

Table of Contents

Dear Reader Letter

Guide to the Draft Environmental Impact Statement

Executive Summary

Frequently Asked Questions

Table of Contents

List of Figures

List of Tables

List of Appendices

Acronyms

Glossary

Chapter 1 Purpose of and Need for the Proposed Action

1.1	Introduction	1-1
1.2	Background	1-3
	1.2.1 The Rail System in the Chicago Metropolitan Area.....	1-3
	1.2.2 The Applicants	1-5
	1.2.3 Elgin, Joliet and Eastern Railway Company	1-6
1.3	Purpose and Need.....	1-8
1.4	Project Context.....	1-9
	1.4.1 Communities and Land Use near the CN Rail Lines.....	1-9
	1.4.2 Communities and Land Use near the EJ&E Rail System.....	1-9
1.5	Overview of the Environmental Review Process.....	1-10
	1.5.1 Lead Agency	1-11
	1.5.2 Key Resource Agencies.....	1-11
	1.5.3 Other Agencies and Groups	1-12
1.6	Scoping and Public Involvement.....	1-13
	1.6.1 Scoping Process.....	1-13
	1.6.2 Scope of Study for the Draft EIS.....	1-14
1.7	Draft EIS Organization.....	1-14
1.8	Request for Comments on the Draft EIS.....	1-16
	1.8.1 Instructions for Submitting Comments	1-16
	1.8.2 Public Meetings.....	1-16

Chapter 2 Proposed Action and Alternatives

2.1	Existing Rail Systems.....	2-1
	2.1.1 Chicago Regional Rail System.....	2-1
	2.1.2 CN Rail System	2-3
	2.1.3 EJ&E Rail System	2-9
	2.1.4 Passenger and Commuter Rail System.....	2-12
2.2	Proposed Action	2-15
	2.2.1 Proposed Changes in Rail Line Operations.....	2-16
	2.2.2 Proposed New Construction	2-28

	2.2.3 Proposed Changes in Yard Operations.....	2-36
	2.2.4 Other Related Actions	2-39
2.3	Alternatives to the Proposed Action.....	2-40
	2.3.1 No-Action Alternative	2-41
	2.3.2 Approval with Conditions Alternative	2-41
2.4	Rail Connection Alternatives	2-42
	2.4.1 Munger, Illinois	2-42
	2.4.2 Joliet, Illinois	2-51
	2.4.3 Matteson, Illinois.....	2-54
	2.4.4 Griffith, Indiana.....	2-59
	2.4.5 Ivanhoe, Indiana	2-62
	2.4.6 Kirk Yard, Gary, Indiana.....	2-62
2.5	Alternatives Eliminated from Detailed Study	2-65
	2.5.1 Expanded Trackage Rights.....	2-65
	2.5.2 CREATE Program.....	2-65
	2.5.3 Acquisition of a Different Rail Line.....	2-68
	2.5.4 Construction of a Bypass.....	2-69
2.6	Comments Requesting Mitigating Conditions	2-69
2.7	Comparison of Environmental Impacts of the Proposed Action and Alternatives	2-69
Chapter 3	Affected Environment	
3.1	Current Rail Operations.....	3.1-3
	3.1.1 Regional Rail Systems.....	3.1-3
	3.1.2 Current Freight Rail Operations	3.1-4
	3.1.3 Commuter and Intercity Passenger Rail Operations.....	3.1-23
3.2	Safety.....	3.2-1
	3.2.1 Freight Rail Safety.....	3.2-1
	3.2.2 Passenger Rail Safety	3.2-4
	3.2.3 Hazardous Materials Transportation Safety	3.2-5
	3.2.4 Vehicle Crossing Safety	3.2-16
	3.2.5 Pedestrian/Bicycle Crossing Safety.....	3.2-21
3.3	Transportation Systems	3.3-1
	3.3.1 Regional and Local Highway Systems.....	3.3-1
	3.3.2 Emergency Response	3.3-57
	3.3.3 Navigation	3.3-92
	3.3.4 Airports.....	3.3-94
3.4	Hazardous Waste Sites	3.4-1
	3.4.1 Background	3.4-1
	3.4.2 Existing Conditions	3.4-1
3.5	Land Use	3.5-1
	3.5.1 Existing Land Use	3.5-1
	3.5.2 Planned Development and Development Trends	3.5-18
	3.5.3 Future Land Use and Zoning.....	3.5-21
	3.5.4 Prime Farmland	3.5-23
	3.5.5 Public Lands.....	3.5-24
3.6	Socioeconomics.....	3.6-1
	3.6.1 Population.....	3.6-1

3.6.2	Economics and Employment.....	3.6-6
3.6.3	Tax Base	3.6-11
3.6.4	Local Businesses	3.6-12
3.6.5	Housing	3.6-13
3.6.6	Communities and Community Cohesion.....	3.6-14
3.6.7	Community Facilities and Public Services.....	3.6-16
3.7	Environmental Justice	3.7-1
3.7.1	Introduction	3.7-1
3.7.2	Public Outreach	3.7-1
3.7.3	Minority and Low-Income Populations.....	3.7-1
3.8	Energy	3.8-1
3.9	Air Quality and Climate	3.9-1
3.9.1	Existing Air Quality Conditions.....	3.9-3
3.9.2	Existing Climate Conditions	3.9-10
3.10	Noise and Vibration.....	3.10-1
3.10.1	Human Perception Levels	3.10-1
3.10.2	Existing Conditions	3.10-3
3.10.3	Quiet Zones	3.10-9
3.10.4	Vibration.....	3.10-9
3.11	Biological Resources.....	3.11-1
3.11.1	Background	3.11-1
3.11.2	Overview of Chicago Wilderness.....	3.11-5
3.11.3	Plant Communities	3.11-5
3.11.4	Railroad Vegetation Management.....	3.11-8
3.11.5	Wildlife Resources	3.11-8
3.11.6	Conservation and Natural Areas within the Illinois Study Area	3.11-11
3.11.7	Conservation and Natural Areas within the Indiana Study Area.....	3.11-19
3.11.8	Threatened, Endangered, and Sensitive Species	3.11-25
3.12	Water Resources.....	3.12-1
3.12.1	Background	3.12-1
3.12.2	Groundwater	3.12-3
3.12.3	Floodplains and Streams	3.12-11
3.12.4	Surface Water Quality.....	3.12-28
3.12.5	Wetlands.....	3.12-30
3.13	Cultural Resources	3.13-1
3.13.1	Review Process.....	3.13-1
3.13.2	Historical Context.....	3.13-2
3.13.3	Historic Districts and Properties Identified	3.13-2
Chapter 4	Environmental Consequences	
4.1	Rail Operations.....	4.1-3
4.1.1	Methodology	4.1-3
4.1.2	No-Action Alternative	4.1-6
4.1.3	Proposed Action	4.1-7
4.1.4	Analysis of Maximum Train Volumes under Proposed Action	4.1-16
4.1.5	Analysis of the EJ&E Rail Line's Ability to Accommodate Applicants' Proposed Train Volumes	4.1-20
4.1.6	Summary Evaluation of the Applicants' Proposed Operating Plan ...	4.1-38
4.1.6	Summary Evaluation of the Applicants' Proposed Operating Plan ...	4.1-39

4.1.7	Effects of Proposed Action on Commuter Capacity and Passenger Rail Service	4.1-39
4.1.8	Effects on Intercity Passenger Rail Service.....	4.1-49
4.2	Rail Safety	4.2-1
4.2.1	Freight Rail Safety.....	4.2-2
4.2.2	Vehicle Safety	4.2-13
4.2.3	Passenger Rail Safety	4.2-20
4.2.4	Quiet Zones	4.2-20
4.2.5	Hazardous Materials Transportation Safety	4.2-28
4.2.6	Pedestrian/Bicycle Safety	4.2-38
4.2.7	Conclusion.....	4.2-44
4.3	Transportation	4.3-1
4.3.1	Regional and Local Highway Systems.....	4.3-3
4.3.2	Effects on Intermodal Facilities	4.3-50
4.3.3	Effects on Emergency Response	4.3-51
4.3.4	Effects on Navigation.....	4.3-88
4.3.5	Airports.....	4.3-90
4.4	Hazardous Waste Sites	4.4-1
4.4.1	Methodology	4.4-1
4.4.2	No Action Alternative	4.4-1
4.4.3	Proposed Action	4.4-1
4.4.4	Conclusion.....	4.4-4
4.5	Land Use	4.5-1
4.5.1	Methodology	4.5-1
4.5.2	No-Action Alternative	4.5-2
4.5.3	Proposed Action	4.5-2
4.5.4	Conclusions	4.5-25
4.6	Socioeconomics.....	4.6-1
4.6.1	Methodology	4.6-3
4.6.2	No-Action Alternative	4.6-4
4.6.3	Proposed Action	4.6-4
4.6.4	Conclusions	4.6-23
4.7	Environmental Justice	4.7-1
4.7.1	Methodology	4.7-1
4.7.2	No Action Alternative	4.7-2
4.7.3	Proposed Action	4.7-3
4.7.4	Other Environmental Justice Issues.....	4.7-5
4.7.5	Public Outreach	4.7-5
4.7.6	Conclusion.....	4.7-5
4.8	Energy	4.8-1
4.8.1	Transportation of Energy Resources	4.8-1
4.8.2	Transportation of Recyclable Commodities	4.8-1
4.8.3	Energy Use and Energy Efficiency	4.8-1
4.8.4	Change in Energy Use Caused by Truck-to-Rail Diversions	4.8-5
4.8.5	Net Change in Energy Use	4.8-6
4.8.6	Conclusions	4.8-7
4.9	Air Quality and Climate	4.9-1
4.9.1	Air Quality Methodology	4.9-2
4.9.2	No-Action Alternative	4.9-6
4.9.3	Proposed Action	4.9-7

4.9.4 Climate	4.9-30
4.10 Noise and Vibration.....	4.10-1
4.10.1 Noise.....	4.10-1
4.10.2 Vibration.....	4.10-15
4.10.3 Conclusions	4.10-29
4.11 Biological Resources.....	4.11-1
4.11.1 Methodology	4.11-2
4.11.2 No-Action Alternative.....	4.11-2
4.11.3 Proposed Action	4.11-2
4.12 Water Resources.....	4.12-1
4.12.1 Methodology	4.12-2
4.12.2 No-Action Alternative.....	4.12-5
4.12.3 Proposed Action	4.12-5
4.13 Cultural Resources	4.13-1
4.13.1 Methodology	4.13-1
4.13.2 No-Action Alternative.....	4.13-1
4.13.3 Proposed Action	4.13-2
4.13.4 Conclusion.....	4.13-3

Chapter 5 Indirect and Cumulative Effects

5.1 Introduction	5.1-1
5.2 Indirect and Cumulative Effects Methodology	5.2-2
5.2.1 Methodology	5.2-3
5.2.2 Scope of Indirect Effects and Cumulative Effects Analysis.....	5.2-4
5.3 Potential Indirect Effects of the Proposed Action	5.3-5
5.3.1 General Indirect Effects.....	5.3-5
5.3.2 Increased Rail Yard Activities	5.3-6
5.3.3 Conclusions	5.3-7
5.4 Related Projects.....	5.4-7
5.4.1 Related Projects Carried Forward for Site-Specific Cumulative Effects Analysis	5.4-7
5.4.2 Related Projects Carried Forward for System-Wide Cumulative Effects Analysis.....	5.4-10
5.4.3 Projects Not Carried Forward for Cumulative Effects Analysis	5.4-12
5.5 Site-Specific Cumulative Effects Analysis of Related Projects	5.5-14
5.5.1 Metra Expansion: The STAR Line.....	5.5-15
5.5.2 Proposed Metra STAR Line Commuter Stations	5.5-16
5.5.3 Highway Construction Projects.....	5.5-19
5.5.4 Pratt's Wayne Woods Forest Preserve and Mining and Reclamation Project.....	5.5-20
5.5.5 Airport Runway Extension	5.5-22
5.5.6 Conclusions	5.5-23
5.6 System-Wide Cumulative Effects Analysis	5.6-24
5.6.1 Energy (Fuel) Use	5.6-24
5.6.2 Air Quality and Climate	5.6-25
5.6.3 Conclusions	5.6-26

Chapter 6 Mitigation

6.1	Overview of SEA's Approach.....	6-1
6.1.1	Limits of Conditioning Power.....	6-1
6.1.2	Voluntary Mitigation and Negotiated Agreements	6-2
6.1.3	Preliminary Nature of Environmental Mitigation	6-2
6.2	Applicants' Voluntary Mitigation Measures	6-3
6.2.1	Safety.....	6-3
6.2.2	Hazardous Materials Transportation	6-4
6.2.3	Transportation Systems	6-5
6.2.4	Land Use	6-6
6.2.5	Air Quality.....	6-8
6.2.6	Noise and Vibration.....	6-9
6.2.7	Water Resources.....	6-10
6.2.8	Additional Applicants' Proposed Mitigation.....	6-11
6.3	SEA's Preliminary Environmental Mitigation Measures.....	6-12
6.3.1	Rail Operations.....	6-12
6.3.2	Rail Safety	6-12
6.3.3	Transportation Systems	6-17
6.3.4	Hazardous Waste Sites	6-23
6.3.5	Land Use	6-23
6.3.6	Socioeconomics.....	6-23
6.3.7	Environmental Justice	6-23
6.3.8	Energy	6-24
6.3.9	Air Quality and Climate	6-24
6.3.10	Noise and Vibration.....	6-24
6.3.11	Biological Resources	6-25
6.3.12	Water Resources.....	6-26
6.3.13	Cultural Resources	6-26
6.3.14	Constructions.....	6-26
6.4	Community Agreements.....	6-30
6.5	Monitoring and Enforcement	6-30

Chapter 7 Short-Term Use versus Long-Term Productivity of the Environment

7.1	Construction Activities.....	7-1
7.2	Potential Hazardous Material Release.....	7-2
7.3	Wetland and Surface Water.....	7-2
7.3.1	Wetlands.....	7-2
7.3.2	Surface water and drainage	7-2
7.4	Biological Resources	7-3
7.4.1	Plant Communities and Wildlife	7-3
7.4.2	Fish and Fish Habitat.....	7-3
7.5	Air Quality.....	7-3
7.6	Noise.....	7-4
7.7	Emergency services.....	7-4
7.8	Energy	7-5
7.9	Cultural Resources	7-5

7.10	Land Use	7-5
Chapter 8	Irreversible and Irretrievable Commitments of Resources	
8.1	Natural Resources	8-1
8.1.1	Land.....	8-1
8.1.2	Water resources	8-1
8.1.3	Protected species	8-1
8.2	Man-made Resources	8-2
8.2.1	Construction Materials	8-2
8.2.2	Time, Labor, and Machinery	8-2
8.2.3	Fuel.....	8-2
Chapter 9	Outreach and Coordination	
9.1	Role of SEA and Its Independent Third-Party Contractors	9-1
9.2	Public Involvement and Outreach	9-1
9.2.1	Scoping Process.....	9-1
9.2.2	Targeted Outreach Activities to Minority and Low-Income Populations	9-6
9.3	Agency Coordination	9-7
9.3.1	Federal Agencies	9-8
9.3.2	Other Agencies and Groups	9-8
9.3.3	Agency Scoping and Stakeholder Meetings.....	9-15
9.4	Distribution of Draft EIS.....	9-17
9.5	Request for Comments on Draft EIS.....	9-19
9.6	Public Meetings for the Draft EIS.....	9-20

List of Preparers

References

Index

List of Appendices

Appendix A	Public Outreach and Agency Coordination Materials
Appendix B	Rail Operations Analysis
Appendix C	Rail Safety Analysis
Appendix D	Safety Integration Plan
Appendix E	Transportation Systems Analysis
Appendix F	Hazardous Waste Sites
Appendix G	Land Use Analysis
Appendix H	Socioeconomics Analysis
Appendix I	Environmental Justice Impacts Analysis
Appendix J	Energy Analysis
Appendix K	Air Quality and Climate Analysis
Appendix L	Noise and Vibration Analysis
Appendix M	Biological Resources Analysis
Appendix N	Water Resources Analysis
Appendix O	Cultural Resources Survey
Appendix P	Decision Documents
Appendix Q	SEA Information Requests and Canadian National Responses
Appendix R	Applicant's Voluntary Mitigation

List of Figures

Figure 1.1-1. Project Vicinity	1-2
Figure 1.2-1. Major Routes Used by CN through Chicago	1-4
Figure 1.2-2. Yard Locations	1-7
Figure 2.1 2.1 1. Chicago Regional Rail System	2-2
Figure 2.1 2.1 2. CN Rail System.....	2-4
Figure 2.1 2.1 3. Rail Station Locations.....	2-7
Figure 2.1 2.1 4. Passenger and Commuter Rail System	2-13
Figure 2.2 1. Proposed Changes to Rail Traffic Volumes.....	2-18
Figure 2.2 2. Proposed Double Track Locations.....	2-30
Figure 2.2 3. Proposed Double Track—Leithton	2-32
Figure 2.2 4. Proposed Double Track—Diamond Lake Road to Gilmer Road.....	2-33
Figure 2.2 5. Proposed Double Track—East Siding to Walker.....	2-34
Figure 2.2 6. Proposed Double Track—East Joliet to Frankfort.....	2-35
Figure 2.2 7. Kirk Yard	2-37
Figure 2.2 8. East Joliet Yard	2-38
Figure 2.4 1. Typical Cross Section for Areas with New Connections.....	2-43
Figure 2.4 2. Proposed Munger Connection.....	2-44
Figure 2.4 3. Cross Section of the Proposed Munger Connection	2-46
Figure 2.4 4. Munger Alternative—Original Proposal.....	2-47
Figure 2.4 5. Munger Alternative—UP Connection.....	2-49
Figure 2.4 6. Munger Alternative—Former Rail Corridor	2-50
Figure 2.4 7. Munger Alternative—Northwest Quadrant.....	2-52
Figure 2.4 8. Proposed Joliet Connection.....	2-53
Figure 2.4 9. Joliet Alternative—Original Proposal.....	2-55
Figure 2.4 10. Proposed Matteson Connection	2-57
Figure 2.4 11. Matteson Alternative—NW & SW Quadrants.....	2-58
Figure 2.4 12. Matteson Alternative—Southwest Quadrant	2-60
Figure 2.4 13. Proposed Griffith Connection	2-61
Figure 2.4 14. Proposed Ivanhoe Connection	2-63
Figure 2.4 15. Proposed Kirk Yard Connection	2-64
Figure 2.5 1. CREATE Corridors.....	2-67
Figure 3.1-1. Rail Segments and Yards.....	3.1-5
Figure 3.1-2. Barrington Train Staging Locations	3.1-11
Figure 3.1-3. Spaulding/Barrett Train Staging Locations	3.1-12
Figure 3.1-4. West Chicago Train Staging Locations	3.1-13
Figure 3.1-5. Rock Island Junction Train Staging Locations	3.1-14
Figure 3.1-6. Chicago Heights Train Staging Locations	3.1-15
Figure 3.1-7. Griffith Train Staging Locations	3.1-16
Figure 3.1-8. Potential Train Staging Locations	3.1-21
Figure 3.1-9. Metra Existing Routes	3.1-24

Figure 3.1-10. Metra Proposed New Routes	3.1-28
Figure 3.1-11. Existing Northern Indiana Commuter Rail Transportation District – Existing Routes.....	3.1-30
Figure 3.1-12. Amtrak Existing Routes.....	3.1-32
Figure 3.1-13. St. Charles Air Line	3.1-33
Figure 3.2-1. Existing and Proposed Quiet Zones.....	3.2-20
Figure 3.3-1. Regional and Local Highways.....	3.3-2
Figure 3.3-2. Gary/Chicago International Airport - Proposed Expansion.....	3.3-97
Figure 3.5-1. Leithton Double Track – Existing Land Use	3.5-3
Figure 3.5-2. Diamond Lake Double Track – Existing Land Use.....	3.5-4
Figure 3.5-3. Munger Connection – Existing Land Use.....	3.5-5
Figure 3.5-4. East Siding to Walker Double Track – Existing Land Use	3.5-6
Figure 3.5-5. Joliet Connection – Existing Land Use.....	3.5-7
Figure 3.5-6. Joliet to Frankfort Double Track – Existing Land Use.....	3.5-8
Figure 3.5-7. Matteson Connection – Existing Land Use	3.5-10
Figure 3.5-8. Griffith Connection – Existing Land Use.....	3.5-11
Figure 3.5-9. Ivanhoe Connection – Existing Land Use	3.5-12
Figure 3.5-10. Kirk Yard Connection – Existing Land Use.....	3.5-13
Figure 3.5-11. Leithton Public Lands.....	3.5-25
Figure 3.5-12. Diamond Lake Public Lands	3.5-26
Figure 3.5-13. Munger Public Lands.....	3.5-27
Figure 3.5-14. East Siding to Walker Public Lands	3.5-28
Figure 3.5-15. Joliet Public Lands.....	3.5-29
Figure 3.5-16. East Joliet to Frankfort Public Lands.....	3.5-30
Figure 3.5-17. Matteson Public Lands	3.5-31
Figure 3.5-18. Griffith Public Lands	3.5-32
Figure 3.5-19. Ivanhoe Public Lands	3.5-33
Figure 3.5-20. Kirk Yard Public Lands	3.5-34
Figure 3.5-21. Indiana Coastal Management Program.....	3.5-51
Figure 3.6-1. Waukegan to Wayne – Population, Income, and Affordable Housing.....	3.6-2
Figure 3.6-2. West Chicago to Frankfort -- Population, Income, and Affordable Housing.....	3.6-3
Figure 3.6-3. Matteson to Gary -- Population, Income, and Affordable Housing...	3.6-4
Figure 3.6-4. Munger Connection – Community Facilities and Public Services	3.6-17
Figure 3.6-5. Matteson Connection – UP Alternative – Community Facilities and Public Services	3.6-18
Figure 3.6-6. Griffith Connection – Community Facilities and Public Services.....	3.6-19
Figure 3.6-7. Kirk Yard Connection – Community Facilities and Public Services	3.6-20
Figure 3.9-1. PM2.5 and Ozone Nonattainment Areas	3.9-4
Figure 3.9-2. CO, PM10, and SO2 Maintenance Areas	3.9-7

Figure 3.9-3. Sketch of Chicago's Heat Island Profile.....	3.9-11
Figure 3.10-1. Noise Monitoring Locations	3.10-6
Figure 3.10-2. Wayside Noise vs. Distance from Track	3.10-7
Figure 3.10-3. Fermilab Location in Relation to EJ&E Rail Line	3.10-8
Figure 3.10-4. Vibration Measurement Sites	3.10-11
Figure 3.10-5. Train Vibration Level vs. Distance from Tracks	3.10-13
Figure 3.10-6. Vibration Spectrum of EJ&E Trains at Site V10.....	3.10-16
Figure 3.10-7. Schematic of Vibration Test	3.10-20
Figure 3.10-8. Measured Line-Source Transfer Mobility at 50-Foot Impact Line.....	3.10-20
Figure 3.10-9. Measured Line-Source Transfer Mobility at 100-Foot Impact Line.....	3.10-21
Figure 3.10-10. Comparison of Background and Train-Induced Vibration Displacements	3.10-22
Figure 3.11-1. Natural Areas	3.11-2
Figure 3.12-1. Sand and Gravel Aquifers.....	3.12-4
Figure 3.12-2. Quaternary Geology.....	3.12-5
Figure 3.12-3. Drift Thickness	3.12-6
Figure 3.12-4. Nitrate Leaching Potential	3.12-8
Figure 3.12-5. Pesticide Leaching Potential.....	3.12-9
Figure 3.12-6. Community and Private Wellhead Protection Areas Near the EJ&E Line	3.12-10
Figure 3.12-7. Major River Basins	3.12-12
Figure 3.12-8. Leithton Double Track Water Resources.....	3.12-14
Figure 3.12-9. Diamond Lake Road to Gilmer Road Water Resources	3.12-15
Figure 3.12-10. Munger Connection Water Resources	3.12-16
Figure 3.12-11. East Siding to Walker Water Resources	3.12-17
Figure 3.12-12. Joliet Connection Water Resources	3.12-18
Figure 3.12-13. East Joliet to Frankfort Water Resources	3.12-19
Figure 3.12-14. Matteson Connection Water Resources	3.12-20
Figure 3.12-15. Griffith Connection Water Resources.....	3.12-21
Figure 3.12-16. Kirk Yard Connection Water Resources	3.12-22
Figure 3.12-17. Fen Areas within Five Miles of Proposed Increased Rail Activity.....	3.12-34
Figure 3.13-1. Chicago Railroad Pattern in 1950.....	3.13-3
Figure 4.1-1. Changes in Rail Traffic Volumes	4.1-4
Figure 4.1-2. Existing EJ&E Schematic Including Methods of Operation	4.1-8
Figure 4.1-3. Schematic Map of EJ&E Rail Line after Proposed Constructions	4.1-12
Figure 4.1-4. CN Rail System	4.1-13
Figure 4.1-5. Historic Rail Traffic Patterns in Chicago	4.1-18
Figure 4.1-6. Bottleneck Map – 11 Mile Segment Around Joliet	4.1-22
Figure 4.1-7. Line Occupancy Index Segment Schematic	4.1-29

Figure 4.1-8. Line Occupancy Index Graph	4.1-31
Figure 4.1-9. RTC Stringlines	4.1-34
Figure 4.2-1. Mundelein and Vernon Hills Quiet Zones	4.2-22
Figure 4.2-2. Barrington and Lake Zurich Quiet Zones	4.2-23
Figure 4.2-3. Des Plaines and River Forest Quiet Zones	4.2-24
Figure 4.2-4. Plainfield and Proposed Warrenville Quiet Zones	4.2-25
Figure 4.2-5. Munster Quiet Zone	4.2-26
Figure 4.2-6. Anticipated Changes to Hazardous Material Transportation	4.2-29
Figure 4.3-1. Single Train Event	4.3-4
Figure 4.3-2. Diamond Lake Road Traffic Delay Location	4.3-36
Figure 4.3-3. Old McHenry Road Traffic Delay Location	4.3-37
Figure 4.3-4. Ela Road and Hough Street (IL 59 & 36) Traffic Delay Locations...	4.3-38
Figure 4.3-5. Liberty Street, Ogden Avenue (US 34), and Montgomery Road/83rd Street Traffic Delay Locations	4.3-39
Figure 4.3-6. 135th Street Traffic Delay Locations	4.3-40
Figure 4.3-7. Woodruff Road and Washington Street Traffic Delay Locations	4.3-41
Figure 4.3-8. Cicero Avenue Traffic Delay Locations	4.3-42
Figure 4.3-9. Western Avenue and Chicago Road Traffic Delay Locations	4.3-43
Figure 4.3-10. Lincoln Highway (US 30) Traffic Delay Locations	4.3-44
Figure 4.3-11. Broad Street Traffic Delay Locations	4.3-45
Figure 4.3-12. Allanson Road Traffic Delay Locations	4.3-46
Figure 4.3-13. Countryside Fire Protection District – Station No. 1	4.3-76
Figure 4.3-14. Lake Zurich Rural Fire Protection District – Station No. 3	4.3-77
Figure 4.3-15. Barrington Fire Protection District – Station No. 1	4.3-78
Figure 4.3-16. Bartlett Fire Protection District – Future Station No. 3	4.3-79
Figure 4.3-17. Plainfield Fire Protection District – Station No. 3	4.3-80
Figure 4.3-18. Joliet Fire Department – Station No. 8	4.3-81
Figure 4.3-19. St. James Fire Hospital and Health Centers – Olympia Fields	4.3-82
Figure 4.3-20. St. James Fire Hospital and Health Centers – Chicago Heights	4.3-83
Figure 4.3-21. Schereville Fire Department Headquarters	4.3-84
Figure 4.3-22. Griffith Volunteer Fire Department Headquarters – Stations No. 1 and Station No. 2	4.3-85
Figure 4.4-1. Hazardous Waste Impact Rankings for Proposed Construction Areas	4.4-5
Figure 4.6-1. Proposed Munger Connection – Parks and Schools Within 1.5 Miles	4.6-24
Figure 4.6-2. Munger Alternative UP Connection – Parks and Schools Within 1.5 Miles	4.6-25
Figure 4.6-3. Proposed Joliet Connection – Parks and Schools Within 1.5 Miles	4.6-26
Figure 4.6-4. Proposed Matteson Connection – Parks and Schools Within 1.5 Miles	4.6-27

Figure 4.6-5. Proposed Griffith Connection – Parks and Schools Within 1.5 Miles	4.6-28
Figure 4.6-6. Proposed Ivanhoe Connection – Schools and Parks Within 1.5 Miles	4.6-29
Figure 4.6-7. Proposed Kirk Yard Connection – Parks and Schools Within 1.5 Miles	4.6-30
Figure 4.10-1. Existing and Proposed Action Noise Effects	4.10-9
Figure 4.10-2. Predicted Noise Effects.....	4.10-10
Figure 4.10-3. FTA Criteria for Detailed Vibration Analysis	4.10-17
Figure 4.10-4. Refined Vibration Analysis Results.....	4.10-25
Figure 4.10-5. Typical Vibration Levels from Construction Equipment	4.10-29
Figure 4.12-1. Joliet Alternative – Original Proposal – Changes in Drainage Areas	4.12-9
Figure 4.12-2. Joliet Connection – Changes in Drainage Areas	4.12-10
Figure 4.12-3. Munger Connection – Original Proposal – Changes in Drainage Areas	4.12-11
Figure 4.12-4. Munger Connection – Changes in Drainage Areas	4.12-12
Figure 4.12-5. Munger Alternative – Northwest Quadrant – Original Proposal – Changes in Drainage Areas.....	4.12-13
Figure 4.12-6. Matteson Connection – Changes in Drainage Areas	4.12-14
Figure 4.12-7. Matteson Alternative – Northeast and Southwest Quadrants – Changes in Drainage Areas	4.12-15
Figure 4.12-8. Griffith Connection – Changes in Drainage Areas	4.12-16
Figure 4.12-9. Ivanhoe Connection – Changes Drainage Areas	4.12-17
Figure 4.12-10. Proposed Munger Connection – Potential Wetland Effects	4.12-27
Figure 4.12-11. Munger Alternative – Original Proposal – Potential Wetland Effects	4.12-28
Figure 4.12-12. Munger Connection – UP Alternative – Potential Wetland Effects	4.12-29
Figure 4.12-13. Munger Alternative – Northwest Quadrant – Potential Wetland Effects.....	4.12-30
Figure 4.12-14. Proposed Joliet Connection – Potential Wetland Effects	4.12-31
Figure 4.12-15. Joliet Connection – Original Proposal – Potential Wetland Effects	4.12-32
Figure 4.12-16. Proposed Matteson Connection - Potential Wetland Effects.....	4.12-33
Figure 4.12-17. Matteson Alternative – Northeast & Southeast Quadrants - Potential Wetland Effects.....	4.12-34
Figure 4.12-18. Proposed Griffith Connection - Potential Wetland Effects.....	4.12-35
Figure 4.12-19. Proposed Ivanhoe Connection - Potential Wetland Effects.....	4.12-36
Figure 4.12-20. Proposed Kirk Yard Connection - Potential Wetland Effects	4.12-37
Figure 4.12-21. Leithton Double Track - Potential Wetland Effects.	4.12-38
Figure 4.12-22. Diamond Lake Road to Gilmer Road Double Track - Potential Wetland Effects.....	4.12-39
Figure 4.12-23. East Siding to Walker Double Track - Potential Wetland Effects.....	4.12-40

Figure 4.12-24. East Joliet to Frankfort Double Track - Potential Wetland Effects	4.12-41
--	---------

List of Tables

Table 2 1. CN Subdivisions in the Chicago Metropolitan Area	2-6
Table 2 2. Freight Train Traffic on CN Subdivisions in the Chicago Terminal District (2007).....	2-8
Table 2 3. EJ&E Track Miles	2-10
Table 2 4. CN and EJ&E Rail/Rail Crossings	2-10
Table 2 5. Freight Train Traffic on the EJ&E Rail Line (2007).....	2-11
Table 2 6. Metra Rail Lines	2-14
Table 2 7. Proposed Changes in Train Traffic Volume on the EJ&E Rail Line	2-19
Table 2 8. Proposed Changes in Train Traffic Volume on CN Rail Lines.....	2-20
Table 2 9. Summary of Potential Environmental Impacts Due to Changes in Rail Operations.....	2-71
Table 2 10. Summary of Potential Environmental Impacts – Munger Connection	2-79
Table 2 11. Summary of Potential Environmental Impacts – Joliet Connection	2-86
Table 2 12. Summary of Potential Environmental Impacts – Matteson Connection	2-90
Table 2 13. Summary of Potential Environmental Impacts – Griffith Connection	2-96
Table 2 14. Summary of Potential Environmental Impacts – Ivanhoe Connection	2-99
Table 2 15. Summary of Potential Environmental Impacts – Kirk Yard Connection.....	2-102
Table 2.1-6. Summary of Potential Environmental Impacts – Double Track	2-105
Table 3.1-1. CN and EJ&E Rail Line Segments in the Chicago Metropolitan Area.....	3.1-8
Table 3.1-2. Train Staging Locations and Train Lengths at or near At-Grade Rail Interlockings along the EJ&E Rail Line between Leithton and Kirk Yard	3.1-10
Table 3.1-3. Potential Staging Locations for Trains (As a Function of Train Length) Operating on the EJ&E Rail Line Between Leithton and Kirk Yard	3.1-17
Table 3.1-4. CN Rail/Rail Crossings.....	3.1-23
Table 3.1-5. EJ&E and Metra Rail/Rail At-Grade Crossings.....	3.1-26
Table 3.2-1. FRA Track Safety Classifications.....	3.2-2
Table 3.2-2. Maximum Allowable Speeds	3.2-2
Table 3.2-3. National Railroad Accident Statistics	3.2-4
Table 3.2-4. Shared Lines for Passenger/Commuter Service and Freight.....	3.2-4
Table 3.2-5. FRA Reportable Accidents per Million Passenger Train Miles.....	3.2-5
Table 3.2-6. 2006 EJ&E Rail Traffic from Users or Generators of Hazardous Materials	3.2-7
Table 3.2-7. Hazardous Materials Transported on EJ&E Rail Line Segments in 2006	3.2-8

Table 3.2-8. Hazardous Materials Transported by CN on CN Rail Lines in the Study Area in 2006.....	3.2-9
Table 3.2-9. Comparison of Total Carloads vs. Hazardous Materials Carloads, EJ&E Rail Line Segments.....	3.2-10
Table 3.2-10. Comparison of Total Carloads vs. Hazardous Materials Carloads, CN Rail Line Segments.....	3.2-11
Table 3.2-11. Rail Crossings by Category.....	3.2-17
Table 3.2-12. Existing and Proposed Quiet Zones on the EJ&E and CN Rail Lines	3.2-19
Table 3.2-13. Pedestrian Crossing Inventory	3.2-22
Table 3.3-1. EJ&E Rail Line Crossing Summary	3.3-1
Table 3.3-2. Yearly Traffic Growth Factor	3.3-4
Table 3.3-3. Existing Vehicle Delays at EJ&E Highway/Rail At-Grade Crossings.....	3.3-7
Table 3.3-4. CN Rail Line Crossing Summary	3.3-15
Table 3.3-5. Existing Vehicle Delays At CN Highway/Rail At-Grade Crossings ..	3.3-18
Table 3.3-6. Roadway Capacity by Area Type and Classification.....	3.3-27
Table 3.3-7. V/C Thresholds per LOS.....	3.3-27
Table 3.3-8. 2007 LOS Summary of Roadways Crossing the EJ&E Railway	3.3-27
Table 3.3-9. 2007 LOS Summary of Roadways Crossing CN Subdivisions	3.3-38
Table 3.5-1. Municipalities and Communities Along the EJ&E Rail Line	3.5-2
Table 3.5-2. Forest Preserves Adjacent to the EJ&E Rail Line	3.5-35
Table 3.5-3. Nature Preserves Adjacent to the EJ&E Rail Line.....	3.5-36
Table 3.5-4. Resource-Rich and Protected Areas Adjacent to the EJ&E Rail Line	3.5-38
Table 3.5-5. Trails and Greenways in Lake County, Illinois	3.5-40
Table 3.5-6. Trails and Greenways in Cook County, Illinois.....	3.5-41
Table 3.5-7. Trails and Greenways in DuPage County, Illinois.....	3.5-42
Table 3.5-8. Trails and Greenways in Will County, Illinois	3.5-43
Table 3.5-9. Trails and Greenways in Lake County, Indiana.....	3.5-45
Table 3.5-10. Local Parks Near the EJ&E Rail Line.....	3.5-45
Table 3.5-11. Land and Water Conservation Fund Properties	3.5-47
Table 3.5-12. Land and Water Reserves in Illinois	3.5-50
Table 3.6-1. Rapid Population Growth Illinois Communities 2000-2030.....	3.6-5
Table 3.6-2. Slow Population Growth Illinois Communities 2000-2030.....	3.6-6
Table 3.6-3. Historic Employment Totals by County in Northeastern Illinois and Lake County, Indiana.....	3.6-7
Table 3.6-4. Chicago Metropolitan Area Occupational Employment Totals	3.6-8
Table 3.6-5. Chicago Metropolitan Area Transportation Employment Data	3.6-9
Table 3.6-6. Illinois Rail Occupation and Wage Data.....	3.6-10
Table 3.6-7. Indiana Transportation and Rail Occupation and Wage Data.....	3.6-10
Table 3.7-1. Minority and Low-Income Criteria Calculated by County	3.7-2

Table 3.7-2. Minority and Low-Income Census Block Groups Along the EJ&E Rail Line.....	3.7-3
Table 3.7-3. Minority and Low-Income Census Block Groups Along CN Rail Line Segments Within the EJ&E Arc.....	3.7-3
Table 3.8-1. CN Energy Use for Existing Conditions in the Chicago Metropolitan Area	3.8-1
Table 3.8-2. Existing Energy Use Due to Traffic Delays.....	3.8-2
Table 3.9-1. National Ambient Air Quality Standards.....	3.9-2
Table 3.9-2. Lake and Porter Counties, Indiana, Mobile Emission Budgets.....	3.9-5
Table 3.9-3. PM2.5 NAAQS Timetable.....	3.9-9
Table 3.10-1. Weighted Noise Levels and Human Response	3.10-2
Table 3.10-2. 24-Hour Noise Monitoring Locations and Existing Noise Levels	3.10-4
Table 3.10-3. Average Sound Exposure Levels (in dBA).....	3.10-5
Table 3.10-4. Summary of Vibration Testing	3.10-12
Table 3.10-5. Summary of Average Maximum Train Vibration Levels (Lmax)	3.10-17
Table 3.10-6. Predicted Vibration Effect Distances at Measurement Sites.....	3.10-19
Table 3.11-1. Invasive and Nonnative Plant Species	3.11-7
Table 3.11-2. Common Wildlife Species in the Study Area	3.11-9
Table 3.11-3. Common Migratory Birds in Study Area.....	3.11-10
Table 3.11-4. Conservation and Natural Areas within the Illinois Study Area.....	3.11-11
Table 3.11-5. Conservation and Natural Areas within the Indiana Study Area	3.11-20
Table 3.11-6. Federal Listed Threatened & Endangered Species with Potential to Occur within Study Area	3.11-25
Table 3.11-7. State-Listed Threatened & Endangered Species Potentially within Illinois and Indiana Study Area.....	3.11-27
Table 3.12-1. Wellhead Protection Areas Near the EJ&E Rail Line	3.12-7
Table 3.12-2. Water Supply Wells and Surface Water Intakes	3.12-11
Table 3.12-3. Existing and Proposed Rail Line Within the Boundary of FEMA Flood Zones.....	3.12-23
Table 3.12-4. Existing Rail Hydraulic Structures within 100-Year Floodplains	3.12-24
Table 3.12-5. Existing Rail Embankments as Boundaries to FEMA Flood Zones	3.12-26
Table 3.12-6. Existing EJ&E Hydraulic Structures Outside of 100-Year and 500-Year Floodplains (Zone X).....	3.12-27
Table 3.12-7. Streams Within or Near Construction Limits.....	3.12-29
Table 3.12-8. Regulation of USACE Non-Jurisdictional Wetlands.....	3.12-32
Table 3.12-9. Fens and Fen Complexes	3.12-35
Table 4.1-1. Proposed Combined CN and EJ&E Train Volume.....	4.1-9
Table 4.1-2. Delay Ratios.....	4.1-33
Table 4.1-3. CN Line Segments with Metra Service.....	4.1-42
Table 4.1-4. EJ&E And Metra Rail/Rail At-Grade Crossings	4.1-42
Table 4.1-5. Train Occupancy Times for EJ&E And Metra Rail/Rail At-Grade Crossings (24-Hour Period).....	4.1-44

Table 4.1-6. Proposed CN Train Traffic Changes on EJ&E Initial STAR Line Segments	4.1-46
Table 4.1-7. Train Occupancy Times for EJ&E and Proposed Metra SouthEast Service – Rail/Rail At-Grade Crossings (24-Hour Period)	4.1-47
Table 4.1-8. CN Rail Line Segments with Amtrak Service	4.1-49
Table 4.1-9. Train Occupancy Times for EJ&E and Amtrak Rail/Rail At-Grade Crossings (24-Hour Period)	4.1-51
Table 4.2-1. FRA Reportable Accident Rates per Million Train Miles	4.2-3
Table 4.2-2. Summary of Five-Year (2003 – 2007) Average FRA Accident and Production Data	4.2-3
Table 4.2-3. Analysis of Potential Change in Main Track Train Accidents on Study Area Line Segments	4.2-4
Table 4.2-4. Five-Year Rolling Average of Number of EJ&E Main Track Accidents	4.2-5
Table 4.2-5. Average Daily Rail Cars Switched for and by CN	4.2-6
Table 4.2-6. Change in Daily Yard Switching Volumes (Rail Cars Switched)	4.2-7
Table 4.2-7. Rail/Rail At-Grade Crossings for EJ&E Rail Line Segments	4.2-9
Table 4.2-8. Rail/Rail At-Grade Crossings for CN Rail Line Segments	4.2-10
Table 4.2-9. Rail/Rail At-Grade Crossings on the EJ&E that Would Experience Changes in Freight Rail Traffic Under the Proposed Action	4.2-11
Table 4.2-10. Rail/Rail At-Grade Crossings on the CN That Experience Changes in Freight Rail Traffic Under the Proposed Action	4.2-12
Table 4.2-11. Summary Daily Exposure Index for Rail/Rail At-Grade Crossings Under the Proposed Action	4.2-13
Table 4.2-12. High Accident Frequency (>0.15 accidents per year) No-Action	4.2-16
Table 4.2-13. Exposure (Trains x Vehicles) No-Action	4.2-17
Table 4.2-14. High Accident Frequency (> 0.15 accidents per year) Proposed Action	4.2-18
Table 4.2-15. Predicted Accidents, Change of +/- 0.0500 or Greater Accidents Per Year	4.2-18
Table 4.2-16. Vehicle Exposure (Trains x Vehicles) No-Action and Proposed Action	4.2-19
Table 4.2-17. Shared Lines for Passenger/Commuter Service and Freight	4.2-20
Table 4.2-18. 2015 FRA Quiet Zone Status Under No-Action	4.2-27
Table 4.2-19. 2015 FRA Quiet Zone Status Under the Proposed Action	4.2-27
Table 4.2-20. Hazardous Materials Annual Carloads Comparison	4.2-31
Table 4.2-21. 2007 Statistics on Train Accidents	4.2-32
Table 4.2-22. CN And EJ&E Accident Data, 2003-2007	4.2-33
Table 4.2-23. Changes in Potential Hazardous Material Releases No-Action vs. Proposed Action	4.2-34
Table 4.2-24. Summary of Pedestrian Trails	4.2-39
Table 4.2-25. Pedestrian Crossing Inventory	4.2-40

Table 4.3-1. Transportation Analysis Thresholds	4.3-1
Table 4.3-2. Yearly Traffic Growth Factor	4.3-7
Table 4.3-3. Total Vehicle Delay	4.3-8
Table 4.3-4. Summary of Proposed Action Effects on Highway/Rail At-Grade Crossings on the EJ&E Rail Line.....	4.3-11
Table 4.3-5. Train Operations Factors for the EJ&E Rail Line.....	4.3-16
Table 4.3-6. Summary of Proposed Action Effects on Highway/Rail At-Grade Crossings on the CN Rail Line.....	4.3-19
Table 4.3-7. Train Operations Factors for the CN Rail Line.....	4.3-27
Table 4.3-8. EJ&E Substantially Affected Highway/Rail At-Grade Crossing Vehicle Delay Data.....	4.3-32
Table 4.3-9. CN Substantially Affected Highway/Rail At-Grade Crossing Vehicle Delay Data	4.3-33
Table 4.3-10. Substantially Affected Highway/Rail At-Grade Crossing LOS under No-Action and Proposed Action Alternatives (Year 2015).....	4.3-34
Table 4.3-11. Substantially Affected Highway/Rail At-Grade Crossing Queue Length under No-Action and Proposed Action Alternatives (Year 2015)	4.3-35
Table 4.3-12. Emergency Service Providers Potentially Affected by the Proposed Action.....	4.3-54
Table 4.3-13. Emergency Service Providers Potentially Substantially Affected by the Proposed Action	4.3-75
Table 4.4-1. Construction Site Rankings.....	4.4-2
Table 4.5-1. Public Lands Adjacent to the EJ&E Rail Line Potentially Affected by the Proposed Action.....	4.5-4
Table 4.5-2. Existing Trails, Greenways, and Scenic Corridors Potentially Affected by the Proposed Action.....	4.5-5
Table 4.5-3. Local Parks Potentially Affected by the Proposed Action.....	4.5-6
Table 4.5-4. Land and Water Conservation Fund Properties Potentially Affected by the Proposed Action.....	4.5-7
Table 4.5-5. Proposed Connections and Double Track Improvements	4.5-7
Table 4.5-6. Land Use Conversion Summary	4.5-12
Table 4.5-7. Prime Farmland Effects Evaluation	4.5-19
Table 4.5-8. Trails, Greenways, and Scenic Corridors Affected by Proposed Construction	4.5-23
Table 4.5-9. Local Parks Potentially Affected by Proposed Construction	4.5-24
Table 4.6-1. Estimated Economic Effects from Changes in Rail Operations.....	4.6-4
Table 4.6-2. Property Value Effects from Proximity to an Existing Rail Line.....	4.6-7
Table 4.6-3. Property Value Effects from Increased Train Traffic on a Nearby Existing Rail Line	4.6-7
Table 4.6-4. Parks Located within 500 Feet of the EJ&E Rail Line.....	4.6-11
Table 4.6-5. School Districts and Private Schools Located within 0.25 Mile of a Highway/Rail At-Grade Crossing.....	4.6-13
Table 4.6-6. Estimated Economic Effects from Construction	4.6-14

Table 4.6-7. Property Acquisition Summary	4.6-17
Table 4.8-1. Energy Use Changes Caused by Operations of Moving CN Trains – Original Estimates	4.8-2
Table 4.8-2. Energy Use Changes Caused by Operations of Moving CN Trains – Revised Estimates	4.8-3
Table 4.8-3. Energy Use Changes Caused by Operations of Moving and Idling Other Carriers on All Lines – Revised Estimates.....	4.8-3
Table 4.8-4. Energy Use Changes Caused by Idling Reductions for CN Trains – Revised Estimates.....	4.8-3
Table 4.8-5. Energy Efficiency Changes for Operations of CN and Other Trains – Original Estimates	4.8-4
Table 4.8-6. Energy Efficiency Changes for Operations of CN and Other Trains – Revised Estimates.....	4.8-4
Table 4.8-7. 2015 Energy Use Changes Caused by Traffic Delay	4.8-5
Table 4.8-8. Net 2015 Energy Use – Original Estimates	4.8-6
Table 4.8-9. Net 2015 Energy Use – Revised Estimates.....	4.8-7
Table 4.9-1. Emissions Caused By Active Operations Of CN Trains – Original Estimates.....	4.9-7
Table 4.9-2. Emissions Caused by Active Operations of CN Trains – Revised Estimates.....	4.9-8
Table 4.9-3. Emissions Caused by Active and Idling Operations of Other Carriers – Revised Estimates.....	4.9-8
Table 4.9-4. Emissions Caused by Idling of CN Trains – Revised Estimates.....	4.9-9
Table 4.9-5. Traffic Delay 2015 Idling Hours.....	4.9-9
Table 4.9-6. Traffic Delay 2015 Exhaust Emissions.....	4.9-10
Table 4.9-7. Net 2015 VOC Operational Emissions (tons/yr) – Original Estimates	4.9-11
Table 4.9-8. Net 2015 VOC Operational Emissions (tons/yr) – Revised Estimates.....	4.9-11
Table 4.9-9. Net 2015 CO Operational Emissions (tons/yr) – Original Estimates.....	4.9-11
Table 4.9-10. Net 2015 CO Operational Emissions (tons/yr) – Revised Estimates.....	4.9-12
Table 4.9-11. Net 2015 NOx Operational Emissions (tons/yr) – Original Estimates	4.9-12
Table 4.9-12. Net 2015 NOx Operational Emissions (tons/yr) – Revised Estimates.....	4.9-12
Table 4.9-13. Net 2015 SO2 Operational Emissions (tons/yr) – Original Estimates	4.9-13
Table 4.9-14. Net 2015 SO2 Operational Emissions (tons/yr) – Revised Estimates.....	4.9-13
Table 4.9-15. Net 2015 PM10 Operational Emissions (tons/yr) – Original Estimates	4.9-13
Table 4.9-16. Net 2015 PM10 Operational Emissions (tons/yr) – Revised Estimates.....	4.9-14

Table 4.9-17. Net 2015 PM2.5 Operational Emissions (tons/yr) – Original Estimates	4.9-14
Table 4.9-18. Net 2015 PM2.5 Operational Emissions (tons/yr) – Revised Estimates.....	4.9-14
Table 4.9-19. Transaction-Related Emissions Changes.	4.9-15
Table 4.9-19. Ozone-Depleting Materials Transported on Rail Segments That Would Be Affected by the Proposed Action	4.9-15
Table 4.9-20. MOBILE6.2 CO Emission Rates	4.9-17
Table 4.9-21. Modeled Hot Spot CO Results.....	4.9-19
Table 4.9-22. IRIS Non-Cancer Reference Concentrations (RfC) and One-in-a-Million Cancer Risk Concentrations for MSATs Studied.....	4.9-20
Table 4.9-23. MOBILE 6.2 MSAT Emission Factors for Air Toxics Analysis – Proposed Action	4.9-21
Table 4.9-24. Maximum Modeled 24-Hour MSAT Concentrations in Comparison to RfC Values.....	4.9-22
Table 4.9-25. Maximum Modeled Annual MSAT Concentrations in Comparison to 1/106 Cancer Risk.....	4.9-23
Table 4.9-26. Comparative Lifetime Cancer Risks	4.9-24
Table 4.9-28. Construction Exhaust Emissions (tons/year)	4.9-25
Table 4.9-29. Construction Fugitive Emissions	4.9-26
Table 4.9-30. VOC & NOx Total Emissions for O3 Compared with SIP (Tons/Summer Day) – Original Estimates	4.9-27
Table 4.9-31. VOC & NOx Total Emissions for O3 Compared with SIP (Tons/Summer Day) – Revised Estimates.....	4.9-27
Table 4.9-32. PM2.5 and NOx Total Emissions for PM2.5 Compared with SIP (Tons/Year) – Original Estimates.....	4.9-29
Table 4.9-33. PM2.5 and NOx Total Emissions for PM2.5 Compared with SIP (Tons/Year) – Revised Estimates	4.9-29
Table 4.9-34. Annual Million Metric Tons of CO2 – Original Estimates.....	4.9-30
Table 4.9-35. Annual Million Metric Tons of CO2 – Revised Estimates	4.9-31
Table 4.10-1. Thresholds for Noise Effect Assessment	4.10-2
Table 4.10-2. Evaluation of 3dBA Increase Criterion.....	4.10-3
Table 4.10-3. Summary of Rail Yard Activities.....	4.10-5
Table 4.10-4. Noise Analysis Summarya –EJ&E Rail Line.....	4.10-6
Table 4.10-5. Noise Analysis Summary – CN Rail Lines.....	4.10-6
Table 4.10-6. Noise Analysis Results–Proposed Construction	4.10-7
Table 4.10-7. Construction Equipment Noise Levels.....	4.10-13
Table 4.10-8. Noise-Sensitive Receptors Within the Proposed Action 70 dBA Ldn Contour on the EJ&E Rail Line.....	4.10-14
Table 4.10-9. FTA Effect Thresholds for Ground-Borne Vibration, General Impact Assessment.....	4.10-16
Table 4.10-10. Predicted Vibration Effect Distances at Measurement Sites.....	4.10-18

Table 4.10-11. Predicted Vibration Effect Distances for each EJ&E Segment, Standard Track.....	4.10-19
Table 4.10-12. Predicted Vibration Effect Distances for EJ&E Sections with Special Trackwork	4.10-21
Table 4.10-13. Vibration-Sensitive Receptors Along the EJ&E Rail Line	4.10-23
Table 4.10-14. Measured PPV, Prestwick Dam.....	4.10-24
Table 4.10-15. FTA Recommended Damage Criteria.....	4.10-24
Table 4.10-16. Vibration Analysis Results–Proposed Construction	4.10-26
Table 4.10-17. Guideline Values for Construction Vibration (Swiss Standard SN640312a).....	4.10-27
Table 4.10-18. Vibration Source Levels for Construction Equipment.....	4.10-28
Table 4.11-1. Potential Effects on Natural Areas from Changes in Operations on the EJ&E Rail Line	4.11-5
Table 4.11-2. Potential Effects on Federally Listed Species Along the EJ&E Rail Line Due to Operational Changes	4.11-8
Table 4.11-3. Potential Effects on State-Listed Species Along the EJ&E Rail Line	4.11-9
Table 4.11-4. Potential Effects on Federally Listed Species Due to the Proposed Connections	4.11-17
Table 4.11-5. Potential Effects on State-listed Species due to Construction Activities at the Proposed Connections	4.11-18
Table 4.11-6. Impacts to Federally Listed Species within the Study Area.....	4.11-23
Table 4.11-7. Potential Effects on State-listed Species within Double Track Construction Limits.....	4.11-24
Table 4.12-1. Potentially Affected Lakes and Preserves.....	4.12-6
Table 4.12-2. Areas of Higher Potential Effect on Domestic Wells from Spills.....	4.12-7
Table 4.12-3. Water Surface Elevation Increases from Proposed Double Track....	4.12-19
Table 4.12-4. Hydraulic Structure Flow Velocities In the Proposed Double Track Segments	4.12-21
Table 4.12-5. Hydraulic Structure Soil Types and Erosion Susceptibility.....	4.12-22
Table 4.12-6. Locations of Existing Ditches Adjacent to Proposed Double Track Areas	4.12-24
Table 4.12-7. Wetland Effects from Proposed Connections	4.12-43
Table 4.12-8. Wetland Effects from Proposed Double Track	4.12-47
Table 5.5-1. Potential Cumulative Effects Analysis of the Proposed Metra Star Line.....	5.5-15
Table 5.5-2. Potential Cumulative Effects Analysis of the Proposed Star Line Commuter Stations	5.5-18
Table 5.5-3. Cumulative Effects Analysis of the Proposed Highway Construction Projects.....	5.5-19
Table 5.5-4. Potential Cumulative Effects Analysis of the Proposed Pratt’s Wayne Woods Mining And Reclamation Project	5.5-21
Table 5.5-5. Potential Cumulative Effects Analysis of the GARY/Chicago International Airport Runway Extension.....	5.5-22

Table 6.3 1. Highway/Rail At-Grade Crossings In The Study Area That Require Mitigation Due To Effects Under The Proposed Action	6-18
Table 6.3 2. Emergency Service Providers Potentially Affected Under the Proposed Action.....	6-21
Table 9.2-1. Announcement Poster Locations	9-3
Table 9.2-2. Targeted Outreach Meetings	9-7
Table 9.3-1. Federal Agencies.....	9-8
Table 9.3-2. Invited State and Local Agencies.....	9-10
Table 9.3-3. Invited State Legislators.....	9-14
Table 9.3-4. Participants in Agency Scoping Meetings	9-15
Table 9.3-5. Participants in Stakeholder Meetings.....	9-16
Table 9.4-1. Locations to Review the Draft EIS	9-17