment	N/A	15.2	11,146,722	64,487,885	11,146,722	11,146,722	0	0	64,487,885	15,599,339	48,888,546	0	0	25,449	0	0	25,449	35,615	48,894	0	0	84,309
SEG-02-01	SEG-02	Lauderdale	MS	Attainment	N/A	3.9	17,146,707	117,359,233	2,435,956	2,435,956	0	0	16,672,702	4,033,054	12,639,648	0	0	5,562	0	0	5,562	9,208	12,597	0	0	21,797
SEG-02-02	SEG-02	Choctaw	AL	Attainment	N/A	23.5	17,146,707	117,359,233	14,710,751	14,710,751	0	0	100,686,531	24,355,635	76,330,896	0	0	33,586	0	0	33,586	55,616	76,027	0	0	131,633
SEG-03-01	SEG-03	Choctaw	AL	Attainment	N/A	2.0	4,871,539	10,603,208	4,871,539	4,871,539	0	0	10,603,208	2,564,870	8,038,338	0	0	11,122	0	0	11,122	5,858	8,006	0	0	13,862
SEG-04-01	SEG-04	Choctaw	AL	Attainment	N/A	1.2	5,876,664	18,620,584	1,147,127	1,147,127	0	0	3,634,744	1,501,449	2,133,295	0	0	2,619	0	0	2,619	3,408	2,125	0	0	5,553
SEG-04-02	SEG-04	Marengo	AL	Attainment	N/A	5.0	5,876,664	18,620,584	4,725,537	4,725,537	0	0	14,985,840	6,190,387	8,795,453	0	0	10,798	0	0	10,798	14,133	8,760	0	0	22,894
SEG-05-01	SEG-05	Marengo	AL	Attainment	N/A	9.3	37,011,269	74,981,472	37,011,269	24,800,212	12,211,057	0	74,981,472	0	0	62,770,415	22,211,057	56,621	27,879	0	84,501	0	0	60,589	27,879	88,468
SEG-06-01	SEG-06	Marengo	AL	Attainment	N/A	18.6	121,834,051	332,733,766	45,049,488	45,049,488	0	0	123,031,991	0	0	123,031,991	0	102,853	0	0	102,853	0	0	118,757	0	118,757
SEG-06-02	SEG-06	Wilcox	AL	Attainment	N/A	1.1	121,834,051	332,733,766	2,654,129	2,654,129	0	0	7,248,535	0	0	7,248,535	0	6,060	0	0	6,060	0	6,997	0	6,997	
SEG-06-03	SEG-06	Marengo	AL	Attainment	N/A	0.8	121,834,051	332,733,766	2,061,095	2,061,095	0	0	5,628,934	0	0	5,628,934	0	4,706	0	0	4,706	0	0	5,433	0	5,433
SEG-06-04	SEG-06	Dallas	AL	Attainment	N/A	29.7	121,834,051	332,733,766	72,069,339	72,069,339	0	0	196,824,306	0	0	196,824,306	0	164,542	0	0	164,542	0	0	189,985	0	189,985
SEG-07-01	SEG-07	Dallas	AL	Attainment	N/A	14.6	67,328,004	158,539,035	42,337,700	42,337,700	0	0	99,693,704	0	0	99,693,704	0	96,661	0	0	96,661	0	0	96,229	0	96,229
SEG-07-02	SEG-07	Lowndes	AL	Attainment	N/A	8.6	67,328,004	158,539,035	24,990,304	24,990,304	0	0	58,845,331	0	0	58,845,331	0	57,055	0	0	57,055	0	0	56,801	0	56,801
SEG-08-01	SEG-08	Lowndes	AL	Attainment	N/A	10.3	31,870,146	75,205,704	31,870,146	31,870,146	0	0	75,205,704	0	0	75,205,704	0	72,763	0	0	72,763	0	0	72,592	0	72,592
SEG-09-01	SEG-09	Lowndes	AL	Attainment	N/A	3.7	55,041,268	113,234,731	14,414,352	12,631,133	0	1,783,219	29,654,210	0	0	29,654,210	0	28,837	0	1,736	30,575	0	0	28,624	0	28,624
SEG-09-02	SEG-09	Montgomery	AL	Attainment	N/A	10.3	55,041,268	113,234,731	40,626,916	35,600,906	0	5,026,010	83,580,521	0	0	83,580,521	0	81,281	0	4,894	86,174	0	0	80,676	0	80,676

Notes:
Segment Ton-Mileage provided by Applicant; Sub Segment ton-mileage proportioned from whole segment based on the Length Proportion and Railroad Proportion
No Action and With Action Fuel Efficiency provided by Applicants (NA and WA MNBR and AGR: 438 Ton-Miles/Gallon; WA CPKC: 1004 Ton-Miles/Gallon; WA CSXT: 1036 Ton-Miles/Gallon)

Table D-11. Rail Segment Analysis- No-Action Criteria Pollutant Emissions by Subsegment

					SubSeg Length	No Action Emissions (tons/year)									
SubCode	Code	County	State	Attainment		NOX	VOC	PM10	PM2.5	SO2	CO	CO2e	CO2	CH4	N2O
SEG-01-01	SEG-01	Lauderdale	MS	Attainment	15.2	5.9	0.3	0.2	0.2	0.0	0.7	287	286	0.012	0.002
SEG-02-01	SEG-02	Lauderdale	MS	Attainment	3.9	1.3	0.1	0.0	0.0	0.0	0.2	63	63	0.003	0.000
SEG-02-02	SEG-02	Choctaw	AL	Attainment	23.5	7.7	0.4	0.2	0.2	0.0	1.0	379	378	0.015	0.003
SEG-03-01	SEG-03	Choctaw	AL	Attainment	2.0	2.6	0.1	0.1	0.1	0.0	0.3	126	125	0.005	0.001
SEG-04-01	SEG-04	Choctaw	AL	Attainment	1.2	0.6	0.0	0.0	0.0	0.0	0.1	30	29	0.001	0.000
SEG-04-02	SEG-04	Marengo	AL	Attainment	5.0	2.5	0.1	0.1	0.1	0.0	0.3	122	122	0.005	0.001
SEG-05-01	SEG-05	Marengo	AL	Attainment	9.3	17.8	0.8	0.5	0.5	0.0	2.5	954	951	0.038	0.007
SEG-06-01	SEG-06	Marengo	AL	Attainment	18.6	23.7	1.1	0.7	0.7	0.0	3.0	1,161	1,158	0.046	0.009
SEG-06-02	SEG-06	Wilcox	AL	Attainment	1.1	1.4	0.1	0.0	0.0	0.0	0.2	68	68	0.003	0.001
SEG-06-03	SEG-06	Marengo	AL	Attainment	0.8	1.1	0.1	0.0	0.0	0.0	0.1	53	53	0.002	0.000
SEG-06-04	SEG-06	Dallas	AL	Attainment	29.7	37.9	1.8	1.1	1.1	0.0	4.8	1,858	1,852	0.074	0.015
SEG-07-01	SEG-07	Dallas	AL	Attainment	14.6	22.3	1.1	0.7	0.6	0.0	2.8	1,092	1,088	0.044	0.009
SEG-07-02	SEG-07	Lowndes	AL	Attainment	8.6	13.1	0.6	0.4	0.4	0.0	1.7	644	642	0.026	0.005
SEG-08-01	SEG-08	Lowndes	AL	Attainment	10.3	16.8	0.8	0.5	0.5	0.0	2.1	822	819	0.033	0.006
SEG-09-01	SEG-09	Lowndes	AL	Attainment	3.7	6.8	0.3	0.2	0.2	0.0	0.9	345	344	0.014	0.003
SEG-09-02	SEG-09	Montgomery	AL	Attainment	10.3	19.3	0.9	0.6	0.6	0.0	2.5	973	970	0.039	0.008

Note: Railroad fuel usage converted to emissions using Railroad-specific locomotive EPA tier mixes.

Table D-12. Rail Segment Analysis- Proposed Transactions Criteria Pollutant Emissions by Subsegment

SubCode	Code	County	State	Attainment	SubSeg Length	Proposed Acquisition Emissions (tons/year)									
						NOX	VOC	PM10	PM2.5	SO2	CO	CO2e	CO2	CH4	N2O
SEG-01-01	SEG-01	Lauderdale	MS	Attainment	15.2	14.4	0.6	0.4	0.4	0.0	2.5	952	949	0.038	0.007
SEG-02-01	SEG-02	Lauderdale	MS	Attainment	3.9	3.7	0.2	0.1	0.1	0.0	0.6	246	245	0.010	0.002
SEG-02-02	SEG-02	Choctaw	AL	Attainment	23.5	22.5	1.0	0.6	0.6	0.0	3.9	1,486	1,481	0.059	0.012
SEG-03-01	SEG-03	Choctaw	AL	Attainment	2.0	2.4	0.1	0.1	0.1	0.0	0.4	157	156	0.006	0.001
SEG-04-01	SEG-04	Choctaw	AL	Attainment	1.2	1.1	0.0	0.0	0.0	0.0	0.2	63	62	0.003	0.000
SEG-04-02	SEG-04	Marengo	AL	Attainment	5.0	4.4	0.2	0.1	0.1	0.0	0.7	259	258	0.010	0.002
SEG-05-01	SEG-05	Marengo	AL	Attainment	9.3	11.9	0.5	0.3	0.3	0.0	2.6	999	996	0.040	0.008
SEG-06-01	SEG-06	Marengo	AL	Attainment	18.6	14.1	0.6	0.3	0.3	0.0	3.5	1,341	1,337	0.054	0.010
SEG-06-02	SEG-06	Wilcox	AL	Attainment	1.1	0.8	0.0	0.0	0.0	0.0	0.2	79	79	0.003	0.001
SEG-06-03	SEG-06	Marengo	AL	Attainment	0.8	0.6	0.0	0.0	0.0	0.0	0.2	61	61	0.002	0.000
SEG-06-04	SEG-06	Dallas	AL	Attainment	29.7	22.5	0.9	0.6	0.5	0.0	5.6	2,145	2,138	0.086	0.017
SEG-07-01	SEG-07	Dallas	AL	Attainment	14.6	11.4	0.5	0.3	0.3	0.0	2.8	1,087	1,083	0.043	0.008
SEG-07-02	SEG-07	Lowndes	AL	Attainment	8.6	6.7	0.3	0.2	0.2	0.0	1.7	641	639	0.026	0.005
SEG-08-01	SEG-08	Lowndes	AL	Attainment	10.3	8.6	0.3	0.2	0.2	0.0	2.1	820	817	0.033	0.006
SEG-09-01	SEG-09	Lowndes	AL	Attainment	3.7	3.4	0.1	0.1	0.1	0.0	0.8	323	322	0.013	0.003
SEG-09-02	SEG-09	Montgomery	AL	Attainment	10.3	9.6	0.4	0.2	0.2	0.0	2.4	911	908	0.036	0.007

Note: Railroad fuel usage converted to emissions using Railroad-specific locomotive EPA tier mixes.

Table D-13. Rail Segment Analysis- Transactions-Related Criteria Pollutant Emissions by Subsegment

SubCode	Code	County	State	Attainment	SubSeg Length	Acquisition-Related Emissions (tons/year)						
						NOX	VOC	PM10	PM2.5	SO2	CO	CO2e
SEG-01-01	SEG-01	Lauderdale	MS	Attainment	15.2	8.5	0.3	0.2	0.2	0.0	1.7	665
SEG-02-01	SEG-02	Lauderdale	MS	Attainment	3.9	2.4	0.1	0.1	0.1	0.0	0.5	183
SEG-02-02	SEG-02	Choctaw	AL	Attainment	23.5	14.7	0.6	0.4	0.4	0.0	2.9	1,107
SEG-03-01	SEG-03	Choctaw	AL	Attainment	2.0	-0.2	0.0	0.0	0.0	0.0	0.1	31
SEG-04-01	SEG-04	Choctaw	AL	Attainment	1.2	0.5	0.0	0.0	0.0	0.0	0.1	33
SEG-04-02	SEG-04	Marengo	AL	Attainment	5.0	1.9	0.1	0.0	0.0	0.0	0.4	137
SEG-05-01	SEG-05	Marengo	AL	Attainment	9.3	-5.9	-0.3	-0.2	-0.2	0.0	0.1	45
SEG-06-01	SEG-06	Marengo	AL	Attainment	18.6	-9.6	-0.6	-0.4	-0.3	0.0	0.5	180
SEG-06-02	SEG-06	Wilcox	AL	Attainment	1.1	-0.6	0.0	0.0	0.0	0.0	0.0	11
SEG-06-03	SEG-06	Marengo	AL	Attainment	0.8	-0.4	0.0	0.0	0.0	0.0	0.0	8
SEG-06-04	SEG-06	Dallas	AL	Attainment	29.7	-15.4	-0.9	-0.6	-0.6	0.0	0.7	287
SEG-07-01	SEG-07	Dallas	AL	Attainment	14.6	-10.8	-0.6	-0.4	-0.4	0.0	0.0	-5
SEG-07-02	SEG-07	Lowndes	AL	Attainment	8.6	-6.4	-0.4	-0.2	-0.2	0.0	0.0	-3
SEG-08-01	SEG-08	Lowndes	AL	Attainment	10.3	-8.1	-0.4	-0.3	-0.3	0.0	0.0	-2
SEG-09-01	SEG-09	Lowndes	AL	Attainment	3.7	-3.5	-0.2	-0.1	-0.1	0.0	-0.1	-22
SEG-09-02	SEG-09	Montgomery	AL	Attainment	10.3	-9.7	-0.5	-0.3	-0.3	0.0	-0.2	-62

Note: Railroad fuel usage converted to emissions using Railroad-specific locomotive EPA tier mixes.

Table D-14. Rail Segment Analysis- No-Action HAPs Emissions by Subsegment

					No Action Emissions (tons/year)							
SubCode	Code	County	State	SubSeg Length	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
SEG-01-01	SEG-01	Lauderdale	MS	15.2	2.2E-02	4.4E-03	6.2E-03	5.2E-04	1.1E-03	6.2E-02	7.6E-04	7.7E-04
SEG-02-01	SEG-02	Lauderdale	MS	3.9	4.7E-03	9.7E-04	1.4E-03	1.1E-04	2.3E-04	1.4E-02	1.7E-04	1.7E-04
SEG-02-02	SEG-02	Choctaw	AL	23.5	2.9E-02	5.9E-03	8.2E-03	6.8E-04	1.4E-03	8.2E-02	1.0E-03	1.0E-03
SEG-03-01	SEG-03	Choctaw	AL	2.0	9.5E-03	1.9E-03	2.7E-03	2.3E-04	4.7E-04	2.7E-02	3.3E-04	3.4E-04
SEG-04-01	SEG-04	Choctaw	AL	1.2	2.2E-03	4.6E-04	6.4E-04	5.3E-05	1.1E-04	6.4E-03	7.8E-05	8.0E-05
SEG-04-02	SEG-04	Marengo	AL	5.0	9.2E-03	1.9E-03	2.6E-03	2.2E-04	4.5E-04	2.6E-02	3.2E-04	3.3E-04
SEG-05-01	SEG-05	Marengo	AL	9.3	6.6E-02	1.4E-02	1.9E-02	1.6E-03	3.3E-03	1.9E-01	2.3E-03	2.4E-03
SEG-06-01	SEG-06	Marengo	AL	18.6	8.8E-02	1.8E-02	2.5E-02	2.1E-03	4.3E-03	2.5E-01	3.1E-03	3.1E-03
SEG-06-02	SEG-06	Wilcox	AL	1.1	5.2E-03	1.1E-03	1.5E-03	1.2E-04	2.5E-04	1.5E-02	1.8E-04	1.8E-04
SEG-06-03	SEG-06	Marengo	AL	0.8	4.0E-03	8.2E-04	1.2E-03	9.5E-05	2.0E-04	1.1E-02	1.4E-04	1.4E-04
SEG-06-04	SEG-06	Dallas	AL	29.7	1.4E-01	2.9E-02	4.0E-02	3.3E-03	6.9E-03	4.0E-01	4.9E-03	5.0E-03
SEG-07-01	SEG-07	Dallas	AL	14.6	8.2E-02	1.7E-02	2.4E-02	2.0E-03	4.0E-03	2.3E-01	2.9E-03	2.9E-03
SEG-07-02	SEG-07	Lowndes	AL	8.6	4.9E-02	9.9E-03	1.4E-02	1.2E-03	2.4E-03	1.4E-01	1.7E-03	1.7E-03
SEG-08-01	SEG-08	Lowndes	AL	10.3	6.2E-02	1.3E-02	1.8E-02	1.5E-03	3.0E-03	1.8E-01	2.2E-03	2.2E-03
SEG-09-01	SEG-09	Lowndes	AL	3.7	2.5E-02	5.2E-03	7.3E-03	6.0E-04	1.2E-03	7.2E-02	8.8E-04	9.0E-04
SEG-09-02	SEG-09	Montgomery	AL	10.3	7.1E-02	1.5E-02	2.0E-02	1.7E-03	3.5E-03	2.0E-01	2.5E-03	2.5E-03

Note: Railroad fuel usage converted to emissions using Railroad-specific locomotive EPA tier mixes.

Table D-15. Rail Segment Analysis- Proposed Transactions HAPs Emissions by Subsegment

					Proposed Acquisition Emissions (tons/year)							
SubCode	Code	County	State	SubSeg Length	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
SEG-01-01	SEG-01	Lauderdale	MS	15.2	4.9E-02	1.0E-02	1.4E-02	1.2E-03	2.4E-03	1.4E-01	1.7E-03	1.7E-03
SEG-02-01	SEG-02	Lauderdale	MS	3.9	1.3E-02	2.6E-03	3.6E-03	3.0E-04	6.2E-04	3.6E-02	4.4E-04	4.5E-04
SEG-02-02	SEG-02	Choctaw	AL	23.5	7.6E-02	1.6E-02	2.2E-02	1.8E-03	3.7E-03	2.2E-01	2.7E-03	2.7E-03
SEG-03-01	SEG-03	Choctaw	AL	2.0	8.0E-03	1.6E-03	2.3E-03	1.9E-04	3.9E-04	2.3E-02	2.8E-04	2.9E-04
SEG-04-01	SEG-04	Choctaw	AL	1.2	3.7E-03	7.6E-04	1.1E-03	8.9E-05	1.8E-04	1.1E-02	1.3E-04	1.3E-04
SEG-04-02	SEG-04	Marengo	AL	5.0	1.5E-02	3.1E-03	4.4E-03	3.7E-04	7.5E-04	4.4E-02	5.4E-04	5.5E-04
SEG-05-01	SEG-05	Marengo	AL	9.3	4.0E-02	8.3E-03	1.2E-02	9.6E-04	2.0E-03	1.2E-01	1.4E-03	1.4E-03
SEG-06-01	SEG-06	Marengo	AL	18.6	4.4E-02	9.0E-03	1.3E-02	1.0E-03	2.2E-03	1.3E-01	1.5E-03	1.5E-03
SEG-06-02	SEG-06	Wilcox	AL	1.1	2.6E-03	5.3E-04	7.4E-04	6.2E-05	1.3E-04	7.4E-03	9.0E-05	9.1E-05
SEG-06-03	SEG-06	Marengo	AL	0.8	2.0E-03	4.1E-04	5.8E-04	4.8E-05	9.9E-05	5.7E-03	7.0E-05	7.1E-05
SEG-06-04	SEG-06	Dallas	AL	29.7	7.0E-02	1.4E-02	2.0E-02	1.7E-03	3.5E-03	2.0E-01	2.5E-03	2.5E-03
SEG-07-01	SEG-07	Dallas	AL	14.6	3.6E-02	7.3E-03	1.0E-02	8.5E-04	1.7E-03	1.0E-01	1.2E-03	1.3E-03
SEG-07-02	SEG-07	Lowndes	AL	8.6	2.1E-02	4.3E-03	6.0E-03	5.0E-04	1.0E-03	6.0E-02	7.3E-04	7.4E-04
SEG-08-01	SEG-08	Lowndes	AL	10.3	2.7E-02	5.5E-03	7.7E-03	6.4E-04	1.3E-03	7.7E-02	9.4E-04	9.5E-04
SEG-09-01	SEG-09	Lowndes	AL	3.7	1.1E-02	2.2E-03	3.0E-03	2.5E-04	5.2E-04	3.0E-02	3.7E-04	3.7E-04
SEG-09-02	SEG-09	Montgomery	AL	10.3	3.0E-02	6.1E-03	8.6E-03	7.1E-04	1.5E-03	8.5E-02	1.0E-03	1.1E-03

Note: Railroad fuel usage converted to emissions using Railroad-specific locomotive EPA tier mixes.

Table D-16. Rail Segment Analysis- Transactions-Related HAPs Emissions by Subsegment

					Acquisition-Related Emissions (tons/year)							
SubCode	Code	County	State	SubSeg Length	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
SEG-01-01	SEG-01	Lauderdale	MS	15.2	2.7E-02	5.5E-03	7.8E-03	6.4E-04	1.3E-03	7.7E-02	9.5E-04	9.6E-04
SEG-02-01	SEG-02	Lauderdale	MS	3.9	7.9E-03	1.6E-03	2.3E-03	1.9E-04	3.9E-04	2.2E-02	2.7E-04	2.8E-04
SEG-02-02	SEG-02	Choctaw	AL	23.5	4.8E-02	9.7E-03	1.4E-02	1.1E-03	2.3E-03	1.4E-01	1.7E-03	1.7E-03
SEG-03-01	SEG-03	Choctaw	AL	2.0	-1.5E-03	-3.0E-04	-4.2E-04	-3.5E-05	-7.2E-05	-4.2E-03	-5.1E-05	-5.2E-05
SEG-04-01	SEG-04	Choctaw	AL	1.2	1.5E-03	3.1E-04	4.3E-04	3.6E-05	7.3E-05	4.3E-03	5.2E-05	5.3E-05
SEG-04-02	SEG-04	Marengo	AL	5.0	6.2E-03	1.3E-03	1.8E-03	1.5E-04	3.0E-04	1.8E-02	2.1E-04	2.2E-04
SEG-05-01	SEG-05	Marengo	AL	9.3	-2.6E-02	-5.3E-03	-7.4E-03	-6.1E-04	-1.3E-03	-7.4E-02	-9.0E-04	-9.3E-04
SEG-06-01	SEG-06	Marengo	AL	18.6	-4.4E-02	-8.9E-03	-1.3E-02	-1.0E-03	-2.1E-03	-1.2E-01	-1.5E-03	-1.6E-03
SEG-06-02	SEG-06	Wilcox	AL	1.1	-2.6E-03	-5.3E-04	-7.4E-04	-6.1E-05	-1.3E-04	-7.3E-03	-9.0E-05	-9.3E-05
SEG-06-03	SEG-06	Marengo	AL	0.8	-2.0E-03	-4.1E-04	-5.8E-04	-4.8E-05	-9.8E-05	-5.7E-03	-7.0E-05	-7.2E-05
SEG-06-04	SEG-06	Dallas	AL	29.7	-7.0E-02	-1.4E-02	-2.0E-02	-1.7E-03	-3.4E-03	-2.0E-01	-2.4E-03	-2.5E-03
SEG-07-01	SEG-07	Dallas	AL	14.6	-4.7E-02	-9.6E-03	-1.3E-02	-1.1E-03	-2.3E-03	-1.3E-01	-1.6E-03	-1.7E-03
SEG-07-02	SEG-07	Lowndes	AL	8.6	-2.8E-02	-5.6E-03	-7.9E-03	-6.6E-04	-1.4E-03	-7.9E-02	-9.6E-04	-9.9E-04
SEG-08-01	SEG-08	Lowndes	AL	10.3	-3.5E-02	-7.2E-03	-1.0E-02	-8.4E-04	-1.7E-03	-1.0E-01	-1.2E-03	-1.3E-03
SEG-09-01	SEG-09	Lowndes	AL	3.7	-1.5E-02	-3.0E-03	-4.2E-03	-3.5E-04	-7.2E-04	-4.2E-02	-5.1E-04	-5.3E-04
SEG-09-02	SEG-09	Montgomery	AL	10.3	-4.1E-02	-8.4E-03	-1.2E-02	-9.8E-04	-2.0E-03	-1.2E-01	-1.4E-03	-1.5E-03

Note: Railroad fuel usage converted to emissions using Railroad-specific locomotive EPA tier mixes.

Table D-17. Rail Segment Analysis- Locomotive Emission Factors (1)

Tier	%	NOx	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	HC
Uncontrolled	38%	13.00	0.51	0.32	0.31	-	1.28	-	-	-	0.48
0	46%	8.60	0.51	0.32	0.31	-	1.28	-	-	-	0.48
0+	16%	7.20	0.32	0.20	0.19	-	1.28	-	-	-	0.30
1	0%	6.70	0.49	0.32	0.31	-	1.28	-	-	-	0.47
1+	0%	6.70	0.31	0.20	0.19	-	1.28	-	-	-	0.29
2	0%	4.95	0.27	0.18	0.17	-	1.28	-	-	-	0.26
2+	0%	4.95	0.14	0.08	0.08	-	1.28	-	-	-	0.13
3	0%	4.95	0.14	0.08	0.08	-	1.28	-	-	-	0.13
4	0%	1.00	0.04	0.02	0.01	-	1.28	-	-	-	0.04
Composite	100%	10.05	0.48	0.30	0.29	-	128%	-	-	-	0.45

20.8 bhp-hr/gal (Large Line Haul)

Criteria & GHG	NOx	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	HC
Composite (g/gal)	209.0	9.9	6.3	6.1	0.1	26.6	10210.0	0.41	0.08	9.4

HAPS	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
Composite (g/gal)	0.77	0.16	0.22	0.02	0.04	2.20	0.03	0.03

CPKC Factors by Tier (g/bhp-hr) (from "Emission Factors for Locomotives"- EPA 2009)

Tier	%	NOx	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	HC
Uncontrolled	0%	13.00	0.51	0.32	0.31	-	1.28	-	-	-	0.48
0	0%	8.60	0.51	0.32	0.31	-	1.28	-	-	-	0.48
0+	0%	7.20	0.32	0.20	0.19	-	1.28	-	-	-	0.30
1	0%	6.70	0.49	0.32	0.31	-	1.28	-	-	-	0.47
1+	43%	6.70	0.31	0.20	0.19	-	1.28	-	-	-	0.29
2	4%	4.95	0.27	0.18	0.17	-	1.28	-	-	-	0.26
2+	36%	4.95	0.14	0.08	0.08	-	1.28	-	-	-	0.13
3	13%	4.95	0.14	0.08	0.08	-	1.28	-	-	-	0.13
4	4%	1.00	0.04	0.02	0.01	-	1.28	-	-	-	0.04
Composite	100%	5.54	0.21	0.13	0.13	-	128%	-	-	-	0.20

20.8 bhp-hr/gal (Large Line Haul)

Criteria & GHG	NOx	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	HC
Composite (g/gal)	115.3	4.4	2.8	2.7	0.1	26.6	10210.0	0.41	0.08	4.2

HAPS	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
Composite (g/gal)	0.34	0.07	0.10	0.01	0.02	0.98	0.01	0.01

CSXT Factors by Tier (g/bhp-hr) (from "Emission Factors for Locomotives"- EPA 2009)

Tier	%	NOx	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	HC
Uncontrolled	0%	13.00	0.51	0.32	0.31	-	1.28	-	-	-	0.48
0	5%	8.60	0.51	0.32	0.31	-	1.28	-	-	-	0.48
0+	2%	7.20	0.32	0.20	0.19	-	1.28	-	-	-	0.30

Rail Segment Analysis- Locomotive Emission Factors (2)

1	1%	6.70	0.49	0.32	0.31	-	1.28	-	-	-	0.47
1+	35%	6.70	0.31	0.20	0.19	-	1.28	-	-	-	0.29
2	0%	4.95	0.27	0.18	0.17	-	1.28	-	-	-	0.26
2+	32%	4.95	0.14	0.08	0.08	-	1.28	-	-	-	0.13
3	9%	4.95	0.14	0.08	0.08	-	1.28	-	-	-	0.13
4	16%	1.00	0.04	0.02	0.01	-	1.28	-	-	-	0.04
Composite	100%	5.18	0.21	0.13	0.12	-	128%	-	-	-	0.20

20.8 bhp-hr/gal (Large Line Haul)

Criteria & GHG	NOx	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	HC
Composite (g/gal)	107.7	4.3	2.7	2.6	0.1	26.6	10210.0	0.41	0.08	4.1

HAPS	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
Composite (g/gal)	0.34	0.07	0.10	0.01	0.02	0.96	0.01	0.01

AGR Factors by Tier (g/bhp-hr) (from "Emission Factors for Locomotives"- EPA 2009)

Tier	%	NOx	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	HC
Uncontrolled	0%	13.00	0.51	0.32	0.31	-	1.28	-	-	-	0.48
0	25%	8.60	0.51	0.32	0.31	-	1.28	-	-	-	0.48
0+	38%	7.20	0.32	0.20	0.19	-	1.28	-	-	-	0.30
1	0%	6.70	0.49	0.32	0.31	-	1.28	-	-	-	0.47
1+	37%	6.70	0.31	0.20	0.19	-	1.28	-	-	-	0.29
2	0%	4.95	0.27	0.18	0.17	-	1.28	-	-	-	0.26
2+	0%	4.95	0.14	0.08	0.08	-	1.28	-	-	-	0.13
3	0%	4.95	0.14	0.08	0.08	-	1.28	-	-	-	0.13
4	0%	1.00	0.04	0.02	0.01	-	1.28	-	-	-	0.04
Composite	100%	7.37	0.36	0.23	0.22	-	128%	-	-	-	0.34

20.8 bhp-hr/gal (Large Line Haul)

Criteria & GHG	NOx	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	HC
Composite (g/gal)	153.2	7.5	4.8	4.6	0.1	26.6	10210.0	0.41	0.08	7.1

HAPS	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
Composite (g/gal)	0.59	0.12	0.17	0.01	0.03	1.67	0.02	0.02

Source Criteria Pollutants: "Emission Factors for Locomotives"- EPA 2009

Source GHG: "Emission Factors for Greenhouse Gas Inventories" - EPA, April 2021

Source HAPS: 2017 EPA National Emissions Inventory, "2017Rail_HAP_AugmentationProfileAssignmentFactors_20200128.xlsx".

Notes:

Tier Mix Provided by Applicants for Locomotive fleets

SO2 factor based on 15 ppm diesel fuel, using calculation from "Emission Factors for Locomotives-EPA2009"

CO2, CH4 and N2O factors from "Emission Factors for Greenhouse Gas Inventories" - EPA, April 2021

HAPs speciation for locomotives from 2017 NEI applied to VOC and PM2.5 emission rates, as appropriate.

Grade Crossing Analysis

Grade Crossing Analysis

OEA conducted an analysis of the emissions changes from vehicles idling at grade crossings on rail line segments that would meet or exceed the Board's thresholds for environmental analysis. OEA estimated average vehicle delay and vehicles delayed per day in the Grade Crossing Analysis in **Appendix C** for grade crossings that met the analysis thresholds. OEA combined and annualized these values to determine the total annual hours of delay at each grade crossing. OEA derived emission factors for a representative vehicle type mix using EPA's Motor Vehicle Emissions Simulator (MOVES4) model (EPA 2024b). OEA ran the MOVES4 model to establish a set of representative emission factors for the counties where grade crossing delays occur using model default inputs. The emission factors represent idling vehicles on a rural unrestricted road in a grams per hour format. OEA combined the resulting emission factors and delay data to create an emissions inventory for grade crossings. OEA grouped grade crossings by county to create a county-level emissions inventory. OEA calculated the difference between the Proposed Transactions and No-Action inventories to determine the Project-Related Emissions.

Tables D-18 and D-19 summarize the grade crossing analysis. **Tables D-20 through D-25** show the estimated emissions by crossing. **Table D-26** shows the on-road emissions factors.

Table D-18. Grade Crossing Analysis- Criteria Pollutant Summary

State	County	Attainment	FRA Crossing ID	Acquisition-Related Emissions (tons/year)						
				NOX	VOC	PM10	PM2.5	SO2	CO	CO2e
Mississippi	Lauderdale	Attainment	840837U	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			840839H	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alabama	Choctaw	Attainment	853240M	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alabama	Marengo	Attainment	350271V	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alabama	Dallas	Attainment	349100X	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			349105G	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			349106N	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			349107V	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			349110D	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			350294C	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			831386U	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			903936U	0.00	0.00	0.00	0.00	0.00	0.00	0.01
			727612H	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			727615D	0.00	0.00	0.00	0.00	0.00	0.00	0.01
			727614W	0.00	0.00	0.00	0.00	0.00	0.00	0.01
			Total	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Alabama	Montgomery	Attainment	831350L	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			831347D	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			831346W	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			831345P	0.00	0.00	0.00	0.00	0.00	0.00	0.01
			831344H	0.00	0.00	0.00	0.00	0.00	0.00	0.01
			Total	0.00	0.00	0.00	0.00	0.00	0.00	0.03

Table D-19. Grade Crossing Analysis- HAPS Summary

			Acquisition-Related HAP Emissions (tons/year)							
State	County	FRA Crossing ID	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
Mississippi	Lauderdale	840837U	3.40E-09	3.50E-10	3.85E-09	1.47E-10	1.66E-09	5.33E-09	2.31E-10	6.02E-12
		840839H	6.39E-10	6.58E-11	7.23E-10	2.77E-11	3.11E-10	1.00E-09	4.35E-11	1.13E-12
		Total	4.04E-09	4.16E-10	4.57E-09	1.75E-10	1.97E-09	6.33E-09	2.75E-10	7.15E-12
Alabama	Choctaw	853240M	-8.83E-09	-9.10E-10	-9.99E-09	-3.83E-10	-4.30E-09	-1.38E-08	-6.01E-10	-1.56E-11
		Total	-8.83E-09	-9.10E-10	-9.99E-09	-3.83E-10	-4.30E-09	-1.38E-08	-6.01E-10	-1.56E-11
Alabama	Marengo	350271V	7.57E-09	7.80E-10	8.57E-09	3.28E-10	3.69E-09	1.19E-08	5.15E-10	1.34E-11
		Total	7.57E-09	7.80E-10	8.57E-09	3.28E-10	3.69E-09	1.19E-08	5.15E-10	1.34E-11
Alabama	Dallas	349100X	5.33E-09	5.49E-10	6.03E-09	2.31E-10	2.59E-09	8.35E-09	3.62E-10	9.43E-12
		349105G	7.88E-09	8.12E-10	8.91E-09	3.42E-10	3.84E-09	1.23E-08	5.36E-10	1.39E-11
		349106N	7.76E-09	7.99E-10	8.77E-09	3.36E-10	3.78E-09	1.22E-08	5.27E-10	1.37E-11
		349107V	9.13E-09	9.40E-10	1.03E-08	3.96E-10	4.44E-09	1.43E-08	6.21E-10	1.61E-11
		349110D	5.67E-09	5.85E-10	6.42E-09	2.46E-10	2.76E-09	8.89E-09	3.86E-10	1.00E-11
		350294C	5.04E-09	5.19E-10	5.70E-09	2.18E-10	2.45E-09	7.89E-09	3.42E-10	8.91E-12
		831386U	5.78E-09	5.95E-10	6.54E-09	2.51E-10	2.81E-09	9.06E-09	3.93E-10	1.02E-11
		903936U	1.88E-08	1.93E-09	2.12E-08	8.13E-10	9.13E-09	2.94E-08	1.28E-09	3.32E-11
		727612H	1.03E-08	1.06E-09	1.17E-08	4.48E-10	5.03E-09	1.62E-08	7.03E-10	1.83E-11
		727615D	1.23E-08	1.27E-09	1.40E-08	5.35E-10	6.01E-09	1.94E-08	8.40E-10	2.18E-11
		727614W	1.45E-08	1.50E-09	1.65E-08	6.30E-10	7.08E-09	2.28E-08	9.89E-10	2.57E-11
		Total	1.03E-07	1.06E-08	1.16E-07	4.45E-09	4.99E-08	1.61E-07	6.97E-09	1.81E-10
Alabama	Montgomery	831350L	6.69E-09	6.90E-10	7.57E-09	2.90E-10	3.26E-09	1.05E-08	4.55E-10	1.18E-11
		831347D	9.25E-09	9.52E-10	1.05E-08	4.01E-10	4.50E-09	1.45E-08	6.29E-10	1.64E-11
		831346W	7.92E-09	8.16E-10	8.96E-09	3.43E-10	3.86E-09	1.24E-08	5.39E-10	1.40E-11
		831345P	2.33E-08	2.40E-09	2.63E-08	1.01E-09	1.13E-08	3.65E-08	1.58E-09	4.12E-11
		831344H	2.11E-08	2.17E-09	2.38E-08	9.14E-10	1.03E-08	3.30E-08	1.43E-09	3.73E-11
		Total	6.82E-08	7.03E-09	7.72E-08	2.96E-09	3.32E-08	1.07E-07	4.64E-09	1.21E-10

Table D-20. Grade Crossing Analysis - No-Action Criteria Pollutant Emissions by Crossing

FRA Crossing ID	County	State	Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		No Action Emissions (tons/year)									
			NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	NOX	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	CO2e
853240M	CHOCTAW	ALABAMA	0.0233	0.0067	17	13	2.4	0.5	4.6E-06	4.4E-07	6.4E-08	5.9E-08	2.4E-08	2.3E-05	0.01	5.0E-07	2.0E-07	0.01
349100X	DALLAS	ALABAMA	0.0067	0.0150	9	17	0.4	1.5	7.3E-07	7.2E-08	1.0E-08	9.4E-09	3.8E-09	3.6E-06	0.00	8.1E-08	3.3E-08	0.00
349105G	DALLAS	ALABAMA	0.0067	0.0150	14	24	0.6	2.2	1.1E-06	1.1E-07	1.5E-08	1.4E-08	5.6E-09	5.4E-06	0.00	1.2E-07	4.9E-08	0.00
349106N	DALLAS	ALABAMA	0.0083	0.0133	22	34	1.1	2.7	2.1E-06	2.1E-07	3.0E-08	2.7E-08	1.1E-08	1.1E-05	0.00	2.3E-07	9.5E-08	0.00
349107V	DALLAS	ALABAMA	0.0083	0.0133	26	40	1.3	3.2	2.5E-06	2.4E-07	3.5E-08	3.2E-08	1.3E-08	1.2E-05	0.00	2.8E-07	1.1E-07	0.00
349110D	DALLAS	ALABAMA	0.0083	0.0133	16	25	0.8	2.0	1.6E-06	1.5E-07	2.2E-08	2.0E-08	8.1E-09	7.7E-06	0.00	1.7E-07	6.9E-08	0.00
350294C	DALLAS	ALABAMA	0.0067	0.0133	12	19	0.5	1.6	9.7E-07	9.4E-08	1.4E-08	1.2E-08	5.0E-09	4.8E-06	0.00	1.1E-07	4.3E-08	0.00
831386U	DALLAS	ALABAMA	0.0067	0.0150	10	18	0.4	1.6	8.0E-07	7.8E-08	1.1E-08	1.0E-08	4.1E-09	4.0E-06	0.00	8.8E-08	3.6E-08	0.00
903936U	DALLAS	ALABAMA	0.0067	0.0167	29	51	1.2	5.1	2.3E-06	2.2E-07	3.2E-08	2.9E-08	1.2E-08	1.1E-05	0.00	2.5E-07	1.0E-07	0.00
727612H	DALLAS	ALABAMA	0.0067	0.0167	16	28	0.6	2.8	1.2E-06	1.2E-07	1.8E-08	1.6E-08	6.5E-09	6.2E-06	0.00	1.4E-07	5.6E-08	0.00
727615D	DALLAS	ALABAMA	0.0083	0.0150	29	45	1.5	4.1	2.8E-06	2.7E-07	4.0E-08	3.6E-08	1.5E-08	1.4E-05	0.00	3.1E-07	1.3E-07	0.00
727614W	DALLAS	ALABAMA	0.0083	0.0133	41	63	2.1	5.1	4.0E-06	3.9E-07	5.6E-08	5.1E-08	2.1E-08	2.0E-05	0.00	4.4E-07	1.8E-07	0.00
350271V	MARENGO	ALABAMA	0.0067	0.0133	19	29	0.8	2.4	1.5E-06	1.4E-07	2.1E-08	1.9E-08	7.6E-09	7.3E-06	0.00	1.6E-07	6.6E-08	0.00
840837U	LAUDERDALE	MISSISSIPPI	0.0100	0.0100	32	44	2.0	2.7	3.8E-06	3.7E-07	5.4E-08	4.9E-08	2.0E-08	1.9E-05	0.00	4.2E-07	1.7E-07	0.00
840839H	LAUDERDALE	MISSISSIPPI	0.0100	0.0083	16	22	1.0	1.1	1.9E-06	1.8E-07	2.7E-08	2.4E-08	9.9E-09	9.4E-06	0.00	2.1E-07	8.5E-08	0.00
831350L	MONTGOMERY	ALABAMA	0.0033	0.0117	11	23	0.2	1.6	4.1E-07	4.0E-08	5.8E-09	5.3E-09	2.1E-09	2.0E-06	0.00	4.5E-08	1.8E-08	0.00
831347D	MONTGOMERY	ALABAMA	0.0033	0.0117	14	32	0.3	2.2	5.6E-07	5.5E-08	7.9E-09	7.2E-09	2.9E-09	2.8E-06	0.00	6.2E-08	2.5E-08	0.00
831346W	MONTGOMERY	ALABAMA	0.0033	0.0117	12	27	0.3	1.9	4.8E-07	4.7E-08	6.8E-09	6.2E-09	2.5E-09	2.4E-06	0.00	5.3E-08	2.2E-08	0.00
831345P	MONTGOMERY	ALABAMA	0.0033	0.0117	36	80	0.7	5.6	1.4E-06	1.4E-07	2.0E-08	1.8E-08	7.4E-09	7.1E-06	0.00	1.6E-07	6.4E-08	0.00
831344H	MONTGOMERY	ALABAMA	0.0033	0.0117	33	72	0.7	5.1	1.3E-06	1.3E-07	1.8E-08	1.7E-08	6.7E-09	6.4E-06	0.00	1.4E-07	5.8E-08	0.00

Note: Vehicles Delayed and Average Delay provided from the transportation study

Table D-21. Grade Crossing Analysis - Proposed Transactions Criteria Pollutant Emissions by Crossing

FRA Crossing ID	County	State	Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		With Action Emissions (tons/year)									
			NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	NOX	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	CO2e
853240M	CHOCTAW	ALABAMA	0.0233	0.0067	17	13	2.4	0.5	9.8E-07	9.5E-08	1.4E-08	1.3E-08	5.1E-09	4.8E-06	0.00	1.1E-07	4.4E-08	0.00
349100X	DALLAS	ALABAMA	0.0067	0.0150	9	17	0.4	1.5	2.9E-06	2.8E-07	4.1E-08	3.7E-08	1.5E-08	1.4E-05	0.00	3.2E-07	1.3E-07	0.00
349105G	DALLAS	ALABAMA	0.0067	0.0150	14	24	0.6	2.2	4.3E-06	4.2E-07	6.1E-08	5.5E-08	2.2E-08	2.1E-05	0.00	4.7E-07	1.9E-07	0.00
349106N	DALLAS	ALABAMA	0.0083	0.0133	22	34	1.1	2.7	5.3E-06	5.1E-07	7.5E-08	6.8E-08	2.7E-08	2.6E-05	0.01	5.8E-07	2.4E-07	0.01
349107V	DALLAS	ALABAMA	0.0083	0.0133	26	40	1.3	3.2	6.2E-06	6.1E-07	8.8E-08	8.0E-08	3.2E-08	3.1E-05	0.01	6.8E-07	2.8E-07	0.01
349110D	DALLAS	ALABAMA	0.0083	0.0133	16	25	0.8	2.0	3.9E-06	3.8E-07	5.4E-08	5.0E-08	2.0E-08	1.9E-05	0.00	4.2E-07	1.7E-07	0.00
350294C	DALLAS	ALABAMA	0.0067	0.0133	12	19	0.5	1.6	3.0E-06	2.9E-07	4.3E-08	3.9E-08	1.6E-08	1.5E-05	0.00	3.3E-07	1.3E-07	0.00
831386U	DALLAS	ALABAMA	0.0067	0.0150	10	18	0.4	1.6	3.1E-06	3.1E-07	4.4E-08	4.0E-08	1.6E-08	1.6E-05	0.00	3.5E-07	1.4E-07	0.00
903936U	DALLAS	ALABAMA	0.0067	0.0167	29	51	1.2	5.1	9.9E-06	9.6E-07	1.4E-07	1.3E-07	5.1E-08	4.9E-05	0.01	1.1E-06	4.4E-07	0.01
727612H	DALLAS	ALABAMA	0.0067	0.0167	16	28	0.6	2.8	5.4E-06	5.3E-07	7.7E-08	7.0E-08	2.8E-08	2.7E-05	0.01	6.0E-07	2.4E-07	0.01
727615D	DALLAS	ALABAMA	0.0083	0.0150	29	45	1.5	4.1	7.8E-06	7.6E-07	1.1E-07	1.0E-07	4.1E-08	3.9E-05	0.01	8.6E-07	3.5E-07	0.01
727614W	DALLAS	ALABAMA	0.0083	0.0133	41	63	2.1	5.1	9.9E-06	9.6E-07	1.4E-07	1.3E-07	5.1E-08	4.9E-05	0.01	1.1E-06	4.4E-07	0.01
350271V	MARENGO	ALABAMA	0.0067	0.0133	19	29	0.8	2.4	4.5E-06	4.4E-07	6.4E-08	5.8E-08	2.4E-08	2.3E-05	0.01	5.0E-07	2.0E-07	0.01
840837U	LAUDERDALE	MISSISSIPPI	0.0100	0.0100	32	44	2.0	2.7	5.2E-06	5.0E-07	7.3E-08	6.7E-08	2.7E-08	2.6E-05	0.01	5.7E-07	2.3E-07	0.01
840839H	LAUDERDALE	MISSISSIPPI	0.0100	0.0083	16	22	1.0	1.1	2.2E-06	2.1E-07	3.0E-08	2.8E-08	1.1E-08	1.1E-05	0.00	2.4E-07	9.7E-08	0.00
831350L	MONTGOMERY	ALABAMA	0.0033	0.0117	11	23	0.2	1.6	3.1E-06	3.0E-07	4.4E-08	4.0E-08	1.6E-08	1.6E-05	0.00	3.4E-07	1.4E-07	0.00
831347D	MONTGOMERY	ALABAMA	0.0033	0.0117	14	32	0.3	2.2	4.3E-06	4.2E-07	6.1E-08	5.6E-08	2.2E-08	2.1E-05	0.00	4.7E-07	1.9E-07	0.00
831346W	MONTGOMERY	ALABAMA	0.0033	0.0117	12	27	0.3	1.9	3.7E-06	3.6E-07	5.2E-08	4.8E-08	1.9E-08	1.8E-05	0.00	4.1E-07	1.7E-07	0.00
831345P	MONTGOMERY	ALABAMA	0.0033	0.0117	36	80	0.7	5.6	1.1E-05	1.1E-06	1.5E-07	1.4E-07	5.7E-08	5.4E-05	0.01	1.2E-06	4.9E-07	0.01
831344H	MONTGOMERY	ALABAMA	0.0033	0.0117	33	72	0.7	5.1	9.8E-06	9.6E-07	1.4E-07	1.3E-07	5.1E-08	4.9E-05	0.01	1.1E-06	4.4E-07	0.01

Note: Vehicles Delayed and Average Delay provided from the transportation study

Table D-22. Grade Crossing Analysis - Transactions-Related Criteria Pollutant Emissions by Crossing

FRA Crossing ID	County	State	Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		Acquisition-Related Emissions (tons/year)						
			NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	NOX	VOC	PM10	PM2.5	SO2	CO	CO2e
853240M	CHOCTAW	ALABAMA	0.0233	0.0067	17	13	2.4	0.5	-3.6E-06	-3.5E-07	-5.1E-08	-4.6E-08	-1.9E-08	-1.8E-05	0.00
349100X	DALLAS	ALABAMA	0.0067	0.0150	9	17	0.4	1.5	2.2E-06	2.1E-07	3.1E-08	2.8E-08	1.1E-08	1.1E-05	0.00
349105G	DALLAS	ALABAMA	0.0067	0.0150	14	24	0.6	2.2	3.2E-06	3.1E-07	4.5E-08	4.1E-08	1.7E-08	1.6E-05	0.00
349106N	DALLAS	ALABAMA	0.0083	0.0133	22	34	1.1	2.7	3.1E-06	3.1E-07	4.4E-08	4.1E-08	1.6E-08	1.6E-05	0.00
349107V	DALLAS	ALABAMA	0.0083	0.0133	26	40	1.3	3.2	3.7E-06	3.6E-07	5.2E-08	4.8E-08	1.9E-08	1.8E-05	0.00
349110D	DALLAS	ALABAMA	0.0083	0.0133	16	25	0.8	2.0	2.3E-06	2.2E-07	3.3E-08	3.0E-08	1.2E-08	1.1E-05	0.00
350294C	DALLAS	ALABAMA	0.0067	0.0133	12	19	0.5	1.6	2.0E-06	2.0E-07	2.9E-08	2.6E-08	1.1E-08	1.0E-05	0.00
831386U	DALLAS	ALABAMA	0.0067	0.0150	10	18	0.4	1.6	2.3E-06	2.3E-07	3.3E-08	3.0E-08	1.2E-08	1.2E-05	0.00
903936U	DALLAS	ALABAMA	0.0067	0.0167	29	51	1.2	5.1	7.6E-06	7.4E-07	1.1E-07	9.8E-08	4.0E-08	3.8E-05	0.01
727612H	DALLAS	ALABAMA	0.0067	0.0167	16	28	0.6	2.8	4.2E-06	4.1E-07	5.9E-08	5.4E-08	2.2E-08	2.1E-05	0.00
727615D	DALLAS	ALABAMA	0.0083	0.0150	29	45	1.5	4.1	5.0E-06	4.9E-07	7.1E-08	6.5E-08	2.6E-08	2.5E-05	0.01
727614W	DALLAS	ALABAMA	0.0083	0.0133	41	63	2.1	5.1	5.9E-06	5.8E-07	8.3E-08	7.6E-08	3.1E-08	2.9E-05	0.01
350271V	MARENGO	ALABAMA	0.0067	0.0133	19	29	0.8	2.4	3.1E-06	3.0E-07	4.3E-08	4.0E-08	1.6E-08	1.5E-05	0.00
840837U	LAUDERDALE	MISSISSIPPI	0.0100	0.0100	32	44	2.0	2.7	1.4E-06	1.3E-07	2.0E-08	1.8E-08	7.2E-09	6.9E-06	0.00
840839H	LAUDERDALE	MISSISSIPPI	0.0100	0.0083	16	22	1.0	1.1	2.6E-07	2.5E-08	3.7E-09	3.3E-09	1.4E-09	1.3E-06	0.00
831350L	MONTGOMERY	ALABAMA	0.0033	0.0117	11	23	0.2	1.6	2.7E-06	2.6E-07	3.8E-08	3.5E-08	1.4E-08	1.4E-05	0.00
831347D	MONTGOMERY	ALABAMA	0.0033	0.0117	14	32	0.3	2.2	3.8E-06	3.7E-07	5.3E-08	4.8E-08	2.0E-08	1.9E-05	0.00
831346W	MONTGOMERY	ALABAMA	0.0033	0.0117	12	27	0.3	1.9	3.2E-06	3.1E-07	4.5E-08	4.1E-08	1.7E-08	1.6E-05	0.00
831345P	MONTGOMERY	ALABAMA	0.0033	0.0117	36	80	0.7	5.6	9.4E-06	9.2E-07	1.3E-07	1.2E-07	4.9E-08	4.7E-05	0.01
831344H	MONTGOMERY	ALABAMA	0.0033	0.0117	33	72	0.7	5.1	8.6E-06	8.3E-07	1.2E-07	1.1E-07	4.5E-08	4.3E-05	0.01

Note: Vehicles Delayed and Average Delay provided from the transportation study

Table D-23. Grade Crossing Analysis - No-Action HAPs Emissions by Crossing

FRA Crossing ID	County	State	Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		No Action Emissions (tons/year)							
			NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
853240M	CHOCTAW	ALABAMA	0.0233	0.0067	17	13	2.4	0.5	1.1E-08	1.2E-09	1.3E-08	4.9E-10	5.5E-09	1.8E-08	7.6E-10	2.0E-11
349100X	DALLAS	ALABAMA	0.0067	0.0150	9	17	0.4	1.5	1.8E-09	1.9E-10	2.0E-09	7.8E-11	8.8E-10	2.8E-09	1.2E-10	3.2E-12
349105G	DALLAS	ALABAMA	0.0067	0.0150	14	24	0.6	2.2	2.7E-09	2.8E-10	3.0E-09	1.2E-10	1.3E-09	4.2E-09	1.8E-10	4.7E-12
349106N	DALLAS	ALABAMA	0.0083	0.0133	22	34	1.1	2.7	5.2E-09	5.4E-10	5.9E-09	2.3E-10	2.6E-09	8.2E-09	3.6E-10	9.3E-12
349107V	DALLAS	ALABAMA	0.0083	0.0133	26	40	1.3	3.2	6.2E-09	6.4E-10	7.0E-09	2.7E-10	3.0E-09	9.7E-09	4.2E-10	1.1E-11
349110D	DALLAS	ALABAMA	0.0083	0.0133	16	25	0.8	2.0	3.8E-09	3.9E-10	4.3E-09	1.7E-10	1.9E-09	6.0E-09	2.6E-10	6.8E-12
350294C	DALLAS	ALABAMA	0.0067	0.0133	12	19	0.5	1.6	2.4E-09	2.5E-10	2.7E-09	1.0E-10	1.2E-09	3.7E-09	1.6E-10	4.2E-12
831386U	DALLAS	ALABAMA	0.0067	0.0150	10	18	0.4	1.6	2.0E-09	2.0E-10	2.2E-09	8.5E-11	9.5E-10	3.1E-09	1.3E-10	3.5E-12
903936U	DALLAS	ALABAMA	0.0067	0.0167	29	51	1.2	5.1	5.6E-09	5.7E-10	6.3E-09	2.4E-10	2.7E-09	8.7E-09	3.8E-10	9.8E-12
727612H	DALLAS	ALABAMA	0.0067	0.0167	16	28	0.6	2.8	3.1E-09	3.2E-10	3.5E-09	1.3E-10	1.5E-09	4.8E-09	2.1E-10	5.4E-12
727615D	DALLAS	ALABAMA	0.0083	0.0150	29	45	1.5	4.1	6.9E-09	7.1E-10	7.8E-09	3.0E-10	3.4E-09	1.1E-08	4.7E-10	1.2E-11
727614W	DALLAS	ALABAMA	0.0083	0.0133	41	63	2.1	5.1	9.8E-09	1.0E-09	1.1E-08	4.3E-10	4.8E-09	1.5E-08	6.7E-10	1.7E-11
350271V	MARENGO	ALABAMA	0.0067	0.0133	19	29	0.8	2.4	3.6E-09	3.7E-10	4.1E-09	1.6E-10	1.8E-09	5.7E-09	2.5E-10	6.4E-12
840837U	LAUDERDALE	MISSISSIPPI	0.0100	0.0100	32	44	2.0	2.7	9.3E-09	9.6E-10	1.1E-08	4.0E-10	4.5E-09	1.5E-08	6.4E-10	1.7E-11
840839H	LAUDERDALE	MISSISSIPPI	0.0100	0.0083	16	22	1.0	1.1	4.7E-09	4.8E-10	5.3E-09	2.0E-10	2.3E-09	7.3E-09	3.2E-10	8.3E-12
831350L	MONTGOMERY	ALABAMA	0.0033	0.0117	11	23	0.2	1.6	1.0E-09	1.0E-10	1.1E-09	4.4E-11	4.9E-10	1.6E-09	6.9E-11	1.8E-12
831347D	MONTGOMERY	ALABAMA	0.0033	0.0117	14	32	0.3	2.2	1.4E-09	1.4E-10	1.6E-09	6.0E-11	6.7E-10	2.2E-09	9.4E-11	2.4E-12
831346W	MONTGOMERY	ALABAMA	0.0033	0.0117	12	27	0.3	1.9	1.2E-09	1.2E-10	1.3E-09	5.2E-11	5.8E-10	1.9E-09	8.1E-11	2.1E-12
831345P	MONTGOMERY	ALABAMA	0.0033	0.0117	36	80	0.7	5.6	3.5E-09	3.6E-10	4.0E-09	1.5E-10	1.7E-09	5.5E-09	2.4E-10	6.2E-12
831344H	MONTGOMERY	ALABAMA	0.0033	0.0117	33	72	0.7	5.1	3.2E-09	3.3E-10	3.6E-09	1.4E-10	1.5E-09	5.0E-09	2.2E-10	5.6E-12

Note: Vehicles Delayed and Average Delay provided from the transportation study

Table D-24. Grade Crossing Analysis - Proposed Transactions HAPs Emissions by Crossing

FRA Crossing ID	County	State	Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		With Action Emissions (tons/year)							
			NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
853240M	CHOCTAW	ALABAMA	0.0233	0.0067	17	13	2.4	0.5	2.4E-09	2.5E-10	2.7E-09	1.0E-10	1.2E-09	3.8E-09	1.6E-10	4.2E-12
349100X	DALLAS	ALABAMA	0.0067	0.0150	9	17	0.4	1.5	7.1E-09	7.4E-10	8.1E-09	3.1E-10	3.5E-09	1.1E-08	4.9E-10	1.3E-11
349105G	DALLAS	ALABAMA	0.0067	0.0150	14	24	0.6	2.2	1.1E-08	1.1E-09	1.2E-08	4.6E-10	5.1E-09	1.7E-08	7.2E-10	1.9E-11
349106N	DALLAS	ALABAMA	0.0083	0.0133	22	34	1.1	2.7	1.3E-08	1.3E-09	1.5E-08	5.6E-10	6.3E-09	2.0E-08	8.8E-10	2.3E-11
349107V	DALLAS	ALABAMA	0.0083	0.0133	26	40	1.3	3.2	1.5E-08	1.6E-09	1.7E-08	6.6E-10	7.4E-09	2.4E-08	1.0E-09	2.7E-11
349110D	DALLAS	ALABAMA	0.0083	0.0133	16	25	0.8	2.0	9.5E-09	9.8E-10	1.1E-08	4.1E-10	4.6E-09	1.5E-08	6.5E-10	1.7E-11
350294C	DALLAS	ALABAMA	0.0067	0.0133	12	19	0.5	1.6	7.4E-09	7.6E-10	8.4E-09	3.2E-10	3.6E-09	1.2E-08	5.0E-10	1.3E-11
831386U	DALLAS	ALABAMA	0.0067	0.0150	10	18	0.4	1.6	7.7E-09	8.0E-10	8.8E-09	3.4E-10	3.8E-09	1.2E-08	5.3E-10	1.4E-11
903936U	DALLAS	ALABAMA	0.0067	0.0167	29	51	1.2	5.1	2.4E-08	2.5E-09	2.7E-08	1.1E-09	1.2E-08	3.8E-08	1.7E-09	4.3E-11
727612H	DALLAS	ALABAMA	0.0067	0.0167	16	28	0.6	2.8	1.3E-08	1.4E-09	1.5E-08	5.8E-10	6.5E-09	2.1E-08	9.1E-10	2.4E-11
727615D	DALLAS	ALABAMA	0.0083	0.0150	29	45	1.5	4.1	1.9E-08	2.0E-09	2.2E-08	8.3E-10	9.4E-09	3.0E-08	1.3E-09	3.4E-11
727614W	DALLAS	ALABAMA	0.0083	0.0133	41	63	2.1	5.1	2.4E-08	2.5E-09	2.8E-08	1.1E-09	1.2E-08	3.8E-08	1.7E-09	4.3E-11
350271V	MARENGO	ALABAMA	0.0067	0.0133	19	29	0.8	2.4	1.1E-08	1.2E-09	1.3E-08	4.8E-10	5.4E-09	1.8E-08	7.6E-10	2.0E-11
840837U	LAUDERDALE	MISSISSIPPI	0.0100	0.0100	32	44	2.0	2.7	1.3E-08	1.3E-09	1.4E-08	5.5E-10	6.2E-09	2.0E-08	8.7E-10	2.3E-11
840839H	LAUDERDALE	MISSISSIPPI	0.0100	0.0083	16	22	1.0	1.1	5.3E-09	5.5E-10	6.0E-09	2.3E-10	2.6E-09	8.3E-09	3.6E-10	9.4E-12
831350L	MONTGOMERY	ALABAMA	0.0033	0.0117	11	23	0.2	1.6	7.7E-09	7.9E-10	8.7E-09	3.3E-10	3.8E-09	1.2E-08	5.2E-10	1.4E-11
831347D	MONTGOMERY	ALABAMA	0.0033	0.0117	14	32	0.3	2.2	1.1E-08	1.1E-09	1.2E-08	4.6E-10	5.2E-09	1.7E-08	7.2E-10	1.9E-11
831346W	MONTGOMERY	ALABAMA	0.0033	0.0117	12	27	0.3	1.9	9.1E-09	9.4E-10	1.0E-08	4.0E-10	4.4E-09	1.4E-08	6.2E-10	1.6E-11
831345P	MONTGOMERY	ALABAMA	0.0033	0.0117	36	80	0.7	5.6	2.7E-08	2.8E-09	3.0E-08	1.2E-09	1.3E-08	4.2E-08	1.8E-09	4.7E-11
831344H	MONTGOMERY	ALABAMA	0.0033	0.0117	33	72	0.7	5.1	2.4E-08	2.5E-09	2.7E-08	1.1E-09	1.2E-08	3.8E-08	1.6E-09	4.3E-11

Note: Vehicles Delayed and Average Delay provided from the transportation study

Table D-25. Grade Crossing Analysis - Transactions-Related HAPs Emissions by Crossing

FRA Crossing ID	County	State	Average Vehicle Delay		Daily Vehicles Delayed		Total Annual Delay		Acquisition-Related Emissions (tons/year)							
			NA min	WA min	NA VPD	WA VPD	NA Hrs	WA Hrs	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
853240M	CHOCTAW	ALABAMA	0.0233	0.0067	17	13	2.4	0.5	-8.8E-09	-9.1E-10	-1.0E-08	-3.8E-10	-4.3E-09	-1.4E-08	-6.0E-10	-1.6E-11
349100X	DALLAS	ALABAMA	0.0067	0.0150	9	17	0.4	1.5	5.3E-09	5.5E-10	6.0E-09	2.3E-10	2.6E-09	8.4E-09	3.6E-10	9.4E-12
349105G	DALLAS	ALABAMA	0.0067	0.0150	14	24	0.6	2.2	7.9E-09	8.1E-10	8.9E-09	3.4E-10	3.8E-09	1.2E-08	5.4E-10	1.4E-11
349106N	DALLAS	ALABAMA	0.0083	0.0133	22	34	1.1	2.7	7.8E-09	8.0E-10	8.8E-09	3.4E-10	3.8E-09	1.2E-08	5.3E-10	1.4E-11
349107V	DALLAS	ALABAMA	0.0083	0.0133	26	40	1.3	3.2	9.1E-09	9.4E-10	1.0E-08	4.0E-10	4.4E-09	1.4E-08	6.2E-10	1.6E-11
349110D	DALLAS	ALABAMA	0.0083	0.0133	16	25	0.8	2.0	5.7E-09	5.8E-10	6.4E-09	2.5E-10	2.8E-09	8.9E-09	3.9E-10	1.0E-11
350294C	DALLAS	ALABAMA	0.0067	0.0133	12	19	0.5	1.6	5.0E-09	5.2E-10	5.7E-09	2.2E-10	2.5E-09	7.9E-09	3.4E-10	8.9E-12
831386U	DALLAS	ALABAMA	0.0067	0.0150	10	18	0.4	1.6	5.8E-09	6.0E-10	6.5E-09	2.5E-10	2.8E-09	9.1E-09	3.9E-10	1.0E-11
903936U	DALLAS	ALABAMA	0.0067	0.0167	29	51	1.2	5.1	1.9E-08	1.9E-09	2.1E-08	8.1E-10	9.1E-09	2.9E-08	1.3E-09	3.3E-11
727612H	DALLAS	ALABAMA	0.0067	0.0167	16	28	0.6	2.8	1.0E-08	1.1E-09	1.2E-08	4.5E-10	5.0E-09	1.6E-08	7.0E-10	1.8E-11
727615D	DALLAS	ALABAMA	0.0083	0.0150	29	45	1.5	4.1	1.2E-08	1.3E-09	1.4E-08	5.4E-10	6.0E-09	1.9E-08	8.4E-10	2.2E-11
727614W	DALLAS	ALABAMA	0.0083	0.0133	41	63	2.1	5.1	1.5E-08	1.5E-09	1.6E-08	6.3E-10	7.1E-09	2.3E-08	9.9E-10	2.6E-11
350271V	MARENGO	ALABAMA	0.0067	0.0133	19	29	0.8	2.4	7.6E-09	7.8E-10	8.6E-09	3.3E-10	3.7E-09	1.2E-08	5.1E-10	1.3E-11
840837U	LAUDERDALE	MISSISSIPPI	0.0100	0.0100	32	44	2.0	2.7	3.4E-09	3.5E-10	3.8E-09	1.5E-10	1.7E-09	5.3E-09	2.3E-10	6.0E-12
840839H	LAUDERDALE	MISSISSIPPI	0.0100	0.0083	16	22	1.0	1.1	6.4E-10	6.6E-11	7.2E-10	2.8E-11	3.1E-10	1.0E-09	4.3E-11	1.1E-12
831350L	MONTGOMERY	ALABAMA	0.0033	0.0117	11	23	0.2	1.6	6.7E-09	6.9E-10	7.6E-09	2.9E-10	3.3E-09	1.0E-08	4.6E-10	1.2E-11
831347D	MONTGOMERY	ALABAMA	0.0033	0.0117	14	32	0.3	2.2	9.2E-09	9.5E-10	1.0E-08	4.0E-10	4.5E-09	1.4E-08	6.3E-10	1.6E-11
831346W	MONTGOMERY	ALABAMA	0.0033	0.0117	12	27	0.3	1.9	7.9E-09	8.2E-10	9.0E-09	3.4E-10	3.9E-09	1.2E-08	5.4E-10	1.4E-11
831345P	MONTGOMERY	ALABAMA	0.0033	0.0117	36	80	0.7	5.6	2.3E-08	2.4E-09	2.6E-08	1.0E-09	1.1E-08	3.6E-08	1.6E-09	4.1E-11
831344H	MONTGOMERY	ALABAMA	0.0033	0.0117	33	72	0.7	5.1	2.1E-08	2.2E-09	2.4E-08	9.1E-10	1.0E-08	3.3E-08	1.4E-09	3.7E-11

Note: Vehicles Delayed and Average Delay provided from the transportation study

Table D-26. Grade Crossing Analysis – On-road Vehicle Emission Factors**Roadway Idling Emission Factors (g/hr)**

	NOX	VOC	PM10	PM2.5	SO2	CO	CO2	CH4	N2O	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Ethyl Benzene	Formaldehyde	Napthalene	POM
2029	1.75	0.17	0.02	0.02	0.01	8.67	1939.9	0.19	0.08	4.3E-03	4.4E-04	4.9E-03	1.9E-04	2.1E-03	6.7E-03	2.9E-04	7.6E-06

Source: MOVES 4

Notes:

County-Level Default Scale with Default Inputs Except Average Speed Distribution set to SpeedBin 1

Represents an average of emission factors for all 24 hours and 12 months for weekday

All 2 States and 4 Counties with an analyzed grade crossing included

All Vehicle and Fuel types included

Rural Unrestricted Access Roadways included

[TIGERweb \(census.gov\)](https://tigerweb.census.gov/) for rural and urban classifications

Appendix E: Noise and Vibration

Appendix E

Noise and Vibration

E.1 Introduction

This appendix describes the methods that OEA used to estimate and analyze the potential effects of noise and vibration from operation of the Proposed Transactions.

E.2 Wayside Noise Models

Wayside noise refers to all noise generated by rail cars and locomotives (but not including horn noise). OEA used noise measurements from past noise studies (Surface Transportation Board 1998a, 1998b) as the basis for the wayside noise level projections for the existing rail line.

The basic equation used for the wayside noise model is as follows.

$$SEL_{cars} = Leq_{ref} + 10\log(T_{passby}) + 30\log(S/S_{ref})$$

For locomotives, which can be modeled as moving monopole point sources, the corresponding equation is as follows.

$$SEL_{locos} = SEL_{ref} + 10\log(N_{locos}) - 10\log(S/S_{ref})$$

The total train sound exposure level is computed by logarithmically adding SEL_{locos} and SEL_{cars} .

$$DNL100' = SEL + 10\log(N_d + 10N_n) - 49.4$$

$$DNL = DNL100' + 15\log(100/D)$$

The $10\log(x)$ term in the previous equations can be used to determine the increase (or decrease) in train noise level associated with changes in traffic volumes assuming that the other factors affecting noise (speed, train consist and length, time of day, and number of locomotives) are equivalent. The change in noise level associated with two different traffic volumes would be as follows.

$$\Delta \text{ (dB)} = 10\log(N_2/N_1) \text{ where } N_1 \text{ and } N_2 \text{ are two different traffic volumes (trains/day)}$$

For example, if rail traffic doubled, the increase in noise level would be $10\log(2) = 3 \text{ dB}$.

The following parameters apply to the equations above.

$$SEL_{cars} = \text{Sound exposure level of railcars (A-weighted decibels [dBA])}$$

$$Leq_{ref} = \text{Level equivalent of railcar}$$

T_{passby} = Train passby time, in seconds

S = Train speed, in miles per hour

S_{ref} = Reference train speed

SEL_{locos} = Sound exposure level of locomotive

SEL_{ref} = Reference sound exposure level of locomotive

DNL = Day-night average noise level

N_{locos} = Number of locomotives

N_d = Number of trains during daytime

N_n = Number of trains during nighttime

D = Distance from tracks, in feet

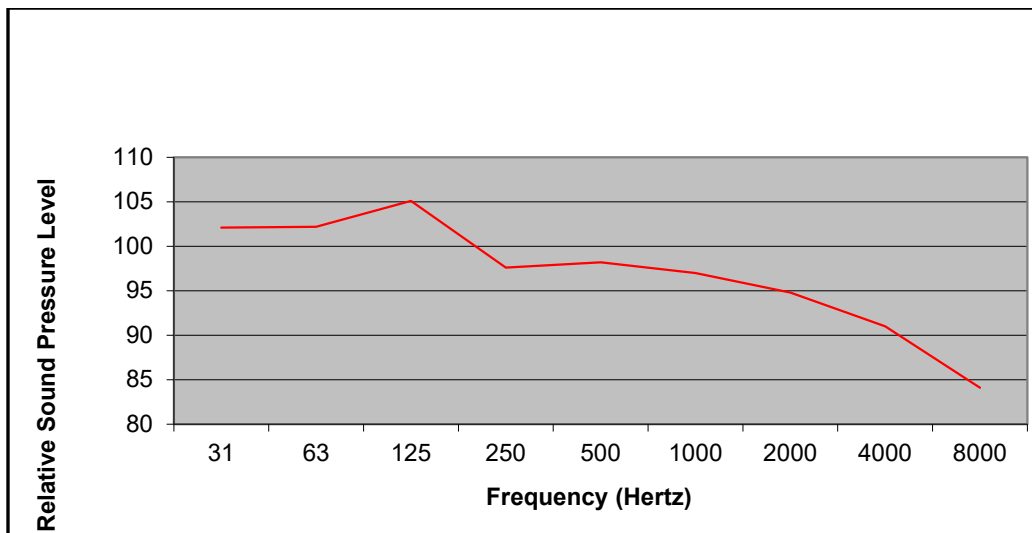
Table E-1 shows the reference wayside noise levels used in this study and **Figure E-1** shows the wayside noise frequency spectrum used in the calculations.

Table E-1. Reference Wayside Noise Levels

Description	Average Level (dBA)
Locomotive SEL (40 miles per hour at 100 feet)	95
Railcar Leq	82

Source: Surface Transportation Board 1998a, 1998b
dBA = A-weighted decibels; SEL = sound exposure level; Leq = level equivalent

Figure E-1. Wayside Noise Spectrum



Surface Transportation Board 2002

E.3 Horn Noise Models

Freight train horn noise levels can vary for a variety of reasons, including the manner in which an engineer sounds the horn. Consequently, it is important to determine horn noise reference levels based on a large sample size. A substantial amount of horn noise data is available from the Draft Environmental Impact Statement, Proposed Rule for the Use of Locomotive Horns at Highway-Rail Grade Crossings (Federal Railroad Administration 1999), hereafter referred to as the 1999 Federal Railroad Administration (FRA) Draft Environmental Impact Statement (EIS).

The FRA data indicates that horn noise levels increase from the point at which the horn is sounded at 0.25-miles from the grade crossing to when it stops sounding at the grade crossing. In the first 0.125-mile segment, the energy average sound exposure level measured at a distance of 100-feet from the tracks was found to be 107 dBA, and in the second 0.125-mile segment, found to be 110 dBA. The 1999 FRA Draft EIS simplified the horn noise contour shape as a 5-sided polygon, when it is actually a teardrop shape.¹ OEA used the more accurate teardrop contour shape for this analysis. The attenuation or drop-off rate of horn noise is assumed to be 4.5 dBA per doubling of distance away from the tracks (Federal Railroad Administration 1999).

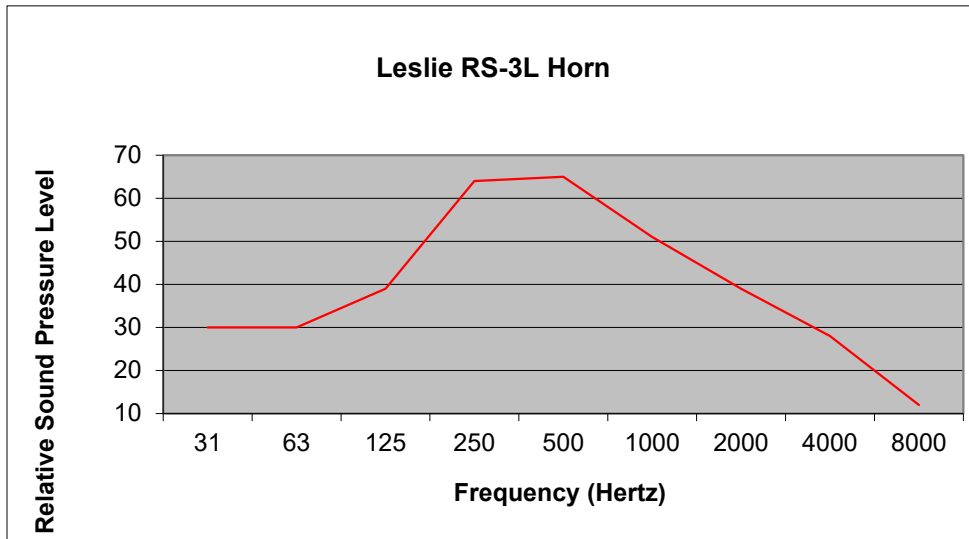
Table E-2 lists the reference horn noise levels used in this study, and **Figure E-2** shows the horn noise spectrum used in the calculations.

Table E-2. Reference Horn Noise Levels

Description	Average Level (dBA)
Horn SEL 1st 0.25 mile	110
Horn SEL 2nd 0.25 mile	107
Source: Federal Railroad Administration 1999	
dBA = A-weighted decibels; SEL = sound exposure level	

¹ The Final Environmental Impact Statement, Construction and Operation of a Rail Line from the Bayport Loop in Harris County, Texas (Surface Transportation Board 2003) discusses this subject in detail.

Figure E-2. *Horn Noise Spectrum*



Surface Transportation Board 2002

E.4 Rail Line Operation Vibration Analysis Methods

OEA based the vibration assessment methods on Federal Transit Administration (FTA) methods (FTA 2006). Vibration level due to train passbys is approximately proportional to:

$$V = 20 \times \log (\text{speed}/\text{speed}_{\text{ref}})$$

Where:

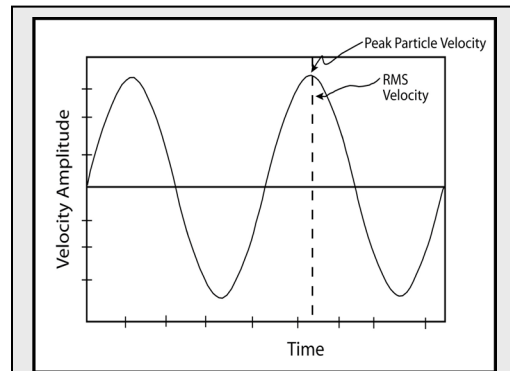
V = The ground-borne vibration velocity

Speed = The train speed

speed_{ref} = The reference speed of the train relative to its corresponding vibration level

Published FTA ground-borne vibration levels are adjusted for train speed by this equation and distance from the rail line to estimate vibration levels at receptor locations.

There are two ground-vibration impacts of general concern: annoyance to humans and damage to buildings. In special cases, activities that are highly sensitive to vibration, such as microelectronics fabrication facilities, are evaluated separately. Two measurements correspond to human annoyance and building damage for evaluating ground vibration: peak particle velocity (PPV) and root-mean square (RMS) velocity. PPV is the maximum instantaneous positive or negative peak of the vibration signal, measured as a distance per time (such as millimeters or inches per second). This measurement has been used historically to evaluate shock-wave type vibrations from actions like blasting, pile driving, and mining activities, and their relationship to building damage. RMS velocity is an average, or smoothed, vibration amplitude, commonly measured over 1-second intervals. It is expressed on a log scale in decibels (VdB) referenced to 0.000001×10^{-6} inches per second and is not to be confused with noise decibels. It is more suitable for addressing human annoyance and characterizing background vibration conditions because it better represents the response time of humans to ground vibration signals.



Peak particle velocity (PPV) is an instantaneous positive or negative peak of a vibration signal, measured as a distance per time.

Root-mean-square (RMS) velocity (VdB) is a measure of ground vibration in decibels used to compare vibration from various sources.

E.5 Noise Modeling Results

As described in *Section 3.4 Noise and Vibration*, 33 receptors could be adversely impacted, 12 severely and 21 moderately, by freight train operations if both Proposed Transactions are approved. Of those 33, 23 receptors are located on the Western Line, seven of which are severe, and 10 receptors are located on the Eastern Line, five of which are severe.

Attachment 1 to this appendix shows these receptors, noise contours, and associated FTA classifications (severe and moderate) for each receptor.²

² Receptor counts in **Attachment 1** skip numbers 12, 16, and 23, which are houses of worship removed from the noise analysis upon application of FTA Classifications because they are daytime-only uses.

E.6 Mitigation Feasibility Analysis

OEA analyzed the feasibility of noise mitigation for receptors that OEA estimates would be severely impacted by noise. OEA used this analysis to develop the recommended noise mitigation described in *Chapter 4, Mitigation*. This mitigation analysis considers noise barriers, quiet zones, and building sound insulation.

E.6.1 Potential Noise Barriers

Wayside noise mitigation options include noise barriers. Noise barriers can reduce both outdoor, and in turn, indoor sound levels. The noise reduction design goal for noise barriers is typically 10 dBA. However, freight railroad noise can be challenging to mitigate because of low frequency diesel engine noise and the high elevation of the exhaust stack noise source. Locomotive horn noise can be challenging as well because the horn is mounted on top of the locomotive. The performance of a noise barrier is based in part on how much the line-of-sight is broken between the source and receptor, which is not ideal when the noise source is high in elevation. In this case, all adversely impacted receptors are affected by horn noise and not primarily by wayside noise. Consequently, noise barriers are not a feasible form of mitigation in this case because they would impede the line-of-sight and create a gap at cross street grade crossings.

E.6.2 Potential Quiet Zones

FRA's Train Horn Rule (49 C.F.R. § 222) requires the train engineer to sound the warning horn when a train is approaching and passing through a public highway-rail at-grade crossing. Many communities have successfully reduced horn noise by implementing the FRA quiet zone program. FRA's final Train Horn Rule (49 C.F.R. § Part 222, 2005) presents the requirements of a quiet zone and supplementary safety measures (SSMs) to mitigate the risks of not sounding train horns. Examples of SSMs include medians or channelization devices, one-way streets with gates, four quadrant gate systems, median barriers, and temporary or permanent crossing closures.

FRA has a specific process to be followed to request a quiet zone. The local government jurisdiction in which the at grade crossing is located must apply to FRA and request the quiet zone. Other agency(ies) and/operator(s) could work with the local government that submits the application. The process involves a detailed series of steps that must be followed and coordinated with FRA, such as a diagnostic team review, submission of required documentation, and notice to interested parties. The cost and delay of implementing quiet zones would make quiet zone mitigation unworkable in this case. Therefore, OEA is not recommending quiet zones as mitigation for noise impacts resulting from operation of the Proposed Transactions.

E.6.3 Potential Building Sound Insulation

Building sound insulation can be used to mitigate both wayside and horn noise. Building sound insulation usually consists of upgraded acoustical windows and doors. These building sound insulation treatments can improve indoor noise levels, typically by 5 to 10

dba. Low frequency engine noise is more difficult to reduce with building sound insulation treatments. Noise levels outside the structure are not affected.

Building sound insulation treatments vary in cost often in direct proportion to the number of windows and doors of a particular structure. Costs include the acoustical replacement windows and doors, engineering design, and pre- and post-construction noise level reduction acoustical testing. A conservative cost estimate for building sound insulation is \$65,000 per residence.³

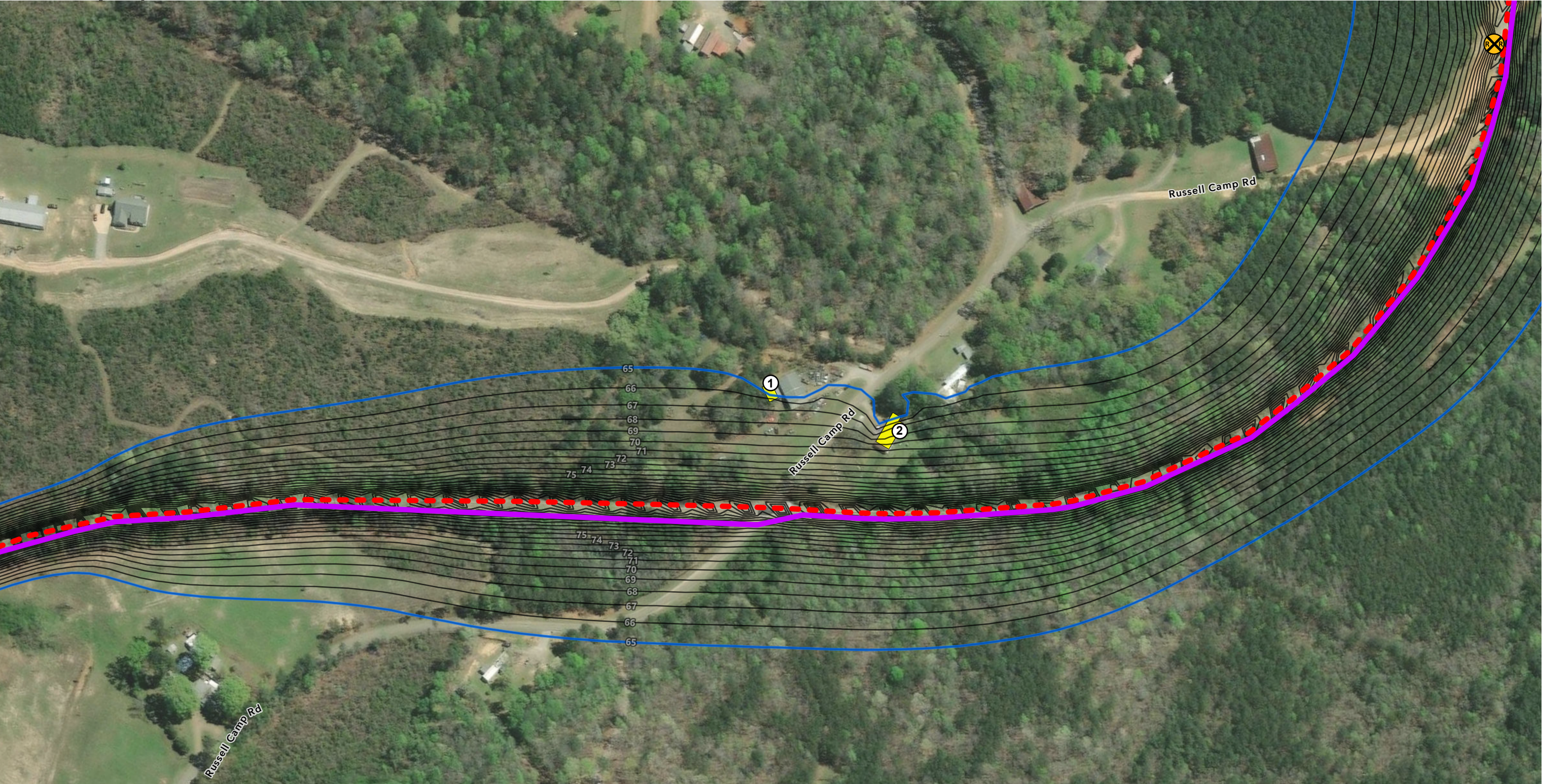
The ASTM E966-10 acoustical test method employs a test loudspeaker method to determine the Noise Level Reduction (NLR) of building façade/window elements. This data is used to determine various sound insulation treatments needed to achieve desired acoustical goals and improved NLR. Acoustical tests are performed prior to and after treatments are installed. The building interior noise level design goal after treatments are installed is DNL 45. Detailed information on building sound insulation methods and criteria are available from the Federal Aviation Administration.⁴

³ FAA, 2014

⁴ Guidelines for Sound Insulation of Structures Exposed to Aircraft Noise, FAA, 2022

Appendix E – Attachment 1: Potentially Impacted Receptor Locations

Potentially Impacted Receptor Locations



LEGEND

- Eastern Line (CSXT)
- Western Line (CPKC)
- MNBR (Meridian & Bigbee Railroad)
- Segment End Points
- Grade Crossings Location
- Receptor - Moderate Impacts
- Receptor - Severe Impacts
- 65 DNL Proposed Action
- 1 dB Contour Intervals

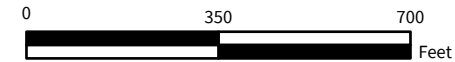


Potentially Impacted Receptor Locations

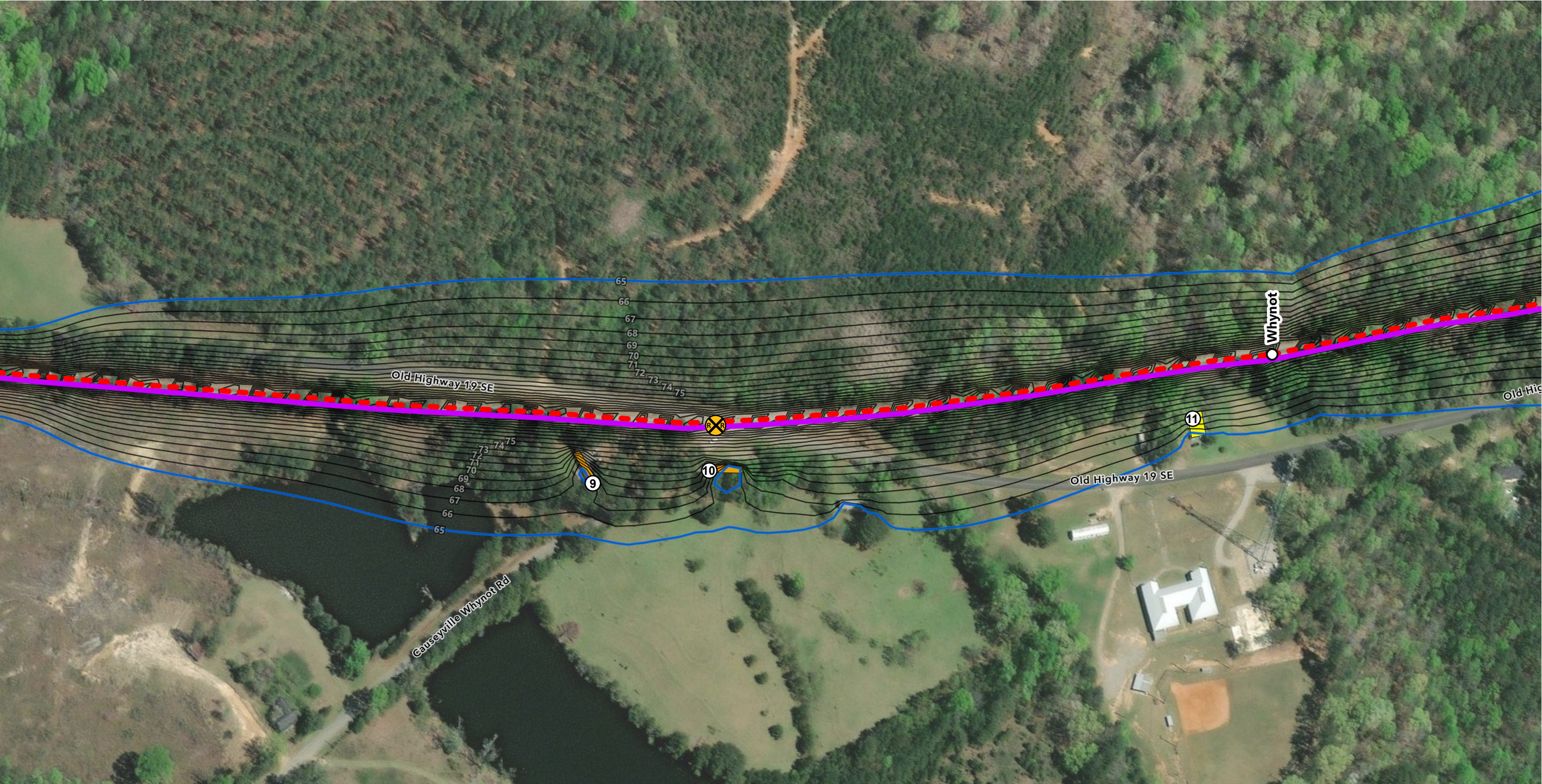


LEGEND

- Eastern Line (CSXT)
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Potentially Impacted Receptor Locations

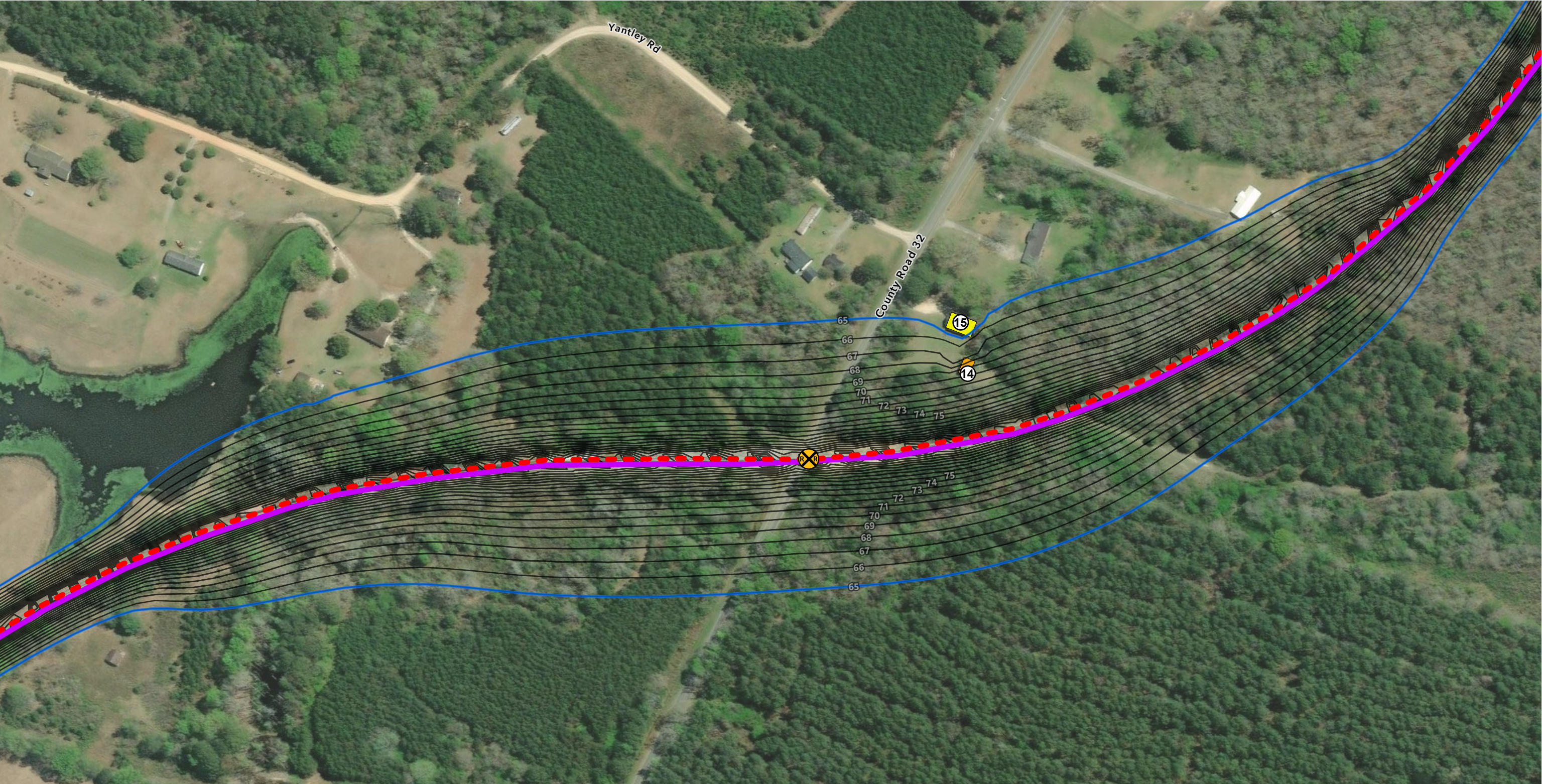


LEGEND

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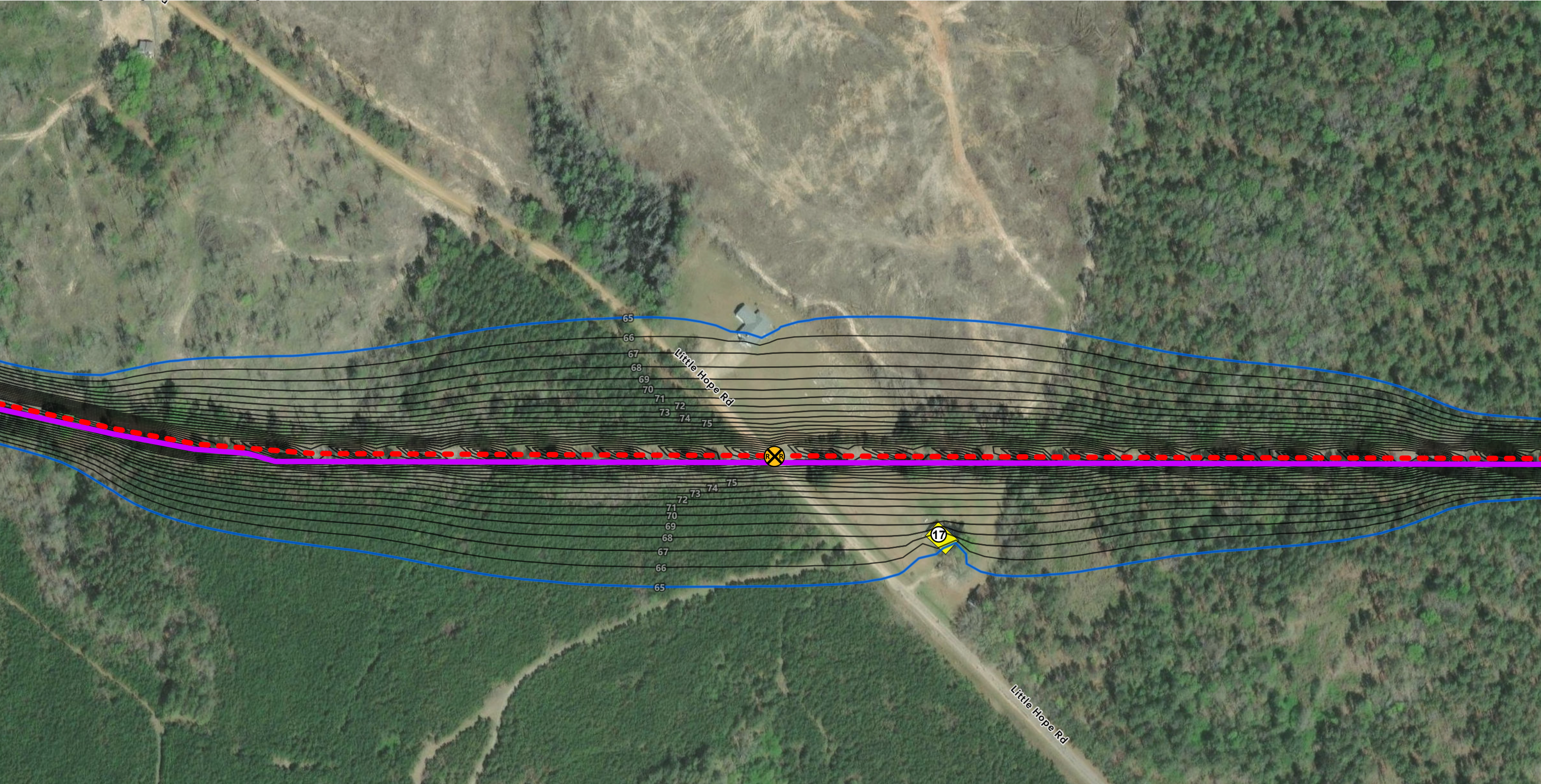


LEGEND

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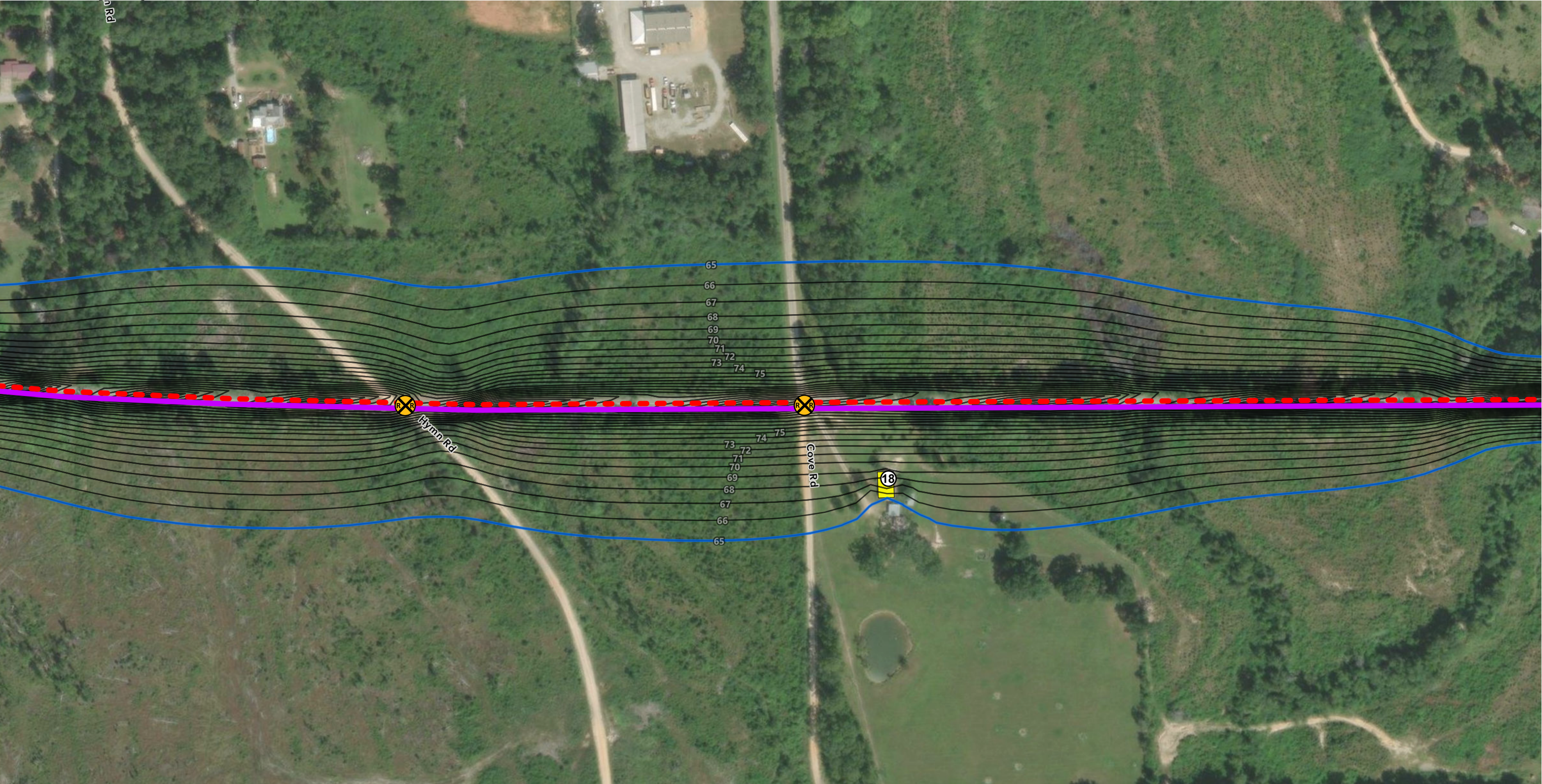


LEGEND

- | | |
|--|---|
|  Eastern Line (CSXT) |  Receptor - Moderate Impacts |
|  Western Line (CPKC) |  Receptor - Severe Impacts |
|  MNBR (Meridian & Bigbee Railroad) |  65 DNL Proposed Action |
|  Segment End Points |  1 dB Contour Intervals |
|  Grade Crossings Location | |

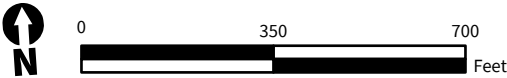


Potentially Impacted Receptor Locations

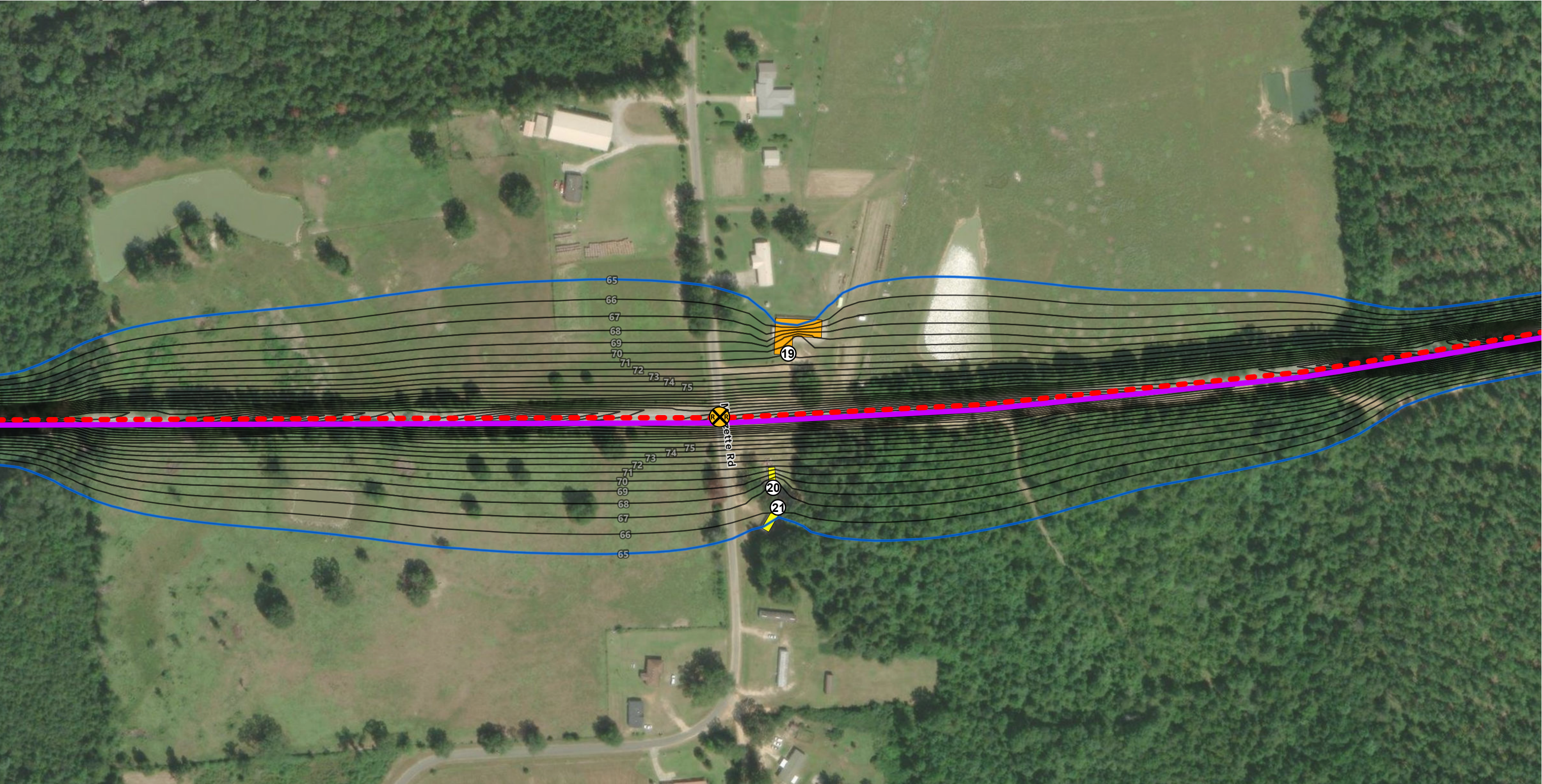


LEGEND

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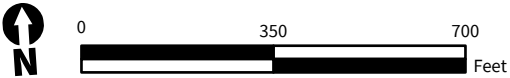


Potentially Impacted Receptor Locations



LEGEND

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Appendix F: Environmental Justice

Appendix F

Environmental Justice

This appendix provides a summary of the data OEA collected to evaluate the potential for the Proposed Transactions to result in disproportionately adverse human health or environmental effects on potential Environmental Justice (EJ) populations.¹

F.1 Demographic Analysis

Table F-1 lists the census block groups that met the thresholds established for identifying potential minority populations. As described in *Section 3.5.1, Approach*, OEA assumed minority populations exist in the study area when either:

- At least 50 percent of the people in the block group self-identify as being of minority status; or
- The percentage of the population of minority status in the block group is at least 10 percentage points higher than for the entire county in which the population is located.

OEA identified a total of 4 block groups as areas with potential minority populations. This represented 40 percent of the study area data set, which included 10 total block groups. In all 4 of the block groups that OEA identified as potential minority populations, at least 50 percent of the people in the block group self-identified as “Black or African American alone” on the U.S. Census. No block groups in the study area were identified as potential “American Indian and Alaska Native alone,” “Asian alone,” “Native Hawaiian and Other Pacific Islander alone,” or “Some Other Race alone” minority populations, nor were any block groups identified as potential “Hispanic or Latino” populations.

¹ OEA uses the term “potential EJ populations” when referring to U.S. Census block groups that met the OEA’s thresholds for identifying an EJ population per the approach described later in *Section 3.5.1*. “Potential” conveys that, as described in the U.S. Census Bureau’s American Community Survey (ACS) handbook (U.S. Census Bureau 2020), ACS data products are estimates produced from a survey of a sample population rather than the full population, are subject to sampling and nonsampling errors, and that population data in the block group may have changed since the samples were taken. Furthermore, as described later in *Section 3.5.1*, the EJ study area includes all block groups that intersect any portion of the area subject to adverse noise impacts from the Proposed Transactions, regardless of the size of the area of impact in proportion to the total area of the block group. Census block groups are the smallest geographical units for which the Census Bureau publishes data on racial and ethnic identification and income level. Thus, the Census data collected for the EJ study area analysis is based on the population within the defined geographic boundary of the block group, which extends beyond the noise impact area. As discussed in the EPA’s guidance (EPA 2016), EJ populations may reside in tightly clustered communities, or be evenly or unevenly distributed throughout the population of a given block group.

Table F-2 lists the block groups that met the thresholds established for identifying potential low-income populations. As described in *Section 3.5.1, Approach*, OEA defined low-income to mean individuals with an income less than 200 percent of the federal poverty level (less than or equal to twice the federal poverty level). Consistent with the EPA’s guidance and OEA’s practice in past railroad acquisition proceedings, OEA identified a block group as potentially containing low-income populations when one or both of the following conditions was met:

- At least 50 percent of the population for whom poverty status is determined in the block group qualifies as low-income; or
- The percentage of the population for whom poverty status is determined in the block group that qualifies as low-income is at least 10 percentage points higher than for the entire county in which the population is located.

OEA identified a total of 3 block groups as areas with potential low-income populations, which represents approximately 17 percent of the total block groups in the data set.

Although it was not a threshold applied to identify potential EJ populations, OEA also collected and reviewed census data to identify potential populations in the study area with limited English proficiency. Identifying these potential populations enables OEA to facilitate meaningful engagement and informed participation, and to determine where it may be appropriate for OEA to provide interpretation and translation services.

As described in *Section 3.5.1, Approach*, OEA identified a block group as limited-English speaking if one or both of the following conditions were met:

- At least 50 percent of households in the block group were limited English speaking; or
- The percentage of limited English-speaking households in the block group was at least 10 percentage points higher than for the entire county in which the block group is located in.

As described in *Section 3.5.2, Affected Environment*, no block groups potentially needing English-language assistance were identified in the study area per these thresholds.

*Bold and italicized font in **Table F-1** and **Table F-2** is used for emphasis in displaying which EJ thresholds are exceeded.*

Table F-1. Census Block Groups in Study Area with Potential Minority Populations

2022: ACS Five-Year Estimates Data Profiles (2018-2022)		Percent Black or African American alone	Percent American Indian and Alaska Native alone	Percent Asian alone	Percent Native Hawaiian and Other Pacific Islander alone	Percent Some Other Race alone	Percent Minority (Non-White alone)	Percent Hispanic or Latino
Alabama		26.4%	0.4%	1.4%	0.0%	1.9%	30.1%	4.6%
Choctaw County		40.0%	0.2%	0.1%	0.0%	0.7%	41.0%	1.1%
Block Group 1, Tract 9567		80.3%	0.0%	0.0%	0.0%	0.0%	80.3%	3.7%
Block Group 3, Tract 9567		82.1%	0.0%	0.0%	0.0%	1.6%	83.8%	1.6%
Block Group 4, Tract 9567		62.9%	0.0%	0.0%	0.0%	0.0%	62.9%	0.0%
Lowndes County		74.9%	0.0%	0.0%	0.0%	0.0%	74.9%	0.2%
Block Group 1, Tract 7810		19.9%	0.0%	0.0%	0.0%	0.0%	19.9%	0.0%
Total Number of Block Groups in Alabama Data Set with Potential Minority Populations:	3	3	0	0	0	0	3	0
Mississippi		37.2%	0.4%	1.0%	0.0%	1.4%	40.1%	3.3%
Lauderdale County		43.5%	0.1%	0.7%	0.0%	0.9%	45.2%	2.2%
Block Group 1, Tract 105.01		10.1%	3.3%	0.0%	0.0%	0.0%	13.4%	0.0%
Block Group 1, Tract 105.02		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Block Group 1, Tract 106.01		29.4%	0.0%	4.7%	0.0%	9.8%	43.9%	9.8%
Block Group 3, Tract 106.01		10.4%	0.0%	0.0%	0.0%	0.0%	10.4%	0.5%
Block Group 2, Tract 106.02		24.1%	0.0%	0.0%	0.0%	0.0%	24.1%	0.0%
Block Group 1, Tract 107		71.6%	0.0%	0.0%	0.0%	0.0%	71.6%	0.0%
Total Number of Block Groups in Mississippi Data Set with Potential Minority Populations:	1	1	0	0	0	0	1	0
GRAND TOTAL NUMBER OF BLOCK GROUPS IN DATA SET	4	4	0	0	0	0	4	0

Table F-1. Census Block Groups in Study Area with Potential Minority Populations

2022: ACS Five-Year Estimates Data Profiles (2018-2022)		Percent Black or African American alone	Percent American Indian and Alaska Native alone	Percent Asian alone	Percent Native Hawaiian and Other Pacific Islander alone	Percent Some Other Race alone	Percent Minority (Non-White alone)	Percent Hispanic or Latino
WITH POTENTIAL MINORITY POPULATIONS:								

Source: U.S. Census Bureau, American Community Survey, Five-Year Estimates Data Profiles (2018-2022).

Table F-2. Census Block Groups in Study Area with Potential Low-Income Populations

2022: ACS Five-Year Estimates Data Profiles (2018-2022)	Individuals with Income Below 200% of Poverty Level	Total Population for Whom Poverty Status is Determined	Percent of Individuals with Income Below 200% of Poverty Level
Alabama	1,701,823	4,890,427	34.8%
Choctaw County	4,869	12,475	39.0%
Block Group 1, Tract 9567	440	895	49.2%
Block Group 3, Tract 9567	57	364	15.7%
Block Group 4, Tract 9567	625	1,175	53.2%
Lowndes County	5,385	9,997	53.9%
Block Group 1, Tract 7810	135	553	24.4%
Total Number of Census Block Groups in Alabama Data Set with Potential Low-Income Populations:			2
Mississippi	1,162,260	2,858,819	40.7%
Lauderdale County	31,981	69,590	46.0%
Block Group 1, Tract 105.01	207	815	25.4%
Block Group 1, Tract 105.02	48	258	18.6%
Block Group 1, Tract 106.01	92	490	18.8%
Block Group 3, Tract 106.01	724	2,098	34.5%
Block Group 2, Tract 106.02	221	1,053	21.0%
Block Group 1, Tract 107	351	426	82.4%
Total Number of Census Block Groups in Mississippi Data Set with Potential Low-Income Populations:			1
GRAND TOTAL NUMBER OF CENSUS BLOCK GROUPS IN DATA SET WITH POTENTIAL LOW-INCOME POPULATIONS:			3

Source: U.S. Census Bureau, American Community Survey, Five-Year Estimates Data Profiles (2018-2022).

F.2 Community Analysis

OEA also examined the distribution of receptors that would experience adverse noise impacts as a result of the Proposed Transactions at the community scale.² OEA identified two incorporated areas within the EJ study area (the Towns of Pennington and White Hall, Alabama) and then determined the percentage of adversely affected receptors in each of those two communities that were located within EJ block groups. **Table F-3** provides a table showing the two communities with receptors subject to adverse noise impacts under the Proposed Transactions and the distribution of adversely affected receptors within each community in EJ and non-EJ block groups. As shown in **Table F-3**, the four adversely affected receptors in the Town of Pennington are in EJ block groups while the six adversely affected receptors in the Town of White Hall are in non-EJ block groups. Therefore, most receptors at the community scale (60 percent) are in non-EJ block groups.

Table F-3. Communities in the Study Area with Receptors Subject to Adverse Noise Impacts (65 dBA Ldn and 3 dBA Increase) under the Proposed Transactions

Community	TOTAL	Within EJ Block Groups	Outside EJ Block Groups	Percent Within EJ Block Groups
ALABAMA	22	12	10	55%
<i>Unincorporated</i>	<i>12</i>	<i>8</i>	<i>4</i>	<i>67%</i>
Pennington	4	4	0	100%
White Hall	6	0	6	0%
MISSISSIPPI	11	0	11	0%
<i>Unincorporated</i>	<i>11</i>	<i>0</i>	<i>11</i>	<i>0%</i>

² Incorporated areas were the unit of analysis in this community-based analysis; unincorporated areas were not included.

Appendix G: Cumulative Actions

Appendix G

Cumulative Actions

G.1. List of Cumulative Actions

G.1.1 Alabama Power Company Transmission Line Relocation

The US Army Corps of Engineers Mobile District published a Public Notice (May 17, 2023) for discharge of fill material in wetlands for Alabama Power Company's proposed rebuild of 12 miles of an existing transmission lines (in same right-of-way (ROW)) that generally runs along State Route 22 in Dallas County. The existing 46 kilovolt (kV) line would be removed, and a 115 kV line would be rebuilt and moved approximately 40 feet east of the ROW centerline. The transmission line ROW crosses the existing rail line between Orrville and Beloit.

G.1.2 Alabama Department of Transportation Projects

The Alabama Department of Transportation (ALDOT) has funded several transportation infrastructure projects through two programs: Rebuild Alabama (RBA) and Alabama Transportation Rehabilitation and Improvement Program-II (ATRIP-II). ALDOT also has a Statewide Transportation Improvement Plan (STIP), which is a long-range transportation plan to evaluate transportation assets and to plan for future needs.

US-80 and AL-41 (Main St.)

This project is located at the intersection of AL-41 and US-80 just south of the City of Selma. The project consists of realigning and widening AL-41, adding a turn lane on US-80 westbound, and adding an acceleration lane on the US-80 eastbound. The intersection is approximately 220 feet south the existing rail line.

Roadway Rehabilitation in the City of Selma

This project is located in the City of Selma on Selma Avenue, Alabama Avenue, and Water Avenue, and includes pothole repair, roadway leveling, and restriping. These three roads run parallel to each other and are approximately 670 feet east of the existing railroad's crossing of Water Avenue.

Road Widening and Resurfacing in the City of Selma

This project is located in the City of Selma, where a total of approximately 2.4 miles of roads will be widened and resurfaced, including portions of Voeglin Avenue, St. Ann Street,

Minter Avenue, Keller Avenue, and Franklin Street. The project encompasses a neighborhood area with the closest point about 200 feet north of the existing rail line.

Resurfacing Local Roads in Orville

This project is located in Orville and consists of resurfacing Academy Street (0.50 mile) from CR-33 to its intersection with Church Street; resurfacing Mill Street (0.48 mile) from Route One Street to just north of AL-22; and resurfacing Church Street (0.40 mile) from Route One Street to the intersection of AL-22. The closest area of work to the rail line is about 1,100 feet to the south.

Resurfacing Local Linden Roads

This project is located in Linden and consists of resurfacing 1.8 miles of roads, including Moore Avenue, Miller Avenue, Oakley Avenue, Brandon Avenue, Easey Avenue, Shiloh Street, Old Myrtlewood Road, and Caroline Street, the closest of which is about 290 feet north of the existing rail line.

Resurfacing CR-45 in Choctaw County

This project is located in Choctaw County and it consists of approximately 3.9 miles of resurfacing CR-45 between SR-10 and CR-32. The existing rail line crosses CR-45 where this work would occur.

Resurfacing CR-1 in Choctaw County

This project is located in Choctaw County and consists of resurfacing and rehabilitating traffic striping and markings on CR-1 from CR-32 to the Sumter County line. The existing rail line crosses CR-1 where this work would occur.

Resurfacing Craig Air Field Streets in Dallas County

The project is located in Dallas County and consists of milling, resurfacing, and adding traffic striping along approximately 1.23 miles of roads near the Craig Air Field, including Lackland Drive, Keesler Drive, Circle Drive, and Avenue C. Most of this project would occur within a quarter mile and to the west of the existing rail line.

Adding Traffic Stripe to Old Montgomery Rd (CR-56) in Dallas County

This project is located in Dallas County and consists of adding traffic striping to approximately 1.6 miles of Old Montgomery Road. The existing rail line crosses Old Montgomery Road at the north end of this segment, then peels progressively further away from Old Montgomery Road as it continues south.

Railroad Crossing Improvement in the City of Selma

This project is located in the City of Selma on the other existing rail line (Norfolk Southern) that parallels the existing rail line under the Proposed Transactions, and consists of two

mast-mounted signals, two gates, signs, markings, legends, the installation of 80 feet of delineators along the centerline of the railroad crossings and reconstructing the sidewalk on the eastern side on Lapsley Street. The existing rail line is 130 feet away from this project.

G.1.3 Selma Riverwalk and Historic Riverfront Masterplan

The City of Selma has developed a Historic Riverfront Park Masterplan along the Alabama River. The park perimeter falls within a quarter mile of the existing rail line on the north and east side. Within the masterplan area, there is a proposed boardwalk, which is part of a Federal Highway Administration project. The boardwalk is described to be located along the Alabama River on an elevated bank, running parallel to Water Avenue.

G.1.4 Selma Stormwater System Improvements (2023-2025)

These improvements are located throughout the City of Selma and include several improvements and repairs to parts of the city's existing sanitary sewer infrastructure that is deteriorated. Several of the sewer replacement segments are adjacent to or with a quarter mile of the existing rail line.

G.1.5 Selma Housing Development

The City of Selma has applied for a U.S. Department of Housing and Urban Development (HUD) Pathways to Removing Obstacles to Housing grant to build 152 new homes in the 2023 tornado disaster area to increase housing inventory. If the grant is awarded, work is anticipated to occur between 2025 – 2029. The existing rail line is located in the middle of the area where these funds would be used.

G.1.6 Alabama Department of Economic and Community Affairs (ADECA)

ADECA awarded the City of Selma a \$500,000 State Community Development Block Grant for housing rehabilitation and dilapidated structure demolition in the neighborhood bounded by Voeglin Avenue, Marie Foster Street, Philpot Avenue, and Washington Street. The southern edge of this area is approximately 200 feet north of the existing rail line.

In addition, numerous broadband projects are occurring or will occur throughout Alabama, including areas of the existing rail line. Based on the available information it is difficult to determine exactly where broadband infrastructure would be placed in relation to the existing rail line, but several of the mapped service areas for these broadband projects overlap with the existing rail line.¹

¹ Note that GIS data showing these service areas was not available and could not be reasonably recreated because of the high number of service areas shown on the ADECA mapper.

G.1.7 Mississippi Department of Transportation Proposed Projects (2024-2028)

The Mississippi Department of Transportation has a Schedule of Proposed Projects which are currently scheduled for implementation during the period of October 1, 2023 to September 30, 2026. There are two which overlap with the existing rail line.

Signing and Striping Replacement on SR-19

Project #108811/305100 is funded by a Surface Transportation Block Grant, STBG-9999-05(422), to replace signing and striping along SR-19 in Lauderdale County. The existing rail line crosses underneath the highway.

Highway and Bridge Construction on I-59

Project #108158/302000 is an Intelligent Transportation Systems construction project, centered on the junction of I-59 and I-20. The precise location and construction details are not posted yet, as this project is slated for 2025. The existing rail line passes underneath I-59 in Meridian.