ILLINOIS HIGH-SPEED RAIL
CHICAGO TO ST. LOUIS

Chicago to St. Louis High-Speed Rail Tier 1
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Volume I

prepared by:

U.S. Department of Transportation
Federal Railroad Administration

Illinois Department of Transportation

June 2012

FEDERAL RAILROAD ADMINISTRATION

Chicago to St. Louis High-Speed Rail Program
Tier 1 Draft Environmental Impact Statement
Tier 2 Evaluation of Springfield Rail Improvements Project

Prepared by
U.S. Department of Transportation
Federal Railroad Administration
and
Illinois Department of Transportation

Cooperating Agencies

Federal Highway Administration
U.S. Fish and Wildlife Service
U.S. Army Corps of Engineers
U.S. Environmental Protection Agency, Region 5
Illinois Historic Preservation Agency
Illinois Department of Agriculture
Illinois Department of Natural Resources

Pursuant to:

National Environmental Policy Act (42 USC § 4332 et seq.), and implementing regulations (40 CFR Parts 1500-1508), 64 FR 28545, 23 CFR § 771, 49 USC § 303(formerly Department of Transportation Act of 1966, Section 4(f)); National Historic Preservation Act (16 USC § 470); Clean Air Act as amended (42 USC §§ 7401 et seq. and 40 CFR Parts 51 and 93); the Endangered Species Act of 1973 (16 USC § 1531-1544); the Clean Water Act (33 USC § 1251-1387); and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (42 USC § 4601)

6/25/12
Date of Approval

FRA Administrator

6/25/2012
Date of Approval

for IDOT

The following persons may be contacted for additional information concerning this document:

Ms. Andrea Martin
USDOT Federal Railroad Administration
1200 New Jersey Avenue S.E., Mail Stop 20
Washington, DC 20590
Phone: (202) 493-6201

Mr. Joseph E. Shacter
Director, Division of Public and Intermodal
Illinois Department of Transportation
100 West Randolph Street, Suite 6-600
Chicago, Illinois 60601-3229
Phone: (312) 793-2116

This Tier 1 Draft Environmental Impact Statement (EIS) evaluates High-Speed Rail (HSR) service improvements in the 280-mile Chicago to St. Louis Corridor in Cook, Will, Grundy, Livingston, McLean, Logan, Sangamon, Macoupin, Jersey, Madison, and St. Clair counties in Illinois and in St. Louis County in Missouri. No-Build and high-speed rail improvement alternatives are evaluated. Build Alternatives would reduce passenger rail travel times, improve service reliability, increase frequency of trips, and increase capacity and safety for passenger and freight trains. The EIS also evaluates the Springfield Rail Improvements Project in Sangamon County, Illinois. Build Alternatives considered included improvements to the existing Union Pacific corridor on 3rd Street and relocating the Union Pacific corridor to 10th Street.

Comments on this Tier 1 Draft EIS should be received by **August 20, 2012** and should be sent to Mr. Joseph Shacter at the above address.

List of Acronyms

AAR	Association of American Railroads
ADT	Average Daily Traffic
AREMA	American Railway Engineering and Maintenance-of-Way Association
ARRA	America Recovery and Reinvestment Act
ASLRRA	American Short Line and Regional Railroad Association
BCS	Biological Stream Characterization
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMAP	Chicago Metropolitan Agency for Planning
CN	Canadian National Railroad
COSIM	Carbon Monoxide Screen for Signalized Intersections
CTA	Chicago Transit Authority
CWS	Community Water Supplies
dBA	Decibels (A-weighting)
DEIS	Draft Environmental Impact Statement
EA	Environmental Assessment
EDR	Environmental Data Resources
EIS	Environmental Impact Statement
EJ	Environmental Justice
EJ&E	Elgin, Joliet, & Eastern Railway
EO	Executive Order
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FRA	Federal Railroad Administration
GHG	Greenhouse Gas
GIS	Geographical Information System
HC	Heritage Corridor
HSR	High-Speed Rail
ICC	Illinois Commerce Commission
IDOA	Illinois Department of Agriculture
IDOT	Illinois Department of Transportation
IEPA	Illinois Environmental Protection Agency
IHPA	Illinois Historic Preservation Agency
INAI	Illinois Natural Areas Inventory
INHS	Illinois Natural History Survey

INPC	Illinois Nature Preserves Commission
IPCB	Illinois Pollution Control Board
ISTP	Illinois State Transportation Plan
KCS	Kansas City Southern Railroad
LOS	Level of Service
LWCF	Land and Water Conservation Fund
MWRRI	Midwest Regional Rail Initiative
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MP	Milepost
MUTCD	Manual on Uniform Traffic Control Devices
NAAQS	National Ambient Air Quality Standards
NAJPTC	North American Joint Positive Train Control Program
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NIRC	Northeast Illinois Regional Commuter Railroad
NS	Norfolk Southern Railroad
NOx	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRHP	National Register of Historic Places
NRCS	Natural Resources Conservation Service
NRI	Nationwide Rivers Inventory
NWI	National Wetlands Inventory
OMP	O'Hare Modernization Program
Pb	Lead
PEM	Palustrine Emergent
PM	Particulate Matter
PPV	Peak Particle Velocity
PSS/PFO	Palustrine Scrub-Shrub Forested
PTC	Positive Train Control
PUB	Palustrine Unconsolidated Bottom
R	Riverine
RCRA	Resource and Conservation Recovery Act
RID	Rock Island District
RMS	Root Mean Square
ROD	Record of Decision
ROW	Right-of-Way
SCAL	St. Charles Air Line
SIU	Section of Independent Utility
SWPPP	Stormwater Pollution Prevention Plan
TR	Township Range
TRRA	Terminal Railroad Association

UP	Union Pacific Railroad
USC	United States Code
USDOT	United States Department of Transportation
USEPA	US Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VHT	Vehicles-Hours Traveled
VMT	Vehicle-Miles Traveled
VOC	Volatile Organic Compounds

TABLE OF CONTENTS

VOLUME I Table of Contents

APPENDIX A. Alternative Exhibits

APPENDIX B. Prime Farmlands

APPENDIX C. Threatened and Endangered Species

APPENDIX D. Special Waste

APPENDIX E. Potential Grade Separation Crossings and Protection Measures

APPENDIX F. Agency Coordination

APPENDIX G. Federal Register Notice of Intent

List of Exhibits

List of Tables

Volume II Table of Contents

List of Exhibits

List of Tables

Charts

SUMMARY

S.0 Summary

This Tier 1 Draft Environmental Impact Statement (DEIS) addresses the proposal by the Illinois Department of Transportation (IDOT) to improve high-speed rail (HSR) passenger service between Chicago, Illinois and St. Louis, Missouri (a distance of approximately 284 miles), including the rail lines through Springfield, Illinois (Exhibit S.0-1). This Tier 1 DEIS (Volume I) for the Chicago to St. Louis High-Speed Rail (HSR) Corridor Program has been prepared by IDOT and the Federal Railroad Administration (FRA), in cooperation with the Federal Highway Administration (FHWA), U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and the U.S. Environmental Protection Agency, to satisfy the requirements of the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality (CEQ) NEPA regulations (40 CFR 1500-1508).

For this program, IDOT and FRA are using a tiered environmental process, a phased environmental review used in the development of complex projects. Under this process, the Tier 1 EIS (Volume I of this document) addresses broad, corridor-level issues and alternatives. Tier 2 environmental documents (Volume II of this document is one such Tier 2 document) address individual component projects of the Selected Alternative carried forward from the Tier 1 study at site-specific detail. Concurrently with this Tier 1 study, IDOT and FRA are conducting a Tier 2 analysis for the Springfield Rail Improvements Project. The Tier 2 Environmental Evaluation for the Springfield Rail Improvements Project has been incorporated into this Tier 1 DEIS as Volume II.

S.1 Background

For more than two decades, IDOT has pursued improvements to passenger rail service between Chicago and St. Louis. The Chicago to St. Louis HSR Corridor is part of the Midwest Regional Rail Initiative program's intent to develop and implement a 21st-century regional passenger rail system.

In January 2003, IDOT, FRA, and FHWA completed an EIS for the Chicago to St. Louis HSR Corridor. The Selected Alternative from the EIS included the provision of three daily round trips along the existing Chicago to St. Louis Amtrak route, with 110-mile per hour high-speed rail service south of Dwight, Illinois. Proposed improvement included 12 miles of double track, 22 miles of freight sidings, station enhancements, one grade-separated crossing, and enhanced warning devices at 174 crossings. No action was selected between Chicago and Dwight. FHWA and FRA issued a Record of Decision (ROD) in January 2004, allowing improvements in the Dwight to St. Louis portion of the corridor to be advanced. Section 2.1.3 discusses the projects that have advanced based on the 2004 ROD.

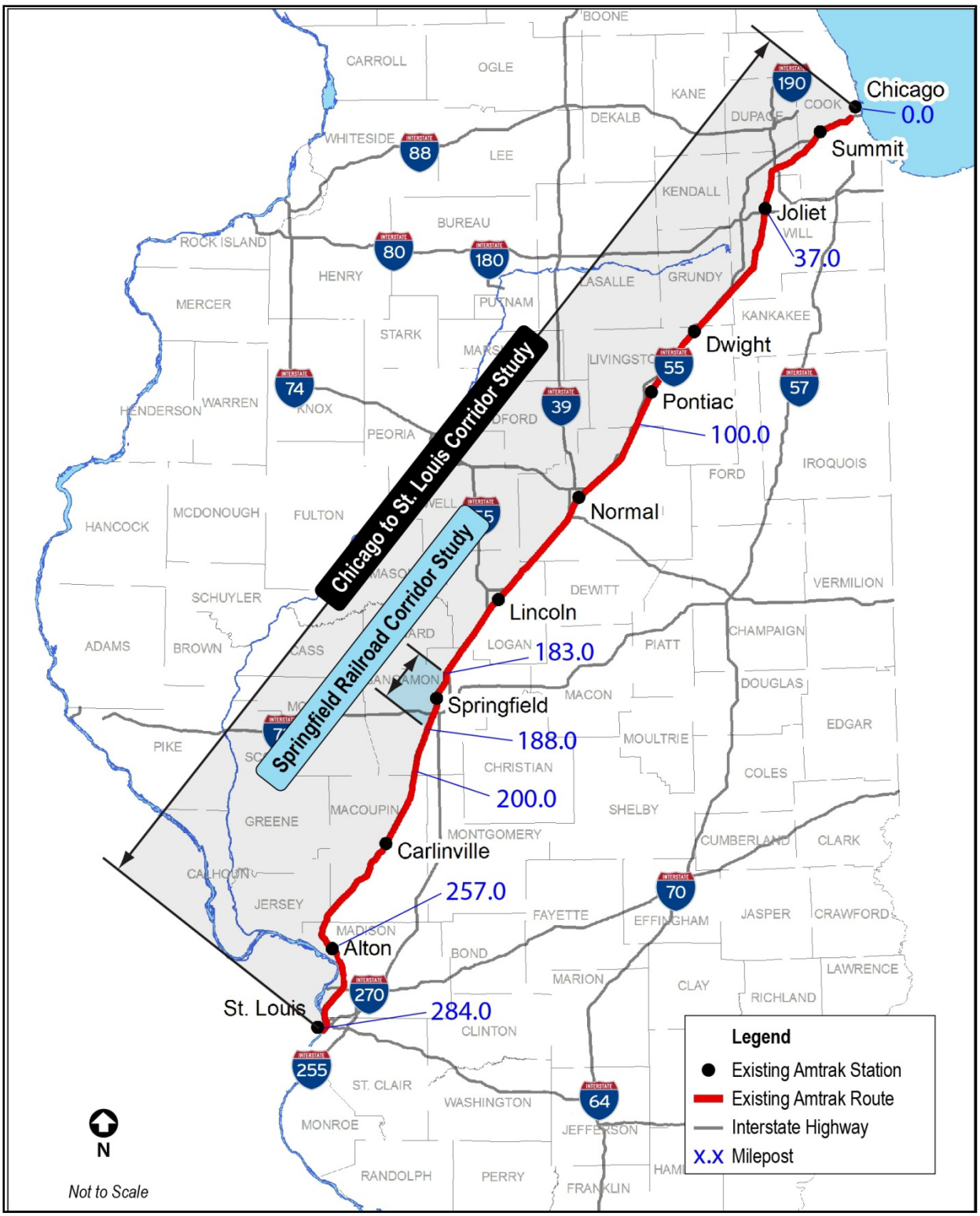

Exhibit S.0-1. Program Location

In 2011, an Environmental Assessment (EA) was completed and a Finding of No Significant Impact (FONSI) was issued for proposed track improvements from Joliet to Dwight. These improvements include upgrading approximately 36 miles of existing track and associated crossings to accommodate 110 mph high-speed rail passenger trains, the addition of six miles of double track, approximately two miles of new side track, and about 12 new turnouts.

S.2 Purpose and Need

The purpose of the proposed Chicago to St. Louis HSR Corridor Program is to enhance the passenger transportation network in the Chicago to St. Louis HSR Corridor by improving high speed passenger rail service, resulting in a more balanced use of different corridor travel options by diverting trips made by automobile and air to rail.

The existing transportation network consists of highway (automobile and bus), air, and passenger rail travel. Currently, nearly all trips made annually within the Chicago to St. Louis HSR Corridor are accomplished through automobile and air travel, with only one percent by passenger rail. Enhancements to passenger rail service would include reduced travel times, improved service reliability, increased frequency of trips, and increased capacity. Increased use of passenger rail would result in an overall improvement in traveler safety in the corridor, as well as a reduction in air pollutant emissions and energy consumption.

The need for the Chicago to St. Louis High-Speed Rail Corridor Program is based on the following:

- Because of inadequate rail capacity and deficiencies in the existing rail infrastructure, there is currently a modal imbalance within the corridor. Rail travel represents only 1.3 percent of the 51 million annual person trips within the Chicago to St. Louis corridor, while automobile travel comprises 97.5 percent of these trips. The other two modes, air and bus, comprise only 1.1 percent and 0.2 percent, respectively. By 2030, it is projected that 62 million annual trips will occur in the Chicago to St. Louis corridor with 96.6 percent consisting of automobiles, 1.5 percent air, 1.7 percent rail, and 0.2 percent bus. As a result, the modal imbalance is projected to remain largely the same in 2030.

- Between 2007 and 2010, on-time performance for rail passenger service between Chicago and St. Louis ranged from 38 percent to 75 percent. For air travel, 15 to 20 percent of flights in the corridor arrive late.

- The single track between Joliet and St. Louis cannot accommodate existing and projected freight and passenger train traffic resulting in travel time delays and the inability to increase passenger rail service.

- The new Joliet Intermodal Terminal will double the number of freight trains using the Chicago to St. Louis corridor from six to 12. The number of freight trains is

projected to increase to 22 by the year 2017, which could affect the performance and capacity for high-speed passenger rail.

- From 2007 to 2010, rail passenger ridership between Chicago and St. Louis has increased 34 percent. (Over this same period, ridership on the state-supported trains between Chicago and St. Louis increased by 72 percent.)

- Automobile and bus travel between Chicago and St. Louis is limited primarily to I-55. Travel by this one route can often be unreliable due to traffic congestion, weather, roadway construction, and accidents, which can substantially increase travel times.

- Automobile travel, which represents 95.5 percent of the trips within the corridor, is the least safe mode of transportation when compared to air, rail, and bus travel. Therefore, there is a need to provide safer alternative modes of transportation along the corridor.

- Although air travel has the shortest travel times and is the safest mode of transportation, additional travel time must be considered for passage through airport security and travel to and from the airport. In addition, air travel is vulnerable to weather conditions, which can result in major delays and cancelled flights. Also, there is currently no direct air service from the central part of the corridor to St. Louis, and air travel provides little service to intermediate destinations.

In addition to these corridor-wide needs, the large number of grade crossings in Springfield results in issues specific to that portion of the study area, including safety, vehicle, and pedestrian delays. These needs are detailed in Volume II, Springfield Rail Improvements Project Tier 2 Environmental Evaluation.

S.3 Alternatives Considered

An extensive alternatives screening process was conducted that led to the selection of five alternatives to be evaluated in this Tier 1 DEIS: a No-Build Alternative and four HSR Build Alternatives (A, B, C, and D).

The No-Build Alternative includes the continuation of intercity passenger service between Chicago and St. Louis along with the planned passenger rail improvements that will allow for limited HSR service between Joliet and St. Louis. The limited HSR service between Joliet and St. Louis will begin following completion of several upgrades to the existing tracks that were approved by a 2004 ROD (Dwight to St. Louis improvements) and 2011 EA/FONSI (Joliet to Dwight improvements). The limited HSR service resulting from these improvements will include up to three daily passenger round trips at speeds up to 110 mph between Joliet and Alton, with the remaining portions of the corridor allowing speeds of up to 79 mph. One additional non-HSR daily passenger round trip will continue to operate between Chicago and St. Louis, and one non-HSR Texas Eagle daily passenger round trip will continue to operate between

Build Alternative. The estimated travel times between Chicago and St. Louis for the No-Build Alternative are expected to be between four hours and 30 minutes to four hours and 45 minutes. This would allow the No-Build Alternative to provide travel times that are up to one hour and 12 minutes faster than the existing conditions.

The four Build Alternatives being evaluated would utilize different routes in three areas: between Chicago and Joliet, through Springfield, and between Alton and St. Louis. The proposed Build Alternative routes would utilize combinations of the existing passenger rail (Amtrak) route and other proposed new intercity passenger routes that primarily follow other existing rail lines. In general, the proposed improvements would include double tracking along the entire length of the corridor in addition to improvements to railroad crossings, signals, and stations. In developing these four Build Alternatives, the corridor was divided into the following seven sections (Exhibit S.3-1):

- Section 1 – Existing Route from Chicago to Joliet
- Section 2 – Proposed New Route (i.e., Rock Island Route) from Chicago to Joliet
- Section 3 – Existing Route from Joliet to Springfield
- Section 4 – Existing Route through Springfield
- Section 5 – Proposed New Route through Springfield
- Section 6 – Existing Route from Springfield to Alton
- Section 7 – Existing Route from Alton to St. Louis

The four Build Alternatives were then comprised of various combinations of these sections as follows:

- Alternative A (Sections 1, 3, 4, 6, 7)
- Alternative B (Sections 1, 3, 5, 6, 7)
- Alternative C (Sections 2, 3, 4, 6, 7)
- Alternative D (Sections 2, 3, 5, 6, 7)

All of these Build Alternatives would include eight daily round trips allowing for 110 mph intercity passenger service for the entire route between Chicago and St. Louis. The overall travel times for these Build Alternatives between Chicago and St. Louis would range from three hours and 51 minutes to four hours and 10 minutes for an overall travel time decrease of up to one hour and 47 minutes over existing conditions.

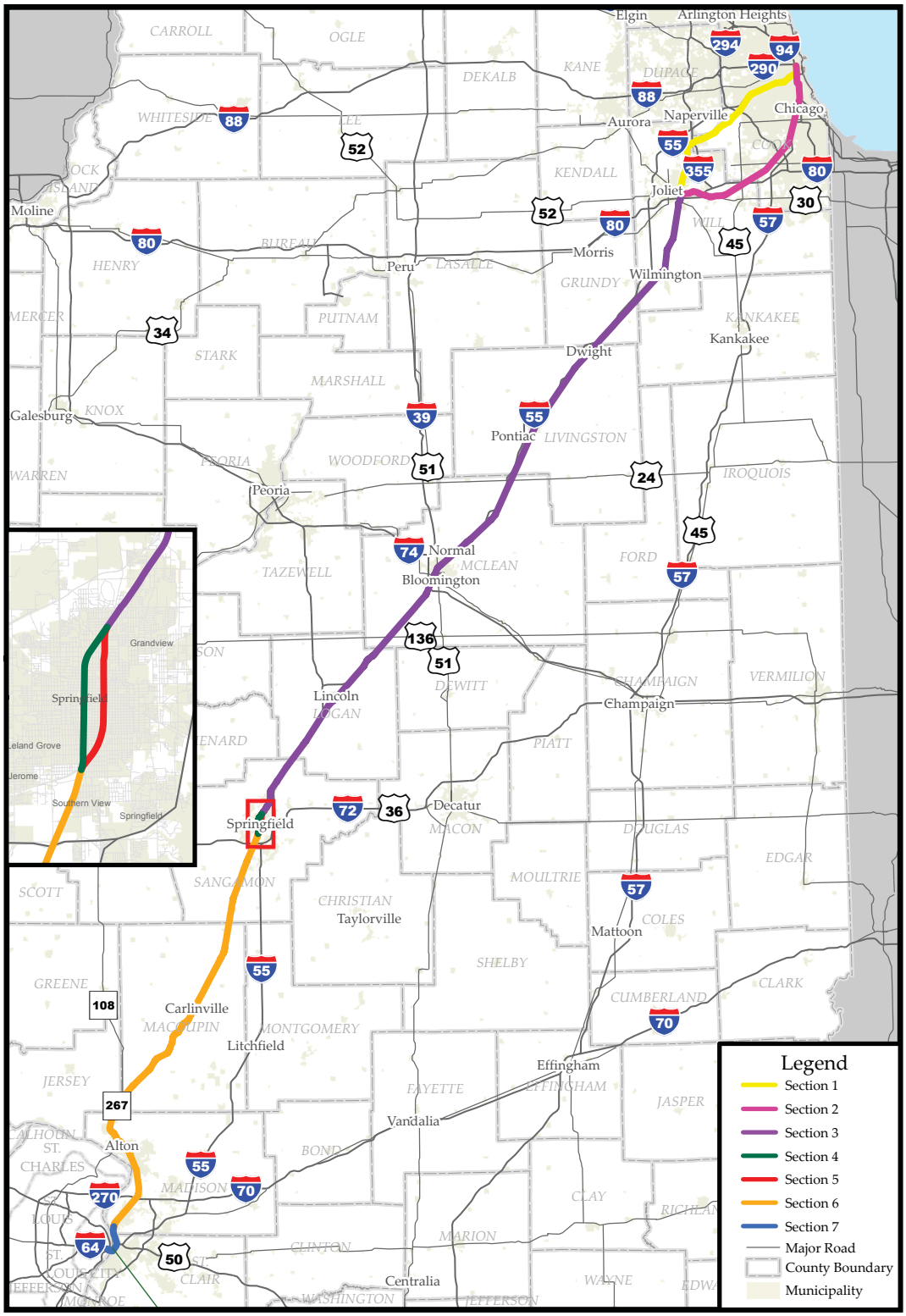

Exhibit S.3-1. Build Alternative Sections between Chicago and St. Louis

S.4 Summary of Impacts

Table S.4-1 summarizes the impacts and costs for each of the Build Alternatives. The No-Build Alternative would not result in any impacts to the resources listed in the table.

Table S.4-1. Summary of Impacts and Costs

Resources	Alternative A	Alternative B	Alternative C	Alternative D
Buildings Displaced	134	189	213	268
New Right-of-Way	336-352 ac	372-373 ac	394-410 ac	430-431 ac
Prime Farmland Soils	1,645 ac	1,643 ac	1,655 ac	1,652 ac
Historic Sites	7	6	6	5
Archaeological Sites	0	0	0	0
Forest	183.0 ac	181.3 ac	200.0 ac	198.3 ac
Prairie Remnants	232 ac	232 ac	232 ac	232 ac
Protected Natural Areas	16.3 ac	16.3 ac	16.6 ac	16.6 ac
Critical Habitat – Hine's Emerald Dragonfly	3.7 ac	3.7 ac	0	0
Noise Sensitive Receptors	218	685	342	809
Vibration Sensitive Receptors	272	305	252	285
Surface Water	203	203	191	191
Special Status Streams:				
Biologically Sensitive Streams #/ft	6/1,136	6/1,136	6/1,136	6/1,136
Illinois Natural Areas Inventory Streams #/ft	6/946	6/946	6/946	6/946
Nationwide Rivers Inventory Streams #/ft	3/554	3/554	3/554	3/554
Navigable Waterways #/ft	8/959	8/959	7/095	7/905
Wellhead Protection Areas	2	2	2	2
Floodplains #/acres	36/72.7	36/72.7	43/77.9	43/77.9
Wetlands #/acres	52/41.3	52/41.7	65/46.4	65/46.3
Special Waste Sites	179	195	260	276
Section 4(f) Properties	8	8	12	12
Costs (millions)	$4,693-$4,978	$4,895-$4,939	$4,163-$4,448	$4,365-$4,409

S.4.1 Land Use/Socioeconomic Impacts

Table S.4-2 shows the number of displacements and the acreage of right-of-way that would be needed for each alternative. Alternative A would result in the fewest displacements (134) and acres of new right-of-way (336-352) while Alternative D would result in the most displacements (268) and acres of new right-of-way (430-431). Potential impacts by each alternative to low-income and minority populations (i.e., environmental justice populations) were also evaluated. As indicated in Table S.4-2, Alternatives C and D would potentially result in greater impacts to low-income and minority populations than Alternatives A and B.

Table S.4-2. Comparison of Land Use and Environmental Justice Impacts between Build Alternatives

Build Alternative	Number of Buildings Potentially Displaced	Proposed New Right-of-Way (Acres)	Census Tracts with Populations Below Poverty Line (>50%)	Census Block Groups with Minority Populations (>50%)
Alternative A	134	336-352	3	38
Alternative B	189	372-373	3	44
Alternative C	213	394-410	10	83
Alternative D	268	430-431	10	89

S.4.2 Energy

Table S.4-3 presents the annual energy consumption by mode and alternative.

Table S.4-3. Annual Energy Consumption (billions of BTUs)

Alternative	Rail	Automobile	Bus	Air	Total
Existing (2010)	199	22,754	69	411	23,433
No-Build (2030)	354	27,558	93	692	28,697
A, B, C, or D	572	27,143	83	628	28,426

The results in Table S.4-3 show that the total energy consumption from intercity passenger travel under the No-Build Alternative would be higher than the Build Alternatives. Although the Build Alternatives would result in an increase in energy consumption compared to the No-Build Alternative with regard to rail transportation, all of the other three modes would experience a decrease, thereby, resulting in an overall

net decrease in energy consumption. This overall net decrease could be attributed to a shift in ridership from the other three less energy efficient modes to rail.

S.4.3 Agriculture

Table S.4-4 presents the impacts to prime farmland soils for each Build Alternative. As indicated in the table, the total acres of impacts between all the Build Alternatives only varies by only 12 acres with Alternative B resulting in the fewest impacts with 1,643 acres and Alternative C resulting in the greatest impacts with 1,655 acres. Because all of the Build Alternatives would follow the existing railroad tracks, no farms would be bisected by any of the alternatives. The increase in train traffic along the corridor could result in increased delays at railroad crossings, as farm vehicles would be required to stop more frequently for trains crossing roadways.

Table S.4-4. Prime Farmland Soil Impacts by Alternative

Alternative	Existing ROW Acres Impacted	Proposed New ROW Acres Impacted	Total Acres Impacted
A	1,336	309	1,645
B	1,321	322	1,643
C	1,297	358	1,655
D	1,282	370	1,652

S.4.4 Cultural Resources

In accordance with Section 106 of the National Historic Preservation Act, each alternative was evaluated for potential impacts to historic architectural and archaeological resources. A file search was conducted to identify any properties within the study corridor that are listed or eligible for listing on the National Register of Historic Places (NRHP). Table S.4-5 shows the number of NRHP listed/eligible architectural resources that would be potentially impacted by the program alternatives. Alternative A would impact the most historic architectural resources (7) while Alternative D would impact the least (5). More detailed field surveys for potentially eligible properties that are not currently listed on the NRHP and the determination of effects will be conducted during Tier 2 studies.

Table S.4-5. Summary of Potentially Impacted Historic Architectural Resources

Section	Alternative A	Alternative B	Alternative C	Alternative D
1	2	2	-	-
2	-	-	1	1
3	3	3	3	3
4	1	-	1	-
5	-	0	-	0
6	1	1	1	1
7	0	0	0	0
Total	**7**	**6**	**6**	**5**

With regard to known archaeological resources, potential impacts were considered where proposed improvements (construction activity) would physically impact the property on which the resource lies or would be immediately adjacent to the construction activity such that temporary impacts could result. Because the resources lay belowground, noise, vibration, and visual impacts were not considered.

One site, 11MP4, located adjacent to Section 6 in Macoupin County is adjacent to an area were construction activities would occur. As a result, all four Build Alternatives would potentially impact this one archaeological resource. Further evaluation will be required during Tier 2 studies to determine if the construction would have an adverse effect on the resource. In addition, Tier 2 studies will include a survey of potential archaeological resources in all areas to be disturbed.

S.4.5 Natural Resources

S.4.5.1 *Forests, Prairie Remnants, and Illinois Natural Areas*

Each Build Alternative was evaluated for potential impacts to natural resources such as forest, prairie remnants, and protected natural areas. Table S.4-6 shows the impacts to these resources for each alternative. With regard to impacts to forest, Alternative B would result in the fewest impacts (181.3 acres) while Alternative C would result in the greatest impacts (200.0 acres). All of the Build Alternatives would impact 232 acres of prairie remnants. They would also result in nearly the same impacts to protected natural areas (16.3 to 16.6 acres). There are five natural areas located within the construction -limits of the Build Alternatives: Hickory Creek Barrens Nature Preserve (0.3 acres), Funks Grove Nature Preserve (0.9 acres), Thaddeus Stubblefield Grove Nature Preserve (7 acres), Hitts Siding Prairie Nature Preserve (0.6 acres), and Funks Grove Land and Water Reserve (7.9 acres), and have potential to be impacted by the alternatives considered.

Table S.4-6. Acreage of Impact to Natural Resources by Alternative

Alternative	Forest	Prairie Remnants	Protected Natural Areas	Designated Critical Habitat (Hines Emerald Dragonfly)
A	183.0	232	16.3	3.7
B	181.3	232	16.3	3.7
C	200.0	232	16.6	0
D	198.3	232	16.6	0

S.4.5.2 *Threatened and Endangered Species*

As indicated in Table S.4-6, Alternatives A and B would impact approximately 3.7 acres of USFWS designated Critical Habitat for the federally endangered Hine's emerald dragonfly. Analysis of the impacts to this habitat will be addressed in more detail in the Tier 2 environmental documentation. In addition to the potential direct loss of Critical Habitat for the Hine's emerald dragonfly, the only other notable impact to the species could be the potential increase in train-dragonfly collisions due to the increase in the number of round trips associated with several of the alternatives. It is anticipated, however, that this potential increase would have a minimal overall impact on the species.

Based on the IDNR EcoCat database and coordination with USFWS and IDNR, there are no other Critical Habitats or known habitats or populations of other federally listed species located within the study corridor that could be impacted by any of the program alternatives. However, this Tier 1 level of documentation did not include detailed fieldwork to identify potential habitats and/or populations of threatened and endangered species. Therefore, conclusions about impacts to listed species or their habitat cannot be made at this time. Further coordination with USFWS and IDNR will continue during the Tier 2 stage.

Species listed as threatened or endangered by the state, which have recorded occurrences within the existing or proposed right-of-way based on the Natural Heritage Data Base are included in Chapter 5, Table 5.6-3 and Exhibits 5.6-1 through 5.6-3. Most of the records for state listed species occur in Sections 3 and 6. Since these sections are included in all the Build Alternatives, there is little difference in the species records for each alternative. All of the species listed in Table 5.6-3 are present in the right-of-way of Alternatives A and B, with the exception of Mead's milkweed, which is only known for Section 2. All species listed in Table 5.6-3 are also present in the right-of-way of Alternatives C and D, with the exception of the leafy prairie clover, which is only known for Section 1.

S.4.6 Air Quality

The proposed improvement would impact the counties of Cook, Will, and Grundy in the northeastern Illinois nonattainment area, and the counties of Jersey, Madison, St. Clair, and St. Louis in the St. Louis nonattainment area. While the proposed program would increase diesel locomotive emissions, these increases would be offset by decreases in regional mobile source auto vehicle miles traveled (VMT) and modest increases in average driving speeds. The program-generated net increases in predicted annual pollutant emissions, from high-speed rail passenger service, in nonattainment areas would all be below general conformity de minimis threshold values. Pursuant to the General Conformity Rule, EPA considers project-generated emissions below these de minimis values to be minimal. Such projects do not require formal conformity determinations. With regard to greenhouse gas (GHG) emissions, the Build Alternatives would reduce CO_2 emissions by 22,200 tons/year versus the No-Build Alternative. As a result, the program is not anticipated to result in significant adverse impacts to public health related to air pollutants and air toxics or contributions to GHG emissions.

S.4.7 Noise and Vibration

As indicated in Table S.4-7, Alternative A would impact the fewest noise sensitive receptors (218) while Alternative D would impact the most (809). With regard to vibration, Alternative C would impact the fewest sensitive receptors (252) while Alternative B would impact the most (305).

Table S.4-7 Noise and Vibration Impacts (Number of Sensitive Receptors)

Alternative	Number of Noise Sensitive Receptors*	Number of Vibration Sensitive Receptors
A	218	272
B	685	305
C	342	252
D	809	285

*Train noise impacts were evaluated based on projected noise level increases relative to baseline (No-Build Alternative) conditions at noise-sensitive receptors. Therefore, no impacts are identified for the No-Build Alternative.

S.4.8 Water Quality

S.4.8.1 *Surface Water*

Alternatives C and D would result in the fewest surface water crossings (191) while Alternatives A and B would result in the most crossings (203).

S.4.8.2 *Special Status Streams*

All of the Build Alternatives would result in the same impacts to Biologically Sensitive Streams (six crossings/1,136 feet), Illinois Natural Areas Inventory Streams (six crossings/946 feet), and Nationwide Rivers Inventory Streams (three crossings/554 feet). With regard to Navigable Waterways, Alternatives A and B would cross eight waterways (959 feet) while Alternatives C and D would cross seven waterways (905 feet).

S.4.8.3 *Wells Crossings*

All of the Build Alternatives would cross the same number of Wellhead Protection Areas (2) and Non-Community Water Supply Well Setbacks (5).

S.4.8.4 *Floodplains*

Table S.4-8 shows that Alternatives A and B would have the least impacts to floodplains (36 crossings and 72.7 acres) while Alternatives C and D would have the greatest impacts (43 crossing and 77.9 acres). The number of perpendicular crossings are similar between all of the Build Alternatives (29 and 30).

Table S.4-8. 100-Year Floodplain Impact by Alternative

Alternative	Number of Floodplains Crossed	Number of Perpendicular Crossings	Total Floodplain Impact (Acres)
A	36	30	72.7
B	36	30	72.7
C	43	29	77.9
D	43	29	77.9

S.4.9 Wetlands

For this Tier 1 level of analysis, National Wetland Inventory (NWI) mapping was used to determine potential wetland impacts. Field investigations were not conducted to verify this information. Therefore, wetland delineations will need to be conducted during the Tier 2 environmental documentation. The wetland communities that would be impacted by the program alternatives are palustrine (i.e., freshwater) emergent (PEM), palustrine forested/scrub-shrub (PFO/PSS), palustrine unconsolidated bottom (PUB) (i.e., ponds), and riverine (i.e., rivers). Table S.4-9 shows that Alternatives A and B would have the least total impacts to wetlands (52 wetlands totaling approximately 41 acres) while Alternatives C and D would have the greatest impacts (65 wetlands totaling approximately 46 acres). Out of all the wetland communities impacted, PFO/PSS wetland communities would have the greatest impacts.

Table S.4-9. NWI Wetland Impact by Alternative

Alternative	Riverine Acres/# of Wetlands	PUB Acres/# of Wetlands	PEM Acres/# of Wetlands	PFO/PSS Acres/# of Wetlands	Total Acres/# of Wetlands
A	9.0/7	1.9/8	8.8/12	21.6/25	41.3/52
B	9.5/7	1.9/8	8.7/12	21.6/25	41.7/52
C	12.2/14	2.2/10	10.1/13	21.9/28	46.4/65
D	12.2/14	2.2/10	10.0/13	21.9/28	46.3/65

S.4.10 Utilities

The Build Alternatives would require the relocation of utilities in the corridor. The estimated cost to relocate these utilities has been included in the program cost estimates.

S.4.11 Visual and Aesthetic Quality Impacts

Table S.4-10 on the following page shows the relative visual impacts to each of the landscape units along the Build Alternatives. Most of the landscape units would have minor/negative impacts from all of the Build Alternative except for the Chicago, Joliet, and Springfield areas, which would have moderate impacts.

S.4.12 Special Waste

A database search was conducted to identify special waste sites that may be impacted by the program. Table S.4-11 shows that Alternative A would potentially impact the fewest number of sites (179) while Alternative D would impact the most sites (276).

Table S.4-11. Special Waste Sites by Alternative

Alternative	Number of Special Waste Sites
A	179
B	195
C	260
D	276

S.4.13 Section 4(f)/6(f) and Parklands

This section identifies the potential for program activities to impact resources protected by Section 4(f) of the Department of Transportation Act of 1966 and Section 6(f) of the Land and Water Conservation Fund (LWCF) Act of 1965 such as public parks, recreation areas, wildlife and waterfowl refuges, and historic properties.

Table S.4-10. Visual Resource Impact Summary

Landscape Unit	No-Build Alternative	Alternative A	Alternative B	Alternative C	Alternative D
Chicago Area	○	◉	◉	◉	◉
Joliet Area	○	◉	◉	◉	◉
Will County	○	○	○	○	○
Grundy County	○	○	○	○	○
Livingston County	○	○	○	○	○
McLean County	○	○	○	○	○
Bloomington-Normal Area	○	○	○	○	○
Logan County	○	○	○	○	○
Sangamon County	○	○	○	○	○
Springfield Area	○	◉	◉	◉	◉
Macoupin County	○	○	○	○	○
Madison County	○	○	○	○	○
St. Louis Area	○	○	○	○	○

● Major
◉ Moderate
○ Minor/Negligible

For this Tier 1 analysis, potential impacts were considered when any portion of a Section 4(f) resource was to be acquired by the program or would physically abut the existing or proposed right-of-way limit. These impacts do not represent an official determination of Section 4(f) "use". Historic resources were not included as potential Section 4(f) properties for this analysis because a determination of adverse effect would need to be conducted, which will not occur until the Tier 2 stage, along with official determination of Section 4(f) "use". Table S.4-12 shows that Alternatives A and B would result in the least impacts to Section 4(f) properties (8) while Alternatives C and D would impact the most (12).

Table S.4-12. Potential Number of Section 4(f) Resources Impacted

Section	Alternative A	Alternative B	Alternative C	Alternative D
1	4	4	-	-
2	-	-	8	8
3	3	3	3	3
4	0	-	0	-
5	-	0	-	0
6	1	1	1	1
7				
Total	**8**	**8**	**12**	**12**

Only one Section 6f) property, the I&M Canal Trail, may be impacted by Alternative A or B (Section 1). Coordination with IDNR and NPS will be required during the Tier 2 study to determine whether these impacts constitute a conversion of protected uses under Section 6(f) of the LWCF.

S.4.14 Indirect and Cumulative

It is anticipated that the program would result in negligible indirect impacts for the following reasons:

- The program would utilize existing rail corridors and train stations and, therefore, would not result in the development of new access or train stations in areas that previously did not have any passenger rail service.

- It is anticipated that the increased ridership would have a minimal effect on inducing development around the existing train stations, which are already located in developed/urbanized areas. Any induced growth that may occur would be limited to the built-up areas in the immediate vicinity of the train stations and would likely include small restaurants and/or retail shops that would be attracted by the increase in transit passengers and potential customers. Any potential growth that may occur would be controlled by the local, state, and federal agencies that would be

responsible for approving such development and permitting the impacts to any regulated resources that may be impacted.

With regard to natural, cultural, agricultural, and socioeconomic resources, it is anticipated that the program would result in negligible cumulative impacts for the following reasons:

- Because the Chicago-St. Louis High-Speed Rail Program would involve primarily the addition of a second track that would parallel the existing track, the majority of the impacts would be within the existing right-of-way and in previously disturbed areas.

- Any new impacts outside of the existing track's footprint and right-of-way would be relatively narrow, linear, and distributed over a long distance (i.e., 284 miles). As a result, the impacts to any given resource (e.g., natural, cultural, agricultural, or socioeconomic) within any given area (e.g., ecosystem, watershed, community) is expected to be relatively small and would have a negligible cumulative effect when added to any other project impacts in those areas.

- The vast majority of the study corridor has been, currently is, and will continue to be farmland. The remaining study corridor is mostly comprised of highly developed urban areas that would not contribute to cumulative impacts. The only areas that may be experiencing land use changes that could contribute to cumulative impacts would be the suburban areas associated with the major metropolitan areas such as Chicago, Springfield, and St. Louis.

The most notable known projects that would result in cumulative impacts along the study corridor when added to this program are the high-speed rail improvements from Dwight to St. Louis associated with the 2004 ROD and the high-speed rail improvements from Joliet to Dwight associated with the 2011 EA/FONSI. Although minimal, the cumulative negative impacts associated with these projects would primarily be limited to prime farmland, vegetation/habitat, wetlands, and streams that are located along the existing railroad corridor. With regard to air quality, these projects are expected to provide an overall cumulative benefit. The high-speed rail facility is expected to provide service to motorists who would otherwise travel between Chicago and St. Louis by automobile. This shift in travel mode is expected to reduce overall vehicle emissions. These projects would also result in a cumulative benefit of removing automobiles from congested roadways and improving safety by shifting automobile travelers to a safer mode of transportation.

S.4.15 Travel Benefits

S.4.15.1 *No-Build Alternative*

Travel Time, Frequency, and Reliability

Existing passenger rail travel time between Chicago and St. Louis ranges from five hours and 20 minutes to five hours and 57 minutes. Under the No-Build Alternative,

passenger rail travel time is expected to range from four hours and 30 minutes and four hours and 45 minutes.

Rail communication and signal systems would continue to be upgraded under the No-Build Alternative, which would improve some of the reliability and on-time performance issues. However, the limited capacity (i.e., the single track through most of the corridor) would continue to affect reliability and on-time performance and limit the ability to add additional trains through the corridor.

With limits on travel time, passenger rail capacity, and reliability that remain with the No-Build Alternative. Ridership in 2030 is forecast to be approximately 1.1 million passengers with the No-Build Alternative, an increase of over 400,000 passengers compared to existing conditions.

Safety

Overall passenger safety in the corridor would increase in that the passenger miles traveled by rail in the corridor is expected to rise to 203 million passenger miles from the existing 114 million passenger miles. To the extent that this increase represents a diversion from automobile travel, the safety risk to travelers would decrease in that rail travel is safer than automobile travel.

However, fewer passengers are expected to divert under the No-Build Alternative compared to the Build Alternatives, which would have overall travel times that are expected to be substantially shorter than automobile travel times.

S.4.15.2 *Build Alternatives*

Travel Time, Frequency, Reliability

Rail passenger travel time between Chicago and St. Louis would decrease from a range of four hours and 30 minutes to four hours and 45 minutes, to three hours and 51 minutes to four hours and 10 minutes. The Build Alternatives could therefore result in an additional 35- to 39-minute travel time savings compared to the No-Build Alternative.

With the Build Alternatives, three additional passenger round trips would be operated daily.

The Build alternatives would include the addition of a second track through most of the corridor (Dwight to St. Louis), rail-to-rail grade separations, and added capacity north of Joliet, as well as associated signal improvements. These features would address the reliability-related issues due to train interference that are not addressed by the No-Build Alternative.

Safety

Overall passenger safety in the corridor would increase in that the annual passenger miles traveled by rail in the corridor is expected to rise to 328 million passenger miles (Year 2030) from the existing 114 million passenger miles. This is 125 million passenger miles greater than with the No-Build Alternative. To the extent that this increase

represents a diversion from automobile travel, the safety risk to travelers would decrease in that rail travel is safer than automobile travel. Annual passenger miles by automobile are projected to decrease by 118 million passenger miles compared to the No-Build Alternative.

With additional trains operating in the corridor, the possibility of train collisions is increased. However, the installation of a positive train control signal system would mitigate this risk.

Additional Travel Benefits

Improvements to passenger rail service improve its competitiveness with other modes of travel. When compared to the other transportation modes, the Build Alternatives would provide more access to intermediate markets along the corridor except for automobile travel, which currently provides access along the entire corridor via the interstate interchanges. Between Chicago and St. Louis, the Build Alternatives would provide improved access to nine intermediate markets via the train stations while air and bus travel currently provides access to only two markets (Bloomington/Normal and Springfield). With regard to trip service, the Build Alternatives would provide for safe use of cell phones and internet access for diverted automobile drivers. As for air travel, although cell phone and internet access is available at airports, there are more restrictions/limitations regarding their use during flight. With regard to cost and service, Build Alternatives would provide higher quality service than bus travel and rail service under the No-Build Alternative at a lower cost than air travel.

S.4.16 Transportation Impacts

S.4.16.1 *Freight Rail Service Impacts*

The No-Build Alternative includes conditions as exist in 2012, plus the completion of construction of track upgrades, capacity improvements, and signal improvements between Joliet and St. Louis per the 2004 ROD improvements and 2011 Dwight to Joliet EA. IDOT and UP have coordinated extensively on these changes so that the projected freight, as well as the No-Build Alternative's intercity passenger service, can operate with improved reliability relative to existing conditions.

Implementation of the Build Alternatives may require some freight train scheduling modifications to prevent conflicts with passenger rail service proposed for the Build Alternatives. The increased frequency of passenger trains will further restrict rail time available for freight movements. Since high-speed operations will occur primarily during the daytime, coordination with the host railroads would be required to determine if the routing of freight trains could occur outside of the peak intercity passenger periods. Ultimately, the freight carrier would have to agree to such a shift.

S.4.16.2 *Commuter Rail Service Impacts*

Commuter rail service in the Chicago area currently operates on Sections 1 (Metra Heritage Corridor) and 2 (Metra Rock Island District). No other commuter rail service operates in the corridor. Metra has no plans for changing or expanding the existing

service along Metra's Rock Island District, used by Alternatives C and D. There is also no intercity passenger service currently operated via the Metra Rock Island District. For Alternatives A and B (using Metra Heritage Corridor north of Joliet), Amtrak service in the No-Build Alternative would remain largely similar to the current service, with the operation of five Amtrak round trips. Metra does have plans to expand service along the Metra Heritage Corridor, possibly adding six trains per day and adding a new station between Lemont and Lockport. The assumed capacity improvements for the high speed service will be developed further in the Tier 2 process to provide appropriate additional capacity, but not for the additional commuter service. Further improvements (crossovers, segments of new trackage, etc) could be developed and analyzed to support the future additional commuter rail service.

Implementation of the Build Alternatives would not result in changes in the number of commuter trains operating daily. Impacts from the Build Alternatives could result in additional intercity passenger trains operating, potentially affecting commuter rail service.

S.4.16.3 *Impacts to Rail Service during Construction*

Under the No-Build Alternative, construction would be limited to regular maintenance activities, and improvements as planned by the 2004 ROD improvements. Therefore, impacts to railroad operations would be minimal.

In general, construction activities for the Build Alternatives would affect rail traffic by reducing operating train speeds through the construction zones, adding to rail travel time and, in turn, cost. This would occur when adding new siding tracks, double-tracks, and connection tracks. The other impact would be schedule adjustments for existing operations to create windows of opportunity for temporary shutdown of rail operations on selected track sections, such as when the new turnouts are being placed for the passing sections and new sidings, or when there is a potential safety risk, such as during the construction of a flyover. During construction, there may be track outages that would interrupt intercity passenger rail service. As necessary, bus service would be provided along the corridor to replace intercity passenger rail service lost during construction.

S.4.16.4 *Highway-Rail Grade Crossings Impacts*

Based on the 2004 ROD and 2011 EA, at-grade highway-rail crossings through most of Sections 3 through 7 (Joliet to East St. Louis) will be upgraded to provide four-quadrant gates and roadway configuration/approach improvements based on crossing diagnostics. Under the No-Build Alternative, no further modification to grade crossing warning devices in the study corridor would be made.

Under the Build Alternatives, most crossings in the corridor would require some type of improvement to accommodate the upgraded service. For example, where additional tracks are to be added, crossing surfaces, gates, and other equipment must be modified.

The Build Alternatives would increase vehicular delay at highway-rail grade crossings for the following reasons:

- **Additional intercity passenger rail service**: Gate down time would increase because the number of passenger trains operating in the corridor would increase from 10 per day to 18 per day.

- **Increase in advance warning time**: All crossings will be equipped with constant warning time. Currently, crossing gates are activated approximately 20 to 30 seconds prior to a train reaching the grade crossing. For high-speed passenger trains, crossing gates would be activated sooner, possibly up to 90 seconds before a train reaches the crossing. This increase in time would cause additional vehicular delay for motorists using the highway-rail grade crossing. As part of implementation of the 2004 ROD improvements, coordination with the Illinois Commerce Commission is underway to determine the length of time required for the gates to be activated before a train reaches a crossing.

- The combination of additional trains and longer gate down times would increase the amount of time that a crossing is blocked by approximately 20 minutes per day.

Every highway-rail crossing in the study corridor was evaluated for its suitability for grade separation. Potential grade separation locations were identified based on setting (urban or rural) and their predicted exposure factor, a function of train and vehicular volumes. At the conclusion of this evaluation, 101 crossings were identified in the study corridor for potential grade separation, which would be evaluated further during Tier 2 analysis.

S.4.16.5 *Impacts to Vehicular Crossings during Construction*

Vehicular traffic would be temporarily affected at locations where grade crossings would be separated, modified, or improved. While the exact construction zones are not known at this time, temporary lane closures or roadway closures would be required to construct some of the proposed improvements. The grade crossing improvements would, at a minimum, require traffic to slow down as it passes through the construction zone while new warning devices and other improvements are installed. In some cases, temporary diversion of traffic to adjacent crossings could be required. Construction of grade separations would be staged to minimize street closures.

Where impacts to vehicular traffic exists, emergency services, schools, businesses, and other activities requiring vehicular access would be affected by potential delays or detours. However, construction related impacts on vehicular traffic would be temporary. Traffic maintenance planning would be coordinated with schools and emergency service providers.

S.4.16.6 *Station Access and Parking Impacts*

The Build Alternatives could potentially involve proposed parking expansions and station improvements to accommodate the increase in ridership. It is anticipated, however, that there would be no access or traffic congestion problems associated with the Build Alternatives.

Potential new stations will be evaluated in suburban Chicago (between Chicago and Joliet) and St. Louis (between St. Louis and Alton). If this program moves forward, the potential location for these stations would be evaluated in Tier 2 studies. However, it is assumed that the location of new stations would be located immediately off of the highway (e.g., I-294 in Chicago and I-270 in St. Louis).

S.5 Summary of Potential Mitigation

Table S.5-1. Potential Mitigation

Impact	Mitigation
Land Use	Long Term - IDOT will implement the provisions of the State of Illinois Relocation Assistance Plan in accordance with the Uniform Relocation Act as mitigation measures where ROW acquisitions and land use changes occur.
Cultural	Mitigation measures will be determined based on the more detailed impact determinations from Tier 2 studies.
Natural Resources	Short Term - Avoidance, minimization, and best management practices implementation will reduce adverse impacts. Long Term – Coordination will continue through the Tier 2 level with the Illinois Nature Preserves Commission regarding the avoidance, minimization, and mitigation of any impacts to prairies. Coordination will continue through the Tier 2 level with the USFWS and INDR regarding the avoidance, minimization, and mitigation of any impacts to state and federal threatened and endangered species in the study corridor.

Table S.5-1. Potential Mitigation Actions (continued)

Impact	Mitigation
Construction	Air Quality: Short Term - State and local regulations regarding dust control and other air quality emission reduction controls will be followed during construction. Noise and Vibration: Short Term: • Perform all construction in a manner to minimize noise and vibration; • Use newer equipment with improved noise muffling, and periodic inspection; • Perform independent noise and vibration monitoring to demonstrate compliance with the noise limits, and modify/reschedule activities if maximum limits are exceeded at residential land uses; • Avoid hauling and unloading operations through residential neighborhoods to the greatest extent possible; • Construction lay-down or staging areas should be selected in industrially zoned districts; • Turn off idling equipment; • Minimize construction activities during evening, nighttime, weekend, and holiday periods; • Comply with all local noise and vibration ordinances and obtain all necessary permits and variances; • When possible, limit the use of construction equipment that creates high vibration levels, such as vibratory rollers and hammers, operating within 130 feet of building structures; • Require vibration monitoring during vibration-intensive activities; • Restrict the hours of vibration-intensive equipment or activities such as vibratory rollers so that impacts to residents are minimal. Water Quality/Erosion Control: Short Term - BMPs will be utilized to protect water quality. Runoff from construction sites must be diverted from directly entering streams during and after construction. Any impervious areas resulting in a small reduction in recharge area will be mitigated using stormwater retention/detention basins.
Floodplains	Mitigation measures will be determined based on the more detailed impact determinations from Tier 2 studies.

Table S.5-1. Potential Mitigation Actions (continued)

Impact	Mitigation
Wetlands	Long Term - A conceptual wetland mitigation plan will be developed to compensate for unavoidable impacts. Coordination with the USACE, the USFWS, and the IDNR will be required to determine specific mitigation requirements to adequately compensate for wetland losses pending final design to quantify actual wetland impacts.
Noise and Vibration	Long Term • Wheel treatments; • Rail treatments; • Vehicle treatments; • Building insulation; • Noise barriers; • Maintenance- – Rail grinding on a regular basis, especially on rails that tend to develop corrugations; – Wheel truing to re-contour the wheel and remove wheel flats. This can result in a dramatic vibration reduction. However, significant improvements can be gained from simply smoothing the running surface. Install wheel-flat detector systems to identify vehicles that are most in need of wheel truing; – Implement vehicle reconditioning programs, particularly with components such as suspension systems, brakes, wheels, and slip-slide detectors; • Relocation of Special Trackwork; • Ballast Mats; • Resiliently Supported Ties; • High Resilience Fasteners; • Floating Slab Trackbed.
Visual and Aesthetic Quality	Long Term - Views from trains into private spaces would be a positive visual impact and views of trains and new rail lines would be considered a minor adverse visual impact. IDOT will determine potential ways to help reduce minor impacts, such as planting vegetation screens or providing aesthetically pleasing features as part of the HSR design.
Special Waste	Mitigation measures will be determined based on the more detailed impact determinations from Tier 2 studies.
Special Lands	Mitigation measures will be determined based on the more detailed impact determinations from Tier 2 studies.

S.6 Implementation Plan

The Tier 1 DEIS presents several improvements along the Chicago to St. Louis corridor to meet the purpose and need of the program. The size and scope of this type of regional program rarely becomes implemented at once, requiring the anticipation of incremental steps with which to logically advance the program. Therefore, an implementation plan has been developed to help guide the identification and selection of staged improvements within the corridor. Ahead of any future projects, should federal funding be utilized, Tier 2 NEPA documentation must also be completed to assess the environmental effects and document measures to avoid or to minimize and mitigate impacts.

Before additional improvements along the corridor can be built, Tier 2 Project Level NEPA documents will be prepared for the specific projects being implemented using federal funds. Following the process outlined in the implementation plan, expected ridership demands will initiate the need for modeling simulations to determine the improvements necessary.

The following is a list of anticipated Tier 2 Project Level NEPA studies. The list is organized from north to south. Logical termini for the projects are based on the extent of major infrastructure improvements and station locations. Intermediate termini will be identified using train operation modeling where additional improvements are necessary to support service level increases (Exhibit S.6-1). The sequence of construction will be based on the results of train traffic modeling. The scope of each Tier 2 document may change depending on future funding and implementation decisions and additional design.

- Chicago to Joliet – This Tier 2 Project Level NEPA document will include additional track, sidings, culvert and bridge improvements, signal improvements, commuter rail station improvements, High Speed Rail station improvements, rail flyovers, rail connections and a parallel structure across the Chicago River at 21st Street to improve capacity and reliability for identified incremental service additions.

- Joliet to Springfield - This Tier 2 Project Level NEPA document will include additional track, sidings, culvert and bridge improvements and roadway grade separations to improve capacity and reliability for identified incremental service additions.

- Springfield - This Tier 2 Project Level NEPA document is part of the overall Chicago to St. Louis Tier 1 DEIS (included as Volume II).

- Springfield Flyover - This Tier 2 Project Level NEPA document will include new track alignment and a railway flyover structure to separate the UPRR and NSRR at-grade crossover to improve capacity and reliability along the corridor.

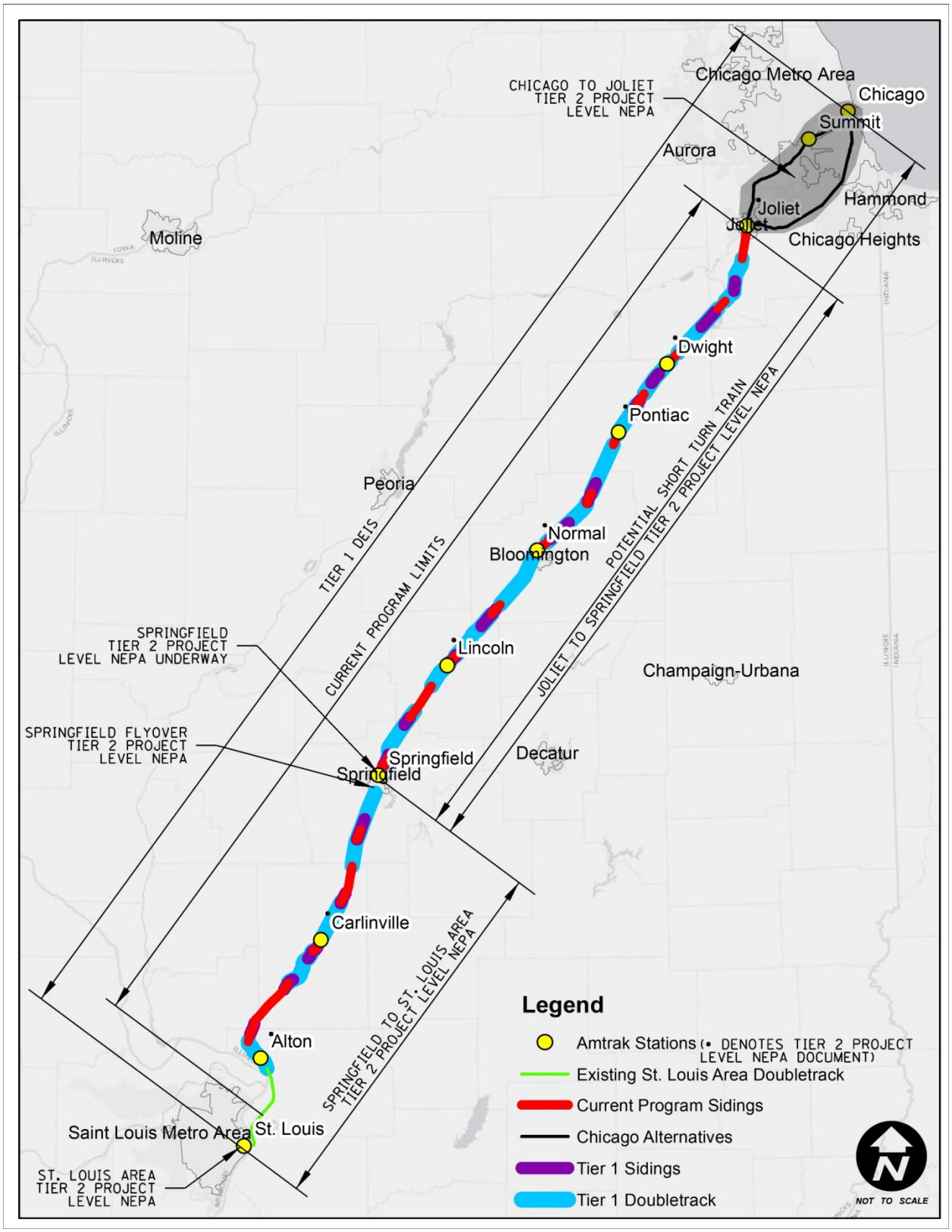

Exhibit S.6-1. Staged Improvements

- Springfield Flyover to St. Louis Area - This Tier 2 Project Level NEPA document will include additional track, sidings, culvert and bridge improvements and roadway grade separations to improve capacity and reliability for identified incremental service additions.
- St. Louis Area - This Tier 2 Project Level NEPA document will include new doubletrack approaches to an increased capacity Mississippi River crossing to improve capacity and reliability for identified incremental service additions. The Tier 2 Level NEPA document will evaluate alternatives for an increased capacity Mississippi River crossing. A new double track connection to the Merchants bridge will also be include to provide redundant access in the system for the Mississippi River crossing and to provide construction staging and future maintenance routes.
- Station Improvements – Tier 2 Project Level NEPA documents will include High Speed Rail station improvements at Joliet, Dwight, Pontiac, Normal, Lincoln, Carlinville and Alton. These improvements include pedestrian grade separation structures to provide access to both platforms and to avoid pedestrians crossing tracks at-grade, additional parking requirements and additional station capacity requirements for identified incremental service additions.

S.7 Comments and Coordination

The environmental process for the Chicago to St. Louis High-Speed Rail Corridor Program Tier 1 DEIS began in February 2011. A scoping coordination letter describing the program and requesting comments and attendance to upcoming scoping meetings, held on March 1st and 3rd, 2011, was forwarded to the state and federal resource agencies in February 2011. The agency scoping letter responses and cooperating agency responses are located in Appendix F. The Tier 1 Chicago to St. Louis High Speed Rail Environmental Impact Statement Notice of Intent (NOI) was published in the Federal Register on February 14, 2011, and a copy is located in Appendix G. In March 2011, an initial round of public meetings was held within the corridor to introduce the study to the public, to explain the EIS process and timeline, and to get input. After these meetings, the study team spent the next several months developing alternatives. In late October and early November 2011, a second round of public meetings was held in the cities of Joliet; Bloomington; Springfield; Carlinville; and Alton.

Section 8 of this document summarizes agency coordination that has occurred at this early phase of this program as well as public coordination and comments relative to the Tier 1 DEIS.

S.8 Springfield Rail Improvements Project Tier 2 Summary (Volume II)

S.8.1 Springfield Background

Multiple alignment options are available for the HSR corridor through Springfield. In addition, the existing and projected rail traffic on the three north-south corridors

through Springfield causes vehicle traffic congestion, safety risks and other problems. These problems are primarily related to the multiple at-grade crossings in the three north-south corridors. The crossings block vehicle traffic, increase risk of crashes and require trains to blow horns. Concurrent with the Tier 1 analysis, the Tier 2 analysis through Springfield analyzes alternatives for enhancing UP rail line capacity and to accommodate and reduce the effects of the increasing high-speed passenger and freight train traffic on the on the three north-south rail corridors in the City.

The north limit of the Springfield project is the south right-of-way line of Sangamon Avenue. The structure over Sangamon Avenue would not be affected by any of the Springfield alternatives and provides an easily recognized project limit for the public.

The south project limit is the north right-of-way line of Stanford Avenue. The track arrangements and rail operations are the same for all alternatives at this point, and it provides an easily recognized project limit for the public. The project includes an evaluation of vehicle congestion, public safety and other problems along all three of the north-south rail lines through the City.

S.8.2 Springfield Purpose and Need

The purpose of the Springfield Rail Improvements Project is to enhance rail line capacity to accommodate and reduce the effects of the increasing high-speed passenger and freight train traffic on the three north-south rail corridors that pass through Springfield: the Union Pacific (UP), Norfolk Southern (NS), and Canadian National (CN)/Illinois & Midland (I&M) (Exhibit S.8-1). The purpose includes reducing rail line effects by improving safety, reducing congestion, and enhancing community livability and supporting commercial activity.

Based on the need for the Springfield Rail Improvements Project, the following goals and objectives were established.

- Provide a route through Springfield that achieves the purpose of the Chicago to St. Louis High Speed Rail Program.
- Enhance rail line capacity and provide for future capacity needs to accommodate growing passenger train traffic.
- Improve safety and reduce congestion by reducing the number of at-grade street crossings in the study area with a focus on those streets with the highest traffic volumes.
- Improve livability and commercial activity by reducing train horn noise throughout the City and reducing the barrier effect of the rail lines on neighborhoods, Downtown and the Medical District.
- Minimize rail operational issues, impacts to existing development, lifecycle and capital costs, and impacts to social and economic resources due to the recommended alternative.

Exhibit S.8-1. Existing Railroad Corridors

S.8.3 Springfield Alternatives Considered

Two alternatives, later refined to five sub-alternatives, were carried from the Tier 1 screening to Tier 2 screening for additional analysis.

Alternative 1 – Double track the existing 3rd Street corridor to accommodate UP freight & passenger (HSR) traffic. This alternative includes three sub-alternatives, each of which includes an alternative specific combination of grade separations and grade crossing closures.

- 1A – Double track UP on 3rd – grade separation at passenger station.
- 1B – Double track UP on 3rd – some grade separations on UP corridor only.
- 1C – Double track UP on 3rd – some grade separations on all corridors.

Alternative 2 – Relocate UP freight and passenger (HSR) traffic to the 10th Street corridor. This alternative includes two sub-alternatives, each of which includes an alternative specific combination of grade separations and grade crossing closures.

- 2A – Relocate UP to 10th – some grade separations on 10th and 19th.
- 2B – Relocate UP to 10th – grade separation or closure of all crossings on 10th south of North Grand Avenue, some grade separations on 19th.

The alternatives were compared as to how well they achieve the project purpose and need, primarily related to safety, traffic delays, horn noise, lifecycle costs and number of at-grade street crossings. They were also compared as to number of residential and commercial displacements (Tables S.8-1 to S.8-4).

Table S.8-1. Predicted Crashes

Alternative	Predicted Crashes per Year (2030)
No-Build	1.30
1A	1.42
1B	1.31
1C	0.58
2A	0.26
2B	0.08

Table S.8-2. Vehicle Delays

Alternative	Vehicle Delay in veh-min per day (2030)
No-Build	47,500
1A	45,900
1B	28,500
1C	18,900
2A	13,500
2B	7,100

Table S.8-3. Horn Blowing

Alternative	Horn Blowing min/day (2030)
No-Build	314
1A	151
1B	151
1C	0
2A	0
2B	0

Table S.8-4. Displacements and Access Changes

Alternative	Displacements		Parcels with Access Changes	Total
	Residential	Commercial		
No-Build	0	0	0	0
1A	36	4	135	175
1B	102	31	219	352
1C	162	42	248	452
2A	108	49	29	186
2B	108	52	41	205

Based on this analysis, Alternatives 1A, 1B and 1C were determined to be not reasonable and Alternatives 2A and 2B were carried forward for more detailed analysis.

S.8.4 Summary of Springfield Impacts

Table S.8-5. Environmental Impact Summary of Alternatives 2A and 2B

Impact Category	Alternative		No-Build Alternative
	2A	*2B*	
Right-of-Way Acquisition (Acres)	42.0	42.6	0
Displacements	157	164	0
Residential	108	108	0
Commercial	49	56	0
Access Changes	29	41	0
Farmland Conversion (Acres)	0	0	0
Cultural Resources			
National Register Listed (or Eligible) Sites	0	1[3]	0
Known Archaeological Sites	0	0	0
Natural Resources			
Threatened/Endangered Species (Number of Species)	0	0	0
Natural Areas (Number)	0	0	0
Native Vegetation (Acres)	0	0	0
Affected Lakes and Streams	0	0	0
100-yr. Floodplains Crossings	0	0	0
Wetlands (Acres)	0	0	0
Parks (Number)	0	0	0
Special Waste Sites (Number within one block)			
CERCLIS[1]	2	2	0
LUST[2]	20	20	0

[1]Comprehensive Environmental Response, Compensation and Liability Information System.
[2]Leaking Underground Storage Tank.
[3] Current access to the Great Western Railroad Depot will be relocated to the west along the same block. Therefore, there will be no permanent impact to this structure.

Only those categories with impacts are discussed below.

S.8.4.1 Land Use/Socioeconomic Impacts

As shown in Table S.8-5 Alternative 2A has fewer displacements and parcels with access changes than 2B. Residential and business relocations will likely affect a small percentage of minority and/or low-income individuals, however the cumulative impacts are not anticipated to be disproportionate for the retained alternatives (2A or 2B).

S.8.4.2 Cultural Resources

The Great Western Railroad Depot at Monroe and 10th Street is a two-story, brick, Italianate-style structure. It was constructed in the 1850s with only one story and later raised to two. It was from this site that Abraham Lincoln departed his hometown for Washington, D.C. on February 11, 1861. It also represents the oldest surviving rail depot in Springfield. The Great Western Railroad Depot is considered eligible for the National Register under Criteria A (commerce), B (in relation to Lincoln), and C. The property abuts the existing railroad R.O.W., but this presents no change from its historic setting. Vibration studies have assessed no structural impact to the property for the retained alternatives. However, Alternative 2B would provide an underpass along Monroe Street which would relocate the existing access to the Depot further to the west within the same block. Therefore, the effects assessment on this property is "No Effect."

S.8.4.3 Noise

Table S.8-6. Summary of Noise Impact Results

Receptors	No-Build		Alternatives 2A and 2B	
	Number of Impacts		Number of Impacts	
	Moderate	Severe	Moderate	Severe
Total	5,978	1,789	9	9

S.8.4.4 Special Waste

Alternatives 2A and 2B both affect the same number of CERCLIS and LUST sites. However, these sites are not anticipated to present significant impairments to rail improvements associated with Alternatives 2A or 2B.

S.8.4.5 Travel Benefits and Transportation Impacts

There are no differences among the Springfield alternatives regarding:

- Rail service alternatives
- Travel time
- Service levels/frequencies
- Ridership/revenue

S.8.5 Summary of Mitigation

Table S.8-7. Mitigation

Resource Impacted	Mitigation
Land Use	IDOT would implement the provisions of the State of Illinois Relocation Assistance Plan in accordance with the Uniform Relocation Act as mitigation action where ROW acquisitions and land use changes occur.
Social/Economic	Any adverse impacts of the proposed project would not be disproportionately borne by minority or low-income populations yielding no need for mitigation action.
Cultural	The Section 106 process would continue with Memoranda of Understanding for any adverse effects to National Register or National Register eligible sites pending SHPO's review of this Draft Document.
Natural Resources	Avoidance, minimization, and best management practices implementation would reduce adverse impacts. Section 7 of the Endangered Species Act consultation would be ongoing to protect threatened and endangered species in the project area.
Air Quality	IDOT's Standard Specification on dust control would be implemented during construction to limit dust emissions during construction.
Noise and Vibration	Quiet zones would be enacted throughout the City on all rail corridors traversing the town.
Water Quality/Resources	Best Management Practices would be utilized to protect water quality. Almost all runoff from construction would be diverted directly into the City's combined sewer system during and after construction and treated by the Springfield Metro Sanitary District.
Visual and Aesthetic Quality	Views of trains and new rail lines would be considered a minor adverse visual impact. IDOT would determine potential ways to help reduce minor impacts, such as planting vegetation screens or providing aesthetically pleasing features as part of the design.
Special Waste	Special waste sites purchased for additional right-of-way would be remediated prior to construction of the proposed action.

S.8.6 Springfield Preferred Alternative

IDOT recommends selection of Alternative 2A. FRA will identify the Preferred Alternative in the Final EIS after consideration of public and agency comments on the Draft EIS.

Alternative 2A is the Recommended Alternative for the following reasons:

- Alternative 2A would have lower capital cost than Alternative 2B.

- Alternative 2B would have lower delays, crash rates and lifecycles costs, but this results primarily from constructing new grade separations at Monroe and Washington Streets and closing Capitol Avenue and Enos Streets. The grade separations both have a benefit/cost ratio much less than 1.0. The grade separations and street closures create undesirable access and adverse travel issues.

- Alternative 2B would require more right-of-way acquisition, and would result in more commercial displacements and more parcels with a change in access.

- Alternative 2B changes the access to the Great Western Railroad Depot due to the construction of an underpass grade separation along Monroe Street.

- There are no other anticipated differences between the impacts for Alternatives 2A and 2B including environmental justice concerns, Section 4(f) properties, noise or vibrations impacts.