



**ILLINOIS
HIGH-SPEED RAIL**
CHICAGO TO ST. LOUIS

Tier 2: Springfield Rail Improvements Project

Volume II



prepared by:



U.S. Department of Transportation
Federal Railroad Administration



Illinois Department
of Transportation

June 2012



Tier 2:

Springfield Rail Improvements Project

Springfield, Illinois

Volume II

Prepared by:



U.S. Department of Transportation
Federal Railroad Administration



Illinois Department
of Transportation

June 2012
DRAFT

TABLE OF CONTENTS

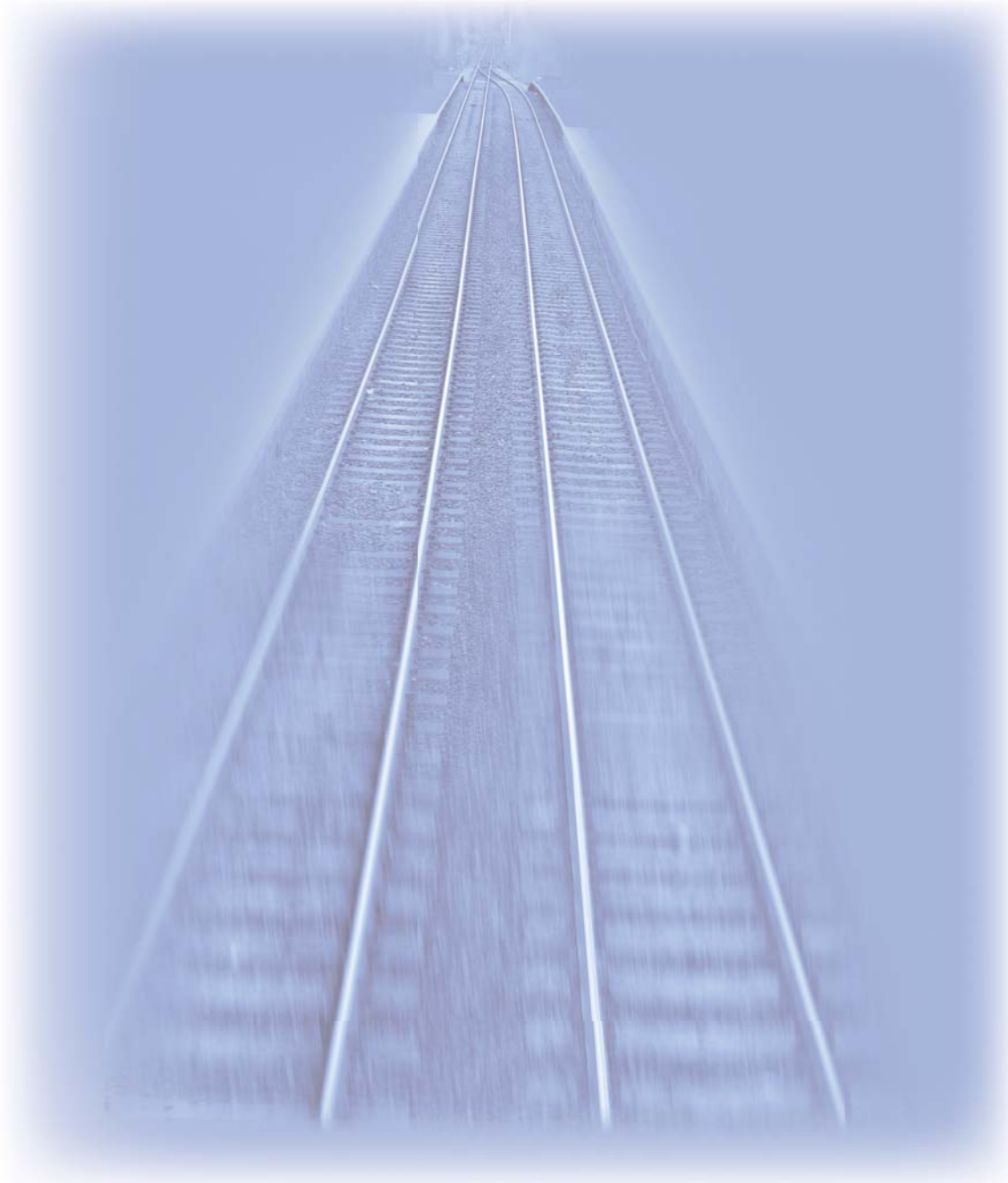


Table of Contents

1.0	INTRODUCTION	1-1
1.1	Tiering Process - Overview	1-1
1.2	Tier 1 Alternatives in Springfield	1-1
1.3	Anticipated Decisions	1-5
2.0	PURPOSE AND NEED FOR THE SPRINGFIELD RAIL IMPROVEMENTS PROJECT	2-1
2.1	Project Purpose	2-1
2.1.1	Chicago to St. Louis High Speed Rail.....	2-1
2.1.2	Springfield Rail Improvements Project.....	2-1
2.2	Project Need	2-5
2.2.1	Chicago to St. Louis Need	2-5
2.2.2	Springfield Rail Improvements Project Need.....	2-5
2.2.3	Goals and Objectives.....	2-14
2.3	Project Background	2-14
2.3.1	Springfield Rail Improvements Project.....	2-15
2.4	Major Authorizing Laws and Regulations	2-16
2.5	Scoping.....	2-16
3.0	ALTERNATIVES	3-1
3.1	Tier 2 Alternatives Screening Process	3-1
3.1.1	Tier 2 Screening and Selection Process.....	3-1
3.2	No Action – No Build Alternative.....	3-4
3.3	Action – Build Alternatives	3-5
3.3.1	Alternative 1.....	3-5
3.3.2	Alternative 2.....	3-11
3.4	Springfield Tier 2 Screening of Alternatives.....	3-17
3.4.1	Safety	3-17
3.4.2	Congestion.....	3-18
3.4.3	Livability and Commercial Activity	3-18
3.4.4	Lifecycle and Capital Costs.....	3-19
3.4.5	Operational Issues.....	3-24
3.4.6	Impacts to Existing Development.....	3-24
3.4.7	Impacts to Social and Economic Resources	3-24
3.4.8	Tier 2 Screening	3-25
3.5	Alternatives Carried Forward	3-26

4.0	AFFECTED ENVIRONMENT	4-1
4.1	Existing Land Use.....	4-1
4.2	Socioeconomic and Community Characteristics	4-3
4.2.1	Population and Population Distribution	4-3
4.2.2	Racial Composition	4-4
4.2.3	Economics and Employment	4-4
4.2.4	Income and Wages	4-6
4.2.5	Environmental Justice and Title VI.....	4-8
4.2.6	Transportation Network	4-13
4.2.7	Communities, Facilities, and Services	4-16
4.3	Energy	4-21
4.4	Cultural Resources	4-21
4.4.1	Project Area – 10 th Street Corridor	4-23
4.4.2	Archaeological Resources	4-27
4.5	Natural Resources	4-28
4.5.1	Geology and Soils.....	4-28
4.5.2	Ecological Resources	4-32
4.5.3	Threatened and Endangered Species	4-34
4.5.4	Natural Areas.....	4-37
4.6	Air Quality.....	4-37
4.6.1	Air Quality Conformity	4-37
4.6.2	Ambient Air Quality	4-38
4.7	Noise/Vibration	4-39
4.7.1	Noise and Vibration Impact Criteria	4-39
4.7.2	Existing Conditions.....	4-44
4.8	Water Quality/Resources	4-50
4.8.1	Surface Water Resources	4-50
4.8.2	Water Quality.....	4-53
4.8.3	Groundwater.....	4-53
4.9	Floodplains	4-55
4.10	Wetlands	4-55
4.11	Special Waste	4-56
4.11.1	SProject Area – 10 th Street Corridor	4-59
4.12	Special Lands	4-60
4.12.1	Section 4(f) Resources	4-60
4.12.2	Section 6(f) Lands	4-61
4.13	Public Health, Safety and Security	4-63
4.13.1	Rail Operations Safety and Security	4-63
4.13.2	Crossing Safety	4-64

5.0	ENVIRONMENTAL CONSEQUENCES	5-1
5.1	Land Use Impacts	5-2
5.1.1	No-Build Alternative	5-2
5.1.2	Alternatives 2A/2B	5-19
5.2	Socioeconomics and Environmental Justice	5-19
5.2.1	Displacements.....	5-19
5.2.2	Public Services/Facilities	5-25
5.2.3	Community Impacts	5-26
5.2.4	Economic Impacts	5-38
5.3	Energy	5-41
5.4	Cultural Resources	5-41
5.4.1	Archaeological Resources	5-47
5.5	Agriculture	5-47
5.6	Air Quality	5-47
5.6.1	Conformity	5-47
5.6.2	Local Air Quality	5-47
5.6.3	Construction Impacts.....	5-48
5.7	Noise/Vibration	5-49
5.7.1	Noise and Vibration Projections	5-49
5.7.2	Noise and Vibration Impact Assessment.....	5-52
5.7.3	Construction Noise Impact Assessment	5-57
5.7.4	Noise and Vibration Mitigation	5-57
5.8	Water Quality/Resources	5-59
5.8.1	Surface Water Impacts.....	5-59
5.9	Utilities	5-60
5.10	Visual and Aesthetic Quality	5-61
5.11	Special Waste	5-61
5.12	Special Lands	5-61
5.13	Public Health, Safety and Security	5-63
5.14	Permits	5-64
5.15	Construction Impacts	5-65
5.16	Indirect and Cumulative Impacts	5-65
5.16.1	Indirect Impacts.....	5-65
5.16.2	Cumulative Impacts.....	5-67
5.17	Other Impacts	5-68
5.17.1	Railroad Operations.....	5-68

5.17.2	Reduce Train Horn Blowing	5-68
5.18	The Relationship Between Local Short-Term Uses and Man’s Environment and the Maintenance and Enhancement of Long-Term Productivity	5-69
5.19	Irreversible and Irretrievable Commitments of Resources.....	5-69
5.20	Transportation Impacts	5-70
5.20.1	Service Development Plan	5-70
5.20.2	Capital Cost.....	5-70
5.20.3	Travel Benefits	5-71
5.20.4	Additional Impacts to Rail, Air and Bus Service	5-71
5.21	Mitigation Actions	5-71
5.22	Preferred Alternative	5-72
6.0	COMMENTS AND COORDINATION.....	6-1
6.1	Agency Coordination.....	6-1
6.1.1	Federal Agency Coordination	6-1
6.1.2	State Agency Coordination	6-2
6.1.3	Local Governments	6-2
6.2	Technical Committee.....	6-3
6.3	Public Involvement Activities	6-3
6.3.1	Stakeholder Interviews.....	6-3
6.3.2	Stakeholder Advisory Groups.....	6-4
6.3.3	Communications, Outreach, and Engagement.....	6-4
6.3.4	Public Open Houses.....	6-5
7.0	LIST OF PREPARERS.....	7-1
8.0	DISTRIBUTION OF THE DRAFT EIS.....	8-1
9.0	REFERENCES.....	9-1

APPENDICES

Appendix A Correspondence

Appendix B Special Waste

Appendix C Newsletters

Exhibits

Exhibit 2-1A. Project Location	2-2
Exhibit 2-1B. Project Area Location.....	2-3
Exhibit 2-2. Existing Railroad Corridors	2-4
Exhibit 2-3. Existing Tracks on 3 rd Street	2-8
Exhibit 2-4. Location and Magnitude of Crossing Delays	2-10
Exhibit 2-5. Springfield’s Medical District	2-12
Exhibit 3-1. Alternative 1A	3-7
Exhibit 3-2. Alternative 1B.....	3-8
Exhibit 3-3. Alternative 1C	3-9
Exhibit 3-4. Passenger Station on 3 rd Street	3-12
Exhibit 3-5. Alternative 2A	3-13
Exhibit 3-6. Alternative 2B.....	3-14
Exhibit 3-7. Passenger Station on 10 th Street	3-19
Exhibit 4-1. Existing Land Use.....	4-2
Exhibit 4-2. Economic Activity Centers	4-7
Exhibit 4-3. Census Blocks with Minority Populations > 50 Percent.....	4-11
Exhibit 4-4. Roadways	4-14
Exhibit 4-5. Bus Routes	4-15
Exhibit 4-6. Neighborhood Associations.....	4-17
Exhibit 4-7. Community Facilities	4-18
Exhibit 4-8. Bike Trails	4-20
Exhibit 4-9. National Register Sites	4-22
Exhibit 4-10. Physiographic Divisions.....	4-29
Exhibit 4-11. Bedrock Geology.....	4-30
Exhibit 4-12. Underground Mining.....	4-31
Exhibit 4-13. Noise and Vibration Locations	4-45
Exhibit 4-14. Watersheds	4-51
Exhibit 4-15. Streams and Floodplains	4-52
Exhibit 4-16. Wells and Aquifers	4-54
Exhibit 4-17. NWI Mapped Wetlands.....	4-57
Exhibit 4-18. Parks	4-62
Exhibit 5-1. Alternative 2A and 2B – Key Map.....	5-3
Exhibit 5-1A. Alternative 2A.....	5-4
Exhibit 5-1B. Alternative 2A	5-5
Exhibit 5-1C. Alternative 2A	5-6
Exhibit 5-1D. Alternative 2A.....	5-7
Exhibit 5-1E. Alternative 2A	5-8
Exhibit 5-1F. Alternative 2A.....	5-9
Exhibit 5-1G. Alternative 2A.....	5-10
Exhibit 5-1H. Alternative 2A.....	5-11
Exhibit 5-1I. Alternative 2A.....	5-12
Exhibit 5-1J. Alternative 2A.....	5-13

Exhibit 5-1K. Alternative 2A	5-14
Exhibit 5-1L. Alternative 2A	5-15
Exhibit 5-2A. Alternative 2B	5-16
Exhibit 5-2B. Alternative 2B	5-17
Exhibit 5-2C. Alternative 2B.....	5-18
Exhibit 5-3A. Adverse Travel Alternative 2A.....	5-29
Exhibit 5-3B. Adverse Travel Alternative 2A	5-30
Exhibit 5-3C. Adverse Travel Alternative 2A.....	5-31
Exhibit 5-4A. Adverse Travel Alternative 2B	5-34
Exhibit 5-4B. Adverse Travel Alternative 2B.....	5-35
Exhibit 5-4C. Adverse Travel Alternative 2B.....	5-36
Exhibit 5-5. Underpass – 10 th St.	5-39
Exhibit 5-6. Underpass Separation – 19 th St.	5-40

Tables

Table 1-1. Summary of Springfield Tier 1 Screening.....	1-3
Table 2-1. Number of Trains Through Springfield	2-6
Table 2-2. Springfield At-Grade Crossings and Grade Separations.....	2-7
Table 2-3. Springfield Illinois ICC Accident Data for all Years (1955-2010).....	2-7
Table 2-4. Springfield Illinois ICC Trespassing Incidents, 2000-2010	2-7
Table 2-5. Business Types along 3 rd Street and 10 th Street Corridors.....	2-13
Table 3-1. Tier 2 Objectives and Screening Criteria	3-2
Table 3-2. Tier 2 Alternatives	3-10
Table 3-3. Predicted Crashes	3-17
Table 3-4. Vehicle Delays.....	3-18
Table 3-5. Horn Blowing.....	3-19
Table 3-6. Annual and Lifecycle Cost Assumptions.....	3-20
Table 3-7. Present Value of Annual and Lifecycle Costs (Millions)	3-21
Table 3-8. Capital Cost for Each Alternative.....	3-22
Table 3-9. Number of Existing At-Grade Street Crossings and Grade Separations.....	3-24
Table 3-10. Additional Right-of-Way.....	3-24
Table 3-11. Displacements and Access Changes	3-25
Table 3-12. Summary of Springfield Tier 2 Screening.....	3-27
Table 4-1. Land Uses Within the Project Area.....	4-1
Table 4-2. Populations and Households.....	4-3
Table 4-3. Population by Racial Composition (2010).....	4-4
Table 4-4. Labor Force Estimates for 2010.....	4-4
Table 4-5. Employment by Industry Category for Sangamon County for 2009	4-5
Table 4-6. Major Employers in Sangamon County (November 2009).....	4-6
Table 4-7. Median Household Income.....	4-8
Table 4-8. Minority Population and Poverty Level	4-9
Table 4-9. Environmental Justice Populations.....	4-12
Table 4-10. Neighborhood Associations along the Project Area.....	4-16
Table 4-11. Significant Property Count in the 10 th Street Corridor ⁽¹⁾	4-24
Table 4-12. Air Quality Monitor Data for Springfield, Illinois (2007-2009).....	4-38
Table 4-13. FTA Land Use Categories.....	4-40
Table 4-14. FTA Ground-Borne Vibration and Ground-Borne Noise Impact Criteria .	4-43
Table 4-15. Ground-Borne Vibration and Noise Impact Criteria for Special Buildings	4-43
Table 4-16. FTA Construction Noise Criteria	4-44
Table 4-17. Summary of Existing Ambient Noise Measurement Results.....	4-46
Table 4-18. Summary of Existing Vibration Measurements ⁽¹⁾	4-49
Table 4-19. CERCLIS Sites	4-59
Table 4-20. Hazardous Materials Sites within Project Area (10 th Street Corridor)	4-60
Table 5-1. Environmental Impact Summary of Alternatives 2A and 2B	5-1
Table 5-2. Residential and Commercial Displacements	5-21
Table 5-3. Miles of Rail Traffic Through Residential Neighborhoods	5-26

Table 5-4. Maximum Adverse Travel for Enterprise Street.....	5-32
Table 5-5. Grade Separations	5-37
Table 5-6. Properties of Architectural Significance within the Area of Potential Effect- 10 th Street Corridor ⁽¹⁾	5-44
Table 5-7. Summary of Noise Impact Results.....	5-53
Table 5-8. Alternatives 2A and 2B Land Use Category 2 Vibration Impact Summary.	5-55
Table 5-9. Alternatives 2A and 2B Land Use Category 3 Vibration Impact Summary.	5-56
Table 5-10. Potential Resources Not Qualifying for Protection Under Section 4(f)	5-63
Table 5-11. Predicted Crashes	5-64
Table 5-12. Number of At-Grade Street Crossing for each Alternative	5-68
Table 5-13. Horn Blowing	5-69
Table 5-14. Capital Cost for each Alternative	5-71
Table 5-15. Mitigation Actions.....	5-72
Table 6-1. Public Response Summary - Alternative Which Best Addresses Accommodating Increasing Rail Traffic.....	6-9
Table 6-2. Public Response Summary - Factors Considered in Alternative Selection ..	6-10

Charts

Chart 4-1. FTA Project Noise Impact Criteria.....	4-41
Chart 4-2. Increase in Cumulative Noise Exposure Allowed by FTA Criteria.....	4-42